

अनुसंधान प्रयोगों का सारांश

Summary of Research Experiments

2022-23



भा.कृ.अनु.प. - अखिल भारतीय समन्वित बाजरा अनुसंधान परियोजना
जोधपुर, राजस्थान - 342 304

ICAR - All India Coordinated Research Project on Pearl Millet
Jodhpur, Rajasthan - 342 304



(For Official Use Only)

Summary of Research Experiments

2022-23



**Project Coordinating Unit
ICAR-AICRP ON PEARL
MILLET
Agriculture University
Jodhpur, Rajasthan – 342 304**



ICAR-All India Coordinated Research Project on Pearl Millet

Summary Tables of Experiments 2022-23

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CONTENTS

	ICAR-AICRP-PM, Cooperating/ Voluntary Centres and Scientists	i-ix
	Locations and Location Code for <i>Kharif /Summer</i> 2022	I
Chapter I	PLANT BREEDING	1-273
	Summary Results Kharif Trials	1
	Coordinated Trials and Test Centers	2
	Initial Hybrid Trial (Early) Zone A ₁	12
	Initial Hybrid Trial (Medium) Zone A & B	13
	Initial Hybrid Trial (Late) Zone A & B	15
	Advanced Hybrid Trial (Medium) Zone A & B	17
	Advanced Hybrid Trial (Late) Zone A	19
	Population Trial Zone A & B	19
	Advanced Hybrid & Population & Essentially Derived Varietal (EDV) Trial (Early) Zone A ₁	22
	Released Hybrids & Varieties Trial Zone A ₁ , A & B	22
	Tables: Grain yield and other characters	25
	Summary Results Summer Trials	190
	Breeder Seed Production	205
	Distinctness, Stability and Uniformity Test	213
	ICAR – ICRISAT Partnership Project	228
	CRP-Biofortification Project	264
	Monitoring Report	273
Chapter II	AGRONOMY	1-177
Chapter III	PLANT PHYSIOLOGY	1-45
Chapter IV	PLANT PATHOLOGY	1-97
Chapter V	ENTOMOLOGY	1-79
Chapter VI	FRONTLINE DEMONSTRATIONS	1-36
Chapter VII	PLANT BIOTECHNOLOGY	1-9
Appendices	METEOROLOGICAL OBSERVATIONS	I-III

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I
LOCATION CODES OF AICRP ON PEARL MILLETT TRIALS
KHARIF/ SUMMER 2022

Abbreviation	Zone A ₁ and A Locations	Abbreviation	Zone A ₁ and A Locations
	RAJASTHAN		JHARKHAND
MDR	Mandor	RNC	Ranchi (BAU)
JDR	Jodhpur (ICAR-CAZRI)		JAMMU & KASHMIR
BKR	Bikaner (SKRAU)	JMU	Jammu (SKUAST)
SDR	Samdari (AUJ)		
LWS	Lalawas (J K Seed)		
MSR	Molasar (Bayer)		Zone B
TBJ	Tabiji (SKNAU)	Abbreviation	Locations
JPR	Jaipur (SKNAU)		MAHARASHTRA
JPR1	Jaipur (Seed Works)	ABD1	Aurangabad (NARP)(VNMKV)
JPR2	Jaipur (Corteva)	ABD2	Aurangabad (Nath Biogene)
ALW	Alwar (Corteva)	ABD3	Aurangabad (Ajeet Seed)
ALW1	Alwar (Seed Works)	ABD4	Aurangabad (DevGen)
ALW2	Alwar (BioSeed)	ABD5	Aurangabad (Bayer)
CKN	Chikani (Hytech)	ABD6	Aurangabad (Crystal)
BHR	Behror (Bayer)	ABD7	Aurangabad (Seed works)
BSR	Bansur (Spriha)	DHL	Dhule(MPKV)
JLR	Jalore (AUJ)	NPD	Niphad (MPKV)
JSR	Jaisalmer (ICAR-CAZRI)	JLN	Jalna (Mahodaya Seed)
MKR	Malakhara (Hytech)	JLN1	Jalna (Mahyco)
KRT	Kherthal (Bisco)	JLG	Jalgaon (JK Seeds)
FTR	Fatehpur Shekhawati (SKNAU)	GDG	Godegaon (Pioneer)
NGR	Nagaur (AUJ)	PCR	Pachora (Nirmal Seed)
DAS	Dausa (Rasi)	GNG	Gangapur (Ganga Kaveri)
TJR	Tijara (Rallis)	BUL	Buldana(PDKV)
PTA	Pavta (Limagrain)	GNW	Ganewadi (Krishidhan Seed)
	GUJARAT	MPR	Malkapur (Ankur Seed)
KTR	Kothara(SDAU)		KARNATAKA
SKN	S.K. Nagar(SDAU)	VYP	Vijayapur (UAS, Dharwad)
AND	Anand (AAU)	MYS	Mysore(UOM)
JMR	Jamnagar (JAU)	MLR	Malnoor(UAS, Raichur)
TLJ	Talaja (JAU)	DHR	Dharwad(UAS, Dharwad)
AHD	Ahmedabad (Biostadt)		ANDHRAPRADESH
NSD	Narsanda (Navbharat)	APR	Ananthapuram (ANGRAU)
PNR1	Palanpur (Pioneer)	PMP	Perumallapalle (ANGRAU)
PNR2	Palanpur (Ajeet)	VZN	Vizianagaram (ANGRAU)
DNR	Dhanera (JK Seeds)		TELANGANA
DEG	Dehgam (Metahelix)	MBD	Manoharabad (Zuari Seed)
DEG1	Dehgam (Kaveri)	MBD1	Manoharabad (Crystal)
DSA1	Deesa (Bioseed)	PLM	Palem(PJTSAU)
DSA2	Deesa (Ajeet)	HBD1	Hyderabad (BISCO)
DSA3	Deesa (JK)	HBD2	Hyderabad (Nuziveedu)
DER	Deodar (Bayer)	HBD3	Hyderabad (Kaveri Seed)
TKR	Thakarwara (Hytech)	HBD4	Hyderabad (Nu Gene)
KHD	Kheda(Shakti Vardhak)	PTR	Patancheru
VSN	Visnagar (Apex Seed)	MDC 1	Medchal (Ganga Kaveri)
	UTTAR PRADESH	MDC 2	Medchal (Godrej)
KLI	Kalai	RLK1	Ravalkol (Spriha)
ELS	Eglas (Bioseeds)	RLK2	Ravalkol (Hytech)
AGR	Agra (Krishna)	WRL	Wargal (Kaveri)
AGR1	Agra (Kartik Seed)	TPN	Toopran, Madak (Nu Genes)
AGR2	Agra (Mahindra Seed)		TAMIL NADU
HTR	Hathras (Ganga Kaveri)	CBE	Coimbatore (TNAU)
ALR	Aligarh (Hytech)		ODISHA
JNS	Jhansi (RLBCAU)	SMG	Semiliguda (OUAT)
BCR	Bichpuri (Kaveri)		
MTR	Mathura (Kamadgiri)		
	HARYANA		
HSR	Hisar (CCSHAU)		
BWL	Bawal(CCSHAU)		
SPR	Shikohpur (ICAR-IARI-KVK)		
SHN	Sohana (Nuziveedu)		
ANR	Arya Nagar (Shakti Vardhak)		
GUG	Gurugram (Tierra)		
	MADHYA PRADESH		
GLR	Gwalior(RVSKVV)		
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CHAPTER I

PLANT BREEDING

BREEDING

Based on climatic conditions, production constraints and differential requirement of various crop growing regions, the pearl millet cultivation in the country is divided in three major zones – A₁, A and B and is used for effective evaluation of the pearl millet breeding materials. The details of pearl millet growing states included in these zones are given below:

Zone(s)	Area (m.ha)* (2020-21)	State(s)
Zone A ₁ : less than 400 mm rainfall	3.78	Western Rajasthan and drier parts of Gujarat and Haryana
Zone A: North - Western zone	2.85	Rajasthan, Gujarat, Haryana, plains of Uttar Pradesh, New Delhi, Madhya Pradesh (Bhind, Morena, Gwalior and adjoining areas) Punjab, Jharkhand and Jammu & Kashmir
Zone B: South - Central zone	1.02	Maharashtra, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu and Odisha
Summer	0.41	Gujarat and Uttar Pradesh

*(<https://aps.dac.gov.in>)

The coordinated hybrid/ varietal trials under ICAR-All India Coordinated Research Project on Pearl Millet (ICAR-AICRP on Pearl Millet) were conducted during summer and Kharif 2022 as per details given below:

Coordinated trials**Mode of operation**

Initial Hybrid Trial (Early) - IHT (E)	Zone A ₁ with early hybrids
Initial Hybrid Trial (Medium) - IHT (M)	Zone A and B with common hybrids
Initial Hybrid Trial (Late) - IHT (L)	Zone A and B with common hybrids
Advanced Hybrid Trial (Medium) - AHT (M)	Zone A and B with different advanced hybrids
Advanced Hybrid Trial (Late) - AHT (L)	Zone A with different advanced hybrids
Population Trial - PT	Zone A and B with common initial and different advanced populations
Advanced Hybrid and Population Trial (Early) - AHPT (E)	Zone A ₁ with early hybrids, populations and EDVs
Released Hybrids and Varieties Trial - (RHVT)	Zone A and B with released entries of respective Zone
Summer Hybrid Trial - SHT	Summer areas of zone A and B with common initial and advanced hybrids

CHAPTER I: BREEDING

The bases of non-inclusion of test location to work out zonal means are:

- 1) Coefficient of variation (C.V.) - More than 30%
- 2) The average grain yield of test location is less than the state average yield except in Zone A₁ trials.

The average grain yield based on the ten years data (2012-13 to 2021-22) in different states is as follows:

	States	Average grain yield
i)	Rajasthan	970 kg/ha
ii)	Karnataka	1095 kg/ha
iii)	Maharashtra	786 kg/ha
iv)	Andhra Pradesh	1772 kg/ha
v)	Telangana	936 kg/ha
vi)	Gujarat (Kharif)	1386 kg/ha
vii)	Gujarat (Summer)	2664 kg/ha
viii)	Madhya Pradesh	2166 kg/ha
ix)	Haryana	1992 kg/ha
x)	Tamil Nadu	2388 kg/ha
xi)	Uttar Pradesh	2008 kg/ha
xii)	Delhi	2236 kg/ha
xiii)	Punjab	824 kg/ha
xiv)	Jammu & Kashmir	595 kg/ha
xv)	Odisha	616 kg/ha
xvi)	Jharkhand	581 kg/ha

Coordinated Trials and Test centres

The ICAR-AICRP on Pearl Millet hybrids/populations yield evaluation trials were organized during kharif /summer 2022 at 10 test locations in Zone A₁, 35 in Zone A and 21 in Zone B. Status of test centres where trials were conducted successfully, trials conducted but failed and trials not conducted are given in Table I.1. Key to experimental hybrids and varieties included in various trials are given in Tables I.2 to I.5. The data on grain yield, quality and ancillary characters are given in Tables I.6 to I.214. The weather data of the test locations are given in Appendix I-III. State-wise positions for successful conduct of trials are given below:

CHAPTER I: BREEDING

Zone	State	Trials x Location Combinations		
		Allotted	Successfully conducted	Percent success
Zone A₁	Rajasthan	23	22	96
	Gujarat	4	4	100
	Haryana	4	4	100
	Total	31	30	97
Zone A	Rajasthan	22	22	100
	Gujarat	29	28	96
	Uttar Pradesh	14	12	86
	Haryana	11	8	73
	Madhya Pradesh	8	7	87
	Punjab	6	6	100
	Delhi	3	3	100
	Jharkhand	1	0	0
	Jammu & Kashmir	1	1	100
	Total	95	87	92
Zone B	Maharashtra	25	25	100
	Karnataka	10	10	100
	Andhra Pradesh	10	10	100
	Telangana	7	7	100
	Tamil Nadu	6	6	100
	Odisha	3	3	100
	Total	61	61	100
	G. Total	187	178	95

CHAPTER I: BREEDING

Table I.1 Details of Centres and Trials Conducted During Kharif 2022/Summer 2022 in Zone A₁ and A

LOCATIONS	IHT (E)	IHT (M)	IHT (L)	AHPT (E)/EDV	AHT (M)	AHT (L)	PT	RHVT	SHT
ZONE A₁									
RAJASTHAN									
Mandor (ICAR-AICRP)	*	*		*	*				*
Mandor (ARS, AU Jodhpur)							*	*	
Jodhpur (ICAR-CAZRI)	*			*					
Bikaner (SKRAU)	*	*		*	*F		*	*	
Fathehpur Shekhawati (SKNAU)	*			*					
Samdari (AUJ)	*			*					
ARS, Jalore (AUJ)	*			*					
Nagaur (AU, Jodhpur)	*			*					
GUJARAT									
Kothara (SDAU)	*	*		*	*				
HARYANA									
Bawal (CCSHAU)	*	*		*	*				
Total Trials Zone A₁	9	4	0	9	4	0	2	2	1
ZONE A									
RAJASTHAN									
Jaipur (SKNAU)		*	*		*	*	*	*	
Jaipur (Seed works)			*			*			
Jaipur (Corteva)		*			*				
Tabiji (SKNAU)		*			*				
Paota (Limagrains)			*						
Tijara (Rallis)		*	*		*				
Alwar (Corteva)			*			*			
Alwar (Bioseed)			*				*		
Dausa (Rasi Seeds)		*	*						
GUJARAT									
Talaja (JAU)		*			*				
Anand (AAU)		*			*				*
Jamnagar (JAU)		*	*		*	*	*	*	*
S.K.Nagar (SDAU)	*	*		*	*				*
Visnagar (Apex Seeds tech)									*
Ahmedabad (Nandi)			*						*
Dehgam (Rallis)									*
Palanpur (Corteva)									*
Deesa (J.K. Seeds)									*
Dhanera (JK Seed)		*	*		*F	*			
Dehgam (Kaveri Seeds)			*			*			
UTTAR PRADESH									
Jhansi (RLBCAU)		*					*	*	
Aligarh (Hytech)			*			*			
Hathras (Ganga Kaveri)			*						
Agra (Kartik Bio Seeds)		*F	*F						*
Agra (Mahindra)						*			
Bichpuri (Kaveri Seeds)					*	*			
Mathura (Kamadgiri)		*	*						
HARYANA									
Hisar (CCS,HAU)	*	*	*	*	*	*	*	*	
Gurugram (Tierraagrotech)		*F	*F				*F		
MADHYA PRADESH									
Gwalior (RVSKVV)		*	*		*	*	*	*	
Morena (RVSKVV)					*F		*		
PUNJAB									
Ludhiana (PAU)		*	*		*	*	*		*
DELHI									
New Delhi (ICAR-IARI)		*			*		*		
JHARKHAND									
Ranchi (BAU)								*F	
JAMMU & KASHMIR									
Jammu (SKUAST)								*	
Total Trials Zone A	2	18	19	2	15	12	10	7	10

CHAPTER I: BREEDING

Table I.1 Details of Centres and Trials Conducted During Kharif 2022/Summer 2022 in Zone B

LOCATIONS	IHT (M)	IHT (L)	AHT (M)	AHT (L)	PT	RHVT	SHT
MAHARASHTRA				No Advance Entries			
Aurangabad (NARP)	*	*	*		*	*	*
Aurangabad (Ajeet Seed)			*				
Aurangabad (Seedworks)		*					*
Niphad (MPKV)			*		*		
Dhule (MPKV)	*	*	*		*	*	*
Jalna (Mahyco)		*					*
Jalna (Krishidhan Ghanewadi)		*					
Pachora (Nirmal Seed)	*	*					*
Malkapur (Ankur Seed)		*					
Gangapur (Ganga Kaveri)		*					
KARNATAKA							
Vijayapur (UAS Dharwad)	*	*	*		*	*	
Malnoor (UAS, Raichur)	*		*		*	*	
Dharwad (KSSC Ltd)	*						
ANDHRA PRADESH							
Ananthapuram (ANGRAU)	*	*	*		*	*	
Perumallapalle (ANGRAU)	*				*		
Vizianagaram (ANGRAU)			*		*	*	
TELANGANA							
Palem (PJ TSAU)	*		*		*	*	*
Hyderabad (Nuziveedu)		*					
Toopran, Medak (NU Genes)		*					
TAMIL NADU							
Coimbatore	*	*	*		*	*	*
ODISHA							
Semiliguda (OUAT)	*				*	*	
Total Trials Zone B	11	13	10		11	9	7

CHAPTER I: BREEDING

Table I.2: Key to Pearl Millet Hybrids (Kharif 2022)

Test Code	Project No.	Identity	Pedigree	Origin
Entries completed one year of testing				
IHT 101	MH 2662	HMHE2201	ICMA 11999 x IIMR-S1-13-7-22-1011	ICAR-IIMR, Hyderabad
IHT 102	MH 2663	HMHE2202	ICMA 22999 x IIMR-S1-3-11-22-1127	ICAR-IIMR, Hyderabad
IHT 103	MH 2664	DHBH-21005	DHLB-33A x DHLBI-1603	ICAR-AICRP-PM, Dhule
IHT 105	MH 2665	BHB2201	ICMA 98222 x BIB-103	ICAR-AICRP-PM, SKRAU, Bikaner
IHT 106	MH 2666	BHB2202	ICMA 98222 x BIB-106	ICAR-AICRP-PM, SKRAU, Bikaner
IHT 107	MH 2667	BHB2203	BMS 2201 x RIB 3135-18	ICAR-AICRP-PM, SKRAU, Bikaner
IHT 108	MH 2668	CZH 263	ICMA 15222 x CZI 2003/8	ICAR-CAZRI, Jodhpur
IHT 110	MH 2669	CZH 264	ICMA 15222 x CZI 2014/3	ICAR-CAZRI, Jodhpur
IHT 111	MH 2670	CZH 265	ICMA 06888 x CZI 2017/1	ICAR-CAZRI, Jodhpur
IHT 112	MH 2671	CZH 266	ICMA 06888 x CZI 2020/5	ICAR-CAZRI, Jodhpur
IHT 113	MH 2672	CZH 267	(A-EBC-IC-2019 x B-IC-2019-1) x CZI 2019/16	ICAR-CAZRI, Jodhpur
IHT 114	MH 2673	RHB-273	RMS 30A x RIB 3135-18	ICAR-AICRP-PM, SKNAU, Jaipur
IHT 115	MH 2674	KPH6111	KP21SA033 x KP21SR034	Kaveri Seeds Co. Ltd., Hyderabad
IHT 116	MH 2675	GHB 1305	ICMA1 15777 x J-2571	ICAR-AICRP-PM, JAU, Jamnagar
IHT 118	MH 2676	GHB 1349	JMSA1 20208 x J-2480	ICAR-AICRP-PM, JAU, Jamnagar
IHT 119	MH 2677	GHB 1350	JMSA1 20208 x J-2643	ICAR-AICRP-PM, JAU, Jamnagar
IHT 120	MH 2678	HHB 344	ICMA 93333 x HR-21-166	ICAR-AICRP-PM, CCSHAU, Hisar
IHT 121	MH 2679	IIMRPH1	ICMA 04999 x 128R	ICAR-IIMR, Hyderabad
IHT 122	MH 2680	Pusa 2201	411A x PPMI 1298	ICAR-IARI, New Delhi
IHT 124	MH 2681	Pusa 2202	411A x PPMI 1299	ICAR-IARI, New Delhi
IHT 201	MH 2682	APHB-126	ICMA 92333 x 4115	ICAR-AICRP-PM, ANGRAU, Ananthapuramu
IHT 202	MH 2683	APHB-135	ICMA 96222 x 3196	ICAR-AICRP-PM, ANGRAU, Ananthapuramu
IHT 203	MH 2684	APHB-234	ICMA 96222 x 26-4	ICAR-AICRP-PM, ANGRAU, Ananthapuramu
IHT 205	MH 2685	NPH-5654	NPA-168 x NPR-1199	Nirmal Seeds Pvt. Ltd., Pachora
IHT 206	MH 2686	TNBH 17016	ICMA 99555 x PT 6679	ICAR-AICRP-PM, TNAU, Coimbatore
IHT 207	MH 2687	TNBH 19013	ICMA 93111 x PT 6679	ICAR-AICRP-PM, TNAU, Coimbatore
IHT 208	MH 2688	DHBH-21001	DHLB-28A x DHLBI-1035	ICAR-AICRP-PM, Dhule
IHT 209	MH 2689	DHBH-21002	DHLB-32A x DHLBI-1035	ICAR-AICRP-PM, Dhule
IHT 210	MH 2690	DHBH-21004	DHLB-28A x DHLBI-1603	ICAR-AICRP-PM, Dhule
IHT 211	MH 2691	DHBH-21006	DHLB-32A x DHLBI-1603	ICAR-AICRP-PM, Dhule
IHT 212	MH 2692	NBH 2340	NB101A x NB2124R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
IHT 214	MH 2693	BLPMH 111	BLPMA002 x BLPMP1548	Limagrains India Pvt. Ltd., Hyderabad
IHT 215	MH 2694	VPMH 18	ICMA 94555 x ICMR 15455	ICAR-AICRP-PM, Vijayapur
IHT 216	MH 2695	VPMH 19	ICMA 98222 x ICMR 15459	ICAR-AICRP-PM, Vijayapur
IHT 217	MH 2696	SUPER 78 GOLD	SMA 88 x SR 278	Super Seeds Pvt. Ltd., Haryana
IHT 218	MH 2697	RVBH-2251	ICMA 96222 x RBR-208	ICAR-AICRP-PM, RVSKVV, Gwalior
IHT 219	MH 2698	RVBH-2252	ICMA 96222 x RBR-230	ICAR-AICRP-PM, RVSKVV, Gwalior
IHT 220	MH 2699	AHB-1609	ICMA 98222 x AUBI1998	ICAR-AICRP-PM, NARP, Aurangabad
IHT 221	MH 2700	AHB-1610	ICMA 98222 x AUBI1999	ICAR-AICRP-PM, NARP, Aurangabad

Contd.

CHAPTER I: BREEDING

Table I.2: Key to Pearl Millet Hybrids (Kharif 2022)

Test Code	Project No.	Identity	Pedigree	Origin
IHT 222	MH 2701	AHB-1732	ICMA 1605 x AUBI 2000	ICAR-AICRP-PM, NARP, Aurangabad
IHT 223	MH 2702	GHB 1330	ICMA1 14333 x J-2597	ICAR-AICRP-PM, JAU, Jamnagar
IHT 224	MH 2703	GHB 1352	JMSA1 20208 x J-2613	ICAR-AICRP-PM, JAU, Jamnagar
IHT 225	MH 2704	DHBH-2112	ICMA 04999 x ICMR 100602	ICAR-AICRP-PM, Dhule
IHT 227	MH 2705	IIMRPH2	242A x 88R	ICAR-IIMR, Hyderabad
IHT 228	MH 2706	NANDI-11	PMNS06S1001S x PMNS19S4006R	Nandi Seeds Pvt. Ltd., Ahmedabad
IHT 229	MH 2707	Pusa 2203	PPMA 991 x PPMI 1300	ICAR-IARI, New Delhi
IHT 230	MH 2708	Pusa 2204	PPMA 1302 x PPMI 1301	ICAR-IARI, New Delhi
IHT 301	MH 2709	MP7173	PM21S1087A x MP16P050R	Rallis India Ltd., Hyderabad
IHT 302	MH 2710	MP7179	PM21S1088A x MP16P050R	Rallis India Ltd., Hyderabad
IHT 303	MH 2711	DHBH-21003	DHLB-37A x DHLBI-1035	ICAR-AICRP-PM, Dhule
IHT 304	MH 2712	VNR-106	VNRF-12 x VNRBB-1368	VNR Seeds Pvt., Ltd., Hyderabad
IHT 305	MH 2713	VNR-107	VNRF-74 x VNRBB-1359	VNR Seeds Pvt., Ltd., Hyderabad
IHT 307	MH 2714	PHB 3767	ICMA 98222 x PIB 686	ICAR-AICRP-PM, PAU, Ludhiana
IHT 308	MH 2715	NBH 5992	NB107A x NB2125R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
IHT 309	MH 2716	US7712	SWM03A x SWM09R	Seed Works Int. Pvt. Ltd., Hyderabad
IHT 310	MH 2717	US7773	SWM03A x SWM11R	Seed Works Int. Pvt. Ltd., Hyderabad
IHT 311	MH 2718	PB1858 (R)	PSP118 x PP123	Crystal Crop Protection Ltd., Aurangabad
IHT 312	MH 2719	PB1948 (R)	PSP134 x PP80	Crystal Crop Protection Ltd., Aurangabad
IHT 313	MH 2720	PB1987	PSP137 x PP123	Crystal Crop Protection Ltd., Aurangabad
IHT 314	MH 2721	PB1991	PSP138 x PP123	Crystal Crop Protection Ltd., Aurangabad
IHT 315	MH 2722	HT 422316	PM0089A x PM0376R	Hytech Seed India Pvt. Ltd., Hyderabad
IHT 316	MH 2723	BLPMH 112	BLPMA002 x BLPMP1533	Limagrains India Pvt., Ltd., Hyderabad
IHT 317	MH 2724	VPMH 20	ICMA 98222 x ICMR 15455	ICAR-AICRP-PM, RARS, Vijayapur
IHT 318	MH 2725	DHBH-21007	DHLB-37A x DHLBI-1603	ICAR-AICRP-PM, Dhule
IHT 320	MH 2726	RHB-274	ICMA 04999 x RIB 21101	ICAR-AICRP-PM, SKNAU, Jaipur
IHT 321	MH 2727	RHB-275	ICMA 1606 x RIB 21102	ICAR-AICRP-PM, SKNAU, Jaipur
IHT 322	MH 2728	9025A428-01	9PCLS33A x M492R	Corteva Agri Sci., Hyderabad
IHT 323	MH 2729	KPH6277	KP19SA001 x KP19SR002	Kaveri Seeds Co. Ltd., Hyderabad
IHT 324	MH 2730	JKBH1870	JKA233 x JKR209	J K Seeds Pvt. Ltd., Hyderabad
IHT 326	MH 2731	GHB 1312	ICMA1 04999 x J-2630	ICAR-AICRP-PM, JAU, Jamnagar
IHT 327	MH 2732	GHB 1313	ICMA1 04999 x J-2631	ICAR-AICRP-PM, JAU, Jamnagar
IHT 328	MH 2733	GHB 1337	ICMA4 10777 x J-2613	ICAR-AICRP-PM, JAU, Jamnagar
IHT 329	MH 2734	GHB 1343	ICMA4 10777 x J-2644	ICAR-AICRP-PM, JAU, Jamnagar
IHT 330	MH 2735	HHB 345	ICMA 04999 x HR-21-67	ICAR-AICRP-PM, CCSHAU, Hisar
IHT 332	MH 2736	HHB 346	ICMA 04999 x HR21-50	ICAR-AICRP-PM, CCSHAU, Hisar
IHT 333	MH 2737	IIMRPH3	269A x 136R	ICAR-IIMR, Hyderabad
IHT 334	MH 2738	NANDI-31	PMNS19K1020S x PMNS19S4006R	Nandi Seeds Pvt. Ltd., Ahmedabad
IHT 335	MH 2739	TMBH 680	TM-610192 x TM-640222	Trimurti Plant Sci. Pvt. Ltd., Hyderabad
IHT 336	MH 2740	HMHL2203	ICMA 11555 x IIMR-S3-5-8-5641	ICAR-IIMR, Hyderabad

Contd.

CHAPTER I: BREEDING

Table I.2: Key to Pearl Millet Hybrids (Kharif 2022)

Test Code	Project No.	Identity	Pedigree	Origin
Entries completed two years of testing				
AHT 403 A	MH 2619	PB2118621	M461F/9PDEV20R	Corteva Agri Science, Hyderabad
AHT 401 B	MH 2564 (R)	NBH 5980	NB1125A x NB2087R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
AHT 403 B	MH 2619	PB2118621	M461F/9PDEV20R	Corteva Agri Science, Hyderabad
AHT 405 B	MH 2606	Pusa 2103	ICMA 08666 x PPMI 1239-1	ICAR-IARI, New Delhi
AHT 504 A	MH 2626	MP7214	MP18P069A/MP20P081R	Metahelix Lifesciences Pvt. Ltd., Bangalore
AHT 507 A	MH 2631	PB1939	PSP132 x PP109	Bayer Bio Science Pvt. Ltd., Hyderabad
AHPT 807	MH 2661 (EDV)	GHB 538 Imp.-4	ICMA ₁ 95444 x ICMR 100886	ICAR-AICRP-PM, JAU, Jamnagar
Entries completed three years of testing				
AHPT 801	MH 2553	MPMH 42	ICMA1 92777 x MIR 519-1	ICAR-AICRP-PM, Jodhpur
AHPT 804	MH 2555	GHB 1294	ICMA1 93333 x J-2632	ICAR-AICRP-PM, JAU, Jamnagar
AHT 501 A	MH 2577	HBH191294	PM0140A x PM0376R	Hytech Seed India Pvt. Ltd., Hyderabad
AHT 502 A	MH 2580	86M93	M500F/9PDEV20R	Corteva Agri Sci., Hyderabad
CHECKS				
		RHB 223 (2018)	ICMA 96666 x RIB 3135-18	ICAR-AICRP-PM, SKRAU, Jaipur
		MPMH 21 (2016)	ICMA 93333 x MIR 524	ICAR-AICRP-PM, Jodhpur
		HHB 67 (Imp.) (2005)	ICMA 843-22 x H 77/833-2-202	ICAR-AICRP-PM, CCS HAU, Hisar
		PB 1756 (2018)	PSP91 x PP107	Crystal Seed Pvt. Ltd., Hyderabad
		MPMH 17 (2013)	ICMA 04999 x MIR 525-2	ICAR-AICRP-PM, Jodhpur
		PB1852 (2019)	PSP 95 x PP 110	Crystal Seed Pvt. Ltd., Hyderabad
		JKBH 1326 (2019)	JKMS 1388A x JKR 16049	J K Seeds Pvt. Ltd., Hyderabad
		AHB 1269 (2019)	ICMA 98222A ₁ x AUBI 1105	ICAR-AICRP-PM, NARP, Aurangabad
		86M01 (2015)	M096F x M149R	Pioneer Overseas Corp., Hyderabad
		Pratap (2012)	NB 101A x NB 152R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
		86M86 (2012)	M128F x M138R	Pioneer Overseas Corp., Hyderabad
		MP 7878 (2018)	MP14P030A x MP15P038R	Metahelix Life Science Ltd., Bangalore
		KBH 108 (2014)	KMPS-74A x KPR-9288R	Krishna Seeds Pvt. Ltd., Agra
		Kaveri S. Boss (2012)	KBMS 329 x KBR 621	Kaveri Seed Co. Ltd., Hyderabad
		NBH 4903 (2018)	NB 105A x NB 98R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
		RHB 177 (2011)	ICMA 843-22 x RIB 494/S94	ICAR-AICRP-PM, SKRAU, Jaipur
		HHB 272 (2016)	HMS 47A x AC 04/13	ICAR-AICRP-PM, CCS HAU, Hisar
		GHB 538 (2005)	ICMA 95444 x J 2340	ICAR-AICRP-PM, JAU, Jamnagar
		PB 1705 (2018)	PSP 83 x PP 78	Bayer Bio Science Pvt. Ltd., Hyderabad
		NBH 5767 (2015)	NB 345A x NB 97R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
		MP-7792 (2012)	M001A x M004R	Metahelix Life Science Ltd., Bangalore

CHAPTER I: BREEDING

Table I.3: Key to Pearl Millet Hybrids (Summer 2022)

Test Code	Project No.	Identity	Pedigree	Origin
Entries completed one year of testing				
SHT 106	MSH 390	KPH6499	KP19SA021 x KP19SR022	Kaveri Seeds Co. Ltd., Hyderabad
SHT 107	MSH 391	TNBH 17025	98222A x PT 6679	ICAR-AICRP-PM, TNAU, Coimbatore
SHT 108	MSH 392	GHB 1306	ICMA1 15666 x J-2604	ICAR-AICRP-PM, JAU, Jamnagar
SHT 109	MSH 393	GHB 1315	ICMA1 14333 x J-2586	ICAR-AICRP-PM, JAU, Jamnagar
SHT 110	MSH 394	GHB 1331	ICMA1 14333 x J-2629	ICAR-AICRP-PM, JAU, Jamnagar
SHT 112	MSH 395	PB2118621	M461F x 9PDEV20R	Corteva Agriscience, Hyderabad
SHT 113	MSH 396	Nandi-11	PMNS06S1001S x PMNS19S4006R	Nandi Seeds Pvt. Ltd., Ahmedabad
SHT 114	MSH 397	Nandi-31	PMNS19K1020S x PMNS19S4006R	Nandi Seeds Pvt. Ltd., Ahmedabad
SHT 116	MSH 398	SVPMH-118	SVMSA-21 x SVR-06	Shakti Vardhak Hyd. Seed Pvt. Ltd.
SHT 117	MSH 399	US7306	KMPS-74A x SWM06R	Seed Works Intern. Pvt. Ltd. , Hyderabad
SHT 119	MSH 400	GDHB 15	ICMA 98444 x 16317 R	SDAU, SK Nagar
Entries completed two years of testing				
SHT 104	MSH 389	PB1918	PSP99 x PP119	Bayer Biosciences Pvt. Ltd., Hyderabad
Entries completed three years of testing				
SHT 101	MSH 371	PB1879	PSP128 x PP108	Bayer Biosciences Pvt. Ltd., Hyderabad
SHT 102	MSH 372	PB1966	PSP83 x PP130	Bayer Biosciences Pvt. Ltd., Hyderabad
SHT 103	MSH 377	86M22	M461F x M458R	Corteva Agriscience, Hyderabad
CHECKS				
		Proagro 9444 (2004)	PSP 41 x PP 29	Bayer Biosciences Pvt. Ltd., Hyderabad
		86M64 (2011)	M096F x M117R	Pioneer Overseas Corp., Hyderabad
		Nandi 75 (2013)	NMS 24 A x NMP 95	New Nandi Seeds Corp., Ahmedabad
		MP 7366 (2021)	MP14P028A x MP15P035R	Metahelix Life Science Ltd., Hyderabad

CHAPTER I: BREEDING

Table I.4: Key to Pearl Millet Varieties (Kharif 2022)

Test Code	Project No.	Identity	Origin
Entries completed one year of testing			
PT 605 A	MP 618	PPBV-5	ARS, ANGRAU, Perumallapalle
PT 606 A	MP 619	PPBV-8	ARS, ANGRAU, Perumallapalle
PT 607 A	MP 620	GBL-3	ICAR-AICRP-PM, PAU, Ludhiana
PT 609 A	MP 621	GBL-8	ICAR-AICRP-PM, PAU, Ludhiana
PT 610 A	MP 622	BCB 2201	ICAR-AICRP-PM, SKRAU, Bikaner
PT 611 A	MP 623	VPMV 14	ICAR-AICRP-PM, RARS, Vijayapur
PT 613 A	MP 624	VPMV 15	ICAR-AICRP-PM, RARS, Vijayapur
PT 615 A	MP 625	VPMV 16	ICAR-AICRP-PM, RARS, Vijayapur
PT 616 A	MP 626	IIMRPV1	ICAR-IIMR, Hyderabad
PT 618 A	MP 627	Pusa Comp. 729	ICAR-IARI, New Delhi
PT 619 A	MP 628	Pusa Comp. 730	ICAR-IARI, New Delhi
PT 620 A	MP 629	Pusa Comp. 731	ICAR-IARI, New Delhi
PT 601 B	MP 618	PPBV-5	ARS, ANGRAU, Perumallapalle
PT 602 B	MP 619	PPBV-8	ARS, ANGRAU, Perumallapalle
PT 604 B	MP 620	GBL-3	ICAR-AICRP-PM, PAU, Ludhiana
PT 605 B	MP 621	GBL-8	ICAR-AICRP-PM, PAU, Ludhiana
PT 607 B	MP 622	BCB 2201	ICAR-AICRP-PM, SKRAU, Bikaner
PT 608 B	MP 623	VPMV 14	ICAR-AICRP-PM, RARS, Vijayapur
PT 610 B	MP 624	VPMV 15	ICAR-AICRP-PM, RARS, Vijayapur
PT 611 B	MP 625	VPMV 16	ICAR-AICRP-PM, RARS, Vijayapur
PT 613 B	MP 626	IIMRPV1	ICAR-IIMR, Hyderabad
PT 614 B	MP 627	Pusa Comp. 729	ICAR-IARI, New Delhi
PT 616 B	MP 628	Pusa Comp. 730	ICAR-IARI, New Delhi
PT 617 B	MP 629	Pusa Comp. 731	ICAR-IARI, New Delhi
Entries completed two years of testing			
PT 601 A	MP 610	Pusa Comp. 726	ICAR-IARI, New Delhi
PT 602 A	MP 612	Pusa Comp. 728	ICAR-IARI, New Delhi
PT 603 A	MP 613	GBL 6	ICAR-AICRP-PM, PAU, Ludhiana
CHECKS			
		ICMV 221 (1993)	ICRISAT, Patancheru
		Pusa Comp. 701 (2016)	ICAR-IARI, New Delhi
		Dhanshakti (2014)	ICRISAT, Patancheru
		Pusa Comp. 383 (2001)	ICAR-IARI, New Delhi
		JBV 2 (1999)	ICAR-AICRP-PM, RVSKV, Gwalior
		Raj 171 (1992)	ICAR-AICRP-PM, SKNAU, Jaipur
		ABV 04 (2019)	ICAR-AICRP-PM, ANGRAU, Ananthapuram
		Pusa Comp. 612 (2011)	ICAR-IARI, New Delhi

CHAPTER I: BREEDING

Table I.5: Key to Pearl Millet Released Hybrids and Varieties (Kharif 2022)

S. No.	Name of entry.	Year of release	Pedigree	Origin
Hybrids				
1	RHB 223	2018	ICMA 96666 x RIB 3135-18	ICAR-AICRP-PM, SKRAU, Jaipur
2	PB 1756	2018	PSP91 x PP107	Bayer Bio Science Hyderabad
3	MPMH 21	2016	ICMA 93333 x MIR 524	ICAR-AICRP-PM, Jodhpur
4	GHB 719	2007	ICMA 95222 x J 2454	ICAR-AICRP-PM, JAU, Jamnagar
5	HHB 67 Improved	2005	ICMA 843-22 x H 77/833-2-202	ICAR-AICRP-PM, CCS HAU, Hisar
6	GHB 538	2005	ICMA 95444 x J 2340	ICAR-AICRP-PM, JAU, Jamnagar
7	PB 1852	2019	PSP 95 x PP 110	Bayer Bio Science, Hyderabad
8	PB 1705	2018	PSP 83 x PP 78	Bayer Bio Science Hyderabad
9	MPMH 17	2013	ICMA 04999 x MIR 525-2	ICAR-AICRP-PM, Jodhpur
10	GHB 905	2013	ICMA 04999 x J- 2454	ICAR-AICRP-PM JAU, Jamnagar
11	RHB 173	2011	ICMA 93333 x RIB 192 S/99	ICAR-AICRP-PM, SKNAU, Jaipur
12	GHB 732	2008	ICMA 96222 x J 2340	ICAR-AICRP-PM, JAU, Jamnagar
13	GHB 744	2008	ICMA 98444 x J 2340	ICAR-AICRP-PM, JAU, Jamnagar
14	MP 7878	2018	MP14P030A x MP15P038R	Metahelix Life Science Ltd.
15	KBH 108	2014	KMPS-74A x KPR-9288R	Krishna Seeds Pvt. Ltd., Agra
16	Kaveri Super Boss	2012	KBMS 329 x KBR 621	Kaveri Seed Co. Ltd., Hyderabad
17	86M86	2012	M128F x M138R	Pioneer Overseas Corp., Hyderabad
18	MP-7792	2012	M001A x M004R	Metahelix Life Science Ltd., Bangalore
19	Proagro 9444	2004	PSP 41 x PP 29	Bayer Biosciences Pvt. Ltd., Hyderabad
20	GHB 558	2003	ICMA 94555 x J 2290	ICAR-AICRP-PM, JAU, Jamnagar
21	RHB 234	2019	ICMA 02333 x RIB 15177	ICAR-AICRP-PM, SKRAU, Jaipur
22	RHB 233	2019	ICMA 99444 x RIB 15176	ICAR-AICRP-PM, SKRAU, Jaipur
23	AHB 1269	2019	ICMA 98222A ₁ x AUBI 1105	ICAR-AICRP-PM, NARP, Aurangabad
24	HHB 299	2018	ICMA 04888 x H 13/0001	ICAR-AICRP-PM, CCS HAU, Hisar
25	AHB 1200	2018	ICMA 98222 A ₁ x AUBI 1101	ICAR-AICRP-PM, NARP, Aurangabad
26	NBH 5767	2015	NB 345A x NB 97R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
27	Pratap (MH 1642)	2012	NB 101A x NB 152R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
28	NBH 4903	2018	NB 105A x NB 98R	Nuziveedu Seeds Pvt. Ltd., Hyderabad
29	86M64	2011	M096F x M 117R	Pioneer Overseas Corp., Hyderabad
Varieties				
30	Dhanshakti	2014	-	ICAR-AICRP-PM, MPKV, Dhule
31	ICMV 221	1993	-	ICRISAT, Patancheru
32	Pusa Comp. 701	2016	-	ICAR-IARI, New Delhi
33	Pusa Comp. 383	2001	-	ICAR-IARI, New Delhi
34	JBV 2	1999	-	ICAR-AICRP-PM, RVSKVV, Gwalior
35	RAJ 171	1992	-	ICAR-AICRP-PM, SKNAU, Jaipur
36	Pusa Comp. 612	2011	-	ICAR-IARI, New Delhi
37	ABV 04	2019	-	ICAR-AICRP-PM, ANGRAU, Ananthapuram
38	ICMV 155	1991	-	ICRISAT, Patancheru

Summary results of successfully conducted trials in Zones A₁, A and B

A. ICAR-AICRP on Pearl Millet Hybrid Trials

1. Initial Hybrid Trial (Early): IHT (E) ZONE A₁

Initial Hybrid Trial (Early) was conducted at 11 locations in Zone A₁ i.e. Seven in Rajasthan, two each in Gujarat and Haryana in which 20 experimental hybrids along with five checks *viz.* PB 1756, RHB 223, HHB 67 Imp., MPMH 21 and AHB 1200 (only for Fe and Zn comparison) were evaluated. Experimental hybrids showed differences in their performance within zone. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.6. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.19 to I.32.

The mean grain yield of test hybrids ranged from 1391 kg/ha to 2361 kg/ha. Nine hybrids, MH 2678 (2361 kg/ha), MH 2667 (2230 kg/ha), MH 2676 (2088 kg/ha), MH 2675 (2083 kg/ha), MH 2677 (2079 kg/ha), MH 2673 (2066 kg/ha), MH 2672 (2035 kg/ha), MH 2679 (1919 kg/ha) and MH 2674 (1917 kg/ha) recorded higher grain yield over the best check PB 1756 (1897 kg/ha). Dry fodder yield ranged from 2733 kg/ha to 4442 kg/ha.

Table I.6: MEAN PERFORMANCE: INITIAL HYBRID TRIAL (Early) KHARIF 2022 ZONE A₁

S.No.	Name of Entry	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2678	2361	4234	42	75	4.1	2.5	2.0	2.8	3.0	43	38
2	MH 2667	2230	4029	42	74	8.8	2.2	2.0	1.3	0.8	45	37
3	MH 2676	2088	4442	48	80	0.5	2.5	1.5	0.3	9.5	49	43
4	MH 2675	2083	3652	46	75	1.3	1.2	2.0	1.1	3.0	60	42
5	MH 2677	2079	4374	47	77	1.2	2.4	2.0	0.1	0.8	62	45
6	MH 2673	2066	3864	45	76	4.6	2.1	2.0	8.0	3.3	43	34
7	MH 2672	2035	4071	44	76	3.5	1.8	2.0	4.8	7.8	45	37
8	MH 2679	1919	3863	48	78	1.7	2.2	2.0	1.8	1.0	53	35
9	MH 2674	1917	4289	48	79	0.5	1.5	2.0	0.5	10.3	48	40
10	PB 1756 (C)	1897	3833	43	75	1.4	2.0	2.0	0.3	0.8	46	35
11	MH 2681	1888	3466	43	74	1.6	2.9	2.0	0.6	10.8		
12	MH 2663	1850	4065	49	80	1.5	1.8	2.0	0.0	0.5		
13	RHB 223 (C)	1836	3404	45	76	5.4	1.7	2.0	0.5	2.3	49	39
14	MH 2668	1832	3468	43	74	8.2	2.0	2.0	1.8	3.0		
15	AHB 1200 (C)	1831	3577	47	79	2.0	2.2	3.5	2.8	1.5	61	37
16	MH 2669	1806	3263	39	73	7.4	1.6	2.0	1.6	5.0		
17	MH 2680	1761	3435	46	76	0.6	2.0	2.0	0.8	3.0		
18	HHB 67 Imp. (C)	1703	3610	42	73	2.7	2.2	2.5	4.3	0.8	47	39
19	MH 2662	1678	4247	49	81	4.3	1.6	2.0	2.5	0.8		
20	MH 2664	1630	3841	49	81	0.0	2.0	2.0	4.0	0.8		
21	MPMH 21 (C)	1577	3777	45	77	1.6	1.7	2.0	2.6	1.0	45	37
22	MH 2671	1560	2795	42	73	1.2	2.1	2.0	6.0	0.5		
23	MH 2665	1518	3011	46	75	2.7	3.2	2.5	1.3	0.8		
24	MH 2670	1416	2873	40	72	1.7	3.2	2.0	7.1	0.5		
25	MH 2666	1391	2733	42	73	2.1	2.9	2.0	2.3	0.5		
LOC. MEAN		1838	3689	45	76							

Promotion criteria as per 52nd Annual group meet : Grain yield = higher than best check or 10% higher over relevant check, Days to 50% flowering ≤ 45 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over HHB 67 Improved, Disease (Across all zones): Downy Mildew (60 DAS): ≤ 5%, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): ≤ 20%, Smut (% severity): ≤ 20%, Rust (% leaf area): ≤ 20%, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

2. Initial Hybrid Trial (Medium): IHT (M) ZONE A & B

Initial Hybrid Trial (Medium) was conducted at 20 locations in which 27 experimental hybrids were evaluated along with four checks viz., PB 1852, JKBH 1326, MPMH 17 and AHB 1200 (only for Fe and Zn comparison) in Zone A and at 9 locations with same test entries along with four checks viz. 86M01, Pratap, AHB 1269 and AHB 1200 (only for Fe and Zn comparison) in Zone B. Experimental hybrids showed differences in their performance between and within zones. The zone-wise results are given below:

Zone A

In Zone A, IHT (Medium) was conducted successfully at 20 locations i.e. seven in Rajasthan, six in Gujarat, two each in Uttar Pradesh and Haryana and one each in Madhya Pradesh, Punjab and Delhi. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.7. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.33 to I.46. The mean grain yield of test hybrids ranged from 1679 kg/ha to 3757 kg/ha. None of hybrid recorded higher grain yield over the best check PB 1852 (3757 kg/ha). Dry fodder yield of test hybrids ranged from 4179 kg/ha to 10479 kg/ha.

Table I.7: MEAN PERFORMANCE: INITIAL HYBRID TRIAL (Medium) KHARIF 2022 ZONE A

S.No.	Name of Entry	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	PB 1852 (C)	3757	10479	51	82	0.4	1.8	2.3	0.0	3.0	59	36
2	MH 2693	3558	8768	52	82	4.8	2.7	1.0	0.6	3.8	50	37
3	MH 2685	3511	9754	54	84	4.1	2.2	6.0	0.2	2.8	51	36
4	MH 2689	3492	8677	50	82	3.8	1.9	2.3	4.0	2.4	52	38
5	MH 2703	3447	7823	50	81	0.3	2.1	2.3	1.6	2.8		
6	MH 2705	3444	8654	54	85	6.1	2.4	1.0	4.2	3.7		
7	MH 2688	3437	8224	49	80	1.9	1.7	3.5	4.4	3.8		
8	MH 2692	3415	7470	48	80	2.8	1.9	1.3	3.8	3.4		
9	MH 2683	3406	8983	53	85	0.6	1.9	3.3	2.7	2.1		
10	MH 2684	3395	7707	50	82	0.7	1.9	1.0	2.8	1.9		
11	JKBH 1326 (C)	3384	8045	51	83	0.6	1.6	2.3	2.5	4.0	45	35
12	MH 2682	3383	8617	52	83	1.5	2.6	1.0	1.9	2.1		
13	MH 2706	3217	7618	50	82	3.1	2.7	2.5	0.0	1.5		
14	MPMH 17 (C)	3104	7539	46	79	2.0	2.3	6.0	4.4	2.6	47	35
15	MH 2696	3089	7982	50	82	1.8	2.5	2.5	1.3	2.1		
16	MH 2701	3071	8878	56	86	4.9	1.6	2.5	5.9	2.8		
17	MH 2704	3045	7770	54	84	1.5	2.6	1.3	0.0	2.8		
18	AHB 1200 (C)	2924	6789	47	79	1.8	2.1	5.5	3.3	1.8	73	43
19	MH 2702	2913	8441	53	84	1.5	2.1	1.3	6.8	3.1		
20	MH 2699	2908	7408	47	79	1.1	3.9	1.8	4.0	1.8		
21	MH 2691	2878	7288	47	80	3.7	2.6	3.5	7.8	2.4		
22	MH 2687	2786	7438	50	81	3.6	2.1	9.8	11.0	2.8		
23	MH 2707	2775	5939	50	82	3.1	1.6	1.0	0.8	2.1		
24	MH 2695	2762	6895	47	79	1.5	2.6	10.0	3.9	3.5		
25	MH 2694	2734	7291	49	81	10.1	2.3	4.8	4.2	3.4		
26	MH 2700	2658	7332	48	80	1.6	3.8	2.3	11.2	2.5		
27	MH 2690	2633	7489	46	79	2.8	2.1	8.5	8.6	2.5		
28	MH 2698	2173	5512	50	81	3.2	2.3	4.8	2.9	2.3		
29	MH 2708	2121	5153	51	83	5.8	2.2	2.3	7.4	2.8		
30	MH 2686	1909	4746	51	83	3.2	1.6	1.0	0.5	1.7		
31	MH 2697	1679	4179	52	83	0.6	1.5	1.0	7.0	2.8		
LOC. MEAN		3039	7699	50	82							

CHAPTER I: BREEDING

Promotion criteria as per 52nd Annual group meet: Grain yield =higher than best check or 10% higher over relevant check, Days to 50% flowering $\leq$ 50 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over relevant checks, Disease (Across all zones): Downy Mildew (60 DAS): $\leq$ 5%, Blast (score): $\leq$ 3 (0-9 scale), Ergot (% severity): $\leq$ 20%, Smut (% severity): $\leq$ 20%, Rust (% leaf area): $\leq$ 20%, Iron content: $\geq$ 42 ppm and Zinc content: $\geq$ 32 ppm.

Zone B

In Zone B, IHT (Medium) was conducted successfully at 9 locations viz. three in Maharashtra, two each in Karnataka and Andhra Pradesh and one each in Telangana and Tamil Nadu. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.8. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.47 to I.60. Mean grain yield of test hybrids ranged from 1634 kg/ha to 3613 kg/ha. Nine hybrids viz. MH 2705 (3613 kg/ha), MH 2693 (3601 kg/ha), MH 2692 (3546 kg/ha), MH 2689 (3401 kg/ha), MH 2682 (3321 kg/ha), MH 2683 (3302 kg/ha), MH 2691 (3265 kg/ha), MH 2704 (3263 kg/ha) and MH 2696 (3174 kg/ha) recorded numerically higher grain yield over best check 86M01 (3129 kg/ha) with medium flowering (up to 50 days) except MH 2704 (51 days). Dry fodder yield of test entries ranged from 5475 kg/ha to 8665 kg/ha.

Table I.8: MEAN PERFORMANCE: INITIAL HYBRID TRIAL (Medium) KHARIF 2022 ZONE B

S.No.	Name of Entry	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2705	3613	8665	50	86	3.1	1.6	0.1	0.0	4.0	58	37
2	MH 2693	3601	7264	48	85	1.8	2.3	15.6	0.0	5.1	50	30
3	MH 2692	3546	8432	48	84	3.1	3.3	16.9	3.3	6.9	56	28
4	MH 2689	3401	8135	49	85	1.0	1.8	3.1	0.4	6.0	57	31
5	MH 2682	3321	7747	48	84	1.3	2.0	1.0	0.4	6.8	55	32
6	MH 2683	3302	8188	50	85	2.3	1.3	0.6	0.8	1.3	51	29
7	MH 2691	3265	7509	47	83	6.3	3.9	4.8	3.6	3.3	71	34
8	MH 2704	3263	8089	51	87	3.1	2.6	1.0	0.3	6.0	79	32
9	MH 2696	3174	8198	49	85	3.5	3.1	14.1	0.4	4.9	61	29
10	86M01 (C)	3129	7650	48	84	2.8	4.1	2.5	1.4	5.1	53	32
11	MH 2706	3125	7386	49	81	1.9	3.0	4.4	1.6	10.0	55	29
12	MH 2703	3103	7987	49	84	3.8	2.8	11.6	0.0	4.5		
13	MH 2684	3005	8117	47	85	2.7	2.3	0.3	2.0	3.5		
14	MH 2702	2985	7609	50	86	2.3	2.3	5.9	0.5	3.6		
15	Pratap (C)	2975	7057	45	82	1.7	3.8	3.1	1.0	8.1	68	32
16	MH 2685	2900	8470	48	84	3.9	1.9	2.5	0.9	6.4		
17	MH 2701	2886	7360	51	86	5.7	2.0	0.6	0.0	7.4		
18	MH 2690	2790	6997	45	80	5.5	2.5	7.5	3.9	9.3		
19	MH 2707	2705	6193	47	84	6.2	1.3	3.1	0.9	6.1		
20	AHB 1269 (C)	2655	6743	45	81	2.9	3.6	6.3	6.5	5.3	70	33
21	AHB 1200 (C)	2630	7291	47	84	1.8	4.0	10.4	4.3	9.6	80	34
22	MH 2694	2586	7276	46	82	5.8	2.5	3.9	0.6	6.6		
23	MH 2688	2551	7549	46	83	1.9	1.0	5.5	6.9	7.1		
24	MH 2695	2549	6703	47	84	3.4	2.6	8.0	0.6	4.9		
25	MH 2687	2521	7624	47	84	4.2	3.0	4.3	1.0	7.9		
26	MH 2700	2515	7087	46	81	3.0	4.1	10.6	2.3	5.9		
27	MH 2686	2315	6194	50	85	4.4	1.5	1.9	0.1	8.6		
28	MH 2699	2265	6393	45	81	1.4	3.9	4.6	3.6	6.1		
29	MH 2698	2014	5864	48	84	7.2	3.4	6.1	1.3	9.9		
30	MH 2697	2003	5475	48	84	7.5	2.8	1.3	0.1	5.9		
31	MH 2708	1634	6046	51	86	23.6	2.0	2.8	1.6	6.8		
LOC. MEAN		2854	7327	48	84							

Promotion criteria as per 52nd Annual group meet: Grain yield =higher than best check or 10% higher over relevant check, Days to 50% flowering $\leq$ 50 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over relevant checks, Disease (Across all zones):

Downy Mildew (60 DAS): $\leq 5\%$, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): $\leq 20\%$, Smut (% severity): $\leq 20\%$, Rust (% leaf area): $\leq 20\%$, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

3. Initial Hybrid Trial (Late): IHT (L) ZONE A & B

In Initial Hybrid Trial (Late) 32 experimental hybrids were evaluated at 17 locations along with four checks viz., MP 7878, 86M86, KBH 108 and AHB 1200 (only for Fe and Zn comparison) in Zone A and same entries at 11 locations along with four checks viz., NBH 4903, 86M86, Kaveri Super Boss and AHB 1200 (only for Fe and Zn comparison) in Zone B. Experimental hybrids showed differences in their performance between and within zones. The zone wise results are given below:

Zone A

In Zone A, Initial Hybrid Trial (Late) was conducted successfully at 17 locations i.e. seven in Rajasthan, four in Gujarat, three in Uttar Pradesh and one each in Haryana, Madhya Pradesh and Punjab. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.9. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.61 to I.74. The mean grain yield of test hybrids ranged from 2894 kg/ha to 4679 kg/ha. Seventeen hybrids viz., MH 2720 (4679 kg/ha), MH 2709 (4464 kg/ha), MH 2728 (4461 kg/ha), MH 2715 (4408 kg/ha), MH 2712 (4351 kg/ha), MH 2717 (4339 kg/ha), MH 2719 (4306 kg/ha), MH 2721 (4285 kg/ha), MH 2718 (4276 kg/ha), MH 2716 (4264 kg/ha), MH 2730 (4218 kg/ha), MH 2710 (4166 kg/ha), MH 2729 (4127 kg/ha), MH 2723 (4124 kg/ha), MH 2733 (4096 kg/ha), MH 2711 (4059 kg/ha) and MH 2713 (4044 kg/ha) recorded higher grain yield over the best check MP 7878 (4040 kg/ha). Dry fodder yield of test hybrids ranged from 9253 kg/ha to 15733 kg/ha.

CHAPTER I: BREEDING

Table I.9: MEAN PERFORMANCE: INITIAL HYBRID TRIAL (Late) KHARIF 2022 ZONE A

S.No.	Name of Entry	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2720	4679	14016	57	86	1.2	1.5	1.0	6.8	1.9	48	29
2	MH 2709	4464	12290	54	83	1.0	1.8	3.5	2.3	0.6	52	36
3	MH 2728	4461	14077	55	84	1.1	1.8	1.0	0.1	3.4	55	35
4	MH 2715	4408	13581	53	83	2.3	1.6	1.0	0.0	1.9	54	37
5	MH 2712	4351	12846	55	85	4.5	1.2	2.3	12.6	2.1	62	40
6	MH 2717	4339	13198	54	84	0.7	2.0	1.0	2.1	3.1	48	35
7	MH 2719	4306	13747	58	87	0.6	1.5	0.8	0.0	2.8	48	29
8	MH 2721	4285	13777	58	87	3.8	1.4	2.0	2.4	2.9	47	28
9	MH 2718	4276	13108	53	83	1.0	1.5	0.8	3.8	4.9	49	30
10	MH 2716	4264	12392	54	83	3.0	1.6	3.5	0.0	2.9	42	31
11	MH 2730	4218	12484	55	84	1.0	1.6	3.5	1.1	1.1	51	33
12	MH 2710	4166	13327	56	86	0.7	1.9	2.8	1.1	2.8	60	36
13	MH 2729	4127	12182	55	84	1.9	1.7	2.3	3.1	3.0	47	35
14	MH 2723	4124	13285	56	85	0.8	1.9	1.0	0.5	0.5	59	37
15	MH 2733	4096	14068	57	87	0.6	1.5	2.3	2.1	0.9	65	38
16	MH 2711	4059	11488	56	85	1.6	1.4	2.3	4.1	2.8	51	34
17	MH 2713	4044	14012	58	87	4.0	1.0	1.3	4.6	3.4	63	44
18	MP 7878 (C)	4040	13046	55	84	1.8	1.9	1.0	0.0	2.8	56	39
19	MH 2739	4028	14316	57	87	2.7	2.0	3.5	0.1	2.3	62	38
20	MH 2722	4015	13052	55	84	1.6	1.8	3.5	0.8	0.9	63	36
21	MH 2725	3943	11127	55	85	2.4	1.7	0.8	5.6	2.4	66	37
22	MH 2738	3896	10694	53	83	2.3	1.9	1.0	1.3	2.1	59	39
23	MH 2736	3808	11552	54	84	1.5	1.6	2.5	1.4	2.8	59	35
24	86M86 (C)	3708	11686	54	84	1.5	1.6	1.0	0.6	1.6	63	39
25	KBH 108 (C)	3703	11724	57	86	0.8	1.9	1.0	0.3	2.8	46	31
26	MH 2735	3679	12112	54	84	3.4	2.2	2.3	1.9	1.9		
27	MH 2727	3621	13534	59	88	3.7	1.5	1.0	0.0	2.8		
28	MH 2731	3548	11328	54	83	2.3	1.7	3.5	1.3	1.9		
29	MH 2734	3543	15733	56	85	0.3	1.6	1.0	0.9	2.0		
30	MH 2740	3515	11579	53	83	1.5	2.0	1.3	10.1	3.4		
31	MH 2737	3509	12607	57	87	0.7	2.0	1.0	4.8	1.3		
32	MH 2732	3507	11453	54	84	0.9	1.9	2.5	2.5	0.9		
33	MH 2726	3333	11440	54	83	1.6	1.8	1.3	0.0	2.4		
34	MH 2724	3024	9253	51	81	3.2	2.6	1.8	2.9	1.1		
35	AHB 1200 (C)	2992	9408	50	80	1.8	2.1	5.5	3.3	1.8	78	38
36	MH 2714	2894	11249	53	83	1.6	1.9	1.0	2.2	2.5		
LOC. MEAN		3916	12521	55	84							

Promotion criteria as per 52nd Annual group meet: Grain yield =higher than best check or 5% higher over relevant check, Disease (Across all zones): Downy Mildew (60 DAS): ≤ 5%, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): ≤ 20%, Smut (% severity): ≤ 20%, Rust (% leaf area): ≤ 20%, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

Zone B

In Zone B, Initial Hybrid Trial (Late) was conducted successfully at 11 locations viz. seven in Maharashtra and one each in Karnataka, Andhra Pradesh, Telangana and Tamil Nadu. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.10. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.75 to I.88. Mean grain yield of test hybrids ranged from 2285 kg/ha to 4052 kg/ha. Five hybrids namely, MH 2720 (4052 kg/ha), MH 2717 (3869 kg/ha), MH 2709 (3820 kg/ha), MH 2715 (3781 kg/ha) and MH 2718 (3763 kg/ha) recorded numerically higher grain yield over the best check NBH 4903 (3737 kg/ha). Dry fodder yield of test hybrids ranged from 8335 kg/ha to 12150 kg/ha.

CHAPTER I: BREEDING

Table I.10: MEAN PERFORMANCE: INITIAL HYBRID TRIAL (Late) KHARIF 2022 ZONE B

S.No.	Name of Entry	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2720	4052	11566	59	91	1.5	1.9	10.6	0.0	5.6	50	29
2	MH 2717	3869	11195	55	88	0.0	1.4	13.1	1.6	8.5	50	34
3	MH 2709	3820	9345	53	86	1.4	1.6	6.8	2.8	5.0	52	32
4	MH 2715	3781	10853	52	85	0.8	1.3	10.5	1.6	3.9	48	32
5	MH 2718	3763	11270	56	88	1.2	1.4	0.1	0.5	6.0	54	29
6	NBH 4903 (C)	3737	10999	56	88	1.6	3.0	0.0	0.0	5.1	43	35
7	MH 2728	3669	11038	55	88	2.9	1.3	9.5	1.0	8.0	44	34
8	MH 2721	3621	12039	59	90	4.2	1.5	8.4	0.1	7.0		
9	MH 2711	3616	9406	53	87	3.1	1.1	3.0	0.6	7.9		
10	MH 2740	3603	10470	53	86	1.6	1.4	23.6	6.1	6.9		
11	MH 2730	3595	10716	54	86	0.8	1.5	1.1	0.0	2.0		
12	MH 2736	3590	11779	56	88	2.2	1.6	19.8	0.4	14.1		
13	MH 2712	3577	10208	56	88	2.5	1.0	14.9	1.1	4.0		
14	MH 2716	3550	11336	55	87	2.2	2.3	7.9	0.8	5.6		
15	MH 2719	3536	12150	58	91	1.1	0.9	2.4	0.1	5.0		
16	MH 2713	3535	11374	57	90	1.9	1.6	9.0	0.5	3.6		
17	MH 2723	3529	9554	52	85	3.2	1.9	3.8	0.6	3.9		
18	MH 2739	3524	10963	54	88	0.3	1.5	5.5	0.1	4.5		
19	MH 2710	3516	9900	55	87	2.1	1.0	3.6	0.0	3.5		
20	MH 2729	3498	8813	54	86	1.1	1.4	8.0	0.3	4.1		
21	86M86 (C)	3476	10039	55	87	1.4	1.3	6.3	0.1	4.6	60	35
22	MH 2722	3469	10973	56	89	1.9	1.6	3.0	1.3	4.6		
23	MH 2731	3457	10480	56	89	1.8	2.4	6.9	0.1	5.4		
24	MH 2738	3429	9841	53	87	1.3	1.4	5.3	1.1	5.4		
25	MH 2726	3352	10847	54	86	0.9	1.6	3.3	0.1	5.4		
26	MH 2733	3292	10093	53	85	1.4	2.0	2.3	2.0	5.5		
27	Kaveri S Boss (C)	3253	10131	55	87	2.6	2.5	8.3	0.0	6.9	46	28
28	MH 2727	3212	9619	55	87	1.5	1.3	2.6	1.0	4.4		
29	MH 2735	3206	10995	57	88	0.9	2.8	10.1	1.1	6.4		
30	MH 2737	3204	10121	56	89	1.0	1.3	8.8	0.1	11.3		
31	MH 2725	3173	9841	53	86	0.7	2.4	2.5	1.1	13.4		
32	MH 2734	3059	11164	54	87	0.5	1.3	2.6	0.4	6.4		
33	MH 2732	2893	10519	56	88	0.9	2.4	0.5	0.3	3.9		
34	MH 2724	2603	9155	52	84	4.0	2.8	6.0	6.9	6.3		
35	AHB 1200 (C)	2583	8335	52	85	1.8	4.0	10.4	4.3	9.6	80	41
36	MH 2714	2285	8703	55	87	5.1	2.0	6.0	2.0	7.9		
LOC. MEAN		3415	10440	55	87							

Promotion criteria as per 52nd Annual group meet: Grain yield =higher than best check or 5% higher over relevant check, Disease (Across all zones): Downy Mildew (60 DAS): $\leq 5\%$, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): $\leq 20\%$, Smut (% severity): $\leq 20\%$, Rust (% leaf area): $\leq 20\%$, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

4. Advanced Hybrid Trial (Medium): AHT (M) ZONE A & B

In Advanced Hybrid Trial (Medium), 01 experimental hybrid along with four checks viz. PB 1705, MPMH 17, 86M01 and AHB 1200 (only for Fe and Zn comparison) at 16 locations in Zone A and 03 experimental hybrids along with five checks viz., Pratap, NBH 5767, AHB 1269, 86M01 and AHB 1200 (only for Fe and Zn comparison) were evaluated at 10 locations in Zone B. Experimental hybrids showed differences in their performance between and within zones. The zone-wise results are given below:

Zone A

In Zone A, AHT (Medium) was conducted successfully at 16 locations viz. five each in Gujarat and Rajasthan, two in Haryana and one each in Uttar Pradesh, Madhya Pradesh, Punjab and Delhi. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.11. Location-wise performance of grain yield, grain quality and other ancillary characters are presented in Tables I.89 to I.103. The mean grain yield of hybrids tested in this trial varied from 2829 kg/ha to 3828 kg/ha. None of the hybrid recorded higher grain yield over the best check PB 1705 (3828 kg/ha). Dry fodder yield of test hybrids ranged from 7867 kg/ha to 9438 kg/ha.

Table I.11: MEAN PERFORMANCE: ADVANCED HYBRID TRIAL (Medium) KHARIF 2022 ZONE A

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	PB 1705 (C)	3828	9438	49	81	1.0	2.4	2.3	0.0	3.0	43	35
2	MH 2619 (2 nd)	3609	8957	48	79	1.4	2.3	1.3	0.0	2.3	58	47
3	MPMH 17 (C)	3240	8410	47	79	1.2	2.2	9.8	6.8	3.5	49	41
4	AHB 1200 (C)	2974	7867	47	80	2.5	2.9	1.3	7.3	3.1	81	47
5	86M01 (C)	2829	8252	50	80	3.9	3.3	0.5	0.5	1.9	61	49
LOC. MEAN		3296	8585	48	80							

Promotion criteria as per 52nd Annual group meet: Grain yield = higher than best check or 10% higher over relevant check, Days to 50% flowering ≤ 50 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over relevant checks, Disease (Across all zones): Downy Mildew (60 DAS): ≤ 5%, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): ≤ 20%, Smut (% severity): ≤ 20%, Rust (% leaf area): ≤ 20%, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

Zone B

In Zone B, AHT (Medium) was conducted successfully at 10 locations viz. four in Maharashtra, two each in Karnataka and Andhra Pradesh and one each in Telangana and Tamil Nadu. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.12. Location-wise performance of grain yield, grain quality and other ancillary characters are presented in Tables I.104 to I.117. The mean grain yield of hybrids tested ranged from 2560 kg/ha to 3070 kg/ha. None of the hybrid recorded higher grain yield over best check Pratap (3070 kg/ha). Dry fodder yield of test hybrids ranged from 4979 kg/ha to 5757 kg/ha.

Table I.12: MEAN PERFORMANCE: ADVANCED HYBRID TRIAL (Medium) KHARIF 2022 ZONE B

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	Pratap (C)	3070	5198	47	83	2.7	4.5	0.9	1.4	12.5	58	35
2	MH 2564 (R-2 nd)	2940	5700	47	83	4.6	3.0	2.5	1.1	14.3	55	33
3	NBH 5767 (C)	2906	5757	49	85	2.0	2.5	4.0	1.4	13.5	55	42
4	AHB 1200 (C)	2841	5055	47	84	3.0	3.7	2.7	3.0	16.5	91	42
5	MH 2619 (2 nd)	2835	5360	47	84	1.3	2.1	2.4	1.6	15.8	50	40
6	AHB 1269 (C)	2687	5222	46	82	3.9	3.9	2.1	2.6	9.8	65	40
7	MH 2606 (2 nd)	2654	5540	50	86	1.5	2.4	1.8	0.8	14.9	64	40
8	86M01 (C)	2560	4979	49	85	3.7	3.5	0.0	0.1	17.8	55	36
LOC. MEAN		2811	5352	48	84							

CHAPTER I: BREEDING

Promotion criteria as per 52nd Annual group meet: Grain yield = higher than best check or 10% higher over relevant check, Days to 50% flowering ≤ 50 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over relevant checks, Disease (Across all zones): Downy Mildew (60 DAS): $\leq 5\%$, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): $\leq 20\%$, Smut (% severity): $\leq 20\%$, Rust (% leaf area): $\leq 20\%$, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

5. Advanced Hybrid Trial (Late): AHT (L) ZONE A

In Advanced Hybrid Trial (Late), four experimental hybrids along with four checks viz. MP-7792, KBH 108, 86M86 and AHB 1200 (only for Fe and Zn comparison) were evaluated at 12 locations in Zone A. Experimental hybrids showed differences in their performance between and within zones. The zone wise results are given below:

Zone A

In Zone A, Advanced Hybrid Trial (Late) was conducted successfully at 12 locations viz., three each in Rajasthan, Gujarat and U.P. and one each in Haryana, Madhya Pradesh and Punjab. Mean performance of experimental hybrids along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.13. Location-wise performance of grain yield, grain quality and other ancillary characters are presented in Tables I.118 to I.132. The mean grain yield of hybrids tested ranged from 3050 kg/ha to 4452 kg/ha. All the four experimental hybrids viz., MH 2631 (4452 kg/ha), MH 2577 (4259 kg/ha), MH 2626 (4151 kg/ha) and MH 2580 (3829 kg/ha) recorded higher grain yield over the best check MP-7792 (3769 kg/ha). Dry fodder yield of test hybrids ranged from 8174 kg/ha to 12616 kg/ha.

Table I.13: MEAN PERFORMANCE: ADVANCED HYBRID TRIAL (Late) KHARIF 2022 ZONE A

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2631 (2 nd)	4452	10750	56	85	0.7	2.1	1.3	3.7	2.1	50	35
2	MH 2577 (3 rd)	4259	10314	53	83	1.7	1.8	1.3	4.4	3.1	52	35
3	MH 2626 (2 nd)	4151	12616	55	85	2.6	1.7	0.3	7.6	4.1	56	34
4	MH 2580 (3 rd)	3829	10671	50	81	1.7	1.9	0.0	1.9	3.3	51	35
5	MP-7792 (C)	3769	9732	52	82	3.2	2.2	4.8	1.1	3.8	43	26
6	KBH 108 (C)	3634	10535	57	86	2.3	2.5	0.0	2.6	2.5	42	27
7	86M86 (C)	3624	10352	54	84	2.4	1.7	1.3	0.0	3.8	57	36
8	AHB 1200 (C)	3050	8174	49	80	2.5	2.9	1.3	7.3	3.1	81	38
LOC. MEAN		3846	10393	53	83							

B. ICAR-AICRP on Pearl Millet Varietal (Population) Trials

1. Population Trial: PT ZONE A & B

Population trial comprising of common initial entries of first year testing and advanced entries of second year testing was conducted in zone A and zone B separately. Population trial in zone A consisting of 15 experimental populations along with six checks viz. JBV 2, Pusa Composite 701, Pusa Composite 383, ICMV 221, Raj 171 and Dhanshakti was conducted at 11 locations while Population trial in zone B consisting of 12 experimental populations along with five checks viz. ABV 04, Pusa Composite 612, ICMV 221, Raj 171 and Dhanshakti was conducted at 11 locations. Test entries showed differences in their performance between and within zones. The zone wise results are given below:

Zone A

In zone A, Population Trial was conducted successfully at 11 locations viz. four in Rajasthan, two in Madhya Pradesh and one each in Gujarat, Punjab, Haryana, Uttar Pradesh and Delhi. Mean performance of experimental populations along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.14. Location-wise performance for grain yield, grain quality and other ancillary characters are presented in Tables I.133 to I.146. The mean grain yield of test varieties ranged from 2151 kg/ha to 3343 kg/ha. None of the population recorded higher grain yield over best check JBV 2 (3343 kg/ha). Dry fodder yield of test entries ranged from 6138 kg/ha to 12392 kg/ha.

Table I.14: MEAN PERFORMANCE: POPULATION TRIAL - KHARIF 2022 ZONE A

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	JBV 2 (C)	3343	7996	47	80	3.7	2.5	1.7	3.2	3.5	54	43
2	MP 620	3257	7622	50	82	2.2	1.9	1.0	3.1	5.3	49	39
3	MP 622	3253	8767	50	82	2.8	2.0	1.0	2.4	3.6	47	39
4	Pusa Comp. 701 (C)	3241	8750	49	82	3.9	2.3	4.0	3.3	3.1	51	41
5	MP 626	3236	8866	54	85	1.9	2.4	1.0	3.8	2.8		
6	MP 628	3188	7866	53	85	4.9	2.2	6.0	1.3	3.0		
7	MP 613 (2 nd)	3187	7971	52	83	2.4	2.9	0.3	3.1	4.4	52	40
8	MP 629	3186	7819	51	82	2.6	1.9	6.0	2.8	4.1		
9	MP 619	3183	8577	50	81	6.8	1.9	1.0	4.2	7.8		
10	Pusa Comp. 383 (C)	3182	9118	49	82	8.6	2.3	3.1	4.0	5.6	48	39
11	MP 627	3132	7547	48	79	3.4	2.2	5.0	1.9	2.8		
12	MP 625	3100	7110	47	79	1.4	2.9	2.3	0.0	2.0		
13	MP 612 (2 nd)	3011	8112	51	82	4.6	2.3	0.0	6.9	4.6	48	39
14	MP 618	2977	7935	53	83	4.2	2.1	1.0	1.0	4.5		
15	ICMV 221 (C)	2940	6492	43	77	4.3	2.9	2.4	2.5	2.4	71	53
16	MP 623	2936	7714	49	81	6.4	2.2	1.0	3.9	4.6		
17	Raj 171 (C)	2927	7679	48	80	3.6	2.5	4.2	6.1	4.3	53	46
18	MP 610 (2 nd)	2917	8079	49	82	4.1	2.7	2.5	1.9	4.6	51	41
19	Dhanshakti (C)	2482	6183	43	77	7.6	2.4	2.2	2.2	3.3	78	55
20	MP 624	2398	6138	48	80	6.5	3.2	2.5	2.1	3.0		
21	MP 621	2151	12392	56	89	1.1	1.6	0.8	2.6	3.4		
LOC. MEAN		3011	8035	49	82							

Zone B

In Zone B, Population Trial was conducted successfully at 11 locations i.e. three each in Maharashtra and Andhra Pradesh, two in Karnataka and one each in Telangana and Tamil Nadu. Mean performance of experimental populations along with checks for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.15. Location-wise performance for grain yield and other ancillary characters are presented in Tables I.147 to I.159. Mean grain yield of test populations ranged from 1506 kg/ha to 2479 kg/ha. None of the variety recorded higher grain yield over the best check ABV 04 (2479 kg/ha). Fodder yield of test populations ranged from 4562 kg/ha to 7407 kg/ha.

CHAPTER I: BREEDING

Table I.15: MEAN PERFORMANCE: POPULATION TRIAL - KHARIF 2022 ZONE B

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	ABV 04 (C)	2479	5832	50	87	5.2	2.8	3.3	0.6	6.4	58	33
2	MP 619	2405	5741	49	86	3.4	2.4	0.6	0.5	7.5	54	28
3	MP 621	2332	7407	52	92	2.8	2.0	0.5	0.0	12.3	38	29
4	MP 622	2233	5273	48	85	1.5	2.3	0.5	1.1	13.6	45	30
5	MP 618	2223	5235	50	88	6.8	2.5	1.1	0.0	3.4	49	31
6	MP 629	2190	5456	51	88	5.3	2.1	1.6	3.1	5.0	46	30
7	MP 620	2125	5369	50	86	3.2	2.1	2.5	0.3	15.9		
8	MP 628	2085	5910	50	87	5.0	2.6	5.4	0.6	7.8		
9	MP 627	2062	5188	50	87	3.8	1.8	5.0	0.6	7.5		
10	Pusa Comp. 612 (C)	2055	5360	50	87	3.6	2.6	3.0	1.8	9.6	50	32
11	MP 623	2025	5236	49	86	9.5	4.0	5.0	2.3	12.5		
12	MP 626	1974	5571	51	88	4.0	2.9	4.8	1.3	17.5		
13	ICMV 221 (C)	1950	4562	44	82	4.0	4.5	4.6	4.3	7.3	70	35
14	MP 625	1801	5361	46	84	5.0	3.6	5.3	2.1	11.0		
15	MP 624	1747	4611	48	85	8.4	3.8	8.8	1.3	8.3		
16	Raj 171 (C)	1723	5654	46	84	4.1	3.0	4.6	1.9	10.0	50	32
17	Dhanshakti (C)	1506	4730	44	82	4.0	4.0	6.3	8.1	17.5	88	38
LOC. MEAN		2054	5441	49	86							

C. ICAR-AICRP on Pearl Millet Hybrid and Population Trials:

Advanced Hybrid and Population Trial: AHPT ZONE A₁

AHPT was constituted comprising entries promoted from IHT (Early) and early populations of Population Trial Zone A based on mean of locations from A₁ Zone comprising of low rainfall areas (<400 mm) of western-Rajasthan, drier parts of Haryana and Gujarat. The trial was conducted successfully at 11 locations viz., seven in Rajasthan, two each in Gujarat and Haryana. In this trial, 9 test entries including 2 experimental hybrids promoted from AHPT and 1 experimental hybrids promoted from EDVT along with five early maturing hybrid checks viz., GHB 538 (for EDV), HHB 272, RHB 177, HHB 67 Improved, MPMH 21 and one high Fe & Zn hybrid check viz., AHB 1200 were evaluated. Mean performance of experimental hybrids and varieties for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.16. Location-wise performance for grain yield, grain quality and other ancillary characters are given in Tables I.160 to I.174. Both the early maturing hybrids viz. MH 2555 (2134 kg/ha) and MH 2553 (2043 kg/ha) recorded 22.2 and 17.0 % higher grain yield over the best check HHB 272 (1746 kg/ha), respectively. EDV MH 2661 (1861 kg/ha) recorded 0.30 per cent higher grain yield over the older version of GHB 538 (1856 kg/ha). Hybrid MH 2555 recorded highest dry fodder yield (4295 kg/ha).

Table I.16: MEAN PERFORMANCE: ADVANCED HYBRID AND POPULATION TRIAL (Early) KHARIF 2022 ZONE A₁

S.No.	Name of Entry (Years of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MH 2555 (3 rd)	2134	4295	46	77	2.2	1.0	0.0	8.3	11.8	52	36
2	MH 2553 (3 rd)	2043	4117	44	75	3.9	2.1	0.0	0.0	14.3	45	39
3	MH 2661 (EDV-2 nd)	1861	3523	44	76	1.0	1.3	0.0	2.3	0.5	43	33
4	GHB 538 (C)	1856	3624	44	75	3.1	1.9	2.0	2.1	0.5	46	33
5	HHB 272 (C)	1746	3595	45	76	2.1	2.0	2.5	5.0	0.8	50	32
6	AHB 1200 (C)	1675	3384	48	78	1.8	1.9	2.5	0.5	0.5	64	36
7	RHB 177 (C)	1670	3422	44	76	6.8	2.3	1.5	2.3	0.8	41	31
8	HHB 67 Imp. (C)	1657	3570	42	73	1.6	2.0	1.5	3.3	0.5	47	34
9	MPMH 21 (C)	1655	3709	46	76	2.2	2.1	0.0	1.8	8.3	48	32
LOC MEAN		1811	3693	45	76							

Promotion criteria as per 52nd Annual group meet : Grain yield =higher than best check or 10% higher over relevant check, Days to 50% flowering ≤ 45 days, A grace of one day in days to 50% flowering may be given to hybrids yielding grains 15% higher over HHB 67 Improved, Disease (Across all zones): Downy Mildew (60 DAS): ≤ 5%, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): ≤ 20%, Smut (% severity): ≤ 20%, Rust (% leaf area): ≤ 20%, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

D. Released Hybrids and Varieties Trial: RHVT ZONE A₁, A and B

In addition to evaluation of experimental hybrids in coordinated trials, the Released Hybrids and Varieties Trial was conducted in both the Zones. New hybrids and varieties released specifically for respective Zones were evaluated in this trial. The Zone-wise results are given below:

Zones A₁ and A

Twenty five hybrids and six populations released for Zone A₁ and A were tested at eight locations viz. three in Rajasthan and one each in Gujarat, Uttar Pradesh, Haryana, Madhya Pradesh and Jammu &

CHAPTER I: BREEDING

Kashmir. Mean performance of released hybrids and populations for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.17. Location-wise data on grain yield and other ancillary characters are presented in Tables I.175 to I.187. Among hybrids, GHB 719 (2589 kg/ha), PB 1705 (3481 kg/ha), MP 7878 (3120 kg/ha) and HHB 299 (2670) recorded maximum grain yield in early, medium, late maturity and high Fe & Zn group respectively. Among populations JBV 2 recorded maximum grain yield (2383 kg/ha) as compared to other populations. Among the hybrids, PB 1852 (8868 kg/ha) and among the populations Pusa Composite 701 (8009 kg/ha) were found superior in fodder yield over other cultivars.

Table I.17: MEAN PERFORMANCE: RELEASED HYBRIDS AND VARIETIES TRIAL KHARIF 2022 ZONE A₁ and A

S.No.	Name of Entry (Year of release)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)
Early										
1	GHB 719 (2007) E	2589	6128	46	78	7.2	2.2	7.3	3.1	1.6
2	PB 1756 (2018) E	2578	6820	45	78	1.0	1.7	7.5	2.7	1.9
3	GHB 538 (2005) E	2483	6167	45	78	5.8	2.7	8.5	5.0	0.9
4	RHB 223 (2018) E	2466	6400	45	76	6.2	2.2	4.8	3.8	1.5
5	MPMH 21 (2015) E	2370	6332	45	79	1.4	1.6	7.3	5.7	2.3
6	HHB 67 Imp. (2005) E	2267	5835	42	74	4.1	3.4	9.8	2.8	2.5
Medium										
7	PB 1705 (2019) M	3481	8172	50	79	1.5	2.4	1.0	0.0	1.9
8	PB 1852 (2019) M	3203	8868	52	81	1.8	1.8	1.0	1.0	0.5
9	GHB 905 (2013) M	2848	6725	48	80	1.7	2.2	8.5	2.0	3.4
10	GHB 732 (2008) M	2835	6874	49	80	3.2	2.0	4.8	7.0	3.4
11	GHB 744 (2008) M	2712	6417	50	81	2.8	1.5	2.3	1.9	3.1
12	MPMH 17 (2013) M	2650	6115	46	78	2.7	2.8	2.3	0.0	2.5
13	RHB 173 (2011) M	2078	5601	49	80	3.1	1.9	1.0	4.5	4.9
Late										
14	MP 7878 (2018) L	3120	8132	53	83	2.7	2.0	0.8	0.0	4.0
15	Proagro 9444 (2004) L	3010	6844	51	81	1.0	2.7	1.0	1.6	6.0
16	MP-7792 (2012) L	2919	6793	51	81	2.3	2.8	4.8	0.0	5.3
17	Kaveri Super Boss (2012) L	2760	8370	54	83	3.2	1.9	3.5	0.0	5.9
18	KBH 108 (2014) L	2689	8314	53	82	3.2	2.6	1.0	0.0	3.5
19	86M86 (2012) L	2573	7098	52	83	1.0	2.0	1.0	0.0	6.4
20	GHB 558 (2003) L	2349	6549	47	80	6.3	3.0	2.3	4.6	4.0
High Iron & Zinc										
21	HHB 299 (2018) M	2670	7054	52	81	2.9	1.8	1.8	0.0	4.6
22	AHB 1269 (2019) M	2488	6359	49	79	1.3	3.2	3.5	3.9	3.6
23	AHB 1200 (2018) M	2368	6149	49	79	0.6	2.4	4.8	4.6	3.6
24	RHB 234 (2019) M	2339	5524	50	79	2.1	2.8	4.8	2.1	5.5
25	RHB 233 (2019) M	2303	5984	51	80	3.2	3.0	9.8	5.4	5.5
Populations										
26	JBV 2 (1999) M	2383	7505	48	79	5.7	2.4	0.8	7.9	5.4
27	Pusa Composite 701 (2016) M	2374	8009	50	80	5.3	2.3	2.0	0.8	4.6
28	Pusa Composite 383 (2001) M	2338	7586	51	80	4.1	2.6	3.5	1.9	5.8
29	Raj 171 (1992) L	2200	7244	47	77	4.7	3.3	1.0	2.1	2.8
30	Dhanshakti (2014) E	1953	5825	46	77	1.3	2.8	6.0	1.0	5.1
31	ICMV 221 (1993) E	1925	6268	46	77	2.6	2.9	1.3	2.5	5.4
LOC. MEAN		2559	6841	49	79					

Zone B

Twelve hybrids and six populations released for Zone B were evaluated at nine locations viz. two each in Maharashtra, Karnataka and Andhra Pradesh and one each in Telangana, Tamil Nadu and Odisha. Mean performance of released hybrids and populations for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Table I.18. Location-wise mean performance of grain yield and other ancillary characters are presented in Tables I.188 to I.199. Hybrids HHB 299 (3047 kg/ha) and NBH 4903 (3355 kg/ha) observed to be superior over all other hybrids in medium and late maturity group, respectively. Among the populations, Pusa Comp. 612 (2169 kg/ha) recorded maximum grain yield. Highest dry fodder yield was recorded HHB 299 (6744 kg/ha) and Pusa Comp. 612 (5732 kg/ha) among all hybrids and populations, respectively.

Table I.18: MEAN PERFORMANCE: RELEASED HYBRIDS AND VARIETIES TRIAL KHARIF 2022 ZONE B

S.No.	Name of Entry (Year of release)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)
Medium hybrids										
1	HHB 299 (2018) M FeZn	3047	6744	51	89	0.3	0.9	11.3	3.0	9.0
2	Pratap (MH 1642) (2012) M	2916	5227	47	86	0.8	2.1	5.6	0.3	3.1
3	AHB 1200 (2018) M FeZn	2840	5136	47	85	0.5	2.8	8.0	2.4	8.0
4	RHB 234 (2019) M FeZn	2631	4603	48	86	4.1	3.3	8.8	4.5	17.9
5	RHB 233 (2019) M FeZn	2629	5327	46	85	3.4	1.6	6.5	0.9	15.3
6	AHB 1269 (2019) M FeZn	2628	4976	46	84	1.0	2.5	9.6	2.8	11.9
7	NBH 5767 (2015) M	2485	5701	46	85	3.3	1.8	6.9	1.8	13.1
Late hybrids										
8	NBH 4903 (2018) L	3355	6495	53	91	2.7	2.8	1.9	0.1	2.5
9	Kaveri Super Boss (2012) L	3203	6703	53	91	2.3	1.9	4.0	0.0	5.6
10	86M86 (2012) L	2717	5542	52	91	1.1	1.6	0.5	0.0	5.1
11	GHB 558 (2003) L	2190	4898	45	84	2.2	2.3	6.1	1.4	17.1
12	86M64 (2011) L	2123	4221	50	88	5.5	2.3	2.8	1.3	5.3
Populations										
13	Pusa Comp. 612 (2011) M	2169	5732	49	86	6.1	2.1	1.6	0.3	14.4
14	ABV 04 (2019) L	2133	5269	49	86	1.6	1.6	7.1	0.6	6.5
15	Raj 171 (1992) L	1914	4851	50	86	2.8	1.9	0.8	0.6	11.9
16	Dhanshakti (2014) E	1752	4725	44	81	3.8	3.3	2.8	7.0	11.3
17	ICMV 155 (1992) L	1707	4619	48	85	7.6	2.5	5.3	0.1	15.9
18	ICMV 221 (1993) E	1677	4355	45	83	1.9	3.8	4.4	4.4	12.8
LOC. MEAN		2451	5285	48	86					

CHAPTER I: BREEDING

Table I.19: INITIAL HYBRID TRIAL (Early) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A₁

Locations	Soil	pH	Sowing	Harvesting	Interculture	Irrigation	Fertilizers			Insecticide
			date	date	date	date	N	P	K	
RAJASTHAN										
Mandor (ICAR- AICRP)	SL	8.2	6.7.22	23.9.22	28.7.22	Nil	40	20	0	Nil
Jodhpur (CAZRI)	SL	7.6	5.7.22	5.10.22	25.7.22	Nil	40	20	0	Nil
Bikaner (SKRAU)	S	8.0	4.7.22	1.10.22	4.8.22	25.8.22	40	20	0	Nil
Fathehpur (SKNAU)	SL	7.0	6.7.22	As Per Maturity	As Per PoP	Nil	As Per Pop	As Per Pop	As Per Pop	Nil
Samdari (ARSS, AU Jodhpur)	SL	8.3	6.7.22	8.10.22	6.8.22	Nil	40	20	0	Nil
ARS, Jalore (AU, Jodhpur)	SL	-	19.7.22	As Per Maturity	-	-	-	-	-	Nil
Nagaur (AU, Jodhpur)	SL	7.9	7.7.22	As Per Maturity	5.8.22	Nil	40	40	0	Nil
GUJARAT										
Kothara (SDAU)	SL	7.5	19.7.22	27.10.22	4.8, 22.8.22	Nil	120	40	0	Nil
S.K.Nagar (SDAU)	SL	-	4.7.22	27.9.22	5.8.22	Nil	80	40	0	Nil
HARYANA										
Bawal (CCSHAU)	LS	8.2	13.7.22	15.10.22	8.8.22	Nil	40	20	30	Atrazine
Hisar (CCS,HAU)	SL	-	19.7.22	4.11.22	10.8, 30.8.22	10.9.22	40	20	0	Nil

SL = Sandy Loam; S = Sandy; LS = Loamy Sand

Table I.20: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	2662	1016	454	1699	819	2639	1370	1523	1370	1414	1392	2046	2966	2506	1678	19
2	IHT 102	MH 2663	2593	895	949	2020	391	2662	2315	1689	1491	1296	1394	2022	3714	2868	1850	12
3	IHT 103	MH 2664	2245	1740	815	1639	699	2176	1435	1536	1787	1417	1602	1840	2132	1986	1630	20
4	IHT 104	RHB 223 (Check)	2597	771	1176	1594	553	3380	2528	1800	1389	1256	1322	2194	2763	2479	1836	13
5	IHT 105	MH 2665	1958	1349	708	1692	536	1991	2051	1469	1333	860	1097	1540	2682	2111	1518	23
6	IHT 106	MH 2666	1657	1082	1097	2600	432	1787	1333	1427	889	617	753	1605	2204	1905	1391	25
7	IHT 107	MH 2667	2708	1817	1514	3009	872	2778	2977	2239	1176	1519	1347	3040	3122	3081	2230	2
8	IHT 108	MH 2668	2403	1502	1366	2841	781	2356	2741	1999	1417	256	836	1648	2839	2244	1832	14
9	IHT 109	MPMH 21 (Check)	2287	1647	1046	1321	897	2176	2426	1686	1611	781	1196	1464	1694	1579	1577	21
10	IHT 110	MH 2669	2917	1322	1134	1591	798	2778	2694	1891	1787	534	1160	1870	2441	2156	1806	16
11	IHT 111	MH 2670	2176	1343	1116	1117	783	2037	1403	1425	1389	833	1111	1407	1972	1690	1416	24
12	IHT 112	MH 2671	2356	1328	1143	2034	774	2181	1338	1593	1083	886	985	2020	2018	2019	1560	22
13	IHT 113	MH 2672	3380	1331	1778	2158	1003	2458	1273	1912	1574	1349	1461	3166	2916	3041	2035	7
14	IHT 114	MH 2673	2894	1603	1713	2064	907	2639	2116	1991	1454	2153	1803	2321	2857	2589	2066	6
15	IHT 115	MH 2674	2361	1060	1301	2549	837	2231	3278	1945	1685	1250	1468	1960	2571	2266	1917	9
16	IHT 116	MH 2675	3060	1208	1352	3110	826	2838	3528	2275	1704	1287	1495	1637	2364	2000	2083	4
17	IHT 117	HHB 67 Imp. (Check)	2222	1028	1167	1874	723	2532	2620	1738	1250	818	1034	2333	2164	2249	1703	18
18	IHT 118	MH 2676	3398	1294	1074	2159	815	3125	2806	2096	1509	1531	1520	2454	2801	2627	2088	3
19	IHT 119	MH 2677	3148	1759	1019	1940	862	3083	2690	2071	1769	1497	1633	1698	3404	2551	2079	5
20	IHT 120	MH 2678	3463	1269	1597	2088	933	3125	3088	2223	1481	1845	1663	3117	3962	3540	2361	1
21	IHT 121	MH 2679	3333	1040	690	1517	737	3157	2727	1886	1593	1185	1389	2188	2941	2565	1919	8
22	IHT 122	MH 2680	2477	1617	1310	1865	850	2569	2231	1846	1528	1275	1401	2231	1413	1822	1761	17
23	IHT 123	PB 1756 (Check)	2806	2117	1551	1606	807	2685	2065	1948	1398	1318	1358	1611	2899	2255	1897	10
24	IHT 124	MH 2681	2560	2297	1032	1937	797	2477	2486	1941	1259	750	1005	2481	2693	2587	1888	11
25	IHT 125	AHB 1200 (Check)	2907	2228	861	2096	458	3009	2491	2007	1694	1067	1381	1238	2091	1664	1831	15
		LOC. MEAN	2663	1426	1158	2005	756	2595	2320	1846	1465	1160	1312	2045	2625	2335	1838	
		C.D. (5%)	1264	674	332	382	253	1025	351	413	312	269	626	265	690	853	332	
		C.D. (1%)	1686	900	442	510	338	1367	469	546	417	358	849	353	920	1156	437	
		C.V. (%)	28.9	28.8	17.4	11.6	20.4	24.1	9.2	21.2	13.0	14.1	23.1	7.9	16.0	17.7	21.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.166	0.000	0.000	0.010	0.000	
		PLOT SIZE (m ²)	7.20	7.20	7.20	7.20	7.20	7.20	7.20	-	7.20	5.40	-	5.40	7.20	-	-	

Table I.21: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	5833	3039	3375	3487	3322	5556	3884	4071	2593	4383	3488	5247	5995	5621	4247	4
2	IHT 102	MH 2663	4444	2612	3218	2786	3113	4491	4220	3555	2778	3704	3241	4568	8786	6677	4065	7
3	IHT 103	MH 2664	3889	3464	3449	3177	2867	3750	4538	3590	3333	5370	4352	4259	4154	4207	3841	11
4	IHT 104	RHB 223 (Check)	3981	2095	2833	2097	2692	3935	3295	2990	2454	3580	3017	4506	5970	5238	3404	20
5	IHT 105	MH 2665	3333	2426	2495	2508	2111	3102	4929	2986	2500	2840	2670	3765	3108	3437	3011	22
6	IHT 106	MH 2666	2778	2193	3593	3267	1678	2593	3859	2851	1667	2284	1975	2901	3247	3074	2733	25
7	IHT 107	MH 2667	5046	3182	3769	4542	2550	5046	3688	3975	2222	3827	3025	4136	6312	5224	4029	8
8	IHT 108	MH 2668	3287	2374	3074	4198	2191	3241	6876	3606	2685	1667	2176	3148	5403	4276	3468	17
9	IHT 109	MPMH 21 (Check)	4120	3683	3185	3219	3168	4167	6098	3949	2917	2901	2909	4043	4044	4044	3777	13
10	IHT 110	MH 2669	4074	2271	3153	2852	2447	3981	3690	3210	3241	2160	2701	3210	4811	4010	3263	21
11	IHT 111	MH 2670	2986	1783	2963	1793	1531	3102	4626	2683	2500	2407	2454	3148	4759	3954	2873	23
12	IHT 112	MH 2671	3843	1918	2894	1825	1922	3750	2801	2707	1944	2778	2361	3025	4052	3539	2795	24
13	IHT 113	MH 2672	5046	3187	4380	3932	2407	4477	3731	3880	2685	3889	3287	5401	5642	5521	4071	6
14	IHT 114	MH 2673	4028	3043	3352	3328	2649	3889	4386	3525	2639	4444	3542	4123	6624	5374	3864	9
15	IHT 115	MH 2674	6157	2259	3296	3915	3277	5468	5051	4203	3102	4691	3897	4062	5901	4981	4289	3
16	IHT 116	MH 2675	4213	2166	3681	4445	1957	4074	4812	3621	3194	2840	3017	4074	4713	4394	3652	14
17	IHT 117	HHB 67 Imp. (Check)	3981	1707	2898	2944	2254	3843	5354	3283	1944	4321	3133	3765	6695	5230	3610	15
18	IHT 118	MH 2676	5463	2633	3519	3996	4186	5370	6206	4482	2778	4136	3457	4228	6343	5286	4442	1
19	IHT 119	MH 2677	4444	3042	3569	3315	3112	4213	6016	3959	3287	5062	4174	4136	7920	6028	4374	2
20	IHT 120	MH 2678	5972	2392	3278	1999	2535	5727	4705	3801	2685	3827	3256	5309	8148	6728	4234	5
21	IHT 121	MH 2679	4306	2423	3269	2950	3810	4120	3699	3511	2917	4259	3588	4136	6607	5372	3863	10
22	IHT 122	MH 2680	4444	3046	2986	3234	2126	4282	2644	3252	2917	3210	3063	4414	4479	4446	3435	19
23	IHT 123	PB 1756 (Check)	3796	3576	3602	2924	2735	3565	3734	3419	2778	4383	3580	3735	7333	5534	3833	12
24	IHT 124	MH 2681	3241	3669	3519	3150	2118	3218	3700	3231	2685	2160	2423	4383	6287	5335	3466	18
25	IHT 125	AHB 1200 (Check)	3889	3706	3380	4056	2456	3657	3458	3515	3194	3642	3418	3364	4540	3952	3577	16
		LOC. MEAN	4264	2716	3309	3197	2609	4105	4400	3514	2706	3551	3128	4043	5675	4859	3689	
		C.D. (5%)	1379	1121	687	563	777	1028	756	705	753	801	1393	807	1567	1888	615	
		C.D. (1%)	1839	1496	916	751	1037	1371	1009	931	1005	1068	1887	1077	2091	2558	811	
		C.V. (%)	19.7	25.2	12.6	10.7	18.2	15.3	10.5	19.0	17.0	13.7	21.6	12.2	16.8	18.8	19.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.149	0.000	0.000	0.029	0.000	
		PLOT SIZE (m ²)	7.20	7.20	7.20	7.20	7.20	7.20	7.20	-	7.20	5.40	-	5.40	7.20	-	-	

CHAPTER I: BREEDING

Table I.22: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR*	SDR	JLR	NGR*	RAJ MEAN	KTR*	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	52	46	50	54	47	52	54	49	51	53	53	46	45	45	49	3
2	IHT 102	MH 2663	51	46	50	53	46	51	54	49	53	56	56	45	46	46	49	2
3	IHT 103	MH 2664	50	47	51	55	47	50	50	49	46	54	54	46	47	47	49	1
4	IHT 104	RHB 223 (Check)	47	42	46	53	48	47	51	46	49	46	46	42	45	44	45	12
5	IHT 105	MH 2665	45	46	44	51	54	45	43	47	45	44	44	44	43	44	46	11
6	IHT 106	MH 2666	40	45	42	47	54	40	40	44	47	42	42	42	34	38	42	19
7	IHT 107	MH 2667	42	41	45	47	42	42	42	42	50	46	46	42	35	39	42	22
8	IHT 108	MH 2668	41	45	43	47	45	41	43	43	46	43	43	42	41	41	43	18
9	IHT 109	MPMH 21 (Check)	45	46	47	53	41	44	55	45	45	48	48	44	44	44	45	13
10	IHT 110	MH 2669	38	40	40	51	40	38	40	39	45	43	43	41	36	38	39	25
11	IHT 111	MH 2670	39	40	42	54	40	39	41	40	47	42	42	41	34	38	40	24
12	IHT 112	MH 2671	42	41	44	53	42	42	42	42	48	42	42	41	42	42	42	21
13	IHT 113	MH 2672	44	42	46	55	50	44	43	45	52	46	46	41	39	40	44	15
14	IHT 114	MH 2673	45	46	46	52	48	45	45	46	51	44	44	42	43	43	45	14
15	IHT 115	MH 2674	48	47	49	51	48	49	55	48	53	47	47	45	49	47	48	5
16	IHT 116	MH 2675	44	47	48	53	51	43	46	47	48	44	44	45	46	46	46	9
17	IHT 117	HHB 67 Imp. (Check)	41	43	42	52	42	41	41	42	54	40	40	41	44	42	42	23
18	IHT 118	MH 2676	49	44	50	55	49	49	47	48	49	46	46	47	50	49	48	4
19	IHT 119	MH 2677	45	46	48	54	54	45	49	48	49	47	47	45	42	44	47	8
20	IHT 120	MH 2678	42	44	46	55	41	42	44	43	52	44	44	42	37	40	42	20
21	IHT 121	MH 2679	46	48	49	60	49	46	52	48	49	50	50	47	46	46	48	6
22	IHT 122	MH 2680	44	47	46	54	50	44	47	46	44	45	45	44	46	45	46	10
23	IHT 123	PB 1756 (Check)	43	42	45	51	41	43	45	43	45	45	45	46	38	42	43	17
24	IHT 124	MH 2681	41	47	43	52	40	41	42	42	46	46	46	41	44	43	43	16
25	IHT 125	AHB 1200 (Check)	47	46	49	53	49	47	56	47	50	47	47	48	48	48	47	7
		LOC. MEAN	44	45	46	53	46	44	47	45	48	46	46	44	43	43	45	
		C.D. (5%)	2.0	3.0	2.0	6.0	3.0	2.0	2.0	3.0	1.0	4.0	4.0	1.0	3.0	5.0	2.0	
		C.D. (1%)	3.0	4.0	3.0	7.0	5.0	2.0	3.0	4.0	1.0	5.0	5.0	2.0	5.0	7.0	3.0	
		C.V. (%)	2.9	4.0	2.5	6.5	4.6	2.3	2.6	5.2	1.0	4.7	4.7	1.8	5.0	5.9	5.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	

*LOCATION REJECTED DUE TO DELAYED FLOWERING IN CHECKS

Table I.23: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 DAYS TO MATURITY ZONE A1

S.No.	TEST CODE	ENTRY	MDR	BKR	FTR*	JLR	NGR*	RAJ MEAN	KTR*	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	79	81	84	79	82	80	76	83	83	79	84	82	81	1
2	IHT 102	MH 2663	79	81	86	79	80	80	76	86	86	76	82	79	80	3
3	IHT 103	MH 2664	78	81	81	78	85	79	73	83	83	80	84	82	81	2
4	IHT 104	RHB 223 (Check)	75	76	88	75	81	75	75	78	78	72	81	77	76	11
5	IHT 105	MH 2665	73	75	81	73	78	74	74	74	74	69	83	76	75	17
6	IHT 106	MH 2666	69	73	76	68	76	70	75	73	73	70	83	76	73	24
7	IHT 107	MH 2667	70	75	76	71	75	72	76	78	78	69	80	75	74	18
8	IHT 108	MH 2668	70	74	77	72	76	72	77	74	74	72	81	77	74	20
9	IHT 109	MPMH 21 (Check)	73	78	86	73	77	75	79	80	80	76	81	78	77	9
10	IHT 110	MH 2669	68	71	84	69	75	69	74	74	74	72	84	78	73	23
11	IHT 111	MH 2670	68	72	89	69	77	70	75	74	74	69	80	75	72	25
12	IHT 112	MH 2671	71	74	82	71	74	72	76	73	73	69	81	75	73	22
13	IHT 113	MH 2672	73	76	84	72	74	74	78	79	79	75	82	78	76	12
14	IHT 114	MH 2673	74	76	89	73	79	75	73	75	75	74	81	78	76	13
15	IHT 115	MH 2674	77	80	80	77	81	78	78	79	79	78	84	81	79	5
16	IHT 116	MH 2675	72	77	82	72	80	74	74	77	77	71	84	78	75	14
17	IHT 117	HHB 67 Imp. (Check)	70	72	85	70	75	71	79	73	73	72	83	78	73	21
18	IHT 118	MH 2676	78	81	83	77	74	79	77	79	79	80	84	82	80	4
19	IHT 119	MH 2677	74	79	85	74	75	76	74	79	79	71	84	77	77	8
20	IHT 120	MH 2678	70	76	84	71	72	72	78	76	76	75	82	79	75	16
21	IHT 121	MH 2679	74	79	92	74	82	76	74	82	82	76	85	80	78	7
22	IHT 122	MH 2680	73	77	87	73	81	74	73	77	77	76	84	80	76	10
23	IHT 123	PB 1756 (Check)	71	75	83	72	77	73	75	76	76	73	84	79	75	15
24	IHT 124	MH 2681	69	74	85	70	75	71	76	77	77	71	82	77	74	19
25	IHT 125	AHB 1200 (Check)	76	79	84	75	84	77	78	79	79	78	85	82	79	6
LOC. MEAN			73	76	84	73	78	74	76	77	77	74	83	78	76	
C.D. (5%)			2.0	2.0	7.0	2.0	2.0	2.0	1.0	3.0	3.0	2.0	3.0	6.0	2.0	
C.D. (1%)			3.0	3.0	9.0	3.0	2.0	3.0	1.0	5.0	5.0	2.0	4.0	8.0	2.0	
C.V. (%)			1.7	1.9	5.0	1.8	1.4	1.3	0.8	2.7	2.7	1.4	2.3	3.7	1.5	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.557	0.000	

*LOCATION REJECTED DUE TO DELAYED MATURITY IN CHECKS

Table I.24: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	228	170	166	201	127	224	186	186	152	178	165	149	183	166	179	3
2	IHT 102	MH 2663	220	192	170	195	125	214	184	186	168	150	159	135	192	164	177	4
3	IHT 103	MH 2664	202	184	132	184	122	193	179	171	161	140	150	109	173	141	162	19
4	IHT 104	RHB 223 (Check)	215	164	154	173	128	215	184	176	186	160	173	138	184	161	173	8
5	IHT 105	MH 2665	195	171	138	201	204	193	186	184	168	156	162	148	178	163	176	5
6	IHT 106	MH 2666	195	183	150	183	135	195	179	174	147	165	156	129	169	149	166	13
7	IHT 107	MH 2667	203	198	156	193	124	202	170	178	143	160	151	141	180	160	170	10
8	IHT 108	MH 2668	182	188	142	172	127	190	174	168	163	141	152	133	166	150	162	20
9	IHT 109	MPMH 21 (Check)	208	172	118	193	129	204	150	168	162	145	154	148	177	163	164	16
10	IHT 110	MH 2669	165	176	143	168	124	167	163	158	157	145	151	121	150	136	153	22
11	IHT 111	MH 2670	173	166	143	144	123	168	164	155	157	151	154	127	127	127	149	24
12	IHT 112	MH 2671	158	173	128	149	119	161	170	151	143	130	137	123	127	125	144	25
13	IHT 113	MH 2672	207	181	148	177	126	204	175	174	167	161	164	139	173	156	169	11
14	IHT 114	MH 2673	207	180	150	174	130	205	165	173	154	171	163	144	173	158	168	12
15	IHT 115	MH 2674	233	185	146	209	132	226	199	190	168	183	176	143	203	173	184	1
16	IHT 116	MH 2675	178	180	118	167	120	176	155	156	139	145	142	131	140	136	150	23
17	IHT 117	HHB 67 Imp. (Check)	188	171	141	186	129	184	196	171	152	157	155	146	169	158	165	14
18	IHT 118	MH 2676	212	194	145	201	128	209	178	181	145	176	160	138	189	164	174	7
19	IHT 119	MH 2677	217	175	138	180	129	217	181	177	147	155	151	143	193	168	170	9
20	IHT 120	MH 2678	205	172	128	174	136	205	162	169	151	166	158	135	185	160	165	15
21	IHT 121	MH 2679	195	170	140	170	126	194	175	167	149	153	151	139	172	156	162	18
22	IHT 122	MH 2680	207	185	147	221	132	206	184	183	175	175	175	152	187	170	179	2
23	IHT 123	PB 1756 (Check)	205	181	160	184	126	201	198	179	182	175	178	138	182	160	176	6
24	IHT 124	MH 2681	192	201	138	194	124	193	178	174	150	125	138	130	149	140	161	21
25	IHT 125	AHB 1200 (Check)	203	179	129	198	128	206	173	174	154	139	147	132	161	147	164	17
		LOC. MEAN	200	180	143	184	130	198	176	173	158	156	157	136	171	154	167	
		C.D. (5%)	16.0	32.0	14.0	16.0	8.0	10.0	5.0	13.0	6.0	18.0	25.0	8.0	31.0	24.0	10.0	
		C.D. (1%)	22.0	42.0	19.0	21.0	10.0	14.0	7.0	17.0	8.0	23.0	33.0	11.0	41.0	32.0	13.0	
		C.V. (%)	5.0	10.8	5.9	5.2	3.6	3.1	1.7	7.0	2.2	6.9	7.6	3.6	10.9	7.5	7.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097	0.000	0.000	0.010	0.000	

Table I.25: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	1.9	2.1	1.1	2.5	1.4	1.9	3.2	2.0	2.7	1.3	2.0	1.1	3.3	2.2	2.1	16
2	IHT 102	MH 2663	1.5	1.9	1.2	2.0	1.2	1.5	4.1	1.9	3.1	1.3	2.2	1.0	3.1	2.1	2.0	21
3	IHT 103	MH 2664	1.4	1.5	1.2	2.2	1.4	1.4	2.2	1.6	2.9	1.2	2.0	1.1	3.0	2.1	1.8	24
4	IHT 104	RHB 223 (Check)	2.3	1.9	1.4	3.0	1.3	2.3	3.2	2.2	2.6	1.2	1.9	1.2	3.0	2.1	2.1	12
5	IHT 105	MH 2665	1.3	1.4	1.4	2.5	1.3	1.3	3.7	1.8	2.7	1.3	2.0	1.2	3.7	2.4	2.0	20
6	IHT 106	MH 2666	1.7	1.6	1.3	3.0	1.2	1.7	3.7	2.0	2.5	1.4	2.0	1.2	2.8	2.0	2.0	19
7	IHT 107	MH 2667	2.7	2.3	1.5	5.0	1.2	2.7	4.0	2.8	2.7	1.8	2.3	1.3	3.1	2.2	2.6	1
8	IHT 108	MH 2668	2.2	1.8	1.5	3.5	1.4	2.2	3.2	2.3	3.0	1.1	2.1	1.3	3.3	2.3	2.2	10
9	IHT 109	MPMH 21 (Check)	1.7	1.8	1.5	2.5	1.4	1.7	2.5	1.9	2.9	1.5	2.2	1.1	2.9	2.0	2.0	22
10	IHT 110	MH 2669	1.7	1.5	1.6	3.5	1.3	1.7	3.2	2.1	3.0	1.1	2.0	1.2	3.4	2.3	2.1	13
11	IHT 111	MH 2670	2.0	1.5	1.6	4.5	1.2	2.0	3.5	2.3	2.9	1.3	2.1	1.6	2.6	2.1	2.2	9
12	IHT 112	MH 2671	2.0	1.1	1.7	5.0	1.3	2.0	3.2	2.3	2.7	1.3	2.0	1.4	3.6	2.5	2.3	6
13	IHT 113	MH 2672	2.4	1.5	1.8	4.2	1.3	2.1	3.9	2.4	3.1	1.3	2.2	1.1	3.0	2.1	2.3	5
14	IHT 114	MH 2673	1.8	1.6	1.5	4.0	1.2	1.8	3.4	2.2	3.0	1.8	2.4	1.8	3.1	2.5	2.3	7
15	IHT 115	MH 2674	1.7	1.5	1.3	5.0	1.4	1.7	4.0	2.4	2.8	1.5	2.2	1.0	3.0	2.0	2.3	8
16	IHT 116	MH 2675	1.6	1.8	1.5	2.2	1.2	1.6	3.2	1.9	3.1	1.2	2.1	1.0	2.7	1.8	1.9	23
17	IHT 117	HHB 67 Imp. (Check)	1.9	1.9	1.6	4.8	1.2	1.9	4.2	2.5	2.6	1.3	2.0	1.6	3.3	2.5	2.4	4
18	IHT 118	MH 2676	1.5	1.9	1.3	4.5	1.4	1.5	4.3	2.3	2.9	1.5	2.2	1.1	2.7	1.9	2.2	11
19	IHT 119	MH 2677	1.7	1.8	1.3	3.5	1.4	1.7	3.5	2.1	2.7	1.4	2.1	1.0	2.8	1.9	2.1	14
20	IHT 120	MH 2678	2.3	2.1	1.9	4.2	1.3	2.3	3.4	2.5	2.9	1.5	2.2	2.2	2.7	2.5	2.4	2
21	IHT 121	MH 2679	2.1	1.5	1.2	2.5	1.3	2.1	3.2	2.0	2.9	1.3	2.1	1.2	2.9	2.1	2.0	17
22	IHT 122	MH 2680	1.4	1.8	1.6	2.8	1.2	1.4	3.4	1.9	3.0	1.4	2.2	1.2	3.5	2.4	2.1	15
23	IHT 123	PB 1756 (Check)	2.0	1.7	1.6	2.5	1.4	2.0	3.2	2.0	2.9	1.3	2.1	1.0	2.9	1.9	2.0	18
24	IHT 124	MH 2681	2.1	2.5	1.7	3.8	1.2	2.1	4.2	2.5	3.1	1.4	2.2	1.3	3.0	2.2	2.4	3
25	IHT 125	AHB 1200 (Check)	1.7	2.3	1.2	3.0	1.2	1.7	3.2	2.1	2.9	1.1	2.0	1.1	2.9	2.0	2.0	17
		LOC. MEAN	1.9	1.8	1.5	3.4	1.3	1.9	3.5	2.2	2.9	1.4	2.1	1.3	3.1	2.2	2.2	
		C.D. (5%)	0.6	0.7	0.4	0.6	0.1	0.4	0.3	0.5	0.3	0.2	0.4	0.3	1.0	0.6	0.3	
		C.D. (1%)	0.7	0.9	0.5	0.9	0.2	0.6	0.4	0.6	0.4	0.3	0.5	0.4	1.3	0.8	0.4	
		C.V. (%)	18.0	24.0	14.8	11.5	6.2	14.0	5.4	19.9	6.3	10.1	9.0	15.1	19.1	13.5	17.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.000	0.000	0.479	0.000	

Table I.26: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	25	21	22	26	22	24	26	24	26	19	23	26	27	27	24	2
2	IHT 102	MH 2663	28	23	24	29	19	27	28	25	25	20	23	25	23	24	25	1
3	IHT 103	MH 2664	20	22	18	24	18	19	22	20	18	18	18	19	27	23	20	22
4	IHT 104	RHB 223 (Check)	24	21	22	25	25	24	21	23	22	20	21	23	24	23	23	7
5	IHT 105	MH 2665	24	24	22	26	21	24	22	23	18	21	20	25	23	24	23	8
6	IHT 106	MH 2666	21	24	21	25	22	21	23	22	16	19	17	17	22	20	21	20
7	IHT 107	MH 2667	21	24	21	22	23	19	22	22	17	19	18	21	20	20	21	21
8	IHT 108	MH 2668	21	21	22	22	23	20	25	22	19	18	19	20	23	22	21	18
9	IHT 109	MPMH 21 (Check)	22	22	20	23	22	21	19	21	19	19	19	23	24	24	21	17
10	IHT 110	MH 2669	20	23	22	23	20	20	24	22	20	18	19	21	20	20	21	19
11	IHT 111	MH 2670	20	18	19	20	16	21	19	19	16	16	16	20	16	18	18	24
12	IHT 112	MH 2671	21	20	20	22	19	20	19	20	15	16	16	19	17	18	19	23
13	IHT 113	MH 2672	24	22	22	25	23	24	22	23	20	19	20	23	23	23	22	9
14	IHT 114	MH 2673	24	20	23	24	22	25	19	22	20	20	20	24	23	23	22	12
15	IHT 115	MH 2674	23	20	21	24	22	23	23	22	18	20	19	22	24	23	22	14
16	IHT 116	MH 2675	23	23	22	28	23	22	28	24	21	20	21	24	30	27	24	3
17	IHT 117	HHB 67 Imp. (Check)	22	20	22	23	22	22	26	22	17	19	18	23	19	21	21	16
18	IHT 118	MH 2676	23	22	21	23	20	23	23	22	17	20	19	24	24	24	22	13
19	IHT 119	MH 2677	25	23	22	21	19	24	28	23	17	20	18	23	26	24	22	10
20	IHT 120	MH 2678	24	22	22	23	23	23	27	24	21	19	20	23	24	23	23	5
21	IHT 121	MH 2679	24	23	20	24	21	23	24	23	18	19	19	23	23	23	22	11
22	IHT 122	MH 2680	23	24	26	29	24	23	23	24	21	21	21	25	26	25	24	3
23	IHT 123	PB 1756 (Check)	23	23	25	28	20	23	28	24	21	20	20	24	27	26	24	4
24	IHT 124	MH 2681	21	23	20	25	21	21	24	22	20	18	19	21	22	22	22	15
25	IHT 125	AHB 1200 (Check)	23	23	22	27	20	24	27	24	20	19	20	22	25	23	23	6
		LOC. MEAN	23	22	22	24	21	22	24	23	19	19	19	22	23	23	22	
		C.D. (5%)	3.0	5.0	2.0	3.0	2.0	2.0	2.0	2.0	1.0	2.0	3.0	2.0	3.0	4.0	1.0	
		C.D. (1%)	5.0	7.0	3.0	4.0	2.0	3.0	2.0	2.0	2.0	3.0	5.0	3.0	4.0	6.0	2.0	
		C.V. (%)	9.3	14.5	6.7	7.2	5.4	6.0	4.3	7.6	4.5	6.6	8.8	6.3	8.8	8.9	7.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.047	0.000	0.000	0.013	0.000	

Table I.27: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	SKN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	3.2	2.5	2.4	2.8	2.6	2.6	2.6	2.7	2.6	3.1	3.2	3.1	2.8	13
2	IHT 102	MH 2663	3.0	2.8	2.5	3.5	2.5	2.6	2.5	2.8	2.8	2.9	3.1	3.0	2.8	6
3	IHT 103	MH 2664	3.3	3.3	2.4	3.4	2.7	2.8	2.3	2.9	2.6	3.1	3.4	3.3	2.9	4
4	IHT 104	RHB 223 (Check)	2.7	2.8	2.3	3.0	2.7	2.8	2.8	2.7	2.6	3.0	3.1	3.1	2.8	12
5	IHT 105	MH 2665	2.9	2.8	2.7	3.1	2.6	2.7	2.7	2.8	2.5	3.2	2.9	3.1	2.8	9
6	IHT 106	MH 2666	2.7	3.2	2.2	3.0	2.4	2.7	2.8	2.7	2.4	2.9	3.0	3.0	2.7	14
7	IHT 107	MH 2667	2.6	3.0	2.3	2.5	2.4	2.6	2.6	2.6	2.4	2.9	2.7	2.8	2.6	20
8	IHT 108	MH 2668	2.6	2.7	2.1	2.5	2.5	3.6	2.6	2.7	2.1	2.7	2.8	2.8	2.6	18
9	IHT 109	MPMH 21 (Check)	2.7	2.8	2.2	3.3	2.7	2.7	2.8	2.7	2.5	3.2	2.9	3.1	2.8	11
10	IHT 110	MH 2669	2.3	2.6	1.9	2.2	1.9	2.3	3.1	2.3	2.3	2.5	2.5	2.5	2.4	25
11	IHT 111	MH 2670	2.5	2.5	2.0	2.5	2.1	2.5	2.4	2.4	2.2	2.7	2.4	2.5	2.4	24
12	IHT 112	MH 2671	2.7	2.7	2.1	2.8	2.5	2.7	2.4	2.6	2.5	2.9	2.8	2.8	2.6	19
13	IHT 113	MH 2672	2.8	2.5	2.1	2.8	2.6	2.7	1.7	2.5	2.4	3.0	2.9	3.0	2.6	22
14	IHT 114	MH 2673	2.9	2.9	2.2	2.7	2.5	3.3	2.5	2.7	2.5	2.9	2.8	2.9	2.7	16
15	IHT 115	MH 2674	2.7	2.9	2.5	2.9	2.6	3.0	2.7	2.8	2.5	3.0	3.0	3.0	2.8	10
16	IHT 116	MH 2675	3.0	2.8	2.5	3.4	2.6	3.4	3.3	3.0	2.9	3.0	3.3	3.2	3.0	2
17	IHT 117	HHB 67 Imp. (Check)	2.3	2.6	1.9	2.1	2.1	2.3	3.7	2.4	2.2	2.7	2.8	2.8	2.5	23
18	IHT 118	MH 2676	2.8	3.1	2.4	3.0	2.5	2.8	2.5	2.7	2.8	3.1	3.1	3.1	2.8	7
19	IHT 119	MH 2677	3.4	2.8	2.4	3.0	2.6	3.4	3.2	3.0	2.6	3.2	3.4	3.3	3.0	3
20	IHT 120	MH 2678	3.0	2.7	2.5	2.8	2.7	3.0	2.9	2.8	2.4	3.0	3.2	3.1	2.8	8
21	IHT 121	MH 2679	3.4	2.7	2.2	3.1	2.6	3.2	3.2	2.9	2.8	3.0	3.0	3.0	2.9	5
22	IHT 122	MH 2680	2.6	2.7	2.2	2.7	2.4	2.6	2.4	2.5	2.4	2.8	3.0	2.9	2.6	21
23	IHT 123	PB 1756 (Check)	2.8	2.9	2.3	3.1	2.1	2.9	2.6	2.7	2.5	2.8	3.4	3.1	2.7	15
24	IHT 124	MH 2681	2.6	3.0	2.3	2.8	2.7	3.0	1.8	2.6	2.5	2.9	3.1	3.0	2.7	17
25	IHT 125	AHB 1200 (Check)	3.6	3.1	2.5	3.7	2.9	2.9	2.5	3.0	2.9	3.2	3.5	3.4	3.1	1
LOC. MEAN			2.9	2.8	2.3	2.9	2.5	2.9	2.7	2.7	2.5	3.0	3.0	3.0	2.7	
C.D. (5%)			0.4	0.6	0.3	0.4	0.1	0.4	0.2	0.3	0.2	0.3	0.3	0.2	0.2	
C.D. (1%)			0.5	0.8	0.4	0.5	0.1	0.5	0.3	0.4	0.2	0.4	0.4	0.3	0.3	
C.V. (%)			8.1	13.0	8.2	8.4	2.7	8.1	4.5	10.0	4.4	5.8	6.2	4.2	8.9	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.28: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 1000-SEED Wt.(g) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	SKN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	7.3	5.6	11.6	9.5	7.0	8.3	8.2	8.2	6.0	7.2	9.7	8.5	8.0	18
2	IHT 102	MH 2663	7.6	7.5	10.7	9.7	6.0	9.2	7.0	8.2	5.9	7.3	7.8	7.6	7.9	20
3	IHT 103	MH 2664	7.4	7.3	11.3	9.0	7.6	8.6	9.9	8.7	6.1	6.6	9.4	8.0	8.3	12
4	IHT 104	RHB 223 (Check)	8.6	7.9	11.3	9.5	7.5	8.7	9.3	9.0	6.1	7.5	9.2	8.4	8.6	8
5	IHT 105	MH 2665	7.0	7.7	10.9	9.3	7.8	7.0	7.8	8.2	6.3	5.2	8.2	6.7	7.7	24
6	IHT 106	MH 2666	7.0	7.3	9.5	9.9	7.5	7.0	7.5	8.0	5.7	6.5	6.6	6.6	7.5	25
7	IHT 107	MH 2667	8.3	7.0	12.1	10.2	7.1	8.2	7.2	8.6	5.7	8.0	8.7	8.3	8.2	13
8	IHT 108	MH 2668	9.2	8.5	11.5	10.0	7.9	8.8	10.6	9.5	7.7	6.1	10.4	8.2	9.1	3
9	IHT 109	MPMH 21 (Check)	7.4	7.9	11.1	8.8	7.1	7.4	7.8	8.2	5.3	6.9	7.5	7.2	7.7	23
10	IHT 110	MH 2669	9.4	9.8	10.7	9.0	7.6	8.3	11.2	9.4	7.3	9.6	11.3	10.4	9.4	1
11	IHT 111	MH 2670	7.9	7.6	12.1	8.7	8.0	7.9	9.8	8.8	6.6	7.9	9.4	8.7	8.6	7
12	IHT 112	MH 2671	8.6	8.5	9.7	9.3	8.1	8.6	8.9	8.8	5.5	7.3	8.8	8.0	8.3	11
13	IHT 113	MH 2672	7.4	7.1	12.4	9.0	6.3	7.4	8.4	8.3	5.6	8.1	7.3	7.7	7.9	19
14	IHT 114	MH 2673	7.5	6.8	11.2	9.6	7.1	7.4	6.7	8.0	6.3	7.3	8.6	8.0	7.8	21
15	IHT 115	MH 2674	9.0	5.7	10.0	9.9	6.0	9.4	7.6	8.2	6.4	7.4	10.0	8.7	8.2	15
16	IHT 116	MH 2675	7.8	8.7	9.8	10.3	7.3	7.5	8.6	8.6	7.7	8.1	10.1	9.1	8.6	6
17	IHT 117	HHB 67 Imp. (Check)	7.5	8.6	11.1	9.1	7.1	7.5	7.9	8.4	7.6	8.5	6.7	7.6	8.2	16
18	IHT 118	MH 2676	7.9	7.9	9.8	9.7	6.0	7.9	6.8	8.0	5.8	7.6	8.6	8.1	7.8	22
19	IHT 119	MH 2677	8.9	10.1	10.1	9.6	6.5	8.9	7.5	8.8	7.6	6.4	11.1	8.8	8.7	5
20	IHT 120	MH 2678	8.8	9.2	11.0	9.6	7.4	9.0	8.9	9.1	5.9	5.7	6.6	6.2	8.2	14
21	IHT 121	MH 2679	8.1	7.6	10.5	9.8	6.3	8.1	7.8	8.3	7.9	6.0	8.8	7.4	8.1	17
22	IHT 122	MH 2680	9.4	10.2	11.6	9.7	8.2	7.6	8.7	9.3	5.9	8.1	10.2	9.2	9.0	4
23	IHT 123	PB 1756 (Check)	9.6	12.3	11.1	9.7	7.8	9.6	9.2	9.9	7.7	6.1	9.8	7.9	9.3	2
24	IHT 124	MH 2681	8.2	10.5	10.0	9.9	8.0	7.3	8.1	8.9	5.6	6.7	9.1	7.9	8.3	10
25	IHT 125	AHB 1200 (Check)	8.3	12.6	9.1	9.7	6.9	7.8	7.3	8.8	6.0	6.1	10.3	8.2	8.4	9
LOC. MEAN			8.2	8.4	10.8	9.5	7.2	8.1	8.4	8.7	6.4	7.1	9.0	8.0	8.3	
C.D. (5%)			1.2	0.6	1.6	0.9	0.2	1.1	0.3	1.0	0.3	0.5	0.9	1.9	0.9	
C.D. (1%)			1.5	0.8	2.1	1.1	0.3	1.5	0.4	1.3	0.4	0.7	1.2	2.6	1.1	
C.V. (%)			8.6	4.6	8.9	5.5	1.9	8.4	2.3	10.7	3.0	4.6	6.1	13.7	11.2	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.489	0.002	

Table I.29: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 POPULATION AT HARVEST (No./plot) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	JLR	NGR	RAJ MEAN	KTR	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	IHT 101	MH 2662	81	59	65	56	88	95	74	75	54	51	52	69	9
2	IHT 102	MH 2663	87	36	62	56	85	85	69	71	47	48	48	64	22
3	IHT 103	MH 2664	87	62	72	56	77	96	75	71	54	26	40	67	18
4	IHT 104	RHB 223 (Check)	78	38	62	56	79	85	66	70	65	28	47	62	24
5	IHT 105	MH 2665	81	63	61	56	89	84	72	72	61	27	44	66	19
6	IHT 106	MH 2666	78	58	63	57	81	99	73	65	49	28	39	64	21
7	IHT 107	MH 2667	79	71	73	57	69	105	76	73	81	45	63	72	2
8	IHT 108	MH 2668	89	53	75	57	80	97	75	70	69	36	53	70	8
9	IHT 109	MPMH 21 (Check)	90	66	70	56	81	105	78	74	61	26	44	70	7
10	IHT 110	MH 2669	98	62	63	56	78	93	75	75	66	30	48	69	10
11	IHT 111	MH 2670	78	47	67	56	78	86	69	68	48	13	30	60	25
12	IHT 112	MH 2671	89	59	70	56	89	93	76	69	65	28	47	69	13
13	IHT 113	MH 2672	80	75	72	56	80	83	75	67	71	33	52	69	14
14	IHT 114	MH 2673	74	76	77	56	74	91	75	71	79	42	61	71	5
15	IHT 115	MH 2674	91	58	73	56	87	99	77	70	67	44	56	72	4
16	IHT 116	MH 2675	82	43	67	56	78	98	71	69	73	40	57	67	17
17	IHT 117	HHB 67 Imp. (Check)	76	45	73	56	76	99	71	70	85	40	63	69	12
18	IHT 118	MH 2676	96	63	67	56	96	99	80	73	88	52	70	77	1
19	IHT 119	MH 2677	88	43	65	56	90	97	73	76	74	57	65	72	3
20	IHT 120	MH 2678	85	37	63	56	98	87	71	71	73	45	59	68	15
21	IHT 121	MH 2679	77	33	67	56	91	91	69	73	73	46	60	67	16
22	IHT 122	MH 2680	69	51	65	56	82	85	68	70	77	27	52	65	20
23	IHT 123	PB 1756 (Check)	80	57	73	56	87	86	73	66	76	40	58	69	11
24	IHT 124	MH 2681	86	67	63	56	86	91	75	67	83	35	59	71	6
25	IHT 125	AHB 1200 (Check)	79	62	67	56	79	94	73	72	46	20	33	64	23
LOC. MEAN			83	55	68	56	83	93	73	71	67	36	52	68	
C.D. (5%)			22.0	20.0	11.0	1.0	22.0	9.0	9.0	11.0	8.0	11.0	11.0	7.0	
C.D. (1%)			30.0	26.0	14.0	1.0	30.0	12.0	12.0	15.0	11.0	15.0	15.0	9.0	
C.V. (%)			16.2	21.7	9.7	0.9	16.2	5.7	10.5	9.5	7.6	18.6	9.5	9.0	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.389	0.000	0.000	0.000	0.000	0.108	

Table I.30: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A1

S.No.	TEST CODE	ENTRY	MDR	BKR	FTR	RAJ MEAN	HSR	ZONE MEAN	RANK
1	IHT 101	MH 2662	85	40	90	72	60	69	14
2	IHT 102	MH 2663	83	45	84	70	63	69	14
3	IHT 103	MH 2664	39	40	80	53	50	52	24
4	IHT 104	RHB 223 (Check)	80	43	82	69	27	58	21
5	IHT 105	MH 2665	83	43	89	72	72	72	7
6	IHT 106	MH 2666	78	40	81	66	93	73	5
7	IHT 107	MH 2667	80	42	84	69	80	72	8
8	IHT 108	MH 2668	71	47	78	65	63	65	19
9	IHT 109	MPMH 21 (Check)	45	50	82	59	33	53	23
10	IHT 110	MH 2669	81	47	88	72	60	69	12
11	IHT 111	MH 2670	73	40	83	65	65	65	18
12	IHT 112	MH 2671	78	50	84	71	78	73	6
13	IHT 113	MH 2672	79	47	83	70	55	66	17
14	IHT 114	MH 2673	79	48	80	69	60	67	16
15	IHT 115	MH 2674	82	43	90	72	87	75	4
16	IHT 116	MH 2675	76	43	78	66	73	68	15
17	IHT 117	HHB 67 Imp. (Check)	77	52	87	72	62	69	11
18	IHT 118	MH 2676	86	48	83	72	92	77	3
19	IHT 119	MH 2677	83	60	82	75	95	80	1
20	IHT 120	MH 2678	75	43	79	66	82	70	10
21	IHT 121	MH 2679	67	53	87	69	15	55	22
22	IHT 122	MH 2680	74	40	78	64	87	70	9
23	IHT 123	PB 1756 (Check)	80	52	87	73	93	78	2
24	IHT 124	MH 2681	81	48	78	69	68	69	13
25	IHT 125	AHB 1200 (Check)	57	45	81	61	63	62	20
LOC. MEAN			75	46	83	68	67	68	
C.D. (5%)			20.0	11.0	8.0	18.0	24.0	12.0	
C.D. (1%)			27.0	15.0	11.0	24.0	32.0	16.0	
C.V. (%)			16.6	15.0	5.8	14.4	21.6	10.6	
F (Prob)			0.000	0.000	0.000	0.383	0.000	0.159	

Table I.31: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 ZONE A1

GRAIN QUALITY: IRON CONTENT (ppm)											
S.No.	TEST CODE	ENTRY	MDR	BKR	SDR	NGR	SKN	BWL	HSR	ZONE MEAN	RANK
1	IHT 104	RHB 223 (Check)	41	60	34	52	41	57	58	49	5
2	IHT 107	MH 2667	33	48	33	44	39	52	66	45	9
3	IHT 109	MPMH 21 (Check)	34	57	24	39	38	61	65	45	9
4	IHT 113	MH 2672	33	50	27	51	36	50	70	45	9
5	IHT 114	MH 2673	34	52	27	34	36	58	57	43	10
6	IHT 115	MH 2674	37	59	29	48	31	62	74	48	6
7	IHT 116	MH 2675	35	84	38	55	43	91	73	60	3
8	IHT 117	HHB 67 Imp. (Check)	33	63	35	46	37	61	57	47	7
9	IHT 118	MH 2676	32	55	28	45	40	69	77	49	5
10	IHT 119	MH 2677	47	79	35	62	49	99	64	62	1
11	IHT 120	MH 2678	37	46	25	39	37	58	61	43	10
12	IHT 121	MH 2679	41	75	34	49	38	69	63	53	4
13	IHT 123	PB 1756 (Check)	33	57	26	38	36	65	65	46	8
14	IHT 125	AHB 1200 (Check)	41	67	37	61	57	93	70	61	2

Table I.32: INITIAL HYBRID TRIAL (Early) KHARIF - 2022 ZONE A1

GRAIN QUALITY: ZINC CONTENT (ppm)											
S.No.	TEST CODE	ENTRY	MDR	BKR	SDR	NGR	SKN	BWL	HSR	ZONE MEAN	RANK
1	IHT 104	RHB 223 (Check)	31	39	41	34	42	48	35	39	5
2	IHT 107	MH 2667	30	39	33	29	44	47	35	37	7
3	IHT 109	MPMH 21 (Check)	32	47	29	26	39	52	35	37	7
4	IHT 113	MH 2672	29	41	32	33	40	41	41	37	7
5	IHT 114	MH 2673	29	36	29	27	37	44	39	34	9
6	IHT 115	MH 2674	32	45	42	32	37	52	39	40	4
7	IHT 116	MH 2675	30	47	41	31	43	61	43	42	3
8	IHT 117	HHB 67 Imp. (Check)	33	44	37	35	42	45	40	39	5
9	IHT 118	MH 2676	33	48	39	33	43	53	54	43	2
10	IHT 119	MH 2677	32	42	44	35	50	62	48	45	1
11	IHT 120	MH 2678	30	39	36	30	40	41	47	38	6
12	IHT 121	MH 2679	26	43	28	31	39	41	41	35	8
13	IHT 123	PB 1756 (Check)	29	44	25	26	36	50	36	35	8
14	IHT 125	AHB 1200 (Check)	27	45	32	25	37	56	38	37	7

CHAPTER I: BREEDING

Table I.33: INITIAL HYBRID TRIAL (Medium) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers			Insecticide
							N	P	K	
RAJASTHAN										
Mandore (AICRP PM)	SL	7.5	6.7.22	30.10.22	28.7.22	Nil	40	20	0	Nil
Bikaner (SKRAU)	S	8.0	4.7.22	10.10.22	4.8.22	25.8.22	40	20	0	Nil
Jaipur (SKNAU)	SL	-	5.7.22	10.10.22	27.7.22	Nil	40	30	0	Nil
Jaipur (Corteva)	L	8.6	7.7.22	28.10.22	25.7,15.8.22	Life Saving	88	60	0	Dantotsu-Clothianidin, Cypermethrin
Tabiji (SKNAU)	L	8.7	6.7.22	28.9.22	27.8.22	Nil	60	30	0	Nil
Tijara (Rallis)	S	6.5	14.7.22	7.10.22	30.7.22	14.7.22	60	30	30	Nil
Dausa (Rasi Seeds)	-	-	28.6.22	29.9.22	20.7.22	Nil	-	-	-	Nil
GUJARAT										
Kothara (SDAU)	SL	7.5	19.7.22	29.10.22	4, 8, 22.8.22	Nil	120	40	0	Nil
Talaja (JAU)	MB	-	22.7.22	17.10.22	8.9.22	Nil	80	40	0	Emamectin Benzoate
Anand (AAU)	SL	-	6.7.22	11.10.22	29.7, 10.8.22	6.7.22	80	40	0	Nil
Jamnagar (JAU)	MB	7.6	7.7.22	5.10.22	19.7, 27.7,4.8.22	Nil	80	40	0	Nil,
S.K. Nagar (SDAU)	SL	-	4.7.22	6.10.22	-	Nil	-	-	-	Nil
Dhenera (J.K Seed)	SL	-	7.7.22	3.10.22	10.8.22	2 Times	40	10	10	Nil
UTTAR PRADESH										
Jhansi (RLBCAU)	RS	7.5	8.7.22	1.11,2.11.22	15.8.22	25.8.22	80	40	40	Nil
Mathura (Kamadgiri)	SL	-	1.7.22	1.10.22	-	5.9.22	80	40	40	Chloropyriphose Cypermethrine
HARYANA										
Hisar (CCSHAU)	SL	-	19.7.22	4.11.22	-	10.9.22	100	40	0	Nil
Bawal (CCSHAU)	LS	8.2	13.7.22	15.10.22	8.8.22	Nil	40	20	30	Atrazine
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	22.7.22	24.10.22	19.8.22	20.8.22	60	40	20	Nil
PUNJAB										
Ludhiana (PAU)	SL	8.0	9.7.22	18.11.22	31.7, 2.9.22	1.8.,1.9.22	50	60	0	Nil
DELHI										
New Delhi (ICAR-IARI)	SL	7.8	10.7.22	20.10.22	-	Nil	60	40	40	Nil

SL = Sandy Loam; MB = Medium Black; S = Sandy; A = Alluvial; LS = Loamy Sand; F = Fertile, RS =Red Soil

CHAPTER I: BREEDING

Table I.34: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR**	BKR***	JPR	JPR2	TBJ	TJR	DAS	RAJ MEAN	KTR	TLJ	AND	JMR	SKN***	DNR	GUJ MEAN
1	IHT 201	MH 2682	3327	389	3923	4002	3983	3576	4015	3900	1370	3503	3284	4266	1932	2689	3023
2	IHT 202	MH 2683	2370	279	3590	4964	3367	3731	4235	3977	1500	4506	5022	4238	1571	2752	3604
3	IHT 203	MH 2684	3382	505	3392	4706	2261	2351	4171	3376	2093	4587	4501	4595	1688	2253	3606
4	IHT 204	MPMH 17 (Check)	3181	722	3122	4286	3656	3302	2704	3414	1833	3433	3626	3870	1531	2529	3058
5	IHT 205	MH 2685	2523	491	3671	3485	4367	3912	4150	3917	1250	5018	3467	4525	827	2417	3335
6	IHT 206	MH 2686	1860	273	2451	3129	856	1929	-	2091	1574	1469	-	2465	343	1600	1777
7	IHT 207	MH 2687	2083	412	2527	3609	4517	2866	-	3380	1759	2148	3858	3688	633	1815	2654
8	IHT 208	MH 2688	2463	352	3251	4678	2589	3396	4417	3666	1620	4154	4104	4259	836	2266	3281
9	IHT 209	MH 2689	3268	500	3126	4732	2817	3833	4075	3716	2065	3730	3838	4132	1747	2256	3204
10	IHT 210	MH 2690	2940	620	2782	3765	2250	2046	2610	2691	1694	2320	3098	2715	1082	2218	2409
11	IHT 211	MH 2691	3198	407	2930	4057	3472	2723	2749	3186	1565	2746	3471	3484	904	2408	2735
12	IHT 212	MH 2692	2525	981	3634	3788	4633	2714	3954	3745	2000	3938	3733	3822	1000	2154	3129
13	IHT 213	PB 1852 (Check)	3949	481	3821	5367	4183	3446	4445	4252	1704	4694	4089	4227	2012	2206	3384
14	IHT 214	MH 2693	3602	796	3132	4247	4683	4215	4321	4120	1315	4583	4254	4190	1639	2846	3438
15	IHT 215	MH 2694	2361	639	2256	3677	1928	2810	2597	2654	1315	2989	2781	3373	793	2259	2543
16	IHT 216	MH 2695	2958	519	2924	2981	2756	2173	3860	2939	1741	2957	3029	3248	1234	2012	2597
17	IHT 217	MH 2696	2514	708	3205	3567	3211	2712	2538	3047	1602	3474	3479	3236	1420	2635	2885
18	IHT 218	MH 2697	2292	398	1072	1766	483	1415	-	1184	472	-	-	1940	193	1917	1443
19	IHT 219	MH 2698	1569	500	2686	1951	1117	4299	-	2513	954	-	-	2495	157	1251	1567
20	IHT 220	MH 2699	1996	468	3299	3304	3439	2573	2481	3019	1167	2761	3153	3579	759	2354	2603
21	IHT 221	MH 2700	2844	653	2549	3053	1856	1924	4144	2705	1194	3028	2985	2963	759	2244	2483
22	IHT 222	MH 2701	3194	250	4319	3804	2861	2305	4403	3538	1602	3358	4077	3940	1022	2758	3147
23	IHT 223	MH 2702	2356	352	3906	2829	2050	2447	3902	3027	1537	3378	3888	3991	698	2408	3040
24	IHT 224	MH 2703	3254	681	3436	5219	4033	3907	2569	3833	1963	3612	4657	4213	1170	2581	3405
25	IHT 225	MH 2704	2737	278	3750	4404	2022	3017	4009	3441	1454	3898	4011	3394	741	2445	3040
26	IHT 226	AHB 1200 (Check)	2240	343	2312	3317	4356	2463	4052	3300	1806	3078	2948	3620	852	2317	2754
27	IHT 227	MH 2705	3130	333	3914	5046	2028	3485	4414	3777	1574	3582	4307	3058	528	2255	2955
28	IHT 228	MH 2706	2185	620	3244	3977	3406	3608	4339	3715	1472	3000	3129	3778	1185	2515	2779
29	IHT 229	MH 2707	1701	602	2604	3837	2239	2302	4010	2998	1704	3022	2588	3025	243	2234	2515
30	IHT 230	MH 2708	1658	458	1509	3100	1300	1856	-	1941	843	1802	3221	2037	104	2427	2066
31	IHT 231	JKBH 1326 (Check)	3193	773	3429	4228	4267	3550	4065	3908	1324	4389	4089	4289	867	2808	3380
		LOC. MEAN	2673	509	3089	3835	2935	2932	3740	3306	1518	3419	3667	3570	983	2317	2898
		C.D. (5%)	1489	161	872	1279	611	552	156	773	351	639	710	701	236	521	540
		C.D. (1%)	1981	215	1159	1701	813	734	209	1024	467	851	945	933	314	692	714
		C.V. (%)	34.1	19.4	17.3	20.4	12.8	11.5	2.6	17.8	14.2	11.4	11.8	12.0	14.7	13.8	14.5
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		PLOT SIZE (m ²)	7.20	7.20	6.00	6.00	6.00	5.40	5.40	-	7.20	6.00	6.00	7.20	5.40	7.20	-

Contd..

CHAPTER I: BREEDING

Table I.34: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JNS***	MTR	UP MEAN	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	1167	4450	4450	2111	2698	2405	2444	4376	3429	3383	12
2	IHT 202	MH 2683	1439	2311	2311	2296	2078	2187	2144	4647	3110	3406	9
3	IHT 203	MH 2684	1539	3333	3333	2790	2271	2531	2461	4396	4154	3395	10
4	IHT 204	MPMH 17 (Check)	822	2717	2717	2848	1950	2399	2551	4492	2749	3104	14
5	IHT 205	MH 2685	1450	4528	4528	2701	2276	2488	2294	4409	3704	3511	3
6	IHT 206	MH 2686	667	-	-	1280	433	856	2541	3137	1954	1909	30
7	IHT 207	MH 2687	517	1044	1044	1886	1978	1932	3564	3167	3362	2786	22
8	IHT 208	MH 2688	1389	4522	4522	2500	3065	2783	2428	3872	3875	3437	7
9	IHT 209	MH 2689	1139	4172	4172	2959	2877	2918	2583	4831	3842	3492	4
10	IHT 210	MH 2690	1328	2811	2811	2057	1702	1880	3028	3749	3287	2633	27
11	IHT 211	MH 2691	1039	3039	3039	2122	2113	2117	2406	3541	3223	2878	21
12	IHT 212	MH 2692	1344	3844	3844	2562	2557	2560	2333	4937	4036	3415	8
13	IHT 213	PB 1852 (Check)	1028	4356	4356	3228	2571	2900	2504	5317	3951	3757	1
14	IHT 214	MH 2693	1583	3806	3806	2636	1648	2142	2089	4763	4207	3558	2
15	IHT 215	MH 2694	944	2917	2917	2685	2226	2455	2477	4398	3057	2734	25
16	IHT 216	MH 2695	1128	2817	2817	2023	2485	2254	2578	3877	2740	2762	24
17	IHT 217	MH 2696	811	4028	4028	2908	1865	2387	2256	4972	3741	3089	15
18	IHT 218	MH 2697	50	-	-	1290	2394	1842	1922	3087	2391	1679	31
19	IHT 219	MH 2698	322	1911	1911	1984	2033	2009	2489	3170	1912	2173	28
20	IHT 220	MH 2699	1150	3928	3928	2519	2442	2480	2150	4051	3331	2908	20
21	IHT 221	MH 2700	994	2644	2644	2419	2188	2303	1783	4383	3171	2658	26
22	IHT 222	MH 2701	1689	2389	2389	2196	1596	1896	2050	4808	2675	3071	16
23	IHT 223	MH 2702	1583	2306	2306	2240	2530	2385	1996	4027	3167	2913	19
24	IHT 224	MH 2703	1922	4444	4444	2446	2328	2387	1750	4504	3486	3447	5
25	IHT 225	MH 2704	1167	2428	2428	2535	2109	2322	1883	4535	2821	3045	17
26	IHT 226	AHB 1200 (Check)	906	2644	2644	2221	2494	2358	1930	4293	2936	2924	18
27	IHT 227	MH 2705	972	3528	3528	3048	2981	3015	3361	4902	3616	3444	6
28	IHT 228	MH 2706	1528	4239	4239	2851	1840	2345	1911	4979	3179	3217	13
29	IHT 229	MH 2707	1594	2950	2950	2759	1448	2103	2072	4817	2782	2775	23
30	IHT 230	MH 2708	589	3483	3483	1549	1440	1494	1794	3633	1817	2121	29
31	IHT 231	JKBH 1326 (Check)	1556	3444	3444	2749	1873	2311	1861	5049	2727	3384	11
		LOC. MEAN	1141	3277	3277	2400	2145	2272	2311	4294	3175	3039	
		C.D. (5%)	407	796	796	125	648	802	168	332	710	345	
		C.D. (1%)	541	1059	1059	167	862	1080	223	441	944	454	
		C.V. (%)	21.8	14.8	14.8	3.2	18.5	17.3	4.4	4.7	13.7	15.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	6.00	6.00	-	5.40	6.00	-	6.00	6.00	9.00	-	

***TEST LOCATION REJECTED DUE TO LOW AVERAGE YIELD (509, 983 & 1141 kg/ha), THAN THE STATE AVERAGE YIELD (970, 1386 & 2008 kg/ha) TAKEN OVER 10 YEARS

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): MDR 34.1%

CHAPTER I: BREEDING

Table I.35: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TBJ	DAS	RAJ	KTR	TLJ	AND	JMR	SKN	DNR	GUJ
									MEAN							MEAN
1	IHT 201	MH 2682	5185	3028	7611	11011	8994	8615	7408	2593	8278	12203	8509	5802	8380	7628
2	IHT 202	MH 2683	3801	3134	7167	12831	9283	9702	7653	2824	8611	14014	8852	4877	9259	8073
3	IHT 203	MH 2684	3611	2546	6472	13637	6239	10238	7124	3935	6583	11473	8088	5802	7778	7277
4	IHT 204	MPMH 17 (Check)	3565	2477	5778	10133	7606	10452	6668	3241	4889	12224	6657	4630	6528	6361
5	IHT 205	MH 2685	5417	2079	10889	13661	7822	11190	8510	2176	9722	13908	9361	6481	8981	8438
6	IHT 206	MH 2686	3889	2764	5056	11347	1611	-	4933	2870	3722	-	5144	741	5370	3569
7	IHT 207	MH 2687	4120	2769	6389	10250	11300	-	6966	3148	5778	10190	7954	3519	8148	6456
8	IHT 208	MH 2688	3935	2884	7944	12897	7522	9498	7447	2963	6333	11283	6991	3025	8333	6488
9	IHT 209	MH 2689	5833	3009	7889	11277	9944	10047	8000	3657	7389	11618	7361	5185	9398	7435
10	IHT 210	MH 2690	4028	2602	7500	11278	10428	7846	7280	2917	6028	12614	6704	3395	7222	6480
11	IHT 211	MH 2691	5463	2384	6583	11747	8739	8844	7294	2963	6667	10307	6583	4136	8102	6460
12	IHT 212	MH 2692	5093	3296	6417	10022	12144	8589	7594	3519	6833	11152	6148	3704	8426	6630
13	IHT 213	PB 1852 (Check)	6620	4606	9944	17936	14200	9396	10451	3056	10694	13864	9921	7963	7037	8756
14	IHT 214	MH 2693	4722	4028	6944	10810	12744	10914	8360	2315	6789	14089	7926	4877	9028	7504
15	IHT 215	MH 2694	5093	2606	4556	11142	8006	9014	6736	2269	6417	10583	7120	2901	7037	6055
16	IHT 216	MH 2695	4352	2792	5194	9300	8650	8558	6474	3056	5344	10684	6398	4321	7454	6210
17	IHT 217	MH 2696	3565	2829	6028	12011	7639	11329	7233	2824	6639	12289	7329	5679	8657	7236
18	IHT 218	MH 2697	4213	3829	3000	6211	1539	-	3758	926	-	-	4648	494	5833	2975
19	IHT 219	MH 2698	2639	3060	5806	7094	3867	-	4493	1713	-	-	6426	741	4375	3314
20	IHT 220	MH 2699	5093	3185	6083	10031	10167	8536	7182	2083	5500	10822	7167	2716	7593	5980
21	IHT 221	MH 2700	5926	3616	4889	8422	8806	10014	6945	2222	7278	12728	7352	4012	7963	6926
22	IHT 222	MH 2701	6574	4125	8167	10682	7006	10495	7841	2917	6250	11636	8204	3951	8009	6828
23	IHT 223	MH 2702	4398	3000	7583	11814	6961	12134	7648	2778	8333	11206	8231	3457	7176	6863
24	IHT 224	MH 2703	5139	3769	7028	11008	8244	9811	7500	3519	6056	10521	8106	4815	7917	6822
25	IHT 225	MH 2704	5255	3491	7111	12583	7039	11805	7881	2778	6083	11710	7176	3086	8657	6582
26	IHT 226	AHB 1200 (Check)	3611	4912	7083	8153	9806	9088	7109	3380	4444	10429	7255	2222	7176	5818
27	IHT 227	MH 2705	5972	3690	9528	12822	10167	12246	9071	2870	6194	13650	6583	3148	8565	6835
28	IHT 228	MH 2706	3843	3495	6222	10447	8133	10916	7176	2500	6250	12303	7306	2840	8056	6542
29	IHT 229	MH 2707	3194	3463	5444	8814	4406	7751	5512	3056	5056	7891	6741	494	8241	5246
30	IHT 230	MH 2708	3194	3500	2611	11872	4483	-	5132	1435	3694	6022	4722	432	7361	3945
31	IHT 231	JKBH 1326 (Check)	4954	2519	5167	10750	9639	9942	7162	2407	7833	10908	8618	3457	8704	6988
		LOC. MEAN	4590	3209	6583	11032	8166	9883	7244	2739	6541	11512	7277	3642	7767	6579
		C.D. (5%)	1547	972	1504	4673	1361	669	1947	739	798	1470	1615	1055	2645	1132
		C.D. (1%)	2058	1292	2001	6214	1810	892	2573	983	1062	1958	2148	1403	3518	1496
		C.V. (%)	20.6	18.5	14.0	25.9	10.2	4.1	23.2	16.5	7.5	7.8	13.6	17.7	20.9	13.8
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		PLOT SIZE (m ²)	7.20	7.20	6.00	6.00	6.00	5.40	-	7.20	6.00	6.00	7.20	5.40	7.20	-

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CHAPTER I: BREEDING

Table I.35: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP MEAN	BWL	HSR	HAR MEAN	GLR	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	5167	20556	12861	6080	9150	7615	8889	15061	8617	8
2	IHT 202	MH 2683	5333	19956	12644	6790	7108	6949	10833	17321	8983	3
3	IHT 203	MH 2684	5000	11294	8147	6235	7087	6661	7778	14922	7707	15
4	IHT 204	MPMH 17 (Check)	4056	23311	13683	4815	6282	5548	10000	9062	7539	17
5	IHT 205	MH 2685	7472	19283	13378	7346	8695	8020	10833	20258	9754	2
6	IHT 206	MH 2686	2683	-	2683	4753	3000	3877	6667	11569	4746	30
7	IHT 207	MH 2687	4239	8256	6247	4568	5984	5276	12778	17051	7438	20
8	IHT 208	MH 2688	5500	18611	12056	6296	7711	7004	10000	16298	8224	10
9	IHT 209	MH 2689	4111	17867	10989	6975	8856	7915	11111	14663	8677	6
10	IHT 210	MH 2690	4611	14944	9778	6111	5995	6053	8333	12249	7489	18
11	IHT 211	MH 2691	4556	14111	9333	4012	6241	5126	6667	13070	7288	24
12	IHT 212	MH 2692	5667	13944	9806	4753	5540	5147	6944	12264	7470	19
13	IHT 213	PB 1852 (Check)	6222	22222	14222	6914	6922	6918	10556	20543	10479	1
14	IHT 214	MH 2693	6333	15511	10922	7160	5737	6449	10833	17068	8768	5
15	IHT 215	MH 2694	4500	15356	9928	5556	6659	6107	9167	13250	7291	23
16	IHT 216	MH 2695	3611	15144	9378	3951	5672	4811	9722	9906	6895	25
17	IHT 217	MH 2696	5056	16878	10967	7346	5785	6565	6389	15401	7982	12
18	IHT 218	MH 2697	261	-	261	3765	6797	5281	5278	11714	4179	31
19	IHT 219	MH 2698	3944	9556	6750	3827	10500	7164	5833	13300	5512	28
20	IHT 220	MH 2699	7478	15911	11694	4630	6708	5669	6278	13373	7408	21
21	IHT 221	MH 2700	4611	13333	8972	7222	5495	6359	6000	12095	7332	22
22	IHT 222	MH 2701	8667	19222	13944	6605	5584	6095	11833	19878	8878	4
23	IHT 223	MH 2702	5000	17944	11472	4938	6896	5917	11389	18702	8441	9
24	IHT 224	MH 2703	6444	15956	11200	4506	6622	5564	6111	15247	7823	13
25	IHT 225	MH 2704	5833	17833	11833	4938	5679	5309	7500	11307	7770	14
26	IHT 226	AHB 1200 (Check)	4722	10278	7500	5679	7408	6544	5278	11283	6789	26
27	IHT 227	MH 2705	5556	16572	11064	7160	5429	6295	9444	16175	8654	7
28	IHT 228	MH 2706	8389	14522	11456	5988	5635	5811	8889	11386	7618	16
29	IHT 229	MH 2707	6333	8111	7222	6481	4149	5315	7500	9779	5939	27
30	IHT 230	MH 2708	4611	11778	8194	3827	4772	4299	5278	8005	5153	29
31	IHT 231	JKBH 1326 (Check)	10000	14811	12406	5185	5536	5360	9167	15220	8045	11
		LOC. MEAN	5354	15623	10488	5626	6440	6033	8493	14110	7699	
		C.D. (5%)	1659	3222	2281	1349	1686	5323	1103	2175	929	
		C.D. (1%)	2206	4289	3071	1794	2242	7181	1466	2893	1223	
		C.V. (%)	19.0	12.6	17.0	14.7	16.0	24.4	8.0	9.4	18.1	
		F (Prob)	0.000	0.000	0.004	0.000	0.000	0.173	0.000	0.000	0.000	
		PLOT SIZE (m ²)	6.00	6.00	-	5.40	6.00	-	6.00	9.00	-	

CHAPTER I: BREEDING

Table I.36: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR*	JPR	JPR2*	TBJ	TJR	DAS*	RAJ MEAN	KTR	TLJ	AND	JMR	SKN*	DNR	GUJ MEAN
1	IHT 201	MH 2682	54	56	49	57	48	52	58	51	49	49	54	49	52	59	52
2	IHT 202	MH 2683	58	56	53	57	50	52	62	53	43	51	57	50	57	57	52
3	IHT 203	MH 2684	52	55	47	56	46	50	57	49	45	47	48	47	53	56	48
4	IHT 204	MPMH 17 (Check)	50	49	41	51	47	47	51	46	45	47	46	42	45	46	45
5	IHT 205	MH 2685	59	57	49	58	51	52	60	53	54	49	54	50	58	60	53
6	IHT 206	MH 2686	55	53	46	56	54	54	-	52	48	49	-	49	54	53	50
7	IHT 207	MH 2687	50	55	42	55	52	52	-	49	48	47	47	44	50	55	48
8	IHT 208	MH 2688	50	54	42	51	47	50	59	47	49	47	48	43	51	52	48
9	IHT 209	MH 2689	53	57	47	55	50	52	56	51	52	46	50	46	55	55	50
10	IHT 210	MH 2690	48	49	43	50	45	47	45	46	45	46	45	42	47	49	45
11	IHT 211	MH 2691	52	54	43	53	48	47	43	48	49	47	46	44	54	47	46
12	IHT 212	MH 2692	51	54	44	56	49	50	53	49	52	47	50	45	52	48	48
13	IHT 213	PB 1852 (Check)	55	57	44	55	52	49	58	50	54	47	53	50	55	55	52
14	IHT 214	MH 2693	54	55	55	55	49	49	57	52	55	46	53	47	54	56	51
15	IHT 215	MH 2694	50	51	51	55	46	50	60	49	50	46	51	42	50	50	48
16	IHT 216	MH 2695	47	48	44	55	47	50	45	47	51	45	45	41	45	46	46
17	IHT 217	MH 2696	55	51	46	57	51	51	58	51	48	46	52	47	50	55	50
18	IHT 218	MH 2697	53	51	48	57	52	50	-	51	50	-	-	48	54	55	51
19	IHT 219	MH 2698	52	50	46	57	47	48	-	48	50	-	-	42	47	51	48
20	IHT 220	MH 2699	48	47	40	54	46	47	49	45	55	47	47	41	50	47	47
21	IHT 221	MH 2700	48	47	39	53	47	48	50	45	49	47	47	41	49	48	47
22	IHT 222	MH 2701	59	57	55	57	56	52	65	56	51	50	59	53	59	60	55
23	IHT 223	MH 2702	56	58	51	55	50	52	61	52	49	48	56	48	55	53	51
24	IHT 224	MH 2703	53	50	50	53	51	50	58	51	50	47	49	45	57	54	49
25	IHT 225	MH 2704	57	55	54	58	56	54	59	55	55	52	56	49	55	57	54
26	IHT 226	AHB 1200 (Check)	49	53	40	53	47	51	45	47	49	48	45	43	52	46	46
27	IHT 227	MH 2705	55	54	54	58	56	53	61	55	51	52	58	50	65	56	53
28	IHT 228	MH 2706	53	57	47	55	48	51	58	50	46	48	50	45	53	50	48
29	IHT 229	MH 2707	53	55	46	53	48	51	58	50	49	47	47	44	54	45	46
30	IHT 230	MH 2708	53	57	48	55	47	52	-	50	51	48	53	48	61	51	50
31	IHT 231	JKBH 1326 (Check)	53	53	53	57	51	51	57	52	55	49	54	49	65	47	51
LOC. MEAN			53	53	47	55	50	50	56	50	50	48	51	46	54	52	49
C.D. (5%)			3.0	3.0	1.0	4.0	1.0	1.0	2.0	3.0	1.0	1.0	2.0	2.0	6.0	6.0	3.0
C.D. (1%)			4.0	4.0	1.0	5.0	1.0	2.0	3.0	4.0	1.0	1.0	2.0	2.0	8.0	8.0	4.0
C.V. (%)			3.2	3.5	1.4	4.2	0.8	1.4	2.1	4.4	1.0	1.4	2.1	2.4	7.0	7.3	5.3
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*LOCATION REJECTED DUE TO DELAYED FLOWERING IN CHECKS

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CHAPTER I: BREEDING

Table I.36: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	MTR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	56	52	56	54	48	55	54	52	7
2	IHT 202	MH 2683	57	51	55	53	46	57	55	53	6
3	IHT 203	MH 2684	55	50	53	51	42	58	51	50	18
4	IHT 204	MPMH 17 (Check)	53	49	49	49	41	50	46	46	30
5	IHT 205	MH 2685	58	53	58	55	47	59	57	54	3
6	IHT 206	MH 2686	-	51	53	52	46	50	50	51	13
7	IHT 207	MH 2687	60	51	54	52	44	50	50	50	20
8	IHT 208	MH 2688	54	50	53	51	44	53	49	49	23
9	IHT 209	MH 2689	52	50	50	50	44	52	50	50	17
10	IHT 210	MH 2690	49	46	45	46	41	51	46	46	31
11	IHT 211	MH 2691	51	46	44	45	43	51	49	47	28
12	IHT 212	MH 2692	53	50	46	48	43	50	49	48	24
13	IHT 213	PB 1852 (Check)	52	47	56	52	43	56	51	51	12
14	IHT 214	MH 2693	56	49	56	53	46	58	51	52	8
15	IHT 215	MH 2694	54	50	49	49	44	49	48	49	22
16	IHT 216	MH 2695	50	48	49	49	42	58	48	47	26
17	IHT 217	MH 2696	53	49	53	51	46	53	51	50	14
18	IHT 218	MH 2697	-	51	57	54	46	59	51	52	9
19	IHT 219	MH 2698	57	53	56	54	44	50	51	50	19
20	IHT 220	MH 2699	50	48	49	49	42	49	47	47	29
21	IHT 221	MH 2700	50	49	51	50	41	60	48	48	25
22	IHT 222	MH 2701	58	56	63	60	49	59	62	56	1
23	IHT 223	MH 2702	60	51	58	54	49	59	56	53	5
24	IHT 224	MH 2703	54	51	51	51	44	59	49	50	15
25	IHT 225	MH 2704	54	54	59	57	46	53	54	54	4
26	IHT 226	AHB 1200 (Check)	52	49	50	50	41	50	48	47	27
27	IHT 227	MH 2705	57	52	59	56	46	59	57	54	2
28	IHT 228	MH 2706	54	50	52	51	46	60	51	50	16
29	IHT 229	MH 2707	56	49	56	52	44	58	51	50	21
30	IHT 230	MH 2708	58	49	55	52	50	58	53	51	10
31	IHT 231	JKBH 1326 (Check)	54	49	53	51	46	51	51	51	11
LOC. MEAN			54	50	53	52	45	55	51	50	
C.D. (5%)			2.0	1.0	4.0	3.0	1.0	1.0	2.0	2.0	
C.D. (1%)			3.0	1.0	5.0	5.0	1.0	2.0	2.0	2.0	
C.V. (%)			2.6	1.2	4.2	3.3	1.5	1.6	2.0	4.8	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.37: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TBJ	TJR	DAS	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	DNR	GUJ MEAN
1	IHT 201	MH 2682	81	87	79	85	77	91	75	82	78	81	84	78	83	81	81
2	IHT 202	MH 2683	85	86	85	83	77	91	86	85	78	82	86	80	89	81	83
3	IHT 203	MH 2684	79	83	76	84	76	88	77	81	76	81	82	77	84	80	80
4	IHT 204	MPMH 17 (Check)	79	79	72	84	76	88	76	79	74	77	80	72	77	71	75
5	IHT 205	MH 2685	87	87	81	85	79	86	79	83	79	80	84	80	89	81	82
6	IHT 206	MH 2686	84	84	74	83	81	94	-	83	79	80	-	79	86	78	80
7	IHT 207	MH 2687	79	85	71	82	80	88	-	81	76	78	83	75	83	76	79
8	IHT 208	MH 2688	76	85	71	83	78	88	80	80	75	77	80	73	83	73	77
9	IHT 209	MH 2689	79	86	77	83	78	92	78	82	79	79	83	76	87	76	80
10	IHT 210	MH 2690	77	78	73	83	74	89	72	78	81	78	79	72	80	72	77
11	IHT 211	MH 2691	81	84	72	82	77	91	72	80	79	78	81	74	86	72	78
12	IHT 212	MH 2692	80	84	73	85	78	91	75	81	77	77	80	75	84	74	78
13	IHT 213	PB 1852 (Check)	84	87	73	83	79	89	80	82	78	81	83	81	87	75	81
14	IHT 214	MH 2693	83	85	76	84	77	88	76	81	76	82	82	77	86	76	80
15	IHT 215	MH 2694	79	81	82	84	74	92	88	83	74	78	84	72	83	75	78
16	IHT 216	MH 2695	76	79	73	83	74	88	72	78	79	79	81	71	78	73	77
17	IHT 217	MH 2696	83	81	76	84	79	88	77	81	79	79	83	77	83	79	80
18	IHT 218	MH 2697	82	81	82	84	81	86	-	83	77	-	-	78	87	76	79
19	IHT 219	MH 2698	81	81	78	84	80	87	-	82	76	-	-	73	79	74	75
20	IHT 220	MH 2699	78	78	69	84	75	89	78	79	81	79	81	71	81	74	78
21	IHT 221	MH 2700	77	78	68	84	75	87	79	78	79	78	81	72	82	73	78
22	IHT 222	MH 2701	86	87	90	85	81	93	90	87	77	81	83	84	90	78	82
23	IHT 223	MH 2702	85	88	82	85	81	91	88	86	76	78	82	79	86	77	80
24	IHT 224	MH 2703	82	79	79	83	78	86	78	81	78	79	80	75	89	75	79
25	IHT 225	MH 2704	85	85	84	85	81	93	84	85	76	82	82	80	85	79	81
26	IHT 226	AHB 1200 (Check)	79	83	70	83	75	85	72	78	79	80	81	74	84	72	78
27	IHT 227	MH 2705	84	84	87	84	80	88	89	85	80	82	84	80	93	78	83
28	IHT 228	MH 2706	82	84	75	84	77	88	79	81	78	78	83	75	85	75	79
29	IHT 229	MH 2707	83	85	74	85	76	87	80	81	76	81	80	75	89	74	79
30	IHT 230	MH 2708	82	87	78	84	80	86	-	83	80	81	80	79	91	76	81
31	IHT 231	JKBH 1326 (Check)	82	83	84	84	78	91	79	83	81	82	83	80	89	74	81
		LOC. MEAN	81	83	77	84	78	89	79	82	78	80	82	76	85	76	79
		C.D. (5%)	3.0	3.0	1.0	2.0	1.0	2.0	1.0	3.0	1.0	1.0	2.0	1.0	6.0	5.0	2.0
		C.D. (1%)	4.0	4.0	1.0	2.0	1.0	2.0	2.0	4.0	1.0	1.0	2.0	2.0	8.0	6.0	3.0
		C.V. (%)	2.5	2.2	0.9	1.3	0.6	1.1	1.0	3.4	0.9	0.7	1.4	0.9	4.4	3.9	2.6
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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CHAPTER I: BREEDING

Table I.37: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	MTR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	81	80	81	80	87	98	85	83	9
2	IHT 202	MH 2683	82	81	86	84	85	100	85	85	3
3	IHT 203	MH 2684	80	78	84	81	82	100	81	82	17
4	IHT 204	MPMH 17 (Check)	78	75	81	78	81	97	75	79	30
5	IHT 205	MH 2685	83	81	83	82	86	101	87	84	5
6	IHT 206	MH 2686	-	81	83	82	85	95	83	83	8
7	IHT 207	MH 2687	85	78	82	80	83	91	80	81	22
8	IHT 208	MH 2688	79	77	81	79	85	91	79	80	25
9	IHT 209	MH 2689	77	78	84	81	85	97	80	82	16
10	IHT 210	MH 2690	74	77	79	78	81	100	76	79	29
11	IHT 211	MH 2691	76	78	78	78	82	97	79	80	24
12	IHT 212	MH 2692	78	75	81	78	83	99	79	80	23
13	IHT 213	PB 1852 (Check)	77	80	80	80	83	99	78	82	12
14	IHT 214	MH 2693	81	77	82	80	86	100	81	82	13
15	IHT 215	MH 2694	79	77	81	79	84	97	79	81	19
16	IHT 216	MH 2695	75	77	81	79	82	102	78	79	28
17	IHT 217	MH 2696	78	81	83	82	85	98	81	82	15
18	IHT 218	MH 2697	-	78	84	81	85	101	79	83	11
19	IHT 219	MH 2698	82	79	83	81	83	99	81	81	21
20	IHT 220	MH 2699	75	77	86	81	81	94	77	79	27
21	IHT 221	MH 2700	75	79	85	82	81	103	77	80	26
22	IHT 222	MH 2701	83	81	86	84	88	100	92	86	1
23	IHT 223	MH 2702	85	81	84	82	88	101	87	84	4
24	IHT 224	MH 2703	79	80	82	81	84	100	79	81	20
25	IHT 225	MH 2704	79	79	83	81	86	98	83	84	6
26	IHT 226	AHB 1200 (Check)	77	77	77	77	81	93	78	79	28
27	IHT 227	MH 2705	82	82	85	83	85	99	87	85	2
28	IHT 228	MH 2706	79	80	83	81	85	104	81	82	14
29	IHT 229	MH 2707	81	78	82	80	83	101	81	82	18
30	IHT 230	MH 2708	83	76	84	80	89	100	83	83	7
31	IHT 231	JKBH 1326 (Check)	79	77	83	80	85	97	81	83	10
		LOC. MEAN	79	78	82	80	84	98	81	82	
		C.D. (5%)	2.0	1.0	2.0	4.0	1.0	2.0	2.0	2.0	
		C.D. (1%)	3.0	1.0	3.0	5.0	2.0	2.0	2.0	2.0	
		C.V. (%)	1.8	0.7	1.6	2.5	0.9	1.1	1.3	2.9	
		F (Prob)	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.38: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TBJ	TJR	DAS	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	DNR	GUJ MEAN
1	IHT 201	MH 2682	213	163	208	237	231	208	228	213	196	199	195	212	171	178	192
2	IHT 202	MH 2683	200	157	187	267	232	197	220	208	182	211	199	214	168	182	193
3	IHT 203	MH 2684	195	162	193	232	220	203	240	206	195	202	192	207	164	172	188
4	IHT 204	MPMH 17 (Check)	208	142	184	202	190	202	228	194	168	193	180	186	164	155	174
5	IHT 205	MH 2685	227	147	235	252	237	200	235	219	189	204	200	232	175	193	199
6	IHT 206	MH 2686	200	145	211	217	172	192	-	189	199	187	-	210	150	172	184
7	IHT 207	MH 2687	217	143	222	227	191	193	-	199	158	199	193	213	169	170	184
8	IHT 208	MH 2688	195	160	208	217	177	182	228	195	144	185	190	190	148	167	171
9	IHT 209	MH 2689	230	153	229	250	231	187	233	216	165	199	206	204	181	187	190
10	IHT 210	MH 2690	213	140	191	218	219	173	218	196	165	182	189	187	149	162	172
11	IHT 211	MH 2691	207	148	212	227	211	175	237	202	150	190	192	192	154	150	171
12	IHT 212	MH 2692	222	157	195	245	217	197	237	210	156	204	198	206	153	167	181
13	IHT 213	PB 1852 (Check)	237	163	208	260	228	193	235	218	182	212	207	201	208	185	199
14	IHT 214	MH 2693	207	152	181	237	228	203	243	207	154	202	194	197	177	178	184
15	IHT 215	MH 2694	222	163	188	228	216	200	233	207	150	198	191	212	169	158	180
16	IHT 216	MH 2695	210	157	183	230	204	192	232	201	181	196	189	193	163	165	181
17	IHT 217	MH 2696	215	164	209	263	220	190	235	214	154	209	197	202	190	188	190
18	IHT 218	MH 2697	197	152	192	215	200	198	-	192	180	-	-	201	157	178	179
19	IHT 219	MH 2698	203	163	205	227	210	200	-	201	173	-	-	197	161	168	175
20	IHT 220	MH 2699	217	158	187	228	190	172	218	196	157	193	191	197	145	172	176
21	IHT 221	MH 2700	233	158	198	225	195	200	230	206	173	197	192	197	164	183	184
22	IHT 222	MH 2701	213	132	223	245	201	200	240	208	164	202	201	215	165	195	190
23	IHT 223	MH 2702	210	165	201	235	181	203	267	209	179	203	199	207	161	165	186
24	IHT 224	MH 2703	218	157	215	233	198	195	228	206	168	194	185	192	166	165	178
25	IHT 225	MH 2704	213	157	231	250	207	207	247	216	165	201	205	217	161	188	190
26	IHT 226	AHB 1200 (Check)	195	135	172	222	171	185	222	186	165	191	171	185	148	152	169
27	IHT 227	MH 2705	233	128	228	260	206	207	280	220	188	214	213	223	161	197	199
28	IHT 228	MH 2706	208	158	194	230	213	203	235	206	164	207	195	207	180	172	187
29	IHT 229	MH 2707	187	148	190	215	200	195	220	194	170	194	187	189	127	158	171
30	IHT 230	MH 2708	205	150	181	217	186	202	-	190	152	173	176	178	143	180	167
31	IHT 231	JKBH 1326 (Check)	223	171	203	245	212	227	228	216	179	205	198	221	171	165	190
		LOC. MEAN	212	153	202	234	206	196	235	205	170	198	194	203	163	173	183
		C.D. (5%)	24.0	14.0	9.0	23.0	11.0	9.0	11.0	13.0	4.0	9.0	7.0	20.0	22.0	20.0	11.0
		C.D. (1%)	32.0	19.0	12.0	30.0	15.0	12.0	14.0	17.0	6.0	12.0	10.0	26.0	30.0	26.0	14.0
		C.V. (%)	7.0	5.6	2.6	5.9	3.3	2.9	2.7	6.1	1.6	2.8	2.3	6.0	8.4	7.0	5.1
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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CHAPTER I: BREEDING

Table I.38: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP MEAN	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	170	244	207	157	189	173	215	160	202	199	10
2	IHT 202	MH 2683	182	249	215	160	177	169	212	176	211	199	9
3	IHT 203	MH 2684	180	223	201	167	167	167	215	162	198	194	13
4	IHT 204	MPMH 17 (Check)	166	223	194	151	163	157	179	167	175	181	28
5	IHT 205	MH 2685	206	246	226	156	183	170	215	200	212	207	3
6	IHT 206	MH 2686	172	-	172	157	185	171	189	160	192	183	26
7	IHT 207	MH 2687	178	224	201	165	174	170	216	175	202	191	19
8	IHT 208	MH 2688	165	216	191	159	173	166	216	150	195	183	25
9	IHT 209	MH 2689	185	231	208	149	186	168	216	173	212	200	8
10	IHT 210	MH 2690	159	213	186	160	172	166	195	157	188	183	27
11	IHT 211	MH 2691	152	210	181	158	173	166	188	155	191	183	24
12	IHT 212	MH 2692	177	228	203	167	177	172	193	160	204	193	16
13	IHT 213	PB 1852 (Check)	200	248	224	182	201	191	217	192	226	209	2
14	IHT 214	MH 2693	181	234	208	165	176	170	207	160	208	194	14
15	IHT 215	MH 2694	176	242	209	157	174	166	217	162	187	192	17
16	IHT 216	MH 2695	166	218	192	154	177	166	215	150	195	189	20
17	IHT 217	MH 2696	182	246	214	169	186	177	196	171	225	200	7
18	IHT 218	MH 2697	178	-	178	145	175	160	213	185	183	184	22
19	IHT 219	MH 2698	166	201	184	145	165	155	209	170	188	185	21
20	IHT 220	MH 2699	167	223	195	142	176	159	191	173	190	184	23
21	IHT 221	MH 2700	186	223	205	164	182	173	191	181	190	193	15
22	IHT 222	MH 2701	200	246	223	158	168	163	223	209	210	200	6
23	IHT 223	MH 2702	176	233	205	155	190	172	226	183	213	198	11
24	IHT 224	MH 2703	174	227	200	158	189	174	217	167	190	192	18
25	IHT 225	MH 2704	197	231	214	151	172	162	211	204	215	202	4
26	IHT 226	AHB 1200 (Check)	154	200	177	136	173	155	211	177	175	177	30
27	IHT 227	MH 2705	202	260	231	175	208	192	212	199	220	211	1
28	IHT 228	MH 2706	178	235	206	170	188	179	216	178	210	197	12
29	IHT 229	MH 2707	157	216	187	161	168	165	207	147	180	181	29
30	IHT 230	MH 2708	175	217	196	143	151	147	177	148	196	176	31
31	IHT 231	JKBH 1326 (Check)	180	241	211	173	198	186	208	163	207	201	5
		LOC. MEAN	177	229	203	158	179	168	207	171	200	193	
		C.D. (5%)	21.0	14.0	14.0	17.0	19.0	14.0	2.0	11.0	9.0	6.0	
		C.D. (1%)	28.0	19.0	19.0	23.0	25.0	19.0	3.0	15.0	12.0	9.0	
		C.V. (%)	7.2	3.8	3.4	6.6	6.6	4.2	0.6	3.9	2.7	5.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.39: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TJR	RAJ	KTR	TLJ	AND	JMR	SKN	DNR**	GUJ MEAN
1	IHT 201	MH 2682	1.3	1.1	2.0	3.4	2.0	2.0	2.9	2.3	2.5	2.4	1.1	1.0	2.3
2	IHT 202	MH 2683	1.2	1.2	1.0	2.9	1.7	1.6	2.7	2.7	2.5	2.0	1.3	1.0	2.2
3	IHT 203	MH 2684	1.3	1.3	1.1	2.8	2.0	1.7	3.1	2.7	2.8	1.3	1.2	1.0	2.2
4	IHT 204	MPMH 17 (Check)	1.7	1.3	2.6	3.4	2.0	2.2	2.7	3.7	3.2	3.4	1.5	2.5	2.9
5	IHT 205	MH 2685	1.3	1.1	1.1	3.6	2.0	1.8	2.7	2.0	3.1	1.3	1.2	1.5	2.1
6	IHT 206	MH 2686	1.3	1.1	1.1	4.5	1.3	1.9	2.9	2.7	-	2.2	1.1	1.0	2.2
7	IHT 207	MH 2687	1.4	1.2	1.9	3.0	1.0	1.7	3.1	2.0	3.2	1.4	1.2	1.0	2.2
8	IHT 208	MH 2688	1.4	1.1	2.1	3.7	1.0	1.8	3.1	3.0	3.3	1.7	1.1	1.5	2.4
9	IHT 209	MH 2689	1.4	1.1	1.1	3.5	1.0	1.6	3.1	3.0	2.5	2.0	1.2	1.0	2.4
10	IHT 210	MH 2690	1.4	1.2	1.1	3.3	1.0	1.6	3.2	2.0	2.9	1.8	1.2	1.8	2.2
11	IHT 211	MH 2691	1.4	1.2	1.0	2.9	1.3	1.6	3.0	2.7	2.3	1.5	1.1	3.3	2.1
12	IHT 212	MH 2692	1.3	1.2	2.9	3.4	1.3	2.0	3.2	2.7	2.9	1.6	1.2	1.8	2.3
13	IHT 213	PB 1852 (Check)	1.4	1.1	1.1	3.7	1.3	1.7	3.2	3.0	3.5	1.1	1.3	1.8	2.4
14	IHT 214	MH 2693	1.5	1.1	1.2	4.0	1.7	1.9	3.1	2.3	2.7	1.7	1.3	1.5	2.2
15	IHT 215	MH 2694	1.4	1.1	1.7	3.7	1.0	1.8	3.3	3.7	2.8	1.9	1.3	1.5	2.6
16	IHT 216	MH 2695	1.4	1.2	1.0	3.0	1.7	1.6	2.9	2.0	2.5	1.3	1.2	1.7	2.0
17	IHT 217	MH 2696	1.3	1.2	1.1	3.1	1.0	1.5	3.0	2.0	2.7	1.3	1.1	1.3	2.0
18	IHT 218	MH 2697	1.3	1.2	1.1	3.7	2.0	1.8	2.9	-	-	3.7	1.1	2.0	2.6
19	IHT 219	MH 2698	1.3	1.2	2.6	3.8	1.0	2.0	3.0	-	-	2.8	1.0	1.0	2.3
20	IHT 220	MH 2699	1.4	1.3	1.1	3.5	1.0	1.7	3.0	2.7	2.7	1.8	1.1	2.3	2.3
21	IHT 221	MH 2700	1.4	1.2	1.1	3.8	1.0	1.7	2.8	2.0	2.3	1.8	1.2	1.5	2.0
22	IHT 222	MH 2701	1.3	1.1	2.2	3.6	2.0	2.0	3.3	2.0	2.8	2.1	1.1	1.3	2.2
23	IHT 223	MH 2702	1.3	1.1	1.9	3.7	2.0	2.0	2.9	2.0	2.7	1.7	1.1	1.7	2.1
24	IHT 224	MH 2703	1.3	1.1	1.1	3.7	1.0	1.6	2.9	2.0	3.1	1.5	1.1	1.8	2.1
25	IHT 225	MH 2704	1.4	1.1	2.0	3.2	1.7	1.9	2.9	2.3	2.3	1.9	1.3	1.5	2.1
26	IHT 226	AHB 1200 (Check)	1.3	1.2	1.0	3.1	1.3	1.6	3.2	2.0	3.3	1.5	1.1	1.3	2.2
27	IHT 227	MH 2705	1.3	1.1	1.1	2.9	1.7	1.6	2.9	2.3	2.9	1.5	1.0	1.2	2.1
28	IHT 228	MH 2706	1.4	1.2	1.1	3.1	1.0	1.6	2.7	2.0	2.4	1.5	1.3	1.3	2.0
29	IHT 229	MH 2707	1.2	1.0	1.1	3.9	1.0	1.6	2.9	2.0	2.5	1.7	1.1	1.5	2.0
30	IHT 230	MH 2708	1.3	1.2	1.1	4.1	1.0	1.7	2.7	2.0	2.7	1.6	1.0	1.3	2.0
31	IHT 231	JKBH 1326 (Check)	1.5	1.3	2.0	3.2	2.0	2.0	2.9	2.7	3.7	1.6	1.1	1.3	2.4
		LOC. MEAN	1.4	1.2	1.5	3.5	1.4	1.8	3.0	2.4	2.8	1.8	1.2	1.5	2.2
		C.D. (5%)	0.3	0.3	0.3	0.8	0.5	0.5	0.3	0.6	0.4	0.5	0.2	0.8	0.5
		C.D. (1%)	0.4	0.4	0.5	1.1	0.7	0.6	0.3	0.8	0.5	0.7	0.3	1.0	0.6
		C.V. (%)	13.0	13.9	14.1	15.0	23.1	18.7	5.2	15.9	7.9	17.3	12.3	30.2	16.3
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.306	0.000	0.000	0.000	0.000	0.000	0.000	0.025

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): DNR 30.2%

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CHAPTER I: BREEDING

Table I.39: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP	BWL	HSR	HAR	GLR	LDA	NDL	ZONE MEAN	RANK
					MEAN			MEAN					
1	IHT 201	MH 2682	1.9	1.1	1.5	1.2	2.3	1.8	2.0	2.3	2.7	2.0	12
2	IHT 202	MH 2683	1.4	1.2	1.3	1.1	2.8	1.9	2.0	2.9	2.7	1.9	21
3	IHT 203	MH 2684	1.3	1.1	1.2	1.4	2.2	1.8	2.0	2.7	2.7	1.9	23
4	IHT 204	MPMH 17 (Check)	2.1	1.2	1.7	1.6	2.9	2.2	2.2	2.6	2.3	2.4	1
5	IHT 205	MH 2685	2.1	1.2	1.7	1.2	2.2	1.7	2.2	2.2	2.7	2.0	17
6	IHT 206	MH 2686	1.0	-	1.0	1.2	3.5	2.4	2.0	3.0	2.7	2.1	7
7	IHT 207	MH 2687	2.2	1.9	2.1	1.2	2.3	1.8	2.5	2.8	2.7	2.1	11
8	IHT 208	MH 2688	2.0	1.4	1.7	1.1	2.7	1.9	2.4	3.7	2.7	2.2	3
9	IHT 209	MH 2689	2.3	1.1	1.7	1.1	2.5	1.8	2.1	2.8	2.7	2.0	13
10	IHT 210	MH 2690	1.5	1.3	1.4	1.6	2.6	2.1	2.3	3.2	2.7	2.0	14
11	IHT 211	MH 2691	1.9	1.1	1.5	1.1	2.0	1.6	1.7	2.3	2.7	1.8	30
12	IHT 212	MH 2692	2.1	1.3	1.7	1.4	2.7	2.1	1.7	2.8	2.7	2.1	4
13	IHT 213	PB 1852 (Check)	1.0	1.2	1.1	1.6	2.1	1.8	2.1	2.5	2.7	2.0	16
14	IHT 214	MH 2693	2.5	1.2	1.9	1.4	2.1	1.8	2.2	3.5	2.7	2.1	5
15	IHT 215	MH 2694	1.6	1.3	1.4	1.4	2.2	1.8	1.9	4.6	2.7	2.2	2
16	IHT 216	MH 2695	1.9	1.3	1.6	1.8	2.4	2.1	2.0	2.9	2.7	2.0	19
17	IHT 217	MH 2696	2.0	1.3	1.7	1.2	2.2	1.7	2.0	2.5	2.7	1.9	27
18	IHT 218	MH 2697	1.0	-	1.0	1.2	3.4	2.3	2.0	2.3	2.3	2.1	10
19	IHT 219	MH 2698	1.0	1.2	1.1	1.3	2.3	1.8	1.7	2.2	2.7	1.9	20
20	IHT 220	MH 2699	2.0	1.7	1.9	0.9	2.3	1.6	2.0	3.0	2.7	2.0	15
21	IHT 221	MH 2700	2.3	1.4	1.8	1.2	2.3	1.8	1.8	2.7	3.0	2.0	18
22	IHT 222	MH 2701	1.8	1.1	1.5	1.2	2.6	1.9	1.9	3.0	2.3	2.1	9
23	IHT 223	MH 2702	2.0	1.4	1.7	1.3	2.3	1.8	2.1	2.9	3.0	2.1	8
24	IHT 224	MH 2703	1.0	1.3	1.2	1.3	2.5	1.9	2.0	3.0	2.7	1.9	24
25	IHT 225	MH 2704	1.0	1.3	1.2	1.4	2.3	1.9	1.9	2.3	2.7	1.9	22
26	IHT 226	AHB 1200 (Check)	1.3	1.1	1.2	1.3	2.0	1.7	1.8	2.6	3.0	1.9	25
27	IHT 227	MH 2705	2.0	1.1	1.6	1.2	2.4	1.8	1.7	2.0	2.7	1.9	26
28	IHT 228	MH 2706	1.2	1.1	1.2	1.4	2.7	2.1	1.7	2.4	2.7	1.8	31
29	IHT 229	MH 2707	1.0	1.1	1.1	1.4	2.3	1.9	1.9	2.5	3.0	1.9	29
30	IHT 230	MH 2708	1.0	1.3	1.2	1.4	2.5	2.0	1.8	2.4	2.7	1.9	28
31	IHT 231	JKBH 1326 (Check)	1.8	1.2	1.5	1.2	2.5	1.9	1.9	2.4	2.7	2.1	6
		LOC. MEAN	1.6	1.3	1.5	1.3	2.5	1.9	2.0	2.7	2.7	2.0	
		C.D. (5%)	0.3	0.3	0.2	0.4	0.6	0.7	0.3	0.4	0.9	0.2	
		C.D. (1%)	0.4	0.4	0.3	0.5	0.8	0.9	0.4	0.5	1.2	0.3	
		C.V. (%)	12.1	15.9	12.3	17.8	15.8	21.7	10.3	8.1	20.4	16.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.137	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.40: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TBJ	TJR	DAS	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	DNR	GUJ MEAN
1	IHT 201	MH 2682	27	21	25	28	25	27	24	25	25	25	29	26	20	25	25
2	IHT 202	MH 2683	26	27	25	26	24	29	25	26	25	29	31	27	20	26	26
3	IHT 203	MH 2684	23	22	25	25	24	25	24	24	23	24	25	25	19	21	23
4	IHT 204	MPMH 17 (Check)	25	21	28	23	21	24	24	24	20	23	24	24	20	21	22
5	IHT 205	MH 2685	24	23	26	24	23	24	25	24	21	23	26	23	20	24	23
6	IHT 206	MH 2686	28	25	31	28	27	27	-	28	25	30	-	32	20	26	27
7	IHT 207	MH 2687	29	25	30	23	25	28	-	27	27	27	28	32	20	22	26
8	IHT 208	MH 2688	23	21	25	25	22	22	23	23	17	22	25	24	20	21	21
9	IHT 209	MH 2689	24	22	24	26	21	25	25	24	21	24	26	25	20	23	23
10	IHT 210	MH 2690	23	21	25	24	21	24	24	23	17	22	23	24	19	18	21
11	IHT 211	MH 2691	23	22	23	22	22	24	24	23	18	23	23	23	17	17	20
12	IHT 212	MH 2692	23	21	24	23	23	24	25	23	21	24	24	22	20	19	22
13	IHT 213	PB 1852 (Check)	23	22	23	25	22	28	26	24	19	22	26	22	21	23	22
14	IHT 214	MH 2693	24	24	22	26	24	24	21	23	18	21	25	22	19	23	22
15	IHT 215	MH 2694	26	20	22	24	23	25	24	23	20	26	27	27	21	20	23
16	IHT 216	MH 2695	24	21	21	23	21	26	24	23	23	20	24	24	19	20	22
17	IHT 217	MH 2696	25	26	22	24	22	26	31	25	22	24	28	25	20	24	24
18	IHT 218	MH 2697	25	26	21	28	24	24	-	25	26	-	-	26	21	22	24
19	IHT 219	MH 2698	26	24	29	27	25	26	-	26	24	-	-	28	22	27	25
20	IHT 220	MH 2699	24	22	25	22	21	26	25	24	19	22	25	23	19	18	21
21	IHT 221	MH 2700	24	20	24	25	19	23	24	23	19	20	25	23	19	22	21
22	IHT 222	MH 2701	27	23	31	27	24	23	27	26	28	26	32	27	20	25	26
23	IHT 223	MH 2702	25	22	26	26	22	24	28	25	24	26	28	25	21	25	25
24	IHT 224	MH 2703	23	22	24	25	22	25	26	24	20	24	24	24	20	19	22
25	IHT 225	MH 2704	25	24	27	25	22	26	26	25	20	24	26	25	21	25	23
26	IHT 226	AHB 1200 (Check)	25	21	25	25	21	22	24	23	21	22	27	26	19	21	23
27	IHT 227	MH 2705	25	24	24	24	22	24	30	25	24	24	26	27	20	24	24
28	IHT 228	MH 2706	24	21	29	27	25	26	26	26	24	24	24	26	20	22	23
29	IHT 229	MH 2707	26	25	25	25	22	26	25	25	20	25	27	27	19	23	23
30	IHT 230	MH 2708	25	23	25	26	21	24	-	24	18	22	23	25	19	20	21
31	IHT 231	JKBH 1326 (Check)	25	24	28	23	23	27	26	25	20	26	29	27	20	24	24
		LOC. MEAN	25	23	25	25	23	25	25	24	22	24	26	25	20	22	23
		C.D. (5%)	3.0	4.0	2.0	4.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0
		C.D. (1%)	4.0	5.0	3.0	5.0	2.0	3.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	6.0	2.0
		C.V. (%)	7.9	10.0	4.6	9.6	5.0	5.2	3.4	6.4	5.8	5.7	4.3	6.0	6.6	12.3	6.6
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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CHAPTER I: BREEDING

Table I.40: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP	BWL	HSR	HAR	GLR	LDA	NDL	ZONE	RANK
					MEAN			MEAN				MEAN	
1	IHT 201	MH 2682	27	28	28	26	24	25	25	25	26	25	7
2	IHT 202	MH 2683	28	34	31	29	32	30	25	26	30	27	3
3	IHT 203	MH 2684	26	27	27	27	24	26	25	25	23	24	16
4	IHT 204	MPMH 17 (Check)	23	25	24	27	23	25	25	27	23	24	19
5	IHT 205	MH 2685	25	27	26	23	23	23	24	28	28	24	14
6	IHT 206	MH 2686	30	-	30	35	34	34	25	30	29	28	1
7	IHT 207	MH 2687	29	33	31	29	29	29	25	31	30	27	2
8	IHT 208	MH 2688	26	27	26	25	24	24	25	24	25	23	23
9	IHT 209	MH 2689	26	26	26	27	26	26	24	20	25	24	17
10	IHT 210	MH 2690	22	23	22	27	22	25	23	23	27	23	28
11	IHT 211	MH 2691	22	23	22	25	23	24	24	22	24	22	30
12	IHT 212	MH 2692	23	23	23	24	24	24	23	12	26	23	29
13	IHT 213	PB 1852 (Check)	25	23	24	24	24	24	23	21	25	23	22
14	IHT 214	MH 2693	25	23	24	27	23	25	25	20	26	23	24
15	IHT 215	MH 2694	26	26	26	25	22	24	23	31	26	24	15
16	IHT 216	MH 2695	21	23	22	23	22	23	24	23	28	23	27
17	IHT 217	MH 2696	28	28	28	28	26	27	24	28	26	25	9
18	IHT 218	MH 2697	24	-	24	28	30	29	24	25	23	25	13
19	IHT 219	MH 2698	26	31	29	25	26	26	25	22	28	26	5
20	IHT 220	MH 2699	25	25	25	25	22	24	23	20	23	23	25
21	IHT 221	MH 2700	25	23	24	25	22	23	25	26	21	23	26
22	IHT 222	MH 2701	29	25	27	29	25	27	25	28	29	27	4
23	IHT 223	MH 2702	25	27	26	29	24	27	25	25	28	25	10
24	IHT 224	MH 2703	25	26	25	22	25	23	24	21	29	23	21
25	IHT 225	MH 2704	26	26	26	28	23	26	25	25	28	25	12
26	IHT 226	AHB 1200 (Check)	25	27	26	24	24	24	24	25	27	24	18
27	IHT 227	MH 2705	26	22	24	29	25	27	25	24	25	25	12
28	IHT 228	MH 2706	25	27	26	27	25	26	24	26	25	25	11
29	IHT 229	MH 2707	27	30	28	31	31	31	23	26	28	26	6
30	IHT 230	MH 2708	26	27	27	27	22	25	25	22	29	24	20
31	IHT 231	JKBH 1326 (Check)	24	27	26	31	22	27	24	25	28	25	8
		LOC. MEAN	25	26	26	27	25	26	24	24	26	24	
		C.D. (5%)	4.0	3.0	3.0	3.0	4.0	4.0	2.0	2.0	1.0	1.0	
		C.D. (1%)	6.0	4.0	4.0	4.0	5.0	5.0	2.0	3.0	2.0	1.0	
		C.V. (%)	10.3	6.1	6.2	7.7	9.2	7.0	4.1	5.4	3.5	7.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.41: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	TJR	DAS	RAJ	TLJ	AND	JMR	SKN	GUJ
									MEAN					MEAN
1	IHT 201	MH 2682	3.2	2.2	3.2	3.4	3.0	3.3	3.1	3.6	3.3	3.4	2.8	3.3
2	IHT 202	MH 2683	3.3	2.5	3.1	3.3	3.0	3.5	3.1	3.6	3.6	3.2	3.0	3.4
3	IHT 203	MH 2684	3.5	2.5	3.3	3.8	3.2	3.5	3.3	3.8	3.5	3.0	2.8	3.3
4	IHT 204	MPMH 17 (Check)	3.0	2.0	2.8	3.2	2.8	3.3	2.9	3.3	3.1	2.4	2.6	2.9
5	IHT 205	MH 2685	3.2	2.3	3.5	3.5	3.0	3.6	3.2	3.8	3.4	3.0	2.9	3.3
6	IHT 206	MH 2686	4.0	2.6	3.4	3.6	2.8	-	3.3	4.0	-	4.0	3.1	3.7
7	IHT 207	MH 2687	3.4	2.3	3.3	3.3	2.8	-	3.0	3.6	3.5	3.2	2.9	3.3
8	IHT 208	MH 2688	3.0	2.2	3.6	3.5	2.8	3.4	3.1	3.5	3.5	2.6	2.8	3.1
9	IHT 209	MH 2689	3.2	2.1	2.3	3.4	3.0	3.4	2.9	3.6	3.4	2.9	2.7	3.1
10	IHT 210	MH 2690	3.5	2.3	3.0	3.6	3.0	3.4	3.1	3.9	3.1	2.8	2.7	3.1
11	IHT 211	MH 2691	3.4	2.2	3.1	3.4	2.8	3.6	3.1	3.6	3.5	2.9	2.8	3.2
12	IHT 212	MH 2692	3.4	2.4	3.2	3.2	2.7	3.5	3.1	3.8	3.7	2.7	2.8	3.3
13	IHT 213	PB 1852 (Check)	3.2	2.2	3.3	3.3	2.7	3.6	3.0	3.5	3.4	2.9	2.9	3.2
14	IHT 214	MH 2693	3.4	2.1	3.1	3.5	2.7	3.7	3.1	3.6	3.6	3.0	2.9	3.3
15	IHT 215	MH 2694	3.2	2.1	3.3	3.2	2.8	3.5	3.0	3.7	3.6	2.8	2.9	3.2
16	IHT 216	MH 2695	3.4	2.1	3.1	3.5	2.8	3.4	3.1	3.5	3.5	2.9	2.8	3.2
17	IHT 217	MH 2696	3.4	2.0	2.9	3.2	2.7	3.7	3.0	3.5	3.3	2.9	2.9	3.2
18	IHT 218	MH 2697	3.0	2.0	3.1	2.9	2.8	-	2.8	-	-	2.5	2.5	2.5
19	IHT 219	MH 2698	3.2	2.2	2.5	3.4	2.8	-	2.8	-	-	2.8	2.6	2.7
20	IHT 220	MH 2699	3.3	2.5	2.8	3.2	2.8	3.4	3.0	3.6	3.2	2.7	2.9	3.1
21	IHT 221	MH 2700	3.6	2.3	3.2	3.3	2.8	3.4	3.1	3.6	3.3	3.0	2.7	3.2
22	IHT 222	MH 2701	3.7	2.4	3.8	3.8	2.8	3.6	3.4	3.8	4.0	3.0	3.0	3.5
23	IHT 223	MH 2702	3.6	2.6	3.9	3.5	3.2	3.6	3.4	3.6	3.5	3.3	3.1	3.4
24	IHT 224	MH 2703	3.5	2.2	3.8	3.1	3.2	3.7	3.3	3.6	3.5	2.9	3.0	3.2
25	IHT 225	MH 2704	3.1	2.2	3.3	3.5	3.2	3.6	3.2	3.6	3.2	2.9	3.0	3.2
26	IHT 226	AHB 1200 (Check)	3.8	2.2	3.3	3.8	2.8	3.6	3.3	3.5	3.7	3.0	2.8	3.3
27	IHT 227	MH 2705	3.0	2.2	2.8	3.4	2.8	3.6	3.0	3.5	3.5	3.0	2.8	3.2
28	IHT 228	MH 2706	3.2	2.4	3.1	3.7	3.2	3.6	3.2	3.5	3.4	3.1	3.0	3.3
29	IHT 229	MH 2707	3.4	2.2	3.2	3.3	3.0	3.5	3.1	3.5	3.3	2.9	2.8	3.1
30	IHT 230	MH 2708	3.8	2.4	3.1	3.6	2.8	-	3.2	3.4	3.4	2.9	2.8	3.1
31	IHT 231	JKBH 1326 (Check)	3.2	2.3	3.3	3.0	2.8	3.5	3.0	3.2	3.4	2.8	2.8	3.1
		LOC. MEAN	3.4	2.3	3.2	3.4	2.9	3.5	3.1	3.6	3.4	2.9	2.8	3.2
		C.D. (5%)	0.5	0.2	0.2	0.7	0.4	0.1	0.3	0.2	0.1	0.3	0.2	0.2
		C.D. (1%)	0.7	0.3	0.2	0.9	0.6	0.2	0.3	0.3	0.2	0.4	0.2	0.3
		C.V. (%)	9.1	6.0	3.1	12.7	9.0	2.4	6.7	3.2	2.0	6.0	3.8	3.8
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008

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CHAPTER I: BREEDING

Table I.41: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP MEAN	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	2.7	3.9	3.3	3.2	3.1	3.2	2.5	3.2	2.9	3.1	20
2	IHT 202	MH 2683	2.8	4.0	3.4	3.4	2.7	3.1	2.5	3.5	3.1	3.2	13
3	IHT 203	MH 2684	2.7	4.1	3.4	3.7	3.6	3.7	2.6	4.0	3.1	3.3	4
4	IHT 204	MPMH 17 (Check)	2.4	3.2	2.8	3.3	3.1	3.2	2.5	3.7	2.9	2.9	25
5	IHT 205	MH 2685	2.9	3.8	3.4	3.3	3.4	3.4	2.4	3.4	3.7	3.3	7
6	IHT 206	MH 2686	3.1	-	3.1	4.1	3.5	3.8	2.7	4.2	4.0	3.5	1
7	IHT 207	MH 2687	2.8	3.5	3.1	3.4	3.4	3.4	2.6	3.5	3.7	3.2	9
8	IHT 208	MH 2688	2.7	3.4	3.1	3.4	3.3	3.4	2.5	3.6	3.0	3.1	19
9	IHT 209	MH 2689	2.9	3.3	3.1	3.3	3.2	3.3	2.5	3.2	3.6	3.1	24
10	IHT 210	MH 2690	2.6	3.5	3.0	3.4	2.9	3.2	2.4	3.4	3.8	3.1	18
11	IHT 211	MH 2691	2.6	3.6	3.1	3.6	3.5	3.5	2.4	3.6	3.9	3.2	10
12	IHT 212	MH 2692	2.7	3.8	3.2	3.6	3.1	3.3	2.6	3.7	3.4	3.2	11
13	IHT 213	PB 1852 (Check)	2.5	3.7	3.1	3.7	3.4	3.6	2.5	3.4	3.4	3.2	14
14	IHT 214	MH 2693	2.7	3.6	3.2	3.6	3.3	3.4	2.5	3.6	3.5	3.2	10
15	IHT 215	MH 2694	2.7	3.5	3.1	3.1	3.2	3.1	2.4	3.7	3.0	3.1	22
16	IHT 216	MH 2695	2.3	3.9	3.1	3.3	3.1	3.2	2.5	3.7	3.4	3.1	18
17	IHT 217	MH 2696	2.7	3.7	3.2	3.5	3.4	3.4	2.4	3.5	3.5	3.1	17
18	IHT 218	MH 2697	2.2	-	2.2	3.5	3.2	3.3	2.4	2.7	3.3	2.8	27
19	IHT 219	MH 2698	2.5	3.5	3.0	3.3	3.0	3.2	2.7	3.1	3.1	2.9	26
20	IHT 220	MH 2699	2.4	3.4	2.9	3.5	3.3	3.4	2.5	3.4	3.2	3.1	23
21	IHT 221	MH 2700	2.5	3.8	3.2	3.3	3.5	3.4	2.4	3.6	3.6	3.2	12
22	IHT 222	MH 2701	2.6	3.9	3.2	3.9	3.3	3.6	2.5	3.9	3.6	3.4	2
23	IHT 223	MH 2702	2.9	3.5	3.2	3.7	3.1	3.4	2.7	3.8	3.5	3.4	3
24	IHT 224	MH 2703	2.9	3.8	3.4	3.8	3.5	3.7	2.6	3.5	3.6	3.3	5
25	IHT 225	MH 2704	2.7	3.8	3.3	3.7	3.2	3.5	2.6	3.4	3.4	3.2	9
26	IHT 226	AHB 1200 (Check)	2.5	3.9	3.2	3.4	3.5	3.5	2.6	3.8	3.6	3.3	6
27	IHT 227	MH 2705	2.7	3.5	3.1	3.7	3.2	3.4	2.1	4.1	3.5	3.1	15
28	IHT 228	MH 2706	2.6	4.0	3.3	3.6	3.3	3.5	2.6	3.7	3.0	3.2	8
29	IHT 229	MH 2707	2.4	3.8	3.1	3.5	3.3	3.4	2.5	3.5	3.2	3.1	16
30	IHT 230	MH 2708	2.5	3.7	3.1	3.6	3.2	3.4	2.5	3.3	2.8	3.1	21
31	IHT 231	JKBH 1326 (Check)	2.6	3.6	3.1	3.7	3.0	3.4	2.4	3.3	2.8	3.1	24
		LOC. MEAN	2.6	3.7	3.2	3.5	3.2	3.4	2.5	3.6	3.4	3.2	
		C.D. (5%)	0.4	0.2	0.3	0.4	0.6	0.4	0.2	0.4	0.5	0.1	
		C.D. (1%)	0.5	0.3	0.4	0.5	0.9	0.5	0.3	0.5	0.7	0.2	
		C.V. (%)	9.2	4.1	5.5	6.7	12.1	9.2	4.8	6.8	9.5	5.5	
		F (Prob)	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.42: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 1000- SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	DAS	RAJ MEAN	TLJ	AND	JMR	SKN	GUJ MEAN
1	IHT 201	MH 2682	9.4	6.6	9.6	12.5	10.4	9.7	13.6	10.3	10.5	7.3	10.4
2	IHT 202	MH 2683	8.5	7.3	8.4	12.1	8.7	9.0	12.1	10.9	8.9	6.6	9.6
3	IHT 203	MH 2684	7.9	7.7	7.7	9.7	9.3	8.5	11.6	9.0	9.2	6.4	9.1
4	IHT 204	MPMH 17 (Check)	8.0	6.9	7.4	7.5	9.5	7.9	11.3	7.1	7.9	6.0	8.1
5	IHT 205	MH 2685	8.3	8.2	8.5	12.1	8.9	9.2	11.7	9.2	8.6	8.4	9.5
6	IHT 206	MH 2686	9.6	8.3	11.0	14.5	-	10.9	13.5	-	13.5	9.1	12.0
7	IHT 207	MH 2687	10.5	8.3	13.2	13.2	-	11.3	13.9	10.7	14.7	7.5	11.7
8	IHT 208	MH 2688	9.9	8.4	8.8	11.4	12.5	10.2	13.7	11.0	11.0	6.8	10.6
9	IHT 209	MH 2689	9.0	8.8	6.9	13.6	12.0	10.1	13.7	11.0	10.4	6.7	10.5
10	IHT 210	MH 2690	9.3	9.9	7.4	13.1	12.5	10.4	12.2	10.5	12.0	5.7	10.1
11	IHT 211	MH 2691	9.1	8.8	7.6	12.3	11.9	9.9	13.1	11.3	9.9	5.5	10.0
12	IHT 212	MH 2692	9.5	9.4	8.6	12.3	11.0	10.2	12.3	9.9	10.1	5.4	9.4
13	IHT 213	PB 1852 (Check)	8.9	10.0	9.5	12.3	11.5	10.4	12.6	10.8	10.1	6.1	9.9
14	IHT 214	MH 2693	9.1	7.1	9.3	12.2	12.3	10.0	12.8	11.4	11.7	6.8	10.7
15	IHT 215	MH 2694	8.8	8.4	8.9	11.7	10.8	9.7	12.8	10.0	10.5	6.6	10.0
16	IHT 216	MH 2695	9.2	10.3	8.3	12.1	11.2	10.2	12.1	9.7	10.5	6.7	9.7
17	IHT 217	MH 2696	7.3	8.2	6.7	11.5	10.0	8.7	12.2	9.1	9.3	5.1	8.9
18	IHT 218	MH 2697	8.2	7.6	8.8	9.8	-	8.6	-	-	8.5	6.1	7.3
19	IHT 219	MH 2698	8.2	8.4	8.0	11.5	-	9.0	-	-	9.1	6.3	7.7
20	IHT 220	MH 2699	9.1	8.7	9.2	11.3	10.7	9.8	13.1	10.0	10.0	7.6	10.2
21	IHT 221	MH 2700	8.8	8.2	7.9	11.9	10.9	9.5	12.7	9.3	9.8	6.0	9.5
22	IHT 222	MH 2701	9.0	8.3	9.5	14.5	10.3	10.3	13.6	11.4	10.5	6.4	10.5
23	IHT 223	MH 2702	8.9	7.6	9.3	14.5	11.5	10.4	12.9	10.2	11.0	8.0	10.5
24	IHT 224	MH 2703	8.0	7.9	8.1	11.2	10.7	9.2	11.3	9.4	9.7	6.1	9.1
25	IHT 225	MH 2704	7.1	7.2	7.0	11.9	11.1	8.9	12.0	9.4	9.1	6.3	9.2
26	IHT 226	AHB 1200 (Check)	9.3	8.8	10.0	12.0	9.8	10.0	12.1	9.5	11.4	6.3	9.8
27	IHT 227	MH 2705	8.5	11.4	10.6	13.3	11.1	11.0	13.2	11.6	9.8	7.2	10.5
28	IHT 228	MH 2706	7.8	8.5	9.4	11.9	10.7	9.7	13.4	9.9	11.3	6.2	10.2
29	IHT 229	MH 2707	9.7	8.7	10.8	13.3	11.6	10.8	12.9	10.1	11.0	7.0	10.3
30	IHT 230	MH 2708	10.2	6.2	9.6	14.9	-	10.2	13.3	9.9	10.4	5.4	9.8
31	IHT 231	JKBH 1326 (Check)	7.9	9.1	7.0	9.7	10.8	8.9	10.4	8.9	9.2	6.0	8.6
		LOC. MEAN	8.8	8.4	8.8	12.1	10.8	9.8	12.6	10.1	10.3	6.6	9.9
		C.D. (5%)	1.2	1.3	0.6	2.7	0.6	1.5	0.8	0.6	1.0	0.6	1.5
		C.D. (1%)	1.6	1.7	0.8	3.6	0.8	2.0	1.1	0.8	1.3	0.7	2.0
		C.V. (%)	8.4	9.4	4.0	13.7	3.4	11.0	3.8	3.8	5.7	5.2	6.1
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.014

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CHAPTER I: BREEDING

Table I.42: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 1000- SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP MEAN	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	IHT 201	MH 2682	10.0	11.4	10.7	9.6	9.2	9.4	11.8	8.5	11.0	10.1	14
2	IHT 202	MH 2683	9.7	11.8	10.8	9.7	8.8	9.3	11.3	10.6	10.7	9.8	19
3	IHT 203	MH 2684	7.5	10.3	8.9	8.3	7.3	7.8	8.0	9.3	8.3	8.6	28
4	IHT 204	MPMH 17 (Check)	10.3	10.4	10.4	6.0	7.7	6.8	9.7	7.7	7.4	8.2	29
5	IHT 205	MH 2685	9.9	11.6	10.8	8.2	10.4	9.3	9.8	9.9	10.0	9.6	21
6	IHT 206	MH 2686	11.2	-	11.2	10.5	12.5	11.5	10.9	11.6	12.6	11.5	2
7	IHT 207	MH 2687	11.3	11.7	11.5	11.2	11.9	11.5	13.3	11.5	14.2	11.8	1
8	IHT 208	MH 2688	9.9	11.6	10.8	8.6	9.8	9.2	8.5	10.7	10.9	10.2	12
9	IHT 209	MH 2689	9.5	11.5	10.5	8.5	10.5	9.5	11.0	10.4	11.5	10.3	9
10	IHT 210	MH 2690	10.5	11.3	10.9	8.3	10.9	9.6	11.0	10.9	11.9	10.5	4
11	IHT 211	MH 2691	9.7	10.6	10.2	9.4	11.4	10.4	10.3	12.1	11.9	10.3	10
12	IHT 212	MH 2692	10.0	11.2	10.6	8.5	9.4	8.9	9.3	8.8	12.3	9.9	17
13	IHT 213	PB 1852 (Check)	9.8	11.7	10.8	8.7	11.5	10.1	10.1	9.7	12.4	10.4	8
14	IHT 214	MH 2693	11.0	10.3	10.6	10.1	9.2	9.6	10.1	11.0	10.3	10.3	11
15	IHT 215	MH 2694	10.2	11.4	10.8	6.9	10.0	8.5	10.0	12.5	10.1	10.0	16
16	IHT 216	MH 2695	9.5	11.6	10.6	7.9	10.2	9.0	10.5	9.5	10.5	10.0	16
17	IHT 217	MH 2696	7.8	9.5	8.7	7.3	9.3	8.3	8.7	8.5	8.9	8.7	26
18	IHT 218	MH 2697	9.7	-	9.7	6.3	7.4	6.8	10.4	7.8	7.5	8.2	30
19	IHT 219	MH 2698	9.1	10.4	9.8	8.6	8.1	8.4	8.7	9.6	9.0	8.9	25
20	IHT 220	MH 2699	9.4	10.3	9.9	7.1	8.4	7.8	8.2	10.5	10.8	9.6	20
21	IHT 221	MH 2700	8.3	10.8	9.5	10.5	8.6	9.6	8.7	9.5	9.2	9.4	22
22	IHT 222	MH 2701	11.8	11.1	11.5	9.3	6.8	8.1	7.9	11.7	15.3	10.5	5
23	IHT 223	MH 2702	9.9	11.9	10.9	10.5	10.5	10.5	8.5	10.5	10.2	10.4	7
24	IHT 224	MH 2703	9.2	11.2	10.2	7.3	7.8	7.5	9.3	10.4	9.7	9.2	23
25	IHT 225	MH 2704	9.5	11.7	10.6	5.5	7.6	6.6	9.0	8.6	9.5	8.9	24
26	IHT 226	AHB 1200 (Check)	10.2	11.7	11.0	7.5	9.7	8.6	8.8	12.1	12.2	10.1	15
27	IHT 227	MH 2705	10.1	10.9	10.5	8.6	9.2	8.9	11.9	10.6	9.3	10.5	6
28	IHT 228	MH 2706	8.7	11.4	10.1	7.9	10.0	9.0	9.3	10.2	11.0	9.9	18
29	IHT 229	MH 2707	10.3	10.8	10.6	8.3	11.6	9.9	11.8	11.3	11.3	10.7	3
30	IHT 230	MH 2708	9.1	11.4	10.3	7.9	10.4	9.1	9.9	12.6	11.3	10.2	13
31	IHT 231	JKBH 1326 (Check)	8.3	9.4	8.9	7.0	8.1	7.5	8.8	10.2	8.1	8.7	27
		LOC. MEAN	9.7	11.1	10.4	8.4	9.5	8.9	9.9	10.3	10.6	9.9	
		C.D. (5%)	1.9	0.6	1.7	0.8	0.9	0.6	0.3	0.4	0.9	0.7	
		C.D. (1%)	2.5	0.8	2.3	1.1	1.2	0.7	0.4	0.6	1.1	0.9	
		C.V. (%)	11.7	3.3	8.1	5.9	5.7	5.2	2.0	2.5	5.0	8.5	
		F (Prob)	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.43: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JPR2	DAS	RAJ	KTR	TLJ	AND	JMR	SKN	DNR	GUJ
								MEAN							MEAN
1	IHT 201	MH 2682	88	61	91	123	81	89	70	51	68	93	102	74	76
2	IHT 202	MH 2683	82	59	89	106	79	83	68	51	78	99	74	79	75
3	IHT 203	MH 2684	79	56	94	123	80	86	74	51	73	97	84	77	76
4	IHT 204	MPMH 17 (Check)	84	62	92	105	79	84	69	49	81	83	75	76	72
5	IHT 205	MH 2685	78	58	94	107	80	83	63	54	78	82	93	81	75
6	IHT 206	MH 2686	67	63	88	48	-	66	71	26	-	27	29	43	39
7	IHT 207	MH 2687	82	60	89	97	-	82	71	45	67	85	75	76	70
8	IHT 208	MH 2688	81	65	91	117	80	87	71	54	74	97	95	81	79
9	IHT 209	MH 2689	86	60	88	101	79	83	71	54	60	90	109	81	78
10	IHT 210	MH 2690	82	65	89	119	79	87	72	44	67	90	90	81	74
11	IHT 211	MH 2691	83	66	92	113	80	87	67	53	53	91	70	80	69
12	IHT 212	MH 2692	84	62	93	105	80	85	73	57	81	100	112	81	84
13	IHT 213	PB 1852 (Check)	89	66	90	123	78	89	68	55	81	100	108	57	78
14	IHT 214	MH 2693	86	63	91	121	80	88	69	59	80	90	89	80	78
15	IHT 215	MH 2694	88	68	88	97	80	84	69	53	76	95	100	81	79
16	IHT 216	MH 2695	82	62	90	113	79	85	67	55	67	100	98	81	78
17	IHT 217	MH 2696	65	66	92	90	80	79	70	58	81	94	80	81	77
18	IHT 218	MH 2697	67	66	90	29	-	63	63	-	-	29	34	46	43
19	IHT 219	MH 2698	53	63	90	44	-	63	67	-	-	85	28	26	51
20	IHT 220	MH 2699	81	60	92	103	79	83	68	53	55	100	91	80	74
21	IHT 221	MH 2700	87	65	92	114	79	87	61	56	79	98	91	81	78
22	IHT 222	MH 2701	82	71	90	103	79	85	69	54	67	95	70	80	73
23	IHT 223	MH 2702	73	71	87	109	80	84	65	55	76	98	75	81	75
24	IHT 224	MH 2703	81	72	91	116	81	88	72	55	69	99	90	81	78
25	IHT 225	MH 2704	87	72	92	115	78	89	69	53	77	108	78	81	78
26	IHT 226	AHB 1200 (Check)	71	64	86	108	79	82	68	50	66	93	94	79	75
27	IHT 227	MH 2705	90	70	92	115	79	89	70	51	81	90	78	81	75
28	IHT 228	MH 2706	80	65	93	114	79	86	71	57	79	99	66	81	76
29	IHT 229	MH 2707	69	67	91	108	80	83	69	37	54	84	77	79	67
30	IHT 230	MH 2708	67	68	93	90	-	80	67	26	53	94	78	71	65
31	IHT 231	JKBH 1326 (Check)	87	65	91	121	81	89	69	57	67	100	84	76	75
		LOC. MEAN	79	64	91	103	79	83	69	51	71	90	81	75	73
		C.D. (5%)	15.0	9.0	5.0	23.0	3.0	16.0	11.0	8.0	5.0	18.0	26.0	20.0	6.0
		C.D. (1%)	20.0	12.0	6.0	30.0	4.0	21.0	14.0	11.0	7.0	24.0	35.0	27.0	8.0
		C.V. (%)	11.8	8.7	3.2	13.5	2.1	13.4	9.6	9.7	4.5	12.2	19.8	16.7	6.8
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.029

Contd..

CHAPTER I: BREEDING

Table I.43: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP	BWL	HSR	HAR	GLR	LDA	NDL	ZONE	RANK
					MEAN			MEAN				MEAN	
1	IHT 201	MH 2682	75	84	79	65	41	53	95	80	73	79	8
2	IHT 202	MH 2683	82	79	80	74	35	55	96	81	78	77	14
3	IHT 203	MH 2684	79	74	77	75	45	60	92	80	72	78	9
4	IHT 204	MPMH 17 (Check)	69	74	72	83	34	59	92	80	73	76	21
5	IHT 205	MH 2685	80	80	80	73	29	51	88	81	81	77	17
6	IHT 206	MH 2686	7	-	7	51	20	36	91	81	72	52	30
7	IHT 207	MH 2687	39	36	38	60	25	43	91	81	74	68	26
8	IHT 208	MH 2688	72	86	79	88	34	61	88	80	71	79	5
9	IHT 209	MH 2689	61	80	70	77	34	55	90	81	81	77	16
10	IHT 210	MH 2690	68	80	74	73	32	53	85	81	79	76	18
11	IHT 211	MH 2691	64	81	72	72	37	55	93	81	74	75	23
12	IHT 212	MH 2692	75	80	77	84	46	65	101	80	73	81	2
13	IHT 213	PB 1852 (Check)	90	82	86	92	44	68	91	81	78	82	1
14	IHT 214	MH 2693	71	81	76	79	42	61	93	80	84	80	3
15	IHT 215	MH 2694	71	81	76	82	23	53	91	81	79	78	10
16	IHT 216	MH 2695	73	73	73	78	37	58	86	80	77	78	12
17	IHT 217	MH 2696	74	81	78	78	33	55	90	81	80	76	20
18	IHT 218	MH 2697	3	-	3	57	28	42	83	80	78	54	29
19	IHT 219	MH 2698	8	55	31	57	30	44	83	80	78	56	28
20	IHT 220	MH 2699	64	78	71	75	32	54	84	80	79	75	22
21	IHT 221	MH 2700	64	78	71	76	43	60	94	81	79	79	6
22	IHT 222	MH 2701	76	79	78	57	31	44	105	80	86	76	19
23	IHT 223	MH 2702	76	81	79	68	47	57	101	80	79	78	11
24	IHT 224	MH 2703	81	81	81	74	41	58	76	80	73	79	7
25	IHT 225	MH 2704	81	81	81	56	39	47	105	80	81	80	4
26	IHT 226	AHB 1200 (Check)	56	76	66	70	33	51	89	80	74	74	24
27	IHT 227	MH 2705	62	79	71	79	32	56	95	81	73	78	13
28	IHT 228	MH 2706	67	80	73	77	32	54	89	80	79	77	15
29	IHT 229	MH 2707	53	77	65	60	27	44	82	80	76	71	25
30	IHT 230	MH 2708	40	74	57	51	30	41	84	80	83	68	27
31	IHT 231	JKBH 1326 (Check)	54	81	68	69	33	51	101	81	81	78	13
		LOC. MEAN	62	77	70	71	34	53	91	80	77	75	
		C.D. (5%)	16.0	10.0	21.0	11.0	12.0	18.0	7.0	1.0	7.0	4.0	
		C.D. (1%)	22.0	13.0	28.0	15.0	16.0	24.0	9.0	2.0	10.0	6.0	
		C.V. (%)	15.9	8.0	13.2	9.5	21.8	12.1	4.5	1.0	5.7	8.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.44: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR2	DAS	RAJ MEAN	AND**	JMR	DNR	GUJ MEAN
1	IHT 201	MH 2682	79	52	95	98	81	32	84	93	89
2	IHT 202	MH 2683	75	47	97	97	79	42	90	83	87
3	IHT 203	MH 2684	71	52	94	96	78	36	96	98	97
4	IHT 204	MPMH 17 (Check)	80	58	96	98	83	50	92	83	88
5	IHT 205	MH 2685	83	45	99	97	81	46	89	95	92
6	IHT 206	MH 2686	68	45	95	-	69	-	88	85	87
7	IHT 207	MH 2687	81	50	97	-	76	40	83	75	79
8	IHT 208	MH 2688	73	48	97	95	78	60	89	75	82
9	IHT 209	MH 2689	77	45	100	95	79	56	76	92	84
10	IHT 210	MH 2690	77	58	99	100	83	27	85	70	78
11	IHT 211	MH 2691	87	55	96	98	84	15	77	55	66
12	IHT 212	MH 2692	65	48	98	95	76	35	75	78	77
13	IHT 213	PB 1852 (Check)	71	42	98	95	76	59	94	85	90
14	IHT 214	MH 2693	77	53	98	92	80	45	84	85	84
15	IHT 215	MH 2694	86	45	96	95	80	15	86	83	85
16	IHT 216	MH 2695	72	55	98	95	80	24	83	83	83
17	IHT 217	MH 2696	81	62	83	95	80	51	81	88	85
18	IHT 218	MH 2697	79	43	95	-	73	-	86	90	88
19	IHT 219	MH 2698	83	52	93	-	76	-	83	78	80
20	IHT 220	MH 2699	72	63	95	98	82	13	82	63	73
21	IHT 221	MH 2700	82	40	96	97	79	28	85	77	81
22	IHT 222	MH 2701	77	53	93	90	78	43	88	80	84
23	IHT 223	MH 2702	87	58	99	95	85	30	75	95	85
24	IHT 224	MH 2703	77	38	96	97	77	46	87	88	87
25	IHT 225	MH 2704	85	58	97	98	85	52	94	98	96
26	IHT 226	AHB 1200 (Check)	71	50	99	97	79	13	75	73	74
27	IHT 227	MH 2705	79	40	95	97	78	33	82	78	80
28	IHT 228	MH 2706	78	57	96	97	82	30	92	78	85
29	IHT 229	MH 2707	79	62	97	98	84	44	82	90	86
30	IHT 230	MH 2708	76	55	96	-	76	38	89	75	82
31	IHT 231	JKBH 1326 (Check)	82	62	98	98	85	48	80	92	86
		LOC. MEAN	78	51	96	96	80	38	85	83	84
		C.D. (5%)	13.0	11.0	10.0	6.0	9.0	25.0	14.0	14.0	6.0
		C.D. (1%)	18.0	14.0	13.0	8.0	12.0	33.0	19.0	18.0	8.0
		C.V. (%)	10.4	12.9	6.1	4.0	7.3	40.5	10.2	10.2	4.0
		F (Prob)	0.000	0.000	0.000	0.000	0.450	0.000	0.000	0.000	0.000

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): AND 40.5%

Contd..

CHAPTER I: BREEDING

Table I.44: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	JNS	MTR	UP	HSR	GLR	LDA	NDL	ZONE MEAN	RANK
					MEAN						
1	IHT 201	MH 2682	100	83	91	87	67	63	73	81	14
2	IHT 202	MH 2683	100	81	91	82	62	62	75	79	20
3	IHT 203	MH 2684	100	70	85	88	73	68	78	82	11
4	IHT 204	MPMH 17 (Check)	100	78	89	67	77	62	73	80	19
5	IHT 205	MH 2685	100	77	89	83	57	65	77	81	15
6	IHT 206	MH 2686	100	-	100	30	73	65	68	72	29
7	IHT 207	MH 2687	100	75	88	35	82	70	68	74	27
8	IHT 208	MH 2688	100	85	92	93	79	95	73	83	5
9	IHT 209	MH 2689	100	83	92	93	58	83	73	81	13
10	IHT 210	MH 2690	100	84	92	30	75	78	68	77	24
11	IHT 211	MH 2691	100	70	85	13	62	32	43	66	31
12	IHT 212	MH 2692	100	80	90	68	62	48	68	74	28
13	IHT 213	PB 1852 (Check)	100	86	93	97	69	53	75	80	18
14	IHT 214	MH 2693	100	81	91	88	66	96	80	83	6
15	IHT 215	MH 2694	100	80	90	57	63	78	67	78	23
16	IHT 216	MH 2695	100	80	90	53	57	58	72	76	25
17	IHT 217	MH 2696	100	78	89	88	67	95	78	83	7
18	IHT 218	MH 2697	100	-	100	80	80	97	73	82	9
19	IHT 219	MH 2698	100	80	90	80	74	65	70	78	22
20	IHT 220	MH 2699	100	90	95	55	80	73	70	79	21
21	IHT 221	MH 2700	93	75	84	55	75	63	65	75	26
22	IHT 222	MH 2701	100	85	93	63	68	93	75	80	17
23	IHT 223	MH 2702	100	78	89	95	70	63	73	82	8
24	IHT 224	MH 2703	100	82	91	98	68	97	78	84	4
25	IHT 225	MH 2704	100	81	90	93	63	42	73	82	12
26	IHT 226	AHB 1200 (Check)	100	78	89	17	75	37	53	69	30
27	IHT 227	MH 2705	100	88	94	92	68	93	77	82	10
28	IHT 228	MH 2706	100	86	93	77	78	97	80	85	3
29	IHT 229	MH 2707	100	79	89	97	77	92	78	86	1
30	IHT 230	MH 2708	100	75	87	82	68	94	75	81	16
31	IHT 231	JKBH 1326 (Check)	100	88	94	78	79	93	73	85	2
		LOC. MEAN	100	81	90	71	70	73	72	80	
		C.D. (5%)	3.0	9.0	-	20.0	9.0	5.0	6.0	7.0	
		C.D. (1%)	5.0	12.0	-	27.0	12.0	6.0	9.0	10.0	
		C.V. (%)	2.1	7.0	4.6	17.2	7.8	3.8	5.5	7.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.248	

CHAPTER I: BREEDING

Table I.45: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 ZONE A

GRAIN QUALITY: IRON CONTENT (ppm)															
S.No.	TEST	ENTRY	MDR	BKR	JPR	TJR	DAS	TLJ	JMR	SKN	HSR	LDA	NDL	ZONE	RANK
	CODE													MEAN	
1	IHT 204 A	MPMH 17 (Check)	30	55	42	43	42	67	54	35	59	45	49	47	6
2	IHT 205 A	MH 2685	34	53	37	46	69	53	55	36	80	39	56	51	4
3	IHT 209 A	MH 2689	27	61	41	53	46	79	58	29	68	39	66	52	3
4	IHT 213 A	PB 1852 (Check)	38	66	55	53	60	75	62	34	91	42	76	59	2
5	IHT 214 A	MH 2693	32	61	30	48	60	61	59	24	69	51	58	50	5
6	IHT 226 A	AHB 1200 (Check)	36	83	44	69	31	112	103	43	92	74	112	73	1
7	IHT 231 A	JKBH 1326 (Check)	27	55	37	44	49	57	54	26	64	36	48	45	7

Table I.46: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 ZONE A

GRAIN QUALITY: ZINC CONTENT (ppm)															
S.No.	TEST	ENTRY	MDR	BKR	JPR	TJR	DAS	TLJ	JMR	SKN	HSR	LDA	NDL	ZONE	RANK
	CODE													MEAN	
1	IHT 204 A	MPMH 17 (Check)	29	46	24	25	30	33	32	37	36	55	39	35	5
2	IHT 205 A	MH 2685	31	47	27	25	44	25	28	37	40	46	51	36	4
3	IHT 209 A	MH 2689	26	54	26	27	32	39	38	33	45	44	51	38	2
4	IHT 213 A	PB 1852 (Check)	28	46	23	28	30	33	34	35	44	44	52	36	4
5	IHT 214 A	MH 2693	27	52	26	21	36	29	33	34	42	54	47	37	3
6	IHT 226 A	AHB 1200 (Check)	34	65	26	25	22	40	41	39	53	62	69	43	1
7	IHT 231 A	JKBH 1326 (Check)	27	47	21	23	42	30	34	34	40	39	46	35	5

CHAPTER I: BREEDING

Table I.47: INITIAL HYBRID TRIAL (Medium) KHARIF 2022 EXPERIMENTAL DETAILS ZONE B

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers			Insecticide
							N	P	K	
MAHARASHTRA										
Aurangabad (NARP) (VNMKV)	MB	7.5	9.7.22	29.10.22	1.8.22	Nil	60	30	30	Nil
Dhule (MPKV)	MB	8.6	4.7.22	17.10.22	31.7.22	Nil	60	30	0	Nil
Pachora (Nirmal Seed)	MB	7.6	21.7.22	30.9.22	20.8.22	21.7.22	100	50	50	Nil
KARNATAKA										
VIjayapur (UAS, Dharwad)	SB	8.7	9.7.22	26.10.22	17.8.22	-	50	25	0	Nil
Malnoor (UAS, Raichur)	MB	7.7	14.7.22	22.10.22	26.8.22	Nil	50	50	0	Nil
Dharwad (KSSC Ltd)	SRS	-	25.7.22	17.11.22	25.8.22	Nil	100	50	25	Nil
ANDHRA PRADESH										
Ananthapuram (ANGRAU)	RSL	6.6	7.7.22	15.11.22	4.8.22	Nil	60	30	20	Nil
Perumallapalle (ANGRAU)	SCL	7.4	7.11.22	10.4.22	-	17.7.22	60	30	20	Neem Oil
TELANGANA										
Palem (PJ TSAU)	-	-	-	-	-	-	-	-	-	-
TAMIL NADU										
Coimbatore (TNAU)	CL	7.8	7.7.22	17.10.22	-	7.7,28.7,19.8,21.9.22	80	40	40	Nil
ODISHA										
Semiliguda (OUAT)	SL	-	4.8.22	As Per Maturity	-	-	60	30	30	-

SB = Shallow Black; MB = Medium Black; CL = Clay Loam; RSL = Red Sandy Loam; RSS = Red Sandy Soil; SL = Sandy Loam; SRS = Shallow Red Soil ,
SCL = Sandy Clay Loam

CHAPTER I: BREEDING

Table I.48: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	3872	4023	3033	3643	2566	2527	2546	3423	3107	3265	2161	5181	3321	5
2	IHT 202	MH 2683	3092	3863	2631	3195	2487	2827	2657	2643	2939	2791	4170	5064	3302	6
3	IHT 203	MH 2684	1867	3665	3757	3096	2029	2998	2514	3003	2536	2769	2828	4358	3005	13
4	IHT 204	AHB 1269 (Check)	2694	2790	2724	2736	1772	1871	1822	3243	2259	2751	3578	2961	2655	20
5	IHT 205	MH 2685	2100	3763	4562	3475	1746	2484	2115	1922	3132	2527	2652	3739	2900	16
6	IHT 206	MH 2686	2533	1963	2354	2284	1493	1156	1324	2102	-	2102	4087	2833	2315	27
7	IHT 207	MH 2687	3167	2823	2276	2755	2497	2104	2300	1261	1910	1586	3633	3017	2521	25
8	IHT 208	MH 2688	2033	4210	3718	3320	1605	2478	2041	2282	2087	2185	2800	1744	2551	23
9	IHT 209	MH 2689	3478	4706	3991	4058	1622	3010	2316	3724	1963	2844	3022	5094	3401	4
10	IHT 210	MH 2690	2197	4482	2511	3063	1941	2138	2039	1982	1156	1569	3744	4959	2790	18
11	IHT 211	MH 2691	3989	4589	3255	3944	1848	2684	2266	4084	2538	3311	3161	3236	3265	7
12	IHT 212	MH 2692	2414	4643	4300	3786	2168	3172	2670	4625	2979	3802	3587	4028	3546	3
13	IHT 213	86M01 (Check)	1964	4053	3580	3199	1535	2212	1874	3784	2623	3204	3707	4700	3129	10
14	IHT 214	MH 2693	2208	4360	3925	3498	2093	3703	2898	5165	3387	4276	2680	4892	3601	2
15	IHT 215	MH 2694	3458	3298	2970	3242	1724	1960	1842	2643	2408	2525	1948	2866	2586	22
16	IHT 216	MH 2695	2867	3049	2486	2801	2228	2344	2286	1982	2406	2194	2281	3297	2549	24
17	IHT 217	MH 2696	2350	4457	2910	3239	2144	3167	2655	5165	2896	4030	2300	3177	3174	9
18	IHT 218	MH 2697	3431	1536	1036	2001	1767	1127	1447	3904	-	3904	1948	1278	2003	30
19	IHT 219	MH 2698	2158	2025	1787	1990	1676	1767	1721	1802	-	1802	1291	3611	2014	29
20	IHT 220	MH 2699	1989	2856	2751	2532	1736	2296	2016	2823	1546	2184	1670	2719	2265	28
21	IHT 221	MH 2700	2119	2885	2372	2459	1432	2187	1809	5165	2136	3650	1337	3000	2515	26
22	IHT 222	MH 2701	3611	3227	3637	3492	1998	2332	2165	3063	2178	2620	2096	3828	2886	17
23	IHT 223	MH 2702	2522	3302	3258	3028	1896	2790	2343	4985	3226	4106	1448	3439	2985	14
24	IHT 224	MH 2703	2111	4274	3970	3452	2226	3494	2860	2102	3493	2798	2485	3775	3103	12
25	IHT 225	MH 2704	3392	4123	4021	3845	2134	3554	2844	2703	2571	2637	2504	4368	3263	8
26	IHT 226	AHB 1200 (Check)	2897	2982	2931	2937	1682	2138	1910	3363	1893	2628	2226	3562	2630	21
27	IHT 227	MH 2705	2714	2655	3568	2979	2186	4126	3156	4805	3029	3917	4828	4608	3613	1
28	IHT 228	MH 2706	2561	3781	3592	3311	2225	2370	2298	3964	2945	3454	2348	4339	3125	11
29	IHT 229	MH 2707	2694	2496	3102	2764	1534	1881	1708	4264	2650	3457	2513	3208	2705	19
30	IHT 230	MH 2708	2078	1836	1673	1862	1490	1587	1538	1201	1251	1226	1874	1713	1634	31
31	IHT 231	Pratap (Check)	2778	3433	3868	3360	2194	2630	2412	2162	2971	2566	3735	3003	2975	15
LOC. MEAN			2688	3424	3114	3076	1925	2488	2206	3204	2508	2856	2730	3600	2854	
C.D. (5%)			284	889	873	1087	346	578	867	667	516	1582	0	704	624	
C.D. (1%)			378	1182	1161	1446	460	768	1168	888	687	2136	1	936	822	
C.V. (%)			6.5	15.9	17.2	21.6	11.0	14.2	19.3	12.8	12.6	26.7	0.0	12.0	22.9	
F (Prob)			0.000	0.000	0.000	0.005	0.000	0.000	0.014	0.000	0.000	0.033	0.000	0.000	0.000	
PLOT SIZE (m ²)			6.00	5.55	5.55	-	6.00	6.00	-	5.55	6.00	-	5.40	6.00	-	

CHAPTER I: BREEDING

Table I.49: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	8333	7447	9309	8363	6833	6333	6583	13393	5210	9302	4628	8230	7747	10
2	IHT 202	MH 2683	8500	9610	8649	8919	7000	6444	6722	14174	4956	9565	4999	9363	8188	5
3	IHT 203	MH 2684	8111	9129	10871	9370	7556	6222	6889	12613	5393	9003	5338	7822	8117	7
4	IHT 204	AHB 1269 (Check)	9333	6366	8048	7916	5778	3778	4778	10991	4571	7781	5832	5987	6743	24
5	IHT 205	MH 2685	5222	11652	15135	10670	7000	5111	6056	11291	5991	8641	5036	9795	8470	2
6	IHT 206	MH 2686	7222	4204	6907	6111	5444	2611	4028	13634	-	13634	4863	4666	6194	27
7	IHT 207	MH 2687	6444	5886	10871	7734	6278	6000	6139	13994	6729	10361	4560	7856	7624	12
8	IHT 208	MH 2688	8833	9730	8649	9071	5278	4889	5083	14294	7513	10904	4607	4144	7549	14
9	IHT 209	MH 2689	7889	8288	10691	8956	6222	6889	6556	13273	4871	9072	5509	9587	8135	6
10	IHT 210	MH 2690	6444	8048	8709	7734	6333	5556	5944	11592	5391	8491	5194	5706	6997	23
11	IHT 211	MH 2691	9056	8649	9249	8984	7444	5222	6333	10991	6067	8529	4157	6746	7509	15
12	IHT 212	MH 2692	7333	8288	10631	8751	7833	6000	6917	14414	5940	10177	6027	9422	8432	3
13	IHT 213	86M01 (Check)	8444	9369	7988	8601	5167	4944	5056	13754	5331	9542	5453	8395	7650	11
14	IHT 214	MH 2693	7167	7808	8949	7974	5000	6333	5667	12132	5904	9018	5101	6986	7264	20
15	IHT 215	MH 2694	8889	8168	10931	9329	5833	5222	5528	12673	4004	8339	3786	5978	7276	19
16	IHT 216	MH 2695	8278	6126	7988	7464	5722	6222	5972	11712	3142	7427	4231	6903	6703	25
17	IHT 217	MH 2696	9278	10330	11832	10480	7944	6000	6972	13033	5411	9222	4268	5690	8198	4
18	IHT 218	MH 2697	4889	4444	5285	4873	5000	2056	3528	11832	-	11832	3842	6454	5475	31
19	IHT 219	MH 2698	5722	5045	6426	5731	4611	3667	4139	13033	-	13033	2842	5565	5864	30
20	IHT 220	MH 2699	7278	7327	8589	7731	4167	5222	4694	12733	2982	7857	4620	4617	6393	26
21	IHT 221	MH 2700	7056	8168	10450	8558	5778	6889	6333	12252	5933	9093	3231	4030	7087	21
22	IHT 222	MH 2701	6556	8168	10390	8371	6278	4556	5417	13754	7636	10695	3305	5595	7360	17
23	IHT 223	MH 2702	6278	10090	9249	8539	6500	5111	5806	14414	5391	9903	5416	6031	7609	13
24	IHT 224	MH 2703	8556	8649	9790	8998	7111	5889	6500	13754	5580	9667	5453	7102	7987	9
25	IHT 225	MH 2704	9056	9009	10691	9585	7000	6556	6778	10931	5649	8290	4175	9737	8089	8
26	IHT 226	AHB 1200 (Check)	7778	6486	8949	7738	5889	6111	6000	13754	4533	9144	6472	5648	7291	18
27	IHT 227	MH 2705	5278	7928	12072	8426	8944	7889	8417	15375	4882	10129	5935	9685	8665	1
28	IHT 228	MH 2706	5778	7928	9970	7892	6611	4444	5528	12733	4953	8843	5453	8600	7386	16
29	IHT 229	MH 2707	4778	5405	8589	6257	5111	4444	4778	11592	4929	8260	5546	5347	6193	28
30	IHT 230	MH 2708	5000	4805	7207	5671	6333	4100	5217	13153	3989	8571	5425	4402	6046	29
31	IHT 231	Pratap (Check)	5556	7027	7928	6837	6611	4778	5694	12973	5949	9461	4770	7920	7057	22
LOC. MEAN			7237	7728	9387	8117	6278	5338	5808	12911	5315	9113	4841	6904	7327	
C.D. (5%)			931	2313	2405	2175	1172	1279	1658	3161	2122	2101	1055	1265	1114	
C.D. (1%)			1238	3076	3199	2893	1558	1700	2232	4205	2827	2837	1403	1683	1469	
C.V. (%)			7.9	18.3	15.7	16.4	11.4	14.7	14.0	15.0	24.4	11.2	13.3	11.2	16.0	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.172	0.000	0.000	0.000	
PLOT SIZE (m ²)			6.00	5.55	5.55	-	6.00	6.00	-	5.55	6.00	-	5.40	6.00	-	

CHAPTER I: BREEDING

Table I.50: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE B

S.NO.	TEST CODE	ENTRY	ABD1*	DHL	PCR*	MS MEAN	VYP	MLR*	KS MEAN	PMP	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	53	52	51	52	47	50	47	50	47	46	48	11
2	IHT 202	MH 2683	54	55	54	55	46	50	46	52	47	48	50	7
3	IHT 203	MH 2684	52	50	58	50	47	51	47	50	42	47	47	17
4	IHT 204	AHB 1269 (Check)	53	48	52	48	45	52	45	47	44	43	45	25
5	IHT 205	MH 2685	53	53	50	53	46	51	46	50	46	47	48	12
6	IHT 206	MH 2686	55	52	54	52	51	49	51	-	46	50	50	5
7	IHT 207	MH 2687	54	49	52	49	46	52	46	49	44	48	47	18
8	IHT 208	MH 2688	47	49	54	49	43	50	43	47	44	47	46	22
9	IHT 209	MH 2689	53	52	51	52	47	51	47	51	49	44	49	9
10	IHT 210	MH 2690	46	47	55	47	43	48	43	45	48	41	45	28
11	IHT 211	MH 2691	52	49	54	49	46	51	46	50	45	45	47	19
12	IHT 212	MH 2692	53	51	52	51	46	50	46	47	46	48	48	15
13	IHT 213	86M01 (Check)	54	50	55	50	44	52	44	50	49	45	48	14
14	IHT 214	MH 2693	55	52	58	52	47	51	47	48	48	47	48	12
15	IHT 215	MH 2694	50	49	56	49	45	50	45	47	45	43	46	23
16	IHT 216	MH 2695	50	49	52	49	45	51	45	50	48	42	47	20
17	IHT 217	MH 2696	52	52	53	52	51	52	51	51	47	45	49	8
18	IHT 218	MH 2697	50	53	55	53	45	48	45	-	48	47	48	10
19	IHT 219	MH 2698	54	51	58	51	47	52	47	-	48	46	48	13
20	IHT 220	MH 2699	52	48	52	48	45	49	45	46	45	41	45	27
21	IHT 221	MH 2700	51	48	46	48	46	50	46	44	46	44	46	24
22	IHT 222	MH 2701	54	56	57	56	52	51	52	52	49	46	51	2
23	IHT 223	MH 2702	55	53	56	53	47	52	47	52	46	51	50	6
24	IHT 224	MH 2703	55	50	53	50	51	52	51	50	49	43	49	9
25	IHT 225	MH 2704	58	54	58	54	53	53	53	50	48	50	51	3
26	IHT 226	AHB 1200 (Check)	50	48	51	48	47	52	47	49	45	44	47	21
27	IHT 227	MH 2705	53	54	58	54	51	51	51	51	46	49	50	4
28	IHT 228	MH 2706	49	49	53	49	49	51	49	50	48	46	49	9
29	IHT 229	MH 2707	49	51	50	51	47	51	47	50	44	45	47	16
30	IHT 230	MH 2708	54	53	53	53	54	52	54	52	47	50	51	1
31	IHT 231	Pratap (Check)	52	49	54	49	43	52	43	45	43	46	45	26
		LOC. MEAN	52	51	54	51	47	51	47	49	46	46	48	
		C.D. (5%)	2.0	2.0	1.0	2.0	1.0	2.0	1.0	3.0	5.0	1.0	2.0	
		C.D. (1%)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	7.0	2.0	3.0	
		C.V. (%)	2.1	2.1	1.3	2.1	1.6	2.1	1.6	3.7	6.6	1.9	3.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

*LOCATION REJECTED DUE TO DELAYED FLOWERING IN CHECKS

CHAPTER I: BREEDING

Table I.51: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO MATURITY ZONE B

S.NO.	TEST CODE	ENTRY	ABD1*	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	PMP	PLM*	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	90	89	75	82	89	86	87	86	89	80	84	13
2	IHT 202	MH 2683	89	92	77	84	88	86	87	87	89	83	85	6
3	IHT 203	MH 2684	89	87	81	84	88	85	87	86	84	83	85	9
4	IHT 204	AHB 1269 (Check)	89	85	73	79	83	86	85	82	86	80	81	25
5	IHT 205	MH 2685	90	90	74	82	84	86	85	86	88	82	84	17
6	IHT 206	MH 2686	93	89	78	83	90	83	86	-	88	86	85	10
7	IHT 207	MH 2687	91	86	77	82	85	87	86	84	86	83	84	20
8	IHT 208	MH 2688	86	86	75	81	84	85	85	83	86	83	83	22
9	IHT 209	MH 2689	89	89	82	86	85	87	86	86	91	83	85	7
10	IHT 210	MH 2690	87	84	73	79	81	82	81	81	90	81	80	29
11	IHT 211	MH 2691	89	86	74	80	88	86	87	85	87	81	83	21
12	IHT 212	MH 2692	89	88	76	82	84	87	85	83	88	84	84	20
13	IHT 213	86M01 (Check)	89	87	79	83	83	87	85	85	91	82	84	15
14	IHT 214	MH 2693	93	89	83	86	89	85	87	84	90	82	85	8
15	IHT 215	MH 2694	89	86	74	80	83	84	84	82	87	81	82	24
16	IHT 216	MH 2695	88	86	79	83	84	87	86	86	90	83	84	14
17	IHT 217	MH 2696	89	89	78	83	90	85	87	86	89	82	85	11
18	IHT 218	MH 2697	89	90	74	82	87	85	86	-	90	83	84	19
19	IHT 219	MH 2698	89	88	75	81	87	87	87	-	90	81	84	18
20	IHT 220	MH 2699	88	85	73	79	84	82	83	82	87	78	81	28
21	IHT 221	MH 2700	87	85	73	79	85	83	84	79	88	82	81	26
22	IHT 222	MH 2701	90	93	79	86	90	85	88	88	91	83	86	2
23	IHT 223	MH 2702	91	90	80	85	87	87	87	87	88	88	86	3
24	IHT 224	MH 2703	90	87	77	82	89	87	88	86	91	81	84	12
25	IHT 225	MH 2704	96	91	82	87	91	87	89	85	90	86	87	1
26	IHT 226	AHB 1200 (Check)	88	85	79	82	86	85	86	85	87	82	84	16
27	IHT 227	MH 2705	91	91	75	83	90	85	88	86	88	86	86	5
28	IHT 228	MH 2706	89	86	74	80	86	85	85	86	90	69	81	27
29	IHT 229	MH 2707	90	88	78	83	88	84	86	85	86	82	84	14
30	IHT 230	MH 2708	90	90	74	82	94	84	89	88	89	86	86	4
31	IHT 231	Pratap (Check)	88	86	75	81	81	86	83	80	85	83	82	23
		LOC. MEAN	89	88	77	82	87	85	86	85	88	82	84	
		C.D. (5%)	1.0	2.0	2.0	4.0	2.0	2.0	5.0	3.0	5.0	7.0	2.0	
		C.D. (1%)	1.0	2.0	3.0	6.0	3.0	2.0	7.0	4.0	7.0	9.0	3.0	
		C.V. (%)	0.6	1.2	1.8	2.6	1.4	1.3	2.8	2.4	3.5	5.0	2.3	
		F (Prob)	0.000	0.000	0.000	0.036	0.000	0.000	0.471	0.000	0.000	0.000	0.000	

*LOCATION REJECTED DUE TO DELAYED MATURITY IN CHECKS

CHAPTER I: BREEDING

Table I.52: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PLANT HEIGHT (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	183	211	228	207	140	163	151	153	211	182	187	204	187	8
2	IHT 202	MH 2683	179	227	219	208	148	175	162	148	232	190	177	209	190	6
3	IHT 203	MH 2684	169	215	203	195	149	163	156	145	198	172	168	198	179	16
4	IHT 204	AHB 1269 (Check)	153	208	197	186	142	167	155	155	198	176	172	185	175	22
5	IHT 205	MH 2685	178	228	211	206	144	154	149	148	229	189	168	198	184	11
6	IHT 206	MH 2686	167	199	199	188	154	150	152	144	-	144	171	197	173	24
7	IHT 207	MH 2687	171	206	205	194	142	177	160	134	199	167	179	192	178	17
8	IHT 208	MH 2688	144	210	179	178	130	144	137	137	185	161	164	158	161	31
9	IHT 209	MH 2689	192	223	208	208	149	180	164	154	215	185	165	208	188	7
10	IHT 210	MH 2690	159	209	187	185	127	166	147	147	199	173	165	175	171	26
11	IHT 211	MH 2691	152	208	197	186	132	153	143	134	196	165	175	172	169	27
12	IHT 212	MH 2692	172	218	216	202	135	170	153	150	215	182	173	204	184	12
13	IHT 213	86M01 (Check)	167	213	214	198	149	162	156	148	216	182	178	197	183	13
14	IHT 214	MH 2693	170	211	209	196	139	175	157	138	212	175	166	204	180	15
15	IHT 215	MH 2694	179	224	209	204	131	158	144	120	210	165	172	178	176	20
16	IHT 216	MH 2695	175	225	197	199	148	162	155	134	219	177	157	181	178	18
17	IHT 217	MH 2696	188	231	232	217	151	180	165	142	217	180	179	206	192	4
18	IHT 218	MH 2697	158	222	181	187	135	124	130	144	-	144	164	181	164	30
19	IHT 219	MH 2698	194	194	190	193	140	150	145	150	-	150	166	197	173	23
20	IHT 220	MH 2699	169	220	206	198	155	154	155	138	207	173	163	180	177	19
21	IHT 221	MH 2700	187	212	209	203	141	164	153	155	217	186	160	181	181	14
22	IHT 222	MH 2701	210	221	236	222	141	166	154	168	210	189	166	206	192	5
23	IHT 223	MH 2702	195	228	237	220	157	160	158	155	243	199	162	196	192	3
24	IHT 224	MH 2703	189	222	213	208	146	170	158	150	198	174	171	204	185	10
25	IHT 225	MH 2704	213	223	228	221	153	182	168	160	220	190	183	206	196	2
26	IHT 226	AHB 1200 (Check)	151	229	179	186	149	168	159	154	200	177	161	187	175	21
27	IHT 227	MH 2705	202	255	217	225	137	183	160	157	215	186	195	220	198	1
28	IHT 228	MH 2706	180	219	213	204	145	174	160	147	212	180	183	197	186	9
29	IHT 229	MH 2707	151	211	190	184	141	158	150	149	193	171	171	181	172	25
30	IHT 230	MH 2708	141	217	209	189	140	138	139	142	189	166	168	157	167	29
31	IHT 231	Pratap (Check)	144	198	198	180	146	144	145	135	203	169	161	189	169	28
		LOC. MEAN	174	217	207	199	143	162	153	146	209	178	171	192	180	
		C.D. (5%)	3.0	22.0	6.0	18.0	10.0	18.0	20.0	26.0	18.0	21.0	15.0	14.0	9.0	
		C.D. (1%)	5.0	29.0	8.0	24.0	14.0	25.0	27.0	34.0	24.0	28.0	20.0	18.0	12.0	
		C.V. (%)	1.2	6.2	1.8	5.6	4.4	7.0	6.5	10.8	5.3	5.6	5.5	4.4	5.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.000	0.000	0.082	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.53: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	2.0	1.7	3.3	2.3	3.6	2.9	3.2	3.2	1.0	2.1	2.8	2.1	2.5	19
2	IHT 202	MH 2683	1.3	2.1	2.7	2.0	3.3	3.0	3.2	3.4	1.0	2.2	2.8	2.0	2.4	29
3	IHT 203	MH 2684	1.0	2.2	4.6	2.6	3.0	2.8	2.9	3.3	1.1	2.2	2.5	2.1	2.5	18
4	IHT 204	AHB 1269 (Check)	1.0	2.3	3.4	2.2	2.8	3.2	3.0	3.1	1.0	2.1	2.5	2.3	2.4	28
5	IHT 205	MH 2685	2.3	2.1	3.3	2.6	2.8	2.9	2.8	3.3	1.3	2.3	2.7	2.4	2.6	12
6	IHT 206	MH 2686	1.3	2.7	4.6	2.9	2.8	3.0	2.9	3.1	-	3.1	2.6	3.2	2.9	1
7	IHT 207	MH 2687	2.0	2.9	4.4	3.1	3.1	3.3	3.2	2.7	1.0	1.9	2.9	3.1	2.8	2
8	IHT 208	MH 2688	1.3	2.7	4.7	2.9	3.1	3.6	3.4	2.7	1.1	1.9	2.7	2.3	2.7	6
9	IHT 209	MH 2689	1.3	2.0	3.3	2.2	2.8	3.0	2.9	3.0	1.1	2.1	3.1	2.3	2.4	25
10	IHT 210	MH 2690	2.0	2.3	3.7	2.7	2.9	2.5	2.7	2.9	1.1	2.0	2.4	2.2	2.4	26
11	IHT 211	MH 2691	2.0	1.9	3.2	2.4	2.6	2.6	2.6	3.0	1.1	2.1	2.9	2.3	2.4	27
12	IHT 212	MH 2692	2.0	2.3	3.6	2.6	3.0	2.8	2.9	2.7	1.3	2.0	2.9	2.3	2.5	17
13	IHT 213	86M01 (Check)	2.7	2.2	3.0	2.6	3.0	3.1	3.1	2.7	1.1	1.9	2.7	2.2	2.5	18
14	IHT 214	MH 2693	2.0	2.3	2.9	2.4	3.4	3.4	3.4	2.6	1.1	1.8	2.6	2.1	2.5	21
15	IHT 215	MH 2694	2.0	2.5	3.5	2.6	2.9	3.1	3.0	2.5	1.1	1.8	2.7	2.0	2.5	24
16	IHT 216	MH 2695	1.3	2.4	3.3	2.4	2.9	3.6	3.3	2.9	1.1	2.0	3.0	2.7	2.6	10
17	IHT 217	MH 2696	2.0	2.4	2.8	2.4	3.2	2.9	3.1	3.2	1.1	2.1	2.5	2.7	2.5	16
18	IHT 218	MH 2697	2.7	2.8	3.2	2.9	3.0	3.1	3.0	2.7	-	2.7	2.4	2.3	2.8	4
19	IHT 219	MH 2698	1.7	3.1	3.7	2.8	2.9	3.1	3.0	2.8	-	2.8	2.5	2.8	2.8	3
20	IHT 220	MH 2699	1.3	2.4	4.6	2.8	3.1	2.9	3.0	2.8	1.1	2.0	2.7	2.1	2.6	12
21	IHT 221	MH 2700	1.3	2.0	5.1	2.8	2.8	2.7	2.7	3.1	1.3	2.2	2.5	2.4	2.6	11
22	IHT 222	MH 2701	2.0	2.1	4.3	2.8	2.9	2.3	2.6	2.9	1.1	2.0	2.5	2.3	2.5	22
23	IHT 223	MH 2702	2.0	2.5	4.4	3.0	3.0	2.9	3.0	3.5	1.0	2.2	2.7	2.7	2.7	5
24	IHT 224	MH 2703	2.0	1.6	3.4	2.3	3.1	2.9	3.0	2.8	1.1	2.0	2.6	2.9	2.5	20
25	IHT 225	MH 2704	1.7	2.0	3.3	2.3	3.3	3.0	3.2	3.3	1.2	2.3	2.5	2.9	2.6	13
26	IHT 226	AHB 1200 (Check)	1.3	1.8	4.2	2.5	2.8	2.9	2.8	3.3	1.0	2.1	2.7	2.3	2.5	23
27	IHT 227	MH 2705	1.3	1.9	4.6	2.6	3.3	3.2	3.3	3.2	1.0	2.1	2.5	2.7	2.6	9
28	IHT 228	MH 2706	1.3	2.1	3.7	2.4	3.4	3.5	3.5	3.3	1.1	2.2	2.6	2.0	2.6	14
29	IHT 229	MH 2707	1.0	2.3	4.4	2.6	2.9	3.7	3.3	3.0	1.1	2.1	2.4	2.0	2.5	15
30	IHT 230	MH 2708	1.3	2.5	3.7	2.5	3.0	3.3	3.1	3.5	1.1	2.3	3.0	2.4	2.6	8
31	IHT 231	Pratap (Check)	1.3	2.5	3.6	2.5	3.4	3.3	3.4	3.5	1.5	2.5	2.5	2.3	2.7	7
		LOC. MEAN	1.7	2.3	3.8	2.6	3.0	3.0	3.0	3.0	1.1	2.1	2.7	2.4	2.6	
		C.D. (5%)	0.6	0.2	0.4	0.9	0.5	0.8	0.5	1.0	0.4	0.4	0.5	0.5	0.3	
		C.D. (1%)	0.8	0.3	0.6	1.2	0.7	1.1	0.7	1.3	0.5	0.6	0.6	0.6	0.4	
		C.V. (%)	23.0	6.1	7.1	20.6	10.7	16.7	8.0	19.7	19.9	10.3	11.2	11.7	14.1	
		F (Prob)	0.000	0.000	0.000	0.877	0.000	0.000	0.063	0.000	0.000	0.271	0.000	0.000	0.816	

CHAPTER I: BREEDING

Table I.54: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE LENGTH (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	28	28	34	30	23	25	24	25	28	27	24	25	27	2
2	IHT 202	MH 2683	25	30	34	30	21	23	22	23	29	26	22	26	26	3
3	IHT 203	MH 2684	23	27	27	26	22	23	23	22	24	23	22	23	24	14
4	IHT 204	AHB 1269 (Check)	25	25	28	26	19	17	18	21	23	22	18	20	22	26
5	IHT 205	MH 2685	25	27	24	25	21	22	21	23	25	24	20	24	23	17
6	IHT 206	MH 2686	29	29	30	29	22	23	23	24	-	24	23	36	27	1
7	IHT 207	MH 2687	25	29	31	28	22	24	23	23	29	26	23	27	26	4
8	IHT 208	MH 2688	21	27	24	24	16	19	18	22	21	21	19	21	21	29
9	IHT 209	MH 2689	24	28	28	27	24	23	24	22	25	24	22	23	24	10
10	IHT 210	MH 2690	21	25	25	24	18	19	19	22	22	22	19	22	22	27
11	IHT 211	MH 2691	20	25	24	23	19	19	19	22	22	22	20	20	21	28
12	IHT 212	MH 2692	23	26	28	26	18	22	20	22	25	24	22	22	23	19
13	IHT 213	86M01 (Check)	25	28	34	29	20	24	22	24	29	27	23	26	26	5
14	IHT 214	MH 2693	22	25	29	25	18	22	20	22	25	24	20	21	23	20
15	IHT 215	MH 2694	25	27	28	27	19	22	21	22	26	24	20	23	24	15
16	IHT 216	MH 2695	20	26	25	24	20	19	20	25	23	24	19	22	22	23
17	IHT 217	MH 2696	25	28	31	28	18	24	21	24	27	26	23	22	25	8
18	IHT 218	MH 2697	24	25	23	24	21	20	20	21	-	21	20	24	22	22
19	IHT 219	MH 2698	24	26	30	27	18	23	20	22	-	22	21	24	23	16
20	IHT 220	MH 2699	24	25	27	25	19	20	20	20	24	22	18	21	22	24
21	IHT 221	MH 2700	23	23	22	23	19	21	20	26	23	25	20	21	22	25
22	IHT 222	MH 2701	24	27	29	27	22	24	23	25	29	27	20	28	25	6
23	IHT 223	MH 2702	24	27	28	26	20	24	22	22	27	25	22	25	24	11
24	IHT 224	MH 2703	24	26	30	27	21	23	22	22	27	24	20	25	24	12
25	IHT 225	MH 2704	25	27	30	27	20	23	22	24	27	25	22	27	25	7
26	IHT 226	AHB 1200 (Check)	25	27	27	26	18	23	21	22	24	23	19	23	23	18
27	IHT 227	MH 2705	24	27	23	25	22	26	24	23	25	24	21	25	24	13
28	IHT 228	MH 2706	24	27	28	26	22	23	22	25	27	26	22	24	24	9
29	IHT 229	MH 2707	24	28	31	28	23	22	23	23	27	25	22	25	25	7
30	IHT 230	MH 2708	20	27	24	24	14	18	16	22	25	24	21	25	22	26
31	IHT 231	Pratap (Check)	23	25	25	25	21	20	21	23	24	24	19	23	23	21
		LOC. MEAN	24	27	28	26	20	22	21	23	26	24	21	24	24	
		C.D. (5%)	1.0	3.0	2.0	3.0	2.0	2.0	3.0	5.0	3.0	3.0	2.0	2.0	1.0	
		C.D. (1%)	2.0	3.0	2.0	4.0	2.0	3.0	4.0	6.0	4.0	4.0	3.0	2.0	2.0	
		C.V. (%)	3.0	6.0	3.6	6.7	5.2	6.7	7.1	12.1	7.4	6.3	7.1	4.2	6.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.018	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.55: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	3.2	3.6	3.7	3.5	3.1	3.2	3.1	2.4	3.1	2.7	2.8	2.8	3.1	10
2	IHT 202	MH 2683	3.2	3.7	3.8	3.6	2.7	3.2	3.0	2.2	3.2	2.7	2.2	2.9	3.0	22
3	IHT 203	MH 2684	3.4	3.7	4.2	3.8	3.1	3.4	3.2	1.9	3.1	2.5	2.5	2.8	3.1	8
4	IHT 204	AHB 1269 (Check)	3.3	3.7	4.2	3.7	2.6	3.2	2.9	2.1	3.4	2.8	2.7	2.7	3.1	9
5	IHT 205	MH 2685	3.2	3.7	3.9	3.6	3.1	3.1	3.1	2.1	3.3	2.7	2.6	2.8	3.1	13
6	IHT 206	MH 2686	4.0	3.8	4.1	4.0	3.4	3.3	3.3	2.0	-	2.0	3.1	3.9	3.4	1
7	IHT 207	MH 2687	3.2	3.8	3.6	3.5	3.4	3.3	3.4	2.1	3.0	2.6	2.9	3.2	3.2	4
8	IHT 208	MH 2688	3.2	3.7	3.5	3.5	2.6	3.0	2.8	2.4	2.7	2.6	2.5	2.8	2.9	27
9	IHT 209	MH 2689	3.1	3.5	3.8	3.5	2.7	3.2	3.0	2.0	3.1	2.5	2.5	3.5	3.1	16
10	IHT 210	MH 2690	3.2	3.6	4.0	3.6	3.1	3.3	3.2	2.2	2.6	2.4	2.5	2.8	3.0	19
11	IHT 211	MH 2691	3.2	3.6	3.9	3.6	2.9	3.3	3.1	2.2	3.1	2.7	2.9	2.9	3.1	8
12	IHT 212	MH 2692	3.3	3.7	4.1	3.7	3.1	3.5	3.3	2.1	3.0	2.6	2.5	3.2	3.2	6
13	IHT 213	86M01 (Check)	2.9	3.4	3.8	3.4	2.4	3.0	2.7	2.1	2.8	2.5	2.6	3.0	2.9	28
14	IHT 214	MH 2693	2.9	3.6	3.8	3.4	2.8	3.4	3.1	2.2	3.3	2.8	2.5	2.8	3.0	20
15	IHT 215	MH 2694	2.7	3.4	3.7	3.3	3.0	3.2	3.1	2.1	3.0	2.6	2.9	2.8	3.0	25
16	IHT 216	MH 2695	3.2	3.7	4.1	3.7	2.7	3.3	3.0	2.1	3.0	2.5	2.7	2.8	3.1	18
17	IHT 217	MH 2696	3.1	3.7	3.9	3.5	2.5	3.3	2.9	2.1	3.1	2.6	2.7	3.2	3.1	17
18	IHT 218	MH 2697	2.7	3.3	2.8	2.9	3.1	3.1	3.1	1.9	-	1.9	2.7	2.5	2.8	30
19	IHT 219	MH 2698	2.7	3.5	3.7	3.3	2.4	2.8	2.6	2.1	-	2.1	2.5	2.6	2.8	29
20	IHT 220	MH 2699	3.1	3.7	3.5	3.4	2.6	3.2	2.9	2.2	3.0	2.6	2.5	3.0	3.0	24
21	IHT 221	MH 2700	3.2	3.6	4.0	3.6	2.9	3.4	3.1	2.0	3.1	2.6	2.6	2.9	3.1	12
22	IHT 222	MH 2701	3.3	3.7	3.8	3.6	2.8	3.4	3.1	2.3	3.5	2.9	2.4	3.6	3.2	3
23	IHT 223	MH 2702	3.5	3.6	4.0	3.7	3.0	3.4	3.2	2.1	3.2	2.7	2.8	3.0	3.2	5
24	IHT 224	MH 2703	3.5	3.6	4.2	3.8	3.0	3.5	3.2	2.2	3.3	2.8	2.4	3.1	3.2	2
25	IHT 225	MH 2704	3.2	3.6	4.0	3.6	2.8	3.3	3.1	2.2	3.2	2.7	2.5	3.0	3.1	11
26	IHT 226	AHB 1200 (Check)	3.3	3.6	3.7	3.5	3.1	3.4	3.3	2.2	3.2	2.7	2.8	3.0	3.1	7
27	IHT 227	MH 2705	3.0	3.6	3.3	3.3	2.9	3.5	3.2	2.0	3.0	2.5	2.6	3.1	3.0	23
28	IHT 228	MH 2706	3.1	3.7	3.7	3.5	2.8	3.4	3.1	2.1	3.1	2.6	2.7	3.0	3.1	14
29	IHT 229	MH 2707	3.2	3.6	3.9	3.5	2.7	3.1	2.9	2.0	3.1	2.6	2.8	2.9	3.0	21
30	IHT 230	MH 2708	3.4	3.5	3.7	3.5	2.9	2.5	2.7	2.0	3.2	2.6	2.7	2.8	3.0	26
31	IHT 231	Pratap (Check)	3.2	3.6	3.8	3.5	3.2	3.3	3.3	2.0	3.2	2.6	2.5	2.9	3.1	15
		LOC. MEAN	3.2	3.6	3.8	3.5	2.9	3.2	3.1	2.1	3.1	2.6	2.6	3.0	3.1	
		C.D. (5%)	0.2	0.2	0.1	0.3	0.5	0.5	0.4	0.3	0.4	0.4	0.5	0.3	0.2	
		C.D. (1%)	0.2	0.3	0.2	0.4	0.6	0.6	0.5	0.3	0.5	0.5	0.6	0.4	0.2	
		C.V. (%)	2.9	3.9	2.3	4.9	9.7	8.7	6.2	7.4	7.6	6.6	11.1	5.5	5.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.709	0.000	0.000	0.021	

CHAPTER I: BREEDING

Table I.56: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 1000-SEED Wt.(g) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	16.3	11.1	12.6	13.3	11.2	11.9	11.6	11.9	9.7	10.8	12.7	13.3	12.3	5
2	IHT 202	MH 2683	13.9	10.0	12.4	12.1	11.3	9.8	10.6	11.7	11.4	11.6	13.1	12.1	11.7	17
3	IHT 203	MH 2684	14.5	9.8	9.5	11.3	11.2	10.4	10.8	12.9	8.3	10.6	9.2	9.3	10.6	29
4	IHT 204	AHB 1269 (Check)	12.3	9.5	12.0	11.3	11.4	12.0	11.7	12.7	13.4	13.0	14.0	10.5	12.0	14
5	IHT 205	MH 2685	13.8	10.8	12.3	12.3	11.5	11.6	11.6	11.5	10.9	11.2	17.9	9.9	12.2	7
6	IHT 206	MH 2686	15.8	13.3	12.0	13.7	11.3	12.4	11.9	11.2	-	11.2	11.5	15.7	12.9	2
7	IHT 207	MH 2687	16.0	13.7	10.9	13.5	13.3	11.3	12.3	13.6	13.8	13.7	15.4	15.4	13.7	1
8	IHT 208	MH 2688	14.1	11.9	12.1	12.7	12.2	11.1	11.6	10.9	11.3	11.1	11.4	13.3	12.0	13
9	IHT 209	MH 2689	12.5	12.0	12.8	12.4	12.1	11.8	12.0	14.2	10.6	12.4	14.1	13.4	12.6	4
10	IHT 210	MH 2690	12.0	11.2	10.5	11.2	12.7	11.9	12.3	10.1	13.9	12.0	11.9	14.2	12.0	12
11	IHT 211	MH 2691	13.8	11.8	11.3	12.3	12.2	10.7	11.5	13.4	9.2	11.3	11.1	11.5	11.7	18
12	IHT 212	MH 2692	13.2	9.8	12.6	11.9	12.7	10.6	11.7	11.2	11.8	11.5	9.6	11.2	11.4	21
13	IHT 213	86M01 (Check)	13.7	11.1	13.7	12.8	11.5	10.7	11.1	10.6	11.3	10.9	14.2	12.6	12.1	9
14	IHT 214	MH 2693	12.5	10.1	11.9	11.5	12.4	11.5	12.0	10.3	9.3	9.8	9.1	9.2	10.7	28
15	IHT 215	MH 2694	11.5	10.4	10.1	10.7	11.3	11.1	11.2	12.4	11.4	11.9	10.9	11.2	11.1	25
16	IHT 216	MH 2695	12.2	11.0	12.3	11.8	12.7	11.7	12.2	12.6	9.5	11.0	8.5	12.5	11.4	20
17	IHT 217	MH 2696	10.5	9.1	9.2	9.6	12.4	11.7	12.1	13.3	9.4	11.4	6.8	10.3	10.3	30
18	IHT 218	MH 2697	10.4	9.8	8.1	9.4	12.7	11.8	12.2	12.7	-	12.7	9.1	7.6	10.3	31
19	IHT 219	MH 2698	11.2	10.7	10.7	10.9	11.3	11.1	11.2	12.6	-	12.6	10.2	10.9	11.1	26
20	IHT 220	MH 2699	9.9	11.8	10.6	10.8	12.3	9.9	11.1	10.7	12.0	11.3	9.2	11.6	10.9	27
21	IHT 221	MH 2700	11.6	9.5	10.6	10.6	12.2	10.4	11.3	13.6	13.5	13.6	15.9	11.4	12.1	11
22	IHT 222	MH 2701	14.9	11.9	11.5	12.8	11.7	11.6	11.7	10.9	18.0	14.5	10.2	15.4	12.9	3
23	IHT 223	MH 2702	12.2	9.1	10.9	10.7	11.6	10.5	11.1	14.2	15.0	14.6	7.5	12.8	11.5	19
24	IHT 224	MH 2703	11.7	8.1	11.8	10.5	11.6	11.8	11.7	10.1	11.8	11.0	14.7	10.7	11.4	22
25	IHT 225	MH 2704	12.3	10.0	10.2	10.9	11.5	10.6	11.0	13.4	8.9	11.2	11.6	12.0	11.2	24
26	IHT 226	AHB 1200 (Check)	11.5	10.0	11.6	11.0	12.7	11.0	11.8	11.2	10.9	11.0	11.9	11.4	11.4	23
27	IHT 227	MH 2705	13.6	10.8	10.3	11.6	11.3	11.3	11.3	10.6	13.1	11.9	12.1	13.4	11.8	16
28	IHT 228	MH 2706	12.1	11.2	12.5	11.9	11.8	12.3	12.0	10.3	12.1	11.2	13.9	11.4	11.9	15
29	IHT 229	MH 2707	13.1	11.5	10.6	11.7	11.4	10.9	11.2	12.4	16.9	14.7	11.5	10.8	12.1	10
30	IHT 230	MH 2708	12.9	11.3	10.5	11.6	12.3	11.1	11.7	12.6	14.8	13.7	10.9	13.1	12.2	8
31	IHT 231	Pratap (Check)	13.4	10.8	10.9	11.7	11.4	10.6	11.0	13.3	12.3	12.8	14.4	13.5	12.3	6
LOC. MEAN			12.9	10.7	11.3	11.6	11.9	11.2	11.5	12.0	12.0	12.0	11.8	12.0	11.7	
C.D. (5%)			0.5	0.9	0.0	1.7	1.1	1.7	1.2	2.4	0.7	4.1	0.2	1.6	1.4	
C.D. (1%)			0.6	1.2	0.1	2.3	1.5	2.3	1.7	3.2	0.9	5.5	0.3	2.1	1.8	
C.V. (%)			2.2	5.0	0.2	9.0	5.8	9.5	5.3	12.4	3.6	16.5	1.2	8.2	12.7	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.355	0.000	0.000	0.614	0.000	0.000	0.002	

CHAPTER I: BREEDING

Table I.57: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	74	67	56	66	70	73	72	63	72	68	56	64	66	10
2	IHT 202	MH 2683	73	58	59	64	72	76	74	60	74	67	66	67	67	6
3	IHT 203	MH 2684	73	63	64	67	71	73	72	64	74	69	64	66	68	4
4	IHT 204	AHB 1269 (Check)	74	61	49	61	74	71	73	70	76	73	67	59	67	8
5	IHT 205	MH 2685	75	92	66	78	72	80	76	65	77	71	53	71	72	1
6	IHT 206	MH 2686	73	29	33	45	69	21	45	25	-	25	56	44	44	31
7	IHT 207	MH 2687	72	54	49	58	70	67	69	42	72	57	67	66	62	24
8	IHT 208	MH 2688	72	57	53	61	73	70	72	66	72	69	61	49	64	18
9	IHT 209	MH 2689	70	69	58	65	74	72	73	57	78	68	64	72	68	3
10	IHT 210	MH 2690	74	68	52	64	68	73	71	51	72	62	47	69	64	19
11	IHT 211	MH 2691	74	69	62	68	72	74	73	62	65	64	52	59	65	13
12	IHT 212	MH 2692	76	66	58	66	71	79	75	67	73	70	67	61	68	2
13	IHT 213	86M01 (Check)	75	61	55	64	72	74	73	60	74	67	64	71	67	7
14	IHT 214	MH 2693	73	64	65	68	72	73	72	56	68	62	58	67	66	9
15	IHT 215	MH 2694	75	59	55	63	73	72	73	57	72	64	57	59	64	17
16	IHT 216	MH 2695	75	57	49	60	73	71	72	47	64	55	64	65	63	22
17	IHT 217	MH 2696	73	60	58	64	70	76	73	52	64	58	53	59	63	21
18	IHT 218	MH 2697	74	35	44	51	70	25	48	23	-	23	54	43	46	30
19	IHT 219	MH 2698	70	41	43	51	70	70	70	32	-	32	50	56	54	29
20	IHT 220	MH 2699	70	54	57	60	74	73	74	59	67	63	61	64	64	16
21	IHT 221	MH 2700	73	53	56	61	74	78	76	64	76	70	53	63	66	12
22	IHT 222	MH 2701	73	59	63	65	74	77	76	62	66	64	69	66	68	5
23	IHT 223	MH 2702	70	62	58	64	71	73	72	57	69	63	64	63	65	14
24	IHT 224	MH 2703	72	63	53	63	72	80	76	62	64	63	59	62	65	15
25	IHT 225	MH 2704	74	64	57	65	72	76	74	58	67	63	58	69	66	11
26	IHT 226	AHB 1200 (Check)	73	53	50	59	73	73	73	55	60	58	53	61	61	26
27	IHT 227	MH 2705	73	53	60	62	70	75	72	54	63	58	57	65	63	20
28	IHT 228	MH 2706	72	58	49	60	73	72	73	43	73	58	52	63	62	25
29	IHT 229	MH 2707	76	41	43	53	72	77	75	60	61	60	59	59	61	27
30	IHT 230	MH 2708	74	38	55	56	70	67	69	50	53	52	69	61	60	28
31	IHT 231	Pratap (Check)	75	48	53	59	74	73	74	59	66	63	53	58	62	23
		LOC. MEAN	73	57	54	62	72	70	71	55	69	62	59	62	64	
		C.D. (5%)	5.0	9.0	13.0	11.0	4.0	6.0	18.0	9.0	12.0	11.0	15.0	12.0	5.0	
		C.D. (1%)	6.0	12.0	18.0	15.0	5.0	8.0	24.0	13.0	16.0	15.0	19.0	16.0	6.0	
		C.V. (%)	3.8	9.8	15.1	10.9	3.4	5.3	12.5	10.5	10.8	8.4	15.1	11.6	8.1	
		F (Prob)	0.000	0.000	0.000	0.002	0.000	0.000	0.291	0.000	0.000	0.042	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.58: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PCR	MS MEAN	APR	PMP	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	98	98	52	83	84	78	81	98	53	80	19
2	IHT 202	MH 2683	99	100	65	88	86	97	91	95	55	85	9
3	IHT 203	MH 2684	98	95	73	89	85	65	75	97	72	84	13
4	IHT 204	AHB 1269 (Check)	97	87	72	85	84	83	84	98	37	80	20
5	IHT 205	MH 2685	100	97	83	93	83	88	86	89	66	87	4
6	IHT 206	MH 2686	98	88	42	76	83	-	83	90	71	79	22
7	IHT 207	MH 2687	96	98	57	84	87	70	78	96	33	77	25
8	IHT 208	MH 2688	97	97	65	86	84	88	86	98	76	86	5
9	IHT 209	MH 2689	98	95	72	88	84	92	88	96	66	86	6
10	IHT 210	MH 2690	95	93	35	74	85	53	69	94	31	70	30
11	IHT 211	MH 2691	97	95	73	89	85	60	72	97	36	78	23
12	IHT 212	MH 2692	99	98	68	88	85	88	87	96	63	85	8
13	IHT 213	86M01 (Check)	98	95	73	89	85	62	73	92	71	82	17
14	IHT 214	MH 2693	100	100	73	91	82	85	84	94	44	83	15
15	IHT 215	MH 2694	97	93	70	87	86	58	72	97	70	82	18
16	IHT 216	MH 2695	98	82	68	83	84	28	56	98	29	69	31
17	IHT 217	MH 2696	97	100	72	89	86	87	86	95	43	83	16
18	IHT 218	MH 2697	99	92	73	88	85	-	85	97	64	85	10
19	IHT 219	MH 2698	95	90	37	74	84	-	84	98	46	75	27
20	IHT 220	MH 2699	99	78	70	82	82	75	79	89	61	79	21
21	IHT 221	MH 2700	98	87	68	84	83	82	83	90	25	76	26
22	IHT 222	MH 2701	97	93	77	89	88	83	86	96	80	88	3
23	IHT 223	MH 2702	98	92	67	86	84	33	59	98	35	72	28
24	IHT 224	MH 2703	98	97	73	89	82	83	83	96	87	88	2
25	IHT 225	MH 2704	99	95	80	91	86	97	91	94	88	91	1
26	IHT 226	AHB 1200 (Check)	99	83	8	63	84	60	72	97	-	72	29
27	IHT 227	MH 2705	100	97	10	69	86	75	80	96	76	77	24
28	IHT 228	MH 2706	96	97	72	88	85	82	83	92	75	85	7
29	IHT 229	MH 2707	98	98	75	90	84	83	84	94	59	85	12
30	IHT 230	MH 2708	98	98	85	94	82	77	80	97	57	85	11
31	IHT 231	Pratap (Check)	97	98	65	87	83	77	80	96	66	83	14
		LOC. MEAN	98	94	64	85	84	75	79	95	58	81	
		C.D. (5%)	4.0	7.0	7.0	18.0	2.0	21.0	11.5	2.0	18.0	14.0	
		C.D. (1%)	5.0	10.0	10.0	24.0	3.0	29.0	16.0	3.0	25.0	18.0	
		C.V. (%)	2.3	4.9	7.1	12.9	1.8	17.6	9.7	1.4	19.6	13.1	
		F (Prob)	0.000	0.000	0.000	0.230	0.000	0.000	0.000	0.000	0.000	0.040	

Table I.59: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 ZONE B
GRAIN QUALITY: IRON CONTENT (ppm)

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PMP	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	61	82	40	36	55	10
2	IHT 202	MH 2683	63	57	45	41	51	12
3	IHT 204	AHB 1269 (Check)	88	80	60	52	70	4
4	IHT 209	MH 2689	74	73	39	44	57	8
5	IHT 211	MH 2691	68	93	62	59	71	3
6	IHT 212	MH 2692	63	73	46	40	56	9
7	IHT 213	86M01 (Check)	67	63	37	46	53	11
8	IHT 214	MH 2693	50	65	43	40	50	13
9	IHT 217	MH 2696	70	65	57	53	61	6
10	IHT 225	MH 2704	91	83	76	66	79	2
11	IHT 226	AHB 1200 (Check)	95	95	67	63	80	1
12	IHT 227	MH 2705	64	73	47	48	58	7
13	IHT 228	MH 2706	59	72	40	48	55	10
14	IHT 231	Pratap (Check)	72	90	54	58	68	5

Table I.60: INITIAL HYBRID TRIAL (Medium) KHARIF - 2022 ZONE B
GRAIN QUALITY: ZINC CONTENT (ppm)

S.NO.	TEST CODE	ENTRY	ABD1	DHL	PMP	CBE	ZONE MEAN	RANK
1	IHT 201	MH 2682	36	34	20	37	32	4
2	IHT 202	MH 2683	32	32	22	30	29	7
3	IHT 204	AHB 1269 (Check)	36	34	25	39	33	3
4	IHT 209	MH 2689	38	33	16	34	31	5
5	IHT 211	MH 2691	31	34	22	50	34	2
6	IHT 212	MH 2692	30	29	18	35	28	8
7	IHT 213	86M01 (Check)	32	31	19	44	32	4
8	IHT 214	MH 2693	33	28	19	40	30	6
9	IHT 217	MH 2696	35	29	20	32	29	7
10	IHT 225	MH 2704	36	33	20	38	32	4
11	IHT 226	AHB 1200 (Check)	35	36	21	45	34	2
12	IHT 227	MH 2705	50	36	17	45	37	1
13	IHT 228	MH 2706	32	30	16	40	29	7
14	IHT 231	Pratap (Check)	37	31	21	39	32	4

CHAPTER I: BREEDING

Table I.61: INITIAL HYBRID TRIAL (Late) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers			Insecticide
							N	P	K	
RAJASTHAN										
Jaipur (SKNAU)	SL	-	5.7.22	12.10.22	27.7.22	Nil	40	30	0	Nil
Jaipur (Seedworks)	MSL	7.2	30.6.22	28.9.22	17.7.22	30.6,13.7, 3.8.22	80	60	40	Chloropyriphos, Coragen, Super Killer
Paota (Limagrain)	M	-	30.6.22	5.10.22	27.7.22	27.8.22	50	30	30	Nil
Tijara (Rallis)	S	6.5	14.7.22	7.10.22	30.7.22	14.7.22	60	30	30	Nil
Alwar (Corteva)	L	8.6	7.7.22	28.10.22	30.8.22	Life Saving	88	60	0	Cypermethrin, Clothianidin
Alwar (Bioseed)	S	6.5	4.7.22	31.10.22	5.8.22	4.7,15.7.22	110	68	0	Cypermethrin
Dausa (Rasi Seeds)	-	-	28.6.22	29.9.22	20.7.22	Nil	-	-	-	Nil
GUJARAT										
Jamnagar (JAU)	MB	7.6	7.7.22	7.10.22	19.7, 27.7,4.8.22	Nil	80	40	0	Nil
Ahemdabad (Nandi)	SL	-	18.7.22	18.10.22	10.8, 26.8.22	Nil	80	40	0	Coragen
Dhenera (J. K. Seed)	SL	-	7.7.22	3.10.22	10.8.22	2 Times	40	10	10	Nil
Dehgam (kaveri Seed)	SL	-	3.7.22	30.10.22	13.7, 30.7.22	Nil	128	92	0	Nil
UTTAR PRADESH										
Aligarh (Hytech)	A	8.1	6.7.22	11.10.22	28.8, 15.9.22	6.7, 20.7.22	60	25	15	Monocrotophos
Hathrus (Ganga Kaveri)	SL	6.5	11.7.22	14.10.22	5.8.22	23.7.22	40	20	20	Chloropyriphos
Mathura (Kamadgiri)	SL	-	2.7.22	2.10.22	-	5.9.22	80	40	40	Chloropyriphos, Cypermethrin
HARYANA										
Hisar (CCSHAU)	SL	-	19.7.22	4.11.22	-	10.9.22	100	40	0	Nil
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	21.7.22	23.10.22	19.8.22	20.8.22	60	40	20	Nil
PUNJAB										
Ludhiana (PAU)	SL	8.2	9.7.22	20.11.22	31.7, 2.9.22	1.8,1.9.22	100	60	0	Nil

SL = Sandy Loam; MB = Medium Black; L = Loam; MSL = Medium Sandy Loam; A = Alluvial; F = Fertile.

Table I.62: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	4433	5000	5692	4151	4396	3886	4091	4521	4493	7111	2182	6500	5072
2	IHT 302	MH 2710	3769	5228	5119	3952	3033	3531	3166	3971	4234	5702	2760	6139	4709
3	IHT 303	MH 2711	3988	5389	5626	3185	2664	4839	3885	4225	3785	4718	2663	6006	4293
4	IHT 304	MH 2712	4502	5272	4151	3889	4232	4686	4319	4436	4185	5044	2442	6800	4618
5	IHT 305	MH 2713	3053	4650	4527	3041	2592	3250	3098	3459	4414	6370	2769	5650	4801
6	IHT 306	AHB 1200 (Check)	2999	3050	2771	2669	2727	3800	3127	3020	3641	3274	2177	4456	3387
7	IHT 307	MH 2714	2749	3133	3753	1775	2081	2775	4584	2979	2359	2972	2215	3750	2824
8	IHT 308	MH 2715	3760	5439	5332	3770	3187	4517	2914	4131	4396	6969	2480	6100	4986
9	IHT 309	MH 2716	2904	5439	5336	3543	4213	2839	4465	4106	4741	6005	2508	6389	4911
10	IHT 310	MH 2717	4913	5556	5156	3075	2929	4508	2746	4126	4789	5653	2206	6628	4819
11	IHT 311	MH 2718	4889	5156	4572	3252	2504	4402	4367	4163	4713	5884	2623	6422	4911
12	IHT 312	MH 2719	4425	5383	6419	3951	3577	1869	3414	4148	4426	5563	2703	6389	4770
13	IHT 313	MH 2720	4532	5328	5628	4990	3279	4650	4348	4679	4701	6319	2853	6700	5143
14	IHT 314	MH 2721	4453	4694	4974	3115	2832	5311	3769	4164	4796	5274	2589	6489	4787
15	IHT 315	MH 2722	4627	4683	4353	4091	3015	3925	2579	3896	5000	4367	2572	6172	4528
16	IHT 316	MH 2723	4569	4567	4793	2847	2553	5203	3551	4012	4738	5687	2523	5811	4690
17	IHT 317	MH 2724	2854	3222	3329	2256	2432	3282	3236	2945	3148	3783	2191	4150	3318
18	IHT 318	MH 2725	3943	4417	5132	3476	3190	3811	3929	3985	3238	5073	2425	5561	4074
19	IHT 319	86M86 (Check)	3489	4683	5008	3559	2432	3125	2763	3580	3873	5149	2303	5961	4322
20	IHT 320	MH 2726	2696	4183	4156	2711	2140	4314	2769	3281	3713	3444	2319	5156	3658
21	IHT 321	MH 2727	3237	4400	3671	2829	2081	3661	2564	3206	3380	4459	2250	5839	3982
22	IHT 322	MH 2728	4025	4772	5544	3636	3016	5134	4498	4375	4884	6734	2911	6272	5200
23	IHT 323	MH 2729	4308	4117	4861	3662	2992	4378	4407	4103	4389	5068	2567	6494	4630
24	IHT 324	MH 2730	3972	4772	5583	3528	3242	4400	3951	4207	4565	5753	2868	6167	4838
25	IHT 325	MP 7878 (Check)	3610	4400	4513	3819	2411	4006	4384	3877	4299	5168	2796	6628	4723
26	IHT 326	MH 2731	3488	4756	3869	2636	2183	4336	4469	3677	3590	2703	2150	5711	3539
27	IHT 327	MH 2732	2929	4406	4023	3481	2886	3869	4517	3730	3259	4231	2316	5328	3784
28	IHT 328	MH 2733	4610	5061	5329	2651	2693	4214	4321	4126	4757	4651	2590	5900	4474
29	IHT 329	MH 2734	3778	4394	4664	2670	2182	4097	3870	3665	3384	3972	2427	4650	3608
30	IHT 330	MH 2735	4159	4183	4241	2307	2953	4644	4428	3845	4046	3569	2195	5011	3705
31	IHT 331	KBH 108 (Check)	3334	4856	5493	2733	2179	4303	2693	3656	4042	4106	2475	6322	4236
32	IHT 332	MH 2736	4236	5139	4394	2209	3058	3256	2569	3551	3917	4558	2875	5517	4217
33	IHT 333	MH 2737	3587	4806	3977	3312	2071	2933	2559	3321	4222	5096	2304	4928	4137
34	IHT 334	MH 2738	3470	4972	4278	2549	3157	3072	4373	3696	3972	5767	2678	5494	4478
35	IHT 335	MH 2739	3337	5206	4571	3402	3448	4203	3570	3962	3963	5424	2386	6378	4538
36	IHT 336	MH 2740	3808	4178	3047	2766	3105	3511	3125	3363	3854	5080	2217	4728	3970
		LOC. MEAN	3818	4691	4663	3208	2880	3959	3650	3839	4109	5020	2486	5794	4352
		C.D. (5%)	1302	497	1017	614	844	1074	181	610	939	428	255	841	747
		C.D. (1%)	1729	660	1350	815	1121	1426	240	804	1246	568	338	1117	989
		C.V. (%)	21.0	6.5	13.4	11.8	18.0	16.7	3.0	15.1	14.0	5.2	6.3	8.9	12.3
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		PLOT SIZE (m ²)	6.00	6.00	6.00	5.40	6.00	6.00	5.40	-	7.20	6.00	7.20	6.00	-

Contd..

Table I.62: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	4480	3293	3978	3917	4074	3683	4447	4464	2
2	IHT 302	MH 2710	4659	3130	3906	3898	4478	3611	4403	4166	12
3	IHT 303	MH 2711	4573	2661	2378	3204	4281	3678	4691	4059	16
4	IHT 304	MH 2712	3873	4212	3728	3938	4886	3578	4170	4351	5
5	IHT 305	MH 2713	3889	4167	4100	4052	4549	3578	5057	4044	17
6	IHT 306	AHB 1200 (Check)	2349	1473	2817	2213	2720	3128	3687	2992	35
7	IHT 307	MH 2714	2714	2024	2411	2383	2845	3503	3547	2894	36
8	IHT 308	MH 2715	4667	3604	4211	4161	5179	3694	4721	4408	4
9	IHT 309	MH 2716	4620	2871	4189	3893	4687	3133	4609	4264	10
10	IHT 310	MH 2717	4822	3221	3061	3701	5776	3139	5586	4339	6
11	IHT 311	MH 2718	4107	3286	2550	3314	4844	3970	5144	4276	9
12	IHT 312	MH 2719	4418	3398	3967	3927	4608	3792	4909	4306	7
13	IHT 313	MH 2720	4737	3111	4283	4044	4847	3758	5487	4679	1
14	IHT 314	MH 2721	4254	3313	4078	3882	4565	3978	4352	4285	8
15	IHT 315	MH 2722	4379	3278	2272	3310	4543	3484	4918	4015	20
16	IHT 316	MH 2723	3648	2850	3811	3436	5163	3739	4059	4124	14
17	IHT 317	MH 2724	2784	2339	2733	2619	2891	3032	3751	3024	34
18	IHT 318	MH 2725	4677	3267	2861	3602	3310	3547	5169	3943	21
19	IHT 319	86M86 (Check)	4146	2511	2461	3039	3161	3856	4548	3708	24
20	IHT 320	MH 2726	2893	2661	2789	2781	3384	3004	4326	3333	33
21	IHT 321	MH 2727	4247	3450	2389	3362	4308	3483	5313	3621	27
22	IHT 322	MH 2728	4114	3583	5083	4260	3926	3370	4331	4461	3
23	IHT 323	MH 2729	4760	4194	4122	4359	2941	3096	3804	4127	13
24	IHT 324	MH 2730	4807	3172	4222	4067	3506	3089	4104	4218	11
25	IHT 325	MP 7878 (Check)	4496	3484	4128	4036	3347	3072	4114	4040	18
26	IHT 326	MH 2731	2909	3559	3417	3295	3237	2988	4319	3548	28
27	IHT 327	MH 2732	3438	2767	3167	3124	2472	2944	3587	3507	32
28	IHT 328	MH 2733	3414	3054	3994	3488	4016	3098	5275	4096	15
29	IHT 329	MH 2734	3749	3493	2461	3234	3356	3000	4075	3543	29
30	IHT 330	MH 2735	3710	2983	3861	3518	3682	2572	3997	3679	26
31	IHT 331	KBH 108 (Check)	3018	2428	4578	3341	3043	3833	3524	3703	25
32	IHT 332	MH 2736	3788	3729	4456	3991	3588	3200	4248	3808	23
33	IHT 333	MH 2737	2800	3003	3617	3140	3661	2922	3852	3509	31
34	IHT 334	MH 2738	4216	2606	4428	3750	3849	2713	4629	3896	22
35	IHT 335	MH 2739	3609	2428	4050	3362	4614	3750	4142	4028	19
36	IHT 336	MH 2740	3228	2133	3033	2798	4102	3878	3962	3515	30
LOC. MEAN			3916	3076	3544	3512	3957	3386	4413	3916	
C.D. (5%)			399	539	754	916	641	151	252	372	
C.D. (1%)			530	716	1001	1217	851	200	335	489	
C.V. (%)			6.3	10.8	13.1	16.0	10.0	2.7	3.5	14.1	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PLOT SIZE (m ²)			6.00	6.00	6.00	-	6.00	6.00	6.00	-	

Table I.63: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	8333	8572	20811	9500	8377	11119	9435	15198	7315	5589	9384
2	IHT 302	MH 2710	9250	8656	21533	10964	10340	12148	9653	12682	9028	6950	9578
3	IHT 303	MH 2711	11167	8494	14811	9972	8926	10674	8176	11869	8056	5367	8367
4	IHT 304	MH 2712	11722	8989	21717	12086	11833	13269	9227	11384	9815	6939	9341
5	IHT 305	MH 2713	5944	9881	20533	11103	12329	11958	9981	14651	9907	6739	10320
6	IHT 306	AHB 1200 (Check)	7722	5161	14089	9072	8833	8976	6431	9451	6250	4894	6756
7	IHT 307	MH 2714	11389	8628	14306	9061	10562	10789	6648	10629	5833	6044	7289
8	IHT 308	MH 2715	13556	8250	17544	12732	7938	12004	9162	14634	5972	6667	9109
9	IHT 309	MH 2716	8944	7844	19650	8556	8025	10604	10116	13032	8333	5439	9230
10	IHT 310	MH 2717	10722	8539	17772	10464	10123	11524	9648	12623	7130	6050	8863
11	IHT 311	MH 2718	9722	9328	16511	11383	7549	10899	10032	14979	8380	6261	9913
12	IHT 312	MH 2719	11056	9850	24300	8431	9611	12649	11963	14817	8843	5967	10397
13	IHT 313	MH 2720	10333	8733	20494	11000	10426	12197	10532	15232	8380	6894	10260
14	IHT 314	MH 2721	11167	8578	22972	10797	8247	12352	11338	11764	7824	6922	9462
15	IHT 315	MH 2722	12000	7400	20567	11450	9000	12083	9681	13063	10093	6478	9829
16	IHT 316	MH 2723	11556	8306	18306	12372	10688	12245	9509	14620	7824	5983	9484
17	IHT 317	MH 2724	6556	5167	10428	7150	7723	7405	6083	11409	6019	4850	7090
18	IHT 318	MH 2725	10000	5833	17144	8919	7852	9950	7213	10821	8148	5306	7872
19	IHT 319	86M86 (Check)	9000	6533	18022	10428	8117	10420	9394	13083	6898	6100	8869
20	IHT 320	MH 2726	6222	7228	16828	10800	10188	10253	8250	12551	10278	6472	9388
21	IHT 321	MH 2727	11778	8061	20233	12372	12447	12978	10569	15125	10694	6678	10767
22	IHT 322	MH 2728	12500	8289	23544	15758	8765	13771	10810	15341	9306	6078	10384
23	IHT 323	MH 2729	11194	7061	17717	11197	10997	11633	8931	11182	8194	6261	8642
24	IHT 324	MH 2730	10667	7961	21244	11866	7346	11817	10181	14669	7222	6011	9521
25	IHT 325	MP 7878 (Check)	10611	9406	20717	10744	8457	11987	10269	16268	7130	7389	10264
26	IHT 326	MH 2731	10222	8189	15806	11214	7006	10487	7579	11339	10972	7450	9335
27	IHT 327	MH 2732	9556	7056	19111	8781	10651	11031	8028	10174	8750	6544	8374
28	IHT 328	MH 2733	13944	8850	19711	13078	12686	13654	10556	14594	7824	6694	9917
29	IHT 329	MH 2734	14167	9239	29139	15978	12177	16140	10829	18774	11343	7883	12207
30	IHT 330	MH 2735	12611	7356	19917	10183	7969	11607	8542	13564	9167	6539	9453
31	IHT 331	KBH 108 (Check)	12722	7122	16239	9133	11483	11340	9435	15203	9306	7144	10272
32	IHT 332	MH 2736	11250	8289	19056	7692	7981	10854	8796	11531	8981	6228	8884
33	IHT 333	MH 2737	10472	7489	17000	10758	10093	11162	9148	14628	8009	5544	9333
34	IHT 334	MH 2738	7000	6794	16028	7789	7432	9009	7847	11860	8704	5956	8592
35	IHT 335	MH 2739	10194	7506	24000	15642	10353	13539	9875	14618	9259	7100	10213
36	IHT 336	MH 2740	8111	7406	17128	8853	7914	9882	8681	13554	6435	5839	8627
		LOC. MEAN	10371	7946	19026	10758	9457	11511	9237	13359	8378	6313	9322
		C.D. (5%)	2049	770	4427	3697	943	3194	1664	2406	1594	1014	1893
		C.D. (1%)	2720	1023	5878	4908	1252	4241	2209	3195	2116	1347	2505
		C.V. (%)	12.1	6.0	14.3	21.1	6.1	15.8	11.1	11.1	11.7	9.9	12.6
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		PLOT SIZE (m ²)	6.00	6.00	6.00	6.00	5.40	-	7.20	6.00	7.20	6.00	-

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Table I.63: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	12033	19978	19833	17281	10341	11111	17919	12290	21
2	IHT 302	MH 2710	20889	18300	18122	19104	12277	11667	19594	13327	11
3	IHT 303	MH 2711	12178	19889	14444	15504	11578	9556	17844	11488	28
4	IHT 304	MH 2712	10678	18944	17389	15670	11962	11722	18278	12846	17
5	IHT 305	MH 2713	16167	22889	21056	20037	12615	14167	22222	14012	6
6	IHT 306	AHB 1200 (Check)	7533	14361	12500	11465	7185	8611	19022	9408	35
7	IHT 307	MH 2714	8633	14500	21167	14767	8592	10000	22750	11249	32
8	IHT 308	MH 2715	22189	21944	18056	20730	8939	10556	25578	13581	9
9	IHT 309	MH 2716	19856	18389	18056	18767	9316	10167	20156	12392	20
10	IHT 310	MH 2717	20811	16722	16889	18141	14626	11111	24739	13198	13
11	IHT 311	MH 2718	14789	21900	18222	18304	11553	11667	24344	13108	14
12	IHT 312	MH 2719	13933	22778	17167	17959	13068	8333	26089	13747	8
13	IHT 313	MH 2720	16678	22811	18167	19219	13674	14722	22156	14016	5
14	IHT 314	MH 2721	15111	22861	16944	18306	13889	12512	25722	13777	7
15	IHT 315	MH 2722	12356	18811	18222	16463	13197	10833	22633	13052	15
16	IHT 316	MH 2723	12011	20722	19167	17300	13033	12500	22683	13285	12
17	IHT 317	MH 2724	11011	13744	16222	13659	7661	9444	15322	9253	36
18	IHT 318	MH 2725	12678	13783	15444	13969	8127	13889	21744	11127	33
19	IHT 319	86M86 (Check)	14900	18167	16722	16596	9459	10278	18189	11686	25
20	IHT 320	MH 2726	15144	15892	14500	15179	9801	10000	17450	11440	30
21	IHT 321	MH 2727	20200	15389	18456	18015	10639	10000	20361	13534	10
22	IHT 322	MH 2728	17789	22389	17778	19319	9918	12778	20117	14077	3
23	IHT 323	MH 2729	21456	19667	13000	18041	7869	8889	19117	12182	22
24	IHT 324	MH 2730	13889	21867	15722	17159	9323	10000	19294	12484	19
25	IHT 325	MP 7878 (Check)	20100	19056	15944	18367	8699	11667	19233	13046	16
26	IHT 326	MH 2731	10667	16833	15222	14241	9967	10000	17450	11328	31
27	IHT 327	MH 2732	14533	16444	17889	16289	5803	11111	17361	11453	29
28	IHT 328	MH 2733	18978	17867	18778	18541	10706	11389	25367	14068	4
29	IHT 329	MH 2734	19956	25367	21056	22126	9247	11667	19183	15733	1
30	IHT 330	MH 2735	13978	20333	16561	16957	9131	9722	16106	12112	23
31	IHT 331	KBH 108 (Check)	14122	14467	13611	14067	6006	12778	17089	11724	24
32	IHT 332	MH 2736	12822	18539	14944	15435	9041	11111	17011	11552	27
33	IHT 333	MH 2737	16200	25733	18444	20126	8720	10611	16261	12607	18
34	IHT 334	MH 2738	12900	16778	11861	13846	10219	10333	18911	10694	34
35	IHT 335	MH 2739	19700	15661	20389	18583	12241	14722	23483	14316	2
36	IHT 336	MH 2740	10889	23789	15500	16726	11183	9056	19344	11579	26
LOC. MEAN			15215	19099	17040	17118	10267	11074	20281	12521	
C.D. (5%)			2758	2572	3132	3633	1646	1557	3205	1475	
C.D. (1%)			3662	3415	4158	4824	2185	2067	4255	1942	
C.V. (%)			11.1	8.3	11.3	22.4	9.9	8.6	9.7	15.9	
F (Prob)			0.000	0.000	0.000	0.059	0.000	0.000	0.000	0.000	
PLOT SIZE (m ²)			6.00	6.00	6.00	-	6.00	6.00	6.00	-	

Table I.64: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	48	55	55	51	52	49	61	53	46	52	61	58	54
2	IHT 302	MH 2710	51	56	58	51	54	52	62	55	50	51	63	61	56
3	IHT 303	MH 2711	54	56	56	52	55	52	64	56	48	53	62	61	56
4	IHT 304	MH 2712	51	57	60	50	54	52	59	55	47	54	60	61	56
5	IHT 305	MH 2713	56	63	62	55	58	54	65	59	51	53	64	64	58
6	IHT 306	AHB 1200 (Check)	42	48	58	48	51	43	57	49	43	47	58	54	50
7	IHT 307	MH 2714	42	56	62	51	55	50	59	54	45	50	57	61	53
8	IHT 308	MH 2715	47	55	57	50	53	49	58	53	47	49	57	60	53
9	IHT 309	MH 2716	48	56	61	50	56	51	57	54	47	52	62	61	55
10	IHT 310	MH 2717	47	56	61	51	54	51	60	54	47	50	62	60	55
11	IHT 311	MH 2718	50	54	56	50	55	50	59	53	49	52	57	60	54
12	IHT 312	MH 2719	55	62	58	52	56	56	64	57	50	53	64	63	57
13	IHT 313	MH 2720	55	63	57	52	56	54	62	57	50	52	63	64	57
14	IHT 314	MH 2721	54	62	63	56	57	55	62	58	51	53	62	63	57
15	IHT 315	MH 2722	48	58	59	51	54	50	61	54	47	51	57	62	54
16	IHT 316	MH 2723	50	56	57	53	54	53	63	55	48	50	63	61	56
17	IHT 317	MH 2724	46	49	57	50	52	44	55	51	43	51	54	56	51
18	IHT 318	MH 2725	48	57	57	51	56	52	63	55	47	53	59	63	55
19	IHT 319	86M86 (Check)	50	57	58	50	54	51	60	54	48	52	60	57	55
20	IHT 320	MH 2726	50	56	59	51	53	49	61	54	46	51	60	62	55
21	IHT 321	MH 2727	52	63	63	50	61	61	65	59	55	51	62	64	58
22	IHT 322	MH 2728	49	57	61	52	54	50	59	55	49	52	62	61	56
23	IHT 323	MH 2729	51	56	62	51	53	50	58	54	47	52	60	59	54
24	IHT 324	MH 2730	51	57	56	51	54	50	60	54	49	51	59	62	55
25	IHT 325	MP 7878 (Check)	49	57	60	51	54	50	58	54	49	49	62	60	55
26	IHT 326	MH 2731	52	57	58	51	53	49	62	55	48	50	58	61	54
27	IHT 327	MH 2732	52	57	56	52	54	48	59	54	49	50	59	61	55
28	IHT 328	MH 2733	54	60	57	52	58	56	64	57	50	52	62	61	56
29	IHT 329	MH 2734	51	59	60	55	55	54	62	57	49	50	58	61	55
30	IHT 330	MH 2735	49	56	56	51	55	48	58	53	49	50	60	63	56
31	IHT 331	KBH 108 (Check)	50	61	61	51	57	51	63	56	49	53	59	63	56
32	IHT 332	MH 2736	49	56	56	51	54	51	59	54	46	51	61	61	55
33	IHT 333	MH 2737	55	62	61	52	56	54	62	58	49	53	60	64	56
34	IHT 334	MH 2738	50	53	61	52	53	51	59	54	46	48	59	57	53
35	IHT 335	MH 2739	57	59	61	54	56	56	63	58	51	53	62	63	57
36	IHT 336	MH 2740	48	55	55	51	53	46	57	52	47	49	60	59	54
		LOC. MEAN	50	57	59	52	55	51	61	55	48	51	60	61	55
		C.D. (5%)	1.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
		C.D. (1%)	1.0	1.0	3.0	2.0	3.0	3.0	2.0	3.0	2.0	2.0	1.0	3.0	3.0
		C.V. (%)	1.2	1.0	2.1	1.6	2.4	2.9	1.6	3.3	2.3	2.0	1.0	2.2	2.8
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Contd..

Table I.64: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	58	55	54	56	54	48	52	54	28
2	IHT 302	MH 2710	60	57	57	58	56	47	57	56	12
3	IHT 303	MH 2711	60	57	58	58	57	47	59	56	10
4	IHT 304	MH 2712	60	56	57	58	56	47	56	55	14
5	IHT 305	MH 2713	64	57	58	59	59	48	60	58	2
6	IHT 306	AHB 1200 (Check)	53	48	53	51	45	46	51	50	35
7	IHT 307	MH 2714	57	55	54	55	54	48	51	53	29
8	IHT 308	MH 2715	58	51	55	55	52	48	52	53	33
9	IHT 309	MH 2716	59	52	56	56	52	47	52	54	25
10	IHT 310	MH 2717	58	51	59	56	52	50	54	54	24
11	IHT 311	MH 2718	56	53	54	54	54	48	51	53	31
12	IHT 312	MH 2719	64	57	60	61	57	50	60	58	4
13	IHT 313	MH 2720	61	59	59	60	58	48	60	57	7
14	IHT 314	MH 2721	61	58	59	59	57	48	60	58	3
15	IHT 315	MH 2722	58	55	58	57	57	49	57	55	18
16	IHT 316	MH 2723	61	56	59	59	57	46	60	56	11
17	IHT 317	MH 2724	55	50	53	53	52	45	52	51	34
18	IHT 318	MH 2725	59	57	61	59	56	46	57	55	13
19	IHT 319	86M86 (Check)	59	56	60	58	54	46	52	54	21
20	IHT 320	MH 2726	58	51	53	54	54	49	53	54	27
21	IHT 321	MH 2727	66	61	60	62	58	49	61	59	1
22	IHT 322	MH 2728	60	55	55	57	56	52	53	55	15
23	IHT 323	MH 2729	58	55	59	57	56	51	55	55	17
24	IHT 324	MH 2730	59	55	55	56	54	52	52	55	19
25	IHT 325	MP 7878 (Check)	59	56	60	58	59	51	53	55	16
26	IHT 326	MH 2731	60	51	54	55	57	50	53	54	23
27	IHT 327	MH 2732	59	55	54	56	59	50	53	54	20
28	IHT 328	MH 2733	66	58	56	60	59	49	63	57	6
29	IHT 329	MH 2734	63	58	58	60	57	47	61	56	9
30	IHT 330	MH 2735	59	54	53	56	55	48	57	54	22
31	IHT 331	KBH 108 (Check)	62	57	58	59	58	50	59	57	8
32	IHT 332	MH 2736	57	53	54	55	55	46	57	54	26
33	IHT 333	MH 2737	63	58	59	60	58	48	58	57	7
34	IHT 334	MH 2738	56	51	56	54	54	48	52	53	30
35	IHT 335	MH 2739	62	59	58	60	56	48	59	57	5
36	IHT 336	MH 2740	57	52	54	54	53	45	59	53	32
LOC. MEAN			60	55	57	57	55	48	56	55	
C.D. (5%)			2.0	1.0	2.0	3.0	3.0	1.0	2.0	1.0	
C.D. (1%)			2.0	2.0	3.0	3.0	4.0	2.0	3.0	2.0	
C.V. (%)			1.7	1.6	2.1	2.7	3.2	1.7	2.6	3.3	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.65: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	78	82	80	92	79	83	88	83	76	72	82	85	79
2	IHT 302	MH 2710	81	84	83	91	81	85	89	85	80	74	84	88	82
3	IHT 303	MH 2711	83	84	81	90	82	85	85	84	78	75	84	87	81
4	IHT 304	MH 2712	79	85	85	89	82	83	86	84	78	76	83	88	81
5	IHT 305	MH 2713	87	89	87	87	86	89	86	87	81	76	87	89	83
6	IHT 306	AHB 1200 (Check)	71	76	83	88	79	77	81	79	73	69	79	79	75
7	IHT 307	MH 2714	74	84	87	92	83	79	84	83	75	72	82	87	79
8	IHT 308	MH 2715	77	83	82	88	81	81	80	82	77	71	82	87	79
9	IHT 309	MH 2716	76	84	86	87	80	81	79	82	78	74	83	87	80
10	IHT 310	MH 2717	77	84	86	89	82	84	86	84	78	71	83	87	80
11	IHT 311	MH 2718	79	82	81	90	83	80	81	82	80	74	79	87	80
12	IHT 312	MH 2719	85	88	83	93	85	86	86	87	80	75	87	89	83
13	IHT 313	MH 2720	86	88	82	92	85	83	86	86	81	73	87	88	82
14	IHT 314	MH 2721	82	88	88	92	85	85	89	87	81	76	86	89	83
15	IHT 315	MH 2722	77	86	84	90	81	79	84	83	77	72	82	86	79
16	IHT 316	MH 2723	78	84	82	89	82	82	90	84	79	74	87	88	82
17	IHT 317	MH 2724	73	77	82	86	80	76	81	79	73	73	79	84	77
18	IHT 318	MH 2725	77	85	82	91	84	82	88	84	78	76	81	88	81
19	IHT 319	86M86 (Check)	78	84	83	90	81	82	88	84	78	74	84	84	80
20	IHT 320	MH 2726	78	88	84	91	82	77	85	84	76	73	85	86	80
21	IHT 321	MH 2727	82	85	88	92	90	87	90	88	86	74	83	89	83
22	IHT 322	MH 2728	82	84	86	88	82	82	80	83	80	75	86	88	82
23	IHT 323	MH 2729	82	85	87	88	81	84	79	84	78	73	80	85	79
24	IHT 324	MH 2730	80	86	81	90	82	81	86	84	79	73	83	87	80
25	IHT 325	MP 7878 (Check)	78	85	85	88	82	76	83	82	80	71	83	88	80
26	IHT 326	MH 2731	81	85	83	90	81	78	86	84	78	74	82	87	80
27	IHT 327	MH 2732	81	85	81	92	82	80	88	84	80	73	82	88	81
28	IHT 328	MH 2733	82	88	82	93	86	90	91	87	80	74	83	87	81
29	IHT 329	MH 2734	80	86	85	91	83	87	80	85	80	74	79	88	80
30	IHT 330	MH 2735	77	84	81	90	83	84	80	83	79	72	83	88	81
31	IHT 331	KBH 108 (Check)	78	87	86	91	85	84	90	86	80	75	84	88	82
32	IHT 332	MH 2736	78	84	81	92	83	82	90	84	76	72	84	87	80
33	IHT 333	MH 2737	84	88	86	93	84	84	90	87	80	75	83	87	81
34	IHT 334	MH 2738	78	81	86	86	81	80	86	83	76	71	83	85	79
35	IHT 335	MH 2739	90	87	86	93	84	82	89	87	81	75	87	87	83
36	IHT 336	MH 2740	79	83	80	87	81	74	84	81	78	70	83	86	79
		LOC. MEAN	80	85	84	90	83	82	85	84	79	73	83	87	80
		C.D. (5%)	1.0	1.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	2.0
		C.D. (1%)	2.0	1.0	3.0	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	3.0
		C.V. (%)	0.9	0.8	1.5	0.8	1.1	1.8	1.3	2.8	1.0	1.0	1.1	0.9	1.8
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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Table I.65: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	89	85	79	84	82	88	94	83	27
2	IHT 302	MH 2710	89	90	82	87	82	90	100	86	9
3	IHT 303	MH 2711	91	86	83	87	81	91	100	85	12
4	IHT 304	MH 2712	90	86	82	86	82	93	98	85	14
5	IHT 305	MH 2713	91	86	83	87	82	90	102	87	5
6	IHT 306	AHB 1200 (Check)	85	80	78	81	82	90	90	80	35
7	IHT 307	MH 2714	85	85	79	83	82	92	91	83	30
8	IHT 308	MH 2715	87	82	80	83	83	91	92	83	33
9	IHT 309	MH 2716	87	84	81	84	81	90	97	83	26
10	IHT 310	MH 2717	88	81	84	84	81	91	100	84	15
11	IHT 311	MH 2718	85	84	79	83	81	89	96	83	31
12	IHT 312	MH 2719	90	90	85	88	83	91	103	87	2
13	IHT 313	MH 2720	88	90	84	87	86	89	101	86	7
14	IHT 314	MH 2721	87	90	84	87	83	89	102	87	4
15	IHT 315	MH 2722	87	85	83	85	82	89	100	84	22
16	IHT 316	MH 2723	89	88	84	87	82	91	102	85	10
17	IHT 317	MH 2724	85	80	78	81	83	90	96	81	34
18	IHT 318	MH 2725	88	89	86	88	84	88	99	85	13
19	IHT 319	86M86 (Check)	86	85	85	85	83	87	94	84	21
20	IHT 320	MH 2726	86	81	78	81	81	89	94	83	28
21	IHT 321	MH 2727	92	91	85	89	81	89	104	88	1
22	IHT 322	MH 2728	87	85	80	84	83	88	97	84	17
23	IHT 323	MH 2729	86	86	84	85	82	89	99	84	18
24	IHT 324	MH 2730	88	85	80	84	82	90	96	84	20
25	IHT 325	MP 7878 (Check)	87	86	85	86	83	88	93	84	24
26	IHT 326	MH 2731	88	82	79	83	82	89	93	83	25
27	IHT 327	MH 2732	89	85	79	84	83	89	91	84	19
28	IHT 328	MH 2733	93	90	81	88	82	89	104	87	6
29	IHT 329	MH 2734	90	90	83	88	84	89	102	85	11
30	IHT 330	MH 2735	88	85	78	84	83	89	100	84	23
31	IHT 331	KBH 108 (Check)	90	88	83	87	83	89	100	86	8
32	IHT 332	MH 2736	88	84	79	84	82	88	100	84	16
33	IHT 333	MH 2737	92	90	84	89	86	89	100	87	4
34	IHT 334	MH 2738	87	80	81	83	84	89	96	83	29
35	IHT 335	MH 2739	90	91	83	88	81	89	101	87	3
36	IHT 336	MH 2740	88	84	79	84	83	89	101	83	32
LOC. MEAN			88	86	82	85	83	89	98	84	
C.D. (5%)			2.0	1.0	2.0	3.0	2.0	1.0	2.0	1.0	
C.D. (1%)			2.0	1.0	3.0	4.0	3.0	2.0	3.0	2.0	
C.V. (%)			1.3	0.7	1.5	2.1	1.8	0.9	1.5	2.5	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.66: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	228	263	264	200	253	266	232	244	221	228	165	227	210
2	IHT 302	MH 2710	230	273	264	210	263	270	243	251	222	234	198	235	222
3	IHT 303	MH 2711	248	273	277	212	263	263	227	252	231	230	185	230	219
4	IHT 304	MH 2712	207	280	253	203	267	270	270	250	230	207	175	233	211
5	IHT 305	MH 2713	235	277	275	207	255	276	285	258	233	228	202	230	223
6	IHT 306	AHB 1200 (Check)	191	227	241	198	200	217	225	214	182	218	165	188	188
7	IHT 307	MH 2714	235	297	241	210	247	254	248	247	242	257	173	247	230
8	IHT 308	MH 2715	213	263	229	208	248	238	215	231	217	206	157	212	198
9	IHT 309	MH 2716	221	263	246	193	255	247	227	236	218	226	168	211	206
10	IHT 310	MH 2717	212	257	242	203	243	252	240	236	217	228	173	210	207
11	IHT 311	MH 2718	208	267	233	197	237	240	213	228	218	220	192	215	211
12	IHT 312	MH 2719	246	283	251	217	263	257	238	251	235	231	183	232	220
13	IHT 313	MH 2720	220	277	256	203	260	255	245	245	232	236	197	239	226
14	IHT 314	MH 2721	225	270	251	195	263	266	243	245	242	228	173	235	220
15	IHT 315	MH 2722	222	263	255	200	248	258	238	241	217	222	207	217	216
16	IHT 316	MH 2723	190	283	271	210	257	264	245	246	225	218	178	225	211
17	IHT 317	MH 2724	153	227	248	167	232	217	217	209	208	187	160	219	194
18	IHT 318	MH 2725	196	260	246	203	245	232	218	229	209	196	158	215	195
19	IHT 319	86M86 (Check)	227	270	253	198	247	243	232	239	227	198	170	213	202
20	IHT 320	MH 2726	232	277	245	208	262	250	242	245	222	202	193	227	211
21	IHT 321	MH 2727	237	293	285	208	283	310	283	271	280	249	223	264	254
22	IHT 322	MH 2728	254	277	257	195	255	262	238	248	243	239	205	228	229
23	IHT 323	MH 2729	227	277	254	197	247	254	247	243	225	225	188	224	216
24	IHT 324	MH 2730	237	280	247	193	250	254	225	241	218	217	173	218	207
25	IHT 325	MP 7878 (Check)	244	277	253	208	263	263	245	251	228	236	175	237	219
26	IHT 326	MH 2731	258	283	266	188	257	267	242	252	228	232	220	234	229
27	IHT 327	MH 2732	245	280	277	210	268	251	238	253	229	214	198	235	219
28	IHT 328	MH 2733	253	277	256	207	267	283	277	260	242	230	177	245	223
29	IHT 329	MH 2734	255	290	274	208	283	290	268	267	235	234	210	238	229
30	IHT 330	MH 2735	234	277	261	198	248	262	238	245	222	226	195	238	220
31	IHT 331	KBH 108 (Check)	251	273	277	198	263	265	255	255	250	239	223	248	240
32	IHT 332	MH 2736	203	267	263	218	248	256	228	241	223	229	190	228	218
33	IHT 333	MH 2737	233	270	256	212	257	272	235	248	223	227	188	225	216
34	IHT 334	MH 2738	223	257	245	227	240	251	225	238	218	222	183	209	208
35	IHT 335	MH 2739	222	277	265	205	267	268	230	248	237	235	213	229	229
36	IHT 336	MH 2740	200	253	225	197	220	217	222	219	203	193	167	200	191
		LOC. MEAN	225	271	256	203	253	257	240	244	226	224	186	227	216
		C.D. (5%)	18.0	12.0	23.0	14.0	13.0	17.0	12.0	12.0	18.0	3.0	9.0	11.0	14.0
		C.D. (1%)	23.0	16.0	31.0	18.0	17.0	22.0	17.0	16.0	24.0	4.0	11.0	14.0	18.0
		C.V. (%)	4.8	2.8	5.6	4.2	3.1	4.0	3.2	4.6	5.0	0.8	2.9	2.9	4.6
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Contd..

Table I.66: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	270	220	243	244	203	219	172	228	24
2	IHT 302	MH 2710	283	226	258	256	226	230	182	238	8
3	IHT 303	MH 2711	292	230	241	254	231	215	183	237	11
4	IHT 304	MH 2712	273	238	258	256	233	223	174	235	16
5	IHT 305	MH 2713	278	249	268	265	212	220	198	243	5
6	IHT 306	AHB 1200 (Check)	205	173	195	191	176	217	173	199	36
7	IHT 307	MH 2714	255	258	218	244	218	248	190	238	9
8	IHT 308	MH 2715	267	217	228	237	206	239	177	220	31
9	IHT 309	MH 2716	263	225	239	243	201	232	173	224	28
10	IHT 310	MH 2717	278	202	223	234	216	220	173	223	29
11	IHT 311	MH 2718	260	202	216	226	212	225	174	219	32
12	IHT 312	MH 2719	283	242	258	261	220	232	187	239	7
13	IHT 313	MH 2720	280	234	248	254	217	238	196	237	10
14	IHT 314	MH 2721	285	229	236	250	221	236	185	234	18
15	IHT 315	MH 2722	260	217	241	239	213	238	185	230	22
16	IHT 316	MH 2723	272	203	226	234	220	245	195	231	20
17	IHT 317	MH 2724	257	200	191	216	180	212	175	203	35
18	IHT 318	MH 2725	243	200	242	229	187	230	175	215	33
19	IHT 319	86M86 (Check)	260	214	216	230	203	229	179	222	30
20	IHT 320	MH 2726	263	187	211	220	186	218	188	224	27
21	IHT 321	MH 2727	310	262	267	280	227	249	232	263	1
22	IHT 322	MH 2728	268	220	252	247	211	237	180	237	13
23	IHT 323	MH 2729	272	222	222	238	210	216	175	228	23
24	IHT 324	MH 2730	270	212	230	237	203	213	174	224	26
25	IHT 325	MP 7878 (Check)	280	224	254	252	207	233	200	237	12
26	IHT 326	MH 2731	258	220	233	237	211	222	200	236	14
27	IHT 327	MH 2732	270	219	240	243	204	222	183	234	17
28	IHT 328	MH 2733	293	239	254	262	214	238	217	245	3
29	IHT 329	MH 2734	300	256	268	275	228	232	202	251	2
30	IHT 330	MH 2735	258	229	244	244	218	215	194	233	19
31	IHT 331	KBH 108 (Check)	270	228	257	252	210	244	193	244	4
32	IHT 332	MH 2736	267	214	246	242	215	222	199	230	21
33	IHT 333	MH 2737	297	214	256	256	208	227	200	235	15
34	IHT 334	MH 2738	265	218	243	242	213	236	195	228	25
35	IHT 335	MH 2739	288	236	250	258	233	236	210	241	6
36	IHT 336	MH 2740	242	188	200	210	197	222	177	207	34
LOC. MEAN			270	221	238	243	211	229	188	231	
C.D. (5%)			14.0	6.0	13.0	17.0	24.0	3.0	10.0	7.0	
C.D. (1%)			18.0	9.0	17.0	23.0	32.0	4.0	14.0	10.0	
C.V. (%)			3.2	1.8	3.3	4.3	7.0	0.8	3.3	4.7	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.67: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	TJR	ALW	ALW2	RAJ	JMR	AHD**	DNR	DEG1	GUJ
								MEAN					MEAN
1	IHT 301	MH 2709	1.0	1.0	1.7	2.0	3.0	1.7	1.5	1.3	1.0	1.3	1.3
2	IHT 302	MH 2710	1.1	1.0	1.3	1.7	2.0	1.4	2.0	1.0	1.5	1.1	1.5
3	IHT 303	MH 2711	1.6	1.3	1.3	1.3	2.0	1.5	1.6	1.0	1.0	1.2	1.3
4	IHT 304	MH 2712	1.7	1.3	1.3	1.0	2.3	1.5	1.5	1.0	1.0	1.3	1.3
5	IHT 305	MH 2713	3.0	1.3	2.0	1.0	2.0	1.9	1.4	2.0	1.0	1.2	1.2
6	IHT 306	AHB 1200 (Check)	1.2	1.0	1.3	1.3	4.0	1.8	1.1	1.0	1.0	1.2	1.1
7	IHT 307	MH 2714	1.1	1.0	1.3	2.0	3.0	1.7	2.3	1.0	1.5	1.2	1.7
8	IHT 308	MH 2715	2.0	1.0	1.0	1.0	3.0	1.6	1.7	1.0	2.2	1.2	1.7
9	IHT 309	MH 2716	1.0	1.0	1.3	1.3	2.0	1.3	1.6	2.3	1.3	1.2	1.4
10	IHT 310	MH 2717	1.2	1.0	1.7	1.7	1.7	1.4	1.8	1.0	1.0	1.1	1.3
11	IHT 311	MH 2718	1.1	1.0	1.7	2.0	2.0	1.6	1.4	1.0	1.0	1.3	1.2
12	IHT 312	MH 2719	1.0	1.3	2.0	3.7	2.3	2.1	1.7	1.0	1.5	1.4	1.5
13	IHT 313	MH 2720	1.1	1.0	1.7	2.7	2.3	1.8	1.3	1.0	1.5	1.1	1.3
14	IHT 314	MH 2721	1.1	1.0	2.0	1.3	3.0	1.7	1.7	1.7	1.0	1.3	1.3
15	IHT 315	MH 2722	1.1	1.0	1.0	2.0	2.0	1.4	1.2	1.3	1.5	1.2	1.3
16	IHT 316	MH 2723	1.1	1.0	1.7	1.0	3.0	1.6	1.3	1.0	1.0	1.1	1.1
17	IHT 317	MH 2724	1.1	1.0	1.0	2.7	3.0	1.8	1.6	1.7	1.0	1.2	1.3
18	IHT 318	MH 2725	1.0	1.0	2.0	1.7	2.0	1.5	1.3	1.7	1.0	1.1	1.2
19	IHT 319	86M86 (Check)	1.8	1.0	2.0	2.7	3.0	2.1	1.7	1.0	1.0	1.3	1.3
20	IHT 320	MH 2726	1.2	1.0	1.0	2.0	2.3	1.5	1.2	2.3	2.2	1.4	1.6
21	IHT 321	MH 2727	1.0	1.0	1.7	2.0	3.0	1.7	1.3	1.0	1.5	1.1	1.3
22	IHT 322	MH 2728	2.0	1.3	1.0	1.7	2.0	1.6	1.3	1.7	1.0	1.2	1.2
23	IHT 323	MH 2729	1.0	1.0	1.3	1.7	3.0	1.6	1.2	1.7	1.5	1.2	1.3
24	IHT 324	MH 2730	2.0	1.0	1.0	1.3	2.0	1.5	1.7	1.0	1.5	1.2	1.4
25	IHT 325	MP 7878 (Check)	1.2	1.0	2.0	1.7	3.0	1.8	1.0	1.0	1.0	1.3	1.1
26	IHT 326	MH 2731	1.1	1.0	1.0	1.0	3.0	1.4	1.2	1.3	3.0	1.4	1.9
27	IHT 327	MH 2732	2.9	1.0	2.0	1.3	2.0	1.8	1.5	1.7	2.7	1.4	1.8
28	IHT 328	MH 2733	1.0	1.3	2.0	1.3	2.0	1.5	1.2	1.0	1.0	1.2	1.1
29	IHT 329	MH 2734	3.0	1.0	2.3	1.0	2.3	1.9	1.1	1.0	1.5	1.2	1.2
30	IHT 330	MH 2735	2.1	1.3	1.3	2.0	2.0	1.7	1.4	1.7	2.2	1.2	1.6
31	IHT 331	KBH 108 (Check)	1.9	1.0	2.0	3.0	2.3	2.0	1.6	1.0	1.0	1.2	1.3
32	IHT 332	MH 2736	2.7	1.7	1.7	2.0	2.3	2.1	1.0	1.7	1.5	1.4	1.3
33	IHT 333	MH 2737	1.2	1.0	1.3	2.0	2.0	1.5	1.1	1.0	1.5	1.1	1.2
34	IHT 334	MH 2738	1.1	1.0	1.0	1.7	3.0	1.6	1.3	1.7	1.2	1.3	1.3
35	IHT 335	MH 2739	2.1	1.0	1.0	2.0	2.0	1.6	1.5	1.3	1.3	1.2	1.3
36	IHT 336	MH 2740	1.1	1.7	1.0	1.3	2.0	1.4	1.5	2.0	1.0	1.1	1.2
		LOC. MEAN	1.5	1.1	1.5	1.8	2.4	1.7	1.4	1.3	1.4	1.2	1.3
		C.D. (5%)	0.3	0.5	0.7	0.7	0.4	0.7	0.4	1.1	0.2	0.2	0.9
		C.D. (1%)	0.4	0.6	0.9	0.9	0.6	0.9	0.6	1.4	0.3	0.3	1.2
		C.V. (%)	13.9	26.0	26.6	23.2	11.1	33.1	18.0	48.8	10.7	9.7	22.7
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.000	0.000	0.686

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): AHD 48.8%

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Table I.67: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	1.1	1.3	1.0	1.1	2.8	3.5	3.0	1.8	8
2	IHT 302	MH 2710	1.1	1.2	1.2	1.2	2.4	3.5	2.2	1.7	24
3	IHT 303	MH 2711	1.1	1.4	1.3	1.3	2.4	3.5	2.4	1.7	21
4	IHT 304	MH 2712	1.1	1.2	1.2	1.2	2.2	3.5	4.0	1.8	11
5	IHT 305	MH 2713	1.1	1.2	1.6	1.3	2.1	3.6	4.0	1.9	1
6	IHT 306	AHB 1200 (Check)	1.1	1.2	1.2	1.2	2.7	2.8	2.9	1.7	16
7	IHT 307	MH 2714	1.2	1.2	1.4	1.3	2.2	2.6	3.1	1.8	9
8	IHT 308	MH 2715	1.1	1.1	1.3	1.2	2.6	3.7	2.6	1.8	5
9	IHT 309	MH 2716	1.1	1.2	1.1	1.1	2.5	3.4	2.2	1.6	28
10	IHT 310	MH 2717	1.1	1.1	1.1	1.1	2.2	3.4	2.6	1.6	26
11	IHT 311	MH 2718	1.1	1.2	1.2	1.2	2.8	3.5	2.6	1.7	17
12	IHT 312	MH 2719	1.1	1.3	1.3	1.2	2.4	3.3	2.1	1.9	1
13	IHT 313	MH 2720	1.1	1.2	1.2	1.2	2.7	3.3	2.9	1.8	10
14	IHT 314	MH 2721	1.1	1.2	1.1	1.2	2.6	3.4	2.9	1.8	12
15	IHT 315	MH 2722	1.2	1.2	1.3	1.2	2.3	2.5	4.0	1.7	22
16	IHT 316	MH 2723	1.3	1.1	1.3	1.2	2.4	2.8	1.7	1.6	34
17	IHT 317	MH 2724	1.1	1.2	1.3	1.2	2.3	3.6	2.3	1.7	13
18	IHT 318	MH 2725	1.1	1.2	1.1	1.2	2.5	3.0	4.0	1.7	15
19	IHT 319	86M86 (Check)	1.2	1.2	1.3	1.2	2.2	3.0	3.0	1.9	2
20	IHT 320	MH 2726	1.1	1.2	1.2	1.2	2.6	3.0	4.0	1.8	6
21	IHT 321	MH 2727	1.1	1.3	1.1	1.2	2.8	3.5	2.9	1.8	7
22	IHT 322	MH 2728	1.1	1.2	1.3	1.2	2.5	3.5	3.1	1.7	14
23	IHT 323	MH 2729	1.1	1.2	1.3	1.2	2.4	3.1	2.2	1.7	25
24	IHT 324	MH 2730	1.1	1.2	1.4	1.2	2.2	1.8	2.7	1.6	32
25	IHT 325	MP 7878 (Check)	1.1	1.2	1.1	1.1	2.3	1.9	1.9	1.6	33
26	IHT 326	MH 2731	1.1	1.1	1.2	1.2	2.3	1.9	2.1	1.6	27
27	IHT 327	MH 2732	1.3	1.3	1.4	1.3	2.2	1.9	3.2	1.9	4
28	IHT 328	MH 2733	1.1	1.3	1.2	1.2	2.2	1.9	3.5	1.6	31
29	IHT 329	MH 2734	1.1	1.3	1.2	1.2	2.3	2.0	2.1	1.7	23
30	IHT 330	MH 2735	1.1	1.2	1.3	1.2	2.0	1.8	2.7	1.7	19
31	IHT 331	KBH 108 (Check)	1.1	1.2	1.1	1.2	2.4	1.9	1.9	1.7	18
32	IHT 332	MH 2736	1.1	1.2	1.5	1.3	2.5	1.7	3.9	1.9	3
33	IHT 333	MH 2737	1.1	1.5	1.3	1.3	2.2	1.9	4.4	1.7	20
34	IHT 334	MH 2738	1.1	1.2	1.3	1.2	2.3	2.0	2.7	1.6	29
35	IHT 335	MH 2739	1.1	1.2	1.2	1.2	2.3	2.1	2.3	1.6	30
36	IHT 336	MH 2740	1.1	1.2	1.1	1.1	2.4	1.9	2.2	1.5	35
LOC. MEAN			1.1	1.2	1.2	1.2	2.4	2.8	2.8	1.7	
C.D. (5%)			0.1	0.2	0.3	0.5	0.6	0.5	0.6	0.3	
C.D. (1%)			0.1	0.2	0.4	0.6	0.8	0.6	0.8	0.4	
C.V. (%)			5.7	7.6	13.2	22.9	14.8	10.5	12.5	24.4	
F (Prob)			0.000	0.000	0.000	0.181	0.000	0.000	0.000	0.632	

Table I.68: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	ALW2	DAS	RAJ MEAN	JMR	AHD	DNR	DEG1	GUJ MEAN
1	IHT 301	MH 2709	29	27	29	24	27	28	27	27	28	28	22	27	26
2	IHT 302	MH 2710	29	27	28	25	28	27	28	27	25	31	22	26	26
3	IHT 303	MH 2711	33	29	29	26	29	30	28	29	28	30	22	28	27
4	IHT 304	MH 2712	28	30	28	29	32	31	28	29	31	29	27	29	29
5	IHT 305	MH 2713	31	25	27	27	27	28	25	27	28	28	26	26	27
6	IHT 306	AHB 1200 (Check)	22	26	26	24	25	27	25	25	25	29	20	24	25
7	IHT 307	MH 2714	26	25	28	26	29	28	26	27	25	26	19	25	24
8	IHT 308	MH 2715	31	25	28	26	27	26	26	27	26	30	19	26	25
9	IHT 309	MH 2716	28	25	26	23	26	24	24	25	24	25	19	25	23
10	IHT 310	MH 2717	25	25	28	27	28	28	27	27	25	27	22	26	25
11	IHT 311	MH 2718	23	25	27	25	27	26	24	25	24	27	24	26	25
12	IHT 312	MH 2719	28	26	27	26	27	26	26	27	25	27	20	25	24
13	IHT 313	MH 2720	27	27	26	27	28	26	26	27	26	31	26	28	28
14	IHT 314	MH 2721	24	24	28	27	27	27	23	26	26	28	21	26	25
15	IHT 315	MH 2722	23	26	28	25	27	26	25	26	27	27	22	25	25
16	IHT 316	MH 2723	19	23	26	22	25	24	25	24	24	26	19	23	23
17	IHT 317	MH 2724	20	22	26	22	25	24	24	23	24	24	20	22	22
18	IHT 318	MH 2725	28	26	27	24	28	28	26	27	27	28	21	23	25
19	IHT 319	86M86 (Check)	25	25	27	24	27	25	23	25	23	25	20	25	23
20	IHT 320	MH 2726	33	28	28	24	31	26	29	28	31	29	28	30	29
21	IHT 321	MH 2727	26	24	27	29	25	25	27	26	25	25	25	27	26
22	IHT 322	MH 2728	34	28	31	29	32	32	28	31	26	30	26	29	28
23	IHT 323	MH 2729	29	26	28	25	29	27	22	27	26	28	23	26	26
24	IHT 324	MH 2730	27	25	29	25	26	28	25	26	25	25	24	26	25
25	IHT 325	MP 7878 (Check)	27	26	27	23	27	25	26	26	25	27	21	26	25
26	IHT 326	MH 2731	29	26	28	23	28	26	26	27	25	27	25	26	26
27	IHT 327	MH 2732	31	29	29	26	28	28	24	28	26	30	23	28	27
28	IHT 328	MH 2733	31	24	27	26	28	29	26	27	28	26	20	26	25
29	IHT 329	MH 2734	29	24	26	26	27	26	24	26	25	27	20	25	24
30	IHT 330	MH 2735	27	25	26	26	26	25	26	26	24	28	27	26	26
31	IHT 331	KBH 108 (Check)	30	25	27	25	27	28	24	26	25	27	22	26	25
32	IHT 332	MH 2736	25	27	28	27	29	28	24	27	26	28	26	26	26
33	IHT 333	MH 2737	27	23	24	22	23	23	23	24	21	23	19	22	22
34	IHT 334	MH 2738	24	23	25	22	26	24	24	24	24	25	19	23	23
35	IHT 335	MH 2739	26	26	28	23	29	27	26	26	26	28	26	28	27
36	IHT 336	MH 2740	22	24	24	24	25	25	25	24	24	25	19	23	23
		LOC. MEAN	27	26	27	25	27	27	25	26	26	27	22	26	25
		C.D. (5%)	2.0	1.0	2.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0
		C.D. (1%)	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0	3.0	1.0	3.0	3.0	3.0
		C.V. (%)	4.0	3.5	4.0	3.6	2.9	3.3	5.5	5.8	5.6	2.1	5.2	4.8	5.7
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Contd..

Table I.68: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	29	27	26	27	28	27	22	27	11
2	IHT 302	MH 2710	29	27	27	28	28	24	24	27	9
3	IHT 303	MH 2711	30	29	29	29	28	28	26	28	4
4	IHT 304	MH 2712	31	31	31	31	30	28	30	30	2
5	IHT 305	MH 2713	29	26	24	26	28	24	28	27	10
6	IHT 306	AHB 1200 (Check)	30	25	21	25	26	26	30	25	27
7	IHT 307	MH 2714	26	25	22	24	28	26	23	26	26
8	IHT 308	MH 2715	28	25	25	26	29	26	27	27	13
9	IHT 309	MH 2716	28	27	24	26	24	26	24	25	29
10	IHT 310	MH 2717	29	26	25	27	28	26	23	26	17
11	IHT 311	MH 2718	28	26	25	26	28	26	22	26	24
12	IHT 312	MH 2719	30	25	26	27	26	28	23	26	19
13	IHT 313	MH 2720	29	25	26	27	28	28	28	27	5
14	IHT 314	MH 2721	31	25	25	27	26	26	26	26	21
15	IHT 315	MH 2722	29	26	25	27	24	25	23	26	26
16	IHT 316	MH 2723	26	24	24	25	27	25	23	24	31
17	IHT 317	MH 2724	28	23	18	23	23	25	22	23	34
18	IHT 318	MH 2725	29	28	30	29	28	26	27	27	12
19	IHT 319	86M86 (Check)	28	25	25	26	28	26	28	25	28
20	IHT 320	MH 2726	30	27	26	28	30	28	30	29	3
21	IHT 321	MH 2727	26	27	24	26	27	25	25	26	20
22	IHT 322	MH 2728	33	30	30	31	31	28	28	30	1
23	IHT 323	MH 2729	30	27	24	27	27	26	25	26	15
24	IHT 324	MH 2730	28	25	27	27	29	25	24	26	18
25	IHT 325	MP 7878 (Check)	28	25	26	27	26	26	26	26	22
26	IHT 326	MH 2731	28	28	25	27	29	26	26	27	14
27	IHT 327	MH 2732	26	26	27	26	28	27	22	27	7
28	IHT 328	MH 2733	29	26	26	27	27	29	27	27	8
29	IHT 329	MH 2734	30	26	25	27	28	26	21	26	25
30	IHT 330	MH 2735	26	26	26	26	26	27	21	26	23
31	IHT 331	KBH 108 (Check)	31	27	26	28	27	27	24	26	16
32	IHT 332	MH 2736	28	27	28	28	26	25	23	27	14
33	IHT 333	MH 2737	26	23	22	24	25	25	21	23	33
34	IHT 334	MH 2738	29	25	24	26	27	25	23	24	30
35	IHT 335	MH 2739	31	28	28	29	29	26	28	27	6
36	IHT 336	MH 2740	26	20	20	22	27	25	22	24	32
LOC. MEAN			29	26	25	27	27	26	25	26	
C.D. (5%)			2.0	2.0	4.0	2.0	3.0	1.0	2.0	1.0	
C.D. (1%)			3.0	3.0	6.0	3.0	4.0	1.0	3.0	1.0	
C.V. (%)			4.6	4.6	10.4	5.2	7.4	2.5	5.0	5.9	
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.69: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	TJR	ALW	DAS	RAJ MEAN	JMR	AHD	DEG1	GUJ MEAN
1	IHT 301	MH 2709	3.3	3.2	3.1	1.7	3.5	3.5	3.0	2.8	2.5	3.0	2.8
2	IHT 302	MH 2710	3.1	3.3	3.3	1.3	3.5	3.4	3.0	2.9	2.6	3.1	2.8
3	IHT 303	MH 2711	3.8	3.4	3.2	1.3	3.7	3.5	3.2	3.2	2.5	3.3	3.0
4	IHT 304	MH 2712	2.8	3.4	3.0	1.3	3.4	3.6	2.9	2.8	2.6	3.0	2.8
5	IHT 305	MH 2713	3.7	3.4	3.2	2.0	3.6	3.6	3.2	3.1	2.6	3.2	3.0
6	IHT 306	AHB 1200 (Check)	3.7	3.8	3.3	1.3	4.0	3.6	3.3	3.1	2.4	3.3	2.9
7	IHT 307	MH 2714	3.3	2.9	3.1	1.3	3.0	3.4	2.8	2.7	3.3	2.7	2.9
8	IHT 308	MH 2715	3.2	3.3	3.1	1.0	3.5	3.6	3.0	3.0	2.6	3.0	2.9
9	IHT 309	MH 2716	3.6	3.3	3.1	1.3	3.6	3.5	3.1	3.1	2.9	3.0	3.0
10	IHT 310	MH 2717	3.3	3.4	3.2	1.7	3.9	3.4	3.2	3.0	2.7	3.1	2.9
11	IHT 311	MH 2718	3.3	3.4	3.2	1.7	3.7	3.5	3.1	2.8	2.4	3.2	2.8
12	IHT 312	MH 2719	3.4	3.3	3.3	2.0	3.6	3.4	3.2	2.8	3.1	3.0	3.0
13	IHT 313	MH 2720	3.0	3.3	3.4	1.7	3.5	3.5	3.1	3.0	3.4	3.2	3.2
14	IHT 314	MH 2721	3.3	3.3	3.1	2.0	3.6	3.5	3.1	3.1	3.8	3.2	3.4
15	IHT 315	MH 2722	3.9	3.6	3.2	1.0	4.2	3.6	3.2	3.4	3.1	3.5	3.3
16	IHT 316	MH 2723	3.1	3.3	3.3	1.7	3.6	3.5	3.1	2.7	3.2	3.0	3.0
17	IHT 317	MH 2724	3.8	3.4	3.1	1.0	4.1	3.4	3.1	3.1	2.6	3.2	3.0
18	IHT 318	MH 2725	3.9	3.4	3.1	2.0	3.8	3.5	3.3	3.2	2.8	3.4	3.1
19	IHT 319	86M86 (Check)	3.5	3.3	3.0	2.0	3.6	3.4	3.1	3.0	2.8	3.2	3.0
20	IHT 320	MH 2726	3.4	3.4	3.3	1.0	3.6	3.5	3.0	2.9	3.4	3.2	3.2
21	IHT 321	MH 2727	3.5	3.3	3.2	1.7	3.5	3.6	3.1	3.3	3.6	3.3	3.4
22	IHT 322	MH 2728	3.3	3.2	3.4	1.0	3.6	3.7	3.0	2.9	3.6	3.1	3.2
23	IHT 323	MH 2729	3.2	3.3	3.3	1.3	3.6	3.4	3.0	3.0	3.3	3.1	3.1
24	IHT 324	MH 2730	3.6	3.3	3.2	1.0	3.6	3.4	3.0	3.0	2.6	3.0	2.9
25	IHT 325	MP 7878 (Check)	3.2	3.3	3.3	2.0	3.6	3.5	3.2	3.2	3.1	3.3	3.2
26	IHT 326	MH 2731	3.4	3.3	3.3	1.0	3.3	3.4	3.0	2.8	3.1	3.0	2.9
27	IHT 327	MH 2732	2.7	3.0	3.3	2.0	3.2	3.4	2.9	2.5	3.7	2.8	3.0
28	IHT 328	MH 2733	3.7	3.5	3.3	2.0	3.9	3.6	3.4	3.3	3.5	3.3	3.4
29	IHT 329	MH 2734	3.9	3.3	3.1	2.3	3.6	3.5	3.3	3.0	3.4	3.3	3.2
30	IHT 330	MH 2735	3.0	3.4	3.1	1.3	3.6	3.5	3.0	3.1	3.2	3.0	3.1
31	IHT 331	KBH 108 (Check)	3.7	3.6	3.5	2.0	3.9	3.6	3.4	3.4	3.4	3.4	3.4
32	IHT 332	MH 2736	3.2	3.4	3.2	1.7	3.9	3.5	3.1	3.0	3.2	3.1	3.1
33	IHT 333	MH 2737	4.0	3.6	3.1	1.3	4.0	3.5	3.3	3.2	2.8	3.6	3.2
34	IHT 334	MH 2738	3.4	3.5	3.1	1.0	3.7	3.5	3.0	2.8	2.9	3.2	2.9
35	IHT 335	MH 2739	3.0	3.2	3.4	1.0	3.4	3.6	2.9	2.9	3.4	3.1	3.1
36	IHT 336	MH 2740	3.5	3.6	3.3	1.0	4.0	3.4	3.1	3.1	3.1	3.3	3.2
LOC. MEAN			3.4	3.4	3.2	1.5	3.7	3.5	3.1	3.0	3.0	3.2	3.1
C.D. (5%)			0.2	0.2	0.3	0.7	0.2	0.2	0.3	0.3	0.2	0.2	0.4
C.D. (1%)			0.2	0.3	0.5	0.9	0.3	0.2	0.4	0.4	0.3	0.3	0.6
C.V. (%)			3.4	4.4	6.6	26.6	3.5	2.8	8.3	6.1	5.0	4.2	8.2
F (Prob)			0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.324

Contd..

Table I.69: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	3.9	3.5	3.4	3.6	3.5	2.5	3.2	3.1	31
2	IHT 302	MH 2710	4.0	3.6	3.5	3.7	3.5	2.5	3.3	3.1	28
3	IHT 303	MH 2711	4.0	3.7	3.5	3.7	3.7	2.6	3.6	3.3	14
4	IHT 304	MH 2712	4.0	3.6	3.5	3.7	3.2	2.5	3.7	3.1	30
5	IHT 305	MH 2713	4.0	3.5	3.5	3.7	3.5	2.6	3.7	3.3	13
6	IHT 306	AHB 1200 (Check)	4.4	3.6	3.6	3.9	3.6	2.4	4.3	3.4	6
7	IHT 307	MH 2714	3.7	3.3	2.8	3.3	2.5	2.4	3.3	2.9	35
8	IHT 308	MH 2715	3.8	3.4	3.3	3.5	3.5	2.5	3.8	3.1	29
9	IHT 309	MH 2716	3.9	3.6	3.4	3.6	3.3	2.5	3.7	3.2	21
10	IHT 310	MH 2717	3.7	3.5	3.5	3.6	3.5	2.4	3.3	3.2	25
11	IHT 311	MH 2718	3.7	3.5	3.4	3.5	3.8	2.5	3.7	3.2	23
12	IHT 312	MH 2719	3.9	3.5	3.3	3.6	3.5	2.5	3.6	3.2	19
13	IHT 313	MH 2720	3.8	3.4	3.3	3.5	3.6	2.5	3.7	3.2	18
14	IHT 314	MH 2721	4.1	3.5	3.5	3.7	3.5	2.4	3.9	3.3	8
15	IHT 315	MH 2722	3.9	3.9	3.7	3.8	3.5	2.5	4.3	3.4	3
16	IHT 316	MH 2723	3.7	3.4	3.4	3.5	3.5	2.4	3.8	3.2	24
17	IHT 317	MH 2724	4.0	3.7	3.8	3.8	3.5	2.6	4.0	3.3	11
18	IHT 318	MH 2725	4.1	3.9	3.8	3.9	3.5	2.9	4.0	3.4	4
19	IHT 319	86M86 (Check)	3.7	3.5	3.5	3.6	3.4	2.6	4.1	3.2	16
20	IHT 320	MH 2726	3.9	3.2	3.2	3.4	3.4	2.5	3.7	3.2	26
21	IHT 321	MH 2727	3.9	3.7	3.3	3.6	3.6	2.5	3.8	3.3	9
22	IHT 322	MH 2728	3.8	3.6	3.5	3.6	3.5	2.5	3.4	3.2	22
23	IHT 323	MH 2729	3.9	3.4	3.6	3.6	3.5	2.5	3.4	3.2	21
24	IHT 324	MH 2730	3.8	3.5	3.5	3.6	3.5	2.6	3.7	3.2	27
25	IHT 325	MP 7878 (Check)	3.9	3.5	3.7	3.7	3.5	2.5	4.0	3.3	10
26	IHT 326	MH 2731	3.2	3.3	3.5	3.3	3.5	2.2	3.3	3.0	33
27	IHT 327	MH 2732	3.1	3.0	2.9	3.0	3.0	2.2	3.0	2.9	34
28	IHT 328	MH 2733	4.0	3.6	3.5	3.7	3.6	2.8	4.1	3.5	2
29	IHT 329	MH 2734	4.0	3.6	3.5	3.7	3.4	2.6	3.5	3.3	7
30	IHT 330	MH 2735	3.6	3.6	3.1	3.4	3.5	2.2	3.3	3.1	32
31	IHT 331	KBH 108 (Check)	3.9	3.8	3.8	3.8	3.9	2.7	3.9	3.5	1
32	IHT 332	MH 2736	3.7	3.6	3.4	3.6	3.6	2.7	3.8	3.3	15
33	IHT 333	MH 2737	4.0	3.7	3.9	3.8	3.8	2.6	4.2	3.4	5
34	IHT 334	MH 2738	3.9	3.8	3.5	3.7	3.6	2.5	4.0	3.2	17
35	IHT 335	MH 2739	4.1	3.5	3.5	3.7	3.6	2.6	3.8	3.2	20
36	IHT 336	MH 2740	3.8	3.4	3.3	3.5	3.7	2.6	4.0	3.3	12
LOC. MEAN			3.9	3.5	3.5	3.6	3.5	2.5	3.7	3.2	
C.D. (5%)			0.2	0.2	0.4	0.3	0.3	0.2	0.3	0.2	
C.D. (1%)			0.3	0.3	0.6	0.4	0.4	0.3	0.5	0.2	
C.V. (%)			3.9	4.1	7.5	4.2	5.6	5.7	5.7	6.9	
F (Prob)			0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	

Table I.70: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 1000-SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	DAS	RAJ MEAN	JMR	AHD	DEG1	GUJ MEAN
1	IHT 301	MH 2709	11.0	11.9	9.3	10.4	10.7	11.7	12.1	13.4	12.4
2	IHT 302	MH 2710	11.2	10.7	9.2	8.7	9.9	10.7	13.5	13.3	12.5
3	IHT 303	MH 2711	7.4	10.5	8.1	6.2	8.0	8.2	12.3	8.8	9.7
4	IHT 304	MH 2712	8.7	9.1	8.7	9.3	9.0	9.2	11.0	9.4	9.8
5	IHT 305	MH 2713	8.0	9.8	9.4	6.7	8.5	9.3	10.3	9.3	9.6
6	IHT 306	AHB 1200 (Check)	9.9	11.2	8.6	8.5	9.5	10.9	11.8	11.6	11.4
7	IHT 307	MH 2714	8.4	10.8	7.9	8.3	8.8	8.6	10.2	8.4	9.1
8	IHT 308	MH 2715	10.8	11.0	9.2	9.4	10.1	10.5	11.8	10.6	11.0
9	IHT 309	MH 2716	9.6	10.1	8.9	7.4	9.0	9.4	10.6	10.4	10.1
10	IHT 310	MH 2717	10.4	11.3	9.1	11.4	10.5	9.7	10.9	11.0	10.5
11	IHT 311	MH 2718	11.2	11.1	9.5	9.4	10.3	10.9	10.5	11.6	11.0
12	IHT 312	MH 2719	11.0	10.6	9.4	10.8	10.5	10.3	10.8	11.5	10.9
13	IHT 313	MH 2720	10.4	10.6	10.0	10.4	10.3	10.3	11.6	11.6	11.1
14	IHT 314	MH 2721	10.9	10.3	10.3	12.4	11.0	11.6	11.4	12.1	11.7
15	IHT 315	MH 2722	12.2	11.7	9.3	12.4	11.4	11.7	12.6	12.1	12.1
16	IHT 316	MH 2723	10.2	10.4	10.0	11.3	10.5	10.5	12.9	12.1	11.8
17	IHT 317	MH 2724	9.0	7.7	7.9	8.7	8.3	9.8	8.4	9.6	9.3
18	IHT 318	MH 2725	10.8	9.5	9.7	10.3	10.1	9.6	11.3	9.6	10.2
19	IHT 319	86M86 (Check)	7.9	10.8	8.3	8.3	8.8	10.6	11.2	11.2	11.0
20	IHT 320	MH 2726	7.2	9.1	6.9	10.3	8.4	8.6	10.8	11.9	10.4
21	IHT 321	MH 2727	8.2	8.1	8.4	9.1	8.4	8.7	12.5	9.7	10.3
22	IHT 322	MH 2728	9.2	11.1	9.4	12.5	10.6	10.9	11.1	9.7	10.6
23	IHT 323	MH 2729	9.3	11.3	8.7	9.1	9.6	10.0	11.6	9.7	10.4
24	IHT 324	MH 2730	9.4	9.9	9.1	11.4	10.0	9.7	12.1	10.8	10.8
25	IHT 325	MP 7878 (Check)	11.7	12.4	9.9	10.1	11.1	11.4	12.6	12.4	12.1
26	IHT 326	MH 2731	9.8	9.6	8.0	8.7	9.0	8.9	12.7	10.7	10.7
27	IHT 327	MH 2732	9.4	10.3	8.0	10.4	9.5	9.1	9.1	10.9	9.7
28	IHT 328	MH 2733	9.6	9.7	9.2	7.6	9.0	10.5	10.3	11.3	10.7
29	IHT 329	MH 2734	9.8	9.4	8.6	8.7	9.1	9.7	9.8	11.1	10.2
30	IHT 330	MH 2735	9.5	8.8	8.2	8.5	8.8	9.0	10.6	9.1	9.5
31	IHT 331	KBH 108 (Check)	12.4	11.3	9.0	12.6	11.3	11.7	9.7	11.4	10.9
32	IHT 332	MH 2736	8.7	9.1	8.2	7.6	8.4	9.5	10.2	10.7	10.1
33	IHT 333	MH 2737	10.6	11.1	9.3	9.3	10.1	10.3	12.7	8.3	10.4
34	IHT 334	MH 2738	8.0	10.5	8.9	8.9	9.1	10.6	10.2	11.4	10.7
35	IHT 335	MH 2739	8.2	8.4	8.5	7.7	8.2	8.0	9.6	10.1	9.2
36	IHT 336	MH 2740	8.8	10.7	9.3	8.7	9.4	11.7	10.7	12.0	11.5
		LOC. MEAN	9.7	10.3	8.9	9.5	9.6	10.0	11.1	10.8	10.7
		C.D. (5%)	0.6	0.5	0.9	0.2	1.7	0.9	1.3	1.7	2.1
		C.D. (1%)	0.8	0.6	1.2	0.3	2.2	1.2	1.7	2.2	2.9
		C.V. (%)	3.9	2.7	6.3	1.4	8.3	5.5	7.2	9.5	11.5
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031

Contd..

Table I.70: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 1000-SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	11.2	12.0	11.6	11.9	12.1	12.6	11.6	2
2	IHT 302	MH 2710	13.2	11.7	12.5	11.0	11.1	10.5	11.2	7
3	IHT 303	MH 2711	10.8	10.8	10.8	9.4	11.0	9.9	9.4	31
4	IHT 304	MH 2712	12.2	10.9	11.6	10.0	12.0	7.9	9.9	22
5	IHT 305	MH 2713	12.9	12.5	12.7	9.8	11.4	8.5	9.8	23
6	IHT 306	AHB 1200 (Check)	10.4	11.8	11.1	10.8	9.0	12.9	10.6	14
7	IHT 307	MH 2714	10.1	9.7	9.9	9.8	10.2	8.1	9.2	34
8	IHT 308	MH 2715	10.0	12.7	11.4	10.3	10.0	8.4	10.4	15
9	IHT 309	MH 2716	9.0	10.2	9.6	9.0	10.0	9.6	9.5	29
10	IHT 310	MH 2717	10.6	11.9	11.2	10.0	11.1	10.6	10.6	13
11	IHT 311	MH 2718	8.3	11.7	10.0	10.3	12.3	11.1	10.7	12
12	IHT 312	MH 2719	10.3	10.5	10.4	11.8	11.9	10.3	10.8	11
13	IHT 313	MH 2720	11.7	13.0	12.4	10.8	12.1	15.2	11.5	5
14	IHT 314	MH 2721	11.7	11.1	11.4	11.9	13.0	12.2	11.6	3
15	IHT 315	MH 2722	13.8	12.7	13.3	12.6	13.0	12.4	12.2	1
16	IHT 316	MH 2723	10.4	12.2	11.3	11.6	13.2	11.5	11.4	6
17	IHT 317	MH 2724	9.2	9.6	9.4	9.2	9.8	8.5	9.0	35
18	IHT 318	MH 2725	11.7	10.7	11.2	8.8	10.0	8.0	10.0	20
19	IHT 319	86M86 (Check)	9.1	10.9	10.0	10.6	12.4	11.3	10.2	17
20	IHT 320	MH 2726	10.0	9.0	9.5	9.0	10.4	7.4	9.2	33
21	IHT 321	MH 2727	10.0	11.5	10.8	9.6	11.5	9.1	9.7	28
22	IHT 322	MH 2728	11.5	12.1	11.8	12.2	11.1	10.9	11.0	9
23	IHT 323	MH 2729	11.5	10.0	10.8	9.6	11.0	9.2	10.1	18
24	IHT 324	MH 2730	10.3	9.7	10.0	10.4	10.3	10.6	10.3	16
25	IHT 325	MP 7878 (Check)	12.8	12.8	12.8	10.5	11.5	10.2	11.5	4
26	IHT 326	MH 2731	9.7	9.7	9.7	9.2	11.1	8.7	9.7	27
27	IHT 327	MH 2732	11.1	10.0	10.6	10.5	9.9	11.6	10.0	19
28	IHT 328	MH 2733	12.7	11.0	11.9	8.3	10.0	9.8	10.0	21
29	IHT 329	MH 2734	10.5	12.6	11.6	9.4	9.1	9.0	9.8	24
30	IHT 330	MH 2735	11.7	12.1	11.9	9.4	10.2	10.4	9.8	25
31	IHT 331	KBH 108 (Check)	11.9	11.0	11.5	9.7	12.0	11.5	11.2	8
32	IHT 332	MH 2736	12.4	10.1	11.3	8.8	11.7	10.2	9.8	26
33	IHT 333	MH 2737	11.4	11.7	11.6	9.3	11.5	12.0	10.6	14
34	IHT 334	MH 2738	7.1	11.8	9.5	8.8	8.5	8.7	9.4	30
35	IHT 335	MH 2739	10.1	10.1	10.1	9.6	10.9	10.4	9.3	32
36	IHT 336	MH 2740	12.5	12.8	12.7	9.7	11.8	11.4	10.9	10
LOC. MEAN			10.9	11.2	11.1	10.1	11.1	10.3	10.3	
C.D. (5%)			1.2	0.7	2.0	1.2	0.2	0.5	1.0	
C.D. (1%)			1.6	1.0	2.7	1.6	0.3	0.6	1.3	
C.V. (%)			6.8	4.0	9.3	7.2	1.3	2.9	9.2	
F (Prob)			0.000	0.000	0.090	0.000	0.000	0.000	0.000	

Table I.71: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	PTA	ALW	ALW2	DAS	RAJ	JMR	AHD	DNR	DEG1	GUJ
									MEAN					MEAN
1	IHT 301	MH 2709	85	83	77	89	80	81	83	94	97	81	79	88
2	IHT 302	MH 2710	89	84	78	65	81	80	80	91	101	81	80	88
3	IHT 303	MH 2711	84	81	76	67	80	79	78	95	111	81	81	92
4	IHT 304	MH 2712	89	81	76	72	80	81	80	91	89	81	76	84
5	IHT 305	MH 2713	86	83	78	68	80	79	79	94	102	81	75	88
6	IHT 306	AHB 1200 (Check)	92	78	75	68	81	78	79	93	99	81	82	89
7	IHT 307	MH 2714	89	78	71	58	63	74	72	91	98	81	75	86
8	IHT 308	MH 2715	80	82	78	73	82	81	79	95	108	81	79	91
9	IHT 309	MH 2716	89	84	75	64	80	78	78	91	102	81	78	88
10	IHT 310	MH 2717	93	80	75	67	80	75	79	99	110	81	80	93
11	IHT 311	MH 2718	85	81	75	50	80	77	75	98	108	81	73	90
12	IHT 312	MH 2719	89	77	78	68	77	79	78	94	101	81	78	88
13	IHT 313	MH 2720	84	81	78	59	77	81	77	93	103	81	78	89
14	IHT 314	MH 2721	88	83	77	74	81	77	80	89	108	81	74	88
15	IHT 315	MH 2722	86	81	78	69	77	80	79	92	100	81	75	87
16	IHT 316	MH 2723	92	85	74	76	80	78	81	99	99	79	82	90
17	IHT 317	MH 2724	89	80	68	56	74	78	74	93	107	80	71	88
18	IHT 318	MH 2725	79	80	77	63	80	80	77	101	108	80	78	92
19	IHT 319	86M86 (Check)	89	82	71	55	77	79	76	91	96	81	76	86
20	IHT 320	MH 2726	95	83	78	66	82	79	81	95	104	81	72	88
21	IHT 321	MH 2727	85	84	75	66	81	79	78	88	107	81	79	89
22	IHT 322	MH 2728	89	81	78	68	81	78	79	91	112	81	80	91
23	IHT 323	MH 2729	94	81	76	65	78	81	79	90	113	81	74	90
24	IHT 324	MH 2730	85	85	78	74	82	81	81	103	108	81	84	94
25	IHT 325	MP 7878 (Check)	90	81	75	66	78	79	78	97	105	81	71	89
26	IHT 326	MH 2731	85	82	75	77	78	78	79	103	101	81	79	91
27	IHT 327	MH 2732	89	81	74	80	80	79	81	102	110	81	78	92
28	IHT 328	MH 2733	87	82	78	65	83	78	79	92	109	80	80	91
29	IHT 329	MH 2734	92	82	78	72	82	76	81	92	101	81	75	87
30	IHT 330	MH 2735	90	80	76	71	80	80	80	93	101	81	80	89
31	IHT 331	KBH 108 (Check)	81	86	75	35	73	81	72	88	111	79	75	88
32	IHT 332	MH 2736	90	82	78	68	80	76	79	96	109	81	74	90
33	IHT 333	MH 2737	85	81	71	58	78	79	75	103	107	81	77	92
34	IHT 334	MH 2738	89	81	76	75	77	79	80	90	103	81	76	87
35	IHT 335	MH 2739	83	82	76	73	80	79	79	94	103	81	81	90
36	IHT 336	MH 2740	89	83	75	57	77	77	77	99	101	81	80	90
		LOC. MEAN	88	82	76	67	79	79	78	94	104	81	77	89
		C.D. (5%)	11.0	2.0	5.0	20.0	5.0	5.0	6.0	12.0	7.0	1.0	9.0	5.0
		C.D. (1%)	14.0	3.0	7.0	27.0	7.0	7.0	8.0	16.0	9.0	1.0	12.0	6.0
		C.V. (%)	7.6	1.6	4.2	18.7	4.2	4.1	5.9	7.6	4.1	0.8	7.1	3.9
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.291

Contd..

Table I.71: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	80	81	75	79	39	89	81	81	9
2	IHT 302	MH 2710	81	78	76	78	46	90	80	80	19
3	IHT 303	MH 2711	80	76	72	76	48	95	80	80	14
4	IHT 304	MH 2712	79	75	74	76	52	87	80	79	30
5	IHT 305	MH 2713	81	78	77	79	47	86	80	80	23
6	IHT 306	AHB 1200 (Check)	80	76	73	76	44	91	81	79	26
7	IHT 307	MH 2714	79	74	70	74	39	100	80	76	34
8	IHT 308	MH 2715	80	79	74	78	50	102	81	82	2
9	IHT 309	MH 2716	80	77	75	77	43	91	80	79	29
10	IHT 310	MH 2717	81	79	71	77	61	101	80	82	1
11	IHT 311	MH 2718	80	78	76	78	55	94	80	80	25
12	IHT 312	MH 2719	80	79	75	78	58	98	80	81	8
13	IHT 313	MH 2720	81	78	72	77	54	98	80	80	22
14	IHT 314	MH 2721	81	79	75	78	41	98	80	80	15
15	IHT 315	MH 2722	80	78	74	77	46	91	80	79	28
16	IHT 316	MH 2723	80	78	74	77	44	97	80	81	6
17	IHT 317	MH 2724	79	77	76	77	45	90	80	78	33
18	IHT 318	MH 2725	80	76	74	77	39	93	80	79	27
19	IHT 319	86M86 (Check)	79	78	72	77	49	92	80	78	32
20	IHT 320	MH 2726	79	79	73	77	40	88	80	80	24
21	IHT 321	MH 2727	78	68	72	73	46	90	80	79	31
22	IHT 322	MH 2728	80	79	77	79	39	89	80	80	16
23	IHT 323	MH 2729	81	79	72	77	39	94	80	80	21
24	IHT 324	MH 2730	80	76	70	75	45	92	80	81	3
25	IHT 325	MP 7878 (Check)	80	70	77	76	39	93	80	79	30
26	IHT 326	MH 2731	79	79	71	76	45	88	80	80	20
27	IHT 327	MH 2732	79	79	73	77	42	91	80	81	5
28	IHT 328	MH 2733	79	74	75	76	53	94	80	81	10
29	IHT 329	MH 2734	79	75	77	77	48	90	81	80	17
30	IHT 330	MH 2735	80	78	73	77	53	94	81	81	12
31	IHT 331	KBH 108 (Check)	73	79	72	75	31	92	80	76	35
32	IHT 332	MH 2736	81	77	74	77	59	88	80	81	7
33	IHT 333	MH 2737	79	79	77	78	52	96	80	80	13
34	IHT 334	MH 2738	80	75	73	76	51	103	80	81	11
35	IHT 335	MH 2739	79	78	76	77	48	105	81	81	4
36	IHT 336	MH 2740	79	77	72	76	49	105	80	80	18
LOC. MEAN			80	77	74	77	47	94	80	80	
C.D. (5%)			2.0	5.0	6.0	4.0	15.0	5.0	1.0	3.0	
C.D. (1%)			2.0	6.0	8.0	5.0	20.0	7.0	1.0	4.0	
C.V. (%)			1.4	3.8	5.2	3.0	19.6	3.4	0.6	5.1	
F (Prob)			0.000	0.000	0.000	0.197	0.000	0.000	0.000	0.001	

Table I.72: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	JPR1	PTA	ALW	DAS	RAJ	JMR	AHD	DNR	DEG1	GUJ
							MEAN					MEAN
1	IHT 301	MH 2709	92	82	90	98	90	95	77	73	77	81
2	IHT 302	MH 2710	100	72	87	95	88	93	67	90	77	82
3	IHT 303	MH 2711	100	67	87	98	88	90	63	87	87	82
4	IHT 304	MH 2712	92	65	80	98	84	90	67	95	90	85
5	IHT 305	MH 2713	100	72	97	97	91	92	67	97	67	80
6	IHT 306	AHB 1200 (Check)	93	68	47	93	75	63	57	82	70	68
7	IHT 307	MH 2714	97	65	87	93	85	78	67	88	83	79
8	IHT 308	MH 2715	100	55	70	96	80	78	83	92	83	84
9	IHT 309	MH 2716	100	65	70	95	83	87	77	70	57	73
10	IHT 310	MH 2717	100	75	93	97	91	86	80	80	67	78
11	IHT 311	MH 2718	100	73	97	92	90	91	67	90	90	84
12	IHT 312	MH 2719	72	85	80	92	82	92	87	77	73	82
13	IHT 313	MH 2720	100	78	93	98	92	91	77	90	87	86
14	IHT 314	MH 2721	100	73	80	97	88	93	77	95	70	84
15	IHT 315	MH 2722	98	73	90	95	89	89	67	73	90	80
16	IHT 316	MH 2723	97	77	67	100	85	82	57	73	77	72
17	IHT 317	MH 2724	75	65	73	97	78	85	57	80	80	75
18	IHT 318	MH 2725	97	67	70	94	82	68	67	88	67	73
19	IHT 319	86M86 (Check)	97	62	83	93	84	84	63	75	90	78
20	IHT 320	MH 2726	92	63	77	97	82	78	67	92	87	81
21	IHT 321	MH 2727	87	65	97	100	87	82	83	87	67	80
22	IHT 322	MH 2728	98	75	83	97	88	94	67	88	73	81
23	IHT 323	MH 2729	98	70	87	100	89	90	67	75	90	80
24	IHT 324	MH 2730	98	65	77	95	84	88	67	87	67	77
25	IHT 325	MP 7878 (Check)	100	72	83	97	88	93	57	85	87	80
26	IHT 326	MH 2731	92	77	90	98	89	93	57	78	87	79
27	IHT 327	MH 2732	65	77	67	98	77	85	27	82	57	63
28	IHT 328	MH 2733	78	68	50	95	73	90	53	82	63	72
29	IHT 329	MH 2734	98	65	87	96	87	91	77	87	90	86
30	IHT 330	MH 2735	70	63	67	92	73	88	87	-	83	86
31	IHT 331	KBH 108 (Check)	88	78	57	93	79	90	57	95	70	78
32	IHT 332	MH 2736	82	68	73	93	79	82	57	72	50	65
33	IHT 333	MH 2737	92	57	63	100	78	88	77	85	90	85
34	IHT 334	MH 2738	80	62	93	97	83	88	57	90	77	78
35	IHT 335	MH 2739	100	77	93	97	92	93	57	97	87	83
36	IHT 336	MH 2740	82	63	83	98	82	88	77	75	83	81
		LOC. MEAN	92	70	80	96	84	87	67	84	77	79
		C.D. (5%)	5.0	24.0	18.0	7.0	18.0	11.0	11.0	8.0	21.0	12.0
		C.D. (1%)	6.0	32.0	24.0	9.0	24.0	15.0	14.0	11.0	28.0	16.0
		C.V. (%)	3.2	21.3	14.0	4.4	10.7	7.8	9.7	6.0	16.9	8.6
		F (Prob)	0.000	0.000	0.000	0.000	0.537	0.000	0.000	0.000	0.000	0.010

Contd..

Table I.72: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	ALR	HTR	MTR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	82	89	79	83	75	81	98	85	5
2	IHT 302	MH 2710	87	92	79	86	82	85	92	85	3
3	IHT 303	MH 2711	50	65	73	63	87	75	57	77	24
4	IHT 304	MH 2712	43	80	82	68	87	88	55	79	21
5	IHT 305	MH 2713	50	92	87	76	93	82	87	84	7
6	IHT 306	AHB 1200 (Check)	37	32	80	49	68	81	52	66	34
7	IHT 307	MH 2714	57	85	80	74	53	72	55	76	27
8	IHT 308	MH 2715	90	90	80	87	93	83	93	85	4
9	IHT 309	MH 2716	47	85	82	71	83	92	96	79	22
10	IHT 310	MH 2717	80	92	80	84	93	85	60	83	9
11	IHT 311	MH 2718	73	91	87	84	95	87	96	88	1
12	IHT 312	MH 2719	67	93	82	81	87	88	87	83	12
13	IHT 313	MH 2720	82	83	78	81	93	92	60	86	2
14	IHT 314	MH 2721	72	85	78	78	85	84	62	82	13
15	IHT 315	MH 2722	70	91	78	80	100	71	93	84	6
16	IHT 316	MH 2723	50	92	84	75	68	85	63	77	26
17	IHT 317	MH 2724	50	89	78	72	57	91	52	73	30
18	IHT 318	MH 2725	37	82	82	67	72	89	48	73	31
19	IHT 319	86M86 (Check)	75	70	81	75	80	88	92	81	17
20	IHT 320	MH 2726	57	45	80	61	78	75	96	77	25
21	IHT 321	MH 2727	62	88	80	77	75	82	97	82	13
22	IHT 322	MH 2728	72	78	83	78	88	92	50	81	15
23	IHT 323	MH 2729	82	84	78	81	85	68	87	83	11
24	IHT 324	MH 2730	62	90	83	78	83	80	91	81	18
25	IHT 325	MP 7878 (Check)	67	88	87	81	80	74	47	80	20
26	IHT 326	MH 2731	30	83	83	66	92	71	94	80	19
27	IHT 327	MH 2732	13	55	79	49	67	72	50	64	35
28	IHT 328	MH 2733	83	72	80	78	92	89	48	75	29
29	IHT 329	MH 2734	92	83	87	87	82	78	50	83	10
30	IHT 330	MH 2735	30	43	80	51	75	75	53	70	32
31	IHT 331	KBH 108 (Check)	75	50	78	68	78	80	67	75	28
32	IHT 332	MH 2736	17	33	81	44	87	72	60	66	33
33	IHT 333	MH 2737	57	87	78	74	93	73	95	81	16
34	IHT 334	MH 2738	57	90	78	75	93	82	96	81	14
35	IHT 335	MH 2739	80	90	82	84	87	81	52	84	8
36	IHT 336	MH 2740	62	72	85	73	83	77	60	78	23
LOC. MEAN			61	78	81	73	83	81	72	79	
C.D. (5%)			24.0	12.0	9.0	16.0	20.0	7.0	5.0	8.0	
C.D. (1%)			31.0	16.0	12.0	21.0	27.0	10.0	7.0	11.0	
C.V. (%)			23.9	9.7	7.0	12.7	15.2	5.6	4.2	12.4	
F (Prob)			0.000	0.000	0.000	0.095	0.000	0.000	0.000	0.000	

Table I.73: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 GRAIN QUALITY: IRON CONTENT (ppm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	TJR	ALW2	DAS	JMR	ALR	HSR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	44	48	45	72	49	47	53	70	43	52	11
2	IHT 302	MH 2710	42	67	53	71	56	57	55	84	54	60	6
3	IHT 303	MH 2711	40	47	52	60	42	51	59	64	48	51	12
4	IHT 304	MH 2712	50	70	49	75	72	60	50	73	60	62	5
5	IHT 305	MH 2713	51	70	50	77	50	58	59	85	66	63	4
6	IHT 306	AHB 1200 (Check)	52	84	77	97	73	84	69	87	83	78	1
7	IHT 308	MH 2715	37	52	45	71	51	53	53	68	53	54	10
8	IHT 309	MH 2716	31	37	45	51	38	44	43	59	34	42	17
9	IHT 310	MH 2717	34	47	43	51	55	42	48	65	46	48	14
10	IHT 311	MH 2718	38	43	46	50	40	52	48	74	45	49	13
11	IHT 312	MH 2719	32	40	33	50	93	39	50	57	42	48	14
12	IHT 313	MH 2720	45	41	44	51	43	57	48	58	46	48	14
13	IHT 314	MH 2721	38	49	43	46	48	49	47	62	40	47	15
14	IHT 315	MH 2722	45	69	66	74	61	58	64	77	56	63	4
15	IHT 316	MH 2723	42	52	64	81	69	59	60	53	55	59	7
16	IHT 318	MH 2725	57	68	69	84	48	71	66	57	73	66	2
17	IHT 319	86M86 (Check)	43	60	65	69	58	67	65	76	63	63	4
18	IHT 322	MH 2728	46	57	40	68	57	55	47	69	55	55	9
19	IHT 323	MH 2729	32	48	41	49	48	49	42	75	40	47	15
20	IHT 324	MH 2730	38	47	48	65	47	45	54	63	52	51	12
21	IHT 325	MP 7878 (Check)	41	59	43	73	45	52	57	87	46	56	8
22	IHT 328	MH 2733	54	57	77	92	58	65	63	67	51	65	3
23	IHT 331	KBH 108 (Check)	37	41	42	47	59	44	47	59	40	46	16
24	IHT 332	MH 2736	43	67	63	64	60	68	52	58	58	59	7
25	IHT 334	MH 2738	38	51	54	60	62	60	60	82	62	59	7
26	IHT 335	MH 2739	51	65	54	82	59	60	63	67	57	62	5

Table I.74: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 GRAIN QUALITY: ZINC CONTENT (ppm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	TJR	ALW2	DAS	JMR	ALR	HSR	LDA	ZONE MEAN	RANK
1	IHT 301	MH 2709	23	46	30	48	35	33	25	45	42	36	6
2	IHT 302	MH 2710	24	44	28	42	32	38	23	46	47	36	6
3	IHT 303	MH 2711	29	40	28	36	25	36	23	44	49	34	8
4	IHT 304	MH 2712	29	47	30	40	43	37	26	45	61	40	2
5	IHT 305	MH 2713	35	52	34	49	36	40	34	49	69	44	1
6	IHT 306	AHB 1200 (Check)	24	51	20	37	36	34	25	48	68	38	4
7	IHT 308	MH 2715	22	43	28	46	39	31	25	50	48	37	5
8	IHT 309	MH 2716	23	37	20	36	25	30	20	44	41	31	10
9	IHT 310	MH 2717	24	38	26	41	38	30	26	42	50	35	7
10	IHT 311	MH 2718	22	31	22	31	25	30	18	48	41	30	11
11	IHT 312	MH 2719	20	35	22	32	28	27	19	40	36	29	12
12	IHT 313	MH 2720	24	31	23	34	24	31	21	39	37	29	12
13	IHT 314	MH 2721	20	30	25	30	25	24	22	41	37	28	13
14	IHT 315	MH 2722	23	43	28	41	32	32	23	47	57	36	6
15	IHT 316	MH 2723	26	37	29	46	41	30	23	46	56	37	5
16	IHT 318	MH 2725	26	48	28	38	33	38	27	37	55	37	5
17	IHT 319	86M86 (Check)	26	38	30	45	37	40	25	49	60	39	3
18	IHT 322	MH 2728	25	47	20	36	34	32	23	53	49	35	7
19	IHT 323	MH 2729	26	42	24	39	31	33	25	45	47	35	7
20	IHT 324	MH 2730	25	37	23	43	32	29	20	42	43	33	9
21	IHT 325	MP 7878 (Check)	26	51	29	49	31	39	32	51	46	39	3
22	IHT 328	MH 2733	28	40	29	49	34	39	27	46	53	38	4
23	IHT 331	KBH 108 (Check)	22	34	25	30	39	29	22	37	37	31	10
24	IHT 332	MH 2736	23	40	27	40	33	35	25	41	50	35	7
25	IHT 334	MH 2738	25	40	29	45	38	37	28	55	57	39	3
26	IHT 335	MH 2739	29	38	31	37	41	37	25	49	54	38	4

CHAPTER I: BREEDING

Table I.75: INITIAL HYBRID TRIAL (Late) KHARIF 2022 EXPERIMENTAL DETAILS ZONE B

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers (kg/ha.)			Insecticide
							N	P	K	
MAHARASHTRA										
Aurangabad (NARP) (VNMKV)	MB	7.5	9.7.22	29.10.22	1.8.22	Nil	60	30	30	Nil
Aurangabad (Seedworks)	MB	-	1.7.22	3.10.22	26.7.22	Nil	80	40	40	Coragen
Dhule (MPKV)	MB	8.6	4.7.22	17.10.22	31.7.22	Nil	60	30	0	Nil
Jalna (Mahyco)	BCS	-	10.7.22	17.10.22	1.8.22	Nil	80	40	40	Nil
Jalna (Krishidhan Ghanewadi)	BS	-	9.7.22	27.10.22	5.8,28.8.22	Nil	-	-	-	Nil
Pachora (Nirmal Seed)	MB	7.6	21.7.22	30.9.22	20.8.22	21.7.22	100	50	50	Nil
Malkapur (Ankur Seed)	BCS	-	9.7.22	9.10.22	20.7,29.7,14.8.22	Nil	60	30	0	Coragen,Fame,
Gangapur (Ganga Kaveri)	BS	6.5	6.7.22	16.10.22	2.8.22	20.7.22	40	20	20	Chloropyriphos
KARNATAKA										
Vijayapur (UAS, Dharwad)	SB	8.7	9.7.22	2.11.22	17.8.22	Nil	50	25	0	Nil
ANDHRA PRADESH										
Ananthapuram (ANGRAU)	RSL	6.5	7.7.22	16.11.22	4.8.22	Nil	60	30	20	Nil
TELANGANA										
Hyderabad (Nuziveedu)	-	-	2.7.22	5.10.22	-	Nil	60	40	30	Nil
Toopran, Medak (NU Genes)	LB	-	20.8.22	23.11.22	23.9.22	Nil	-	-	-	Nil
TAMIL NADU										
Coimbatore (TNAU)	CL	7.8	6.7.22	17.10.22	-	6.7,27.7,19.8,21.9.22	80	40	40	Nil

SB = Shallow Black; MB = Medium Black; CL = Clay Loam; RSL = Red Sandy Loam, BCS = Black Cotton Soil; RS = Red Soil , BS = Black Soil, LB =Light Black

CHAPTER I: BREEDING

Table I.76: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE B

S.NO	TEST ENTRY CODE	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS MEAN	VYP	APR	TPN	CBE	ZONE MEAN	RANK
1	IHT 301 MH 2709	3050	4787	4201	3246	5396	4133	2875	3955	2513	3724	3869	4222	3820	3
2	IHT 302 MH 2710	3211	4413	3656	3862	4646	3694	2672	3736	2011	1982	4198	4333	3516	19
3	IHT 303 MH 2711	3489	5004	4064	2647	4694	4467	2914	3897	2467	2462	3447	4125	3616	9
4	IHT 304 MH 2712	2994	4664	4326	4369	4553	3717	3153	3968	2394	1562	3998	3619	3577	13
5	IHT 305 MH 2713	3889	3688	3681	4034	3365	4217	2984	3694	2822	1982	3613	4608	3535	16
6	IHT 306 AHB 1200 (Check)	2200	2558	2544	2626	2760	3611	2843	2734	1621	1021	3760	2869	2583	35
7	IHT 307 MH 2714	3094	3174	1604	1757	1511	2178	2642	2280	1806	1201	3448	2722	2285	36
8	IHT 308 MH 2715	3517	4727	4968	4352	2787	4572	3253	4025	2804	2342	3783	4481	3781	4
9	IHT 309 MH 2716	3078	5470	4407	4624	3000	4333	2861	3968	2544	1742	3697	3292	3550	14
10	IHT 310 MH 2717	3883	5661	5106	3042	1709	4744	3392	3934	2703	2823	4530	4969	3869	2
11	IHT 311 MH 2718	3656	4967	4345	3839	4081	4306	2961	4022	2684	2462	4192	3903	3763	5
12	IHT 312 MH 2719	3833	4877	4217	3960	1213	4861	2768	3676	2036	1922	4135	5078	3536	15
13	IHT 313 MH 2720	4133	5269	4539	4866	2667	4972	2853	4186	2281	3784	4464	4744	4052	1
14	IHT 314 MH 2721	3961	5286	4117	3438	2471	4456	2903	3805	2548	2402	3586	4664	3621	8
15	IHT 315 MH 2722	4389	5764	3784	3681	3315	4033	3061	4004	2109	2042	2751	3231	3469	22
16	IHT 316 MH 2723	3450	4031	4222	3563	4309	3989	2844	3773	1975	3363	3304	3769	3529	17
17	IHT 317 MH 2724	2367	3333	1968	2822	2129	2711	2806	2591	1748	2823	2994	2931	2603	34
18	IHT 318 MH 2725	3467	4067	3718	3531	2423	3572	3158	3419	2232	1081	3739	3911	3173	31
19	IHT 319 86M86 (Check)	3578	4869	3631	3662	2796	3472	3172	3597	1956	3003	3535	4558	3476	21
20	IHT 320 MH 2726	2867	4166	2480	3761	4027	3672	2652	3375	2457	3664	4281	2850	3352	25
21	IHT 321 MH 2727	3250	4526	2909	3597	4114	3339	2772	3501	1898	1862	3407	3658	3212	28
22	IHT 322 MH 2728	3389	5492	4085	4112	2943	4050	2572	3806	2321	3063	3751	4583	3669	7
23	IHT 323 MH 2729	3644	4584	3845	3448	2979	4172	2597	3610	1936	3664	3826	3785	3498	20
24	IHT 324 MH 2730	2744	5426	3950	3977	4480	3944	3010	3933	1932	2282	3530	4272	3595	11
25	IHT 325 Kaveri S Boss (Check)	1967	4478	3458	2934	3222	3400	3006	3209	2291	3183	3976	3869	3253	27
26	IHT 326 MH 2731	3194	4481	3426	2780	4622	3467	3339	3616	2223	2763	3810	3928	3457	23
27	IHT 327 MH 2732	1858	4314	2532	2557	3225	2533	2581	2800	2250	2042	4246	3683	2893	33
28	IHT 328 MH 2733	2944	4117	3659	3310	3453	3400	2803	3384	2001	3063	4433	3028	3292	26
29	IHT 329 MH 2734	2044	3854	3393	2343	2213	3478	2547	2839	1754	3483	4434	4106	3059	32
30	IHT 330 MH 2735	2956	4091	3867	2949	3207	3083	3311	3352	2419	2222	3665	3500	3206	29
31	IHT 331 NBH 4903 (Check)	3806	5117	3195	3719	4532	3689	3425	3926	2981	2643	3653	4344	3737	6
32	IHT 332 MH 2736	2667	4236	3612	3967	3718	4222	3231	3665	2548	3904	3550	3833	3590	12
33	IHT 333 MH 2737	3056	4875	4000	2943	3033	3622	2622	3450	1897	2763	3460	2969	3204	30
34	IHT 334 MH 2738	3200	4976	3274	3180	4453	3600	3025	3673	2252	2282	4526	2950	3429	24
35	IHT 335 MH 2739	3561	4661	3928	4010	4733	3417	3294	3943	1906	1982	3544	3728	3524	18
36	IHT 336 MH 2740	2233	4447	4225	2822	4135	2639	3232	3391	2485	4204	4240	4967	3603	10
	LOC. MEAN	3184	4568	3693	3454	3414	3771	2948	3576	2245	2578	3816	3891	3415	
	C.D. (5%)	390	505	999	776	987	914	323	615	450	962	437	775	488	
	C.D. (1%)	518	671	1327	1030	1310	1214	428	811	597	1277	581	1029	642	
	C.V. (%)	7.5	6.8	16.6	13.8	17.8	14.9	6.7	16.3	12.3	22.9	7.0	12.2	17.0	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	PLOT SIZE (m ²)	6.00	6.00	5.55	6.00	5.55	6.00	6.00	-	6.00	5.55	6.75	6.00	-	

CHAPTER I: BREEDING

Table I.77: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE								MEAN					MEAN	
1	IHT 301	MH 2709	8333	8923	7207	13072	11411	10800	8886	9805	6444	13213	7457	7046	9345	32
2	IHT 302	MH 2710	8000	8902	11772	14333	11592	9250	10177	10575	7389	12613	7852	7025	9900	26
3	IHT 303	MH 2711	6222	10337	10931	9789	10210	10656	9247	9627	5622	11411	9136	9903	9406	31
4	IHT 304	MH 2712	8944	10029	13333	12164	13514	9828	9969	11112	5944	12312	10321	5933	10208	21
5	IHT 305	MH 2713	9056	11632	12012	17294	13694	14367	10163	12603	8000	10691	8494	9711	11374	5
6	IHT 306	AHB 1200 (Check)	7222	6601	9009	13903	9610	9183	8997	9218	5333	9850	7605	4367	8335	36
7	IHT 307	MH 2714	6111	9037	7087	16503	8529	5211	9819	8900	6056	14234	8247	4900	8703	35
8	IHT 308	MH 2715	8644	9519	10691	14144	14294	11794	10238	11332	7778	14234	10074	7972	10853	15
9	IHT 309	MH 2716	9167	12388	14174	18206	11712	13222	9999	12695	8889	12492	7605	6839	11336	6
10	IHT 310	MH 2717	8500	14910	11652	17203	13273	11411	9813	12395	7833	11652	10074	6828	11195	8
11	IHT 311	MH 2718	8944	11959	15255	16394	12973	11917	11119	12652	6833	12312	9531	6733	11270	7
12	IHT 312	MH 2719	9167	12292	17658	18589	14835	15094	10727	14052	6056	11832	8593	8806	12150	1
13	IHT 313	MH 2720	9333	12999	17778	17356	8709	13050	9855	12726	7167	12913	9185	8878	11566	4
14	IHT 314	MH 2721	9056	15132	17297	22100	11652	12028	10761	14004	5944	11231	8642	8583	12039	2
15	IHT 315	MH 2722	10444	14079	13814	19133	11532	10472	10763	12891	5667	10631	7605	6561	10973	13
16	IHT 316	MH 2723	6722	9034	11772	14883	9730	9544	9549	10176	5500	13453	7457	7444	9554	30
17	IHT 317	MH 2724	6722	9807	8889	15308	6667	8672	11108	9596	5944	13754	7506	6328	9155	33
18	IHT 318	MH 2725	8556	9338	8889	16394	11471	9733	10527	10701	5500	10991	8889	7964	9841	27
19	IHT 319	86M86 (Check)	8111	12173	9009	16469	12072	8156	10961	10993	4611	10691	10173	8008	10039	25
20	IHT 320	MH 2726	9944	12169	11892	15104	12132	11450	10874	11938	4667	13153	10469	7461	10847	16
21	IHT 321	MH 2727	9111	9769	9489	11637	10270	8994	10208	9926	6000	14054	8494	7781	9619	29
22	IHT 322	MH 2728	8500	12439	13814	17261	13213	10161	10313	12243	4722	12372	9580	9042	11038	10
23	IHT 323	MH 2729	5000	9135	11532	10233	10751	10283	10127	9580	4778	10571	7457	7072	8813	34
24	IHT 324	MH 2730	8167	11630	15375	16050	11952	12833	10019	12289	4056	11592	9432	6772	10716	17
25	IHT 325	Kaveri S Boss (Check)	9222	11137	12132	13553	10030	11528	9961	11080	4667	13333	8148	7728	10131	22
26	IHT 326	MH 2731	8000	13887	12252	17258	12372	10578	10133	12069	5556	12312	7358	5572	10480	19
27	IHT 327	MH 2732	8500	12386	10330	17067	11411	9050	10594	11334	5944	14354	8642	7428	10519	18
28	IHT 328	MH 2733	6667	9902	12252	16508	11832	9711	10047	10988	6167	13453	8642	5847	10093	24
29	IHT 329	MH 2734	8611	10523	16697	19189	11892	13406	10166	12926	3833	12132	8494	7861	11164	9
30	IHT 330	MH 2735	8056	10588	11892	20544	10691	10572	11224	11938	6167	12913	10074	8222	10995	12
31	IHT 331	NBH 4903 (Check)	7667	11029	13574	19500	14895	10017	9108	12256	6167	11892	9086	8056	10999	11
32	IHT 332	MH 2736	8278	11959	15495	24061	11171	12556	11247	13538	6389	11832	8444	8136	11779	3
33	IHT 333	MH 2737	8000	9884	12132	19833	9850	8972	10091	11252	5944	11952	9136	5533	10121	23
34	IHT 334	MH 2738	7722	10512	8529	18483	11351	10367	8019	10712	5500	12733	9185	5847	9841	28
35	IHT 335	MH 2739	7944	8626	16036	17250	14414	9683	9791	11964	5389	14294	9432	7728	10963	14
36	IHT 336	MH 2740	9278	10091	12673	21644	10631	6183	9169	11381	6167	12312	9531	7486	10470	20
		LOC. MEAN	8220	10966	12342	16623	11565	10576	10105	11485	5962	12382	8779	7317	10440	
		C.D. (5%)	1347	1803	4420	3047	1799	2785	1820	1848	976	3006	1240	904	1362	
		C.D. (1%)	1788	2394	5868	4045	2388	3698	2416	2437	1296	3991	1646	1200	1794	
		C.V. (%)	10.1	10.1	22.0	11.3	9.6	16.2	11.1	15.3	10.1	14.9	8.7	7.6	15.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	6.00	6.00	5.55	6.00	5.55	6.00	6.00	-	6.00	5.55	6.75	6.00	-	

CHAPTER I: BREEDING

Table I.78: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN												MEAN	
1	IHT 301	MH 2709	55	53	53	62	56	50	62	56	54	38	57	47	53	28
2	IHT 302	MH 2710	55	57	55	60	59	53	62	57	57	40	57	51	55	15
3	IHT 303	MH 2711	55	56	54	55	54	53	62	55	53	41	58	46	53	27
4	IHT 304	MH 2712	53	58	54	62	58	53	62	57	55	51	58	50	56	11
5	IHT 305	MH 2713	58	60	58	68	60	54	65	60	51	50	56	54	57	4
6	IHT 306	AHB 1200 (Check)	48	51	49	53	57	46	60	52	54	49	55	46	52	33
7	IHT 307	MH 2714	56	56	53	62	57	54	61	57	53	48	56	49	55	16
8	IHT 308	MH 2715	54	54	51	54	56	48	62	54	50	40	56	48	52	32
9	IHT 309	MH 2716	55	54	53	67	61	52	60	57	51	46	57	49	55	17
10	IHT 310	MH 2717	54	54	53	70	59	50	60	57	52	48	57	50	55	14
11	IHT 311	MH 2718	55	58	54	70	58	52	60	58	53	48	58	51	56	9
12	IHT 312	MH 2719	58	59	56	71	61	53	64	60	51	53	60	55	58	3
13	IHT 313	MH 2720	60	59	57	70	60	55	65	61	54	56	57	55	59	1
14	IHT 314	MH 2721	61	58	55	70	60	55	66	61	55	56	57	55	59	2
15	IHT 315	MH 2722	60	59	57	69	57	51	61	59	53	48	56	51	56	6
16	IHT 316	MH 2723	52	54	53	55	60	48	56	54	52	43	56	45	52	31
17	IHT 317	MH 2724	48	51	51	54	56	50	57	52	55	40	59	47	52	34
18	IHT 318	MH 2725	54	55	54	68	54	51	57	56	53	38	58	46	53	26
19	IHT 319	86M86 (Check)	55	55	53	65	59	53	59	57	53	41	58	50	55	18
20	IHT 320	MH 2726	54	56	54	67	57	51	62	57	54	39	56	49	54	21
21	IHT 321	MH 2727	55	59	56	62	60	53	62	58	51	37	54	51	55	19
22	IHT 322	MH 2728	54	58	57	69	58	52	64	59	54	36	56	51	55	12
23	IHT 323	MH 2729	54	57	52	62	59	51	61	57	56	35	57	47	54	24
24	IHT 324	MH 2730	56	56	54	65	58	51	62	57	51	37	57	48	54	22
25	IHT 325	Kaveri S Boss (Check)	58	58	55	64	59	53	63	59	52	42	56	50	55	13
26	IHT 326	MH 2731	60	59	55	67	55	52	65	59	52	45	55	49	56	10
27	IHT 327	MH 2732	58	59	56	61	56	53	66	58	57	46	56	49	56	8
28	IHT 328	MH 2733	54	54	55	56	53	49	64	55	52	46	57	46	53	29
29	IHT 329	MH 2734	55	53	55	66	55	51	60	56	51	46	60	47	54	20
30	IHT 330	MH 2735	59	58	55	70	59	51	65	60	51	49	57	50	57	5
31	IHT 331	NBH 4903 (Check)	59	59	54	68	57	51	62	58	53	48	58	49	56	8
32	IHT 332	MH 2736	59	59	53	66	59	51	63	59	51	47	55	49	56	11
33	IHT 333	MH 2737	59	58	55	69	57	52	62	59	52	46	56	52	56	7
34	IHT 334	MH 2738	52	55	53	61	55	51	57	55	55	43	58	49	53	25
35	IHT 335	MH 2739	55	54	55	56	53	52	62	55	54	50	57	47	54	23
36	IHT 336	MH 2740	56	56	54	53	53	52	58	54	53	43	55	48	53	30
		LOC. MEAN	56	56	54	64	57	52	62	57	53	45	57	49	55	
		C.D. (5%)	1.0	2.0	2.0	4.0	1.0	2.0	1.0	2.0	1.0	6.0	2.0	1.0	2.0	
		C.D. (1%)	2.0	2.0	3.0	5.0	2.0	3.0	1.0	3.0	2.0	8.0	3.0	2.0	3.0	
		C.V. (%)	1.6	2.0	2.5	3.5	1.5	2.6	1.1	4.1	1.5	8.4	2.3	1.8	4.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.79: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO MATURITY ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN											MEAN		
1	IHT 301	MH 2709	89	81	91	92	76	84	93	87	96	67	90	83	86	28
2	IHT 302	MH 2710	94	84	94	90	80	85	94	89	98	68	89	86	87	16
3	IHT 303	MH 2711	92	84	93	85	84	85	92	88	96	68	90	85	87	23
4	IHT 304	MH 2712	88	84	94	92	79	83	92	88	96	80	90	86	88	14
5	IHT 305	MH 2713	95	88	96	95	83	84	96	91	92	78	90	89	90	4
6	IHT 306	AHB 1200 (Check)	86	78	87	83	85	79	92	84	96	76	90	82	85	34
7	IHT 307	MH 2714	94	83	91	92	79	80	92	87	96	76	89	84	87	20
8	IHT 308	MH 2715	92	82	90	84	82	78	93	86	94	67	89	84	85	33
9	IHT 309	MH 2716	94	82	92	97	83	78	91	88	95	75	90	84	87	17
10	IHT 310	MH 2717	89	82	93	96	86	79	92	88	94	76	90	87	88	14
11	IHT 311	MH 2718	94	85	93	97	83	80	92	89	96	75	90	87	88	10
12	IHT 312	MH 2719	94	88	96	94	87	83	95	91	96	82	91	92	91	2
13	IHT 313	MH 2720	96	88	96	94	83	85	97	91	96	83	90	93	91	1
14	IHT 314	MH 2721	95	86	94	95	79	84	96	90	98	84	89	91	90	3
15	IHT 315	MH 2722	98	87	95	97	82	79	92	90	96	77	90	87	89	5
16	IHT 316	MH 2723	90	81	92	85	83	77	89	85	94	72	90	82	85	32
17	IHT 317	MH 2724	88	79	90	84	78	77	89	84	98	68	88	83	84	35
18	IHT 318	MH 2725	89	82	93	96	83	78	88	87	95	65	89	83	86	30
19	IHT 319	86M86 (Check)	93	83	92	93	85	80	90	88	96	70	90	87	87	19
20	IHT 320	MH 2726	87	83	92	95	83	80	93	88	94	67	90	85	86	25
21	IHT 321	MH 2727	89	87	95	92	84	79	94	89	96	64	89	86	87	21
22	IHT 322	MH 2728	93	86	96	97	87	79	95	90	97	65	90	87	88	9
23	IHT 323	MH 2729	87	84	91	92	84	79	91	87	99	63	89	83	86	29
24	IHT 324	MH 2730	94	84	93	95	83	76	93	88	91	64	89	85	86	26
25	IHT 325	Kaveri S Boss (Check)	94	86	93	94	85	79	94	89	92	70	89	84	87	18
26	IHT 326	MH 2731	98	88	93	96	82	82	97	91	92	72	90	86	89	7
27	IHT 327	MH 2732	94	86	95	91	79	79	98	89	97	75	90	85	88	11
28	IHT 328	MH 2733	89	81	94	86	79	76	94	86	93	74	90	83	85	31
29	IHT 329	MH 2734	89	80	94	96	83	81	91	88	92	73	91	83	87	22
30	IHT 330	MH 2735	97	86	94	96	79	77	97	89	91	78	89	86	88	12
31	IHT 331	NBH 4903 (Check)	98	87	93	97	82	79	93	90	94	75	88	86	88	8
32	IHT 332	MH 2736	94	88	92	96	80	79	93	89	94	75	90	86	88	13
33	IHT 333	MH 2737	93	85	94	98	83	82	93	90	94	75	90	89	89	6
34	IHT 334	MH 2738	91	82	91	91	84	78	89	87	96	72	90	87	87	24
35	IHT 335	MH 2739	92	82	94	86	88	80	93	88	97	78	90	85	88	15
36	IHT 336	MH 2740	88	83	92	83	85	83	89	86	96	70	91	85	86	27
		LOC. MEAN	92	84	93	92	83	80	93	88	95	73	90	86	87	
		C.D. (5%)	1.0	2.0	2.0	4.0	2.0	4.0	2.0	3.0	1.0	6.0	2.0	2.0	2.0	
		C.D. (1%)	2.0	3.0	3.0	6.0	3.0	6.0	2.0	4.0	2.0	8.0	2.0	2.0	3.0	
		C.V. (%)	0.8	1.5	1.5	2.9	1.6	3.2	1.1	2.9	0.7	5.2	1.0	1.2	3.2	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.80: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PLANT HEIGHT (cm) ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE								MEAN					MEAN	
1	IHT 301	MH 2709	190	220	224	212	237	248	206	219	128	151	105	203	193	27
2	IHT 302	MH 2710	188	223	232	225	207	260	211	221	153	169	124	212	200	11
3	IHT 303	MH 2711	176	230	246	197	212	239	201	214	126	152	122	240	195	22
4	IHT 304	MH 2712	173	237	232	218	220	251	208	220	131	160	125	224	198	17
5	IHT 305	MH 2713	193	230	227	217	202	246	215	219	147	169	130	215	199	16
6	IHT 306	AHB 1200 (Check)	156	193	201	178	199	203	201	190	129	126	109	190	172	36
7	IHT 307	MH 2714	152	233	241	225	219	253	203	218	144	139	116	213	194	23
8	IHT 308	MH 2715	188	210	217	203	199	226	208	207	127	155	119	198	186	32
9	IHT 309	MH 2716	196	230	231	207	209	248	215	219	143	151	133	214	198	18
10	IHT 310	MH 2717	190	233	218	200	186	238	201	209	157	132	124	207	190	30
11	IHT 311	MH 2718	181	220	230	217	207	234	200	213	163	149	130	208	194	24
12	IHT 312	MH 2719	202	240	241	222	218	262	214	228	155	165	132	229	207	4
13	IHT 313	MH 2720	184	230	226	245	227	257	214	226	171	159	134	226	207	5
14	IHT 314	MH 2721	210	247	225	263	211	269	203	232	154	154	138	227	209	1
15	IHT 315	MH 2722	186	240	214	212	207	255	199	216	147	129	122	224	194	25
16	IHT 316	MH 2723	146	203	230	205	206	222	201	202	134	136	132	203	184	34
17	IHT 317	MH 2724	164	233	219	187	209	218	210	206	124	134	124	207	185	33
18	IHT 318	MH 2725	148	207	215	198	189	232	203	199	145	129	127	200	181	35
19	IHT 319	86M86 (Check)	188	227	223	210	229	231	208	216	139	162	127	207	196	20
20	IHT 320	MH 2726	181	240	231	213	179	253	209	215	134	142	121	216	193	28
21	IHT 321	MH 2727	207	240	246	222	217	266	209	230	139	147	126	224	204	7
22	IHT 322	MH 2728	177	237	244	235	214	259	211	225	139	160	129	234	204	8
23	IHT 323	MH 2729	163	223	230	222	200	253	201	213	138	158	125	216	194	26
24	IHT 324	MH 2730	156	213	232	220	215	239	218	213	134	143	122	212	191	29
25	IHT 325	Kaveri S Boss (Check)	198	260	243	218	215	278	213	232	149	156	126	230	208	2
26	IHT 326	MH 2731	209	257	250	223	224	252	221	234	164	153	126	203	208	3
27	IHT 327	MH 2732	195	230	239	222	208	253	214	223	134	158	138	215	201	10
28	IHT 328	MH 2733	199	230	247	215	225	236	200	222	154	142	134	211	199	14
29	IHT 329	MH 2734	182	227	238	205	234	254	193	219	134	147	131	219	197	19
30	IHT 330	MH 2735	195	233	242	230	218	255	212	226	142	138	123	219	201	9
31	IHT 331	NBH 4903 (Check)	194	237	245	218	213	244	206	222	146	147	127	219	200	13
32	IHT 332	MH 2736	212	233	245	240	184	262	211	227	159	162	122	217	204	6
33	IHT 333	MH 2737	209	220	229	230	210	256	200	222	152	148	136	213	200	12
34	IHT 334	MH 2738	189	210	219	220	209	236	213	214	154	157	120	214	195	21
35	IHT 335	MH 2739	192	220	232	227	220	256	214	223	132	169	108	221	199	15
36	IHT 336	MH 2740	191	223	230	212	192	219	209	211	137	160	101	196	188	31
		LOC. MEAN	185	228	231	217	210	246	208	218	143	150	125	215	196	
		C.D. (5%)	3.0	17.0	22.0	17.0	7.0	26.0	8.0	12.0	13.0	31.0	21.0	7.0	9.0	
		C.D. (1%)	4.0	22.0	29.0	23.0	9.0	34.0	11.0	15.0	17.0	41.0	28.0	10.0	12.0	
		C.V. (%)	1.0	4.6	5.8	5.0	2.0	6.5	2.5	5.1	5.5	12.8	10.5	2.1	5.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.81: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE B

S.NO	TEST ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
CODE		MEAN												MEAN	
1	IHT 301 MH 2709	3.0	1.8	1.6	2.0	3.6	5.3	2.3	2.8	2.4	3.0	2.3	2.5	2.7	3
2	IHT 302 MH 2710	1.3	1.3	2.3	2.0	3.9	4.7	2.2	2.5	3.0	2.9	2.7	2.3	2.6	12
3	IHT 303 MH 2711	1.0	1.8	2.2	1.0	4.4	3.5	2.3	2.3	2.6	2.8	2.7	2.1	2.4	28
4	IHT 304 MH 2712	1.3	1.9	2.3	2.7	3.7	4.1	2.1	2.6	3.2	3.1	2.3	2.6	2.7	4
5	IHT 305 MH 2713	1.3	1.3	2.2	2.0	4.5	3.9	2.1	2.5	2.8	3.3	3.0	2.5	2.6	10
6	IHT 306 AHB 1200 (Check)	1.3	2.1	2.4	1.0	4.5	4.6	2.1	2.6	3.0	3.1	2.0	2.3	2.6	13
7	IHT 307 MH 2714	1.3	2.9	2.1	3.0	3.8	4.9	2.5	2.9	2.3	3.1	3.0	2.7	2.9	1
8	IHT 308 MH 2715	2.0	1.7	1.9	1.3	4.0	3.8	2.3	2.4	2.7	2.9	2.7	2.1	2.5	22
9	IHT 309 MH 2716	2.0	1.5	2.0	1.0	4.2	3.5	2.2	2.4	3.1	2.9	2.7	2.3	2.5	19
10	IHT 310 MH 2717	1.0	1.4	2.8	1.3	3.6	4.0	2.2	2.3	2.4	2.9	3.0	2.3	2.5	25
11	IHT 311 MH 2718	1.0	1.1	2.2	1.0	4.4	4.1	2.1	2.3	2.8	2.6	2.7	2.3	2.4	27
12	IHT 312 MH 2719	1.0	1.6	2.2	2.3	5.1	4.1	2.2	2.6	2.4	2.7	2.7	2.5	2.6	9
13	IHT 313 MH 2720	1.7	1.2	2.0	1.7	3.6	4.2	2.3	2.4	3.0	2.7	2.3	2.3	2.4	26
14	IHT 314 MH 2721	1.0	1.4	2.4	1.3	4.8	4.5	2.2	2.5	2.3	2.5	2.3	2.4	2.5	23
15	IHT 315 MH 2722	2.0	1.8	2.4	1.7	4.3	4.5	2.4	2.7	2.8	2.4	2.7	2.3	2.6	6
16	IHT 316 MH 2723	2.0	1.7	2.1	1.7	3.8	4.3	2.2	2.5	2.4	3.0	2.3	2.5	2.5	17
17	IHT 317 MH 2724	2.0	2.0	2.0	1.7	3.9	3.9	2.2	2.5	2.6	3.0	2.0	2.3	2.5	19
18	IHT 318 MH 2725	1.7	1.2	1.7	2.0	4.3	4.9	2.3	2.6	2.8	3.3	2.7	2.0	2.6	8
19	IHT 319 86M86 (Check)	1.0	2.0	2.2	2.0	3.9	4.5	2.1	2.5	2.7	3.2	2.7	2.5	2.6	11
20	IHT 320 MH 2726	1.0	1.3	2.0	2.0	3.2	4.1	2.2	2.3	2.9	3.3	3.0	2.2	2.5	23
21	IHT 321 MH 2727	1.3	2.1	1.9	3.0	4.3	3.8	2.3	2.7	2.5	3.6	3.0	2.3	2.7	2
22	IHT 322 MH 2728	1.0	1.3	2.0	1.0	4.1	4.6	2.1	2.3	2.4	2.6	2.0	2.3	2.3	32
23	IHT 323 MH 2729	1.0	2.3	1.6	2.0	3.3	4.2	2.0	2.4	2.8	3.5	2.3	2.4	2.5	20
24	IHT 324 MH 2730	1.0	2.1	2.0	1.0	3.1	3.9	2.3	2.2	3.1	2.9	2.7	2.0	2.4	29
25	IHT 325 Kaveri S Boss (Check)	1.0	1.2	1.9	1.3	3.6	4.2	2.0	2.2	2.6	3.1	2.3	2.0	2.3	33
26	IHT 326 MH 2731	1.0	1.0	1.8	2.0	4.0	4.8	2.1	2.4	2.9	3.1	2.0	2.3	2.5	24
27	IHT 327 MH 2732	1.0	2.1	2.3	3.0	3.8	4.3	2.2	2.7	2.4	2.7	3.0	2.4	2.7	5
28	IHT 328 MH 2733	1.3	1.5	2.1	2.7	4.2	3.6	2.2	2.5	3.1	3.5	2.3	2.5	2.6	7
29	IHT 329 MH 2734	1.7	1.6	2.1	2.0	3.3	4.5	2.3	2.5	2.3	3.4	2.3	2.7	2.6	16
30	IHT 330 MH 2735	1.3	1.7	2.5	2.3	3.6	4.3	2.2	2.5	2.4	3.3	2.7	2.1	2.6	14
31	IHT 331 NBH 4903 (Check)	1.0	1.2	1.6	1.3	3.2	4.5	2.1	2.1	2.9	3.6	2.3	2.1	2.4	31
32	IHT 332 MH 2736	1.7	1.7	2.0	2.0	3.3	4.2	2.2	2.4	2.7	3.3	3.0	2.2	2.6	15
33	IHT 333 MH 2737	1.0	1.7	2.2	2.0	3.4	3.5	2.2	2.3	2.9	3.5	2.7	2.4	2.5	21
34	IHT 334 MH 2738	1.7	1.4	2.0	1.3	3.3	2.9	2.4	2.1	2.8	3.8	2.3	2.0	2.4	30
35	IHT 335 MH 2739	2.0	1.6	2.0	2.0	3.8	3.8	2.1	2.5	2.8	3.3	2.0	2.2	2.5	18
36	IHT 336 MH 2740	1.3	1.4	2.0	1.0	3.3	3.6	2.1	2.1	2.4	3.6	2.0	2.2	2.3	34
	LOC. MEAN	1.4	1.6	2.1	1.8	3.9	4.2	2.2	2.4	2.7	3.1	2.5	2.3	2.5	
	C.D. (5%)	0.6	0.6	0.2	0.6	0.4	1.6	0.3	0.4	0.5	1.1	1.0	0.3	0.3	
	C.D. (1%)	0.7	0.8	0.3	0.8	0.6	2.2	0.3	0.6	0.7	1.4	1.3	0.4	0.4	
	C.V. (%)	24.3	23.0	6.5	20.3	6.7	23.9	7.2	17.0	12.3	20.9	24.7	7.5	14.9	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.000	0.000	0.000	0.078	

CHAPTER I: BREEDING

Table I.82: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE LENGTH (cm) ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN												MEAN	
1	IHT 301	MH 2709	25	28	26	25	31	29	28	28	20	26	23	24	26	13
2	IHT 302	MH 2710	24	28	27	27	31	29	23	27	22	23	21	25	25	19
3	IHT 303	MH 2711	27	32	27	26	32	31	22	28	23	21	21	24	26	14
4	IHT 304	MH 2712	29	32	29	30	33	34	25	30	23	22	23	24	28	4
5	IHT 305	MH 2713	25	27	25	27	30	29	27	27	22	22	23	24	26	17
6	IHT 306	AHB 1200 (Check)	19	26	25	20	26	27	24	24	19	22	18	25	23	34
7	IHT 307	MH 2714	24	28	25	27	28	30	26	27	24	25	21	24	26	15
8	IHT 308	MH 2715	25	28	28	28	31	30	26	28	24	24	21	23	26	12
9	IHT 309	MH 2716	23	25	25	27	27	29	25	26	22	24	22	24	25	25
10	IHT 310	MH 2717	22	29	26	22	29	28	25	26	26	25	21	23	25	24
11	IHT 311	MH 2718	24	28	27	28	29	29	25	27	24	22	25	26	26	11
12	IHT 312	MH 2719	24	26	25	26	25	29	20	25	25	24	20	24	24	28
13	IHT 313	MH 2720	27	29	27	29	30	30	23	28	23	26	20	25	26	10
14	IHT 314	MH 2721	27	27	26	25	30	30	24	27	23	22	24	28	26	13
15	IHT 315	MH 2722	26	27	26	27	31	29	27	28	25	24	20	24	26	14
16	IHT 316	MH 2723	22	24	26	21	27	25	22	24	22	21	23	23	23	33
17	IHT 317	MH 2724	22	25	25	25	26	26	23	25	20	23	19	22	23	32
18	IHT 318	MH 2725	24	28	26	22	31	29	24	26	23	20	22	22	25	27
19	IHT 319	86M86 (Check)	26	26	25	25	29	29	25	26	23	24	19	23	25	26
20	IHT 320	MH 2726	29	33	29	29	30	31	24	29	30	24	25	28	28	1
21	IHT 321	MH 2727	25	27	24	27	27	29	25	26	21	24	23	26	25	22
22	IHT 322	MH 2728	26	32	29	32	33	33	23	30	23	26	20	30	28	3
23	IHT 323	MH 2729	25	27	26	26	30	29	24	27	21	24	20	25	25	23
24	IHT 324	MH 2730	24	27	26	28	28	29	26	27	23	24	20	27	26	18
25	IHT 325	Kaveri S Boss (Check)	27	30	28	28	32	31	29	29	26	25	18	29	27	5
26	IHT 326	MH 2731	30	29	27	27	30	32	26	29	24	23	21	26	27	7
27	IHT 327	MH 2732	26	30	27	28	29	32	23	28	25	24	25	26	27	8
28	IHT 328	MH 2733	25	28	26	25	28	29	26	27	23	23	24	23	25	20
29	IHT 329	MH 2734	26	28	25	26	28	30	26	27	23	24	22	26	26	16
30	IHT 330	MH 2735	26	28	25	27	27	29	25	27	23	23	21	25	25	21
31	IHT 331	NBH 4903 (Check)	27	30	29	29	33	30	28	29	25	25	24	28	28	2
32	IHT 332	MH 2736	27	29	27	28	31	29	29	28	23	25	23	26	27	6
33	IHT 333	MH 2737	21	25	24	26	26	26	25	25	22	24	22	24	24	29
34	IHT 334	MH 2738	24	26	25	25	26	26	23	25	21	22	23	23	24	30
35	IHT 335	MH 2739	26	30	27	29	32	30	26	29	20	22	23	25	26	9
36	IHT 336	MH 2740	23	24	25	26	26	27	25	25	21	24	19	23	24	31
		LOC. MEAN	25	28	26	26	29	29	25	27	23	23	22	25	26	
		C.D. (5%)	2.0	2.0	2.0	3.0	2.0	2.0	2.0	1.0	2.0	5.0	5.0	2.0	1.0	
		C.D. (1%)	2.0	3.0	2.0	4.0	2.0	3.0	3.0	2.0	2.0	7.0	7.0	2.0	2.0	
		C.V. (%)	4.2	4.8	4.2	6.4	3.4	4.4	5.8	5.2	4.9	13.0	14.5	4.0	6.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.83: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN											MEAN		
1	IHT 301	MH 2709	2.7	3.3	3.5	3.1	3.7	3.8	3.6	3.4	2.4	2.4	2.0	2.8	3.0	32
2	IHT 302	MH 2710	3.0	3.2	3.6	3.0	3.7	3.4	3.6	3.4	2.5	2.5	2.3	3.1	3.1	29
3	IHT 303	MH 2711	3.4	3.6	3.6	3.0	3.8	3.5	3.6	3.5	2.4	2.2	2.3	3.2	3.1	26
4	IHT 304	MH 2712	3.0	3.4	3.5	3.3	3.6	3.3	3.7	3.4	2.5	2.4	2.5	3.7	3.2	22
5	IHT 305	MH 2713	3.1	3.7	3.7	3.5	3.9	3.8	3.6	3.6	2.8	2.4	2.3	3.1	3.3	10
6	IHT 306	AHB 1200 (Check)	3.4	3.5	3.7	3.5	4.1	3.7	3.5	3.6	2.7	2.6	2.2	3.7	3.3	9
7	IHT 307	MH 2714	3.4	2.9	3.3	2.5	2.9	3.3	3.7	3.1	2.8	2.5	2.2	3.1	3.0	34
8	IHT 308	MH 2715	3.1	3.4	3.7	3.4	3.5	3.4	3.7	3.5	2.7	2.6	2.0	3.7	3.2	16
9	IHT 309	MH 2716	3.2	3.5	3.5	3.0	3.7	3.6	3.5	3.4	2.8	2.5	2.3	3.2	3.2	24
10	IHT 310	MH 2717	3.6	3.8	3.6	3.5	4.0	3.7	3.7	3.7	3.2	2.3	2.1	3.3	3.3	7
11	IHT 311	MH 2718	3.2	3.5	3.6	3.6	3.8	3.5	3.8	3.6	2.7	2.6	2.3	3.2	3.3	12
12	IHT 312	MH 2719	3.2	3.4	3.5	2.8	2.8	3.5	3.6	3.3	3.0	2.4	2.0	3.5	3.1	30
13	IHT 313	MH 2720	3.2	3.6	3.5	3.6	4.0	3.6	3.6	3.6	3.3	2.5	2.2	3.6	3.3	8
14	IHT 314	MH 2721	3.1	3.5	3.6	3.6	3.8	4.0	3.5	3.6	2.9	2.3	2.0	3.3	3.2	14
15	IHT 315	MH 2722	3.6	3.9	3.5	3.7	4.5	4.1	3.8	3.9	3.2	2.5	2.2	3.6	3.5	2
16	IHT 316	MH 2723	2.8	3.6	3.7	2.7	3.7	3.4	3.3	3.3	3.1	2.6	2.1	3.2	3.1	28
17	IHT 317	MH 2724	2.8	3.6	3.7	4.1	3.6	4.2	3.8	3.7	3.4	2.7	2.1	3.6	3.4	6
18	IHT 318	MH 2725	3.5	4.0	3.7	3.4	4.0	3.8	3.8	3.7	3.2	2.6	2.2	3.7	3.4	4
19	IHT 319	86M86 (Check)	3.2	3.5	3.6	3.5	3.9	3.5	3.8	3.6	2.5	2.5	2.1	2.9	3.2	20
20	IHT 320	MH 2726	3.6	3.6	3.5	3.1	3.6	3.8	3.5	3.5	2.5	2.5	2.3	3.3	3.2	15
21	IHT 321	MH 2727	3.5	3.7	3.4	3.1	3.6	4.1	3.5	3.6	2.4	2.4	2.4	3.6	3.3	11
22	IHT 322	MH 2728	3.2	3.5	3.4	3.1	3.6	3.8	3.5	3.4	2.5	2.5	2.2	3.4	3.1	27
23	IHT 323	MH 2729	3.2	3.4	3.6	3.3	3.6	3.5	3.8	3.5	2.6	2.6	2.2	3.2	3.2	23
24	IHT 324	MH 2730	3.1	3.5	3.5	3.5	3.7	3.5	3.8	3.5	2.6	2.4	2.3	3.1	3.2	21
25	IHT 325	Kaveri S Boss (Check)	2.9	3.4	3.5	3.3	4.0	3.8	3.7	3.5	2.6	2.5	2.4	3.1	3.2	18
26	IHT 326	MH 2731	2.9	3.4	3.5	3.0	3.3	3.6	3.6	3.3	2.5	2.3	2.2	3.1	3.0	31
27	IHT 327	MH 2732	3.0	3.2	3.3	3.4	3.2	3.1	3.8	3.3	2.5	2.6	2.1	3.0	3.0	33
28	IHT 328	MH 2733	3.1	3.7	3.7	3.4	4.0	4.3	3.7	3.7	3.0	2.4	2.3	3.3	3.3	7
29	IHT 329	MH 2734	3.1	3.6	3.5	3.2	3.7	3.7	3.4	3.5	2.7	2.4	2.3	3.2	3.2	24
30	IHT 330	MH 2735	3.2	3.3	3.7	3.6	3.3	3.8	3.8	3.5	2.8	2.2	2.3	3.2	3.2	19
31	IHT 331	NBH 4903 (Check)	3.8	3.9	3.8	3.7	4.2	4.0	3.7	3.9	2.7	2.4	2.3	3.4	3.4	3
32	IHT 332	MH 2736	3.2	3.6	3.7	3.1	3.7	3.4	3.6	3.5	3.3	2.4	2.3	3.3	3.2	13
33	IHT 333	MH 2737	3.6	4.1	3.7	3.9	4.2	4.4	3.5	3.9	3.1	2.3	2.3	3.7	3.5	1
34	IHT 334	MH 2738	3.2	3.6	3.4	3.3	3.9	3.4	3.7	3.5	2.6	2.4	2.0	3.1	3.2	25
35	IHT 335	MH 2739	3.2	3.4	3.5	3.5	4.0	4.0	3.7	3.6	2.7	2.4	1.9	3.1	3.2	17
36	IHT 336	MH 2740	2.9	3.9	3.9	4.1	4.1	3.8	3.7	3.8	3.0	2.6	2.2	3.6	3.4	5
		LOC. MEAN	3.2	3.6	3.6	3.3	3.7	3.7	3.6	3.5	2.8	2.4	2.2	3.3	3.2	
		C.D. (5%)	0.2	0.2	0.2	0.3	0.2	0.6	0.3	0.2	0.4	0.4	0.5	0.3	0.2	
		C.D. (1%)	0.2	0.3	0.3	0.3	0.3	0.8	0.4	0.3	0.5	0.5	0.6	0.4	0.2	
		C.V. (%)	3.6	3.7	3.6	4.8	3.3	10.2	5.3	6.0	8.3	10.1	13.2	5.4	6.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.84: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 1000-SEED Wt.(g) ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN												MEAN	
1	IHT 301	MH 2709	11.8	17.0	12.5	12.0	11.9	13.5	12.8	13.1	12.3	12.3	11.4	10.0	12.5	11
2	IHT 302	MH 2710	12.5	14.0	10.8	12.0	12.1	15.6	12.7	12.8	11.3	12.7	12.2	11.4	12.5	12
3	IHT 303	MH 2711	15.3	13.0	10.0	11.0	8.5	15.9	13.7	12.5	12.2	11.9	10.5	10.2	12.0	19
4	IHT 304	MH 2712	11.4	14.0	10.3	11.0	9.7	13.9	13.8	12.0	11.9	11.5	10.8	11.1	11.8	27
5	IHT 305	MH 2713	12.3	13.0	11.1	12.0	10.7	14.3	12.8	12.3	12.4	11.7	10.1	11.1	12.0	22
6	IHT 306	AHB 1200 (Check)	12.4	15.0	11.4	11.3	14.3	13.1	14.1	13.1	12.3	13.0	11.3	11.4	12.7	7
7	IHT 307	MH 2714	11.6	10.7	9.5	11.0	9.7	12.3	12.9	11.1	12.1	12.3	11.4	9.2	11.2	35
8	IHT 308	MH 2715	11.6	14.7	11.7	11.7	11.0	12.9	12.1	12.2	11.4	11.9	10.3	12.1	11.9	23
9	IHT 309	MH 2716	11.4	11.0	9.6	12.0	8.1	12.0	12.0	10.9	11.5	12.4	11.4	10.2	11.0	36
10	IHT 310	MH 2717	12.3	13.0	10.3	12.0	10.6	13.1	14.1	12.2	11.6	13.0	9.9	11.8	12.0	21
11	IHT 311	MH 2718	11.9	15.0	12.5	11.3	11.0	14.4	14.3	12.9	12.1	14.0	10.5	12.9	12.7	6
12	IHT 312	MH 2719	14.5	13.7	10.8	12.0	9.6	13.6	14.2	12.6	12.4	12.0	11.5	11.5	12.3	14
13	IHT 313	MH 2720	13.0	14.3	11.6	11.0	12.7	14.2	14.4	13.0	11.2	13.0	11.9	14.9	12.9	4
14	IHT 314	MH 2721	15.0	15.0	12.7	11.7	18.4	15.1	14.0	14.5	11.9	11.4	10.5	13.7	13.6	1
15	IHT 315	MH 2722	12.2	14.7	13.4	11.7	15.7	15.4	14.4	13.9	11.4	12.5	11.0	12.3	13.2	2
16	IHT 316	MH 2723	11.0	15.0	11.7	11.7	12.6	13.6	14.5	12.9	12.3	13.3	9.9	12.5	12.6	9
17	IHT 317	MH 2724	12.2	13.3	10.1	11.0	12.3	14.9	12.0	12.3	11.2	11.0	10.2	8.6	11.5	30
18	IHT 318	MH 2725	10.5	15.3	11.4	12.0	10.1	14.9	14.2	12.6	11.1	11.7	10.7	12.6	12.2	16
19	IHT 319	86M86 (Check)	14.5	13.0	10.1	12.0	13.8	12.3	14.4	12.9	11.7	13.0	11.6	10.4	12.4	13
20	IHT 320	MH 2726	11.3	13.3	9.9	11.7	11.2	13.4	12.2	11.8	11.9	13.0	11.3	10.1	11.7	29
21	IHT 321	MH 2727	11.4	11.0	8.9	11.7	9.6	12.0	12.1	10.9	11.8	13.3	10.8	11.2	11.2	34
22	IHT 322	MH 2728	11.2	14.0	9.6	12.3	14.6	14.2	14.1	12.9	12.5	13.3	10.5	12.7	12.6	8
23	IHT 323	MH 2729	10.5	12.7	10.4	12.3	11.0	11.8	13.0	11.7	11.0	13.3	10.1	10.1	11.5	32
24	IHT 324	MH 2730	10.5	14.3	10.3	12.0	11.9	13.1	12.8	12.1	11.2	13.7	11.5	12.0	12.1	18
25	IHT 325	Kaveri S Boss (Check)	10.6	12.3	9.9	12.3	12.1	13.0	11.8	11.7	12.1	13.7	11.5	11.5	11.9	24
26	IHT 326	MH 2731	11.3	14.0	11.7	11.7	12.3	15.1	12.8	12.7	11.6	11.6	11.5	10.9	12.2	17
27	IHT 327	MH 2732	8.5	12.7	10.5	11.7	12.0	14.1	12.6	11.7	12.0	12.7	11.1	11.5	11.8	28
28	IHT 328	MH 2733	11.3	13.0	10.7	12.0	11.5	13.7	13.0	12.2	11.5	12.3	10.3	11.0	11.9	25
29	IHT 329	MH 2734	9.3	14.3	10.5	12.3	12.2	15.4	12.3	12.4	11.7	11.2	10.5	11.9	12.0	20
30	IHT 330	MH 2735	12.3	12.7	10.4	12.3	10.2	15.8	14.5	12.6	11.7	12.3	11.4	11.4	12.3	15
31	IHT 331	NBH 4903 (Check)	14.3	13.7	12.8	12.0	11.8	16.0	14.3	13.6	11.3	13.3	10.3	12.8	13.0	3
32	IHT 332	MH 2736	10.8	13.3	11.4	12.0	13.7	14.2	13.9	12.8	12.4	13.7	11.1	11.7	12.6	10
33	IHT 333	MH 2737	11.6	12.0	11.8	10.7	12.5	11.1	13.2	11.8	11.7	13.7	9.9	11.5	11.8	26
34	IHT 334	MH 2738	10.8	13.3	9.4	12.0	12.2	12.6	13.1	11.9	12.2	11.6	8.7	10.7	11.5	31
35	IHT 335	MH 2739	11.7	11.0	9.7	11.7	7.7	12.8	11.0	10.8	12.8	12.7	10.9	11.9	11.3	33
36	IHT 336	MH 2740	14.1	15.0	13.2	11.0	10.7	15.6	14.0	13.4	12.6	12.3	9.6	12.7	12.8	5
		LOC. MEAN	11.9	13.5	10.9	11.7	11.7	13.9	13.3	12.4	11.8	12.6	10.8	11.5	12.1	
		C.D. (5%)	0.5	1.8	0.6	1.1	0.0	1.0	0.8	1.2	1.0	1.6	1.7	0.3	0.9	
		C.D. (1%)	0.7	2.4	0.8	1.5	0.0	1.3	1.0	1.6	1.3	2.2	2.2	0.4	1.2	
		C.V. (%)	2.5	8.2	3.2	5.9	0.1	4.3	3.6	9.3	5.1	8.0	9.7	1.5	8.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.85: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE B

S.NO	TEST ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	VYP	APR	TPN	CBE	ZONE	RANK
CODE		MEAN												MEAN	
1	IHT 301 MH 2709	74	82	65	80	57	67	61	69	74	77	93	60	72	29
2	IHT 302 MH 2710	72	80	61	80	57	75	64	70	74	93	94	64	74	13
3	IHT 303 MH 2711	73	80	65	77	54	66	63	68	72	91	96	63	73	22
4	IHT 304 MH 2712	72	79	66	81	56	49	69	67	72	123	94	57	74	10
5	IHT 305 MH 2713	74	77	64	80	65	67	66	71	70	99	91	63	74	11
6	IHT 306 AHB 1200 (Check)	74	77	60	82	55	67	68	69	71	104	96	58	74	16
7	IHT 307 MH 2714	74	77	40	78	48	68	57	63	70	98	94	57	69	34
8	IHT 308 MH 2715	76	79	67	77	65	68	65	71	73	107	94	63	76	3
9	IHT 309 MH 2716	76	84	62	78	58	67	65	70	71	82	96	62	73	21
10	IHT 310 MH 2717	74	78	68	79	58	79	68	72	75	102	97	65	77	1
11	IHT 311 MH 2718	74	80	62	79	60	68	67	70	72	100	98	63	75	8
12	IHT 312 MH 2719	74	82	61	81	68	78	66	73	72	90	92	65	75	6
13	IHT 313 MH 2720	76	80	63	84	50	68	64	69	72	108	91	69	75	7
14	IHT 314 MH 2721	75	79	60	82	60	67	66	70	73	84	92	61	73	23
15	IHT 315 MH 2722	72	80	57	80	60	74	63	69	73	100	90	61	74	17
16	IHT 316 MH 2723	75	82	62	76	59	65	67	69	73	87	94	58	73	26
17	IHT 317 MH 2724	73	79	41	79	45	70	64	64	73	94	100	66	71	30
18	IHT 318 MH 2725	73	79	57	79	59	67	63	68	71	95	102	60	73	18
19	IHT 319 86M86 (Check)	72	79	55	79	57	67	67	68	72	89	97	66	73	22
20	IHT 320 MH 2726	74	80	45	79	64	70	62	68	71	97	91	65	72	27
21	IHT 321 MH 2727	73	79	46	77	57	66	62	66	73	88	94	63	71	33
22	IHT 322 MH 2728	73	80	55	81	57	63	66	68	74	93	92	69	73	20
23	IHT 323 MH 2729	73	79	52	81	59	68	70	69	72	107	92	65	74	11
24	IHT 324 MH 2730	73	80	58	80	62	70	61	69	75	113	92	66	75	5
25	IHT 325 Kaveri S Boss (Check)	74	79	52	80	56	66	67	68	74	109	94	65	74	12
26	IHT 326 MH 2731	74	81	54	81	62	71	67	70	74	118	95	61	76	2
27	IHT 327 MH 2732	74	80	44	79	60	69	63	67	74	130	94	65	76	4
28	IHT 328 MH 2733	73	78	42	81	59	68	65	67	73	116	89	68	74	14
29	IHT 329 MH 2734	75	79	41	83	61	65	61	67	70	112	94	69	74	15
30	IHT 330 MH 2735	75	79	46	81	56	65	64	67	73	102	96	66	73	19
31	IHT 331 NBH 4903 (Check)	74	80	43	81	60	69	66	68	72	92	92	69	73	25
32	IHT 332 MH 2736	73	79	49	80	54	62	64	66	72	112	92	63	73	24
33	IHT 333 MH 2737	74	77	59	75	50	67	65	67	71	91	94	59	71	31
34	IHT 334 MH 2738	71	81	58	82	60	68	59	68	71	95	94	58	72	28
35	IHT 335 MH 2739	69	79	52	80	68	63	64	68	70	116	96	63	75	9
36	IHT 336 MH 2740	73	81	53	81	52	62	67	67	73	80	91	69	71	32
	LOC. MEAN	74	79	55	80	58	67	65	68	72	100	94	63	73	
	C.D. (5%)	4.0	6.0	8.0	5.0	10.0	10.0	7.0	5.0	4.0	12.0	9.0	8.0	4.0	
	C.D. (1%)	5.0	8.0	10.0	7.0	13.0	14.0	9.0	6.0	5.0	15.0	12.0	11.0	6.0	
	C.V. (%)	3.3	4.7	8.7	3.8	10.2	9.4	6.7	6.3	3.3	7.2	5.9	8.2	7.3	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.379	

CHAPTER I: BREEDING

Table I.86: INITIAL HYBRID TRIAL (Late) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE B

S.NO	TEST	ENTRY	ABD1	ABD7	DHL	JLN1	PCR	MPR	GNG	MS	APR	TPN	CBE	ZONE	RANK
		CODE	MEAN										MEAN		
1	IHT 301	MH 2709	100	90	85	85	80	60	80	83	84	87	77	83	22
2	IHT 302	MH 2710	99	87	95	88	85	87	83	89	84	90	65	86	6
3	IHT 303	MH 2711	98	100	85	81	62	63	56	78	84	87	71	79	28
4	IHT 304	MH 2712	99	100	93	91	87	97	71	91	82	83	53	86	12
5	IHT 305	MH 2713	100	93	88	96	65	93	84	88	81	85	77	86	7
6	IHT 306	AHB 1200 (Check)	98	67	82	85	47	23	34	62	82	87	45	65	36
7	IHT 307	MH 2714	100	73	92	91	62	83	76	82	84	90	48	80	26
8	IHT 308	MH 2715	96	93	90	93	85	77	81	88	82	87	83	87	3
9	IHT 309	MH 2716	99	90	92	88	80	77	76	86	81	88	80	85	16
10	IHT 310	MH 2717	99	87	87	96	83	67	83	86	81	90	87	86	9
11	IHT 311	MH 2718	100	97	88	95	68	90	82	89	82	82	75	86	10
12	IHT 312	MH 2719	99	87	85	91	72	83	85	86	81	83	70	84	20
13	IHT 313	MH 2720	99	97	90	97	73	87	74	88	81	83	86	87	2
14	IHT 314	MH 2721	96	90	85	96	72	87	76	86	81	87	86	86	14
15	IHT 315	MH 2722	100	83	90	96	68	97	82	88	82	90	77	87	4
16	IHT 316	MH 2723	98	100	90	95	45	53	83	81	83	90	42	78	29
17	IHT 317	MH 2724	99	87	93	85	60	67	76	81	81	90	83	82	23
18	IHT 318	MH 2725	100	67	75	95	47	67	76	75	82	82	44	73	33
19	IHT 319	86M86 (Check)	98	83	92	97	73	83	61	84	82	87	86	84	19
20	IHT 320	MH 2726	100	93	87	86	78	77	50	82	81	87	60	80	27
21	IHT 321	MH 2727	99	100	97	92	50	83	81	86	84	87	77	85	17
22	IHT 322	MH 2728	100	90	83	96	82	87	70	87	83	87	73	85	18
23	IHT 323	MH 2729	100	93	90	97	78	77	75	87	84	90	75	86	8
24	IHT 324	MH 2730	99	83	80	97	68	93	81	86	81	90	82	86	13
25	IHT 325	Kaveri S Boss (Check)	100	93	85	95	73	83	80	87	81	90	77	86	11
26	IHT 326	MH 2731	99	97	92	91	23	83	75	80	81	90	79	81	25
27	IHT 327	MH 2732	100	57	88	90	67	67	56	75	83	90	26	72	34
28	IHT 328	MH 2733	99	97	92	37	67	77	63	76	85	90	62	77	31
29	IHT 329	MH 2734	100	93	87	91	60	80	75	84	84	90	72	83	21
30	IHT 330	MH 2735	99	60	93	42	65	67	53	68	87	85	34	69	35
31	IHT 331	NBH 4903 (Check)	100	90	75	93	65	70	41	76	86	87	37	74	32
32	IHT 332	MH 2736	99	83	93	95	72	80	40	80	86	85	79	81	24
33	IHT 333	MH 2737	100	100	93	97	75	77	78	88	81	87	67	85	15
34	IHT 334	MH 2738	100	90	85	95	72	90	81	88	83	88	80	86	5
35	IHT 335	MH 2739	99	100	90	98	80	77	81	89	85	87	88	88	1
36	IHT 336	MH 2740	98	77	93	96	17	70	63	73	84	90	85	77	30
		LOC. MEAN	99	88	88	90	67	77	71	83	83	87	69	82	
		C.D. (5%)	2.0	21.0	10.0	2.0	9.0	19.0	10.0	11.0	3.0	7.0	19.0	9.0	
		C.D. (1%)	3.0	28.0	13.0	3.0	12.0	25.0	13.0	15.0	4.0	9.0	25.0	12.0	
		C.V. (%)	1.5	14.7	6.6	1.7	8.6	15.1	8.4	12.8	2.1	4.8	16.6	11.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.87: INITIAL HYBRID TRIAL (Late) KHARIF - 2022: GRAIN QUALITY: IRON CONTENT (ppm) ZONE B

S.NO	TEST ENTRY	ABD1	ABD7	DHL	GNG	VYP	CBE	ZONE	RANK
CODE								MEAN	
1	IHT 301 MH 2709	50	59	55	53	51	46	52	4
2	IHT 306 AHB 1200 (Check)	95	91	89	68	71	70	80	1
3	IHT 308 MH 2715	49	56	47	44	48	42	48	6
4	IHT 310 MH 2717	57	45	44	50	56	51	50	5
5	IHT 311 MH 2718	54	51	53	58	56	53	54	3
6	IHT 313 MH 2720	49	52	52	45	46	59	50	5
7	IHT 319 86M86 (Check)	66	67	55	61	53	60	60	2
8	IHT 322 MH 2728	43	55	43	43	41	41	44	8
9	IHT 325 Kaveri S Boss (Check)	48	47	44	39	46	49	46	7
10	IHT 331 NBH 4903 (Check)	38	45	51	45	44	37	43	9

Table I.88: INITIAL HYBRID TRIAL (Late) KHARIF - 2022: GRAIN QUALITY: ZINC CONTENT (ppm) ZONE B

S.NO	TEST ENTRY	ABD1	ABD7	DHL	GNG	VYP	CBE	ZONE	RANK
CODE								MEAN	
1	IHT 301 MH 2709	34	35	29	23	33	39	32	4
2	IHT 306 AHB 1200 (Check)	42	48	34	30	41	52	41	1
3	IHT 308 MH 2715	31	34	29	26	33	38	32	4
4	IHT 310 MH 2717	33	33	28	29	37	44	34	3
5	IHT 311 MH 2718	27	29	25	26	30	38	29	5
6	IHT 313 MH 2720	25	28	26	21	33	42	29	5
7	IHT 319 86M86 (Check)	39	41	30	24	33	46	35	2
8	IHT 322 MH 2728	33	42	30	29	29	39	34	3
9	IHT 325 Kaveri S Boss (Check)	25	33	28	22	28	32	28	6
10	IHT 331 NBH 4903 (Check)	32	39	33	36	34	37	35	2

CHAPTER I: BREEDING

Table I.89: ADVANCE HYBRID TRIAL (Medium) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A.

Locations	Soil	pH	Sowing date	Harvesting date	Interculture Date	Irrigation Date	Fertilizer			Insecticide
							N	P	K	
RAJASTHAN										
Mandor (ICAR-AICRP)	SL	8.2	6.7.22	27.9.22	28.7.22	Nil	40	20	0	Nil
Jaipur (SKNAU)	SL	-	7.12.22	20.10.22	8.5.22	Nil	40	30	0	Nil
Jaipur (Corteva)	L	8.6	7.7.22	28.10.22	30.8.22	Life Saving	88	60	0	Dantotsu-Clothianidin, Cypermethrin
Tabiji (SKNAU)	L	8.7	11.7.22	30.9.22	26.8.22	Nil	60	30	0	Nil
Tijara (Rallis)	S	6.5	14.7.22	7.10.22	30.7.22	14.7.22	60	30	30	Nil
GUJARAT										
Kothara (SDAU)	SL	7.5	19.7.22	27.10.22	4.8, 22.8.22	Nil	120	40	0	Nil
Talaja (JAU)	MB	-	22.7.22	17.10.22	9.8.22	Nil	80	40	0	Emamectin Benzoate 5 % SG+ Chlorantraniliprole 18.5% SC
Anand (AAU)	SL	-	16.7.22	22.10.22	5.8,15.8,30.8.22	16.7.22	80	40	0	Nil
Jamnagar (JAU)	MB	7.6	15.7.22	7.10.22	19.7, 27.7, 4.8.22	Nil	80	40	0	Nil
S.K.Nagar (SDAU)	SL	-	16.7.22	13.10.22	-	Nil	80	40	0	Nil
UTTAR PRADESH										
Bichpuri (Kaveri Seeds)	SL	-	20.7.22	-	30.7.22	Nil	148	22.5	22.5	Nil
HARYANA										
Bawal (CCSHAU)	LS	8.2	13.7.22	15.10.22	8.8.22	Nil	40	20	30	Nil
Hisar (CCSHAU)	SL	-	19.7.22	4.11.22	-	10.9.22	100	40	0	Nil
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	21.7.22	22.10.22	17.8.22	18.8.22	60	40	20	Nil
PUNJAB										
Ludhiana (PAU)	SL	8.2	13.7.22	20.11.22	31.7, 3.9.22	3.8, 4.9.22	100	60	0	Nil
DELHI										
New Delhi (ICAR-IARI)	SL	7.8	3.8.22	7.11.22	-	Nil	60	40	40	Nil

SL = Sandy Loam; MB = Medium Black; L= Loamy; CL= Clay Loam; S = Sandy

CHAPTER I: BREEDING

Table I.90: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	3426	2613	3491	3169	2461	3032	1551	3632	2708	4228	1201	2664	3497	2330	3742	3036	2433	4029	3076	2974	4
2	AHT 402 A	MPMH 17 (Check)	4135	2608	3691	3522	3125	3416	1958	4315	2376	3125	1049	2565	3661	2614	4186	3400	2953	5220	3309	3240	3
3	AHT 403 A	MH 2619	3536	2749	5026	3453	2827	3518	1972	4549	4093	4985	1812	3482	4847	2511	4547	3529	3019	4042	3769	3609	2
4	AHT 404 A	PB 1705 (Check)	5010	3020	4619	3850	4667	4233	1861	3823	4957	5448	1985	3615	4056	2849	4879	3864	2533	3692	4006	3828	1
5	AHT 405 A	86M01 (Check)	3576	2118	2827	2739	2832	2818	1463	3864	3075	4160	1145	2741	3489	2333	3122	2728	2237	3860	2431	2829	5
		LOC. MEAN	3937	2622	3931	3347	3183	3404	1761	4037	3442	4389	1438	3013	3910	2527	4095	3311	2635	4169	3318	3296	
		C.D. (5%)	907	370	552	655	537	588	394	892	582	500	236	697	493	306	885	1012	229	204	426	339	
		C.D. (1%)	1319	539	803	954	781	810	573	1297	847	727	343	960	717	445	1288	1679	333	297	620	450	
		C.V. (%)	12.2	7.5	7.5	10.4	9.0	12.9	11.9	11.7	9.0	6.0	8.7	17.3	6.7	6.4	11.5	11.0	4.6	2.6	6.8	14.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.162	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	14.40	12.00	12.00	12.00	10.80	-	14.40	12.00	12.00	14.40	10.80	-	12.00	10.80	12.00	-	12.00	12.00	18.00	-	

Table I.91: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	5069	7722	10286	6858	7484	2778	6389	9125	7947	3086	5865	11499	4043	10316	7180	6111	11786	14981	7867	5
2	AHT 402 A	MPMH 17 (Check)	4977	5222	11222	6703	7031	3681	5778	8994	6218	2623	5459	10363	6389	11706	9047	9278	16211	16783	8410	3
3	AHT 403 A	MH 2619	4583	5222	12989	5033	6957	3495	7750	10135	9146	4969	7099	15119	6096	10165	8130	12222	10850	16576	8957	2
4	AHT 404 A	PB 1705 (Check)	6829	6750	11947	6303	7957	3380	8639	11158	10204	6265	7929	12950	6481	11312	8897	10833	13681	14835	9438	1
5	AHT 405 A	86M01 (Check)	5556	5778	12292	5892	7379	2685	6639	9249	7912	3827	6062	11958	5093	8787	6940	9167	13022	15926	8252	4
		LOC. MEAN	5403	6139	11747	6158	7362	3204	7039	9732	8285	4154	6483	12378	5620	10457	8039	9522	13110	15820	8585	
		C.D. (5%)	969	976	1838	1267	1513	707	1176	1267	1361	961	1039	2429	828	1931	3602	602	2557	2210	918	
		C.D. (1%)	1409	1421	2675	1843	2121	1029	1712	1843	1980	1399	1456	3535	1204	2810	5974	876	3720	3215	1223	
		C.V. (%)	9.5	8.5	8.3	10.9	13.3	11.7	8.9	6.9	8.7	12.3	9.5	10.4	7.8	9.8	14.4	3.4	10.4	7.4	15.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.627	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.341	0.000	0.000	0.000	0.005	
		PLOT SIZE (m ²)	14.40	12.00	12.00	12.00	-	14.40	12.00	12.00	14.40	10.80	-	12.00	10.80	12.00	-	12.00	12.00	18.00	-	

CHAPTER I: BREEDING

Table I.92: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	45	46	51	45	46	46	52	47	49	41	50	48	46	50	44	47	42	52	49	47	4
2	AHT 402 A	MPMH 17 (Check)	47	44	52	43	47	47	52	46	48	41	52	48	45	49	46	48	42	50	46	47	5
3	AHT 403 A	MH 2619	48	48	50	47	47	48	52	47	51	41	51	48	47	51	49	50	42	51	48	48	3
4	AHT 404 A	PB 1705 (Check)	49	49	53	49	47	49	48	48	52	42	51	48	49	51	50	51	45	54	50	49	2
5	AHT 405 A	86M01 (Check)	49	51	54	50	48	50	50	48	51	42	51	48	48	50	52	51	46	54	51	50	1
		LOC. MEAN	47	48	52	47	47	48	51	47	50	41	51	48	47	50	48	49	43	52	49	48	
		C.D. (5%)	2.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	3.0	1.0	2.0	2.0	1.0	1.0	2.0	6.0	1.0	1.0	1.0	1.0	
		C.D. (1%)	2.0	1.0	3.0	1.0	3.0	2.0	1.0	2.0	4.0	2.0	2.0	3.0	2.0	1.0	2.0	9.0	2.0	2.0	2.0	1.0	
		C.V. (%)	1.8	0.9	1.8	1.1	2.1	2.7	0.9	1.6	2.7	1.9	1.7	2.9	1.3	0.9	1.7	4.2	1.8	1.4	1.6	2.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.869	0.000	0.000	0.000	0.320	0.000	0.000	0.000	0.000	

Table I.93: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	74	75	82	74	88	79	78	79	86	71	81	79	71	72	81	76	84	100	79	80	3
2	AHT 402 A	MPMH 17 (Check)	77	73	83	76	86	79	79	77	85	70	83	79	69	68	81	74	86	97	76	79	4
3	AHT 403 A	MH 2619	77	76	80	75	84	78	79	79	81	71	78	78	71	70	81	76	81	100	76	79	5
4	AHT 404 A	PB 1705 (Check)	78	79	84	77	90	81	76	78	83	72	79	77	72	72	81	76	88	103	80	81	1
5	AHT 405 A	86M01 (Check)	78	79	86	76	87	81	77	78	81	71	80	78	71	73	82	78	86	100	80	80	2
		LOC. MEAN	77	76	83	75	87	80	77	78	83	71	80	78	71	71	81	76	85	100	78	80	
		C.D. (5%)	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	2.0	2.0	1.0	1.0	2.0	3.0	2.0	4.0	1.0	1.0	
		C.D. (1%)	2.0	2.0	2.0	1.0	1.0	3.0	2.0	2.0	3.0	1.0	3.0	3.0	1.0	2.0	3.0	5.0	2.0	5.0	2.0	2.0	
		C.V. (%)	0.9	0.8	0.9	0.4	0.5	2.0	0.7	0.9	1.3	0.7	1.3	1.9	0.8	1.0	1.5	1.4	1.1	1.9	1.0	2.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.303	0.000	0.000	0.000	0.222	0.000	0.000	0.000	0.012	

CHAPTER I: BREEDING

Table I.94: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	212	151	208	198	180	190	167	179	154	199	154	171	210	140	178	159	186	150	168	177	5
2	AHT 402 A	MPMH 17 (Check)	204	186	205	202	190	197	158	181	154	186	154	166	223	146	190	168	192	183	172	183	4
3	AHT 403 A	MH 2619	220	162	232	200	183	199	166	203	180	213	169	186	235	159	214	187	203	179	186	194	3
4	AHT 404 A	PB 1705 (Check)	237	188	240	206	210	216	190	210	190	218	166	195	263	161	227	194	203	184	200	206	1
5	AHT 405 A	86M01 (Check)	237	199	233	209	200	216	191	211	186	234	168	198	252	155	204	179	211	189	188	204	2
		LOC. MEAN	222	177	224	203	193	204	174	197	173	210	162	183	237	152	202	177	199	177	183	193	
		C.D. (5%)	17.0	9.0	24.0	14.0	22.0	13.0	4.0	13.0	6.0	16.0	28.0	9.0	11.0	13.0	25.0	21.0	3.0	13.0	9.0	6.0	
		C.D. (1%)	24.0	13.0	34.0	20.0	31.0	17.0	6.0	19.0	9.0	24.0	41.0	12.0	16.0	18.0	36.0	35.0	4.0	18.0	13.0	8.0	
		C.V. (%)	4.0	2.7	5.6	3.6	6.0	4.6	1.3	3.6	1.8	4.1	9.2	3.7	2.4	4.4	6.6	4.3	0.7	3.8	2.6	4.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.000	0.000	0.000	0.000	

Table I.95: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	1.3	1.2	3.2	1.7	1.8	2.9	2.0	3.1	1.6	1.2	2.2	1.1	1.9	1.9	1.9	1.6	4.0	2.7	2.1	3
2	AHT 402 A	MPMH 17 (Check)	2.2	2.6	3.2	2.0	2.5	3.3	4.0	3.7	4.2	1.1	3.3	1.5	2.1	2.9	2.5	1.9	5.0	2.7	2.8	1
3	AHT 403 A	MH 2619	1.3	1.1	2.6	1.0	1.5	2.9	2.3	2.5	1.0	1.1	2.0	1.1	2.1	1.8	2.0	2.5	3.5	2.7	2.0	4
4	AHT 404 A	PB 1705 (Check)	1.5	1.1	3.2	2.0	2.0	2.9	3.0	3.9	2.0	1.3	2.6	1.1	2.2	2.5	2.4	2.4	3.8	2.7	2.4	2
5	AHT 405 A	86M01 (Check)	1.5	1.8	2.7	1.7	1.9	2.9	3.0	2.9	2.5	1.3	2.5	1.2	2.0	3.0	2.5	1.7	4.8	2.7	2.4	2
		LOC. MEAN	1.6	1.6	3.0	1.7	1.9	2.9	2.9	3.2	2.3	1.2	2.5	1.2	2.1	2.4	2.2	2.0	4.2	2.7	2.3	
		C.D. (5%)	0.5	0.5	1.0	0.7	0.7	0.4	0.5	0.4	0.5	0.5	0.7	0.1	0.4	0.6	0.4	0.4	0.9	1.2	0.3	
		C.D. (1%)	0.7	0.7	1.5	1.1	1.0	0.6	0.7	0.5	0.7	0.7	0.9	0.2	0.6	0.9	0.7	0.5	1.3	1.7	0.4	
		C.V. (%)	15.4	16.8	18.6	23.2	17.3	7.1	9.0	5.8	12.1	19.8	19.3	5.3	10.1	13.2	9.1	9.8	11.3	23.7	19.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.061	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.439	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.96: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	29	20	24	23	23	24	22	25	25	23	19	23	30	26	31	29	26	29	27	25	3
2	AHT 402 A	MPMH 17 (Check)	25	23	25	23	27	25	22	19	24	25	19	22	26	30	29	29	26	27	24	25	4
3	AHT 403 A	MH 2619	27	22	26	24	26	25	19	25	26	26	20	23	30	27	31	29	27	26	27	26	2
4	AHT 404 A	PB 1705 (Check)	26	23	23	23	26	24	19	22	25	24	19	22	27	31	29	30	25	24	23	24	5
5	AHT 405 A	86M01 (Check)	32	26	25	23	26	26	26	29	28	30	22	27	34	27	33	30	28	30	30	28	1
		LOC. MEAN	28	23	25	23	26	25	22	24	26	26	20	23	29	28	30	29	26	27	26	26	
		C.D. (5%)	3.0	1.0	3.0	1.0	4.0	2.0	1.0	2.0	2.0	3.0	1.0	2.0	2.0	1.0	2.0	7.0	1.0	4.0	1.0	1.0	
		C.D. (1%)	4.0	2.0	4.0	2.0	5.0	3.0	2.0	3.0	2.0	4.0	2.0	3.0	2.0	2.0	4.0	11.0	2.0	6.0	2.0	2.0	
		C.V. (%)	5.2	3.3	6.2	3.3	7.6	6.3	3.1	5.2	3.5	5.6	4.0	7.0	3.0	2.8	4.3	8.4	2.4	7.7	2.9	6.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.163	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.984	0.000	0.000	0.000	0.000	

Table I.97: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	TBJ	TJR	RAJ MEAN	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	3.9	3.5	3.4	1.8	2.8	3.1	4.0	3.8	3.2	3.0	3.5	3.8	3.2	3.8	3.5	2.2	3.6	3.7	3.3	1
2	AHT 402 A	MPMH 17 (Check)	3.0	3.3	3.3	1.5	2.7	2.7	3.2	2.8	2.2	2.6	2.7	3.1	3.8	3.1	3.5	2.2	3.7	3.0	2.9	5
3	AHT 403 A	MH 2619	3.6	3.2	3.5	1.8	3.2	3.1	3.7	3.7	3.3	3.0	3.4	3.7	3.6	3.6	3.6	2.1	3.5	3.5	3.3	2
4	AHT 404 A	PB 1705 (Check)	3.1	3.2	3.1	1.7	2.8	2.8	3.2	3.3	3.2	2.7	3.1	3.1	3.9	3.3	3.6	1.8	3.5	3.0	3.0	4
5	AHT 405 A	86M01 (Check)	3.5	3.5	3.2	1.4	2.7	2.9	3.4	3.4	3.2	3.1	3.3	3.3	3.3	3.6	3.5	2.3	3.5	3.0	3.1	3
		LOC. MEAN	3.4	3.3	3.3	1.6	2.8	2.9	3.5	3.4	3.0	2.9	3.2	3.4	3.6	3.5	3.5	2.1	3.6	3.3	3.1	
		C.D. (5%)	0.4	0.2	0.6	0.1	0.6	0.2	0.2	0.2	0.4	0.2	0.4	0.3	0.3	0.3	1.2	0.3	0.7	0.3	0.2	
		C.D. (1%)	0.5	0.3	0.9	0.1	0.9	0.3	0.3	0.3	0.6	0.3	0.5	0.5	0.4	0.4	1.9	0.4	1.0	0.4	0.2	
		C.V. (%)	5.7	3.6	10.3	3.1	11.2	6.2	3.1	2.9	6.7	3.6	5.9	5.2	3.8	4.1	12.1	7.1	10.6	4.2	7.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.933	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.98: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 1000-SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	RAJ MEAN	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	9.0	8.6	10.6	9.4	13.4	11.8	9.9	8.0	10.8	11.4	9.0	9.1	9.0	10.0	8.2	13.0	10.1	4
2	AHT 402 A	MPMH 17 (Check)	7.5	7.7	8.8	8.0	11.7	9.8	7.8	6.2	8.9	7.7	9.6	8.5	9.1	9.5	11.7	8.9	8.9	5
3	AHT 403 A	MH 2619	9.2	9.2	13.9	10.8	13.2	12.2	12.2	9.6	11.8	12.4	9.3	10.6	9.9	9.8	10.6	12.2	11.1	3
4	AHT 404 A	PB 1705 (Check)	9.9	9.6	12.2	10.6	12.8	13.0	12.5	9.2	11.9	14.2	9.4	11.6	10.5	10.3	10.7	11.7	11.3	2
5	AHT 405 A	86M01 (Check)	10.0	10.8	13.8	11.5	12.8	12.3	12.3	10.1	11.8	12.2	9.1	12.2	10.7	11.9	10.5	12.4	11.6	1
		LOC. MEAN	9.1	9.2	11.9	10.1	12.8	11.8	10.9	8.6	11.0	11.6	9.3	10.4	9.8	10.3	10.3	11.6	10.6	
		C.D. (5%)	1.2	0.6	3.0	1.6	0.6	1.1	0.4	0.9	0.6	1.3	1.6	1.2	1.3	0.6	0.5	1.9	0.8	
		C.D. (1%)	1.7	0.8	4.4	2.3	0.8	1.6	0.6	1.3	0.8	1.9	2.4	1.8	2.1	0.8	0.7	2.8	1.1	
		C.V. (%)	6.9	3.2	13.6	8.2	2.3	5.1	1.9	5.3	2.3	5.9	9.4	6.2	4.7	2.9	2.4	8.7	8.7	
		F (Prob)	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	

Table I.99: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR	JPR2	RAJ MEAN	KTR	TLJ	AND	JMR	SKN	GUJ MEAN	BCR	BWL	HSR	HAR MEAN	GLR	LDA	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	159	176	205	180	122	115	154	181	164	147	170	117	83	100	179	164	153	3
2	AHT 402 A	MPMH 17 (Check)	165	178	147	164	122	117	155	166	160	144	172	123	77	100	189	164	149	4
3	AHT 403 A	MH 2619	155	176	197	176	119	125	150	186	155	147	170	120	95	108	185	164	154	2
4	AHT 404 A	PB 1705 (Check)	164	185	240	196	122	122	155	186	162	149	171	127	89	108	194	164	160	1
5	AHT 405 A	86M01 (Check)	143	195	190	176	117	107	127	158	152	132	144	116	62	89	182	164	143	5
		LOC. MEAN	157	182	196	178	120	117	148	176	158	144	165	120	81	101	186	164	152	
		C.D. (5%)	15.0	14.0	63.0	39.0	23.0	13.0	21.0	24.0	7.0	11.0	24.0	14.0	33.0	17.0	6.0	1.0	10.0	
		C.D. (1%)	22.0	21.0	92.0	56.0	33.0	18.0	30.0	34.0	11.0	16.0	36.0	21.0	48.0	29.0	9.0	1.0	14.0	
		C.V. (%)	5.1	4.1	17.2	11.5	10.1	5.7	7.4	7.2	2.5	4.4	7.9	6.3	21.6	3.9	1.8	0.3	8.0	
		F (Prob)	0.000	0.000	0.000	0.468	0.000	0.000	0.000	0.000	0.000	0.041	0.000	0.000	0.000	0.135	0.000	0.000	0.007	

CHAPTER I: BREEDING

Table I.100: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	MDR	JPR2	RAJ MEAN	AND	JMR	GUJ MEAN	BCR	HSR	GLR	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	53	95	74	44	87	66	77	75	70	92	50	71	5
2	AHT 402 A	MPMH 17 (Check)	76	95	85	40	97	69	73	78	83	92	72	78	4
3	AHT 403 A	MH 2619	81	99	90	61	96	79	83	82	81	88	72	83	1
4	AHT 404 A	PB 1705 (Check)	82	99	91	53	92	73	85	78	82	96	73	82	2
5	AHT 405 A	86M01 (Check)	82	89	85	59	92	76	90	78	70	90	68	80	3
		LOC. MEAN	75	95	85	51	93	72	82	78	77	91	67	79	
		C.D. (5%)	8.0	10.0	8.0	14.0	9.0	10.0	9.0	17.0	7.0	5.0	5.0	11.0	
		C.D. (1%)	11.0	15.0	11.0	21.0	13.0	15.0	14.0	25.0	10.0	7.0	7.0	15.0	
		C.V. (%)	5.5	5.8	5.5	14.6	5.1	5.8	6.1	11.6	4.8	2.7	4.0	8.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.083	

CHAPTER I: BREEDING

Table I.101: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 ZONE A
GRAIN QUALITY: IRON CONTENT (ppm)

S.No.	TEST CODE	ENTRY	JPR	TJR	TLJ	JMR	SKN	BCR	BWL	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	39	78	120	75	63	83	80	68	125	81	1
2	AHT 402 A	MPMH 17 (Check)	45	46	60	52	42	38	56	40	62	49	4
3	AHT 403 A	MH 2619	44	46	61	92	39	56	62	58	62	58	3
4	AHT 404 A	PB 1705 (Check)	33	39	49	61	35	33	56	31	54	43	5
5	AHT 405 A	86M01 (Check)	50	52	70	59	53	58	71	55	79	61	2

Table I.102: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 ZONE A
GRAIN QUALITY: ZINC CONTENT (ppm)

S.No.	TEST CODE	ENTRY	JPR	TJR	TLJ	JMR	SKN	BCR	BWL	LDA	NDL	ZONE MEAN	RANK
1	AHT 401 A	AHB 1200 (Check)	52	19	45	40	46	42	45	65	66	47	2
2	AHT 402 A	MPMH 17 (Check)	50	28	33	33	45	34	38	51	54	41	3
3	AHT 403 A	MH 2619	51	35	42	44	45	46	44	63	57	47	2
4	AHT 404 A	PB 1705 (Check)	40	22	31	36	32	29	35	46	46	35	4
5	AHT 405 A	86M01 (Check)	49	29	39	39	56	43	45	70	70	49	1

Table I.103: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 ZONE A
GRAIN QUALITY (Protein and Fat)

S. No.	TEST CODE	ENTRY	Protein (%)			Fat (%)		
			HSR	BWL	MEAN	HSR	BWL	MEAN
1	AHT 401 A	AHB 1200 (Check)	10.3	12.0	11.2	4.8	4.7	4.8
2	AHT 402 A	MPMH 17 (Check)	9.9	12.4	11.2	6.0	5.2	5.6
3	AHT 403 A	MH 2619	9.8	12.6	11.2	6.0	4.7	5.4
4	AHT 404 A	PB 1705 (Check)	8.8	11.7	10.3	6.4	6.5	6.5
5	AHT 405 A	86M01 (Check)	11.8	10.1	10.9	5.4	4.1	4.8

CHAPTER I: BREEDING

Table I.104: ADVANCE HYBRID TRIAL (Medium) KHARIF 2022 EXPERIMENTAL DETAILS ZONE B

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers (kg/ha.)			Insecticide
							N	P	K	
MAHARASHTRA										
Aurangabad (NARP) (VNMKV)	MB	7.5	12.7.22	30.10.22	1.8.22	Nil	60	30	30	Nil
Aurangabad (Ajeet Seed)	-	-	25.7.22	-	-	-	-	-	-	-
Niphad (MPKV)	-	-	-	-	-	-	-	-	-	-
Dhule (MPKV)	MB	8.6	13.7.22	17.10.22	31.7.22	Nil	60	30	0	Nil
KARNATAKA										
Vijayapur (UAS, Dharwad)	SB	8.7	16.7.22	29.10.22	19.8.22	Nil	50	25	0	Nil
Malnoor (UAS,Raichur)	MB	7.7	17.7.22	22.10.22	26.8.22	Nil	50	50	0	Nil
ANDHRA PRADESH										
Ananthapuram (ANGRAU)	RSL	6.5	25.7.22	22.11.22	10.8.22	Nil	60	30	20	Nil
Vizianagaram (ANGRAU)	RSL	7.1	5.8.22	12.10.22	27.8.22	Nil	60	40	30	Nil
TELANGANA										
Palem (PJ TSAU)	RS	-	17.7.22	As Per Maturity	-	-	-	-	-	-
TAMIL NADU										
Coimbatore (TNAU)	CL	7.8	5.8.22	29.10.22	-	5.8,9.8,3.9,17.9.22	80	40	40	Nil

SB = Shallow Black; MB = Medium Black; CL = Clay Loam; RSL = Red Sandy Loam, BCS = Black Cotton Soil; RS = Red Sandy

CHAPTER I: BREEDING

Table I.105: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR***	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	4140	2069	3115	4359	3421	2301	2423	2362	721	2541	2541	2146	3363	2940	2
2	AHT 402 B	Pratap (Check)	3687	2904	2579	3779	3237	2367	2246	2307	1622	3459	3459	1808	4797	3070	1
3	AHT 403 B	MH 2619	4225	1929	2921	4149	3306	2126	1983	2054	2012	2706	2706	2176	3300	2835	5
4	AHT 404 B	AHB 1269 (Check)	3826	1525	2587	3788	2931	1909	1788	1848	1081	3009	3009	2299	3453	2687	6
5	AHT 405 B	MH 2606	3553	2508	2015	3169	2811	2331	2268	2299	991	3165	3165	1836	3039	2654	7
6	AHT 406 B	NBH 5767 (Check)	3431	2263	3225	4478	3349	2145	2145	2145	1057	3117	3117	1697	3651	2906	3
7	AHT 407 B	86M01 (Check)	3417	1750	1984	3136	2572	1883	1935	1909	1892	2520	2520	1906	4513	2560	8
8	AHT 408 B	AHB 1200 (Check)	3897	1950	2528	3723	3025	1708	1863	1786	1622	3718	3718	2387	3794	2841	4
		LOC. MEAN	3772	2112	2619	3823	3081	2096	2081	2089	1375	3029	3029	2032	3739	2811	
		C.D. (5%)	832	501	774	837	531	326	491	194	258	753	753	0	461	369	
		C.D. (1%)	1155	696	1075	1162	723	452	682	287	359	1045	1045	1	639	492	
		C.V. (%)	12.6	13.6	16.9	12.5	11.7	8.9	13.5	3.9	10.7	14.2	14.2	0.0	7.0	13.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.036	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.139	
		PI OT SIZE (m ²)	12.00	12.00	12.00	11.10	-	12.00	12.00	-	11.10	11.10	-	10.80	12.00	-	

***TEST LOCATION REJECTED DUE TO LOW AVERAGE YIELD (1375 kg/ha), THAN THE STATE AVERAGE YIELD (1772 kg/ha) TAKEN OVER 10 YEARS

Table I.106: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	8194	4161	5296	7327	6245	5583	6172	5878	4505	4375	4440	4202	7185	5700	2
2	AHT 402 B	Pratap (Check)	5806	4761	4384	5465	5104	4528	5222	4875	4024	5754	4889	4313	7724	5198	6
3	AHT 403 B	MH 2619	6694	4624	5550	6667	5884	5222	4778	5000	4054	3847	3950	4808	7358	5360	4
4	AHT 404 B	AHB 1269 (Check)	7222	3926	4915	6667	5682	4556	5333	4944	4114	5234	4674	3021	7233	5222	5
5	AHT 405 B	MH 2606	8389	5014	3829	6727	5989	4639	5944	5292	4459	4949	4704	4734	6721	5540	3
6	AHT 406 B	NBH 5767 (Check)	8083	4501	6128	6246	6240	7167	5611	6389	4321	5096	4709	3827	6590	5757	1
7	AHT 407 B	86M01 (Check)	8167	4284	3770	5616	5459	4167	5444	4806	4024	3498	3761	3688	7138	4979	8
8	AHT 408 B	AHB 1200 (Check)	7222	3973	4297	4895	5097	4278	4806	4542	4474	5462	4968	4669	6471	5055	7
		LOC. MEAN	7472	4406	4771	6201	5712	5017	5414	5216	4247	4777	4512	4158	7052	5352	
		C.D. (5%)	1275	733	1423	954	1036	737	1162	1600	1447	1224	1288	0	771	593	
		C.D. (1%)	1770	1017	1975	1323	1411	1023	1613	2368	2008	1698	1906	1	1070	788	
		C.V. (%)	9.7	9.5	17.0	8.8	12.3	8.4	12.3	13.0	19.5	14.6	12.1	0.0	6.2	12.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.162	0.000	0.000	0.257	0.000	0.000	0.374	0.000	0.000	0.082	
		PI OT SIZE (m ²)	12.00	12.00	12.00	11.10	-	12.00	12.00	-	11.10	11.10	-	10.80	12.00	-	

CHAPTER I: BREEDING

Table I.107: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	51	57	44	51	51	48	52	50	40	45	43	44	39	47	5
2	AHT 402 B	Pratap (Check)	54	55	47	49	51	47	49	48	43	43	43	46	37	47	6
3	AHT 403 B	MH 2619	49	55	48	51	51	50	50	50	40	45	43	45	37	47	4
4	AHT 404 B	AHB 1269 (Check)	49	57	43	52	50	47	49	48	42	37	39	46	39	46	8
5	AHT 405 B	MH 2606	54	57	54	55	55	51	52	51	43	46	45	47	42	50	1
6	AHT 406 B	NBH 5767 (Check)	49	58	52	51	52	50	51	51	42	47	45	45	43	49	3
7	AHT 407 B	86M01 (Check)	53	59	47	52	53	47	51	49	46	48	47	45	42	49	2
8	AHT 408 B	AHB 1200 (Check)	48	54	43	50	49	51	48	50	43	42	43	45	40	47	7
		LOC. MEAN	51	56	47	52	51	49	50	50	42	44	43	45	40	48	
		C.D. (5%)	3.0	2.0	2.0	2.0	3.0	1.0	2.0	4.0	6.0	2.0	6.0	4.0	1.0	2.0	
		C.D. (1%)	4.0	3.0	2.0	3.0	4.0	2.0	3.0	6.0	8.0	3.0	9.0	6.0	2.0	2.0	
		C.V. (%)	3.1	1.9	2.1	2.4	4.2	1.4	2.4	3.4	8.2	2.9	5.9	5.7	2.1	4.2	
		F (Prob)	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.463	0.000	0.000	0.289	0.000	0.000	0.000	

Table I.108: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 DAYS TO MATURITY ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	87	87	81	88	86	86	86	86	70	78	74	89	82	83	7
2	AHT 402 B	Pratap (Check)	89	85	84	86	86	85	85	85	72	76	74	91	81	83	6
3	AHT 403 B	MH 2619	86	85	85	88	86	90	84	87	68	78	73	90	82	84	5
4	AHT 404 B	AHB 1269 (Check)	87	87	80	89	86	88	86	87	68	67	68	91	82	82	8
5	AHT 405 B	MH 2606	88	87	91	92	89	92	85	88	69	78	74	92	84	86	1
6	AHT 406 B	NBH 5767 (Check)	87	88	89	88	88	90	86	88	71	79	75	90	85	85	2
7	AHT 407 B	86M01 (Check)	90	89	84	89	88	85	85	85	71	81	76	90	84	85	3
8	AHT 408 B	AHB 1200 (Check)	88	84	80	87	85	93	86	90	75	73	74	90	80	84	4
		LOC. MEAN	87	86	84	89	87	89	85	87	71	76	73	90	82	84	
		C.D. (5%)	1.0	2.0	2.0	2.0	3.0	1.0	2.0	6.0	6.0	4.0	8.0	4.0	1.0	2.0	
		C.D. (1%)	1.0	3.0	2.0	3.0	4.0	1.0	3.0	9.0	9.0	6.0	12.0	6.0	2.0	3.0	
		C.V. (%)	0.5	1.3	1.2	1.4	2.5	0.7	1.4	2.9	5.1	3.2	4.6	2.9	0.9	2.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.105	0.000	0.000	0.577	0.000	0.000	0.422	0.000	0.000	0.050	

CHAPTER I: BREEDING

Table I.109: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PLANT HEIGHT (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	185	173	150	211	180	125	172	148	159	191	175	173	187	172	5
2	AHT 402 B	Pratap (Check)	146	157	144	178	156	133	153	143	138	261	200	166	174	165	8
3	AHT 403 B	MH 2619	168	170	168	200	176	147	161	154	150	220	185	180	190	175	4
4	AHT 404 B	AHB 1269 (Check)	167	169	169	203	177	120	157	138	163	201	182	175	176	170	6
5	AHT 405 B	MH 2606	209	196	183	211	200	134	169	151	168	219	194	175	172	184	2
6	AHT 406 B	NBH 5767 (Check)	179	197	182	224	196	141	179	160	168	295	232	189	191	195	1
7	AHT 407 B	86M01 (Check)	178	199	165	211	188	138	159	149	182	211	197	176	187	181	3
8	AHT 408 B	AHB 1200 (Check)	156	163	148	191	165	125	148	137	174	221	198	174	169	167	7
		LOC. MEAN	173	178	164	204	180	133	162	147	163	227	195	176	181	176	
		C.D. (5%)	3.0	6.0	5.0	18.0	12.0	11.0	12.0	19.0	5.0	14.0	65.0	13.0	6.0	13.0	
		C.D. (1%)	4.0	8.0	7.0	26.0	17.0	16.0	16.0	28.0	7.0	19.0	97.0	18.0	9.0	17.0	
		C.V. (%)	1.0	1.9	1.7	5.2	4.6	5.0	4.2	5.5	1.7	3.5	14.2	4.3	2.0	8.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.202	0.000	0.000	0.635	0.000	0.000	0.000	

Table I.110: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	2.0	1.9	3.1	3.1	2.5	3.1	3.1	3.1	2.4	2.2	2.3	2.6	3.0	2.6	3
2	AHT 402 B	Pratap (Check)	2.0	1.6	2.8	2.8	2.3	3.1	3.0	3.1	2.7	2.6	2.7	2.5	3.3	2.6	5
3	AHT 403 B	MH 2619	1.7	1.5	3.0	2.8	2.3	2.9	2.6	2.8	2.7	2.8	2.8	2.8	2.6	2.5	8
4	AHT 404 B	AHB 1269 (Check)	2.0	2.1	3.0	2.4	2.4	2.9	3.1	3.0	2.4	2.9	2.7	2.5	3.5	2.7	2
5	AHT 405 B	MH 2606	2.0	2.2	2.4	3.0	2.4	2.5	3.4	2.9	3.1	2.9	3.0	2.7	3.7	2.8	1
6	AHT 406 B	NBH 5767 (Check)	1.3	2.1	3.4	3.0	2.5	3.1	3.2	3.1	2.7	2.7	2.7	2.5	2.5	2.6	4
7	AHT 407 B	86M01 (Check)	1.0	1.8	2.2	3.4	2.1	2.7	3.4	3.0	2.7	2.2	2.4	2.9	3.9	2.6	6
8	AHT 408 B	AHB 1200 (Check)	1.7	1.7	2.8	2.2	2.1	3.3	2.6	3.0	2.7	3.1	2.9	3.1	2.5	2.6	7
		LOC. MEAN	1.7	1.9	2.8	2.8	2.3	2.9	3.0	3.0	2.7	2.7	2.7	2.7	3.1	2.6	
		C.D. (5%)	0.6	0.5	0.2	0.2	0.5	0.3	0.8	0.9	0.5	0.8	0.6	0.5	0.8	0.3	
		C.D. (1%)	0.9	0.7	0.3	0.3	0.7	0.5	1.1	1.3	0.7	1.1	0.8	0.8	1.1	0.4	
		C.V. (%)	21.7	15.5	4.2	4.2	15.9	6.6	15.1	12.4	10.9	16.9	8.9	11.5	14.4	13.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.674	0.000	0.000	0.975	0.000	0.000	0.230	0.000	0.000	0.836	

CHAPTER I: BREEDING

Table I.111: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE LENGTH (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	27	24	27	26	26	22	23	23	23	25	24	22	24	24	4
2	AHT 402 B	Pratap (Check)	23	22	27	24	24	24	24	24	24	23	24	20	23	23	8
3	AHT 403 B	MH 2619	26	25	27	27	26	25	23	24	25	23	24	21	26	25	3
4	AHT 404 B	AHB 1269 (Check)	27	23	27	25	25	23	21	22	25	23	24	20	22	24	7
5	AHT 405 B	MH 2606	26	25	25	27	26	26	23	24	26	22	24	21	23	24	5
6	AHT 406 B	NBH 5767 (Check)	25	26	30	27	27	23	22	23	25	26	26	21	24	25	2
7	AHT 407 B	86M01 (Check)	27	29	24	30	28	27	24	25	27	22	24	24	27	26	1
8	AHT 408 B	AHB 1200 (Check)	25	25	26	27	25	24	18	21	26	22	24	23	25	24	6
		LOC. MEAN	26	25	27	27	26	24	22	23	25	23	24	21	24	24	
		C.D. (5%)	1.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	4.0	2.0	3.0	1.0	
		C.D. (1%)	2.0	3.0	2.0	2.0	3.0	2.0	4.0	5.0	2.0	3.0	6.0	3.0	4.0	2.0	
		C.V. (%)	2.5	4.3	3.6	3.6	6.5	3.9	7.1	5.9	3.8	4.5	7.2	6.1	5.9	6.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.169	0.000	0.000	0.203	0.000	0.000	0.937	0.000	0.000	0.008	

Table I.112: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	3.4	3.3	3.7	3.7	3.5	3.0	3.6	3.3	1.7	3.3	2.5	2.9	3.3	3.2	3
2	AHT 402 B	Pratap (Check)	3.5	3.2	3.6	3.7	3.5	3.4	3.4	3.4	1.6	3.3	2.4	2.7	3.0	3.1	6
3	AHT 403 B	MH 2619	3.6	3.3	3.7	3.6	3.6	3.3	3.4	3.4	2.1	3.3	2.7	2.8	3.2	3.2	2
4	AHT 404 B	AHB 1269 (Check)	3.8	3.3	3.7	3.7	3.6	3.3	3.1	3.2	2.3	3.7	3.0	2.9	3.1	3.3	1
5	AHT 405 B	MH 2606	3.7	3.4	3.6	3.6	3.6	3.1	3.3	3.2	1.8	3.5	2.7	2.7	3.1	3.2	4
6	AHT 406 B	NBH 5767 (Check)	3.7	3.0	3.8	3.6	3.5	3.1	3.4	3.3	1.8	3.2	2.5	2.5	3.0	3.1	7
7	AHT 407 B	86M01 (Check)	3.4	3.1	3.5	3.5	3.4	3.0	3.3	3.1	2.3	3.4	2.8	2.5	3.1	3.1	8
8	AHT 408 B	AHB 1200 (Check)	3.3	3.3	3.6	3.8	3.5	3.0	2.7	2.9	2.2	3.4	2.8	3.0	3.2	3.2	5
		LOC. MEAN	3.6	3.3	3.7	3.7	3.5	3.2	3.3	3.2	2.0	3.4	2.7	2.8	3.1	3.2	
		C.D. (5%)	0.1	0.2	0.2	0.2	0.2	0.4	0.6	0.5	0.2	0.9	0.4	0.4	0.3	0.2	
		C.D. (1%)	0.1	0.3	0.2	0.2	0.2	0.6	0.9	0.7	0.2	1.2	0.6	0.6	0.4	0.2	
		C.V. (%)	1.4	3.5	2.6	2.6	3.5	7.8	11.0	6.6	4.5	14.4	6.6	9.1	5.9	5.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.319	0.000	0.000	0.314	0.000	0.000	0.163	0.000	0.000	0.289	

CHAPTER I: BREEDING

Table I.113: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 1000 SEED Wt.(g) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	13.5	10.0	12.0	11.9	11.8	11.6	11.7	13.4	16.4	14.9	11.0	9.6	12.1	6
2	AHT 402 B	Pratap (Check)	12.2	8.6	10.7	10.5	12.4	11.1	11.7	14.0	16.0	15.0	11.5	12.6	12.1	7
3	AHT 403 B	MH 2619	15.4	10.9	13.6	13.3	12.7	10.4	11.6	15.5	17.6	16.5	11.2	12.2	13.3	1
4	AHT 404 B	AHB 1269 (Check)	16.4	8.4	12.4	12.4	12.3	10.2	11.3	16.1	16.2	16.2	13.2	12.6	13.1	2
5	AHT 405 B	MH 2606	10.7	9.8	11.1	10.5	12.4	10.5	11.5	15.1	14.5	14.8	9.5	10.5	11.6	8
6	AHT 406 B	NBH 5767 (Check)	12.4	11.3	11.6	11.8	12.3	10.9	11.6	14.4	16.6	15.5	8.8	11.4	12.2	5
7	AHT 407 B	86M01 (Check)	14.1	9.9	12.7	12.2	12.6	11.3	12.0	13.4	16.5	15.0	12.4	12.7	12.9	3
8	AHT 408 B	AHB 1200 (Check)	10.2	10.0	12.5	10.9	12.4	9.7	11.1	14.0	16.5	15.2	13.5	11.1	12.2	4
		LOC. MEAN	13.1	9.9	12.1	11.7	12.4	10.7	11.5	14.5	16.3	15.4	11.4	11.6	12.4	
		C.D. (5%)	0.5	0.9	0.9	4.2	1.2	1.9	1.5	2.6	2.4	2.5	0.1	0.6	1.1	
		C.D. (1%)	0.6	1.2	1.2	6.2	1.6	2.6	2.2	3.6	3.4	3.6	0.1	0.8	1.5	
		C.V. (%)	2.0	5.1	4.2	15.5	5.4	10.1	5.1	10.3	8.5	8.2	0.3	2.8	8.9	
		F (Prob)	0.000	0.000	0.000	0.628	0.000	0.000	0.318	0.000	0.000	0.929	0.000	0.000	0.065	

Table I.114: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	152	93	73	106	146	157	152	144	129	136	132	117	127	2
2	AHT 402 B	Pratap (Check)	154	94	64	104	145	157	151	118	131	125	141	122	125	3
3	AHT 403 B	MH 2619	154	96	60	104	146	156	151	100	132	116	135	123	123	7
4	AHT 404 B	AHB 1269 (Check)	152	86	77	105	147	147	147	118	133	126	132	120	123	5
5	AHT 405 B	MH 2606	151	97	55	101	142	150	146	131	130	130	132	117	123	6
6	AHT 406 B	NBH 5767 (Check)	156	96	93	115	144	155	150	134	132	133	136	122	130	1
7	AHT 407 B	86M01 (Check)	152	91	44	96	146	150	148	85	130	107	132	106	115	8
8	AHT 408 B	AHB 1200 (Check)	154	78	95	109	142	149	146	106	131	118	140	117	124	4
		LOC. MEAN	153	91	70	105	145	153	149	117	131	124	135	118	124	
		C.D. (5%)	4.0	15.0	29.0	11.0	3.0	14.0	31.0	13.0	4.0	31.0	7.0	12.0	10.0	
		C.D. (1%)	5.0	21.0	41.0	16.0	4.0	19.0	46.0	18.0	5.0	45.0	9.0	17.0	13.0	
		C.V. (%)	1.4	9.5	24.0	3.8	1.3	5.2	12.2	6.2	1.7	9.6	2.8	5.9	7.7	
		F (Prob)	0.000	0.000	0.000	0.475	0.000	0.000	0.560	0.000	0.000	0.353	0.000	0.000	0.171	

CHAPTER I: BREEDING

Table I.115: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	DHL	MS MEAN	APR	PLM	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	99	73	97	90	83	97	45	82	5
2	AHT 402 B	Pratap (Check)	99	83	90	91	84	96	90	90	1
3	AHT 403 B	MH 2619	97	83	93	91	84	92	76	88	4
4	AHT 404 B	AHB 1269 (Check)	96	87	98	94	84	94	34	82	6
5	AHT 405 B	MH 2606	95	92	95	94	85	97	68	88	3
6	AHT 406 B	NBH 5767 (Check)	98	57	85	80	85	98	27	75	8
7	AHT 407 B	86M01 (Check)	98	89	92	93	83	95	83	90	2
8	AHT 408 B	AHB 1200 (Check)	100	77	92	89	84	97	27	79	7
		LOC. MEAN	98	80	93	90	84	96	56	84	
		C.D. (5%)	5.0	5.0	7.0	20.0	5.0	3.0	10.0	12.0	
		C.D. (1%)	6.0	7.0	10.0	30.0	6.0	4.0	14.0	16.0	
		C.V. (%)	2.7	3.7	4.4	9.7	3.1	1.6	10.5	7.3	
		F (Prob)	0.000	0.000	0.000	0.648	0.000	0.000	0.000	0.287	

CHAPTER I: BREEDING

Table I.116: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 ZONE B

GRAIN QUALITY: IRON CONTENT (ppm)

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	DHL	VYP	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	63	60	61	44	46	55	5
2	AHT 402 B	Pratap (Check)	52	55	69	61	53	58	4
3	AHT 403 B	MH 2619	55	56	55	46	39	50	6
4	AHT 404 B	AHB 1269 (Check)	61	79	61	59	65	65	2
5	AHT 405 B	MH 2606	63	86	57	60	53	64	3
6	AHT 406 B	NBH 5767 (Check)	65	54	61	49	46	55	5
7	AHT 407 B	86M01 (Check)	63	54	57	56	48	55	5
8	AHT 408 B	AHB 1200 (Check)	92	120	90	82	72	91	1

Table I.117: ADVANCE HYBRID TRIAL (Medium) KHARIF - 2022 ZONE B

GRAIN QUALITY: ZINC CONTENT (ppm)

S.NO.	TEST CODE	ENTRY	ABD1	ABD3	DHL	VYP	CBE	ZONE MEAN	RANK
1	AHT 401 B	MH 2564 (R)	37	22	36	33	36	33	5
2	AHT 402 B	Pratap (Check)	30	32	41	33	39	35	4
3	AHT 403 B	MH 2619	43	26	44	39	45	40	2
4	AHT 404 B	AHB 1269 (Check)	41	28	41	37	52	40	2
5	AHT 405 B	MH 2606	41	31	42	40	45	40	2
6	AHT 406 B	NBH 5767 (Check)	54	31	43	36	47	42	1
7	AHT 407 B	86M01 (Check)	40	20	37	38	44	36	3
8	AHT 408 B	AHB 1200 (Check)	44	32	39	40	53	42	1

CHAPTER I: BREEDING

Table I.118: ADVANCE HYBRID TRIAL (Late) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizer			Insecticide
							N	P	K	
RAJASTHAN										
Jaipur (SKNAU)	SL	-	5.7.22	12.10.22	27.7.22	Nil	40	30	0	Nil
Jaipur (Seedworks)	MSL	7.2	30.6.22	28.9.22	17.7.22	30.6,13.7,3.8,8.9.22	80	60	40	Chloropyriphos, Coragen, Super Killer
Alwar (Corteva)	L	8.6	7.7.22	28.10.22	30.8.22	Life Saving	88	60	0	Cypermethrin, Clothianidin
GUJARAT										
Jamnagar (JAU)	MB	7.6	7.7.22	7.10.22	19.7,27.7,4.8.22	Nil	80	40	0	Nil
Dhanera (JK seed)	SL	-	7.7.22	3.10.22	10.8.22	2 Times	40	10	10	Nil
Dehgam (Kaveri Seeds)	SL	-	3.7.22	30.10.22	13.7.,30.7.22	Nil	128	92	0	Nil
UTTAR PRADESH										
Aligarh (Hytech)	A	-	6.7.22	12.10.22	28.8,15.9.22	6.7, 20.7.22	60	25	15	Monocrotophos, Bavistin
Agra (Mahindra)	-	-	-	-	-	-	-	-	-	-
Bichpuri (Kaveri Seeds)	SL	-	20.7.22	As Per maturity	30.7.22	Nil	148	22.5	22.5	Nil
HARYANA										
Hisar (CCS,HAU)	SL	-	19.7.22	4.11.22	-	10.9.22	100	40	0	Nil
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	21.7.22	22.10.22	17.8.22	18.8.22	60	40	20	Nil
PUNJAB										
Ludhiana (PAU)	SL	8.2	9.7.22	20.11.22	31.7, 2.9.22	1.8,1.9.22	100	60	0	Nil

SL = Sandy Loam; MB = Medium Black; L= Loam, A= Alluvial

CHAPTER I: BREEDING

Table I.119: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	2821	5297	3698	3939	5421	3422	6121	4988	2791	4707	5250	4249	4819	2605	4153	4259	2
2	AHT 502 A	MH 2580	2401	4744	3539	3561	5617	2809	5381	4602	2638	4678	4161	3826	3588	2538	3857	3829	4
3	AHT 503 A	AHB 1200 (Check)	1762	3044	3148	2652	3889	2775	4750	3805	1606	2644	2944	2398	3602	2526	3914	3050	8
4	AHT 504 A	MH 2626	2186	5856	3186	3743	5063	3225	5700	4663	3160	4721	4311	4064	4298	3234	4870	4151	3
5	AHT 505 A	KBH 108 (Check)	2225	4642	2442	3103	5084	3154	6114	4784	1981	2921	3819	2907	4254	2945	4031	3634	6
6	AHT 506 A	86M86 (Check)	2176	4231	2971	3126	4421	3331	5994	4582	2335	3936	4314	3528	3758	2281	3742	3624	7
7	AHT 507 A	MH 2631	2232	5731	3696	3886	4969	3391	5944	4768	3600	4585	5750	4645	5961	2481	5086	4452	1
8	AHT 508 A	MP-7792 (Check)	2495	4397	3426	3439	5096	2964	4950	4337	2524	4336	3492	3450	4923	2346	4277	3769	5
		LOC. MEAN	2287	4743	3263	3431	4945	3134	5619	4566	2579	4066	4255	3633	4400	2619	4241	3846	
		C.D. (5%)	515	614	542	881	721	276	640	639	232	182	574	704	1083	181	173	375	
		C.D. (1%)	715	853	752	1222	1001	384	888	887	322	252	797	977	1503	251	240	497	
		C.V. (%)	12.9	7.4	9.5	14.7	8.3	5.0	6.5	8.0	5.1	2.6	7.7	11.1	14.1	4.0	2.3	12.0	
		F (Prob)	0.000	0.000	0.000	0.082	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	12.00	12.00	12.00	-	14.40	14.40	12.00	-	12.00	12.00	12.00	-	12.00	12.00	12.00	-	

Table I.120: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	6278	6894	18194	10456	9301	6111	5703	7038	10417	12294	15383	12698	12008	9583	11606	10314	6
2	AHT 502 A	MH 2580	4361	8742	17611	10238	11296	5324	6156	7592	11444	15122	14906	13824	12565	9583	10944	10671	3
3	AHT 503 A	AHB 1200 (Check)	5014	5503	13778	8098	7595	3565	4728	5296	10222	8072	10222	9506	9871	9306	10208	8174	8
4	AHT 504 A	MH 2626	7972	9567	20036	12525	11442	7870	7214	8842	12722	20417	15314	16151	11648	12917	14275	12616	1
5	AHT 505 A	KBH 108 (Check)	8722	7594	17544	11287	10791	8310	7322	8808	10194	9017	11083	10098	11024	12222	12592	10535	4
6	AHT 506 A	86M86 (Check)	6319	7667	16503	10163	9440	6898	6306	7548	9306	15722	14347	13125	11397	9861	10458	10352	5
7	AHT 507 A	MH 2631	7444	8569	15728	10581	10606	7060	6508	8058	10556	15094	12331	12660	12575	8472	14056	10750	2
8	AHT 508 A	MP-7792 (Check)	5778	7406	14667	9283	8181	6065	5267	6504	11778	12811	10744	11778	12622	9583	11883	9732	7
		LOC. MEAN	6486	7743	16758	10329	9832	6400	6150	7461	10830	13569	13041	12480	11714	10191	12003	10393	
		C.D. (5%)	759	626	2870	2042	1482	894	910	1176	561	1244	3317	3583	2531	906	2349	1153	
		C.D. (1%)	1054	869	3984	2834	2057	1241	1264	1633	779	1727	4604	4974	3513	1257	3260	1529	
		C.V. (%)	6.7	4.6	9.8	11.3	8.6	8.0	8.5	9.0	3.0	5.2	14.5	16.4	12.3	5.1	11.2	13.6	
		F (Prob)	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	12.00	12.00	12.00	-	14.40	14.40	12.00	-	12.00	12.00	12.00	-	12.00	12.00	12.00	-	

CHAPTER I: BREEDING

Table I.121: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	55	56	53	55	47	56	57	53	58	56	50	55	51	46	55	53	5
2	AHT 502 A	MH 2580	51	51	50	51	43	50	50	48	56	54	48	53	46	45	53	50	7
3	AHT 503 A	AHB 1200 (Check)	47	47	51	48	43	49	50	47	56	50	46	51	42	44	58	49	8
4	AHT 504 A	MH 2626	55	57	54	55	48	59	57	55	58	59	51	56	53	48	55	55	3
5	AHT 505 A	KBH 108 (Check)	54	58	58	57	51	63	59	58	60	62	53	58	53	49	60	57	1
6	AHT 506 A	86M86 (Check)	50	56	55	53	49	55	57	54	60	59	50	56	52	48	52	54	4
7	AHT 507 A	MH 2631	52	57	57	55	47	59	60	55	60	62	55	59	55	48	61	56	2
8	AHT 508 A	MP-7792 (Check)	47	53	53	51	45	54	55	51	58	57	49	55	50	47	53	52	6
		LOC. MEAN	51	54	54	53	47	56	56	53	58	58	50	55	50	47	56	53	
		C.D. (5%)	1.0	1.0	2.0	3.0	2.0	1.0	2.0	3.0	2.0	1.0	1.0	2.0	3.0	1.0	2.0	1.0	
		C.D. (1%)	1.0	1.0	2.0	4.0	3.0	2.0	3.0	4.0	2.0	2.0	2.0	3.0	4.0	2.0	3.0	2.0	
		C.V. (%)	0.9	0.9	1.6	3.1	2.4	1.3	2.2	2.9	1.7	1.1	1.4	2.5	3.3	1.4	1.9	3.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.122: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	87	83	80	83	76	78	79	78	89	85	75	83	81	87	101	83	5
2	AHT 502 A	MH 2580	82	79	78	80	73	75	75	74	85	85	72	81	81	87	101	81	7
3	AHT 503 A	AHB 1200 (Check)	79	74	78	77	73	75	77	75	84	81	71	79	80	86	105	80	8
4	AHT 504 A	MH 2626	88	84	83	85	78	79	80	79	89	88	75	84	81	92	101	85	3
5	AHT 505 A	KBH 108 (Check)	83	85	84	84	81	84	84	83	90	89	77	86	82	93	104	86	1
6	AHT 506 A	86M86 (Check)	79	83	84	82	79	79	80	79	91	88	76	85	81	92	100	84	4
7	AHT 507 A	MH 2631	81	84	86	84	77	81	82	80	89	88	76	85	81	92	104	85	2
8	AHT 508 A	MP-7792 (Check)	78	80	80	79	76	75	78	76	86	87	75	82	81	90	101	82	6
		LOC. MEAN	82	81	82	82	77	78	79	78	88	86	75	83	81	90	102	83	
		C.D. (5%)	2.0	1.0	2.0	4.0	2.0	1.0	1.0	2.0	2.0	1.0	1.0	2.0	1.0	2.0	2.0	2.0	
		C.D. (1%)	2.0	2.0	2.0	6.0	3.0	1.0	1.0	2.0	2.0	2.0	1.0	3.0	2.0	2.0	3.0	2.0	
		C.V. (%)	1.1	0.9	1.2	3.0	1.6	0.7	0.5	1.1	1.2	0.9	0.8	1.3	1.1	1.0	1.1	2.3	
		F (Prob)	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.123: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	179	253	243	225	210	168	213	197	242	253	245	247	217	195	193	218	7
2	AHT 502 A	MH 2580	192	257	248	232	220	165	208	198	239	268	258	255	237	186	210	224	4
3	AHT 503 A	AHB 1200 (Check)	177	223	213	204	214	157	177	183	226	223	212	220	176	192	193	199	8
4	AHT 504 A	MH 2626	221	283	268	258	242	210	241	231	248	278	282	269	243	223	201	245	1
5	AHT 505 A	KBH 108 (Check)	213	287	268	256	243	223	247	238	221	273	272	255	246	224	210	244	2
6	AHT 506 A	86M86 (Check)	196	263	250	237	221	175	215	204	211	265	258	245	218	207	193	223	6
7	AHT 507 A	MH 2631	214	257	263	245	223	198	221	214	219	275	265	253	238	190	195	230	3
8	AHT 508 A	MP-7792 (Check)	184	247	250	227	225	180	209	205	239	265	262	255	222	197	207	224	5
		LOC. MEAN	197	259	251	235	225	185	216	209	231	263	257	250	224	202	200	226	
		C.D. (5%)	9.0	11.0	7.0	12.0	19.0	13.0	7.0	15.0	6.0	12.0	8.0	23.0	14.0	3.0	12.0	9.0	
		C.D. (1%)	12.0	15.0	9.0	17.0	27.0	17.0	10.0	21.0	8.0	16.0	11.0	32.0	20.0	4.0	16.0	12.0	
		C.V. (%)	2.6	2.3	1.5	3.0	4.9	3.9	1.9	4.2	1.5	2.5	1.8	5.2	3.7	0.7	3.3	4.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.000	0.000	0.000	

Table I.124: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW**	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	1.0	2.0	1.7	1.5	2.6	1.2	1.2	1.7	1.3	1.1	1.0	1.1	2.4	1.9	4.0	1.8	2
2	AHT 502 A	MH 2580	1.1	2.0	2.0	1.6	1.9	1.5	1.3	1.5	2.0	1.1	1.1	1.4	2.3	1.7	2.9	1.7	4
3	AHT 503 A	AHB 1200 (Check)	1.1	1.3	1.7	1.2	1.7	1.2	1.2	1.4	1.0	1.1	1.0	1.0	2.2	1.8	4.7	1.7	5
4	AHT 504 A	MH 2626	1.1	1.7	1.3	1.4	1.7	1.5	1.3	1.5	2.0	1.1	1.0	1.4	1.8	1.9	3.0	1.6	6
5	AHT 505 A	KBH 108 (Check)	1.1	1.0	2.3	1.1	2.9	1.5	1.3	1.9	1.0	1.1	1.0	1.0	2.5	1.8	2.0	1.6	8
6	AHT 506 A	86M86 (Check)	1.1	1.3	1.3	1.2	2.4	1.5	1.3	1.7	1.0	1.1	1.0	1.0	2.2	1.9	3.0	1.6	7
7	AHT 507 A	MH 2631	2.0	1.7	1.7	1.8	1.4	2.0	1.5	1.6	2.3	1.1	1.1	1.5	2.5	2.0	3.0	1.9	1
8	AHT 508 A	MP-7792 (Check)	1.2	1.3	2.0	1.3	2.4	2.0	1.3	1.9	1.3	1.1	1.1	1.2	2.4	2.2	2.4	1.7	3
		LOC. MEAN	1.2	1.5	1.8	1.4	2.1	1.5	1.3	1.7	1.5	1.1	1.0	1.2	2.3	1.9	3.1	1.7	
		C.D. (5%)	0.3	0.7	0.9	0.8	0.4	0.3	0.2	0.6	0.5	0.1	0.1	0.5	0.8	0.2	0.5	0.3	
		C.D. (1%)	0.5	1.0	1.3	1.1	0.5	0.4	0.3	0.9	0.7	0.1	0.1	0.7	1.1	0.3	0.7	0.5	
		C.V. (%)	16.3	26.0	30.5	23.6	10.7	9.7	10.9	22.1	19.9	4.3	4.5	24.7	20.2	5.9	9.8	23.6	
		F (Prob)	0.000	0.000	0.000	0.445	0.000	0.000	0.000	0.615	0.000	0.000	0.000	0.369	0.000	0.000	0.000	0.732	

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): ALW 30.5%

CHAPTER I: BREEDING

Table I.125: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	26	25	26	26	26	21	24	24	27	28	28	28	26	26	28	26	7
2	AHT 502 A	MH 2580	23	26	27	26	28	24	26	26	31	29	30	30	31	26	28	27	1
3	AHT 503 A	AHB 1200 (Check)	26	25	25	26	26	25	25	25	27	26	29	27	31	26	27	27	5
4	AHT 504 A	MH 2626	23	27	28	26	27	26	27	26	27	30	30	29	28	25	25	27	4
5	AHT 505 A	KBH 108 (Check)	26	27	27	27	25	26	26	26	26	29	29	28	30	27	26	27	3
6	AHT 506 A	86M86 (Check)	23	24	27	25	24	23	25	24	29	29	27	28	30	26	28	26	6
7	AHT 507 A	MH 2631	28	26	28	27	27	24	26	26	29	29	29	29	30	26	24	27	2
8	AHT 508 A	MP-7792 (Check)	23	25	25	24	27	24	24	25	27	27	27	27	25	25	28	26	8
		LOC. MEAN	25	26	27	26	26	24	26	25	28	28	29	28	29	26	27	27	
		C.D. (5%)	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0	3.0	2.0	3.0	1.0	
		C.D. (1%)	2.0	1.0	2.0	3.0	3.0	1.0	3.0	3.0	2.0	2.0	3.0	3.0	4.0	3.0	4.0	1.0	
		C.V. (%)	4.0	1.6	2.3	5.1	4.4	2.3	4.3	4.3	3.3	2.3	4.0	4.2	5.9	4.5	5.5	5.0	
		F (Prob)	0.000	0.000	0.000	0.194	0.000	0.000	0.000	0.083	0.000	0.000	0.000	0.094	0.000	0.000	0.000	0.009	

Table I.126: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DEG1	GUJ MEAN	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	3.9	3.8	4.0	3.9	3.8	3.6	3.7	4.3	4.0	4.2	3.6	2.4	3.8	3.7	1
2	AHT 502 A	MH 2580	3.2	3.5	4.0	3.6	3.4	3.3	3.4	4.0	3.7	3.8	3.6	2.4	3.5	3.5	4
3	AHT 503 A	AHB 1200 (Check)	3.4	3.5	4.2	3.7	3.5	3.1	3.3	3.9	3.6	3.8	3.5	2.4	3.9	3.5	3
4	AHT 504 A	MH 2626	2.8	3.2	3.5	3.2	3.0	2.9	2.9	3.8	3.4	3.6	3.4	2.5	3.9	3.2	7
5	AHT 505 A	KBH 108 (Check)	3.3	3.6	3.8	3.6	3.6	3.4	3.5	4.0	3.7	3.8	3.7	2.4	4.0	3.6	2
6	AHT 506 A	86M86 (Check)	3.5	3.5	3.5	3.5	3.2	3.1	3.2	3.9	3.6	3.8	3.7	2.6	3.3	3.4	5
7	AHT 507 A	MH 2631	3.2	3.2	3.6	3.3	3.0	2.9	3.0	3.8	3.3	3.5	3.5	2.5	3.3	3.2	8
8	AHT 508 A	MP-7792 (Check)	3.3	3.4	3.6	3.4	3.2	3.0	3.1	3.9	3.3	3.6	3.5	2.4	3.4	3.3	6
		LOC. MEAN	3.3	3.5	3.8	3.5	3.3	3.2	3.3	3.9	3.6	3.8	3.6	2.4	3.6	3.4	
		C.D. (5%)	0.2	0.1	0.3	0.3	0.4	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.5	0.1	
		C.D. (1%)	0.3	0.2	0.4	0.4	0.6	0.3	0.6	0.2	0.3	0.3	0.2	0.2	0.7	0.2	
		C.V. (%)	3.7	2.0	3.9	4.8	7.2	3.5	7.2	2.6	3.7	3.5	2.7	3.9	8.4	3.8	
		F (Prob)	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.127: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 1000-SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DEG1	GUJ MEAN	BCR	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	8.7	10.8	9.4	9.6	11.6	9.6	10.6	13.4	11.5	10.8	10.4	10.7	4
2	AHT 502 A	MH 2580	8.0	11.2	9.3	9.5	12.3	12.6	12.4	11.9	10.6	12.0	8.7	10.7	3
3	AHT 503 A	AHB 1200 (Check)	9.6	10.2	8.2	9.3	11.7	10.6	11.1	11.4	10.2	10.8	12.7	10.6	5
4	AHT 504 A	MH 2626	8.1	10.0	9.7	9.3	11.6	12.3	11.9	13.1	11.8	12.6	9.5	11.0	2
5	AHT 505 A	KBH 108 (Check)	10.1	11.4	9.8	10.4	12.3	11.1	11.7	11.0	10.9	11.9	10.7	11.0	1
6	AHT 506 A	86M86 (Check)	8.7	10.2	9.1	9.3	10.7	10.2	10.5	11.5	9.5	11.3	10.4	10.2	6
7	AHT 507 A	MH 2631	6.8	8.5	8.6	8.0	9.5	10.1	9.8	11.3	12.8	10.2	8.9	9.6	8
8	AHT 508 A	MP-7792 (Check)	9.1	12.0	8.4	9.8	11.2	9.7	10.5	9.7	11.8	8.7	8.4	9.9	7
		LOC. MEAN	8.6	10.5	9.1	9.4	11.4	10.8	11.1	11.7	11.1	11.1	10.0	10.5	
		C.D. (5%)	0.5	1.2	0.9	1.3	0.8	1.8	0.8	1.6	3.9	0.5	0.4	1.0	
		C.D. (1%)	0.7	1.7	1.2	1.8	1.1	2.5	1.1	2.2	5.4	0.7	0.5	1.4	
		C.V. (%)	3.2	6.5	5.4	8.0	4.1	9.6	4.1	7.8	20.1	2.6	2.2	8.5	
		F (Prob)	0.000	0.000	0.000	0.067	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	

Table I.128: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	JPR	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	AGR2	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	177	173	172	174	179	162	150	163	127	160	162	150	90	188	164	159	6
2	AHT 502 A	MH 2580	187	171	165	174	193	162	157	171	130	162	167	153	78	198	164	161	3
3	AHT 503 A	AHB 1200 (Check)	197	174	142	171	190	161	151	168	124	160	166	150	83	204	164	160	5
4	AHT 504 A	MH 2626	168	166	167	167	195	161	146	167	131	160	166	152	94	212	164	161	4
5	AHT 505 A	KBH 108 (Check)	178	163	76	139	165	158	141	155	100	124	150	125	97	192	164	142	8
6	AHT 506 A	86M86 (Check)	197	160	129	162	192	162	157	170	132	161	164	152	76	189	163	157	7
7	AHT 507 A	MH 2631	172	174	172	173	199	162	156	173	130	161	162	151	107	193	163	163	2
8	AHT 508 A	MP-7792 (Check)	188	157	175	173	189	162	154	168	129	161	170	153	109	202	164	163	1
		LOC. MEAN	183	167	150	167	188	161	152	167	125	156	163	148	92	197	164	158	
		C.D. (5%)	7.0	5.0	41.0	37.0	24.0	5.0	15.0	9.0	5.0	2.0	12.0	8.0	14.0	6.0	2.0	9.0	
		C.D. (1%)	10.0	8.0	57.0	51.0	33.0	7.0	21.0	13.0	7.0	3.0	16.0	11.0	19.0	8.0	3.0	12.0	
		C.V. (%)	2.3	1.9	15.7	12.6	7.3	1.7	5.6	3.2	2.2	0.7	4.0	3.0	8.5	1.7	0.7	7.3	
		F (Prob)	0.000	0.000	0.000	0.482	0.000	0.000	0.000	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	

CHAPTER I: BREEDING

Table I.129: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A

S.No.	TEST CODE	ENTRY	JPR1	ALW	RAJ MEAN	JMR	DNR	DEG1	GUJ MEAN	ALR	BCR	UP MEAN	HSR	GLR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	97	97	97	95	93	87	92	95	82	88	92	73	98	91	1
2	AHT 502 A	MH 2580	88	97	93	91	80	87	86	92	83	88	87	77	98	88	2
3	AHT 503 A	AHB 1200 (Check)	87	57	72	62	78	70	70	27	48	38	45	82	83	64	8
4	AHT 504 A	MH 2626	100	97	98	94	72	90	85	65	83	74	93	87	93	87	3
5	AHT 505 A	KBH 108 (Check)	100	83	92	86	68	77	77	77	72	74	68	80	83	79	6
6	AHT 506 A	86M86 (Check)	100	80	90	92	83	90	88	52	80	66	92	72	78	82	4
7	AHT 507 A	MH 2631	50	57	53	-	55	-	55	23	73	48	93	82	87	65	7
8	AHT 508 A	MP-7792 (Check)	77	90	83	91	75	87	84	83	82	83	87	65	82	82	5
		LOC. MEAN	87	82	85	87	76	84	82	64	75	70	82	77	88	80	
		C.D. (5%)	8.0	30.0	8.0	9.0	6.0	11.0	15.0	23.0	19.0	11.0	13.0	10.0	6.0	10.0	
		C.D. (1%)	11.0	41.0	11.0	13.0	8.0	15.0	22.0	32.0	27.0	15.0	18.0	13.0	8.0	13.0	
		C.V. (%)	5.0	20.7	5.0	5.9	4.5	7.4	10.3	20.8	14.7	7.4	9.0	7.0	3.7	12.2	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.130: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 ZONE A
GRAIN QUALITY: IRON CONTENT (ppm)

S.No.	TEST CODE	ENTRY	JPR	JPR1	JMR	DEG1	ALR	BCR	HSR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	29	46	65	41	72	50	66	51	52	4
2	AHT 502 A	MH 2580	31	44	66	54	49	58	60	44	51	5
3	AHT 503 A	AHB 1200 (Check)	49	61	103	72	86	100	100	81	81	1
4	AHT 504 A	MH 2626	40	47	56	53	69	69	60	54	56	3
5	AHT 505 A	KBH 108 (Check)	32	40	51	36	43	45	44	42	42	8
6	AHT 506 A	86M86 (Check)	43	45	55	55	56	66	73	62	57	2
7	AHT 507 A	MH 2631	42	49	52	47	55	50	51	51	50	6
8	AHT 508 A	MP-7792 (Check)	28	39	54	39	41	48	61	37	43	7

Table I.131: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 ZONE A
GRAIN QUALITY: ZINC CONTENT (ppm)

S.No.	TEST CODE	ENTRY	JPR	JPR1	JMR	DEG1	ALR	BCR	HSR	LDA	ZONE MEAN	RANK
1	AHT 501 A	MH 2577	27	40	39	16	27	33	47	54	35	3
2	AHT 502 A	MH 2580	26	37	38	24	20	41	50	40	35	3
3	AHT 503 A	AHB 1200 (Check)	32	37	41	13	30	39	56	60	38	1
4	AHT 504 A	MH 2626	27	32	33	19	31	43	46	44	34	4
5	AHT 505 A	KBH 108 (Check)	19	27	32	16	22	26	34	38	27	5
6	AHT 506 A	86M86 (Check)	30	33	39	18	24	37	51	58	36	2
7	AHT 507 A	MH 2631	31	39	30	19	27	38	36	58	35	3
8	AHT 508 A	MP-7792 (Check)	19	27	36	14	16	22	46	25	26	6

Table I.132: ADVANCE HYBRID TRIAL (Late) KHARIF - 2022 ZONE A
GRAIN QUALITY (Protein and Fat)

S. No.	TEST CODE	ENTRY	Protein (%)	Fat (%)
			HSR	HSR
1	AHT 501 A	MH 2577	8.8	5.5
2	AHT 502 A	MH 2580	10.5	5.2
3	AHT 503 A	AHB 1200 (Check)	10.6	5.1
4	AHT 504 A	MH 2626	9.0	4.8
5	AHT 505 A	KBH 108 (Check)	9.1	5.4
6	AHT 506 A	86M86 (Check)	10.3	5.4
7	AHT 507 A	MH 2631	9.3	5.6
8	AHT 508 A	MP-7792 (Check)	9.8	4.9

CHAPTER I: BREEDING

Table I.133: POPULATION TRIAL KHARIF 2022 EXPERIMENTAL DETAILS ZONE A.

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizer			Insecticide
							N	P	K	
RAJASTHAN										
Mandor(ARS,AU Jodhpur)	SL	8.1	7.7.22	As Per Maturity	10.8.22	Nil	40	20	0	Nil
Bikaner (SKRAU)	S	8.0	5.7.22	15.10.22	4.8.22	25.8.22	40	20	0	Nil
Jaipur (SKNAU)	SL	-	5.7.22	11.10.22	27.7.22	Nil	40	30	0	Nil
Alwar (BioSeed)	S	6.5	2.7.22	30.8.22	-	15.7.22	110	68	0	Cypermethrin
GUJARAT										
Jamnagar (JAU)	MB	7.6	10.7.22	8.10.22	19.7,27.7,4.8.22	Nil	80	40	0	Nil
HARYANA										
Hisar (CCS,HAU)	SL	-	20.7.22	4.11.22	-	10.9.22	100	40	0	Nil
UTTAR PRADESH										
Jhansi (RLBCAU)	BS	7.5	9.7.22	1.11.22	15.8.22	25.8.22	80	40	40	Nil
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	21.7.22	23.10.22	17.8.22	18.8.22	60	40	20	Nil
Morena (RVSKVV)	SL	7.8	14.7.22	14.10.22	2.8.22	-	100	50	20	Nil
PUNJAB										
Ludhiana (PAU)	SL	8.0	9.7.22	18.11.22	31.7, 2.9.22	1.8,1.9.22	50	60	0	Nil
DELHI										
New Delhi (ICAR-IARI)	SL	7.8	10.7.22	20.10.22	-	Nil	60	40	40	Nil

MB = Medium Black; SL = Sandy Loam; S = Sandy; BS = Black Soil

Table I.134: POPULATION TRIAL KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR***	BKR***	JPR	ALW2	RAJ MEAN	JMR	JNS***	HSR	GLR***	MRN***	LDA	NDL ***	ZONE MEAN	RANK
1	PT 601 A	MP 610	696	1139	2103	2890	2496	2764	356	3282	2664	3054	3548	2068	2917	18
2	PT 602 A	MP 612	580	738	2441	2855	2648	3081	333	3015	1875	2175	3664	2350	3011	13
3	PT 603 A	MP 613	803	865	2171	2884	2528	3464	458	3519	2769	2229	3894	2330	3187	7
4	PT 604 A	ICMV 221 (Check)	392	1118	1936	3278	2607	2903	258	3340	2555	475	3244	1641	2940	15
5	PT 605 A	MP 618	552	1215	2489	2566	2527	3642	1417	2575	2988	413	3611	1881	2977	14
6	PT 606 A	MP 619	1093	1271	2981	3064	3023	3125	569	2852	2738	1813	3891	2043	3183	9
7	PT 607 A	MP 620	1010	1028	2350	3286	2818	3501	444	3502	2594	1458	3648	2180	3257	2
8	PT 608 A	Pusa Comp. 701 (Check)	1248	1083	2450	3256	2853	2662	222	3652	3111	2865	4184	2492	3241	4
9	PT 609 A	MP 621	530	417	2138	1134	1636	1536	328	1622	1950	858	4325	1307	2151	21
10	PT 610 A	MP 622	1024	747	3097	2731	2914	3292	389	3071	1806	3371	4072	2195	3253	3
11	PT 611 A	MP 623	763	571	1635	2817	2226	2601	383	3469	2197	2046	4156	1791	2936	16
12	PT 612 A	Dhanshakti (Check)	561	648	2017	2434	2226	2249	131	2813	1503	1042	2899	1236	2482	19
13	PT 613 A	MP 624	827	756	1766	2492	2129	1961	292	3103	1460	1217	2668	1344	2398	20
14	PT 614 A	Pusa Comp. 383 (Check)	1265	1073	2764	2765	2764	3313	294	3690	2286	2679	3376	1944	3182	10
15	PT 615 A	MP 625	560	688	2314	3024	2669	2865	667	3621	1406	1688	3676	1631	3100	12
16	PT 616 A	MP 626	1531	463	2258	2975	2616	3252	556	3493	1888	2492	4200	2172	3236	5
17	PT 617 A	JBV 2 (Check)	1065	920	2813	3384	3099	3130	403	3078	1416	2688	4307	2262	3343	1
18	PT 618 A	MP 627	1485	837	2276	3117	2697	3134	383	2954	1797	2096	4181	2383	3132	11
19	PT 619 A	MP 628	778	1260	2182	3150	2666	3377	597	3013	1931	1233	4218	2284	3188	6
20	PT 620 A	MP 629	1159	1316	2044	3557	2801	2848	389	3272	1943	646	4207	2602	3186	8
21	PT 621 A	Raj 171 (Check)	994	965	2422	2671	2547	2940	444	3066	1206	2308	3537	2634	2927	17
		LOC. MEAN	901	910	2317	2873	2595	2935	444	3143	2099	1850	3786	2037	3011	
		C.D. (5%)	166	159	451	724	855	546	133	483	115	393	178	457	490	
		C.D. (1%)	222	213	603	969	1166	730	178	647	154	526	238	611	649	
		C.V. (%)	11.1	10.6	11.8	15.3	15.8	11.3	18.1	9.3	3.3	12.9	2.9	13.6	12.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.282	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	14.40	14.40	12.00	14.40	-	14.40	12.00	12.00	12.00	8.00	12.00	18.00	-	

***TEST LOCATION REJECTED DUE TO LOW AVERAGE YIELD (901, 910, 444, 2099, 1850 & 2037 kg/ha), THAN THE STATE AVERAGE YIELD (786, 2008, 2166 & 2236 kg/ha) TAKEN OVER 10 YEARS

Table I.135: POPULATION TRIAL KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	2606	5468	5444	9169	5672	6780	5833	9518	8194	13375	10785	9492	12987	8079	8
2	PT 602 A	MP 612	1616	4868	7556	9013	5763	8021	5444	9949	9722	11333	10528	9544	12162	8112	7
3	PT 603 A	MP 613	1323	3769	5097	8723	4728	7685	5417	9596	10833	12167	11500	10803	12263	7971	10
4	PT 604 A	ICMV 221 (Check)	1626	3519	4333	6638	4029	5444	3611	10380	5833	8958	7396	8894	12176	6492	19
5	PT 605 A	MP 618	2032	5000	5528	6564	4781	8354	4250	10103	11333	9000	10167	9694	15425	7935	11
6	PT 606 A	MP 619	2725	4502	8389	8742	6090	7900	6278	9039	12083	11583	11833	10386	12717	8577	6
7	PT 607 A	MP 620	2644	4236	7833	8656	5842	7810	5333	9891	6389	9333	7861	9581	12138	7622	16
8	PT 608 A	Pusa Comp. 701 (Check)	3302	4875	9528	11572	7319	7505	4639	9017	10556	11792	11174	9411	14059	8750	5
9	PT 609 A	MP 621	5866	8310	9069	13493	9185	13465	7500	8544	13611	14833	14222	14286	27336	12392	1
10	PT 610 A	MP 622	3111	4745	10111	10221	7047	8600	5472	7623	7083	14250	10667	9886	15331	8767	4
11	PT 611 A	MP 623	1750	4752	7583	7270	5339	6475	4333	9271	7917	13417	10667	10436	11651	7714	14
12	PT 612 A	Dhanshakti (Check)	1928	3567	5722	5738	4239	4694	4611	8392	4861	10208	7535	9525	8769	6183	20
13	PT 613 A	MP 624	1907	3356	4611	7506	4345	4519	3361	8590	3889	14208	9049	9747	5828	6138	21
14	PT 614 A	Pusa Comp. 383 (Check)	3782	4565	10472	10086	7226	8021	5972	9823	9861	14375	12118	10572	12765	9118	2
15	PT 615 A	MP 625	2659	3211	6111	9036	5254	5639	5333	8739	6417	13208	9813	9586	8271	7110	18
16	PT 616 A	MP 626	3362	4259	9056	8884	6390	7042	4306	8639	7500	16667	12083	11422	16386	8866	3
17	PT 617 A	JBV 2 (Check)	3998	4155	7306	9802	6315	6500	4250	9386	7083	13500	10292	9664	12314	7996	9
18	PT 618 A	MP 627	3103	3523	7111	9972	5927	6688	4139	8215	6250	12958	9604	10269	10790	7547	17
19	PT 619 A	MP 628	2215	5394	8014	9860	6371	7375	3889	7578	9583	9833	9708	10986	11802	7866	12
20	PT 620 A	MP 629	2465	5625	7722	11238	6763	6600	4139	9201	8472	6833	7653	12025	11688	7819	13
21	PT 621 A	Raj 171 (Check)	2855	4653	7819	9186	6128	7289	4167	7945	5694	14375	10035	8933	11554	7679	15
		LOC. MEAN	2708	4588	7353	9113	5941	7257	4870	9021	8246	12200	10223	10245	12781	8035	
		C.D. (5%)	521	804	1329	2313	1359	1315	1307	1292	881	1985	5333	1853	1434	1356	
		C.D. (1%)	698	1076	1778	3095	1807	1760	1749	1729	1179	2657	7275	2479	1919	1788	
		C.V. (%)	11.7	10.6	11.0	15.4	16.2	11.0	16.3	8.7	6.5	9.9	25.0	11.0	6.8	20.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.595	0.000	0.000	0.000	
		PLOT SIZE (m ²)	14.40	14.40	12.00	14.40	-	14.40	12.00	12.00	12.00	8.00	-	12.00	18.00	-	

Table I.136: POPULATION TRIAL KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A

S.No.	TEST CODE	ENTRY	MDR*	BKR	JPR	ALW2	RAJ MEAN	JMR	HSR	GLR	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	65	51	50	52	51	46	47	44	56	48	49	11
2	PT 602 A	MP 612	66	51	51	51	51	47	53	47	54	50	51	7
3	PT 603 A	MP 613	65	52	55	51	53	46	53	47	57	52	52	5
4	PT 604 A	ICMV 221 (Check)	59	47	44	40	43	36	44	38	50	46	43	18
5	PT 605 A	MP 618	64	54	54	53	54	48	54	47	58	51	53	4
6	PT 606 A	MP 619	64	50	46	51	49	46	54	48	51	52	50	10
7	PT 607 A	MP 620	66	52	48	52	51	46	53	47	50	51	50	8
8	PT 608 A	Pusa Comp. 701 (Check)	61	51	43	50	48	46	54	45	53	50	49	12
9	PT 609 A	MP 621	61	54	57	51	54	57	52	47	66	64	56	1
10	PT 610 A	MP 622	64	51	49	52	51	46	54	46	51	51	50	9
11	PT 611 A	MP 623	60	53	48	50	50	45	52	45	51	49	49	12
12	PT 612 A	Dhanshakti (Check)	57	47	36	41	41	38	47	39	49	48	43	18
13	PT 613 A	MP 624	61	51	42	48	47	46	47	43	56	47	48	15
14	PT 614 A	Pusa Comp. 383 (Check)	61	51	44	51	49	47	53	44	49	50	49	13
15	PT 615 A	MP 625	62	51	44	47	47	46	52	43	46	48	47	16
16	PT 616 A	MP 626	65	53	58	54	55	54	56	44	56	56	54	2
17	PT 617 A	JBV 2 (Check)	55	50	44	48	47	43	52	44	46	47	47	17
18	PT 618 A	MP 627	57	48	47	50	48	44	53	45	49	49	48	14
19	PT 619 A	MP 628	67	52	58	55	55	50	53	48	51	54	53	3
20	PT 620 A	MP 629	63	52	50	51	51	50	54	45	49	54	51	6
21	PT 621 A	Raj 171 (Check)	59	47	48	46	47	43	50	42	59	48	48	14
		LOC. MEAN	62	51	48	50	50	46	52	45	53	51	49	
		C.D. (5%)	4.0	2.0	1.0	2.0	4.0	2.0	4.0	1.0	2.0	2.0	3.0	
		C.D. (1%)	5.0	2.0	1.0	3.0	6.0	3.0	5.0	1.0	2.0	2.0	4.0	
		C.V. (%)	3.9	2.0	1.1	2.9	5.5	2.6	4.3	1.5	2.1	2.2	4.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

*LOCATION REJECTED DUE TO DELAYED FLOWERING IN CHECKS

Table I.137: POPULATION TRIAL KHARIF - 2022 DAYS TO MATURITY ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	93	82	78	81	84	79	66	82	88	73	81	101	79	82	9
2	PT 602 A	MP 612	92	84	81	80	84	79	67	81	88	75	82	101	78	82	7
3	PT 603 A	MP 613	91	84	87	74	84	79	67	82	90	77	84	101	82	83	4
4	PT 604 A	ICMV 221 (Check)	90	80	72	66	77	70	64	81	87	69	78	96	76	77	19
5	PT 605 A	MP 618	92	86	84	74	84	81	63	82	90	78	84	101	79	83	5
6	PT 606 A	MP 619	89	83	74	78	81	79	66	82	89	78	84	97	81	81	12
7	PT 607 A	MP 620	89	85	76	83	83	79	67	81	90	79	84	91	80	82	10
8	PT 608 A	Pusa Comp. 701 (Check)	88	83	72	84	81	79	68	81	88	78	83	96	80	82	11
9	PT 609 A	MP 621	93	86	90	82	88	93	73	74	88	84	86	116	94	89	1
10	PT 610 A	MP 622	87	83	78	86	84	80	67	82	88	77	83	100	78	82	6
11	PT 611 A	MP 623	87	85	77	80	82	79	67	81	89	70	79	97	77	81	13
12	PT 612 A	Dhanshakti (Check)	88	80	69	74	78	71	62	82	88	66	77	92	76	77	20
13	PT 613 A	MP 624	85	81	71	71	77	79	66	81	89	80	85	99	78	80	15
14	PT 614 A	Pusa Comp. 383 (Check)	87	84	72	85	82	81	68	82	88	74	81	97	79	82	11
15	PT 615 A	MP 625	84	82	72	81	80	79	62	81	89	70	80	89	77	79	17
16	PT 616 A	MP 626	92	85	87	84	87	87	71	82	89	77	83	100	85	85	2
17	PT 617 A	JBV 2 (Check)	87	82	73	81	81	77	68	81	88	76	82	94	76	80	14
18	PT 618 A	MP 627	83	80	79	70	78	77	67	81	89	69	79	90	79	79	18
19	PT 619 A	MP 628	94	84	88	84	87	85	71	81	90	80	85	96	81	85	3
20	PT 620 A	MP 629	90	84	78	84	84	84	68	78	89	72	81	93	83	82	8
21	PT 621 A	Raj 171 (Check)	85	79	77	75	79	77	64	82	89	68	79	101	78	80	16
		LOC. MEAN	89	83	78	79	82	80	67	81	89	75	82	98	80	82	
		C.D. (5%)	5.0	2.0	1.0	3.0	5.0	2.0	4.0	3.0	1.0	2.0	7.0	3.0	2.0	3.0	
		C.D. (1%)	6.0	3.0	1.0	3.0	7.0	2.0	6.0	3.0	2.0	3.0	9.0	3.0	2.0	4.0	
		C.V. (%)	3.2	1.8	0.8	2.0	4.5	1.2	4.0	1.9	1.0	2.0	3.9	1.6	1.2	4.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.341	0.000	0.000	0.000	

Table I.138: POPULATION TRIAL KHARIF - 2022 PLANT HEIGHT (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	189	162	209	278	209	218	185	243	206	224	215	207	185	210	10
2	PT 602 A	MP 612	189	186	212	277	216	218	188	250	214	233	224	187	232	217	5
3	PT 603 A	MP 613	149	155	227	257	197	218	177	218	189	222	205	198	203	201	16
4	PT 604 A	ICMV 221 (Check)	165	150	146	248	177	198	146	239	185	137	161	183	197	181	21
5	PT 605 A	MP 618	188	187	213	268	214	227	176	229	217	222	219	197	213	212	7
6	PT 606 A	MP 619	200	155	189	266	202	224	202	224	228	217	223	193	218	211	8
7	PT 607 A	MP 620	182	155	220	255	203	209	163	246	219	185	202	182	210	202	15
8	PT 608 A	Pusa Comp. 701 (Check)	232	170	228	307	234	237	182	265	219	257	238	207	228	230	3
9	PT 609 A	MP 621	246	173	317	341	269	322	218	315	263	323	293	295	247	278	1
10	PT 610 A	MP 622	236	170	280	296	246	237	160	252	215	246	231	208	243	231	2
11	PT 611 A	MP 623	197	157	205	244	201	204	145	216	181	227	204	207	193	198	18
12	PT 612 A	Dhanshakti (Check)	195	135	173	257	190	193	134	218	180	212	196	200	177	189	20
13	PT 613 A	MP 624	205	153	238	265	215	208	158	216	189	216	203	183	180	201	17
14	PT 614 A	Pusa Comp. 383 (Check)	197	199	236	292	231	238	202	228	219	275	247	210	230	230	4
15	PT 615 A	MP 625	216	145	178	265	201	213	167	241	221	221	221	181	218	206	11
16	PT 616 A	MP 626	206	135	223	277	210	213	183	237	208	245	227	197	222	213	6
17	PT 617 A	JBV 2 (Check)	214	165	205	273	214	222	168	243	216	226	221	198	182	210	9
18	PT 618 A	MP 627	213	150	204	246	203	203	169	208	206	253	229	198	197	204	14
19	PT 619 A	MP 628	191	158	159	247	189	203	179	231	205	211	208	188	197	197	19
20	PT 620 A	MP 629	178	160	212	253	201	205	165	265	216	226	221	182	195	205	12
21	PT 621 A	Raj 171 (Check)	194	151	192	279	204	217	167	257	192	226	209	181	197	205	13
		LOC. MEAN	199	160	213	271	211	220	173	240	209	229	219	199	208	211	
		C.D. (5%)	27.0	13.0	7.0	29.0	27.0	27.0	28.0	43.0	3.0	23.0	41.0	11.0	26.0	14.0	
		C.D. (1%)	36.0	18.0	10.0	39.0	36.0	36.0	38.0	57.0	4.0	31.0	56.0	15.0	34.0	18.0	
		C.V. (%)	8.1	5.0	2.1	6.6	9.0	7.4	9.9	10.8	0.8	6.1	9.0	3.4	7.5	7.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	

Table I.139: POPULATION TRIAL KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	1.9	1.1	2.0	3.0	2.0	2.0	2.5	2.4	2.1	2.7	2.4	4.8	2.7	2.5	1
2	PT 602 A	MP 612	1.8	1.1	1.2	3.7	2.0	3.1	1.9	2.9	1.7	2.0	1.9	2.6	2.7	2.2	10
3	PT 603 A	MP 613	1.5	1.1	1.1	2.7	1.6	2.1	2.0	2.8	2.0	2.3	2.2	3.1	2.7	2.1	14
4	PT 604 A	ICMV 221 (Check)	1.5	1.3	1.1	1.7	1.4	1.5	1.8	2.2	1.9	2.5	2.2	4.5	2.3	2.0	20
5	PT 605 A	MP 618	2.1	1.1	2.0	3.7	2.2	2.9	2.3	3.1	1.9	1.2	1.5	2.3	2.7	2.3	7
6	PT 606 A	MP 619	1.8	1.1	2.0	2.7	1.9	2.5	2.1	2.8	2.5	2.4	2.5	3.9	2.7	2.4	3
7	PT 607 A	MP 620	1.7	1.0	1.0	3.3	1.8	2.6	2.1	3.0	2.4	2.5	2.4	3.4	2.7	2.3	6
8	PT 608 A	Pusa Comp. 701 (Check)	1.9	1.3	2.1	2.0	1.8	2.1	2.1	3.0	1.8	1.7	1.8	2.9	2.7	2.1	13
9	PT 609 A	MP 621	1.5	1.1	1.0	3.0	1.7	2.1	2.1	3.0	1.3	2.3	1.8	3.2	2.3	2.1	17
10	PT 610 A	MP 622	1.9	1.1	1.1	3.0	1.8	2.3	1.7	2.6	2.1	3.0	2.5	2.0	2.7	2.1	15
11	PT 611 A	MP 623	1.9	1.1	1.2	3.0	1.8	2.2	1.7	2.3	1.5	2.4	2.0	2.3	2.7	2.0	19
12	PT 612 A	Dhanshakti (Check)	1.7	1.3	2.7	2.0	1.9	2.6	1.9	2.5	1.8	2.2	2.0	3.6	2.3	2.2	9
13	PT 613 A	MP 624	1.9	1.0	2.1	2.0	1.7	2.1	1.9	2.8	1.6	2.3	2.0	3.1	2.0	2.1	18
14	PT 614 A	Pusa Comp. 383 (Check)	2.1	1.2	2.0	2.0	1.8	2.0	2.2	2.6	1.8	2.6	2.2	2.8	2.7	2.2	11
15	PT 615 A	MP 625	1.7	1.1	2.6	2.0	1.8	2.9	2.5	2.7	1.6	2.7	2.2	4.0	2.3	2.4	4
16	PT 616 A	MP 626	1.8	1.1	2.0	2.0	1.7	2.9	2.1	3.2	2.1	2.9	2.5	2.5	2.3	2.3	8
17	PT 617 A	JBV 2 (Check)	2.1	1.3	1.8	3.0	2.1	2.5	2.3	2.9	1.8	1.5	1.7	4.8	2.7	2.4	2
18	PT 618 A	MP 627	2.2	1.2	2.7	2.0	2.0	2.7	2.1	2.5	1.8	2.3	2.1	3.8	2.7	2.4	5
19	PT 619 A	MP 628	1.9	1.1	1.2	2.0	1.5	3.0	2.3	2.9	2.1	2.2	2.2	2.1	3.0	2.2	11
20	PT 620 A	MP 629	1.7	1.1	1.1	2.3	1.6	2.3	2.3	2.9	2.0	2.2	2.1	2.3	2.7	2.1	16
21	PT 621 A	Raj 171 (Check)	2.4	1.3	1.1	3.0	2.0	2.3	1.9	2.7	1.6	2.5	2.1	2.3	2.7	2.2	12
		LOC. MEAN	1.9	1.1	1.7	2.6	1.8	2.4	2.1	2.8	1.9	2.3	2.1	3.2	2.6	2.2	
		C.D. (5%)	0.2	0.2	0.4	0.5	0.7	0.4	0.5	0.8	0.2	0.3	0.7	0.9	0.9	0.4	
		C.D. (1%)	0.2	0.2	0.6	0.7	0.9	0.5	0.6	1.1	0.3	0.4	1.0	1.1	1.2	0.5	
		C.V. (%)	5.8	9.1	15.5	12.9	25.8	9.8	13.8	18.2	7.1	7.3	16.0	16.3	21.3	20.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.837	0.000	0.000	0.000	0.000	0.000	0.240	0.000	0.000	0.421	

Table I.140: POPULATION TRIAL KHARIF - 2022 PANICLE LENGTH (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	29	23	24	28	26	30	28	32	26	23	25	28	24	27	10
2	PT 602 A	MP 612	27	26	28	29	27	30	25	37	26	26	26	24	29	28	5
3	PT 603 A	MP 613	25	22	25	28	25	25	26	30	26	26	26	24	24	25	19
4	PT 604 A	ICMV 221 (Check)	20	21	18	25	21	23	21	28	18	13	15	21	25	21	21
5	PT 605 A	MP 618	24	24	28	29	26	27	24	38	29	25	27	25	23	27	9
6	PT 606 A	MP 619	25	23	28	29	26	25	26	34	30	22	26	25	25	27	11
7	PT 607 A	MP 620	23	23	23	27	24	24	25	31	28	25	27	26	28	26	16
8	PT 608 A	Pusa Comp. 701 (Check)	27	26	31	34	30	29	28	32	29	33	31	25	26	29	3
9	PT 609 A	MP 621	45	23	45	57	42	48	38	35	33	46	40	35	42	41	1
10	PT 610 A	MP 622	30	25	30	32	29	31	29	37	27	32	30	31	29	30	2
11	PT 611 A	MP 623	24	23	23	26	24	25	24	34	26	23	25	31	24	26	15
12	PT 612 A	Dhanshakti (Check)	21	21	19	29	23	26	23	28	20	22	21	28	25	24	20
13	PT 613 A	MP 624	27	23	34	33	29	27	25	28	26	26	26	28	21	27	7
14	PT 614 A	Pusa Comp. 383 (Check)	29	26	36	31	30	28	29	32	26	31	29	21	29	29	4
15	PT 615 A	MP 625	23	21	26	29	25	26	25	29	26	27	27	27	23	26	17
16	PT 616 A	MP 626	23	22	26	28	25	26	24	30	27	25	26	27	25	26	18
17	PT 617 A	JBV 2 (Check)	25	23	25	29	26	27	26	39	24	27	26	29	26	27	6
18	PT 618 A	MP 627	24	21	25	27	25	25	26	32	26	26	26	29	24	26	13
19	PT 619 A	MP 628	25	23	26	32	26	26	25	31	24	23	24	26	22	26	14
20	PT 620 A	MP 629	26	22	31	24	26	26	26	32	24	24	24	28	25	26	12
21	PT 621 A	Raj 171 (Check)	26	22	25	34	27	27	22	33	23	33	28	27	27	27	8
		LOC. MEAN	26	23	27	31	27	28	26	33	26	27	26	27	26	27	
		C.D. (5%)	2.0	1.0	2.0	2.0	5.0	2.0	5.0	6.0	2.0	3.0	7.0	5.0	3.0	3.0	
		C.D. (1%)	3.0	2.0	3.0	3.0	6.0	3.0	7.0	8.0	2.0	4.0	10.0	6.0	4.0	3.0	
		C.V. (%)	5.2	3.9	4.2	4.5	12.6	5.3	12.1	11.0	3.8	7.0	13.3	10.7	6.5	11.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	

Table I.141: POPULATION TRIAL KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	2.4	2.3	2.6	2.5	2.7	2.3	3.1	2.8	2.4	2.6	3.4	3.1	2.7	15
2	PT 602 A	MP 612	2.6	2.3	2.4	2.4	2.7	2.5	3.3	2.5	2.3	2.4	3.0	2.6	2.6	16
3	PT 603 A	MP 613	2.4	2.3	3.4	2.7	2.8	2.5	3.3	2.5	2.9	2.7	3.3	3.0	2.8	11
4	PT 604 A	ICMV 221 (Check)	3.0	2.6	3.2	2.9	2.9	2.1	3.5	2.0	1.8	1.9	3.3	3.3	2.8	12
5	PT 605 A	MP 618	3.1	2.6	3.4	3.0	3.3	2.6	3.6	2.6	2.9	2.7	3.5	3.1	3.1	4
6	PT 606 A	MP 619	3.1	2.6	3.3	3.0	3.3	2.8	3.7	2.5	2.8	2.7	3.4	3.1	3.1	5
7	PT 607 A	MP 620	2.7	2.7	3.5	3.0	2.9	2.6	3.5	2.4	2.5	2.5	3.5	2.9	2.9	8
8	PT 608 A	Pusa Comp. 701 (Check)	2.4	2.3	3.1	2.6	2.3	2.2	3.0	1.9	2.7	2.3	2.8	2.2	2.5	19
9	PT 609 A	MP 621	1.9	2.4	1.9	2.1	2.2	2.3	2.5	1.7	2.4	2.1	2.7	2.0	2.2	21
10	PT 610 A	MP 622	2.5	2.2	2.9	2.6	2.3	2.2	3.5	1.5	3.2	2.4	3.0	2.5	2.6	17
11	PT 611 A	MP 623	2.7	2.2	3.4	2.8	2.9	2.4	3.5	2.2	3.2	2.7	3.6	3.1	2.9	7
12	PT 612 A	Dhanshakti (Check)	3.0	2.4	2.7	2.7	2.8	2.5	3.2	1.7	3.3	2.5	3.0	3.1	2.8	13
13	PT 613 A	MP 624	3.1	2.4	3.7	3.1	3.0	2.8	4.0	2.5	3.4	2.9	3.4	2.7	3.1	3
14	PT 614 A	Pusa Comp. 383 (Check)	2.4	2.3	2.7	2.5	2.6	2.3	3.0	1.8	3.1	2.5	2.7	2.3	2.5	18
15	PT 615 A	MP 625	3.0	2.3	3.4	2.9	2.9	2.8	3.4	2.4	3.5	3.0	3.7	3.3	3.1	6
16	PT 616 A	MP 626	2.8	2.5	3.1	2.8	3.0	2.6	3.3	1.8	3.4	2.6	3.7	2.6	2.9	10
17	PT 617 A	JBV 2 (Check)	2.4	2.3	2.8	2.5	2.6	2.3	3.1	2.3	3.3	2.8	3.1	3.1	2.7	14
18	PT 618 A	MP 627	2.9	2.1	2.8	2.6	3.1	2.5	3.3	2.3	3.3	2.8	3.6	3.0	2.9	9
19	PT 619 A	MP 628	3.1	2.4	3.0	2.8	3.6	2.7	3.4	2.2	3.6	2.9	3.8	3.2	3.1	1
20	PT 620 A	MP 629	3.2	2.7	3.4	3.1	3.0	2.7	3.3	2.4	3.3	2.9	3.7	3.4	3.1	2
21	PT 621 A	Raj 171 (Check)	2.1	1.9	2.8	2.3	2.2	2.1	3.5	1.5	2.8	2.2	2.9	2.2	2.4	20
		LOC. MEAN	2.7	2.4	3.0	2.7	2.8	2.5	3.3	2.2	3.0	2.6	3.3	2.8	2.8	
		C.D. (5%)	0.2	0.2	0.2	0.4	0.3	0.4	0.6	0.2	0.4	0.6	0.5	0.3	0.2	
		C.D. (1%)	0.3	0.3	0.2	0.5	0.4	0.6	0.9	0.3	0.5	0.8	0.7	0.4	0.3	
		C.V. (%)	4.8	5.4	3.1	9.1	6.3	10.7	11.7	6.7	7.2	10.1	9.3	7.2	9.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.075	0.000	0.000	0.000	

Table I.142: POPULATION TRIAL KHARIF - 2022 1000-SEED Wt.(g) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	7.7	8.8	7.6	8.0	8.9	10.4	9.4	9.7	11.3	10.5	9.7	8.0	9.1	14
2	PT 602 A	MP 612	7.2	8.3	7.4	7.6	8.9	9.6	9.1	7.9	9.8	8.8	8.2	9.5	8.6	21
3	PT 603 A	MP 613	7.1	7.4	7.8	7.4	9.1	8.8	9.4	11.1	11.7	11.4	9.0	8.6	9.0	16
4	PT 604 A	ICMV 221 (Check)	8.3	10.5	9.9	9.6	12.1	10.9	10.1	12.2	10.7	11.5	11.7	11.1	10.8	2
5	PT 605 A	MP 618	8.3	10.8	10.1	9.7	11.5	10.6	10.6	9.8	13.6	11.7	8.1	9.6	10.3	4
6	PT 606 A	MP 619	8.6	9.2	8.8	8.9	10.5	10.9	11.9	7.9	10.1	9.0	9.2	8.2	9.5	10
7	PT 607 A	MP 620	7.5	7.9	9.7	8.4	8.7	10.9	9.9	10.1	10.5	10.3	7.9	8.6	9.2	13
8	PT 608 A	Pusa Comp. 701 (Check)	7.5	9.9	8.0	8.5	8.3	9.9	9.0	9.5	8.5	9.0	9.2	8.4	8.8	18
9	PT 609 A	MP 621	7.0	9.6	7.6	8.1	7.6	9.7	9.2	9.9	9.3	9.6	7.9	8.6	8.7	19
10	PT 610 A	MP 622	7.8	10.7	7.7	8.7	9.0	10.5	8.9	10.1	9.7	9.9	8.0	9.9	9.2	12
11	PT 611 A	MP 623	7.8	6.9	8.6	7.7	10.7	10.0	10.3	9.8	11.5	10.7	9.5	10.5	9.6	9
12	PT 612 A	Dhanshakti (Check)	8.3	9.9	9.5	9.2	11.9	10.8	11.3	11.0	13.0	12.0	12.5	12.2	11.0	1
13	PT 613 A	MP 624	8.1	11.3	8.9	9.4	9.9	10.1	11.8	10.9	11.0	11.0	8.8	8.6	9.9	6
14	PT 614 A	Pusa Comp. 383 (Check)	7.7	8.1	8.4	8.1	9.2	9.5	8.3	9.1	10.4	9.7	9.4	9.0	8.9	17
15	PT 615 A	MP 625	8.0	6.1	9.9	8.0	10.3	10.3	11.6	10.0	12.7	11.4	11.5	9.2	10.0	5
16	PT 616 A	MP 626	7.7	8.0	8.5	8.1	9.9	9.3	9.5	11.1	11.4	11.3	12.3	8.7	9.6	8
17	PT 617 A	JBV 2 (Check)	7.7	4.6	6.6	6.3	9.6	10.3	9.2	9.0	11.1	10.1	8.9	9.0	8.6	20
18	PT 618 A	MP 627	7.9	9.8	9.7	9.2	10.4	10.2	10.5	8.3	12.9	10.6	8.9	9.7	9.8	7
19	PT 619 A	MP 628	8.4	7.9	9.4	8.6	11.0	10.7	10.3	11.0	14.1	12.5	10.8	10.3	10.4	3
20	PT 620 A	MP 629	8.3	6.2	8.8	7.8	10.2	10.1	10.4	8.9	11.5	10.2	10.5	9.7	9.5	11
21	PT 621 A	Raj 171 (Check)	7.4	7.9	8.4	7.9	8.8	10.7	8.1	11.1	10.4	10.7	9.4	8.4	9.1	15
		LOC. MEAN	7.8	8.6	8.6	8.3	9.8	10.2	9.9	9.9	11.2	10.6	9.6	9.3	9.5	
		C.D. (5%)	0.5	2.0	0.5	1.7	0.8	1.8	1.5	0.3	3.1	2.4	0.4	0.6	0.9	
		C.D. (1%)	0.6	2.7	0.6	2.3	1.1	2.4	2.1	0.4	4.2	3.2	0.6	0.8	1.2	
		C.V. (%)	3.5	14.5	3.2	12.6	5.2	10.6	9.4	1.8	17.0	11.4	2.7	4.0	10.6	
		F (Prob)	0.000	0.000	0.000	0.052	0.000	0.000	0.000	0.000	0.000	0.525	0.000	0.000	0.000	

Table I.143: POPULATION TRIAL KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	ALW2	RAJ MEAN	JMR	JNS	HSR	GLR	MRN	MP MEAN	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	88	120	179	156	136	157	173	82	182	124	153	163	156	144	19
2	PT 602 A	MP 612	62	117	176	152	127	172	174	68	194	123	159	164	165	142	20
3	PT 603 A	MP 613	76	115	181	154	131	175	175	75	181	130	155	163	158	144	18
4	PT 604 A	ICMV 221 (Check)	67	118	201	151	134	178	153	84	187	121	154	162	161	144	16
5	PT 605 A	MP 618	104	112	185	68	117	124	184	54	183	111	147	163	158	132	21
6	PT 606 A	MP 619	107	109	191	142	137	151	185	66	187	127	157	163	156	144	17
7	PT 607 A	MP 620	116	116	180	152	141	173	175	96	184	133	158	162	157	149	6
8	PT 608 A	Pusa Comp. 701 (Check)	138	120	190	157	151	169	160	75	184	133	159	163	155	149	5
9	PT 609 A	MP 621	147	119	196	136	150	168	148	67	182	129	155	163	151	146	12
10	PT 610 A	MP 622	107	114	185	149	139	162	171	81	180	135	157	162	155	146	13
11	PT 611 A	MP 623	132	116	182	151	146	174	160	87	184	135	160	163	156	149	8
12	PT 612 A	Dhanshakti (Check)	117	121	195	151	146	168	161	68	190	140	165	163	160	149	9
13	PT 613 A	MP 624	115	119	192	146	143	172	152	69	174	130	152	164	158	145	15
14	PT 614 A	Pusa Comp. 383 (Check)	153	122	185	155	154	176	196	76	172	133	153	163	165	154	2
15	PT 615 A	MP 625	103	118	180	151	138	147	173	83	182	135	159	163	159	145	14
16	PT 616 A	MP 626	179	117	197	156	162	176	187	79	182	137	160	162	158	157	1
17	PT 617 A	JBV 2 (Check)	160	117	192	155	156	167	187	66	171	134	153	162	166	152	3
18	PT 618 A	MP 627	160	122	181	159	156	164	150	64	176	136	156	163	167	149	7
19	PT 619 A	MP 628	88	118	190	150	137	177	188	70	170	139	155	163	156	146	11
20	PT 620 A	MP 629	125	126	195	154	150	174	176	76	184	137	160	164	162	152	4
21	PT 621 A	Raj 171 (Check)	127	122	180	158	147	172	169	63	184	132	158	162	157	148	10
		LOC. MEAN	118	118	187	148	143	166	171	74	182	131	156	163	159	147	
		C.D. (5%)	20.0	11.0	14.0	10.0	25.0	30.0	31.0	18.0	5.0	8.0	15.0	3.0	8.0	11.0	
		C.D. (1%)	27.0	15.0	19.0	14.0	34.0	40.0	41.0	24.0	6.0	11.0	21.0	3.0	11.0	14.0	
		C.V. (%)	10.4	5.8	4.6	4.1	12.6	10.8	10.9	15.0	1.5	3.8	4.7	1.0	3.0	8.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.152	0.000	0.000	0.000	0.000	0.000	0.916	0.000	0.000	0.022	

Table I.144: POPULATION TRIAL KHARIF - 2022 GRAIN QUALITY: IRON CONTENT (ppm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JMR	HSR	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	48	43	46	44	58	48	70	51	6
2	PT 602 A	MP 612	43	38	41	43	64	45	64	48	8
3	PT 603 A	MP 613	51	48	45	53	53	48	64	52	5
4	PT 604 A	ICMV 221 (Check)	57	52	63	70	87	68	102	71	2
5	PT 607 A	MP 620	46	43	44	52	55	43	58	49	7
6	PT 608 A	Pusa Comp. 701 (Check)	44	35	45	50	78	37	67	51	6
7	PT 610 A	MP 622	44	42	41	43	55	44	57	47	9
8	PT 612 A	Dhanshakti (Check)	73	72	58	79	72	76	116	78	1
9	PT 614 A	Pusa Comp. 383 (Check)	50	40	41	56	50	46	54	48	8
10	PT 617 A	JBV 2 (Check)	51	46	43	51	57	48	83	54	3
11	PT 621 A	Raj 171 (Check)	42	43	47	50	65	50	71	53	4

Table I.145: POPULATION TRIAL KHARIF - 2022 GRAIN QUALITY: ZINC CONTENT (ppm) ZONE A

S.No.	TEST CODE	ENTRY	MDR	BKR	JPR	JMR	HSR	LDA	NDL	ZONE MEAN	RANK
1	PT 601 A	MP 610	34	28	31	37	50	48	58	41	5
2	PT 602 A	MP 612	38	26	28	33	50	44	53	39	7
3	PT 603 A	MP 613	38	28	32	35	45	47	55	40	6
4	PT 604 A	ICMV 221 (Check)	38	34	38	44	64	69	85	53	2
5	PT 607 A	MP 620	30	31	27	35	48	51	48	39	7
6	PT 608 A	Pusa Comp. 701 (Check)	39	28	29	35	59	41	60	41	5
7	PT 610 A	MP 622	37	27	22	33	53	48	53	39	7
8	PT 612 A	Dhanshakti (Check)	45	40	35	44	65	72	83	55	1
9	PT 614 A	Pusa Comp. 383 (Check)	37	27	26	37	45	48	50	39	7
10	PT 617 A	JBV 2 (Check)	39	31	24	34	51	50	71	43	4
11	PT 621 A	Raj 171 (Check)	41	31	30	39	54	57	69	46	3

Table I.146: POPULATION TRIAL KHARIF 2021 ZONE A
GRAIN QUALITY(Protein and Fat)

S.No.	TEST CODE	ENTRY	Protein (%)	Fat (%)
			HSR	HSR
1	PT 601 A	MP 610	10.9	5.9
2	PT 602 A	MP 612	12.6	5.9
3	PT 603 A	MP 613	11.8	5.3
4	PT 604 A	ICMV 221 (Check)	11.3	5.5
5	PT 605 A	MP 618	11.0	5.1
6	PT 606 A	MP 619	10.8	5.7
7	PT 607 A	MP 620	9.9	5.4
8	PT 608 A	Pusa Comp. 701 (Check)	9.8	5.8
9	PT 609 A	MP 621	11.1	5.4
10	PT 610 A	MP 622	10.4	5.7
11	PT 611 A	MP 623	10.7	5.1
12	PT 612 A	Dhanshakti (Check)	12.0	4.8
13	PT 613 A	MP 624	11.1	5.3
14	PT 614 A	Pusa Comp. 383 (Check)	12.4	5.3
15	PT 615 A	MP 625	10.9	5.4
16	PT 616 A	MP 626	10.7	5.9
17	PT 617 A	JBV 2 (Check)	11.3	5.6
18	PT 618 A	MP 627	11.2	5.4
19	PT 619 A	MP 628	11.2	6.4
20	PT 620 A	MP 629	11.3	5.1
21	PT 621 A	Raj 171 (Check)	11.3	5.5

CHAPTER I: BREEDING

Table I.147: POPULATION TRIAL KHARIF 2022 EXPERIMENTAL DETAILS ZONE B

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizer			Insecticide
							N	P	K	
MAHARASHTRA										
Aurangabad (NARP) (VNMKV)	MB	7.5	12.7.22	30.10.22	1.8.22	Nil	60	30	30	Nil
Niphad (MPKV)	MB	8.8	22.7.22	As Per Maturity	-	Nil	60	30	30	Curacron
Dhule (MPKV)	MB	8.6	4.7.22	17.10.22	31.7.22	Nil	60	30	0	Nil
KARNATAKA										Nil
Vijayapur (UAS, Dharwad)	SB	8.7	9.7.22	30.10.22	17.8.22	-	50	25	0	Nil
Malnoor (UAS, Raichur)	MB	7.7	14.7.22	22.10.22	26.8.22	Nil	50	50	0	Nil
ANDHRA PRADESH										
Ananthapuram (ANGRAU)	RSL	6.5	7.7.22	18.11.22	4.8.22	Nil	60	30	20	Nil
Perumallapalle (ANGRAU)	SCL	7.4	11.7.22	10.10.22	-	17.7.22	60	30	20	Neem Oil
Vizianagaram (ANGRAU)	RSL	6.8	5.8.22	12.10.22	27.8.22	Nil	60	40	30	Nil
TELANGANA										
Palem (PJ TSAU)	RS	-	17.7.22	As Per Maturity	-	Nil	-	-	-	Nil
TAMIL NADU										
Coimbatore (TNAU)	CL	7.8	7.7.22	17.10.22	-	7.7,28.7,19.8, 21.9.22	105	35	35	Nil
ODISHA										
Semiliguda (OUAT)	SL	-	3.8.22	As Per Maturity	-	Nil	60	30	30	Nil

MB = Medium Black; CL = Clay Loam; SB = Shallow Black; RSL = Red Sandy Loam, SCL=Sandy Clay Loam, RS= Red Sandy, SL= Sandy Loam

Table I.148: POPULATION TRIAL KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP***	VZN	AP MEAN	PLM	CBE***	SMG	ZONE MEAN	RANK
1	PT 601 B	MP 618	3708	1847	2222	2592	1418	1085	1252	4264	625	2592	3428	2360	3357	514	2223	5
2	PT 602 B	MP 619	3730	2131	2529	2797	2035	1818	1926	3964	1561	1832	2898	2610	2074	1000	2405	2
3	PT 603 B	ABV 04 (Check)	3183	2139	2537	2620	1890	2117	2003	3724	1284	1775	2749	2526	2953	2417	2479	1
4	PT 604 B	MP 620	2947	2592	3027	2855	1830	2272	2051	1832	1490	2165	1998	1751	1555	708	2125	7
5	PT 605 B	MP 621	3594	2119	2516	2743	1910	1406	1658	3964	805	2210	3087	2184	2589	1083	2332	3
6	PT 606 B	ICMV 221 (Check)	2994	1458	1802	2084	1807	1554	1681	2132	1240	3093	2613	2073	1594	636	1950	13
7	PT 607 B	MP 622	3612	2185	2587	2794	1522	2394	1958	3544	1971	1468	2506	1647	1828	1139	2233	4
8	PT 608 B	MP 623	2655	1199	1522	1792	1871	1985	1928	4114	841	2483	3299	1341	1475	1056	2025	11
9	PT 609 B	Pusa Comp. 612 (Check)	3446	2215	2620	2760	1589	2049	1819	2072	1175	1694	1883	1425	2119	1389	2055	10
10	PT 610 B	MP 624	3476	1446	1789	2237	1632	1296	1464	1742	1038	2012	1877	1272	2149	1056	1747	15
11	PT 611 B	MP 625	2898	1485	1831	2071	1798	1898	1848	1411	1565	2988	2200	1012	2253	889	1801	14
12	PT 612 B	Raj 171 (Check)	2801	1490	1836	2042	1506	1695	1601	1321	1039	2817	2069	767	2661	1278	1723	16
13	PT 613 B	MP 626	3049	2009	2397	2485	1854	1780	1817	1725	1218	2363	2044	813	2207	1778	1974	12
14	PT 614 B	MP 627	3608	2151	2550	2770	1881	1852	1867	2913	1953	1547	2230	415	2788	1639	2062	9
15	PT 615 B	Dhanshakti (Check)	2867	1294	1625	1929	1501	1384	1443	1772	770	1619	1695	739	1838	750	1506	17
16	PT 616 B	MP 628	3658	2239	2646	2848	1591	1885	1738	1532	1099	2420	1976	1573	3124	1222	2085	8
17	PT 617 B	MP 629	3293	2510	2939	2914	1530	1810	1670	2432	1389	1703	2068	2049	2515	1444	2190	6
		LOC. MEAN	3266	1912	2293	2490	1716	1781	1748	2615	1239	2164	2389	1562	2299	1176	2054	
		C.D. (5%)	411	524	567	387	332	481	527	1076	309	370	1958	0	347	345	489	
		C.D. (1%)	553	705	762	520	446	646	726	1446	416	497	2698	0	467	463	646	
		C.V. (%)	7.6	16.5	14.9	9.3	11.6	16.2	14.2	24.7	15.0	10.3	38.7	0.0	9.1	17.6	25.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.199	0.000	0.000	0.000	0.787	0.000	0.000	0.000	0.010	
		PLOT SIZE (m ²)	12.00	12.00	11.10	-	12.00	12.00	-	11.10	12.00	11.10	-	10.80	12.00	12.00	-	

***TEST LOCATION REJECTED DUE TO LOW AVERAGE YIELD (1239 & 2299 kg/ha), THAN THE STATE AVERAGE YIELD (1772 & 2388 kg/ha) TAKEN OVER 10 YEARS

Table I.149: POPULATION TRIAL KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	PT 601 B	MP 618	8042	3509	6847	6133	4639	2307	3473	8619	7791	3318	6576	4395	7222	896	5235	13
2	PT 602 B	MP 619	7361	4049	9249	6886	5722	4461	5092	8679	7937	2625	6413	5501	5961	1611	5741	4
3	PT 603 B	ABV 04 (Check)	8306	3636	8348	6763	5472	3556	4514	8468	7383	2937	6263	5458	6964	3625	5832	3
4	PT 604 B	MP 620	8361	4406	9069	7279	4139	3833	3986	9189	4559	3979	5909	4498	5961	1063	5369	8
5	PT 605 B	MP 621	8847	4026	15556	9476	5167	5000	5083	8619	11739	3162	7840	5270	12467	1625	7407	1
6	PT 606 B	ICMV 221 (Check)	6181	2479	5826	4828	4083	2222	3153	9069	4789	4952	6270	5980	3653	954	4562	17
7	PT 607 B	MP 622	8069	4151	8889	7036	5361	4722	5042	8589	4441	2883	5304	4313	4874	1708	5273	11
8	PT 608 B	MP 623	8333	2279	7387	6000	4306	4000	4153	8288	10183	3952	7475	3341	3949	1583	5236	12
9	PT 609 B	Pusa Comp. 612 (Check)	8125	4209	9489	7274	4556	4222	4389	8438	5244	2847	5510	2600	7149	2083	5360	10
10	PT 610 B	MP 624	6972	2459	5616	5016	4972	2278	3625	9039	7978	2856	6624	2813	4159	1583	4611	16
11	PT 611 B	MP 625	7972	2525	8108	6202	4278	3444	3861	9039	9596	4084	7573	2535	6058	1333	5361	9
12	PT 612 B	Raj 171 (Check)	8375	2831	7538	6248	5222	3222	4222	8438	10289	4294	7674	3480	6586	1917	5654	5
13	PT 613 B	MP 626	7806	3415	10631	7284	5194	3667	4431	8243	7279	3775	6432	4387	4224	2667	5571	6
14	PT 614 B	MP 627	7611	3656	8438	6569	5111	2944	4028	8619	8409	3084	6704	1674	5061	2458	5188	14
15	PT 615 B	Dhanshakti (Check)	8417	2201	7688	6102	4639	2833	3736	8438	5426	3429	5764	2443	5224	1292	4730	15
16	PT 616 B	MP 628	8750	4254	8769	7258	4917	3167	4042	9039	10040	4237	7772	3989	6011	1833	5910	2
17	PT 617 B	MP 629	6667	4769	9489	6975	4556	3167	3861	8438	9023	2523	6661	3109	6111	2167	5456	7
		LOC. MEAN	7894	3462	8643	6666	4843	3473	4158	8662	7771	3467	6633	3870	5978	1788	5441	
		C.D. (5%)	1221	956	1681	2001	851	1051	1199	1443	3054	698	2274	662	841	512	1007	
		C.D. (1%)	1642	1285	2260	2691	1145	1413	1652	1940	4105	938	3058	891	1130	688	1329	
		C.V. (%)	9.3	16.6	11.7	18.1	10.6	18.2	13.6	10.0	23.6	12.1	20.6	10.3	8.5	17.2	22.0	
		F (Prob)	0.000	0.000	0.000	0.026	0.000	0.000	0.099	0.000	0.000	0.000	0.469	0.000	0.000	0.000	0.000	
		PLOT SIZE (m ²)	12.00	12.00	11.10	-	12.00	12.00	-	11.10	12.00	11.10	-	10.80	12.00	12.00	-	

Table I.150: POPULATION TRIAL KHARIF - 2022 DAYS TO 50% FLOWERING ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	51	53	53	52	52	49	51	52	47	49	52	43	50	5
2	PT 602 B	MP 619	50	51	50	50	53	50	51	50	46	48	49	44	49	10
3	PT 603 B	ABV 04 (Check)	52	53	54	53	50	51	50	52	47	49	49	46	50	4
4	PT 604 B	MP 620	51	55	51	52	52	50	51	51	47	49	48	46	50	6
5	PT 605 B	MP 621	62	46	55	54	52	54	53	52	45	49	55	49	52	1
6	PT 606 B	ICMV 221 (Check)	44	43	43	43	48	46	47	47	44	46	42	38	44	17
7	PT 607 B	MP 622	45	50	51	48	53	50	52	50	42	46	51	44	48	12
8	PT 608 B	MP 623	46	52	50	49	52	51	51	50	45	47	51	45	49	11
9	PT 609 B	Pusa Comp. 612 (Check)	49	54	52	52	54	51	53	49	44	47	47	47	50	8
10	PT 610 B	MP 624	45	53	49	49	52	46	49	51	45	48	48	46	48	13
11	PT 611 B	MP 625	45	51	47	48	48	47	48	48	42	45	47	42	46	14
12	PT 612 B	Raj 171 (Check)	47	53	48	49	47	47	47	48	41	44	46	41	46	15
13	PT 613 B	MP 626	54	54	55	55	53	51	52	52	43	48	47	49	51	2
14	PT 614 B	MP 627	51	55	49	52	52	52	52	48	43	46	50	46	50	7
15	PT 615 B	Dhanshakti (Check)	44	41	43	43	49	48	48	47	43	45	45	38	44	16
16	PT 616 B	MP 628	52	51	53	52	52	50	51	52	42	47	45	50	50	9
17	PT 617 B	MP 629	52	48	51	50	55	51	53	51	47	49	52	49	51	3
		LOC. MEAN	49	51	50	50	51	50	51	50	44	47	48	45	49	
		C.D. (5%)	2.0	1.0	2.0	5.0	1.0	2.0	3.0	4.0	6.0	4.0	6.0	2.0	2.0	
		C.D. (1%)	2.0	2.0	3.0	7.0	2.0	2.0	4.0	5.0	8.0	5.0	8.0	2.0	3.0	
		C.V. (%)	2.0	1.5	2.3	5.9	1.6	2.1	2.7	4.4	7.6	4.4	7.4	2.4	4.8	
		F (Prob)	0.000	0.000	0.000	0.001	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.151: POPULATION TRIAL KHARIF - 2022 DAYS TO MATURITY ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	87	94	90	90	92	83	88	86	80	83	97	81	88	4
2	PT 602 B	MP 619	87	88	87	87	93	84	89	84	76	80	94	82	86	10
3	PT 603 B	ABV 04 (Check)	91	90	91	91	89	84	87	86	77	82	94	82	87	5
4	PT 604 B	MP 620	87	92	88	89	91	83	87	85	77	81	93	82	86	9
5	PT 605 B	MP 621	102	92	98	97	91	89	90	86	82	84	100	91	92	1
6	PT 606 B	ICMV 221 (Check)	83	80	80	81	86	83	84	81	78	80	87	80	82	17
7	PT 607 B	MP 622	85	87	88	86	92	81	87	84	72	78	96	81	85	13
8	PT 608 B	MP 623	84	89	87	87	94	84	89	84	75	79	96	82	86	11
9	PT 609 B	Pusa Comp. 612 (Check)	87	91	89	89	96	84	90	83	76	80	92	86	87	6
10	PT 610 B	MP 624	82	90	86	86	94	80	87	85	75	80	93	85	85	12
11	PT 611 B	MP 625	84	88	84	85	89	81	85	82	73	78	92	81	84	14
12	PT 612 B	Raj 171 (Check)	85	90	85	87	87	81	84	82	70	76	92	81	84	15
13	PT 613 B	MP 626	91	91	92	92	95	84	90	86	75	81	92	87	88	2
14	PT 614 B	MP 627	88	92	86	89	95	85	90	82	75	78	95	84	87	7
15	PT 615 B	Dhanshakti (Check)	83	78	80	80	88	81	85	81	80	81	90	81	82	16
16	PT 616 B	MP 628	89	88	90	89	90	83	87	86	79	83	90	86	87	8
17	PT 617 B	MP 629	87	94	88	89	95	84	90	85	78	82	97	83	88	3
		LOC. MEAN	87	89	88	88	92	83	87	84	76	80	94	83	86	
		C.D. (5%)	1.0	1.0	2.0	4.0	1.0	2.0	5.0	4.0	2.0	4.0	6.0	2.0	3.0	
		C.D. (1%)	1.0	2.0	3.0	6.0	2.0	3.0	6.0	5.0	2.0	5.0	8.0	3.0	3.0	
		C.V. (%)	0.6	0.8	1.3	2.9	0.8	1.4	2.5	2.7	1.4	2.7	3.8	1.6	3.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.113	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.152: POPULATION TRIAL KHARIF - 2022 PLANT HEIGHT (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	PT 601 B	MP 618	212	143	270	208	130	161	146	150	226	171	182	189	214	151	183	6
2	PT 602 B	MP 619	212	156	226	198	140	181	161	152	217	212	193	183	215	166	187	5
3	PT 603 B	ABV 04 (Check)	194	132	209	178	143	166	154	154	232	219	202	177	207	151	180	8
4	PT 604 B	MP 620	186	136	227	183	148	164	156	140	201	221	187	169	188	150	175	12
5	PT 605 B	MP 621	276	179	311	255	174	278	226	241	314	308	287	199	283	292	259	1
6	PT 606 B	ICMV 221 (Check)	178	137	230	181	126	166	146	131	191	200	174	194	191	148	172	15
7	PT 607 B	MP 622	203	148	245	199	136	202	169	161	223	247	210	177	217	171	194	3
8	PT 608 B	MP 623	168	145	209	174	138	167	153	129	199	248	192	190	172	178	177	10
9	PT 609 B	Pusa Comp. 612 (Check)	209	160	241	204	139	192	165	136	228	248	204	187	221	190	196	2
10	PT 610 B	MP 624	184	138	211	178	138	145	142	152	197	198	182	180	197	140	171	16
11	PT 611 B	MP 625	158	136	223	172	128	159	144	124	217	215	185	184	200	162	173	14
12	PT 612 B	Raj 171 (Check)	213	144	221	192	143	172	157	128	227	206	187	172	207	180	183	7
13	PT 613 B	MP 626	187	134	231	184	137	161	149	134	213	205	184	173	193	163	176	11
14	PT 614 B	MP 627	205	137	234	192	138	167	153	139	203	217	186	164	209	169	180	9
15	PT 615 B	Dhanshakti (Check)	148	125	228	167	131	145	138	143	211	202	186	179	191	142	168	17
16	PT 616 B	MP 628	177	142	232	184	132	157	144	147	211	196	185	174	198	154	175	13
17	PT 617 B	MP 629	211	147	239	199	135	163	149	150	206	256	204	189	210	165	188	4
		LOC. MEAN	195	143	235	191	139	173	156	148	219	222	196	181	207	169	185	
		C.D. (5%)	3.0	12.0	41.0	22.0	9.0	19.0	34.0	21.0	27.0	24.0	26.0	32.0	10.0	37.0	12.0	
		C.D. (1%)	4.0	17.0	55.0	30.0	12.0	25.0	47.0	28.0	36.0	32.0	35.0	43.0	13.0	50.0	16.0	
		C.V. (%)	0.8	5.2	10.5	7.0	4.0	6.5	10.3	8.5	7.4	6.4	8.0	10.6	2.9	13.3	7.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.153: POPULATION TRIAL KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	PT 601 B	MP 618	2.0	1.9	2.1	2.0	2.9	3.6	3.3	2.4	1.3	2.3	2.0	3.0	2.8	3.1	2.5	9
2	PT 602 B	MP 619	2.3	2.3	2.4	2.4	3.0	3.1	3.0	2.4	1.2	2.7	2.1	2.6	3.0	3.0	2.6	5
3	PT 603 B	ABV 04 (Check)	2.7	2.1	2.0	2.3	2.9	3.0	3.0	2.9	1.3	2.3	2.2	2.4	2.7	3.3	2.5	8
4	PT 604 B	MP 620	3.0	2.8	2.6	2.8	2.7	3.2	3.0	2.7	1.2	2.7	2.2	2.9	2.8	4.2	2.8	1
5	PT 605 B	MP 621	2.7	2.4	1.9	2.3	2.9	3.1	3.0	3.0	1.0	1.8	1.9	2.6	2.5	2.5	2.4	14
6	PT 606 B	ICMV 221 (Check)	2.0	1.7	2.5	2.0	2.9	3.2	3.1	2.5	1.1	2.7	2.1	2.5	2.9	2.8	2.4	12
7	PT 607 B	MP 622	2.0	2.2	2.1	2.1	2.7	3.5	3.1	2.7	1.2	1.7	1.9	2.9	2.4	3.9	2.5	10
8	PT 608 B	MP 623	1.3	2.0	1.7	1.7	2.8	2.9	2.9	2.9	1.3	2.1	2.1	2.5	2.3	2.9	2.2	17
9	PT 609 B	Pusa Comp. 612 (Check)	1.7	2.3	2.3	2.1	2.7	3.7	3.2	2.5	1.3	2.3	2.0	2.9	2.6	3.8	2.6	4
10	PT 610 B	MP 624	1.0	1.4	2.6	1.7	2.6	3.2	2.9	2.7	1.5	1.9	2.0	2.7	2.7	2.5	2.3	16
11	PT 611 B	MP 625	1.7	2.6	2.2	2.2	2.6	2.8	2.7	2.5	1.3	2.2	2.0	2.6	2.8	3.4	2.4	13
12	PT 612 B	Raj 171 (Check)	3.0	2.1	2.3	2.5	2.7	3.5	3.1	2.9	1.7	2.9	2.5	2.7	2.7	3.9	2.8	2
13	PT 613 B	MP 626	2.0	2.2	2.0	2.1	3.1	3.8	3.4	2.7	1.0	2.7	2.1	2.7	2.7	3.2	2.5	6
14	PT 614 B	MP 627	2.7	2.1	2.2	2.3	2.8	3.9	3.3	2.5	1.3	2.4	2.1	2.8	2.9	3.5	2.6	3
15	PT 615 B	Dhanshakti (Check)	2.7	2.5	2.8	2.7	2.8	3.7	3.3	2.6	1.1	1.5	1.8	2.5	2.8	2.9	2.5	7
16	PT 616 B	MP 628	1.3	2.5	2.6	2.1	2.9	3.7	3.3	2.7	1.1	1.9	1.9	2.5	2.6	2.4	2.4	15
17	PT 617 B	MP 629	2.3	2.6	1.4	2.1	3.0	3.4	3.2	2.5	1.1	2.2	1.9	2.4	2.5	3.7	2.5	11
		LOC. MEAN	2.1	2.2	2.2	2.2	2.8	3.4	3.1	2.7	1.2	2.3	2.0	2.7	2.7	3.2	2.5	
		C.D. (5%)	0.8	0.2	0.2	0.7	0.4	0.9	0.5	0.5	0.5	0.6	0.4	0.5	0.4	0.8	0.3	
		C.D. (1%)	1.1	0.2	0.2	0.9	0.6	1.2	0.7	0.6	0.7	0.8	0.6	0.7	0.6	1.1	0.4	
		C.V. (%)	22.8	4.8	4.5	19.1	8.9	16.3	7.9	10.6	24.1	15.5	12.8	11.9	9.9	14.8	13.1	
		F (Prob)	0.000	0.000	0.000	0.165	0.000	0.000	0.333	0.000	0.000	0.000	0.327	0.000	0.000	0.000	0.006	

Table I.154: POPULATION TRIAL KHARIF - 2022 PANICLE LENGTH (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	28	26	27	27	22	20	21	23	25	29	25	28	30	26	6
2	PT 602 B	MP 619	28	27	26	27	24	23	23	22	27	24	24	27	27	25	8
3	PT 603 B	ABV 04 (Check)	29	27	25	27	21	22	22	21	25	19	22	24	25	24	14
4	PT 604 B	MP 620	24	49	26	33	20	20	20	21	23	26	23	25	25	26	4
5	PT 605 B	MP 621	56	27	49	44	35	42	39	42	44	34	40	28	53	41	1
			24	25	25	25	20	18	19	21	22	28	24	27	24	23	15
6	PT 606 B	ICMV 221 (Check)															
7	PT 607 B	MP 622	27	27	30	28	24	27	26	24	27	27	26	25	28	27	3
8	PT 608 B	MP 623	25	25	27	26	24	21	23	23	22	34	27	25	23	25	10
9	PT 609 B	Pusa Comp. 612 (Check)	28	29	29	29	22	25	24	27	26	33	28	25	27	27	2
10	PT 610 B	MP 624	22	25	25	24	20	20	20	25	26	34	28	24	26	25	11
11	PT 611 B	MP 625	27	26	27	26	21	22	22	23	26	27	25	26	23	25	11
12	PT 612 B	Raj 171 (Check)	28	26	26	27	23	22	22	22	27	25	24	24	24	25	12
13	PT 613 B	MP 626	25	26	27	26	21	19	20	22	26	29	26	24	23	24	13
14	PT 614 B	MP 627	27	27	29	28	23	21	22	20	22	33	25	22	28	25	9
15	PT 615 B	Dhanshakti (Check)	24	25	25	25	20	16	18	23	23	28	24	22	22	23	16
16	PT 616 B	MP 628	27	29	26	27	21	22	22	25	26	27	26	26	29	26	5
17	PT 617 B	MP 629	26	31	27	28	21	23	22	24	24	23	24	27	27	25	7
		LOC. MEAN	28	28	28	28	23	22	23	24	26	28	26	25	27	26	
		C.D. (5%)	2.0	2.0	2.0	9.0	2.0	2.0	4.0	6.0	5.0	4.0	5.0	7.0	3.0	3.0	
		C.D. (1%)	2.0	3.0	3.0	12.0	3.0	3.0	6.0	8.0	6.0	5.0	7.0	9.0	5.0	4.0	
		C.V. (%)	3.3	4.7	4.5	19.0	5.3	5.6	8.4	14.9	10.4	8.6	12.2	16.2	7.5	14.1	
		F (Prob)	0.000	0.000	0.000	0.028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.155: POPULATION TRIAL KHARIF - 2022 PANICLE DIAMETER (cm) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	NPD	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	3.4	3.5	3.5	3.5	3.0	2.9	2.9	2.0	2.9	3.7	2.9	2.9	3.3	3.1	4
2	PT 602 B	MP 619	3.1	3.6	3.6	3.4	3.2	3.2	3.2	2.0	2.8	3.3	2.7	2.7	3.3	3.1	6
3	PT 603 B	ABV 04 (Check)	3.0	3.6	3.6	3.4	3.0	3.1	3.1	2.1	2.8	2.8	2.6	2.7	2.9	3.0	12
4	PT 604 B	MP 620	3.2	3.7	3.4	3.4	3.0	3.0	3.0	2.2	2.3	3.1	2.5	2.8	2.9	2.9	13
5	PT 605 B	MP 621	2.3	3.6	2.9	2.9	2.5	2.3	2.4	2.2	2.1	3.2	2.5	2.5	3.2	2.7	17
6	PT 606 B	ICMV 221 (Check)	3.2	3.4	3.4	3.3	3.2	3.0	3.1	2.3	2.6	4.1	3.0	2.5	2.9	3.1	7
7	PT 607 B	MP 622	3.2	3.6	3.2	3.3	2.9	3.0	2.9	2.1	2.6	2.9	2.5	2.9	2.9	2.9	14
8	PT 608 B	MP 623	3.2	3.2	3.7	3.4	3.1	3.0	3.1	2.2	2.5	3.5	2.7	2.7	2.9	3.0	10
9	PT 609 B	Pusa Comp. 612 (Check)	3.3	3.6	3.1	3.3	2.9	2.7	2.8	1.9	2.0	3.9	2.6	2.9	2.8	2.9	15
10	PT 610 B	MP 624	3.2	3.3	3.6	3.4	3.0	3.0	3.0	2.2	2.7	3.5	2.8	2.9	3.4	3.1	5
11	PT 611 B	MP 625	3.6	3.4	3.5	3.5	3.0	3.4	3.2	2.4	2.6	4.0	3.0	2.7	3.0	3.2	2
12	PT 612 B	Raj 171 (Check)	2.6	3.4	3.4	3.1	2.7	2.5	2.6	1.7	2.1	3.8	2.5	2.4	2.5	2.7	16
13	PT 613 B	MP 626	3.2	3.5	3.5	3.4	3.1	3.0	3.1	2.2	2.8	3.4	2.8	2.6	2.8	3.0	9
14	PT 614 B	MP 627	3.5	3.6	3.5	3.5	2.4	3.1	2.8	2.1	2.5	3.9	2.8	2.5	3.1	3.0	8
15	PT 615 B	Dhanshakti (Check)	3.4	3.1	3.6	3.4	2.8	2.6	2.7	2.3	2.6	4.0	3.0	2.5	3.0	3.0	11
16	PT 616 B	MP 628	3.2	3.6	3.6	3.5	2.6	3.4	3.0	2.4	2.9	4.0	3.1	2.8	3.3	3.2	1
17	PT 617 B	MP 629	3.3	3.6	3.6	3.5	2.8	3.3	3.1	2.3	2.8	3.8	2.9	2.8	3.0	3.1	3
		LOC. MEAN	3.2	3.5	3.5	3.4	2.9	3.0	2.9	2.2	2.6	3.6	2.8	2.7	3.0	3.0	
		C.D. (5%)	0.4	0.3	0.2	0.4	0.4	0.4	0.5	0.1	0.6	0.5	0.5	0.4	0.3	0.2	
		C.D. (1%)	0.5	0.4	0.2	0.5	0.5	0.6	0.6	0.1	0.9	0.7	0.6	0.6	0.4	0.3	
		C.V. (%)	7.3	4.7	3.2	6.8	7.5	8.8	7.3	2.5	15.0	9.2	10.3	9.3	5.9	7.7	
		F (Prob)	0.000	0.000	0.000	0.339	0.000	0.000	0.109	0.000	0.000	0.000	0.162	0.000	0.000	0.000	

Table I.156: POPULATION TRIAL KHARIF - 2022 1000-SEED Wt.(g) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	11.0	10.5	10.8	12.1	10.4	11.2	11.9	13.4	14.8	13.4	13.8	12.4	12.3	6
2	PT 602 B	MP 619	13.7	13.1	13.4	11.5	9.7	10.6	14.1	14.9	14.9	14.6	13.4	11.0	12.9	1
3	PT 603 B	ABV 04 (Check)	12.1	11.5	11.8	10.7	11.7	11.2	14.5	11.7	14.0	13.4	12.5	11.1	12.2	7
4	PT 604 B	MP 620	11.2	10.6	10.9	10.8	10.3	10.6	14.6	9.6	15.1	13.1	12.4	10.9	11.7	14
5	PT 605 B	MP 621	9.0	9.4	9.2	9.8	10.2	10.0	14.3	8.9	15.0	12.7	12.3	10.3	11.0	15
6	PT 606 B	ICMV 221 (Check)	10.9	12.0	11.5	10.6	10.9	10.7	13.5	10.5	17.1	13.7	10.6	10.6	11.8	12
7	PT 607 B	MP 622	10.4	9.9	10.1	9.3	11.3	10.3	12.2	7.2	16.0	11.8	7.7	8.9	10.3	17
8	PT 608 B	MP 623	12.3	11.1	11.7	10.7	10.2	10.5	12.8	10.0	17.7	13.5	13.5	12.8	12.3	4
9	PT 609 B	Pusa Comp. 612 (Check)	13.9	10.5	12.2	11.1	9.4	10.3	13.9	12.1	14.9	13.6	11.1	9.3	11.8	13
10	PT 610 B	MP 624	12.9	11.2	12.0	10.8	10.4	10.6	17.3	11.1	15.9	14.8	10.0	10.9	12.3	5
11	PT 611 B	MP 625	13.1	11.3	12.2	12.0	10.2	11.1	13.3	10.7	15.5	13.2	10.6	11.1	12.0	11
12	PT 612 B	Raj 171 (Check)	10.7	9.7	10.2	10.3	10.4	10.4	11.0	8.8	15.7	11.9	10.9	9.3	10.8	16
13	PT 613 B	MP 626	10.8	12.1	11.4	10.2	10.6	10.4	14.2	13.3	15.8	14.4	12.0	10.2	12.1	8
14	PT 614 B	MP 627	13.1	10.0	11.6	11.2	10.6	10.9	12.2	13.3	14.1	13.2	12.5	11.7	12.1	9
15	PT 615 B	Dhanshakti (Check)	12.8	11.5	12.1	11.6	10.4	11.0	12.8	12.9	14.1	13.3	12.9	14.4	12.6	3
16	PT 616 B	MP 628	14.7	10.5	12.6	11.1	10.5	10.8	13.9	14.4	15.0	14.4	12.9	12.1	12.8	2
17	PT 617 B	MP 629	10.8	10.7	10.7	10.7	10.9	10.8	17.3	9.4	14.7	13.8	12.6	10.8	12.0	10
		LOC. MEAN	12.0	10.9	11.4	10.9	10.5	10.7	13.7	11.3	15.3	13.5	11.9	11.0	11.9	
		C.D. (5%)	0.6	0.8	0.6	0.9	1.2	1.5	2.2	0.7	1.8	2.8	0.1	0.7	1.3	
		C.D. (1%)	0.9	1.1	0.9	1.3	1.6	2.0	3.0	0.9	2.5	3.7	0.1	0.9	1.7	
		C.V. (%)	3.2	4.6	3.2	5.2	6.8	6.3	9.8	3.7	7.2	14.0	0.5	3.8	10.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.084	0.000	0.000	0.000	0.614	0.000	0.000	0.011	

Table I.157: POPULATION TRIAL KHARIF - 2022 POPULATION AT HARVEST(No./plot) ZONE B

S.NO.	TEST CODE	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PMP	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	PT 601 B	MP 618	152	78	115	144	117	130	112	120	130	121	132	151	126	14
2	PT 602 B	MP 619	154	93	123	144	132	138	80	130	131	114	140	124	125	16
3	PT 603 B	ABV 04 (Check)	145	91	118	143	148	146	90	132	127	117	132	141	128	12
4	PT 604 B	MP 620	145	90	118	144	145	145	104	131	130	121	132	129	128	13
5	PT 605 B	MP 621	151	100	125	147	125	136	114	146	126	129	135	121	129	9
6	PT 606 B	ICMV 221 (Check)	152	94	123	145	133	139	98	115	129	114	132	116	124	17
7	PT 607 B	MP 622	152	85	119	145	147	146	106	123	131	120	132	130	128	11
8	PT 608 B	MP 623	151	80	116	143	163	153	110	149	128	129	140	126	132	4
9	PT 609 B	Pusa Comp. 612 (Check)	151	96	124	145	144	145	103	145	128	125	132	122	130	8
10	PT 610 B	MP 624	153	87	120	145	129	137	109	115	131	118	132	131	126	15
11	PT 611 B	MP 625	151	89	120	145	147	146	104	164	129	132	141	123	132	3
12	PT 612 B	Raj 171 (Check)	152	84	118	148	136	142	102	155	130	129	135	132	130	7
13	PT 613 B	MP 626	154	93	123	143	136	139	97	144	134	125	132	129	129	10
14	PT 614 B	MP 627	150	95	123	145	142	144	109	129	132	123	140	139	131	6
15	PT 615 B	Dhanshakti (Check)	155	86	121	143	154	149	130	138	134	134	132	135	134	2
16	PT 616 B	MP 628	151	102	127	144	132	138	111	134	129	124	132	152	132	5
17	PT 617 B	MP 629	150	118	134	147	121	134	125	174	129	143	141	131	137	1
		LOC. MEAN	151	92	121	145	138	141	106	138	130	125	135	131	130	
		C.D. (5%)	6.0	12.0	6.0	4.0	29.0	13.0	13.0	36.0	5.0	21.0	6.0	11.0	9.0	
		C.D. (1%)	8.0	16.0	8.0	5.0	39.0	18.0	17.0	48.0	7.0	29.0	7.0	14.0	12.0	
		C.V. (%)	2.5	8.0	2.5	1.6	12.6	5.3	7.3	15.5	2.3	10.1	2.5	4.9	6.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.331	0.000	0.000	0.000	0.200	0.000	0.000	0.094	

Table I.158: POPULATION TRIAL KHARIF - 2022 ZONE B
GRAIN QUALITY: IRON CONTENT (ppm)

S.NO.	TEST ENTRY	ABD1	DHL	PMP	CBE	ZONE MEAN	RANK
1	PT 601 B MP 618	55	54	43	43	49	6
2	PT 602 B MP 619	58	61	47	49	54	4
3	PT 603 B ABV 04 (Check)	80	63	45	45	58	3
4	PT 605 B MP 621	45	48	27	34	38	9
5	PT 606 B ICMV 221 (Check)	89	81	70	41	70	2
6	PT 607 B MP 622	60	54	35	33	45	8
7	PT 609 B Pusa Comp. 612 (Check)	64	48	43	43	50	5
8	PT 612 B Raj 171 (Check)	62	56	45	38	50	5
9	PT 615 B Dhanshakti (Check)	109	91	89	64	88	1
10	PT 617 B MP 629	56	49	37	42	46	7

Table I.159: POPULATION TRIAL KHARIF - 2022 ZONE B
GRAIN QUALITY:ZINC CONTENT (ppm)

S.NO.	TEST ENTRY	ABD1	DHL	PMP	CBE	ZONE MEAN	RANK
1	PT 601 B MP 618	36	35	23	31	31	5
2	PT 602 B MP 619	33	30	19	32	28	8
3	PT 603 B ABV 04 (Check)	38	35	22	39	33	3
4	PT 605 B MP 621	26	31	17	41	29	7
5	PT 606 B ICMV 221 (Check)	30	40	28	40	35	2
6	PT 607 B MP 622	38	34	20	28	30	6
7	PT 609 B Pusa Comp. 612 (Check)	40	30	21	36	32	4
8	PT 612 B Raj 171 (Check)	27	33	24	43	32	4
9	PT 615 B Dhanshakti (Check)	36	39	26	51	38	1
10	PT 617 B MP 629	30	29	20	42	30	6

CHAPTER I: BREEDING

Table I.160: ADVANCE HYBRID AND POPULATION TRIAL (Early) KHARIF 2022 EXPERIMENTAL DETAILS ZONE A₁.

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizers			Insecticide
							N	P	K	
RAJASTHAN										
Mandor (ICAR AICRP)	SL	8.2	6.7.22	25.9.22	28.7.22	Nil	60	40	0	Nil
Jodhpur (CAZRI)	SL	7.6	5.7.22	5.10.22	25.7.22	Nil	40	20	0	Nil
Bikaner (SKRAU)	S	8.0	5.7.22	5.10.22	4.8.22	25.8.22	40	20	0	Nil
Fathehpur (SKNAU)	SL	7.5	6.7.22	As per Maturity	As per pop	Nil	As per pop	As per pop	As per pop	Nil
Samdari (ARSS, AUJ)	SL	8.3	7.7.22	5.10.22	7.8.22	Nil	40	20	0	Nil
ARS, Jalore (AUJ)	-	-	19.7.22	As per Maturity	-	-	-	-	-	-
Nagaur (AU, Jodhpur)	SL	7.9	7.7.22	As per Maturity	3.8, 5.8.22	Nil	40	40	0	Nil
GUJARAT										
Kothara (SDAU)	SL	7.5	19.7.22	26.10.22	4.8, 22.8.22	Nil	120	40	0	Nil
S.K.Nagar (SDAU)	SL	-	4.7.22	28.9.22	-	Nil	80	40	0	Nil
HARYANA										
Bawal (CCSHAU)	LS	8.2	13.7.22	15.10.22	8.8.22	Nil	40	20	30	Atrazine
Hisar (CCS,HAU)	SL	-	19.7.22	4.11.22	-	10.9.22	40	20	0	Nil

SL = Sandy Loam; S= Sandy, LS= Loamy Sand

CHAPTER I: BREEDING

Table I.161: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	3456	1226	1340	2115	1069	3079	2093	2054	1727	2049	1888	2649	1672	2161	2043	2
2	AHPT 802	MPMH 21 (Check)	2769	1548	1289	1702	897	2755	1495	1779	1560	997	1279	2259	933	1596	1655	9
3	AHPT 803	HHB 67 Imp. (Check)	3166	2018	1118	1681	961	2458	1148	1793	1148	883	1015	2186	1458	1822	1657	8
4	AHPT 804	MH 2555	3588	1721	1620	2002	1062	3044	1968	2144	1898	1824	1861	2706	2044	2375	2134	1
5	AHPT 805	RHB 177 (Check)	2492	1675	1433	1657	733	2884	1428	1758	1417	1145	1281	2303	1205	1754	1670	7
6	AHPT 806	GHB 538 (Check)	3218	1580	1417	1736	1031	2822	1921	1961	1310	1281	1296	2331	1766	2049	1856	4
7	AHPT 807	MH 2661	3264	1484	1546	1723	1010	2951	1875	1979	1685	1414	1549	2253	1260	1756	1861	3
8	AHPT 808	AHB 1200 (Check)	3144	1274	1368	1926	806	2410	1736	1809	1796	1302	1549	1926	738	1332	1675	6
9	AHPT 809	HHB 272 (Check)	3049	1116	1444	1753	956	2486	1838	1806	1588	1324	1456	2369	1288	1828	1746	5
		LOC. MEAN	3127	1516	1397	1811	947	2765	1722	1898	1570	1358	1464	2331	1374	1853	1811	
		C.D. (5%)	897	598	261	233	230	424	224	229	268	313	429	167	348	416	186	
		C.D. (1%)	1236	824	359	321	316	585	308	305	369	431	624	230	480	605	247	
		C.V. (%)	16.6	22.8	10.8	7.4	14.0	8.9	7.5	11.2	9.8	13.3	12.7	4.1	14.7	9.7	12.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.000	0.021	0.000	0.000	0.011	0.000	
		PLOT SIZE (m ²)	14.40	14.40	14.40	14.40	14.40	14.40	14.40	-	14.40	10.80	-	10.80	14.40	-	-	

Table I.162: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	4491	2772	4322	3233	2992	7222	3269	4043	3171	5247	4209	4691	3877	4284	4117	2
2	AHPT 802	MPMH 21 (Check)	4421	2853	4565	2211	2890	6505	3715	3880	2942	3889	3416	4676	2130	3403	3709	3
3	AHPT 803	HHB 67 Imp. (Check)	4259	4241	3252	1937	2709	6296	2738	3633	2176	3735	2955	4259	3670	3965	3570	6
4	AHPT 804	MH 2555	5093	3449	4044	2805	3430	6968	3289	4154	3527	5154	4341	5093	4398	4745	4295	1
5	AHPT 805	RHB 177 (Check)	4259	3420	3558	1925	1875	6435	3009	3497	2635	3951	3293	3920	2653	3286	3422	8
6	AHPT 806	GHB 538 (Check)	4468	3125	3979	1937	2435	6319	2956	3603	2421	4537	3479	4228	3460	3844	3624	4
7	AHPT 807	MH 2661	4259	2369	3961	1562	3108	6181	3058	3500	3110	3920	3515	4321	2910	3616	3523	7
8	AHPT 808	AHB 1200 (Check)	3727	2114	3655	2782	2641	5856	3352	3447	3349	3704	3526	4043	1997	3020	3384	9
9	AHPT 809	HHB 272 (Check)	4537	2513	3940	2298	2257	5764	3884	3599	2917	3179	3048	4846	3415	4130	3595	5
		LOC. MEAN	4390	2984	3919	2299	2704	6394	3252	3706	2917	4146	3531	4453	3168	3810	3693	
		C.D. (5%)	513	1389	460	347	757	869	214	464	600	965	1114	490	783	1083	379	
		C.D. (1%)	707	1914	633	478	1043	1197	295	619	827	1329	1621	675	1079	1576	502	
		C.V. (%)	6.8	26.9	6.8	8.7	16.2	7.9	3.8	11.7	11.9	13.5	13.7	6.4	14.3	12.3	12.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.000	0.196	0.000	0.000	0.096	0.000	
		PLOT SIZE (m ²)	14.40	14.40	14.40	14.40	14.40	14.40	14.40	-	14.40	10.80	-	10.80	14.40	-	-	

CHAPTER I: BREEDING

Table I.163: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR*	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL*	HSR*	ZONE MEAN	RANK
1	AHPT 801	MH 2553	43	45	48	47	48	44	42	45	42	42	42	49	47	44	6
2	AHPT 802	MPMH 21 (Check)	44	46	48	51	49	46	46	47	43	46	45	51	48	46	2
3	AHPT 803	HHB 67 Imp. (Check)	40	41	45	54	40	44	40	42	45	40	43	50	41	42	9
4	AHPT 804	MH 2555	42	47	49	47	45	44	46	45	49	45	47	51	51	46	3
5	AHPT 805	RHB 177 (Check)	40	44	46	51	42	46	42	43	47	41	44	46	50	44	8
6	AHPT 806	GHB 538 (Check)	44	43	48	51	41	46	42	44	41	44	42	47	49	44	7
7	AHPT 807	MH 2661	46	46	49	53	42	44	43	45	41	44	43	49	46	44	5
8	AHPT 808	AHB 1200 (Check)	47	46	48	54	48	48	47	47	50	46	48	52	49	48	1
9	AHPT 809	HHB 272 (Check)	40	45	46	51	49	44	46	45	43	43	43	46	50	45	4
		LOC. MEAN	43	45	47	51	45	45	44	45	44	44	44	49	48	45	
		C.D. (5%)	1.0	2.0	2.0	5.0	2.0	3.0	3.0	2.0	1.0	2.0	6.0	1.0	2.0	2.0	
		C.D. (1%)	1.0	2.0	3.0	7.0	2.0	4.0	4.0	3.0	1.0	2.0	9.0	1.0	3.0	3.0	
		C.V. (%)	1.4	2.2	2.8	5.6	2.1	3.8	3.4	4.2	1.1	2.1	6.3	1.1	2.3	4.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.401	0.000	0.000	0.000	

*LOCATION REJECTED DUE TO DELAYED FLOWERING IN CHECKS

Table I.164: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 DAYS TO MATURITY ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	BKR	FTR*	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL*	HSR*	ZONE MEAN	RANK
1	AHPT 801	MH 2553	71	79	74	77	77	76	72	72	72	67	82	75	8
2	AHPT 802	MPMH 21 (Check)	73	79	85	77	79	77	73	78	76	70	82	76	3
3	AHPT 803	HHB 67 Imp. (Check)	71	76	88	72	76	74	73	72	73	65	85	73	9
4	AHPT 804	MH 2555	72	79	76	79	82	78	75	75	75	71	82	77	2
5	AHPT 805	RHB 177 (Check)	71	77	82	78	82	77	75	73	74	67	84	76	5
6	AHPT 806	GHB 538 (Check)	73	79	81	80	73	76	71	75	73	67	83	75	7
7	AHPT 807	MH 2661	75	80	83	79	77	78	71	76	74	67	83	76	4
8	AHPT 808	AHB 1200 (Check)	75	78	87	85	74	78	76	79	78	72	84	78	1
9	AHPT 809	HHB 272 (Check)	70	78	83	77	81	77	72	76	74	68	83	76	6
		LOC. MEAN	72	78	82	78	78	77	73	75	74	68	83	76	
		C.D. (5%)	1.0	2.0	7.0	3.0	3.0	3.0	1.0	2.0	9.0	1.0	3.0	4.0	
		C.D. (1%)	2.0	2.0	10.0	4.0	4.0	4.0	1.0	3.0	13.0	1.0	4.0	5.0	
		C.V. (%)	1.1	1.3	5.2	2.1	2.3	1.4	0.8	1.7	4.8	0.9	1.9	3.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.106	0.000	0.000	0.791	0.000	0.000	0.408	

*LOCATION REJECTED DUE TO DELAYED MATURITY IN CHECKS

CHAPTER I: BREEDING

Table I.165: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 PLANT HEIGHT (cm) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	204	189	160	181	176	151	188	178	172	172	172	137	163	150	172	2
2	AHPT 802	MPMH 21 (Check)	200	185	165	172	168	136	199	175	172	167	170	147	142	144	168	5
3	AHPT 803	HHB 67 Imp. (Check)	184	181	158	166	169	132	137	161	175	152	163	147	156	151	160	9
4	AHPT 804	MH 2555	206	194	150	157	181	139	180	172	170	178	174	142	161	152	169	4
5	AHPT 805	RHB 177 (Check)	198	195	158	172	167	140	188	174	190	158	174	153	152	153	170	3
6	AHPT 806	GHB 538 (Check)	197	182	158	163	165	137	168	167	170	176	173	156	149	153	166	6
7	AHPT 807	MH 2661	208	188	180	159	191	133	188	178	177	180	179	156	163	159	175	1
8	AHPT 808	AHB 1200 (Check)	207	175	155	176	162	129	188	170	164	157	161	152	146	149	165	7
9	AHPT 809	HHB 272 (Check)	195	172	157	160	170	128	176	165	172	164	168	152	156	154	164	8
		LOC. MEAN	200	185	160	167	172	136	179	171	174	167	170	149	154	152	168	
		C.D. (5%)	16.0	21.0	13.0	15.0	13.0	23.0	9.0	10.0	4.0	13.0	22.0	10.0	18.0	18.0	7.0	
		C.D. (1%)	22.0	29.0	18.0	20.0	18.0	31.0	13.0	13.0	6.0	17.0	32.0	14.0	25.0	27.0	10.0	
		C.V. (%)	4.5	6.7	4.8	5.1	4.4	9.7	3.0	5.2	1.5	4.4	5.6	4.0	6.8	5.2	5.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.704	0.000	0.000	0.829	0.003	

Table I.166: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	2.3	2.3	1.5	3.2	1.3	2.4	3.7	2.4	3.2	1.7	2.5	2.3	3.5	2.9	2.5	1
2	AHPT 802	MPMH 21 (Check)	1.9	3.3	1.3	1.8	1.2	2.1	3.1	2.1	3.1	1.7	2.4	1.7	3.6	2.6	2.3	3
3	AHPT 803	HHB 67 Imp. (Check)	2.5	2.3	1.5	2.2	1.2	2.2	2.7	2.1	2.9	1.5	2.2	1.8	3.3	2.6	2.2	5
4	AHPT 804	MH 2555	1.9	2.3	1.2	2.7	1.2	2.1	3.5	2.1	3.4	1.5	2.4	1.5	2.9	2.2	2.2	4
5	AHPT 805	RHB 177 (Check)	2.3	2.3	1.3	2.2	1.1	2.1	2.6	2.0	2.9	1.4	2.1	1.6	3.6	2.6	2.1	6
6	AHPT 806	GHB 538 (Check)	2.2	1.7	1.5	2.2	1.2	2.2	3.4	2.0	2.9	1.7	2.3	1.5	2.8	2.1	2.1	7
7	AHPT 807	MH 2661	2.0	2.0	1.2	2.8	1.1	1.9	2.1	1.9	3.1	1.7	2.4	2.0	2.7	2.3	2.1	8
8	AHPT 808	AHB 1200 (Check)	1.7	1.7	1.0	2.2	1.1	2.2	2.8	1.8	3.1	1.3	2.2	1.7	2.6	2.1	1.9	9
9	AHPT 809	HHB 272 (Check)	2.1	2.3	1.6	2.2	1.3	2.0	2.7	2.0	3.1	1.6	2.3	2.3	4.1	3.2	2.3	2
		LOC. MEAN	2.1	2.3	1.4	2.4	1.2	2.1	3.0	2.1	3.1	1.6	2.3	1.8	3.2	2.5	2.2	
		C.D. (5%)	0.3	1.1	0.4	0.5	0.2	0.3	0.4	0.3	0.2	0.4	0.3	0.4	1.2	0.7	0.3	
		C.D. (1%)	0.4	1.5	0.5	0.7	0.2	0.4	0.5	0.5	0.3	0.5	0.5	0.5	1.6	1.0	0.3	
		C.V. (%)	8.4	26.9	15.8	12.4	7.6	8.2	7.0	15.6	4.6	13.9	6.5	12.2	21.0	12.4	14.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.000	0.000	0.426	0.000	0.000	0.083	0.010	

CHAPTER I: BREEDING

Table I.167: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 PANICLE LENGTH (cm) ZONE A1

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	23	22	22	25	21	26	25	23	20	20	20	24	24	24	23	3
2	AHPT 802	MPMH 21 (Check)	20	23	22	22	21	24	27	23	19	19	19	26	24	25	22	4
3	AHPT 803	HHB 67 Imp. (Check)	21	22	23	22	23	24	23	23	19	20	20	25	21	23	22	6
4	AHPT 804	MH 2555	24	24	21	24	19	22	24	22	19	20	20	24	23	24	22	7
5	AHPT 805	RHB 177 (Check)	23	22	23	22	23	22	25	23	21	20	20	24	23	23	22	5
6	AHPT 806	GHB 538 (Check)	21	21	22	24	21	22	26	22	20	19	19	25	21	23	22	8
7	AHPT 807	MH 2661	25	25	25	25	24	22	23	24	18	22	20	28	26	27	24	1
8	AHPT 808	AHB 1200 (Check)	24	25	22	24	16	22	27	23	20	19	20	27	27	27	23	2
9	AHPT 809	HHB 272 (Check)	22	21	21	23	18	23	23	22	19	19	19	25	22	24	21	9
		LOC. MEAN	23	23	22	23	21	23	25	23	19	20	20	25	23	24	22	
		C.D. (5%)	3.0	4.0	2.0	2.0	2.0	3.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	3.0	1.0	
		C.D. (1%)	4.0	5.0	3.0	3.0	3.0	4.0	1.0	2.0	3.0	3.0	4.0	1.0	3.0	4.0	2.0	
		C.V. (%)	7.5	9.9	6.1	4.9	5.5	6.4	2.4	6.9	5.7	5.3	5.4	2.4	4.7	4.5	6.3	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.193	0.000	0.000	0.894	0.000	0.000	0.046	0.007	

Table I.168: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	SKN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	2.7	2.6	2.3	2.9	2.5	3.4	3.1	2.8	2.7	3.2	3.0	3.1	2.8	4
2	AHPT 802	MPMH 21 (Check)	2.8	3.2	2.5	2.6	2.5	3.3	2.5	2.8	2.7	3.3	3.2	3.3	2.9	2
3	AHPT 803	HHB 67 Imp. (Check)	2.2	2.8	2.0	2.3	2.0	3.4	2.7	2.5	2.3	2.8	2.7	2.8	2.5	8
4	AHPT 804	MH 2555	2.9	3.0	2.5	2.9	2.4	3.4	2.5	2.8	2.7	3.1	3.0	3.1	2.8	3
5	AHPT 805	RHB 177 (Check)	2.8	2.8	2.3	2.7	2.5	3.3	2.8	2.7	2.5	3.2	3.0	3.1	2.8	5
6	AHPT 806	GHB 538 (Check)	2.6	2.8	2.2	2.5	2.3	3.3	3.4	2.7	2.5	3.2	2.7	3.0	2.8	6
7	AHPT 807	MH 2661	2.5	2.8	2.2	2.5	2.2	3.2	3.6	2.7	2.5	3.0	2.8	2.9	2.7	7
8	AHPT 808	AHB 1200 (Check)	3.4	3.0	2.8	3.4	2.6	3.3	2.5	3.0	3.1	3.4	3.4	3.4	3.1	1
9	AHPT 809	HHB 272 (Check)	2.7	2.7	2.5	2.9	2.3	3.5	3.1	2.8	2.7	3.2	2.9	3.0	2.8	4
		LOC. MEAN	2.7	2.9	2.4	2.7	2.4	3.3	2.9	2.8	2.6	3.2	3.0	3.1	2.8	
		C.D. (5%)	0.5	0.7	0.3	0.2	0.2	0.4	0.3	0.3	0.2	0.2	0.4	0.2	0.2	
		C.D. (1%)	0.6	1.0	0.4	0.3	0.2	0.5	0.4	0.4	0.3	0.3	0.5	0.3	0.3	
		C.V. (%)	9.5	14.8	7.2	5.1	3.9	6.1	6.2	9.3	4.3	4.2	6.9	3.3	8.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.000	0.000	0.007	0.001	

CHAPTER I: BREEDING

Table I.169: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 1000-SEED Wt. (g) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	SDR	JLR	NGR	RAJ MEAN	SKN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	7.4	6.3	7.8	10.2	7.0	8.4	10.2	8.2	6.0	6.6	8.8	7.7	7.9	9
2	AHPT 802	MPMH 21 (Check)	8.0	8.2	11.1	8.8	7.7	8.3	8.6	8.7	6.3	7.2	9.6	8.4	8.4	7
3	AHPT 803	HHB 67 Imp. (Check)	8.2	9.4	11.2	9.6	7.5	8.3	9.2	9.0	6.8	7.7	10.0	8.9	8.8	2
4	AHPT 804	MH 2555	7.9	7.3	9.3	9.8	6.8	7.9	7.7	8.1	6.8	6.7	10.7	8.7	8.1	8
5	AHPT 805	RHB 177 (Check)	8.8	8.5	8.2	9.3	7.9	8.0	8.7	8.5	6.8	7.6	11.1	9.3	8.5	5
6	AHPT 806	GHB 538 (Check)	9.2	7.3	7.4	8.7	7.8	8.4	9.2	8.3	7.2	7.4	11.5	9.5	8.4	6
7	AHPT 807	MH 2661	9.2	7.8	10.3	9.0	7.8	8.4	9.3	8.8	6.9	7.2	11.3	9.3	8.7	3
8	AHPT 808	AHB 1200 (Check)	8.8	9.7	12.1	9.5	6.8	8.5	9.5	9.3	7.9	8.0	12.3	10.2	9.3	1
9	AHPT 809	HHB 272 (Check)	7.8	7.6	11.3	8.8	8.0	8.5	9.9	8.9	5.8	7.6	10.6	9.1	8.6	4
		LOC. MEAN	8.4	8.0	9.8	9.3	7.5	8.3	9.1	8.6	6.7	7.3	10.7	9.0	8.5	
		C.D. (5%)	0.6	0.6	1.5	0.8	0.1	0.3	0.5	0.9	0.6	0.5	1.3	1.0	0.7	
		C.D. (1%)	0.8	0.9	2.0	1.1	0.1	0.4	0.6	1.2	0.8	0.7	1.8	1.4	1.0	
		C.V. (%)	4.0	4.6	8.6	5.1	0.6	2.1	2.9	10.1	4.9	4.1	7.0	6.0	9.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.179	0.000	0.000	0.000	0.109	0.040	

Table I.170: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 POPULATION AT HARVEST (No./plot) ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR**	BKR	FTR	JLR	NGR	RAJ MEAN	KTR	SKN	GUJ MEAN	BWL	HSR	HAR MEAN	ZONE MEAN	RANK
1	AHPT 801	MH 2553	179	75	107	142	135	156	144	120	182	151	110	61	86	132	5
2	AHPT 802	MPMH 21 (Check)	193	79	128	141	124	142	146	122	175	149	111	36	74	130	6
3	AHPT 803	HHB 67 Imp. (Check)	173	130	117	140	126	148	141	126	215	171	114	61	87	136	2
4	AHPT 804	MH 2555	181	123	125	141	127	148	144	126	228	177	118	52	85	138	1
5	AHPT 805	RHB 177 (Check)	185	129	128	140	122	145	144	119	197	158	114	47	81	133	4
6	AHPT 806	GHB 538 (Check)	181	132	116	140	126	152	143	117	203	160	117	47	82	133	3
7	AHPT 807	MH 2661	165	66	126	141	128	149	142	119	128	124	112	30	71	122	8
8	AHPT 808	AHB 1200 (Check)	160	73	115	140	118	157	138	113	158	135	111	20	66	121	9
9	AHPT 809	HHB 272 (Check)	180	83	116	140	121	167	145	115	158	137	109	46	78	128	7
		LOC. MEAN	178	99	120	141	125	152	143	120	183	151	113	44	79	131	
		C.D. (5%)	20.0	52.0	14.0	1.0	15.0	5.0	9.0	17.0	33.0	18.0	9.0	11.0	48.0	12.0	
		C.D. (1%)	28.0	71.0	19.0	1.0	21.0	7.0	13.0	24.0	46.0	26.0	12.0	15.0	70.0	16.0	
		C.V. (%)	6.6	30.3	6.7	0.4	6.9	2.1	4.6	8.3	10.5	5.6	4.5	13.8	14.0	8.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.293	0.000	0.000	0.953	0.000	0.000	0.347	0.213	

**LOCATION REJECTED DUE TO HIGH C.V. (i.e. > 30%): JDR 30.3%

Table I.171: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022
SEED SET (%) UNDER BAG ZONE A₁

S.No.	TEST CODE	ENTRY	MDR	JDR	BKR	FTR	RAJ MEAN	HSR	ZONE MEAN	RANK
1	AHPT 801	MH 2553	85	83	43	77	72	82	74	2
2	AHPT 802	MPMH 21 (Check)	68	83	55	89	74	35	66	7
3	AHPT 803	HHB 67 Imp. (Check)	73	87	58	84	75	67	74	3
4	AHPT 804	MH 2555	79	83	50	72	71	65	70	5
5	AHPT 805	RHB 177 (Check)	78	82	45	80	71	57	68	6
6	AHPT 806	GHB 538 (Check)	77	67	62	85	73	63	71	4
7	AHPT 807	MH 2661	79	88	55	83	76	73	76	1
8	AHPT 808	AHB 1200 (Check)	68	83	55	81	72	35	64	8
9	AHPT 809	HHB 272 (Check)	28	80	53	87	62	15	53	9
		LOC. MEAN	71	82	53	82	72	55	68	
		C.D. (5%)	12.0	11.0	15.0	8.0	15.0	13.0	15.0	
		C.D. (1%)	17.0	15.0	21.0	11.0	20.0	18.0	20.0	
		C.V. (%)	10.1	7.6	16.9	5.9	14.4	13.8	14.4	
		F (Prob)	0.000	0.000	0.000	0.000	0.755	0.000	0.755	

CHAPTER I: BREEDING

Table I.172: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 ZONE A₁
GRAIN QUALITY: IRON CONTENT (ppm)

S.No.	TEST CODE	ENTRY	MDR	BKR	FTR	SDR	NGR	SKN	BWL	HSR	ZONE MEAN	RANK
1	AHPT 801	MH 2553	37	39	51	39	45	32	56	64	45	7
2	AHPT 802	MPMH 21 (Check)	41	56	51	40	40	33	55	71	48	4
3	AHPT 803	HHB 67 Imp. (Check)	42	53	41	34	47	35	63	58	47	5
4	AHPT 804	MH 2555	40	56	49	38	47	36	68	83	52	2
5	AHPT 805	RHB 177 (Check)	35	39	44	36	43	28	45	59	41	9
6	AHPT 806	GHB 538 (Check)	36	49	50	37	47	37	48	63	46	6
7	AHPT 807	MH 2661	33	44	41	36	41	31	53	61	43	8
8	AHPT 808	AHB 1200 (Check)	45	78	63	46	66	40	100	74	64	1
9	AHPT 809	HHB 272 (Check)	39	56	54	38	56	32	60	62	50	3

Table I.173: ADVANCE HYBRID & POPULATION TRIAL (Early) KHARIF - 2022 ZONE A₁
GRAIN QUALITY: ZINC CONTENT (ppm)

S.No.	TEST CODE	ENTRY	MDR	BKR	FTR	SDR	NGR	SKN	BWL	HSR	ZONE MEAN	RANK
1	AHPT 801	MH 2553	40	42	23	45	41	35	50	37	39	1
2	AHPT 802	MPMH 21 (Check)	32	38	10	26	29	35	44	43	32	5
3	AHPT 803	HHB 67 Imp. (Check)	31	45	10	31	35	39	44	40	34	3
4	AHPT 804	MH 2555	35	35	11	38	37	37	48	45	36	2
5	AHPT 805	RHB 177 (Check)	28	34	13	30	33	37	36	36	31	6
6	AHPT 806	GHB 538 (Check)	26	43	18	34	35	34	39	36	33	4
7	AHPT 807	MH 2661	29	36	22	29	33	36	36	40	33	4
8	AHPT 808	AHB 1200 (Check)	27	41	16	29	37	43	53	39	36	2
9	AHPT 809	HHB 272 (Check)	27	41	14	29	34	38	34	42	32	5

Table I.174: ADVANCE HYB. & POP. TRIAL (Early) KHARIF - 2022 ZONE A₁
GRAIN QUALITY (Protein and Fat)

S.No.	TEST CODE	ENTRY	Protein (%)			Fat (%)		
			HSR	BWL	MEAN	HSR	BWL	MEAN
1	AHPT 801	MH 2553	11.0	12.7	11.8	5.0	6.1	5.6
2	AHPT 802	MPMH 21 (Check)	10.4	11.3	10.8	4.6	5.7	5.2
3	AHPT 803	HHB 67 Imp. (Check)	12.0	13.6	12.8	4.7	6.0	5.4
4	AHPT 804	MH 2555	9.3	12.3	10.8	4.8	5.4	5.1
5	AHPT 805	RHB 177 (Check)	9.6	12.8	11.2	5.4	6.2	5.8
6	AHPT 806	GHB 538 (Check)	9.6	11.8	10.7	4.9	4.8	4.9
7	AHPT 807	MH 2661	10.8	13.6	12.2	5.4	4.6	5.0
8	AHPT 808	AHB 1200 (Check)	10.2	12.1	11.2	5.4	6.4	5.9
9	AHPT 809	HHB 272 (Check)	10.4	11.9	11.2	5.9	5.6	5.7

CHAPTER I: BREEDING

Table I.175: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF 2022 EXPERIMENTAL DETAILS ZONE A .

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizer			Insecticide
							N	P	K	
RAJASTHAN										
Mandor(ARS,AU Jodhpur)	SL	8.1	7.7.22	As per maturity	10.8.22	Nil	40	20	0	Nil
Bikaner (SKRAU)	S	8.0	5.7.22	17.10.22	4.8.22	25.8.22	40	20	0	Nil
Jaipur (SKNAU)	SL	-	5.7.22	12.10.22	27.7.22	Nil	40	30	0	Nil
GUJARAT										
Jamnagar (JAU)	MB	7.6	10.7.22	8.10.22	19.7,27.7,4.8.22	Nil	80	40	0	Nil
HARYANA										
Hisar (CCS,HAU)	SL	-	19.7.22	4.11.22	-	10.9.22	100	40	0	Nil
UTTAR PRADESH										
Jhansi (RLBCAU)	B	7.5	9.7.22	1.11.22	15.8.22	25.8.22	80	40	40	Nil
MADHYA PRADESH										
Gwalior (RVSKVV)	SL	7.1	22.7.22	24.10.22	19.8.22	20.8.22	60	40	20	Nil
JAMMU & KASHMIR										
Jammu (SKUAST)	SL	6.7	8.7.22	As per maturity	10.8.22	Nil	50	30	15	Nil

SL = Sandy Loam; MB = Medium Black; S= Sandy, B = Black

CHAPTER I: BREEDING

Table I.176: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS***	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	1302	979	2458	1580	3910	750	3189	2821	2602	2466	18
2	PB 1756	1850	955	2401	1735	4289	444	3238	2656	2655	2578	14
3	MPMH 21	1329	660	2583	1524	3413	650	3888	1997	2721	2370	21
4	GHB 719	2002	955	2094	1684	3610	481	4301	2939	2223	2589	13
5	HHB 67 Imp.	1250	1000	1928	1393	3756	458	3379	2286	2266	2267	27
6	GHB 538	1607	1385	2430	1807	3845	214	2804	2668	2641	2483	17
7	PB 1852	2184	1045	2924	2051	4891	1250	4458	4219	2697	3203	2
8	PB 1705	1938	1177	3992	2369	4911	722	4837	4489	3026	3481	1
9	MPMH 17	2248	1104	3008	2120	3347	647	2911	3338	2593	2650	12
10	GHB 905	2330	1507	2472	2103	3677	972	3938	3181	2832	2848	6
11	RHB 173	937	1111	2451	1500	2870	531	1888	2772	2518	2078	29
12	GHB 732	1896	1045	2407	1783	4145	397	4298	3006	3049	2835	7
13	GHB 744	2046	750	3011	1936	3625	244	3685	2600	3265	2712	9
14	MP 7878	1976	1446	3565	2329	4770	1111	4333	3461	2287	3120	3
15	KBH 108	1241	906	3145	1764	3682	778	3790	3408	2650	2689	10
16	Kaveri Super Boss	1703	422	3173	1766	4543	542	4056	3186	2238	2760	8
17	86M86	1676	576	2891	1715	4191	1167	3983	2685	2010	2573	15
18	MP-7792	2156	1236	3679	2357	4699	569	3447	2631	2582	2919	5
19	Proagro 9444	2466	1535	2879	2294	4234	681	3965	3090	2897	3010	4
20	GHB 558	1297	1433	2415	1715	3310	444	3495	1881	2611	2349	23
21	RHB 234	1445	698	3114	1752	3200	583	2805	2306	2808	2339	24
22	RHB 233	1217	538	2661	1472	3373	361	3099	2672	2564	2303	26
23	AHB 1269	1675	802	2499	1659	3734	200	3362	2667	2679	2488	16
24	HHB 299	1807	986	3345	2046	4206	917	3362	3014	1971	2670	11
25	AHB 1200	1148	979	2763	1630	3747	311	3479	2661	1802	2368	22
26	Dhanshakti	1103	549	1418	1023	2672	319	3298	2283	2351	1953	30
27	ICMV 221	874	1052	1918	1281	2817	306	2940	1927	1944	1925	31
28	Pusa Composite 701	1321	937	2399	1552	3267	278	3577	2706	2407	2374	20
29	Pusa Composite 383	1925	365	2007	1432	3142	217	3513	2793	2618	2338	25
30	JBV 2	1601	699	2721	1674	3598	342	3421	2543	2100	2383	19
31	Raj 171	1479	1438	2071	1663	2648	303	3715	1978	2073	2200	28
	LOC. MEAN	1646	976	2672	1765	3746	554	3563	2802	2506	2559	
	C.D. (5%)	209	181	711	617	612	189	744	132	807	418	
	C.D. (1%)	277	241	946	820	814	251	990	175	1073	551	
	C.V. (%)	7.8	11.4	16.3	21.4	10.0	20.8	12.8	2.9	19.7	15.5	
	F (Prob)	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	
	PLOT SIZE (m ²)	14.40	14.40	12.00	-	14.40	12.00	12.00	12.00	12.00	-	

***TEST LOCATION REJECTED DUE TO LOW AVERAGE YIELD (554 kg/ha), THAN THE STATE AVERAGE YIELD (2008 kg/ha) TAKEN OVER 10 YEARS

CHAPTER I: BREEDING

Table I.177: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	2076	3701	7667	4481	7042	2750	10491	7500	9973	6400	19
2	PB 1756	2832	3417	8167	4805	6995	3750	10810	8944	9646	6820	14
3	MPMH 21	2420	3264	5889	3858	6620	5722	10539	7222	8979	6332	21
4	GHB 719	2965	3021	5917	3968	6870	5722	10761	6250	7515	6128	25
5	HHB 67 Imp.	2053	3160	4556	3256	6125	4472	10725	5556	10035	5835	28
6	GHB 538	2091	4167	6639	4299	5775	4000	10482	7278	8904	6167	23
7	PB 1852	3360	7560	8028	6316	12042	8028	11156	10833	9940	8868	1
8	PB 1705	3449	5220	9306	5992	9317	8333	10573	10694	8480	8172	4
9	MPMH 17	2781	3144	5000	3641	6016	4417	11301	9944	6318	6115	26
10	GHB 905	2907	3576	4889	3791	7054	4778	11472	8056	11068	6725	16
11	RHB 173	1539	3681	5736	3652	5606	4111	6889	6806	10438	5601	30
12	GHB 732	2677	4421	4583	3894	7623	4528	12619	8528	10016	6874	12
13	GHB 744	2932	3491	5472	3965	6333	4139	11876	7500	9594	6417	18
14	MP 7878	4333	5611	6528	5491	11097	6833	10802	10833	9015	8132	5
15	KBH 108	3615	6185	8583	6128	7484	5611	10722	13417	10898	8314	3
16	Kaveri Super Boss	3565	5507	8056	5709	10037	4056	11752	11667	12320	8370	2
17	86M86	2782	4479	5583	4282	8535	3333	11917	8333	11817	7098	10
18	MP-7792	2958	4271	6139	4456	7308	5417	9395	9000	9855	6793	15
19	Proagro 9444	3329	4167	6250	4582	8826	5500	10744	7333	8601	6844	13
20	GHB 558	1808	4803	5583	4065	6440	5167	11713	7944	8932	6549	17
21	RHB 234	1991	3076	6389	3819	5144	4000	9247	4167	10180	5524	31
22	RHB 233	1954	4583	5042	3860	6308	4500	9413	5833	10236	5984	27
23	AHB 1269	2878	2569	6694	4047	6225	5250	9869	8278	9109	6359	20
24	HHB 299	3366	3495	7972	4944	8273	5667	10376	8056	9225	7054	11
25	AHB 1200	1891	4313	6000	4068	6116	5222	10655	7778	7216	6149	24
26	Dhanshakti	1723	3924	6333	3993	5495	5611	9192	5833	8484	5825	29
27	ICMV 221	1152	3407	6542	3700	6123	6444	9761	8722	7989	6268	22
28	Pusa Composite 701	3350	4958	9028	5779	9410	8472	9977	9861	9019	8009	6
29	Pusa Composite 383	4006	4542	9417	5988	8019	7778	8798	8750	9378	7586	7
30	JBV 2	3226	4826	9750	5934	7790	6222	11424	8278	8526	7505	8
31	Raj 171	3590	5833	10333	6586	7667	5833	9632	7639	7427	7244	9
	LOC. MEAN	2761	4270	6841	4624	7410	5344	10487	8285	9327	6841	
	C.D. (5%)	418	837	1038	1470	1361	2178	2321	546	2178	1148	
	C.D. (1%)	556	1113	1381	1955	1809	2897	3087	727	2896	1514	
	C.V. (%)	9.3	12.0	9.3	19.5	11.2	25.0	13.6	4.0	14.3	17.0	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	PLOT SIZE (m ²)	14.40	14.40	12.00	-	14.40	12.00	12.00	12.00	12.00	-	

CHAPTER I: BREEDING

Table I.178: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DAYS TO 50% FLOWERING ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	46	49	40	45	41	45	42	51	45	27
2	PB 1756	50	45	44	47	41	42	40	52	45	28
3	MPMH 21	49	52	42	48	42	42	40	49	45	26
4	GHB 719	53	50	45	49	41	45	41	47	46	24
5	HHB 67 Imp.	44	49	37	43	35	42	39	52	42	30
6	GHB 538	50	49	39	46	37	47	38	53	45	29
7	PB 1852	65	55	49	56	47	53	42	51	52	4
8	PB 1705	52	54	50	52	45	52	42	51	50	14
9	MPMH 17	47	51	44	47	42	51	41	49	46	22
10	GHB 905	56	52	43	50	41	46	41	54	48	19
11	RHB 173	61	54	44	53	43	53	43	47	49	15
12	GHB 732	59	55	48	54	43	48	42	48	49	17
13	GHB 744	59	57	49	55	42	51	41	52	50	12
14	MP 7878	65	58	51	58	50	54	46	49	53	2
15	KBH 108	64	46	54	55	50	57	49	51	53	3
16	Kaveri Super Boss	67	58	53	59	49	56	48	48	54	1
17	86M86	55	57	50	54	48	54	46	51	52	6
18	MP-7792	58	55	48	54	45	52	45	51	51	10
19	Proagro 9444	61	57	50	56	45	55	45	48	51	7
20	GHB 558	54	53	43	50	40	51	42	45	47	21
21	RHB 234	59	55	46	53	43	50	43	51	50	13
22	RHB 233	63	57	45	55	44	52	43	51	51	8
23	AHB 1269	61	53	43	52	42	50	42	51	49	16
24	HHB 299	65	55	47	56	47	53	43	51	52	5
25	AHB 1200	64	52	44	53	44	49	44	47	49	16
26	Dhanshakti	60	49	36	48	36	46	41	54	46	23
27	ICMV 221	63	48	36	49	37	44	41	50	46	25
28	Pusa Composite 701	63	53	45	54	45	54	42	51	50	11
29	Pusa Composite 383	59	54	48	54	45	54	43	52	51	9
30	JBV 2	55	50	44	50	44	53	42	51	48	18
31	Raj 171	55	47	43	48	42	50	43	52	47	20
	LOC. MEAN	58	52	45	52	43	50	42	50	49	
	C.D. (5%)	4.0	2.0	1.0	6.0	2.0	3.0	1.0	5.0	3.0	
	C.D. (1%)	5.0	3.0	1.0	8.0	2.0	4.0	1.0	7.0	4.0	
	C.V. (%)	3.7	2.5	1.4	7.0	2.2	3.4	1.5	6.1	5.8	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.179: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DAYS TO MATURITY ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	74	80	71	75	71	72	74	83	81	76	29
2	PB 1756	81	76	76	77	70	73	81	88	79	78	22
3	MPMH 21	74	83	74	77	72	70	80	88	92	79	18
4	GHB 719	80	80	77	79	71	67	81	82	82	78	24
5	HHB 67 Imp.	72	80	70	74	66	71	71	79	84	74	30
6	GHB 538	82	80	78	80	68	71	81	86	75	78	25
7	PB 1852	86	86	78	83	77	74	80	89	79	81	5
8	PB 1705	84	84	75	81	75	72	77	83	79	79	20
9	MPMH 17	81	82	73	79	73	70	82	85	76	78	23
10	GHB 905	81	82	75	79	72	71	81	84	91	80	14
11	RHB 173	92	85	77	85	74	71	80	81	77	80	15
12	GHB 732	83	85	78	82	74	72	77	89	81	80	12
13	GHB 744	85	87	81	84	73	73	81	88	78	81	7
14	MP 7878	86	88	87	87	80	74	80	87	81	83	2
15	KBH 108	90	77	84	84	81	75	83	89	81	82	4
16	Kaveri Super Boss	92	88	82	87	79	76	81	88	81	83	1
17	86M86	86	88	84	86	77	72	83	88	83	83	3
18	MP-7792	85	86	80	84	75	73	81	84	81	81	8
19	Proagro 9444	88	87	78	84	75	73	82	83	80	81	9
20	GHB 558	91	84	75	83	70	72	81	88	82	80	10
21	RHB 234	83	85	74	81	74	70	80	90	76	79	19
22	RHB 233	83	87	73	81	75	72	80	89	77	80	14
23	AHB 1269	83	84	74	80	73	68	81	89	82	79	17
24	HHB 299	87	85	77	83	78	75	79	90	77	81	6
25	AHB 1200	87	83	74	81	73	71	81	88	79	79	16
26	Dhanshakti	86	80	71	79	66	70	80	88	78	77	26
27	ICMV 221	88	79	70	79	67	68	81	89	77	77	27
28	Pusa Composite 701	85	84	76	82	75	71	83	87	78	80	11
29	Pusa Composite 383	82	85	78	82	75	73	81	86	78	80	13
30	JBV 2	82	81	76	79	75	73	82	90	73	79	21
31	Raj 171	83	78	74	78	72	72	76	85	78	77	28
	LOC. MEAN	84	83	76	81	73	72	80	87	80	79	
	C.D. (5%)	5.0	2.0	1.0	5.0	1.0	4.0	2.0	1.0	6.0	3.0	
	C.D. (1%)	7.0	3.0	2.0	7.0	2.0	5.0	2.0	1.0	8.0	4.0	
	C.V. (%)	3.8	1.6	1.0	3.8	1.0	3.4	1.3	0.8	4.4	3.9	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.180: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PLANT HEIGHT (cm.) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	175	153	211	180	193	163	188	221	171	184	17
2	PB 1756	188	153	207	183	205	159	195	187	180	184	18
3	MPMH 21	168	138	192	166	206	157	199	184	175	178	26
4	GHB 719	174	150	200	175	183	154	196	197	190	181	21
5	HHB 67 Imp.	171	133	186	163	172	151	191	202	165	171	31
6	GHB 538	173	155	216	181	179	141	181	190	156	174	30
7	PB 1852	209	170	241	207	233	217	231	198	180	210	5
8	PB 1705	200	160	228	196	217	169	227	201	183	198	10
9	MPMH 17	195	143	188	175	185	154	197	190	178	179	25
10	GHB 905	184	153	183	174	192	220	198	192	166	186	15
11	RHB 173	178	176	192	182	192	157	196	205	170	183	20
12	GHB 732	184	153	204	180	193	166	204	203	175	185	16
13	GHB 744	183	160	209	184	205	168	214	181	187	188	14
14	MP 7878	203	185	234	208	238	194	233	221	176	211	4
15	KBH 108	201	163	215	193	247	214	236	219	182	209	6
16	Kaveri Super Boss	194	155	245	198	257	209	254	222	188	216	3
17	86M86	197	150	181	176	217	189	208	216	192	194	12
18	MP-7792	206	162	193	187	225	164	219	217	178	196	11
19	Proagro 9444	206	172	210	196	214	184	231	215	187	202	9
20	GHB 558	158	153	200	170	190	151	206	176	166	175	28
21	RHB 234	186	133	203	174	186	151	180	188	172	175	29
22	RHB 233	187	140	187	171	217	159	197	214	171	184	19
23	AHB 1269	197	135	180	171	208	153	184	195	167	177	27
24	HHB 299	191	145	194	177	232	165	209	216	155	189	13
25	AHB 1200	160	143	216	173	200	156	185	205	175	180	22
26	Dhanshakti	158	143	206	169	198	168	190	194	174	179	24
27	ICMV 221	153	145	205	168	198	159	185	214	180	180	23
28	Pusa Composite 701	206	178	265	216	263	209	224	225	175	218	2
29	Pusa Composite 383	209	170	259	213	247	197	272	218	178	219	1
30	JBV 2	184	165	252	201	225	192	245	219	176	207	7
31	Raj 171	199	195	207	201	220	180	216	225	187	204	8
	LOC. MEAN	186	156	210	184	211	173	209	205	176	191	
	C.D. (5%)	20.0	17.0	7.0	23.0	19.0	39.0	25.0	3.0	21.0	13.0	
	C.D. (1%)	27.0	22.0	10.0	30.0	25.0	53.0	33.0	4.0	28.0	17.0	
	C.V. (%)	6.7	6.6	2.1	7.6	5.5	14.0	7.3	0.8	7.3	7.0	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.181: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	2.7	1.2	3.6	2.5	4.4	2.9	3.2	1.8	1.3	2.6	1
2	PB 1756	2.1	1.4	2.2	1.9	2.3	2.5	2.8	1.3	1.5	2.0	19
3	MPMH 21	2.1	1.1	1.7	1.6	3.0	1.9	2.8	1.8	1.5	2.0	21
4	GHB 719	2.2	1.5	1.1	1.6	3.4	2.3	3.2	1.8	1.6	2.1	9
5	HHB 67 Imp.	2.2	1.5	1.8	1.9	3.2	2.5	2.7	2.2	1.4	2.2	6
6	GHB 538	2.3	1.4	1.0	1.5	5.0	2.3	3.2	1.8	1.5	2.3	3
7	PB 1852	1.6	1.1	1.9	1.5	1.6	2.3	2.5	2.1	1.5	1.8	25
8	PB 1705	2.2	1.4	2.0	1.9	2.8	2.5	3.1	1.9	1.6	2.2	7
9	MPMH 17	2.7	1.3	1.8	2.0	3.5	2.1	3.1	1.9	1.4	2.2	4
10	GHB 905	2.6	1.4	1.0	1.7	3.5	2.1	2.9	2.0	1.5	2.1	10
11	RHB 173	2.9	1.0	3.0	2.3	3.1	2.1	3.4	2.3	1.4	2.4	2
12	GHB 732	2.1	1.3	1.0	1.5	3.1	2.0	3.7	1.7	1.6	2.1	16
13	GHB 744	2.9	1.3	1.1	1.8	2.1	2.1	2.6	1.9	1.6	1.9	22
14	MP 7878	1.7	1.3	1.0	1.3	1.0	2.1	3.5	1.9	1.4	1.7	27
15	KBH 108	2.4	1.2	1.7	1.8	2.7	2.1	3.8	1.8	1.3	2.1	11
16	Kaveri Super Boss	1.7	1.0	1.1	1.3	1.1	2.2	3.0	1.9	1.5	1.7	29
17	86M86	2.1	1.0	1.7	1.6	3.4	2.4	3.3	1.7	1.5	2.2	8
18	MP-7792	2.7	1.3	1.1	1.7	2.0	2.3	3.5	1.8	1.4	2.0	18
19	Proagro 9444	2.3	1.4	1.0	1.6	2.9	2.4	3.2	1.7	1.5	2.1	17
20	GHB 558	2.4	1.2	1.4	1.7	2.6	2.1	3.1	1.8	1.3	2.0	20
21	RHB 234	2.2	1.1	3.5	2.3	2.3	2.3	3.3	1.8	1.4	2.2	5
22	RHB 233	2.3	1.0	2.2	1.8	2.6	1.9	3.2	1.9	1.5	2.1	15
23	AHB 1269	1.7	1.1	2.0	1.6	2.4	2.5	2.6	1.9	1.2	1.9	24
24	HHB 299	2.3	1.1	1.8	1.7	1.2	1.5	2.5	1.9	1.4	1.7	28
25	AHB 1200	1.9	1.1	1.0	1.3	1.1	2.3	2.5	1.6	1.5	1.6	31
26	Dhanshakti	2.2	1.1	1.0	1.4	2.7	2.3	3.0	1.8	1.4	1.9	23
27	ICMV 221	1.5	1.1	1.1	1.2	1.8	2.5	2.1	1.7	1.4	1.7	30
28	Pusa Composite 701	1.9	1.2	1.0	1.3	1.3	2.0	3.6	1.9	1.5	1.8	26
29	Pusa Composite 383	2.5	1.1	2.4	2.0	2.2	2.0	3.3	1.8	1.5	2.1	12
30	JBV 2	1.6	1.2	2.4	1.7	2.3	2.2	3.8	1.9	1.3	2.1	13
31	Raj 171	2.1	1.3	1.7	1.7	2.4	2.1	3.7	1.9	1.3	2.1	14
	LOC. MEAN	2.2	1.2	1.7	1.7	2.5	2.2	3.1	1.8	1.4	2.0	
	C.D. (5%)	0.2	0.2	0.4	0.8	0.6	0.5	0.9	0.3	0.3	0.5	
	C.D. (1%)	0.3	0.2	0.6	1.0	0.8	0.6	1.2	0.4	0.4	0.6	
	C.V. (%)	5.8	8.5	15.4	27.7	13.6	12.8	17.2	10.5	12.2	22.7	
	F (Prob)	0.000	0.000	0.000	0.273	0.000	0.000	0.000	0.000	0.000	0.004	

CHAPTER I: BREEDING

Table I.182: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PANICLE LENGTH (cm) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	24	23	26	24	26	22	31	27	24	25	10
2	PB 1756	28	23	28	26	27	24	28	22	23	25	9
3	MPMH 21	21	21	25	22	24	22	28	23	20	23	24
4	GHB 719	21	22	21	21	26	23	28	21	27	24	20
5	HHB 67 Imp.	22	24	25	24	26	17	25	21	21	23	26
6	GHB 538	22	22	23	22	24	20	25	20	21	22	29
7	PB 1852	21	21	24	22	24	22	26	23	23	23	23
8	PB 1705	23	23	24	23	24	20	30	24	23	24	19
9	MPMH 17	26	21	24	24	26	20	25	24	25	24	18
10	GHB 905	27	23	24	25	26	21	28	26	23	25	12
11	RHB 173	29	25	31	28	29	21	32	25	25	27	4
12	GHB 732	22	22	22	22	24	21	23	22	21	22	28
13	GHB 744	23	21	21	22	24	21	27	24	25	23	22
14	MP 7878	26	23	26	25	24	26	30	26	24	26	7
15	KBH 108	26	24	24	25	24	26	31	27	28	26	6
16	Kaveri Super Boss	27	26	29	27	28	23	33	27	29	28	3
17	86M86	26	22	25	24	25	24	29	25	21	25	13
18	MP-7792	25	23	22	23	25	22	27	24	24	24	16
19	Proagro 9444	24	23	23	23	26	25	28	23	23	24	15
20	GHB 558	23	23	24	23	24	21	27	22	24	24	21
21	RHB 234	24	22	26	24	23	19	25	24	18	23	27
22	RHB 233	27	24	25	25	27	23	27	27	20	25	11
23	AHB 1269	23	22	24	23	25	22	28	23	24	24	17
24	HHB 299	28	24	25	26	26	19	31	27	23	26	8
25	AHB 1200	24	24	21	23	25	21	34	27	20	25	14
26	Dhanshakti	22	20	23	22	22	20	29	24	23	23	25
27	ICMV 221	20	21	21	21	22	17	28	20	23	22	30
28	Pusa Composite 701	28	24	31	28	36	27	33	26	26	29	2
29	Pusa Composite 383	31	24	33	29	35	28	35	25	29	30	1
30	JBV 2	25	23	28	25	34	26	30	26	24	27	4
31	Raj 171	26	23	30	26	27	24	32	26	25	27	5
	LOC. MEAN	25	23	25	24	26	22	29	24	24	25	
	C.D. (5%)	2.0	2.0	2.0	3.0	3.0	5.0	5.0	2.0	3.0	2.0	
	C.D. (1%)	3.0	2.0	2.0	3.0	3.0	7.0	6.0	2.0	4.0	2.0	
	C.V. (%)	5.4	4.3	4.2	6.6	5.9	14.3	9.9	3.9	7.5	7.6	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.183: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PANICLE DIAMETER (cm) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	2.9	2.4	2.8	2.7	2.7	2.1	3.4	2.7	2.9	2.7	19
2	PB 1756	2.9	2.4	2.9	2.7	2.9	2.2	3.2	2.6	2.6	2.7	20
3	MPMH 21	2.8	2.1	2.9	2.6	2.7	2.3	3.3	2.6	3.3	2.8	17
4	GHB 719	2.4	2.0	2.8	2.4	2.5	1.6	3.1	2.4	3.1	2.5	26
5	HHB 67 Imp.	2.2	1.9	2.4	2.1	2.3	1.5	2.8	2.5	2.8	2.3	30
6	GHB 538	2.5	2.1	2.7	2.4	2.3	1.9	2.9	2.7	2.9	2.5	25
7	PB 1852	3.0	2.6	3.6	3.1	3.3	2.7	3.3	2.5	3.5	3.1	5
8	PB 1705	3.0	2.3	3.3	2.8	2.9	2.5	3.3	2.3	3.2	2.8	13
9	MPMH 17	3.0	2.2	3.1	2.8	2.9	2.2	3.3	2.5	3.3	2.8	15
10	GHB 905	2.7	2.3	2.4	2.5	2.6	2.1	2.9	2.4	3.3	2.6	24
11	RHB 173	3.0	2.2	2.7	2.6	2.3	2.2	3.2	2.5	3.4	2.7	21
12	GHB 732	2.5	2.1	2.7	2.4	2.5	2.0	2.9	1.8	2.9	2.4	27
13	GHB 744	2.9	2.2	3.3	2.8	2.9	2.3	3.1	2.2	3.7	2.8	14
14	MP 7878	3.5	2.8	3.7	3.3	3.4	2.8	3.5	2.5	2.9	3.1	3
15	KBH 108	3.3	3.0	3.3	3.2	3.5	2.9	4.1	2.5	3.0	3.2	1
16	Kaveri Super Boss	3.1	2.9	3.7	3.2	3.2	2.4	3.7	2.6	3.0	3.1	4
17	86M86	3.4	2.6	3.1	3.1	3.3	2.5	3.6	2.6	2.9	3.0	6
18	MP-7792	3.1	2.5	3.0	2.9	3.3	2.4	3.5	2.5	3.3	3.0	8
19	Proagro 9444	3.0	2.6	3.2	3.0	2.8	2.4	3.3	2.1	3.2	2.8	12
20	GHB 558	3.2	2.9	2.8	3.0	3.0	2.3	3.1	2.5	3.1	2.9	11
21	RHB 234	3.5	2.5	3.2	3.1	3.4	2.5	3.5	2.6	2.8	3.0	7
22	RHB 233	2.9	2.7	3.3	3.0	2.8	2.3	3.6	2.4	3.1	2.9	10
23	AHB 1269	3.2	2.7	3.0	3.0	3.2	2.2	3.6	2.5	3.3	3.0	8
24	HHB 299	3.3	2.6	3.2	3.0	3.3	2.2	3.4	2.6	3.0	3.0	9
25	AHB 1200	3.5	3.0	3.4	3.3	3.4	2.4	4.1	2.6	3.0	3.2	2
26	Dhanshakti	2.7	2.4	2.8	2.7	2.9	2.2	3.5	2.5	2.9	2.7	18
27	ICMV 221	2.9	2.3	2.7	2.6	2.9	2.3	3.4	2.6	3.1	2.8	16
28	Pusa Composite 701	2.4	2.2	2.4	2.3	2.5	2.2	3.1	1.8	2.8	2.4	28
29	Pusa Composite 383	2.9	2.0	2.7	2.5	2.7	2.2	3.1	2.6	3.3	2.7	22
30	JBV 2	2.7	2.3	2.9	2.7	2.5	2.5	2.9	2.2	2.8	2.6	23
31	Raj 171	2.1	2.3	2.6	2.3	2.3	1.8	2.7	2.2	2.9	2.4	29
	LOC. MEAN	2.9	2.4	3.0	2.8	2.9	2.3	3.3	2.4	3.1	2.8	
	C.D. (5%)	0.2	0.3	0.1	0.3	0.3	0.5	0.4	0.2	0.5	0.2	
	C.D. (1%)	0.3	0.4	0.2	0.4	0.4	0.7	0.6	0.2	0.7	0.3	
	C.V. (%)	4.7	7.3	2.6	7.0	5.9	13.8	8.0	4.1	10.6	8.0	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.184: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 1000- SEED Wt.(g) ZONE A1 & A

S.No.	ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	JMU	ZONE MEAN	RANK
1	RHB 223	11.3	11.3	10.0	10.9	10.6	10.0	8.7	10.5	9.1	10.2	13
2	PB 1756	10.6	11.5	10.2	10.8	13.6	11.2	12.3	12.1	9.6	11.4	1
3	MPMH 21	10.2	7.1	7.5	8.3	10.3	10.2	8.7	6.3	9.0	8.7	30
4	GHB 719	10.8	10.3	7.4	9.5	7.9	8.8	8.4	7.7	8.4	8.7	28
5	HHB 67 Imp.	10.3	11.1	8.3	9.9	9.4	9.9	9.5	10.3	8.6	9.7	21
6	GHB 538	10.4	9.5	8.7	9.5	9.5	10.2	8.9	10.3	12.1	9.9	16
7	PB 1852	10.9	10.3	10.1	10.4	11.2	10.6	11.1	9.9	11.0	10.6	9
8	PB 1705	11.8	9.9	11.2	11.0	12.6	10.4	13.5	11.4	8.5	11.2	2
9	MPMH 17	10.5	9.3	6.9	8.9	8.1	8.7	7.7	7.6	9.2	8.5	31
10	GHB 905	10.3	11.1	7.0	9.5	7.8	9.7	7.5	8.6	8.8	8.8	27
11	RHB 173	11.0	10.8	7.2	9.7	8.7	9.4	9.4	8.8	9.0	9.3	25
12	GHB 732	10.2	7.5	8.6	8.8	10.2	10.5	8.8	10.8	9.4	9.5	22
13	GHB 744	11.2	10.1	7.6	9.6	11.2	10.5	8.8	10.2	11.6	10.1	14
14	MP 7878	12.2	9.7	8.6	10.1	12.1	10.6	11.7	7.3	8.6	10.1	15
15	KBH 108	11.4	12.3	10.5	11.4	12.3	10.3	9.9	11.1	9.2	10.9	4
16	Kaveri Super Boss	10.7	12.2	8.2	10.4	10.7	9.6	11.0	10.8	9.3	10.3	10
17	86M86	10.7	11.1	8.8	10.2	10.6	10.7	10.0	10.3	9.7	10.3	11
18	MP-7792	11.4	9.5	9.3	10.1	11.5	11.1	11.7	10.5	10.6	10.7	8
19	Proagro 9444	11.1	8.4	8.8	9.4	10.6	11.2	9.6	9.0	9.6	9.8	20
20	GHB 558	10.7	10.3	7.1	9.4	10.3	10.0	8.2	9.4	12.4	9.8	18
21	RHB 234	10.8	8.4	6.8	8.6	8.8	10.6	8.2	7.3	13.7	9.3	24
22	RHB 233	11.3	10.9	9.4	10.5	11.8	11.3	11.9	10.3	9.1	10.8	7
23	AHB 1269	11.7	7.6	9.1	9.5	12.4	10.0	9.0	9.0	12.8	10.2	12
24	HHB 299	11.5	9.8	10.6	10.6	12.1	10.0	11.7	11.9	9.7	10.9	3
25	AHB 1200	11.6	8.8	8.6	9.7	10.9	10.3	9.9	10.1	9.0	9.9	17
26	Dhanshakti	11.2	8.3	9.7	9.7	13.1	10.3	11.7	10.4	11.9	10.8	5
27	ICMV 221	11.5	11.4	10.2	11.1	12.5	10.3	11.5	9.4	9.5	10.8	6
28	Pusa Composite 701	10.5	13.0	7.8	10.4	9.1	8.6	9.0	7.7	8.8	9.3	23
29	Pusa Composite 383	10.4	8.1	7.5	8.7	9.1	9.4	8.9	7.2	9.1	8.7	29
30	JBV 2	10.6	6.3	9.3	8.7	9.6	8.8	10.0	7.3	9.5	8.9	26
31	Raj 171	10.3	11.0	9.0	10.1	9.2	10.8	8.6	10.0	9.3	9.8	19
	LOC. MEAN	10.9	9.9	8.7	9.8	10.6	10.1	9.9	9.5	9.9	9.9	
	C.D. (5%)	0.4	1.5	0.6	1.8	1.1	1.6	1.9	0.4	1.3	1.1	
	C.D. (1%)	0.6	2.0	0.7	2.4	1.5	2.1	2.6	0.5	1.8	1.5	
	C.V. (%)	2.5	9.4	3.9	11.4	6.3	9.4	12.0	2.6	8.2	11.4	
	F (Prob)	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.185: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 POPULATION AT HARVEST (No./plot) ZONE A1 & A

S.No. ENTRY	MDR	BKR	JPR	RAJ MEAN	JMR	JNS	HSR	GLR	ZONE MEAN	RANK
1 RHB 223	88	120	201	136	166	179	60	202	145	23
2 PB 1756	147	119	182	149	178	150	73	210	151	9
3 MPMH 21	139	121	184	148	179	155	85	193	151	11
4 GHB 719	172	119	181	157	171	181	85	182	156	5
5 HHB 67 Imp.	127	122	201	150	176	154	85	190	151	12
6 GHB 538	135	127	178	146	169	167	70	201	149	16
7 PB 1852	160	123	179	154	175	176	74	209	156	3
8 PB 1705	145	128	179	151	175	184	97	192	157	2
9 MPMH 17	112	121	193	142	175	170	74	194	148	17
10 GHB 905	147	127	196	157	181	167	76	199	156	4
11 RHB 173	87	123	183	131	135	153	47	201	133	31
12 GHB 732	117	124	179	140	183	175	90	192	151	8
13 GHB 744	121	119	189	143	181	152	80	184	147	20
14 MP 7878	123	122	171	139	179	172	79	192	148	18
15 KBH 108	105	118	189	137	135	180	53	192	139	30
16 Kaveri Super Boss	128	120	195	148	176	179	89	191	154	6
17 86M86	102	125	189	139	174	155	85	191	146	22
18 MP-7792	143	124	195	154	164	122	68	207	146	21
19 Proagro 9444	150	124	186	153	166	132	77	192	147	19
20 GHB 558	93	127	184	135	167	154	76	204	144	25
21 RHB 234	106	120	195	140	166	169	60	188	143	26
22 RHB 233	115	117	198	144	177	146	56	193	143	27
23 AHB 1269	124	120	199	148	174	167	60	217	152	7
24 HHB 299	134	125	198	152	179	157	73	190	151	10
25 AHB 1200	97	128	185	137	173	177	83	205	150	14
26 Dhanshakti	87	120	175	127	176	190	69	194	144	24
27 ICMV 221	65	119	170	118	176	173	67	205	139	29
28 Pusa Composite 701	137	126	176	147	169	182	70	187	150	15
29 Pusa Composite 383	138	118	166	141	178	132	63	202	142	28
30 JBV 2	159	122	174	152	174	157	65	201	150	13
31 Raj 171	153	122	205	160	179	170	75	202	158	1
LOC. MEAN	124	122	186	144	172	164	73	197	148	
C.D. (5%)	10.0	7.0	11.0	26.0	27.0	39.0	28.0	7.0	14.0	
C.D. (1%)	14.0	9.0	15.0	35.0	36.0	51.0	37.0	9.0	19.0	
C.V. (%)	5.0	3.6	3.7	11.1	9.7	14.4	23.1	2.1	9.3	
F (Prob)	0.000	0.000	0.000	0.438	0.000	0.000	0.000	0.000	0.182	

CHAPTER I: BREEDING

Table I.186: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 SEED SET (%) UNDER BAG ZONE A1 & A

S.No.	ENTRY	BKR	JNS	HSR	GLR	ZONE MEAN	RANK
1	RHB 223	47	99	17	70	58	31
2	PB 1756	52	96	87	78	78	6
3	MPMH 21	53	96	63	68	70	24
4	GHB 719	45	94	82	75	74	14
5	HHB 67 Imp.	50	100	67	75	73	19
6	GHB 538	57	92	57	78	71	23
7	PB 1852	57	99	97	80	83	1
8	PB 1705	58	97	87	72	79	5
9	MPMH 17	45	97	72	81	74	16
10	GHB 905	47	97	80	68	73	20
11	RHB 173	58	99	78	69	76	9
12	GHB 732	53	98	88	68	77	8
13	GHB 744	50	97	85	77	77	7
14	MP 7878	53	97	70	77	74	13
15	KBH 108	62	98	23	75	65	29
16	Kaveri Super Boss	58	95	20	77	63	30
17	86M86	50	98	88	86	81	2
18	MP-7792	52	98	90	82	80	3
19	Proagro 9444	50	97	90	64	75	11
20	GHB 558	52	97	60	78	72	22
21	RHB 234	53	96	92	60	75	10
22	RHB 233	47	95	57	77	69	27
23	AHB 1269	43	87	78	68	69	26
24	HHB 299	60	97	87	72	79	4
25	AHB 1200	48	95	60	73	69	25
26	Dhanshakti	45	96	47	80	67	28
27	ICMV 221	50	97	82	72	75	12
28	Pusa Composite 701	38	99	82	76	74	15
29	Pusa Composite 383	38	96	87	67	72	21
30	JBV 2	37	93	90	74	74	17
31	Raj 171	35	97	80	81	73	18
	LOC. MEAN	50	96	72	74	73	
	C.D. (5%)	14.0	10.0	25.0	9.0	14.0	
	C.D. (1%)	19.0	13.0	33.0	12.0	19.0	
	C.V. (%)	17.7	6.2	21.2	7.2	17.7	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

**Table I.187: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 ZONE A1 & A
GRAIN QUALITY (Protein and Fat)**

S.No.	TEST CODE	Protein (%)	Fat (%)
		HSR	HSR
1	RHB 223	10.8	5.3
2	PB 1756	11.4	4.4
3	MPMH 21	11.9	5.3
4	GHB 719	12.5	5.4
5	HHB 67 Imp.	12.5	4.9
6	GHB 538	11.2	5.3
7	PB 1852	10.1	5.6
8	PB 1705	11.2	6.2
9	MPMH 17	11.8	5.8
10	GHB 905	12.4	5.8
11	RHB 173	11.3	5.5
12	GHB 732	9.5	5.3
13	GHB 744	10.4	5.4
14	MP 7878	11.1	6.1
15	KBH 108	11.1	4.9
16	Kaveri Super Boss	10.9	4.8
17	86M86	11.2	5.3
18	MP-7792	10.9	5.6
19	Proagro 9444	11.4	5.9
20	GHB 558	11.4	5.5
21	RHB 234	11.4	5.2
22	RHB 233	11.8	5.1
23	AHB 1269	11.0	4.7
24	HHB 299	11.3	4.5
25	AHB 1200	11.7	5.5
26	Dhanshakti	12.2	5.0
27	ICMV 221	11.4	4.4
28	Pusa Composite 701	13.0	4.9
29	Pusa Composite 383	12.5	5.3
30	JBV 2	12.0	5.2
31	Raj 171	12.1	5.9

CHAPTER I: BREEDING

Table I.188: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF 2022 EXPERIMENTAL DETAILS ZONE B

Locations	Soil	pH	Sowing date	Harvesting date	Interculture date	Irrigation date	Fertilizer			Insecticide
							N	P	K	
MAHARASHTRA										
Aurangabad (NARP) (VNMKV)	MB	7.5	12.7.22	30.10.22	1.8.22	Nil	60	30	30	Nil
Dhule (MPKV)	MB	8.6	4.7.22	17.10.22	31.7.22	Nil	60	30	0	Nil
KARNATAKA										
Vijayapur (UAS, Dharwad)	SB	8.7	9.7.22	29.10.22	17.8.22	-	50	25	0	Nil
Malnoor (UAS, Raichur)	MB	7.7	14.7.22	22.10.22	26.8.22	Nil	50	50	0	Nil
ANDHRA PRADESH										
Ananthapuram (ANGRAU)	RSL	6.5	7.7.22	18.11.22	4.8.22	Nil	60	30	20	Nil
Vizianagaram (ANGRAU)	RSL	6.7	5.8.22	12.10.22	27.8.22	Nil	60	40	30	Nil
TELANGANA										
Palem (PJ TSAU)	RSS	-	-	As Per Maturity	-	-	-	-	-	Nil
TAMIL NADU										
Coimbatore (TNAU)	CL	7.8	6.7.22	17.10.22	-	6.7,27.7,19.8, 21.9.22	80	40	40	Nil
ODISHA										
Semiliguda (OUAT)	SL	-	3.8.22	As Per Maturity	-	-	60	30	30	Nil

MB = Medium Black; CL = Clay Loam; SB = Shallow Black; RSL = Red Sandy Loam, RSS= Red Sandy Soil

CHAPTER I: BREEDING

Table I.189: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 GRAIN YIELD (kg/ha) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	RHB 234	3544	2408	2976	1819	2146	1983	4024	2228	3126	3015	3189	1306	2631	7
2	RHB 233	2519	2232	2376	1812	2289	2050	3934	3622	3778	3386	2758	1111	2629	8
3	AHB 1269	3111	2494	2802	1983	2167	2075	3754	2658	3206	2715	3493	1278	2628	9
4	HHB 299	3917	4809	4363	2446	2645	2546	1411	2072	1742	2808	4283	3028	3047	3
5	AHB 1200	3418	2495	2956	2167	2264	2216	3844	2568	3206	3085	4465	1250	2840	5
6	NBH 5767	3185	2662	2924	2272	2293	2282	1862	1979	1920	2664	3533	1917	2485	10
7	Pratap (MH 1642)	3598	3288	3443	3179	2318	2749	2943	3075	3009	2441	3231	2167	2916	4
8	NBH 4903	2669	4573	3621	2877	3286	3081	4835	2691	3763	1673	4957	2639	3355	1
9	86M86	2702	3413	3057	2689	2401	2545	1592	2847	2219	1515	4431	2861	2717	6
10	Kaveri Super Boss	4036	4062	4049	2399	2693	2546	1592	3381	2486	3043	4650	2972	3203	2
11	86M64	2734	2498	2616	2551	2528	2539	1321	2237	1779	997	3487	750	2123	14
12	GHB 558	2699	2656	2678	2023	2403	2213	1321	2643	1982	1932	2807	1222	2190	11
13	Dhansakti	2191	1719	1955	1688	1384	1536	1502	1964	1733	2062	2317	944	1752	16
14	ICMV 221	1750	1529	1639	2045	1467	1756	2042	2090	2066	1099	2210	861	1677	18
15	Pusa Comp. 612	3426	2626	3026	2096	1513	1805	1502	3030	2266	1043	2227	2056	2169	12
16	ABV 04	2018	2379	2199	2658	2184	2421	871	3306	2089	978	2777	2028	2133	13
17	Raj 171	2519	2221	2370	2219	1222	1721	1952	2976	2464	840	2197	1083	1914	15
18	ICMV 155	2940	1692	2316	1794	978	1386	1682	2625	2153	1099	1664	889	1707	17
	LOC. MEAN	2943	2764	2854	2262	2121	2192	2332	2666	2499	2022	3260	1687	2451	
	C.D. (5%)	271	788	1148	377	467	718	404	563	1880	0	611	508	611	
	C.D. (1%)	364	1058	1578	505	626	986	542	756	2583	0	820	683	807	
	C.V. (%)	5.6	17.2	19.1	10.0	13.3	15.5	10.4	12.7	35.7	.	11.3	18.2	26.7	
	F (Prob)	0.000	0.000	0.009	0.000	0.000	0.008	0.000	0.000	0.387	0.000	0.000	0.000	0.000	
	PLOT SIZE (m ²)	12.00	11.10	-	12.00	12.00	-	11.10	11.10	-	10.80	12.00	12.00	-	

Table I.190: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DRY FODDER YIELD (kg/ha) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	RHB 234	6250	4595	5422	4333	4222	4278	7027	3940	5483	4272	4831	1958	4603	16
2	RHB 233	7056	5315	6185	4639	6000	5319	7477	5610	6544	4466	5712	1667	5327	7
3	AHB 1269	6875	4715	5795	4694	6056	5375	6577	4483	5530	3540	5929	1917	4976	11
4	HHB 299	7264	8709	7986	6944	6972	6958	6847	3976	5411	7336	8049	4597	6744	1
5	AHB 1200	7181	5526	6353	5000	5694	5347	7087	4234	5661	2790	6561	2153	5136	10
6	NBH 5767	7444	5946	6695	6361	6861	6611	6547	3261	4904	4565	7447	2875	5701	5
7	Pratap (MH 1642)	7222	5586	6404	4972	5778	5375	6667	5342	6005	2438	5792	3250	5227	9
8	NBH 4903	7417	9189	8303	6556	7361	6958	7447	4201	5824	4355	7970	3958	6495	3
9	86M86	7011	7087	7049	4889	5583	5236	6637	4438	5538	2522	7415	4292	5542	6
10	Kaveri Super Boss	7417	9369	8393	4972	6389	5681	6727	5354	6041	7159	8480	4458	6703	2
11	86M64	5972	3904	4938	3972	4917	4444	6787	3694	5240	2799	4817	1125	4221	18
12	GHB 558	6944	4895	5920	4083	5889	4986	6306	4369	5338	4276	5488	1833	4898	12
13	Dhansakti	6917	4384	5651	4278	3444	3861	6426	3880	5153	5299	6479	1417	4725	14
14	ICMV 221	6500	6306	6403	4278	3444	3861	6186	3369	4778	3452	4365	1292	4355	17
15	Pusa Comp. 612	7042	8438	7740	5111	4667	4889	7117	5006	6062	5651	5473	3083	5732	4
16	ABV 04	5556	7207	6381	4917	4611	4764	6396	5471	5934	4512	5704	3042	5269	8
17	Raj 171	6736	6306	6521	5111	4000	4556	6517	5036	5776	2799	5531	1625	4851	13
18	ICMV 155	5972	6306	6139	4972	3694	4333	6997	4441	5719	3633	4220	1333	4619	15
	LOC. MEAN	6821	6321	6571	5005	5310	5157	6765	4450	5608	4215	6126	2549	5285	
	C.D. (5%)	982	2170	2361	835	1091	1413	1247	1076	1081	1	1332	741	807	
	C.D. (1%)	1319	2913	3243	1121	1464	1941	1674	1445	1484	2	1788	995	1066	
	C.V. (%)	8.7	20.7	17.0	10.1	12.4	13.0	11.1	14.6	9.1	0.0	13.1	17.5	16.4	
	F (Prob)	0.000	0.000	0.195	0.000	0.000	0.004	0.000	0.000	0.216	0.000	0.000	0.000	0.000	
	PLOT SIZE (m ²)	12.00	11.10	-	12.00	12.00	-	11.10	11.10	-	10.80	12.00	12.00	-	

CHAPTER I: BREEDING

Table I.191: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DAYS TO 50% FLOWERING ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	VZN	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	50	53	51	47	48	47	46	44	46	48	10
2	RHB 233	45	48	47	46	51	49	44	43	46	46	13
3	AHB 1269	47	48	48	46	51	49	42	42	43	46	15
4	HHB 299	52	53	52	51	53	52	47	50	50	51	4
5	AHB 1200	48	49	48	48	52	50	44	43	44	47	12
6	NBH 5767	49	48	49	44	50	47	45	42	43	46	14
7	Pratap (MH 1642)	48	50	49	45	52	49	42	46	46	47	11
8	NBH 4903	61	53	57	52	56	54	47	51	50	53	2
9	86M86	59	53	56	51	53	52	49	50	51	52	3
10	Kaveri Super Boss	56	53	55	56	54	55	48	54	51	53	1
11	86M64	54	51	53	50	51	51	46	50	50	50	5
12	GHB 558	46	48	47	46	47	47	44	41	45	45	16
13	Dhanshakti	44	44	44	46	47	47	44	39	41	44	18
14	ICMV 221	45	45	45	48	49	48	44	41	42	45	17
15	Pusa Comp. 612	49	53	51	49	49	49	45	49	48	49	7
16	ABV 04	52	53	52	51	48	49	44	44	50	49	8
17	Raj 171	54	51	52	52	48	50	46	46	51	50	6
18	ICMV 155	54	49	52	51	48	49	46	44	47	48	9
	LOC. MEAN	51	50	50	49	50	50	45	45	47	48	
	C.D. (5%)	2.0	3.0	5.0	1.0	1.0	5.0	2.0	4.0	1.0	2.0	
	C.D. (1%)	3.0	4.0	7.0	2.0	2.0	7.0	3.0	6.0	2.0	3.0	
	C.V. (%)	2.6	3.5	4.5	1.5	1.5	4.7	3.1	5.5	1.8	4.3	
	F (Prob)	0.000	0.000	0.001	0.000	0.000	0.089	0.000	0.000	0.000	0.000	

Table I.192: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 DAYS TO MATURITY ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	VZN	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	88	94	91	91	83	87	76	89	84	86	7
2	RHB 233	86	89	88	93	84	89	74	88	82	85	11
3	AHB 1269	86	89	88	91	82	87	73	87	81	84	15
4	HHB 299	89	94	91	94	84	89	80	95	87	89	4
5	AHB 1200	86	90	88	89	84	87	74	88	83	85	13
6	NBH 5767	85	89	87	91	85	88	75	87	81	85	14
7	Pratap (MH 1642)	86	91	89	92	84	88	73	91	82	86	10
8	NBH 4903	97	94	96	96	87	91	81	96	86	91	1
9	86M86	96	94	95	93	84	88	84	95	87	91	3
10	Kaveri Super Boss	95	94	95	95	86	90	81	99	87	91	2
11	86M64	91	92	92	93	83	88	77	95	87	88	5
12	GHB 558	86	89	87	86	82	84	75	86	83	84	16
13	Dhanshakti	84	85	85	83	80	82	73	84	81	81	18
14	ICMV 221	85	86	85	85	82	84	75	86	81	83	17
15	Pusa Comp. 612	86	94	90	89	81	85	76	94	84	86	8
16	ABV 04	89	94	91	91	82	86	76	89	86	86	6
17	Raj 171	91	92	91	88	82	85	76	91	83	86	9
18	ICMV 155	91	90	91	87	81	84	77	89	81	85	12
	LOC. MEAN	89	91	90	90	83	87	76	90	84	86	
	C.D. (5%)	1.0	3.0	4.0	2.0	2.0	3.0	4.0	4.0	2.0	2.0	
	C.D. (1%)	1.0	4.0	6.0	2.0	2.0	5.0	5.0	6.0	3.0	3.0	
	C.V. (%)	0.7	1.9	2.3	1.0	1.1	1.9	2.8	2.8	1.7	2.3	
	F (Prob)	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.193: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PLANT HEIGHT (cm.) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	RHB 234	159	197	178	135	144	140	138	179	159	169	189	142	161	17
2	RHB 233	168	227	198	136	152	144	124	206	165	188	200	147	172	12
3	AHB 1269	184	218	201	139	161	150	130	191	161	181	212	180	177	9
4	HHB 299	199	228	213	139	174	157	132	190	161	196	215	199	186	7
5	AHB 1200	183	206	195	134	168	151	111	183	147	174	191	161	168	15
6	NBH 5767	188	232	210	138	182	160	126	204	165	191	199	180	182	8
7	Pratap (MH 1642)	159	184	172	132	150	141	149	196	173	166	182	167	165	16
8	NBH 4903	189	230	210	154	196	175	149	239	194	203	227	198	198	3
9	86M86	196	222	209	149	167	158	153	205	179	189	216	185	187	6
10	Kaveri Super Boss	208	231	220	154	183	169	152	233	192	193	245	205	200	2
11	86M64	152	209	180	134	157	146	161	205	183	168	206	145	171	13
12	GHB 558	140	184	162	125	145	135	130	175	153	158	168	137	151	18
13	Dhanshakti	179	197	188	139	174	156	114	197	156	170	199	162	170	14
14	ICMV 221	181	201	191	131	175	153	126	201	163	181	211	161	174	11
15	Pusa Comp. 612	211	252	231	147	191	169	180	230	205	186	226	210	204	1
16	ABV 04	174	224	199	136	171	153	191	271	231	183	222	182	195	4
17	Raj 171	195	237	216	130	188	159	171	201	186	189	232	195	193	5
18	ICMV 155	147	237	192	149	173	161	148	209	178	166	186	170	176	10
	LOC. MEAN	178	218	198	139	170	154	144	206	175	181	207	174	180	
	C.D. (5%)	4.0	24.0	26.0	11.0	26.0	19.0	10.0	20.0	26.0	20.0	10.0	19.0	12.0	
	C.D. (1%)	6.0	32.0	36.0	15.0	35.0	26.0	14.0	27.0	36.0	27.0	13.0	26.0	16.0	
	C.V. (%)	1.4	6.7	6.3	4.9	9.3	5.8	4.3	5.9	7.2	6.7	2.9	6.7	7.1	
	F (Prob)	0.000	0.000	0.003	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table I.194: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PRODUCTIVE TILLERS (No./Plant) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	SMG	ZONE MEAN	RANK
1	RHB 234	1.6	2.2	1.9	2.7	3.3	3.0	2.3	3.8	3.0	3.8	2.4	3.3	2.8	4
2	RHB 233	2.3	2.1	2.2	2.8	3.3	3.1	2.4	3.7	3.1	3.5	4.1	3.5	3.1	1
3	AHB 1269	1.9	2.0	2.0	2.9	2.9	2.9	2.4	3.3	2.8	3.2	2.5	2.7	2.6	16
4	HHB 299	2.9	2.2	2.5	2.8	2.8	2.8	2.2	2.7	2.5	3.5	2.8	2.6	2.7	11
5	AHB 1200	1.8	2.0	1.9	2.7	2.9	2.8	2.3	3.7	3.0	3.6	2.5	3.0	2.7	12
6	NBH 5767	2.3	2.1	2.2	2.9	3.0	3.0	2.3	2.7	2.5	3.5	3.4	3.3	2.8	3
7	Pratap (MH 1642)	2.3	2.1	2.2	3.1	2.9	3.0	1.9	4.3	3.1	3.3	2.7	2.7	2.8	6
8	NBH 4903	1.9	2.1	2.0	2.7	2.9	2.8	1.9	3.1	2.5	3.5	3.4	2.6	2.7	13
9	86M86	2.2	1.9	2.1	3.0	3.5	3.2	2.1	3.1	2.6	2.9	3.0	3.6	2.8	5
10	Kaveri Super Boss	1.7	1.5	1.6	2.9	3.8	3.4	2.3	2.1	2.2	3.5	3.0	3.1	2.6	14
11	86M64	1.3	1.9	1.6	3.3	4.0	3.7	2.3	2.9	2.6	3.5	3.1	2.3	2.7	9
12	GHB 558	2.8	2.2	2.5	2.8	4.1	3.5	2.2	1.9	2.1	3.7	2.6	4.7	3.0	2
13	Dhanshakti	2.1	2.1	2.1	3.0	3.8	3.4	2.3	1.9	2.1	4.0	2.6	3.1	2.8	8
14	ICMV 221	1.5	2.0	1.7	3.0	3.6	3.3	2.3	1.8	2.0	3.3	2.5	2.7	2.5	17
15	Pusa Comp. 612	1.1	2.0	1.5	2.5	4.5	3.5	2.2	2.3	2.2	3.7	3.2	3.7	2.8	7
16	ABV 04	2.1	1.9	2.0	2.8	3.5	3.1	2.2	1.9	2.0	3.7	2.9	3.5	2.7	11
17	Raj 171	1.7	2.0	1.9	3.0	3.5	3.2	1.9	1.9	1.9	3.5	2.9	4.1	2.7	10
18	ICMV 155	1.8	2.0	1.9	3.1	3.4	3.2	2.1	1.3	1.7	4.1	2.5	3.5	2.6	15
	LOC. MEAN	2.0	2.0	2.0	2.9	3.4	3.2	2.2	2.7	2.4	3.6	2.9	3.2	2.8	
	C.D. (5%)	0.5	0.2	0.6	0.4	1.0	0.8	0.5	0.6	1.3	1.1	0.5	1.0	0.4	
	C.D. (1%)	0.7	0.2	0.9	0.6	1.4	1.1	0.6	0.8	1.8	1.5	0.7	1.3	0.6	
	C.V. (%)	15.1	4.8	14.7	8.6	17.9	11.7	12.6	13.6	25.2	18.4	10.3	17.9	16.9	
	F (Prob)	0.000	0.000	0.105	0.000	0.000	0.491	0.000	0.000	0.529	0.000	0.000	0.000	0.758	

CHAPTER I: BREEDING

Table I.195: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PANICLE LENGTH (cm) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	25	24	24	21	22	22	25	23	24	20	23	23	14
2	RHB 233	28	27	27	20	21	21	25	26	26	22	27	24	9
3	AHB 1269	24	25	25	20	21	21	22	22	22	19	23	22	17
4	HHB 299	29	26	27	23	24	23	25	27	26	23	25	25	4
5	AHB 1200	30	27	28	22	21	22	23	26	24	23	26	25	7
6	NBH 5767	28	27	27	20	19	20	23	27	25	21	26	24	12
7	Pratap (MH 1642)	26	25	26	20	22	21	23	24	24	21	24	23	13
8	NBH 4903	28	26	27	23	27	25	26	31	29	26	26	27	1
9	86M86	27	24	26	21	23	22	25	26	26	22	25	24	10
10	Kaveri Super Boss	28	26	27	21	26	24	27	25	26	25	29	26	2
11	86M64	27	26	27	22	21	22	27	26	27	23	26	25	6
12	GHB 558	23	25	24	21	20	21	23	24	24	19	23	22	16
13	Dhanshakti	24	25	25	21	18	20	16	26	21	20	24	22	18
14	ICMV 221	26	24	25	21	20	21	16	28	22	23	23	23	15
15	Pusa Comp. 612	28	28	28	22	23	22	25	31	28	24	24	26	3
16	ABV 04	27	25	26	21	23	22	26	31	29	22	25	25	5
17	Raj 171	26	28	27	21	24	23	25	24	24	23	25	25	8
18	ICMV 155	26	28	27	21	18	19	25	30	27	22	25	24	11
	LOC. MEAN	27	26	26	21	22	22	24	27	25	22	25	24	
	C.D. (5%)	2.0	2.0	3.0	1.0	3.0	3.0	2.0	3.0	6.0	4.0	2.0	2.0	
	C.D. (1%)	3.0	3.0	4.0	2.0	4.0	4.0	3.0	4.0	8.0	5.0	2.0	2.0	
	C.V. (%)	5.5	4.5	4.9	4.3	7.6	7.0	4.7	7.6	10.9	9.6	4.0	7.0	
	F (Prob)	0.000	0.000	0.065	0.000	0.000	0.105	0.000	0.000	0.292	0.000	0.000	0.000	

Table I.196: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 PANICLE DIAMETER (cm) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	3.5	3.3	3.4	2.5	3.1	2.8	4.3	4.0	4.2	2.6	2.7	3.3	9
2	RHB 233	3.5	3.2	3.3	2.6	3.0	2.8	3.5	3.8	3.7	2.8	2.8	3.1	12
3	AHB 1269	3.6	3.5	3.5	3.0	3.3	3.2	3.8	4.3	4.1	3.0	3.2	3.5	3
4	HHB 299	3.3	3.7	3.5	3.1	3.3	3.2	3.7	3.8	3.7	3.0	2.7	3.3	6
5	AHB 1200	3.7	3.7	3.7	3.0	3.1	3.1	3.8	4.2	4.0	3.0	3.5	3.5	2
6	NBH 5767	3.5	3.6	3.5	2.5	2.8	2.6	3.1	3.0	3.0	2.9	2.7	3.0	15
7	Pratap (MH 1642)	3.4	3.6	3.5	3.2	3.3	3.2	3.4	4.0	3.7	2.9	2.8	3.3	7
8	NBH 4903	3.5	3.8	3.6	3.4	3.6	3.5	3.6	4.3	3.9	3.3	3.2	3.6	1
9	86M86	3.3	3.5	3.4	3.0	3.4	3.2	3.5	4.2	3.9	3.0	2.6	3.3	5
10	Kaveri Super Boss	3.3	3.4	3.4	2.7	3.2	3.0	3.4	4.4	3.9	2.8	2.8	3.3	8
11	86M64	3.3	3.5	3.4	3.3	3.3	3.3	3.2	4.2	3.7	2.9	3.0	3.4	4
12	GHB 558	3.1	3.4	3.2	2.5	3.0	2.7	3.5	4.0	3.8	2.7	3.2	3.2	11
13	Dhanshakti	3.4	3.1	3.2	2.5	2.9	2.7	3.4	3.5	3.5	2.6	2.6	3.0	16
14	ICMV 221	3.2	3.3	3.2	2.9	3.1	3.0	3.0	4.2	3.6	2.8	2.4	3.1	13
15	Pusa Comp. 612	3.1	2.9	3.0	2.4	2.4	2.4	3.2	4.2	3.7	3.3	2.5	3.0	14
16	ABV 04	3.2	3.5	3.4	2.7	3.3	3.0	3.6	4.0	3.8	2.4	2.7	3.2	10
17	Raj 171	2.9	2.7	2.8	2.5	2.2	2.4	3.4	3.4	3.4	2.4	2.5	2.8	18
18	ICMV 155	2.7	3.0	2.8	2.4	2.5	2.5	3.3	3.8	3.6	2.4	2.1	2.8	17
	LOC. MEAN	3.3	3.4	3.3	2.8	3.0	2.9	3.5	4.0	3.7	2.8	2.8	3.2	
	C.D. (5%)	0.2	0.3	0.3	0.4	0.4	0.4	0.8	0.7	0.6	0.4	0.2	0.2	
	C.D. (1%)	0.3	0.3	0.4	0.5	0.6	0.5	1.0	0.9	0.9	0.6	0.3	0.3	
	C.V. (%)	4.4	4.6	4.4	8.8	8.2	5.8	13.1	10.2	7.9	9.5	5.2	7.4	
	F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.164	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.197: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 1000-SEED Wt.(g) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	11.1	9.5	10.3	13.0	11.4	12.2	14.0	10.0	9.0	11.1	15
2	RHB 233	12.9	11.0	12.0	11.6	12.7	12.2	13.0	14.8	13.9	12.8	1
3	AHB 1269	10.8	10.2	10.5	12.2	12.2	12.2	12.0	13.6	11.2	11.8	13
4	HHB 299	14.4	10.7	12.6	12.6	11.6	12.1	12.0	13.8	12.4	12.5	3
5	AHB 1200	14.9	11.7	13.3	11.8	12.1	11.9	12.7	13.6	12.7	12.8	2
6	NBH 5767	11.9	10.1	11.0	10.7	11.9	11.3	13.3	12.9	11.5	11.8	12
7	Pratap (MH 1642)	14.5	10.5	12.5	12.1	11.8	12.0	12.3	10.7	12.7	12.1	8
8	NBH 4903	13.7	10.0	11.9	12.9	12.6	12.8	13.3	11.5	12.6	12.4	5
9	86M86	14.2	9.5	11.8	13.5	12.5	13.0	14.0	11.1	12.5	12.5	4
10	Kaveri Super Boss	12.4	8.6	10.5	11.9	12.6	12.3	13.3	11.8	12.1	11.8	11
11	86M64	11.4	9.6	10.5	12.2	11.2	11.7	11.7	10.3	12.3	11.2	14
12	GHB 558	12.6	9.8	11.2	12.9	11.6	12.3	13.5	14.7	11.2	12.3	6
13	Dhanshakti	11.4	10.9	11.1	10.7	11.4	11.1	12.3	15.0	12.8	12.1	9
14	ICMV 221	10.6	9.4	10.0	12.4	12.6	12.5	12.3	14.7	13.3	12.2	7
15	Pusa Comp. 612	14.5	9.0	11.8	12.1	11.2	11.7	12.0	6.1	9.7	10.7	17
16	ABV 04	11.5	10.6	11.1	10.7	12.6	11.7	12.3	13.4	12.4	11.9	10
17	Raj 171	8.6	9.5	9.0	12.2	11.8	12.0	11.7	10.6	9.1	10.5	18
18	ICMV 155	10.5	9.1	9.8	11.3	12.2	11.8	13.5	9.9	9.7	10.9	16
	LOC. MEAN	12.3	10.0	11.2	12.0	12.0	12.0	12.7	12.2	11.7	11.9	
	C.D. (5%)	0.5	0.8	2.5	1.5	1.2	1.5	2.6	0.1	0.7	1.5	
	C.D. (1%)	0.7	1.1	3.4	2.0	1.6	2.0	3.5	0.1	0.9	2.0	
	C.V. (%)	2.5	5.0	10.5	7.4	6.0	5.8	12.4	0.3	3.6	10.9	
	F (Prob)	0.000	0.000	0.137	0.000	0.000	0.577	0.000	0.000	0.000	0.140	

Table I.198: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022 POPULATION AT HARVEST (No./ plot) ZONE B

S.No.	ENTRY	ABD1	DHL	MS MEAN	VYP	MLR	KS MEAN	APR	VZN	AP MEAN	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	152	116	134	141	140	141	146	131	138	132	129	136	11
2	RHB 233	153	104	129	145	144	144	157	129	143	141	107	135	12
3	AHB 1269	153	111	132	143	145	144	187	128	158	135	130	141	5
4	HHB 299	148	134	141	144	148	146	185	131	158	132	136	145	1
5	AHB 1200	153	105	129	143	161	152	177	132	154	132	122	141	6
6	NBH 5767	153	98	126	143	165	154	206	127	167	132	129	144	2
7	Pratap (MH 1642)	155	103	129	143	160	152	166	132	149	140	119	140	7
8	NBH 4903	154	130	142	143	165	154	158	128	143	132	127	142	3
9	86M86	154	125	140	144	146	145	149	131	140	132	127	138	8
10	Kaveri Super Boss	155	131	143	145	149	147	159	131	145	141	125	142	4
11	86M64	152	98	125	143	158	151	109	129	119	135	115	130	18
12	GHB 558	153	94	123	145	152	149	141	132	137	132	93	130	16
13	Dhanshakti	155	86	121	145	151	148	130	128	129	132	112	130	17
14	ICMV 221	151	87	119	145	163	154	154	127	141	141	123	136	10
15	Pusa Comp. 612	154	100	127	146	151	148	147	130	139	135	113	135	13
16	ABV 04	156	93	124	145	157	151	169	129	149	132	115	137	9
17	Raj 171	156	88	122	145	159	152	123	130	126	132	114	131	14
18	ICMV 155	153	86	120	144	158	151	132	131	132	136	106	131	15
	LOC. MEAN	153	105	129	144	154	149	155	130	143	135	119	137	
	C.D. (5%)	5.0	9.0	25.0	3.0	16.0	11.0	20.0	5.0	37.0	5.0	19.0	11.0	
	C.D. (1%)	6.0	12.0	35.0	4.0	21.0	16.0	26.0	7.0	50.0	7.0	25.0	14.0	
	C.V. (%)	1.9	5.3	9.2	1.2	6.1	3.6	7.6	2.4	12.2	2.4	9.4	8.0	
	F (Prob)	0.000	0.000	0.611	0.000	0.000	0.463	0.000	0.000	0.520	0.000	0.000	0.046	

CHAPTER I: BREEDING

Table I.199: RELEASED HYBRIDS & VARIETIES TRIAL KHARIF - 2022
SEED SET (%) UNDER BAG ZONE B

S.No.	ENTRY	DHL	PLM	CBE	ZONE MEAN	RANK
1	RHB 234	88	98	42	76	17
2	RHB 233	93	89	52	78	15
3	AHB 1269	92	90	44	75	18
4	HHB 299	92	96	70	86	2
5	AHB 1200	97	98	64	86	1
6	NBH 5767	95	96	58	83	5
7	Pratap (MH 1642)	97	94	65	85	4
8	NBH 4903	97	97	48	80	11
9	86M86	95	96	53	81	9
10	Kaveri Super Boss	95	94	56	82	7
11	86M64	93	97	67	86	3
12	GHB 558	88	96	46	77	16
13	Dhanshakti	83	92	64	80	12
14	ICMV 221	82	94	62	79	13
15	Pusa Comp. 612	92	97	56	81	8
16	ABV 04	85	98	61	81	10
17	Raj 171	95	95	59	83	6
18	ICMV 155	83	97	55	79	14
	LOC. MEAN	91	95	57	81	
	C.D. (5%)	8.0	2.0	11.0	8.0	
	C.D. (1%)	11.0	3.0	15.0	11.0	
	C.V. (%)	5.3	1.5	11.8	5.3	
	F (Prob)	0.000	0.000	0.000	0.000	

E. AICRP on Pearl Millet Summer Trials: SHT

One coordinated trial in summer 2022 viz. Summer Hybrid Trial comprising entries of first, second and third year of testing was conducted at 17 locations i.e. eight locations in Gujarat, four in Maharashtra and one each in Rajasthan, U.P., Punjab, Telangana and Tamil Nadu. The results are presented below:

Fifteen hybrids along with four checks MP 7366, Nandi 75, Proagro 9444 and 86M64 were evaluated in SHT (Summer Hybrid Trial). Mean performance of experimental hybrids for grain yield, dry fodder yield, days to 50% flowering and days to maturity are given in Tables I.200. Location-wise performance for grain yield and other ancillary characters are given in Tables I.201 to I.214. None of the hybrid recorded higher grain yield over the best check MP 7366 (4875 kg/ha). Dry fodder yield ranged from 6765 kg/ha to 11321 kg/ha.

Table I.200: MEAN PERFORMANCE: SUMMER HYBRID TRIAL SUMMER 2022

S.No.	Name of Entry (Year of testing)	Grain Yield (kg/ha)	Dry Fodder Yield (kg/ha)	Days to 50% Flower	Days to Maturity	DM (%) 60 DAS	Blast (score)	Ergot (%)	Smut (%)	Rust (%)	Fe (ppm)	Zn (ppm)
1	MP 7366 (C)	4875	9761	56	87	0.0	1.0	0.5	0.5	2.7	64	42
2	MSH 389 (2 nd)	4752	9174	57	88	0.2	0.8	0.8	1.5	2.3	56	36
3	MSH 396	4743	9511	58	88	0.0	0.0	0.0	0.0	4.0	49	33
4	MSH 377 (3 rd)	4742	9746	55	86	0.0	0.0	0.0	0.0	3.8	68	41
5	Nandi 75 (C)	4722	11321	57	87	0.0	0.8	1.2	0.3	3.0	50	33
6	MSH 371 (3 rd)	4671	11207	56	87	0.3	0.8	0.0	0.0	1.7	54	36
7	MSH 397	4653	10355	59	89	0.0	0.8	0.3	0.0	4.2	62	40
8	MSH 395	4651	9768	54	85	0.0	0.3	0.0	0.0	2.2	57	45
9	MSH 399	4637	10175	56	87	0.0	0.7	0.8	1.2	3.0	52	34
10	MSH 398	4544	10441	56	88	0.0	0.0	0.0	0.0	2.5	51	36
11	MSH 372 (3 rd)	4509	10092	55	87	0.0	0.0	0.2	1.3	3.0	57	37
12	MSH 394	4466	9873	57	88	0.0	0.0	0.7	0.2	0.0	65	38
13	MSH 392	4308	9336	56	86	0.0	0.8	0.3	0.0	2.8	61	37
14	MSH 390	4237	10145	56	86	0.0	0.7	0.5	0.3	3.7	46	33
15	Proagro 9444 (C)	4182	8847	55	86	0.0	1.2	0.0	0.0	1.2	47	34
16	MSH 393	4127	11091	58	89	0.2	1.0	0.8	0.8	4.2	68	40
17	MSH 400	3508	7855	51	83	0.0	0.8	0.0	0.0	1.0	52	34
18	MSH 391	3436	7430	49	81	0.0	0.0	0.0	0.0	2.7	81	38
19	86M64 (C)	3259	6765	58	89	2.3	1.2	0.5	0.8	4.5	60	38
LOC. MEAN		4377	9642	56	87							

Promotion criteria as per 54th Annual group meet: Grain yield =higher than best check or 5% higher over relevant check, Disease (Across all zones): Downy Mildew (60 DAS): $\leq 5\%$, Blast (score): ≤ 3 (0-9 scale), Ergot (% severity): $\leq 20\%$, Smut (% severity): $\leq 20\%$, Rust (% leaf area): $\leq 20\%$, Iron content: ≥ 42 ppm and Zinc content: ≥ 32 ppm.

CHAPTER I: BREEDING

Table I.201: SUMMER HYBRID TRIAL 2022 EXPERIMENTAL DETAILS ZONE

Locations	Soil	pH	Sowing date	Harvesting date	Interculture Date	Irrigation Date	Fertilizer			Insecticide
							N	P	K	
Mandor (ICAR-AICRP)	SL	7.5	28.2.22	As Per Maturity	23.3.22	Twelve	60	40	0	Nil
Anand (AAU)	SL	7.2	20.2.22	18.5.22	21.3,30.3.22	Six	120	60	0	Nil
Jamnagar (JAU)	MB	7.6	19.2.22	18.4.22	4.3,11.3,20.3.22	Ten	120	60	0	Nil
S.K.Nagar (SDAU)	SL	-	28.2.22	7.6.22	17.3.22	2 times then Sprinkler	120	60	0	Nil
Visnagar (Apex Seedstech)	SL	-	5.3.22	6.7.22	4.4.22	Ten	40	20	20	Nil
Ahmedabad (Nandi)	SL	-	24.2.22	28.5.22	16.3, 8.4.22	Ten	80	40	0	Coragen
Dehgam (Rallis)	SL	6.5	2.3.22	3.6.22	30.3.22	Twelve	40	20	20	Coragen
Palanpur (Corteva)	L	8.6	16.3.22	18.6.22	24.4.22	Twelve	88	60	0	Chloropyriphos, Cypermethrin
Deesa (J K Seed)	SL	-	17.3.22	12.6.22	27.4.22	Seven	24	6	6	Nil
Agra (Kartik Bio Seeds)	SL	-	20.3.22	As Per Maturity	12.4.22	-	-	-	-	Nil
Ludhiana (PAU)	SL	-	25.3.22	25.7.22	13.4, 15.5.22	Three	100	60	0	Nil
Aurangabad (NARP)	MB	7.5	21.2.22	22.5.22	-	Seven	60	30	30	Nil
Aurangabad (Seedworks)	BCS	-	24.2.22	30.5.22	20.3.22	Seven	80	40	40	Chloropyriphos
Dhule (MPKV)	MB	8.6	18.2.22	6.6.22	9.3, 25.3.22	Nine	90	45	45	Nil
Jalna (Mahyco)	BCS	-	11.3.22	13.6.22	10.4.22	Six	80	40	40	Nil
Pachora (Nirmal Seed)	MB	7.6	5.3.22	8.6.22	30.3.22	Five	100	50	50	Nil
Palem (PJ TSAU)	RSS	-	5.3.22	As Per Maturity	-	-	-	-	-	-
Coimbatore (TNAU)	CL	7.8	16.3.22	16.6.22	-	Six	80	40	40	Nil

SL = Sandy Loam; MB = Medium Black; L= Loamy; CL= Clay Loam; S = Sandy, BCS = Black Cotton Soil, RSS= Red Sandy soil.

CHAPTER I: BREEDING

Table I.202: SUMMER HYBRID TRIAL - 2022 GRAIN YIELD (kg/ha)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	5138	4759	6126	4167	5098	6228	4575	6531	6653	5517	3093	2301	3224	6172	5018	3615	4507	3088	3625	4671	6
2	SHT 102	MSH 372	5403	5521	6113	3751	4637	6503	4344	6546	6318	5467	1918	2697	3904	6250	4016	3563	4433	2134	3044	4509	11
3	SHT 103	MSH 377	5255	5699	6281	4871	4451	5817	3911	7607	5895	5567	1918	2510	4614	5937	4435	3494	4620	3481	4442	4742	4
4	SHT 104	MSH 389	4865	5580	6273	4367	4775	5406	4483	6778	6499	5520	3635	2812	3872	5883	4585	4394	4683	3142	3442	4752	2
5	SHT 105	Proagro 9444 (Check)	4403	3097	5086	4903	3891	5464	3598	5456	4987	4560	2313	2708	3724	6354	3858	4538	4618	3349	3361	4182	15
6	SHT 106	MSH 390	4728	3960	5450	3720	4403	5729	3863	6488	6637	5031	3158	2352	4323	4572	3861	2798	3889	3239	2748	4237	14
7	SHT 107	MSH 391	3826	3807	4477	2298	4188	4812	3666	4458	3558	3908	2459	1869	4910	3674	4026	2198	3702	1934	2247	3436	18
8	SHT 108	MSH 392	4760	5027	5120	4073	4125	5068	3833	5735	5192	4772	1945	2797	5110	6241	4092	4704	5037	2660	2756	4308	13
9	SHT 109	MSH 393	4753	5174	4440	2612	4392	5138	3869	6146	4756	4566	2595	2762	4909	5425	3020	3944	4325	2670	3556	4127	16
10	SHT 110	MSH 394	4563	5978	5428	3821	5084	6336	4561	5246	5522	5247	2849	3040	4689	5510	3426	3550	4294	2500	3819	4466	12
11	SHT 111	Nandi 75 (Check)	4895	5890	5567	4660	5223	6130	4683	7749	6354	5782	2692	2683	4153	5574	3931	4025	4421	2486	3586	4722	5
12	SHT 112	MSH 395	3038	5560	5994	4478	4885	7000	4345	6572	5197	5504	2930	2495	4325	5790	4321	3848	4571	3508	4774	4651	8
13	SHT 113	MSH 396	5240	5851	5940	4924	4967	6470	4427	7071	5797	5681	1923	3169	3719	5648	4803	4525	4674	3403	2759	4743	3
14	SHT 114	MSH 397	5725	5410	6065	3964	4407	6444	4114	6442	6641	5436	2443	3076	4499	5987	3922	4758	4791	2265	2944	4653	7
15	SHT 115	86M64 (Check)	4200	3316	4588	3907	2873	5606	2581	3692	-	3795	2302	1963	4962	3893	1444	3321	3405	1980	1522	3259	19
16	SHT 116	MSH 398	5084	5766	5701	5436	4958	7343	4435	5847	6327	5727	2562	2891	4200	5369	4116	2215	3975	1827	3176	4544	10
17	SHT 117	MSH 399	4715	5194	5389	4472	4709	7043	4169	6640	6546	5520	2546	3638	5141	6315	3964	3544	4741	1636	3161	4637	9
18	SHT 118	MP 7366 (Check)	4375	6089	5444	5324	5501	6866	4979	7019	5790	5877	2134	3562	4259	5775	4494	3135	4416	3602	4534	4875	1
19	SHT 119	MSH 400	3488	2663	3627	4017	2855	4081	2315	4346	4826	3591	2188	3588	3751	5755	3374	4596	4369	2532	1635	3508	17
		LOC. MEAN	4655	4965	5427	4198	4496	5973	4040	6125	5750	5122	2505	2785	4331	5585	3932	3724	4393	2707	3217	4377	
		C.D. (5%)	811	1089	868	1312	769	867	769	1533	802	516	65	169	705	607	587	665	978	1205	376	413	
		C.D. (1%)	1087	1460	1164	1760	1031	1162	1031	2055	1077	683	87	226	946	814	787	892	1303	1616	504	544	
		C.V. (%)	10.5	13.2	9.7	18.9	10.3	8.8	11.5	15.1	8.4	10.1	1.6	3.7	9.8	6.6	9.0	10.8	15.7	26.9	7.1	13.8	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.193	0.000	0.000	0.000	
		PLOT SIZE (m ²)	14.40	12.00	14.40	10.80	8.00	12.00	8.00	12.00	7.20	-	8.00	12.00	12.00	8.00	11.10	8.00	-	10.80	12.00	-	

CHAPTER I: BREEDING

Table I.203: SUMMER HYBRID TRIAL - 2022 DRY FODDER YIELD (kg/ha)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	8351	9008	8356	9259	7914	10160	22682	13009	11484	14958	9194	8972	12133	12973	19800	13470	5357	7188	11207	2
2	SHT 102	MSH 372	7122	10542	8773	9722	6676	11627	18853	12454	11235	8458	10025	8278	12574	12072	13233	11539	5094	5976	10092	8
3	SHT 103	MSH 377	6488	9536	8472	8796	5505	7947	21392	10139	10255	13917	8961	9528	10188	10811	12875	10850	5293	6090	9746	12
4	SHT 104	MSH 389	6810	9639	7616	7253	5115	6693	19289	9815	9346	14450	10747	6972	9765	8288	12500	9381	6262	5570	9174	15
5	SHT 105	Proagro 9444 (Check)	5951	7683	7361	8642	3865	7618	15039	11806	8859	11304	8886	9444	13587	9850	9721	10651	4864	5935	8847	16
6	SHT 106	MSH 390	6828	10150	8067	5556	6044	9532	18497	13935	10254	11542	8650	9028	10461	10511	20642	12660	6500	6382	10145	7
7	SHT 107	MSH 391	5529	8514	7269	4784	4354	7491	13525	8889	7832	10875	8106	8111	7802	9610	6000	7881	3548	4469	7430	18
8	SHT 108	MSH 392	6774	8553	7500	6944	5880	8141	17794	8704	9074	11058	10747	9278	10889	11081	16017	11816	5540	4475	9336	14
9	SHT 109	MSH 393	9558	9739	7060	7870	6258	12959	20739	12130	10965	16250	9706	8778	10015	10571	24475	13459	5150	6208	11091	3
10	SHT 110	MSH 394	7271	8886	7037	7562	6354	11613	19036	12454	10420	11313	10503	9444	12183	10691	13508	11456	4685	5427	9873	9
11	SHT 111	Nandi 75 (Check)	7644	10028	8194	10802	7055	13478	23847	13796	12457	10029	9661	10056	10595	12973	21758	13845	4799	6428	11321	1
12	SHT 112	MSH 395	6201	9653	8866	9259	5482	9984	19392	11528	10595	10221	10528	8056	10868	10751	13971	10911	5417	6115	9768	10
13	SHT 113	MSH 396	7557	9822	7546	8025	6255	11839	17194	11296	10283	9854	10906	8194	10340	10511	14238	10821	3904	4690	9511	13
14	SHT 114	MSH 397	6980	10903	7488	9568	4018	10165	18500	12546	10455	12358	9369	10278	11466	9820	22842	13601	5046	4328	10355	5
15	SHT 115	86M64 (Check)	7161	7639	5000	8642	3582	9570	8825	-	7210	3833	9250	9528	6718	3634	11408	7822	2997	3685	6765	19
16	SHT 116	MSH 398	7292	10717	8380	12963	6414	12613	18736	10694	11502	12792	11075	9417	13120	12613	10271	11355	4108	5851	10441	4
17	SHT 117	MSH 399	6155	7369	7477	9568	5161	9483	19356	13426	10263	12479	12053	9264	13193	11171	16192	12455	4244	6207	10175	6
18	SHT 118	MP 7366 (Check)	6258	9950	6875	9105	6362	11386	17711	11991	10483	10779	12833	9278	9660	9670	13367	10494	5494	5452	9761	11
19	SHT 119	MSH 400	6604	5925	5428	6790	3232	8077	11822	9769	7292	7567	12522	9500	7811	8769	13954	10008	3938	3972	7855	17
		LOC. MEAN	6975	9171	7514	8480	5554	10020	18012	11577	10047	11265	10196	9021	10703	10335	15093	11288	4855	5497	9642	
		C.D. (5%)	941	2062	975	1635	1595	1002	4953	1756	1801	308	1495	1051	1389	1769	3799	2013	1676	669	1265	
		C.D. (1%)	1262	2764	1308	2192	2139	1344	6642	2358	2385	412	2004	1409	1863	2372	5094	2681	2247	897	1667	
		C.V. (%)	8.2	13.6	7.8	11.6	17.3	6.0	16.6	9.1	16.0	1.7	8.9	7.0	7.8	10.3	15.2	14.1	20.8	7.4	17.5	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.000	
		PLOT SIZE (m ²)	14.40	12.00	14.40	10.80	8.00	12.00	12.00	7.20	-	8.00	12.00	12.00	8.00	11.10	8.00	-	10.80	12.00	-	

CHAPTER I: BREEDING

Table I.204: SUMMER HYBRID TRIAL - 2022 DAYS TO 50% FLOWERING

S.No.	TEST	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS	PLM	CBE	ZONE	RANK
	CODE											MEAN							MEAN			MEAN	
1	SHT 101	MSH 371	70	48	52	58	52	57	54	54	51	53	65	56	55	58	61	62	59	49	48	56	9
2	SHT 102	MSH 372	69	49	51	57	53	56	53	55	52	53	68	53	59	55	59	59	58	46	46	55	15
3	SHT 103	MSH 377	64	50	52	57	54	56	55	55	52	54	65	57	54	57	60	61	58	48	44	55	14
4	SHT 104	MSH 389	68	49	54	57	56	58	57	55	53	55	67	57	61	56	63	60	60	50	47	57	6
5	SHT 105	Proagro 9444 (Check)	67	46	51	57	57	55	56	55	49	53	63	56	56	57	59	61	58	47	44	55	16
6	SHT 106	MSH 390	67	49	52	58	54	56	56	55	56	54	58	57	54	56	60	62	58	48	47	56	13
7	SHT 107	MSH 391	56	41	44	55	50	51	49	51	44	48	54	57	50	51	53	52	52	40	38	49	19
8	SHT 108	MSH 392	68	51	51	59	55	58	56	53	49	54	58	56	57	56	63	62	60	50	46	56	10
9	SHT 109	MSH 393	75	52	52	60	58	61	57	56	56	56	68	55	56	58	63	65	61	49	48	58	2
10	SHT 110	MSH 394	69	52	54	61	54	58	56	55	58	56	71	53	53	57	63	63	59	49	47	57	5
11	SHT 111	Nandi 75 (Check)	70	49	52	57	56	58	57	56	55	55	65	53	55	58	60	62	59	50	48	57	7
12	SHT 112	MSH 395	61	50	52	56	55	53	53	53	51	53	64	56	60	54	57	52	56	51	42	54	17
13	SHT 113	MSH 396	67	51	55	60	58	58	57	55	53	56	72	55	61	59	65	61	62	51	45	58	3
14	SHT 114	MSH 397	70	52	55	61	56	59	58	56	57	57	72	51	60	60	65	63	62	52	47	59	1
15	SHT 115	86M64 (Check)	65	55	54	55	55	59	56	55	-	55	73	56	61	61	61	63	61	49	46	58	4
16	SHT 116	MSH 398	71	48	51	54	54	57	55	54	52	53	69	55	52	56	59	62	58	48	47	56	12
17	SHT 117	MSH 399	70	50	52	57	55	59	54	55	52	54	72	53	55	56	60	61	58	46	47	56	8
18	SHT 118	MP 7366 (Check)	66	49	52	59	56	57	56	55	51	54	65	53	60	56	61	54	58	49	49	56	11
19	SHT 119	MSH 400	59	41	44	51	50	52	51	55	48	49	62	53	52	53	53	53	53	39	42	51	18
		LOC. MEAN	67	49	52	57	55	57	55	55	52	54	66	55	56	57	60	60	58	48	46	56	
		C.D. (5%)	4.0	2.0	1.0	2.0	2.0	3.0	2.0	2.0	1.0	1.0	4.0	2.0	2.0	1.0	3.0	3.0	3.0	2.0	2.0	1.0	
		C.D. (1%)	5.0	3.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	6.0	3.0	2.0	2.0	4.0	4.0	4.0	3.0	3.0	2.0	
		C.V. (%)	3.4	2.3	1.4	2.0	1.7	2.7	1.7	2.0	1.3	2.7	4.1	2.1	1.9	1.5	2.7	3.1	4.0	2.9	3.2	3.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.205: SUMMER HYBRID TRIAL - 2022 DAYS TO MATURITY

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	102	83	84	85	81	88	94	75	84	90	83	91	83	99	92	91	75	87	87	9
2	SHT 102	MSH 372	102	86	84	84	84	89	91	76	85	93	84	96	81	97	89	91	72	85	87	10
3	SHT 103	MSH 377	95	89	82	86	83	89	87	76	85	90	82	91	82	98	91	91	75	83	86	14
4	SHT 104	MSH 389	99	88	86	85	86	87	90	76	86	92	84	97	82	101	90	93	77	86	88	6
5	SHT 105	Proagro 9444 (Check)	98	84	83	84	87	86	92	75	84	88	81	90	83	97	91	90	73	84	86	16
6	SHT 106	MSH 390	98	84	84	87	82	88	89	78	85	83	82	89	82	98	92	90	74	87	86	15
7	SHT 107	MSH 391	89	83	76	87	79	87	85	68	81	79	82	88	77	91	82	84	66	77	81	19
8	SHT 108	MSH 392	99	87	84	88	84	89	88	72	84	83	81	92	82	100	92	92	77	85	86	13
9	SHT 109	MSH 393	108	89	84	88	89	88	92	79	87	88	85	93	85	101	94	93	76	87	89	3
10	SHT 110	MSH 394	102	88	84	88	84	89	91	80	86	86	81	90	83	100	93	92	75	87	88	7
11	SHT 111	Nandi 75 (Check)	102	85	84	86	87	89	93	79	86	86	81	90	83	98	92	91	77	88	87	8
12	SHT 112	MSH 395	93	83	86	86	84	87	87	75	84	80	80	93	80	95	82	88	80	82	85	17
13	SHT 113	MSH 396	100	84	85	87	87	88	94	75	86	95	80	98	85	103	91	94	80	85	88	4
14	SHT 114	MSH 397	101	84	86	87	84	90	94	79	86	97	82	96	86	103	93	95	80	86	89	1
15	SHT 115	86M64 (Check)	96	85	87	86	85	90	92	-	87	98	84	96	86	99	93	93	76	86	89	2
16	SHT 116	MSH 398	106	85	84	85	83	89	92	75	85	94	89	93	82	97	92	91	75	87	88	5
17	SHT 117	MSH 399	103	83	82	85	84	88	94	76	84	92	84	91	82	98	91	91	72	86	87	11
18	SHT 118	MP 7366 (Check)	97	84	85	87	84	87	92	75	85	90	81	97	83	99	84	91	76	88	87	12
19	SHT 119	MSH 400	93	86	77	83	79	86	86	71	81	89	83	88	80	91	83	86	65	82	83	18
		LOC. MEAN	99	85	84	86	84	88	91	76	85	89	83	93	83	98	90	91	75	85	87	
		C.D. (5%)	5.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	6.0	3.0	2.0	2.0	3.0	3.0	3.0	4.0	2.0	2.0	
		C.D. (1%)	6.0	2.0	1.0	2.0	2.0	3.0	3.0	2.0	3.0	7.0	3.0	2.0	3.0	4.0	4.0	4.0	5.0	3.0	2.0	
		C.V. (%)	2.8	1.2	0.6	1.2	1.2	1.5	1.6	1.0	2.2	3.8	1.9	1.0	1.4	1.8	1.9	2.5	2.9	1.7	2.9	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.206: SUMMER HYBRID TRIAL - 2022 PLANT HEIGHT (cm)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	189	193	191	180	198	188	185	220	173	191	222	142	152	200	194	213	190	163	210	189	5
2	SHT 102	MSH 372	189	207	202	179	175	204	180	210	165	190	215	175	161	207	192	218	195	149	206	190	4
3	SHT 103	MSH 377	159	200	198	186	162	195	172	215	158	186	205	152	155	197	170	198	180	154	202	181	10
4	SHT 104	MSH 389	159	187	185	160	150	176	163	208	152	173	195	155	126	177	178	186	167	147	197	171	17
5	SHT 105	Proagro 9444 (Check)	174	168	180	179	173	182	160	190	172	175	204	157	162	190	197	200	187	150	187	178	15
6	SHT 106	MSH 390	195	204	202	177	172	184	178	210	175	188	208	167	157	193	179	209	184	162	203	187	8
7	SHT 107	MSH 391	150	160	160	122	128	149	145	173	95	142	159	95	121	150	146	177	149	123	155	142	19
8	SHT 108	MSH 392	183	187	193	158	172	184	175	197	134	175	198	148	156	200	179	216	188	156	192	178	14
9	SHT 109	MSH 393	187	197	188	158	190	177	165	205	177	182	189	162	157	193	177	211	185	150	186	180	13
10	SHT 110	MSH 394	188	209	210	167	202	204	197	230	175	199	210	205	174	213	191	223	200	151	205	197	1
11	SHT 111	Nandi 75 (Check)	197	205	212	188	190	196	185	233	177	198	212	192	157	217	195	221	197	159	199	196	2
12	SHT 112	MSH 395	159	189	197	186	185	188	173	213	153	186	188	165	145	193	195	203	184	148	194	181	11
13	SHT 113	MSH 396	176	194	195	168	188	181	172	213	152	183	200	183	143	203	189	210	186	153	203	184	9
14	SHT 114	MSH 397	183	198	197	183	180	198	177	218	165	189	205	182	147	197	192	209	186	148	195	187	7
15	SHT 115	86M64 (Check)	167	183	188	189	170	187	168	200	-	184	180	155	147	197	159	203	176	148	193	177	16
16	SHT 116	MSH 398	182	208	198	198	175	201	180	213	165	192	200	200	166	213	194	204	194	145	211	191	3
17	SHT 117	MSH 399	177	196	188	186	192	188	178	205	182	189	202	172	157	207	199	210	193	158	205	188	6
18	SHT 118	MP 7366 (Check)	169	189	187	180	178	188	172	210	163	183	179	170	150	190	193	196	182	168	193	181	12
19	SHT 119	MSH 400	165	175	156	171	145	170	143	187	137	160	182	152	137	167	177	196	169	135	188	164	18
		LOC. MEAN	176	192	191	174	175	186	172	208	159	182	198	165	151	195	184	205	184	151	196	181	
		C.D. (5%)	14.0	11.0	12.0	26.0	18.0	15.0	10.0	22.0	9.0	9.0	8.0	11.0	5.0	8.0	17.0	18.0	11.0	16.0	11.0	6.0	
		C.D. (1%)	19.0	15.0	16.0	35.0	24.0	20.0	13.0	30.0	12.0	11.0	11.0	15.0	7.0	11.0	23.0	24.0	14.0	21.0	14.0	8.0	
		C.V. (%)	4.8	3.6	3.8	9.1	6.1	4.9	3.4	6.5	3.3	4.8	2.5	4.0	2.1	2.6	5.7	5.3	4.1	6.3	3.3	5.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.207: SUMMER HYBRID TRIAL - 2022 PRODUCTIVE TILLERS (No./Plant)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS	PLM	CBE	ZONE	RANK
												MEAN							MEAN			MEAN	
1	SHT 101	MSH 371	1.7	3.5	2.5	2.3	1.5	1.0	1.4	3.3	3.3	2.4	1.1	1.3	1.5	2.3	3.0	2.7	2.4	2.3	2.4	2.2	7
2	SHT 102	MSH 372	1.3	2.7	2.1	2.1	1.5	1.0	1.3	3.3	2.2	2.0	1.1	2.1	1.8	2.0	2.4	2.5	2.2	2.4	2.3	2.0	17
3	SHT 103	MSH 377	1.1	2.5	1.5	1.8	1.4	1.0	1.1	4.7	1.5	1.9	1.4	2.1	1.4	1.3	1.3	2.5	1.6	2.7	2.7	1.9	19
4	SHT 104	MSH 389	1.9	2.8	2.3	2.2	1.5	1.0	1.2	3.3	2.2	2.1	2.3	2.2	1.7	1.7	1.7	2.2	1.8	2.8	2.6	2.1	16
5	SHT 105	Proagro 9444 (Check)	1.8	4.5	2.9	2.4	1.9	1.7	1.9	3.0	3.5	2.7	1.2	2.1	1.0	4.0	2.3	2.5	2.5	2.7	3.0	2.5	1
6	SHT 106	MSH 390	1.8	3.7	2.7	2.3	1.4	1.0	1.2	3.7	2.5	2.3	1.1	1.4	2.0	2.7	2.7	2.7	2.5	2.5	2.9	2.2	5
7	SHT 107	MSH 391	1.7	3.1	2.5	2.3	1.2	1.0	1.1	3.7	2.2	2.1	1.1	1.9	1.2	2.0	3.0	2.5	2.2	2.7	2.5	2.1	15
8	SHT 108	MSH 392	1.7	3.4	2.5	2.2	1.5	1.0	1.4	3.7	2.0	2.2	1.0	3.1	2.4	3.0	3.0	2.5	2.7	2.9	3.0	2.4	4
9	SHT 109	MSH 393	1.7	3.3	2.1	2.5	1.5	1.0	1.2	3.7	1.8	2.1	1.2	2.4	2.1	1.3	4.0	2.0	2.4	2.6	2.3	2.2	12
10	SHT 110	MSH 394	1.8	3.1	2.0	2.0	1.5	1.0	1.3	3.0	1.7	1.9	1.2	2.8	1.3	2.3	1.3	2.0	1.8	2.5	2.5	2.0	18
11	SHT 111	Nandi 75 (Check)	1.5	3.1	2.4	2.5	2.0	1.0	1.9	3.3	2.5	2.4	3.6	1.3	1.3	2.7	2.3	1.7	2.0	2.5	2.5	2.2	6
12	SHT 112	MSH 395	1.8	3.1	1.9	2.3	1.6	1.0	1.2	4.0	2.0	2.1	1.1	2.7	1.3	2.0	3.3	2.5	2.3	2.5	2.5	2.2	10
13	SHT 113	MSH 396	1.6	3.1	2.4	2.3	1.5	1.0	1.2	3.7	2.2	2.2	1.1	3.5	2.0	1.7	2.3	2.5	2.1	2.5	2.3	2.2	11
14	SHT 114	MSH 397	1.3	2.8	1.7	2.1	1.4	1.0	1.2	4.0	2.7	2.1	1.3	2.4	1.4	2.0	3.0	2.5	2.2	2.8	2.2	2.1	14
15	SHT 115	86M64 (Check)	2.4	4.5	2.5	1.9	1.9	1.0	1.3	4.0	-	2.5	1.2	1.3	1.8	3.3	4.0	3.0	3.0	2.3	3.3	2.5	2
16	SHT 116	MSH 398	1.6	3.7	2.3	2.1	1.7	1.0	1.5	3.7	2.5	2.3	1.1	2.3	1.4	2.0	1.7	2.5	1.9	2.7	2.4	2.1	13
17	SHT 117	MSH 399	1.3	3.5	2.5	2.1	1.3	1.0	1.2	3.3	2.7	2.2	1.1	3.6	1.7	2.0	2.0	2.7	2.1	2.5	2.7	2.2	8
18	SHT 118	MP 7366 (Check)	1.6	2.8	2.1	2.2	1.7	1.0	1.5	3.7	3.3	2.3	1.0	3.4	1.1	1.7	2.3	2.5	1.9	2.5	2.6	2.2	9
19	SHT 119	MSH 400	1.6	4.1	3.3	1.9	1.7	1.0	1.5	3.3	2.3	2.4	1.2	3.0	1.3	3.3	3.3	1.8	2.4	3.3	3.2	2.4	3
		LOC. MEAN	1.6	3.3	2.3	2.2	1.6	1.0	1.3	3.6	2.4	2.2	1.3	2.4	1.6	2.3	2.6	2.4	2.2	2.6	2.6	2.2	
		C.D. (5%)	0.7	0.5	0.2	0.5	0.3	0.2	0.5	1.2	0.4	0.3	0.1	0.3	0.6	0.7	0.8	0.4	0.8	0.6	0.5	0.3	
		C.D. (1%)	0.9	0.6	0.3	0.6	0.5	0.3	0.6	1.6	0.6	0.4	0.1	0.4	0.8	1.0	1.0	0.6	1.0	0.8	0.6	0.4	
		C.V. (%)	25.7	8.2	5.5	13.1	13.4	12.8	21.0	19.5	11.1	15.0	4.9	8.5	23.8	19.7	17.7	10.5	24.9	13.1	10.9	20.0	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.089	0.000	0.000	0.008	

CHAPTER I: BREEDING

Table I.208: SUMMER HYBRID TRIAL - 2022 PANICLE LENGTH (cm)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS	PLM	CBE	ZONE	RANK
												MEAN							MEAN			MEAN	
1	SHT 101	MSH 371	25	25	25	22	23	27	23	26	22	24	22	23	25	24	23	25	24	22	26	24	18
2	SHT 102	MSH 372	26	28	29	23	30	30	27	25	29	28	25	26	26	27	27	29	27	23	28	27	7
3	SHT 103	MSH 377	25	27	28	23	27	29	27	27	27	27	23	26	27	26	27	26	26	22	27	26	12
4	SHT 104	MSH 389	25	26	26	23	22	29	26	26	27	26	26	27	25	25	26	26	25	23	27	26	15
5	SHT 105	Proagro 9444 (Check)	27	25	24	23	25	27	25	23	26	25	27	25	25	24	26	26	25	22	24	25	17
6	SHT 106	MSH 390	25	27	27	23	24	28	26	25	26	26	27	25	25	24	27	30	27	21	26	26	14
7	SHT 107	MSH 391	27	27	27	24	21	33	27	27	26	26	23	24	28	30	29	30	29	22	29	27	8
8	SHT 108	MSH 392	27	29	27	23	24	29	28	27	26	27	26	27	28	28	28	31	29	25	29	27	6
9	SHT 109	MSH 393	28	30	28	23	31	30	27	30	29	28	23	28	27	28	27	31	28	25	29	28	3
10	SHT 110	MSH 394	30	29	29	23	29	31	28	29	29	28	26	28	28	28	29	30	29	24	27	28	2
11	SHT 111	Nandi 75 (Check)	28	30	29	23	27	31	27	28	29	28	27	27	27	30	29	31	29	25	29	28	1
12	SHT 112	MSH 395	28	28	29	23	28	31	27	28	29	28	24	27	26	28	27	30	28	25	27	27	5
13	SHT 113	MSH 396	26	30	26	23	25	30	25	28	28	27	23	28	27	27	27	27	27	24	28	27	10
14	SHT 114	MSH 397	25	26	26	22	26	27	26	26	26	26	25	22	25	24	26	27	25	22	25	25	16
15	SHT 115	86M64 (Check)	26	29	31	24	29	30	28	29	-	29	27	26	26	28	28	29	28	26	28	28	4
16	SHT 116	MSH 398	26	29	27	22	28	29	28	24	30	27	26	25	26	27	27	24	26	23	28	26	11
17	SHT 117	MSH 399	27	30	28	22	29	30	27	27	29	28	27	25	27	28	26	30	28	23	28	27	6
18	SHT 118	MP 7366 (Check)	27	28	26	23	28	30	26	25	25	26	27	28	27	26	26	28	27	25	28	27	9
19	SHT 119	MSH 400	28	25	24	22	25	29	27	27	25	25	23	26	26	26	26	31	27	23	27	26	13
		LOC. MEAN	27	28	27	23	26	29	27	27	27	27	25	26	26	27	27	28	27	23	27	27	
		C.D. (5%)	2.0	2.0	2.0	1.0	3.0	2.0	3.0	3.0	1.0	1.0	2.0	1.0	1.0	2.0	3.0	2.0	2.0	2.0	2.0	1.0	
		C.D. (1%)	2.0	3.0	3.0	2.0	4.0	3.0	4.0	5.0	2.0	2.0	3.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0	1.0	
		C.V. (%)	4.1	4.1	4.5	3.2	6.7	4.1	6.2	7.9	2.7	5.1	4.8	3.3	3.4	4.1	5.7	5.3	4.3	5.7	4.3	5.1	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.209: SUMMER HYBRID TRIAL - 2022 PANICLE DIAMETER (cm)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	3.2	3.3	3.4	3.2	3.2	3.4	2.9	3.3	3.5	3.3	3.5	3.2	3.0	3.0	3.5	3.5	3.3	2.7	2.7	3.2	16
2	SHT 102	MSH 372	3.3	3.5	3.4	3.3	3.3	3.7	3.3	3.3	3.6	3.4	3.1	3.6	3.3	3.4	3.8	4.0	3.6	2.5	2.8	3.4	14
3	SHT 103	MSH 377	3.1	4.0	3.7	3.6	3.5	4.1	3.7	3.7	3.9	3.8	3.3	3.4	3.5	3.8	3.8	3.9	3.8	3.3	2.8	3.6	3
4	SHT 104	MSH 389	3.4	3.6	3.5	3.4	3.6	3.7	3.5	3.5	3.6	3.5	3.4	3.3	2.9	3.5	3.7	4.0	3.6	3.1	2.9	3.5	9
5	SHT 105	Proagro 9444 (Check)	2.7	3.2	2.9	2.9	3.4	3.3	3.1	2.8	3.3	3.1	3.6	2.7	2.9	3.1	3.3	3.5	3.2	2.5	2.6	3.0	18
6	SHT 106	MSH 390	2.5	3.3	3.1	3.2	3.2	3.3	2.8	3.1	3.4	3.2	3.8	3.2	3.1	3.2	3.2	3.4	3.2	2.6	2.8	3.1	17
7	SHT 107	MSH 391	3.1	3.6	3.5	3.3	3.2	4.5	3.6	3.8	3.5	3.6	3.4	3.1	3.2	4.0	3.6	4.2	3.8	2.8	3.5	3.5	6
8	SHT 108	MSH 392	3.1	3.8	3.4	3.3	3.5	3.8	3.6	3.3	3.4	3.5	3.4	3.4	3.4	3.6	3.7	3.8	3.6	2.7	3.0	3.4	10
9	SHT 109	MSH 393	3.6	4.3	3.7	3.3	3.7	4.5	4.0	3.9	3.9	3.9	3.2	3.3	3.9	4.4	4.1	4.5	4.2	3.2	3.5	3.8	1
10	SHT 110	MSH 394	3.4	3.8	3.5	3.4	3.5	4.2	3.6	3.6	3.8	3.7	2.9	3.3	3.4	3.7	3.7	4.0	3.7	2.8	3.3	3.5	7
11	SHT 111	Nandi 75 (Check)	3.3	3.8	3.5	3.1	3.5	3.9	3.4	3.5	3.6	3.5	2.9	3.5	3.3	3.5	3.7	3.9	3.6	2.7	3.1	3.4	11
12	SHT 112	MSH 395	3.3	3.9	3.7	3.5	3.5	4.1	3.5	3.5	3.8	3.7	3.3	3.2	3.5	3.8	3.8	4.0	3.8	3.2	3.1	3.6	4
13	SHT 113	MSH 396	3.5	4.2	3.4	3.2	3.7	4.1	3.5	3.3	3.9	3.7	3.4	3.4	3.1	3.7	3.8	4.0	3.7	3.1	2.9	3.5	5
14	SHT 114	MSH 397	3.4	3.9	3.6	3.2	3.5	3.8	3.7	3.6	3.7	3.6	3.0	4.0	3.4	3.5	3.8	3.9	3.7	2.9	2.8	3.5	8
15	SHT 115	86M64 (Check)	3.5	4.0	3.6	3.6	3.1	4.0	3.6	3.6	-	3.6	3.3	3.6	3.5	3.9	3.8	4.3	3.9	3.3	3.0	3.6	2
16	SHT 116	MSH 398	3.5	3.6	3.5	3.1	3.6	3.9	3.6	3.5	3.6	3.6	3.5	3.2	3.2	3.4	3.6	3.7	3.5	2.8	2.8	3.4	12
17	SHT 117	MSH 399	3.2	3.7	3.2	3.1	3.4	3.6	3.2	3.4	3.5	3.4	3.1	3.5	3.4	3.5	3.5	3.8	3.6	2.8	2.9	3.3	15
18	SHT 118	MP 7366 (Check)	3.2	3.5	3.5	3.4	3.3	3.9	3.4	3.2	3.3	3.5	3.3	3.6	3.1	3.5	3.5	3.8	3.5	3.0	2.8	3.4	13
19	SHT 119	MSH 400	2.8	3.0	2.7	2.9	3.1	3.1	3.2	3.0	2.9	3.0	3.4	2.9	3.1	3.1	3.3	3.7	3.3	2.5	2.6	3.0	19
		LOC. MEAN	3.2	3.7	3.4	3.3	3.4	3.8	3.4	3.4	3.5	3.5	3.3	3.3	3.3	3.6	3.6	3.9	3.6	2.9	2.9	3.4	
		C.D. (5%)	0.2	0.2	0.3	0.2	0.5	0.4	0.3	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.1	
		C.D. (1%)	0.3	0.3	0.4	0.3	0.7	0.5	0.4	0.7	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.4	0.2	0.5	0.3	0.2	
		C.V. (%)	3.7	3.5	5.6	3.7	9.3	5.5	5.7	8.9	3.7	4.7	3.0	4.5	3.0	3.2	4.6	4.3	3.6	8.5	4.9	5.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.210: SUMMER HYBRID TRIAL - 2022 1000-GRAIN Wt. (g)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	AHD	PNR1	GUJ	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS	PLM	CBE	ZONE	RANK
									MEAN							MEAN			MEAN	
1	SHT 101	MSH 371	7.8	9.7	11.2	7.8	8.1	11.3	9.6	10.8	10.2	10.7	8.8	10.7	12.7	10.7	11.4	12.3	10.2	12
2	SHT 102	MSH 372	7.1	9.6	12.2	7.1	9.6	10.0	9.7	12.6	9.3	11.1	11.0	10.6	12.4	11.3	13.1	13.6	10.7	6
3	SHT 103	MSH 377	7.9	11.2	11.9	7.9	8.7	11.9	10.3	9.1	10.4	12.4	12.5	11.4	12.0	12.1	12.8	9.5	10.7	5
4	SHT 104	MSH 389	6.7	8.6	9.9	6.7	10.8	9.6	9.1	11.4	9.4	10.9	8.4	9.9	11.4	10.2	10.9	14.5	10.0	14
5	SHT 105	Proagro 9444 (Check)	6.6	8.7	10.1	6.6	7.5	8.6	8.3	10.4	8.0	9.6	9.1	10.0	11.6	10.1	10.6	13.4	9.3	18
6	SHT 106	MSH 390	6.5	8.5	10.5	6.5	9.3	11.5	9.3	10.5	9.0	10.4	8.2	10.5	12.3	10.3	10.4	9.9	9.6	16
7	SHT 107	MSH 391	8.3	10.4	12.9	8.3	9.1	10.5	10.3	12.9	10.7	10.0	10.7	12.6	12.3	11.4	13.2	12.3	11.0	3
8	SHT 108	MSH 392	7.1	8.8	9.5	7.1	9.1	10.5	9.0	12.4	8.9	10.6	8.7	9.9	11.7	10.2	11.7	12.6	9.9	15
9	SHT 109	MSH 393	8.4	11.4	11.4	8.4	9.3	11.4	10.4	8.5	11.2	13.2	10.6	13.5	11.5	12.2	13.7	10.4	10.9	4
10	SHT 110	MSH 394	7.7	10.2	10.3	7.7	9.1	9.7	9.4	9.0	10.4	9.5	9.1	12.4	12.8	10.9	14.6	13.3	10.4	8
11	SHT 111	Nandi 75 (Check)	7.5	9.9	10.4	7.5	9.7	11.3	9.8	9.3	10.0	12.2	8.5	11.4	11.7	11.0	11.7	12.8	10.3	10
12	SHT 112	MSH 395	7.9	11.3	12.3	7.9	9.5	11.6	10.5	7.9	11.3	11.7	10.7	12.0	12.4	11.7	13.7	14.4	11.0	2
13	SHT 113	MSH 396	7.9	9.6	11.2	7.9	8.9	10.0	9.5	10.5	10.4	9.8	10.7	10.2	12.3	10.7	12.2	12.4	10.3	11
14	SHT 114	MSH 397	6.3	9.2	10.4	6.3	6.9	10.1	8.6	10.5	9.1	8.6	7.5	11.3	11.9	9.8	11.2	13.6	9.5	17
15	SHT 115	86M64 (Check)	9.3	9.9	11.6	9.3	8.9	9.5	9.8	7.6	11.0	11.5	9.7	12.2	12.5	11.5	13.9	11.6	10.6	7
16	SHT 116	MSH 398	8.2	9.6	11.1	8.2	9.6	10.0	9.7	9.5	8.8	9.7	9.2	11.7	12.4	10.8	11.0	12.5	10.1	13
17	SHT 117	MSH 399	8.2	10.0	11.6	8.2	7.9	10.0	9.5	10.2	10.6	10.5	9.3	13.6	12.2	11.4	12.4	10.4	10.4	9
18	SHT 118	MP 7366 (Check)	8.9	11.6	12.9	8.9	8.4	10.8	10.5	10.4	11.7	10.9	12.7	12.8	12.5	12.2	13.4	12.6	11.3	1
19	SHT 119	MSH 400	6.6	8.0	8.6	6.6	7.4	10.7	8.3	11.5	8.5	10.5	8.3	9.7	9.8	9.6	10.8	12.4	9.2	19
		LOC. MEAN	7.6	9.8	11.0	7.6	8.8	10.5	9.6	10.3	9.9	10.7	9.7	11.4	12.0	11.0	12.3	12.3	10.3	
		C.D. (5%)	1.6	0.6	1.0	1.6	1.3	1.6	1.0	0.6	0.3	0.6	1.2	1.0	1.1	2.2	1.8	0.4	0.8	
		C.D. (1%)	2.1	0.8	1.3	2.1	1.7	2.1	1.4	0.8	0.4	0.7	1.6	1.4	1.4	3.0	2.4	0.6	1.0	
		C.V. (%)	12.6	3.6	5.3	12.6	8.8	9.0	7.9	3.7	2.0	3.1	7.5	5.4	5.4	13.1	8.9	2.0	9.7	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.910	0.000	0.000	0.000	

CHAPTER I: BREEDING

Table I.211: SUMMER HYBRID TRIAL - 2022 POPULATION AT HARVEST (No./plot)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ MEAN	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS MEAN	PLM	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	200	149	190	221	125	200	128	165	105	160	142	162	153	109	121	83	116	237	99	152	4
2	SHT 102	MSH 372	184	150	187	227	119	211	129	182	104	164	140	162	153	105	111	82	113	211	108	151	5
3	SHT 103	MSH 377	198	150	193	227	130	193	133	194	107	166	145	161	155	98	125	84	115	219	100	154	2
4	SHT 104	MSH 389	202	152	212	221	129	193	135	167	106	164	144	161	147	102	125	82	114	228	109	154	1
5	SHT 105	Proagro 9444 (Check)	214	144	172	228	121	190	104	169	104	154	140	161	151	100	114	82	112	219	98	148	11
6	SHT 106	MSH 390	201	149	196	224	133	173	130	165	106	160	136	163	153	98	131	82	116	205	91	149	7
7	SHT 107	MSH 391	193	149	184	231	128	186	125	159	106	159	137	161	154	98	110	81	111	202	96	147	15
8	SHT 108	MSH 392	213	147	192	231	135	203	121	179	105	164	137	161	152	103	102	80	109	233	103	153	3
9	SHT 109	MSH 393	187	147	160	231	117	191	125	180	106	157	132	161	151	94	99	81	107	225	105	147	16
10	SHT 110	MSH 394	187	150	178	237	134	188	119	154	104	158	140	161	155	98	106	81	110	224	99	148	9
11	SHT 111	Nandi 75 (Check)	209	145	203	228	125	184	97	159	104	156	134	162	150	98	95	82	106	268	108	150	6
12	SHT 112	MSH 395	171	149	162	198	123	204	127	176	105	156	144	161	154	91	97	82	106	273	96	148	10
13	SHT 113	MSH 396	197	147	176	227	97	192	123	168	106	155	146	161	153	99	108	82	111	225	95	147	13
14	SHT 114	MSH 397	197	147	173	230	119	109	124	175	103	147	139	160	153	95	89	83	105	180	102	140	18
15	SHT 115	86M64 (Check)	80	98	64	76	124	178	89	43	-	96	17	161	151	43	55	84	83	190	38	93	19
16	SHT 116	MSH 398	191	147	180	231	89	198	119	174	106	156	134	160	153	99	112	83	112	237	94	147	12
17	SHT 117	MSH 399	201	145	187	229	109	169	134	176	107	157	141	161	152	105	124	83	116	203	75	147	14
18	SHT 118	MP 7366 (Check)	205	143	175	206	127	178	109	165	107	151	144	161	155	103	110	81	113	224	97	147	17
19	SHT 119	MSH 400	197	148	176	218	104	182	117	179	104	154	133	161	151	96	119	83	112	256	99	148	8
		LOC. MEAN	191	145	177	217	120	185	120	165	105	154	133	161	152	97	108	82	110	224	95	146	
		C.D. (5%)	23.0	10.0	17.0	14.0	29.0	12.0	29.0	19.0	5.0	11.0	6.0	2.0	5.0	7.0	23.0	5.0	14.0	62.0	12.0	7.0	
		C.D. (1%)	31.0	14.0	23.0	18.0	39.0	16.0	39.0	26.0	7.0	15.0	8.0	2.0	6.0	10.0	31.0	6.0	18.0	84.0	16.0	10.0	
		C.V. (%)	7.3	4.2	5.9	3.8	14.5	3.9	14.5	7.0	3.1	7.3	2.7	0.7	1.9	4.6	12.8	3.3	8.7	16.8	7.4	7.2	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.145	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.059	

CHAPTER I: BREEDING

Table I.212: SUMMER HYBRID TRIAL - 2022 SEED SET (%) UNDER BAG

S.No.	TEST CODE	ENTRY	MDR**	AND	JMR	SKN	VSN	AHD	DEG	PNR1	DSA3	GUJ	AGR1	LDA	ABD1	ABD7	DHL	JLN1	MS	PLM	CBE	ZONE	RANK
												MEAN							MEAN			MEAN	
1	SHT 101	MSH 371	18	60	30	6	5	43	13	58	42	32	92	73	100	23	58	40	55	99	78	51	19
2	SHT 102	MSH 372	44	84	87	50	13	67	78	73	80	67	93	82	98	90	60	94	85	100	79	77	9
3	SHT 103	MSH 377	39	88	88	58	82	70	77	83	70	77	90	83	96	80	95	52	81	100	78	81	5
4	SHT 104	MSH 389	30	85	81	44	78	53	70	92	80	73	44	95	95	93	96	60	86	100	73	78	8
5	SHT 105	Proagro 9444 (Check)	58	52	81	35	82	40	55	62	88	62	93	78	98	77	87	77	84	99	74	74	11
6	SHT 106	MSH 390	58	81	86	66	77	77	82	82	65	77	87	72	98	82	95	87	90	100	74	82	2
7	SHT 107	MSH 391	4	42	-	-	5	13	5	43	-	22	92	90	99	-	75	22	65	100	37	52	18
8	SHT 108	MSH 392	69	78	73	89	70	63	82	48	80	73	52	82	98	90	95	92	94	100	59	78	7
9	SHT 109	MSH 393	39	79	82	37	4	70	87	65	82	63	62	73	98	85	85	87	89	100	62	72	12
10	SHT 110	MSH 394	75	71	83	86	62	70	88	55	78	74	52	82	100	93	95	71	90	100	71	79	6
11	SHT 111	Nandi 75 (Check)	25	78	79	33	18	67	8	73	85	55	92	92	99	73	95	78	87	100	54	70	14
12	SHT 112	MSH 395	52	78	89	88	88	63	83	78	75	80	62	90	98	90	90	57	84	100	77	82	3
13	SHT 113	MSH 396	67	82	89	86	8	80	88	72	77	73	85	90	99	95	93	83	93	100	71	81	4
14	SHT 114	MSH 397	71	87	94	90	88	70	77	82	75	83	93	73	99	93	95	87	94	100	71	86	1
15	SHT 115	86M64 (Check)	28	69	61	21	77	30	12	53	-	46	97	80	97	43	85	57	70	100	48	62	16
16	SHT 116	MSH 398	23	54	68	16	12	37	13	50	63	39	93	93	99	45	95	77	79	100	57	61	17
17	SHT 117	MSH 399	32	82	83	81	42	67	62	75	85	72	65	87	98	77	95	67	84	99	59	76	10
18	SHT 118	MP 7366 (Check)	15	58	47	-	83	60	42	70	70	61	89	92	96	58	95	43	73	100	58	71	13
19	SHT 119	MSH 400	10	68	35	34	33	63	4	60	87	48	94	88	99	50	75	89	78	99	78	66	15
		LOC. MEAN	40	73	74	54	49	58	54	67	75	63	80	84	98	74	87	69	82	100	66	73	
		C.D. (5%)	28.0	12.0	12.0	22.0	11.0	13.0	12.0	29.0	7.0	17.0	4.0	5.0	4.0	19.0	10.0	31.0	19.0	1.0	14.0	11.0	
		C.D. (1%)	38.0	17.0	16.0	30.0	15.0	17.0	17.0	38.0	9.0	23.0	5.0	6.0	5.0	26.0	13.0	41.0	25.0	1.0	18.0	15.0	
		C.V. (%)	42.6	10.4	9.5	25.0	14.1	13.1	13.9	25.7	5.2	26.4	2.9	3.3	2.2	15.5	6.9	26.8	15.9	0.5	12.5	21.6	
		F (Prob)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.000	0.000	0.000	

**LOCATIONS REJECTED DUE TO HIGH C.V. (i.e.> 30%): MDR 42.6%

CHAPTER I: BREEDING

Table I.213: SUMMER HYBRID TRIAL - 2022
GRAIN QUALITY: IRON CONTENT (ppm)

S.No.	TEST	ENTRY	MDR	AND	JMR	SKN	ABD1	DHL	CBE	ZONE	RANK
	CODE									MEAN	
1	SHT 101	MSH 371	44	43	57	52	65	52	64	54	10
2	SHT 102	MSH 372	30	48	62	70	71	55	64	57	8
3	SHT 103	MSH 377	48	60	49	86	89	69	76	68	2
4	SHT 104	MSH 389	32	52	53	62	60	65	69	56	9
5	SHT 105	Proagro 9444 (Check)	24	43	47	47	61	59	49	47	15
6	SHT 106	MSH 390	36	45	47	52	53	56	33	46	16
7	SHT 107	MSH 391	40	88	57	104	111	99	68	81	1
8	SHT 108	MSH 392	37	45	51	61	83	72	76	61	6
9	SHT 109	MSH 393	49	60	47	92	82	77	68	68	2
10	SHT 110	MSH 394	42	55	49	75	81	81	68	65	3
11	SHT 111	Nandi 75 (Check)	25	40	50	52	61	53	66	50	13
12	SHT 112	MSH 395	39	44	50	59	71	61	72	57	8
13	SHT 113	MSH 396	30	45	51	60	67	52	39	49	14
14	SHT 114	MSH 397	45	52	50	62	77	66	83	62	5
15	SHT 115	86M64 (Check)	39	55	53	68	63	66	73	60	7
16	SHT 116	MSH 398	33	43	53	53	62	60	52	51	12
17	SHT 117	MSH 399	34	49	52	56	52	68	54	52	11
18	SHT 118	MP 7366 (Check)	53	55	50	69	74	80	67	64	4
19	SHT 119	MSH 400	32	58	51	67	62	50	47	52	11

CHAPTER I: BREEDING

Table I.214: SUMMER HYBRID TRIAL - 2022
GRAIN QUALITY: ZINC CONTENT (ppm)

S.No.	TEST CODE	ENTRY	MDR	AND	JMR	SKN	ABD1	DHL	CBE	ZONE MEAN	RANK
1	SHT 101	MSH 371	48	16	39	33	34	36	48	36	7
2	SHT 102	MSH 372	33	20	43	36	43	37	47	37	6
3	SHT 103	MSH 377	51	25	45	36	48	41	41	41	3
4	SHT 104	MSH 389	37	16	50	32	43	36	39	36	7
5	SHT 105	Proagro 9444 (Check)	30	22	44	30	39	36	35	34	8
6	SHT 106	MSH 390	42	22	39	31	36	36	28	33	9
7	SHT 107	MSH 391	46	17	43	34	48	46	36	38	5
8	SHT 108	MSH 392	42	19	41	32	44	43	40	37	6
9	SHT 109	MSH 393	48	26	35	38	47	45	38	40	4
10	SHT 110	MSH 394	45	20	37	35	37	47	44	38	5
11	SHT 111	Nandi 75 (Check)	26	22	39	29	31	34	48	33	9
12	SHT 112	MSH 395	59	29	45	40	44	50	46	45	1
13	SHT 113	MSH 396	33	20	42	35	34	38	31	33	9
14	SHT 114	MSH 397	50	25	39	35	49	47	36	40	4
15	SHT 115	86M64 (Check)	44	26	42	41	37	44	35	38	5
16	SHT 116	MSH 398	37	23	42	33	37	41	38	36	7
17	SHT 117	MSH 399	40	21	42	31	34	41	32	34	8
18	SHT 118	MP 7366 (Check)	59	21	44	42	43	49	37	42	2
19	SHT 119	MSH 400	37	22	43	32	37	32	36	34	8

BREEDER SEED PRODUCTION

F. BREEDER SEED PRODUCTION (2022-2023)

In response to 7.82 q breeder seed indents received from the Department of Agriculture and Cooperation, Ministry of Agriculture and Farmer's Welfare (GOI), New Delhi, the target of production of 7.82 q breeder seed was assigned to different institutions for undertaking breeder seed production of 06 varieties and 44 parental lines of different hybrids during the year 2022-23. The breeder seed production programme was organized for three parental line at SKNAU, Jaipur, two parental lines at AU, Jodhpur, two varieties at Delhi (ICAR-IARI), four parental lines at CCSHAU, Hisar, one variety and twenty parental lines at ICRISAT, one variety and one parental lines at NARP, Aurangabad, one variety and eight parental lines at MPKV, Dhule, one parental line at UAS, Dharwad and one variety each at ANGRAU, Ananthapuram and RVSKVV, Gwalior. Two hybrids viz., Shraddha and Saburi are highly susceptible to diseases and also not in cultivation, hence no seed production was undertaken of the parental lines of these hybrids (except R line of Saburi).

The deficit breeder seed production in these cases is planned in summer 2023. The parental line/variety-wise DAC indent, actual production and supply position as per BSP I issued is summarized in Table I.215-217.

A total of 31.39 q breeder seed was produced against the DAC indent while supply of breeder seed of some of parental lines was assured through carry over seed stock of the year 2021-2022.

CHAPTER I: BREEDING

Table I.215: Center-wise Breeder Seed Production Report Kharif 2022-23
Crop: Pearl millet

Year of Indent/ Production: 2022
Year of supply: February: 2023

S. No.	Name of Producing center/state	Name of parental line/ variety	DAC indent (q)	Actual allocation as per BSP-I Target (q)	Actual Production (q)	Production Surplus (+)/ Deficit (-) over BSP-I target (q)
A	Varieties					
1	ANGRAU, Ananthapuram	ABV-04 (MP 552)	0.50	0.50	10.0	9.50
2	ICAR-IARI, New Delhi	Pusa Composite 612 (MP 480)	0.36	0.36	1.50	1.14
3	ICAR-IARI, New Delhi	Pusa Composite 701 (MP 535)	0.88	0.88	4.00	3.12
4A	ICRISAT, Patancheru	Dhanshakti (ICTP 8203 Fe 10-2)	3.54	3.54	1.00	1.46
4B	MPKV, Dhule	Dhanshakti (ICTP 8203 Fe 10-2)			4.00	
5	NARP, Aurangabad	ABPC-4-3 (MP 484)	0.01	0.01	0.14	0.13
6	RVSKVV, Gwalior	JBV-2	0.20	0.20	0.16	-0.04
		Total (A)	5.49	5.49	20.80	15.31
B.	Parental lines					
1	ICRISAT, Patancheru	ICMA 843-22 (A line HHB 67 Imp, HHB 67 Imp 2-7)	0.72	0.72	0.00	-0.72
2	ICRISAT, Patancheru	ICMB 843-22 (B line HHB 67 Imp, HHB 67 Imp 2-7)	0.11	0.11	0.00	-0.11
3	ICRISAT, Patancheru	ICMA 04888 (A line HHB 299)	0.08	0.08	0.08	0.00
4	ICRISAT, Patancheru	ICMB 04888 (B line HHB 299)	0.04	0.04	0.04	0.00
5	ICRISAT, Patancheru	ICMA 02333 (A line HHB 311, RHB 234)	0.11	0.11	0.11	0.00
6	ICRISAT, Patancheru	ICMB 02333 (B line HHB 311, RHB 234)	0.07	0.07	0.07	0.00
7	ICRISAT, Patancheru	ICMA 99222 (A line Phule Mahashakti)	0.01	0.01	0.01	0.00
8	ICRISAT, Patancheru	ICMB 99222 (B line Phule Mahashakti)	0.01	0.01	0.01	0.00
9	ICRISAT, Patancheru	ICMA 99444 (A line RHB 233)	0.01	0.01	0.01	0.00
10	ICRISAT, Patancheru	ICMB 99444 (B line RHB 233)	0.01	0.01	0.01	0.00
11	ICRISAT, Patancheru	ICMA 94555 (A line VPMH 7)	0.02	0.02	0.02	0.00
12	ICRISAT, Patancheru	ICMB 94555 (B line VPMH 7)	0.01	0.01	0.01	0.00
13	ICRISAT, Patancheru	ICMA 98222 (A line AHB 1200)	0.01	0.01	0.01	0.00
14	ICRISAT, Patancheru	ICMB 98222 (B line AHB 1200)	0.01	0.01	0.01	0.00
15	ICRISAT, Patancheru	ICMA 04999 (A line MPMH 17)	0.02	0.02	0.02	0.00
16	ICRISAT, Patancheru	ICMB 04999 (B line MPMH 17)	0.01	0.01	0.01	0.00
17	ICRISAT, Patancheru	ICMA 96666 (A line RHB 223)	0.09	0.09	0.09	0.00
18	ICRISAT, Patancheru	ICMB 96666 (B line RHB 223)	0.07	0.07	0.07	0.00

CHAPTER I: BREEDING

S. No.	Name of Producing center/state	Name of parental line/ variety	DAC indent (q)	Actual allocation as per BSP-I Target (q)	Actual Production (q)	Production Surplus (+)/ Deficit (-) over BSP-I target (q)
19	ICRISAT, Patancheru	ICMA 93333 (A line MPMH 21)	0.09	0.09	0.09	0.00
20	ICRISAT, Patancheru	ICMB 93333 (B line MPMH 21)	0.08	0.08	0.08	0.00
21	MPKV, Dhule	DHLB-8A (A line PHULE ADISHAKTI)	0.06	0.06	0.08	0.02
22	MPKV, Dhule	DHLB-8B (B line PHULE ADISHAKTI)	0.06	0.06	0.08	0.02
23	MPKV, Dhule	DHLBI-967 (R line PHULE ADISHAKTI)	0.06	0.06	0.10	0.04
24	MPKV, Dhule	DHLB 16A (A line DHBH 1397)	0.01	0.01	0.02	0.01
25	MPKV, Dhule	DHLB 16B (B line DHBH 1397)	0.01	0.01	0.02	0.01
26	MPKV, Dhule	DHLBI 1035 (R line DHBH 1397)	0.01	0.01	0.04	0.03
27	MPKV, Dhule	DHLBI 1201 (R line Phule Mahashakti)	0.01	0.01	0.02	0.01
28	MPKV, Dhule	RHRB 1A (A line SHRADDHA)**	0.02	0.02	0.0	-0.02
29	MPKV, Dhule	RHRB 1B (B line SHRADDHA)**	0.01	0.01	0.0	-0.01
30	MPKV, Dhule	RHRBI 138 (R line SHRADDHA)**	0.01	0.01	0.0	-0.01
31	MPKV, Dhule	RHRB 5A (A line SABURI)**	0.02	0.02	0.0	-0.02
32	MPKV, Dhule	RHRB 5B (B line SABURI)**	0.01	0.01	0.0	-0.01
33	MPKV, Dhule	RHRBI 458 (R line SABURI)**	0.01	0.01	0.02	0.01
34	NARP, Aurangabad	AUBI 1101 (R line AHB 1200)	0.01	0.01	3.70	3.69
35	UAS, Dharwad	CPRT-112 (R line VPMH 7)	0.01	0.01	0.20	0.19
36	CCSHAU, Hisar	H 77/833-2-202 (R line of HHB 67 Imp)	0.10	0.10	0.10*	0.00
37	CCSHAU, Hisar	H 77/833-2-202-6 (R line of HHB 67-2 Imp)	0.01	0.01	0.01*	0.00
38	CCSHAU, Hisar	H 14/003 (R line HHB 311)	0.05	0.05	0.05*	0.00
39	CCSHAU, Hisar	H 13/0001 (R line HHB 299)	0.04	0.04	0.10*	0.06
40	SKNAU, Jaipur	RIB 15176 (R line RHB 233)	0.01	0.01	0.10	0.09
41	SKNAU, Jaipur	RIB 15177 (R line RHB 234)	0.04	0.04	0.70	0.66
42	SKNAU, Jaipur	RIB 3135-18 (R line RHB 223)	0.07	0.07	0.20	0.13
43	AU, Jodhpur	MIR 525-2 (R line MPMH 17)	0.01	0.01	3.48	3.47
44	AU, Jodhpur	MIR 524 (R line MPMH 21)	0.10	0.10	0.82*	0.72
		Total (B)	2.33	2.33	10.59	8.26
		Total (A)+(B)	7.82	7.82	31.39	23.57

*Carryover of Kharif 2021 season

** Not in Cultivation

CHAPTER I: BREEDING

Table I.216: State-wise Breeder Seed Production Report Kharif 2022-23
Crop: Pearl millet

Year of Indent/ Production: 2022
Year of supply: February 2023

S. No.	Name of Producing center/state	Hybrid/ Variety	Name of parental line	DAC indent (q)	Actual allocation as per BSP-I target (q)	Actual Production (q)	Production Surplus (+) Deficit (-) over BSP-I target (q)
	Rajasthan						
1	SKNAU, Jaipur	RHB 233 (R line)	RIB 15176	0.01	0.01	0.10	0.09
2	SKNAU, Jaipur	RHB 234 (R line)	RIB 15177	0.04	0.04	0.70	0.66
3	SKNAU, Jaipur	RHB 223 (R line)	RIB 3135-18	0.07	0.07	0.20	0.13
4	AU, Jodhpur	MPMH 17 (R line)	MIR 525-2	0.01	0.01	3.48	3.47
5	AU, Jodhpur	MPMH 21 (R line)	MIR 524	0.10	0.10	0.82*	0.72
		Total		0.23	0.23	5.30	5.07
	Delhi						
1	ICAR-IARI, New Delhi	Pusa Composite 612 (MP 480)	-	0.36	0.36	1.50	1.14
2	ICAR-IARI, New Delhi	Pusa Composite 701 (MP 535)	-	0.88	0.88	4.00	3.12
		Total		1.24	1.24	5.50	4.26
	Haryana						
1	CCSHAU, Hisar	HHB 67 Imp (R line)	H 77/833-2-202	0.10	0.10	0.10*	0.00
2	CCSHAU, Hisar	HHB 67-2 Imp (R line)	H 77/833-2-202-6	0.01	0.01	0.01*	0.00
3	CCSHAU, Hisar	HHB 311 (R line)	H 14/003	0.05	0.05	0.05*	0.00
4	CCSHAU, Hisar	HHB 299 (R line)	H 13/0001	0.04	0.04	0.10*	0.06
		Total		0.20	0.20	0.26	0.06
	Madhya Pradesh						
1	RVSKVV, Gwalior	JBV-2	-	0.20	0.20	0.16	-0.04
		Total		0.20	0.20	0.16	-0.04
	Maharashtra						
1	MPKV, Dhule	(A line PHULE ADISHAKTI)	DHLB-8A	0.06	0.06	0.08	0.02
2	MPKV, Dhule	(B line PHULE ADISHAKTI)	DHLB-8B	0.06	0.06	0.08	0.02
3	MPKV, Dhule	(R line PHULE ADISHAKTI)	DHLBI-967	0.06	0.06	0.10	0.04
4	MPKV, Dhule	(A line DHBH 1397)	DHLB 16A	0.01	0.01	0.02	0.01
5	MPKV, Dhule	(B line DHBH 1397)	DHLB 16B	0.01	0.01	0.02	0.01
6	MPKV, Dhule	(R line DHBH 1397)	DHLBI 1035	0.01	0.01	0.04	0.03
7	MPKV, Dhule	(R line Phule Mahashakti)	DHLBI 1201	0.01	0.01	0.02	0.01
8	MPKV, Dhule	(A line SHRADDHA)**	RHRB 1A	0.02	0.02	0.0	-0.02

CHAPTER I: BREEDING

S. No.	Name of Producing center/state	Hybrid/ Variety	Name of parental line	DAC indent (q)	Actual allocation as per BSP-I target (q)	Actual Production (q)	Production Surplus (+) Deficit (-) over BSP-I target (q)
9	MPKV, Dhule	(B line SHRADDHA)**	RHRB 1B	0.01	0.01	0.0	-0.01
10	MPKV, Dhule	SHRADDHA (R line)**	RHRBI 138	0.01	0.01	0.0	-0.01
11	MPKV, Dhule	SABURI (A line)**	RHRB 5A	0.02	0.02	0.0	-0.02
12	MPKV, Dhule	SABURI (B line)**	RHRB 5B	0.01	0.01	0.0	-0.01
13	MPKV, Dhule	SABURI (R line)**	RHRBI 458	0.01	0.01	0.02	0.01
14	NARP, Aurangabad	ABPC-4-3 (MP 484)	-	0.01	0.01	0.14	0.13
15	NARP, Aurangabad	AHB 1200 (R line)	AUBI 1101	0.01	0.01	3.70	3.69
		Total		0.32	0.32	4.22	3.90
	Karnataka						
1	UAS, Dharwad	VPMH 7 (R line)	CPRT-112	0.01	0.01	0.20	0.19
		Total		0.01	0.01	0.20	0.19
	Andhra Pradesh						
1	ANGRAU, Ananthapuram	ABV-04 (MP 552)	-	0.50	0.50	10.0	9.50
		Total		0.50	0.50	10.0	9.50
	Telangana						
1	ICRISAT, Patancheru	Dhanshakti (ICTP 8203 Fe 10-2)	-	3.54	3.54	5.00 (1.0 ICRISAT + 4.0 Dhule)	1.46
2	ICRISAT, Patancheru	HHB 67 Imp, HHB 67 Imp 2-7 (A line)	ICMA 843-22	0.72	0.72	0.00	-0.72
3	ICRISAT, Patancheru	HHB 67 Imp, HHB 67 Imp 2-7 (B line)	ICMB 843-22	0.11	0.11	0.00	-0.11
4	ICRISAT, Patancheru	HHB 299 (A line)	ICMA 04888	0.08	0.08	0.08	0.00
5	ICRISAT, Patancheru	HHB 299 (B line)	ICMB 04888	0.04	0.04	0.04	0.00
6	ICRISAT, Patancheru	HHB 311, RHB 234 (A line)	ICMA 02333	0.11	0.11	0.11	0.00
7	ICRISAT, Patancheru	HHB 311, RHB 234 (B line)	ICMB 02333	0.07	0.07	0.07	0.00
8	ICRISAT, Patancheru	Phule Mahashakti (A line)	ICMA 99222	0.01	0.01	0.01	0.00
9	ICRISAT, Patancheru	Phule Mahashakti (B line)	ICMB 99222	0.01	0.01	0.01	0.00
10	ICRISAT, Patancheru	RHB 233 (A line)	ICMA 99444	0.01	0.01	0.01	0.00
11	ICRISAT, Patancheru	RHB 233 (B line)	ICMB 99444	0.01	0.01	0.01	0.00
12	ICRISAT, Patancheru	VPMH 7 (A line)	ICMA 94555	0.02	0.02	0.02	0.00
13	ICRISAT, Patancheru	VPMH 7 (B line)	ICMB 94555	0.01	0.01	0.01	0.00
14	ICRISAT, Patancheru	AHB 1200 (A line)	ICMA 98222	0.01	0.01	0.01	0.00
15	ICRISAT, Patancheru	AHB 1200 (B line)	ICMB 98222	0.01	0.01	0.01	0.00
16	ICRISAT, Patancheru	MPMH 17 (A line)	ICMA 04999	0.02	0.02	0.02	0.00
17	ICRISAT, Patancheru	MPMH 17 (B line)	ICMB 04999	0.01	0.01	0.01	0.00

CHAPTER I: BREEDING

S. No.	Name of Producing center/state	Hybrid/ Variety	Name of parental line	DAC indent (q)	Actual allocation as per BSP-I target (q)	Actual Production (q)	Production Surplus (+) Deficit (-) over BSP-I target (q)
18	ICRISAT, Patancheru	RHB 223 (A line)	ICMA 96666	0.09	0.09	0.09	0.00
19	ICRISAT, Patancheru	RHB 223 (B line)	ICMB 96666	0.07	0.07	0.07	0.00
20	ICRISAT, Patancheru	MPMH 21 (A line)	ICMA 93333	0.09	0.09	0.09	0.00
21	ICRISAT, Patancheru	MPMH 21 (B line)	ICMB 93333	0.08	0.08	0.08	0.00
		Total		5.12	5.12	5.75	0.63
		Grand Total		7.82	7.82	31.39	23.57

* Carry over seed stock Kharif 2021 season

** Not in Cultivation

CHAPTER I: BREEDING

Table I.217: Variety-wise Breeder Seed Production Report Kharif 2022-23

Crop: Pearl millet

Year of Indent/ Production: 2022

Year of supply: February 2023

S. No.	Name Variety/Hybrid	Name of parental line	Year of Release	Total DAC indent (q)	Actual allocation as per BSP-I target (q)	Actual Production (q)	Production Surplus (+) Deficit (-) over BSP-I target (q)
1	ABV-04 (MP 552)	-	2019	0.50	0.50	10.0	9.50
2	Pusa Composite 612 (MP 480)	-	2011	0.36	0.36	1.50	1.14
3	Pusa Composite 701 (MP 535)	-	2016	0.88	0.88	4.00	3.12
4A	Dhanshakti (ICTP 8203 Fe 10-2)	-	2014	3.54	3.54	1.00	1.46
4B	Dhanshakti (ICTP 8203 Fe 10-2)	-	2014			4.00	
5	ABPC-4-3 (MP 484)	-	2012	0.01	0.01	0.14	0.13
6	JBV-2	-	1999	0.20	0.20	0.16	-0.04
		Total (A)		5.49	5.49	20.80	15.31
7	HHB 67 Imp	ICMA 843-22 (A line)	2005	0.20	0.20	0.00	-0.20
		ICMB 843-22 (B line)		0.10	0.10	0.00	-0.10
		H 77/833-2-202 (R Line)		0.10	0.10	0.10*	0.00
8	HHB 67 Imp 2-7	ICMA 843-22 (A line)	2021	0.52	0.52	0.00	-0.52
		ICMB 843-22 (B line)		0.01	0.01	0.00	-0.01
		H 77/833-2-202-6 (R Line)		0.01	0.01	0.01*	0.00
9	HHB 299	ICMA 04888 (A Line)	2018	0.08	0.08	0.08	0.00
		ICMB 04888 (B Line)		0.04	0.04	0.04	0.00
		H 13/0001 (R Line)		0.04	0.04	0.10*	0.06
10	HHB 311	ICMA 02333 (A line)	2020	0.03	0.03	0.03	0.00
		ICMB 02333 (B line)		0.03	0.03	0.03	0.00
		H 14/003 (R Line)		0.05	0.05	0.05*	0.00
11	RHB 234	ICMA 02333 (A line)	2019	0.08	0.08	0.08	0.00
		ICMB 02333 (B line)		0.04	0.04	0.04	0.00
		RIB 15177 (R line)		0.04	0.04	0.70	0.66
12	Phule Mahashakti	ICMA 99222 (A line)	2019	0.01	0.01	0.01	0.00
		ICMB 99222 (B line)		0.01	0.01	0.01	0.00
		DHLBI 1201 (R Line)		0.01	0.01	0.02	0.01

CHAPTER I: BREEDING

S. No.	Name Variety/Hybrid	Name of parental line	Year of Release	Total DAC indent (q)	Actual allocation as per BSP-I target (q)	Actual Production (q)	Production Surplus (+) Deficit (-) over BSP-I target (q)
13	RHB 233	ICMA 99444 (A line)	2019	0.01	0.01	0.01	0.00
		ICMB 99444 (B line)		0.01	0.01	0.01	0.00
		RIB 15176 (R line)		0.01	0.01	0.10	0.09
14	VPMH 7	ICMA 94555 (A line)	2021	0.02	0.02	0.02	0.00
		ICMB 94555 (B line)		0.01	0.01	0.01	0.00
		CPRT-112 (R line)		0.01	0.01	0.20	0.19
15	AHB 1200	ICMA 98222 (A Line)	2018	0.01	0.01	0.01	0.00
		ICMB 98222 (B Line)		0.01	0.01	0.01	0.00
		AUBI 1101 (R line)		0.01	0.01	3.70	3.69
16	MPMH 17	ICMA 04999 (A line)	2013	0.02	0.02	0.02	0.00
		ICMB 04999 (B line)		0.01	0.01	0.01	0.00
		MIR 525-2 (R Line)		0.01	0.01	3.48	3.47
17	RHB 223	ICMA 96666 (A line)	2018	0.09	0.09	0.09	0.00
		ICMB 96666 (B line)		0.07	0.07	0.07	0.00
		RIB 3135-18 (R line)		0.07	0.07	0.20	0.13
18	MPMH 21	ICMA 93333 (A line)	2016	0.09	0.09	0.09	0.00
		ICMB 93333 (B line)		0.08	0.08	0.08	0.00
		MIR 524 (R line)		0.10	0.10	0.82*	0.72
19	PHULE ADISHAKTI	DHLB-8A (A line)	2015	0.06	0.06	0.08	0.02
		DHLB-8B (B line)		0.06	0.06	0.08	0.02
		DHLBI-967 (R line)		0.06	0.06	0.10	0.04
20	DHBH 1397	DHLB 16A (A line)	2019	0.01	0.01	0.02	0.01
		DHLB 16B (B line)		0.01	0.01	0.02	0.01
		DHLBI 1035(R line)		0.01	0.01	0.04	0.03
21	SHRADDHA**	RHRB 1A (A line)	1994	0.02	0.02	0.0	-0.02
		RHRB 1B (B line)		0.01	0.01	0.0	-0.01
		RHRBI 138 (R line)		0.01	0.01	0.0	-0.01
22	SABURI**	RHRB 5A (A line)	1997	0.02	0.02	0.0	-0.02
		RHRB 5B (B line)		0.01	0.01	0.0	-0.01
		RHRBI 458 (R line)		0.01	0.01	0.02	0.01
		Total (B)		2.33	2.33	10.59	8.26
		Total (A)+(B)		7.82	7.82	31.39	23.57

* Carry over seed stock Kharif 2021 season

** Not in Cultivation

DUS TESTING

H. DUS Testing under PPV and FRA**a. DUS Testing of varieties/ hybrids/ parental lines**

The DUS testing was undertaken as per approved guidelines of PPV and FRA during Kharif 2022. Thirty nine candidate varieties for second year and four candidate varieties for first year were tested at ICAR-AICRP on Pearl Millet, Mandor, Jodhpur and ICAR-AICRP on Pearl Millet, BRS, MPKV, Dhule as under:

S. No.	Name of candidate variety	S. No.	Name of candidate variety	S. No.	Name of candidate variety
First year test					
1	22KBH1	3	22KBH3		
2	22KBH2	4	22KBH4		
Second year test					
1	2880/3222/H - CH	14	2021H4 - SMGH	27	2021H13 - CH
2	2880/3222/H - SMGH	15	2021H3 - CH	28	2021H13 - SMGH
3	2880/3223/H - CH	16	2021H3 - SMGH	29	2021H1
4	2880/3223/H - SMGH	17	2021H5 - CH	30	2021H2
5	2880/2256/H - CH	18	2021H5 - SMGH	31	2021H6
6	2880/2256/H - SMGH	19	2021H8 - CH	32	2021H7
7	2876/2771/H - CH	20	2021H8 - SMGH	33	2021-5
8	2876/2771/H - SMGH	21	2021H10 - CH	34	2021-10
9	2883/2060/H - CH	22	2021H10 - SMGH	35	2021-9
10	2883/2060/H - SMGH	23	2021H11 - CH	36	2021-8
11	2877/3147/H - CH	24	2021H11 - SMGH	37	2021-4
12	2877/3147/H - SMGH	25	2021H12 - CH	38	2021-C
13	2021H4 - CH	26	2021H12 - SMGH	39	2021-2
Checks					
1	RIB 3135-18	2	HHB 67 Improved		

Observations on candidate and reference varieties on following 28 characters were recorded as per general and specific DUS guidelines (Pearl Millet) notified by PPV & FRA in Plant Variety Journal of India Vol. - 12, No. – 04, June 05, 2018:

S. No.	Characteristics	S. No.	Characteristics
1	Plant: Anthocyanin colouration of first leaf sheath	15	Spike: Length (cm)
2	Plant: Growth habit	16	Spike: Anthocyanin pigmentation of glume
3	Time of spike emergence (50% plant with at least one spike emerged fully)	17	Spike: Bristle
4	Leaf : Sheath pubescence	18	Spike: Bristle colour
5	Leaf : Sheath length (cm)	19	Spike: Bristle Appearance
6	Leaf: Blade length (cm)	20	Spike: Girth [maximum point (excluding bristles)] (cm)
7	Leaf: Blade width (at widest point) (cm)	21	Plant: Number of productive tillers
8	Spike: Stigma Pigmentation	22	Plant: Height (including spike) (cm)
9	Spike: Anther colour	23	Spike: Shape
10	Plant: Node pubescence	24	Spike: Tip sterility
11	Plant: Number of nodes	25	Spike: Density
12	Plant: Node pigmentation	26	Seed: colour
13	Plant: Internode pigmentation (between 3 rd and 4 th node from top)	27	Seed: Shape
14	Spike exertion	28	Seed: Weight of 1000 grains (g)

b. Maintenance of DUS reference varieties

Fifty six genotypes including B lines (18), R lines (16) and hybrids (22) listed below were studied for DUS characteristics at ICAR-AICRP on Pearl Millet, Jodhpur and MPKV, Rahuri during Kharif 2019-20 and 2020-21 and maintained (B and R lines only) at ICAR-AICRP on Pearl Millet, Jodhpur during Kharif 2022.

S. No.	Reference/example varieties	S. No.	Reference/example varieties	S. No.	Reference/example varieties
1	81 B	20	J 2454	39	RHB 173
2	841 B	21	J 2467	40	MPMH 17
3	842 B	22	ICMR 356	41	RHB 121
4	843-22 B	23	H 77/833-2-202	42	GHB 558
5	ICMB 88004	24	G 73-107	43	GHB 744
6	ICMB 92333	25	H 77/29-2	44	GHB 732
7	ICMB 92777	26	H 77/833-2	45	ICMH 356
8	ICMB 93333	27	H 90/4-5	46	HHB 67 Improved
9	ICMB 94555	28	HBL 11	47	HHB 197
10	ICMB 94111	29	RHRBI 1314	48	HHB 223
11	ICMB 95222	30	RIB 3135-18	49	Pratap
12	ICMB 97111	31	RIB 494	50	Nandi 61
13	ICMB 97444	32	RIB 335/74	51	86M64
14	ICMB 02333	33	PIB 686	52	Kaveri Super Boss
15	ICMB 04999	34	MIR 525-2	53	86M86
16	RHRB 1B	35	RHB 177	54	MP 7792
17	RHRB 5B	36	GHB 538	55	JKBH 26
18	RHRB 13B	37	GHB 719	56	Proagro 9444
19	J 2340	38	PB 106		

c. Registration of cultivars in PPV and FRA

So far 193 cultivars and parental lines (46 Public, 145 private and 2 farmer varieties) have been registered with PPV and FRA and several are in the process of registration. ICAR-AICRP on Pearl Millet is the nodal agency for undertaking pearl millet variety registration with PPV & FRA. Details of registered genotypes are as under:

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
1.	1 of 2009	Extant (Notified)	JKBH-26 (MH-595)	JK Agri Genetics Ltd.	Private	14-Jun-2007	E17 PG 24 07 094	12 February 2009	16 September 2012	14-Jun-2007 to 12-Feb-2009
2.	27 of 2009	Extant (Notified)	GHB-719 (MH-1236)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E20 PG29 07 203	12 February 2009	05 February 2022	06-Nov-2007 to 12-Feb-2009
3.	28 of 2009	Extant (Notified)	GHB-538 (MH-1049)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E21 PG30 07 204	12 February 2009	24 August 2020	06-Nov-2007 to 12-Feb-2009
4.	29 of 2009	Extant (Notified)	Parbhani Sampada (PPC-6)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E24 PG33 07 207	12 February 2009	01 February 2020	06-Nov-2007 to 12-Feb-2009
5.	30 of 2009	Extant (Notified)	GHB-526 (MSH-105)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E26 PG 35 07 209	12 February 2009	11 March 2018	06-Nov-2007 to 12-Feb-2009
6.	31 of 2009	Extant (Notified)	GHB-558 (MH-946)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E27 PG36 07 210	12 February 2009	11 March 2018	06-Nov-2007 to 12-Feb-2009
7.	56 of 2009	Extant (Notified)	MP-406 (CZP-9802)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E30 PG39 07 213	16 April 2009	11 March 2018	06-Nov-2007 to 16-Apr-2009
8.	57 of 2009	Extant (Notified)	CoCu-9	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E31 PG 40 07 214	16 April 2009	24 August 2020	06-Nov-2007 to 16-Apr-2009
9.	58 of 2009	Extant (Notified)	HC-20-(HMP 9102)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E33 PG 42 07 216	16 April 2009	03 September 2017	06-Nov-2007 to 16-Apr-2009
10.	59 of 2009	Extant (Notified)	RHB-121 (MH-892)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E36 PG45 07 219	16 April 2009	14 November 2016	06-Nov-2007 to 16-Apr-2009
11.	60 of 2009	Extant (Notified)	COH (Cu)8	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E38 PG47 07 221	16 April 2009	14 November 2016	06-Nov-2007 to 16-Apr-2009
12.	61 of 2009	Extant (Notified)	Pusa Composite-383 (MP-383)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E39 PG48 07 222	16 April 2009	14 November 2016	06-Nov-2007 to 16-Apr-2009
13.	62 of 2009	Extant (Notified)	AIMP-92901 (Samrudhi-MP-282)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E41 PG50 07 224	16 April 2009	14 November 2016	06-Nov-2007 to 16-Apr-2009
14.	63 of 2009	Extant	JBV-2 (GKKV-	Indian Council of	Public	6-Nov-2007	E47 PG56	16 April	07 June	06-Nov-2007 to

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
		(Notified)	93191)	Agricultural Research (ICAR)			07 230	2009	2014	16-Apr-2009
15.	64 of 2009	Extant (Notified)	X-6 (MH-140)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E50 PG59 07 233	16 April 2009	30 April 2012	06-Nov-2007 to 16-Apr-2009
16.	65 of 2009	Extant (Notified)	Pusa Bajri-266 (MP-226)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E56 PG65 07 239	16 April 2009	30 April 2012	06-Nov-2007 to 16-Apr-2009
17.	66 of 2009	Extant (Notified)	RHRBH-8609 (Shraddha)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E59 PG68 07 242	16 April 2009	01 September 2009	06-Nov-2007 to 16-Apr-2009
18.	72 of 2009	Extant (Notified)	HHB 67 Improved	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E22 PG31 07 205	20 July 2009	04 November 2020	06-Nov-2007 to 20-Jul-2009
19.	73 of 2009	Extant (Notified)	HHB-117	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E32 PG41 07 215	20 July 2009	30 May 2019	06-Nov-2007 to 20-Jul-2009
20.	74 of 2009	Extant (Notified)	Haryana Composite-10	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E44 PG53 07 227	20 July 2009	02 April 2015	06-Nov-2007 to 20-Jul-2009
21.	75 of 2009	Extant (Notified)	X-7	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E51 PG60 07 234	20 July 2009	08 September 2012	06-Nov-2007 to 20-Jul-2009
22.	76 of 2009	Extant (Notified)	RBH-30	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E55 PG64 07 238	20 July 2009	30 April 2012	06-Nov-2007 to 20-Jul-2009
23.	112 of 2009	Extant	Nandi-52 (MH-1078) (NMH-45)	New Nandi Seeds Corporation	Private	8-Sep-2008	E322 PG20 08 446	20 July 2009	09 January 2023	08-Sep-2008 to 20-Jul-2009
24.	113 of 2009	Extant	Nandi-62 (MH-1274) (NMH-68)	New Nandi Seeds Corporation	Private	18-Sep-2008	E323 PG21 08 448	20 July 2009	04 October 2022	18-Sep-2008 to 20-Jul-2009
25.	114 of 2009	Extant	Nandi-35 (MH-889)	New Nandi Seeds Corporation	Private	18-Sep-2008	E324 PG22 08 449	20 July 2009	14 November 2016	18-Sep-2008 to 20-Jul-2009
26.	115 of 2009	Extant	Nandi-8 (MH-741)	New Nandi Seeds Corporation	Private	18-Sep-2008	E325 PG23 08 450	20 July 2009	07 June 2014	18-Sep-2008 to 20-Jul-2009
27.	116 of 2009	Extant	Nandi-30 (MH-515)	New Nandi Seeds Corporation	Private	18-Sep-2008	E326 PG24 08 451	20 July 2009	30 April 2012	18-Sep-2008 to 20-Jul-2009
28.	117 of 2009	Extant	Nandi-32 (MH-	New Nandi Seeds	Private	18-Sep-2008	E327 PG25	20 July	25 October	18-Sep-2008 to

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
			773)	Corporation			08 452	2009	2014	20-Jul-2009
29.	161 of 2009	Extant	GICK V-96752 (MP 363)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E40 PG49 07 223	21 December 2009	01 February 2016	06-Nov-2007 to 21-Dec-2009
30.	35 of 2011	Extant	JKBH-676 (MH-1299)	JK Agri Genetics Ltd.	Private	14-Jun-2007	E16 PG23 07 93	24 June 2011	26 August 2024	14-Jun-2007 to 24-Jun-2011
31.	49 of 2011	Extant	PROAGRO-9444 (MSH-118)	Bayer Biosciences Pvt. Ltd.	Private	12-Aug-2009	E15 PG22 09 335	24 June 2011	01 February 2020	12-Aug-2009 to 24-Jun-2011
32.	77 of 2011	Extant	PCB 164	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E29 PG38 07 212	21 October 2011	19 July 2022	06-Nov-2007 to 21-Oct-2011
33.	82 of 2011	Extant	PHB-2168	Indian Council of Agricultural Research (ICAR)	Public	22-Jan-2008	E390 PG27 08 158	21 October 2011	07 May 2023	22-Jan-2008 to 21-Oct-2011
34.	83 of 2011	Extant	GHB-744 (MH-1272)	Indian Council of Agricultural Research (ICAR)	Public	22-Jan-2008	E391 PG28 08 159	21 October 2011	09 January 2023	22-Jan-2008 to 21-Oct-2011
35.	99 of 2011	Extant	Pusa Composite 443 (MP 443)	Indian Council of Agricultural Research (ICAR)	Public	29-Apr-2009	E11 PG16 09 218	21 October 2011	10 February 2024	29-Apr-2009 to 21-Oct-2011
36.	111 of 2011	New	B 2114	Maharashtra Hybrid Seeds Company Limited	Private	21-May-2007	N1 PG3 07 017	07 December 2011	06 December 2026	21-May-2007 to 07-Dec-2011
37.	8 of 2012	New	B 2124	Maharashtra Hybrid Seeds Company Limited	Private	21-May-2007	N3 PG5 07 019	07 March 2012	06 March 2027	21-May-2007 to 07-Mar-2012
38.	9 of 2012	New	MIP-003	Emergent Genetics India Pvt Ltd	Private	22-May-2007	N6 PG14 07 077	07 March 2012	06 March 2027	22-May-2007 to 07-Mar-2012
39.	10 of 2012	New	SYN-PM-0458	Syngenta India Limited	Private	10-Oct-2007	N9 PG28 07 141	07 March 2012	06 March 2027	10-Oct-2007 to 07-Mar-2012
40.	11 of 2012	New	86M64	Pioneer Overseas corporation-India Branch Office	Private	17-Sep-2007	N8 PG27 07 140	07 March 2012	06 March 2027	17-Sep-2007 to 07-Mar-2012
41.	43 of 2012	Extant	HHB-146 (MH-960)	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E28 PG37 07 211	02 July 2012	11 February 2018	06-Nov-2007 to 02-Jul-2012
42.	177 of 2012	Extant	Proagro 9443 (MH-846)	Bayer Biosciences Pvt. Ltd.	Private	19-Sep-2011	E1 PG1 11 931	16 October 2012	01 February 2016	19-Sep-2011 to 16-Oct-2012

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
43.	195 of 2012	Extant	Pusa 605 (MH 564)	Indian Council of Agricultural Research (ICAR)	Public	17-Jan-2008	E129 PG4 08 142	09 November 2012	07 June 2014	17-Jan-2008 to 09-Nov-2012
44.	196 of 2012	Extant	Pusa Composite-334 (MP-334)	Indian Council of Agricultural Research (ICAR)	Public	17-Jan-2008	E127 PG2 08 140	09 November 2012	25 October 2014	17-Jan-2008 to 09-Nov-2012
45.	197 of 2012	Extant	Pusa-415	Indian Council of Agricultural Research (ICAR)	Public	6-Nov-2007	E46 PG55 07 229	09 November 2012	25 October 2014	06-Nov-2007 to 09-Nov-2012
46.	21 of 2013	Extant	HHB 197 (MH-1302)	Indian Council of Agricultural Research (ICAR)	Public	22-Jan-2008	E395 PG10 08 161	01 February 2013	09 January 2023	22-Jan-2008 to 01-Feb-2013
47.	30 of 2013	Extant	Proagro 555 (MSH 16) (PB 727)	Bayer Biosciences Pvt. Ltd.	Private	1-Oct-2009	E20 PG28 09 414	06 March 2013	09 January 2023	01-Oct-2009 to 06-Mar-2013
48.	88 of 2013	Extant	GHB-732 (MH-1307)	Indian Council of Agricultural Research (ICAR)	Public	22-Jan-2008	E394 PG9 08 160	17 May 2013	09 January 2023	22-Jan-2008 to 17-May-2013
49.	89 of 2013	Extant	GHB-757 (MH-1328)	Indian Council of Agricultural Research (ICAR)	Public	22-Jan-2008	E396 PG11 08 162	17 May 2013	09 January 2023	22-Jan-2008 to 17-May-2013
50.	92 of 2013	Extant	KPMH-1	M/S Kaveri Seed Company Limited	Private	5-Feb-2009	E3 PG7 09 36	24 May 2013	09 September 2027	05-Feb-2009 to 24-May-2013
51.	115 of 2013	Extant (VCK)	MRB 204	Maharashtra Hybrid Seeds Company Limited	Private	21-May-2007	E2 PG2 07 016	17 July 2013	16 July 2028	21-May-2007 to 17-Jul-2013
52.	116 of 2013	Extant (VCK)	MRB 2210	Maharashtra Hybrid Seeds Company Limited	Private	21-May-2007	E1 PG1 07 013	22 July 2013	21 July 2028	21-May-2007 to 22-Jul-2013
53.	271 of 2013	Extant (VCK)	BPM 901	Bayer Biosciences Pvt. Ltd.	Private	12-Aug-2009	E14 PG21 09 334	16 December 2013	16 December 2028	12-Aug-2009 to 16-Dec-2013
54.	282 of 2013	Extant (VCK)	Nirmal-40 (NPH-40)	Nirmal Seeds Private Ltd.	Private	22-Sep-2009	E18 PG26 09 395	16 December 2013	16 December 2028	22-Sep-2009 to 16-Dec-2013
55.	283 of 2013	Extant (VCK)	NB-14A	Nuziveedu Seeds Limited	Private	3-Nov-2009	E28 PG36 09 465	16 December 2013	16 December 2028	03-Nov-2009 to 16-Dec-2013
56.	285 of 2013	Extant	NB-10R	Nuziveedu Seeds	Private	3-Nov-2009	E30 PG38	19	19	03-Nov-2009 to

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
		(VCK)		Limited			09 467	December 2013	December 2028	19-Dec-2013
57.	287 of 2013	Extant (VCK)	NB-61A	Nuziveedu Seeds Limited	Private	3-Nov-2009	E24 PG32 09 461	20 December 2013	20 December 2028	03-Nov-2009 to 20-Dec-2013
58.	289 of 2013	New	DGB-013	Devgen NV, Belgium	Private	3-Nov-2009	N9 PG43 09 478	26 December 2013	26 December 2028	03-Nov-2009 to 26-Dec-2013
59.	290 of 2013	Extant (VCK)	NB-86R	Nuziveedu Seeds Limited	Private	3-Nov-2009	E26 PG34 09 463	26 December 2013	26 December 2028	03-Nov-2009 to 26-Dec-2013
60.	291 of 2013	Extant (VCK)	NB-153R	Nuziveedu Seeds Limited	Private	3-Nov-2009	E29 PG37 09 466	26 December 2013	26 December 2028	03-Nov-2009 to 26-Dec-2013
61.	299 of 2013	Extant (VCK)	BPM 904	Bayer Biosciences Pvt. Ltd.	Private	1-Oct-2009	E21 PG29 09 415	31 December 2013	31 December 2028	01-Oct-2009 to 31-Dec-2013
62.	300 of 2013	Extant (VCK)	GK 1044	Ganga Kaveri Seed Pvt. Ltd., Hyderabad	Private	23-Jun-2009	E13 PG19 09 299	31 December 2013	31 December 2028	23-Jun-2009 to 31-Dec-2013
63.	301 of 2013	Extant (VCK)	NB-151R	Nuziveedu Seeds Limited	Private	3-Nov-2009	E32 PG40 09 469	31 December 2013	31 December 2028	03-Nov-2009 to 31-Dec-2013
64.	302 of 2013	Extant (VCK)	NB-152 R	Nuziveedu Seeds Limited	Private	3-Nov-2009	E31 PG39 09 468	31 December 2013	31 December 2028	03-Nov-2009 to 31-Dec-2013
65.	1 of 2014	Extant (VCK)	NB-101 A	Nuziveedu Seeds Limited	Private	3-Nov-2009	E34 PG42 09 471	02 January 2014	02 January 2029	03-Nov-2009 to 02-Jan-2014
66.	2 of 2014	Extant (VCK)	NB-102A	Nuziveedu Seeds Limited	Private	3-Nov-2009	E33 PG41 09 470	02 January 2014	02 January 2029	03-Nov-2009 to 02-Jan-2014
67.	3 of 2014	Extant (VCK)	NB-20R	Nuziveedu Seeds Limited	Private	3-Nov-2009	E27 PG35 09 464	02 January 2014	02 January 2029	03-Nov-2009 to 02-Jan-2014
68.	4 of 2014	Extant (VCK)	NB-60A	Nuziveedu Seeds Limited	Private	3-Nov-2009	E25 PG33 09 462	09 January 2014	09 January 2029	03-Nov-2009 to 09-Jan-2014
69.	5 of 2014	Extant (VCK)	BPM 906	Bayer Biosciences Pvt. Ltd.	Private	1-Oct-2009	E23 PG31 09 417	09 January 2014	09 January 2029	01-Oct-2009 to 09-Jan-2014
70.	7 of 2014	New	KBH Boss 65	M/S Kaveri Seed Company Limited	Private	5-Feb-2009	N4 PG6 09 35	09 January 2014	09 January 2029	05-Feb-2009 to 09-Jan-2014
71.	9 of 2014	New	HT-PM-4201	Hytech Seed India Private Limited	Private	19-Nov-2009	N13 PG47 09 507	09 January 2014	09 January 2029	19-Nov-2009 to 09-Jan-2014

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
72.	10 of 2014	New	BIO 448 H	Bioseed Research India Private Limited	Private	5-Feb-2009	N1 PG2 09 29	09 January 2014	09 January 2029	05-Feb-2009 to 09-Jan-2014
73.	27 of 2014	Extant (VCK)	BPM 905	Bayer Biosciences Pvt. Ltd.	Private	1-Oct-2009	E22 PG30 09 416	20 January 2014	20 January 2029	01-Oct-2009 to 20-Jan-2014
74.	30 of 2014	Extant	Pratap (MH 1642)	Nuziveedu Seeds Limited	Private	17-Mar-2009	E7 PG11 09 76	21 January 2014	09 September 2027	17-Mar-2009 to 21-Jan-2014
75.	32 of 2014	New	KBR 621	M/S Kaveri Seed Company Limited	Private	5-Feb-2009	N3 PG4 09 33	22 January 2014	22 January 2029	05-Feb-2009 to 22-Jan-2014
76.	33 of 2014	New	KBMS 329	M/S Kaveri Seed Company Limited	Private	5-Feb-2009	N2 PG3 09 32	22 January 2014	22 January 2029	05-Feb-2009 to 22-Jan-2014
77.	45 of 2014	New	VBBH 3040	Vibha Agrotech Limited	Private	17-Mar-2008	N25 PG14 08 203	05 February 2014	04 February 2029	17-Mar-2008 to 05-Feb-2014
78.	170 of 2014	New	KBR-780	M/S Kaveri Seed Company Limited	Private	21-Jun-2010	N27 PG27 10 169	13 May 2014	12 May 2029	21-Jun-2010 to 13-May-2014
79.	625 of 2014	New	JKBH 768	JK Agri Genetics Ltd.	Private	7-Apr-2008	N104 PG 19 08 351	17 September 2014	16 September 2029	07-Apr-2008 to 17-Sep-2014
80.	11 of 2015	Extant	MP-7792 (MH-1609)	Metahelix Life Sciences Limited	Private	21-Jul-2014	E2 PG23 14 1412	06 January 2015	25 July 2027	21-Jul-2014 to 06-Jan-2015
81.	13 of 2015	Extant	MP-7872 (MH-1610)	Metahelix Life Sciences Limited	Private	21-Jul-2014	E1 PG22 14 1411	07 January 2015	25 July 2027	21-Jul-2014 to 07-Jan-2015
82.	31 of 2015	New	JKBH 778	JK Agri Genetics Ltd.	Private	7-Apr-2008	N103 PG18 08 350	19 January 2015	18 January 2030	07-Apr-2008 to 19-Jan-2015
83.	32 of 2015	Extant (VCK)	AKASH (VBBH 350)	Vibha Agrotech Limited	Private	31-Mar-2008	E192 PG15 08 222	19 January 2015	18 January 2030	31-Mar-2008 to 19-Jan-2015
84.	79 of 2015	New	KBR 870	M/S Kaveri Seed Company Limited	Private	8-Mar-2010	N05 PG05 10 64	20 February 2015	19 February 2030	08-Mar-2010 to 20-Feb-2015
85.	82 of 2015	New	KBMS 293	M/S Kaveri Seed Company Limited	Private	8-Mar-2010	N06 PG06 10 65	25 February 2015	24 February 2030	08-Mar-2010 to 25-Feb-2015
86.	93 of 2015	New	NBBH-913	Navbharat Seeds Pvt. Ltd.	Private	12-Jan-2010	N02 PG02 10 06	07 April 2015	06 April 2030	12-Jan-2010 to 07-Apr-2015
87.	99 of 2015	New	BPM907	Bayer Biosciences Pvt. Ltd.	Private	19-Oct-2010	N38 PG38 10 319	27 April 2015	26 April 2030	19-Oct-2010 to 27-Apr-2015
88.	101 of 2015	New	KBMS 231	Kaveri Seed Company Limited	Private	8-Mar-2010	N10 PG10 10 69	27 April 2015	26 April 2030	08-Mar-2010 to 27-Apr-2015
89.	102 of 2015	New	KBR 864	Kaveri Seed	Private	8-Mar-2010	N04 PG04	27 April	26 April	08-Mar-2010 to

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
				Company Limited			10 63	2015	2030	27-Apr-2015
90.	199 of 2015	Extant (VCK)	JKBH-550	JK Agri Genetics Ltd.	Private	14-Jun-2007	E15 PG22 07 92	27 August 2015	26 August 2030	14-Jun-2007 to 27-Aug-2015
91.	200 of 2015	New	VBBH 3115	VIBHA AGROTECH LIMITED	Private	4-Jan-2010	N01 PG01 10 02	27 August 2015	26 August 2030	04-Jan-2010 to 27-Aug-2015
92.	203 of 2015	Extant (VCK)	NBH-1188 (Big B)	Nath Bio-Genes (I) Ltd.	Private	13-Jun-2012	E1 PG5 12 200	27 August 2015	26 August 2030	13-Jun-2012 to 27-Aug-2015
93.	204 of 2015	Extant (VCK)	86M01	Pioneer Overseas Corporation	Private	28-Jun-2012	E3 PG8 12 228	27 August 2015	26 August 2030	28-Jun-2012 to 27-Aug-2015
94.	206 of 2015	Extant (VCK)	NBH-1134	Nuziveedu Seeds Ltd.	Private	17-Mar-2009	E6 PG10 09 75	02 September 2015	09 January 2030	17-Mar-2009 to 02-Sep-2015
95.	207 of 2015	Extant (VCK)	NBH-2223	Nuziveedu Seeds Ltd.	Private	17-Mar-2009	E8 PG12 09 77	02 September 2015	09 January 2030	17-Mar-2009 to 02-Sep-2015
96.	208 of 2015	Extant (VCK)	NBH-4455	Nuziveedu Seeds Ltd.	Private	13-Apr-2009	E9 PG14 09 139	02 September 2015	09 January 2030	13-Apr-2009 to 02-Sep-2015
97.	209 of 2015	Extant (VCK)	NBH-216	Nuziveedu Seeds Ltd.	Private	21-May-2009	E12 PG17 09 278	02 September 2015	01 September 2030	21-May-2009 to 02-Sep-2015
98.	210 of 2015	New	KBR 721	Kaveri Seed Company Limited	Private	8-Mar-2010	N07 PG07 10 66	02 September 2015	01 September 2030	08-Mar-2010 to 02-Sep-2015
99.	212 of 2015	Extant (VCK)	NBH-1717	Nath Bio-Genes (I) Ltd.	Private	13-Jun-2012	E2 PG6 12 201	02 September 2015	01 September 2030	13-Jun-2012 to 02-Sep-2015
100.	243 of 2015	Extant	RHRBH-9808	Mahatma Phule Krishi Vidyapeeth	Public	9-Jan-2015	E1 PG1 15 28	15 October 2015	30 August 2025	09-Jan-2015 to 15-Oct-2015
101.	361 of 2016	Extant (VCK)	PM80105R	DCM Shriram Limited	Private	26-Mar-2009	E35 PG13 9 113	09 November 2016	08 November 2031	26-Mar-2009 to 09-Nov-2016
102.	226 of 2017	New	KBMS 569	Kaveri Seed Company Limited	Private	3-Jun-2010	N15 PG15 10 136	30 August 2017	29 August 2032	03-Jun-2010 to 30-Aug-2017
103.	227 of 2017	New	KBMS 253	Kaveri Seed Company Limited	Private	3-Jun-2010	N16 PG16 10 137	30 August 2017	29 August 2032	03-Jun-2010 to 30-Aug-2017
104.	228 of 2017	New	KBMS 219	Kaveri Seed Company Limited	Private	21-Jun-2010	N21 PG21 10 163	30 August 2017	29 August 2032	21-Jun-2010 to 30-Aug-2017
105.	229 of 2017	New	KBR 877	Kaveri Seed Company Limited	Private	21-Jun-2010	N23 PG23 10 165	30 August 2017	29 August 2032	21-Jun-2010 to 30-Aug-2017

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
106.	270 of 2017	New	KBMS 227	Kaveri Seed Company Limited	Private	3-Jun-2010	N18 PG18 10 139	29 September 2017	28 September 2032	03-Jun-2010 to 29-Sep-2017
107.	282 of 2017	New	KBMS 239	Kaveri Seed Company Limited	Private	8-Mar-2010	N8 PG8 10 67	04 October 2017	03 October 2032	08-Mar-2010 to 04-Oct-2017
108.	284 of 2017	New	KBR 831	Kaveri Seed Company Limited	Private	21-Jun-2010	N22 PG22 10 164	04 October 2017	03 October 2032	21-Jun-2010 to 04-Oct-2017
109.	285 of 2017	New	KBR 823	Kaveri Seed Company Limited	Private	21-Jun-2010	N25 PG25 10 167	04 October 2017	03 October 2032	21-Jun-2010 to 04-Oct-2017
110.	309 of 2017	New	SONY-NBH227	Nuziveedu Seeds Ltd.	Private	22-Sep-2008	N124 PG26 8 453	28 November 2017	27 November 2032	22-Sep-2008 to 28-Nov-2017
111.	312 of 2017	New	KBMS 251	Kaveri Seed Company Limited	Private	3-Jun-2010	N19 PG19 10 140	28 November 2017	27 November 2032	03-Jun-2010 to 28-Nov-2017
112.	41 of 2018	New	JKBH 1108	JK Agri Genetics Ltd.	Private	25-Jul-2012	N7 PG10 12 373	28 March 2018	27 March 2033	25-Jul-2012 to 28-Mar-2018
113.	42 of 2018	New	JKBH 1093	JK Agri Genetics Ltd.	Private	25-Jul-2012	N8 PG11 12 374	28 March 2018	27 March 2033	25-Jul-2012 to 28-Mar-2018
114.	43 of 2018	New	JKBH 1100	JK Agri Genetics Ltd.	Private	25-Jul-2012	N9 PG12 12 375	28 March 2018	27 March 2033	25-Jul-2012 to 28-Mar-2018
115.	19 of 2019	New	NBH-4903	Nuziveedu Seeds Limited	Private	19-Dec-2011	N2 PG3 11 1353	18 March 2019	17 March 2034	19-Dec-2011 to 18-Mar-2019
116.	95 of 2019	New	86M88	Pioneer Overseas Corporation	Private	28-Jun-2012	N6 PG9 12 229	27 March 2019	26 March 2034	28-Jun-2012 to 27-Mar-2019
117.	96 of 2019	New	86M12	Pioneer Overseas Corporation	Private	28-Jun-2012	N5 PG7 12 227	28 March 2019	27 March 2034	28-Jun-2012 to 28-Mar-2019
118.	99 of 2019	New	KBR 618	Kaveri Seed Company Limited	Private	21-Jun-2010	N24 PG24 10 166	28 March 2019	27 March 2034	21-Jun-2010 to 28-Mar-2019
119.	101 of 2019	Extant (Notified)	NBH 5061 (MH 1812)	Nuziveedu Seeds Ltd.	Private	20-Jul-2016	E5 PG31 16 946	28 March 2019	29 July 2029	20-Jul-2016 to 28-Mar-2019
120.	287 of 2019	Extant (VCK)	B 2037	Maharashtra Hybrid Seeds Company Limited	Private	21-May-2007	E68 PG4 7 18	19 December 2019	18 December 2034	21-May-2007 to 19-Dec-2019
121.	337 of 2019	New	PSP68	Bayer Biosciences Pvt. Ltd.	Private	7-Nov-2013	N12 PG12 13 753	19 December 2019	18 December 2034	07-Nov-2013 to 19-Dec-2019
122.	358 of 2019	New	PP63	Bayer Biosciences Pvt. Ltd.	Private	28-Dec-2012	N11 PG14 12 691	19 December 2019	18 December 2034	28-Dec-2012 to 19-Dec-2019

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
123.	359 of 2019	New	DGB-017	M/s Crystal Crop Protection Limited	Private	22-Jul-2010	N31 PG31 10 214	19 December 2019	18 December 2034	22-Jul-2010 to 19-Dec-2019
124.	361 of 2019	New	MIP-007	M/s Crystal Crop Protection Limited	Private	22-May-2007	N10 PG15 7 78	19 December 2019	18 December 2034	22-May-2007 to 19-Dec-2019
125.	22 of 2020	Extant (VCK)	MIP-008	M/s Crystal Crop Protection Limited	Private	22-May-2007	E5 PG10 7 68	17 January 2020	16 January 2035	22-May-2007 to 17-Jan-2020
126.	126 of 2020	New	NPA-84	Nirmal Seeds Pvt. Ltd.	Private	19-Aug-2014	N24 PG28 14 1701	19 February 2020	18 February 2035	19-Aug-2014 to 19-Feb-2020
127.	127 of 2020	New	NPA-168	Nirmal Seeds Pvt. Ltd.	Private	19-Aug-2014	N23 PG27 14 1700	19 February 2020	18 February 2035	19-Aug-2014 to 19-Feb-2020
128.	112 of 2013	Extant (VCK)	86M52	Pioneer Overseas Corporation (reissued with address change, old serial no. 658)	Private	22-Aug-2007	E19 PG26 7 137	17 July 2013	16 July 2028	22-Aug-2007 to 17-Jul-2013
129.	94 of 2015	New	86M66	Pioneer Overseas Corporation (reissued with address change, old serial no. 1777)	Private	19-Apr-2010	N12 PG12 10 118	07 April 2015	06 April 2030	19-Apr-2010 to 07-Apr-2015
130.	97 of 2015	New	86M33	Pioneer Overseas Corporation (reissued with address change, old serial no. 1780)	Private	19-Apr-2010	N11 PG11 10 117	08 April 2015	07 April 2030	19-Apr-2010 to 08-Apr-2015
131.	105 of 2015	New	86M86	Pioneer Overseas Corporation (reissued with address change, old serial no. 1788)	Private	13-May-2010	N13 PG13 10 126	27 April 2015	26 April 2030	13-May-2010 to 27-Apr-2015
132.	40 of 2016	New	86 M 40	Pioneer Overseas Corporation (reissued with address change, old serial no. 2109)	Private	18-Jan-2012	N2 PG2 12 5	29 January 2016	28 January 2031	18-Jan-2012 to 29-Jan-2016
133.	41 of 2016	New	86 M 76	Pioneer Overseas Corporation (reissued with address change, old serial no. 2110)	Private	18-Jan-2012	N3 PG3 12 6	29 January 2016	28 January 2031	18-Jan-2012 to 29-Jan-2016
134.	42 of 2016	New	86M11	Pioneer Overseas Corporation (reissued	Private	8-Feb-2012	N4 PG4 12 12	29 January 2016	28 January 2031	08-Feb-2012 to 29-Jan-2016

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
				with address change, old serial no. 2111)						
135.	201 of 2017	New	86M84	Pioneer Overseas Corporation (reissued with address change, old serial no. 2875)	Private	13-May-2014	N12 PG14 14 1150	29 May 2017	28 May 2032	13-May-2014 to 29-May-2017
136.	REG/2019/73 H	Extant (Notified)	PB 1705 (MH 2008)	Bayer Crop Science LP	Public	6-May-2019	E2 PG2 19 73	20 August 2020	26 March 2033	06-May-2019 to 20-Aug-2020
137.	REG/2019/73 A	Extant (Notified)	PSP83	Bayer Crop Science LP	Public	6-May-2019	E2 PG2 19 73	20 August 2020	26 March 2033	06-May-2019 to 20-Aug-2020
138.	REG/2019/73 B	Extant (Notified)	PSP84	Bayer Crop Science LP	Public	6-May-2019	E2 PG2 19 73	20 August 2020	26 March 2033	06-May-2019 to 20-Aug-2020
139.	REG/2019/73 R	Extant (Notified)	PP78	Bayer Crop Science LP	Public	6-May-2019	E2 PG2 19 73	20 August 2020	26 March 2033	06-May-2019 to 20-Aug-2020
140.	REG/2018/112 H	Extant (Notified)	Mahabeej-1005 (MH-1852)	Maharashtra State Seeds Corporation Ltd.	Public	13-Mar-2018	E2 PG7 18 112	20 August 2020	24 August 2032	13-Mar-2018 to 20-Aug-2020
141.	REG/2018/112 A	Extant (Notified)	MBJ-2A	Maharashtra State Seeds Corporation Ltd.	Public	13-Mar-2018	E2 PG7 18 112	20 August 2020	24 August 2032	13-Mar-2018 to 20-Aug-2020
142.	REG/2018/112 B	Extant (Notified)	MBJ-2B	Maharashtra State Seeds Corporation Ltd.	Public	13-Mar-2018	E2 PG7 18 112	20 August 2020	24 August 2032	13-Mar-2018 to 20-Aug-2020
143.	REG/2018/112 R	Extant (Notified)	MBJ-1R	Maharashtra State Seeds Corporation Ltd.	Public	13-Mar-2018	E2 PG7 18 112	20 August 2020	24 August 2032	13-Mar-2018 to 20-Aug-2020
144.	REG/2019/72 H	Extant (Notified)	PB 1720 (MH 2107) (PB 1720)	Bayer Crop Science LP	Private	6-May-2019	E1 PG1 19 72	20 August 2020	25 December 2033	06-May-2019 to 20-Aug-2020
145.	REG/2019/72 A	Extant (Notified)	PSP93	Bayer Crop Science LP	Private	6-May-2019	E1 PG1 19 72	20 August 2020	25 December 2033	06-May-2019 to 20-Aug-2020
146.	REG/2019/72 B	Extant (Notified)	PSP94	Bayer Crop Science LP	Private	6-May-2019	E1 PG1 19 72	20 August 2020	25 December 2033	06-May-2019 to 20-Aug-2020
147.	REG/2019/72 R	Extant (Notified)	PP106	Bayer Crop Science LP	Private	6-May-2019	E1 PG1 19 72	20 August 2020	25 December 2033	06-May-2019 to 20-Aug-2020
148.	REG/2019/172 H	Extant (Notified)	PB 1852 (MH-2224)	Bayer Crop Science LP	Private	3-Dec-2019	E9 PG10 19 172	29 October 2020	04 September	03-Dec-2019 to 29-Oct-2020

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
									2034	
149.	REG/2019/172 A	Extant (Notified)	PSP95	Bayer Crop Science LP	Private	3-Dec-2019	E9 PG10 19 172	29 October 2020	04 September 2034	03-Dec-2019 to 29-Oct-2020
150.	REG/2019/172 B	Extant (Notified)	PSP96	Bayer Crop Science LP	Private	3-Dec-2019	E9 PG10 19 172	29 October 2020	04 September 2034	03-Dec-2019 to 29-Oct-2020
151.	REG/2019/172 R	Extant (Notified)	PP110	Bayer Crop Science LP	Private	3-Dec-2019	E9 PG10 19 172	29 October 2020	04 September 2034	03-Dec-2019 to 29-Oct-2020
152.	REG/2014/2446	Extant (VCK)	BLPMR 1295	Bisco Biosciences Pvt. Ltd.	Private	8-Dec-2014	E4 PG30 14 2446	12 November 2020	11 November 2035	08-Dec-2014 to 12-Nov-2020
153.	REG/2017/1870 H	Extant (Notified)	Nutrifeed (PAC-981)	UPL Limited	Private	18-Sep-2017	E2 PG27 17 1870	12 November 2020	23 April 2029	18-Sep-2017 to 12-Nov-2020
154.	REG/2017/1870 A	Extant (Notified)	110001	UPL Limited	Private	18-Sep-2017	E2 PG27 17 1870	12 November 2020	23 April 2029	18-Sep-2017 to 12-Nov-2020
155.	REG/2017/1870 B	Extant (Notified)	120001	UPL Limited	Private	18-Sep-2017	E2 PG27 17 1870	12 November 2020	23 April 2029	18-Sep-2017 to 12-Nov-2020
156.	REG/2017/1870 R	Extant (Notified)	PM03-48-23-32	UPL Limited	Private	18-Sep-2017	E2 PG27 17 1870	12 November 2020	23 April 2029	18-Sep-2017 to 12-Nov-2020
157.	REG/2010/224	Extant (VCK)	JKR 11568	JK Agri Genetics Ltd	Private	26-Jul-2010	E2 PG33 10 224	28 January 2021	27 January 2036	26-Jul-2010 to 28-Jan-2021
158.	REG/2010/225	Extant (VCK)	JKR 4259	JK Agri Genetics Ltd	Private	29-Jul-2010	E1 PG34 10 225	28 January 2021	27 January 2036	29-Jul-2010 to 28-Jan-2021
159.	REG/2010/227	Extant (VCK)	JKMS 405A	JK Agri Genetics Ltd	Private	29-Jul-2010	E3 PG36 10 227	28 January 2021	27 January 2036	29-Jul-2010 to 28-Jan-2021
160.	REG/2014/1171	New	M171G	Pioneer Overseas Corporation	Private	16-May-2014	N15 PG17 14 1171	28 January 2021	27 January 2036	16-May-2014 to 28-Jan-2021
161.	REG/2015/271	Extant (VCK)	MP12P16A	Metahelix Life Sciences Limited	Private	11-Feb-2015	E9 PG12 15 271	24 March 2021	23 March 2036	11-Feb-2015 to 24-Mar-2021
162.	REG/2010/68	New	KBMS 261	Kaveri Seed Company Limited	Private	8-Mar-2010	N9 PG9 10 68	06 April 2021	05 April 2036	08-Mar-2010 to 06-Apr-2021
163.	REG/2010/138	New	KBMS 353	Kaveri Seed Company Limited	Private	3-Jun-2010	N17 PG17 10 138	06 April 2021	05 April 2036	03-Jun-2010 to 06-Apr-2021
164.	REG/2015/301	New	PMGP100001A	Metahelix Life	Private	13-Feb-2015	N10 PG14	06 April	05 April	13-Feb-2015 to

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
				Sciences Limited			15 301	2021	2036	06-Apr-2021
165.	REG/2016/771	New	BIO EM189Z	DCM Shriram Limited	Private	24-Jun-2016	N13 PG17 16 771	06 April 2021	05 April 2036	24-Jun-2016 to 06-Apr-2021
166.	REG/2014/2419	New	JKR 06128	JK Agri Genetics Ltd	Private	1-Dec-2014	N25 PG29 14 2419	20 April 2021	19 April 2036	01-Dec-2014 to 20-Apr-2021
167.	REG/2009/34	New	KBR 837	Kaveri Seed Company Limited	Private	5-Feb-2009	N14 PG5 9 34	16 June 2021	15 June 2036	05-Feb-2009 to 16-Jun-2021
168.	REG/2010/162	New	KBMS 229	Kaveri Seed Company Limited	Private	21-Jun-2010	N20 PG20 10 162	16 June 2021	15 June 2036	21-Jun-2010 to 16-Jun-2021
169.	REG/2010/168	New	KBR 672	Kaveri Seed Company Limited	Private	21-Jun-2010	N26 PG26 10 168	16 June 2021	15 June 2036	21-Jun-2010 to 16-Jun-2021
170.	REG/2010/170	New	KBR 882	Kaveri Seed Company Limited	Private	21-Jun-2010	N28 PG28 10 170	16 June 2021	15 June 2036	21-Jun-2010 to 16-Jun-2021
171.	REG/2010/172	New	KBR 880	Kaveri Seed Company Limited	Private	21-Jun-2010	N29 PG29 10 172	16 June 2021	15 June 2036	21-Jun-2010 to 16-Jun-2021
172.	Reg/2015/1166	New	M172R	Pioneer Overseas Corporation	Private	10-Jun-2015	N21 PG30 15 1166	16 June 2021	15 June 2036	10-Jun-2015 to 16-Jun-2021
173.	REG/2016/68	New	M297F	Pioneer Overseas Corporation	Private	16-Feb-2016	N5 PG6 16 68	16 June 2021	15 June 2036	16-Feb-2016 to 16-Jun-2021
174.	REG/2020/114 H	Extant (Notified)	CO 9	Tamil Nadu Agricultural University	Public	7-Jul-2020	E2 PG8 20 114	30 June 2021	25 July 2027	07-Jul-2020 to 30-Jun-2021
175.	REG/2020/114 A	Extant (Notified)	ICMA 93111A	Tamil Nadu Agricultural University	Public	7-Jul-2020	E2 PG8 20 114	30 June 2021	25 July 2027	07-Jul-2020 to 30-Jun-2021
176.	REG/2020/114 B	Extant (Notified)	ICMB 93111B	Tamil Nadu Agricultural University	Public	7-Jul-2020	E2 PG8 20 114	30 June 2021	25 July 2027	07-Jul-2020 to 30-Jun-2021
177.	REG/2020/114 R	Extant (Notified)	PT 6029-30	Tamil Nadu Agricultural University	Public	7-Jul-2020	E2 PG8 20 114	30 June 2021	25 July 2027	07-Jul-2020 to 30-Jun-2021
178.	REG/2016/5	New	PP56	Bayer Crop Science LP	Private	12-Jan-2016	N2 PG3 16 5	07 December 2021	06 December 2036	12-Jan-2016 to 07-Dec-2021
179.	REG/2016/6	New	PSP66	Bayer Crop Science LP	Private	12-Jan-2016	N3 PG4 16 6	07 December 2021	06 December 2036	12-Jan-2016 to 07-Dec-2021
180.	REG/2011/1354	New	NB-98R	Nuziveedu Seeds Limited	Private	Monday, December 19, 2011	N3 PG4 11 1354	Monday, March 18, 2019	17-March-2034	19-Dec-2011 to 18-Mar-2019

CHAPTER I: BREEDING

S. No.	Registration No.	Category of Variety	Denomination of the Candidate Variety	Name of Applicant	Applicant Category	Date of Filling	Application No.	Date of Certificate Issue	Maximum Protection Period up to	Provisional Protection Claim
181.	REG/2017/1643	Farmer	Sulkhaniya Bajra	Shri Hanumanaram Jhuriya,	Farmer	Monday, July 03, 2017	F8 PG17 17 1643	02-March-2022	01-March-2037	03-Jul-2017 to 02-Mar-2022
182.	REG/2020/153	Extant (VCK)	M164R	Pioneer Overseas Corporation	Private	Wednesday, July 22, 2020	E3 PG10 20 153	18-October-2022	17-October-2037	22-Jul-2020 to 18-Oct-2022
183.	REG/2020/388	Farmer	BABARKOT NO BAJRO	Laxmanbhai Bhavanbhai Makwana	Farmer	Thursday, December 24, 2020	F1 PG11 20 388	18-October-2022	17-October-2037	24-Dec-2020 to 18-Oct-2022
184.	REG/2021/0215 H	Extant (Notified)	Pusa 1201 (MH 1849)	Indian Agricultural Research Institute	Public	Thursday, December 30, 2021	E1 PG12 21 215	15-November-2022	26-March-2033	30-Dec-2021 to 15-Nov-2022
185.	REG/2021/0215 A	Extant (Notified)	MS 411A	Indian Agricultural Research Institute	Public	Thursday, December 30, 2021	-	15-November-2022	26-March-2033	30-Dec-2021 to 15-Nov-2022
186.	REG/2021/0215 B	Extant (Notified)	MS 411B	Indian Agricultural Research Institute	Public	Thursday, December 30, 2021	-	15-November-2022	26-March-2033	30-Dec-2021 to 15-Nov-2022
187.	REG/2021/0215 R	Extant (Notified)	ICMR 07333	Indian Agricultural Research Institute	Public	Thursday, December 30, 2021	-	15-November-2022	26-June-2033	30-Dec-2021 to 15-Nov-2022
188.	REG/2013/182	New	PP 64	M/s Crystal Crop Protection Limited	Private	01 April 2013	N3 PG3 13 182	21-February-2023	20-February-2038	01-Apr-2013 to 21-Feb-2023
189.	REG/2013/977	New	PSP70	M/s Crystal Crop Protection Limited	Private	26 November 2013	N15 PG16 13 977	21-February-2023	20-February-2038	26-Nov-2013 to 21-Feb-2023
190.	REG/2014/489	New	BIO-LM135Z	DCM Shriram Limited	Private	03 March 2014	N3 PG4 14 489	21-February-2023	20-February-2038	03-Mar-2014 to 21-Feb-2023
191.	REG/2014/492	New	EM104Z	DCM Shriram Limited	Private	03 March 2014	N6 PG7 14 492	21-February-2023	20-February-2038	03-Mar-2014 to 21-Feb-2023
192.	REG/2019/96	Extant (VCK)	PP83	M/s Crystal Crop Protection Limited	Private	06 June 2019	E8 PG9 19 96	21-February-2023	20-February-2038	06-Jun-2019 to 21-Feb-2023
193.	REG/2015/270	New	MP12P021R	Rallis India Limited	Private	11 February 2015	N7 PG11 15 270	15-March-2023	14-March-2038	11-Feb-2015 to 15-Mar-2023

Source: <https://plantaauthority.gov.in>

ICAR-ICRISAT PARTNERSHIP TRIALS

CHAPTER I: BREEDING

ICAR-ICRISAT Partnership Project Trials *Kharif-2022-23*

Project title: Pearl millet hybrids for harshest drought prone environments and for new emerging markets.

Table 1: The summary table of breeding trials and nurseries is given below

S. No.	Nursery/Trial	Trial size	HYD	APR	MLR	DHL	JMR	MDR	JDR	BKR	JPR	HSR	BWL	NDL	GLR	LDN	Total
		Ent x reps x rows															
	Seed Parent Progeny Trial																
1	Potential B-line Nursery (PBLN)	60x2x1	* F			*	*	*	* F		*	*			*		8
	Restorer Parent Progeny Trials																
2	Potential R-Line Nursery (PRLN)	60x2x1	* F		*	*	*		* F		*	*		*	*		9
	Other Trials																
3	Drought Tolerant Hybrid Parent Nursery (DTHPN)	40x2x1						*	* F	*	*	* F					5
4	Blast Resistant B and R Line Nursery (BRB&RLN)	40x2x1		*		*					*			*	*		5
5	Elite Joint Biofortification Nursery (EJBFN)	60x2x1			*	*	*	*	* F	*	*			*		*	9
	Marker Assisted Breeding Trial and Nurseries																
6	Blast Resistance Trial : GWAS	350x2x2				* NC		* F			* NC		* F				4
7	Blast Resistance Trial : Mapping population	300x2x2				* NC					* NC			* NC			3
	Total Trials		2	1	2	6	3	4	4	2	7	3	1	4	3	1	43

Abbreviations * =Trial successfully conducted, *F = Trial conducted but failed, *NC = Trial not conducted due to drought

HYD=Hyderabad, APR=Ananthapuram, MLR=Malnoor, DHL=Dhule, JMR=Jamnagar, MDR=Mandor, JDR=Jodhpur, BKR=Bikaner, JPR=Jaipur, HSR=Hisar, BWL=Bawal, NDL=New Delhi, GLR=Gwalior and LDN=Ludhiana

AS=Agronomic score (1-Poor, 2-Average, 3-Good, 4-Very good, 5-Excellent), BS=Blast score 0-9 (0=Blast free, 9=more than 90% blast), DF=Days to 50% flowering, DM=Downy mildew per cent, E. or Ent.=Entry, ETPP=Effective tillers/plant, HD=Head diameter (cm), HL=Head length (cm), NG=Not Germinated, PH=Plant height (cm), SG 1-3 (1=low or non stay green, 2=medium, 3=high Stay green) Fe=XRF Fe (ppm), Zn=XRF Zn (ppm).

ICAR-ICRISAT COLLABORATIVE NURSERIES

A total of 5 trials comprising of potential B- line nursery, potential R- line nursery, drought tolerant hybrid parent nursery, blast resistant B and R line nursery and elite joint biofortification nursery conducted as per detail given in table 1. Trial-wise results are given below:-

SEED PARENT PROGENY NURSERY

1. Potential B-line nursery (PBLN): In this nursery, a total of 60 entries along with 5 checks were evaluated across 8 locations- Hyderabad (failed), Dhule, Jamnagar, Mandor, Jodhpur (failed), Jaipur, Hisar and Gwalior (Table 7). In potential B-line nursery flowering time ranged from 51 to 67 days. The range of plant height is 95 to 131 cm, head length 17 to 26 cm, head diameter 2.0 to 2.9 cm, effective tillers per plant 1.7 to 4.4, stay green scores 1.5 to 2.9, blast scores 1.9 to 5.0 and agronomic scores 1.9 to 3.1. The entry no. 48, 42, 55, 24, 43, 20, 14, 17, 19, 44, 16, 29, 25, 41, 7, 18, 53, 8, 6 and 23 were early to the best check ICMB 11222 (59 days). The entry no. 39, 48, 54, 41, 27 and 31 were superior in plant height to the best check ICMB 04888 (118 cm). The entry no. 31, 9, 48, 40, 52, 15, 54, 44, 50, 49, 19, 22, 30, 4, 23, 26, 2, 13 and 41 were superior in head length to the best check ICMB 04999 (21 cm). In head diameter only entry no. 12 was superior to the best check ICMB 11222 (2.8 cm). In high tillering only entry no. 44 was superior to the best check ICMB 15111 (4.3). The entry no. 9, 4, 29, 38, 10, 13, 18, 8, 27, 39, 52 and 55 were higher in stay green scores to stay green best check ICMB 843 (2.4). The entry no. 41, 3, 13, 28, 4, 35, 34, 49, 27, 11, 10, 15, 16 and 12 were superior in blast tolerance to the best check ICMB 11222 (2.8). The entry no. 54, 48, 19, 17, 55, 41, 50, 25, 34, 10, 8, 43, 9, 28, 2, 11, 52, 44, 21, 45, 40, 46 and 23 were superior in agronomic scores to the best check ICMB 15111 (2.5).

RESTORER PARENT PROGENY NURSERY

2. Potential R-line nursery (PRLN): In potential R-line nursery, a total of 60 entries along with 4 checks were evaluated across 9 locations- Hyderabad (failed), Malnoor, Dhule, Jamnagar, Jodhpur (failed), Jaipur, Hisar, New Delhi and Gwalior (Table 8). In Potential R-line nursery, the flowering time ranged from 52 to 62 days, plant height 130 to 168 cm, head length 17 to 26 cm, head diameter 2.1 to 3.0 cm, effective tillers per plant 1.8 to 4.1, stay green scores 1.6 to 2.7, blast scores 2.1 to 6.4 and agronomic scores 1.9 to 3.3. In days to flowering only entry no. 54 was early to the best check ICMR 12555 (53 days). The entry no. 45, 40, 46, 4, 14, 6, 39, 20 and 49 were superior in plant height to the best check ICMR 08111 (156 cm). In head length only entry no. 45 was superior to the best check ICMR 08111 (24 cm). In head diameter entry no. 55, 1, 5, 3, 4, 15, 32, 43, 46, 26, 18 and 13 were superior to the best check ICMR 1201 (2.7 cm). None of R-line was high tillering to the high tillering best check ICMR 1201 (4.1). The entry no. 5, 41, 28, 14, 40, 18, 34, 39, 45, 46, 27, 17, 22, 26 and 2 were higher in stay green scores to stay green best check ICMR 08111 (2.3).

The entry no. 32 and 45 were superior in blast tolerance to the best check ICMR 14888 (2.3). The entry no. 32 and 18 were superior in agronomic scores to the best check ICMR 08111 (3.0).

OTHER TRIALS

3. Drought tolerant hybrid parent nursery (DTHPN): In drought tolerant hybrid parent nursery, a total of 40 entries along with four R line checks were evaluated across 5 locations- Mandor, Jodhpur (failed), Bikaner, Jaipur and Hisar (failed) (Table 9). In drought tolerant hybrid parent nursery flowering time ranged from 47 to 59 days. The range of plant height 108 to 153 cm, head length 16 to 22 cm, head diameter 1.9 to 2.8 cm, effective tillers per plant 1.1 to 2.8, stay green scores 1.0 to 2.8, blast scores 1.5 to 4.0 and agronomic scores 2.4 to 3.9. In days to flowering entry no. 26, 29, 36, 13, 31 and 21 were early to the best check ICMR 356 (51 days). The entry no. 32, 4, 1, 31, 35, 20, 29, 2, 8, 26, 11, 23, 17, 12, 16, 14, 15, 19, 28 and 30 were superior in plant height to the best check PRLT 2/89-33 (136 cm). The entry no. 13, 17, 32, 28, 16 and 35 were superior in head length to the best check H77/833-2 (20 cm). In head diameter entry no. 19, 2, 12, 16, 33, 23, 27, 32, 20, 30, 1, 15, 5, 7, 25, 11, 13, 14, 29, 6, 18, 9, 35, 4, 24, 3, 21, 10, 28 and 31 were superior to the best check ICMR 356 (2.2 cm). The entry no. 31, 34 and 20 were high tillering to the best check ICMR 14888 (2.2). The entry no. 20, 2, 15 and 16 were higher in stay green scores to stay green best check ICMR 356 (2.3). The entry no. 3, 22, 34, 2, 21, 25 and 33 were superior in blast tolerance to the best check ICMR 14888 (2.5). The entry no. 4, 12, 20, 32, 9 and 5 were superior in agronomic scores to the best check ICMR 356 (3.5).

4. Blast resistant B and R line nursery (BRB&RLN): In this nursery, a total of 40 entries along with two B line and one R line checks were evaluated across 5 locations- Ananthapuram, Dhule, Jaipur, New Delhi and Gwalior (Table 10). The days to 50% flowering of progenies ranged from 50 to 61 days. Progenies showed variation for plant height 100 to 152 cm, head length 16 to 26 cm, head diameter 2.4 to 3.2 cm, effective tillers per plant 1.6 to 2.7, stay green scores 1.5 to 3.0, blast scores 2.3 to 5.5 and agronomic scores 2.4 to 3.6.

Amongst blast resistant B line entry no. 33, 38 and 34 were early to the best check ICMB 95444 (53 days). The entry no. 32, 31, 23, 36, 38, 37, 30, 25, 33, 26 and 35 were superior in plant height to the best check ICMB 95444 (109 cm). In head length the entry no. 30, 32, 23, 26, 37 and 28 were superior to the best check ICMB 06444 (19 cm). In head diameter entry no. 25, 35, 30, 33, 28, 24, 27, 23, 29, 37 and 31 were superior to the best check ICMB 06444 (2.7 cm). The entry no. 30 and 36 were high tillering to the best check ICMB 06444 (2.3). The entry no. 32 and 23 were higher in stay green scores to stay green best checks ICMB 06444 (2.4). Amongst blast resistant B lines entry no. 32, 30, 25, 28, 33, 26, 34, 36, 31, 35, 24 and 27 were superior in blast tolerance to the best check ICMB 06444 (3.8). The entry no. 23, 28, 32, 37, 27, 35, 36, 26, 33 and 34 were superior in agronomic scores to the best check ICMB 95444 (2.8).

Amongst blast resistant R lines only entry no. 14 was early to the best check ICMR 08111 (55 days). The entry no. 11, 9, 5 and 6 were superior in plant height to the best check ICMR 08111 (140 cm). In head length the entry no. 9, 12, 5, 6, 17, 8 and 7 were superior to the best check ICMR 08111 (21 cm). In head diameter entry no. 1, 2, 7, 14, 10 and 21 were superior to the best check ICMR 08111 (2.8 cm). Only entry no. 4 was high tillering to the best check ICMR 08111 (2.0). The entry no. 20, 11, 12, 14, 21, 16, 9, 18, 6, 13, 1, 19, 7, 15 and 17 were higher in stay green scores to stay green best check ICMR 08111 (2.2). Amongst blast resistant R lines entry no. 9, 13, 20, 21, 14, 10, 7, 11 and 12 were blast tolerance to the best check ICMR 08111

(3.3). The R-lines entry no. 21, 14, 5, 16, 9, 11, 12, 2, 3, 6, 13, 7, 15, 4, 8 and 19 were superior in agronomic scores to the best check ICMR 08111 (2.8).

5. Elite joint biofortification nursery (EJBFN): In this trial, 60 entries along with two B line and two R line checks were evaluated across 9 locations- Malnoor, Dhule, Jamnagar, Mandor, Jodhpur (failed), Bikaner, Jaipur, New Delhi and Ludhiana (Table 11). The range of progenies for days to 50% flowering is 50 to 63 days, plant height 94 to 163 cm, head length 16 to 33 cm, head diameter 2.2 to 3.1 cm, effective tillers per plant 2.0 to 3.2, stay green score 1.4 to 2.8, blast score 1.4 to 5.7 and agronomic score 2.0 to 3.3.

Amongst biofortification B lines none of the entry was early to the best check ICMB 98222 (51 days). None of the entry was superior in plant height to the best check ICMB 98222 (133 cm). The entry no. 36, 31, 33, 28, 39, 38, 23, 40, 35, 32, 43, 42, 37, 26, 24 and 25 were superior in head length to the best check ICMB 04999 (20 cm). In head diameter entry no. 40, 32, 34, 35, 26, 31, 38, 23, 28, 29, 25, 39, 30, 42, 27, 33 and 24 were superior to the best check ICMB 98222 (2.6 cm). The entry no. 40, 32, 26, 41, 42, 35, 39, 23, 38 and 24 were high tillering to the best check ICMB 04999 (2.4). None of the entry was higher in stay green score to stay green best check ICMB 04999 (2.8). The entry no. 43, 40, 31, 24, 27, 34, 41, 23, 36, 29, 35, 38, 32, 33, 25, 26, 28, 42, 39 and 30 were blast tolerance to the best check ICMB 04999 (5.4). The entry no. 26, 40, 24, 42, 32, 41, 28, 25, 39 and 35 were superior in agronomic scores to the best check ICMB 04999 (2.4). The entry no. 28, 34, 25, 33, 26, 39, 35, 27 and 23 were contained highest Fe to the best check ICMB 04999 (78 ppm). The entry no. 26, 28, 27, 23 and 25 were contained highest Zn to the best check ICMB 98222 (73 ppm).

Amongst biofortification R lines entry no. 46, 53, 60, 20, 55, 2, 52, 51, 49, 59, 11, 48, 47, 50, 19, 9, 17 and 54 were early to the best check ICMR 1503 (58 days). The entry no. 13, 55, 5, 53, 54, 56, 1, 2, 58, 11, 16, 57, 48, 12, 52, 3, 6, 60 and 14 were superior in plant height to the best check ICMR 1503 (139 cm). Only entry no. 58 was superior in head length to the best check ICMR 1503 (23 cm). In head diameter entry no. 5, 9, 60 and 15 were superior to the best check ICMR 1503 (2.7 cm). The entry no. 5, 1, 11 and 16 were high tillering to the best check ICMR 1203 (2.4). The entry no. 9, 49 and 48 were higher in stay green scores to stay green best check ICMR 1203 (2.4). The entry no. 58, 56, 57, 16, 54, 55, 1, 4, 11, 8 and 13 were superior in blast tolerance to the best check ICMR 1503 (2.4). The entry no. 18, 5, 3, 17, 54, 12, 56, 2, 57, 13, 51, 53, 1, 14, 55, 60 and 58 were superior in agronomic scores to the best check ICMR 1503 (2.7). The entry no. 7, 16, 15, 59, 17, 48, 11 and 57 were contained highest Fe to the best check ICMR 1503 (92 ppm). The entry no. 59, 51, 16, 48, 55, 7 and 52 were contained highest Zn to the best check ICMR 1503 (64 ppm).

CHAPTER I: BREEDING

Table 2: Pedigree of entries in potential B-line nursery (PBLN) *kharif*-2022

E. no.	Pedigree
1	A1 Thick panicle B-comp HS-4-3-1-5-1
2	A1 Thick panicle B-comp HS-27-3-3-3-2
3	A1 Thick panicle B-comp HS-62-2-1-1-4
4	A1 Thick panicle B-comp HS-64-2-2-1-4
5	A1 Thick panicle B-comp HS-84-3-1-3-4
6	A1 Thick panicle B-comp HS-122-5-2-2-2
7	[(ICMB 95444 x ICMB 93333)-24-2-B-2-BX(BSECBPT/91-38 x SPF3/S91-529)-10-1-7-16]-33-3
8	[[[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1} X [(MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2 x (ICMR 312 S1-1-5-3-B x HHVBC)-7-1-1-1-B-B-B]-21-B-1-4-1-2-1-2-B]]-1-3-1
9	[[[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1} X [(MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2 x (ICMR 312 S1-1-5-3-B x HHVBC)-7-1-1-1-B-B-B]-21-B-1-4-1-2-1-2-B]]-4-6-1
10	[[[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1} X [(MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2 x (ICMR 312 S1-1-5-3-B x HHVBC)-7-1-1-1-B-B-B]-21-B-1-4-1-2-1-2-B]]-1-3-1
11	[[[(ICMB 01888 x ICMB 01222)-15-2-B-2-3] X [(MC 94 S1-81-1-B x HHVBC)-4-4-1 x (MC 94 S1-81-1-B x HHVBC)-4-2-4-10-3-1--B-B-B x ICMB 02777]-3-3-B-2]]-B-7-3-1
12	[[[(MC 94 S1-81-1-B x HHVBC)-4-4-1 x (MC 94 S1-81-1-B x HHVBC)-4-2-4-10-3-1--B-B-B x ICMB 02777]-3-3-B-2] X [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-2-3]]-B-5-2-2
13	[[[(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6 x [(843B x ICTP 8202-161-5)-20-3-B-B-3 x B-bulk]-2-B-9 x [(ICMB 96555 x LaGrap C2 S1-32-1)-10 x IP 14758-2-1]-8-2]-1-1-1-2)-10-2-1-1-2-2-B
14	[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-2-2-2-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-15-3-5-1
15	(ICMB 95444 x ICMB 93333)-24-2-B-2-B-B-8
16	[(ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1 x [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-2-3)-6-2-B-4
17	[(ICMB 01666 x ICMB 01222)-49-1-2-B-B x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-9-3-3-B
18	(ICMB 04888 x ICMB 98222)-1-2-2-1
19	((7005x7001-7011)-6-5-1)
20	[[[(ICMB 96555 x IP 10437)-9-B-B-B-B-B x IP 14758-2-2]-19-1-B x (ICMB 96555 x IP 10437)-3-4-1-2-2-1-B-2-B-3]-3-3-2-1-5-1
21	[(ICMB 96555 x LaGrap C2 S1-32-1)-10-B-B-B-B x IP 10437-1-1]-28-1 -B-B-3-4
22	A1 Thick panicle B-comp HS-27-3-1-4-4
23	A1 Thick panicle B-comp HS-122-5-2-2-1
24	A4 Thick Head B-composite-Early (RCE 24B / K16)-8-2-3-2

CHAPTER I: BREEDING

Table 2: Pedigree of entries in potential B-line nursery (PBLN) *kharif*-2022

E. no.	Pedigree
25	[(ICMB 08666 (A1) X 1215/K14)]-B-13-3-4-2-B
26	[(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-4-2-4-2-B X (Blast and DM Resistance B-com HS-28-1-5-4-5)]-9-6-4
27	[[[(D2BLN/95-93 x SPF1/K95-3213-20)-10 x (91777B x HHVBC)]-7-B-1-B-B-4-B-1 X (BSECBPT/91-38 x SPF3/S91-529)-10-1-7]-1-4-7]-B-4-7-2-SB X ((ICMB 01333 x HHVDBC HS-10-1-2-1-1-3-B)-2-1-3-2-1 x [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-2-3)-13-3-2-B]-B-17
28	[[[(B x B) F2 S1-109-2-3-3-1-4-2 X (ICMB 01666 x ICMB 01222)-27-3-B-3]-1-2-1]-B-2-1-4-1 X {(ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1 x (HTBLN/95-98 x ICMB 89111)-1-B-B-1-9-1-3-4-2 X HHVDBC HS-120-1-2-1-1-3-B-4 x (ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-4]-5-7-4]-B-20
29	[IC-CZBC-C0-166-2-1-B-B-P3 X (ICMB 01888 x ICMB 01222)-16-2-B-B-B]-B-13
30	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-13-2}-B-12-3
31	{[HHVBC II D2 HS-456-1-2-5-1 X [(ICMB 96555 x IP 10437)-3-4-1-2-3 x (ICMB 96555 x LaGrap C2 S1-32-1)-10 x IP 14758-2-1]-2-B-1-3-1-1]-4-1]-B-1-1
32	{[(ICMB 95111 x 9035/S92-B-3)-17-1-B-B-B-BX(ICMB 01666 x ICMB 01222)-27-3-B-3]-B-1-5
33	{[(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-3-6-4-2-3-BX{[(ICMV 88908-11-12-3-2-B x B-bulk)-8-B-3 x {(843B x ICMP5 900-9-3-2-2)-41-2-5-5 S2-34-1-2-1-1 x B-bulk}-5-B-B]-11-1-1-B-B x ICMB 04111]-127-1-3-4)-B-9-2
34	{[(ICMB 95111 x 9035/S92-B-3)-17-5-1-B-B-B x ICMB 99111]-2-2-1-B-B] X [(ICMB 03777 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-3-1)-6]-B-3-4
35	{[Blast and DM Resistance B-com HS-32-2-2-3-3] X [(ICMB 01666 x ICMB 01222)-27-3-B-3]-B-14-1
36	[RCB-2 S1-19-2-5-3-2-1-B-B-B-B-B-B x [(ICMB 95111 x 9035/S92-B-3)-17-5-1-B-B-B x ICMB 99111]-2-2-1-B-B]-14-3-4
37	[[[(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-1-2-2 X (ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1]-1-4-2]-B-4-2-2-2 X ((ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1 x [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-2-3)-13-3-2-B]-B-23-2
38	[MDMR B-Composite (HS)-5-4-1-1-3-4 X [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-1-2-2 X (ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1)-1-1-4]-B-1-4-2-4]-B-1-3
39	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-13-2}-B-12-4-4
40	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-16-1}-B-4-6-2
41	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-16-2}-B-7-3-1
42	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-18-1}-B-2-5-5
43	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-18-1}-B-6-5-3
44	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-18-1}-B-7-1-1
45	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-18-1}-B-7-2-1
46	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-18-1}-B-7-4-4
47	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-19-3}-B-20-2-1
48	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-22-5}-B-17-4-3
49	{[(ICMB 95444 x ICMB 93333)-24-2-B-B X (MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2]-22-5}-B-20-5-4

CHAPTER I: BREEDING

Table 2: Pedigree of entries in potential B-line nursery (PBLN) *kharif*-2022

E. no.	Pedigree
50	{{(ICMB 95444 x ICMB 93333)-24-2-B-B X {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-1-3-3}-2-3}-B-10-1-2
51	{{(ICMB 95444 x ICMB 93333)-24-2-B-B X {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-1-3-3}-2-3}-B-16-11-1
52	{{(ICMB 95444 x ICMB 93333)-24-2-B-B X {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-1-3-3}-2-3}-B-23-4-4
53	[IC-CZBC-C0-166-2-1-B-B-P3 X (ICMB 01888 x ICMB 01222)-16-2-B-B-B]-B-9-25
54	A4 Thick Head B-composite-Late (RCE 24B / K16)-101-3-7
55	A4 Thick Head B-composite-Late (RCE 24B / K16)-109-2-9
56	Check-ICMB 843
57	Check-ICMB 15111
58	Check-ICMB 04888
59	Check-ICMB 04999
60	Check-ICMB 11222

CHAPTER I: BREEDING

Table 3: Pedigree of entries in potential R-line nursery (PRLN) *kharif* -2022

E. no.	Pedigree
1	((IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1 x ((22669-22675/S11)-8-7-1 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-B x AIMP 92901 S1-296-2-1-1-3-B-1-6-B-B]-B-14-4-3-1-B)-1-3-2
2	DM/Blast R-composte-HS(Early)-S1-1-1-4-4-2-3-B
3	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-22-2-3] x (MC 94 S1-30-2-B x HHVBC)-16-3-1-1 -7x(((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-30-3-1 x R-lines bulk (20216-20249/K09)))]-22-1)-33-3-1
4	A4-R-Composite-K2015-S1-82-1-2-1-3
5	(((((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-BxIPC 1518)-B-7-3 x (B 282 x S10B-38)-2-1-5-1-1)-2-7-1-2
6	((JBV 3 S1 -237-1-3-3-1-B-20) x (RCB-2-S1-121-1-2-2-4-2-2-1-B-B))-17-3-2-1-1-1
7	((ICMV 96490-S1-15-1-4-3-1 X MRC HS-130-2-2-1-B-B-3-B-B-1-3-1]-13) x ((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-2-2-2-64-2))-5-1-4-1-1-1
8	[IP 13900 S1-4-3-1-1 x (MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-2-2-2]-1-2-1-1-1-1
9	(((IPC 107xSDMV 90031-S1-84-1-1-1-1)xGB 8735-S1-25-4-4-1-1-3-1-1]-1-1-5-1 X JBV 3 S1 -237-1-3-3-1-B]-21-1-1-1
10	(HTComp.-SB-1-B X ICMV 96490-S1-15-1-2-1-3-2-7-1-1)-21-1-1-1
11	HiFeRC-1401 (HS) -122-1-2-2-1-1-1
12	(AIMP 92901 S1-15-1-2-3-B-2-B-13-3-1 X ICMR 12555)-2-1-1-1
13	((EERC-HS-23)-31-1-2 X ICMR 12555)-1-1-1-1
14	Blast Resistant Composite-HS-S1-241-1-3-2-B-B
15	ERC S2017 HS-185-3-1-B-B
16	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-2-B-Bx(R-lines bulk (22669-22675/S11))-5-1-1-3-B-B X [(IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x(R-lines bulk (22669-22675/S11))-8-5-4-3-B)-B-10-1-1-1
17	((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-8-3-1-2-B-Bx (22720-22726/S11))-8-5-3-5 x Acid tolerant pop S1-7-1-5-2-B)-B-13-1-1-1
18	(((((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-BxAIMP 92901 S1-296-2-1-1-3-B-1-6-B-B)-B-11-2 x (B 282 x S10B-38)-2-1-5-1-1)-2-5-2 x Acid tolerant pop S1-7-1-5-2-B)-B-8-2-1-1
19	(HTRC S1's-2092-1-2-2-3 x (AIMP 92901 S1-415-2-1-2-B-B-B-1-B x MS group R-line bulk (20216-20249))-11-1-2-3-1)-B-2-1-1-1
20	((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-8-3-1-2-B-Bx (22720-22726/S11))-1-1-1-1 x DM/Blast R-composte-HS(Early)-S1-1-3-4-1-3-3)-B-2-3-1-1
21	((((SRC II C3 S1-19-3-2 x HHVBC)-3-5-1) x (IP 19626-4-1-1-1))-B-2-2-1-2-4-2-B-6-1-1-B x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-BxAIMP 92901 S1-296-2-1-1-2-2)-B-18-1 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-28-2-2-3-1-2xICMR 312 S1-3-2-3-2-1-1-B-B-B)-B-14-3)-2-2-1-4)-B-11-1-1-1
22	(((((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-BxAIMP 92901 S1-296-2-1-1-2-2)-B-18-1 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-28-2-2-3-1-2xICMR 312 S1-3-2-3-2-1-1-B-B-B)-B-14-3)-2-2-1-4 x ((SRC II C3 S1-19-3-2 x HHVBC)-3-5-1) x (IP 19626-4-1-1-1))-B-2-2-1-2-4-2-B-6-1-1-B)-B-5-2-1-1

CHAPTER I: BREEDING

Table 3: Pedigree of entries in potential R-line nursery (PRLN) *kharif* -2022

E. no.	Pedigree
23	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-2-B-Bx(R-lines bulk (22669-22675/S11))-5-1-1-3-B x ICMR 15555)-B-6-1-1-1
24	(JBV 3 S1-286-1-1-3-B-8-1-1-B x ((EERC-HS-23)-12-3-1-B x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-28-3-1-2-2)x(JBV 3 S1-197-2-4-1)-B-3-P1-3-3-B-B)-13-1-1)-B-5-1-1-1
25	((ICMS 8506 S1-4-2-2-2-3-3-1-2-3-3-B-4-x20265x(20259-20274))-1-1-1-2-1-B x [(IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x (22669-22675/S11))-8-6-1-1-4)-B-5-1-1-1
26	((MC 94 C2-S1-3-1-1-2-3-2-B-1-B-B-Bx (20216-20249))-4-1-1-2-4 x (EERC-HS-29)-19-3)-B-13-1-1-1
27	DTRC-CAZRI-S1-23-4-1
28	DTRC-CAZRI-S1-54-4-1
29	(((((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-28-3-4-3-1)x(RCB2 S1-19-2-5-1-1-2-3-3-B)-B-5-P1-5) X AIMP 92901-S1-183-2-2-B-P08-B)-B-8-1-1-1-1
30	(HTRC S1's-2092-1-2-2-3 x (AIMP 92901 S1-415-2-1-2-B-B-B-1-B x MS group R-line bulk (20216-20249))-11-1-2-3-1)-B-6-1-1-3
31	((((IPC 337xSDMV 90031-S1-84-1-1-1-1)xSDMV 95045 S1-7-2-4-2-3-2-2-2-1]-P1-1-4 x (ICMS 8506 S1-4-2-2-2-3-3-1-2-3-3-B-4-x20265x(20259-20274))-1-1-1-2-1-B)-B-8-1-1-1
32	A4-R-Composite-K2015-S1-82-1-2-1-3-B-4
33	DTRC-K2018-HS-158-3-3-1-B-3
34	[(MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-1 X JBV 3 S1 -237-1-3-3-1-B]-B-10-2-1-2-1
35	DTRC-K2018-HS-71-2-3-3-B-3
36	DTRC-CAZRI-S1-11-1-B-4
37	((((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-8-3-1-2-B-BxR-lines bulk (22720-22726/S11))-7-6-4-2 x ICMR 13888)-B-3-1-1-3
38	((((ICMS 7704-S1-127-5-1 $\frac{1}{2}$ RCB-2 Tall)-B-19-3-3-1-B-1 x IP No. 17843-1-3))-2-1-3-1-B x JBV 3 S1-286-1-1-3-B-8-1-1-B)-B-5-3-2-1
39	(JBV 3 S1-300-1-1-2-1-4-1 x (((IP 12370-1-3 $\frac{1}{2}$ B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x (22680-22692/S11))-4-5-2-3)-B-10-3-1-5
40	((((IPC 337 $\frac{1}{2}$ SDMV 90031-S1-84-1-1-1-1) $\frac{1}{2}$ SDMV 95045 S1-7-2-4-2-3-2-2-2-1]-P1-1-4 x [(IP 12370-1-3 $\frac{1}{2}$ B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x (22669-22675/S11))-8-6-1-1-4)-B-3-1-1
41	((((IPC 337 $\frac{1}{2}$ SDMV 90031-S1-84-1-1-1-1) $\frac{1}{2}$ SDMV 95045 S1-7-2-4-2-3-2-2-2-1]-P1-1-4 x (ICMS 8506 S1-4-2-2-2-3-3-1-2-3-3-B-4-x20265x(20259-20274))-1-1-1-2-1-B)-B-3-1-1-2
42	((((IPC 337 $\frac{1}{2}$ SDMV 90031-S1-84-1-1-1-1) $\frac{1}{2}$ SDMV 95045 S1-7-2-4-2-3-2-2-2-1]-P1-1-4 x (ICMS 8506 S1-4-2-2-2-3-3-1-2-3-3-B-4-x20265x(20259-20274))-1-1-1-2-1-B)-B-8-1-1-2
43	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-2-B-Bx(R-lines bulk (22669-22675/S11))-5-1-4-2-B X Thorny composite-HS-S2-B-33-5-2)-B-5-1-1-1
44	(ICMR 15666 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) $\frac{1}{2}$ (IP 19626-4-2-3))-B-1-1-2-3-2-B-1)-B-2-1-1
45	((((IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-x(22669-22675/S11))-8-5-1 x (15491-15506/S14)-13-2-1 x {ARD-288-1-10-1-2 (RM)-3 $\frac{1}{2}$ B-lines bulk]-14-B-1-1) $\frac{1}{2}$ ((ICMV IS 94206 S1-15-2) $\frac{1}{2}$ ((SRC II C3 S1-19-3-2 $\frac{1}{2}$ HHVBC)-5-3-1))-B-1-2-1-1)-B-8-1-2-2)-B-23-1-3

CHAPTER I: BREEDING

Table 3: Pedigree of entries in potential R-line nursery (PRLN) *kharif* -2022

E. no.	Pedigree
46	(HHVBC tall (C1) S1-33-3-1-1-1-2-B-B-3-3-1-7 x PE 05532 Super Sosat-S1-13-1-1-1-1-5)-B-14-3-1-1
47	((MRC S1-156-1-1-1-B-3-B-B-8-1-1) X ((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-1-1)-21-3-1-1
48	(ICMB 08666 x (ICTP 8203 x 40258-B-1)) F3-30-1-2-1
49	(ICTP 8202 S1-99-2-1-B-B x ICTP 8203-S1-10-2-1-2-B)-B-12-1-4
50	((((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-22-2-3-3-B-BxR-lines bulk (22680-22692/S11))-2-4-3-1-B-B x (SDMV 90031 S1-3-3-2-1-3-1-1 x ICMS 8511 S1-14-3-1-1-2-B-1)-B-35-3-2-1-B-B-B)-B-1-1-2
51	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-17-4-3-2-B-B-B x SDMV 95045 S1-7-2-4-2-3-2-1-B-B-B-B-8-1-1-B-B)-B-12-1-1
52	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-2-B-Bx(R-lines bulk (22669-22675/S11))-5-1-1-3-B-B x [(MC 94 C2-S1-3-1-1-2-3-2-B-1-B-B-B x R-lines bulk 20216-20249/K09)]-12-3-B)-B-7-3-4
53	(([(IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-x(22669-22675/S11))-8-5-1 x (15491-15506/S14)-13-2-1 x [MC 94 C2-S1-3-1-3-1-4-2-2-B-B-1 x (ICMV-IS 94206-7 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-10-1-1-5-4-4-1(ICMV-IS 94206-7 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-10-1-1-5-4-4-1]-B-5-4-4-3-B)-B-12-3-2
54	(([(IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x (22680-22692/S11))-10-6-1 x (15491-15506/S14)-9-1-2 x [MC 94 C2-S1-3-1-3-1-4-2-2-B-B-1 x (ICMV-IS 94206-7 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-10-1-1-5-4-4-1(ICMV-IS 94206-7 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-10-1-1-5-4-4-1]-B-5-4-4-3-B)-B-1-3-2
55	(([(SRC II C3 S1-19-3-2 x HHVBC)-3-5-1) x (IP 19626-4-1-1-1)]-B-2-2-1-2-4-2-B-1-3-3-B x [ICMV-IS 94206-17 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-9-2-2-1-3-1-1-B)-B-13-1-1
56	(([(IP 12370-1-3 x B-Lines)-B-9-1-2-1-2-2 x MRC S1-191-2-1-5-B]-B-6-1x (22680-22692/S11))-4-5-1 x (15491-15506/S14)-15-3-2 x [ICMV-IS 94206-17 x (SRC II C3 S1-1-1-2 x HHVBC)-1-3-3))-B-9-2-2-1-3-1-1-B)-B-15-2-3
57	Check-ICMR 08111
58	Check-ICMR 12555
59	Check-ICMR 14888
60	Check-ICMR 1201

CHAPTER I: BREEDING

Table 4: Pedigree of entries in drought tolerant hybrid parent nursery (DTHPN) *kharif* - 2022

E. no.	Pedigree
1	IC-CAZ-F2/4-1-4-1
2	IC-CAZ-F2/8-2-3-1
3	IC-CAZ-F2/8-6-1-1
4	IC-CAZ-F2/9-17-2-1
5	IC-CAZ-F2/10-2-1-1
6	IC-CAZ-F2/15-17-4-1
7	IC-CAZ-F2/23-3-2-1
8	IC-CAZ-F2/26-2-1-1
9	IC-CAZ-F2/27-1-2-1
10	IC-CAZ-F2/28-8-2-1
11	[((HPB-(40258/S14)) F3-77-1-2 X [ICMV 96490-S1-15-1-4-3-1 X MRC HS-130-2-2-1-B-B-3-B-B-B-1-3-1]-98-2-B))-B-10-4
12	[((HPB-(40258/S14)) F3-63-2-2 X (EERC-HS-23)-31-1-2))-B-1-3
13	[((HPB-(40258/S14)) F3-77-5-2 X (EERC-HS-23)-8-1-3))-B-12-1
14	[((HPB-(40258/S14)) F3-77-4-3 X ICMR 12555))-B-3-1
15	[((HPB-(40258/S14)) F3-77-4-3 X ICMR 12555))-B-6-3
16	[((HPB-(40258/S14)) F3-77-4-4 X [ICMV 96490-S1-15-1-4-3-1 X MRC HS-130-2-2-1-B-B-3-B-B-B-1-3-1]-98-2-B))-B-14-2
17	[((HPB-(40258/S14)) F3-77-3-2 X ICTP 8203 S1 - 26-B-B-B-B))-B-5-1
18	[((HPB-(40258/S14)) F3-77-3-2 X ICTP 8203 S1 - 26-B-B-B-B))-B-7-3
19	[((HPB-(40258/S14)) F3-77-4-1 X ICMR 12555))-B-3-2
20	[((HPB-(40258/S14)) F3-77-4-1 X ICMR 12555))-B-6-2
21	[((HPB-(40258/S14)) F3-77-4-1 X ICMR 12555))-B-10-1
22	[((HPB-(40258/S14)) F3-77-4-1 X ICMR 12555))-B-10-3
23	[((HPB-(40258/S14)) F3-77-4-1 X ICMR 12555))-B-18-1
24	[((HPB-(40258/S14)) F3-77-3-2 X (EERC-HS-6)-B-12-1-1-2-B))-B-2-3
25	[((HPB-(40258/S14)) F3-77-3-2 X (EERC-HS-6)-B-12-1-1-2-B))-B-7-2
26	[((HPB-(40258/S14)) F3-77-4-2 X (EERC-HS-23)-B-25-1-1-2-B-B))-B-11-3
27	[((HPB-(40258/S14)) F3-77-3-3 X (EERC-HS-23)-B-25-1-1-2-B-B))-B-9-3
28	[((HPB-(40258/S14)) F3-77-5-3 X (EERC-HS-23)-31-1-2))-B-1-3
29	[((HPB-(40258/S14)) F3-77-5-3 X (EERC-HS-23)-31-1-2))-B-6-1
30	[((HPB-(40258/S14)) F3-77-5-3 X (EERC-HS-23)-31-1-2))-B-13-1
31	[((HPB-(40258/S14)) F3-63-2-2 X (EERC-HS-23)-31-1-2))-B-6-3
32	[((HPB-(40258/S14)) F3-63-2-2 X (EERC-HS-23)-31-1-2))-B-15-2
33	IC-CAZ-F2/15-19-4-1
34	IC-CAZ-F2/9-9-1-1
35	[((HPB-(40258/S14)) F3-77-3-3 X (EERC-HS-23)-B-25-1-1-2-B-B))-B-3-3
36	[((HPB-(40258/S14)) F3-77-1-2 X [ICMV 96490-S1-15-1-4-3-1 X MRC HS-130-2-2-1-B-B-3-B-B-B-1-3-1]-98-2-B))-B-7-2
37	Check-PRLT 2/89-33
38	Check-H77/833-2
39	Check-ICMR 14888
40	Check-ICMR 356

CHAPTER I: BREEDING

Table 5: Blast resistant B & R line nursery (BRB&RLN) *kharif*- 2022

E. no.	Pedigree
1	JBV 3 S1-18-2-2-1-3-2 x JBV 3 S1 -237-1-3-3-1-B-20 (long)-15-3-3-B
2	(ICMV 96490-S1-15-1-2-1-3-2x{((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-3-4-3-1}x{RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-3)-3-1-3
3	{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-2-2-3-1-2 x ICMR 312 S1-3-2-3-2-1-1-B-B-B)-B-4 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-3-4-3-1) x {RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-2)-2-4-1
4	{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-2-2-3-1-2 x ICMR 312 S1-3-2-3-2-1-1-B-B-B)-B-4 x (((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-3-4-3-1) x {RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-2)-2-4-4
5	DM/Blast R-composte-HS(Early)-S1-1-1-4-2-3-5-5
6	(MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-28-1-3
7	HT Composite (B) 1171-1-3-3-4-3-2-1-1-B
8	(ICMR 312 S1-3-2-3-2-1-1-B-1 x MS group R-line bulk (20216-20249))-11-1-2-3-1-B-B
9	HHVBC tall (C1) S1-33-3-1-1-1-2-B-B-3-3-1-7-B
10	{(((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-30-3-1 x R-lines bulk (20216-20249/K09)))-22-1x{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-2-2-3-1-2xAIMP 92901 S1-296-2-1-1-2-2)-B-3-1-3-2)-2-1
11	Forage Composite-K2011-HS-78-1-2-4-2
12	MC 94 C2-S1-3-1-1-2-1-1-B-2-3-B
13	A4-R-Composite-K2015-S1-82-1-2-1-3
14	((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-8-3-1-2-B-BxR-lines bulk (22720-22726/S11))-7-6-4-4
15	((MRC S1-156-1-1-1-B-3-B-B-8-1-1) X ((MC 94 C2-S1-3-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-1-1)-1-3-6-2-3
16	{[MRC HS-130-2-2-1-B-B-3-B-B-1-3-1 X {(((IP 12322-1-2)xB-Lines)-B-14) x (MRC S1-156-2-1-B)]-B-1-3-3-B}x{GB 8735-S1-15-3-1-1-3-4-2-2-2-1)-B-11-5-1-1-1]-20-1-B X {((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-3-4-3-1}x{RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-3]-B-1-3-3-1
17	{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-28-3-4-3-1}x{RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-2 X JBV 3 S1 -237-1-3-3-1-B]-B-26-1-1-1
18	{((IPC 337xSDMV 90031-S1-84-1-1-1-1)xSDMV 95045 S1-7-2-4-2-3-2-2-1]-P1-1-4 x (ICMS 8506 S1-4-2-2-2-3-3-1-2-3-3-B-4-x20265x(20259-20274))-1-1-1-2-1-B)-B-4-2-1-1
19	{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-1-1-2-1-2-B x (IPC 337 xSDMV 90031-S1-84-1-1-1-1)-12-5-2-4-B-B)-B-4-3-1-1
20	{(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3)]-B-18-2-3-2-2-BxIPC 1518)-B-7-3 x (B 282 x S10B-38)-2-1-5-1-1)-2-7-1-2 x (MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-2-B-Bx (22669-22675/S11)-5-1-4-1-B)-B-4-3-1-1
21	((MRC S1-156-1-1-1-B-3-B-B-8-1-1) x ((MC 94 C2-S1-3-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-1-1)-21-1-2
22	Check-ICMR 08111

CHAPTER I: BREEDING

Table 5: Blast resistant B & R line nursery (BRB&RLN) *kharif*- 2022

E. no.	Pedigree
23	(((HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1 X (Blast and DM Resistance B-com HS-28-1-5-4-5))-27-3-1
24	(ARD-288-1-10-1-2 (RM)-5-P2-B x ICMB 08666 x (ICTP 8203 x 40258-B-1)-P7)-8-1-1-1
25	[(81B x 4017-6-1-1)-3-1-4-3-4-1-2-1-B-2-2 x ICMB 05888]x[(ICMB 96111 x 4017-5-3-B)-4-2-1-5-B-2-B-3-B-1-B x ICMB 05888]-2-5-2-4
26	[(81B x 4017-6-1-1)-3-1-4-3-4-1-2-1-B-2-2 x ICMB 05888]x[(ICMB 96111 x 4017-5-3-B)-4-2-1-5-B-2-B-3-B-1-B x ICMB 05888]-2-5-2-4
27	(((HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1-2) X (((HHVDBC HS-10-1-2-1-1-4 x [ICMB 99555 x {78-7088/3/SER3 AD//B282/(3/4)EB x PBLN/S95-359}-19-5-B-B]-13-2-B-B-B)-22-1-4-2-1 x Dwarf togo type B-lines Bulk (1807-1813/S11))-6)-1-5
28	[IC-CZBC-C0-1-6-3-3-B X 16625/S12]-12-7
29	(((HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1-2) X (((HHVDBC HS-10-1-2-1-1-4 x [ICMB 99555 x {78-7088/3/SER3 AD//B282/(3/4)EB x PBLN/S95-359}-19-5-B-B]-13-2-B-B-B)-22-1-4-2-1 x Dwarf togo type B-lines Bulk (1807-1813/S11))-6)-6-6
30	[(81B x 4017-6-1-1)-3-1-4-3-4-1-2-1-B-2-2 x ICMB 05888]x[(ICMB 96111 x 4017-5-3-B)-4-2-1-5-B-2-B-3-B-1-B x ICMB 05888]-2-5-2-4
31	[(ICMB 95111 x (ICMB 96555 x IP 10437)-3]-54-2-B-B-B-B-B x (HHVDBC HS-246-1-2-1-2 x ICMB 98444)-4-3-2-1)-7-8
32	(ICMB 04999 x ICMB 92777)-9-5-1
33	EEBC S1-407-1-B-B-B-B-2-1-B-2-B-B-2-1-B-BxEarly D2/Med group lines x med maturity lines bulk (1301-28)-7-2-2
34	EEBC S1-407-1-B-B-B-B-2-1-B-2-B-B-2-1-B-BxEarly D2/Med group lines x med maturity lines bulk (1301-28)-8-1-1-1-1
35	[(NC D2 BC7F4-34-3-1-2-B-2-B x EEBC 407)-12-1-2-3xEEBC S1-2-1-1-1-1-1-1-B-B-1-4-B-B]-26-1-1-3
36	[(EEBC S1-407-1-B-B-B-B-B-1-B-1-B-5-1x 3981-3989 G1)-2-1-1x(EEBC S1-109-1-4-2-1-B-B-B-1-1x 3981-3989 G1)-4-2-6]-4-1-1-B
37	[(81B x 4017-6-1-1)-3-1-4-3-4-1-2-1-B-2-2 x ICMB 05888]x[(ICMB 96111 x 4017-5-3-B)-4-2-1-5-B-2-B-3-B-1-B x ICMB 05888]-2-5-2-4
38	EEDBC S1-2-1-1-1-1-1-1-B-B-1-4-B-B-4
39	Check-ICMB 95444
40	Check-ICMB 06444

CHAPTER I: BREEDING

Table 6: Pedigree of entries in elite joint biofortification nursery (EJBFN) *kharif*-2022

E. no.	Pedigree	R/B line	Contributing Inst.
1	[(((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-28-3-4-3-1]x{RCB2 S1-19-2-5-1-1-2-3-3-B}-B-5-P1-3) X (JBV 3 S1-131-3-1-2-3-5-B-1))-B-27-3-2	R line	ICRISAT
2	[(JBV 3 S1 -237-1-3-3-1-B) X ((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-2-2-2))-B-9-1-3	R line	ICRISAT
3	[(JBV 3 S1 -237-1-3-3-1-B) X ((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-2-2-2))-B-2-2-3	R line	ICRISAT
4	[(AIMP 92901 S1-15-1-2-3-B-2-B-25-1-1) X (ICMV 96490-S1-15-1-2-1-3-2 -3))-B-4-2-2	R line	ICRISAT
5	[([ICMV 96490-S1-15-4-1-1-2 X ICMR 312 S1-3-2-1-2-2-B]-8-1-B) X ((MC 94 C2-S1-3-2-2-2-1-3-B-B x SDMV 90031 S1-3-3-2-2-2-2-2)-B-1-3-4))-B-9-3-1	R line	ICRISAT
6	[(JBV 3 S1 -237-1-3-3-1-B) X ((NC D2 BC7F4-34-3-1-2-B-2-B x EEBC 407)-12-1-2x(EEBC S1-407-1-B-B-B-B-1-B-1-B-13-1 x B-bulk (3981-3989/S06 G1))-1-2-3]-1-3-1-B))-B-6-1-1	R line	ICRISAT
7	[([LaGrap C2-S1-14-4-1-3-4-1 X (MC 94 C2-S1-3-2-2-2-1-3-B-B x SDMV 90031 S1-93-3-1-1-3-2-B-2)-B-23-2-1]-2-4-1) X (ICMV 96490-S1-15-1-2-1-3-2 -3))-B-2-2-3	R line	ICRISAT
8	[(AIMP 92901 S1-15-1-2-3-B-2-B-25-1-1) X (ICMV 96490-S1-15-1-2-1-3-2 -1))-B-20-1-2	R line	ICRISAT
9	[([MRC HS-130-2-2-1-B-B-3-B-B-1-3-1 X (((IP 12322-1-2)x B-Lines)-B-14) x (MRC S1-156-2-1-B))-B-1-3-3-B)x{GB 8735-S1-15-3-1-1-3-4-2-2-1]-B-11-5-1-1-1]-20-1-B) X (ICMV 96490-S1-15-1-2-1-1))-B-14-1-1	R line	ICRISAT
10	(JBV 3 S1 -237-1-3-3-1-Bx(AIMP 92901-S1-10-1-3XICMR 312 S1-113)-27-2-2)-B-40-1-3	R line	ICRISAT
11	[(AIMP 92901 S1-296-2-1-1-4-2-B-15-2-1 X ICMV 96490-S1-15-1-2-3-2]-30-1-2-1x[LaGrap C2-S1-14-4-1-3-4-1 X (MC 94 C2-S1-3-2-2-2-1-3-B-B x SDMV 90031 S1-93-3-1-1-3-2-B-2)-B-23-2-1]-35-5-3)-B-14-1-2	R line	ICRISAT
12	[(AIMP 92901 S1-296-2-1-1-4-2-B-15-2-1 X ICMV 96490-S1-15-1-2-3-2]-30-1-2-6xJBV 3 S1 -237-1-3-3-1-B)-B-12-1-2	R line	ICRISAT
13	[(AIMP 92901 S1-296-2-1-1-4-2-B-15-2-1 X ICMV 96490-S1-15-1-2-3-2]-30-1-2-3xJBV 3 S1 -237-1-3-3-1-B)-B-11-1-1	R line	ICRISAT
14	((MC 94 C2-S1-3-2-2-2-1-3-B-B x SDMV 90031 S1-3-3-2-2-2-2-2)-B-1-3-4xJBV 3 S1 -237-1-3-3-1-B)-B-37-1-4	R line	ICRISAT
15	[([ICMV 96490-S1-15-4-1-1-2 X ICMR 312 S1-3-2-1-2-2-B]-8-1-B X JBV 3 S1 -237-1-3-3-1-B)-B-18-1-1-1-2	R line	ICRISAT
16	((MRC HS-130-2-2-1-B-B-3-B-B-1-3-1) X (LaGrap C2-S1-14-4-3-1-1-2)-21-1-3-1-3	R line	ICRISAT
17	((MRC S1-156-1-1-1-B-3-B-B-8-1-1) X ((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-1-1)-21-1-3-3-1	R line	ICRISAT
18	((MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-23-3-1-29-1x R-lines bulk (20216-20249/K09))([((MC 94 S1-34-1-B x HHVBC)-16-2-1) x (IP 19626-4-2-3))-B-18-2-3-2-2-BxICMR 312 S1-3-2-3-2-1-1-B-B-B-B)-B-3-4-1-1)-23-2-2	R line	ICRISAT
19	[(MC 94 C2-S1-3-2-2-2-1-3-B-B x ICMR 312 S1-3-2-3-2-1-1-B-B)-B-34-4-1 X JBV 3 S1-237-1-3-3-1-B]-B-2-2-1-1-2	R line	ICRISAT
20	((([MRC HS-130-2-2-1-B-B-3-B-B-1-3-1 X ICMV 96490-S1-15-1-2-1-3-1]-31) x ((MC 94 C2-S1-3-2-2-2-1-3-B-B x AIMP 92901 S1-488-2-1-1-4-B-B)-B-2-2-2-64-2))-B-16-1-1-1-1	R line	ICRISAT
21	Check-ICMR 1203	R line	ICRISAT

CHAPTER I: BREEDING

Table 6: Pedigree of entries in elite joint biofortification nursery (EJBFN) *kharif*-2022

E. no.	Pedigree	R/B line	Contributing Inst.
22	Check-ICMR 1503	R line	ICRISAT
23	A1 Thick panicle B-comp HS-27-3-3-1-5	B line	ICRISAT
24	A1 Thick panicle B-comp HS-30-2-1-5-4	B line	ICRISAT
25	A1 Thick panicle B-comp HS-30-2-3-4-1	B line	ICRISAT
26	A1 Thick panicle B-comp HS-64-2-1-4-2	B line	ICRISAT
27	A1 Thick panicle B-comp HS-67-1-2-2-4	B line	ICRISAT
28	A1 Thick panicle B-comp HS-157-5-1-3-1	B line	ICRISAT
29	{[(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-3-2-5-B X (Blast and DM Resistance B-com HS-28-1-5-4-5)]-11-5-4	B line	ICRISAT
30	{[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-1-3-3-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-18-2-1-B-B-1-1} X {[(MC 94 S1-34-1-B x HHVBC)-10-4-3-2-2-B-B-2 x (ICMR 312 S1-1-5-3-B x HHVBC)-7-1-1-1-B-B-B]-21-B-1-4-1-2-1-2-B}]-3-1-6	B line	ICRISAT
31	{[(ICMV 88908-11-12-3-2-B x B-bulk)-8-B-3 x {(843B x ICMP5 900-9-3-2-2)-41-2-5-5 S2-34-1-2-1-1 x B-bulk)-5-B-B]-11-1-1-B-B x ICMB 04111]-67-5-2-1} X {[(ICMB 94333 x ICMB 01222)-47-1-B-B-B x 4287 {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-2-5-1-5-1}-5-5-4	B line	ICRISAT
32	{[(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-1-3-4-1 x [(EEBC S1-407-1-B-B-B-B-1-B-1-B-5-1x 3981-3989 G1)-2-1-1x(ICMB 04888 x ICMB 02333)-3-1-3-1]-3-3]-2-1-4-2-2-B	B line	ICRISAT
33	{[(MC 94 S1-81-1-B x HHVBC)-4-4-1 x (MC 94 S1-81-1-B x HHVBC)-4-2-4-10-3-1--B-B-B x ICMB 02777]-3-3-B-2	B line	ICRISAT
34	(HHVDBC HS-120-1-2-1-1-3-B-4 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-4-2-4-4)-19-2	B line	ICRISAT
35	{[(ICMB 01666 x ICMB 01222)-49-1-2-B-B x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-9-3-1-B-B	B line	ICRISAT
36	{[(ICMB 01333 x HHVDBC HS-10-1-2-1-1-1-3-B)-2-1-3-2-1 x [(DMR 133 x HTBC 48-B-1-1-1-5)-19-2-B-B x ICMB 04111]-145-1-2-3)-13-2-B-B	B line	ICRISAT
37	{[(ICMB 94333 x ICMB 01222)-47-1-B-B-B x 4287 {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-16-5-2-B-1	B line	ICRISAT
38	{[(SPF3/S91-933 x SPF3/S91-3)-4-2-2-BX(ICMB 95444 x ICMB 93333)-24-2-B-2-B]-20-1	B line	ICRISAT
39	(AIMP 92901-S1-183-2-2-B-P08 X {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6)-8-2-2-3-1	B line	ICRISAT
40	{[(HHVDBC HS-246-1-2-1-2 x ICMB 99555)-2-2-2-1 x {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-15-3-5-1	B line	ICRISAT

CHAPTER I: BREEDING

Table 6: Pedigree of entries in elite joint biofortification nursery (EJBFN) *kharif*-2022

E. no.	Pedigree	R/B line	Contributing Inst.
41	{[[[ICMV 88908-11-12-3-2-B x B-bulk)-8-B-3 x {(843B x ICMPS 900-9-3-2-2)-41-2-5-5 S2-34-1-2-1-1 x B-bulk}-5-B-B]-11-1-1-B-B x ICMB 04111]-67-5-2-1} X {(ICMB 94333 x ICMB 01222)-47-1-B-B-B x 4287 {(MC 94 S1-34-1-B x HHVBC)-16-2-1-1-1-1-B-B-5 x (MC 94 S1-34-1-B x HHVBC)-10-4-1-2-1-B-B-1-30-2-4-2-6-2-4)-2-5-1-5-1}-5-5-5	B line	ICRISAT
42	(ICMB 93333 x ICMB 01222)-20-2-B-5-B-1-B-P3	B line	ICRISAT
43	[(EEDBC S1-704-1-1-1-3-B-B-1xEEBC 407 progenies bulk)-7-3-1 x NCD2S1-2-2-2-1-9-B-B-14-1-3-1-2 X {(843B x ICMPS 900-9-3-2-2)-41-2-5-5 S2-34-1-2-3 x B-line bulk]-8-B-B-1-B-B-B-1 x (ICMB 01666xICMB 01222)-12-2-B-1-B P1)-4-1-2-3-B)-1-5]-B-5-4-2	B line	ICRISAT
44	Check-ICMB 98222	B line	ICRISAT
45	Check-ICMB 04999	B line	ICRISAT
46	103-SB-22	R line	Jamnagar
47	208-SB-22	R line	Jamnagar
48	227-SB-22	R line	Jamnagar
49	328-SCB-22	R line	Jamnagar
50	336-SCB-22	R line	Jamnagar
51	PPMI-1305	R line	New Delhi
52	PPMI-1306	R line	New Delhi
53	DHBRF-781	R line	Dhule
54	DHBRF-783	R line	Dhule
55	DHBRF-784	R line	Dhule
56	DHBRF-786	R line	Dhule
57	DHBRF-787	R line	Dhule
58	DHBRF-788	R line	Dhule
59	PCMHiFeR 18-10	R line	Mandor
60	PCMHiFeR 18-12	R line	Mandor

CHAPTER I: BREEDING

Table 7: Potential B-line nursery, across six locations- Dhule, Jamnagar, Mandor, Jaipur, Hisar and Gwalior. (for Pedigree of entries see table 2)

Plot size: 1 row x 4 m x 2 reps.

E. no.	DHL								JMR								MDR							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
1	68	122	22	3.3	1.0	3.0	4.5	1.0	62	132	23	3.0	3.4	1.0	-	3.0	66	105	22	2.9	1.2	2.5	1.5	2.9
2	69	109	24	3.0	1.0	-	6.5	2.0	61	118	23	3.3	3.3	1.5	2.0	3.5	67	103	22	2.6	1.3	2.0	2.0	3.3
3	70	118	21	3.0	2.0	3.0	3.0	2.0	65	113	21	3.2	2.9	1.0	1.0	3.3	66	113	21	2.8	1.2	1.5	2.5	3.5
4	66	119	22	3.0	1.5	3.0	5.5	1.5	66	120	23	3.1	4.2	2.0	2.0	3.0	77	85	20	3.1	1.0	3.0	1.0	2.0
5	62	102	17	2.9	2.0	-	6.5	1.0	60	110	19	2.8	4.3	1.5	1.5	3.0	62	93	18	2.7	1.2	2.0	2.5	2.3
6	69	86	17	3.0	1.0	-	7.5	1.0	60	107	20	3.1	3.5	1.5	3.0	3.8	63	103	19	2.7	1.0	1.5	3.0	2.9
7	61	100	15	2.6	3.0	-	6.0	1.0	55	135	19	2.7	3.4	1.0	-	3.0	54	105	20	2.6	1.5	1.0	3.5	2.5
8	62	106	20	3.1	2.0	3.0	5.0	1.5	60	107	21	3.3	4.5	2.0	4.0	3.0	59	100	19	2.7	1.5	1.5	3.5	3.1
9	68	97	18	3.1	1.5	3.0	3.0	2.0	57	125	20	3.6	2.8	3.0	3.0	4.5	75	93	19	2.6	1.0	2.5	2.0	1.5
10	69	88	20	3.6	1.5	3.0	4.0	2.0	62	107	22	3.3	4.5	2.0	2.5	3.5	66	93	20	3.5	2.0	2.0	2.5	2.6
11	63	104	20	3.2	2.0	3.0	3.5	2.0	59	116	22	3.6	3.5	1.5	2.0	3.3	64	95	19	3.2	1.0	1.5	2.5	3.7
12	62	94	20	3.4	2.0	3.0	6.5	1.5	60	102	18	3.1	3.5	1.5	2.0	3.8	63	93	20	3.4	1.5	1.5	1.5	2.5
13	75	75	21	2.5	1.5	3.0	2.0	1.0	65	114	23	3.2	4.4	1.5	2.5	3.8	66	85	21	2.5	1.0	2.5	3.0	1.9
14	62	93	18	2.5	2.5	3.0	4.5	1.0	51	115	18	2.7	4.4	2.0	4.0	3.8	57	95	19	2.5	1.8	1.5	4.5	2.6
15	65	92	22	3.0	1.5	3.0	4.0	1.5	65	129	24	3.2	3.9	1.0	1.5	3.5	58	93	21	3.0	2.6	2.5	2.5	2.4
16	65	109	18	2.8	2.0	3.0	5.0	1.5	55	125	20	2.9	4.0	1.5	1.5	3.3	54	95	17	2.7	1.7	2.0	1.5	1.7
17	62	88	19	3.0	1.5	3.0	5.5	1.5	52	115	20	3.4	3.9	2.5	3.5	3.0	60	93	20	2.9	1.9	1.0	3.0	3.6
18	72	90	20	2.9	1.5	3.0	6.0	1.5	54	117	23	3.4	4.4	2.0	4.5	3.0	67	95	21	3.2	1.6	3.0	2.0	3.2
19	67	93	21	3.1	1.5	3.0	5.5	1.5	53	115	25	3.1	3.5	2.5	5.0	2.8	58	113	22	2.9	1.2	1.0	3.5	3.4
20	64	84	19	3.1	2.0	3.0	4.5	1.5	53	100	20	3.3	3.2	2.5	4.5	2.8	59	88	17	2.9	1.2	1.0	3.5	2.9
21	68	103	22	3.0	2.0	3.0	6.0	1.5	61	114	22	3.2	4.4	2.0	5.0	3.0	71	85	18	2.8	1.0	2.0	2.5	2.7
22	63	98	22	3.0	1.0	-	6.5	1.0	56	115	22	2.7	3.0	2.5	4.0	3.0	63	103	21	2.8	1.0	1.5	3.5	2.3
23	62	112	21	3.1	2.0	-	7.0	1.5	59	113	22	3.3	2.9	2.5	4.0	3.5	64	105	19	3.0	1.0	2.0	3.0	2.8
24	61	97	17	3.0	1.5	-	8.5	1.0	56	118	17	2.8	2.6	2.5	3.0	3.0	60	98	19	2.8	1.8	1.5	3.5	2.7
25	61	91	19	2.9	2.0	-	6.0	1.0	53	115	19	2.7	3.3	2.5	5.0	3.5	62	95	20	2.7	1.3	2.0	2.5	3.1
26	64	95	22	3.4	2.0	-	6.5	1.0	62	94	24	3.4	2.4	2.0	2.5	3.3	70	88	21	3.1	1.2	1.5	2.5	2.6
27	62	113	20	3.0	1.5	3.0	4.5	2.5	61	128	19	2.7	3.1	1.5	2.0	3.5	66	103	18	2.5	1.0	2.0	2.5	2.5
28	65	112	19	3.1	1.5	3.0	3.0	2.0	62	-	20	-	-	2.0	2.0	4.5	71	98	18	2.8	1.0	2.0	2.0	2.0
29	61	97	18	3.1	2.5	-	8.5	1.0	63	91	16	2.5	2.2	2.5	3.5	3.0	62	90	18	2.8	1.6	2.0	2.5	2.9
30	63	106	23	3.3	2.5	3.0	5.0	2.5	59	113	23	3.1	3.3	2.0	4.0	3.3	67	93	21	2.9	2.0	1.5	2.5	3.1

CHAPTER I: BREEDING

Table 7: Potential B-line nursery, across six locations- Dhule, Jamnagar, Mandor, Jaipur, Hisar and Gwalior. (for Pedigree of entries see table 2)

Plot size: 1 row x 4 m x 2 reps.

E. no.	DHL								JMR								MDR							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
31	62	108	24	3.5	1.5	-	5.5	1.5	60	125	22	3.4	2.8	1.5	5.0	3.0	65	110	22	3.2	1.2	1.5	3.0	3.6
32	71	105	18	2.9	1.0	-	6.5	1.0	64	128	19	2.8	4.0	1.5	2.5	3.5	62	113	18	2.6	2.0	2.0	3.0	2.6
33	65	109	20	3.3	1.5	3.0	3.5	2.0	57	116	18	3.5	3.9	2.0	2.0	3.3	71	90	18	2.7	1.0	2.0	1.5	2.1
34	64	125	19	3.2	2.5	3.0	3.0	3.0	64	113	21	3.2	3.1	1.0	0.5	3.5	68	93	20	2.7	1.8	2.0	2.0	3.0
35	62	113	21	3.2	1.5	-	4.5	1.5	64	95	19	3.1	2.6	1.0	1.0	3.5	65	93	20	2.8	1.0	2.0	2.5	2.6
36	60	108	20	3.2	2.5	-	8.0	1.0	60	108	20	3.0	3.4	2.5	3.5	3.0	64	95	19	2.8	1.0	1.0	2.5	3.2
37	61	118	21	2.8	2.0	3.0	8.0	1.5	58	121	20	3.0	3.8	1.5	2.5	3.3	62	108	20	2.6	1.2	1.5	3.5	3.0
38	64	118	19	3.2	1.0	-	7.5	1.0	63	128	20	2.8	2.7	2.5	4.0	3.3	71	90	20	2.5	1.5	2.0	3.5	2.2
39	70	131	20	2.9	2.5	3.0	3.0	2.0	61	150	20	2.9	4.6	2.0	4.0	3.8	70	118	20	2.6	1.0	1.5	3.0	2.3
40	66	104	22	2.9	2.0	3.0	3.5	2.0	57	127	22	2.7	4.0	1.5	1.5	3.3	70	98	22	2.9	1.5	2.0	2.0	2.3
41	63	129	24	3.3	2.0	3.0	3.0	2.5	53	123	22	3.1	4.3	1.5	1.0	3.5	58	100	19	2.5	1.5	2.0	2.5	2.8
42	59	83	16	2.8	1.5	-	7.5	1.5	49	111	20	2.9	3.8	2.0	5.0	2.8	57	98	18	2.5	1.3	1.5	2.5	2.6
43	58	102	21	3.4	1.5	-	5.5	2.0	53	107	18	2.9	4.2	2.0	2.0	3.5	60	93	19	2.7	1.0	1.5	2.0	3.1
44	63	107	25	3.6	2.0	-	6.0	1.5	58	112	25	3.4	4.5	1.5	2.5	3.5	61	100	22	3.1	1.5	1.5	3.0	3.8
45	63	102	16	3.0	2.5	3.0	3.5	2.0	56	97	20	2.9	3.2	1.5	2.0	2.8	70	83	17	2.4	1.0	2.0	1.5	2.2
46	64	97	19	3.0	2.5	-	7.0	1.5	58	115	19	3.2	2.8	1.5	1.5	3.5	62	98	19	3.2	1.6	2.0	2.5	3.0
47	68	109	19	2.8	3.0	3.0	5.5	1.0	66	120	17	2.9	3.6	1.0	1.0	2.5	67	110	19	2.5	2.2	2.5	2.5	3.1
48	65	120	21	3.1	1.5	-	5.0	1.5	56	133	24	3.3	3.6	1.5	4.0	3.8	64	120	23	2.8	2.0	2.5	2.0	3.1
49	70	122	23	3.1	2.0	3.0	2.0	2.5	64	135	21	2.9	2.8	1.0	1.0	3.0	62	83	28	2.4	1.8	2.5	2.5	1.8
50	72	118	21	2.9	2.5	-	5.5	1.0	61	123	22	3.3	4.2	2.0	3.5	4.0	65	108	21	2.8	1.0	1.5	2.5	3.3
51	65	111	17	2.6	3.0	3.0	3.5	1.0	55	123	18	2.3	5.0	1.5	1.5	3.0	58	100	17	2.3	2.5	1.5	2.0	2.6
52	61	120	21	3.4	1.0	3.0	5.0	2.5	58	130	22	3.5	2.2	2.0	2.5	3.3	73	100	23	3.5	1.0	1.5	1.5	2.2
53	65	105	20	3.0	2.0	3.0	5.0	2.0	57	107	20	2.9	3.5	2.0	4.0	2.8	62	103	21	2.9	2.3	1.0	2.5	3.1
54	65	119	20	3.1	2.0	3.0	5.0	2.0	56	135	22	3.3	3.2	1.5	3.5	3.8	63	108	22	2.9	1.2	2.5	2.0	3.3
55	59	96	19	2.4	1.0	-	6.5	1.0	47	95	22	3.0	3.3	2.5	5.0	2.3	54	95	20	2.5	1.0	1.5	3.5	2.9
56	67	101	20	3.3	2.5	3.0	5.0	2.0	61	100	20	2.7	3.7	1.5	2.5	3.3	62	83	20	2.6	2.0	2.5	2.5	1.8
57	59	98	18	3.2	2.0	-	8.0	1.0	52	100	18	2.8	3.8	3.0	5.5	3.0	73	78	18	2.3	1.0	2.0	2.5	1.5
58	62	128	20	3.2	1.5	-	7.5	1.5	57	115	20	3.0	3.6	2.0	4.0	3.8	70	108	21	2.7	1.2	2.0	2.0	2.3
59	61	105	20	3.1	2.0	-	5.5	2.0	62	99	22	2.8	4.5	2.0	3.0	3.3	69	93	20	2.6	1.0	2.0	3.0	2.2
60	62	107	18	2.9	2.0	3.0	4.5	2.0	59	105	19	3.2	3.9	1.5	2.0	3.5	66	90	18	2.8	1.0	1.5	2.5	1.9

CHAPTER I: BREEDING

Table 7: Potential B-line nursery, across six locations- Dhule, Jamnagar, Mandor, Jaipur, Hisar and Gwalior. (for Pedigree of entries see table 2)

Plot size: 1 row x 4 m x 2 reps.

E. no.	JPR						HSR								GLR								Grand Mean							
	DF	PH	HL	HD	ETPP	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
1	51	105	18	2.4	1.5	2.0	NG	-	-	-	-	-	-	-	64	124	22	2.1	1.5	3.0	-	3.5	62	118	21	2.7	1.7	2.4	3.0	2.5
2	51	111	23	2.3	1.0	1.0	NG	-	-	-	-	-	-	-	66	106	20	2.1	1.8	3.0	1.0	3.5	62	109	22	2.7	1.7	2.2	2.9	2.7
3	54	102	25	4.1	2.5	2.0	66	65	18	0.8	3.0	3.0	2.0	1.0	59	126	21	2.3	1.7	3.0	1.0	2.5	63	106	21	2.7	2.2	2.3	1.9	2.4
4	51	102	22	3.9	4.0	2.0	78	118	23	0.8	6.0	3.0	1.0	1.0	66	114	23	2.0	1.8	3.0	1.0	3.0	67	110	22	2.7	3.1	2.8	2.1	2.1
5	51	107	21	3.0	3.0	1.0	72	119	29	0.9	10.0	3.0	3.0	2.0	58	120	20	2.2	2.3	2.0	2.0	4.5	61	108	21	2.4	3.8	2.1	3.1	2.3
6	51	105	14	2.2	2.5	1.5	53	100	26	1.0	7.0	3.0	3.0	2.0	56	106	20	1.9	1.3	2.0	5.5	4.0	58	101	19	2.3	2.7	2.0	4.4	2.5
7	51	117	20	2.0	2.0	4.0	70	93	28	1.0	8.0	3.0	3.0	1.0	57	102	15	1.9	1.7	1.0	3.5	2.0	58	108	19	2.1	3.3	1.5	4.0	2.3
8	56	102	20	3.4	3.0	2.0	59	120	21	1.0	6.0	3.0	1.5	1.5	54	123	18	1.8	2.0	3.0	9.0	5.0	58	110	20	2.6	3.2	2.5	4.6	2.7
9	54	108	18	2.9	2.5	2.0	61	120	24	0.9	7.0	3.0	3.0	1.5	69	129	52	2.2	1.5	3.0	-	4.5	64	112	25	2.5	2.7	2.9	2.8	2.7
10	52	107	19	2.7	4.0	2.0	59	98	20	0.9	6.0	3.0	2.0	-	65	104	19	2.0	2.3	3.0	2.0	3.5	62	99	20	2.7	3.4	2.6	2.6	2.7
11	52	121	24	3.5	4.0	2.0	59	84	23	1.0	5.5	3.0	1.5	1.0	60	114	21	2.0	1.5	3.0	3.0	4.0	59	106	21	2.7	2.9	2.4	2.5	2.7
12	51	103	23	4.2	3.0	1.5	62	79	18	1.0	4.5	3.0	2.0	1.8	57	112	20	2.3	1.7	3.0	1.5	4.0	59	97	20	2.9	2.7	2.4	2.7	2.5
13	50	118	24	2.7	2.5	1.0	72	99	21	0.9	3.0	3.0	1.0	3.0	58	121	22	2.0	1.7	3.0	1.0	3.0	64	102	22	2.3	2.3	2.6	1.9	2.3
14	56	115	23	3.0	4.0	1.0	56	86	16	0.9	8.5	3.0	1.5	1.8	48	106	15	1.7	2.2	2.0	5.0	4.0	55	102	18	2.2	3.9	2.3	3.9	2.3
15	53	106	24	2.5	3.0	1.0	71	104	26	0.9	9.0	3.0	3.0	1.5	63	110	23	2.1	2.3	2.0	2.0	4.5	62	106	23	2.4	3.7	2.3	2.6	2.4
16	55	107	19	2.2	2.0	2.5	56	100	19	0.9	5.5	3.0	1.5	1.5	58	129	20	1.8	1.8	2.0	3.5	4.5	57	111	19	2.2	2.8	2.3	2.6	2.5
17	53	105	22	2.8	3.0	3.0	54	102	18	1.0	5.0	3.0	2.5	1.5	51	107	19	2.2	1.3	2.0	5.5	5.0	55	101	19	2.5	2.8	2.3	4.0	2.9
18	50	117	21	3.2	2.5	2.0	54	114	22	1.0	8.0	3.0	3.0	1.5	53	123	18	1.9	1.8	2.0	3.5	3.5	58	109	21	2.6	3.3	2.6	3.8	2.5
19	53	87	19	2.4	2.0	2.0	56	109	24	0.9	6.5	3.0	2.0	3.5	51	126	25	2.1	2.0	1.0	7.0	5.0	56	107	22	2.4	2.8	2.1	4.6	3.0
20	51	85	19	2.5	2.5	1.0	49	90	17	0.9	5.0	3.0	3.0	3.0	54	121	19	2.1	1.5	2.0	6.5	3.0	55	95	18	2.5	2.6	2.3	4.4	2.4
21	56	99	14	2.8	3.5	1.5	54	103	28	1.0	4.0	3.0	3.0	2.0	61	126	18	2.1	2.2	2.0	3.5	5.0	62	105	20	2.5	2.8	2.4	4.0	2.6
22	53	110	24	3.3	3.0	1.0	69	104	24	0.9	6.0	3.0	2.0	1.5	55	112	21	1.8	1.5	2.0	2.0	2.5	60	107	22	2.4	2.6	2.3	3.6	1.9
23	49	106	22	3.0	3.5	2.0	66	100	24	1.4	3.0	3.0	2.0	1.0	51	127	24	2.2	1.5	2.0	2.0	4.5	58	110	22	2.6	2.3	2.4	3.6	2.6
24	50	96	21	3.2	3.5	2.0	49	90	14	1.1	8.0	3.0	3.0	1.0	52	112	20	2.0	1.5	2.0	7.0	4.5	55	102	18	2.5	3.2	2.3	5.0	2.4
25	53	128	19	3.4	3.5	1.0	63	98	21	0.8	4.5	2.0	2.0	3.0	55	122	20	1.9	2.0	3.0	1.0	5.0	58	108	20	2.4	2.8	2.4	3.3	2.8
26	53	116	21	3.1	3.5	1.5	54	82	24	0.9	4.0	3.0	3.0	2.0	61	108	21	2.0	1.8	3.0	5.0	4.5	61	97	22	2.7	2.5	2.4	3.9	2.5
27	51	117	22	2.4	3.5	1.0	58	136	24	0.8	3.0	3.0	2.0	1.0	57	123	19	1.9	1.5	3.0	1.0	3.5	59	120	20	2.2	2.3	2.5	2.4	2.3
28	51	119	17	3.3	3.0	2.0	63	115	20	0.9	8.0	2.0	1.0	1.0	60	118	17	2.2	1.5	3.0	-	4.5	62	112	18	2.5	3.0	2.4	2.0	2.7
29	54	112	19	2.7	2.0	1.0	53	94	14	0.9	6.0	3.0	1.0	2.5	52	103	17	2.0	1.7	3.0	4.0	2.5	57	98	17	2.3	2.7	2.6	3.9	2.2
30	54	94	23	2.8	3.0	1.0	63	91	20	0.9	7.5	2.0	2.0	1.0	59	115	24	2.2	2.2	3.0	-	3.0	60	102	22	2.5	3.4	2.3	3.4	2.3

CHAPTER I: BREEDING

Table 7: Potential B-line nursery, across six locations- Dhule, Jamnagar, Mandor, Jaipur, Hisar and Gwalior. (for Pedigree of entries see table 2)

Plot size: 1 row x 4 m x 2 reps.

E. no.	JPR						HSR								GLR								Grand Mean							
	DF	PH	HL	HD	ETPP	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
31	53	107	31	3.4	3.0	1.0	56	140	33	1.2	8.0	3.0	3.0	1.0	63	126	23	2.3	1.7	3.0	-	3.0	60	119	26	2.8	3.0	2.3	4.1	2.2
32	58	97	17	2.8	3.0	1.5	64	135	20	0.9	5.0	3.0	3.0	2.0	63	109	19	1.9	1.8	3.0	2.0	2.5	63	114	19	2.3	2.8	2.4	3.4	2.2
33	52	117	22	3.3	2.0	1.0	65	102	21	0.9	6.0	3.0	3.0	1.0	57	115	18	2.1	1.7	2.0	4.0	3.0	61	108	19	2.6	2.7	2.4	2.8	2.1
34	52	93	21	3.1	4.0	2.0	77	75	19	1.0	5.0	1.0	3.0	1.0	58	121	20	2.2	1.7	3.0	3.0	4.0	64	103	20	2.6	3.0	2.0	2.3	2.7
35	53	96	14	2.6	2.5	2.0	62	80	19	1.0	6.0	3.0	1.0	1.0	59	120	21	2.2	1.8	3.0	-	2.5	61	99	19	2.5	2.6	2.3	2.3	2.2
36	54	128	21	3.0	3.0	1.0	59	93	21	0.9	5.0	3.0	1.0	2.0	59	112	18	2.1	1.8	3.0	7.0	4.0	59	107	20	2.5	2.8	2.4	4.4	2.4
37	57	113	15	2.4	3.0	2.0	71	100	21	1.0	10.0	3.0	1.0	1.0	58	115	24	1.8	1.7	2.0	5.0	2.5	61	112	20	2.2	3.6	2.2	4.0	2.2
38	53	101	22	3.3	4.0	3.0	71	105	21	0.9	3.0	3.0	1.0		55	123	21	1.9	1.7	3.0	6.0	2.0	63	111	20	2.4	2.3	2.6	4.4	2.3
39	54	114	23	2.2	2.0	1.0	69	138	27	0.8	12.0	3.0	1.0	1.0	61	133	19	2.0	1.3	3.0	6.0	3.0	64	131	21	2.2	3.9	2.5	3.4	2.2
40	55	136	22	2.8	2.5	3.0	96	115	31	1.0	7.0	1.0	1.0	1.0	57	127	22	1.8	1.5	3.0	7.0	4.0	67	118	23	2.3	3.1	2.1	3.0	2.6
41	54	152	21	4.3	3.0	1.0	70	93	26	1.0	3.0	3.0	1.0	3.5	49	142	17	1.8	2.0	1.0	-	4.0	58	123	22	2.6	2.6	2.1	1.9	2.9
42	55	124	16	1.7	2.0	1.5	41	99	13	0.8	6.0	3.0	1.0	1.0	52	117	18	2.1	2.0	2.0	-	3.5	52	105	17	2.1	2.8	2.1	4.0	2.1
43	54	145	18	3.5	4.0	2.0	53	74	17	1.0	5.0	3.0	3.0	1.0	51	123	20	2.1	1.8	3.0	5.5	4.5	55	107	19	2.6	2.9	2.4	3.6	2.7
44	53	123	18	3.0	3.5	1.0	52	100	23	1.0	13.0	3.0	2.0	1.0	54	120	23	2.1	1.7	2.0	4.5	5.0	57	110	22	2.7	4.4	2.0	3.6	2.6
45	52	117	25	3.0	2.0	2.0	NG	-	-	-	-	-	-	-	53	109	18	1.9	1.2	2.0	7.0	4.0	59	101	19	2.6	2.0	2.1	3.5	2.6
46	51	110	21	2.3	2.5	1.0	69	88	13	0.9	6.0	3.0	3.0	2.0	55	113	20	2.1	1.7	3.0	3.0	4.5	60	103	18	2.4	2.8	2.4	3.4	2.6
47	53	130	21	3.3	3.0	2.0	74	93	13	0.9	6.0	3.0	3.0	2.0	65	127	18	2.0	2.0	2.0	2.5	4.5	65	115	18	2.4	3.3	2.3	2.9	2.5
48	51	134	27	2.6	2.0	1.5	20	132	29	1.0	7.0	3.0	2.0	3.5	53	132	24	2.0	1.7	2.0	4.0	5.0	51	128	25	2.5	3.0	2.3	3.4	3.1
49	52	104	17	3.2	2.0	1.0	NG	-	-	-	-	-	-	-	64	121	24	2.0	1.2	3.0	4.0	4.0	62	113	22	2.7	2.0	2.4	2.4	2.5
50	53	109	21	2.4	4.0	3.0	65	119	29	0.9	8.0	3.0	1.5	1.5	58	124	22	1.7	1.7	3.0	2.5	4.0	62	117	22	2.3	3.6	2.4	3.1	2.8
51	55	120	17	2.4	2.0	2.0	66	126	17	0.8	5.0	3.0	3.0	2.0	55	126	16	1.6	1.3	3.0	4.0	2.5	59	117	17	2.0	3.1	2.4	2.8	2.2
52	57	114	23	3.0	3.0	1.0	55	97	29	1.0	9.0	3.0	2.0	2.5	60	128	22	2.2	1.3	3.0	3.0	4.5	60	115	23	2.7	2.9	2.5	2.8	2.7
53	53	129	16	2.8	2.0	2.5	55	98	22	1.0	6.0	3.0	2.0	2.0	56	118	20	2.2	1.8	3.0	-	2.5	58	110	20	2.5	2.9	2.4	3.4	2.5
54	54	139	25	3.4	3.0	3.0	61	110	24	0.9	5.0	3.0	2.0	1.5	55	134	24	2.1	2.2	2.0	8.0	5.0	59	124	23	2.6	2.8	2.4	4.1	3.1
55	57	137	20	3.1	3.0	4.0	57	98	16	0.9	10.5	3.0	2.0	2.3	52	111	17	2.1	1.7	3.0	3.0	5.0	54	105	19	2.3	3.4	2.5	4.0	2.9
56	54	134	22	3.0	2.5	2.0	73	95	15	1.0	5.0	3.0	3.0	1.0	61	112	21	2.2	1.7	2.0	-	4.5	63	104	19	2.5	2.9	2.4	3.3	2.4
57	53	119	17	3.3	3.0	2.5	68	115	13	0.9	14.0	3.0	2.0	2.5	53	111	19	1.9	2.0	1.0	2.0	4.5	59	103	17	2.4	4.3	2.3	4.0	2.5
58	51	116	11	2.6	2.5	1.0	NG	-	-	-	-	-	-	-	54	123	18	1.7	1.8	3.0	1.0	3.0	59	118	18	2.6	2.1	2.3	3.6	2.3
59	51	134	19	2.2	2.0	1.5	NG	-	-	-	-	-	-	-	67	120	24	2.0	1.5	3.0	1.0	3.5	62	110	21	2.6	2.2	2.3	3.1	2.5
60	52	113	19	3.1	3.0	1.0	NG	-	-	-	-	-	-	-	55	117	17	2.0	1.5	3.0	2.0	3.5	59	106	18	2.8	2.3	2.3	2.8	2.4

CHAPTER I: BREEDING

Table 8: Potential R-line nursery, across seven locations- Malnoor, Dhule, Jamnagar, Jaipur, Hisar, New Delhi and Gwalior. (for Pedigree of entries see table 3)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MLR									DHL								JMR								JPR					
	DF	PH	HL	HD	ETPP	SG	BS	DM	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	AS
1	63	102	19	2.0	2.2	1.0	3.0	-	1.0	66	119	19	3.1	1.5	3.0	5.5	1.0	63	190	24	3.4	3.9	1.5	0.5	3.5	54	159	22	3.3	1.5	3.5
2	54	106	17	1.7	2.2	2.5	-	-	1.0	61	158	19	3.3	1.5	-	7.0	1.5	62	181	22	3.2	3.2	1.5	1.5	3.8	53	152	17	2.7	2.0	2.5
3	52	94	18	3.0	4.2	1.0	2.0	-	1.0	67	97	17	2.3	1.5	3.0	4.5	1.5	68	205	24	3.3	3.6	1.0	0.0	3.5	54	168	23	3.1	2.0	4.0
4	57	116	18	2.4	2.4	1.5	4.0	-	1.5	58	174	23	3.4	2.5	3.0	5.0	2.0	55	185	27	3.5	3.8	2.0	2.0	3.0	58	159	23	2.9	1.5	3.0
5	57	103	19	2.9	1.3	2.5	-	2.0	2.5	57	141	20	3.2	1.5	3.0	5.0	2.0	57	178	21	3.3	2.8	2.0	1.5	3.3	52	173	23	2.8	1.5	3.0
6	51	117	18	1.9	2.3	1.0	3.5	-	1.0	57	143	18	2.6	2.0	3.0	6.5	1.0	54	187	24	2.5	2.8	2.0	3.0	3.5	55	173	19	3.4	3.0	3.0
7	61	121	20	3.1	2.2	1.0	7.0	2.0	2.5	58	141	22	2.8	1.5	3.0	5.5	1.5	52	177	28	2.8	2.6	1.5	1.5	3.5	55	175	25	3.1	2.0	3.0
8	45	107	14	2.3	2.2	1.0	2.5	-	1.0	59	134	18	3.0	1.0	3.0	5.5	1.0	53	165	21	3.0	2.6	1.5	2.0	3.0	57	140	22	2.8	2.0	3.5
9	61	88	18	2.4	2.2	1.0	-	-	1.0	57	150	20	2.7	2.0	-	6.5	1.0	49	176	28	2.8	3.3	1.5	1.0	3.3	53	118	14	2.6	2.0	3.0
10	49	100	17	2.5	4.1	2.5	-	-	1.0	60	132	18	2.4	1.5	-	6.5	1.0	57	166	21	2.4	3.4	2.0	2.5	3.5	53	163	28	2.9	2.0	3.5
11	54	146	14	2.6	4.4	1.0	5.0	-	2.5	59	117	16	2.8	1.0	-	8.0	1.0	54	172	20	3.0	2.1	2.5	5.5	2.5	53	134	16	2.9	1.5	3.0
12	56	115	18	1.6	3.3	1.0	-	-	1.0	60	142	21	3.3	1.5	3.0	5.5	1.0	55	180	24	3.4	2.2	2.0	3.5	3.0	57	129	18	2.4	2.0	3.5
13	56	134	17	2.6	2.6	1.0	5.0	-	3.5	65	124	19	2.9	1.5	3.0	4.5	1.0	58	176	20	3.0	2.8	1.5	3.0	3.3	53	146	17	2.7	1.5	2.5
14	53	146	16	3.3	3.1	3.0	2.0	-	4.0	64	136	20	2.7	2.0	3.0	6.0	1.0	57	175	26	3.0	1.9	1.5	2.0	3.0	53	152	23	2.7	1.5	2.5
15	54	107	17	3.2	3.1	1.0	4.0	-	3.5	59	156	17	3.0	1.5	3.0	5.0	2.0	54	185	19	2.7	1.9	1.5	2.5	3.5	59	148	19	2.7	1.5	3.0
16	54	111	18	2.9	3.5	1.5	3.0	-	2.0	59	144	18	2.8	1.5	-	6.5	1.0	56	192	22	2.7	3.3	1.0	0.5	3.5	55	133	14	1.8	2.5	2.5
17	56	114	20	2.6	2.9	2.5	-	-	3.5	57	123	19	2.9	1.0	-	8.5	1.0	49	174	19	3.3	2.5	2.5	4.5	2.0	51	133	19	2.9	1.5	2.5
18	49	127	24	2.9	3.1	2.5	3.0	-	3.0	60	142	20	2.8	1.5	3.0	5.0	2.0	55	194	20	3.0	1.9	1.0	1.0	3.5	54	157	21	2.8	2.0	2.5
19	56	111	13	2.5	3.3	1.0	2.0	-	1.5	59	137	20	3.0	1.0	3.0	6.5	1.5	52	176	24	3.0	1.8	1.5	0.5	3.5	57	133	22	2.8	2.0	3.0
20	63	103	16	2.5	3.0	1.0	2.5	-	1.5	69	154	23	2.4	1.5	3.0	5.0	1.0	60	200	25	2.4	4.6	1.0	1.5	3.5	57	165	25	2.7	2.0	3.0
21	55	96	18	2.8	3.3	1.0	1.5	-	1.0	59	159	21	3.2	1.5	3.0	7.0	1.5	54	159	25	3.5	2.0	2.5	4.0	3.0	56	129	29	2.7	1.5	3.5
22	51	90	17	3.0	3.3	1.5	3.5	-	1.0	55	147	17	2.7	1.0	-	7.0	1.5	47	157	20	2.9	2.8	2.5	3.0	3.0	54	135	19	2.5	2.0	3.5
23	52	127	19	3.1	2.5	1.0	2.0	-	1.0	62	145	21	2.7	2.5	-	6.5	1.0	55	177	24	2.7	2.6	2.5	5.5	2.5	51	166	21	2.8	1.5	2.5
24	47	100	17	2.3	4.6	1.0	4.5	-	1.0	62	145	19	3.1	1.5	3.0	4.5	1.0	56	180	19	3.2	2.3	1.5	0.5	3.5	53	154	21	3.1	2.0	4.5
25	55	114	17	3.2	3.1	2.5	-	3.0	4.0	58	126	17	2.5	1.0	-	6.5	1.0	47	167	20	2.3	1.9	3.0	7.5	2.0	51	147	21	2.6	1.5	3.0
26	52	113	14	2.4	1.1	1.0	-	-	1.0	60	130	18	3.2	1.5	-	8.0	1.5	55	185	21	3.5	1.8	2.5	4.5	2.8	58	164	19	3.0	2.0	3.0
27	61	99	16	2.7	1.8	1.0	6.5	-	2.0	64	129	17	2.3	1.0	3.0	5.0	1.0	54	183	23	2.5	2.7	2.5	4.5	2.8	57	120	17	2.8	1.5	2.5
28	53	126	12	2.4	3.3	3.0	3.5	-	1.0	58	156	18	2.7	2.0	3.0	3.5	2.5	52	185	19	2.5	3.4	1.0	0.0	3.8	55	125	21	2.0	2.0	3.0
29	55	127	17	2.8	4.0	1.0	4.0	-	3.0	58	139	14	2.6	2.0	3.0	5.5	1.5	56	169	17	2.5	3.8	2.0	4.0	3.0	54	140	19	3.0	1.5	3.0
30	52	103	20	2.9	3.1	1.0	4.0	-	2.0	59	148	19	2.9	1.5	-	3.5	2.0	59	181	22	2.7	2.4	1.5	1.5	3.5	53	164	24	2.6	1.5	3.5

CHAPTER I: BREEDING

Table 8: Potential R-line nursery, across seven locations- Malnoor, Dhule, Jamnagar, Jaipur, Hisar, New Delhi and Gwalior. (for Pedigree of entries see table 3)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MLR									DHL								JMR								JPR					
	DF	PH	HL	HD	ETPP	SG	BS	DM	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	AS
31	57	130	25	2.6	4.1	2.0	-	-	4.5	61	121	20	2.8	1.0	-	6.5	1.0	50	185	27	3.1	2.2	2.0	3.5	3.0	55	154	23	2.4	1.5	3.5
32	51	117	16	2.3	2.1	1.0	-	-	1.0	68	123	20	3.2	1.5	3.0	2.5	2.5	61	180	20	3.3	3.0	1.5	1.0	4.0	55	149	25	2.9	1.5	3.0
33	45	114	12	2.3	2.3	1.0	5.5	-	1.0	67	139	21	2.4	1.0	3.0	4.5	1.5	60	162	24	2.5	3.6	1.5	1.0	3.3	55	126	22	2.3	1.5	3.0
34	44	135	18	2.0	4.1	2.5	2.5	-	1.5	61	140	22	2.9	1.5	3.0	5.0	1.5	62	155	23	2.9	2.3	1.5	2.0	3.0	54	196	27	2.6	1.5	3.5
35	57	105	19	2.2	3.1	2.0	-	-	1.0	60	145	22	3.4	2.0	3.0	7.5	1.0	59	166	23	3.4	4.6	2.0	2.5	2.5	54	161	19	3.2	1.5	3.5
36	57	125	16	2.3	4.3	1.0	5.0	2.0	1.5	64	122	16	2.9	1.5	-	4.0	2.0	57	180	19	3.4	3.3	1.5	0.0	3.8	57	128	17	3.0	2.0	3.0
37	59	138	19	2.4	1.3	1.0	4.0	-	1.0	66	148	20	3.1	1.0	3.0	2.0	2.0	60	164	22	3.0	2.4	1.0	1.0	3.8	57	135	25	2.8	2.5	3.5
38	51	108	13	2.3	3.3	2.0	1.0	-	1.0	59	139	18	2.9	1.5	-	6.0	1.0	55	170	18	3.2	2.1	1.5	2.0	3.8	54	120	19	3.3	2.0	3.0
39	60	129	18	2.7	2.9	2.5	2.5	2.5	3.5	63	148	20	3.1	1.5	3.0	7.0	1.0	57	158	24	3.1	3.2	1.5	1.5	3.0	51	133	22	3.0	1.5	2.5
40	56	140	17	2.9	2.3	2.5	2.5	-	3.5	67	148	21	2.8	1.0	3.0	3.5	2.0	54	176	21	2.9	1.0	2.0	4.0	3.5	56	158	16	2.7	2.0	3.0
41	51	110	22	3.0	3.9	3.0	2.5	-	2.5	56	125	17	2.7	1.5	-	6.0	1.0	48	158	20	2.3	4.3	2.5	4.0	3.0	56	127	20	2.6	3.0	2.0
42	49	100	24	2.6	2.3	1.5	0.5	-	4.5	60	134	16	2.7	1.5	-	7.0	1.0	55	179	18	2.8	5.2	2.0	3.5	3.5	56	136	23	3.0	1.5	3.0
43	52	100	21	2.6	2.1	1.0	2.5	-	2.5	58	121	21	3.3	1.0	-	6.0	1.0	51	159	25	3.1	3.1	2.0	1.5	3.0	57	143	22	2.8	1.5	3.0
44	51	132	19	3.0	2.4	1.0	1.0	-	1.0	58	133	16	2.8	2.0	-	7.5	1.0	58	168	18	3.1	3.8	1.5	2.0	3.0	55	169	21	3.0	2.5	2.0
45	51	118	23	2.8	2.0	2.0	1.5	-	2.5	68	154	23	2.8	1.0	3.0	3.5	2.0	62	180	29	2.8	3.6	1.0	0.0	3.5	57	176	29	3.0	1.5	4.0
46	49	103	14	2.3	4.3	3.0	2.5	-	1.0	65	171	21	3.0	2.0	3.0	4.5	2.0	62	196	22	3.4	2.4	1.0	0.0	3.3	53	183	27	3.2	1.5	3.5
47	62	147	18	2.7	2.2	1.0	4.0	-	4.5	60	134	17	2.6	2.0	-	4.5	1.5	61	152	18	2.5	7.6	1.5	0.5	3.3	51	123	15	2.6	2.0	2.0
48	53	120	23	2.8	2.3	2.0	1.5	-	3.0	66	146	18	2.4	1.5	3.0	5.0	1.0	60	166	26	2.6	2.4	1.5	2.5	3.0	54	158	22	2.5	2.0	3.0
49	49	115	20	3.5	2.3	1.0	3.5	-	2.5	61	158	17	2.3	1.5	-	6.0	1.0	58	191	22	2.6	6.2	1.0	1.0	3.0	52	159	26	2.4	2.5	2.5
50	57	103	16	2.7	2.4	2.5	2.5	1.0	2.0	56	131	20	3.1	2.0	-	5.5	1.0	52	177	22	3.1	3.4	2.0	4.0	3.0	54	169	22	2.5	1.5	2.0
51	53	122	15	2.5	2.3	1.0	2.5	-	2.0	64	115	16	2.4	1.0	3.0	3.5	1.5	62	170	21	3.2	3.1	1.5	1.0	3.0	56	155	26	2.5	1.5	3.5
52	59	124	15	3.2	2.2	1.0	4.0	1.0	4.0	67	133	19	2.9	1.5	3.0	3.5	2.0	61	173	21	3.1	3.8	1.0	0.0	3.3	57	142	25	2.8	2.5	3.5
53	60	124	21	2.4	2.4	2.0	0.5	-	2.5	59	141	20	2.9	1.0	-	7.5	1.5	49	157	20	2.7	3.2	2.5	4.0	3.0	54	149	22	3.1	2.0	3.0
54	44	115	23	2.3	2.1	1.0	7.0	-	1.0	59	123	15	2.6	1.0	-	7.5	1.0	53	186	20	2.7	3.9	2.0	2.5	2.8	53	151	15	2.7	2.0	2.5
55	60	104	16	3.1	2.1	1.0	2.5	-	2.5	59	136	21	3.1	1.5	3.0	6.5	1.0	52	173	24	3.1	3.8	1.5	3.5	3.0	55	128	22	3.0	2.0	3.5
56	53	126	19	2.8	2.8	1.0	3.5	-	4.0	68	112	17	2.5	1.0	3.0	3.0	1.5	60	180	21	2.6	2.8	1.5	2.5	3.5	55	140	20	2.6	1.5	2.0
57	50	107	24	3.2	2.8	1.0	3.5	-	4.5	67	138	22	2.6	1.5	3.0	3.0	2.0	54	212	29	2.8	3.0	1.0	1.0	3.3	52	170	21	2.9	2.0	3.5
58	54	99	14	2.3	4.1	1.0	5.0	-	2.0	64	105	14	2.3	1.5	3.0	6.0	1.0	49	172	19	2.1	2.4	2.5	4.0	3.0	52	184	19	2.7	1.5	4.0
59	59	127	21	2.6	2.3	1.0	2.0	-	1.0	69	132	15	2.9	1.5	3.0	3.0	2.0	57	201	22	3.4	3.1	1.0	0.5	3.5	51	135	22	2.8	2.0	3.0
60	60	93	19	2.4	1.0	1.0	-	-	1.0	59	126	17	2.7	1.5	3.0	1.5	2.5	52	190	20	2.4	3.0	1.5	1.5	3.3	49	158	21	3.1	2.0	2.5

CHAPTER I: BREEDING

Table 8: Potential R-line nursery, across seven locations- Malnoor, Dhule, Jamnagar, Jaipur, Hisar, New Delhi and Gwalior. (for Pedigree of entries see table 3)

Plot size: 1 row x 4 m x 2 reps.

E. no.	HSR							NDL							GLR							Grand Mean										
	DF	PH	HL	HD	ETPP	SG	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	DM	AS
1	NG	-	-	-	-	-	-	60	146	18	3.4	2.0	2.0	5.0	3.5	61	170	22	2.6	1.5	2.0	-	4.0	61	148	20	3.0	2.1	1.9	3.5	-	2.8
2	NG	-	-	-	-	-	-	63	175	20	2.3	2.5	2.5	5.0	2.5	60	158	21	2.2	1.7	3.0	2.0	5.0	59	155	19	2.6	2.2	2.4	3.9	-	2.7
3	NG	-	-	-	-	-	-	59	145	21	2.9	2.0	2.0	6.5	2.0	72	197	26	2.9	2.0	3.0	8.0	3.0	62	151	21	2.9	2.5	2.0	4.2	-	2.5
4	NG	-	-	-	-	-	-	65	163	18	2.7	2.0	3.0	3.0	3.5	55	168	23	2.6	1.7	2.0	5.0	4.5	58	161	22	2.9	2.3	2.3	3.8	-	2.9
5	NG	-	-	-	-	-	-	66	143	12	3.1	3.0	3.0	3.0	3.0	55	161	19	2.3	1.2	3.0	2.0	4.5	57	150	19	2.9	1.9	2.7	2.9	2.0	3.0
6	56	175	33	1.4	10.0	3.0	2.0	69	161	19	2.6	2.5	2.5	4.0	2.5	49	160	19	1.9	1.5	1.0	8.0	3.0	56	159	21	2.3	3.4	2.1	5.0	-	2.3
7	58	95	10	0.8	2.0	3.0	1.0	60	137	17	3.0	2.5	2.0	5.0	2.5	52	164	25	2.1	1.8	1.0	5.0	3.5	56	144	21	2.5	2.1	1.9	4.8	2.0	2.5
8	62	180	31	1.0	4.0	3.0	2.0	65	153	15	2.7	2.5	2.0	5.0	2.5	53	145	19	2.4	2.0	1.0	7.0	4.5	56	146	20	2.5	2.3	1.9	4.4	-	2.5
9	55	155	25	0.9	4.5	3.0	2.0	63	164	18	2.3	2.0	1.5	5.5	2.5	50	169	23	2.1	1.7	1.0	5.0	3.0	55	145	21	2.3	2.5	1.6	4.5	-	2.3
10	NG	-	-	-	-	-	-	69	175	25	2.8	1.5	2.5	3.5	4.0	52	148	20	2.1	1.3	2.0	8.5	2.0	57	147	22	2.5	2.3	2.3	5.3	-	2.5
11	NG	-	-	-	-	-	-	69	148	19	2.9	2.5	2.5	4.0	3.0	51	151	18	2.0	1.7	1.0	4.5	4.0	57	144	17	2.7	2.2	1.8	5.4	-	2.7
12	58	155	29	1.3	3.0	3.0	2.5	52	149	20	2.3	2.5	2.0	6.5	2.0	50	155	23	2.7	2.2	2.0	2.0	4.0	55	146	22	2.4	2.4	2.2	4.4	-	2.4
13	NG	-	-	-	-	-	-	55	141	20	3.2	2.5	2.0	5.5	3.0	54	162	20	2.2	2.0	3.0	-	5.0	56	147	19	2.8	2.1	2.1	4.5	-	3.0
14	60	180	31	1.0	10.0	3.0	2.0	65	157	18	2.9	2.0	2.0	4.0	3.5	56	169	21	2.1	1.5	3.0	5.0	4.0	58	159	22	2.5	3.1	2.6	3.8	-	2.9
15	59	162	-	-	-	3.0	1.0	61	156	18	3.2	2.0	2.0	4.5	2.5	54	162	19	2.4	1.7	2.0	1.5	5.0	57	154	18	2.8	1.9	2.1	3.5	-	2.9
16	NG	-	-	-	-	-	-	61	179	24	3.1	2.5	1.5	5.0	2.5	54	171	17	2.4	1.5	3.0	5.0	2.5	56	155	19	2.6	2.5	1.8	4.0	-	2.3
17	59	160	23	1.3	7.0	3.0	2.0	66	160	22	3.2	2.0	2.0	4.5	2.5	54	147	23	2.5	1.7	2.0	7.5	2.5	56	144	21	2.7	2.7	2.4	6.3	-	2.3
18	NG	-	-	-	-	-	-	65	145	21	3.0	1.5	3.0	3.5	3.0	56	166	21	2.2	1.7	3.0	4.0	5.0	56	155	21	2.8	1.9	2.5	3.3	-	3.2
19	55	155	27	1.0	7.0	3.0	2.0	59	145	16	3.0	2.5	2.5	5.0	3.0	52	165	19	2.4	2.0	2.0	2.0	4.0	56	146	20	2.5	2.8	2.2	3.2	-	2.6
20	NG	-	-	-	-	-	-	64	169	19	2.5	2.0	2.5	4.0	3.5	57	155	21	1.6	1.5	3.0	1.0	3.5	61	157	21	2.3	2.4	2.1	2.8	-	2.7
21	59	170	30	0.9	2.0	3.0	2.0	49	144	22	3.2	2.0	2.0	5.5	3.0	53	164	21	2.4	1.3	2.0	2.5	4.5	55	146	24	2.7	1.9	2.3	4.1	-	2.6
22	59	155	23	0.9	6.0	3.0	2.0	64	153	20	3.2	2.0	2.0	4.0	3.5	49	139	17	2.2	1.5	3.0	3.5	3.0	54	139	19	2.5	2.7	2.4	4.2	-	2.5
23	59	153	19	1.0	5.0	3.0	2.0	60	158	22	2.9	2.5	2.5	4.0	3.0	51	169	22	2.3	1.3	2.0	9.0	3.0	55	156	21	2.5	2.6	2.2	5.4	-	2.1
24	62	150	12	1.3	6.0	3.0	1.0	65	149	19	2.8	2.0	2.5	3.5	3.5	54	153	18	2.3	2.2	3.0	5.5	4.0	57	147	18	2.6	2.9	2.3	3.7	-	2.6
25	NG	-	-	-	-	-	-	70	129	17	3.2	2.0	2.5	4.5	2.5	48	161	22	1.9	1.5	1.0	5.5	2.5	55	141	19	2.6	1.8	2.3	6.0	3.0	2.5
26	60	175	21	1.2	4.0	3.0	2.5	62	145	27	3.4	2.5	2.5	3.5	4.0	58	159	19	2.8	2.3	3.0	1.0	3.5	58	153	20	2.8	2.2	2.4	4.3	-	2.6
27	59	70	22	0.9	2.0	3.0	2.0	62	150	19	2.4	2.0	3.0	4.0	4.0	53	161	22	2.0	1.3	2.0	5.0	3.0	58	130	19	2.2	1.8	2.4	5.0	-	2.5
28	NG	-	-	-	-	-	-	57	133	14	2.5	2.5	3.0	5.0	2.5	50	167	18	2.1	2.2	3.0	1.0	5.0	54	149	17	2.3	2.6	2.6	2.6	-	3.0
29	61	155	19	1.0	4.0	3.0	2.0	62	159	18	2.5	2.0	2.5	4.5	2.5	51	158	15	2.1	2.2	2.0	2.0	4.0	57	149	17	2.3	2.8	2.3	4.0	-	2.7
30	NG	-	-	-	-	-	-	63	143	19	2.7	2.5	2.0	4.0	3.0	55	168	20	2.0	2.2	3.0	8.0	4.0	57	151	20	2.6	2.2	1.9	4.2	-	3.0

CHAPTER I: BREEDING

Table 8: Potential R-line nursery, across seven locations- Malnoor, Dhule, Jamnagar, Jaipur, Hisar, New Delhi and Gwalior. (for Pedigree of entries see table 3)

Plot size: 1 row x 4 m x 2 reps.

E. no.	HSR							NDL							GLR							Grand Mean										
	DF	PH	HL	HD	ETPP	SG	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	DM	AS
31	NG	-	-	-	-	-	-	70	151	21	2.2	2.0	3.0	4.0	3.0	49	166	26	2.4	1.5	1.0	9.0	2.0	57	151	24	2.6	2.1	2.0	5.8	-	2.8
32	NG	-	-	-	-	-	-	64	160	17	3.1	2.0	3.0	3.5	4.5	59	172	19	2.3	1.7	3.0	1.5	4.5	59	150	19	2.8	2.0	2.3	2.1	-	3.3
33	NG	-	-	-	-	-	-	56	130	18	2.6	2.0	2.5	5.0	2.5	60	169	22	1.7	1.8	3.0	5.5	4.5	57	140	20	2.3	2.0	2.2	4.3	-	2.6
34	56	140	29	0.8	2.0	3.0	2.0	68	149	17	2.9	3.0	3.0	3.5	3.5	59	168	26	2.1	1.8	2.0	7.0	3.5	58	155	23	2.3	2.3	2.5	4.0	-	2.6
35	60	140	16	1.1	7.0	3.0	1.0	57	153	18	2.8	2.0	2.0	4.5	3.0	54	165	22	2.2	2.3	1.0	2.0	3.0	57	148	20	2.6	3.2	2.2	4.1	-	2.1
36	57	150	29	0.9	5.0	3.0	2.0	51	156	21	2.4	2.5	2.0	6.5	2.0	53	152	19	2.3	1.8	3.0	3.0	3.0	56	145	20	2.4	2.9	2.1	3.7	2.0	2.5
37	55	125	20	0.9	2.0	3.0	1.0	58	162	26	3.3	2.5	3.0	3.0	4.5	55	161	20	2.4	2.0	3.0	8.0	5.0	58	147	21	2.6	2.0	2.3	3.6	-	3.0
38	59	145	24	0.9	4.0	3.0	2.0	60	161	18	2.3	2.0	3.0	3.5	4.0	51	158	19	2.6	1.5	2.0	6.5	3.5	55	143	18	2.5	2.3	2.3	3.8	-	2.6
39	61	193	28	0.9	5.0	3.0	3.5	69	190	20	2.6	2.0	3.0	1.5	2.5	53	155	20	2.3	2.0	2.0	9.0	3.5	59	158	22	2.5	2.6	2.5	4.3	2.5	2.8
40	52	167	20	0.9	6.5	3.0	1.0	63	161	17	3.6	2.5	3.0	5.0	3.5	54	196	24	2.3	1.5	2.0	6.0	4.0	57	163	19	2.6	2.4	2.6	4.2	-	2.9
41	62	177	20	0.9	12.0	3.0	2.0	65	190	26	2.9	2.0	3.0	3.5	2.5	50	153	17	1.9	1.3	2.0	7.0	3.5	55	148	20	2.3	4.0	2.7	4.6	-	2.4
42	61	153	29	1.0	6.0	3.0	2.0	69	151	28	2.3	2.0	2.5	3.5	2.5	53	155	24	2.1	1.2	2.0	9.0	2.5	57	144	23	2.3	2.8	2.2	4.7	-	2.7
43	NG	-	-	-	-	-	-	70	154	24	2.6	2.5	2.5	5.0	2.0	56	151	26	2.5	1.8	1.0	7.0	2.5	57	138	23	2.8	2.0	1.6	4.4	-	2.3
44	62	176	29	0.9	7.0	3.0	2.0	69	155	18	3.4	2.0	3.0	4.5	3.0	60	156	16	2.1	1.5	2.0	6.0	3.0	59	155	20	2.6	3.0	2.1	4.2	-	2.1
45	62	190	26	1.0	5.5	3.0	2.0	68	182	30	2.3	2.0	3.0	4.0	2.5	57	180	20	1.8	2.0	3.0	2.0	3.5	61	168	26	2.4	2.5	2.5	2.2	-	2.9
46	NG	-	-	-	-	-	-	55	151	19	2.6	2.0	2.5	5.0	3.0	53	165	21	2.5	1.3	3.0	2.0	4.5	56	162	21	2.8	2.3	2.5	2.8	-	2.9
47	62	153	32	1.0	5.0	3.0	2.0	67	131	18	2.5	2.0	3.0	3.0	4.0	54	147	17	1.9	1.8	3.0	7.0	4.0	59	141	19	2.3	3.2	2.3	3.8	-	3.0
48	NG	-	-	-	-	-	-	58	148	20	3.5	2.0	1.5	6.0	2.0	54	162	20	1.6	1.8	3.0	1.5	3.0	57	150	21	2.5	2.0	2.2	3.3	-	2.5
49	57	151	28	1.0	6.0	3.0	2.0	57	166	22	3.1	2.0	2.0	6.0	3.5	57	162	19	1.9	1.5	3.0	1.5	4.5	56	157	22	2.4	3.1	2.0	3.6	-	2.7
50	61	159	20	0.9	3.5	3.0	1.8	58	154	20	3.8	2.5	1.5	5.5	3.0	53	161	23	2.3	2.2	2.0	4.0	3.5	56	151	20	2.6	2.5	2.2	4.3	1.0	2.3
51	59	158	20	1.0	4.5	3.0	2.5	55	168	19	3.1	2.5	2.5	4.5	3.0	57	174	20	2.3	2.0	3.0	7.0	3.5	58	152	20	2.4	2.4	2.3	3.7	-	2.7
52	60	148	21	0.9	5.5	3.0	1.5	59	145	26	3.2	2.0	2.0	3.0	3.0	57	154	18	2.0	2.2	3.0	8.0	3.5	60	146	21	2.6	2.8	2.2	3.7	1.0	3.0
53	61	148	23	0.9	7.0	3.0	2.0	56	158	28	2.4	2.0	2.0	4.5	3.0	53	158	20	2.3	1.8	2.0	9.0	3.0	56	148	22	2.4	2.8	2.3	5.1	-	2.6
54	56	155	29	1.0	6.5	3.0	1.5	50	160	27	2.5	2.0	2.0	7.0	2.0	52	152	18	1.7	1.7	1.0	8.0	2.5	52	149	21	2.2	2.7	1.8	6.4	-	1.9
55	NG	-	-	-	-	-	-	62	157	24	3.2	2.0	2.0	4.0	4.0	50	157	23	2.5	1.7	2.0	7.0	3.5	56	142	22	3.0	2.2	1.9	4.7	-	2.9
56	NG	-	-	-	-	-	-	69	188	21	2.8	2.0	2.5	4.5	2.5	54	163	23	2.0	1.5	3.0	3.0	2.5	60	151	20	2.6	1.9	2.2	3.3	-	2.7
57	58	133	24	1.0	4.0	3.0	2.0	64	159	22	2.1	2.0	3.0	4.5	2.5	57	176	24	1.9	1.8	3.0	2.0	3.5	57	156	24	2.4	2.4	2.3	2.8	-	3.0
58	55	163	25	1.0	5.0	3.0	2.0	49	143	20	2.8	2.5	1.5	7.0	1.5	51	147	18	1.7	2.0	3.0	2.0	3.5	53	145	18	2.1	2.7	2.3	4.8	-	2.4
59	58	135	26	1.0	4.0	3.0	2.0	63	158	15	2.4	2.0	2.0	5.0	3.5	57	162	18	2.2	1.5	1.0	1.0	3.5	59	150	20	2.5	2.3	1.8	2.3	-	2.6
60	59	185	26	-	15.0	3.0	1.0	52	159	22	3.1	2.0	2.5	4.0	4.5	NG	-	-	-	-	-	-	-	55	152	21	2.7	4.1	2.2	2.3	-	2.5

CHAPTER I: BREEDING

Table 9: Drought tolerant hybrid parent nursery, across three locations- Mandor, Bikaner and Jaipur (for Pedigree of entries see table 4)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MDR								BKR						JPR						Grand Mean							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	SG	AS	DF	PH	HL	HD	ETPP	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
1	66	158	20	2.7	1.2	1.5	3.0	2.7	55	150	14	1.6	3.0	3.0	53	136	22	3.2	1.5	3.0	58	148	19	2.5	1.3	2.3	3.0	2.9
2	63	173	19	2.8	1.2	2.0	2.0	2.7	54	135	17	2.2	3.0	4.0	51	123	20	3.2	1.5	3.0	56	143	19	2.7	1.3	2.5	2.0	3.2
3	61	133	19	2.4	1.0	2.0	1.5	2.1	40	110	18	1.6	1.0	4.0	53	154	18	3.0	2.0	3.0	51	132	18	2.3	1.5	1.5	1.5	3.0
4	57	168	20	2.7	1.3	1.5	2.5	3.1	49	140	18	1.8	2.0	4.5	54	150	19	2.6	1.0	4.0	53	152	19	2.3	1.2	1.8	2.5	3.9
5	58	143	20	2.6	1.0	1.5	3.5	2.2	48	105	14	1.8	1.0	4.0	50	154	26	3.0	2.5	4.5	52	134	20	2.5	1.8	1.3	3.5	3.6
6	61	150	21	2.5	1.2	1.5	2.5	2.6	47	115	13	1.9	1.0	4.0	47	129	16	2.7	3.0	3.0	52	131	16	2.4	2.1	1.3	2.5	3.2
7	58	158	21	2.7	1.2	1.0	4.0	3.1	53	138	17	1.8	2.0	4.5	53	110	20	2.8	3.0	3.0	55	135	19	2.4	2.1	1.5	4.0	3.5
8	60	165	19	2.4	1.2	1.0	3.5	2.6	58	133	18	1.2	1.0	3.0	54	131	17	2.8	1.5	3.5	57	143	18	2.1	1.3	1.0	3.5	3.0
9	55	153	18	2.4	1.3	1.5	3.5	2.8	48	115	16	1.8	2.0	4.0	50	128	19	2.9	1.5	4.0	51	132	18	2.3	1.4	1.8	3.5	3.6
10	59	148	19	2.3	1.5	1.0	3.5	2.5	48	128	18	1.7	2.0	4.5	48	134	19	2.9	3.0	3.5	51	136	18	2.3	2.2	1.5	3.5	3.5
11	60	140	19	2.5	1.0	1.5	3.5	2.3	49	135	20	1.7	1.0	4.0	52	150	19	3.0	1.5	3.0	54	142	19	2.4	1.3	1.3	3.5	3.1
12	60	153	21	2.7	1.0	1.5	3.0	2.5	49	140	18	2.3	1.0	4.0	54	127	22	3.0	2.5	4.5	54	140	20	2.7	1.8	1.3	3.0	3.7
13	49	148	21	2.4	2.1	1.0	3.0	3.0	45	113	23	1.6	1.0	3.5	52	133	23	3.2	2.0	4.0	48	131	22	2.4	2.1	1.0	3.0	3.5
14	58	148	22	2.5	1.2	1.5	3.5	2.6	49	130	15	1.5	2.0	4.0	49	140	20	3.2	1.0	3.5	52	139	19	2.4	1.1	1.8	3.5	3.4
15	57	160	21	2.6	1.3	2.0	2.5	3.3	48	118	18	1.8	3.0	4.0	51	140	20	3.0	3.0	3.0	52	139	19	2.5	2.2	2.5	2.5	3.4
16	67	150	21	2.6	1.3	2.5	3.0	1.8	53	-	-	-	-	-	54	129	21	2.7	2.5	3.0	58	140	21	2.7	1.9	2.5	3.0	2.4
17	54	158	21	2.4	1.2	1.0	4.0	2.9	50	108	21	1.6	2.0	3.5	56	156	22	2.8	1.5	3.5	53	140	21	2.2	1.3	1.5	4.0	3.3
18	60	150	20	2.5	1.2	1.5	3.0	2.6	58	95	18	1.8	1.0	3.0	57	156	19	2.8	2.0	3.0	58	134	19	2.4	1.6	1.3	3.0	2.9
19	61	155	21	2.6	1.0	1.5	2.5	2.6	59	120	16	2.9	3.0	3.0	57	141	19	2.9	1.5	3.5	59	139	19	2.8	1.3	2.3	2.5	3.0
20	60	163	21	2.7	2.1	2.5	2.5	3.4	54	125	20	1.8	3.0	4.0	55	147	19	3.1	2.5	3.5	56	145	20	2.5	2.3	2.8	2.5	3.6
21	59	135	19	2.4	1.2	1.5	2.0	2.4	46	120	19	1.5	1.0	4.0	46	147	20	3.0	2.0	3.0	50	134	19	2.3	1.6	1.3	2.0	3.1
22	60	113	20	2.2	1.3	1.5	1.5	1.8	49	98	16	1.5	1.0	3.5	47	113	19	2.3	2.5	3.5	52	108	18	2.0	1.9	1.3	1.5	2.9
23	62	138	19	2.6	1.2	1.5	3.0	2.5	50	120	20	2.5	1.0	4.0	51	167	21	2.6	2.5	3.0	54	141	20	2.6	1.8	1.3	3.0	3.2
24	65	145	20	2.7	1.2	2.0	2.5	2.3	50	130	15	1.6	1.0	3.0	53	131	21	2.8	2.0	2.5	56	135	19	2.3	1.6	1.5	2.5	2.6
25	61	140	18	2.9	1.5	2.0	2.0	2.7	52	100	17	1.7	1.0	3.0	50	125	19	2.7	1.5	3.0	54	122	18	2.4	1.5	1.5	2.0	2.9
26	52	165	22	2.5	1.3	1.5	3.5	2.9	41	138	21	1.8	1.0	4.0	49	126	19	2.3	2.5	3.5	47	143	20	2.2	1.9	1.3	3.5	3.5

CHAPTER I: BREEDING

Table 9: Drought tolerant hybrid parent nursery, across three locations- Mandor, Bikaner and Jaipur (for Pedigree of entries see table 4)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MDR								BKR						JPR						Grand Mean							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	SG	AS	DF	PH	HL	HD	ETPP	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
27	54	148	19	2.8	1.2	1.0	3.5	2.7	50	115	16	2.3	1.0	4.0	52	127	18	2.6	1.0	2.5	52	130	17	2.5	1.1	1.0	3.5	3.1
28	61	158	18	2.6	1.0	2.0	3.0	2.5	46	110	24	1.9	1.0	3.5	49	147	21	2.4	1.5	3.5	52	138	21	2.3	1.3	1.5	3.0	3.2
29	56	165	21	2.6	1.2	1.5	4.0	2.8	39	120	22	1.9	1.0	4.0	48	147	18	2.6	2.0	3.5	48	144	20	2.4	1.6	1.3	4.0	3.4
30	59	160	19	2.8	1.3	1.0	3.0	2.8	49	105	17	1.9	1.0	3.0	50	150	21	2.9	1.5	3.5	53	138	19	2.5	1.4	1.0	3.0	3.1
31	54	143	19	2.6	1.6	2.0	3.0	1.9	48	123	17	1.8	2.0	3.5	49	174	18	2.5	4.0	3.0	50	146	18	2.3	2.8	2.0	3.0	2.8
32	59	173	22	2.9	1.3	1.5	2.5	3.4	46	120	21	1.9	3.0	3.0	47	168	21	2.9	1.0	4.5	51	153	21	2.5	1.2	2.3	2.5	3.6
33	59	113	18	2.4	1.7	2.0	2.0	2.0	47	108	18	2.3	2.0	4.0	51	153	21	3.1	2.5	4.0	52	124	19	2.6	2.1	2.0	2.0	3.3
34	59	138	20	2.5	1.3	1.5	1.5	2.3	52	118	18	1.4	1.0	3.5	53	125	16	2.7	3.5	3.0	55	127	18	2.2	2.4	1.3	1.5	2.9
35	60	183	21	2.6	1.2	1.5	3.0	2.8	53	115	22	1.8	1.0	2.0	48	138	19	2.6	1.5	3.0	54	145	21	2.3	1.3	1.3	3.0	2.6
36	50	163	22	2.2	1.8	1.5	2.5	3.3	45	108	15	1.2	1.0	3.5	48	136	18	2.4	2.5	3.0	48	135	18	1.9	2.2	1.3	2.5	3.3
37	55	158	18	2.4	1.3	1.5	3.0	3.2	52	95	18	1.5	1.0	4.0	49	155	19	2.7	2.0	3.0	52	136	18	2.2	1.7	1.3	3.0	3.4
38	57	158	21	2.6	1.5	1.5	3.0	3.5	59	100	20	1.6	1.0	2.0	51	147	20	2.3	2.0	3.0	56	135	20	2.2	1.8	1.3	3.0	2.8
39	62	145	19	2.5	1.5	1.0	2.5	3.4	51	115	19	1.5	1.0	3.0	49	131	16	2.7	3.0	3.5	54	130	18	2.2	2.2	1.0	2.5	3.3
40	53	160	22	2.6	1.5	1.5	3.0	3.1	51	103	17	2.0	3.0	4.5	50	117	16	2.2	2.0	3.0	51	127	18	2.2	1.8	2.3	3.0	3.5

CHAPTER I: BREEDING

Table 10: Blast resistant B & R line nursery, across five locations- Ananthapuram, Dhule, Jaipur, New Delhi and Gwalior. (for Pedigree of entries see table 5)

Plot size: 1 row x 4 m x 2 reps.

E. no.	APR								DHL								JPR					
	DF	PH	HL	HD	ETPP	SG	BS	DM	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	AS
1	44	125	22	3.5	1.5	1.5	2.0	0.0	60	117	20	3.3	1.5	-	7.0	1.0	53	140	23	3.2	1.0	2.5
2	47	135	21	3.3	0.5	2.0	1.5	0.0	60	128	21	3.2	2.5	-	2.5	2.0	50	128	19	3.2	1.5	4.0
3	45	117	20	3.0	2.5	2.0	1.5	0.5	63	141	21	3.3	2.0	3.0	8.0	2.0	57	141	16	2.7	1.0	4.5
4	59	125	25	3.8	3.0	1.5	2.0	1.0	65	127	21	2.7	1.5	-	6.0	1.0	51	133	23	3.0	2.0	3.5
5	52	135	25	3.3	1.5	2.0	1.5	2.5	63	152	26	3.2	2.0	3.0	8.0	1.5	51	151	26	2.5	1.0	3.5
6	46	119	23	2.9	2.0	2.5	2.5	0.0	64	149	19	2.8	1.0	3.0	7.0	1.5	51	150	25	2.3	2.0	3.5
7	55	126	25	3.5	2.0	2.5	1.5	0.0	66	139	20	3.4	1.5	3.0	2.0	2.0	55	137	24	2.9	1.5	3.0
8	45	119	23	3.6	2.0	2.5	2.0	0.0	61	141	23	3.3	2.0	3.0	3.0	2.5	54	131	27	2.3	1.0	3.0
9	63	142	28	3.5	2.0	3.0	2.0	1.0	66	170	26	2.9	1.5	3.0	1.5	2.0	54	138	30	2.4	2.0	3.0
10	53	118	24	3.7	1.0	3.0	2.0	0.0	64	135	21	2.8	1.0	-	3.5	1.5	52	131	18	2.7	1.5	3.0
11	42	120	17	3.0	2.5	3.0	1.5	0.0	70	147	20	2.8	1.5	3.0	4.0	2.0	54	161	17	2.5	1.0	3.5
12	46	117	22	3.3	1.5	2.5	2.0	0.0	68	141	23	3.2	1.5	3.0	4.0	1.5	51	133	24	2.8	1.0	3.5
13	41	113	19	3.4	1.5	2.5	1.0	0.5	69	154	23	2.7	1.5	3.0	4.0	1.5	52	115	18	2.6	1.0	3.0
14	54	126	18	3.2	1.5	2.5	1.5	0.0	36	128	17	2.7	1.5	3.0	3.0	1.5	55	133	18	3.5	1.5	4.0
15	46	112	22	3.2	2.5	1.5	1.5	0.0	63	127	20	2.9	1.0	3.0	6.5	1.0	53	135	21	2.8	1.0	3.0
16	43	132	21	2.9	2.0	2.5	1.5	2.5	60	132	17	2.8	1.5	-	7.5	1.0	54	118	18	2.6	1.0	3.5
17	55	127	22	3.4	2.5	3.0	0.5	2.5	64	137	20	2.8	1.5	3.0	5.5	1.0	50	137	27	2.7	1.0	3.0
18	53	115	21	3.0	1.0	3.0	1.0	0.0	66	143	21	3.0	1.5	-	7.5	1.0	52	136	16	2.7	1.5	3.0
19	56	111	22	3.7	3.5	2.5	1.5	2.5	70	155	24	2.9	1.0	-	5.0	1.0	52	148	19	2.4	1.0	4.0
20	51	113	18	3.0	1.5	3.0	1.5	2.5	64	147	23	2.9	2.0	3.0	3.5	1.5	53	135	18	2.7	3.0	3.5
21	47	124	21	3.4	1.5	2.5	1.5	0.0	62	138	21	3.2	1.5	3.0	4.0	2.0	55	125	17	3.5	1.5	4.0
22	48	133	22	3.7	2.5	2.5	1.0	0.0	63	134	22	3.3	1.5	-	5.5	1.0	53	137	20	2.8	1.0	3.0
23	42	126	22	3.8	1.5	2.5	1.5	2.5	67	129	21	2.7	2.0	3.0	5.5	2.0	53	118	23	2.9	1.0	3.0
24	54	108	22	3.0	3.5	2.0	1.5	2.5	70	91	19	3.2	1.0	-	6.5	1.0	50	91	23	2.9	1.0	3.5

CHAPTER I: BREEDING

Table 10: Blast resistant B & R line nursery, across five locations- Ananthapuram, Dhule, Jaipur, New Delhi and Gwalior. (for Pedigree of entries see table 5)

Plot size: 1 row x 4 m x 2 reps.

E. no.	APR								DHL								JPR					
	DF	PH	HL	HD	ETPP	SG	BS	DM	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	AS
25	46	141	22	4.3	3.0	2.0	1.0	0.0	58	115	24	3.1	1.0	-	2.0	1.0	51	92	16	2.4	1.5	2.0
26	46	116	24	3.3	1.0	2.0	1.5	5.0	56	119	21	3.0	2.0	3.0	4.0	2.5	56	108	24	2.7	1.0	3.0
27	49	115	18	3.2	1.5	1.5	1.0	2.5	58	122	21	3.4	3.0	3.0	4.5	1.5	56	97	19	2.5	1.0	3.0
28	44	118	24	3.0	1.5	1.5	1.5	0.0	59	109	20	3.1	2.5	3.0	4.0	2.0	54	92	17	2.5	2.5	3.5
29	56	111	20	2.9	2.5	2.0	1.5	0.0	60	114	15	2.9	1.0	3.0	5.0	2.0	51	85	15	3.0	1.0	2.0
30	46	121	26	3.5	2.0	1.5	1.5	0.0	56	110	21	3.0	3.5	3.0	2.5	1.5	54	110	23	3.2	3.0	3.0
31	53	147	21	3.1	2.0	2.5	2.0	2.5	54	127	17	2.8	1.5	-	5.5	1.5	52	129	16	2.9	1.5	2.0
32	44	133	23	3.4	2.5	2.0	1.0	2.5	58	138	24	3.0	1.5	3.0	4.0	2.0	52	117	23	2.7	1.0	3.0
33	44	123	21	3.3	1.5	1.5	1.0	0.0	58	111	16	3.1	2.0	-	4.0	1.5	53	111	17	3.2	1.0	3.0
34	44	109	19	2.9	1.5	2.0	2.0	0.0	56	115	16	2.7	2.0	-	5.5	1.5	56	78	15	2.6	1.0	2.0
35	55	106	22	3.9	1.5	2.5	1.0	0.0	60	114	19	3.4	2.5	-	4.5	2.0	56	90	22	2.9	1.5	3.0
36	53	128	21	3.0	3.5	2.0	1.5	0.0	56	125	20	2.8	2.5	-	4.5	1.5	52	118	18	2.9	1.0	2.5
37	52	126	21	3.4	2.0	1.5	1.5	0.0	57	115	19	3.0	2.5	-	6.0	1.5	57	125	24	3.0	2.0	4.0
38	52	162	19	2.6	1.0	2.5	1.0	5.0	55	122	21	2.9	2.5	-	7.0	1.0	54	97	19	2.7	2.0	2.0
39	48	124	23	3.2	1.5	2.5	1.5	0.0	60	104	18	3.0	3.0	3.0	5.5	2.0	55	114	19	3.1	2.0	2.5
40	53	112	22	2.9	3.0	2.5	1.0	0.0	62	88	17	2.8	2.5	3.0	5.5	1.5	51	91	21	3.0	2.0	2.5

CHAPTER I: BREEDING

Table 10: Blast resistant B & R line nursery, across five locations- Ananthapuram, Dhule, Jaipur, New Delhi and Gwalior. (for Pedigree of entries see table 5)

Plot size: 1 row x 4 m x 2 reps.

E. no.	NDL								GLR								Grand Mean								
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	DM	AS
1	64	148	18	3.5	3.0	3.0	3.0	3.5	53	144	22	2.5	1.5	3.0	3.5	3.5	55	135	21	3.2	1.7	2.5	3.9	0.0	2.6
2	64	115	21	3.1	2.5	2.5	4.0	2.5	55	139	22	2.5	1.3	2.0	5.0	4.0	55	129	21	3.1	1.7	2.2	3.3	0.0	3.1
3	63	101	19	3.0	2.5	1.5	4.0	2.5	52	152	23	2.2	1.5	2.0	2.0	3.5	56	130	20	2.8	1.9	2.1	3.9	0.5	3.1
4	69	134	16	2.9	2.0	3.0	4.0	2.5	52	153	20	1.6	2.0	2.0	2.0	4.5	59	134	21	2.8	2.1	2.2	3.5	1.0	2.9
5	58	146	14	2.6	2.0	1.5	5.0	3.5	58	150	23	2.4	1.5	2.0	7.0	5.0	56	147	23	2.8	1.6	2.1	5.4	2.5	3.4
6	61	137	25	3.0	2.5	3.0	4.0	4.0	53	158	21	1.8	1.2	2.0	-	3.5	55	143	22	2.6	1.7	2.6	4.5	0.0	3.1
7	58	142	21	2.9	2.5	1.0	6.0	2.0	56	142	17	2.1	1.7	3.0	-	5.0	58	137	22	2.9	1.8	2.4	3.2	0.0	3.0
8	57	137	18	2.9	3.0	1.0	7.0	1.5	58	147	20	1.8	1.3	2.0	2.0	4.5	55	135	22	2.8	1.9	2.1	3.5	0.0	2.9
9	59	141	21	3.6	2.5	2.0	4.5	3.5	63	146	26	1.8	1.7	3.0	1.0	4.5	61	147	26	2.8	1.9	2.8	2.3	1.0	3.3
10	54	136	21	3.4	3.0	1.0	6.0	2.0	56	144	22	1.9	1.7	1.0	1.0	4.0	56	133	21	2.9	1.6	1.7	3.1	0.0	2.6
11	68	149	22	2.1	2.5	2.5	4.0	2.5	57	181	20	1.7	1.5	3.0	-	5.0	58	152	19	2.4	1.8	2.9	3.2	0.0	3.3
12	66	138	24	2.4	3.0	3.0	3.5	3.0	54	158	21	2.1	1.2	3.0	-	5.0	57	137	23	2.8	1.6	2.9	3.2	0.0	3.3
13	65	153	20	2.8	2.5	3.0	2.5	3.5	53	156	17	1.6	1.8	2.0	-	4.5	56	138	19	2.6	1.7	2.6	2.5	0.5	3.1
14	54	153	26	3.4	2.5	3.0	4.0	4.0	57	153	19	1.8	1.8	3.0	-	4.5	51	138	20	2.9	1.8	2.9	2.8	0.0	3.5
15	67	128	15	2.9	2.5	3.0	3.5	3.5	54	140	21	2.0	1.2	2.0	6.0	4.5	56	128	20	2.8	1.6	2.4	4.4	0.0	3.0
16	60	141	21	2.9	2.0	3.0	3.0	4.5	57	150	18	1.8	1.5	3.0	-	4.5	55	134	19	2.6	1.6	2.8	4.0	2.5	3.4
17	59	141	23	2.4	2.5	1.5	5.5	2.5	55	134	20	1.9	1.0	2.0	-	3.0	56	135	22	2.6	1.7	2.4	3.8	2.5	2.4
18	66	153	22	2.5	2.5	3.0	3.0	3.0	61	154	22	2.0	1.7	2.0	-	4.0	59	140	20	2.7	1.6	2.7	3.8	0.0	2.8
19	62	114	15	2.9	3.0	3.0	3.5	2.5	67	164	22	1.5	1.5	2.0	-	4.0	61	138	20	2.7	2.0	2.5	3.3	2.5	2.9
20	60	151	23	3.8	2.5	3.0	4.0	2.5	52	156	21	1.7	1.2	3.0	1.0	3.5	56	140	20	2.8	2.0	3.0	2.5	2.5	2.8
21	61	136	22	2.7	3.0	3.0	3.5	4.0	52	159	24	1.8	1.3	3.0	2.0	4.5	55	136	21	2.9	1.8	2.9	2.8	0.0	3.6
22	58	154	17	2.4	3.0	3.0	2.5	3.5	54	143	23	2.0	1.8	1.0	4.0	3.5	55	140	21	2.8	2.0	2.2	3.3	0.0	2.8
23	65	129	22	2.8	2.5	3.0	3.5	3.5	54	126	22	1.7	1.7	2.0	5.0	4.5	56	126	22	2.8	1.7	2.6	3.9	2.5	3.3
24	61	141	16	3.0	3.0	2.5	3.5	3.0	61	97	17	1.8	1.3	2.0	3.0	2.5	59	106	19	2.8	2.0	2.2	3.6	2.5	2.5

CHAPTER I: BREEDING

Table 10: Blast resistant B & R line nursery, across five locations- Ananthapuram, Dhule, Jaipur, New Delhi and Gwalior. (for Pedigree of entries see table 5)

Plot size: 1 row x 4 m x 2 reps.

E. no.	NDL								GLR								Grand Mean								
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	DM	AS
25	67	92	14	2.9	2.5	1.5	5.0	3.0	46	132	22	1.8	1.3	3.0	-	5.0	53	114	19	2.9	1.9	2.2	2.7	0.0	2.8
26	60	101	15	2.2	3.0	1.5	4.5	2.0	57	108	23	1.8	1.5	2.0	2.0	4.0	55	110	21	2.6	1.7	2.1	3.0	5.0	2.9
27	73	59	18	2.8	2.0	1.0	7.0	3.0	57	107	16	2.0	1.3	2.0	2.0	4.5	58	100	19	2.8	1.8	1.9	3.6	2.5	3.0
28	60	119	19	3.0	3.0	2.5	3.5	3.0	48	109	19	2.6	1.5	2.0	2.0	4.0	53	109	20	2.8	2.2	2.3	2.8	0.0	3.1
29	66	87	20	3.4	3.0	1.0	5.0	3.0	46	112	16	1.7	1.3	3.0	-	4.0	56	102	17	2.8	1.8	2.3	3.8	0.0	2.8
30	61	79	22	2.7	3.0	1.0	5.0	2.5	49	158	26	2.0	1.8	3.0	1.5	3.5	53	116	23	2.9	2.7	2.1	2.6	0.0	2.6
31	61	119	16	3.2	2.5	2.0	3.0	3.0	45	140	18	1.8	1.5	2.0	3.0	3.5	53	132	18	2.8	1.8	2.2	3.4	2.5	2.5
32	59	159	20	2.5	2.5	3.0	3.5	3.0	53	131	21	1.8	1.2	3.0	1.5	4.5	53	136	22	2.7	1.7	2.8	2.5	2.5	3.1
33	49	107	18	2.6	3.0	2.0	4.0	2.5	46	109	17	2.1	1.8	3.0	2.0	4.5	50	112	18	2.8	1.9	2.2	2.8	0.0	2.9
34	53	98	17	2.9	2.0	1.5	4.0	3.0	47	127	16	1.8	1.3	1.0	1.0	5.0	51	105	16	2.6	1.6	1.5	3.1	0.0	2.9
35	51	133	15	2.4	3.0	1.0	5.0	3.0	53	105	17	1.9	1.8	3.0	-	4.0	55	110	19	2.9	2.1	2.2	3.5	0.0	3.0
36	55	123	15	3.1	3.0	2.0	4.0	3.5	53	126	20	1.6	1.8	2.0	-	4.5	53	124	19	2.7	2.4	2.0	3.3	0.0	3.0
37	57	97	20	2.8	2.0	1.5	6.0	2.5	51	133	18	1.7	1.7	2.0	-	4.5	55	119	20	2.8	2.0	1.7	4.5	0.0	3.1
38	46	115	16	2.6	3.0	1.0	5.5	3.0	48	112	18	1.6	1.2	1.0	2.0	4.5	51	121	19	2.5	1.9	1.5	3.9	5.0	2.6
39	53	88	15	2.2	2.0	1.0	7.0	2.0	53	115	17	1.9	1.5	2.0	8.0	4.5	53	109	18	2.7	2.0	2.1	5.5	0.0	2.8
40	47	95	15	2.6	2.5	1.0	5.0	3.0	57	139	19	2.1	1.7	3.0	-	4.0	54	105	19	2.7	2.3	2.4	3.8	0.0	2.8

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana (for Pedigree of entries see table 6)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MLR								DHL								JMR							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
1	57	129	19	3.1	3.5	2.0	2.5	1.5	67	183	28	0.9	2.0	1.0	3.5	2.0	61	191	26	2.7	3.7	1.0	0.5	4.0
2	54	133	21	3.1	3.2	2.5	2.5	2.0	61	155	22	0.9	1.0	2.0	3.0	1.5	51	164	22	2.6	1.8	2.0	1.0	3.8
3	52	120	19	2.8	3.0	2.5	3.0	3.0	63	151	21	0.8	1.5	1.5	3.5	2.0	59	145	27	2.8	3.9	1.5	1.5	3.5
4	58	117	21	2.9	3.1	2.5	2.5	1.5	64	122	18	0.9	1.5	2.0	2.5	2.0	58	120	17	3.1	2.0	2.0	0.5	2.8
5	55	132	19	3.2	3.6	2.0	2.5	4.0	63	171	21	1.2	1.0	1.5	4.5	1.5	57	190	24	3.8	4.2	1.5	0.0	3.5
6	57	136	18	2.8	3.1	3.0	3.0	2.0	66	144	19	0.9	1.5	1.5	2.5	1.5	52	148	20	2.5	2.7	2.0	2.0	2.5
7	55	135	19	2.6	2.6	2.5	2.0	2.5	67	141	23	1.0	1.5	1.5	4.0	1.5	61	142	22	3.0	2.7	1.5	2.0	2.5
8	55	121	20	3.1	3.1	2.5	3.5	1.0	67	106	18	1.0	2.0	1.5	3.5	1.5	56	150	16	2.9	2.5	1.5	0.5	3.5
9	53	116	20	3.1	3.2	2.5	3.5	1.0	58	163	19	1.1	1.0	3.0	7.5	1.5	53	153	19	3.3	2.9	1.5	2.0	3.8
10	55	118	20	2.8	2.9	2.5	1.5	1.5	73	101	14	0.8	1.0	2.0	4.5	1.0	60	161	20	3.0	3.3	2.0	2.0	3.5
11	55	123	19	2.7	2.6	2.0	2.0	1.0	58	150	20	1.0	1.5	1.0	3.0	3.0	53	173	19	2.7	3.8	2.0	0.5	3.5
12	57	127	20	2.9	3.0	2.5	2.0	3.0	61	167	21	1.1	1.5	2.0	4.0	2.0	57	180	22	2.8	2.3	2.0	2.0	3.5
13	53	134	21	3.1	3.2	2.5	3.0	1.5	64	178	25	0.9	1.5	1.0	2.5	2.5	59	202	24	2.9	3.3	1.0	0.0	4.5
14	59	126	18	3.1	3.2	2.0	2.5	1.5	69	141	21	1.0	1.5	1.0	3.5	1.5	61	170	24	2.8	2.1	1.0	1.0	4.0
15	54	125	19	3.1	3.4	3.0	2.5	2.5	68	122	16	1.1	1.5	2.5	5.5	1.0	61	146	21	3.4	2.2	2.5	1.5	3.5
16	51	115	16	3.0	2.9	2.5	1.0	2.5	65	272	19	1.1	1.5	2.0	4.0	2.0	57	148	19	3.3	2.2	2.0	1.0	3.8
17	55	113	20	3.0	2.8	2.5	3.0	1.5	58	132	19	1.0	1.0	2.0	3.0	2.5	53	146	20	2.9	3.3	1.5	1.5	3.5
18	57	114	18	2.7	3.4	2.0	3.0	1.5	59	163	25	1.1	1.5	1.5	4.5	2.0	59	165	24	3.2	1.6	1.0	0.0	4.0
19	50	114	18	2.8	2.8	3.0	3.5	1.5	57	139	21	0.8	1.5	2.5	6.5	1.0	56	153	20	2.7	2.8	2.0	2.0	3.0
20	57	124	20	2.9	2.9	2.5	3.5	1.5	55	145	21	1.1	1.5	3.0	7.5	1.0	43	153	23	2.9	2.7	2.0	3.0	3.0
21	56	111	21	3.2	3.0	2.5	3.0	1.0	58	131	20	1.0	1.5	2.5	3.5	1.5	50	140	22	3.1	2.5	2.0	2.5	4.0
22	57	110	21	3.2	3.0	2.5	2.0	1.5	58	132	20	0.9	1.0	1.5	2.5	1.0	54	164	22	3.3	2.8	1.5	0.5	3.3
23	47	123	22	2.8	3.0	3.0	4.0	1.5	71	104	24	1.2	2.0	1.5	4.5	2.5	64	104	23	3.5	2.3	1.5	2.5	4.0
24	57	107	18	2.6	2.3	3.0	3.0	1.0	63	97	22	1.1	3.0	2.0	5.5	2.0	59	90	23	3.2	3.7	1.5	2.5	3.3
25	58	101	20	2.7	3.0	2.5	4.5	1.0	69	83	20	1.0	2.0	2.0	5.5	1.0	61	91	19	3.4	3.6	1.5	4.0	4.0
26	56	114	22	3.1	3.4	2.5	3.5	1.0	70	94	20	1.1	2.5	1.0	6.5	1.5	63	93	18	3.5	3.2	2.0	5.5	3.3
27	55	129	19	2.6	2.8	2.0	4.0	1.0	67	108	21	0.9	1.5	1.5	3.5	1.5	58	98	18	3.4	2.6	2.0	2.5	3.3
28	55	141	19	2.6	2.4	2.3	3.0	1.0	64	121	23	1.1	1.5	2.5	7.0	1.5	56	126	23	3.6	3.2	2.5	4.5	3.3
29	55	129	18	3.1	2.9	2.5	4.0	1.5	69	97	16	1.0	1.5	2.5	4.5	1.0	52	103	21	3.6	2.7	2.0	2.0	3.5
30	57	109	18	3.1	3.2	2.5	4.0	1.5	62	104	20	1.0	1.0	3.0	7.5	1.0	55	120	21	3.5	1.9	3.0	6.0	3.3

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana
(for Pedigree of entries see table 6)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MLR								DHL								JMR							
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	BS	AS
31	56	124	24	3.2	2.8	2.5	2.0	1.5	72	122	21	1.0	2.0	2.0	5.5	1.5	58	130	23	3.0	2.8	1.5	1.5	3.3
32	57	124	20	2.7	2.7	2.3	3.5	1.0	66	97	20	1.2	3.0	2.0	6.5	2.0	59	99	23	3.4	4.7	1.5	3.5	3.5
33	55	117	19	2.7	2.5	3.0	3.5	1.5	69	85	19	0.8	1.5	2.0	5.5	1.0	62	101	24	3.3	2.1	2.5	4.5	2.5
34	56	130	19	2.8	2.6	2.5	3.0	1.0	71	116	21	1.0	2.0	1.5	5.0	1.5	59	125	22	3.6	3.1	1.5	3.0	4.0
35	49	139	18	2.6	2.7	2.5	3.0	1.5	65	129	21	1.0	2.0	2.0	5.5	1.5	53	136	24	3.4	3.7	2.0	4.5	3.8
36	51	132	20	2.7	2.5	3.0	4.5	1.5	70	123	23	1.1	3.0	2.0	6.0	2.0	65	112	24	3.5	2.1	1.5	2.0	3.0
37	57	132	21	2.7	3.0	3.0	4.0	1.5	71	98	19	0.8	1.5	3.0	7.5	1.0	57	117	24	3.0	2.8	3.0	7.5	3.5
38	56	126	19	2.8	2.9	2.5	3.5	1.0	60	116	21	1.0	2.0	3.0	7.5	1.0	57	110	22	3.4	3.7	2.0	2.0	3.3
39	54	125	17	2.9	2.6	3.0	3.5	1.5	69	112	21	1.1	2.5	3.0	7.0	1.0	59	119	22	3.4	3.6	2.5	4.5	3.3
40	46	105	19	3.3	3.6	2.5	2.5	1.0	71	101	20	1.1	3.5	1.5	4.0	2.5	62	99	19	3.7	5.3	1.0	2.0	4.0
41	55	97	18	2.7	3.0	3.0	2.5	1.5	69	124	23	0.9	2.5	1.0	4.5	1.5	60	125	22	2.9	3.7	1.5	4.5	3.0
42	55	128	20	2.5	2.5	2.5	4.0	1.5	70	108	23	1.0	2.5	1.5	4.5	2.5	60	105	21	3.4	3.6	2.0	6.0	3.5
43	53	127	21	2.8	3.0	3.0	2.0	1.5	72	89	19	0.8	1.5	1.0	1.5	1.0	59	100	20	3.1	2.5	1.0	2.0	3.0
44	54	129	18	3.0	2.7	2.5	3.0	2.0	58	120	17	1.0	1.5	3.0	7.5	1.5	45	163	18	3.4	2.3	3.0	7.5	3.5
45	52	93	19	3.3	3.2	2.5	2.5	1.0	60	91	19	0.7	2.0	2.5	7.0	1.0	45	125	22	2.7	2.7	3.0	6.5	3.0
46	48	126	18	2.8	2.9	2.0	4.5	1.0	57	106	14	0.7	1.5	2.5	6.5	1.0	41	142	21	2.6	2.6	2.5	5.0	3.0
47	50	126	17	2.8	2.9	2.5	3.0	2.0	61	123	15	0.7	1.0	2.5	7.0	1.5	48	141	17	2.6	1.6	2.5	5.5	4.0
48	43	137	17	3.4	3.6	2.5	2.0	1.5	63	144	16	0.8	2.0	2.0	5.0	1.5	49	176	17	2.9	1.4	2.5	0.5	3.3
49	53	150	22	3.5	3.4	3.0	3.0	1.5	62	87	19	0.8	1.5	3.0	8.5	1.0	48	113	21	2.8	2.0	3.0	6.5	2.5
50	55	143	22	2.7	2.8	2.0	3.0	2.5	62	129	16	0.8	1.5	3.0	8.0	1.0	48	131	21	2.9	2.4	3.0	8.0	1.5
51	53	130	17	2.5	2.4	2.5	4.5	1.5	62	129	14	0.8	1.5	1.5	2.0	2.0	51	167	18	2.7	2.5	2.5	1.0	3.8
52	58	133	20	2.9	3.0	2.0	4.0	1.5	57	113	18	0.8	1.5	2.5	2.5	1.5	46	183	25	2.6	2.3	3.0	2.5	2.8
53	58	138	18	2.6	2.5	2.0	3.0	2.0	58	152	19	0.8	1.5	2.0	4.0	1.5	48	179	21	2.9	2.0	2.0	1.5	3.5
54	59	123	19	2.8	2.7	2.0	4.0	1.5	60	158	21	0.8	1.0	1.5	3.0	2.5	55	192	26	2.8	1.9	1.0	0.0	4.0
55	57	133	21	2.6	2.4	2.5	4.5	1.5	60	168	19	0.9	1.5	1.0	2.5	2.0	48	197	24	2.7	2.4	2.0	0.0	3.8
56	57	147	21	2.9	2.9	2.0	3.0	2.5	73	166	21	0.8	1.5	1.0	2.5	2.5	56	192	23	2.4	2.2	1.0	0.0	4.3
57	53	115	22	3.3	3.3	3.0	3.0	1.5	63	165	21	0.8	1.0	1.5	3.0	2.0	56	197	21	2.5	3.0	1.0	0.5	4.5
58	58	136	20	3.3	3.3	2.5	2.0	1.5	62	146	21	0.8	1.5	2.0	2.0	2.0	52	175	22	2.6	1.9	1.0	0.0	3.8
59	50	125	20	3.0	3.3	2.5	3.0	2.0	59	133	16	1.0	1.0	2.0	4.0	1.5	54	130	16	3.4	2.2	2.0	1.0	3.0
60	55	131	19	3.0	3.1	2.0	4.5	1.0	58	154	17	1.0	1.5	1.5	6.0	2.0	49	179	17	3.4	2.2	2.0	3.0	3.8

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana
(for Pedigree of entries see table 6)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MDR										BKR						JPR					
	DF	PH	HL	HD	ETPP	SG	BS	AS	Fe	Zn	DF	PH	HL	HD	SG	AS	DF	PH	HL	HD	ETPP	AS
1	72	135	21	2.2	1.0	1.0	1.0	1.5	77	52	60	165	22	1.0	3.0	5.0	51	120	20	3.0	1.5	3.5
2	54	180	24	2.6	1.2	2.0	1.5	3.3	42	27	59	160	19	2.7	3.0	5.0	53	122	23	3.0	1.5	3.0
3	64	141	21	2.4	1.0	2.0	1.5	2.3	85	59	60	180	14	1.6	3.0	4.0	56	148	24	2.9	2.0	3.0
4	62	113	17	2.5	1.0	2.0	1.0	2.3	68	48	60	130	26	2.2	3.0	3.0	53	120	20	2.9	2.0	3.5
5	59	195	24	4.0	1.8	1.5	2.0	3.8	76	37	64	125	23	1.9	3.0	3.0	58	127	21	3.1	2.0	3.5
6	57	150	24	2.8	1.0	2.5	1.5	2.3	78	42	64	133	26	2.5	2.0	3.0	54	147	25	3.3	2.0	3.5
7	66	133	22	2.6	1.0	1.5	2.0	2.0	206	50	58	145	18	2.2	1.0	3.0	55	131	22	2.8	1.5	3.5
8	67	88	16	2.4	1.0	1.5	1.0	1.5	70	40	62	-	-	-	-	-	55	137	17	2.6	1.0	3.0
9	61	138	19	3.1	1.3	3.0	2.0	3.0	62	45	60	140	21	2.2	3.0	3.0	52	134	25	3.2	2.5	3.5
10	63	150	18	2.7	1.0	2.5	2.5	2.9	40	31	64	-	-	-	-	-	60	172	22	3.3	2.5	3.5
11	54	173	21	2.7	1.2	2.5	1.5	2.5	132	53	64	-	-	-	-	-	57	126	22	3.8	2.5	3.0
12	59	163	22	2.7	1.5	3.0	3.5	2.8	72	40	60	100	18	2.0	1.0	2.5	58	129	22	2.5	2.0	3.0
13	64	159	21	2.7	1.0	2.5	2.0	3.7	89	41	62	-	-	-	-	-	56	149	24	3.2	1.0	3.5
14	64	155	22	2.7	1.3	1.5	1.5	4.0	56	50	59	95	20	2.0	1.0	3.0	51	148	22	2.9	2.0	3.0
15	64	131	17	3.3	1.0	2.5	3.0	2.1	109	51	63	-	-	-	-	-	57	118	23	3.0	3.0	3.5
16	60	140	19	3.0	1.7	3.0	2.5	2.8	171	61	59	120	17	2.0	1.0	2.0	57	147	21	2.5	1.5	3.0
17	56	152	20	2.8	1.3	2.0	1.5	4.5	124	67	62	-	-	-	-	-	52	128	25	3.3	1.5	3.0
18	57	163	25	3.2	1.0	1.0	1.0	4.5	80	63	59	145	26	2.2	1.0	4.0	56	118	20	3.0	2.0	3.5
19	55	168	22	2.8	1.0	3.0	3.5	3.2	53	30	59	130	20	2.1	1.0	4.0	54	130	20	2.9	1.5	3.0
20	47	150	20	2.6	1.2	1.5	1.0	3.3	70	59	58	113	20	2.0	1.0	3.5	54	110	22	2.8	2.0	3.0
21	59	118	20	2.9	1.0	3.0	2.5	2.5	114	65	61	-	-	-	-	-	54	124	22	2.4	1.5	3.0
22	59	150	21	2.5	1.0	2.0	2.0	2.8	98	64	61	-	-	-	-	-	55	143	24	3.3	2.0	4.0
23	69	88	19	3.0	1.3	1.5	2.0	2.0	76	60	62	-	-	-	-	-	56	133	21	3.2	2.0	3.0
24	64	93	21	3.1	1.6	2.5	1.0	3.8	66	56	62	130	21	2.1	1.0	4.0	54	129	21	2.7	1.5	3.5
25	67	95	21	3.1	1.0	2.5	2.0	3.5	117	90	60	-	-	-	-	-	56	124	22	2.9	1.0	3.5
26	70	95	19	2.7	1.6	1.0	2.5	3.4	-	-	60	99	25	2.5	1.0	4.0	54	108	23	3.2	2.5	4.0
27	67	85	18	3.0	1.3	1.0	2.0	2.8	90	82	61	-	-	-	-	-	55	103	20	3.2	2.0	3.0
28	61	93	22	2.8	1.0	3.0	2.0	3.0	124	81	61	-	-	-	-	-	54	109	21	3.7	2.0	4.5
29	66	83	18	3.2	1.0	2.5	3.0	2.0	-	-	62	-	-	-	-	-	58	136	20	3.2	2.0	3.0
30	68	93	18	2.8	1.3	2.5	2.0	2.5	70	73	61	-	-	-	-	-	55	129	22	3.2	2.5	3.0

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana
(for Pedigree of entries see table 6)

Plot size: 1 row x 4 m x 2 reps.

E. no.	MDR										BKR						JPR					
	DF	PH	HL	HD	ETPP	SG	BS	AS	Fe	Zn	DF	PH	HL	HD	SG	AS	DF	PH	HL	HD	ETPP	AS
31	68	100	20	2.6	1.2	2.0	2.0	2.7	89	40	62	-	-	-	-	-	55	119	22	3.1	1.5	3.0
32	38	90	20	3.5	1.5	3.0	1.0	4.0	64	51	61	-	-	-	-	-	52	123	23	3.0	2.0	3.0
33	70	80	21	2.9	1.0	2.5	2.0	1.8	129	49	60	-	-	-	-	-	56	149	23	3.5	2.5	3.5
34	69	108	19	2.9	1.2	2.0	2.0	2.6	136	78	61	90	17	2.6	1.0	3.0	50	147	23	3.5	1.0	3.0
35	64	110	22	3.3	1.3	1.0	1.5	3.5	125	78	58	80	20	2.6	1.0	3.0	50	123	20	3.3	2.5	2.5
36	72	110	21	3.2	1.0	2.0	2.0	2.0	52	69	60	-	-	-	-	-	50	139	20	2.7	1.0	3.0
37	68	103	22	2.6	1.5	3.0	2.0	3.3	67	37	62	90	18	1.9	1.0	3.0	61	120	19	2.9	1.5	3.5
38	59	103	22	3.4	1.2	3.0	1.5	3.4	41	59	60	-	-	-	-	-	53	160	25	2.8	2.5	3.0
39	66	100	21	3.0	1.0	1.5	2.5	3.7	103	51	60	-	-	-	-	-	51	130	27	3.1	2.0	3.0
40	68	93	20	4.1	1.5	1.5	1.5	3.4	48	42	58	135	26	2.8	1.0	4.0	49	142	23	3.5	1.5	3.0
41	70	95	19	2.6	1.0	2.0	1.5	2.5	55	50	54	85	21	2.1	2.0	3.0	56	128	21	3.0	3.5	3.5
42	67	90	22	3.7	1.5	3.0	2.0	4.0	92	74	57	100	18	2.0	3.0	3.0	54	122	22	2.9	2.0	2.5
43	65	98	20	2.5	1.5	2.0	1.0	3.0	85	48	57	155	24	2.8	3.0	3.0	52	177	27	3.2	2.5	3.5
44	52	146	19	3.1	1.0	3.0	3.0	2.3	67	77	59	100	19	1.3	1.0	3.0	53	162	25	3.2	1.5	2.5
45	52	112	22	2.4	1.2	3.0	5.0	3.6	54	39	61	-	-	-	-	-	58	145	20	3.4	2.0	3.0
46	47	140	19	2.3	1.0	3.0	3.5	2.3	73	52	56	110	20	2.0	1.0	3.5	60	111	15	2.3	2.5	3.5
47	55	148	19	2.3	1.0	2.5	3.0	2.9	70	58	61	100	15	2.0	1.0	2.5	57	118	16	2.7	2.5	4.0
48	59	169	16	2.4	1.0	3.0	1.5	2.3	110	74	59	140	20	2.5	3.0	4.0	55	129	19	2.7	2.0	3.0
49	61	93	17	2.4	1.3	3.0	3.0	2.5	89	46	55	108	21	1.8	2.0	2.5	51	112	19	2.5	1.5	3.0
50	58	121	18	2.6	1.0	2.5	3.5	2.1	58	47	59	105	21	2.0	1.0	3.0	51	128	20	2.5	2.5	3.5
51	57	153	18	2.6	1.0	3.0	2.5	2.7	69	90	54	148	19	2.2	3.0	4.0	52	117	19	2.5	2.0	2.5
52	58	123	18	2.3	1.0	3.0	1.5	1.6	54	76	54	165	22	2.3	1.0	4.0	54	133	23	2.2	2.5	3.5
53	52	173	21	2.5	1.7	3.0	1.5	3.3	65	52	59	158	21	2.1	1.0	4.0	49	144	26	3.3	2.5	3.5
54	63	155	22	2.4	1.3	2.0	1.0	2.5	53	48	59	148	24	1.9	1.0	3.5	50	151	23	2.8	2.5	4.0
55	59	178	22	2.9	1.6	2.0	1.0	2.8	74	62	59	145	22	2.1	1.0	3.0	54	133	25	3.1	1.5	3.5
56	65	160	21	2.3	1.3	2.0	1.0	2.4	62	43	61	100	20	2.2	1.0	3.0	54	121	20	2.9	2.0	3.0
57	65	160	21	2.4	1.3	1.0	1.0	2.6	102	52	61	90	22	2.3	1.0	3.0	54	137	29	2.8	1.5	2.5
58	59	153	23	2.7	1.3	1.0	1.0	3.3	88	37	59	145	13	2.6	1.0	2.0	55	152	23	3.2	2.0	3.5
59	60	120	14	2.5	1.0	1.5	1.0	2.0	93	86	61	105	16	1.7	1.0	3.0	51	140	22	3.8	1.5	3.5
60	57	160	19	3.6	1.5	1.5	1.5	2.8	58	41	57	113	18	2.5	1.0	3.5	51	133	22	3.4	2.0	3.5

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana (for Pedigree of entries see table 6).

Plot size: 1 row x 4 m x 2 reps.

E. no.	NDL								LDN										Grand Mean											
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	DM	AS	Fe	Zn	DF	PH	HL	HD	ETPP	SG	BS	DM	AS	Fe	Zn	
1	68	153	20	2.5	2.5	1.0	3.0	3.0	65	137	26	2.6	4.1	1.0	8.0	2.0	60	76	62	152	23	2.2	2.6	1.4	2.1	8.0	2.8	68	64	
2	58	148	23	2.5	3.0	2.0	5.0	2.0	48	138	26	3.0	4.0	2.5	-	3.0	65	59	55	150	23	2.5	2.2	2.3	2.6	-	2.9	53	43	
3	59	151	23	2.6	2.0	2.0	5.0	2.5	61	113	21	3.1	3.1	3.0	-	4.0	94	69	59	144	21	2.4	2.3	2.2	2.9	-	3.0	89	64	
4	67	138	21	2.6	2.5	1.0	4.0	2.0	66	112	19	3.2	3.0	3.0	-	2.0	61	67	61	121	20	2.5	2.2	2.2	2.1	-	2.4	65	57	
5	58	184	23	2.9	2.5	2.5	4.0	3.0	59	142	28	4.0	4.0	2.0	10.0	3.0	54	65	59	158	23	3.0	2.7	2.0	2.6	10.0	3.2	65	51	
6	57	143	21	2.7	2.5	2.5	5.0	2.5	59	149	22	3.3	3.0	3.0	12.0	3.0	95	80	58	143	22	2.6	2.3	2.4	2.8	12.0	2.5	87	61	
7	67	143	22	2.4	2.5	1.0	2.5	2.0	72	122	21	2.9	2.0	3.0	-	3.0	108	87	62	136	21	2.4	2.0	1.7	2.5	-	2.5	157	69	
8	68	136	18	2.8	3.0	1.0	3.0	3.0	66	122	14	2.9	1.2	2.5	7.5	2.0	49	54	62	123	17	2.5	2.0	1.8	2.3	7.5	2.2	60	47	
9	57	137	21	3.7	3.0	2.5	5.5	2.0	62	114	23	3.6	3.0	3.0	7.0	2.0	55	53	57	137	21	2.9	2.4	2.6	4.1	7.0	2.5	59	49	
10	67	144	18	2.7	3.0	1.0	5.0	2.5	63	112	18	3.2	3.0	3.0	-	3.0	66	47	63	137	19	2.6	2.4	2.2	3.1	-	2.6	53	39	
11	50	157	18	2.7	3.0	3.0	3.5	2.5	56	147	28	3.2	3.7	2.5	-	1.0	62	67	56	150	21	2.7	2.6	2.2	2.1	-	2.4	97	60	
12	59	146	22	3.1	3.0	2.0	5.0	2.0	61	158	18	3.4	3.1	3.0	8.0	5.0	69	73	59	146	21	2.6	2.3	2.2	3.3	8.0	3.0	70	57	
13	63	169	21	2.5	3.0	2.0	4.0	2.5	62	151	29	3.3	2.9	3.0	5.0	2.0	84	62	60	163	23	2.7	2.3	2.0	2.3	5.0	2.9	86	51	
14	62	138	26	2.3	3.0	2.0	3.5	2.5	59	151	28	3.5	3.2	2.5	-	3.0	79	70	60	140	22	2.5	2.3	1.6	2.4	-	2.8	67	60	
15	67	130	16	2.6	2.5	1.0	5.0	2.0	63	107	18	3.3	3.1	2.0	-	3.0	108	60	62	125	18	2.8	2.4	2.3	3.5	-	2.5	109	55	
16	69	136	20	2.7	3.0	1.0	1.5	2.5	64	118	19	3.3	4.5	1.5	-	2.0	85	95	60	149	19	2.6	2.5	1.9	2.0	-	2.6	128	78	
17	61	126	21	2.5	3.0	2.0	3.0	3.0	62	114	20	3.5	3.1	3.0	-	3.0	75	58	57	130	21	2.7	2.3	2.2	2.4	-	3.0	99	63	
18	64	133	25	2.7	3.0	1.5	3.5	2.5	59	114	23	3.6	3.2	3.0	5.0	4.0	68	48	59	139	23	2.7	2.2	1.6	2.4	5.0	3.3	74	55	
19	60	154	21	2.4	3.0	2.5	5.0	3.0	63	129	20	3.6	3.2	3.0	8.0	2.0	86	66	57	139	20	2.5	2.2	2.4	4.1	8.0	2.6	70	48	
20	57	139	18	2.6	3.0	2.5	5.0	2.5	57	91	15	3.7	1.6	3.0	14.0	2.0	52	60	53	128	20	2.6	2.1	2.2	4.0	14.0	2.5	61	59	
21	59	118	20	3.4	3.0	2.0	4.0	3.5	67	96	16	2.8	4.0	2.5	5.5	3.0	42	34	58	119	20	2.7	2.4	2.4	3.1	5.5	2.6	78	49	
22	59	154	29	2.5	3.0	2.5	5.0	2.5	58	120	24	3.7	3.3	3.0	10.0	4.0	85	64	58	139	23	2.7	2.3	2.2	2.4	10.0	2.7	92	64	
23	68	104	20	3.0	3.0	1.0	6.5	1.5	68	70	23	2.8	4.3	2.5	-	2.0	95	100	63	104	21	2.8	2.6	1.8	3.9	-	2.4	86	80	
24	66	92	19	3.5	2.5	1.0	5.0	2.0	67	62	23	2.9	3.0	3.0	-	2.0	90	72	61	100	21	2.7	2.5	2.0	3.4	-	2.7	78	64	
25	67	94	21	2.9	3.0	1.0	6.0	1.5	64	74	24	3.1	3.1	1.5	-	3.0	99	66	62	94	21	2.7	2.4	1.8	4.4	-	2.5	108	78	
26	67	108	18	2.8	2.5	1.0	4.0	2.0	64	73	23	3.3	4.4	2.0	12.0	3.0	95	109	63	98	21	2.8	2.9	1.5	4.4	12.0	2.8	95	109	
27	66	89	18	2.7	3.0	1.0	5.0	2.0	65	75	20	2.9	2.4	2.5	9.0	2.0	87	87	62	98	19	2.7	2.2	1.7	3.4	9.0	2.2	89	84	
28	64	96	21	2.6	2.5	1.0	6.5	1.5	66	65	26	3.0	3.7	2.0	7.5	3.0	103	94	60	107	22	2.8	2.3	2.2	4.6	7.5	2.5	113	87	
29	65	83	17	2.4	3.0	1.0	6.5	1.0	71	71	21	2.9	3.0	3.0	4.5	3.0	63	57	62	100	19	2.7	2.3	2.3	4.0	4.5	2.1	63	57	
30	65	118	22	2.4	2.5	1.0	6.5	1.5	63	92	18	3.1	3.4	2.0	4.5	4.0	58	72	61	109	20	2.7	2.2	2.3	5.2	4.5	2.4	64	73	

CHAPTER I: BREEDING

Table 11: Elite joint biofortification nursery, across eight locations- Malnoor, Dhule, Jamnagar, Mandor, Bikaner, Jaipur, New Delhi and Ludhiana (for Pedigree of entries see table 6).

Plot size: 1 row x 4 m x 2 reps.

E. no.	NDL								LDN										Grand Mean											
	DF	PH	HL	HD	ETPP	SG	BS	AS	DF	PH	HL	HD	ETPP	SG	DM	AS	Fe	Zn	DF	PH	HL	HD	ETPP	SG	BS	DM	AS	Fe	Zn	
31	68	113	22	3.2	2.0	1.0	4.5	2.0	63	104	23	3.3	2.6	3.0	5.0	3.0	60	70	63	116	22	2.8	2.1	2.0	3.1	5.0	2.4	74	55	
32	68	98	20	2.9	3.0	1.0	6.5	1.5	69	73	25	3.2	4.0	2.0	9.0	3.0	50	54	58	100	21	2.8	3.0	2.0	4.2	9.0	2.6	57	52	
33	67	93	22	2.5	3.0	1.0	6.0	1.5	57	72	26	3.0	2.4	3.0	5.0	2.0	69	69	62	100	22	2.7	2.1	2.3	4.3	5.0	2.0	99	59	
34	67	122	20	2.8	2.5	1.0	5.0	2.0	66	103	23	3.5	3.8	2.0	8.5	2.0	81	61	62	117	20	2.8	2.3	1.6	3.6	8.5	2.4	108	70	
35	64	124	22	3.0	2.5	1.5	5.5	2.0	59	109	24	3.0	4.0	3.0	-	2.0	55	59	58	119	21	2.8	2.7	1.9	4.0	-	2.5	90	68	
36	66	116	26	2.5	2.5	1.0	5.0	2.0	71	79	27	2.7	2.0	1.5	5.0	3.0	61	48	63	116	23	2.6	2.0	1.8	3.9	5.0	2.4	56	58	
37	68	123	24	1.8	3.0	1.0	6.5	1.5	63	77	24	2.8	2.1	3.0	5.0	2.0	82	71	63	107	21	2.3	2.2	2.4	5.5	5.0	2.4	75	54	
38	63	92	21	2.9	2.5	1.5	5.5	1.5	66	74	23	3.2	3.1	2.0	-	2.0	52	61	59	111	22	2.8	2.5	2.3	4.0	-	2.2	47	60	
39	69	120	22	2.6	2.5	1.0	6.0	2.0	66	93	23	3.0	3.9	2.0	9.0	3.0	80	72	61	114	22	2.7	2.6	2.2	4.7	9.0	2.5	92	61	
40	67	99	21	2.6	3.0	1.0	4.0	2.0	69	84	23	3.6	4.0	2.0	-	2.0	71	61	61	107	21	3.1	3.2	1.5	2.8	-	2.7	60	51	
41	68	114	20	2.4	2.5	1.0	5.0	2.5	66	90	19	2.1	3.6	2.0	7.0	3.0	59	61	62	107	20	2.3	2.8	1.8	3.6	7.0	2.6	57	56	
42	68	99	20	2.7	3.0	1.0	6.5	1.5	67	81	24	3.5	4.0	1.5	7.0	3.0	61	68	62	104	21	2.7	2.7	2.1	4.6	7.0	2.7	77	71	
43	67	101	21	2.6	3.0	1.0	3.0	2.0	66	85	20	2.8	2.7	3.0	0.0	2.0	68	82	61	116	21	2.6	2.4	2.0	1.9	0.0	2.4	77	65	
44	48	139	19	3.0	3.0	3.0	7.0	1.0	44	103	12	2.6	4.5	1.0	7.0	3.0	85	70	51	133	18	2.6	2.4	2.4	5.6	7.0	2.3	76	73	
45	52	111	18	2.5	3.0	3.0	6.0	2.0	56	73	18	2.7	2.8	2.5	-	3.0	102	97	54	107	20	2.5	2.4	2.8	5.4	-	2.4	78	68	
46	48	129	22	2.6	2.5	3.0	6.0	2.0	42	92	13	2.4	2.5	3.0	8.5	4.0	53	42	50	119	18	2.2	2.2	2.4	5.1	8.5	2.5	63	47	
47	59	129	14	2.6	3.0	2.0	4.0	3.0	60	115	18	2.6	2.9	2.5	6.0	2.0	65	63	56	125	16	2.3	2.1	2.2	4.5	6.0	2.7	67	61	
48	59	164	14	2.5	2.0	2.0	4.0	3.0	61	135	20	2.4	3.3	2.5	5.0	2.0	85	77	56	149	17	2.4	2.2	2.5	2.6	5.0	2.6	98	75	
49	56	99	18	2.6	2.5	2.0	6.5	1.0	60	81	18	2.5	3.3	2.5	3.0	4.0	89	73	55	105	19	2.4	2.2	2.6	5.5	3.0	2.2	89	59	
50	55	159	21	2.7	3.0	2.5	6.0	1.5	63	90	17	2.8	3.1	3.0	-	2.0	50	55	56	126	19	2.4	2.3	2.4	5.7	-	2.1	54	51	
51	55	161	19	2.8	2.5	2.0	3.0	3.5	58	112	14	2.5	3.4	2.5	9.0	3.0	72	71	55	139	17	2.3	2.2	2.4	2.6	9.0	2.9	70	80	
52	55	176	19	3.0	2.0	2.0	4.0	2.0	58	133	21	3.2	2.4	2.5	-	2.0	45	61	55	145	21	2.4	2.1	2.3	2.9	-	2.4	49	68	
53	52	179	22	2.5	3.0	3.0	3.0	3.0	45	141	22	3.0	4.0	2.0	-	2.0	36	41	52	158	21	2.4	2.4	2.1	2.6	-	2.8	50	46	
54	57	196	21	2.6	2.5	2.0	2.0	4.0	56	131	20	2.8	4.1	2.5	-	2.0	62	46	57	157	22	2.4	2.3	1.7	2.0	-	3.0	57	47	
55	53	186	19	2.9	3.0	2.5	2.0	4.0	46	141	22	3.1	2.5	2.5	9.0	2.0	81	79	54	160	22	2.5	2.1	1.9	2.0	9.0	2.8	78	70	
56	61	191	26	2.3	2.5	1.5	2.0	4.0	66	140	22	2.7	2.5	3.0	-	2.0	88	50	61	152	22	2.3	2.1	1.6	1.7	-	3.0	75	47	
57	61	189	24	2.5	3.0	1.5	2.0	4.0	66	142	21	2.5	3.9	2.5	5.0	3.0	89	57	60	149	23	2.4	2.4	1.6	1.9	5.0	2.9	95	55	
58	57	173	27	2.6	3.0	2.0	2.0	3.0	62	118	120	2.8	3.5	3.0	5.0	3.0	79	36	58	150	33	2.6	2.4	1.8	1.4	5.0	2.8	84	36	
59	56	136	16	2.8	3.0	2.0	5.0	2.5	54	83	17	3.0	4.0	3.0	9.0	2.0	114	82	55	122	17	2.6	2.3	2.0	2.8	9.0	2.4	103	84	
60	54	137	20	2.7	3.0	2.5	5.0	2.5	46	130	20	3.1	2.9	3.0	5.5	3.0	70	56	53	142	19	2.8	2.3	1.9	4.0	5.5	2.8	64	49	

**CRP
BIOFORTIFICATION
PROJECT**

Mean performance of entries for different traits in CRP Biofortification Parental Line Trial (CRPB PLT) *Kharif-2022* across 6 locations

The trial was conducted using 22 entries including two checks across 6 locations viz., Mandor, Jaipur, Hisar, New Delhi, Jamnagar and Dhule. The performance for days to 50% flowering, plant height (cm), Effective tillers /plant, head length (cm), head girth (cm), seed set (%), and agronomic score. The days to 50% flowering ranged from 46 (Dhanshakti) to 64 (243-BCS-22). The plant height ranged from 102 cm (231-BCS-22) to 178 cm (PPMI 1303). Effective tillers per plant was 1.7 (ICMB 98222) to 3.4 (PCMHFeR17-29). Head length ranged from 15 cm (PCMHFeR17-29) to 26 cm (DDY-4). Head diameter ranged from 2.5 cm (PCMHFeR17-29) to 3.6 (DHBRF 778, 231-BCS-22 and 243-BCS-22). The seed set (%) under open pollination condition ranged from 64 (231-BCS-22) to 87 (PPMI 1303). Agronomic score ranged from 1.9 (243-BCS-22) to 3.2 (PPMI 1303). Grain sample of all test location collected and analyzed for grain nutrient content at ICRISAT. Grain iron content ranged (52 -92 ppm) none of the entry recorded higher in iron content. Grain zinc content ranged (45-56 ppm) none of the entry recorded higher in zinc content compared to best check Dhanshakti (Fe 92 & Zn 56 ppm).

Centre wise brief progress report of CRP Biofortification project *kharif 2022*

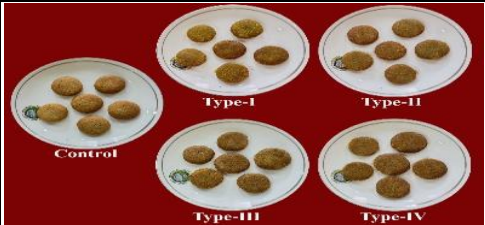
Name of Centre	Activity performed
ICAR-AICRP-PM, Jodhpur	❖ CRP Biofortification Parental Line Trial (CRPBPLT) comprising (22 ent. x 1row x 3rep.) constituted and distributed to associated centers. CRP Biofortification parental Line Trial (CRPBPLT) conducted and observations were taken on different characters like days to 50% flowering, plant height (cm), effective tiller par plant, panicle length (cm), panicle girth (cm), seed set percent and agronomic score. ❖ A total of 335 hybrids along with 8 checks were tested in High Fe Initial Station Hybrid Trials during <i>kharif 2022</i>. Twenty six hybrids were found promising in grain yield as well as iron and zinc content. ❖ 67 station and other centre's inbred lines having high iron and zinc content were maintained for use in different breeding programmes. ❖ Under generation advancement activity, 10 RxR families were advanced from F₆ to F₇ and observations recorded on different ancillary characters ❖ New R x R crosses in diallelic fashion were attempted with the use of 8 promising restorers in order to develop high grain iron and zinc containing breeding material for future hybrid development . ❖ 18 promising A/B pairs were maintained and seed was multiplied. ❖ Hybrid development programme was conducted for early and medium maturity group using 11 promising male sterile line and 35 fertility restorer lines having high Fe and Zn content and 235 F₁ were developed. ❖ Harvested grain samples of the trial received from different locations were further sent to ICRISAT for nutritional analysis. ❖ Biofortified hybrids/varieties were demonstrated in National demonstration <i>kharif 2022</i>.

	❖ Seed increase of promising hybrids with high iron and zinc was done to include in the upcoming AICRP-PM coordinated trial for <i>kharif</i> 2023. ❖ Two publications were also made during the period under this project. <u>Technical Programme 2023</u> ❖ Composition and distribution of CRP Biofortification Parental Line Trial (CRPBPLT) <i>kharif</i> 2023 to associated centers.. ❖ CRP Biofortification parental Line Trial conducted and observation on different aspects will be recorded. ❖ Selection and screening activity will be carried out ❖ Maintenance programme will be carried out for available high Fe and Zn lines and station and national repository A/B Pairs. ❖ Newly developed hybrids will be evaluated along with standard checks in HiFeISHT during <i>kharif</i> 2023 and promising hybrid will be selected and advanced. ❖ Under hybrid development activity more number of A x R crosses attempted, generation advancement activity for RxR crosses will be carried out. ❖ Demonstration of biofortified hybrids/variety along with other in National demonstration <i>kharif</i> 2023 and seed increase programme for proposed hybrids will be carried out.
ICAR-IARI, New Delhi	❖ Identification of low rancid genotypes: Five low rancid (IP 19334, IP 13520, IP 18168, IP 10379, IP 18246), five medium rancid (IP 9406, IP 6869, IP 7762, IP 11311, 81B-P6) and five high rancid (IP 7470, IP 10085, IP 17690, IP 10811 and IP 8949) genotypes were identified. ❖ Inheritance of cream grain colour: Two inbred of cream grain color and three inbreds of grey grain color were used for generating six F₁s and their reciprocal crosses. The segregation pattern of F₂ and backcross generations revealed that the inheritance of cream grain color is governed by a single dominant gene with no maternal inheritance. ❖ Estimation of iron, zinc, phytic acid, protein and total phenols: Three thousand plants from six generations of all crosses were assessed. The iron content ranges from 17.6 ppm to 151.4 ppm and the zinc content ranges from 10.7 ppm to 135.1 ppm. Similarly, protein content ranges from 5.94 % to 15.57%, phytic acid from 0.87 % to 1.15 %, and total phenol ranges from 0.052 % to 0.205 % (% = g/100g). ❖ Evaluation of iron and zinc enriched hybrids: In Intermediate Station Trial, 87 hybrids were tested. 7 hybrids were found promising on the basis of yield, iron and zinc content. Range of average grain yield of promising hybrids was 4213 kg/ha to 4875 kg/ha. Iron and zinc content among these hybrids was >55 ppm and 43 ppm, respectively. ❖ 123 new hybrids were developed using iron and zinc enriched parents. ❖ 218 families of high iron and zinc lines were advanced to F₉ generation. ❖ 21 A/B pairs and 107 restorers having high Fe and Zn were maintained and multiplied. ❖ Entries (PPMI 1286, PPMI 1287, PPMI 1288, PPMI 1289, PPMI 1290, and PPMI 1291) were nominated CRPBPLT K-2022.

	❖ Biofortified pearl millet hybrid Pusa 1201 and its parents were protected in PPVFRA. <u>Technical Programme 2023</u> ❖ Screening of pearl millet lines for iron and zinc ❖ Evaluation of Fe and Zn enriched hybrids developed in <i>kharif</i> 2022 involving parental lines possessing high iron and Zinc content. ❖ More number of hybrids will be generated in <i>kharif</i> 2023 using diverse and high Fe and Zn restorers and A/B pairs. ❖ Nomination of iron and zinc enriched lines will be made to biofortification trials constituted by AICRP-PM.
JAU, Jamnagar	❖ Five promising breeding lines seed Supplied for CRP Biofortification Parental Line Trial (CRPB-PLT) having a higher content of Fe and Zn to the PC Unit-Jodhpur for the testing in <i>kharif</i> 2022 parental lines multi-location trial. ❖ Registered a genetic stock (IC0643982 / INGR22035) designated as J-2642 possessing high Fe and Zn content with the NBPGR. ❖ Total 9 hybrids in summer and 38 hybrids in <i>kharif</i> 2022 season were evaluated based on high Fe & Zn content parental lines and their 318 samples screened for Fe and Zn content at ICRISAT lab. The promising hybrids based on yield and their Fe and Zn level will be tested in next season. ❖ Under breeding materials generation three R × R and two B × B crosses evaluated during <i>kharif</i> 2022 and selected progenies will be evaluated in the next season. ❖ Total 138 breeding materials generated and the experimental crosses developed and maintained were screened for their Fe and Zn content at the ICRISAT lab. The range observed for iron was 35 to 113 ppm and for zinc 17-92 ppm. ❖ Total 420 kg breeder seed produced of biofortified hybrids parent. ❖ Total 672 kg hybrid seed produced of biofortified hybrids GHB 1129, GHB 1225 and GHB 1231. ❖ Total 45 Frontline Demonstrations (FLDs) on biofortified pearl millet hybrids GHB 1129 and GHB 1225 at various locations in Saurashtra and North Gujarat conducted during the summer and <i>kharif</i> 2022. The hybrid GHB 1129 (11.8 %) and GHB 1225 (10.8 %) higher grain yield was recorded over farmers preferred hybrids during <i>kharif</i> 2022 and around 8.6 % grain yield increase was recorded by GHB 1129 against farmers preferred hybrids during summer 2022. <u>Technical Programme 2023</u> ❖ The seed of promising B and R lines having higher content of Fe and Zn will be contribute to sub group leader for the testing in parental line multi-location trial. ❖ Field trial/nurseries of CRPBPLT breeding lines as per the technical program finalized by sub group leader will be conducted and yield and related traits will be recorded and grain as well as straw samples for Fe and Zn determination will be submitted. ❖ New hybrids developed based on high Fe and Zn content parental lines will be evaluated at the station and other locations and promising hybrids based on yield and their Fe and Zn level will be promoted or released.

	❖ The breeding materials generation R × R and B × B crosses will be carried out and existing breeding materials of F₁, F₂, F₃ and advanced generation material will be evaluated and bulk/progenies selected and screened for Fe and Zn content. ❖ The seed increase program during off-season summer nurseries will be undertaken for the promising initial and advanced level hybrids for evaluate them. ❖ Scaling up activities for released biofortified hybrids GHB 1129 and GHB 1231 will be carried out through conducting FLDs during summer and <i>kharif</i> 2023.												
ICAR- AICRP-PM, RARI, Jaipur	❖ CRP Biofortification parental Line Trial (CRPBPLT) consisting 22 entries sent by ICAR- AICRP on Pearl Millet conducted successfully and observation on different character were recorded and data along with grain sample for analysis submitted to PC Unit. ❖ Already developed 2 biofortified hybrids (RHB 233 and RHB 234) under this project. ❖ Maintenance and screening of all available breeding material for quality parameters. <u>Technical Programme 2023</u> ❖ Screening of parental lines and evaluation of Fe and Zn rich hybrids. More number of hybrids will be generated by using diverse and high Fe and Zn restorers and male sterile lines. ❖ Further evaluation of the segregating materials. ❖ Maintenance activity for available male sterile lines and established restorers having high grain iron and zinc will be carried out. ❖ Nomination of iron and zinc enriched lines will be made to bio-fortification trials.												
ICAR- AICRP-PM, MPKV, Dhule	❖ Grain samples were analyzed for nutrient content.<table><tr><th>S. No.</th><th>Particular</th><th>No of Samples</th><th>No of Samples, Fe >70 ppm , Zn >35 ppm</th></tr><tr><td>1</td><td>Breeding Material</td><td>21</td><td>16</td></tr><tr><td>2</td><td>Hybrids</td><td>82</td><td>43</td></tr></table> ❖ 82 new hybrids developed using 8 Male sterile lines and 19 restorer lines having high nutrient content. ❖ 117 hybrids including standard check tested in Station and University Multi location Trials out of these 26 hybrids recorded 11 % to 36 % higher grain yield over best check Phule Aadishakti. ❖ 28 hybrids/population including 4 checks evaluated at 7 locations during <i>kharif</i>-2022. Three hybrids recorded 13 % to 20 % higher grain yield over best check Phule Aadishakti (2266 kg/ha) ❖ Maintenance of biofortified male sterile lines viz., DHLB-15 B/A, DHLB-28 B/A, DHLB 32 B/ A, DHLB 35 B/A, DHLB 36 B/A and DHLB 37 B/A by paired crossing. ❖ Maintenance of 14 promising restorer lines by sib-mating. Viz, DHLBI-1822, DHLBI-1708, DHLBI-1609, DHLBI-21021, DHLBI-21024, DHLBI-21027, DHLBI-21028, DHLBI-21030, DHLBI-21032, DHLBI-21035, DHLBI-21036, DHLBI-21037, DHLBI-21038, DHLBI-21039.	S. No.	Particular	No of Samples	No of Samples, Fe >70 ppm , Zn >35 ppm	1	Breeding Material	21	16	2	Hybrids	82	43
S. No.	Particular	No of Samples	No of Samples, Fe >70 ppm , Zn >35 ppm										
1	Breeding Material	21	16										
2	Hybrids	82	43										

	❖ Advancement of IPS selected during Summer-2022 by sib mating. ❖ B line improvement for Fe/Zn: 6 B x B crosses made during summer-2022. ❖ Growing of F₂ and F₃ of B x B crosses for B line development during summer 2022. ❖ 6 crosses made for R line improvement for higher grain iron and zinc content during summer -2022 and planted in <i>kharif</i> 2022. <table><tr><th>S. No</th><th>Name of Crosse</th><th>S. No</th><th>Name of Crosse</th></tr><tr><td>1</td><td>DHLBI-967 x DHLBI-1822</td><td>4</td><td>DHLBI-1035 x DHLBI-1201</td></tr><tr><td>2</td><td>DHLBI-967 x DHLBI-1201</td><td>5</td><td>DHLBI-1603 x DHLBI-1822</td></tr><tr><td>3</td><td>DHLBI-1035 x DHLBI-1708</td><td>6</td><td>DHLBI-1603 x DHLBI-1201</td></tr></table> ❖ Growing of F₃s of crosses (DHLBI-1822 x DHLBI-967 and DHLBI- 967 x DHLBI-1708) for R line developments having high Fe and Zn content during <i>kharif</i>, 2022. ❖ Selections were made for biofortified R lines from 15 biofortified R lines selected during 2021. <u>Technical Programme 2023</u> ❖ Maintenance of biofortified male sterile lines by paired crossing viz., DHLB-23 B/A, DHLB-28 B/A, DHLB 32 B/ A, DHLB 35 B/A, DHLB 36 B/A and DHLB 37 B/A. ❖ Maintainable Promising restorer lines by sib-mating. Viz, DHLBI-1822, DHLBI-1708, DHLBI-1609, DHLBI-21021, DHLBI-21024, DHLBI-21027, DHLBI-21028, DHLBI-21030, DHLBI-21032, DHLBI-21035, DHLBI-21036, DHLBI-21037, DHLBI-21038, DHLBI-21039. ❖ Development of experimental hybrids: Hybrid will be developed utilizing biofortified male sterile lines and restorers during Summer-2023 and will be tested in <i>kharif</i> 2023 in Station trials, UMLT and SMLT trials. ❖ Advancement of breeding material – B and R improvement: Growing of F₁, F₂, F₃, F₄ generations.	S. No	Name of Crosse	S. No	Name of Crosse	1	DHLBI-967 x DHLBI-1822	4	DHLBI-1035 x DHLBI-1201	2	DHLBI-967 x DHLBI-1201	5	DHLBI-1603 x DHLBI-1822	3	DHLBI-1035 x DHLBI-1708	6	DHLBI-1603 x DHLBI-1201
S. No	Name of Crosse	S. No	Name of Crosse														
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ICAR-AICRP-PM, CCS HAU, Hisar	❖ Evaluation of CRP Biofortification Parental Trial (AICRP): 22 entries were evaluated in three replications. Data were analyzed for different characters and 4 entries were found promising. ❖ CRP Biofortification Station breeding work: 10 new B x B crosses were made, 5 new R x R crosses were made and 30 A x R crosses were developed. ❖ Screening of germplasm for Rancidity trait: Based on lowest Comprehensive peroxide value (CPV) and Comprehensive acid value (CAV) difference values, low rancid genotypes were identified, HMS 74 B and HMS 41B showed lower CPV difference HMS 29B and ICMB 94555 showed lower CAV difference. ❖ RSSC produced and sold 637.6 qtls in 2021, 1700 qtls in 2022 and plan for 8000 qtls in 2023. ❖ All FLDs conducted with biofortified hybrid HHB 299. <u>Technical Programme 2023</u> ❖ Development of pearl millet genotypes/hybrids for high iron/zinc and other micronutrients.																

	❖ The main focus will be to screen available pearl millet germplasm for different nutritional traits in pearl millet. for e.g. mineral traits like Ca, Mg, Fe, Zn, P, K etc ❖ Phenotyping of pearl millet germplasm for rancidity parameters such as acid value and peroxide value.																																																	
CCS HAU, Hisar	Under the project objective 5 and 6 i.e Development of value added products, ready to cook and multigrain mixtures suitable for mid day meal schemes and Socio-Impact studies for assessment of consumer knowledge, preference and preparedness for biofortified products and sensitization and popularization of biofortified products following activities were performed. ❖ Mean scores of organoleptic acceptability of pearl millet based biscuits incorporating amaranth leaves powder <table border="1"><thead><tr><th>Types of Biscuits</th><th>Color</th><th>Appearance</th><th>Aroma</th><th>Texture</th><th>Taste</th><th>Overall Acceptability</th></tr></thead><tbody><tr><td>Control</td><td>8.31±0.50</td><td>8.60±0.46</td><td>8.43±0.46</td><td>8.28±0.45</td><td>8.62±0.40</td><td>8.44±0.13</td></tr><tr><td colspan="7">Amaranth leaves powder</td></tr><tr><td>Type I</td><td>7.45±0.07</td><td>7.69±0.13</td><td>7.75±0.06</td><td>7.36±0.09</td><td>7.66±0.06</td><td>7.58±0.02</td></tr><tr><td>Type II</td><td>7.31±0.05</td><td>8.02±0.20</td><td>7.80±0.15</td><td>7.54±0.07</td><td>7.80±0.16</td><td>7.69±0.02</td></tr><tr><td>Type III</td><td>7.52±0.08</td><td>7.56±0.09</td><td>7.57±0.08</td><td>6.68±0.10</td><td>7.58±0.11</td><td>7.38±0.03</td></tr><tr><td>Type IV</td><td>8.13±0.43</td><td>8.17±0.30</td><td>7.95±0.35</td><td>7.93±0.27</td><td>7.71±0.20</td><td>7.97±0.13</td></tr></tbody></table> Hybrid used: Biofortified HHB 311, Values are mean ± SE of ten independent determinants Control- pearl millet biscuits without amaranth leaves powder Type-I, Type-II, Type-III and Type-IV contained 5%, 10%, 15% and 20% of amaranth leaves powder, respectively. 	Types of Biscuits	Color	Appearance	Aroma	Texture	Taste	Overall Acceptability	Control	8.31±0.50	8.60±0.46	8.43±0.46	8.28±0.45	8.62±0.40	8.44±0.13	Amaranth leaves powder							Type I	7.45±0.07	7.69±0.13	7.75±0.06	7.36±0.09	7.66±0.06	7.58±0.02	Type II	7.31±0.05	8.02±0.20	7.80±0.15	7.54±0.07	7.80±0.16	7.69±0.02	Type III	7.52±0.08	7.56±0.09	7.57±0.08	6.68±0.10	7.58±0.11	7.38±0.03	Type IV	8.13±0.43	8.17±0.30	7.95±0.35	7.93±0.27	7.71±0.20	7.97±0.13
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Type IV	8.13±0.43	8.17±0.30	7.95±0.35	7.93±0.27	7.71±0.20	7.97±0.13																																												
	❖ Proximate composition of amaranth leaves powder incorporated pearl millet biscuits (g/100g, on dry matter basis) <table border="1"><thead><tr><th>Biscuits</th><th>Control</th><th>Amaranth leaves powder (ALP) (20%)</th></tr></thead><tbody><tr><td>Moisture#</td><td>2.13±0.02</td><td>1.73±0.05</td></tr><tr><td>Crude protein</td><td>8.54±0.07</td><td>13.84±0.01</td></tr><tr><td>Crude fat</td><td>27.33±0.16</td><td>24.60±0.20</td></tr><tr><td>Ash</td><td>1.70±0.02</td><td>2.34±0.01</td></tr><tr><td>Crude fiber</td><td>1.04±0.03</td><td>2.13±0.08</td></tr><tr><td>Carbohydrates</td><td>61.39±0.13</td><td>57.09±0.67</td></tr></tbody></table>	Biscuits	Control	Amaranth leaves powder (ALP) (20%)	Moisture#	2.13±0.02	1.73±0.05	Crude protein	8.54±0.07	13.84±0.01	Crude fat	27.33±0.16	24.60±0.20	Ash	1.70±0.02	2.34±0.01	Crude fiber	1.04±0.03	2.13±0.08	Carbohydrates	61.39±0.13	57.09±0.67																												
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❖ **Trainings and Exhibitions**

S No	Programme	Date	Venue	Participants
1.	Training on nutri-garden	11 Feb, 2022	Dhani Kushal, Hisar	70
2.	Group meeting on importance of nutritive diet for womens	28 March, 2022	Dhani Peerawali, Hisar	33
3.	Exhibition Stall of bajra products during Krishi Mela (Kharif) organized by CCSHAU, Hisar	15-16 March, 2022	CCS HAU, Hisar	2600
4.	Demonstration on preparation of bajra biscuits to SC rural women of Hisar District	15 Dec, 2022	CCS HAU, Hisar	30
5.	Lecture on nutritional importance of millets in daily diet to SC rural women of Hisar District	16 Dec, 2022	CCS HAU, Hisar	30
6.	Exhibition stall in Flower show organized by CCSHAU, Hisar to popularize pearl millet recipes/products	19 Dec, 2022	CCS HAU, Hisar	200
7.	Training on preparation of bakery products from pearl millet to rural women of Rohtak	22 Dec, 2022	KVK, Rohtak	30
8.	Lecture on nutritional importance of millets in daily diet to rural women of Rohtak District	22 Dec, 2022	KVK, Rohtak	30
9.	Exhibition Stall of bajra products during Kisan Diwas in memory of Late Sh. Charan Singh, Former prime Minister	23 Dec, 2022	CCS HAU, Hisar	500
				
Training on pearl millet value added products to rural womens		Exhibition on pearl millet value added products during Kisan Diwas		

Technical Programme 2023

- ❖ Development of value added products, ready to cook and multigrain mixtures by utilization of biofortified and non-biofortified pearl millet hybrids/ varieties for product development.
- ❖ Nutritional analysis of developed value-added products.
- ❖ Trainings, lectures, demonstrations, surveys etc. for popularization of pearl millet products.
- ❖ Socio-Impact studies for assessment of consumer knowledge, preference and preparedness for biofortified products and sensitization and popularization of biofortified products.

CHAPTER I: BREEDING

Table 1: CRP Biofortification parental line trial (CRPB-PLT) *kharif*-2022 across 6 locations- Mandor, Jaipur, Hisar, New Delhi, Jamnagar and Dhule.

Experimantal details:No. of entries-22, row-1, replications-3

S. No.	Entry name	Location																																					
		Mandor										Jaipur								Hisar										New Delhi									
		DF	PH	PP	HL	HD	SS	AS	Fe	Zn	PH	PP	HL	HD	AS	Fe	Zn	DF	PH	PP	HL	HD	SS	AS	Fe	Zn	DF	PH	PP	HL	HD	SS	AS	Fe	Zn				
1	DDY-1	59	142	2.3	21	2.5	78	1.8	46	46	137	2.3	25	2.6	2.3	32	34	56	158	3.3	27	3.1	90	3.5	69	58	55	145	2.7	18	3.1	75	2.0	70	62				
2	DDY-2	61	100	1.7	19	3.1	67	2.0	39	37	124	2.3	25	3.3	4.0	38	31	54	144	3.5	24	3.5	98	4.5	76	46	58	160	2.7	21	3.2	75	2.0	70	57				
3	DDY-3	56	116	2.5	17	2.4	73	2.0	29	33	128	1.3	23	2.7	3.3	40	29	56	135	4.1	22	3.7	93	3.8	63	45	54	167	3.0	16	2.8	75	2.0	54	40				
4	DDY-4	61	90	1.8	22	3.2	53	1.5	31	30	92	1.0	33	3.4	3.3	42	31	51	73	3.3	28	3.7	70	3.5	71	46	56	138	3.0	23	2.7	75	2.3	66	53				
5	J-2644	61	117	2.5	16	2.6	82	2.3	47	36	128	1.0	25	3.1	3.3	55	51	46	123	5.2	19	3.2	88	3.8	74	51	55	173	2.7	20	2.9	77	2.7	58	50				
6	86-SB-22	59	116	2.2	23	2.7	85	2.5	44	27	111	1.0	22	3.1	3.0	46	40	72	112	3.7	27	3.6	80	3.5	95	47	56	155	2.3	21	3.2	77	3.3	97	50				
7	231-BCS-22	63	93	1.7	22	3.3	53	1.0	55	51	97	1.0	25	4.3	3.0	58	53	52	75	3.3	24	3.8	70	3.0	98	63	56	112	2.7	21	2.8	73	2.0	108	81				
8	239-BCS-22	59	115	2.2	18	2.6	78	1.7	47	37	112	1.3	17	3.2	3.0	53	43	59	113	5.3	27	4.0	75	3.5	99	70	56	165	3.0	20	2.9	75	2.7	110	68				
9	243-BCS-22	67	87	1.5	16	2.8	48	1.0	64	46	94	1.0	18	4.2	2.7	55	49	73	90	4.5	21	3.7	100	3.8	93	52	51	123	3.0	17	2.8	73	2.0	-	-				
10	PPMI 1302	58	132	1.8	17	2.5	73	1.8	57	43	116	2.0	16	2.8	3.3	52	46	70	185	5.0	26	3.3	95	3.5	90	50	54	160	2.7	19	2.7	75	3.3	96	75				
11	PPMI 1303	53	153	2.0	24	3.0	92	2.3	39	30	170	2.3	23	3.3	4.7	53	43	64	163	3.7	28	3.9	78	3.5	73	47	53	180	2.7	19	2.9	77	3.0	84	77				
12	PPMI 1304	60	137	2.3	18	2.7	77	2.0	64	42	175	1.0	25	3.3	3.0	61	37	73	96	2.3	19	3.4	95	4.0	74	48	46	177	3.0	20	2.8	72	2.3	128	92				
13	DHBRF 771	59	158	2.3	22	2.7	83	2.0	43	28	168	2.0	24	3.3	3.0	39	34	58	198	3.3	26	3.8	90	4.0	78	47	56	137	2.7	24	3.2	73	2.3	80	59				
14	DHBRF 774	53	148	2.5	23	3.1	80	2.3	31	28	139	2.0	23	3.4	3.0	43	60	48	191	6.2	27	3.7	75	3.5	87	49	52	133	2.0	18	3.0	75	2.0	71	60				
15	DHBRF 776	53	141	2.0	25	3.0	85	2.5	35	32	147	2.0	22	3.5	3.7	51	46	50	169	5.3	24	3.5	80	3.5	84	51	56	152	2.7	19	2.7	78	2.7	67	55				
16	DHBRF 778	55	133	2.2	20	3.0	83	2.2	44	38	153	1.0	18	4.0	3.3	57	65	50	186	5.7	25	4.0	93	4.0	69	52	54	170	2.7	18	2.9	75	2.3	89	76				
17	DHBRF 779	57	144	2.2	21	2.8	83	2.2	31	28	178	3.0	28	3.3	3.0	34	40	60	178	5.5	29	4.0	90	4.0	75	44	57	167	2.7	21	3.2	77	3.0	59	42				
18	PCMHFeR17-5	63	128	1.7	16	2.4	83	1.8	51	35	169	1.0	23	3.1	3.0	59	45	57	200	3.3	29	4.1	95	4.5	-	-	55	150	3.0	22	3.0	75	2.0	102	58				
19	PCMHFeR17-8	60	123	2.2	19	2.6	82	1.5	35	34	156	1.0	25	2.8	3.0	58	44	64	151	4.0	25	3.6	95	4.5	100	59	53	163	2.3	24	3.0	75	2.7	80	57				
20	PCMHFeR17-29	55	93	3.2	14	2.3	73	2.3	44	39	73	3.0	14	2.3	3.0	65	55	62	153	6.5	18	3.0	90	3.5	84	54	55	130	2.3	18	2.4	70	2.3	133	80				
21	ICMB 98222 (C)	60	109	1.7	14	2.5	70	1.5	47	40	130	2.0	15	2.8	3.3	77	63	-	-	-	-	-	-	-	-	52	137	2.0	21	2.8	73	1.7	123	87					
22	Dhanshakti (C)	43	157	2.3	24	2.9	87	2.5	44	34	139	1.0	16	2.4	3.0	93	65	51	174	6.0	25	3.8	93	4.5	100	57	50	155	2.3	21	2.8	75	2.3	119	88				

Cont...

CHAPTER I: BREEDING

Table 1: CRP Biofortification parental line trial (CRPB-PLT) *kharif*-2022 across 6 locations- Mandor, Jaipur, Hisar, New Delhi, Jamnagar and Dhule.

Experimantal details:No. of entries-22, row-1, replications-3

S. No.	Entry name	Location																											
		Jamnagar										Dhule										Grand Mean							
		DF	PH	PP	HL	HD	SS	AS	Fe	Zn	DF	PH	PP	HL	HD	SS	AS	Fe	Zn	DF	PH	PP	HL	HD	SS	AS	Fe	Zn	
1	DDY-1	54	176	4.5	23	2.5	85	4.2	63	42	57	146	3.3	20	2.8	70	1.7	61	43	56	151	3.1	22	2.8	80	2.6	57	47	
2	DDY-2	59	132	2.0	23	2.8	80	3.0	75	45	55	116	1.3	22	3.3	67	1.3	63	30	57	129	2.3	23	3.2	77	2.8	60	41	
3	DDY-3	50	162	3.4	21	2.6	80	3.7	51	37	49	140	2.0	17	2.8	53	1.0	47	31	53	141	2.7	19	2.8	75	2.6	47	36	
4	DDY-4	57	121	2.1	24	3.0	69	2.7	82	51	53	108	3.3	25	3.5	77	1.3	58	35	56	104	2.4	26	3.3	69	2.4	59	41	
5	J-2644	53	185	4.0	20	3.2	92	4.3	75	48	55	170	1.7	18	2.9	77	2.0	60	42	54	149	2.8	20	3.0	83	3.1	62	46	
6	86-SB-22	52	147	1.8	28	3.3	85	4.0	87	44	52	135	2.3	23	3.3	83	2.3	69	28	58	129	2.2	24	3.2	82	3.1	73	39	
7	231-BCS-22	56	116	2.5	24	3.9	65	2.5	84	56	52	121	3.0	23	3.6	60	1.3	82	47	56	102	2.4	23	3.6	64	2.1	81	59	
8	239-BCS-22	54	177	2.9	20	2.4	79	3.5	63	39	54	143	1.0	20	2.9	63	1.3	71	36	57	138	2.6	20	3.0	74	2.6	74	49	
9	243-BCS-22	67	118	1.5	16	4.1	70	2.5	88	47	60	113	2.0	18	4.0	40	1.0	106	51	64	104	2.2	18	3.6	66	1.9	81	49	
10	PPMI 1302	51	172	2.2	17	2.7	77	3.3	70	47	52	134	2.3	17	2.9	73	1.7	80	44	57	150	2.7	19	2.8	79	2.8	74	51	
11	PPMI 1303	50	203	3.7	22	2.9	91	3.8	82	48	51	199	2.0	24	3.6	97	2.0	57	37	54	178	2.7	23	3.3	87	3.2	65	47	
12	PPMI 1304	54	187	2.1	21	3.1	89	4.2	81	34	55	167	1.7	20	3.3	73	1.0	72	34	58	156	2.1	21	3.1	81	2.8	80	48	
13	DHBRF 771	53	202	2.6	23	3.1	83	4.0	64	42	52	191	1.3	25	3.4	87	2.7	50	29	56	176	2.4	24	3.2	83	3.0	59	40	
14	DHBRF 774	47	188	3.1	27	3.2	87	3.8	61	38	51	181	2.3	23	3.4	80	2.3	63	27	50	164	3.0	23	3.3	79	2.8	59	43	
15	DHBRF 776	51	192	3.1	24	3.3	83	3.5	68	42	50	185	2.0	22	3.6	93	2.7	51	28	52	164	2.8	23	3.3	84	3.1	59	42	
16	DHBRF 778	48	194	1.9	24	3.6	84	3.7	67	42	52	171	1.7	21	3.9	87	2.0	66	33	52	168	2.5	21	3.6	84	2.9	65	51	
17	DHBRF 779	50	193	2.9	25	3.3	83	4.3	60	39	51	178	3.0	22	3.2	87	2.3	42	26	55	173	3.2	24	3.3	84	3.1	50	36	
18	PCMHFeR17-5	57	187	2.5	21	2.7	88	3.8	88	44	56	170	1.0	20	2.7	83	1.3	70	32	58	167	2.1	22	3.0	85	2.8	74	43	
19	PCMHFeR17-8	52	202	3.3	23	2.8	91	3.3	65	42	52	163	2.3	23	3.0	70	1.3	67	37	56	160	2.5	23	3.0	83	2.7	68	45	
20	PCMHFeR17-29	46	150	3.6	16	2.6	63	2.2	87	53	51	125	2.0	14	2.5	80	1.3	79	45	54	121	3.4	15	2.5	75	2.4	82	55	
21	ICMB 98222 (C)	49	175	1.7	19	3.0	79	2.8	117	46	49	138	1.3	17	3.1	77	1.0	96	37	53	138	1.7	17	2.8	75	2.1	92	55	
22	Dhanshakti (C)	41	200	2.7	23	3.0	75	2.7	106	54	45	187	2.7	20	3.1	87	1.3	89	42	46	169	2.8	22	3.0	83	2.7	92	56	

DF: Days to 50% flowering, PH: Plant height (cm), PP: Panicle/Plant, HL: Head length (cm), HD: Head diameter, SS: seed set (%), AS:

TRIALS MONITORING REPORT

CHAPTER I: BREEDING

ONLINE MONITORING 2022

Online monitoring done by Dr. C. Tara Satyavathi, Project Coordinator, Dr. Vikas Khandelwal, Senior Scientist, PC Unit, Dr. R.C. Meena, Assistant Professor, PC Unit, Dr. Anil Kumar, Principal Scientist, CCSHAU, Hisar, Dr. Raj Kumar P. Juneja, Assistant Research Scientist, RS, JAU, Jamnagar, Dr. S. Chandra Nayak, Professor, UOM, Mysore.

Name of Centre	Date	Time
ARS Fathepur	13 th September, 2022	11:00 am
ARS, Tabiji	16 th September, 2022	04.00 pm
JAU, Jamnagar	17 th September, 2022	03:30 pm
Kaveri, Dehgam	19 th September, 2022	11.00 am
Tierra Agrotech	19 th September, 2022	03.00 pm
Rasi Seeds	19 th September, 2022	03:30 pm
Seed works, Jaipur	20 th September, 2022	11:00 am
Kamadgiri Crop Sci., Mathura	20 th September, 2022	03.30 pm
SKRAU, Bikaner	20 th September, 2022	04:00 pm
ARS, Perumallapalle & RRS, Bawal	21 st September, 2022	03.00 pm
NARP, Aurangabad	27 th September, 2022	10.30am
PAU, Ludhiana	27 th September, 2022	11.30 am
RRS, AAU, Anand	27 th September, 2022	03.30 pm
RVSKVV, Gwalior	28 th September, 2022	10:30 am
RARI, Durgapura	28 th September, 2022	03.30 pm
ARS, SDAU, S.K. Nagar	29 th September, 2022	10:30 am
Hytech Seed India Pvt. Ltd.	29 th September, 2022	11:30 am
TNAU, Coimbatore	30 th September, 2022	10:30 am
CCS HAU, Hisar	10 th October, 2022	04:30 pm
MPKV, Dhule	11 th October, 2022	10:30 am
ANGRAU, Ananthapuram	11 th October, 2022	03.30 pm
UAS, Vijayapur	12 th October, 2022	10:30 am
RLBCAU, Jhansi	12 th October, 2022	03.30 pm

CHAPTER II

AGRONOMY

AGRONOMY

The agronomical trials conducted at different locations under All India Coordinated Research Project on Pearl Millet are presented in Table II.1. The plot history and agronomical operations carried out in these trials are briefly presented in Table II.2.

PMAT 1: Response of pearl millet advance hybrids and/or populations to different levels of nitrogen

Response of different advance hybrid entries (early, medium and late) under different levels of nitrogen in different Zones was studied. Trial designated as PMAT 1a, 1b & 1d were conducted during *Khariif* and *summer* seasons in Zone A1, A & B.

PMAT 1a: Performance of advance hybrids to nitrogen levels in Zone A₁

The trial was conducted at two locations *i.e.* Bikaner & Mandor. Two advance hybrid entries MH 2553 and MH 2555 were tested for their response to four N levels (0, 20, 40 and 60 kg N/ha) in comparison with four hybrid checks *i.e.* HHB 67 (Imp.), MPMH 21, HHB 223 and RHB 177 (c). Thus, 24 treatment combinations (Six entries and four levels of nitrogen) were evaluated in split plot design, keeping N in main plots and entries in sub-plots. All the treatments were replicated for three times. The observations recorded on grain and stover yields along with other parameters are presented in Table II.3. The location performance of grain and stover yield of these advance entries at different N levels and against Zonal checks are described in the following paragraphs.

1.1 Bikaner: The grain yield was significantly increased with successive increase in dose of Nitrogen (N) from 0 to 40 kg/ha whereas, stover yield was found significantly superior also up to 40 kg N/ha over control and 20 kg N/ha and both these lower doses were found statistically at par. Maximum grain yield (24.64 q/ha) and dry stover yield (54.56 q/ha) were recorded with the application of 60 kg N/ha which was found to be 25.7, 16.2 and 4.7 percent higher in grain and 25.1, 26.2 and 6.0% more in dry stover yield compared to the grain and dry stover yield obtained by applying 0, 20 and 40 kg N/ha, respectively. The advance hybrid entry MH 2553 (24.45 q/ha) produced significantly higher grain yield than all the checks except RHB 223 (22.98 q/ha). However stover yield in MH 2555 (57.58 q/ha) was found significantly superior than all the checks. The test weight was also found maximum in the advance entry MH 2555 (12.2 g) which was followed by the check HHB 67 Imp. (12.1 g) was found lowest MH 2553 (10.8 g).

1.2 Mandor: The advance hybrid entries MH 2553 (18.81q/ha) and MH 2555 (18.16 q/ha) were found statistically at par but produced significantly higher grain yield than all the checks except RHB 223 (17.95 q/ha) and RHB 177 (17.36 q/ha). However, stover yield was found statistically at par in both the advance entries in comparison to all the checks. The test weight was found highest in the check RHB 177 (8.6 g) which was statistically at par with the advance entry MH 2555 (8.3 g) but significantly superior than all the checks and entry MH 2553.

The grain yield was significantly increased with successive increase in dose of Nitrogen (N) from 0 to 40 kg/ha whereas, stover yield was found significantly superior also up to 40 kg N/ha over control and 20 kg N/ha and both these lower doses were found statistically at par. Maximum grain yield (20.14 q/ha) and dry stover yield (42.12 q/ha) were recorded with the application of 60 kg N/ha which was found to

be 50.4, 23.3 and 8.2 percent higher in grain and 48.7, 22.3 and 13.0% more in dry stover yield compared to the grain and dry stover yield obtained by applying 0, 20 and 40 kg N/ha, respectively.

Zonal Performance- Zone A1

The mean data of two locations revealed that the highest grain yield was recorded at 60 kg N/ha (22.39 kg/ha) which was 35.7, 19.3 and 5.9 percent higher compared to the grain yield obtained by applying 0, 30 and 60 kg N/ha, respectively whereas, stover yield was improved to the tune of 34.3, 24.4 and 8.9%. The days to 50% flowering did not vary with the application of 20, 40 and 60 kg N/ha over the control. However, the test weight was quite improved at 60 kg N/ha (10.2 g) over the control (9.3 g). The mean grain yield in entries MH 2553 and MH 2555 (21.63 q/ha & 20.77 q/ha) were found quite superior over the checks HHB 67 Imp. (17.15 q/ha) and MPMH (18.39 q/ha) but almost at par with other two checks *i.e.* RHB 223 (20.47 q/ha) and RHB 177 (19.70 q/ha). The stover yield was recorded highest in MH 2555 (47.81 q/ha) which was found quite superior than all the checks (34.90 to 42.34 q/ha) and other advance hybrid entry MH 2553 (43.94 q/ha). The test weight was also found maximum in the advance entry MH 2555 (10.2 g) which was followed by the check HHB 67 Imp. (10.0 g) & lowest in MH 2553 (9.4 g).

PMAT 1b: Response of advance medium and late hybrid entries to nitrogen levels in Zone A

The trial was conducted at three locations *viz.* Jaipur, Hisar, Jamnagar and New Delhi. Two advance hybrid entries *i.e.* MH 2577 and MH 2580 were tested for its response to four N levels (0, 30, 60 and 90 kg N/ha) in comparison with three hybrid checks *i.e.* 86M86, KBH 108 and MP 7792(c). Thus, 20 treatment combinations (Five entries and four levels of nitrogen) were evaluated in split plot design, keeping N in main plots and entries in sub-plots. All the treatments were replicated for three times. The observations recorded on grain and stover yields along with other parameters are presented in Table II.4 and II.5. Location-wise performance of grain and stover yield of these advance entries at different N levels and against Zonal checks are described in the following paragraphs.

1.2 Hisar: The grain and dry stover yield were increased with successive increase in dose of Nitrogen (N) from 0 to 90 kg/ha. Maximum grain yield (39.32 q/ha) recorded with the application of 90 kg N/ha which was found to be 45.3, 21.9 and 7.4 percent higher compared to the grain yield obtained by applying 0, 30 and 60 kg N/ha, respectively whereas, stover yield was improved to the tune of 39.2, 18.8 and 7.0%. The advance hybrid entry MH 2577 (35.97 q/ha) produced significantly higher grain yield than the check 86M86 (32.29 q/ha) and MP 7792 (31.99 q/ha) but it was at par with the check KBH 108 (35.22 q/ha). The test weight in all the checks (12.0-12.5 g) was found significantly higher as compared to both the advance hybrid entries (11.2-11.5 g).

1.3 Jamnagar: The advance hybrid entry MH 2577 (37.89 q/ha) produced significantly higher grain yield than the checks 86M86 (27.42 q/ha), KBH 108 (27.39 q/ha) and MP 7792 (26.96 q/ha) but MH 2580 (25.53 q/ha) could not surpass the yield of other three checks. The stover yield was found statistically lowest in the advance hybrid entry MH 2577 (54.63 q/ha) as compared to all the three checks (59.57-68.85 q/ha) and entry MH 2580 (59.65 q/ha). The grain yield was significantly higher at 60 and 90 kg N/ha compared to the control but 60 kg N/ha remained at par with 30 kg N/ha. The stover yield increased significantly up to 60 kg N/ha (65.27 q/ha) but remained at par with 90 kg N/ha (68.80 q/ha). The hybrid check KBH108 (228.3 cm) produced significantly taller plants than two advance hybrid entries and checks. The entry MH 2577 (11.9 g) recorded significantly highest test weight compared to the other advance hybrid entry and all the checks.

1.4 Jaipur: Maximum grain yield (31.57 q/ha) recorded with application of 90 kg N/ha was found significantly higher over the control (17.43 q/ha) and 30 kg N/ha (25.97 q/ha) but remained at par with 60 kg N/ha (30.17 q/ha). Significantly higher stover yield (78.71 q/ha) was also obtained with application of 90 kg N/ha than 0 and 30 (47.16 and 67.46 q/ha) but at par with 60 kg N/ha (77.47 q/ha). The performance of both the advance entries MH 2577 (29.91 q/ha) and MH 2580 (30.86 q/ha) in terms of grain yield was found significantly superior than all the three hybrid checks 86M86 (24.55 q/ha), KBH 108 (22.35 q/ha) and MP 7792 (23.76 q/ha). The stover yield in the advance hybrid entry MH 2580 (78.53 q/ha) was found significantly superior over all the three checks (59.92-63.27 q/ha) and other advance hybrid entry (73.71 q/ha). The test weight was found significantly higher in the advance hybrid entry MH 2580 (14.1 g) than all the three checks and another advance hybrid entry. Days taken to 50% flowering were significantly higher in the check KBH 108 (60.6 days) than both the advance hybrid entries MH 2580 (53.1 days) and MH 2577 (58.5 days).

New Delhi: The performance of both the advance entries MH 2577 (30.43 q/ha) and MH 2580 (32.12 q/ha) in terms of grain yield was found significantly superior than all the three hybrid checks 86M86 (26.84 q/ha), KBH 108 (25.03 q/ha) and MP 7792 (23.13 q/ha). The stover yield in the advance hybrid entry MH 2580 (83.71 q/ha) was found significantly superior over all the three checks (64.34-66.56 q/ha) and other advance hybrid entry (76.19 q/ha). Maximum grain yield (33.39 q/ha) recorded with application of 90 kg N/ha was found significantly higher over the control (18.23 q/ha) and 30 kg N/ha (26.70 q/ha) but remained at par with 60 kg N/ha (31.72 q/ha). Significantly higher stover yield (85.32 q/ha) was also obtained with application of 90 kg N/ha than 0 and 30 (47.88 and 70.21 q/ha) but at par with 60 kg N/ha (82.39 q/ha). The advance entry MH 2580 (234.7 cm) produced significantly taller plants than other advance hybrid entry and two checks. The entry MH 2580 (11.4 g) recorded significantly highest test weight compared to all the checks.

Zonal performance – Zone A

The mean data revealed that advance hybrid entry MH 2577 (33.55 q/ha) was found highest grain yielder as compared to all the three checks 86M86(27.78 q/ha), KBH 108 (27.50 q/ha) and MP 7792(26.46 q/ha) and another advance entry MH 2580 (30.51 q/ha). The dry stover yield was found superior in the advance entry MH 2480 (78.41 q/ha) and MH 2577 (75.32 q/ha) but quite superior over the checks three checks 86M86(71.09 q/ha), KBH 108 (73.91 q/ha) and MP 7792(69.31 q/ha). Maximum grain (34.50 q/ha) and stover (85.13 q/ha) yields were recorded with the application of 90 kg N/ha and it produced 63.4, 21.7 and 5.5% more grain yield whereas, stover yield was 51.3, 18.9 and 4.5% higher over application of 0, 30 kg and 60 kg N/ha, respectively. Days taken to 50% flowering were not influenced with increasing nitrogen levels over control whereas; advance hybrid entry MH 2480 took minimum number of days for 50% flowering (48.2 days). Total tillers and effective tillers/plant were recorded higher in the check KBH 108 (3.8 and 2.8). The test weight in both the entry *i.e.* MH 2577 (11.5 g) and MH 2580 (11.6 g) was recorded higher as compared to all the checks (10.9-11.3 g).

PMAT 1d: Response of advance summer hybrid entries to nitrogen levels – Zone A & B

The trial was conducted at three locations *i.e.* Aurangabad, Jamnagar & Dhule in Zone A and Zone B. Three advance summer hybrid entries *viz.*, MSH 371, MSH 373 and MSH 377 were tested for its response to three nitrogen levels (60, 90 & 120 kg N/ha) in comparison with the national checks 86M64, Proagro 9444 and Nandi 75. Thus, 18 treatment (6 hybrids and 3 nitrogen levels) combinations were evaluated in split plot design (Nitrogen in main plot and entries in sub-plots) with three replications. The observations recorded on grain and stover yield along with other parameters are presented in Table II.6 to II.8. Centre wise performance of grain and fodder yield of these hybrids at different nitrogen levels are discussed in the following paragraphs.

1.5 Aurangabad: The grain as well as stover yield in the advance entry MSH 371 (39.15 & 73.70 q/ha, respectively) was found significantly higher in comparison to all the three checks 86M64 (32.81 & 59.59 q/ha, respectively), Proagro 9444 (32.43 & 60.86 q/ha, respectively) and Nandi 75 (29.03 & 53.76 q/ha, respectively) and other two advance entries MSH 373 (34.27 & 62.72 q/ha, respectively) and MSH 377 (34.43 & 60.93 q/ha, respectively). The increasing levels of N from 60 kg/ha (27.73 q/ha) to 90 kg N/ha (33.39 q/ha) and 120 kg/ha (39.94 q/ha) bring out significant improvement in the grain yield. The stover yield also followed the trend of grain yield.

1.6 Dhule: Increasing levels of N up to 120 kg/ha (41.88 q/ha) caused significant improvement in the grain over the 60 kg N/ha (36.67 q/ha) and 90 kg N/ha (38.70 q/ha). The stover yield was also found significantly higher at the maximum dose of 120 kg N/ha (69.11 q/ha) as compared to 60 kg N (60.51 q/ha) & 90 kg N/ha (63.86 q/ha). The new advance hybrid entry MSH 377 (45.60 q/ha) performance in terms of grain yield was found significantly superior over 86M64 (35.41 q/ha), Proagro 9444 (37.70 q/ha) and Nandi 75 (36.71 q/ha). Similar trend of grain yield was observed in the stover yield also. The yield attributing traits *viz.* effective tillers/plant and test weight were found significantly superior in the entry MSH 377 in comparison to the three checks. The plant height was recorded significantly higher in the check Nandi 75 (215.1 cm) than all the advance entries and checks.

1.7 Jamnagar: The highest grain yield was recorded with 120 kg N/ha (38.23 q/ha) but it remained at par with 60 (31.53 q/ha) & 90 kg N/ha (35.65 q/ha). The stover yield among 90 & 120 kg N/ha remained at par but highest dose of 120 kg/ha produced significantly higher stover yield than 60 kg N/ha. The grain yield was recorded significantly higher in advance entry MSH 371 (41.47 q/ha) over all the three checks Proagro 9444 (32.64 q/ha) and Nandi 75 (36.11 q/ha) and 86M64 (30.26 q/ha). The stover yield in the entry MSH 371 was found significantly superior over all the two checks Proagro 9444 and 86M64 and advance entry MSH 373. The test weight in the hybrid entry MSH 373 (10.9 g) was found significantly higher than all the checks 86M64 (10.4 g), Proagro 9444 (9.2 g) and Nandi 75 (10.3 g).

National performance

The entry MSH 371 (40.37 q/ha) and MSH 377 (39.45 q/ha) produced higher grain yield over the checks Proagro 9444 (34.26 q/ha) and Nandi 75 (33.95 q/ha) and 86M64 (32.83 q/ha) and MSH 373 (34.96 q/ha). The dry fodder yield was found superior in the entry MSH 371 (69.28 q/ha) and MSH 377 (67.26 q/ha) than the checks Proagro 9444 (59.22 q/ha), Nandi 75 (58.68 q/ha) and 86M64 (54.43 q/ha). The grain yield at the highest level of 120 kg N/ha was found 25.1 and 11.4% superior over 60 and 90 kg N/ha, whereas, the stover yield was to the tune 22.7 and 11.1%. The test weight among all the advance entries was comparable to the three checks 86M64, Proagro 9444 and Nandi 75.

PMAT 2: Moisture conservation through polymers and crop residues under rainfed conditions

The field experiment aimed to study the effect of polymers and crop residues on the productivity, water use efficiency and microbial count of pearl millet was started during *Kharif*, 2020 at two locations of Zone A1 (Mandor and Bikaner), four locations in Zone A (Jaipur, Jamnagar, New Delhi and Hisar) and four locations in Zone B (Aurangabad, Coimbatore, Vijayapur and Dhule). The performance of hybrid MPMH 17 in Zone A1, Zone A and Zone B was evaluated with ten different hydrogel and mulching treatments *i.e.* T₁: Control (RDF), T₂: T₁+Crop residue mulch @ 5.0 t/ha after 10-15 DAS, T₃: T₁+ Pusa Hydrogel dry application @ 5.0 kg/ha, T₄: T₁+ SPG 1118 dry application @ 5.0 kg/ha, T₅: T₁+ Pusa Hydrogel slurry application @ 5.0 kg/ha, T₆: T₁+ SPG 1118 slurry application @ 5.0 kg/ha, T₇: T₃+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS and T₈: T₄+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS, T₉: T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS and T₁₀: T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS. Ten treatments were replicated three times in RBD. Data on ancillary characters, yield attributes, yield and water use efficiency are presented in Table II.9 to II.36.

2.1 Bikaner: The data presented in the Table II.9 to 14 exhibited at par performance in the treatments T₈, T₇, T₉, T₃, T₄ and T₁₀ but T₈ (30.27 q/ha) was found significantly superior over all the remaining treatments (21.00-25.37 q/ha). The stover yield was also found significantly highest in T₈ treatment (59.07 q/ha) over all the treatments. On pooled data of three years the best treatment produced 42.3% and 27.5% higher grain and stover yield as compared to control. The gross returns were also recorded highest in the T₈ treatment (Rs. 95758/ha) whereas, net returns (Rs. 56475/ha) and BC ratio (3.28) were maximum in the T₅ (T₁+ Pusa Hydrogel slurry application @ 5.0 kg/ha) treatment.

2.2 Mandor: Similar to Bikaner centre, the highest grain (18.57 q/ha) yield was recorded in T₈ (T₄+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS), which was 82.5 higher over the control and stover yield was found maximum in T₉ treatment (38.15 q/ha) and it was higher by 58.6 %. However, the grain yield in the T₈ treatment remained at par with T₉ (T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment but significantly superior over all the treatments over all the three years except T₄ treatment during 2022. The stover yield was found at par T₄, T₅, T₈ and T₉ treatments. The maximum gross (Rs. 61166/ha) and net returns (Rs. 33142/ha) were also found in the T₈ treatment and resulted in Rs. 14919/ha more net returns over the control, however, the maximum BC ratio was recorded in the T₄ treatment (2.50).

The microbial counts study (Table II.11 to 12) revealed that dehydrogenase activity was recorded highest in the treatment T₈ (T₄+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) which was found statistically at par with T₂, T₇ and T₁₀, but significantly superior over all other treatments. Alkaline phosphatase population was found significantly higher in T₈ (RDF + SPG 1118 dry application @ 5.0 kg/ha + Crop residue mulch @ 5.0 t/ha) and it was statistically at par with T₂, T₇, T₉ and T₁₀, but significantly superior over rest of treatments during 2020 but remained at par during 2022. Acid phosphatase was also found significantly higher in T₁₀ and it was statistically at par with T₉ and T₈, but significantly superior over rest of treatments during both the years. Urease populations was not affected by different treatments during 2020 but was also found significantly higher in T₁₀ and it was statistically at par with T₈, but significantly superior over rest of treatments during 2022. The MBC populations were recorded highest in treatment T₉ and it was at par between T₈ & T₁₀ treatments but significantly superior over other treatments. Bacterial counts, fungal counts and actinomycetes counts were not affected significantly with the application of different treatments during both the years except fungal count during 2022 where it was found at par in the T₆ to T₁₀ & T₂ treatments.

Zonal performance – Zone A1

The two locations mean data showed the superiority of treatment T₈ (RDF+ SPG 1118 dry application @ 5.0 kg/ha + Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment in terms of grain and stover yield (23.02 and 43.37 q/ha, respectively) compared to all the remaining treatments including control (14.71 q/ha grain; 31.22 q/ha stover). The grain and stover yield were improved by 56.5 and 38.9% in the T₈ treatment over the control. The T₄ treatment resulted in Rs. 10078/ha more net returns over the control, however, the maximum B:C was recorded in the T₅ (2.84).

The microbial counts study (Table II.11 to 12) revealed that dehydrogenase activity & alkaline phosphatase population was recorded highest in the treatment T₈ (T₄+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) whereas, acid phosphatase was also found significantly higher in T₁₀ and it was statistically at par with T₉ and T₈, but significantly superior over rest of treatments during both the years. Urease populations was not affected by different treatments during 2020 but was found significantly higher in T₁₀ remained statistically at par with T₈ but significantly superior over rest of treatments during 2022. The MBC populations were recorded highest in treatment T₉ and it was at par between T₈ & T₁₀ treatments but significantly superior over other treatments. Bacterial counts, fungal counts and actinomycetes counts were not affected significantly with the application of different treatments during both the years except fungal count during 2022 where it was found at par in the T₆ to T₁₀ & T₂ treatments.

2.3 Hisar: The perusal of the data in Table II.15-23 showed that the treatment T₉ (T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) had the highest grain yield (30.88 q/ha) and it produced significantly superior than T₁: Control (RDF) to T₆ (T₁+ SPG 1118 slurry application @ 5.0 kg/ha) however, it was at par with T₇, T₈ and T₁₀ treatments. Similar trend was also observed for stover yield where it was also at par with T₂ treatment also. The ancillary character's viz., plant height, total tillers/plant, effective tillers/plant and test weight were found superior in T₉. The water use efficiency of 111.5 kg/ha-cm was recorded highest in the treatment T₉ which was followed by T₇ (107.8 kg/ha-cm) and lowest in the control (T₁) with WUE of 80.4 kg/ha-cm. The highest gross (Rs. 84314/ha) and net returns (Rs. 25918/ha) were realized in T₉ treatment, whereas, B:C (1.53) in the T₁ treatment.

The microbial counts studies (Table 22-23) during 2020-2021 revealed that all the enzymatic activities i.e. dehydrogenase activity (25.47-28.09 µg TPF g⁻¹ soil), alkaline phosphatase population (18.95-22.23 µg PNP g⁻¹ soil), acid phosphatase (16.01-18.34 µg PNP g⁻¹ soil) increased among the treatments compared to initial status before sowing of the crop with values of 15.63 µg TPF g⁻¹ soil, 15.05 µg PNP g⁻¹ soil and 12.80 µg PNP g⁻¹ soil, respectively. Bacterial count was recorded significantly higher in treatment T₉ (8.14 10⁵ cfu/g soil). Similarly, the fungal counts (5.98x10⁴ cfu/g soil) and actinomycetes counts (6.66x10⁴ cfu/g soil) were also recorded highest in treatment T₉. The MBC populations and enzymatic activities were recorded significantly higher among all the T₁ to T₁₀ treatments as compared to initial status before sowing.

2.4 Jamnagar: The application of crop residue mulch, Pusa Hydrogel and SPG 1118 alone or in combinations did not bring out significant improvement in the growth, yield attributes, yield and WUE over the T₁ treatment (RDF) during 2020 & 2021 but during 2022, the grain yield (31.65 q/ha) was found significantly highest in T₁₀ over all the treatments except T₉ & T₆ treatments whereas, stover yield was recorded maximum in T₉ but at par with T₃ to T₁₀ treatments. The gross returns (Rs. 67554/ha) and

net returns (Rs. 37746/ha) was found highest in the T₁₀ treatment whereas, BC ratio in the RDF treatment (2.46). The water use efficiency of 101.4 kg/ha-cm was recorded highest in the treatment T₁₀ which was followed by T₆ (91.2 kg/ha-cm) and lowest in the control (T₁) with WUE of 77.0 kg/ha-cm.

2.5 Jaipur: The data presented in the Table II.15-21 revealed that the treatment T₁₀ (T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) had the highest grain yield (34.79 q/ha) and it produced significantly superior than T₁: Control (RDF), T₂ (Crop residue mulch @ 5.0 t/ha after 10-15 DAS), T₄ (T₁+ SPG 1118 dry application @ 5.0 kg/ha) and T₅ (T₁+ Pusa Hydrogel slurry application @ 5.0 kg/ha) treatments, however, it was at par with other treatments. The stover yield was found significantly higher in T₁₀ treatment which remained statistically at par with T₆ to T₉ treatments. The ancillary characters viz., total and effective tillers/plant were found superior in T₁₀. The water use efficiency of 61.3 kg/ha-cm was recorded highest in the treatment T₁₀ which was followed by T₉ (60.1 kg/ha-cm) and lowest in the control (T₁) with WUE of 44.1 kg/ha-cm. The highest gross returns (Rs. 90284/ha) and net returns (Rs. 56600/ha) were realized in T₁₀: T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS treatment, whereas B:C (2.73) in the T₆ treatment.

2.6 New Delhi: The study exhibited that during 2022, the grain and stover yield were not significantly affected by any treatments however, on mean basis of three years, the treatment T₉ was having the highest grain yield (35.14 q/ha) which was followed by T₇ (34.96 q/ha) and minimum in control (24.73 q/ha). The stover yield (76.80 q/ha) was found significantly superior in T₇ treatment over all the treatments. The ancillary characters viz., plant height, total tillers/plant and test weight were found superior in T₉. The water use efficiency of 82.7 kg/ha-cm was recorded highest in the T₇ treatment and lowest in control with value of 67.3 kg/ha-cm. The highest gross returns (Rs. 111738/ha) and net returns (Rs. 76238/ha) were realized in T₉ treatment whereas B:C (3.37) in the T₂ treatment.

The microbial counts study conducted during 2020-2021 (Table 24-25) revealed that the dehydrogenase activity was recorded highest in the treatment T₁₀ and statistically at par with T₄ and T₆ treatments, but significantly superior over all other treatments. Alkaline phosphatase population was found significantly higher in T₄ over all the treatment except T₆ & T₈. Acid phosphatase was found significantly higher in T₁₀ over rest of treatments. Urease populations were higher found in T₈ over all other treatments. The MBC populations were recorded significantly superior from T₂ to T₁₀ treatments over the control. Bacterial counts were observed maximum in T₈ which remained statistically at par with T₅, T₇, T₉ and T₁₀ treatments. Fungal counts found statistically at par between T₄, T₇ to T₁₀ treatments. The actinomycetes counts were significantly higher from T₂ to T₁₀ treatments over the control.

Zonal performance – Zone A

The Zonal mean data showed that the T₇ (T₃+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS), T₉ (T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) and T₁₀ (T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatments produced 30.6, 32.3 and 31.0% higher grain yield over the control. The stover yield was higher by 32.5, 33.1 and 31.1%, respectively in these treatments than the control. The water use efficiency was recorded 84.9, 87.1 and 85.9 Kg/ha-cm in the T₇, T₉ and T₁₀ treatments, respectively. The highest gross returns (Rs. 86609/ha) and net returns (Rs. 47262/ha) were realized in T₉: T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS treatment, whereas B:C (2.48) in the T₂ treatment.

The microbial counts studies (Table 22-23) at Hisar during 2020-2021 revealed that all the enzymatic activities *i.e.* dehydrogenase activity (25.47-28.09 µg TPF g⁻¹ soil), alkaline phosphatase population

(18.95-22.23 $\mu\text{g PNP g}^{-1}$ soil), acid phosphatase (16.01-18.34 $\mu\text{g PNP g}^{-1}$ soil) increased among the treatments compared to initial status before sowing of the crop with values of 15.63 $\mu\text{g TPF g}^{-1}$ soil, 15.05 $\mu\text{g PNP g}^{-1}$ soil and 12.80 $\mu\text{g PNP g}^{-1}$ soil, respectively. Bacterial count (8.14×10^5 cfu/g soil), fungal counts (5.98×10^4 cfu/g soil) and actinomycetes counts (6.66×10^4 cfu/g soil) were recorded highest in treatment T_9 at Hisar. The MBC populations and enzymatic activities were recorded significantly higher among all the T_1 to T_{10} treatments as compared to initial status before sowing.

The microbial counts study conducted during 2020-2021 (Table 24-25) at New Delhi revealed that the dehydrogenase activity and Acid phosphatase was recorded highest in the treatment T_{10} whereas, Alkaline phosphatase population in T_4 treatment over rest of treatments. Urease populations & Bacterial counts were higher found in T_8 over all other treatments. The MBC populations and actinomycetes were recorded significantly superior from T_2 to T_{10} treatments over the control. Fungal counts found statistically at par between T_4 , T_7 to T_{10} treatments.

2.7 Aurangabad: The data pertaining to the study in Table II.26-30 & 34-36 revealed that the treatment T_9 (T_5 + Crop residue mulch @ 5.0 t/ha after 10-15 DAS) had the highest grain yield (33.87 q/ha) and it produced significantly superior over T_1 , T_2 , T_3 , T_5 and T_6 treatments. The grain yield was improved by 57.0% over the control (RDF). The stover yield also followed the trend of grain yield. The ancillary characters viz., plant height, total tillers/plant, effective tillers/plant and test weight were found superior in T_9 . The water use efficiency of 53.3 kg/ha-cm was recorded highest in the treatment T_9 which was followed by T_{10} (50.1 kg/ha-cm) and lowest in the control (T_1) with WUE of 34.5 kg/ha-cm. The highest gross returns (Rs. 89225/ha), net returns (Rs. 52120/ha) and B:C (2.67) were also realized in T_9 (T_6 + Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment.

2.8 Dhule: The perusal of the data in Table II.26-36 showed that the treatment T_9 (T_5 + Crop residue mulch @ 5.0 t/ha after 10-15 DAS) had the highest grain yield (33.25 q/ha) and it was statistically at par with T_{10} and T_7 but produced significantly superior over other treatments. However, stover yield was recorded significantly higher in this treatment over all the treatments except T_{10} treatment. The ancillary characters viz., plant height, total tillers/plant, effective tillers/plant and test weight were found superior in T_9 . The highest gross returns (Rs. 76391/ha), net returns (Rs. 47207/ha), B:C (2.60) and WUE (53.0 kg/ha-cm) were also realized in T_9 (T_6 + Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment. The soil physico-chemical properties in the treatments T_2 to T_{10} ranges from pH (7.88-7.92), EC (0.40-0.41 ds/m), OC (0.56-0.62%) and available N (190.5-213.7 kg/ha), P (17.2-17.8 kg/ha), K (575.5-599.5 kg/ha) as compared to the values of 7.99, 0.44, 0.53, 186.1, 17.1 and 576.0, respectively with the control (RDF).

2.9 Vijayapur: The application of crop residue mulch, Pusa Hydrogel and SPG 1118 alone or in combination did not bring out significant improvement in the grain yield and WUE during 2020 & 2021. However, during 2022 maximum grain and stover yield were recorded in T_{10} treatment, which remained at par with T_7 to T_9 treatments. The economic analysis of the treatments exhibited the superiority of the treatment T_{10} in terms of gross returns (Rs. 39380/ha) and net returns (Rs. 23583/ha) whereas, B:C (3.32) was significantly highest in the T_2 (RDF + crop residue mulch @ 5t/ha treatment. The respective values were Rs. 28304/ha, Rs. 17840/ha and 2.71 in the T_1 treatment. The soil physico-chemical properties viz., pH, EC, OC and available N, P, K were not significantly affected by any of the treatments compared to the control (RDF) during 2021 but OC (%), Av. N, P_2O_5 and K_2O were recorded between (0.67-0.68%), (210.7-226.0 kg/ha), (20.8-25.0 kg/ha) and (399.7-418.2 kg/ha) among different

treatments in comparison to 0.66%, 210.5 kg/ha, 21.2 kg/ha and 392.2 kg/ha in the Control (RDF) treatment.

2.10 Coimbatore: The data pertaining to the study in Table II.26-36 revealed that the treatment T₉ (T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) had the highest grain yield (29.71q/ha) and it produced significantly superior over all the treatments except T₇ (28.54 q/ha), T₈ (28.07 q/ha) and T₁₀ (29.03 q/ha grain). The stover yield also followed the pattern of grain yield. The grain and stover yield were improved by 25.8 and 26.8%, respectively over the control (RDF) treatment. The water use efficiency of 65.2 kg/ha-cm was recorded highest in the treatment T₉ which was followed by T₁₀ (63.8 kg/ha-cm) and lowest in the control (T₁) with WUE of 51.4 kg/ha-cm. The highest gross returns (Rs. 52682/ha) and net returns (Rs. 19056/ha) were also realized in T₉ (T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment whereas B:C (1.58) in T₁₀ treatment. Av. N, P₂O₅ and K₂O were recorded between (174.0-236.0 kg/ha), (12.0-18.0 kg/ha) and (435.0-585.0 kg/ha) among different treatments in comparison to 199.0 kg/ha, 13.0 kg/ha and 469.0 kg/ha in the Control (RDF) treatment

Zonal performance – Zone B

The mean grain and stover yield were higher by 43.3 & 40.3% and 39.3 & 36.2%, respectively in T₉ (T₅+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) & T₁₀ (T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatments in comparison to the control (20.59 grain; 43.04 stover yield). The plant height was higher by 17.4 and 18.0 cm in these treatments than the control. The total tillers/plant (4.6 and 4.6), effective tillers/plant (3.5 and 3.5) and test weight (11.8 and 12.0 g) in T₉ and T₁₀ treatments were observed quiet superior over the T₁ treatment (3.3, 2.4 and 10.6, respectively). The water use efficiency was recorded 58.3 kg/ha-cm and 57.3 kg/ha-cm in the T₉ and T₁₀ treatments, respectively as compared to control with WUE of 41.3 kg/ha-cm. The highest gross returns (Rs. 63892/ha), net returns (Rs. 34963/ha) were realized in T₉ (T₆+ Crop residue mulch @ 5.0 t/ha after 10-15 DAS) treatment but B:C (2.31) was maximum in T₂ treatment

At Dhule, the soil physico-chemical properties in the treatments T₂ to T₁₀ ranges from pH (7.88-7.92), EC (0.40-0.41 ds/m), OC (0.56-0.62%) and available N (190.5-213.7 kg/ha), P (17.2-17.8 kg/ha), K (575.5-599.5 kg/ha) as compared to the values of 7.99, 0.44, 0.53, 186.1, 17.1 and 576.0, respectively with the control (RDF). At Vijayapur, OC (%), Av. N, P₂O₅ and K₂O were recorded between (0.67-0.68%), (210.7-226.0 kg/ha), (20.8-25.0 kg/ha) and (399.7-418.2 kg/ha) among different treatments in comparison to 0.66%, 210.5 kg/ha, 21.2 kg/ha and 392.2 kg/ha in the Control (RDF) treatment. At Coimbatore, Av. N, P₂O₅ and K₂O were recorded between (174.0-236.0 kg/ha), (12.0-18.0 kg/ha) and (435.0-585.0 kg/ha) among different treatments in comparison to 199.0 kg/ha, 13.0 kg/ha and 469.0 kg/ha in the Control (RDF) treatment.

PMAT 3: Enhancing biofortified/non- biofortified pearl millet hybrids productivity and quality through micronutrients under irrigated situation

Due to intensive cultivation of cereal based crop rotations, the soils of the country have become deficient in macro as well as micro nutrients like Fe, Zn, Mn, Cu and B causing yield stagnation in pearl millet. Therefore, the present experiment was started during *Kharif*, 2021 to find out the effect of micronutrients on the crop growth, productivity, quality and economics of biofortified/non-biofortified pearl millet hybrids under irrigated condition at two locations of Zone A1 (Mandor and Bikaner), four locations each in Zone A (Jaipur, Jamnagar, Hisar and New Delhi) and Zone B (Aurangabad, Coimbatore, Vijayapur and Dhule). The performance of two hybrids *i.e.* MPMH 17 and HHB 299 were

evaluated with nine micronutrient management practices i.e. T_1 : Control, T_2 : Soil application $ZnSO_4$ @ 25 kg/ha, T_3 : 0.5% $ZnSO_4$ Foliar spray at 20-25 DAS, T_4 : Soil application $FeSO_4$ @ 20 kg/ha, T_5 : 0.5% $FeSO_4$ Foliar spray at tillering stage (20-25 DAS), T_6 : 0.5% $MnSO_4$ Foliar spray at tillering stage (20-25 DAS), T_7 : 0.2% $CuSO_4$ Foliar spray at tillering stage (20-25 DAS), T_8 : 0.2% Borax Foliar spray at tillering stage (20-25 DAS) and T_9 : $ZnSO_4$ (25 kg/ha) + $FeSO_4$ (20 kg/ha) + 0.2 % Borax. Eighteen treatments were replicated three times in SPD. Data on ancillary characters, yield attributes & yield of pearl millet are presented in Table II.37 to II.65.

3.1 Bikaner: The data presented in the Table II.37 and 41 exhibited the significantly higher performance of hybrid HHB 299 (41.69 q/ha) compared to MPMH 17 (31.30 q/ha) in terms of grain yield whereas the stover yield was found statistically at par in HHB 299 (69.24 q/ha) over MPMH 17 (61.06 q/ha). Among the basal and foliar application of the micro nutrients, the grain yield (40.06 q/ha) was found significantly superior in the treatment T_9 : $ZnSO_4$ (25 kg/ha) + $FeSO_4$ (20 kg/ha) + 0.2 % Borax than all the treatments which was 25.2% superior over the control but at par with T_8 & T_5 treatments. The application of Mn and Cu did not bring out significant improvement in the grain yield. The stover yield also followed the trend of grain yield. The maximum gross returns (Rs. 136835/ha) and net returns (Rs. 111570/ha) in the treatment T_9 whereas, BC ratio (6.03) in the T_8 treatment were noticed compared to the control (Rs.107644/ha, Rs. 86644/ha and 5.12, respectively).

3.2 Mandor: The data presented in the Table II.37 and 41 revealed that the performance of both the hybrids were found at par in terms of grain, stover yield and economics. Similarly, the yield and economic evaluation of application of different micronutrients exhibited the par performance compared to the control. However, the gross returns (Rs. 57963/ha) were maximum in the treatment T_9 whereas, net returns (Rs. 33130/ha) and BC ratio (2.21) were higher in the treatment T_5 compared to the control (Rs. 38716/ha, Rs. 16283/ha and 1.74, respectively).

Zonal performance – Zone A₁

The two locations mean data exhibited the superior performance of hybrid HHB 299 (25.88 q/ha) compared to MPMH 17 (22.35 q/ha) in terms of grain yield. The stover yield was also found superior in HHB 299 (48.72 q/ha) over MPMH 17 (43.86 q/ha). Among the basal and foliar application of the micronutrients, the grain yield (27.76 q/ha) was found 29.8% superior in the treatment T_9 : $ZnSO_4$ (25 kg/ha) + $FeSO_4$ (20 kg/ha) + 0.2 % Borax over the control whereas, the stover yield was higher by 25.4%. The application of Mn, Cu and B did not bring out significant improvement in the grain yield. The gross returns (Rs. 88743/ha) and net returns (Rs. 63228/ha) were maximum in the treatment T_9 whereas, BC ratio (3.80) in the T_5 treatment compared to the control (Rs. 68848/ha, Rs. 47598/ha and 3.26, respectively).

3.3 Hisar: The data presented in the Table II.42 and 52 exhibited that the biofortified hybrid HHB 299 (36.30 q/ha) produced significantly higher yield by 43.8% over the MPMH 17 (25.24 q/ha) in terms of grain yield. The stover yield was found significantly superior in HHB 299 (110.71 q/ha) over MPMH 17 (95.45 q/ha) by 16.0%. Among the basal and foliar application of the micronutrients, the grain yield (33.60 q/ha) was found significantly superior in the treatment T_9 : $ZnSO_4$ (25 kg/ha) + $FeSO_4$ (20 kg/ha) + 0.2 % Borax over all the treatments except T_2 and T_5 treatments which was 17.0% superior over the control. The application of Mn, Cu and B did not bring out significant improvement in the grain yield over the control. The gross returns (Rs. 100074/ha) and net returns (Rs. 41118/ha) in the treatment T_9

whereas, BC ratio (1.70) in the T₅ treatment were noticed highest compared to all the treatments including control (Rs. 86617/ha, Rs. 30679/ha and 1.55, respectively).

The hybrid HHB 299 had significantly higher Fe and Zn content in both grain and stover as compared to MPMH 17 whereas Cu content was found at par. The Mn content was significantly higher in MPMH 17 than HHB 299. The foliar application of FeSO₄ and soil application of ZnSO₄ were found better as compared to their vice-versa application. Among the basal and foliar application of the micronutrients, the Fe (65.5ppm) and Zn (43.8 ppm) were found significantly superior in the treatment T₉ : ZnSO₄ (25 kg/ha) + FeSO₄ (20 kg/ha) + 0.2 % Borax over all the treatments except T₅ treatments for Fe and T₂ for Zn. Similar trend was observed for Fe & Zn content in stover also. The Mn and Cu content in stover remained at par within hybrids and micro nutrient management treatments.

3.4 Jaipur: In comparison to Hisar and Jamnagar the performance of MPMH 17 in terms of grain (31.30 q/ha) and stover yield (82.29 q/ha) was found significantly superior than HHB 299 with yield of 27.11 and 69.35 q/ha, respectively. Among the micronutrient management, the grain yield was found statistically at par in the T₂ (31.00 q/ha), T₃ (31.63 q/ha) and T₉ (33.79 q/ha) treatments and the best treatment was found significantly superior than all the remaining treatments. The individual application of Mn, Cu and B also bring out significant improvement in the grain yield over the control. The stover yield was also highest in the T₉ treatment. The gross returns and net returns were higher by Rs 28879/ha and Rs. 25292/ha in the T₉ treatment as compared to control. The BC ratio (3.86) was found highest in the treatment T₃ and lowest in control (3.00) treatment.

3.5 Jamnagar: The study revealed that the biofortified hybrid HHB 299 (31.28 q/ha) produced 27.3% higher grain yield over the MPMH 17 (24.56 q/ha). The stover yield was superior by 14.3% in HHB 299 (46.49 q/ha) over MPMH 17 (40.68 q/ha). Among the micronutrient management, the best treatment was again T₉: ZnSO₄ (25 kg/ha) + FeSO₄ (20 kg/ha) + 0.2 % Borax which produced 30.7% higher yield (31.84 q/ha) over the control (24.36 q/ha). The grain yield was found at par in the treatment T₉ compared to ZnSO₄ and FeSO₄ treatments. Similar pattern was also followed for the stover yield. The application of Mn, Cu and B did not bring out significant improvement in the grain yield over the control. The gross returns (Rs. 73631/ha) and net returns (Rs. 48485/ha) in the treatment T₉ were noticed highest compared to all the treatments including control (Rs. 56310/ha, Rs. 34884/ha and 2.63, respectively) whereas, BC ratio (2.44) in T₄ treatment (Soil application of FeSO₄ @ 20 kg/ha).

The hybrid HHB 299 had significantly higher Fe and Zn content in grain compared to MPMH 17 whereas Cu, B and Mn content was found at par. The Zn, Cu, Mn and B content in fodder between two hybrids remained statistically at par whereas Fe content was significantly more in HHB 299. The highest Fe (64.8 ppm), Zn (43.8 ppm) and B content (33.4 ppm) were found in T₉ treatment whereas, Cu content in T₇ and Mn content in T₆ treatments, respectively in grain.

Zonal performance – Zone A

The Zonal mean data showed that the treatment T₉: ZnSO₄ (25 kg/ha) + FeSO₄ (20 kg/ha) + 0.2 % Borax improved the grain and stover yield by 27.5% and 26.4% over the control. The application of ZnSO₄ as basal application and FeSO₄ as foliar application improved the grain yield by 19.5 and 17.2% as compared to the control. The application of Mn, Cu and B did not bring out significant improvement in the grain yield over the control. The hybrid HHB 299 had significantly higher Fe, Zn and B content in both grain and stover as compared to MPMH 17 whereas Mn and Cu contents were found at par. The Fe

and Zn content were also found higher in both grain and stover where these were applied in comparison to without their application. The gross returns (Rs. 87435/ha), net returns (Rs. 51551/ha) and BC ratio (2.65) in the treatment T₉ were noticed highest compared to all the treatments including control (Rs. 68804/ha, Rs. 35803/ha and 2.24, respectively).

3.6 Vijayapur: The data presented in Table II.53-63 and 65 clearly indicated the performance of the hybrid HHB 299 was significantly superior in terms of both grain (24.44 q/ha) and stover (62.56 q/ha) yield in comparison to MPMH 17 (21.95 q/ha and 58.43 q/ha, respectively). The application of the foliar application of Fe, Zn and Borax application did not bring out significant improvement in the grain yield as compared to the control whereas, it was significantly higher among all the treatments. The integrated application of Zn, Fe and B (T₉) had the maximum yield (25.83 q/ha). The gross returns (Rs. 46482/ha) and net returns (Rs. 27040/ha) in the treatment T₉ were noticed highest compared to all the treatments including control (Rs. 36207/ha and Rs. 20268/ha, respectively) whereas, BC ratio was noticed highest in T₄ treatment (2.61).

The hybrid HHB 299 had significantly higher Fe, Zn, Cu and Mn content in grain as compared to MPMH 17. Fe content was observed maximum in grain of T₄ & T₉ treatments whereas Zn was highest in T₉ as compared to all the treatments including control. The Mn was maximum in T₄ and Cu in T₇ treatments, respectively.

3.7 Aurangabad: The grain as well as stover yield were found statistically at par between two hybrids. The combined application of Zn, Fe and B in the T₉ treatment produced the highest grain yield (33.93 q/ha) and it was significantly superior than all the treatments except T₂ treatment. The stover yield was significantly higher in T₉ treatment as compared all the treatments. The net returns were almost double in the T₉ treatment (Rs. 72285/ha) as compared to control (Rs. 36396/ha) with BC ratio of 3.19.

3.8 Dhule: The perusal of the data (Table II.53-64) revealed that the performance of both the hybrid remained at par in terms of grain yield but HHB 299 had significantly higher stover yield as compared to MPMH 17. The application of all the micronutrients bring out significant improvement in the grain as well as stover yield and the integrated application of Zn, Fe and B (T₉) had the maximum yield. The gross returns (Rs. 78843/ha) was maximum in T₉ treatment whereas, B:C (2.84) and net returns (Rs. 27688/ha) in the treatment T₂ were noticed highest compared to all the treatments including control (Rs. 54555/ha, Rs. 27688/ha, 2.03, respectively).

The hybrid HHB 299 did not exhibited higher Fe, Zn, Cu, Mn and B content in both grain and stover as compared to MPMH 17. The Fe and Zn contents were also observed maximum in grain as well as in straw of T₉ treatment as compared to all the treatments including control whereas, Mn, Cu and B were found higher in their sole applications.

3.10 Coimbatore: The study revealed that the biofortified hybrid HHB 299 (30.62 q/ha & 54.44 q/ha) produced significantly higher grain & stover yields over the MPMH 17 (27.74 q/ha & 46.01 q/ha). The application of Mn, Cu & B micro nutrients as sole produced significantly higher grain yield as compared to the control whereas, T₉ : ZnSO₄ (25 kg/ha) + FeSO₄ (20 kg/ha) + 0.2 % Borax treatment had the maximum grain as well as stover yield as compared to all the treatments. The soil as well as foliar application of Fe & Zn did not significantly improve the grain yield. Similarly the stover yield was also found highest in this T₉ treatment. The gross returns (Rs. 59461/ha) in the treatment T₉ were noticed

highest whereas, net returns (Rs. 27920/ha) and BC ratio (1.95) in T₇ treatment compared to all the treatments including control (Rs. 49138/ha, Rs. 19728/ha and 1.67, respectively).

Zonal performance – Zone B

The mean grain yield was higher by 10.4% in the biofortified hybrid HHB 299 (28.02 q/ha) in comparison to MPMH 17 (25.37 q/ha). Similar pattern was also observed for dry stover yield and it was higher by 11.2% in this hybrid. Among the basal and foliar application of the micronutrients, the grain yield (31.09 q/ha) was found highest in the treatment T₉: ZnSO₄ (25 kg/ha) + FeSO₄ (20 kg/ha) + 0.2 % Borax over all the treatments which was 31.9% superior over the control. The application of different micronutrients bring out between 2.57 to 7.52 q/ha more grain yield over the control. The gross returns (Rs. 71614/ha) and net returns (Rs. 43402/ha) in the treatment T₉ whereas, BC ratio (2.54) in the T₂ treatment were noticed highest compared to all the treatments including control (Rs. 52726/ha, Rs. 27396/ha and 2.12, respectively).

The hybrid HHB 299 had significantly higher Fe, Cu, Zn and B content in grain as compared to MPMH 17 whereas, Mn content had reverse trend. All the micronutrients were having comparable values between both the hybrids in the stover. The micro nutrient Fe, Zn contents were observed maximum in grain as well as in straw of T₉ treatment as compared to all the treatments including control but Mn, Cu and B were found maximum in their sole application treatments as compared to all the treatments.

PMAT 4: Contribution of production factors to the yield and economics of pearl millet

For the quantification of individual production factors of management towards productivity and economics in the pearl millet crop, this experiment was planned and started during *kharif* 2021 at two locations of Zone A1 (Mandor and Bikaner), three locations in Zone A (Jaipur, Jamnagar and Hisar) and four locations in Zone B (Aurangabad, Coimbatore, Vijayapur and Dhule). The experiment comprises of 8 treatments were evaluated in RBD keeping three replications. Treatments were T₁: Full package & practices of the location [(RDF+ ZnSO₄ @ 25 kg/ha+ FeSO₄ @ 0.5-0.75% at 20-25 DAS + bioinoculant seed treatment (Azoteeka/as per availability) + thinning & gap filling + weeding & hoeing (3 & 5 Weeks after sowing)+ Irrigation], T₂ : T₁- RDF, T₃ : T₁- ZnSO₄ @ 25 kg/ha, T₄ : T₁- FeSO₄ @ 0.5-0.75% at 20-25 DAS, T₅ : T₁- bioinoculant seed treatment (Azoteeka), T₆ : T₁- thinning & gap filling, T₇ : T₁- weeding & hoeing (3 & 5 Weeks after sowing) and T₈ : T₁- Irrigation. The result of the experiment is discussed in the following paragraphs and data presented in Tables II.66-83.

4.1 Bikaner: The perusal of the data in the Table II.66-68 indicated that maximum grain yield reduction of 74.0 % was observed when irrigation was not applied and it was followed by thinning and gap filling (25.3%), without RDF & weeding operation (25.0%), biomix (19.2%), ZnSO₄ (13.2%) and minimum in the FeSO₄ treatment with value of 7.7%. The gross returns across the treatments reduced from 12.2 to 45.8% as compared to full package and practices whereas, the net returns reduction was between 11.9 to 88.5%.

4.2 Mandor: The data revealed that the grain yield was reduced by 30.7, 17.8, 6.6, 9.3, 24.5, 28.4 and 25.8 % when RDF, ZnSO₄, FeSO₄, Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied. The stover yield was reduced by 27.8, 15.7, 7.1, 11.9, 21.1, 25.9 and 23.6%, respectively. The gross returns across the treatments reduced from 6.8 to 29.8% as compared to full package and practices whereas, the net returns reduction were between 10.0 to 42.8%.

Zone Mean

The mean data of the Zone A1 showed that the maximum grain yield (26.74 q/ha) was recorded with the application of full package and practices. The maximum reduction of 39.0% was observed when irrigation was not applied and it was followed by without weeding (26.2%), without RDF (25.1%) and without thinning and gap filling (24.4%). The grain yield reduction among other treatments was between 12.4-16.7%. Similar trend was observed for stover yield (12.2-31.4%), gross returns (12.6-36.6%) and net returns (16.8-49.0%) across the treatments.

4.3 Hisar: The perusal of the data revealed that the grain yield was significantly reduced by not carrying out the important management operations. The maximum reduction of 31.4% was observed when RDF was not applied which was followed by weeding (27.2%) and irrigation (16.1%). The reduction was between 5.5-13.3% when ZnSO₄, FeSO₄, Bioinoculant, thinning & gap filling were not done. The stover yield also exhibited the similar trend. The gross returns across the treatments reduced from 5.2 to 29.4% as compared to full package and practices whereas, the net returns reduction were between 6.1 to 64.4%.

4.4 Jamnagar: The data in the Table 11.69-74 indicated that the gross returns were reduced by 43.0, 10.6, 8.0, 16.8, 17.9, 21.2 and 7.8% when RDF, ZnSO₄, FeSO₄, Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied. The grain yield was reduced by 46.1, 9.9, 6.9, 17.1, 18.6, 22.9 and 7.8 %, respectively. The net returns across the treatments reduced from 9.5 to 62.2% as compared to full package and practices whereas, the stover yield reduction were between 7.8 to 28.8%.

4.5 Jaipur: The data pertaining that the grain yield was significantly reduced by not caring out the important management operations. The maximum reduction of 22.5% was observed when weeding was not done and it was followed RDF (21.4%) and irrigation (18.0%). The reduction was between 2.3-14.6% when ZnSO₄, FeSO₄, Bioinoculant, thinning and gap filling were not done. The stover yield also exhibited the similar trend. The gross returns across the treatments reduced from 3.5 to 23.4% as compared to full package and practices whereas, the net returns reduction were between 4.1 to 27.7%.

Zone Mean

The mean data of the Zone A revealed that the maximum grain yield (34.90 q/ha) was recorded with the application of full package and practices. The maximum reduction of 29.1% was observed when RDF was not applied. Almost equal reduction of 25.9% was observed when weeding was not carried out. The grain yield reduction among other treatments was between 5.9-20.4%. Similar trend was observed for stover yield (6.3-21.0%), gross returns (6.3-28.0%) and net returns (10.6-44.1%) across the treatments.

4.6 Aurangabad: The perusal of the data revealed that the grain yield was significantly reduced by not caring out the important management operations. The maximum reduction of 42.2% was observed when thinning and gap filling was not done which was followed by without weeding (31.3%) and biofertilizer (17.5%). The reduction was between 1.6-16.4 % when ZnSO₄, FeSO₄, irrigation, RDF were not done. The stover yield also exhibited the similar trend. The gross returns across the treatments reduced from 1.8 to 41.3% as compared to full package and practices whereas, the net returns reduction were between 1.2 to 61.8%.

4.7 Dhule: Among different treatments the data in the Table 11.75-83 indicated that the grain yield was reduced by 30.1, 13.6, 18.1, 10.2, 19.1, 21.3 and 24.2% when RDF, ZnSO₄, FeSO₄, Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied. The net returns were reduced

by 40.5, 20.7, 27.7, 17.1, 26.4, 25.1 and 33.1%, respectively. The gross returns across the treatments reduced from 10.3 to 30.1% as compared to full package and practices.

4.8 Vijayapur: The perusal of the data revealed that the grain yield as well as stover yield were significantly reduced by not caring out the important management operations as compared to full package and practices. The maximum reduction in grain yield of 39.9% was observed when weeding was not done which was followed by without RDF (37.4%) and thinning and gap filling (21.4%). The reduction was between 12.5-16.8% when ZnSO_4 , FeSO_4 , Bioinoculant, irrigation were not done. The stover yield also exhibited the similar trend. The net returns were reduced by 48, 7, 14.8, 17.2, 18.4, 28.9, 55.0 and 22.7%, respectively when RDF, ZnSO_4 , FeSO_4 , Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied as compared to full package and practices.

4.9 Coimbatore: The data presented in the Table II.75-81 revealed that the grain yield was reduced by 39.0, 11.4, 9.0, 5.3, 23.3, 39.0 and 9.1% when RDF, ZnSO_4 , FeSO_4 , Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied. The stover yield was reduced by 30.6, 9.9, 7.9, 3.6, 20.0, 29.6 and 8.6 %, respectively. The net returns were reduced between 10.1-66.9%. The gross returns across the treatments reduced between 5.2-38.4% as compared to full package and practices.

Zone Mean

The mean data of the Zone B revealed that the maximum grain yield (31.62 q/ha) was recorded with the application of full package and practices. The maximum reduction of grain yield 30.5% was observed when RDF was not applied which was followed by without weeding and hoeing (29.4%) and irrigation operations. The gross returns reduced from Rs. 49058 to Rs. 61975/ha among different treatments as compared to Rs. 69192/ha in the full package and practices treatments. The respective value of net returns was between Rs. 7280 to Rs. 32975/ha and Rs. 41020/ha, respectively. The stover yield was reduced by 25.6, 8.5, 7.7, 7.9, 16.2, 24.2 and 14.5% when RDF, ZnSO_4 , FeSO_4 , Bioinoculant, thinning & gap filling, weeding & hoeing and irrigation were not applied.

PMAT 5: Effect of tillage and nutrient management systems on pearl millet yield and soil properties

Keeping the energy saving concept and proper nutrition use among the crops in the present scenario, this trail was started during *kharif* 2021 on the resource conservation technology aspect with an objective to study the effect of different tillage manipulations and nutrient supply practices on the productivity, water use efficiency, physico-chemical and energy analysis in pearl millet crop at two locations of Zone A₁ (Mandor and Bikaner), three locations in Zone A (Jaipur, Jamnagar and Hisar) and four locations in Zone B (Aurangabad, Coimbatore, Vijayapur and Dhule). Four tillage practices viz. CT₁: Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS), CT₂: Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-28 DAS), MT₁: Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS) and MT₂: Minimum tillage (One harrow + One cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS were taken as main plot and four nutritient supply sources (F₁: 100% RDF of the Zones, F₂: 75 % N through RDF + 2.5 t/ha FYM, F₃: 50 % N through RDF + 5.0 t/ha through FYM and F₄: 100% N through FYM) as sub plot. Thus, 16 treatment combinations were evaluated in split plot

design. All the treatments were replicated for three times. The results of the experiment are discussed in the following paragraphs and data presented in Tables 11.84-115.

5.1 Mandor: The data presented in the Table 84-86 for *kharif* 2022 revealed that the grain and dry stover yield were not significantly influenced by different tillage practices and nutrient management practices. All the conventional and minimum tillage practices with one and two intercultural operations did not bring out any significant improvement in the growth, yield attributes, yield and economics of the treatments.

Among the nutrient supply treatments, the application of RDF either through inorganic, organic and combination of these two sources also did not bring out any significant changes in the crop performance in terms of growth, yield attributes, yield and economic improvement.

5.2 Bikaner: The data presented for *kharif* 2021 in the Table 84-85 revealed that the grain and dry stover yield were not significantly influenced by different tillage practices and nutrient management practices. All the conventional and minimum tillage practices with one and two intercultural operations did not bring out any significant improvement in the growth, yield attributes, yield and economics of the treatments.

Among the nutrient supply treatments, the application of RDF either through inorganic, organic and combination of these two sources bring out any significant changes in the crop performance in terms of growth, yield attributes, yield and economic parameters.

Zonal performance – Zone A₁

The trial was failed at the Mandor centre during 2021 and in Bikaner centre during 2022 however, results of both the locations revealed that different tillage and nutrient management practices did not bring out any significant differences among growth, yield attributes, yield and economic parameters.

5.2 Hisar: The data presented in the Table 90-101 revealed that the grain and dry stover yield were significantly influenced by different tillage practices and it was significantly superior in the conventional tillage (CT₁) with two intercultural operations (27.89 q/ha grain ; 68.12 q/ha stover) as compared to CT₂ with one intercultural operations (25.00 q/ha grain ; 63.30 q/ha stover) and MT₂ with one intercultural operations (23.34 q/ha grain ; 59.73 q/ha stover) however, it was statistically at par to MT₁ with two intercultural operations (25.77 q/ha grain ; 66.10 q/ha stover). Similarly, the highest gross returns (Rs 75694/ha) and WUE (85.6 kg/ha-cm) were recorded in the conventional tillage (CT₁) with two intercultural operations whereas, net returns (Rs. 19239/ha) and BC ratio (1.39) were recorded in MT₁ with two intercultural operations treatment as compared to all other treatments.

Among the nutrient supply treatments, the grain (27.21 q/ha) as well as stover yield (66.33 q/ha) in the 75% RDF + 2.5 t FYM/ha treatment was at par with RDF through inorganic sources (26.57 q/ha grain; 65.34 q/ha stover) however, significantly superior over RDF through FYM and 50% RDF+5.0 t FYM/ha combination treatments. The stover yield was found significantly superior in the 75% RDN + 2.5 t FYM/ha treatment over all the other nutrient supply treatments. The net returns (Rs. 23330/ha), BC ratio (1.47) and WUE (81.8 kg/ha-cm) were recorded higher in F₁: 100% RDF which was followed by F₂: 75%RDF+2.5 t FYM/ha with values of Rs. 19219/ha, 1.36 and 77.5 kg/ha-cm, respectively and lowest in F₄: 100% N through FYM (Rs. 7844/ha, 1.14 and 69.9 kg/ha-cm).

The soil physico-chemical properties viz., BD, EC, pH, available P and K (Table 95-97) were not significantly affected by tillage practices and nutrient supply treatments after harvest of the crop, however, available N and OC were significantly influenced by the nutrient management practices but not by the tillage practices. The OC (0.39%) and av. N (139.9 kg/ha) were higher in the F₄ treatment as compared to F₁ (0.33% & 134.7 kg N/ha) and F₂ (0.37% & 136.9 kg N/ha) treatments

The energy input, output relation study (Table 101) of the experiment showed that maximum energy input among the tillage practices was in CT₁ with 2 intercultural operations (5381 MJ/ha) and minimum in MT₂ with 1 intercultural operation (4820 MJ/ha). Similarly, energy output (138357 MJ/ha), net energy (132976 MJ/ha) and energy productivity (0.55 kg/MJ/ha) were also recorded maximum in the CT₁ with 2 intercultural operation. Among the nutrient supply treatments, maximum energy consumption was in the F₃ treatment (5284 MJ/ha). The energy output (135912 MJ/ha), net energy (130716 MJ/ha), energy productivity (0.56 kg/MJ/ha) and EUE (26.16) were higher in the F₂ (75% N +2.5 t FYM/ha) treatment.

5.3 Jamnagar: The perusal of the data in the Table 90-96 & 98-100 exhibited that the grain yield was significantly superior in the conventional tillage (CT₁) with two intercultural operations (20.95 q/ha) as compared to CT₂ with one intercultural operations (17.54 q/ha), MT₂ with one intercultural operations (18.57 q/ha) and MT₁ with two intercultural operations (16.51 q/ha). The stover yield among the CT₁, CT₂ and MT₁ was found statistically at par but CT₁ was significantly superior over MT₂. Similarly, the highest gross returns (Rs 49731/ha), net returns (Rs. 27436/ha) and BC ratio (2.25) were recorded in the conventional tillage (CT₁) with two intercultural operations. The WUE was recorded maximum in CT₁ (46.7 kg/ha-cm) and it was par to MT₁ (46.2 kg/ha-cm).

Among the nutrient supply treatments, the significantly highest grain yield (19.88 q/ha) and WUE (47.0 kg/ha-cm) were realised in the 75% RDF + 2.5 t FYM/ha treatment and it was followed by RDF through inorganic sources (19.37 q/ha), 50% RDF +5.0 t FYM/ha (18.61 q/ha) combination treatments but significantly superior over RDF through FYM (15.70q/ha). The gross returns (Rs. 47261/ha), net returns (Rs. 25997/ha) and BC ratio (2.22) were recorded higher in F₂: 75%RDF+2.5 t FYM/ha whereas lowest in F₄: 100% N through FYM (Rs. 38112/ha, Rs. 12985/ha and 1.53).

The soil physico-chemical properties i.e. the available N (185.5 kg/ha) and K (292.6 kg/ha) were found significantly higher in MT₂ treatment as compared to other tillage practices. BD was recorded significantly highest in the F₁ treatment as compared to F₂, F₃ and F₄ treatments whereas, available N (176.9 kg/ha) was found significantly lower in this treatment as compared to F₂ (180.9 kg/ha), F₃ (179.0 kg/ha) and F₄ (181.0 kg/ha-cm).

5.4 Jaipur: The perusal of the data in the Table 90-94 exhibited that the dry stover yield was not significantly influenced by different tillage practices during 2020 & 2021 but during 2022 it was significantly superior in CT₁ as compared to MT₁ & MT₂. The grain yield was found statistically at par in the conventional tillage (CT₁) with two intercultural operations (36.20 q/ha) as compared to CT₂ with one intercultural operations (34.90 q/ha) and MT₂ with one intercultural operations (34.87 q/ha) but significantly superior over MT₁ with two intercultural operations (31.81 q/ha). The WUE was found highest in the CT₁ (76.9 ka/ha-cm) which was followed by MT₁ (74.0 ka/ha-cm), CT₂ (73.9 ka/ha-cm) and minimum in the MT₂ (67.9 ka/ha-cm).

Among the nutrient supply treatments, the best grain (36.62 q/ha) as well as stover yield (89.00 q/ha) were realised in the treatment F₁ (100% RDF) which remained at par with F₂: 75% RDF+2.5 t FYM/ha and F₃ (50% RDF+5 t FYM/ha) but significantly superior over F₄: 100% N through FYM. The stover yield was found significantly superior in F₁ as compared to F₄ but remained at par with F₂ and F₃ treatments. The WUE (77.8 kg/ha-cm) was recorded highest in F₁, which was followed by F₂ (74.2 kg/ha-cm), F₃ (72.8 kg/ha-cm) and F₄ (67.9 kg/ha-cm) treatments.

Zonal performance – Zone A

The Zonal mean data of the three centres revealed that maximum grain and stover yield were obtained in CT₁ with 2 intercultural operations (28.35 q/ha grain; 64.89 q/ha stover) which was followed by MT₁ with two inter cultural operations (26.40 q/ha; 62.40 q/ha), CT₂ with one intercultural operation (25.81 q/ha; 61.17 q/ha) and MT₂ with one inter cultural operations (23.88 q/ha; 57.03 q/ha). The highest gross returns (Rs. 62712/ha), net returns (Rs. 21482/ha) and B:C (1.75) were achieved in CT₁ with 2 intercultural operations.

Among the nutrient supply treatments, the best grain (27.73 q/ha) as well as stover yield (63.68 q/ha) were realised in the 100% RDF through inorganic source in comparison to all other treatments of organic and inorganic combinations. The gross returns (Rs. 59837/ha) was highest in F₂: 75%RDF+2.5 t FYM/ha whereas, net returns (Rs. 24283/ha), BC ratio (1.84) and WUE (67.9 kg-ha-cm) were highest in F₁: 100% RDF treatment.

At Hisar, the soil physico-chemical properties viz., BD, EC, pH, available P and K (Table 95-97) were not significantly affected by tillage practices and nutrient supply treatments after harvest of the crop, however, available N and OC were significantly influenced by the nutrient management practices but not by the tillage practices. The OC (0.39%) and av. N (139.9 kg/ha) were higher in the F₄ treatment as compared to F₁ (0.33% & 134.7 kg N/ha) and F₂ (0.37% & 136.9 kg N/ha) treatments.

The energy input, output relation study (Table 101) of the experiment at Hisar showed that maximum energy input among the tillage practices was in CT₁ with 2 intercultural operations (5381 MJ/ha) and minimum in MT₂ with 1 intercultural operation (4820 MJ/ha). Similarly, energy output (138357 MJ/ha), net energy (132976 MJ/ha) and energy productivity (0.55 kg/MJ/ha) were also recorded maximum in the CT₁ with 2 intercultural operation. Among the nutrient supply treatments, maximum energy consumption was in the F₃ treatment (5284 MJ/ha). The energy output (135912MJ/ha), net energy (130716 MJ/ha), energy productivity (0.56 kg/MJ/ha) and EUE (26.16) were higher in the F₂ (75% N +2.5 t FYM/ha) treatment.

5.5 Aurangabad: Different tillage practices and nutrient management treatments significantly influenced the grain as well as stover yields (Table 102-109). The grain yield was found significantly higher in the CT₁ with two intercultural operations (26.29 q/ha) as compared to the treatment MT₂ with one intercultural operation (20.47 q/ha), MT₁ with two intercultural operations (22.50 q/ha) and CT₂ with one intercultural operation (24.35 q/ha). Similar pattern was also observed for water use efficiency with values of 41.67, 32.65, 35.88 and 38.89 kg/ha-cm, respectively. Similarly, the highest gross returns (Rs 70250/ha), net returns (Rs 41409/ha) and B:C (2.44) were also recorded in the CT₁ with two intercultural operations.

The grain yield (24.21 q/ha), gross returns (Rs. 68469/ha), net returns (Rs. 41204/ha), BC ratio (2.51) and WUE (41.07 kg/ha-cm) were recorded highest in F₁: 100% RDF which was followed by F₂: 75%RDF+2.5 t FYM/ha with values of 23.89 q/ha, Rs. 63817/ha, Rs 35122/ha, 2.22 and 37.88 kg/ha-cm, respectively and lowest in F₄: 100% N through FYM (20.80 q/ha, Rs. 55121/ha, Rs. 26203/ha, 1.91 and 33.48 kg/ha-cm).

5.6 Dhule: The perusal of the data in the Table 102-115 exhibited that the grain yield was not significantly affected by tillage practices during 2020 & 2022 but it was found significantly higher in MT₁ with two intercultural operations (23.59 q/ha) which was found significantly superior over all the other tillage practices which remained statistically at par among themselves during 2021 season. The dry stover yield was not significantly influenced by different tillage practices during 2020 & 2021 but it was significantly superior in MT₁ with two intercultural operations (55.26 q/ha) which was found significantly superior over all the other tillage practices. Similarly, the highest gross returns (Rs 51588/ha), net returns (Rs 24078/ha) and WUE (37.66 kg/ha-cm) were also recorded in the MT₁ with two intercultural operations.

Among the nutrient supply treatments, the F₁-100% RDF (23.96 grain; 47.41 q/ha stover yield) and F₂-75% RDF+2.5 t FYM/ha (21.27 grain; 44.86 q/ha stover yield) were found statistically at par but produced significantly higher than F₃ - 50% RDF+5 t FYM/ha (21.41 grain; 42.29 q/ha stover yield) and F₄ - 100% N through FYM (19.80 grain; 38.95 q/ha stover yield), respectively. The gross returns (Rs. 55569/ha), net returns (Rs. 28709/ha), BC ratio (2.05) and WUE (38.19 kg/ha-cm) were also recorded highest in F₁.

The soil physico-chemical properties viz., BD, EC, pH, OC, available N, P and K (Table 113-115) were not significantly affected by tillage practices but available N was found highest in F₄ (205.7 kg/ha) as compared to values in the range of 186.3-195.0 kg/ha among other nutrition treatments. The available K in the F₁ and F₂ was in the range of 580.3-590.3 kg/ha whereas, it was between 552.0-567.8 kg/ha in F₃ and F₄ treatments.

The energy input, output relation study (Table 110-112) of the experiment showed that maximum energy input among the tillage practices was in CT₁ with 2 intercultural operations (4271 MJ/ha) whereas, maximum energy output (98637 MJ/ha), net energy (94491 MJ/ha), EUE (25.26) and energy productivity (0.64 kg/MJ/ha) in MT₁ with 2 intercultural operation. Among the nutrient supply treatments, the energy input (5040 MJ/ha), energy output (101553 MJ/ha) and net energy (96513 MJ/ha) were highest in the F₁ (RDF) treatment whereas, maximum EUE (35.65) and energy productivity (0.61 kg/MJ/ha) were recorded in the F₄ (100%N through FYM).

5.7 Vijayapur: A critical look on the data presented in Table 102-109 and 113-115 indicated that the grain and stover yield was significantly highest in the treatment CT₁ with two intercultural operations (21.06 q/ha grain; 51.44 q/ha stover) at par with CT₂ with one intercultural operation (20.12 q/ha grain; 49.33 q/ha stover) but produced significantly superior over MT₁ with two intercultural operations yields of 17.56 q/ha & 45.47 q/ha, respectively and MT₂ with one intercultural operation with yields of 16.62 q/ha & 52.89 q/ha, respectively. Similarly the WUE was higher in these two treatments with values of 63.48 & 60.60 kg/ha-cm in comparison 53.21 & 50.40 kg/ha-cm in MT₁ and MT₂ treatments, respectively. The gross returns (Rs. 37016/ha), net returns (Rs. 20121/ha) were recorded maximum in the CT₁ with two intercultural operations but BC ratio (2.46) in CT₂ with one intercultural operation.

Among the nutrient supply treatments, the grain yield was significantly affected by different treatments and it was significantly superior in the F₄ (100%N through FYM) treatment with value of 19.58 q/ha over F₁-100% RDF treatment but at par with MT₁ with two intercultural operations and MT₂ with one intercultural operation. The WUE was found highest in F₄ (100%N through FYM) treatment with value of 59.08 kg/ha-cm. The net returns and BC ratio were recorded maximum in the F₁-100% RDF treatment (Rs. 21185/ha; 2.73).

The soil physico-chemical properties viz., BD, EC, pH, OC, available N, P and K (Table 113-115) were not significantly affected by tillage practices but available N was found highest in F₄ (214.4 kg/ha) as compared to values in the range of 190.3-205.5 kg/ha among other nutrition treatments. However, available K in the F₁ and F₂ was in the range of 398.2-408.7 kg/ha whereas, it was between 412.6-416.5 kg/ha in F₃ and F₄ treatments.

5.8 Coimbatore: The perusal of the data in the Table 102-112 exhibited that the treatment CT₂ with one intercultural operations (29.75 q/ha grain; 42.05 q/ha stover yield) and CT₁ with two intercultural operations (29.35 q/ha grain; 42.06 q/ha stover) were statistically at par in terms of grain and stover yield but produced significantly superior over MT₁ with two intercultural operations (26.62 q/ha grain; 38.94 q/ha stover yield) and MT₂ with one intercultural operation (26.17 q/ha grain; 38.47 q/ha stover yield), respectively. The WUE (79.60 kg/ha-cm), net returns (Rs. 25423/ha) and B:C (1.95) were recorded maximum in CT₂ with 1 intercultural operation which was followed by CT₁ with 2 intercultural operations (80.56 kg/ha-cm, Rs. 25130/ha and 1.90), MT₁ with 2 intercultural operations (72.25 kg/ha-cm, Rs. 17267/ha and 2.00) and CT₂ with 1 intercultural operation (71.09 kg/ha-cm, Rs. 20576/ha and 1.97) treatments, respectively.

Among the nutrient supply treatments, the F₁-100% RDF (28.31 q/ha grain; 40.76 q/ha stover yield) and F₂-75% RDF+2.5 t FYM/ha (28.53 q/ha grain; 40.75 q/ha stover yield) were found statistically at par but produced significantly higher than F₃ - 50% RDF+5 t FYM/ha (27.91q/ha grain; 40.48 q/ha stover yield) and F₄ - 100% N through FYM (27.15 q/ha grain; 39.53 q/ha stover yield), respectively. The gross returns (Rs. 50983/ha) and WUE (81.72 kg/ha-cm) were found maximum in F₂ whereas, the net returns (Rs. 26308/ha) and BC ratio (2.06) were recorded highest in F₁.

The energy input and output relation study (Table 110-112) of the experiment showed that among the tillage practices, maximum energy input (9275 MJ/ha) and energy output (97587 MJ/ha) was in CT₁ with 2 intercultural operations and minimum in MT₂ with 1 intercultural operation (86552 MJ/ha and 7911 MJ/ha) whereas, net energy (87240 MJ/ha), EUE (11.29) and energy productivity (0.35 kg/MJ/ha) were recorded in the CT₂ with 1 intercultural operation. Among the nutrient supply treatments, maximum energy consumption was in the F₁ (RDF) treatment (8740 MJ/ha). The energy output and net energy were higher in the F₂ (RDF) treatment with values of 87987 and 80079 MJ/ha. Similarly, EUE (11.10) and energy productivity (0.34 kg/MJ/ha) were recorded maximum in the F₂-75% RDF+2.5 t FYM/ha treatment.

Zonal performance – Zone B

The mean data of Zone B revealed that grain and stover yield obtained in CT₁ with 2 intercultural operations (24.48 q/ha; 46.45 q/ha) and CT₂ with one intercultural operation (23.83 q/ha; 45.55 q/ha) were at par and produced higher than MT₁ with two intercultural operations (22.57 q/ha; 43.73 q/ha) and MT₂ with one intercultural operation (21.27 q/ha; 41.16 q/ha). The highest gross returns (Rs.

52879/ha), net returns (Rs. 27333/ha), B:C of 2.13 and WUE (54.57 kg/ha-cm) were obtained in CT₁ with two intercultural operations however, B:C (2.13) was at par with CT₂ with 1 intercultural operation.

Among the nutrient supply treatments, the grain yield was almost at par among different treatments (21.83-23.91 q/ha), stover yield (42.10-46.04 q/ha) and WUE (49.31-52.46 kg/ha-cm), respectively. The gross returns (Rs. 52879/ha), net returns (Rs. 27333/ha) and BC ratio (2.34) were also recorded highest in F₁: 100% RDF. The energy input-output relation study of the experiment showed that maximum energy input among the tillage practices was in CT₁ with 2 intercultural operations and minimum in MT₂ with 1 intercultural operation whereas, energy output, net energy, EUE and energy productivity were recorded in the MT₁ with 2 intercultural operations at Dhule whereas, in CT₂ with 1 intercultural operation in Coimbatore. Among the nutrient supply treatments, maximum energy consumption, energy output and net energy was in the F₁ (RDF) treatment. EUE and energy productivity were recorded maximum in the F₁ (RDF) treatment in Coimbatore whereas, in F₄ at Dhule Centre.

PMAT 6: Response of pearl millet to split application of nitrogen at different growth stages under irrigated condition

The trail was started during *kharif*, 2021 with an objective to study the optimum time of split application of nitrogen and see its effect on pearl millet crop growth, productivity and economics at two locations of Zone A₁ (Mandor and Bikaner), three locations in Zone A (Jaipur, Jamnagar and Hisar) and four locations in Zone B (Aurangabad, Coimbatore, Vijayapur and Dhule). Three nitrogen levels viz., N₁ – 100 % RDN, N₂ – 112.5% RDN and N₃ – 125 % RDN were taken as main plot and four nitrogen split applications S₁: Entire dose of N at sowing, S₂: 50% N at sowing + 50% N at tillering (20-25 DAS), S₃: 50% N at sowing + 50% N at boot stage (35-40 DAS), S₄: N will be applied in three splits (25% basal), 50% at tillering (20-25 DAS) and 25% at boot stage (35-40 DAS) as sub plot. Thus, 12 treatment combinations were evaluated in split plot design. All the treatments were replicated for four times. The results of the experiment are discussed in the following paragraphs and data presented in Tables II.116-151.

6.1 Bikaner: The data presented in the Table 116-120 for *kharif* 2022 season revealed that grain and stover yield were significantly higher at 125% RDN over RDN but was at par with 112.5% RDN. Maximum gross returns, net returns and BC ratio of Rs. 96156/ha, Rs. 74563/ha and 4.44 were achieved in the 125% RDN treatment. The three time split application of N (S₄) recorded significantly higher grain yield (25.98 q/ha) over S₁ (entire dose of N at sowing) with 22.62 q/ha and S₂ (50% N at sowing and 50% N at tillering) with 23.14 q/ha. The respective increase in the S₄ treatment was 14.9, 12.3 and 0.8% as compared to S₁, S₂ and S₃ treatments. The gross returns increase in the S₄ treatment was to the tune of Rs. 12331, Rs. 7562 and Rs. 1154/ha, whereas, the net returns by Rs. 11731, Rs. 7263 and Rs. 855/ha, respectively over S₁, S₂ and S₃ treatments. The BC ratio was recorded highest in the S₃ treatment (4.23).

6.2 Mandor: The perusal of the data in Table 116-120 revealed that the grain yield was found statistically at par among all the doses of the N, however it was significantly higher in S₄: N will be applied in three splits (25% basal), 50% at tillering (20-25 DAS) and 25% at boot stage (35-40 DAS) as compared to S₁: Entire dose of N at sowing and S₂: 50% N at sowing + 50% N at tillering (20-25 DAS) but remained at par with S₃: 50% N at sowing + 50% N at boot stage (35-40 DAS). The stover yield improved significantly up to 112.5% RDN. However, stover yield in S₂, S₃ & S₄ remained statistically at

par but all these produced significantly superior over S_1 . The gross returns (Rs 75566/ha), net returns (Rs 50653/ha) and B:C were highest at 125% RDN but almost at par with 112.5% RDN. Similarly, the gross returns (Rs 77646/ha), net returns (Rs 52579/ha) and B:C (3.10) were highest in S_4 : N will be applied in three splits (25% basal), 50% at tillering (20-25 DAS) and 25% at boot stage (35-40 DAS).

Zonal performance – Zone A1

The mean data of two locations revealed that highest grain yield (28.86 q/ha) and stover yield was obtained with 125% RDN (56.96 q/ha) as compared to other doses. The three times split N applications (S_4) had higher grain yield by 12.0, 7.8 and 4.9% whereas, stover yield by 12.5, 3.0 and 1.5% over S_1 , S_2 and S_3 treatments. The net returns were lower by Rs. 10410, Rs. 6207 and Rs. 2209/ha, respectively in S_1 , S_2 and S_3 treatments as compared to S_4 treatment. The BC ratio was also highest in the S_4 treatment (4.29).

6.3 Hisar: The perusal of the data in the Table 121-135 revealed that the grain as well as stover yield were significantly increased with successive increase in dose of Nitrogen (N) from RDN to 112.5% RDN which remained at par with 125% RDN. Maximum gross returns, net returns and BC ratio of Rs. 116260, Rs. 59252/ha and 2.04 were achieved in the 125% RDN treatment. The three time split application of N (S_4) recorded significantly higher grain yield (41.04 q/ha) over S_1 (entire dose of N at sowing) with 33.97 q/ha and S_2 (50% N at sowing and 50% N at tillering) with 39.18 q/ha and S_3 (50% N at sowing and 50% N at boot) with 38.37 q/ha. Similar trend was observed for stover yield. The respective increase in the S_4 treatment was 20.8, 1.7 and 7.0% higher as compared to S_1 , S_2 and S_3 treatments. The gross returns increase in the S_4 treatment was to the tune of Rs. 19110, Rs. 5529 and Rs. 7433/ha, whereas, the net returns by Rs. 17951, Rs. 4910 and Rs. 6814/ha, respectively over S_1 , S_2 and S_3 treatments. The BC ratio was also highest in the S_4 treatment (2.09).

The NPK content and their uptake studies in grain and straw was also carried out and it was found that P and K content were not much affected by doses and split application of N but these were recorded comparatively higher in 125% RDN and three split applications in comparison to 100% RDN and entire dose of N at sowing, respectively. However, N content in grain was higher in 125% RDN (1.92%) over RDN (1.88%). The total N, P and K uptake were 125.0, 45.6 and 236.9 kg, respectively in the 125% RDN as compared to 111.9, 38.9 and 214.0 kg/ha in the RDN. The three split application had also the highest uptake of N (128.6 kg/ha), P (46.4 kg/ha) and K (241.0 kg/ha) as compared to the range of 107.8-120.2, 37.8-43.3 and 209.9-228.7 kg/ha, respectively in the treatments from S_1 to S_3 .

6.4 Jamnagar: The data presented in the Table 121-127 and 131-135 revealed that the grain yield was significantly increased with successive increase in dose of Nitrogen (N) from RDN to 125% RDN whereas; stover yield was significantly highest at 125% RDN over RDN but was at par with 112.5% RDN. Maximum gross returns, net returns and BC ratio of Rs. 73723, Rs. 50300/ha and 3.14 were achieved in the 125% RDN treatment. The three time split application of N (S_4) recorded significantly higher grain yield (32.73 q/ha) over S_1 (entire dose of N at sowing) with 23.83 q/ha, S_2 (50% N at sowing and 50% N at tillering) with 29.00 q/ha and S_3 with 26.44 q/ha. The net returns increase in the S_4 treatment was to the tune of Rs. 18805, Rs. 7801 and Rs. 13217/ha, respectively over S_1 , S_2 and S_3 treatments. The BC ratio was also highest in the S_4 treatment (3.25).

The NPK content and their uptake were significantly affected by doses and split application of N. N (1.90%), P (0.31%) and K (0.41%) content in grain were maximum in 125% RDN treatment over RDN

and similar was the trend for fodder. The three time split application was also having the highest N content (1.75%) as compared to the range of 1.54-1.65%, respectively in the treatments from S₁ to S₃. The available N (172.9 kg/ha), P (16.9 kg/ha) and K (275.5 kg/ha) in the soil after harvest were maximum in 125% RDN treatment, whereas in RDN treatment these values were 130.8 kg/ha, 16.07 kg/ha and 267.4 kg/ha, respectively.

6.5 Jaipur: The data presented in the Table 121-122 and 126-127 revealed that the grain yield was significantly higher at 112.5% RDN as compared to RDN but remained statistically at par with 125% RDN. However, stover yield in 125% RDN was found significantly superior over RDN but it remained at par with 112.5% RDN. The three time split application of N (S₄) recorded significantly higher grain yield (29.68 q/ha) over S₁ (entire dose of N at sowing) with 26.86 q/ha but remained at par with S₃ (50% N at sowing and 50% N at boot) with 29.14 q/ha and S₂ (50% N at sowing and 50% N at tillering) with 30.03 q/ha. Similar respective increase in the S₄ treatment was found for stover yield as compared to S₁, S₂ and S₃ treatments.

Zonal performance – Zone A

The mean data of three locations revealed that the grain yield was 10.7 and 16.2% higher in the 112.5 and 125% RDN over RDN only whereas, this increase was 7.3 and 10.9% in terms of stover yield. The gross returns were higher by Rs. 11656/ha and Rs. 4609/ha in the highest dose of 125% RDN as compared to RDN and 112.5% RDN. The net returns values were Rs. 11296/ha and Rs. 4421/ha, respectively. The three times split N applications had higher grain yield by 25.3, 6.3 and 11.1% whereas, stover yield by 14.8, 4.4 and 5.9% over S₁, S₂ and S₃ treatments. The net returns were lower by Rs. 18481, Rs. 6171 and Rs. 9300/ha, respectively in S₁, S₂ and S₃ treatments as compared to S₄ treatment. The BC ratio was also highest in the S₄ treatment (2.48).

At Hisar, the NPK content and their uptake studies in grain and straw revealed that P and K content were not much affected by doses and split application of N. However, N content in grain was higher in 125% RDN (1.92%) over RDN (1.88%). The total N, P and K uptake were 125.0, 45.6 and 236.9 kg/ha, respectively in the 125% RDN as compared to 111.9, 38.9 and 214.0 kg/ha in the RDN. The three split application had also the highest uptake of N (128.6 kg/ha), P (46.4 kg/ha) and K (241.0 kg/ha) as compared to the range of 107.8-120.2, 37.8-43.3 and 209.9-228.7 kg/ha, respectively in the treatments from S₁ to S₃.

At Jamnagar, N (1.90%), P (0.31%) and K (0.41%) content in grain were maximum in 125% RDN treatment over RDN and similar trend was the for stover. The three time split application was also having the highest N content (1.75%) as compared to the range of 1.54-1.65%, respectively in the treatments from S₁ to S₃. The available N (172.9 kg/ha), P (16.9 kg/ha) and K (275.5 kg/ha) in the soil after harvest were maximum in 125% RDN treatment whereas in RDN treatment these values were 130.8 kg/ha, 16.07 kg/ha and 267.4 kg/ha, respectively.

6.6 Aurangabad: The perusal of the data in the Table 136-142 revealed that the grain yield was significantly higher at 125% RDN in comparison to RDN and 112.5% RDN which remained statistically at par. The stover yield was not significantly improved by 112.5 & 125 % RDN doses over RDN. Maximum gross returns and net returns of Rs. 92784/ha and Rs. 61784/ha were achieved in the 125% RDN treatment. The two time split application of N (S₂) recorded statistically at par grain yield (31.14 q/ha) in comparison to S₁ (Entire dose of N at sowing time) but significantly superior over S₄ with 20.78 q/ha and S₃ (50% N at sowing and 50% N at boot) with 26.71 q/ha. Similar trend was observed for

stover yield except the best treatment was also at par with S₃. The gross returns (Rs. 95663/ha) and net returns (Rs. 65163/ha) were maximum in the S₂ treatment with B:C of 3.13. The N, P and K content studies in the grain, stover and soil were not conducted during 2022.

6.7 Dhule: The data presented in the Table 136-151 revealed that the grain as well as stover yield were not significantly by higher doses of 112.5 & 125% RDN as compared to RDN. The two time split application of N (S₃) with grain yield of 30.88 q/ha, S₂ with 29.90 q/ha and S₄ with value of 29.25 q/ha recorded significantly higher grain yield over S₁ (entire dose of N at sowing) with 26.59 q/ha. The net returns increase in the S₃ treatment was to the tune of by Rs. 10325, Rs. 1715 and Rs. 4628/ha, respectively over S₁, S₂ and S₄ treatments, respectively. The BC ratio was also highest in the S₃ treatment (2.85).

No much variation in NPK content of grain and plant were observed by doses and split application of N except N content which was maximum at 125% RDN (1.58%) and also K content in stover (1.43%). Total N (115.2 kg/ha), P (32.3 kg/ha) and K uptake (109.0 kg/ha) were highest at 125% RDN. The two time split application of N (S₃) recorded significantly higher N (117.2 kg/ha), P (40.1 kg/ha) and K uptake (112.0 kg/ha) over S₁ (entire dose of N at sowing), S₂ (50% N at sowing and 50% N at tillering) and S₄ treatments. The available N (198.5 kg/ha) & P (17.2 kg/ha) in the soil after harvest were maximum in 125% RDN but K in RDN (571.0 kg/ha) treatment whereas, soil pH was almost at par. There was no change in the soil pH by the split application of N. The available N (183.4-190.2 kg/ha), P (17.2-17.3 kg/ha) and K (566-573 kg/ha) in the soil were recorded among S₁, S₂, S₃ & S₄ N application.

6.8 Vijayapur: The perusal of the data in the Table 136-151 revealed that the grain yield was found statistically at par among RDN, 112.5% RDN and 125% RDN whereas, stover yield was significantly higher in 125% RDN over RDN but remained at par with 112.5 % RDN. The three time split application of N (S₄) recorded significantly higher grain yield (24.94 q/ha) over S₁ (entire dose of N at sowing) with 20.46 q/ha and S₂ (50% N at sowing and 50% N at tillering) with 22.91 q/ha but at par with S₃ (50% N at sowing and 50% N at boot) with yield of 23.01 q/ha. Similar trend was observed for stover yield but it was at par with S₂ & S₃. The gross returns increase in the S₄ treatment was to the tune of Rs. 7620, Rs. 3452 and Rs. 3283/ha, whereas, the net returns by Rs. 7020, Rs. 3152 and Rs. 2983/ha, respectively over S₁, S₂ and S₃ treatments. The BC ratio was also highest in the S₄ treatment (2.51).

The NPK content and their uptake studies in grain was also carried out and it was found that P and K content were not much affected by doses and split application of N. However, N content in grain was significantly higher in 125% RDN (2.10%) over RDN (2.06%). The three split application of N had highest uptake of N (51.8 kg/ha), P (17.9 kg/ha) and K (22.2 kg/ha) in grain as compared to the range of 42.4-47.9, 14.3-16.4 and 18.1-20.7 kg/ha, respectively in the treatments from S₁ to S₃. The available N in the soil after harvest was maximum in 125 % RDN (188.2 kg/ha) and there were no much variation in pH, available P and K values among the different doses and split application treatments.

6.9 Coimbatore: The data presented in the Table 136-142 revealed that the grain as well as stover yield were significantly higher at 125% RDN as compared to RDN and 112.5% RDN. The increase in the yield was 24.3 and 6.3%, respectively. Maximum gross returns, net returns and BC ratio of Rs. 55793, Rs. 25946/ha and 1.90 were achieved in the 125% RDN treatment. The three time split application of N (S₄) recorded significantly higher grain yield (30.61 q/ha) over S₁ (entire dose of N at sowing) with 25.10 q/ha, S₂ (50% N at sowing and 50% N at tillering) with 27.52 q/ha and S₃ with 27.89 q/ha. The net returns increase in the S₄ treatment was to the tune of by Rs. 6713, Rs. 4622 and Rs. 3954/ha,

respectively over S_1 , S_2 and S_3 treatments. The BC ratio was also highest in the S_4 treatment (1.96). The available N (219.9 kg/ha) and P (15.0 kg/ha) in the soil were maximum at 125 % RDN however, K in the soil was recorded maximum in RDN. In nitrogen split application treatments, the maximum available N, P and K were recorded in the S_1 i.e. entire dose of N at sowing treatment.

Zonal performance - Zone B

The mean data of four locations exhibited the increase of 8.1 and 14.1% in the grain yield whereas; in stover yield it was 7.3 and 9.6% with the 112.5 and 125% RDN as compared to RDN. Maximum gross returns, net returns and BC ratio of Rs. 63676/ha, Rs. 37384/ha and 2.49 were achieved in the 125% RDN treatment and gross and net returns were higher by Rs. 7929/ha and Rs 6418/ha over RDN. Among the split application of nitrogen, the grain (25.78 q/ha) as well as stover yield (50.72 q/ha) were lowest in S_1 whereas, the grain yield was in the range of 27.53 to 28.31 q/ha and stover yield between 52.07-54.84 q/ha in the S_2 to S_4 treatments. Similar trend was also observed for the gross returns, net returns and BC ratio.

The soil pH, available P and K in the soil were not much influenced by the higher doses and split application of N, however available N (201.4 kg/ha) was found maximum in 125% RDN treatment. At Dhule centre, two time split application of N (S_3) recorded significantly higher N (117.2 kg/ha), P (40.1 kg/ha) and K uptake (112.0 kg/ha) over S_1 (entire dose of N at sowing), S_2 (50% N at sowing and 50% N at tillering) and S_4 treatments. The available N (198.5 kg/ha) & P (17.2 kg/ha) in the soil after harvest were maximum in 125% RDN but K in RDN (571.0 kg/ha) treatment whereas, soil pH was almost at par. At Vijayapur, the three split application of N had highest uptake of N (51.8 kg/ha), P (17.9 kg/ha) and K (22.2 kg/ha) in grain as compared to the range of 42.4-47.9, 14.3-16.4 and 18.1-20.7 kg/ha, respectively in the treatments from S_1 to S_3 . The available N in the soil after harvest was maximum in 125 % RDN (188.2 kg/ha) and there were no much variation in pH, available P and K values among the different doses and split application treatments.

PMAT 7: Productivity of pearl millet [*Pennisetum glaucum* (L.) R.Br. Emend. Stuntz]- Mustard/ Chickpea cropping sequence as influenced by organic and naturalfarming.

The field experiment aimed to evaluate the effect of organic and natural farming on productivity, quality, soil properties and microbial counts of pearl millet and mustard/chickpea crops was started during *Kharif*, 2022 at two locations of Zone A1 (Mandor and Bikaner), four locations in Zone A (Jaipur, Jamnagar, Jammu and Hisar) and five locations in Zone B (Aurangabad, Coimbatore, Vijayapur, Dhule and Peruvullum). The performance of most popular pearl millet hybrid or mustard/gram varieties of the locations in Zone A1, Zone A and Zone B were evaluated with nine different treatments i.e. T_1 : Control (RDF), T_2 : RDN* through Farm yard manure (FYM), T_3 : RDN through Vermicompost (VC), T_4 : DN through Poultry manure(PM) for Zone A &B / *Sheep or Goat manure for Zone A₁, T_5 : DN through Poultry manure(PM) for Zone A &B / *Sheep or Goat manure for Zone A₁, T_6 : RDN through Poultry manure(PM) for Zone A &B / *Sheep or Goat manure for Zone A₁, T_7 : RDN through Poultry manure + Biofertilizer and T_8 : *** Cow based bio formulation (250 kg/ha Cow Urine Based Solid Organic bio-Formulation (CUBSOF)/ha before sowing along with sieved dry FYM @ 250 kg/ha will be applied into the soil before sowing and Cow Urine Based Liquid Organic bio-Formulation (CUBLOF) @ 500 litre/ha with irrigation water or foliar spray of 10 % will be applied two times at 15-20 & 35-40 DAS in pearl millet and after 35-40 & 70-75 DAS in mustard/chickpea crops during the crop season) and T_9 : RDF**. Nine treatments were replicated three times in RBD. Data on ancillary characters,

nutritional aspects, microbial counts, yield attributes, yield and economics are presented in Table II.152 to II.170.

7.1 Bikaner: The data presented in the Table II.152 to 154 exhibited at par performance for grain yield in the treatments T₂ to T₈ (14.28-16.47 q/ha) and all these produced significantly lower yield than RDF through inorganic sources (20.51 q/ha). More importantly, the grain and stover yield in the control (T₁) and RDF (T₉) were found statistically at par. The stover yield also followed the trend of grain yield. The respective grain and stover yield were 16.44 q/ha and 30.79 q/ha, respectively in the cow based treatment. The gross returns were also recorded highest in the T₉ treatment (Rs. 88718/ha) whereas, net returns (Rs. 62917/ha) and BC ratio (4.0) were maximum in the T₁ (Control).

7.2 Mandor: The grain and stover yield were found maximum in T₉ treatment (19.83 q/ha grain; 41.37 q/ha stover) and these were higher by 163.3 and 192.7%, respectively over the control. The grain and stover yield were significantly lower in the cow based treatments (T₈) treatment (16.73 q/ha grain; 33.03 q/ha stover) as compared to RDF treatment but remained at par with all the organic manure treatments (FYM, VC and Poultry Manure and their combinations). The maximum gross (Rs. 71429/ha), net returns (Rs. 51057/ha) and BC ratio (3.5) were also found in the T₉ treatment and resulted in Rs. 15614/ha more net returns over the cow based treatments (T₈) treatment.

The microbial counts study (Table II.155) revealed that dehydrogenase activity was recorded highest in the treatment T₅ (RDN through FYM+ Biofertilizer) which was found statistically at par with T₆ but significantly superior over all other treatments. Alkaline phosphatase, Acid phosphatase and MBC populations were found statistically at par among all the treatments. Urease populations was found significantly higher in T₅ & T₇ treatments over rest of treatments. Bacterial counts in T₅ and T₆ treatments were significantly higher over all the treatments except T₇. The fungal counts were recorded statistically at par among T₂ to T₈ treatments and all these were having significantly superior populations over control except T₂ & T₃ and RDF treatments. The actinomycetes counts were found at par in the T₅ to T₈ and showed significantly higher population over all the treatments except T₂ treatments.

Zonal performance – Zone A1

The two locations mean data showed the superiority of treatment T₉ (RDF) treatment in terms of grain and stover yield (20.17 and 40.94 q/ha, respectively) compared to all the remaining treatments including control (13.44 q/ha grain; 26.30 q/ha stover). The grain and stover yield were improved by 50.0 and 55.7% in the T₉ treatment over the control and by 21.6 and 28.3 % over the cow based formulation treatment (T₈). The T₉ treatment resulted in Rs. 9322/ha and Rs. 18206/ha more net returns over the control and cow based treatments. The maximum B:C was also recorded in the T₉ (2.7) whereas it was 2.2 and 1.9 in control and cow based treatments.

The microbial counts study (Table II.155) at Mandor revealed that dehydrogenase activity was recorded highest in the treatment T₅ (RDN through FYM+ Biofertilizer) which was found statistically at par with T₆ but significantly superior over all other treatments. Alkaline phosphatase, Acid phosphatase and MBC populations were found statistically at par among all the treatments. Urease populations was found significantly higher in T₅ & T₇ treatments over rest of treatments. Bacterial counts in T₅ and T₆ treatments were significantly higher over all the treatments except T₇. The fungal counts were recorded statistically at par among T₂ to T₈ treatments and all these were having significantly superior populations over control except T₂ & T₃ and RDF except T₂ to T₅ treatments. The actinomycetes counts were found

at par in the T_5 to T_8 and showed significantly higher population over all the treatments except T_2 treatments.

7.3 Hisar: All organic manures were incorporated thoroughly into the soil prior to crop sowing except cow urine based liquid organic bioformulation CUBLOF which was applied twice at 20 and 35 DAS. Yield attributes (total no. of tillers, effective tillers, ear head length, ear head girth and 1000 grains weight) were significantly increased with the application of different organic manures alone (viz., farmyard manure, vermicompost and poultry manure) and also along with biofertilizers over control (Table II.156-161).

Results shown in Table II.156-161 depict that organic and cow centric nutrients had significant impact on grain and stover yield of pearl millet. The grain and stover yield of pearl millet showed an increment with the application of different organic manures alone (viz., farmyard manure (FYM), vermicompost (VM) and poultry manure) and in combination with bio fertilizers over control. Highest grain and stover yield (40.56 q/ha in grain and 111.79 q/ha in stover) were obtained under treatment RDF. However, lowest grain and stover yields (21.36 & 64.90 q/ha) were obtained in the control. The respective range of grain yield was in the range of 31.32 to 33.28 q/ha and 85.87 to 90.15 q/ha, respectively in the T_5 to T_7 treatments whereas, it was 26.26 q/ha and 75.56 q/ha, respectively in cow based treatment (T_8). Highest gross (Rs. 117668/ha), net returns (Rs. 49854/ha) and BC ratio (1.74) were also found in the T_9 treatment and resulted in Rs. 40648/ha more net returns over the cow based treatment (T_8).

It can be inferred from the Table II.159 that organic sources of nutrients alone as well as along with biofertilizers were found to be higher in SOC and available nitrogen (N). Maximum available soil organic carbon (0.36 %) and N (191 kg/ha) were observed in the poultry manure along with biofertilizers treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by cow based formulation treatment.

An appraisal of data presented in Table II.160 inferred that remarkable effects of biofertilizers, FYM and vermicompost were observed on the bacterial population of soil after harvesting of pearl millet. Treatment receiving cow based bio formulations notably recorded highest bacterial population (5.50×10^5 cfu count g^{-1} soil) over control (3.30×10^5 cfu count g^{-1} soil) and RDF treatment (3.18×10^5 cfu count g^{-1} soil). Similarly the fungal population was also found maximum in cow based treatment (4.51×10^4 cfu count g^{-1} soil) over control (3.35×10^4 cfu count g^{-1} soil) and RDF treatment (3.12×10^4 cfu count g^{-1} soil). The actinomycetes population also showed the similar trend with value 2.88×10^4 cfu count g^{-1} soil in cow based treatment over control (2.20×10^4 cfu count g^{-1} soil) and RDF treatment (2.02×10^4 cfu count g^{-1} soil).

7.4 Jaipur: The data presented in the Table II.156-158 & 161 exhibited at par performance for grain yield in the treatments T_3 to T_9 (37.72-40.14 q/ha) and all these produced significantly higher yield than control (30.34 q/ha). The stover yield also followed the trend of grain yield. The respective grain and stover yield were 38.06 q/ha and 99.82 q/ha, respectively in the cow based treatment. The protein content was recorded highest in the T_9 treatment (9.3 %) however it was statistically at par among all the treatments.

7.5 Jamnagar: The study exhibited that the grain and stover yield were significantly higher in the RDF treatment over all the treatments. The grain yield was higher by 154.9 and 91.1 per cent higher over

control and cow based treatments. The stover yield was 79.8 and 36.7 per cent more in these treatments, respectively. Among organic manure treatments, the poultry manure application alone (15.50 q/ha) and in combination (19.37 q/ha) resulted into higher yield as compared to FYM, vermicompost and cow based treatments. The highest gross returns (Rs. 59325/ha) and net returns (Rs. 37967/ha) and BC ratio (2.78) were also found in the T₉ treatment and resulted in Rs. 27773/ha more net returns over the cow based treatment (T₈).

Table II.159 exhibited that organic sources of nutrients alone as well as along with biofertilizers were found to be higher in SOC (0.58-0.68%) and available nitrogen (188.6-202.9 kg/ha) as compared to 0.59% and 196.6 kg/ha in cow based treatment, 0.51 % & 186.1 kg/ha in control and 0.46% and 225.4 kg/ha in RDF treatment. Similar trend was also observed for phosphorus (P) and potash (K). Maximum available soil organic carbon (0.68 %) and N (202.9 kg/ha) were observed in the poultry manure along with biofertilizers treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by cow based formulation treatment. Bacterial counts were also observed significantly higher in T₈ than all the treatments except FYM alone and FYM along with biofertilizer treatments which remained statistically at par.

7.6 Jammu: The data presented in the Table II.156-158 exhibited at par performance for grain yield in the treatments T₂ to T₆ (19.73-24.03 q/ha) and all these produced statistically at par yield than cow based formulation (20.83 q/ha). The stover yield was found statistically at par among all the treatments including control. The grain (28.96 q/ha) and stover (50.64 q/ha) yields were significantly higher in the RDF treatment over all the treatments. The grain yield was higher by 59.2 and 39.0 per cent higher over control and cow based treatments.

Zonal performance – Zone A

The four locations mean data showed the superiority of T₉ (RDF) treatment in terms of grain and stover yield (33.58 and 75.42 q/ha, respectively) compared to all the remaining treatments including control (19.97 q/ha grain; 51.30 q/ha stover). The grain and stover yield were higher by 68.2 and 47.0% in the T₉ treatment over the control and by 36.4 and 21.6% over the cow based formulation treatment (T₈). The T₉ treatment resulted in Rs. 38644/ha and Rs. 34210/ha more net returns over the control and cow based treatments. The maximum B:C was also recorded in the T₉ (2.7) whereas it was 1.22 and 1.29 in control and cow based treatments. The protein content was observed maximum in the VC + biofertilizer (9.7%) and Poultry manure + biofertilizer (9.7%) treatments as compared to 9.4% in RDF and 9.5% in cow based treatments whereas, lowest in the control (9.0%).

At Hisar, maximum available soil organic carbon (0.36%) and N (191 kg/ha) were observed in the poultry manure along with biofertilizers treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by cow based formulation treatment. An appraisal of data presented in Table II.160 inferred that cow based bio formulations notably recorded highest bacterial population (5.50×10^5 cfu count g⁻¹ soil) over control (3.30×10^5 cfu count g⁻¹ soil) and RDF treatment (3.18×10^5 cfu count g⁻¹ soil). Similarly the fungal population was also found maximum in cow based treatment (4.51×10^4 cfu count g⁻¹ soil) over control (3.35×10^4 cfu count g⁻¹ soil) and RDF treatment (3.12×10^4 cfu count g⁻¹ soil). The actinomycetes population also showed the similar trend with value 2.88×10^4 cfu count g⁻¹ soil in cow based treatment over control (2.20×10^4 cfu count g⁻¹ soil) and RDF treatment (2.02×10^4 cfu count g⁻¹ soil).

Table II.159 at Jamnagar exhibited that organic sources of nutrients alone as well as along with biofertilizers were found to be higher in SOC (0.58-0.68%) and available nitrogen (188.6-202.9 kg/ha) as compared to 0.59% and 196.6 kg/ha in cow based treatment, 0.51 % & 186.1 kg/ha in control and 0.46% and 225.4 kg/ha in RDF treatment. Maximum available soil organic carbon (0.68 %) and N (202.9 kg/ha) were observed in the poultry manure along with biofertilizers treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by cow based formulation treatment. Bacterial counts were also observed significantly higher in T₈ than all the treatments except FYM alone and FYM along with biofertilizer treatments which remained statistically at par.

7.7 Aurangabad: The data presented in the Table II.162 to 165 & 168 exhibited at par performance for grain yield in the treatments T₃ to T₇ (21.88-26.39 q/ha) and all these produced statistically at par yield than cow based formulation (22.43 q/ha). The stover yield was found statistically at par among T₂ to T₈ treatments including cow based formulation. The grain (33.52 q/ha) and stover (58.10 q/ha) yields were significantly higher in the RDF treatment over all the treatments. The grain yield was higher by 73.0 and 49.4 per cent higher over control and cow based treatments, respectively. The T₉ treatment resulted in Rs. 39161/ha and Rs. 31853/ha more net returns over the control and cow based treatments. The maximum B:C was also recorded in the T₉ (3.4) whereas, it was 2.2 and 2.4 in control and cow based treatments.

7.8 Dhule: The grain and stover yield were found maximum in T₉ treatment (19.50 q/ha grain; 37.05 q/ha stover) and these were higher by 83.1 and 51.8%, respectively over the control and cow based treatment. The grain and stover yield were significantly lower in the cow based treatments (T₈) treatment (12.85 q/ha grain; 24.67 q/ha stover) as compared to RDF treatment but remained at par with all the sole organic manure treatments (FYM, VC and Poultry Manure) but significantly lower than their combination treatments. The maximum gross (Rs. 51720/ha), net returns (Rs. 29761/ha) and BC ratio (2.4) were also found in the T₉ treatment and resulted in Rs. 17128/ha more net returns over the cow based treatment (T₈).

The perusal of the data in Table II.166-167 revealed that organic sources of nutrients alone as well as along with biofertilizers were found to be higher in SOC, available nitrogen (N), phosphorus (P) and potash (K). Maximum available soil organic carbon (0.58 %), N (213.7 kg/ha) and P₂O₅ (17.2 kg/ha) were observed in the FYM along with biofertilizer treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by RDF treatment.

7.9 Vijayapur: All the yield attributes (total no. of tillers/plant, effective tillers/plant, ear head length, ear head girth and 1000 grains weight), grain and stover yields were significantly increased with the application of different sole organic manures (farmyard manure, vermicompost and poultry manure) and also along with biofertilizers over control (Table II.162-164 and 166-169). Highest grain and straw yield (26.77 q/ha in grain and 61.25 q/ha in stover) were obtained under treatment RDF. However, lowest grain and stover yields (17.16 & 47.60 q/ha) were obtained in the control. The respective range of grain yield and stover yield was in the range of 23.93 to 26.03 q/ha and 55.16 to 59.54 q/ha, respectively in the T₅ to T₇ treatments whereas, it was 21.61 q/ha and 52.04 q/ha, respectively in cow based treatment (T₈). The Fe and Zn content in pearl millet grain were found statistically at par among all the treatments as compared to control.

The SOC (%) was not significantly affected by cow based formulations, RDF, organic sources of nutrients alone as well as along with biofertilizers over the control. Maximum available N (223.7 kg/ha), P_2O_5 (22.06 kg/ha) and K_2O (428.5 kg/ha) were observed in the vermicompost along with biofertilizer treatment. However, available nitrogen (N) in post-harvest soils were observed minimum under control (182.1 kg/ha) followed by RDF treatment (211.5 kg/ha).

The data presented in Table II.168 inferred that cow based formulations, organic manures (FYM, PM and vermicompost) and RDF treatments did not showed significantly higher bacterial population in soil over control after harvesting of pearl millet. However, treatment receiving cow based bio formulations notably recorded highest bacterial population (4.20×10^6 cfu count g^{-1} soil) over control (3.07×10^6 cfu count g^{-1} soil) and RDF treatment (3.63×10^6 cfu count g^{-1} soil).

7.10 Coimbatore: The study exhibited that the grain and stover yield were significantly higher in the RDF treatment over all the treatments. The grain yield was higher by 65.1 and 26.3 per cent higher over control and cow based treatments. The stover yield was 38.0 and 17.5 per cent more in these treatments, respectively. Among organic manure treatments, the poultry manure application in combination with biofertilizer (23.41 q/ha) resulted into higher yield as compared to FYM, vermicompost and cow based treatments. The highest gross returns (Rs. 53107/ha) and net returns (Rs. 21197/ha) and BC ratio (1.7) were also found in the T_9 treatment and resulted in Rs. 5819/ha more net returns over the cow based treatment (T_8).

7.11 Perruvullam: The data presented in the Table II.162 to 168 and 170 exhibited at par performance for grain yield in the treatments T_2 to T_4 & T_6 treatments (21.94-23.92 q/ha) and all these produced statistically at par yield than cow based formulation (22.92 q/ha). The grain (32.67 q/ha) and stover (53.15 q/ha) yields were significantly higher in the RDF treatment over all the treatments except RDN through FYM + Biofertilizer (30.07 q/ha) and RDN through VC + Biofertilizer (27.40 q/ha) treatments. The stover yield was found statistically at par among T_2 to T_8 treatments but significantly higher over control but statistically lower than RDF treatment. The highest gross returns (Rs. 104563/ha) and net returns (Rs. 74563/ha) and BC ratio (3.5) were also found in the T_9 treatment and resulted in Rs. 30219/ha more net returns over the cow based treatment (T_8).

The pH, EC, SOC (%) and available N were not significantly affected by cow based, RDF, organic sources of nutrients alone as well as along with biofertilizers over the control. Maximum available P_2O_5 (68.7 kg/ha) was observed in the sole vermicompost treatment. An appraisal of data presented in Table II.168 inferred that cow based bio formulations notably recorded highest bacterial population (13.00×10^6 cfu count g^{-1} soil) over control (3.33×10^6 cfu count g^{-1} soil) and RDF treatment (5.33×10^6 cfu count g^{-1} soil). However, the fungal population was found maximum in RDN through Vermicompost treatment (14.00×10^6 cfu count g^{-1} soil) as compared to cow based treatment (6.67×10^6 cfu count g^{-1} soil), control (6.00×10^6 cfu count g^{-1} soil) and RDF treatment (6.67×10^6 cfu count g^{-1} soil).

Zonal performance – Zone B

The mean data of the five locations for grain and stover yield revealed the superiority of RDF treatment T_9 (28.27 and 49.96 q/ha, respectively) compared to all the remaining treatments including control (15.39 q/ha grain; 32.79 q/ha stover). The grain and stover yield were higher by 83.7 and 52.3% in the T_9 treatment over the control and by 37.7 and 24.9 % over the cow based formulation treatment (20.53 q/ha grain; 44.86 q/ha stover). The T_9 treatment resulted in Rs. 32082/ha and Rs. 21255/ha more net

returns over the control and cow based treatments. The maximum B:C was also recorded in the T₉ (2.7) whereas it was 1.8 and 2.0 in control and cow based treatments. The protein content was observed maximum in RDF (11.5%) and cow based treatments (11.5%) whereas, lowest in the control (10.1%).

At Dhule centre, the findings revealed that organic sources of nutrients alone as well as along with biofertilizers were found to be higher in SOC, available nitrogen (N), phosphorus (P) and potash (K). Maximum available soil organic carbon (0.58 %), N (213.7 kg/ha) and P₂O₅ (17.2 kg/ha) were observed in the FYM along with biofertilizer treatment. However, organic carbon and available nitrogen (N) in post-harvest soils were observed minimum under control followed by RDF treatment.

At Vijayapur, the OC (%) was not significantly affected by cow based bio formulations, RDF, organic sources of nutrients alone as well as along with biofertilizers over the control. Maximum available N (223.7 kg/ha), P₂O₅ (22.06 kg/ha) and K₂O (428.5 kg/ha) were observed in the vermicompost along with biofertilizer treatment. The data presented in Table II.168 inferred that cow based formulations, organic manures (FYM, PM and vermicompost) and RDF treatments did not showed significantly higher bacterial population in soil over control after harvesting of pearl millet. However, treatment receiving cow based bio formulations notably recorded highest bacterial population (4.20×10^6 cfu count g⁻¹ soil) over control (3.07×10^6 cfu count g⁻¹ soil) and RDF treatment (3.63×10^6 cfu count g⁻¹ soil).

At Peruvullum, the pH, EC, SOC (%) and available N were not significantly affected by cow based bio formulations, RDF, organic sources of nutrients alone as well as along with biofertilizers over the control. Maximum available P₂O₅ (68.7 kg/ha) was observed in the sole vermicompost treatment. The data presented in Table II.168 inferred that cow based bio formulations notably recorded highest bacterial population (13.00×10^6 cfu count g⁻¹ soil) over control (3.33×10^6 cfu count g⁻¹ soil) and RDF (5.33×10^6 cfu count g⁻¹ soil) treatment. However, the fungal population was found maximum in RDN through Vermicompost treatment (14.00×10^6 cfu count g⁻¹ soil) as compared to cow based treatment (6.67×10^6 cfu count g⁻¹ soil), control (6.00×10^6 cfu count g⁻¹ soil) and RDF treatment (6.67×10^6 cfu count g⁻¹ soil).

CHAPTER II: AGRONOMY

Table II.1: Summary of Agronomical trials conducted during 2022

S. No.	Name of centre										Trials allotted	Result reported	Trial failed/not conducted
		1			2	3	4	5	6	7			
		a	b	d									
ZONE A1													
1	Mandor	A	-	-	A	A	A	A	A	A	7	7	-
2	Bikaner	A	-	-	A	A	A	A*	A	A	7	6	*Not conducted
ZONE A													
3	Jaipur	-	A	-	A	A	A	A	A	A	7	7	-
4	New Delhi	-	A	-	A	-	-	-	-	-	2	2	-
5	Hisar	-	A	-	A	A	A	A	A	A	7	7	-
6	Jamnagar	-	A	A	A	A	A	A	A	A	8	8	-
7	SK Nagar	-	-	A*	-	-	-	-	-	-	1	0	*Not conducted
8	Jammu	-	-	-	-	-	-	-	-	A	1	1	
ZONE B													
9	Aurangabad	-	-	A	A	A	A	A	A	A	7	7	-
10	Dhule	-	-	A	A	A	A	A	A	A	7	7	-
11	Vijayapur	-	-	-	A	A	A	A	A	A	6	6	-
12	Coimbatore	-	-	-	A	A	A	A	A	A	6	6	
13	Perumallapalle	-	-	-	-	-	-	-	-	A	1	1	-
Total		2	4	3	10	9	9	8	9	11	67	65	

A = Allotted

CHAPTER II: AGRONOMY

Table II.2: Experimental details of Agronomy trials– Summer and Kharif 2022

Trials & Locations	Soil Status						Previous Crop	Variety Used	Nutrient (Kg/ha)			Date of operations carried								
	Type	pH	N	P	K	Depth/ Fe status			N	P	K	Sowing	Thinning	Top dressing	Weeding	Hoeing	Irri.	Pl. Prot.	Harvest	
PMAT 1a																				
Bikaner	LS	7.9	L	L	M	Deep	Groundnut	APT	APT	40	40	03/07/22	12/07/22 14/07/22	25/07/22	22/07/22 16/08/22	26/07/22 17/08/22	2	-	23/09/22	
Mandor	SL	8.2	L	M	H	Deep	Pearl Millet	APT	APT	20	-	07/07/22	19/07/22	26/07/22	20/07/22 02/08/22	20/07/22 02/08/22	-	-	27/09/22	
PMAT 1b																				
Jaipur	LS	7.5	L	M	M	Deep	-	APT	APT	30	-	07/07/22	26/07/22	03/08/22	29/08/22	29/08/22	-	-	05/10/22	
Jamnagar	CL	7.4	M	L	M	60 cm	Groundnut	APT	APT	40	-	17/07/22	02/08/22	12/08/22	30/07/22 14/08/22	30/07/22 14/08/22	-	-	15/10/22	
New Delhi	SL	7.8	201 kg/ha	16.3 kg/ha	221 kg/ha	Deep	Mustard	APT	APT	-	-	11/07/22	07/08/22	-	07/08/22 10/09/22	07/08/22 10/09/22	-	13/09/22	10/10/22	
Hisar	SL	8.2	146 kg/ha	16.9 kg/ha	196 kg/ha	Deep	Wheat	APT	APT	62.5	-	20/07/22	15/10/22	10/08/22 06/09/22	10/08/22 25/08/22	10/08/22 25/08/22	28/08/22 08/09/22	-	17/10/22	
PMAT 1d																				
Jamnagar	MB	7.6	M	M	H	30 cm	Pearl Millet	APT	APT	APT	-	24/02/22	05/03/22	28/03/22 08/04/22	10/03/22 11/04/22	04/03/22 30/03/22	9	-	25/05/22	
Aurangabad	MDB	8.2	L	M	H	60 cm	Soybean	APT	APT	APT	-	23/02/22	03/03/22	02/04/22	31/03/22	31/03/22	11	-	31/05/22	
Dhule	MB	7.3	L	M	H	60-90 cm	Sunhemp	APT	APT	APT	-	24/02/22	11/03/22	30/04/22	22/03/22	26/03/22	9	-	06/03/22	
PMAT 2																				
Bikaner	LS	7.9	L	L	M	Deep	Groundnut	MPMH 17	APT	40	40	03/07/22	18/07/22 19/07/22	-	30/07/22 30/08/22	02/08/22 30/08/22	2	-	01/10/22	
Mandor	SL	8.1	L	M	H	Deep	Pearl Millet	MPMH 17	APT	20	-	07/07/22	22/07/22	22/08/22	01/08/22 17/08/22	01/08/22 17/08/22	-	-	28/09/22	
Jaipur	LS	7.4	L	M	M	Deep	-	RHB 173	APT	40	-	16/07/22	01/08/22	14/08/22	10/08/22	10/08/22	-	-	18/10/22	
Jamnagar	CL	7.5	M	M	M	60 cm	Groundnut	GHB 732	APT	40	-	17/07/22	04/08/22	12/08/22	30/07/22 14/08/22	30/07/22 14/08/22	-	-	16/10/22	
New Delhi	SL	7.8	201 kg/ha	16.3 kg/ha	221 kg/ha	Deep	Mustard	RHB 173	APT	-	-	11/07/22	07/08/22	-	07/08/22 10/09/22	07/08/22 10/09/22	-	13/09/22	10/10/22	
Hisar	SL	8.3	144 kg/ha	16.7 kg/ha	195 kg/ha	Deep	Fallow	MPMH 17	40	20	-	27/07/22	15/10/22	18/08/22	10/08/22 18/08/22	10/08/22 18/08/22	-	-	17/10/22	
Aurangabad	MDB	8.2	L	M	H	60 cm	Fallow	AHB 1200	APT	APT	-	16/07/22	06/08/22 07/08/22	06/08/22	02/08/22 29/08/22	05/08/22	-	-	02/10/22	

CHAPTER II: AGRONOMY

Table II.2: Experimental details of Agronomy trials– Summer and Kharif 2022

Trials & Locations	Soil Status						Previous Crop	Variety Used	Nutrient (Kg/ha)			Date of operations carried							
	Type	pH	N	P	K	Depth/ Fe status			N	P	K	Sowing	Thinning	Top dressing	Weeding	Hoeing	Irri.	Pl. Prot.	Harvest
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	GHB 558	APT	30	-	06/07/22	21/07/22 22/07/22	08/08/22	29/08/22 30/08/22	29/08/22 30/08/22	-	-	06/10/22
Vijayapur	MB	8.1	L	L	H	30-45 cm	Chickpea	VPMH 7	APT	30	-	30/07/22	05/08/22	-	16/08/22 17/08/22	16/08/22 17/08/22	-	-	05/11/22
Coimbatore	SCL	8.5	L	M	H	Deep	Fallow	GHB 558	APT	35	35	28/07/22	08/08/22	12/08/22 26/08/22	10/08/22 25/08/22	10/08/22 25/08/22	3	09/09/22	02/11/22
PMAT 3																			
Bikaner	LS	7.9	L	L	M	Deep	Groundnut	APT	40	40	-	03/07/22	28/07/22	-	02/08/22 17/08/22	26/07/22 17/08/22	2	08/08/22	29/09/22
Mandor	SL	8.2	L	M	H	Deep	Pearl Millet	APT	40	20	-	07/07/22	24/08/22	26/07/22	02/08/22 05/08/22	02/08/22 05/08/22	-	-	03/10/22
Jaipur	LS	7.5	L	M	M	Deep	-	APT	60	30	-	16/07/22	01/08/22	14/08/22	10/08/22	10/08/22	-	-	19/10/22
Jamnagar	CL	7.5	L	M	L	60 cm	Groundnut	APT	80	40	-	17/07/22	04/08/22	12/08/22	30/07/22 14/08/22	30/07/22 14/08/22	-	-	16/10/22
Hisar	SL	8.3	143 kg/ha	16.9 kg/ha	195 kg/ha	Deep	Fallow	MPMH 17 HHB 299	156.3	62.5	-	27/07/22	16/10/22	18/08/22 06/09/22	10/08/22 18/08/22	10/08/22 18/08/22	31/07/22 08/09/22	-	17/10/22
Aurangabad	MDB	8.5	L	M	H	60 cm	Fallow	APT	60	30	30	06/07/22	15/07/22 04/08/22	18/08/22	12/08/22 25/08/22	01/08/22	-	-	19/10/22
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	APT	60	30	-	07/07/22	21/08/22 22/08/22	08/08/22	29/07/22 30/07/22	29/07/22 30/07/22	-	-	06/10/22
Vijayapur	MB	8.2	L	L	H	30-45 cm	Fallow	APT	60	30	-	30/07/22	06/08/22 16/08/22	22/08/22	16/08/22 01/09/22	16/08/22 01/09/22	-	-	05/11/22
Coimbatore	SCL	8.5	L	M	H	Deep	Fallow	APT	70	40	40	27/07/22	08/08/22	12/08/22 29/08/22	11/08/22 26/08/22	11/08/22 26/08/22	3	-	31/10/22
PMAT 4																			
Bikaner	LS	7.9	L	L	M	Deep	Groundnut	HHB 299	40	40	-	03/07/22	28/07/22	-	03/08/22 23/08/22	03/08/22 23/08/22	2	-	27/09/22
Mandor	SL	8.1	L	M	H	Deep	Pearl Millet	HHB 299	40	20	-	07/07/22	23/08/22	26/07/22	01/08/22 18/08/22	01/08/22 18/08/22	-	-	01/10/22
Jaipur	LS	7.5	L	M	M	Deep	-	RHB 223	APT	APT	-	15/07/22	02/08/22	16/08/22	13/08/22	13/08/22	-	-	10/07/22
Hisar	SL	8.3	144 kg/ha	17.0 kg/ha	197 kg/ha	Deep	Fallow	HHB 299	APT	APT	-	27/07/22	16/10/22	18/08/22 06/09/22	10/8/22 18/08/22	10/08/22 18/08/22	31/07/22 08/09/22	-	18/10/22

CHAPTER II: AGRONOMY

Table II.2: Experimental details of Agronomy trials– Summer and Kharif 2022

Trials & Locations	Soil Status						Previous Crop	Variety Used	Nutrient (Kg/ha)			Date of operations carried							
	Type	pH	N	P	K	Depth/ Fe status			N	P	K	Sowing	Thinning	Top dressing	Weeding	Hoeing	Irri.	Pl. Prot.	Harvest
Jamnagar	CL	7.5	M	L	M	60 cm	Pearl Millet	GHB 732	80	40	-	17/07/22	04/08/22	12/08/22	30/07/22 14/08/22	30/07/22 14/08/22	1	-	16/10/22
Aurangabad	MDB	8.3	L	M	H	60 cm	Fallow	AHB 1200	APT	APT	30	04/07/22	15/07/22 25/08/22	06/08/22	01/08/22 28/08/22	10/08/22	2	-	05/10/22
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	GHB 558	APT	APT	-	06/07/22	20/07/22 21/07/22	08/08/22	29/07/22 30/07/22	29/07/22 30/07/22	-	-	06/10/22
Vijayapur	MB	7.9	L	L	H	30-45 cm	Fallow	HHB 299	60	30	-	16/07/22	23/07/22 01/08/22	08/08/22	08/08/22 29/08/22	08/08/22 29/08/22	2	-	22/10/22
Coimbatore	SCL	8.5	L	M	H	Deep	Fallow	HHB 299	70	35	35	28/07/22	10/08/22	12/08/22 29/08/22	10/08/22 26/08/22	10/08/22 26/08/22	3	-	01/11/22
PMAT 5																			
Mandor	SL	8.1	L	M	H	Deep	Pearl Millet	MPMH 17	40	20	-	07/07/22	23/08/22	26/07/22	APT	APT	-	-	01/10/22
Jaipur	LS	7.5	L	M	M	Deep	-	MPMH 17	APT	APT	-	08/07/22	28/07/20	06/08/22	APT	APT	-	-	30/09/22
Hisar	SL	8.2	140 kg/ha	16.06 kg/ha	195 kg/ha	Deep	Wheat	MPMH 17	APT	APT	-	27/07/22	14/10/22	18/08/22	04/08/22 10/08/22	04/08/22 10/08/22	28/08/22 08/09/22	-	17/10/22
Jamnagar	CL	7.5	L	L	M	60 cm	Pearl Millet	MPMH 17	APT	40	-	17/07/22	04/08/22	12/08/22	APT	APT	-	-	16/10/22
Aurangabad	MDB	8.4	L	M	H	60 cm	Fallow	AHB 1200	APT	APT	30	07/07/22	15/07/22	06/08/22	APT	APT	-	-	17/10/22
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	GHB 558	APT	APT	-	07/07/22	20/07/22	08/08/22	APT	APT	-	-	07/10/22
Vijayapur	MB	8.3	L	L	H	30-45 cm	Fallow	VPMH 7	APT	APT	-	13/07/22	19/07/22	22/08/22	APT	APT	-	-	28/10/22
Coimbatore	SCL	8.2	L	M	M	Deep	Fallow	GHB 558	APT	APT	-	27/07/22	10/08/22	16/08/22 29/09/22	APT	APT	2	-	31/10/22
PMAT 6																			
Bikaner	LS	7.9	L	L	M	Deep	Groundnut	HHB 299	APT	APT	-	03/07/22	28/07/22	APT	23/07/22 02/08/22	23/07/22 02/08/22	2	-	01/10/22
Mandor	SL	8.1	L	M	H	Deep	Pearl Millet	HHB 299	APT	APT	-	07/07/22	23/08/22	APT	01/08/22 18/08/22	01/08/22 18/08/22	-	-	02/10/22
Jaipur	LS	7.4	L	M	M	Deep	-	HHB 299	APT	APT	-	08/07/22	28/07/22	APT	05/08/22	05/08/22	-	-	As per Maturity
Hisar	SL	8.3	141 kg/ha	16.7 kg/ha	194 kg/ha	Deep	Wheat	HHB 299	APT	APT	-	20/07/22	14/10/22	10/08/22 06/09/22	10/08/22 25/08/22	10/08/22 25/08/22	28/08/22 08/09/22	-	17/10/22
Jamnagar	CL	7.6	L	L	L	60 cm	Groundnut	HHB 299	APT	APT	-	17/07/22	04/08/22	APT	30/07/22 14/08/22	30/07/22 14/08/22	-	-	17/10/22

CHAPTER II: AGRONOMY

Table II.2: Experimental details of Agronomy trials– Summer and Kharif 2022

Trials & Locations	Soil Status						Previous Crop	Variety Used	Nutrient (Kg/ha)			Date of operations carried							
	Type	pH	N	P	K	Depth/ Fe status			N	P	K	Sowing	Thinning	Top dressing	Weeding	Hoeing	Irri.	Pl. Prot.	Harvest
Aurangabad	MDB	8.2	L	M	H	60 cm	Fallow	AHB 1200	APT	APT	30	05/07/22	15/07/22 29/07/22	APT	12/08/22 02/09/22	12/08/22 02/09/22	1	-	14/10/22
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	GHB 558	APT	APT	-	07/07/22	20/07/22 21/07/22	APT	29/07/22 30/07/22	29/07/22 30/07/22	-	-	07/10/22
Vijayapur	MB	8.2	L	L	H	30-45 cm	Fallow	VPMH 7	APT	APT	-	19/07/22	25/07/22 02/08/22	APT	03/08/22 27/08/22	03/08/22 27/08/22	1	-	29/10/22
Coimbatore	SCL	8.3	L	M	H	Deep	Fallow	CO 10	APT	APT	35	07/07/22	14/07/22	APT	21/07/22 11/08/22	21/07/22 11/08/22	2	-	10/10/22
PMAT 7																			
Bikaner	LS	7.9	L	L	M	Deep	Fallow	MPMH 17	APT	APT	-	06/07/22	3/8/22	-	27/07/22	27/07/22	1	-	07/10/22
Mandor	SL	8.1	L	M	H	Deep	Pearl Millet	MPMH 17	APT	APT	-	07/07/22	23/08/22	26/07/22	01/08/22 18/08/22	01/08/22 18/08/22	-	-	03/10/22
Jaipur	LS	7.5	L	M	M	Deep	-	RHB 233	APT	APT	-	15/07/22	02/08/22	-	13/08/22	13/08/22	-	-	10/11/22
Hisar	SL	8.3	148 kg/ha	16.9 kg/ha	197 kg/ha	Deep	Fallow	HHB 299	APT	APT	-	27/07/22	15/10/22	18/8/22	10/08/22 18/8/22	10/08/22 18/8/22	-	-	18/10/22
Jamnagar	CL	7.6	L	L	M	60 cm	Pearl Millet	GHB 1225	APT	APT	-	17/07/22	04/08/22	-	30/07/22 14/08/22	30/07/22 14/08/22	-	-	17/10/22
Jammu	SL	6.8	L	M	L	90 cm	Mustard	RHB 173	APT	APT	-	12/07/22	20/07/22	11/08/22	05/08/22 20/08/22	05/08/22 20/08/22	-	-	05/10/22
Aurangabad	MDB	8.2	L	M	H	60 cm	Fallow	AHB 1200	APT	APT	30	04/07/22	15/07/22 26/07/22	06/08/22	01/08/22 11/08/22	29/08/22	2	-	10/10/22
Dhule	MB	8.2	L	M	H	60-90 cm	Fallow	GHB 558	APT	APT	-	06/07/22	21/07/22 22/07/22	08/08/22	29/07/22 30/07/22	29/07/22 30/07/22	-	-	07/10/22
Vijayapur	MB	8.4	L	L	H	30-45 cm	Fallow	HHB 299	APT	APT	-	21/07/22	27/07/22 06/08/22	-	12/08/22 02/09/22	12/08/22 02/09/22	2	-	31/10/22
Coimbatore	SCL	8.3	L	M	H	Deep	Fallow	CO 10	APT	APT	40	04/08/22	11/08/22	-	18/08/22 03/09/22	18/08/22 03/09/22	2	-	07/11/22
Perumallapall	SL	7.5	L	M	M	60 cm	Fallow	HHB 299	APT	APT	30	14/07/22	30/07/22	06/08/22	08/08/22 09/08/22	08/08/22 09/08/22	-	-	18/10/22

VL = Very Low

H = High

Input/agronomic operation not applied

L = Low

M = Medium

APR = As per requirement

SL = Sandy loam

LS = Lomy sand

MB = Medium Black

CL = Clay Loam

APT = As per treatment

MDB = Medium deep Black

CHAPTER II: AGRONOMY

Table II.3: PMAT 1a: Performance of pearl Millet advance hybrids entries or populations for yields and yield attributes as affected by nitrogen levels in Zone A1 during *kharif* 2022

Treatment		Grain yield (q/ha)			Stover yield (q/ha)			Days to 50% Flowering			Plant height (cm)			Plant population ('000/ha)			Total tillers/plant			Effective Tillers/plant			Test weight (g)		
N(kg/ha)	Entries	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
0	MH-2553	18.83	12.13	15.48	38.40	24.70	31.55	44.3	44.7	44.5	197.1	176.5	186.8	124.9	123.1	124.0	3.6	1.7	2.7	2.9	1.1	2.0	10.9	6.9	8.9
	MH-2555	20.00	13.50	16.75	47.03	30.80	38.92	45.3	46.3	45.8	191.9	183.5	187.7	126.6	122.9	124.8	2.6	1.6	2.1	2.8	1.2	2.0	10.3	7.8	9.0
	HNB-67 (Imp.)	18.47	11.67	15.07	36.20	22.47	29.33	40.0	43.7	41.8	193.0	176.2	184.6	127.6	130.1	128.8	3.7	1.5	2.6	3.5	1.2	2.3	11.5	7.7	9.6
	MPMH-21	18.97	13.03	16.00	49.27	27.73	38.50	43.7	45.3	44.5	184.7	172.7	178.7	124.6	128.0	126.3	3.7	2.1	2.9	2.8	1.5	2.1	11.0	7.7	9.3
	RHB-223	21.87	15.93	18.90	45.63	32.30	38.97	45.3	44.3	44.8	191.9	177.3	184.6	126.6	128.9	127.8	3.6	2.4	3.0	3.1	1.5	2.3	10.0	8.1	9.0
	RHB-177	19.50	14.10	16.80	45.07	32.00	38.53	46.0	45.7	45.8	196.8	186.3	191.6	126.6	133.1	129.8	4.5	2.0	3.2	4.3	1.3	2.8	11.8	8.5	10.1
	Mean	19.61	13.39	16.50	43.60	28.33	35.97	44.1	45.0	44.6	192.6	178.7	185.7	126.1	127.7	126.9	3.6	1.9	2.8	3.2	1.3	2.3	10.9	7.8	9.3
20	MH-2553	22.27	17.47	19.87	48.93	36.63	42.78	44.0	45.3	44.7	193.3	186.5	189.9	129.0	142.6	135.8	4.5	3.1	3.8	3.3	1.7	2.5	10.2	7.5	8.8
	MH-2555	20.60	15.70	18.15	51.17	37.10	44.13	44.3	46.3	45.3	189.4	193.9	191.6	124.2	134.3	129.2	3.9	2.8	3.3	3.3	1.9	2.6	13.9	8.1	11.0
	HNB-67 (Imp.)	18.63	14.53	16.58	35.77	27.90	31.83	37.3	44.3	40.8	197.0	184.8	190.9	127.6	145.1	136.4	3.2	2.8	3.0	3.3	1.4	2.3	11.4	7.6	9.5
	MPMH-21	21.27	16.30	18.78	42.63	32.80	37.72	45.3	45.7	45.5	194.7	182.7	188.7	126.1	129.2	127.6	3.4	2.9	3.2	2.8	1.8	2.3	10.5	7.9	9.2
	RHB-223	23.27	17.93	20.60	46.00	35.90	40.95	45.7	44.7	45.2	188.7	185.9	187.3	126.1	143.1	134.6	4.0	3.2	3.6	3.6	1.9	2.7	11.3	8.8	10.0
	RHB-177	21.23	16.03	18.63	35.00	36.37	35.68	39.0	45.7	42.3	200.1	197.9	199.0	124.6	153.5	139.1	4.1	2.9	3.5	3.5	2.0	2.7	11.6	9.0	10.3
	Mean	21.21	16.33	18.77	43.25	34.45	38.85	42.6	45.3	44.0	193.9	188.6	191.3	126.3	141.3	133.8	3.8	3.0	3.4	3.3	1.8	2.5	11.5	8.1	9.8
40	MH-2553	27.40	22.20	24.80	61.23	37.63	49.43	42.3	45.3	43.8	197.6	199.2	198.4	124.9	145.6	135.2	4.6	3.2	3.9	3.8	1.9	2.8	11.9	9.0	10.5
	MH-2555	26.23	21.40	23.82	66.50	39.93	53.22	44.3	46.3	45.3	186.1	198.7	192.4	124.2	126.6	125.4	4.3	3.4	3.8	4.1	2.1	3.1	11.3	8.7	10.0
	HNB-67 (Imp.)	19.90	14.63	17.27	38.07	31.57	34.82	37.0	44.0	40.5	194.7	190.3	192.5	126.6	140.5	133.6	4.3	3.3	3.8	4.1	1.6	2.9	12.8	7.8	10.3
	MPMH-21	21.80	16.77	19.28	48.97	38.03	43.50	46.3	45.3	45.8	192.0	188.9	190.4	126.6	121.1	123.8	3.6	3.5	3.6	3.1	2.1	2.6	10.4	7.4	8.9
	RHB-223	23.47	18.67	21.07	47.23	37.33	42.28	45.0	44.7	44.8	195.6	192.1	193.8	127.6	131.0	129.3	4.1	3.5	3.8	4.2	2.1	3.2	11.6	7.8	9.7
	RHB-177	22.40	18.07	20.23	46.80	39.13	42.97	38.3	46.3	42.3	186.4	203.1	194.7	126.6	153.9	140.3	4.8	3.6	4.2	4.0	2.2	3.1	10.9	8.9	9.9
	Mean	23.53	18.62	21.08	51.47	37.27	44.37	42.2	45.3	43.8	192.1	195.4	193.7	126.1	136.5	131.3	4.3	3.4	3.9	3.9	2.0	2.9	11.5	8.3	9.9
60	MH-2553	29.30	23.43	26.37	61.50	42.50	52.00	43.3	44.3	43.8	197.7	203.5	200.6	124.9	155.3	140.1	4.5	3.7	4.1	4.1	1.9	3.0	10.3	8.6	9.5
	MH-2555	26.70	22.03	24.37	65.60	44.33	54.97	45.0	46.7	45.8	192.7	202.1	197.4	129.0	134.3	131.6	4.6	3.8	4.2	3.6	2.1	2.9	13.2	8.5	10.9
	HNB-67 (Imp.)	21.80	17.53	19.67	48.27	38.93	43.60	37.7	43.7	40.7	191.3	197.3	194.3	164.6	131.2	147.9	4.5	3.6	4.1	4.5	1.9	3.2	12.8	8.7	10.8
	MPMH-21	21.67	17.33	19.50	55.00	44.27	49.63	44.0	44.7	44.3	189.7	194.4	192.0	167.5	131.0	149.3	3.9	3.8	3.9	3.7	1.9	2.8	12.1	8.3	10.2
	RHB-223	23.33	19.27	21.30	52.53	41.63	47.08	44.7	44.7	44.7	196.3	199.9	198.1	169.5	147.0	158.3	4.3	3.7	4.0	4.0	2.3	3.1	11.3	9.0	10.2
	RHB-177	25.07	21.23	23.15	44.47	41.07	42.77	43.7	46.3	45.0	200.2	206.4	203.3	124.6	153.0	138.8	4.7	3.9	4.3	4.3	2.3	3.3	10.7	8.2	9.5
	Mean	24.64	20.14	22.39	54.56	42.12	48.34	43.1	45.1	44.1	194.7	200.6	197.6	146.7	142.0	144.3	4.4	3.7	4.1	4.0	2.1	3.0	11.7	8.6	10.2
Entries Mean	MH-2553	24.45	18.81	21.63	52.52	35.37	43.94	43.5	44.9	44.2	196.4	191.4	193.9	125.9	141.7	133.8	4.3	2.9	3.6	3.5	1.6	2.6	10.8	8.0	9.4
	MH-2555	23.38	18.16	20.77	57.58	38.04	47.81	44.8	46.4	45.6	190.1	194.5	192.3	126.0	129.5	127.7	3.8	2.9	3.4	3.5	1.8	2.6	12.2	8.3	10.2
	HNB-67 (Imp.)	19.70	14.59	17.15	39.58	30.22	34.90	38.0	43.9	41.0	194.0	187.1	190.6	136.6	136.7	136.7	3.9	2.8	3.4	3.8	1.5	2.7	12.1	8.0	10.0
	MPMH-21	20.93	15.86	18.39	48.97	35.71	42.34	44.8	45.3	45.0	190.3	184.7	187.5	136.2	127.3	131.8	3.7	3.1	3.4	3.1	1.8	2.5	11.0	7.8	9.4
	RHB-223	22.98	17.95	20.47	47.85	36.79	42.32	45.2	44.6	44.9	193.1	188.8	191.0	137.4	137.5	137.5	4.0	3.2	3.6	3.7	1.9	2.8	11.1	8.4	9.7
	RHB-177	22.05	17.36	19.70	42.83	37.14	39.99	41.8	46.0	43.9	195.9	198.4	197.2	125.6	148.4	137.0	4.5	3.1	3.8	4.0	1.9	3.0	11.3	8.6	9.9
	Mean	21.63	16.81	19.22	47.58	34.52	42.32	42.5	45.1	43.8	193.0	188.8	191.3	131.8	131.8	131.8	3.9	3.1	4.1	3.6	1.8	2.9	11.3	8.3	9.7
CD (5%)	N	1.55	1.76		7.22	8.47		NS	NS		NS	3.3		NS	8.8		0.4	0.5		0.5	0.1		NS	0.3	
	E	2.06	1.93		5.55	NS		1.5	0.5		NS	3.5		NS	7.8		0.4	NS		0.4	0.1		NS	0.5	
	N x E	NS	NS		NS	NS		3.3	NS		NS	NS		NS	NS		NS	NS		NS	NS		NS	1.0	
	E x N	NS	NS		NS	NS		3.5	NS		NS	NS		NS	NS		NS	NS		NS	NS		NS	1.0	
	CV (%)				11.2	13.6		13.9	27.8		4.3	1.3		3.5	2.2		15.3	6.9		12.6	11.6		13.9	9.1	

CHAPTER II: AGRONOMY

Table II.4: PMAT 1b: Performance of pearl Millet advance late hybrids entries for grain yield, stover yield, 50% flowering and plant height as affected by nitrogen levels in Zone A during *kharif* 2022

Treatment		Grain yield (q/ha)					Stover yield (q/ha)					Days to 50% Flowering					Plant height (cm)				
N(kg/ha)	Entries	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean
0	MH 2577	29.51	31.08	19.01	20.20	24.95	79.82	46.41	49.18	48.71	56.03	-	45.3	60.3	-	52.8	184.3	186.7	186.3	188.3	186.4
	MH 2580	27.41	17.84	21.40	22.11	22.19	76.75	49.65	54.97	56.00	59.34	-	41.7	54.3	-	48.0	186.7	194.6	230.0	227.9	209.8
	86M86 (c)	25.76	20.00	18.91	19.51	21.05	75.36	55.30	48.88	50.03	57.39	-	48.3	60.7	-	54.5	183.3	207.6	193.0	190.8	193.7
	KBH 108 (c)	27.96	21.04	14.25	15.82	19.77	82.36	60.13	42.10	45.16	57.44	-	51.3	61.0	-	56.2	191.3	220.3	210.3	204.7	206.7
	MP 7792 (c)	24.64	18.74	13.59	13.50	17.62	72.60	51.65	40.67	39.48	51.10	-	44.7	60.7	-	52.7	185.3	202.3	187.3	192.1	191.8
	Mean	27.06	21.74	17.43	18.23	21.11	77.38	52.63	47.16	47.88	56.26	-	46.3	59.4	-	52.8	186.2	202.3	201.4	200.8	197.7
30	MH 2577	34.12	36.87	27.96	28.65	31.90	94.80	51.67	70.19	74.81	72.87	-	46.0	58.7	-	52.3	195.3	202.5	196.7	202.2	199.2
	MH 2580	31.84	24.33	31.17	32.12	29.86	87.82	55.63	78.26	81.72	75.86	-	42.7	52.7	-	47.7	197.0	209.1	232.7	239.7	219.6
	86M86 (c)	30.91	26.66	24.14	25.38	26.77	86.56	58.77	63.80	65.22	68.59	-	51.0	59.3	-	55.2	192.3	216.9	191.3	194.6	198.8
	KBH 108 (c)	34.02	27.56	25.83	26.68	28.52	97.45	68.31	67.61	70.38	75.94	-	53.0	60.7	-	56.8	202.0	224.9	214.7	214.7	214.1
	MP 7792 (c)	30.39	26.72	20.72	20.64	24.62	86.70	56.13	57.46	58.89	64.80	-	45.7	54.0	-	49.8	196.3	212.9	217.3	218.7	211.3
	Mean	32.26	28.43	25.97	26.70	28.34	90.67	58.10	67.46	70.21	71.61	-	47.7	57.1	-	52.4	196.6	213.3	210.5	214.0	208.6
60	MH 2577	38.63	40.56	31.29	33.02	35.88	102.88	57.96	79.22	86.25	81.58	-	47.0	60.0	-	53.5	202.7	209.8	190.7	195.3	199.6
	MH 2580	35.96	29.53	34.87	36.89	34.32	97.44	64.88	88.89	97.17	87.10	-	43.7	52.7	-	48.2	204.3	218.7	226.0	233.4	220.6
	86M86 (c)	35.45	30.96	28.49	30.10	31.25	98.12	68.53	71.53	74.34	78.13	-	51.7	57.7	-	54.7	201.3	222.0	218.7	224.3	216.6
	KBH 108 (c)	37.76	29.77	27.15	30.50	31.30	108.03	72.10	71.83	76.09	82.01	-	54.0	60.0	-	57.0	210.0	230.5	220.0	226.7	221.8
	MP 7792 (c)	35.09	30.53	29.04	28.09	30.69	96.55	62.87	75.85	78.10	78.34	-	46.7	52.7	-	49.7	202.0	220.8	218.7	226.0	216.9
	Mean	36.58	32.27	30.17	31.72	32.69	100.60	65.27	77.47	82.39	81.43	-	48.6	56.6	-	52.6	204.1	220.3	214.8	221.2	215.1
90	MH 2577	41.61	43.04	41.36	39.86	41.47	109.45	62.48	96.25	95.01	90.80	-	47.7	55.0	-	51.3	209.3	215.4	212.3	212.7	212.4
	MH 2580	38.96	30.41	35.98	37.37	35.68	104.91	68.44	92.01	99.96	91.33	-	45.3	52.7	-	49.0	211.7	222.6	231.7	237.9	226.0
	86M86 (c)	37.05	32.08	26.66	32.34	32.03	105.35	71.40	68.03	76.13	80.23	-	53.3	59.0	-	56.2	207.3	227.6	201.0	217.1	213.3
	KBH 108 (c)	41.15	31.18	22.18	27.10	30.40	114.27	74.04	58.13	74.59	80.26	-	55.3	60.7	-	58.0	219.3	237.6	208.7	218.0	220.9
	MP 7792 (c)	37.85	31.84	31.68	30.28	32.91	104.42	67.63	79.11	80.90	83.02	-	47.3	52.7	-	50.0	206.0	223.4	216.3	227.5	218.3
	Mean	39.32	33.71	31.57	33.39	34.50	107.68	68.80	78.71	85.32	85.13	-	49.8	56.0	-	52.9	210.7	225.3	214.0	222.6	218.2
Entries Mean	MH 2577	35.97	37.89	29.91	30.43	33.55	96.74	54.63	73.71	76.19	75.32	-	46.5	58.5	-	52.5	197.9	203.6	196.5	199.6	199.4
	MH 2580	33.54	25.53	30.86	32.12	30.51	91.73	59.65	78.53	83.71	78.41	-	43.3	53.1	-	48.2	199.9	211.2	230.1	234.7	219.0
	86M86 (c)	32.29	27.42	24.55	26.84	27.78	91.35	63.50	63.06	66.43	71.09	-	51.1	59.2	-	55.1	196.1	218.5	201.0	206.7	205.6
	KBH 108 (c)	35.22	27.39	22.35	25.03	27.50	100.53	68.65	59.92	66.56	73.91	-	53.4	60.6	-	57.0	205.7	228.3	213.4	216.0	215.9
	MP 7792 (c)	31.99	26.96	23.76	23.13	26.46	90.07	59.57	63.27	64.34	69.31	-	46.1	55.0	-	50.5	197.4	214.8	209.9	216.1	209.6
CD (5%)	N	2.19	4.44	3.07	2.23		3.46	4.61	5.25	4.68		-	1.1	1.3	-		5.5	4.5	NS	9.9	
	E	1.73	2.86	3.45	3.32		3.93	4.06	5.67	4.30		-	0.8	1.5	-		4.0	2.8	6.1	6.1	
	N x E	NS	NS	NS	NS		NS	NS	11.71	8.97		-	NS	3.1	-		NS	NS	13.5	13.2	
	E x N	NS	NS	NS	NS		NS	NS	11.38	8.96		-	NS	3.0	-		NS	NS	16.8	14.7	
CV (%)		6.1	11.8	15.7	14.4		5.0	7.9	10.0	7.2		-	2.0	3.1	-		2.4	1.6	3.5	3.4	

CHAPTER II: AGRONOMY

Table II.5: PMAT 1b: Effect of N levels on total & effective tillers/plant, test weight and plant population of pearl millet advance late hybrid entries in Zone A during *kharif* 2022

Treatment		Total tillers/plant					Effective Tillers/plant					Test weight (g)					Plant population ('000/ha)				
N(kg/ha)	Entries	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean
0	MH 2577	2.9	2.6	3.3	3.1	3.0	1.7	1.5	1.5	2.2	1.7	11.0	10.7	11.0	9.1	10.5	139.0	161.7	170.0	-	156.9
	MH 2580	2.7	2.8	3.8	3.6	3.2	1.6	2.2	1.7	2.4	2.0	11.7	8.2	14.2	10.5	11.2	140.0	159.4	167.7	-	155.7
	86M86 (c)	2.7	2.4	3.3	3.2	2.9	1.8	1.5	1.4	2.0	1.7	12.0	9.2	10.5	7.8	9.9	137.7	161.2	165.0	-	154.6
	KBH 108 (c)	3.2	2.7	4.4	4.3	3.7	2.0	1.9	2.2	3.3	2.4	12.2	8.3	11.4	8.1	10.0	141.3	162.2	163.3	-	155.6
	MP 7792 (c)	2.9	2.5	3.3	3.3	3.0	1.7	1.6	2.3	3.2	2.2	11.8	8.4	12.3	7.2	9.9	138.0	160.8	166.7	-	155.1
	Mean	2.9	2.6	3.6	3.5	3.2	1.8	1.8	1.8	2.6	2.0	12.6	8.9	11.9	8.5	10.5	139.2	161.1	166.5	-	155.6
30	MH 2577	3.3	3.0	4.6	4.8	3.9	2.1	1.9	2.2	3.0	2.3	12.9	11.8	12.3	10.0	11.7	141.7	164.0	168.7	-	158.1
	MH 2580	3.6	3.1	4.1	4.1	3.7	2.0	2.4	2.0	2.6	2.2	13.5	9.7	13.5	10.7	11.8	142.7	159.4	167.3	-	156.5
	86M86 (c)	3.7	2.6	3.4	3.6	3.3	2.4	1.7	2.2	2.4	2.2	13.8	10.4	10.6	8.8	10.9	142.0	162.2	164.0	-	156.1
	KBH 108 (c)	3.9	3.1	3.3	3.6	3.5	2.9	2.0	2.8	3.6	2.8	13.2	9.8	13.2	11.1	11.8	143.3	161.2	165.7	-	156.7
	MP 7792 (c)	3.7	2.8	3.3	3.6	3.4	2.4	1.9	1.6	2.7	2.1	11.5	9.6	13.6	7.5	10.6	138.3	161.7	168.3	-	156.1
	Mean	3.6	2.9	3.8	3.9	3.6	2.4	2.0	2.2	2.8	2.3	12.2	10.3	12.6	9.6	11.2	141.6	161.7	166.8	-	156.7
60	MH 2577	3.6	3.2	4.0	4.1	3.7	2.6	2.1	2.4	2.7	2.4	12.4	12.4	12.8	11.0	12.2	143.3	162.6	167.0	-	157.7
	MH 2580	3.7	3.4	3.7	3.8	3.6	2.7	2.6	2.3	2.6	2.6	12.5	10.2	13.1	11.3	11.8	143.0	161.7	163.7	-	156.1
	86M86 (c)	3.7	2.7	3.3	3.5	3.3	2.6	1.8	1.6	2.4	2.1	12.2	11.3	12.3	10.4	11.5	140.7	160.8	165.0	-	155.5
	KBH 108 (c)	3.8	3.3	4.0	4.1	3.8	3.2	2.2	2.2	3.0	2.7	11.7	10.7	12.6	11.2	11.5	145.3	162.2	165.7	-	157.7
	MP 7792 (c)	4.0	3.1	4.1	4.3	3.9	2.6	2.1	2.6	3.6	2.7	12.3	10.5	13.6	8.7	11.3	142.0	163.6	165.7	-	157.1
	Mean	3.7	3.1	3.8	3.9	3.7	2.7	2.2	2.2	2.9	2.5	12.5	11.0	12.9	10.5	11.7	142.9	162.2	165.4	-	156.8
90	MH 2577	3.7	3.5	4.2	4.5	4.0	2.8	2.3	2.3	3.6	2.8	12.4	12.6	13.6	11.8	12.6	144.7	161.7	167.7	-	158.0
	MH 2580	3.8	3.7	3.7	3.8	3.8	2.7	2.5	2.1	2.7	2.5	12.2	10.8	15.3	12.9	12.8	142.8	161.7	164.7	-	156.4
	86M86 (c)	3.8	3.1	4.7	4.7	4.1	3.0	1.9	2.8	2.9	2.6	10.5	11.9	12.6	10.8	11.4	144.0	164.0	163.0	-	157.0
	KBH 108 (c)	4.1	3.7	4.6	4.7	4.3	3.4	2.5	3.2	3.6	3.2	11.0	11.0	13.1	11.3	11.6	145.0	163.1	162.3	-	156.8
	MP 7792 (c)	4.1	3.4	3.7	3.9	3.8	2.8	2.3	2.6	3.1	2.7	11.6	11.1	14.3	8.4	11.4	143.3	164.0	166.3	-	157.9
	Mean	3.9	3.5	4.2	4.3	4.0	2.9	2.3	2.6	3.2	2.8	11.8	11.5	13.8	11.1	12.0	144.0	162.9	164.8	-	157.2
Entries Mean	MH 2577	3.4	3.1	4.0	4.1	3.6	2.3	2.0	2.1	2.9	2.3	11.2	11.9	12.4	10.5	11.5	142.2	162.5	168.3	-	157.7
	MH 2580	3.4	3.3	3.8	3.8	3.6	2.2	2.4	2.0	2.6	2.3	11.5	9.7	14.1	11.4	11.6	142.1	160.5	165.8	-	156.2
	86M86 (c)	3.4	2.7	3.7	3.7	3.4	2.5	1.7	2.0	2.4	2.1	12.0	10.7	11.5	9.4	10.9	141.1	162.1	164.3	-	155.8
	KBH 108 (c)	3.8	3.2	4.1	4.2	3.8	2.9	2.2	2.6	3.4	2.8	12.4	9.9	12.6	10.4	11.3	143.8	162.2	164.3	-	156.7
	MP 7792 (c)	3.7	3.0	3.6	3.7	3.5	2.4	2.0	2.3	3.2	2.4	12.5	9.9	13.5	8.0	11.0	140.4	162.5	166.8	-	156.6
CD (5%)	N	0.2	0.3	NS	0.5		0.3	0.2	NS	0.2		0.3	0.5	0.7	0.9		2.1	NS	NS	-	
	E	NS	0.2	0.4	NS		0.3	0.2	0.2	0.2		0.4	0.5	0.7	0.9		1.5	NS	NS	-	
	N x E	NS	NS	0.7	0.9		NS	NS	0.5	0.5		NS	NS	NS	NS		NS	NS	NS	-	
	E x N	NS	NS	0.8	0.9		NS	NS	0.7	0.5		NS	NS	NS	NS		NS	NS	NS	-	
CV (%)		11.2	8.4	11.0	12.9		14.9	10.2	12.5	9.6		4.0	5.5	7.0	10.9		1.3	1.8	3.3	-	

CHAPTER II: AGRONOMY

Table II.6: PMAT 1D: Performance of pearl millet advance summer hybrid entries for grain yield and stover yield as affected by N levels in Zone A&B during Summer 2022

Treatment		Grain yield (q/ha)				Stover yield (q/ha)			
N(kg/ha)	Entries	ABD	JMR	DHL	Mean	ABD	JMR	DHL	Mean
60	MSH 371	33.61	36.60	38.73	36.31	63.17	63.85	63.91	63.64
	MSH 373	27.78	29.25	36.92	31.31	50.40	57.03	60.93	56.12
	MSH 377	25.49	35.76	40.29	33.85	44.80	62.28	66.48	57.85
	Proagro 9444 (c)	27.77	28.18	36.07	30.67	51.97	50.56	59.51	54.02
	Nandi 75 (c)	23.82	32.14	34.69	30.21	43.68	57.55	57.25	52.83
	86M64 (c)	27.93	27.26	33.33	29.51	52.19	43.23	55.00	50.14
	Mean	27.73	31.53	36.67	31.98	51.04	55.75	60.51	55.77
90	MSH 371	39.58	42.67	40.50	40.92	73.92	66.35	66.85	69.04
	MSH 373	33.83	32.73	38.66	35.07	62.05	61.05	63.80	62.30
	MSH 377	34.13	38.62	43.43	38.73	60.26	64.86	71.67	65.60
	Proagro 9444 (c)	32.11	34.11	37.39	34.54	60.48	54.77	61.69	58.98
	Nandi 75 (c)	26.92	36.09	36.75	33.26	50.40	62.35	60.65	57.80
	86M64 (c)	33.79	29.65	35.46	32.97	63.40	45.08	58.52	55.66
	Mean	33.39	35.65	38.70	35.91	61.75	59.08	63.86	61.56
120	MSH 371	44.26	45.13	42.21	43.87	84.01	71.77	69.68	75.15
	MSH 373	41.22	34.06	40.25	38.51	75.72	66.25	66.41	69.46
	MSH 377	43.67	40.60	53.09	45.79	77.74	69.72	87.57	78.34
	Proagro 9444 (c)	37.41	35.64	39.63	37.56	70.12	58.49	65.37	64.66
	Nandi 75 (c)	36.36	40.09	38.68	38.38	67.20	65.21	63.82	65.41
	86M64 (c)	36.72	33.87	37.45	36.01	63.17	47.50	61.81	57.49
	Mean	39.94	38.23	41.88	40.02	72.99	63.16	69.11	68.42
Entries Mean	MSH 371	39.15	41.47	40.48	40.37	73.70	67.32	66.81	69.28
	MSH 373	34.27	32.01	38.61	34.96	62.72	61.44	63.71	62.63
	MSH 377	34.43	38.33	45.60	39.45	60.93	65.62	75.24	67.26
	Proagro 9444 (c)	32.43	32.64	37.70	34.26	60.86	54.61	62.19	59.22
	Nandi 75 (c)	29.03	36.11	36.71	33.95	53.76	61.71	60.57	58.68
	86M64 (c)	32.81	30.26	35.41	32.83	59.59	45.27	58.44	54.43
CD (5%)	N	5.14	NS	2.20		5.29	5.10	3.63	
	E	4.01	3.97	3.60		6.74	5.84	5.94	
	N x E	NS	NS	NS		NS	NS	NS	
	E x N	NS	NS	NS		NS	NS	NS	
CV (%)		12.3	11.7	9.5		11.2	10.2	9.5	

CHAPTER II: AGRONOMY

Table II.7: PMAT 1d: Performance of pearl millet advance summer hybrid entries for total & effective tillers/plant and test weight as affected by N levels in Zone A&B during Summer 2022

Treatment		Total tillers/plant				Effective tillers/plant				Test weight (g)			
N(kg/ha)	Entries	ABD	JMR	DHL	Mean	ABD	JMR	DHL	Mean	ABD	JMR	DHL	Mean
60	MSH 371	4.1	2.6	3.2	3.3	3.0	2.1	2.0	2.4	10.2	10.5	10.0	10.2
	MSH 373	4.3	2.3	2.9	3.2	3.2	1.9	2.0	2.3	10.7	10.2	9.7	10.2
	MSH 377	3.5	2.8	3.0	3.1	2.6	2.2	2.1	2.3	11.3	9.3	10.4	10.3
	Proagro 9444 (c)	3.8	3.0	3.2	3.3	2.5	2.4	1.9	2.3	10.3	9.1	9.5	9.6
	Nandi 75 (c)	4.5	3.2	2.7	3.5	3.9	2.6	1.9	2.8	12.1	10.1	9.9	10.7
	86M64 (c)	4.7	3.7	3.3	3.9	3.7	2.7	1.9	2.8	10.4	10.1	10.3	10.3
	Mean	4.2	2.9	3.0	3.4	3.1	2.3	2.0	2.5	10.8	9.9	9.9	10.2
90	MSH 371	5.8	3.0	3.5	4.1	4.9	2.3	2.3	3.2	10.9	11.0	10.2	10.7
	MSH 373	5.0	2.7	3.3	3.7	3.9	2.2	2.2	2.8	12.0	10.5	10.0	10.8
	MSH 377	4.5	3.1	3.4	3.7	3.5	2.6	3.0	3.0	12.3	9.5	11.0	10.9
	Proagro 9444 (c)	5.1	3.3	3.4	3.9	4.1	2.7	2.1	3.0	11.1	9.2	9.7	10.0
	Nandi 75 (c)	4.8	3.4	3.0	3.7	3.8	2.9	2.1	2.9	11.9	10.3	10.2	10.8
	86M64 (c)	4.6	3.9	3.7	4.1	3.5	2.9	2.1	2.8	10.8	10.4	10.5	10.6
	Mean	5.0	3.2	3.4	3.9	4.0	2.6	2.3	3.0	11.5	10.2	10.3	10.6
120	MSH 371	5.7	3.5	3.8	4.3	4.6	2.6	2.9	3.4	11.5	11.2	10.4	11.0
	MSH 373	5.3	3.0	3.9	4.1	4.3	2.5	2.8	3.2	11.9	10.8	10.4	11.0
	MSH 377	5.0	3.4	4.5	4.3	3.9	2.7	3.3	3.3	12.3	9.8	11.0	11.0
	Proagro 9444 (c)	4.0	3.8	3.6	3.8	3.0	3.0	2.7	2.9	11.5	9.4	9.9	10.3
	Nandi 75 (c)	4.3	3.9	3.1	3.8	3.8	2.9	2.5	3.1	11.7	10.6	10.3	10.9
	86M64 (c)	4.2	4.1	4.0	4.1	3.5	3.1	2.4	3.0	11.2	10.7	10.8	10.9
	Mean	4.8	3.6	3.8	4.1	3.9	2.8	2.8	3.1	11.7	10.4	10.4	10.8
Entries Mean	MSH 371	5.2	3.0	3.5	3.9	4.2	2.3	2.4	3.0	10.9	10.9	10.2	10.7
	MSH 373	4.9	2.7	3.4	3.6	3.8	2.2	2.3	2.8	11.5	10.5	10.0	10.7
	MSH 377	4.4	3.1	3.6	3.7	3.3	2.5	2.8	2.9	12.0	9.5	10.8	10.8
	Proagro 9444 (c)	4.3	3.4	3.4	3.7	3.2	2.7	2.3	2.7	10.9	9.2	9.7	10.0
	Nandi 75 (c)	4.6	3.5	2.9	3.7	3.8	2.8	2.2	2.9	11.9	10.3	10.1	10.8
	86M64 (c)	4.5	3.9	3.6	4.0	3.6	2.9	2.1	2.9	10.8	10.4	10.5	10.6
	Mean	4.6	3.1	3.4	3.8	3.7	2.4	2.4	2.9	11.4	10.2	10.3	10.7
	N	NS	0.3	NS		0.7	0.2	0.5		NS	0.3	0.2	
	E	0.3	0.2	NS		0.4	0.2	0.3		0.9	0.3	0.4	
	N x E	0.7	NS	NS		0.8	NS	NS		NS	NS	NS	
	E x N	0.9	NS	NS		0.9	NS	NS		NS	NS	NS	
CV (%)		7.5	6.3	14.9		10.7	7.1	14.8		8.0	3.0	3.6	

CHAPTER II: AGRONOMY

Table II.8: PMAT 1d: Performance of pearl millet advance summer hybrid entries for plant height, plant populations and days to 50% flowering as affected by N levels in Zone A&B during Summer 2022

Treatment		Plant population ('000/ha)				Plant height (cm)				Days to 50% flowering			
N(kg/ha)	Entries	ABD	JMR	DHL	Mean	ABD	JMR	DHL	Mean	ABD	JMR	DHL	Mean
60	MSH 371	329.3	162.5	204.0	231.9	171.1	179.3	205.8	185.4	54.0	51.0	57.0	54.0
	MSH 373	326.3	163.5	203.0	231.0	170.6	171.4	204.7	182.2	51.7	44.7	56.7	51.0
	MSH 377	326.0	162.2	205.3	231.2	165.5	169.0	189.2	174.6	53.0	45.3	55.3	51.2
	Proagro 9444 (c)	325.3	163.2	203.0	230.5	163.3	172.2	193.9	176.4	58.0	49.0	55.3	54.1
	Nandi 75 (c)	328.7	162.5	202.0	231.1	164.7	187.5	209.3	187.2	57.0	51.0	60.0	56.0
	86M64 (c)	305.3	158.3	201.3	221.7	155.5	172.4	181.1	169.7	51.0	53.3	62.3	55.6
	Mean	323.5	162.0	203.1	229.6	165.1	175.3	197.3	179.2	54.1	49.1	57.8	53.6
90	MSH 371	322.3	162.5	205.7	230.2	173.5	184.1	208.0	188.5	53.0	53.0	60.7	55.6
	MSH 373	329.7	163.5	204.0	232.4	175.4	175.7	209.3	186.8	51.0	46.0	58.3	51.8
	MSH 377	320.3	164.2	207.7	230.7	173.1	173.4	190.3	178.9	52.0	46.7	59.3	52.7
	Proagro 9444 (c)	328.0	162.9	204.0	231.6	169.5	177.4	198.0	181.6	56.7	50.0	58.3	55.0
	Nandi 75 (c)	330.0	163.5	203.3	232.3	172.7	192.7	215.3	193.6	55.3	52.0	58.3	55.2
	86M64 (c)	310.3	110.4	203.0	207.9	164.1	176.0	184.2	174.7	50.0	55.0	63.3	56.1
	Mean	323.4	154.5	204.6	227.5	171.4	179.9	200.8	184.0	53.0	50.4	59.7	54.4
120	MSH 371	318.7	163.2	206.0	229.3	178.9	187.5	212.3	192.9	52.0	54.0	61.3	55.8
	MSH 373	325.0	161.1	205.3	230.5	182.5	178.4	213.0	191.3	50.0	47.7	60.3	52.7
	MSH 377	329.3	163.2	209.0	233.8	175.2	177.0	196.7	183.0	51.0	48.7	57.7	52.4
	Proagro 9444 (c)	324.7	160.4	206.7	230.6	178.5	180.8	206.3	188.5	55.7	52.0	59.3	55.7
	Nandi 75 (c)	328.7	162.2	205.3	232.1	178.8	200.7	220.7	200.1	54.3	54.0	59.0	55.8
	86M64 (c)	299.3	159.0	206.3	221.6	178.3	179.9	190.7	183.0	49.0	57.0	62.0	56.0
	Mean	320.9	161.5	206.4	229.6	178.7	184.1	206.6	189.8	52.0	52.2	59.9	54.7
Entries Mean	MSH 371	323.4	162.7	205.2	230.5	174.5	183.6	208.7	188.9	53.0	52.7	59.7	55.1
	MSH 373	327.0	162.7	204.1	231.3	176.2	175.2	209.0	186.8	50.9	46.1	58.4	51.8
	MSH 377	325.2	163.2	207.3	231.9	171.2	173.1	192.1	178.8	52.0	46.9	57.4	52.1
	Proagro 9444 (c)	326.0	162.2	204.6	230.9	170.4	176.8	199.4	182.2	56.8	50.3	57.7	54.9
	Nandi 75 (c)	329.1	162.7	203.6	231.8	172.1	193.6	215.1	193.6	55.6	52.3	59.1	55.7
	86M64 (c)	305.0	142.6	203.6	217.1	166.0	176.1	185.3	175.8	50.0	55.1	62.6	55.9
	Mean	323.4	162.7	205.2	230.5	174.5	183.6	208.7	188.9	53.0	52.7	59.7	55.1
CD (5%)	N	NS	NS	NS		1.4	NS	3.2		0.1	1.5	NS	
	E	4.8	NS	NS		1.6	6.0	6.9		1.1	0.9	1.7	
	N x E	NS	NS	NS		2.8	NS	NS		NS	NS	NS	
	E x N	NS	NS	NS		2.8	NS	NS		NS	NS	NS	
CV (%)		1.5	12.3	2.1		0.9	3.4	3.5		2.2	1.9	3.0	

CHAPTER II: AGRONOMY

Table II.9: PMAT 2a: Effect of polymers and crop residues on grain and stover yield of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 of Zone A1

Treatment	Grain yield (q/ha)								Zonal Mean	Stover yield (q/ha)								Zonal Mean
	BKR				MDR					BKR				MDR				
	2020	2021	2022	Mean	2020	2021	2022	Mean		2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	12.26	24.47	21.00	19.24	12.90	7.72	9.90	10.17	14.71	33.45	40.37	41.30	38.37	34.45	17.26	20.47	24.06	31.22
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	15.77	27.47	24.70	22.64	18.55	10.27	12.33	13.72	18.18	38.30	38.27	47.93	41.50	41.26	22.53	26.67	30.15	35.83
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	13.02	24.97	27.70	21.90	15.57	9.63	11.83	12.34	17.12	34.82	41.37	49.53	41.91	38.33	20.82	25.27	28.14	35.02
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	18.41	26.27	26.07	23.58	21.36	13.33	16.67	17.12	20.35	42.05	37.87	48.13	42.68	44.52	29.55	33.97	36.01	39.35
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	18.37	24.53	25.37	22.76	20.75	12.71	15.90	16.45	19.61	41.89	41.77	49.13	44.26	41.91	28.71	31.83	34.15	39.21
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	16.46	26.10	23.83	22.13	19.19	10.90	13.60	14.56	18.35	40.37	36.50	48.87	41.91	41.35	25.63	30.03	32.34	37.12
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	15.98	27.63	28.97	24.19	18.62	10.47	12.73	13.94	19.07	39.91	45.47	51.07	45.48	40.99	24.40	27.13	30.84	38.16
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	19.78	32.40	30.27	27.48	22.52	15.32	17.87	18.57	23.02	45.63	42.07	59.07	48.92	46.87	32.08	34.50	37.82	43.37
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	19.07	25.30	26.70	23.69	21.99	14.54	17.50	18.01	20.85	43.53	41.47	49.77	44.92	46.63	30.95	36.87	38.15	41.53
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	18.26	31.80	26.87	25.64	20.10	11.34	14.10	15.18	20.41	42.22	44.80	49.17	45.40	45.14	26.05	29.07	33.42	39.41
CD at 5 %	2.95	4.84	4.685		1.18	1.47	1.901			6.52	5.47	7.43		5.60	3.22	7.89		
CV (%)	10.2	10.3	10.4		3.6	7.3	7.7			9.4	7.7	8.7		7.7	7.2	15.4		

Table II.10: PMAT 2a: Effect of polymers and crop residues on gross returns and net returns of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022

Treatment	Gross return (Rs/ha)							Zone Mean	Net return (Rs/ha)							Zone Mean
	BKR			MDR					BKR			MDR				
	2021	2022	Mean	2020	2021	2022	Mean		2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	75235	67895	71565	44958	25236	35545	35247	53406	54235	46895	50565	29608	9886	15173	18223	34394
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	80870	79594	80232	60518	33351	44983	46284	63258	34870	33594	34232	40168	13001	19611	24260	29246
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	76843	87107	81975	52649	31110	42968	42242	62109	51343	61607	56475	31299	9760	16596	19218	37847
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	78041	82779	80410	68191	43436	59547	57058	68734	52541	57279	54910	46841	22086	33175	34034	44472
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	76140	81654	78897	65566	41690	56465	54574	66735	52140	57654	54897	44216	20340	30093	31550	43223
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	76908	78139	77523	61934	36242	49980	49385	63454	52908	54139	53523	35584	9892	18608	21361	37442
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	84839	90688	87763	60527	34704	46203	47145	67454	34339	40188	37263	34177	8354	14831	19121	28192
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	93941	97576	95758	71846	48966	62687	61166	78462	43441	47076	45258	45496	22616	31315	33142	39200
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	77621	84957	81289	70585	46742	63245	60191	70740	28621	35957	32289	44235	20392	31873	32167	32228
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	93952	85038	89495	65791	37407	50575	51258	70376	44952	36038	40495	39441	11057	19203	23234	31864
CD at 5 %	12543	12514		4264	4436	8184			12543	12514		4264	4436	8184		
CV (%)	8.9	8.7		4.0	6.8	9.2			16.1	15.4		6.3	17.4	20.5		

CHAPTER II: AGRONOMY

Table II.11: PMAT 2a: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020 and 2022 at Mandor

Treatment	Dehydrogenase µg TPF/g soil/day			Alkaline phosphatases µg/g soil/hr			Acid phosphatases µg/g soil/hr			Urease (µ moles ammonia released/g/hr)		
	2020	2022	Mean	2020	2022	Mean	2020	2022	Mean	2020	2022	Mean
T ₁ : Control	2.48	3.73	3.11	6.94	85.67	46.30	0.47	8.23	4.35	8.12	13.97	11.05
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	3.43	4.17	3.80	10.64	97.11	53.88	0.63	15.95	8.29	11.56	18.09	14.82
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	2.68	3.80	3.24	8.50	91.49	50.00	0.49	10.05	5.27	8.25	16.95	12.60
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	2.49	3.93	3.21	8.51	93.43	50.97	0.54	12.69	6.61	11.48	16.34	13.91
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	2.70	3.87	3.28	8.38	91.73	50.06	0.64	10.81	5.73	10.05	17.43	13.74
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	2.71	4.00	3.36	9.52	92.44	50.98	0.68	12.91	6.80	10.30	17.94	14.12
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	3.63	4.27	3.95	10.92	92.33	51.62	0.78	17.95	9.37	10.80	23.08	16.94
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	3.35	4.60	3.98	12.08	100.97	56.52	1.41	20.08	10.75	14.57	24.17	19.37
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	3.38	3.42	3.40	11.70	94.10	52.90	1.32	16.70	9.01	11.10	23.51	17.30
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	3.29	4.07	3.68	11.27	101.84	56.56	0.86	21.87	11.37	12.94	25.11	19.02
CD at 5 %	0.47	0.41		2.81	NS		0.62	2.81		NS	1.49	
CV (%)	8.9	5.9		16.5	6.2		45.8	11.1		27.8	4.4	

Table II.12: PMAT 2a: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020 and 2022 at Mandor

Treatment	MBC µg g ⁻¹ soil			Bacterial count (10 ⁶ cfu/g soil)			Fungal count (10 ⁴ cfu/g soil)			Actinomycetes count (10 ⁵ cfu/g soil)		
	2020	2022	Mean	2020	2022	Mean	2020	2022	Mean	2020	2022	Mean
T ₁ : Control	108.84	113.14	110.99	6.60	6.64	6.62	4.18	4.10	4.14	5.02	5.01	5.02
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	126.25	130.44	128.35	6.71	6.77	6.74	4.34	4.34	4.34	5.12	5.10	5.11
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	117.54	116.74	117.14	6.57	6.67	6.62	4.17	4.18	4.18	5.03	5.04	5.03
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	120.45	118.16	119.31	6.69	6.72	6.71	4.27	4.27	4.27	5.01	4.97	4.99
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	121.90	120.33	121.12	6.80	6.73	6.77	4.28	4.25	4.26	5.01	5.09	5.05
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	117.77	122.49	120.13	6.79	6.70	6.74	4.29	4.29	4.29	4.87	5.07	4.97
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	134.38	134.05	134.22	6.62	6.78	6.70	4.27	4.36	4.31	5.09	5.13	5.11
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	143.44	136.93	140.19	6.54	6.78	6.66	4.28	4.35	4.31	5.11	5.14	5.13
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	141.93	139.10	140.51	6.64	6.78	6.71	4.27	4.37	4.32	5.14	5.13	5.14
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	132.87	141.26	137.07	6.62	6.80	6.71	4.21	4.40	4.30	5.16	5.13	5.15
CD at 5 %	11.64	3.66		NS	NS		NS	0.12		NS	NS	
CV (%)	5.3	1.7		1.7	1.2		1.9	1.6		2.5	1.3	

CHAPTER II: AGRONOMY

Table II.13: PMAT 2a: Effect of polymers and crop residues on total & effective tillers/plant, test wt. and days to 50% flowering of pearl millet under rainfed conditions during *kharif* 2022

Treatment	Total tillers/plant			Effective tillers/plant			Test weight (g)			Days to 50% flowering		
	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
T ₁ : Control	3.1	3.3	3.2	2.6	2.3	2.5	7.0	8.8	7.9	-	46.7	46.7
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	3.5	3.4	3.4	3.0	2.4	2.7	7.3	8.6	8.0	-	46.3	46.3
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	3.2	3.7	3.5	2.8	2.6	2.7	7.4	8.9	8.2	-	47.7	47.7
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	3.3	3.8	3.5	2.8	2.8	2.8	7.3	8.9	8.1	-	47.3	47.3
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	3.8	3.8	3.8	3.2	2.5	2.9	7.4	8.8	8.1	-	48.0	48.0
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	3.5	3.7	3.6	3.0	2.6	2.8	7.5	8.9	8.2	-	48.3	48.3
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	3.5	3.4	3.4	2.9	2.5	2.7	7.4	8.8	8.1	-	47.3	47.3
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	3.9	3.9	3.9	3.3	2.9	3.1	7.4	8.5	8.0	-	48.7	48.7
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	3.7	3.7	3.7	3.1	2.6	2.9	7.5	8.6	8.1	-	47.3	47.3
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	3.7	3.7	3.7	3.1	2.6	2.9	7.4	8.5	8.0	-	48.7	48.7
CD at 5 %	0.4	0.4		0.4	NS		NS	NS		-	1.1	1.1
CV (%)	7.3	5.9		6.8	10.7		3.3	3.6		-	1.3	1.3

Table II.14: PMAT 2a: Effect of polymers and crop residues on plant height, plant population and BC ratio of pearl millet under rainfed conditions during *kharif* 2022

Treatment	Plant height (cm)			Plant population ('000/ha)			BC ratio								Zonal Mean
	BKR	MDR		BKR	MDR		BKR			MDR					
	2022	2022	Mean	2022	2022	Mean	2021	2022	Mean	2020	2021	2022	Mean		
T ₁ : Control	180.1	158.1	169.1	129.6	120.3	124.9	3.57	3.23	3.40	2.93	1.64	1.74	2.10	2.75	
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	181.1	162.7	171.9	128.6	125.2	126.9	1.77	1.70	1.73	2.98	1.64	1.77	2.13	1.93	
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	189.2	162.9	176.1	126.9	124.5	125.7	3.00	3.40	3.20	2.47	1.46	1.63	1.85	2.53	
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	187.9	166.5	177.2	126.7	123.2	125.0	3.07	3.23	3.15	3.19	2.04	2.26	2.50	2.82	
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	184.4	165.7	175.1	128.1	131.9	130.0	3.17	3.40	3.28	3.07	1.95	2.14	2.39	2.84	
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	192.8	164.0	178.4	126.2	128.0	127.1	3.20	3.27	3.23	2.35	1.37	1.59	1.77	2.50	
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	189.8	163.8	176.8	131.0	121.5	126.3	1.67	1.83	1.75	2.30	1.32	1.47	1.70	1.72	
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	192.9	174.8	183.9	128.6	120.4	124.5	1.83	1.90	1.87	2.73	1.86	2.00	2.20	2.03	
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	194.0	172.9	183.5	129.6	126.7	128.1	1.60	1.73	1.67	2.68	1.78	2.02	2.16	1.91	
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	194.0	173.3	183.7	123.8	124.1	123.9	1.93	1.73	1.83	2.50	1.42	1.61	1.84	1.84	
CD at 5 %	NS	NS		NS	NS		0.38	0.37		0.18	0.18	0.27			
CV (%)	3.2	4.9		5.2	3.9		8.8	8.3		3.8	6.5	8.6			

CHAPTER II: AGRONOMY

Table II.15: PMAT 2b: Effect of hydrogel and mulching on the grain yield of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone A

Treatment	Grain yield (q/ha)																Zone Mean
	HSR				JMR				JPR				NDL				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	24.75	26.71	23.79	25.08	13.31	20.75	22.41	18.82	25.93	22.58	23.28	23.93	24.07	28.87	21.27	24.73	23.14
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	27.37	29.83	27.34	28.18	13.86	22.59	24.69	20.38	32.51	27.50	25.42	28.48	33.27	35.97	28.64	32.62	27.42
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	26.02	28.28	25.36	26.55	14.61	23.10	25.09	20.93	38.27	29.17	27.03	31.49	32.40	33.87	26.20	30.82	27.45
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	25.55	27.60	24.50	25.88	13.65	22.23	26.23	20.70	34.77	27.92	26.52	29.74	27.63	31.53	24.79	27.98	26.08
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	26.64	29.33	26.31	27.43	15.81	22.97	26.78	21.85	33.54	27.34	26.74	29.21	32.80	34.03	26.96	31.27	27.44
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	26.27	28.37	25.75	26.80	15.53	23.44	27.51	22.16	39.30	29.56	27.97	32.28	28.30	30.27	24.98	27.85	27.27
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	28.81	31.61	30.04	30.15	15.62	24.43	26.08	22.04	39.92	32.29	29.12	33.78	36.20	37.63	31.04	34.96	30.23
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	28.05	29.15	29.50	28.90	14.55	22.79	26.95	21.43	36.63	31.75	29.45	32.61	33.67	35.30	29.29	32.75	28.92
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	29.49	32.60	30.55	30.88	16.32	24.31	29.25	23.29	37.24	31.50	30.89	33.21	36.57	36.83	32.01	35.14	30.63
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	29.22	30.18	29.45	29.61	16.10	24.79	31.65	24.18	40.74	32.50	31.12	34.79	33.37	35.17	29.60	32.71	30.32
CD at 5 %	3.06	2.55	2.37		NS	NS	4.65		4.83	4.22	4.67		3.47	3.89	NS		
CV (%)	6.5	5.0	5.0		14.3	13.2	10.1		7.8	8.3	9.7		6.3	6.6	15.0		

Table II.16: PMAT 2b: Effect of hydrogel and mulching on the stover yield of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone A

Treatment	Stover yield (q/ha)																Zone Mean
	HSR				JMR				JPR				NDL				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	60.34	69.27	59.08	62.90	31.55	46.95	45.06	41.19	66.18	50.14	58.73	58.35	72.57	81.60	54.09	69.42	57.96
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	71.28	79.87	68.60	73.25	37.13	48.67	51.09	45.63	83.01	63.68	62.29	69.66	90.87	101.27	70.06	87.40	68.98
T ₃ : T ₁ +Pusa Hydrogel dry appl.@ 5 kg/ha	67.48	75.03	64.74	69.08	37.69	48.11	54.14	46.65	97.59	69.43	64.78	77.27	93.70	93.23	63.34	83.42	69.11
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	65.42	73.80	61.75	66.99	34.74	49.98	55.02	46.58	88.60	64.21	64.91	72.57	82.03	90.37	60.65	77.68	65.96
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	69.11	77.67	65.65	70.81	42.02	50.01	54.58	48.87	85.28	68.36	68.55	74.06	94.23	97.27	69.40	86.97	70.18
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	68.50	75.53	63.67	69.23	37.88	52.13	55.24	48.42	100.12	73.91	69.08	81.04	81.07	91.30	62.20	78.19	69.22
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	73.88	81.70	71.48	75.69	39.34	54.61	56.06	50.00	101.74	87.50	71.77	87.00	99.40	106.83	77.33	94.52	76.80
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	72.04	77.17	68.32	72.51	38.03	49.86	56.69	48.19	94.03	79.38	72.70	82.04	91.53	102.70	73.68	89.30	73.01
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	75.40	85.00	73.37	77.92	46.87	49.00	59.30	51.72	94.96	78.75	76.54	83.42	100.17	106.67	79.45	95.43	77.12
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	73.52	82.07	71.96	75.85	42.25	49.22	61.97	51.15	103.85	87.14	76.09	89.03	90.97	100.13	72.71	87.94	75.99
CD at 5 %	6.94	7.22	6.50		NS	NS	8.65		17.99	13.18	8.82		12.37	14.25	NS		
CV (%)	5.8	5.4	5.6		13.1	13.7	9.1		11.4	10.6	7.4		8.0	8.5	16.6		

CHAPTER II: AGRONOMY

Table II.17: PMAT 2b: Effect of polymers and crop residues on total water use and WUE of pearl millet under rainfed conditions during *kharif 2021 and 2022* in Zone A

Treatment	Total Water Use (cm)						Water Use Efficiency (Kg-ha-cm)												Zonal mean
	HSR			NDL			HSR			JMR			JPR			NDL			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : Control	35.4	27.8	31.6	34.5	-	34.5	75.4	85.5	80.4	66.6	87.3	77.0	45.3	42.9	44.1	83.7	51.0	67.3	67.2
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	31.9	26.6	29.3	40.7	-	40.7	93.5	102.7	98.1	72.6	96.2	84.4	55.2	46.8	51.0	88.4	67.0	77.7	77.8
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	33.0	27.6	30.3	39.1	-	39.1	85.7	92.0	88.9	74.2	97.7	86.0	58.6	49.8	54.2	86.6	62.3	74.5	75.9
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	33.3	27.6	30.4	36.9	-	36.9	83.0	88.7	85.8	71.4	102.2	86.8	56.1	48.8	52.4	85.5	59.7	72.6	74.4
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	32.3	27.3	29.8	39.0	-	39.0	90.7	96.3	93.5	73.8	104.3	89.0	54.9	49.2	52.1	87.3	64.0	75.6	77.6
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	32.6	27.4	30.0	35.8	-	35.8	86.9	94.0	90.5	75.3	107.2	91.2	59.4	51.5	55.5	84.5	59.0	71.8	77.2
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	31.1	26.4	28.7	40.1	-	40.1	101.6	114.0	107.8	78.5	101.6	90.0	64.9	53.6	59.3	93.8	71.7	82.7	84.9
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	31.5	26.6	29.0	40.9	-	40.9	92.6	110.8	101.7	73.2	105.0	89.1	63.7	54.2	59.0	86.2	67.3	76.8	81.7
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	30.4	26.4	28.4	41.8	-	41.8	107.2	115.8	111.5	78.1	113.9	96.0	63.3	56.9	60.1	88.2	73.3	80.8	87.1
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	31.1	26.5	28.8	41.3	-	41.3	96.9	111.1	104.0	79.6	123.3	101.4	65.3	57.3	61.3	85.1	69.0	77.1	85.9

Table II.18: PMAT 2b: Effect of polymers and crop residues on the total & effective tillers/plant, test wt. and plant height of pearl millet under rainfed conditions during *kharif 2022* in Zone A

Treatment	Total tillers/plant					Effective tillers/plant					Test weight (g)					Plant height (cm)				
	HSR	JMR	JPR	NDL	Mean	HSR	JMR	NDL	JPR	Mean	HSR	JMR	JPR	NDL	Mean	HSR	JMR	JPR	NDL	Mean
T ₁ : Control	2.1	2.6	3.8	3.8	3.1	1.6	2.1	1.3	1.4	1.6	7.3	8.3	7.7	7.9	7.8	176.0	183.9	162.0	168.7	172.6
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	2.7	2.8	3.8	3.8	3.3	2.1	2.3	2.0	1.6	2.0	8.5	8.4	8.0	8.9	8.4	186.7	191.5	172.0	201.3	187.9
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	2.3	2.9	4.6	4.6	3.6	1.8	2.3	1.9	2.0	2.0	7.6	8.5	7.7	8.4	8.1	182.0	188.2	176.9	194.0	185.3
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	2.2	2.9	4.0	4.0	3.3	1.7	2.3	2.0	1.9	2.0	7.5	8.9	7.8	8.6	8.2	180.7	190.9	177.6	184.2	183.4
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @ 5 kg/ha	2.4	2.9	4.2	4.2	3.4	2.0	2.5	2.0	1.9	2.1	8.0	8.9	7.9	8.5	8.3	185.0	187.8	177.8	189.1	184.9
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	2.3	3.1	4.6	4.6	3.7	1.8	2.5	2.0	2.0	2.1	7.9	9.2	7.9	8.6	8.4	184.0	191.2	178.1	197.0	187.6
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	3.0	3.0	4.8	4.8	3.9	2.4	2.3	2.8	2.9	2.6	8.3	8.6	7.9	9.1	8.5	192.3	193.5	182.6	208.1	194.1
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	2.9	3.1	4.6	4.6	3.8	2.3	2.6	2.6	2.5	2.5	8.1	9.0	7.9	8.9	8.5	190.7	195.3	181.1	198.3	191.4
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	3.1	3.2	4.6	4.6	3.9	2.5	2.7	2.9	2.8	2.7	8.8	9.3	8.2	9.0	8.8	195.7	196.3	183.1	206.0	195.3
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	3.0	3.5	4.8	4.8	4.0	2.4	2.9	2.9	2.8	2.7	8.2	9.5	8.0	9.0	8.7	192.7	198.7	186.8	208.6	196.7
CD at 5 %	0.5	0.4	0.6	0.6		0.6	0.4	1.0	0.5		0.7	0.6	NS	NS		8.7	5.9	11.8	17.5	
CV (%)	11.9	8.1	8.4	8.4		17.5	9.2	26.3	12.9		5.3	3.7	3.4	8.8		2.7	1.8	3.8	5.2	

CHAPTER II: AGRONOMY

Table II.19: PMAT 2b: Effect of polymers and crop residues on gross returns of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone A

Treatment	Gross returns (Rs/ha)												Zonal Mean
	HSR				JMR			JPR				NDL	
	2020	2021	2022	Mean	2021	2022	Mean	2020	2021	2022	Mean	2022	
T ₁ : Control	64077	73265	67723	68355	50890	53832	52361	69250	46160	70049	61820	74901	64359
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	71682	82292	77970	77315	54912	59606	57259	86847	56735	75758	73113	99461	76787
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	68090	77886	72543	72840	55822	61002	58412	102183	60553	79981	80906	90612	75692
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	66700	76122	69919	70914	54456	63463	58960	92817	57508	78996	76441	86097	73103
T ₅ : T1+Pusa Hydrogel slurry appl. @ 5 kg/ha	69723	80756	74951	75143	55942	64465	60204	89451	57422	80894	75922	95369	76660
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	68810	78177	73253	73413	57286	66068	61677	104895	62081	83573	83516	87305	76478
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	75232	86652	84897	82260	59782	63371	61577	106558	69167	86953	87559	108514	84978
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	73268	80242	82995	78835	55552	65247	60400	98045	66675	87984	84235	102749	81555
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	76983	89500	86460	84314	58420	70359	64390	99434	66150	92403	85996	111738	86609
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	76049	83491	83592	81044	59422	75686	67554	108761	69427	92663	90284	102954	85459

Table II.20: PMAT 2b: Effect of polymers and crop residues on net returns of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone A

Treatment	Net returns (Rs/ha)												Zonal Mean
	HSR				JMR			JPR				NDL	
	2020	2021	2022	Mean	2021	2022	Mean	2020	2021	2022	Mean	2022	
T ₁ : Control	20288	29159	21280	23576	29524	32581	31053	48250	23610	45549	39136	50401	36041
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	22393	30170	23367	25310	31046	35855	33451	60847	29185	46258	45430	69961	43538
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	19301	26764	18940	21668	28706	34001	31354	75183	32003	49481	52222	60112	41339
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	17911	25000	16316	19742	27340	36462	31901	65817	28958	48496	47757	55597	38749
T ₅ : T1+Pusa Hydrogel slurry appl. @ 5 kg/ha	20934	29634	21348	23972	28576	37214	32895	62451	28872	50394	47239	64869	42244
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	20021	27055	19650	22242	29920	38817	34369	72895	33531	53073	53166	56805	41646
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	20943	27514	23134	23864	30166	33870	32018	74558	35617	51453	53876	73014	45693
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	18979	21104	21232	20438	25936	35746	30841	66045	33125	52484	50551	67249	42270
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	22694	30362	24697	25918	28554	40608	34581	67434	32600	56903	52312	76238	47262
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	21760	24353	21829	22647	29556	45935	37746	76761	35877	57163	56600	67454	46112

CHAPTER II: AGRONOMY

Table II.21: PMAT 2b: Effect of polymers and crop residues on BC ratio of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone A

Treatment	BC ratio												Zonal Mean
	HSR				JMR			JPR				NDL	
	2020	2021	2022	Mean	2021	2022	Mean	2020	2021	2022	Mean	2022	
T ₁ : Control	1.46	1.66	1.46	1.53	2.38	2.53	2.46	3.30	2.05	2.86	2.73	3.06	2.44
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	1.45	1.58	1.43	1.49	2.30	2.51	2.41	3.34	2.06	2.57	2.66	3.37	2.48
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	1.40	1.52	1.35	1.42	2.06	2.26	2.16	3.78	2.12	2.62	2.84	2.97	2.35
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	1.37	1.49	1.30	1.39	2.01	2.35	2.18	3.44	2.01	2.59	2.68	2.82	2.27
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	1.43	1.58	1.40	1.47	2.04	2.37	2.21	3.31	2.01	2.65	2.66	3.13	2.36
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	1.41	1.53	1.37	1.44	2.09	2.42	2.26	3.28	2.17	2.74	2.73	2.86	2.32
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	1.39	1.47	1.37	1.41	2.02	2.15	2.09	3.33	2.06	2.45	2.61	3.06	2.29
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	1.35	1.36	1.34	1.35	1.88	2.21	2.05	3.06	1.99	2.48	2.51	2.89	2.20
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	1.42	1.51	1.40	1.44	1.96	2.36	2.16	3.11	1.97	2.60	2.56	3.15	2.33
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	1.40	1.41	1.35	1.39	1.99	2.54	2.27	3.40	2.07	2.61	2.69	2.90	2.31

Table II.22: PMAT 2b: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 at Hisar in Zone A

Treatment	Dehydrogenase µg TPF/g soil/day				Alkaline phosphatases µg PNP/g soil/hr				Acid phosphatases µg PNP/g soil/hr			
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean
T ₁ : Control	24.26	26.67	-	25.47	17.35	20.55	-	18.95	17.00	15.02	-	16.01
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	26.26	28.32	-	27.29	18.47	23.30	-	20.88	17.67	16.65	-	17.16
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	24.77	28.03	-	26.40	17.60	22.77	-	20.18	17.24	16.28	-	16.76
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	24.50	27.88	-	26.19	17.50	22.70	-	20.10	17.10	16.24	-	16.67
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	25.76	28.05	-	26.91	18.10	23.51	-	20.81	17.59	16.43	-	17.01
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	25.25	27.95	-	26.60	17.79	23.05	-	20.42	17.20	16.16	-	16.68
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	26.44	28.63	-	27.54	19.50	24.04	-	21.77	18.90	16.90	-	17.90
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	26.02	28.37	-	27.19	18.90	23.34	-	21.12	18.13	16.83	-	17.48
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	27.25	28.93	-	28.09	20.19	24.27	-	22.23	19.71	16.97	-	18.34
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	27.10	28.77	-	27.94	20.07	23.49	-	21.78	19.49	16.93	-	18.21
0-15 cm before sowing (Initial status)	14.25	17.00	-	15.63	13.10	17.00	-	15.05	12.50	13.10	-	12.80
CD at 5 %	1.66	1.82	-		1.94	1.81	-		1.80	1.02	-	
CV (%)	3.7	5.1	-		6.1	5.5	-		5.8	3.6	-	

CHAPTER II: AGRONOMY

Table II.23: PMAT 2b: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 at Hisar in Zone A

Treatment	Bacterial count (10 ⁵ cfu/g soil)				Fungal count (10 ⁴ cfu/g soil)				Actinomycetes count (10 ⁴ cfu/g soil)			
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean
T ₁ : Control	5.20	5.80	4.50	5.17	3.32	4.10	4.50	3.97	4.90	5.23	3.80	4.64
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	7.85	8.13	5.70	7.23	4.31	4.70	5.70	4.90	6.40	6.30	4.50	5.73
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	6.50	7.73	4.50	6.24	3.70	4.30	4.50	4.17	5.55	6.10	4.30	5.32
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	6.10	7.60	4.40	6.03	3.50	4.57	4.40	4.16	5.40	6.13	4.20	5.24
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	6.80	7.97	4.60	6.45	4.08	5.10	4.60	4.59	5.70	6.47	4.70	5.62
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	6.70	7.87	4.50	6.35	3.93	4.97	4.50	4.47	5.60	6.37	4.60	5.52
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	8.20	8.63	6.50	7.78	5.00	5.33	6.50	5.61	6.80	6.35	5.50	6.22
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	7.88	8.50	6.40	7.59	4.82	5.47	6.40	5.56	6.70	6.80	5.40	6.30
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	8.70	8.73	7.00	8.14	5.43	5.50	7.00	5.98	7.20	6.87	5.90	6.66
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	8.20	8.53	6.50	7.74	5.27	5.13	6.50	5.63	6.90	6.73	5.70	6.44
0-15 cm before sowing (Initial status)	3.20	4.10	3.80	3.70	3.00	3.40	3.80	3.40	3.80	4.80	4.30	4.30
CD at 5 %	0.87	1.23	1.01		0.69	0.81	1.01		0.98	0.89	0.82	
CV (%)	7.00	8.96	7.60		9.25	9.56	7.60		9.23	8.16	7.50	

CHAPTER II: AGRONOMY

Table II.24: PMAT 2b: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 at New Delhi

Treatment	Dehydrogenase µg TPF/g soil/day				Alkaline phosphatases µg/g soil/hr				Acid phosphatases µg/g soil/hr				Urease (µ moles ammonia released/g/hr)			
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean
T ₁ : Control	6.18	1.60	-	3.89	10.39	5.23	-	7.81	2.92	2.37	-	2.64	16.71	7.40	-	12.05
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	8.18	1.73	-	4.96	14.58	5.63	-	10.11	4.05	3.03	-	3.54	29.23	9.48	-	19.35
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	7.99	1.68	-	4.83	14.34	5.47	-	9.91	3.93	2.83	-	3.38	30.45	7.91	-	19.18
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	8.92	1.68	-	5.30	16.45	5.37	-	10.91	4.78	2.60	-	3.69	25.88	9.74	-	17.81
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	8.05	1.72	-	4.89	13.90	5.40	-	9.65	4.14	2.90	-	3.52	26.97	9.16	-	18.06
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	9.10	1.71	-	5.41	15.78	5.33	-	10.56	4.60	2.70	-	3.65	27.85	10.30	-	19.07
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	6.82	1.78	-	4.30	13.58	5.83	-	9.71	3.94	3.43	-	3.69	27.39	9.94	-	18.67
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	8.18	1.92	-	5.05	14.69	6.23	-	10.46	4.26	3.27	-	3.76	33.42	10.24	-	21.83
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	6.88	1.95	-	4.42	13.00	5.70	-	9.35	4.13	3.23	-	3.68	23.95	9.96	-	16.96
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	8.82	2.03	-	5.43	14.44	6.03	-	10.24	4.90	3.47	-	4.18	25.84	10.90	-	18.37
CD at 5 %	1.86	0.13	-		2.99	0.29	-		0.65	0.28	-		NS	0.62	-	
CV (%)	13.6	4.4	-		12.3	3.0	-		9.0	5.4	-		21.8	3.8	-	

Table II.25: PMAT 2b: Effect of polymers and crop residues on the soil microbial counts of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 at New Delhi

Treatment	MBC (µg g-1 soil)				Bacterial count (10 ⁶ cfu/g soil)				Fungal count (10 ⁴ cfu/g soil)				Actinomycetes count (10 ⁵ cfu/g soil)			
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean
T ₁ : Control	213.9	280.3	-	247.1	6.95	7.27	-	7.11	4.74	3.69	-	4.21	5.75	6.27	-	6.01
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	266.6	337.4	-	302.0	7.19	7.40	-	7.30	4.93	3.95	-	4.44	6.00	6.63	-	6.32
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	236.2	320.3	-	278.2	7.03	7.49	-	7.26	4.79	3.83	-	4.31	5.80	6.50	-	6.15
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	268.0	318.4	-	293.2	7.17	7.47	-	7.32	4.94	4.05	-	4.50	5.96	6.58	-	6.27
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	232.7	329.3	-	281.0	7.00	7.71	-	7.36	4.87	3.90	-	4.39	5.75	6.53	-	6.14
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	278.3	330.6	-	304.4	7.20	7.31	-	7.26	4.93	3.90	-	4.42	5.95	6.61	-	6.28
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	242.6	346.2	-	294.4	7.10	7.54	-	7.32	4.87	4.08	-	4.48	5.85	6.67	-	6.26
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	269.2	338.8	-	304.0	7.25	7.78	-	7.52	4.92	4.17	-	4.55	5.88	6.66	-	6.27
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	238.5	342.8	-	290.6	7.02	7.74	-	7.38	4.91	4.10	-	4.51	5.80	6.64	-	6.22
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	265.2	343.1	-	304.1	7.20	7.63	-	7.42	4.96	3.99	-	4.47	6.00	6.69	-	6.34
CD at 5 %	20.1	31.1	-		0.10	0.23	-		0.12	0.15	-		NS	0.08	-	
CV (%)	4.63	5.5	-		0.77	1.8	-		1.47	2.2	-		2.99	0.7	-	

CHAPTER II: AGRONOMY

Table II.26: PMAT 2c: Effect of polymers and crop residues on grain yield of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	Grain yield (q/ha)																Zone Mean
	ABD1				DHL				VYP				CBE				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	21.56	22.36	20.79	21.57	21.66	21.28	20.17	21.04	13.04	19.07	16.30	16.14	23.61	22.95	24.27	23.61	20.59
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	21.92	28.36	23.98	24.75	24.98	25.81	24.27	25.02	17.32	23.88	22.97	21.39	26.15	25.65	25.18	25.66	24.20
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	22.34	29.14	24.19	25.22	28.96	30.34	29.56	29.62	14.04	22.21	19.59	18.61	24.95	24.87	27.36	25.73	24.80
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	24.26	31.46	26.65	27.46	27.72	29.52	28.09	28.44	14.27	20.15	18.62	17.68	24.48	24.16	27.18	25.27	24.71
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	23.28	29.23	27.41	26.64	29.52	31.36	29.98	30.29	14.11	21.27	19.93	18.44	25.28	25.09	27.52	25.96	25.33
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	22.33	27.99	27.94	26.08	28.79	30.12	28.59	29.17	15.01	22.67	21.02	19.57	24.88	24.57	27.37	25.61	25.11
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	25.84	36.04	31.50	31.13	30.19	32.54	30.59	31.11	16.36	23.01	22.27	20.55	29.49	26.83	29.30	28.54	27.83
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	25.53	35.97	32.08	31.20	29.14	31.21	29.53	29.96	15.56	23.69	22.46	20.57	27.92	26.24	30.04	28.07	27.45
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	30.97	37.53	33.13	33.87	31.34	34.20	34.21	33.25	17.22	23.56	22.96	21.25	31.50	27.92	29.70	29.71	29.52
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	26.93	36.27	33.87	32.36	30.13	32.52	32.45	31.70	18.92	24.31	24.04	22.42	29.87	26.54	30.68	29.03	28.88
CD at 5 %	4.95	6.48	6.09		3.56	2.57	2.79		NS	NS	2.78		1.93	2.15	3.35		
CV (%)	11.7	11.9	12.5		7.3	5.0	5.6		13.4	9.1	7.7		4.2	4.9	6.9		

Table II.27: PMAT 2c: Effect of polymers and crop residues on stover yield of pearl millet under rainfed conditions during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	Stover yield (q/ha)																Zone Mean
	ABD1				DHL				VYP				CBE				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	46.49	52.08	34.31	44.29	42.24	39.12	40.68	40.68	60.79	49.77	48.87	53.14	29.68	35.18	37.33	34.06	43.04
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	47.97	54.86	39.57	47.47	47.96	51.46	47.96	49.13	80.72	62.96	66.00	69.89	33.72	38.83	38.33	36.96	50.86
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	43.35	59.03	39.91	47.43	54.17	59.10	58.24	57.17	71.23	56.25	56.16	61.21	31.68	37.37	41.72	36.92	50.68
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	47.99	54.86	43.97	48.94	53.08	58.60	55.45	55.71	71.60	55.09	54.68	60.46	30.88	35.33	40.94	35.72	50.21
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	52.82	60.19	45.22	52.74	56.37	62.61	58.22	59.07	75.70	60.42	58.66	64.92	32.30	36.87	41.48	36.89	53.40
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	50.17	55.56	46.10	50.61	54.17	60.12	56.53	56.94	75.28	59.03	60.56	64.96	31.32	36.35	41.62	36.43	52.23
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	51.82	61.34	51.97	55.05	59.21	64.19	60.22	61.21	79.40	62.27	64.17	68.61	39.42	39.70	44.42	41.18	56.51
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	48.46	59.03	52.93	53.47	57.80	62.28	58.02	59.37	80.95	63.19	64.70	69.61	37.88	38.74	45.37	40.66	55.78
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	60.26	65.97	54.66	60.30	60.19	69.42	66.74	65.45	83.77	63.89	65.21	70.96	43.77	41.13	44.67	43.19	59.97
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	58.83	63.66	55.88	59.45	56.37	64.87	63.54	61.59	83.10	64.12	66.69	71.31	40.90	39.00	46.41	42.10	58.61
CD at 5 %	5.58	NS	10.04		7.20	2.35	3.63		11.61	NS	7.33		2.42	3.60	5.03		
CV (%)	6.4	12.5	12.5		7.7	2.3	3.7		8.8	9.2	7.0		4.0	5.5	6.9		

CHAPTER II: AGRONOMY

Table II.28: PMAT 2c: Effect of polymers and crop residues on total & effective tillers/plant and test wt. of pearl millet during *kharif* 2022 in Zone B

Treatment	Total tillers/plant					Effective tillers/plant					Test weight (g)				
	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
T ₁ : Control	3.3	2.3	3.5	4.0	3.3	2.3	1.1	2.7	3.5	2.4	14.1	11.4	10.8	6.3	10.6
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	4.1	2.9	4.1	4.2	3.8	2.7	1.1	3.1	3.8	2.7	14.2	11.8	12.1	6.3	11.1
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	5.0	3.0	3.7	4.2	4.0	4.0	1.3	2.8	3.7	3.0	14.2	11.9	11.5	6.5	11.0
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	5.4	3.0	3.7	4.1	4.1	4.5	1.2	2.8	3.7	3.0	14.3	11.8	11.3	6.5	11.0
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @ 5 kg/ha	5.6	3.1	3.8	4.2	4.2	4.5	1.3	2.9	3.8	3.1	14.6	12.0	11.9	6.5	11.2
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	5.9	3.0	3.9	4.2	4.2	4.9	1.2	2.8	3.7	3.1	14.6	11.9	11.7	6.5	11.2
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	6.0	3.0	3.9	4.5	4.4	5.0	1.4	2.9	4.1	3.3	15.2	12.1	12.0	7.0	11.6
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	6.1	3.0	4.0	4.5	4.4	5.0	1.3	2.9	4.2	3.3	15.4	12.0	12.1	7.1	11.7
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	6.2	3.2	4.1	4.7	4.6	5.2	1.4	3.1	4.3	3.5	15.5	12.2	12.2	7.4	11.8
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	6.4	3.0	4.2	4.7	4.6	5.3	1.2	3.1	4.3	3.5	15.8	12.1	12.4	7.6	12.0
CD at 5 %	1.0	0.3	0.4	NS		1.0	0.1	0.3	NS		NS	NS	NS	0.3	
CV (%)	10.9	6.6	5.8	9.6		13.8	5.4	5.8	11.9		6.2	3.3	5.2	2.5	

Table II.29: PMAT 2c: Effect of polymers and crop residues on WUE of pearl millet during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	Water Use Efficiency (Kg-ha-cm)															Zonal Mean
	ABD1				DHL			VYP				CBE				
	2020	2021	2022	Mean	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	46.9	30.2	26.3	34.5	39.1	25.4	32.3	40.1	55.7	44.9	46.9	29.7	63.7	60.7	51.4	41.3
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	47.7	38.3	30.3	38.8	47.4	30.6	39.0	53.2	69.8	63.3	62.1	33.7	71.3	62.9	56.0	49.0
T ₃ : T1+Pusa Hydrogel dry appl. @ 5 kg/ha	48.6	39.3	30.5	39.5	55.7	37.3	46.5	43.1	64.9	54.0	54.0	31.7	69.1	68.4	56.4	49.1
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	52.8	42.5	33.6	43.0	54.2	35.4	44.8	43.8	58.9	51.3	51.3	30.9	67.1	68.0	55.3	48.6
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	50.7	39.5	34.6	41.6	57.6	37.8	47.7	43.3	62.2	54.9	53.5	32.3	69.7	68.8	56.9	49.9
T ₆ : T1+SPG 1118 slurry appl @ 5 kg/ha	48.6	37.8	35.3	40.6	55.3	36.0	45.7	46.1	66.2	57.9	56.8	31.3	68.3	68.5	56.0	49.8
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	56.2	48.7	39.8	48.2	59.8	38.6	49.2	50.3	67.3	61.4	59.6	39.4	74.5	73.3	62.4	54.9
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	55.6	48.6	40.5	48.2	57.3	37.2	47.3	47.8	69.2	61.9	59.6	37.9	72.9	75.1	62.0	54.3
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	67.4	50.6	41.8	53.3	62.8	43.1	53.0	52.9	68.9	63.3	61.7	43.8	77.6	74.3	65.2	58.3
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	58.6	49.0	42.8	50.1	59.8	40.9	50.3	58.1	71.0	66.2	65.1	40.9	73.7	76.7	63.8	57.3
CD at 5 %	-	-	-		-	-		NS	NS	7.7		2.4	6.0	8.4		
CV (%)	-	-	-		-	-		13.5	9.1	7.7		4.0	4.9	7.0		

CHAPTER II: AGRONOMY

Table II.30: PMAT 2c: Effect of polymers and crop residues on plant population, plant height and total water use of pearl millet during *kharif* 2022 in Zone B

Treatment	Plant population ('000/ha)					Plant height (cm)					Total Water Use (cm)						Zonal Mean
	ABD1	DHL	VYP	CBE		ABD1	VYP	DHL	CBE		ABD1			DHL			
	2022				Mean	2022				Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : Control	219.4	131.5	140.0	141.7	158.2	169.9	170.2	190.6	125.0	163.9	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	216.9	132.4	142.4	144.3	159.0	173.2	190.0	192.3	135.5	172.8	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	219.9	135.4	137.3	145.7	159.6	175.7	180.7	191.7	137.5	171.4	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	218.1	134.5	138.4	146.0	159.2	177.4	182.1	192.7	138.2	172.6	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	217.8	135.2	137.7	146.3	159.3	178.2	182.1	192.1	144.1	174.1	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	218.3	134.7	139.8	147.0	160.0	179.6	183.5	191.5	140.9	173.9	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	219.9	135.2	138.9	145.7	159.9	175.0	185.4	195.0	150.2	176.4	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	217.6	133.8	144.0	144.0	159.8	183.6	187.0	193.1	151.6	178.8	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	219.9	136.3	140.3	148.3	161.2	182.0	189.6	198.2	155.3	181.3	74.1	79.2	76.6	54.4	79.3	66.9	71.8
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	219.0	134.5	140.0	148.7	160.6	183.3	191.1	196.2	157.1	181.9	74.1	79.2	76.6	54.4	79.3	66.9	71.8
CD at 5 %	NS	NS	NS	NS		NS	10.4	NS	11.7		-	-		-	-		
CV (%)	0.8	1.6	2.3	3.1		6.6	3.3	3.1	4.7		-	-		-	-		

Table II.31: PMAT 2c: Effect of polymers and crop residues on pH, E.C., organic carbon of soil after harvest of pearl millet during *kharif* 2021 and 2022 in Zone

Treatment	Soil pH						Soil EC (dS/m)						Soil organic carbon (%)					
	DHL			VYP			DHL			VYP			DHL			VYP		
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
T ₁ : Control	7.99	7.98	7.99	8.11	8.12	8.12	0.43	0.44	0.44	0.33	0.33	0.33	0.54	0.51	0.53	0.67	0.65	0.66
T ₂ : T ₁ +Crop residue mulch @ 5.0 t/ha	7.88	7.87	7.88	8.12	8.11	8.11	0.39	0.40	0.40	0.32	0.32	0.32	0.62	0.60	0.61	0.68	0.68	0.68
T ₃ : T ₁ +Pusa Hydrogel dry appl. @ 5 kg/ha	7.92	7.91	7.92	8.10	8.12	8.11	0.41	0.41	0.41	0.33	0.32	0.33	0.56	0.55	0.56	0.68	0.66	0.67
T ₄ : T ₁ +SPG 1118 dry appl. @ 5.0 kg/ha	7.92	7.92	7.92	8.11	8.13	8.12	0.40	0.41	0.41	0.32	0.32	0.32	0.57	0.55	0.56	0.67	0.66	0.67
T ₅ : T ₁ +Pusa Hydrogel slurry appl. @5 kg/ha	7.94	7.93	7.94	8.12	8.11	8.12	0.41	0.41	0.41	0.32	0.33	0.33	0.56	0.55	0.56	0.68	0.67	0.67
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	7.92	7.92	7.92	8.12	8.12	8.12	0.41	0.41	0.41	0.32	0.32	0.32	0.57	0.56	0.57	0.68	0.67	0.67
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	7.89	7.88	7.89	8.12	8.11	8.12	0.39	0.40	0.40	0.33	0.32	0.32	0.63	0.61	0.62	0.67	0.67	0.67
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	7.87	7.88	7.88	8.12	8.11	8.12	0.40	0.40	0.40	0.32	0.32	0.32	0.62	0.60	0.61	0.68	0.68	0.68
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	7.87	7.88	7.88	8.12	8.11	8.12	0.39	0.40	0.40	0.33	0.31	0.32	0.62	0.61	0.62	0.68	0.67	0.68
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	7.88	7.89	7.89	8.12	8.10	8.11	0.39	0.40	0.40	0.32	0.32	0.32	0.63	0.61	0.62	0.68	0.68	0.68
CD at 5 %	-	-		NS	NS		-			NS	NS		-			NS	0.02	
CV (%)	-	-		0.2	0.2		-			3.5	3.9		-			0.6	1.4	

CHAPTER II: AGRONOMY

Table II.32: PMAT 2c: Effect of polymers and crop residues on available N and P of soil after harvest of pearl millet during *kharif* 2021 and 2022 in Zone B

Treatment	Available nitrogen (kg/ha)							Zonal mean	Available P2O5 (kg/ha)							Zonal mean
	VYP			DHL			CBE		DHL			VYP			CBE	
	2021	2022	Mean	2021	2022	Mean			2022	2021	2022	Mean	2021	2022		
T ₁ : Control	217.9	203.0	210.5	189.5	182.7	186.1	199.0	198.5	17.2	17.0	17.1	21.3	21.1	21.2	13.0	17.1
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	219.8	232.2	226.0	214.8	212.2	213.5	226.3	222.0	17.9	17.7	17.8	21.9	25.1	23.5	17.0	19.4
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	215.2	206.2	210.7	191.1	189.9	190.5	182.3	194.5	17.3	17.1	17.2	21.8	22.6	22.2	11.0	16.8
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	214.7	210.3	212.5	191.2	189.7	190.5	177.3	193.4	17.4	17.1	17.2	22.2	21.6	21.9	13.0	17.4
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	212.1	198.2	205.2	190.7	187.9	189.3	174.0	189.5	17.3	17.0	17.2	21.0	22.2	21.6	12.0	16.9
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	220.6	208.8	214.7	191.3	188.7	190.0	182.0	195.6	17.3	17.0	17.2	20.8	20.7	20.8	11.0	16.3
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	217.7	222.6	220.2	215.3	212.2	213.7	225.3	219.7	17.9	17.7	17.8	22.5	24.8	23.7	16.0	19.2
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	218.3	228.7	223.5	214.8	212.0	213.4	236.0	224.3	17.9	17.6	17.8	23.7	26.4	25.0	18.0	20.3
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	219.2	230.4	224.8	214.7	210.5	212.6	230.3	222.6	17.8	17.6	17.7	22.7	24.7	23.7	16.0	19.1
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	217.3	229.4	223.4	215.3	211.7	213.5	224.0	220.3	17.9	17.7	17.8	23.2	24.6	23.9	17.0	19.6
CD at 5 %	NS	22.5		-	-		18.7		-	-		NS	2.9		2.5	
CV (%)	2.6	6.0		-	-		5.3		-	-		5.1	7.2		10.1	

Table II.33: PMAT 2c: Effect of polymers and crop residues on available K of soil after harvest of pearl millet during *kharif* 2021 and 2022 in Zone B

Treatment	Available K2O (kg/ha)							Zonal mean
	DHL			VYP			CBE	
	2021	2022	Mean	2021	2022	Mean	2022	
T ₁ : Control	582.0	570.0	576.0	390.9	393.5	392.2	469.0	479.1
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	602.0	590.0	596.0	402.0	428.5	415.2	542.7	518.0
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	586.0	575.0	580.5	397.5	404.7	401.1	435.0	472.2
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	580.0	571.0	575.5	402.7	396.7	399.7	458.0	477.7
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	584.0	573.0	578.5	401.7	401.2	401.5	441.0	473.7
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	582.0	572.0	577.0	397.1	407.1	402.1	534.0	504.4
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	604.0	594.0	599.0	400.0	419.8	409.9	574.3	527.8
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	596.0	588.0	592.0	407.3	425.1	416.2	565.3	524.5
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	598.0	592.0	595.0	401.4	434.8	418.1	578.3	530.5
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	609.0	590.0	599.5	399.3	429.0	414.2	585.0	532.9
CD at 5 %	-	-		NS	27.4		28.6	
CV (%)	-	-		2.2	3.8		3.2	

CHAPTER II: AGRONOMY

Table II.34: PMAT 2c: Effect of polymers and crop residues on gross returns of pearl millet during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	Gross returns (Rs/ha)																Zonal Mean
	ABD1				DHL				VYP				CBE				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	55584	53650	63005	57413	44542	45699	53683	47974	24783	32414	27716	28304	35420	45900	44992	42104	43949
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	59050	66360	72678	66029	51302	55737	64502	57180	32898	40591	39053	37514	39225	51300	46634	45720	51611
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	57366	68592	73307	66422	59363	65404	78560	67776	26671	37762	33308	32580	37425	49747	50678	45950	53182
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	62738	72722	80758	72073	56923	63716	74662	65100	27110	34260	31663	31011	36725	48313	50300	45113	53324
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	61416	68957	83049	71141	60594	67741	79600	69312	26807	36160	33874	32280	37925	50173	50927	46342	54769
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	59580	65707	84672	69986	59038	65055	75992	66695	28531	38533	35728	34264	37325	49140	50697	45721	54166
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	66872	83083	95458	81804	62098	70209	81299	71202	31082	39123	37860	36022	44235	53660	54258	50718	59936
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	66268	82600	97222	82030	59992	67395	78467	68618	29569	40269	38175	36004	41880	52487	55611	49993	59161
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	80458	86826	100391	89225	64357	73951	90866	76391	32714	40060	39029	37268	47255	55840	54952	52682	63892
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	71312	83909	102630	85950	61747	70236	86218	72733	35946	41327	40867	39380	44810	53080	56791	51560	62406
CD at 5 %	-	-	18440		6809	5208	6951		NS	NS	4727		-	-	-		
CV (%)	-	-	12.5		6.8	4.7	5.3		13.4	9.1	7.7		-	-	-		

Table II.35: PMAT 2c: Effect of polymers and crop residues on net returns of pearl millet during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	Net returns (Rs/ha)																Zonal Mean
	ABD1				DHL				VYP				CBE				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	32894	15858	33025	27259	22042	21849	27448	23779	14033	22093	17395	17840	7416	15796	15582	12931	20453
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	35110	25741	40288	33713	27362	30361	36588	31437	21148	29470	27932	26183	9946	19921	12224	14030	26341
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	31426	25847	39417	32230	33423	37907	48314	39881	11521	22441	17987	17316	7421	17643	19456	14840	26067
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	36548	30103	46368	37673	30733	35955	44124	36937	11960	18939	16342	15747	6721	16209	19078	14003	26090
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	35076	25288	48409	36258	34254	39820	48887	40987	11657	20839	18553	17016	7921	18069	19705	15232	27373
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	33040	22233	49532	34935	32498	36922	45047	38155	13381	23212	20407	19000	7321	17036	19475	14611	26675
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	40032	37492	59068	45531	35258	41759	50004	42340	15932	23002	21739	20224	12956	20281	18036	17091	31297
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	39318	36856	60332	45502	33042	38828	47043	39638	14419	24148	22054	20207	10601	19108	19389	16366	30428
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	53318	39790	63251	52120	37217	45183	59220	47207	17564	23939	22908	21470	15976	22461	18730	19056	34963
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	44062	36721	64990	48591	34497	41351	54444	43430	20796	25206	24746	23583	13531	19701	23757	18996	33650
CD at 5 %	-	-	18440		6809	5208	6950		NS	NS	4727		-	-	-		
CV (%)	-	-	21.1		12.3	8.1	8.7		26.1	14.8	13.0		-	-	-		

CHAPTER II: AGRONOMY

Table II.36: PMAT 2c: Effect of polymers and crop residues on B:C of pearl millet during *kharif* 2020, 2021 and 2022 in Zone B

Treatment	B:C																Zonal Mean
	ABD1				DHL				VYP				CBE				
	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
T ₁ : Control	2.45	1.79	2.10	2.11	1.98	1.91	2.05	1.98	2.31	3.14	2.68	2.71	1.26	1.52	1.53	1.44	2.06
T ₂ : T1+Crop residue mulch @ 5.0 t/ha	2.47	2.05	2.24	2.25	2.15	2.20	2.31	2.22	2.80	3.65	3.51	3.32	1.34	1.63	1.36	1.44	2.31
T ₃ : T1+Pusa Hydrogel dry appl.@ 5 kg/ha	2.21	2.02	2.16	2.13	2.29	2.38	2.60	2.42	1.76	2.46	2.17	2.13	1.25	1.55	1.62	1.47	2.04
T ₄ : T1+SPG 1118 dry appl. @ 5.0 kg/ha	2.40	2.11	2.35	2.29	2.17	2.30	2.45	2.30	1.79	2.24	2.07	2.03	1.22	1.50	1.61	1.44	2.02
T ₅ : T1+Pusa Hydrogel slurry appl. @5 kg/ha	2.33	1.99	2.40	2.24	2.30	2.43	2.59	2.44	1.77	2.36	2.21	2.11	1.26	1.56	1.63	1.48	2.07
T ₆ : T ₁ +SPG 1118 slurry appl @ 5 kg/ha	2.24	1.87	2.41	2.17	2.23	2.31	2.45	2.33	1.88	2.52	2.33	2.24	1.24	1.53	1.62	1.46	2.05
T ₇ : T ₃ + Crop residue mulch @ 5.0 t/ha	2.49	2.28	2.62	2.46	2.31	2.47	2.60	2.46	2.05	2.43	2.35	2.28	1.41	1.61	1.50	1.51	2.18
T ₈ : T ₄ + Crop residue mulch @ 5.0 t/ha	2.46	2.24	2.63	2.44	2.22	2.36	2.50	2.36	1.95	2.50	2.37	2.27	1.34	1.57	1.54	1.48	2.14
T ₉ : T ₅ + Crop residue mulch @ 5.0 t/ha	2.96	2.34	2.70	2.67	2.37	2.57	2.87	2.60	2.16	2.48	2.42	2.35	1.51	1.67	1.52	1.57	2.30
T ₁₀ : T ₆ + Crop residue mulch @ 5.0 t/ha	2.62	2.23	2.73	2.53	2.26	2.43	2.71	2.47	2.37	2.56	2.53	2.49	1.43	1.59	1.72	1.58	2.27
CD at 5 %	-	-	NS		NS	0.19	0.23		0.48	0.42	0.33		-	-	-		
CV (%)	-	-	13.1		6.8	4.6	5.2		13.4	9.2	7.7		-	-	-		

CHAPTER II: AGRONOMY

Table II.37: PMAT 3a: Effect of micronutrient management on the productivity of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatments		Grain yield (q/ha)						Zonal mean	Stover yield (q/ha)						Zonal mean
		BKR			MND				BKR			MND			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	28.80	25.17	26.98	12.77	11.30	12.03	19.51	45.73	56.80	51.27	24.00	19.70	21.85	36.56
	T2=Soil application ZnSO4=25 kg/ha	34.97	26.63	30.80	14.63	16.47	15.55	23.18	55.03	66.17	60.60	26.90	34.07	30.48	45.54
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	33.90	32.30	33.10	13.60	15.47	14.53	23.82	56.57	66.53	61.55	25.03	32.60	28.82	45.18
	T4= Soil application FeSO4=20 kg/ha	31.13	33.00	32.07	13.07	14.83	13.95	23.01	54.20	70.03	62.12	23.13	28.17	25.65	43.88
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	32.10	33.23	32.67	13.27	14.87	14.07	23.37	57.77	70.97	64.37	21.13	29.80	25.47	44.92
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	25.53	31.63	28.58	11.63	13.40	12.52	20.55	59.63	60.97	60.30	20.63	30.93	25.78	43.04
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	25.87	27.40	26.63	12.30	13.87	13.08	19.86	53.90	68.67	61.28	22.63	28.27	25.45	43.37
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	27.47	36.17	31.82	12.60	14.57	13.58	22.70	49.10	72.80	60.95	23.47	30.13	26.80	43.88
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	34.47	36.17	35.32	14.10	16.00	15.05	25.18	62.80	71.50	67.15	26.70	32.57	29.63	48.39
	Mean	30.47	31.30	30.89	13.11	14.53	13.82	22.35	54.97	67.16	61.06	23.74	29.58	26.66	43.86
HHB 299	T1=control	27.27	42.53	34.90	12.37	10.83	11.60	23.25	63.13	69.23	66.18	24.53	21.20	22.87	44.52
	T2=Soil application ZnSO4=25 kg/ha	32.37	37.77	35.07	13.30	15.20	14.25	24.66	61.67	64.67	63.17	25.17	32.10	28.63	45.90
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	32.87	38.33	35.60	13.27	15.10	14.18	24.89	60.93	73.03	66.98	25.20	32.57	28.88	47.93
	T4= Soil application FeSO4=20 kg/ha	34.63	40.07	37.35	14.03	16.03	15.03	26.19	70.93	69.63	70.28	29.67	34.13	31.90	51.09
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	35.97	45.40	40.68	14.33	16.27	15.30	27.99	63.13	75.90	69.52	27.67	33.77	30.72	50.12
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	33.03	38.20	35.62	13.57	15.50	14.53	25.08	58.50	79.73	69.12	25.60	30.67	28.13	48.63
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	32.03	39.00	35.52	13.27	15.03	14.15	24.83	55.77	78.47	67.12	23.23	29.87	26.55	46.83
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	29.30	45.27	37.28	13.17	15.07	14.12	25.70	58.17	88.90	73.53	23.40	30.10	26.75	50.14
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	41.00	48.60	44.80	15.03	16.73	15.88	30.34	60.10	94.37	77.23	26.23	32.43	29.33	53.28
	Mean	33.16	41.69	37.42	13.59	15.09	14.34	25.88	61.37	77.10	69.24	25.63	30.76	28.20	48.72
Micronutrient Management	T1=control	28.03	33.85	30.94	12.57	11.07	11.82	21.38	54.43	63.02	58.73	24.27	20.45	22.36	40.54
	T2=Soil application ZnSO4=25 kg/ha	33.67	32.20	32.93	13.97	15.83	14.90	23.92	58.35	65.42	61.88	26.03	33.08	29.56	45.72
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	33.38	35.32	34.35	13.43	15.28	14.36	24.35	58.75	69.78	64.27	25.12	32.58	28.85	46.56
	T4= Soil application FeSO4=20 kg/ha	32.88	36.53	34.71	13.55	15.43	14.49	24.60	62.57	69.83	66.20	26.40	31.15	28.78	47.49
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	34.03	39.32	36.68	13.80	15.57	14.68	25.68	60.45	73.43	66.94	24.40	31.78	28.09	47.52
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	29.28	34.92	32.10	12.60	14.45	13.53	22.81	59.07	70.35	64.71	23.12	30.80	26.96	45.83
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	28.95	33.20	31.08	12.78	14.45	13.62	22.35	54.83	73.57	64.20	22.93	29.07	26.00	45.10
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	28.38	40.72	34.55	12.88	14.82	13.85	24.20	53.63	80.85	67.24	23.43	30.12	26.78	47.01
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	37.73	42.38	40.06	14.57	16.37	15.47	27.76	61.45	82.93	72.19	26.47	32.50	29.48	50.84
CD (5%)	Hybrids	NS	7.78		NS	NS			5.52	NS		NS	NS		
	NM	3.81	3.31		NS	2.79			NS	9.35		NS	7.10		
	H x NM	NS	6.91		NS	NS			NS	NS		NS	NS		
	NM x H	NS	8.26		NS	NS			NS	NS		NS	NS		
CV (%)		10.1	7.7		10.1	16.0			11.3	11.0		9.9	19.9		

CHAPTER II: AGRONOMY

Table II.38: PMAT 3a: Effect of micronutrient management on the total & effective tillers/plant, test weight, plant height and plant population of pearl millet hybrids under irrigated condition during kharif 2022 in Zone A1

Treatments		Plant Population (Final) in thousands/ha			Total tillers/plant			Effective tillers/plant			Test weight (g)			Plant height (cm)		
Hybrids	Micronutrient Management	BKR	MND	Mean	BKR	MND	Mean	BKR	MND	Mean	BKR	MND	Mean	BKR	MND	Mean
MPMH 17	T1=control	125.5	115.2	120.4	2.3	4.4	42.3	1.7	2.8	2.2	8.0	9.7	8.8	196.3	160.6	178.5
	T2=Soil application ZnSO ₄ =25 kg/ha	130.3	115.9	123.1	2.8	4.3	43.4	2.1	2.7	2.4	7.4	8.9	8.2	198.8	179.2	189.0
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	127.9	118.8	123.3	2.4	3.7	43.2	1.8	2.5	2.2	8.1	9.4	8.8	195.7	176.6	186.2
	T4= Soil application FeSO ₄ =20 kg/ha	128.9	114.2	121.5	2.5	4.2	42.7	1.8	2.5	2.2	8.0	8.9	8.5	195.3	184.6	190.0
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	127.9	116.1	122.0	3.1	4.1	43.1	2.4	2.6	2.5	8.0	9.8	8.9	197.9	186.7	192.3
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	126.2	113.7	120.0	2.7	3.9	42.2	2.1	2.5	2.3	7.8	9.6	8.7	194.4	173.2	183.8
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	126.2	116.9	121.5	2.7	3.7	42.6	2.0	2.5	2.3	7.8	9.2	8.5	204.6	171.8	188.2
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	126.0	116.2	121.1	3.1	3.4	42.6	2.4	2.8	2.6	7.5	9.7	8.6	195.2	173.8	184.5
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	127.4	114.4	120.9	3.0	4.3	42.7	2.3	3.0	2.6	8.2	9.6	8.9	190.5	188.5	189.5
	Mean	127.4	115.7	121.5	2.7	4.0	42.8	2.1	2.7	2.4	7.9	9.4	8.6	196.5	177.2	186.9
HHB 299	T1=control	126.0	115.9	120.9	3.2	4.2	42.8	2.4	2.5	2.5	7.3	9.9	8.6	171.1	157.1	164.1
	T2=Soil application ZnSO ₄ =25 kg/ha	128.9	115.8	122.3	3.4	4.0	43.2	2.6	2.8	2.7	6.9	9.8	8.4	160.1	194.5	177.3
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	131.8	118.7	125.2	2.8	4.1	44.0	2.1	3.1	2.6	7.2	9.3	8.3	160.7	189.2	174.9
	T4= Soil application FeSO ₄ =20 kg/ha	125.5	116.1	120.8	2.9	4.1	42.6	2.2	2.9	2.6	7.3	9.8	8.6	166.2	195.8	181.0
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	130.3	111.1	120.7	2.9	3.9	42.5	2.2	2.8	2.5	7.5	9.8	8.6	163.5	194.9	179.2
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	127.9	121.8	124.8	3.2	3.9	44.0	2.5	2.9	2.7	7.0	9.8	8.4	175.4	192.6	184.0
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	128.9	115.4	122.1	3.1	4.1	43.1	2.4	2.8	2.6	7.8	9.8	8.8	178.0	191.4	184.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	127.9	123.5	125.7	3.0	4.1	44.3	2.3	2.5	2.4	7.8	9.7	8.8	175.1	193.1	184.1
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	127.7	115.5	121.6	3.2	4.3	43.0	2.4	2.8	2.6	8.4	9.6	9.0	172.4	190.7	181.6
	Mean	128.3	117.1	122.7	3.1	4.1	43.3	2.4	2.8	2.6	7.5	9.7	8.6	169.2	188.8	179.0
Micronutrient Management	T1=control	125.7	115.6	120.6	2.7	4.3	42.6	2.1	2.7	2.4	7.7	9.8	8.7	183.7	158.9	171.3
	T2=Soil application ZnSO ₄ =25 kg/ha	129.6	115.9	122.7	3.1	4.2	43.3	2.3	2.8	2.5	7.2	9.4	8.3	179.4	186.9	183.1
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	129.8	118.7	124.3	2.6	3.9	43.6	2.0	2.8	2.4	7.6	9.4	8.5	178.2	182.9	180.6
	T4= Soil application FeSO ₄ =20 kg/ha	127.2	115.2	121.2	2.7	4.2	42.7	2.0	2.7	2.4	7.6	9.4	8.5	180.8	190.2	185.5
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	129.1	113.6	121.4	3.0	4.0	42.8	2.3	2.7	2.5	7.7	9.8	8.8	180.7	190.8	185.7
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	127.1	117.7	122.4	3.0	3.9	43.1	2.3	2.7	2.5	7.4	9.7	8.5	184.9	182.9	183.9
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	127.5	116.1	121.8	2.9	3.9	42.9	2.2	2.7	2.4	7.8	9.5	8.6	191.3	181.6	186.5
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	126.9	119.9	123.4	3.1	3.8	43.4	2.4	2.7	2.5	7.6	9.7	8.7	185.1	183.4	184.3
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	127.5	114.9	121.2	3.1	4.3	42.9	2.4	2.9	2.6	8.3	9.6	8.9	181.5	189.6	185.5
CD (5%)	Hybrids	NS	NS		NS	NS		NS	NS		NS	NS		17.3	6.6	
	NM	NS	NS		0.4	0.3		0.3	NS		NS	NS		NS	5.6	
	H x NM	NS	NS		NS	0.5		NS	0.3		NS	NS		NS	9.3	
	NM x H	NS	NS		NS	0.5		NS	0.3		NS	NS		NS	9.4	
CV (%)		5.0	7.7		10.3	6.0		11.6	6.8		9.8	3.6		3.7	2.6	

CHAPTER II: AGRONOMY

Table II.39: PMAT 3a: Effect of micronutrient management on the gross returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatments		Gross Return (Rs/ha)						Zonal mean
Hybrids	Micronutrient Management	BKR			MND			
		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	87657	84988	86323	39448	38379	38914	62618
	T2=Soil application ZnSO4=25 kg/ha	106181	92945	99563	44912	59174	52043	75803
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	104516	105937	105227	41757	55890	48824	77025
	T4= Soil application FeSO4=20 kg/ha	97113	109259	103186	39660	51762	45711	74449
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	101100	110237	105668	39090	52839	45965	75817
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	87309	101696	94503	35328	50042	42685	68594
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	85186	95940	90563	37762	49547	43654	67109
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	86325	117731	102028	38823	52328	45576	73802
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	108941	117081	113011	43665	57145	50405	81708
	Mean	96036	103979	100008	40049	51901	45975	72991
HHB 299	T1=control	92968	130299	111634	38855	38186	38521	75077
	T2=Soil application ZnSO4=25 kg/ha	103675	117237	110456	41178	55009	48094	79275
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	104393	122751	113572	41123	55021	48072	80822
	T4= Soil application FeSO4=20 kg/ha	113396	124945	119170	45005	58166	51586	85378
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	112506	140109	126307	44650	58481	51565	88936
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	103625	125789	114707	41968	54822	48395	81551
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	99930	126979	113454	40140	53251	46696	80075
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	94956	146351	120653	40008	53443	46726	83689
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	122305	156590	139447	45438	58781	52110	95779
	Mean	105306	132339	118822	42041	53907	47974	83398
Micronutrient Management	T1=control	90313	107644	98978	39152	38283	38717	68848
	T2=Soil application ZnSO4=25 kg/ha	104928	105091	105009	43045	57091	50068	77539
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	104455	114344	109399	41440	55456	48448	78924
	T4= Soil application FeSO4=20 kg/ha	105254	117102	111178	42333	54964	48648	79913
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	106803	125173	115988	41870	55660	48765	82376
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	95467	113743	104605	38648	52432	45540	75073
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	92558	111459	102009	38951	51399	45175	73592
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	90640	132041	111341	39416	52886	46151	78746
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	115623	136835	126229	44552	57963	51258	88743
CD (5%)	Hybrids	NS	16114		NS	NS		
	NM	9589	10326		NS	10348		
	H x NM	NS	NS		NS	NS		
	NM x H	NS	NS		NS	NS		
CV (%)		8.1	7.4		10.4	16.6		

CHAPTER II: AGRONOMY

Table II.40: PMAT 3a: Effect of micronutrient management on the net returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatments		Net Return (Rs/ha)						Zonal mean
		BKR			MND			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	66657	63988	65323	18448	16379	17414	41368
	T2=Soil application ZnSO4=25 kg/ha	81930	68695	75313	20662	33924	27293	51303
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	82886	84307	83596	20127	33260	26694	55145
	T4= Soil application FeSO4=20 kg/ha	75513	87659	81586	18060	29162	23611	52599
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	79570	88707	84138	17560	30309	23935	54037
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	65559	79946	72753	13578	27292	20435	46594
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	63536	74290	68913	16112	26897	21504	45209
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	64495	95901	80198	16993	29498	23246	51722
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	83676	91816	87746	18400	30880	24640	56193
	Mean	73758	81701	77730	17771	28622	23197	50463
HHB 299	T1=control	71968	109299	90634	17855	16186	17021	53827
	T2=Soil application ZnSO4=25 kg/ha	79425	92987	86206	16928	29759	23344	54775
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	82763	101121	91942	19493	32391	25942	58942
	T4= Soil application FeSO4=20 kg/ha	91796	103345	97570	23405	35566	29486	63528
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	90976	118579	104777	23120	35951	29535	67156
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	81875	104039	92957	20218	32072	26145	59551
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	78280	105329	91804	18490	30601	24546	58175
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	73126	124521	98823	18178	30613	24396	61609
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	97040	131325	114182	20173	32516	26345	70264
	Mean	83028	110061	96544	19762	30628	25195	60870
Micronutrient Management	T1=control	69313	86644	77978	18152	16283	17217	47598
	T2=Soil application ZnSO4=25 kg/ha	80678	80841	80759	18795	31841	25318	53039
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	82825	92714	87769	19810	32826	26318	57044
	T4= Soil application FeSO4=20 kg/ha	83654	95502	89578	20733	32364	26548	58063
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	85273	103643	94458	20340	33130	26735	60596
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	73717	91993	82855	16898	29682	23290	53073
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	70908	89809	80359	17301	28749	23025	51692
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	68810	110211	89511	17586	30056	23821	56666
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	90358	111570	100964	19287	31698	25493	63228
CD (5%)	Hybrids	NS	16114		NS	NS		
	NM	9589	10326		NS	NS		
	H x NM	NS	NS		NS	NS		
	NM x H	NS	NS		NS	NS		
CV (%)		10.4	9.1		22.6	29.6		

CHAPTER II: AGRONOMY

Table II.41: PMAT 3a: Effect of micronutrient management on the BC ratio of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatments		BC Ratio						Zonal mean
Hybrids	Micronutrient Management	BKR			MND			
		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	4.20	4.07	4.13	1.88	1.74	1.81	2.97
	T2=Soil application ZnSO4=25 kg/ha	4.37	3.83	4.10	1.85	2.34	2.10	3.10
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.83	4.90	4.87	1.93	2.47	2.20	3.53
	T4= Soil application FeSO4=20 kg/ha	4.50	5.07	4.78	1.84	2.29	2.06	3.42
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.70	5.13	4.92	1.81	2.34	2.08	3.50
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.03	4.67	4.35	1.63	2.20	1.91	3.13
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	3.93	4.43	4.18	1.74	2.19	1.97	3.07
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	3.93	5.37	4.65	1.78	2.29	2.03	3.34
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.30	4.63	4.47	1.73	2.18	1.95	3.21
	Mean	4.31	4.68	4.49	1.80	2.23	2.01	3.25
HHB 299	T1=control	4.40	6.17	5.28	1.85	1.74	1.79	3.54
	T2=Soil application ZnSO4=25 kg/ha	4.27	4.83	4.55	1.70	2.18	1.94	3.24
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.83	5.67	5.25	1.90	2.43	2.17	3.71
	T4= Soil application FeSO4=20 kg/ha	5.27	5.77	5.52	2.09	2.57	2.33	3.92
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	5.23	6.50	5.87	2.07	2.60	2.33	4.10
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.77	5.80	5.28	1.93	2.41	2.17	3.73
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.63	5.87	5.25	1.86	2.35	2.11	3.68
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.33	6.70	5.52	1.83	2.34	2.09	3.80
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.83	6.17	5.50	1.80	2.24	2.02	3.76
	Mean	4.73	5.94	5.34	1.89	2.32	2.10	3.72
Micronutrient Management	T1=control	4.30	5.12	4.71	1.86	1.74	1.80	3.26
	T2=Soil application ZnSO4=25 kg/ha	4.32	4.33	4.33	1.78	2.26	2.02	3.17
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.83	5.28	5.06	1.92	2.45	2.18	3.62
	T4= Soil application FeSO4=20 kg/ha	4.88	5.42	5.15	1.96	2.43	2.20	3.67
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.97	5.82	5.39	1.94	2.47	2.21	3.80
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.40	5.23	4.82	1.78	2.30	2.04	3.43
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.28	5.15	4.72	1.80	2.27	2.04	3.38
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.13	6.03	5.08	1.80	2.32	2.06	3.57
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.57	5.40	4.98	1.76	2.21	1.99	3.48
CD (5%)	Hybrids	NS	0.74		NS	NS		
	NM	0.45	0.46		NS	NS		
	H x NM	NS	NS		NS	NS		
	NM x H	NS	NS		NS	NS		
CV (%)		8.3	7.4		9.9	16.6		

CHAPTER II: AGRONOMY

Table II.42: PMAT 3a: Effect of micronutrient management on the grain yield of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		Grain yield (kg/ha)									Zonal mean
		HSR			JMR			JPR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	33.02	23.12	28.07	13.77	21.04	17.41	24.79	24.23	24.51	23.33
	T2=Soil application ZnSO4=25 kg/ha	34.73	25.89	30.31	19.51	26.95	23.23	30.48	33.81	32.14	28.56
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	33.65	25.24	29.45	18.59	25.25	21.92	27.92	34.51	31.21	27.53
	T4= Soil application FeSO4=20 kg/ha	34.33	24.85	29.59	18.98	26.19	22.59	26.13	29.96	28.04	26.74
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	35.89	26.48	31.18	18.07	24.64	21.36	25.11	30.97	28.04	26.86
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	33.84	25.07	29.46	17.65	23.82	20.74	29.86	29.75	29.80	26.67
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	33.49	24.09	28.79	16.17	22.47	19.32	25.63	29.65	27.64	25.25
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	33.85	24.46	29.15	15.61	21.95	18.78	28.21	33.38	30.79	26.24
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	36.56	27.92	32.24	21.42	28.74	25.08	32.86	35.49	34.17	30.50
	Mean	34.37	25.24	29.81	17.75	24.56	21.16	27.89	31.30	29.60	26.85
HHB 299	T1=control	39.39	34.31	36.85	19.06	27.67	23.37	27.90	24.43	26.17	28.79
	T2=Soil application ZnSO4=25 kg/ha	42.04	37.74	39.89	25.72	34.04	29.88	34.44	28.19	31.32	33.70
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	41.48	36.30	38.89	23.90	32.28	28.09	35.21	28.75	31.98	32.99
	T4= Soil application FeSO4=20 kg/ha	41.01	35.71	38.36	23.94	33.27	28.60	30.65	26.78	28.72	31.89
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	43.56	37.61	40.59	23.08	31.28	27.18	33.75	24.38	29.06	32.28
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	40.71	35.85	38.28	20.37	29.93	25.15	28.23	26.20	27.22	30.22
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	39.76	35.15	37.46	20.09	29.47	24.78	34.13	26.29	30.21	30.81
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	39.01	34.70	36.86	19.43	28.61	24.02	33.94	26.90	30.42	30.43
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	45.23	39.29	42.26	27.38	34.94	31.16	37.09	32.09	34.59	36.00
	Mean	41.35	36.30	38.83	22.55	31.28	26.91	32.82	27.11	29.96	31.90
Micronutrient Management	T1=control	36.20	28.72	32.46	16.41	24.36	20.39	26.35	24.33	25.34	26.06
	T2=Soil application ZnSO4=25 kg/ha	38.39	31.82	35.10	22.62	30.50	26.56	32.46	31.00	31.73	31.13
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	37.57	30.77	34.17	21.24	28.77	25.01	31.56	31.63	31.60	30.26
	T4= Soil application FeSO4=20 kg/ha	37.67	30.28	33.98	21.46	29.73	25.59	28.39	28.37	28.38	29.32
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	39.73	32.04	35.88	20.58	27.96	24.27	29.43	27.68	28.55	29.57
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	37.28	30.46	33.87	19.01	26.88	22.94	29.05	27.98	28.51	28.44
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	36.63	29.62	33.12	18.13	25.97	22.05	29.88	27.97	28.92	28.03
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	36.43	29.58	33.00	17.52	25.28	21.40	31.07	30.14	30.61	28.34
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	40.90	33.60	37.25	24.40	31.84	28.12	34.97	33.79	34.38	33.25
CD (5%)	Hybrids	1.15	1.08		4.62	3.94		4.74	3.45		
	NM	2.60	2.29		4.10	2.96		3.84	3.06		
	H x NM	NS	NS		NS	NS		NS	NS		
	NM x H	NS	NS		NS	NS		NS	NS		
CV (%)		5.8	6.3		17.2	9.0		10.7	8.9		

CHAPTER II: AGRONOMY

Table II.43: PMAT 3a: Effect of micronutrient management on the stover yield of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		Stover yield (q/ha)									Zonal mean
		HSR			JMR			JPR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	93.26	86.81	90.04	42.85	35.13	38.99	57.42	63.11	60.27	63.10
	T2=Soil application ZnSO4=25 kg/ha	96.23	94.70	95.47	48.72	42.47	45.60	85.08	87.78	86.43	75.83
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	95.08	91.38	93.23	46.58	40.52	43.55	79.83	90.68	85.26	74.01
	T4= Soil application FeSO4=20 kg/ha	98.64	91.12	94.88	47.55	41.63	44.59	83.88	79.31	81.60	73.69
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	104.48	95.35	99.91	45.75	39.19	42.47	60.65	81.29	70.97	71.12
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	98.73	88.71	93.72	44.82	40.46	42.64	56.25	78.74	67.50	67.95
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	99.66	87.73	93.70	44.19	40.27	42.23	69.06	78.44	73.75	69.89
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	100.80	87.36	94.08	43.33	40.41	41.87	55.67	88.34	72.00	69.32
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	110.17	97.90	104.03	50.42	46.06	48.24	87.50	92.93	90.21	80.83
	Mean	99.67	91.23	95.45	46.03	40.68	43.35	70.59	82.29	76.44	71.75
HHB 299	T1=control	108.10	104.55	106.33	52.66	40.87	46.77	62.50	62.56	62.53	71.87
	T2=Soil application ZnSO4=25 kg/ha	116.44	109.30	112.87	59.30	49.77	54.54	87.50	72.15	79.83	82.41
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	114.54	107.22	110.88	57.59	46.47	52.03	99.42	73.54	86.48	83.13
	T4= Soil application FeSO4=20 kg/ha	113.67	108.67	111.17	58.17	46.81	52.49	81.25	67.50	74.37	79.35
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	117.36	113.12	115.24	56.62	44.61	50.62	84.38	62.75	73.57	79.81
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	111.34	105.46	108.40	55.56	44.77	50.17	99.00	67.00	83.00	80.52
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	108.68	104.95	106.82	55.32	46.25	50.79	93.75	67.25	80.50	79.37
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	107.85	106.14	106.99	54.81	45.53	50.17	100.00	68.84	84.42	80.53
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	122.21	113.17	117.69	61.33	53.35	57.34	106.18	82.59	94.39	89.81
	Mean	113.36	108.07	110.71	56.82	46.49	51.66	90.44	69.35	79.90	80.75
Micronutrient Management	T1=control	100.68	95.68	98.18	47.76	38.00	42.88	59.96	62.84	61.40	67.49
	T2=Soil application ZnSO4=25 kg/ha	106.33	102.00	104.17	54.01	46.12	50.07	86.29	79.97	83.13	79.12
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	104.81	99.30	102.05	52.09	43.50	47.79	89.62	82.11	85.87	78.57
	T4= Soil application FeSO4=20 kg/ha	106.16	99.90	103.03	52.86	44.22	48.54	82.57	73.40	77.98	76.52
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	110.92	104.24	107.58	51.19	41.90	46.54	72.52	72.02	72.27	75.46
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	105.04	97.08	101.06	50.19	42.61	46.40	77.63	72.87	75.25	74.24
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	104.17	96.34	100.26	49.76	43.26	46.51	81.41	72.85	77.13	74.63
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	104.32	96.75	100.54	49.07	42.97	46.02	77.83	78.59	78.21	74.92
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	116.19	105.54	110.86	55.88	49.70	52.79	96.84	87.76	92.30	85.32
CD (5%)	Hybrids	6.55	2.62		5.15	6.12		8.30	6.44		
	NM	4.99	5.55		4.69	4.58		5.81	6.74		
	H x NM	NS	NS		NS	NS		10.12	NS		
	NM x H	NS	NS		NS	NS		10.56	NS		
CV (%)		4.0	4.7		7.7	8.9		6.1	7.5		

CHAPTER II: AGRONOMY

Table II.44: PMAT 3a: Effect of micronutrient management on the gross returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		Gross Return (Rs/ha)									Zonal mean
		HSR			JMR			JPR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	91075	71688	81381	36110	49106	42608	51150	73702	62426	62138
	T2=Soil application ZnSO4=25 kg/ha	95470	79789	87630	48764	62394	55579	65782	102726	84254	75821
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	92833	77591	85212	46496	58606	52551	60633	105296	82964	73576
	T4= Soil application FeSO4=20 kg/ha	95004	76629	85817	47470	60706	54088	58575	91647	75111	71672
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	99558	81291	90425	45290	57118	51204	52301	94462	73381	71670
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	93918	76663	85291	44264	55732	49998	59017	90992	75004	70098
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	93285	74158	83722	41178	52994	47086	54813	90674	72743	67850
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	94300	74947	84623	39886	51982	45934	56267	102096	79181	69913
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	102097	85191	93644	52924	66692	59808	70067	108148	89107	80853
	Mean	95282	77551	86416	44709	57259	50984	58734	95527	77130	71510
HHB 299	T1=control	108079	101546	104812	48652	63514	56083	57133	73891	65512	75469
	T2=Soil application ZnSO4=25 kg/ha	115549	110541	113045	63300	78034	70667	72600	85248	78924	87545
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	113940	106756	110348	59298	73852	66575	76217	86920	81568	86164
	T4= Soil application FeSO4=20 kg/ha	112733	105653	109193	59516	75902	67709	65290	80555	72922	83275
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	119135	111008	115072	57484	71482	64483	70875	73851	72363	83973
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	111646	105339	108492	51854	68814	60334	64971	79204	72088	80305
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	109030	103586	106308	51244	68190	59717	73353	79488	76420	80815
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	107178	102780	104979	49822	66326	58074	74300	81336	77818	80290
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	123773	114959	119366	67026	80570	73798	80570	97203	88887	94017
	Mean	113451	106909	110180	56466	71854	64160	70590	81966	76278	83539
Micronutrient Management	T1=control	99577	86617	93097	42381	56310	49346	54142	73796	63969	68804
	T2=Soil application ZnSO4=25 kg/ha	105510	95165	100337	56032	70214	63123	69191	93987	81589	81683
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	103387	92175	97781	52897	66229	59563	68425	96108	82266	79870
	T4= Soil application FeSO4=20 kg/ha	103869	91142	97505	53493	68304	60899	61933	86101	74017	77474
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	109347	96148	102748	51387	64300	57844	61588	84157	72872	77821
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	102782	91002	96892	48059	62273	55166	61994	85098	73546	75201
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	101157	88871	95014	46211	60592	53402	64083	85081	74582	74332
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	100739	88863	94801	44854	59154	52004	65283	91716	78500	75102
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	112935	100074	106504	59975	73631	66803	75318	102675	88997	87435

CHAPTER II: AGRONOMY

Table II.45: PMAT 3a: Effect of micronutrient management on the net returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		Net Return (Rs/ha)									Zonal mean
		HSR			JMR			JPR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	39731	15750	27740	14264	27855	21060	28600	49202	38901	29234
	T2=Soil application ZnSO4=25 kg/ha	42622	22311	32467	25200	38333	31767	41514	76508	59011	41081
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	40885	21013	30949	24237	36759	30498	37670	80383	59026	40158
	T4= Soil application FeSO4=20 kg/ha	42896	19891	31394	24676	38425	31551	35077	66199	50638	37861
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	47677	24783	36230	23091	35432	29262	29398	69609	49503	38332
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	41945	19960	30953	21980	33961	27971	36029	66054	51041	36655
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	41292	17317	29305	18964	31293	25129	31895	65806	48850	34428
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	42397	18331	30364	17717	30326	24022	33394	77273	55333	36573
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	47953	26235	37094	28357	41546	34952	44796	80927	62861	44969
	Mean	43044	20622	31833	22054	34881	28468	35375	70218	52796	37699
HHB 299	T1=control	56735	45608	51171	26538	41913	34226	34315	49123	41719	42372
	T2=Soil application ZnSO4=25 kg/ha	62701	53063	57882	39736	53973	46855	48332	59030	53681	52806
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	61992	50178	56085	37039	52005	44522	53254	62007	57630	52746
	T4= Soil application FeSO4=20 kg/ha	60625	48915	54770	36722	53621	45172	41792	55107	48449	49464
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	67254	54500	60877	35285	49796	42541	47972	48998	48485	50634
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	59673	48636	54154	29570	47043	38307	41983	54266	48125	46862
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	57037	46745	51891	29030	46489	37760	50435	54620	52527	47392
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	55275	46164	50720	27653	44670	36162	51427	56513	53970	46950
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	69629	56003	62816	42459	55424	48942	55299	69982	62641	58133
	Mean	61213	49980	55597	33781	49437	41609	47201	56627	51914	49707
Micronutrient Management	T1=control	48233	30679	39456	20401	34884	27643	31458	49162	40310	35803
	T2=Soil application ZnSO4=25 kg/ha	52662	37687	45174	32468	46153	39311	44923	67769	56346	46944
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	51439	35597	43518	30638	44382	37510	45462	71195	58328	46452
	T4= Soil application FeSO4=20 kg/ha	51761	34404	43082	30699	46023	38361	38435	60653	49544	43662
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	57466	39640	48553	29188	42614	35901	38685	59304	48994	44483
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	50809	34299	42554	25775	40502	33139	39006	60160	49583	41759
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	49164	32030	40597	23997	38891	31444	41165	60213	50689	40910
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	48836	32247	40542	22685	37498	30092	42410	66893	54652	41762
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	58791	41118	49954	35408	48485	41947	50047	75454	62751	51551

CHAPTER II: AGRONOMY

Table II.46: PMAT 3a: Effect of micronutrient management on the BC ratio of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		BC Ratio									Zonal mean
		HSR			JMR			JPR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	1.77	1.28	1.53	1.65	2.31	1.98	2.27	3.01	2.64	2.05
	T2=Soil application ZnSO4=25 kg/ha	1.81	1.39	1.60	2.07	2.59	2.33	2.71	3.92	3.31	2.41
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	1.79	1.37	1.58	2.09	2.68	2.39	2.64	4.23	3.43	2.47
	T4= Soil application FeSO4=20 kg/ha	1.82	1.35	1.59	2.08	2.72	2.40	2.49	3.60	3.05	2.34
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	1.92	1.44	1.68	2.04	2.63	2.34	2.28	3.80	3.04	2.35
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	1.81	1.35	1.58	1.99	2.56	2.28	2.57	3.65	3.11	2.32
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	1.79	1.30	1.55	1.85	2.44	2.15	2.39	3.65	3.02	2.24
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	1.82	1.32	1.57	1.80	2.40	2.10	2.46	4.11	3.29	2.32
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	1.89	1.44	1.67	2.15	2.65	2.40	2.77	3.97	3.37	2.48
	Mean	1.82	1.36	1.59	1.97	2.55	2.26	2.51	3.77	3.14	2.33
HHB 299	T1=control	2.10	1.82	1.96	2.20	2.94	2.57	2.50	2.98	2.74	2.42
	T2=Soil application ZnSO4=25 kg/ha	2.19	1.92	2.05	2.69	3.24	2.97	2.99	3.25	3.12	2.71
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	2.19	1.89	2.04	2.66	3.38	3.02	3.32	3.49	3.40	2.82
	T4= Soil application FeSO4=20 kg/ha	2.16	1.86	2.01	2.61	3.41	3.01	2.78	3.17	2.97	2.66
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	2.30	1.96	2.13	2.59	3.30	2.95	3.09	2.97	3.03	2.70
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	2.15	1.86	2.00	2.33	3.16	2.75	2.83	3.18	3.00	2.58
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	2.10	1.82	1.96	2.31	3.14	2.73	3.20	3.20	3.20	2.63
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	2.06	1.82	1.94	2.25	3.06	2.66	3.25	3.28	3.26	2.62
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	2.29	1.95	2.12	2.73	3.20	2.97	3.19	3.57	3.38	2.82
	Mean	2.17	1.88	2.02	2.49	3.20	2.84	3.02	3.23	3.12	2.66
Micronutrient Management	T1=control	1.94	1.55	1.74	1.93	2.63	2.28	2.39	3.00	2.69	2.24
	T2=Soil application ZnSO4=25 kg/ha	2.00	1.66	1.83	2.38	2.92	2.65	2.85	3.58	3.22	2.56
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	1.99	1.63	1.81	2.38	3.03	2.70	2.98	3.86	3.42	2.64
	T4= Soil application FeSO4=20 kg/ha	1.99	1.61	1.80	2.35	3.07	2.71	2.64	3.38	3.01	2.50
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	2.11	1.70	1.90	2.32	2.97	2.64	2.69	3.39	3.04	2.53
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	1.98	1.60	1.79	2.16	2.86	2.51	2.70	3.41	3.05	2.45
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	1.95	1.56	1.75	2.08	2.79	2.44	2.80	3.42	3.11	2.43
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	1.94	1.57	1.76	2.03	2.73	2.38	2.85	3.69	3.27	2.47
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	2.09	1.70	1.89	2.44	2.93	2.68	2.98	3.77	3.38	2.65

CHAPTER II: AGRONOMY

Table II.47: PMAT 3a: Effect of micronutrient management on total & effective tillers/plant, plant population, plant height and test weight of pearl millet hybrids under irrigated condition during *kharif* 2022 in Zone A

Treatments		Total tillers/plant				Effective tillers/plant				Test weight (g)				Plant population ('000/ha)				Plant height (cm)			
Hybrids	Micronutrient Management	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean
MPMH 17	T1=Control	2.9	3.7	2.8	3.1	2.2	2.4	2.3	2.3	8.4	8.7	8.5	8.5	134.0	138.0	158.0	143.3	180.3	143.5	158.3	160.7
	T2=Soil application ZnSO ₄ =25 kg/ha	3.3	4.4	4.6	4.1	2.4	3.1	3.0	2.9	8.9	10.1	9.6	9.5	135.3	139.0	164.0	146.1	188.3	155.4	166.7	170.1
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	3.2	4.3	4.0	3.8	2.3	2.9	3.0	2.8	8.4	9.5	9.5	9.2	134.7	142.5	165.3	147.5	185.0	152.3	155.7	164.3
	T4= Soil application FeSO ₄ =20 kg/ha	3.0	4.5	3.8	3.8	2.2	3.1	3.1	2.8	8.3	9.7	9.5	9.1	135.3	136.9	168.7	147.0	185.7	153.1	161.7	166.8
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.4	4.2	4.4	4.0	2.4	2.8	2.9	2.7	8.6	9.5	8.7	8.9	135.8	140.4	167.3	147.9	190.0	149.4	165.0	168.1
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	4.3	4.9	4.1	2.3	2.7	2.8	2.6	8.2	9.5	8.8	8.8	134.0	135.9	163.0	144.3	184.7	146.4	156.7	162.6
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	4.1	4.6	3.9	2.3	2.7	2.9	2.6	8.1	9.3	8.9	8.7	135.2	141.4	165.3	147.3	184.3	146.2	161.7	164.1
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	3.0	3.8	4.8	3.9	2.2	2.5	2.8	2.5	8.0	9.1	9.0	8.7	136.0	140.4	162.3	146.2	186.7	144.8	171.7	167.7
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	3.4	4.8	5.0	4.4	2.7	3.4	3.3	3.1	9.2	10.4	9.9	9.8	136.3	140.1	164.0	146.8	198.3	157.6	171.7	175.9
	Mean	3.2	4.2	4.3	3.9	2.4	2.8	2.9	2.7	8.4	9.5	9.1	9.0	135.2	139.4	164.2	146.3	187.0	149.9	163.2	166.7
HHB 299	T1=Control	3.0	3.0	3.3	3.1	1.9	1.7	2.3	2.0	11.5	10.7	10.9	11.0	137.0	141.8	166.0	148.3	190.0	171.1	185.0	182.0
	T2=Soil application ZnSO ₄ =25 kg/ha	3.2	3.6	4.0	3.6	2.3	2.7	3.1	2.7	11.9	12.3	12.0	12.1	138.0	141.1	176.7	151.9	195.0	184.5	181.7	187.1
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	3.1	3.3	4.8	3.7	2.1	2.3	2.7	2.4	11.7	12.1	11.2	11.7	137.5	138.7	168.0	148.1	190.0	179.3	190.0	186.4
	T4= Soil application FeSO ₄ =20 kg/ha	3.0	3.5	4.9	3.8	2.1	2.4	2.8	2.4	11.6	12.3	11.5	11.8	137.2	141.1	160.3	146.2	188.3	181.3	203.3	191.0
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.3	3.2	4.8	3.8	2.2	2.2	2.7	2.4	11.8	11.9	11.3	11.7	138.0	142.1	165.3	148.5	198.3	177.1	191.7	189.0
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	3.1	5.0	3.7	2.0	2.1	2.7	2.3	11.7	11.8	11.1	11.5	138.2	139.0	166.0	147.7	193.3	176.4	193.3	187.7
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	3.1	4.0	3.4	2.0	2.1	2.9	2.3	11.5	11.5	11.0	11.3	137.7	140.7	168.7	149.0	192.7	180.1	206.7	193.2
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	3.1	2.8	4.7	3.5	2.1	1.9	2.4	2.2	11.5	11.3	10.9	11.2	137.7	139.7	162.3	146.6	191.7	175.2	200.0	189.0
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	3.6	3.8	5.4	4.3	2.6	2.9	3.3	2.9	12.2	12.7	11.9	12.3	139.7	141.1	163.0	147.9	205.0	187.1	213.3	201.8
	Mean	3.2	3.3	4.5	3.7	2.1	2.3	2.8	2.4	11.7	11.8	11.3	11.6	137.9	140.6	166.3	148.2	193.8	179.1	196.1	189.7
Micronutrient Management	T1=Control	3.0	3.3	3.1	3.1	2.1	2.0	2.3	2.1	10.0	9.7	9.7	9.8	135.5	139.9	162.0	145.8	185.2	157.3	171.7	171.4
	T2=Soil application ZnSO ₄ =25 kg/ha	3.3	4.0	4.3	3.8	2.4	2.9	3.1	2.8	10.4	11.2	10.8	10.8	136.7	140.1	170.3	149.0	191.7	170.0	174.2	178.6
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	3.2	3.8	4.4	3.8	2.2	2.6	2.8	2.6	10.1	10.8	10.3	10.4	136.1	140.6	166.7	147.8	187.5	165.8	172.8	175.4
	T4= Soil application FeSO ₄ =20 kg/ha	3.0	4.0	4.3	3.8	2.2	2.7	2.9	2.6	9.9	11.0	10.5	10.5	136.3	139.0	164.5	146.6	187.0	167.2	182.5	178.9
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.4	3.7	4.6	3.9	2.3	2.5	2.8	2.5	10.2	10.7	10.0	10.3	136.9	141.3	166.3	148.2	194.2	163.2	178.3	178.6
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	3.7	5.0	3.9	2.2	2.4	2.7	2.4	9.9	10.6	10.0	10.2	136.1	137.5	164.5	146.0	189.0	161.4	175.0	175.1
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	3.1	3.6	4.3	3.6	2.2	2.4	2.9	2.5	9.8	10.4	9.9	10.0	136.4	141.1	167.0	148.2	188.5	163.2	184.2	178.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	3.0	3.3	4.8	3.7	2.2	2.2	2.6	2.3	9.7	10.2	9.9	9.9	136.8	140.1	162.3	146.4	189.2	160.0	185.8	178.3
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	3.5	4.3	5.2	4.3	2.6	3.2	3.3	3.0	10.7	11.6	10.9	11.0	138.0	140.6	163.5	147.4	201.7	172.4	192.5	188.8
CD (5%)	Hybrids	NS	0.1	NS		0.2	0.0	NS		0.4	1.2	0.4		0.4	NS	NS		2.6	3.3	7.0	4.3
	NM	0.3	0.2	0.7		0.3	0.2	0.3		0.5	1.0	0.4		NS	NS	NS		7.1	2.2	9.4	6.2
	H x NM	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS	
	NM x H	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS	
CV (%)		7.5	4.7	13.0		11.0	7.8	9.7		4.6	8.1	2.9		1.4	1.9	5.3		3.2	1.1	4.4	

CHAPTER II: AGRONOMY

Table II.48: PMAT 3a: Effect of micronutrient management on Fe and Zn content in grain (ppm) of pearl millet hybrids under irrigated condition during *kharif* 2021 & 2022 in Zone A

Treatments		Fe Grain						Zonal mean	Zn Grain						Zonal mean
		HSR			JMR				HSR			JMR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		
MPMH 17	T1=control	50.9	48.5	49.7	45.5	41.1	43.3	46.5	40.5	39.0	39.7	36.5	32.1	34.3	37.0
	T2=Soil application ZnSO4=25 kg/ha	53.1	50.2	51.7	46.6	44.9	45.8	48.7	43.7	41.2	42.5	44.8	37.5	41.1	41.8
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	53.2	49.5	51.4	49.2	45.8	47.5	49.4	42.7	40.1	41.4	42.6	35.9	39.3	40.3
	T4= Soil application FeSO4=20 kg/ha	55.6	52.3	54.0	63.9	53.9	58.9	56.4	40.7	39.5	40.1	37.9	33.5	35.7	37.9
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	56.1	53.1	54.6	58.2	49.6	53.9	54.3	41.6	39.2	40.4	34.6	30.5	32.6	36.5
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	52.0	50.2	51.1	48.6	43.9	46.3	48.7	41.8	39.1	40.5	34.1	33.3	33.7	37.1
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	51.8	50.6	51.2	46.3	42.0	44.1	47.7	41.2	39.8	40.5	34.7	30.7	32.7	36.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	54.3	50.1	52.2	50.0	44.4	47.2	49.7	42.0	40.0	41.0	37.5	33.1	35.3	38.1
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	61.2	56.4	58.8	66.1	58.7	62.4	60.6	43.9	42.0	43.0	47.1	39.0	43.1	43.0
	Mean	54.2	51.2	52.7	52.7	47.1	49.9	51.3	42.0	40.0	41.0	38.9	34.0	36.4	38.7
HHB 299	T1=control	70.2	66.1	68.1	68.4	58.8	63.6	65.9	46.8	42.0	44.4	48.0	41.6	44.8	44.6
	T2=Soil application ZnSO4=25 kg/ha	71.3	69.1	70.2	72.4	67.3	69.8	70.0	50.0	44.1	47.1	61.5	47.8	54.7	50.9
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	72.0	67.2	69.6	69.1	62.4	65.7	67.7	49.6	43.0	46.3	54.5	46.2	50.4	48.3
	T4= Soil application FeSO4=20 kg/ha	74.9	72.3	73.6	86.5	71.9	79.2	76.4	48.0	42.1	45.1	43.9	36.7	40.3	42.7
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	76.6	73.5	75.1	78.7	64.6	71.7	73.4	48.0	42.3	45.2	46.0	38.8	42.4	43.8
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	71.1	70.5	70.8	73.7	62.7	68.2	69.5	47.9	42.6	45.2	45.4	40.4	42.9	44.1
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	70.7	71.0	70.9	67.5	57.7	62.6	66.7	48.4	42.3	45.4	45.2	37.8	41.5	43.4
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	71.0	71.5	71.3	72.2	63.7	68.0	69.6	47.7	42.3	45.0	47.9	41.6	44.8	44.9
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	78.3	74.5	76.4	85.9	70.9	78.4	77.4	50.3	45.5	47.9	46.3	39.5	42.9	45.4
	Mean	72.9	70.6	71.8	74.9	64.4	69.7	70.7	48.5	42.9	45.7	48.7	41.1	44.9	45.3
Micronutrient Management	T1=control	60.6	57.3	58.9	57.0	50.0	53.5	56.2	43.6	40.5	42.1	42.3	36.9	39.6	40.8
	T2=Soil application ZnSO4=25 kg/ha	62.2	59.7	60.9	59.5	56.1	57.8	59.4	46.9	42.7	44.8	53.1	42.7	47.9	46.3
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	62.6	58.4	60.5	59.2	54.1	56.6	58.6	46.2	41.6	43.9	48.5	41.1	44.8	44.3
	T4= Soil application FeSO4=20 kg/ha	65.2	62.3	63.8	75.2	62.9	69.0	66.4	44.4	40.8	42.6	40.9	35.1	38.0	40.3
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	66.4	63.3	64.8	68.5	57.1	62.8	63.8	44.8	40.8	42.8	40.3	34.7	37.5	40.1
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	61.5	60.4	60.9	61.2	53.3	57.2	59.1	44.8	40.9	42.8	39.8	36.8	38.3	40.6
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	61.2	60.8	61.0	56.9	49.9	53.4	57.2	44.8	41.1	42.9	39.9	34.2	37.1	40.0
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	62.7	60.8	61.7	61.1	54.1	57.6	59.7	44.8	41.2	43.0	42.7	37.3	40.0	41.5
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	69.8	65.5	67.6	76.0	64.8	70.4	69.0	47.1	43.8	45.4	46.7	39.3	43.0	44.2
CD (5%)	Hybrids	1.8	2.1		2.0	NS			1.8	1.6		2.1	NS		
	NM	2.3	3.0		1.8	6.9			1.3	2.7		1.4	4.6		
	H x NM	NS	NS		3.0	NS			NS	NS		2.5	NS		
	NM x H	NS	NS		3.0	NS			NS	NS		2.6	NS		
CV (%)		3.0	4.5		2.4	10.4			2.4	3.9		2.7	10.3		

CHAPTER II: AGRONOMY

Table II.49: PMAT 3a: Effect of micronutrient management on Mn and Cu content in grain (ppm) of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		Mn Grain						Zonal mean	Cu Grain						Zonal mean
		HSR			JMR				HSR			JMR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		
MPMH 17	T1=control	8.5	10.1	9.3	20.4	19.1	19.8	14.5	5.9	4.2	5.1	11.9	13.5	12.7	8.9
	T2=Soil application ZnSO4=25 kg/ha	8.5	9.8	9.1	22.0	21.7	21.9	15.5	6.0	4.7	5.4	17.5	16.3	16.9	11.1
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	8.5	9.7	9.1	21.1	21.2	21.1	15.1	5.9	4.4	5.2	16.6	18.4	17.5	11.3
	T4= Soil application FeSO4=20 kg/ha	8.6	10.3	9.5	21.5	19.9	20.7	15.1	6.1	4.6	5.3	11.1	13.7	12.4	8.9
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	8.5	9.9	9.2	22.5	20.7	21.6	15.4	5.9	4.2	5.1	12.4	14.5	13.4	9.3
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	8.9	10.8	9.8	31.2	27.0	29.1	19.5	6.0	4.5	5.2	12.8	14.4	13.6	9.4
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	8.5	9.9	9.2	20.9	21.5	21.2	15.2	6.1	4.9	5.5	11.7	18.0	14.8	10.2
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.6	10.1	9.3	20.1	19.5	19.8	14.6	5.9	4.5	5.2	12.7	14.9	13.8	9.5
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	8.6	10.0	9.3	21.6	20.7	21.1	15.2	6.0	4.6	5.3	19.1	16.2	17.6	11.5
	Mean	8.6	10.1	9.3	22.4	21.3	21.8	15.6	6.0	4.5	5.3	14.0	15.5	14.7	10.0
HHB 299	T1=control	8.0	9.0	8.5	20.9	19.7	20.3	14.4	6.3	5.0	5.6	11.8	13.9	12.9	9.2
	T2=Soil application ZnSO4=25 kg/ha	8.1	9.3	8.7	21.5	21.7	21.6	15.2	6.4	5.3	5.9	19.3	18.8	19.0	12.5
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	8.1	9.4	8.8	21.7	22.1	21.9	15.3	6.5	5.2	5.9	17.1	18.9	18.0	11.9
	T4= Soil application FeSO4=20 kg/ha	8.2	9.1	8.7	21.7	20.2	20.9	14.8	6.4	5.6	6.0	12.5	14.3	13.4	9.7
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	8.2	9.4	8.8	22.7	20.7	21.7	15.2	6.3	5.4	5.8	12.8	14.6	13.7	9.8
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	8.4	10.1	9.3	27.7	23.5	25.6	17.4	6.2	5.3	5.8	12.2	14.0	13.1	9.4
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	8.2	9.6	8.9	20.1	20.8	20.4	14.7	6.6	6.0	6.3	12.1	19.5	15.8	11.1
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.1	9.7	8.9	22.9	20.8	21.9	15.4	6.4	5.6	6.0	12.1	16.0	14.0	10.0
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	8.2	9.8	9.0	21.7	20.4	21.1	15.0	6.4	5.8	6.1	20.5	16.3	18.4	12.2
	Mean	8.2	9.5	8.8	22.3	21.1	21.7	15.3	6.4	5.5	5.9	14.5	16.2	15.4	10.6
Micronutrient Management	T1=control	8.2	9.6	8.9	20.7	19.4	20.0	14.5	6.1	4.6	5.4	11.9	13.7	12.8	9.1
	T2=Soil application ZnSO4=25 kg/ha	8.3	9.6	8.9	21.7	21.7	21.7	15.3	6.2	5.0	5.6	18.4	17.6	18.0	11.8
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	8.3	9.6	8.9	21.4	21.6	21.5	15.2	6.2	4.8	5.5	16.9	18.6	17.7	11.6
	T4= Soil application FeSO4=20 kg/ha	8.4	9.7	9.1	21.6	20.0	20.8	14.9	6.2	5.1	5.7	11.8	14.0	12.9	9.3
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	8.3	9.7	9.0	22.6	20.7	21.6	15.3	6.1	4.8	5.5	12.6	14.6	13.6	9.5
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	8.6	10.5	9.5	29.4	25.3	27.3	18.4	6.1	4.9	5.5	12.5	14.2	13.3	9.4
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	8.4	9.8	9.1	20.5	21.2	20.8	14.9	6.4	5.5	5.9	11.9	18.7	15.3	10.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.3	9.9	9.1	21.5	20.1	20.8	15.0	6.2	5.1	5.6	12.4	15.4	13.9	9.8
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	8.4	9.9	9.2	21.7	20.5	21.1	15.1	6.2	5.2	5.7	19.8	16.2	18.0	11.8
CD (5%)	Hybrids	NS	0.3		NS	NS			NS	NS		0.4	NS		
	NM	NS	0.5		0.7	3.0			NS	NS		0.7	3.2		
	H x NM	NS	NS		1.0	NS			NS	NS		1.1	NS		
	NM x H	NS	NS		0.9	NS			NS	NS		1.0	NS		
CV (%)		4.3	4.0		2.6	1.9			5.6	5.4		4.2	16.8		

CHAPTER II: AGRONOMY

Table II.50: PMAT 3a: Effect of micronutrient management on Fe and Zn content in fodder (ppm) of pearl millet hybrids under irrigated condition during kharif 2021 and 2022 in Zone A

Treatments		Fe Fodder						Zonal mean	Zn Fodder						Zonal mean
		HSR			JMR				HSR			JMR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		
MPMH 17	T1=control	4.4	4.8	4.6	75.1	78.9	77.0	40.8	2.7	2.9	2.8	38.3	40.9	39.6	21.2
	T2=Soil application ZnSO4=25 kg/ha	4.4	5.2	4.8	79.3	82.2	80.8	42.8	3.0	3.5	3.3	47.2	49.0	48.1	25.7
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.5	4.9	4.7	83.3	86.0	84.6	44.7	2.8	3.2	3.0	44.9	46.0	45.5	24.2
	T4= Soil application FeSO4=20 kg/ha	5.3	5.3	5.3	110.4	113.0	111.7	58.5	2.7	3.1	2.9	35.4	35.7	35.6	19.2
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	5.4	5.6	5.5	104.8	109.1	107.0	56.2	2.8	3.2	3.0	36.7	38.2	37.4	20.2
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.5	5.0	4.8	81.8	85.0	83.4	44.1	2.8	3.1	3.0	34.4	35.1	34.8	18.9
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.5	5.1	4.8	83.3	83.7	83.5	44.2	2.8	3.1	3.0	37.4	39.1	38.3	20.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.7	5.2	4.9	80.2	81.5	80.8	42.9	2.7	3.3	3.0	37.0	37.7	37.4	20.2
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	5.6	6.0	5.8	113.5	116.2	114.9	60.3	3.1	3.9	3.5	49.8	50.8	50.3	26.9
	Mean	4.8	5.2	5.0	90.2	92.8	91.5	48.3	2.8	3.3	3.0	40.1	41.4	40.8	21.9
HHB 299	T1=control	4.6	5.6	5.1	113.5	105.1	109.3	57.2	2.9	4.0	3.5	35.6	37.0	36.3	19.9
	T2=Soil application ZnSO4=25 kg/ha	5.0	6.1	5.6	108.5	108.0	108.3	56.9	3.4	4.5	3.9	46.9	51.3	49.1	26.5
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.9	6.0	5.5	110.5	113.7	112.1	58.8	3.2	4.3	3.8	44.4	45.8	45.1	24.4
	T4= Soil application FeSO4=20 kg/ha	5.6	6.4	6.0	136.0	137.0	136.5	71.3	3.1	4.1	3.6	35.3	36.9	36.1	19.8
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	5.8	6.8	6.3	132.4	126.4	129.4	67.8	3.0	4.2	3.6	35.1	36.6	35.9	19.7
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.8	5.9	5.4	114.5	110.5	112.5	58.9	3.1	4.0	3.5	35.0	37.1	36.0	19.8
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.9	6.0	5.4	108.9	104.9	106.9	56.2	3.0	4.1	3.5	35.5	36.3	35.9	19.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.9	6.1	5.5	113.5	109.5	111.5	58.5	3.0	4.2	3.6	37.1	37.4	37.2	20.4
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	6.0	6.6	6.3	141.5	136.4	138.9	72.6	3.4	4.6	4.0	49.8	52.6	51.2	27.6
	Mean	5.2	6.2	5.7	119.9	116.8	118.4	62.0	3.1	4.2	3.7	39.4	41.2	40.3	22.0
Micronutrient Management	T1=control	4.5	5.2	4.8	94.3	92.0	93.2	49.0	2.8	3.5	3.1	37.0	39.0	38.0	20.5
	T2=Soil application ZnSO4=25 kg/ha	4.7	5.7	5.2	93.9	95.1	94.5	49.8	3.2	4.0	3.6	47.1	50.2	48.6	26.1
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.7	5.5	5.1	96.9	99.8	98.4	51.7	3.0	3.8	3.4	44.7	45.9	45.3	24.3
	T4= Soil application FeSO4=20 kg/ha	5.4	5.9	5.6	123.2	125.0	124.1	64.9	2.9	3.6	3.3	35.4	36.3	35.8	19.5
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	5.6	6.2	5.9	118.6	117.8	118.2	62.0	2.9	3.7	3.3	35.9	37.4	36.7	20.0
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.7	5.5	5.1	98.2	97.8	98.0	51.5	2.9	3.6	3.2	34.7	36.1	35.4	19.3
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.7	5.6	5.1	96.1	94.3	95.2	50.2	2.9	3.6	3.3	36.5	37.7	37.1	20.2
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.8	5.7	5.2	96.8	95.5	96.2	50.7	2.8	3.8	3.3	37.1	37.6	37.3	20.3
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	5.8	6.3	6.0	127.5	126.3	126.9	66.5	3.3	4.3	3.8	49.8	51.7	50.8	27.3
CD (5%)	Hybrids	0.1	0.2		4.3	1.5			0.2	0.3		NS	NS		
	NM	0.4	0.3		2.7	3.5			0.3	0.5		1.5	2.4		
	H x NM	NS	NS		4.8	5.1			NS	NS		NS	NS		
	NM x H	NS	NS		5.1	4.9			NS	NS		NS	NS		
CV (%)		7.0	5.2		2.1	2.8			8.1	4.6		3.2	4.9		

CHAPTER II: AGRONOMY

Table II.51: PMAT 3a: Effect of micronutrient management on Mn and Cu content in fodder (ppm) of pearl millet hybrids under irrigated condition during kharif 2021 and 2022 in Zone A

Treatments		Mn Fodder						Zonal mean	Cu Fodder						Zonal mean
		HSR			JMR				HSR			JMR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		
MPMH 17	T1=control	0.79	1.10	0.95	51.6	56.1	53.8	27.4	0.63	0.58	0.61	10.5	11.3	10.9	5.8
	T2=Soil application ZnSO4=25 kg/ha	0.82	1.20	1.01	56.3	71.2	63.8	32.4	0.64	0.59	0.62	15.2	15.8	15.5	8.0
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.81	1.20	1.01	54.1	60.3	57.2	29.1	0.65	0.58	0.62	14.0	14.9	14.5	7.5
	T4= Soil application FeSO4=20 kg/ha	0.80	1.30	1.05	56.3	63.1	59.7	30.4	0.64	0.61	0.63	10.5	11.2	10.9	5.7
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.79	1.20	0.99	53.3	60.3	56.8	28.9	0.66	0.63	0.65	10.6	11.3	11.0	5.8
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.84	1.30	1.07	66.1	73.9	70.0	35.5	0.63	0.59	0.61	11.5	12.3	11.9	6.3
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.79	1.10	0.95	50.6	60.1	55.3	28.1	0.67	0.65	0.66	10.5	18.8	14.7	7.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.80	1.00	0.90	49.6	55.5	52.6	26.7	0.65	0.60	0.63	11.1	11.7	11.4	6.0
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.80	1.20	1.00	53.5	59.1	56.3	28.6	0.65	0.62	0.63	16.7	11.3	14.0	7.3
	Mean	0.81	1.18	0.99	54.6	62.2	58.4	29.7	0.65	0.61	0.63	12.3	13.2	12.7	6.7
HHB 299	T1=control	0.76	0.95	0.85	54.3	55.7	55.0	27.9	0.65	0.62	0.63	11.6	12.1	11.9	6.3
	T2=Soil application ZnSO4=25 kg/ha	0.77	0.97	0.87	58.8	61.8	60.3	30.6	0.66	0.64	0.65	15.3	15.6	15.5	8.1
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.76	0.98	0.87	54.4	56.9	55.6	28.3	0.67	0.61	0.64	18.0	18.4	18.2	9.4
	T4= Soil application FeSO4=20 kg/ha	0.78	0.96	0.87	53.2	55.9	54.6	27.7	0.67	0.62	0.65	15.4	16.5	16.0	8.3
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.77	0.97	0.87	52.6	55.3	54.0	27.4	0.67	0.61	0.64	11.8	13.0	12.4	6.5
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.80	1.08	0.94	62.9	67.1	65.0	33.0	0.67	0.59	0.63	12.5	13.4	13.0	6.8
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.78	0.96	0.87	58.8	62.2	60.5	30.7	0.68	0.65	0.67	11.6	19.7	15.7	8.2
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.78	0.98	0.88	60.4	63.4	61.9	31.4	0.66	0.62	0.64	12.3	13.5	12.9	6.8
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.77	0.99	0.88	56.2	58.9	57.6	29.2	0.67	0.64	0.65	18.7	12.1	15.4	8.0
	Mean	0.78	0.98	0.88	56.8	59.7	58.3	29.6	0.67	0.62	0.64	14.1	14.9	14.5	7.6
Micronutrient Management	T1=control	0.78	1.03	0.90	53.0	55.9	54.4	27.7	0.64	0.60	0.62	11.1	11.7	11.4	6.0
	T2=Soil application ZnSO4=25 kg/ha	0.80	1.09	0.94	57.6	66.5	62.0	31.5	0.65	0.62	0.63	15.2	15.7	15.5	8.0
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.79	1.09	0.94	54.3	58.6	56.4	28.7	0.66	0.60	0.63	16.0	16.6	16.3	8.5
	T4= Soil application FeSO4=20 kg/ha	0.79	1.13	0.96	54.8	59.5	57.1	29.0	0.66	0.62	0.64	13.0	13.9	13.4	7.0
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.78	1.09	0.93	52.9	57.8	55.4	28.2	0.67	0.62	0.64	11.2	12.1	11.7	6.2
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.82	1.19	1.00	64.5	70.5	67.5	34.3	0.65	0.59	0.62	12.0	12.9	12.4	6.5
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.79	1.03	0.91	54.7	61.1	57.9	29.4	0.68	0.65	0.66	11.1	19.3	15.2	7.9
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.79	0.99	0.89	55.0	59.5	57.2	29.1	0.66	0.61	0.63	11.7	12.6	12.2	6.4
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.79	1.10	0.94	54.9	59.0	56.9	28.9	0.66	0.63	0.64	17.7	11.7	14.7	7.7
CD (5%)	Hybrids	NS	NS		NS	NS			NS	NS		1.8	NS		
	NM	NS	NS		1.5	5.5			NS	NS		0.8	0.9		
	H x NM	NS	NS		2.8	NS			NS	NS		1.7	2.1		
	NM x H	NS	NS		3.2	NS			NS	NS		2.0	2.7		
CV (%)		5.7	4.0		2.2	7.6			0.0	1.2		5.4	5.7		

CHAPTER II: AGRONOMY

Table II.52: PMAT 3a: Effect of micronutrient management on Boron content (ppm) in grain and fodder of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone A

Treatments		B Fodder						Zonal mean	B Grain						Zonal mean
		HSR			JMR				HSR			JMR			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		
MPMH 17	T1=control	0.32	-	0.32	27.23	26.67	26.95	13.64	1.83	-	1.83	11.93	21.07	16.50	9.17
	T2=Soil application ZnSO4=25 kg/ha	0.34	-	0.34	27.37	27.07	27.22	13.78	1.85	-	1.85	17.43	22.33	19.88	10.87
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.34	-	0.34	28.33	27.73	28.03	14.19	1.83	-	1.83	15.83	25.57	20.70	11.27
	T4= Soil application FeSO4=20 kg/ha	0.35	-	0.35	27.67	26.90	27.28	13.82	1.83	-	1.83	11.27	28.07	19.67	10.75
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.34	-	0.34	27.07	26.70	26.88	13.61	1.82	-	1.82	12.33	26.93	19.63	10.73
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.33	-	0.33	27.97	27.67	27.82	14.08	1.83	-	1.83	12.83	24.27	18.55	10.19
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.34	-	0.34	27.37	27.40	27.38	13.86	1.82	-	1.82	11.27	22.43	16.85	9.34
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.37	-	0.37	34.30	33.40	33.85	17.11	1.88	-	1.88	12.40	26.90	19.65	10.77
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.38	-	0.38	34.23	34.33	34.28	17.33	1.90	-	1.90	19.10	33.17	26.13	14.02
	Mean	0.35	-	0.35	29.06	28.65	28.86	14.60	1.84	-	1.84	13.82	25.64	19.73	10.79
HHB 299	T1=control	0.34	-	0.34	23.30	22.80	23.05	11.70	2.07	-	2.07	12.20	29.43	20.82	11.44
	T2=Soil application ZnSO4=25 kg/ha	0.35	-	0.35	25.17	24.80	24.98	12.67	2.09	-	2.09	19.00	31.63	25.32	13.70
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.35	-	0.35	25.33	24.17	24.75	12.55	2.07	-	2.07	17.10	32.93	25.02	13.54
	T4= Soil application FeSO4=20 kg/ha	0.36	-	0.36	26.10	26.10	26.10	13.23	2.09	-	2.09	13.50	37.73	25.62	13.85
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.36	-	0.36	26.50	25.37	25.93	13.15	2.07	-	2.07	13.27	34.73	24.00	13.04
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.36	-	0.36	25.10	24.33	24.72	12.54	2.08	-	2.08	12.80	32.43	22.62	12.35
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.36	-	0.36	24.27	22.70	23.48	11.92	2.08	-	2.08	12.77	30.27	21.52	11.80
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.41	-	0.41	33.23	32.67	32.95	16.68	2.12	-	2.12	12.33	36.87	24.60	13.36
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.45	-	0.45	33.80	32.47	33.13	16.79	2.15	-	2.15	20.23	41.73	30.98	16.57
	Mean	0.37	-	0.37	26.98	26.16	26.57	13.47	2.09	-	2.09	14.80	34.20	24.50	13.29
Micronutrient Management	T1=control	0.33	-	0.33	25.27	24.73	25.00	12.67	1.95	-	1.95	12.07	25.25	18.66	10.30
	T2=Soil application ZnSO4=25 kg/ha	0.35	-	0.35	26.27	25.93	26.10	13.22	1.97	-	1.97	18.22	26.98	22.60	12.28
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.34	-	0.34	26.83	25.95	26.39	13.37	1.95	-	1.95	16.47	29.25	22.86	12.41
	T4= Soil application FeSO4=20 kg/ha	0.36	-	0.36	26.88	26.50	26.69	13.52	1.96	-	1.96	12.38	32.90	22.64	12.30
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.35	-	0.35	26.78	26.03	26.41	13.38	1.95	-	1.95	12.80	30.83	21.82	11.88
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.35	-	0.35	26.53	26.00	26.27	13.31	1.96	-	1.96	12.82	28.35	20.58	11.27
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.35	-	0.35	25.82	25.05	25.43	12.89	1.95	-	1.95	12.02	26.35	19.18	10.57
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.39	-	0.39	33.77	33.03	33.40	16.90	2.00	-	2.00	12.37	31.88	22.13	12.06
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.42	-	0.42	34.02	33.40	33.71	17.06	2.02	-	2.02	19.67	37.45	28.56	15.29
CD (5%)	Hybrids	0.03	-		1.35	1.09			0.05	-		0.64	NS		
	NM	0.03	-		1.45	1.92			NS	-		0.72	5.40		
	H x NM	NS	-		NS	NS			NS	-		1.13	NS		
	NM x H	NS	-		NS	NS			NS	-		1.11	NS		
CV (%)		8.8	-		4.4	5.9			3.6	-		4.3	15.3		

CHAPTER II: AGRONOMY

Table II.53: PMAT 3b: Effect of micronutrient management on the grain yield of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Grain yield (kg/ha)										Zonal mean		
		ABD1			DHL			VYP			CBE			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021		2022	Mean
MPMH 17	T1=control	-	20.14	20.14	27.20	18.29	22.74	21.16	19.18	20.17	23.85	25.36	24.61	21.91
	T2=Soil application ZnSO4=25 kg/ha	-	30.02	30.02	32.44	27.87	30.15	24.50	23.03	23.77	26.19	27.63	26.91	27.71
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	23.45	23.45	30.90	25.81	28.36	21.32	21.69	21.50	25.33	26.49	25.91	24.80
	T4= Soil application FeSO4=20 kg/ha	-	28.29	28.29	31.38	26.29	28.83	23.75	22.98	23.37	25.13	27.39	26.26	26.69
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	22.94	22.94	30.67	24.01	27.34	22.60	20.85	21.73	25.10	26.82	25.96	24.49
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	23.66	23.66	30.32	23.26	26.79	22.07	22.09	22.08	25.07	28.60	26.83	24.84
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	22.43	22.43	29.84	22.57	26.21	21.65	22.49	22.07	25.12	29.76	27.44	24.54
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	23.68	23.68	29.43	21.92	25.68	21.89	21.51	21.70	25.27	28.42	26.85	24.48
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	30.99	30.99	33.52	28.47	31.00	25.82	23.76	24.79	28.03	29.18	28.61	28.85
	Mean	-	25.07	25.07	30.63	24.28	27.46	22.75	21.95	22.35	25.46	27.74	26.60	25.37
HHB 299	T1=control	-	22.76	22.76	29.98	22.82	26.40	22.98	21.05	22.02	26.02	27.45	26.74	24.48
	T2=Soil application ZnSO4=25 kg/ha	-	33.33	33.33	34.03	30.96	32.49	25.78	26.28	26.03	28.39	29.55	28.97	30.21
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	28.89	28.89	33.45	29.28	31.37	23.57	23.21	23.39	27.52	28.82	28.17	27.95
	T4= Soil application FeSO4=20 kg/ha	-	30.48	30.48	33.81	30.32	32.07	24.87	25.77	25.32	27.94	30.14	29.04	29.23
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	25.37	25.37	32.98	28.12	30.55	23.30	23.66	23.48	27.24	29.21	28.23	26.91
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	24.65	24.65	32.41	27.08	29.75	23.78	24.07	23.93	26.65	32.41	29.53	26.96
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	24.75	24.75	31.71	25.93	28.82	24.05	24.32	24.18	27.29	31.51	29.40	26.79
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	28.13	28.13	30.56	24.56	27.56	23.30	23.72	23.51	27.10	32.42	29.76	27.24
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	36.87	36.87	35.07	30.94	33.00	27.52	27.89	27.70	30.22	34.08	32.15	32.43
	Mean	-	28.36	28.36	32.67	27.78	30.22	24.35	24.44	24.40	27.60	30.62	29.11	28.02
Micro-nutrient Management	T1=control	24.42	21.45	22.93	28.59	20.55	24.57	22.07	20.12	21.09	24.93	26.41	25.67	23.57
	T2=Soil application ZnSO4=25 kg/ha	34.88	31.68	33.28	33.23	29.41	31.32	25.14	24.65	24.90	27.29	28.59	27.94	29.36
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	30.04	26.17	28.11	32.18	27.55	29.86	22.44	22.45	22.45	26.43	27.66	27.04	26.86
	T4= Soil application FeSO4=20 kg/ha	34.45	29.39	31.92	32.60	28.31	30.45	24.31	24.37	24.34	26.53	28.77	27.65	28.59
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	29.52	24.16	26.84	31.83	26.07	28.95	22.95	22.26	22.60	26.17	28.02	27.09	26.37
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	29.07	24.16	26.61	31.37	25.17	28.27	22.93	23.08	23.00	25.86	30.51	28.18	26.52
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	27.43	23.59	25.51	30.78	24.25	27.51	22.85	23.41	23.13	26.21	30.63	28.42	26.14
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	28.26	25.90	27.08	30.00	23.24	26.62	22.60	22.62	22.61	26.19	30.42	28.31	26.15
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	37.55	33.93	35.74	34.29	29.71	32.00	26.67	25.83	26.25	29.13	31.63	30.38	31.09
CD (5%)	Hybrids	-	NS		NS	NS		NS	1.40		0.62	1.26		
	NM	-	3.54		2.95	2.31		1.59	2.84		0.79	2.97		
	H x NM	7.03	NS		NS	NS		NS	NS		NS	NS		
	NM x H	-	NS		NS	NS		NS	NS		NS	NS		
CV (%)		13.1	11.2		7.9	7.5		5.7	10.4		2.5	8.6		

CHAPTER II: AGRONOMY

Table II.54: PMAT 3b: Effect of micronutrient management on the stover yield of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Stover yield (q/ha)											Zonal mean	
		ABD1			DHL			VYP			CBE			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	-	35.88	35.88	54.84	34.76	44.80	57.87	55.21	56.54	39.45	36.57	38.01	43.81
	T2=Soil application ZnSO4=25 kg/ha	-	44.68	44.68	66.11	51.99	59.05	62.73	62.08	62.41	41.79	43.83	42.81	52.24
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	45.14	45.14	60.80	50.81	55.80	58.56	57.87	58.22	40.93	44.40	42.67	50.46
	T4= Soil application FeSO4=20 kg/ha	-	53.24	53.24	62.78	52.90	57.84	61.35	60.14	60.74	40.83	44.58	42.70	53.63
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	43.52	43.52	61.90	48.40	55.15	57.64	55.56	56.60	39.57	44.85	42.21	49.37
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	46.30	46.30	60.76	46.47	53.62	61.34	57.71	59.53	41.93	48.88	45.41	51.21
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	41.67	41.67	59.05	44.33	51.69	59.26	58.63	58.95	40.13	49.20	44.67	49.24
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	45.83	45.83	58.51	42.94	50.72	59.72	56.62	58.17	40.44	49.11	44.78	49.88
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	64.35	64.35	66.00	54.42	60.21	64.58	62.01	63.30	48.73	52.64	50.68	59.64
	Mean	-	46.73	46.73	61.20	47.45	54.32	60.34	58.43	59.38	41.53	46.01	43.77	51.05
HHB 299	T1=control	-	51.39	51.39	59.16	44.47	51.82	59.26	59.05	59.16	39.70	48.29	44.00	51.59
	T2=Soil application ZnSO4=25 kg/ha	-	69.68	69.68	67.17	59.44	63.31	63.66	63.98	63.82	41.15	52.36	46.76	60.89
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	59.03	59.03	66.45	55.90	61.18	60.88	61.62	61.25	42.90	50.95	46.92	57.09
	T4= Soil application FeSO4=20 kg/ha	-	60.65	60.65	65.89	59.37	62.63	61.81	64.26	63.03	40.62	53.51	47.07	58.34
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	47.46	47.46	61.97	56.02	59.00	59.95	61.02	60.49	41.84	51.71	46.77	53.43
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	49.77	49.77	61.66	54.68	58.17	60.18	60.83	60.51	41.62	57.92	49.77	54.55
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	47.46	47.46	62.35	50.46	56.41	61.11	62.01	61.56	41.95	56.17	49.06	53.62
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	56.48	56.48	60.93	48.22	54.57	60.88	63.49	62.19	44.21	57.94	51.08	56.08
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	76.39	76.39	68.45	60.16	64.31	65.51	66.76	66.14	47.43	61.15	54.29	65.28
	Mean	-	57.59	57.59	63.78	54.30	59.04	61.47	62.56	62.02	42.38	54.44	48.41	56.76
Micro-nutrient Management	T1=control	50.93	43.64	47.28	57.00	39.62	48.31	58.57	57.13	57.85	39.58	42.43	41.00	48.61
	T2=Soil application ZnSO4=25 kg/ha	63.66	57.18	60.42	66.64	55.72	61.18	63.20	63.03	63.11	41.47	48.09	44.78	57.37
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	59.03	52.09	55.56	63.62	53.36	58.49	59.72	59.75	59.73	41.91	47.68	44.79	54.64
	T4= Soil application FeSO4=20 kg/ha	59.03	56.95	57.99	64.34	56.14	60.24	61.58	62.20	61.89	40.73	49.04	44.88	56.25
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	59.03	45.49	52.26	61.94	52.21	57.07	58.80	58.29	58.54	40.71	48.28	44.49	53.09
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	59.03	48.03	53.53	61.21	50.58	55.89	60.76	59.27	60.02	41.78	53.40	47.59	54.26
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	57.87	44.56	51.22	60.70	47.40	54.05	60.19	60.32	60.26	41.04	52.69	46.86	53.10
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	53.24	51.16	52.20	59.72	45.58	52.65	60.30	60.06	60.18	42.33	53.53	47.93	53.24
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	60.42	70.37	65.39	67.22	57.29	62.26	65.05	64.39	64.72	48.08	56.90	52.49	61.21
CD (5%)	Hybrids	-	NS		NS	4.56		NS	3.00		NS	4.43		
	NM	-	8.17		5.61	5.23		3.50	NS		2.50	5.28		
	H x NM	NS	NS		NS	NS		NS	NS		NS	NS		
	NM x H	-	NS		NS	NS		NS	NS		NS	NS		
CV (%)		11.1	13.3		7.6	8.7		4.9	7.8		5.1	8.9		

CHAPTER II: AGRONOMY

Table II.55: PMAT 3b: Effect of micronutrient management on the plant population and plant height of pearl millet hybrids under irrigated condition during *kharif* 2022 in Zone B

Treatments		Plant population ('000/ha)					Plant height (cm)				
Hybrids	Micronutrient Management	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
MPMH 17	T1=control	217.4	130.7	135.2	142.3	156.4	151.0	176.3	160.2	180.8	167.1
	T2=Soil application ZnSO4=25 kg/ha	216.2	133.7	134.0	143.3	156.8	163.1	183.0	171.0	181.4	174.6
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	215.3	133.5	136.6	136.7	155.5	156.1	182.3	165.1	184.3	172.0
	T4= Soil application FeSO4=20 kg/ha	214.4	133.2	137.0	141.0	156.4	165.2	184.7	172.3	181.7	176.0
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	218.5	132.8	134.5	145.0	157.7	153.2	182.7	162.4	182.1	170.1
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	217.1	132.7	133.6	138.3	155.4	153.3	181.8	162.2	183.6	170.2
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	215.5	131.8	133.1	139.7	155.0	153.6	182.0	164.2	182.2	170.5
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	214.8	131.9	134.7	137.3	154.7	152.4	181.4	163.7	180.3	169.4
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	218.1	134.0	134.3	140.7	156.7	170.6	188.0	173.7	182.0	178.6
	Mean	216.4	132.7	134.8	140.5	156.1	157.6	182.5	166.1	182.0	172.1
HHB 299	T1=control	219.0	131.9	133.3	137.7	155.5	160.1	181.0	164.6	166.6	168.1
	T2=Soil application ZnSO4=25 kg/ha	213.2	133.8	136.6	135.7	154.8	176.4	185.7	176.5	172.4	177.8
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	214.6	133.0	136.8	136.0	155.1	167.0	183.7	168.0	166.6	171.3
	T4= Soil application FeSO4=20 kg/ha	213.2	133.5	135.0	148.0	157.4	180.1	184.3	175.8	168.7	177.2
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	215.5	132.8	137.5	145.3	157.8	167.1	181.0	167.4	168.6	171.0
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	211.3	132.8	135.6	136.7	154.1	162.9	180.7	168.3	166.9	169.7
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	217.4	133.4	135.6	145.0	157.9	158.5	178.7	170.4	170.9	169.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	216.2	132.4	136.3	142.0	156.7	168.7	177.0	169.5	173.6	172.2
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	217.1	134.2	135.6	144.0	157.7	180.5	184.0	180.6	171.8	179.2
	Mean	215.3	133.1	135.8	141.1	156.3	169.0	181.8	171.2	169.6	172.9
Micro- nutrient Manage- ment	T1=control	218.2	131.3	134.3	140.0	155.9	155.6	178.7	162.4	173.7	167.6
	T2=Soil application ZnSO4=25 kg/ha	214.7	133.8	135.3	139.5	155.8	169.7	184.3	173.8	176.9	176.2
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	214.9	133.2	136.7	136.3	155.3	161.5	183.0	166.6	175.4	171.6
	T4= Soil application FeSO4=20 kg/ha	213.8	133.4	136.0	144.5	156.9	172.7	184.5	174.1	175.2	176.6
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	217.0	132.8	136.0	145.2	157.7	160.2	181.8	164.9	175.3	170.6
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	214.2	132.7	134.6	137.5	154.8	158.1	181.3	165.2	175.3	170.0
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	216.4	132.6	134.4	142.3	156.4	156.1	180.3	167.3	176.5	170.1
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	215.5	132.2	135.5	139.7	155.7	160.5	179.2	166.6	177.0	170.8
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	217.6	134.1	135.0	142.3	157.2	175.6	186.0	177.2	176.9	178.9
CD (5%)	Hybrids	NS	NS	NS	NS		5.0	NS	3.3	5.3	
	NM	NS	NS	NS	NS		2.3	3.2	5.4	NS	
	H x NM	NS	NS	NS	NS		4.7	NS	NS	NS	
	NM x H	NS	NS	NS	NS		5.4	NS	NS	NS	
CV (%)		4.3	1.3	2.8	5.1		1.2	1.5	2.7	3.2	

CHAPTER II: AGRONOMY

Table II.56: PMAT 3b: Effect of micronutrient management on the total & effective tillers/plant and test weight of pearl millet hybrids under irrigated condition during *kharif* 2022 in Zone B

Treatments		Test weight (g)					Total tillers/plant					Effective tillers/plant				
Hybrids	Micronutrient Management	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
MPMH 17	T1=control	12.6	10.1	11.7	5.3	9.9	2.7	4.6	3.2	2.8	3.3	1.7	2.8	2.3	2.3	2.3
	T2=Soil application ZnSO ₄ =25 kg/ha	14.2	11.3	12.6	6.9	11.2	5.8	5.1	3.7	4.0	4.6	5.1	3.2	2.7	3.6	3.6
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	12.8	11.1	11.9	6.8	10.7	3.8	4.9	3.7	3.8	4.0	2.8	3.0	2.5	3.2	2.9
	T4= Soil application FeSO ₄ =20 kg/ha	13.3	11.2	12.8	7.1	11.1	6.3	5.0	3.7	3.9	4.7	5.3	3.3	2.7	3.2	3.6
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.0	10.9	12.3	6.8	10.8	3.3	4.8	3.6	3.3	3.8	3.0	3.2	2.6	2.9	2.9
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.1	10.8	12.5	6.9	10.8	2.9	4.6	3.5	3.2	3.6	1.9	3.1	2.6	3.0	2.7
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.1	10.8	12.3	6.7	10.7	2.8	4.5	3.5	3.2	3.5	1.8	3.1	2.7	2.9	2.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	13.3	10.8	12.2	6.6	10.7	3.7	4.5	3.6	3.1	3.7	2.7	3.0	2.6	2.5	2.7
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	13.8	11.4	13.0	8.3	11.6	6.3	5.1	3.7	4.7	4.9	5.3	3.4	2.8	4.3	3.9
	Mean	13.2	10.9	12.4	6.8	10.8	4.2	4.8	3.6	3.5	4.0	3.3	3.1	2.6	3.1	3.0
HHB 299	T1=control	12.7	10.3	12.2	9.0	11.1	3.4	4.7	3.3	2.6	3.5	2.3	2.9	2.4	2.3	2.5
	T2=Soil application ZnSO ₄ =25 kg/ha	14.3	11.5	13.4	10.2	12.3	6.6	5.1	3.7	3.7	4.8	5.6	3.3	2.7	3.5	3.8
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	12.9	11.2	12.9	10.1	11.8	3.8	5.0	3.6	3.7	4.0	2.8	3.3	2.5	3.4	3.0
	T4= Soil application FeSO ₄ =20 kg/ha	13.3	11.4	13.5	10.4	12.1	6.0	5.1	3.7	3.8	4.6	5.1	3.4	2.7	3.4	3.7
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.0	11.2	13.1	10.3	11.9	3.7	4.9	3.6	3.2	3.8	2.7	3.2	2.5	3.1	2.9
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.2	11.1	13.2	9.8	11.8	3.2	4.7	3.4	3.1	3.6	2.2	3.2	2.5	2.8	2.7
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.4	11.1	13.0	9.7	11.8	3.5	4.7	3.5	3.1	3.7	2.2	3.2	2.7	2.7	2.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	13.6	11.1	12.9	9.3	11.7	3.3	4.6	3.5	2.9	3.6	2.2	3.1	2.5	2.5	2.6
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	13.9	12.0	13.8	11.1	12.7	6.5	5.2	3.9	4.1	4.9	5.5	3.5	2.9	3.8	3.9
	Mean	13.4	11.2	13.1	10.0	11.9	4.4	4.9	3.6	3.4	4.1	3.4	3.2	2.6	3.1	3.1
Micro- nutrient Manage- ment	T1=control	12.7	10.2	11.9	7.1	10.5	3.1	4.6	3.3	2.7	3.4	2.0	2.8	2.4	2.3	2.4
	T2=Soil application ZnSO ₄ =25 kg/ha	14.3	11.4	13.0	8.6	11.8	6.2	5.1	3.7	3.9	4.7	5.4	3.3	2.7	3.5	3.7
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	12.9	11.2	12.4	8.4	11.2	3.8	5.0	3.6	3.7	4.0	2.8	3.1	2.5	3.3	2.9
	T4= Soil application FeSO ₄ =20 kg/ha	13.3	11.3	13.2	8.7	11.6	6.2	5.0	3.7	3.8	4.7	5.2	3.4	2.7	3.3	3.6
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.0	11.1	12.7	8.6	11.3	3.5	4.8	3.6	3.3	3.8	2.8	3.2	2.5	3.0	2.9
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.1	11.0	12.8	8.3	11.3	3.1	4.7	3.5	3.2	3.6	2.1	3.2	2.6	2.9	2.7
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	13.2	10.9	12.7	8.2	11.3	3.1	4.6	3.5	3.1	3.6	2.0	3.1	2.7	2.8	2.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	13.4	10.9	12.6	7.9	11.2	3.5	4.5	3.6	3.0	3.6	2.5	3.1	2.6	2.5	2.6
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	13.8	11.7	13.4	9.7	12.1	6.4	5.1	3.8	4.4	4.9	5.4	3.4	2.8	4.1	3.9
CD (5%)	Hybrids	NS	NS	NS	1.1		NS	NS	NS	NS		NS	NS	NS	NS	
	NM	0.6	0.6	NS	0.4		0.5	0.4	0.3	0.2		0.4	0.2	0.2	0.3	
	H x NM	NS	NS	NS	NS		NS	NS	NS	NS		NS	NS	NS	NS	
	NM x H	NS	NS	NS	NS		NS	NS	NS	NS		NS	NS	NS	NS	
CV (%)		9.9	4.2	6.0	4.4		9.3	7.0	7.1	5.7		10.6	6.2	7.4	7.4	

CHAPTER II: AGRONOMY

Table II.57: PMAT 3b: Effect of micronutrient management on the gross returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Gross Return (Rs/ha)											Zonal mean
		ABD1			DHL			VYP			CBE		
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
MPMH 17	T1=control	-	61481	61481	58785	48498	53642	35972	34521	35247	47693	46775	47234
	T2=Soil application ZnSO4=25 kg/ha	-	90159	90159	70164	73835	72000	41654	41455	41554	52380	51348	51864
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	72159	72159	66669	68590	67630	36235	39042	37638	50670	49473	50072
	T4= Soil application FeSO4=20 kg/ha	-	86840	86840	67777	69949	68863	40379	41358	40869	50253	51021	50637
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	70482	70482	66295	63912	65104	38411	37534	37973	50193	50073	50133
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	72928	72928	65509	61877	63693	37522	39755	38638	50140	53502	51821
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	68768	68768	64414	59970	62192	36798	40488	38643	50247	55507	52877
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	72913	72913	63547	58238	60893	37219	38708	37964	50547	53231	51889
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	96177	96177	72317	75534	73926	43897	42771	43334	56067	54876	55472
	Mean	-	76879	76879	66164	64489	65327	38676	39515	39095	50910	51756	51333
HHB 299	T1=control	-	71311	71311	64687	60612	62649	39069	37892	38480	52035	51500	51768
	T2=Soil application ZnSO4=25 kg/ha	-	103512	103512	73429	82157	77793	43830	47300	45565	56780	55465	56123
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	89479	89479	72214	77678	74946	40072	41784	40928	55039	54088	54564
	T4= Soil application FeSO4=20 kg/ha	-	94147	94147	72901	80560	76731	42272	46388	44330	55873	56589	56231
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	77835	77835	70930	74794	72862	39604	42579	41092	54472	54833	54653
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	76256	76256	69748	72082	70915	40430	43330	41880	53290	60895	57093
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	76117	76117	68414	68852	68633	40875	43767	42321	54580	59184	56882
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	86945	86945	65986	65269	65627	39620	42700	41160	54207	60914	57561
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	114392	114392	75615	82151	78883	46785	50192	48489	60440	64045	62243
	Mean	-	87777	87777	70436	73795	72116	41395	43992	42694	55191	57501	56346
Micro-nutrient Management	T1=control	57700	66396	66396	61736	54555	58146	37520	36207	36863	49864	49138	49501
	T2=Soil application ZnSO4=25 kg/ha	81053	96835	96835	71797	77996	74896	42742	44377	43560	54580	53407	53993
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	70443	80819	80819	69442	73134	71288	38154	40413	39283	52855	51781	52318
	T4= Soil application FeSO4=20 kg/ha	79470	90494	90494	70339	75255	72797	41325	43873	42599	53063	53805	53434
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	69363	74159	74159	68613	69353	68983	39008	40057	39532	52333	52453	52393
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	68455	74592	74592	67629	66980	67304	38976	41542	40259	51715	57199	54457
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	64912	72442	72442	66414	64411	65412	38837	42127	40482	52414	57346	54880
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	65926	79929	79929	64766	61754	63260	38419	40704	39562	52377	57073	54725
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	86034	105285	105285	73966	78843	76404	45341	46482	45911	58254	59461	58857
CD (5%)	Hybrids	-	NS		NS	NS		NS	2516		-	-	
	NM	-	10605		6333	5692		2710	5115		-	-	
	H x NM	-	NS		NS	NS		NS	NS		-	-	
	NM x H	-	NS		NS	NS		NS	NS		-	-	
CV (%)		-	10.9		7.9	7.0		5.7	10.4		-	-	

CHAPTER II: AGRONOMY

Table II.58: PMAT 3b: Effect of micronutrient management on the net returns of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Net Return (Rs/ha)											Zonal mean	
		ABD1			DHL			VYP			CBE			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022		Mean
MPMH 17	T1=control	-	31481	31481	34420	21697	28059	20153	18702	19428	17589	17365	17477	24111
	T2=Soil application ZnSO4=25 kg/ha	-	59159	59159	45249	46429	45839	24060	23861	23960	21276	19864	20570	37382
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	40159	40159	41254	40634	40944	19950	22757	21353	19566	20043	19805	30565
	T4= Soil application FeSO4=20 kg/ha	-	55940	55940	42762	42433	42598	23660	24639	24150	19549	20012	19781	35617
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	38582	38582	40780	35846	38313	22223	21346	21785	19114	20644	19879	29640
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	42328	42328	39844	33646	36745	21166	23398	22282	18836	24069	21453	30702
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	38468	38468	38649	31629	35139	20329	24019	22174	18943	26081	22512	29573
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	42813	42813	37982	30117	34049	20952	22441	21697	19476	23813	21645	30051
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	63177	63177	46352	46973	46662	24555	23429	23992	22996	21782	22389	39055
	Mean	-	45790	45790	40810	36600	38705	21894	22732	22313	19705	21519	20612	31855
HHB 299	T1=control	-	41311	41311	40202	33679	36940	23050	21873	22461	21931	22090	22011	30681
	T2=Soil application ZnSO4=25 kg/ha	-	72512	72512	48394	54619	51506	26036	29506	27771	25676	23980	24828	44154
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	57479	57479	46679	49589	48134	23586	25298	24442	23935	24658	24297	38588
	T4= Soil application FeSO4=20 kg/ha	-	63247	63247	47766	52912	50339	25353	29469	27411	25169	25579	25374	41593
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	45935	45935	45295	46595	45945	23216	26191	24704	23393	25404	24399	35246
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	45656	45656	43963	43719	43841	23874	26773	25323	21986	31461	26724	35386
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	45817	45817	42529	40378	41454	24206	27098	25652	23276	29758	26517	34860
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	56845	56845	40301	37016	38658	23153	26233	24693	23136	31495	27316	36878
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	81392	81392	49530	53458	51494	27243	30650	28947	27369	30952	29161	47748
	Mean	-	56688	56688	44962	45774	45368	24413	27010	25711	23986	27264	25625	38348
Micro-nutrient Management	T1=control	27720	36396	36396	37311	27688	32499	21601	20288	20944	19760	19728	19744	27396
	T2=Soil application ZnSO4=25 kg/ha	50073	65835	65835	46822	50524	48673	25048	26683	25866	23476	21922	22699	40768
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	38463	48819	48819	43967	45112	44539	21768	24027	22898	21751	22351	22051	34577
	T4= Soil application FeSO4=20 kg/ha	48590	59594	59594	45264	47672	46468	24506	27054	25780	22359	22796	22577	38605
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	37384	42259	42259	43038	41221	42129	22720	23769	23244	21254	23024	22139	32443
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	38050	43992	43992	41904	38682	40293	22520	25085	23802	20411	27765	24088	33044
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	34783	42142	42142	40589	36004	38296	22268	25558	23913	21110	27920	24515	32216
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	35816	49829	49829	39141	33566	36354	22052	24337	23195	21306	27654	24480	33464
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	54024	72285	72285	47941	50215	49078	25899	27040	26469	25183	26367	25775	43402
CD (5%)	Hybrids	-	NS		NS	NS		NS	2515		-	-		
	NM	-	10605		6333	5692		2710	NS		-	-		
	H x NM	-	NS		NS	NS		NS	NS		-	-		
	NM x H	-	NS		NS	NS		NS	NS		-	-		
CV (%)		-	17.5		12.5	11.7		9.9	17.4		-	-		

CHAPTER II: AGRONOMY

Table II.59: PMAT 3b: Effect of micronutrient management on the BC ratio of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		BC Ratio											Zonal mean	
		ABD1			DHL			VYP			CBE			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022		Mean
MPMH 17	T1=control	-	2.05	2.05	2.41	1.81	2.11	2.27	2.18	2.23	1.58	1.59	1.59	1.99
	T2=Soil application ZnSO4=25 kg/ha	-	2.91	2.91	2.82	2.70	2.76	2.37	2.36	2.36	1.68	1.63	1.66	2.42
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	2.26	2.26	2.62	2.45	2.54	2.23	2.40	2.31	1.63	1.68	1.66	2.19
	T4= Soil application FeSO4=20 kg/ha	-	2.81	2.81	2.71	2.54	2.63	2.42	2.47	2.45	1.64	1.65	1.65	2.38
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.21	2.21	2.60	2.28	2.44	2.38	2.32	2.35	1.62	1.70	1.66	2.16
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.38	2.38	2.55	2.19	2.37	2.29	2.43	2.36	1.60	1.82	1.71	2.21
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.27	2.27	2.50	2.12	2.31	2.23	2.46	2.35	1.61	1.89	1.75	2.17
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	2.42	2.42	2.49	2.07	2.28	2.29	2.38	2.33	1.63	1.81	1.72	2.19
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	2.91	2.91	2.79	2.65	2.72	2.27	2.21	2.24	1.70	1.66	1.68	2.39
	Mean	-	2.47	2.47	2.61	2.31	2.46	2.31	2.36	2.33	1.63	1.71	1.67	2.23
HHB 299	T1=control	-	2.38	2.38	2.64	2.25	2.45	2.44	2.37	2.40	1.73	1.75	1.74	2.24
	T2=Soil application ZnSO4=25 kg/ha	-	3.34	3.34	2.93	2.99	2.96	2.46	2.66	2.56	1.83	1.76	1.80	2.66
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	-	2.79	2.79	2.83	2.76	2.80	2.43	2.53	2.48	1.77	1.84	1.81	2.47
	T4= Soil application FeSO4=20 kg/ha	-	3.05	3.05	2.90	2.92	2.91	2.50	2.74	2.62	1.82	1.82	1.82	2.60
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.44	2.44	2.77	2.65	2.71	2.42	2.60	2.51	1.75	1.86	1.81	2.37
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.49	2.49	2.71	2.54	2.62	2.44	2.62	2.53	1.70	2.07	1.89	2.38
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	-	2.51	2.51	2.64	2.42	2.53	2.45	2.62	2.54	1.74	2.01	1.88	2.36
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	-	2.89	2.89	2.57	2.31	2.44	2.41	2.60	2.50	1.74	2.07	1.91	2.43
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	-	3.47	3.47	2.90	2.86	2.88	2.40	2.57	2.48	1.83	1.94	1.89	2.68
	Mean	-	2.82	2.82	2.77	2.63	2.70	2.44	2.59	2.51	1.77	1.90	1.84	2.47
Micro-nutrient Management	T1=control	1.92	2.21	2.21	2.53	2.03	2.28	2.36	2.28	2.32	1.66	1.67	1.66	2.12
	T2=Soil application ZnSO4=25 kg/ha	2.62	3.12	3.12	2.88	2.84	2.86	2.42	2.51	2.46	1.76	1.70	1.73	2.54
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	2.20	2.53	2.53	2.73	2.61	2.67	2.33	2.47	2.40	1.70	1.76	1.73	2.33
	T4= Soil application FeSO4=20 kg/ha	2.57	2.93	2.93	2.81	2.73	2.77	2.46	2.61	2.53	1.73	1.74	1.73	2.49
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	2.17	2.33	2.33	2.68	2.47	2.57	2.40	2.46	2.43	1.69	1.78	1.73	2.26
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	2.25	2.44	2.44	2.63	2.37	2.50	2.37	2.52	2.45	1.65	1.95	1.80	2.29
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	2.15	2.39	2.39	2.57	2.27	2.42	2.34	2.54	2.44	1.68	1.95	1.81	2.27
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	2.19	2.66	2.66	2.53	2.19	2.36	2.35	2.49	2.42	1.69	1.94	1.81	2.31
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	2.69	3.19	3.19	2.84	2.76	2.80	2.33	2.39	2.36	1.77	1.80	1.78	2.53
CD (5%)	Hybrids	-	NS		NS	NS		NS	0.15		-	-		
	NM	-	0.34		0.25	0.20		NS	NS		-	-		
	H x NM	-	NS		NS	NS		NS	NS		-	-		
	NM x H	-	NS		NS	NS		NS	NS		-	-		
CV (%)		-	10.9		7.9	7.0		5.7	10.3		-	-		

CHAPTER II: AGRONOMY

Table II.60: PMAT 3b: Effect of micronutrient management on Fe, Zn and Mn content in grain (ppm) of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Fe Grain						Zonal mean	Zn Grain						Zonal mean	Mn Grain						Zonal mean
		VYP			DHL				VYP			DHL				VYP			DHL			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	41.6	38.9	40.2	69.1	41.6	55.3	47.8	31.0	29.0	30.0	30.2	24.2	27.2	28.6	5.3	4.3	4.8	24.2	20.3	22.3	13.5
	T2=Soil application ZnSO4=25 kg/ha	41.0	39.9	40.4	69.7	42.9	56.3	48.4	34.2	33.2	33.7	31.0	27.7	29.4	31.5	5.9	5.0	5.4	24.6	20.5	22.5	14.0
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	41.7	39.5	40.6	69.4	42.6	56.0	48.3	33.2	31.8	32.5	30.9	27.1	29.0	30.8	5.3	4.2	4.8	24.3	20.4	22.4	13.6
	T4= Soil application FeSO4=20 kg/ha	43.7	42.0	42.9	70.6	46.5	58.6	50.7	31.2	30.3	30.8	30.3	26.5	28.4	29.6	5.6	5.1	5.4	24.6	20.5	22.6	14.0
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	42.9	41.4	42.1	69.9	45.2	57.5	49.8	32.8	30.5	31.6	30.2	26.4	28.3	30.0	5.6	4.8	5.2	24.4	20.4	22.4	13.8
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	39.7	39.1	39.4	69.3	42.6	56.0	47.7	32.3	31.6	31.9	30.2	26.1	28.2	30.0	6.0	6.6	6.3	25.1	21.8	23.4	14.9
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	40.8	38.2	39.5	69.2	42.6	55.9	47.7	31.7	30.7	31.2	30.2	25.9	28.1	29.7	5.6	4.0	4.8	24.3	20.4	22.3	13.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	39.9	38.3	39.1	69.1	42.6	55.8	47.5	32.5	31.3	31.9	30.2	25.7	28.0	29.9	5.8	5.1	5.5	24.2	20.4	22.3	13.9
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	42.8	41.2	42.0	70.6	46.6	58.6	50.3	33.6	34.5	34.1	31.0	27.8	29.4	31.7	5.5	5.2	5.4	24.9	20.5	22.7	14.0
	Mean	41.6	39.8	40.7	69.7	43.7	56.7	48.7	32.5	31.4	32.0	30.5	26.4	28.4	30.2	5.6	4.9	5.3	24.5	20.6	22.5	13.9
HHB 299	T1=control	63.0	60.9	62.0	69.2	41.6	55.4	58.7	37.3	37.2	37.3	30.3	24.3	27.3	32.3	4.8	4.3	4.5	24.2	20.4	22.3	13.4
	T2=Soil application ZnSO4=25 kg/ha	62.7	61.5	62.1	69.9	42.9	56.4	59.3	40.5	40.7	40.6	31.0	27.7	29.4	35.0	4.7	4.9	4.8	24.6	20.5	22.5	13.7
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	64.8	63.2	64.0	69.5	42.7	56.1	60.1	40.1	38.8	39.5	30.9	27.2	29.1	34.3	5.0	5.1	5.1	24.4	20.5	22.4	13.7
	T4= Soil application FeSO4=20 kg/ha	69.5	70.0	69.7	70.7	46.7	58.7	64.2	38.6	36.9	37.7	30.3	26.5	28.4	33.1	5.3	5.4	5.3	24.6	20.5	22.6	14.0
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	69.1	67.0	68.0	70.1	45.3	57.7	62.9	38.5	37.0	37.7	30.3	26.4	28.3	33.0	4.9	5.1	5.0	24.4	20.4	22.4	13.7
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	66.9	62.5	64.7	69.4	42.6	56.0	60.3	37.4	35.3	36.3	30.3	26.2	28.2	32.3	5.2	6.6	5.9	25.1	21.8	23.5	14.7
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	66.8	64.3	65.6	69.4	42.6	56.0	60.8	38.9	37.4	38.1	30.3	26.0	28.1	33.1	4.9	4.7	4.8	24.3	20.4	22.3	13.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	66.3	63.4	64.9	69.3	42.6	55.9	60.4	37.7	36.5	37.1	30.3	25.7	28.0	32.5	4.9	4.9	4.9	24.2	20.4	22.3	13.6
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	70.7	70.4	70.5	70.8	46.6	58.7	64.6	40.8	42.5	41.6	31.1	27.8	29.4	35.5	4.9	5.0	4.9	24.9	20.5	22.7	13.8
	Mean	66.7	64.8	65.7	69.8	43.7	56.8	61.2	38.9	38.0	38.4	30.5	26.4	28.5	33.5	5.0	5.1	5.0	24.5	20.6	22.6	13.8
Micro-nutrient Management	T1=control	52.3	49.9	51.1	69.2	41.6	55.4	53.2	34.2	33.1	33.6	30.2	24.3	27.3	30.4	5.1	4.3	4.7	24.2	20.4	22.3	13.5
	T2=Soil application ZnSO4=25 kg/ha	51.9	50.7	51.3	69.8	42.9	56.3	53.8	37.3	36.9	37.1	31.0	27.7	29.4	33.3	5.3	5.0	5.1	24.6	20.5	22.5	13.8
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	53.3	51.3	52.3	69.5	42.7	56.1	54.2	36.7	35.3	36.0	30.9	27.2	29.0	32.5	5.2	4.6	4.9	24.4	20.4	22.4	13.7
	T4= Soil application FeSO4=20 kg/ha	56.6	56.0	56.3	70.7	46.6	58.6	57.5	34.9	33.6	34.2	30.3	26.5	28.4	31.3	5.5	5.2	5.4	24.6	20.5	22.6	14.0
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	56.0	54.2	55.1	70.0	45.3	57.6	56.4	35.6	33.7	34.7	30.3	26.4	28.3	31.5	5.3	4.9	5.1	24.4	20.4	22.4	13.7
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	53.3	50.8	52.0	69.4	42.6	56.0	54.0	34.8	33.4	34.1	30.3	26.2	28.2	31.2	5.6	6.6	6.1	25.1	21.8	23.5	14.8
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	53.8	51.3	52.5	69.3	42.6	55.9	54.2	35.3	34.0	34.7	30.3	25.9	28.1	31.4	5.3	4.4	4.8	24.3	20.4	22.3	13.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	53.1	50.8	52.0	69.2	42.6	55.9	53.9	35.1	33.9	34.5	30.3	25.7	28.0	31.2	5.4	5.0	5.2	24.2	20.4	22.3	13.7
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	56.8	55.8	56.3	70.7	46.6	58.7	57.5	37.2	38.5	37.9	31.1	27.8	29.4	33.6	5.2	5.1	5.2	24.9	20.5	22.7	13.9

CHAPTER II: AGRONOMY

Table II.61: PMAT 3b: Effect of micronutrient management on Fe, Zn and Mn content in fodder (ppm) of pearl millet hybrids under irrigated condition during kharif 2021 and 2022 in Zone B

Treatments		Fe Fodder						Zonal mean	Zn Fodder						Zonal mean	Mn Fodder						Zonal mean
		VYP			DHL				VYP			DHL				VYP			DHL			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	4.09	-	4.09	64.2	48.1	56.2	30.1	2.17	-	2.17	26.1	18.3	22.2	12.2	0.55	-	0.55	21.6	19.7	20.6	10.6
	T2=Soil application ZnSO4=25 kg/ha	4.52	-	4.52	64.7	49.4	57.1	30.8	2.54	-	2.54	26.9	24.8	25.9	14.2	0.61	-	0.61	21.7	19.9	20.8	10.7
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.24	-	4.24	64.5	49.2	56.8	30.5	2.29	-	2.29	26.8	22.8	24.8	13.5	0.57	-	0.57	21.6	19.9	20.7	10.7
	T4= Soil application FeSO4=20 kg/ha	4.84	-	4.84	65.7	58.9	62.3	33.6	2.04	-	2.04	26.2	19.2	22.7	12.4	0.52	-	0.52	21.7	19.9	20.8	10.6
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.82	-	4.82	64.9	54.6	59.8	32.3	2.06	-	2.06	26.2	19.2	22.7	12.4	0.49	-	0.49	21.6	19.9	20.7	10.6
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.28	-	4.28	64.4	49.3	56.9	30.6	2.08	-	2.08	26.1	18.9	22.5	12.3	0.60	-	0.60	22.5	22.3	22.4	11.5
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.22	-	4.22	64.3	49.2	56.7	30.5	2.33	-	2.33	26.1	19.0	22.5	12.4	0.55	-	0.55	21.6	19.8	20.7	10.6
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.42	-	4.42	64.2	48.8	56.5	30.5	2.05	-	2.05	26.1	18.8	22.5	12.3	0.54	-	0.54	21.6	19.8	20.7	10.6
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.83	-	4.83	65.7	58.9	62.3	33.6	2.33	-	2.33	26.9	24.9	25.9	14.1	0.53	-	0.53	21.7	19.9	20.8	10.7
	Mean	4.47	-	4.47	64.7	51.8	58.3	31.4	2.21	-	2.21	26.4	20.7	23.5	12.9	0.55	-	0.55	21.7	20.1	20.9	10.7
HHB 299	T1=control	4.34	-	4.34	64.4	48.1	56.3	30.3	2.15	-	2.15	26.1	18.4	22.2	12.2	0.52	-	0.52	21.7	19.7	20.7	10.6
	T2=Soil application ZnSO4=25 kg/ha	3.78	-	3.78	64.8	49.5	57.1	30.5	2.43	-	2.43	26.9	24.8	25.9	14.2	0.55	-	0.55	21.7	19.9	20.8	10.7
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.47	-	4.47	64.6	49.2	56.9	30.7	2.38	-	2.38	26.8	22.8	24.8	13.6	0.54	-	0.54	21.7	19.9	20.8	10.7
	T4= Soil application FeSO4=20 kg/ha	4.90	-	4.90	65.9	58.9	62.4	33.6	2.32	-	2.32	26.2	19.2	22.7	12.5	0.54	-	0.54	21.7	19.9	20.8	10.7
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.84	-	4.84	65.2	54.7	60.0	32.4	2.30	-	2.30	26.2	19.2	22.7	12.5	0.54	-	0.54	21.7	19.9	20.8	10.7
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.19	-	4.19	64.6	49.4	57.0	30.6	2.18	-	2.18	26.2	18.9	22.6	12.4	0.56	-	0.56	22.5	22.4	22.5	11.5
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.02	-	4.02	64.5	49.2	56.9	30.4	2.14	-	2.14	26.2	19.0	22.6	12.3	0.62	-	0.62	21.7	19.8	20.8	10.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.14	-	4.14	64.5	48.8	56.7	30.4	2.33	-	2.33	26.2	18.8	22.5	12.4	0.59	-	0.59	21.7	19.8	20.7	10.7
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.37	-	4.37	65.9	58.9	62.4	33.4	2.41	-	2.41	27.0	25.0	26.0	14.2	0.58	-	0.58	21.7	20.0	20.8	10.7
	Mean	4.34	-	4.34	64.9	51.9	58.4	31.4	2.29	-	2.29	26.4	20.7	23.5	12.9	0.56	-	0.56	21.8	20.1	21.0	10.8
Micro-nutrient Management	T1=control	4.21	-	4.21	64.3	48.1	56.2	30.2	2.16	-	2.16	26.1	18.3	22.2	12.2	0.53	-	0.53	21.6	19.7	20.7	10.6
	T2=Soil application ZnSO4=25 kg/ha	4.15	-	4.15	64.8	49.5	57.1	30.6	2.49	-	2.49	26.9	24.8	25.9	14.2	0.58	-	0.58	21.7	19.9	20.8	10.7
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.36	-	4.36	64.6	49.2	56.9	30.6	2.33	-	2.33	26.8	22.8	24.8	13.6	0.55	-	0.55	21.7	19.9	20.8	10.7
	T4= Soil application FeSO4=20 kg/ha	4.87	-	4.87	65.8	58.9	62.3	33.6	2.18	-	2.18	26.2	19.2	22.7	12.4	0.53	-	0.53	21.7	19.9	20.8	10.7
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.83	-	4.83	65.1	54.7	59.9	32.3	2.18	-	2.18	26.2	19.2	22.7	12.4	0.51	-	0.51	21.7	19.9	20.8	10.6
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.24	-	4.24	64.5	49.4	56.9	30.6	2.13	-	2.13	26.2	18.9	22.5	12.3	0.58	-	0.58	22.5	22.4	22.4	11.5
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.12	-	4.12	64.4	49.2	56.8	30.5	2.24	-	2.24	26.1	19.0	22.5	12.4	0.59	-	0.59	21.7	19.8	20.7	10.7
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.28	-	4.28	64.4	48.8	56.6	30.4	2.19	-	2.19	26.2	18.8	22.5	12.3	0.57	-	0.57	21.6	19.8	20.7	10.6
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.60	-	4.60	65.8	58.9	62.3	33.5	2.37	-	2.37	26.9	24.9	25.9	14.2	0.56	-	0.56	21.7	19.9	20.8	10.7

CHAPTER II: AGRONOMY

Table II.62: PMAT 3b: Effect of micronutrient management on Cu and B content in grain (ppm) of pearl millet hybrids under irrigated condition during *kharif* 2021 and 2022 in Zone B

Treatments		Cu Grain						Zonal mean	B grain						Zonal mean
		VYP			DHL				VYP			DHL			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	4.75	3.36	4.05	8.12	5.21	6.67	5.36	1.72	-	1.72	2.39	2.46	2.43	2.07
	T2=Soil application ZnSO4=25 kg/ha	4.95	3.78	4.37	8.16	5.28	6.72	5.54	1.79	-	1.79	2.44	2.51	2.48	2.13
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	4.71	3.64	4.18	8.15	5.26	6.71	5.44	1.69	-	1.69	2.42	2.49	2.46	2.07
	T4= Soil application FeSO4=20 kg/ha	4.49	3.54	4.01	8.17	5.28	6.73	5.37	1.72	-	1.72	2.43	2.51	2.47	2.09
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.39	3.44	3.92	8.16	5.26	6.71	5.31	1.68	-	1.68	2.41	2.49	2.45	2.07
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.42	3.26	3.84	8.15	5.25	6.70	5.27	1.65	-	1.65	2.41	2.48	2.45	2.05
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.63	4.12	4.38	8.84	5.86	7.35	5.86	1.65	-	1.65	2.41	2.48	2.45	2.05
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.30	3.52	3.91	8.14	5.24	6.69	5.30	1.83	-	1.83	2.55	2.69	2.62	2.23
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.43	3.66	4.05	8.18	5.30	6.74	5.39	1.79	-	1.79	2.57	2.52	2.55	2.17
	Mean	4.56	3.59	4.08	8.23	5.33	6.78	5.43	1.72	-	1.72	2.45	2.51	2.48	2.10
HHB 299	T1=control	5.08	3.96	4.52	8.14	5.22	6.68	5.60	1.96	-	1.96	2.42	2.48	2.45	2.21
	T2=Soil application ZnSO4=25 kg/ha	5.22	4.21	4.72	8.18	5.28	6.73	5.72	2.17	-	2.17	2.46	2.51	2.49	2.33
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	5.30	4.32	4.81	8.17	5.27	6.72	5.77	2.13	-	2.13	2.44	2.49	2.47	2.30
	T4= Soil application FeSO4=20 kg/ha	5.19	3.82	4.51	8.18	5.28	6.73	5.62	2.01	-	2.01	2.45	2.51	2.48	2.25
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	5.05	3.96	4.50	8.17	5.27	6.72	5.61	2.16	-	2.16	2.44	2.49	2.47	2.31
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	5.04	4.02	4.53	8.17	5.25	6.71	5.62	2.12	-	2.12	2.44	2.48	2.46	2.29
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	5.21	4.86	5.04	8.86	5.88	7.37	6.20	2.02	-	2.02	2.44	2.48	2.46	2.24
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.68	3.87	4.27	8.16	5.24	6.70	5.49	2.24	-	2.24	2.57	2.71	2.64	2.44
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.48	4.08	4.28	8.20	5.32	6.76	5.52	2.26	-	2.26	2.59	2.52	2.56	2.41
	Mean	5.03	4.12	4.57	8.25	5.33	6.79	5.68	2.12	-	2.12	2.47	2.52	2.50	2.31
Micro- nutrient Manage- ment	T1=control	4.91	3.66	4.29	8.13	5.22	6.67	5.48	1.84	-	1.84	2.41	2.47	2.44	2.14
	T2=Soil application ZnSO4=25 kg/ha	5.09	4.00	4.54	8.17	5.28	6.73	5.63	1.98	-	1.98	2.45	2.51	2.48	2.23
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	5.01	3.98	4.50	8.16	5.27	6.71	5.60	1.91	-	1.91	2.43	2.49	2.46	2.19
	T4= Soil application FeSO4=20 kg/ha	4.84	3.68	4.26	8.18	5.28	6.73	5.49	1.86	-	1.86	2.44	2.51	2.48	2.17
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	4.72	3.70	4.21	8.17	5.27	6.72	5.46	1.92	-	1.92	2.43	2.49	2.46	2.19
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	4.73	3.64	4.18	8.16	5.25	6.71	5.44	1.89	-	1.89	2.43	2.48	2.45	2.17
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	4.92	4.49	4.71	8.85	5.87	7.36	6.03	1.84	-	1.84	2.43	2.48	2.45	2.14
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	4.49	3.69	4.09	8.15	5.24	6.70	5.39	2.03	-	2.03	2.56	2.70	2.63	2.33
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	4.46	3.87	4.16	8.19	5.31	6.75	5.46	2.02	-	2.02	2.58	2.52	2.55	2.29

CHAPTER II: AGRONOMY

Table II.63: PMAT 3b: Effect of micronutrient management on Cu and B content in fodder (ppm) of pearl millet hybrids under irrigated condition during kharif 2021 and 2022 in Zone B

Treatments		Cu Fodder						Zonal mean	B Fodder						Zonal mean
		VYP			DHL				VYP			DHL			
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
MPMH 17	T1=control	0.43	-	0.43	4.32	3.87	4.10	2.26	0.27	-	0.27	5.05	5.12	5.09	2.68
	T2=Soil application ZnSO4=25 kg/ha	0.37	-	0.37	4.32	3.93	4.13	2.25	0.35	-	0.35	5.09	5.16	5.13	2.74
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.42	-	0.42	4.31	3.90	4.11	2.26	0.32	-	0.32	5.08	5.15	5.12	2.72
	T4= Soil application FeSO4=20 kg/ha	0.35	-	0.35	4.33	3.93	4.13	2.24	0.30	-	0.30	5.07	5.16	5.12	2.71
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.43	-	0.43	4.30	3.90	4.10	2.27	0.31	-	0.31	5.08	5.15	5.12	2.71
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.37	-	0.37	4.31	3.89	4.10	2.24	0.31	-	0.31	5.06	5.14	5.10	2.70
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.41	-	0.41	4.85	4.28	4.57	2.49	0.29	-	0.29	5.07	5.14	5.11	2.70
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.40	-	0.40	4.31	3.88	4.10	2.25	0.36	-	0.36	5.42	5.62	5.52	2.94
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.35	-	0.35	4.32	3.95	4.14	2.24	0.37	-	0.37	5.43	5.18	5.31	2.84
	Mean	0.39	-	0.39	4.37	3.95	4.16	2.28	0.32	-	0.32	5.15	5.20	5.18	2.75
HHB 299	T1=control	0.38	-	0.38	4.34	3.88	4.11	2.24	0.29	-	0.29	5.08	5.12	5.10	2.70
	T2=Soil application ZnSO4=25 kg/ha	0.40	-	0.40	4.35	3.95	4.15	2.28	0.34	-	0.34	5.10	5.16	5.13	2.74
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.38	-	0.38	4.34	3.89	4.12	2.25	0.32	-	0.32	5.10	5.15	5.13	2.72
	T4= Soil application FeSO4=20 kg/ha	0.42	-	0.42	4.35	3.94	4.15	2.28	0.39	-	0.39	5.09	5.16	5.13	2.76
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.37	-	0.37	4.34	3.90	4.12	2.24	0.39	-	0.39	5.14	5.15	5.15	2.77
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.38	-	0.38	4.34	3.89	4.12	2.25	0.36	-	0.36	5.09	5.14	5.12	2.74
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.41	-	0.41	4.88	4.31	4.60	2.50	0.36	-	0.36	5.09	5.14	5.12	2.74
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.37	-	0.37	4.34	3.89	4.12	2.24	0.40	-	0.40	5.46	5.66	5.56	2.98
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.38	-	0.38	4.35	3.95	4.15	2.27	0.40	-	0.40	5.48	5.18	5.33	2.86
	Mean	0.39	-	0.39	4.40	3.96	4.18	2.28	0.36	-	0.36	5.18	5.21	5.19	2.78
Micro- nutrient Manage- ment	T1=control	0.41	-	0.41	4.33	3.88	4.10	2.25	0.28	-	0.28	5.07	5.12	5.09	2.69
	T2=Soil application ZnSO4=25 kg/ha	0.38	-	0.38	4.34	3.94	4.14	2.26	0.35	-	0.35	5.10	5.16	5.13	2.74
	T3=0.5% ZnSO4 foliar Spray(20-25DAS)	0.40	-	0.40	4.33	3.90	4.11	2.25	0.32	-	0.32	5.09	5.15	5.12	2.72
	T4= Soil application FeSO4=20 kg/ha	0.38	-	0.38	4.34	3.94	4.14	2.26	0.34	-	0.34	5.08	5.16	5.12	2.73
	T5=0.5% FeSO4 foliar Sp. at tiller stage(20-25DAS)	0.40	-	0.40	4.32	3.90	4.11	2.25	0.35	-	0.35	5.11	5.15	5.13	2.74
	T6=0.5% MnSO4 foliar Sp. at tiller stage(20-25DAS)	0.38	-	0.38	4.33	3.89	4.11	2.24	0.34	-	0.34	5.08	5.14	5.11	2.72
	T7=0.5% CuSO4 foliar Sp. at tiller stage(20-25DAS)	0.41	-	0.41	4.87	4.30	4.58	2.50	0.32	-	0.32	5.08	5.14	5.11	2.72
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	0.39	-	0.39	4.33	3.89	4.11	2.25	0.38	-	0.38	5.44	5.64	5.54	2.96
	T9= ZnSO4(25kg/ha) + FeSO4(20kg/ha)+ 0.2 % Borex	0.37	-	0.37	4.34	3.95	4.14	2.25	0.38	-	0.38	5.46	5.18	5.32	2.85

CHAPTER II: AGRONOMY

Table II.64: PMAT 3b: Effect of micronutrient management on pH, E.C., Organic carbon and available N,P,K in soil after harvest of pearl millet hybrids of Dhule Centre under irrigated condition during kharif 2021 and 2022 in Zone B

Hybrids	Treatments	Dhule centre																	
		pH			E.C.(ds/m)			Organic C (%)			Av. N (kg/ha)			Av. P (kg/ha)			Av. K (kg/ha)		
	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
MPMH 17	T1=control	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	191	189	190	17.3	17.0	17.1	590	578	584
	T2=Soil application ZnSO ₄ =25 kg/ha	7.8	7.9	7.9	0.4	0.4	0.4	0.5	0.5	0.5	186	185	186	17.2	16.8	17.0	573	565	569
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	188	185	187	17.2	16.8	17.0	578	569	574
	T4= Soil application FeSO ₄ =20 kg/ha	7.8	7.9	7.8	0.4	0.4	0.4	0.6	0.5	0.5	187	185	186	17.2	16.8	17.0	575	564	570
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	189	186	187	17.2	16.8	17.0	582	572	577
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	190	188	189	17.3	16.9	17.1	586	573	580
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	190	188	189	17.3	16.9	17.1	585	574	580
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	191	188	190	17.3	16.9	17.1	586	577	582
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	7.8	7.8	7.8	0.4	0.4	0.4	0.5	0.5	0.5	185	183	184	17.1	16.7	16.9	574	565	570
	Mean	7.9	7.9	7.9	0.4	0.4	0.4	0.5	0.5	0.5	189	186	187	17.2	16.8	17.0	581	571	576
HHB 299	T1=control	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	191	189	190	17.3	17.0	17.1	589	578	584
	T2=Soil application ZnSO ₄ =25 kg/ha	7.8	7.9	7.8	0.4	0.4	0.4	0.5	0.5	0.5	186	184	185	17.1	16.7	16.9	572	564	568
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	188	185	187	17.2	16.8	17.0	578	567	573
	T4= Soil application FeSO ₄ =20 kg/ha	7.8	7.9	7.8	0.4	0.4	0.4	0.5	0.5	0.5	187	185	186	17.2	16.8	17.0	573	567	570
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	189	185	187	17.2	16.8	17.0	581	571	576
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	190	188	189	17.2	16.8	17.0	584	572	578
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	190	188	189	17.2	16.8	17.0	584	574	579
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	191	188	190	17.3	16.9	17.1	586	576	581
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	7.8	7.8	7.8	0.4	0.4	0.4	0.5	0.5	0.5	185	182	184	17.0	16.7	16.9	572	567	570
	Mean	7.9	7.9	7.9	0.4	0.4	0.4	0.5	0.5	0.5	189	186	187	17.2	16.8	17.0	580	571	575
Micronutrient Management	T1=control	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	191	189	190	17.3	17.0	17.1	590	578	584
	T2=Soil application ZnSO ₄ =25 kg/ha	7.8	7.9	7.8	0.4	0.4	0.4	0.5	0.5	0.5	186	185	185	17.1	16.8	16.9	573	565	569
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	188	185	187	17.2	16.8	17.0	578	568	573
	T4= Soil application FeSO ₄ =20 kg/ha	7.8	7.9	7.8	0.4	0.4	0.4	0.5	0.5	0.5	187	185	186	17.2	16.8	17.0	574	566	570
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	189	186	187	17.2	16.8	17.0	582	572	577
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	190	188	189	17.3	16.8	17.0	585	573	579
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.6	0.5	0.5	190	188	189	17.3	16.9	17.1	585	574	579
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.0	8.0	8.0	0.4	0.4	0.4	0.5	0.5	0.5	191	188	190	17.3	16.9	17.1	586	577	581
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	7.8	7.8	7.8	0.4	0.4	0.4	0.5	0.5	0.5	185	183	184	17.1	16.7	16.9	573	566	570

CHAPTER II: AGRONOMY

Table II.65: PMAT 3b: Effect of micronutrient management on Fe, Zn, Mn, Cu and B content of soil after harvest (ppm) of pearl millet hybrids under irrigated condition in Vijayapur (Karnataka) Centre during *kharif* 2021 and 2022 in Zone B

Treatments		Fe Content			Zn Content			Mn Content			Cu Content			B Content		
Hybrids	Micronutrient Management	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
MPMH 17	T1=control	7.95	8.38	8.16	0.60	0.56	0.58	4.13	4.67	4.40	0.64	0.38	0.51	0.33	-	0.33
	T2=Soil application ZnSO ₄ =25 kg/ha	8.32	8.57	8.45	0.77	0.80	0.79	6.50	4.37	5.43	0.46	0.48	0.47	0.29	-	0.29
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	8.09	9.39	8.74	0.68	0.59	0.63	6.56	4.25	5.40	0.42	0.42	0.42	0.32	-	0.32
	T4= Soil application FeSO ₄ =20 kg/ha	9.41	11.35	10.38	0.63	0.53	0.58	6.19	3.95	5.07	0.42	0.37	0.40	0.29	-	0.29
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	7.85	8.84	8.34	0.60	0.57	0.59	7.13	3.99	5.56	0.43	0.40	0.41	0.27	-	0.27
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.01	8.73	8.37	0.69	0.62	0.66	5.99	4.35	5.17	0.54	0.43	0.49	0.27	-	0.27
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.41	9.39	8.90	0.66	0.56	0.61	6.80	3.79	5.29	0.42	0.46	0.44	0.27	-	0.27
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	8.04	8.77	8.40	0.75	0.56	0.66	6.36	4.82	5.59	0.41	0.45	0.43	0.29	-	0.29
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	10.46	11.46	10.96	0.80	0.83	0.82	6.53	4.21	5.37	0.45	0.49	0.47	0.27	-	0.27
	Mean	8.50	9.43	8.97	0.69	0.63	0.66	6.24	4.27	5.25	0.47	0.43	0.45	0.29		0.29
HHB 299	T1=control	7.87	7.61	7.74	0.67	0.63	0.65	5.61	4.37	4.99	0.43	0.42	0.42	0.27	-	0.27
	T2=Soil application ZnSO ₄ =25 kg/ha	8.39	8.08	8.23	0.79	0.79	0.79	6.52	4.02	5.27	0.46	0.48	0.47	0.28	-	0.28
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	7.85	8.74	8.30	0.75	0.62	0.69	6.28	4.18	5.23	0.45	0.47	0.46	0.31	-	0.31
	T4= Soil application FeSO ₄ =20 kg/ha	10.52	12.40	11.46	0.67	0.67	0.67	5.51	4.74	5.13	0.45	0.42	0.43	0.27	-	0.27
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.59	8.76	8.68	0.71	0.58	0.64	6.70	4.54	5.62	0.45	0.41	0.43	0.28	-	0.28
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	7.99	9.43	8.71	0.72	0.64	0.68	5.83	4.58	5.21	0.42	0.43	0.42	0.29	-	0.29
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.25	9.96	9.11	0.69	0.61	0.65	6.83	5.41	6.12	0.47	0.42	0.45	0.23	-	0.23
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	7.39	10.93	9.16	0.66	0.59	0.63	5.85	3.98	4.92	0.50	0.43	0.46	0.28	-	0.28
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	10.18	11.80	10.99	0.80	0.83	0.81	6.34	3.76	5.05	0.44	0.44	0.44	0.24	-	0.24
	Mean	8.56	9.74	9.15	0.72	0.66	0.69	6.16	4.40	5.28	0.45	0.43	0.44	0.27	-	0.27
Micronutrient Management	T1=control	7.91	7.99	7.95	0.64	0.60	0.62	4.87	4.52	4.69	0.53	0.40	0.46	0.30	-	0.30
	T2=Soil application ZnSO ₄ =25 kg/ha	8.36	8.32	8.34	0.78	0.80	0.79	6.51	4.19	5.35	0.46	0.48	0.47	0.29	-	0.29
	T3=0.5% ZnSO ₄ foliar Spray(20-25DAS)	7.97	9.07	8.52	0.71	0.60	0.66	6.42	4.21	5.32	0.44	0.45	0.44	0.31	-	0.31
	T4= Soil application FeSO ₄ =20 kg/ha	9.97	11.87	10.92	0.65	0.60	0.63	5.85	4.35	5.10	0.44	0.40	0.42	0.28	-	0.28
	T5=0.5% FeSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.22	8.80	8.51	0.66	0.58	0.62	6.91	4.27	5.59	0.44	0.41	0.42	0.28	-	0.28
	T6=0.5% MnSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.00	9.08	8.54	0.71	0.63	0.67	5.91	4.46	5.19	0.48	0.43	0.45	0.28	-	0.28
	T7=0.5% CuSO ₄ foliar Sp. at tiller stage(20-25DAS)	8.33	9.67	9.00	0.67	0.59	0.63	6.82	4.60	5.71	0.45	0.44	0.44	0.25	-	0.25
	T8=0.5% Borex foliar Sp. at tiller stage(20-25DAS)	7.72	9.85	8.78	0.71	0.58	0.64	6.10	4.40	5.25	0.46	0.44	0.45	0.29	-	0.29
	T9= ZnSO ₄ (25kg/ha) + FeSO ₄ (20kg/ha)+ 0.2 % Borex	10.32	11.63	10.98	0.80	0.83	0.82	6.43	3.99	5.21	0.45	0.47	0.46	0.26	-	0.26

CHAPTER II: AGRONOMY

Table II.66: PMAT 4A1: Influence of of production factors on the grain and stover yield of pearl millet under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatment	Grain yield (q/ha)						Zonal mean	Stover yield (q/ha)						Zonal mean
	BKR			MDR				BKR			MDR			
	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	35.88	35.50	35.69	16.47	19.10	17.78	26.74	64.07	63.87	63.97	34.27	34.23	34.25	49.11
T ₂ : T1- RDF	26.17	26.60	26.38	14.07	13.23	13.65	20.02	53.13	35.17	44.15	29.23	24.73	26.98	35.57
T ₃ : T1- ZnSO ₄ @25 Kg/ha	29.42	30.80	30.11	13.20	15.70	14.45	22.28	56.83	48.60	52.72	28.00	28.87	28.43	40.58
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	30.15	32.77	31.46	12.97	17.83	15.40	23.43	57.03	53.93	55.48	27.00	31.80	29.40	42.44
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	28.31	28.70	28.51	17.37	17.33	17.35	22.93	57.03	49.03	53.03	36.27	30.17	33.22	43.13
T ₆ : T1-Thinning &gap filling	27.13	26.53	26.83	12.73	14.43	13.58	20.21	58.13	50.00	54.07	27.33	27.00	27.17	40.62
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	24.81	26.60	25.71	13.90	13.67	13.78	19.74	47.87	51.43	49.65	29.13	25.37	27.25	38.45
T ₈ : T1-Irrigation	27.50	9.23	18.37	14.37	14.17	14.27	16.32	52.97	25.57	39.27	30.13	26.13	28.13	33.70
CD at 5 %	4.58	5.30		2.77	2.91			6.05	9.39		5.34	5.07		
CV (%)	9.0	11.1		10.9	10.5			6.1	11.3		10.0	10.0		

Table II.67: PMAT 4A1: Influence of of production factors on the growth & yield attributes of pearl millet under irrigated condition during *K2022* in Zone A1

Treatment	Plant height (cm)			Plant population ('000/ha)			Total tillers/plant			Effective tillers/plant			Test wt. (g)		
	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	184.9	167.0	176.0	142.3	110.5	126.4	3.3	4.0	3.7	3.0	2.5	2.7	7.7	10.8	9.2
T ₂ : T1- RDF	195.3	158.3	176.8	143.4	111.0	127.2	3.3	2.8	3.1	2.9	1.7	2.3	7.3	10.7	9.0
T ₃ : T1- ZnSO ₄ @25 Kg/ha	185.7	162.4	174.1	142.3	110.9	126.6	3.7	3.5	3.6	3.2	2.1	2.7	7.9	10.5	9.2
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	182.8	175.1	179.0	140.5	112.9	126.7	3.8	3.9	3.9	3.3	2.3	2.8	7.4	11.0	9.2
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	185.4	161.6	173.5	140.3	110.8	125.5	3.5	3.7	3.6	3.1	2.2	2.7	7.4	10.8	9.1
T ₆ : T1-Thinning &gap filling	176.4	154.6	165.5	141.8	112.8	127.3	3.7	3.3	3.5	3.2	1.9	2.5	7.1	10.5	8.8
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	170.7	156.3	163.5	139.7	113.0	126.4	3.5	2.9	3.2	3.1	1.7	2.4	6.0	10.6	8.3
T ₈ : T1-Irrigation	85.1	155.0	120.0	144.9	113.8	129.4	3.0	3.1	3.0	2.7	1.8	2.2	5.5	11.0	8.2
CD at 5 %	12.9	NS		NS	NS		0.4	0.4		0.3	0.5		0.9	NS	
CV (%)	4.3	5.8		5.7	5.1		7.2	5.9		5.8	15.1		6.9	2.5	

CHAPTER II: AGRONOMY

Table II.68: PMAT 4A1: Influence of of production factors on economics of pearl millet under irrigated condition during *kharif* 2021 and 2022 in Zone A1

Treatment	Gross Return (Rs/ha)						Zonal mean	Net Return (Rs/ha)						Zonal mean	BC Ratio						Zonal mean
	BKR			MDR				BKR			MDR				BKR			MDR			
	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	112774	111741	112258	54183	65425	59804	86031	88774	87741	88258	30183	39195	34689	61473	4.7	4.7	4.7	2.3	2.5	2.4	3.5
T ₂ : T1- RDF	85448	77462	81455	46267	45938	46103	63779	69148	61162	65155	29967	22408	26188	45671	5.2	4.8	5.0	2.8	2.0	2.4	3.7
T ₃ : T1- ZnSO4@25 Kg/ha	94620	93549	94084	43700	54215	48958	71521	73870	72799	73334	22950	31235	27093	50213	4.5	4.5	4.5	2.1	2.4	2.2	3.4
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	96356	100723	98539	42675	60988	51832	75185	72886	77253	75069	19205	35288	27247	51158	4.1	4.3	4.2	1.8	2.4	2.1	3.1
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	92217	89087	90652	57208	58833	58021	74336	68317	65187	66752	33308	32703	33006	49879	3.9	3.7	3.8	2.4	2.3	2.3	3.1
T ₆ : T1-Thinning &gap filling	90117	84721	87419	42317	50118	46218	66818	69617	64221	66919	21817	27388	24603	45761	4.4	4.1	4.3	2.1	2.2	2.1	3.2
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	79761	85601	82681	45842	47337	46589	64635	62761	68601	65681	28842	24107	26474	46077	4.7	5.0	4.9	2.7	2.0	2.4	3.6
T ₈ : T1-Irrigation	88357	33521	60939	47392	48972	48182	54561	64857	10021	37439	23892	26742	25317	31378	3.8	1.4	2.6	2.0	2.2	2.1	2.4
CD at 5 %	11661	12666		8867	9749			11662	12666		8867	9749			0.6	0.6		0.4	NS		
CV (%)	7.1	8.5		10.6	10.2			9.3	11.3		19.1	18.5			7.4	8.7		10.2	10.4		

CHAPTER II: AGRONOMY

Table II.69: PMAT 4A: Influence of of production factors on the grain yield of pearl millet under irrigated condition during kharif 2021 & 2022 in Zone A

Treatment	Grain yield (q/ha)									Zonal mean
	HSR			JMR			JPR			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	47.40	42.79	45.10	24.81	27.97	26.39	36.75	29.67	33.21	34.90
T ₂ : T1- RDF	30.50	29.36	29.93	19.82	15.08	17.45	30.33	23.33	26.83	24.74
T ₃ : T1- ZnSO4@25 Kg/ha	43.71	37.12	40.42	23.69	25.19	24.44	35.31	27.00	31.16	32.00
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	44.48	37.45	40.97	24.15	26.03	25.09	35.98	29.00	32.49	32.85
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	44.33	40.45	42.39	21.63	23.19	22.41	32.06	28.33	30.20	31.67
T ₆ : T1-Thinning &gap filling	40.78	37.36	39.07	20.31	22.78	21.54	27.29	25.33	26.31	28.97
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	32.22	31.13	31.68	19.03	21.55	20.29	28.25	23.00	25.63	25.86
T ₈ : T1-Irrigation	32.81	35.92	34.36	17.06	25.80	21.43	30.83	24.33	27.58	27.79
CD at 5 %	4.69	3.53		4.37	4.29		4.82	3.72		
CV (%)	6.7	5.5		11.6	10.3		8.5	8.0		

Table II.70: PMAT 4A: Influence of of production factors on the stover yield of pearl millet under irrigated condition during kharif 2021 & 2022 in Zone A

Treatment	Stover yield (q/ha)									Zonal mean
	HSR			JMR			JPR			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	116.44	109.85	113.15	57.68	61.06	59.37	91.04	73.33	82.19	84.90
T ₂ : T1- RDF	92.94	87.42	90.18	43.01	43.48	43.24	78.26	57.33	67.80	67.07
T ₃ : T1- ZnSO4@25 Kg/ha	108.92	97.53	103.23	54.34	52.76	53.55	89.57	66.00	77.78	78.19
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	111.06	99.78	105.42	51.87	53.21	52.54	90.75	70.67	80.71	79.56
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	110.98	105.22	108.10	49.96	51.66	50.81	80.40	69.00	74.70	77.87
T ₆ : T1-Thinning &gap filling	106.65	102.19	104.42	45.17	51.99	48.58	70.41	62.33	66.37	73.12
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	96.11	93.73	94.92	49.09	53.13	51.11	72.89	56.33	64.61	70.21
T ₈ : T1-Irrigation	100.93	100.70	100.82	41.85	56.31	49.08	79.55	59.67	69.61	73.17
CD at 5 %	6.86	6.62		7.96	8.23		9.60	9.42		
CV (%)	3.7	3.8		9.2	8.8		6.7	8.3		

CHAPTER II: AGRONOMY

Table II.71: PMAT 4A: Influence of of production factors on the gross returns of pearl millet under irrigated condition during kharif 2021 & 2022 in Zone A

Treatment	Gross Return (Rs/ha)									Zonal mean
	HSR			JMR			JPR			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning & gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	127615	122520	125068	61178	68152	64665	77008	88999	83003	90912
T ₂ : T1- RDF	85354	86488	85921	48242	38856	43549	64185	69412	66799	65423
T ₃ : T1- ZnSO4@25 Kg/ha	117960	106731	112346	58268	60932	59600	74414	80399	77406	83117
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	120078	107964	114021	58674	62702	60688	75717	85849	80783	85164
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	119712	116102	117907	53232	56714	54973	67380	83840	75610	82830
T ₆ : T1-Thinning &gap filling	110946	108234	109590	49652	55958	52805	57749	75996	66873	76423
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	89788	91909	90848	47878	53726	50802	59777	68203	63990	68547
T ₈ : T1-Irrigation	91983	104546	98264	42490	62862	52676	65243	72088	68666	73202

Table II.72: PMAT 4A: Influence of of production factors on the net returns of pearl millet under irrigated condition during kharif 2021 & 2022 in Zone A

Treatment	Net Return (Rs/ha)									Zonal mean
	HSR			JMR			JPR			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	52152	43025	47589	34615	41626	38121	49448	61439	55443	47051
T ₂ : T1- RDF	18156	15336	16746	25093	15751	20422	39185	44412	41799	26322
T ₃ : T1- ZnSO4@25 Kg/ha	44124	30031	37078	32691	37216	34954	47840	53825	50832	40955
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	45196	30218	37707	32732	36611	34672	48778	58910	53844	42074
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	44357	36716	40536	26903	30388	28646	40054	56514	48284	39155
T ₆ : T1-Thinning &gap filling	46385	40420	43402	25769	31182	28476	33189	51436	42313	38064
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	36128	35775	35951	27139	31700	29420	38217	46643	42430	35934
T ₈ : T1-Irrigation	19233	28142	23687	17463	37686	27575	40223	47068	43646	31636

CHAPTER II: AGRONOMY

Table II.73: PMAT 4A: Influence of of production factors on the BC ratio of pearl millet under irrigated condition during kharif 2021 and 2022 in Zone A

Treatment	BC Ratio									Zonal mean
	HSR			JMR			JPR			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	1.41	1.54	1.48	2.30	2.57	2.44	2.79	3.23	3.01	2.31
T ₂ : T1- RDF	1.02	1.22	1.12	2.08	1.68	1.88	2.57	2.78	2.67	1.89
T ₃ : T1- ZnSO4@25 Kg/ha	1.33	1.39	1.36	2.28	2.57	2.43	2.80	3.03	2.91	2.23
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	1.34	1.39	1.36	2.26	2.40	2.33	2.81	3.19	3.00	2.23
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	1.32	1.46	1.39	2.02	2.15	2.09	2.47	3.07	2.77	2.08
T ₆ : T1-Thinning &gap filling	1.42	1.60	1.51	2.08	2.26	2.17	2.35	3.09	2.72	2.13
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	1.35	1.64	1.49	2.31	2.44	2.38	2.77	3.16	2.97	2.28
T ₈ : T1-Irrigation	1.01	1.37	1.19	1.70	2.50	2.10	2.61	2.88	2.74	2.01

CHAPTER II: AGRONOMY

Table II.74: PMAT 4A: Influence of of production factors on growth, total tillers & effective tillers/plant and test weight of pearl millet under irrigated condition during kharif 2022 in Zone A

Treatment	Total tillers/plant				Effective tillers/plant				Test wt. (g)				Plant height (cm)				Plant population ('000/ha)			
	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	3.0	3.7	6.1	4.2	2.5	2.5	3.5	2.8	11.4	9.5	11.9	10.9	190.3	203.2	211.7	201.7	123.4	148.4	167.0	146.3
T ₂ : T ₁ - RDF	2.0	2.8	4.6	3.1	1.6	1.6	2.7	1.9	9.5	8.8	11.0	9.8	171.7	182.3	188.3	180.8	122.7	149.1	168.3	146.7
T ₃ : T ₁ - ZnSO ₄ @25 Kg/ha	2.7	3.1	5.5	3.8	2.0	2.3	3.3	2.5	10.9	9.3	11.6	10.6	186.3	191.7	200.0	192.7	122.2	147.0	168.0	145.7
T ₄ : T ₁ - FeSO ₄ @0.5-.75 at 20-25 DAS	2.6	3.2	5.9	3.9	2.2	2.4	3.2	2.6	11.0	9.3	11.5	10.6	185.7	192.7	198.3	192.2	122.5	148.4	168.0	146.3
T ₅ : T ₁ - Bioinoculant seed treatment (Azoteeka)	2.8	3.0	5.3	3.7	2.3	2.2	3.3	2.6	11.2	9.1	11.5	10.6	186.7	193.0	200.0	193.2	122.8	151.1	170.7	148.2
T ₆ : T ₁ -Thinning &gap filling	2.0	2.9	5.0	3.3	1.6	2.0	2.7	2.1	10.8	8.8	10.8	10.1	191.3	188.3	190.0	189.9	129.1	145.9	173.3	149.5
T ₇ : T ₁ -weeding & hoeing (3-5 weeks after sowing)	2.0	2.7	5.2	3.3	1.7	1.8	2.6	2.0	10.0	8.7	10.8	9.8	177.0	198.8	187.7	187.8	120.8	150.5	167.7	146.3
T ₈ : T ₁ -Irrigation	2.2	3.5	5.0	3.6	1.8	2.5	3.0	2.4	10.4	9.4	11.1	10.3	180.3	193.5	195.0	189.6	121.5	148.0	168.7	146.1
CD at 5 %	0.5	0.4	0.8		0.5	0.3	0.6		1.0	NS	0.7		5.6	4.5	13.9		3.8	NS	NS	
CV (%)	12.4	6.4	9.0		15.4	8.8	10.3		5.2	4.7	3.7		1.7	1.3	4.0		1.8	2.0	4.5	

CHAPTER II: AGRONOMY

Table II.75: PMAT 4b: Influence of of production factors on grain yield of pearl millet under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Grain yield (q/ha)												Zonal mean
	ABD1			DHL			VYP			CBE			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	32.36	31.09	31.73	38.82	32.07	35.45	28.34	25.53	26.94	31.20	33.56	32.38	31.62
T ₂ : T1- RDF	24.12	25.97	25.05	25.57	22.43	24.00	16.54	15.98	16.26	24.85	20.47	22.66	21.99
T ₃ : T1- ZnSO4@25 Kg/ha	25.72	26.57	26.15	35.49	27.70	31.59	23.06	22.00	22.53	28.43	29.72	29.08	27.34
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	29.40	27.57	28.48	34.40	26.26	30.33	26.11	22.19	24.15	29.60	30.53	30.07	28.26
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	27.36	25.65	26.50	36.75	28.80	32.78	25.78	22.33	24.05	29.40	31.77	30.58	28.48
T ₆ : T1-Thinning &gap filling	28.01	17.96	22.99	33.94	25.94	29.94	21.99	20.08	21.04	22.65	25.75	24.20	24.54
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	25.28	21.34	23.31	30.71	25.25	27.98	19.10	15.35	17.22	20.90	20.47	20.69	22.30
T ₈ : T1-Irrigation	25.53	30.58	28.06	29.74	24.30	27.02	22.72	21.25	21.99	21.60	30.52	26.06	25.78
CD at 5 %	NS	4.90		1.53	2.79		3.90	NS		1.48	3.83		
CV (%)	12.2	10.7		2.6	5.9		9.6	17.3		3.2	7.8		

Table II.76: PMAT 4b: Influence of of production factors on stover yield of pearl millet under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Stover yield (q/ha)												Zonal mean
	ABD1			DHL			VYP			CBE			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	60.19	60.19	60.19	66.50	63.19	64.85	59.72	55.84	57.78	52.14	46.41	49.27	58.02
T ₂ : T1- RDF	42.83	50.93	46.88	45.32	43.64	44.48	45.60	41.13	43.37	43.75	32.20	37.97	43.17
T ₃ : T1- ZnSO4@25 Kg/ha	48.61	49.31	48.96	67.69	53.24	60.46	57.17	53.92	55.55	53.09	41.81	47.45	53.11
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	54.86	54.40	54.63	65.03	52.87	58.95	58.34	52.78	55.56	47.51	42.76	45.14	53.57
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	48.84	49.77	49.31	71.52	55.09	63.31	56.71	50.28	53.50	50.62	44.73	47.68	53.45
T ₆ : T1-Thinning &gap filling	53.24	39.81	46.53	66.06	50.77	58.42	51.85	47.53	49.69	42.32	37.15	39.74	48.59
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	46.30	40.51	43.41	59.70	49.64	54.67	47.92	42.78	45.35	32.47	32.66	32.56	44.00
T ₈ : T1-Irrigation	48.61	58.33	53.47	58.83	47.09	52.96	54.86	51.50	53.18	35.46	42.40	38.93	49.64
CD at 5 %	NS	11.87		4.51	4.54		7.80	5.61		4.59	4.85		
CV (%)	11.4	13.3		4.1	4.9		8.2	6.4		5.8	6.9		

CHAPTER II: AGRONOMY

Table II.77: PMAT 4b: Influence of of production factors on gross returns of pearl millet under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Gross Return (Rs/ha)												Zonal mean
	ABD1			DHL			VYP			CBE			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	75373	95723	85548	82959	85229	84094	46758	43409	45083	62400	61687	62044	69192
T ₂ : T1- RDF	55870	80081	67975	54769	59567	57168	27286	27175	27231	49700	38019	43860	49058
T ₃ : T1- ZnSO4@25 Kg/ha	60011	81460	70736	76396	73495	74946	38057	37400	37729	56867	54705	55786	59799
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	68492	85064	76778	74008	69895	71951	43087	37731	40409	59200	56171	57686	61706
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	63415	78993	71204	79222	76410	77816	42529	37961	40245	58796	58477	58637	61975
T ₆ : T1-Thinning &gap filling	65407	56166	60787	73169	68923	71046	36281	34131	35206	45300	47490	46395	53359
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	58763	65579	62171	66188	67085	66636	31506	26094	28800	41800	38065	39933	49385
T ₈ : T1-Irrigation	59636	94008	76822	64188	64531	64359	37488	36132	36810	43200	56118	49659	56913
CD at 5 %	-	15307		-	6853		-	NS		-	-		
CV (%)	-	10.9		-	5.5		-	17.3		-	-		

Table II.78: PMAT 4b: Influence of of production factors on net returns of pearl millet under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Net Return (Rs/ha)												Zonal mean
	ABD1			DHL			VYP			CBE			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	41193	61543	51368	54491	53914	54203	31943	28594	30268	28581	27902	28242	41020
T ₂ : T1- RDF	24971	49181	37076	29784	32084	30934	14792	14681	14737	20235	9243	14739	24371
T ₃ : T1- ZnSO4@25 Kg/ha	26831	48280	37556	48431	42734	45582	25017	24360	24689	23548	24595	24072	32975
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	36312	52884	44598	45893	38969	42431	29042	23686	26364	26306	24006	25156	34637
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	29435	45013	37224	50407	44713	47560	27894	23326	25610	25017	25072	25045	33860
T ₆ : T1-Thinning &gap filling	32727	23486	28107	46608	39705	43157	22466	20316	21391	13731	14905	14318	26743
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	29183	35999	32591	41928	40399	41163	18291	12879	15585	12481	7280	9881	24805
T ₈ : T1-Irrigation	26456	60828	43642	38323	36079	37201	23473	22117	22795	12081	23333	17707	30336
CD at 5 %	-	15307		-	6853		-	NS		-	-		
CV (%)	-	18.4		-	9.4		-	28.4		-	-		

CHAPTER II: AGRONOMY

Table II.79: PMAT 4b: Influence of of production factors on BC ratio of pearl millet under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	BC Ratio												Zonal mean
	ABD1			DHL			VYP			CBE			
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
T ₁ : 100% RDF+ZnSO4-25Kg/ha+FeSO4@0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	2.2	2.80	2.51	2.9	2.72	2.82	3.2	2.93	3.04	1.9	1.83	1.84	2.55
T ₂ : T1- RDF	1.8	2.59	2.20	2.2	2.17	2.18	2.2	2.18	2.18	1.7	1.32	1.51	2.02
T ₃ : T1- ZnSO4@25 Kg/ha	1.8	2.45	2.13	2.7	2.39	2.56	2.9	2.87	2.90	1.7	1.82	1.77	2.34
T ₄ : T1- FeSO4@0.5-.75 at 20-25 DAS	2.1	2.64	2.39	2.6	2.26	2.45	3.1	2.69	2.88	1.8	1.75	1.78	2.37
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	1.9	2.32	2.10	2.7	2.41	2.58	2.9	2.59	2.75	1.7	1.75	1.75	2.29
T ₆ : T1-Thinning &gap filling	2.0	1.72	1.86	2.8	2.36	2.56	2.6	2.47	2.55	1.4	1.46	1.45	2.10
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	2.0	2.22	2.10	2.7	2.51	2.62	2.4	1.98	2.18	1.4	1.24	1.34	2.06
T ₈ : T1-Irrigation	1.8	2.83	2.32	2.5	2.27	2.38	2.7	2.58	2.63	1.4	1.71	1.55	2.22
CD at 5 %	-	0.48		-	0.23		-	NS		-	-		
CV (%)	-	11.0		-	5.5		-	17.2		-	-		

CHAPTER II: AGRONOMY

Table II.80: PMAT 4b: Influence of of production factors on growth and yield attributes of pearl millet under under irrigated condition during kharif 2022 in Zone B

Treatment	Total tillers/plant					Effective tillers/plant					Plant height (cm)				
	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	5.9	4.5	4.1	4.9	4.8	4.8	2.8	3.1	4.4	3.8	182.0	201.3	174.2	192.5	187.5
T ₂ : T1- RDF	4.1	3.8	3.4	3.6	3.7	3.0	2.3	2.3	2.8	2.6	175.9	194.7	158.7	170.1	174.9
T ₃ : T1- ZnSO ₄ @25 Kg/ha	5.0	4.2	4.0	4.1	4.3	4.0	2.5	2.9	3.4	3.2	180.2	200.0	168.2	176.7	181.3
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	4.9	4.1	3.9	4.3	4.3	3.9	2.5	2.9	3.5	3.2	180.6	198.7	170.0	175.4	181.2
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	4.5	4.4	3.9	4.1	4.2	3.5	2.5	2.9	3.4	3.1	179.5	200.3	165.5	176.6	180.5
T ₆ : T1-Thinning &gap filling	3.2	4.1	3.6	4.2	3.8	2.2	2.4	2.5	3.6	2.7	172.3	198.0	158.0	173.3	175.4
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	3.1	4.0	3.3	3.1	3.4	2.0	2.4	2.3	2.6	2.3	169.9	197.3	148.4	165.7	170.3
T ₈ : T1-Irrigation	4.9	4.0	3.9	4.6	4.4	3.9	2.3	2.9	4.1	3.3	181.3	196.3	166.9	189.0	183.4
CD at 5 %	0.6	NS	0.3	0.7		0.7	0.3	0.4	0.7		7.2	NS	11.8	15.4	
CV (%)	8.1	8.7	5.1	10.0		10.8	6.6	7.6	12.0		2.3	2.3	4.1	4.9	

Table II.81: PMAT 4b: Influence of of production factors on growth and yield attributes of pearl millet under under irrigated condition during kharif 2022 in Zone B

Treatment	Plant population ('000/ha)					Test wt. (g)				
	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	219.2	136.3	140.0	150.9	161.6	15.6	12.1	12.1	11.2	12.8
T ₂ : T1- RDF	218.1	133.6	144.0	132.6	157.1	14.3	10.1	10.9	8.8	11.0
T ₃ : T1- ZnSO ₄ @25 Kg/ha	219.0	135.3	139.8	145.9	160.0	14.4	11.8	12.1	10.7	12.2
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	218.3	135.1	140.7	145.6	159.9	15.0	11.5	11.9	10.6	12.2
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	217.1	135.5	139.1	144.8	159.1	15.3	12.0	11.7	10.4	12.4
T ₆ : T1-Thinning &gap filling	218.3	134.7	150.7	135.3	159.7	12.6	11.4	11.6	9.1	11.2
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	219.7	134.3	139.6	124.8	154.6	13.2	11.3	10.7	8.1	10.8
T ₈ : T1-Irrigation	218.8	134.0	137.5	148.6	159.7	14.7	11.1	11.6	10.9	12.1
CD at 5 %	NS	NS	6.4	5.9		1.8	NS	NS	1.9	
CV (%)	0.7	1.2	2.6	2.4		7.2	6.7	6.4	10.5	

CHAPTER II: AGRONOMY

Table II.82: PMAT 4b: Influence of of production factors on available N,P & K after harvest in soil of Dhule Centre of pearl millet under under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Available after harvest (kg/ha)											
	N				P				K			
	Dhule			CBE	Dhule			CBE	Dhule			CBE
	2021	2022	Mean	2022	2021	2022	Mean	2022	2021	2022	Mean	2022
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	184.4	187.5	186.0	164.0	16.8	16.8	16.8	16.0	564.0	572.0	568.0	508.0
T ₂ : T1- RDF	170.2	174.5	172.4	112.0	12.4	16.7	14.6	11.0	544.0	556.0	550.0	452.0
T ₃ : T1- ZnSO ₄ @25 Kg/ha	185.6	186.8	186.2	198.0	17.1	17.0	17.0	20.0	570.0	562.0	566.0	558.0
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	186.1	188.3	187.2	206.0	17.1	16.9	17.0	20.0	574.0	569.0	571.5	569.0
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	185.4	186.8	186.1	218.7	17.0	16.9	17.0	17.7	568.0	560.0	564.0	524.0
T ₆ : T1-Thinning &gap filling	186.6	187.9	187.3	210.0	17.1	17.1	17.1	16.3	579.0	571.0	575.0	519.0
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	188.4	189.7	189.0	186.0	17.2	17.1	17.1	14.3	580.0	573.0	576.5	537.0
T ₈ : T1-Irrigation	189.2	189.9	189.5	182.7	17.3	17.2	17.2	14.3	580.0	573.0	576.5	546.0

Table II.83: PMAT 4b: Influence of of production factors on pH, E.C. and Organic carbon after harvest in soil of Dhule Centre of pearl millet under under irrigated conditions during kharif 2021 and 2022 in Zone B

Treatment	Available after harvest (kg/ha)								
	pH			E.C. (ds/m)			Organic C (%)		
	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
T ₁ : 100% RDF+ZnSO ₄ -25Kg/ha+FeSO ₄ @0.5-.75 at 20-25 DAS+Bioinoculant-Azoteeka +Thinning &gap filling+ weeding & hoeing (3-5 weeks after sowing) + Irrigation	7.92	7.95	7.94	0.43	0.44	0.44	0.54	0.53	0.54
T ₂ : T1- RDF	7.80	7.84	7.82	0.40	0.41	0.41	0.52	0.52	0.52
T ₃ : T1- ZnSO ₄ @25 Kg/ha	7.94	7.96	7.95	0.42	0.43	0.43	0.53	0.53	0.53
T ₄ : T1- FeSO ₄ @0.5-.75 at 20-25 DAS	7.94	7.96	7.95	0.42	0.43	0.43	0.53	0.53	0.53
T ₅ : T1- Bioinoculant seed treatment (Azoteeka)	7.96	7.97	7.97	0.43	0.44	0.44	0.53	0.53	0.53
T ₆ : T1-Thinning &gap filling	7.92	7.93	7.93	0.43	0.44	0.44	0.54	0.53	0.54
T ₇ : T1-weeding & hoeing (3-5 weeks after sowing)	7.92	7.94	7.93	0.43	0.44	0.44	0.54	0.53	0.54
T ₈ : T1-Irrigation	7.94	7.94	7.94	0.45	0.46	0.46	0.56	0.54	0.55

CHAPTER II: AGRONOMY

Table II.84: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on grain yield of pearl millet crop in Zone A1 during *kharif* 2021 and 2022

Treatment		Grain yield (q/ha)						Zonal mean
		BKR			MND			
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	17.77	-	17.77	-	17.10	17.10	17.43
	F2 - 75 % N through RDF + 2.5 t/ha FYM	15.50	-	15.50	-	16.57	16.57	16.03
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	18.27	-	18.27	-	15.73	15.73	17.00
	F4 - 100% N through FYM	18.77	-	18.77	-	15.10	15.10	16.93
	Mean	17.58	-	17.58	-	16.13	16.13	16.85
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	16.63	-	16.63	-	16.43	16.43	16.53
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.33	-	17.33	-	15.47	15.47	16.40
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.53	-	17.53	-	14.90	14.90	16.22
	F4 - 100% N through FYM	16.97	-	16.97	-	14.20	14.20	15.58
	Mean	17.12	-	17.12	-	15.25	15.25	16.18
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	17.70	-	17.70	-	16.00	16.00	16.85
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.60	-	17.60	-	14.73	14.73	16.17
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.10	-	17.10	-	14.30	14.30	15.70
	F4 - 100% N through FYM	18.83	-	18.83	-	13.40	13.40	16.12
	Mean	17.81	-	17.81	-	14.61	14.61	16.21
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	15.03	-	15.03	-	15.17	15.17	15.10
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.27	-	16.27	-	14.27	14.27	15.27
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	14.93	-	14.93	-	13.77	13.77	14.35
	F4 - 100% N through FYM	16.90	-	16.90	-	12.87	12.87	14.88
	Mean	15.78	-	15.78	-	14.02	14.02	14.90
Nutrient supply	F1 - 100% RDF* of the Zones	16.78	-	16.78	-	16.18	16.18	16.48
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.68	-	16.68	-	15.26	15.26	15.97
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.96	-	16.96	-	14.68	14.68	15.82
	F4 - 100% N through FYM	17.87	-	17.87	-	13.89	13.89	15.88
CD (5%)	Tillage	NS	-		-	NS		
	Nutrition	NS	-		-	NS		
	T x N	NS	-		-	NS		
	N x T	NS	-		-	NS		
CV (%)		6.6	-		-	18.3		

CHAPTER II: AGRONOMY

Table II.85: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on stover yield of pearl millet crop in Zone A1 during *kharif* 2021 and 2022

Treatment		Stover yield (q/ha)						Zonal mean
		BKR			MND			
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	24.33	-	24.33	-	33.30	33.30	28.82
	F2 - 75 % N through RDF + 2.5 t/ha FYM	25.73	-	25.73	-	30.87	30.87	28.30
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	28.57	-	28.57	-	29.30	29.30	28.93
	F4 - 100% N through FYM	29.43	-	29.43	-	27.90	27.90	28.67
	Mean	27.02	-	27.02	-	30.34	30.34	28.68
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	29.07	-	29.07	-	29.43	29.43	29.25
	F2 - 75 % N through RDF + 2.5 t/ha FYM	32.20	-	32.20	-	27.17	27.17	29.68
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	22.90	-	22.90	-	26.93	26.93	24.92
	F4 - 100% N through FYM	26.77	-	26.77	-	26.07	26.07	26.42
	Mean	27.73	-	27.73	-	27.40	27.40	27.57
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	32.23	-	32.23	-	28.90	28.90	30.57
	F2 - 75 % N through RDF + 2.5 t/ha FYM	30.23	-	30.23	-	27.80	27.80	29.02
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	26.17	-	26.17	-	27.03	27.03	26.60
	F4 - 100% N through FYM	25.00	-	25.00	-	25.93	25.93	25.47
	Mean	28.41	-	28.41	-	27.42	27.42	27.91
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	29.07	-	29.07	-	27.20	27.20	28.13
	F2 - 75 % N through RDF + 2.5 t/ha FYM	35.13	-	35.13	-	26.03	26.03	30.58
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	28.60	-	28.60	-	25.67	25.67	27.13
	F4 - 100% N through FYM	29.87	-	29.87	-	24.83	24.83	27.35
	Mean	30.67	-	30.67	-	25.93	25.93	28.30
Nutrient supply	F1 - 100% RDF* of the Zones	28.68	-	28.68	-	29.71	29.71	29.19
	F2 - 75 % N through RDF + 2.5 t/ha FYM	30.83	-	30.83	-	27.97	27.97	29.40
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	26.56	-	26.56	-	27.23	27.23	26.90
	F4 - 100% N through FYM	27.77	-	27.77	-	26.18	26.18	26.98
CD (5%)	Tillage	NS	-		-	NS	NS	
	Nutrition	NS	-		-	NS	NS	
	T x N	NS	-		-	NS	NS	
	N x T	NS	-		-	NS	NS	
CV (%)		20.8	-		-	14.6	14.58	

CHAPTER II: AGRONOMY

Table II.86: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on gross returns of pearl millet crop in Zone A1 during *kharif* 2021 and 2022

Treatment		Gross returns (Rs/ha)						Zonal mean
		BKR			MND			
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	36019	-	36019	-	60157	60157	48088
	F2 - 75 % N through RDF + 2.5 t/ha FYM	33653	-	33653	-	57452	57452	45552
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	37906	-	37906	-	54553	54553	46230
	F4 - 100% N through FYM	39237	-	39237	-	52213	52213	45725
	Mean	36704	-	36704	-	56094	56094	46399
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	37354	-	37354	-	56254	56254	46804
	F2 - 75 % N through RDF + 2.5 t/ha FYM	40324	-	40324	-	52635	52635	46479
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	35463	-	35463	-	51173	51173	43318
	F4 - 100% N through FYM	35980	-	35980	-	49024	49024	42502
	Mean	37280	-	37280	-	52272	52272	44776
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	39259	-	39259	-	54952	54952	47106
	F2 - 75 % N through RDF + 2.5 t/ha FYM	38202	-	38202	-	51317	51317	44760
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	36266	-	36266	-	49811	49811	43039
	F4 - 100% N through FYM	37599	-	37599	-	47048	47048	42324
	Mean	37832	-	37832	-	50782	50782	44307
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	35192	-	35192	-	51952	51952	43572
	F2 - 75 % N through RDF + 2.5 t/ha FYM	38836	-	38836	-	49131	49131	43983
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	34613	-	34613	-	47758	47758	41185
	F4 - 100% N through FYM	37819	-	37819	-	45131	45131	41475
	Mean	36615	-	36615	-	48493	48493	42554
Nutrient supply	F1 - 100% RDF* of the Zones	36956	-	36956	-	55829	55829	46392
	F2 - 75 % N through RDF + 2.5 t/ha FYM	37753	-	37753	-	52634	52634	45194
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	36062	-	36062	-	50824	50824	43443
	F4 - 100% N through FYM	37659	-	37659	-	48354	48354	43006
CD (5%)	Tillage	NS	-		-	NS		
	Nutrition	NS	-		-	NS		
	T x N	NS	-		-	NS		
	N x T	NS	-		-	NS		
CV (%)		12.0	-		-	16.3		

CHAPTER II: AGRONOMY

Table II.87: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on net returns of pearl millet crop in Zone A1 during *kharif* 2021 and 2022

Treatment		Net returns (Rs/ha)						Zonal mean
		BKR			MND			
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	15019	-	15019	-	36927	36927	25973
	F2 - 75 % N through RDF + 2.5 t/ha FYM	11653	-	11653	-	33922	33922	22787
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	14906	-	14906	-	31023	31023	22965
	F4 - 100% N through FYM	15837	-	15837	-	28383	28383	22110
	Mean	14354	-	14354	-	32564	32564	23459
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	19854	-	19854	-	32877	32877	26365
	F2 - 75 % N through RDF + 2.5 t/ha FYM	21824	-	21824	-	28959	28959	25391
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	15963	-	15963	-	27497	27497	21730
	F4 - 100% N through FYM	16080	-	16080	-	25048	25048	20564
	Mean	18430	-	18430	-	28595	28595	23513
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	19259	-	19259	-	31429	31429	25344
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17202	-	17202	-	27494	27494	22348
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	14266	-	14266	-	25988	25988	20127
	F4 - 100% N through FYM	15199	-	15199	-	22925	22925	19062
	Mean	16482	-	16482	-	26959	26959	21720
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	18692	-	18692	-	27829	27829	23260
	F2 - 75 % N through RDF + 2.5 t/ha FYM	21336	-	21336	-	25008	25008	23172
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16113	-	16113	-	23635	23635	19874
	F4 - 100% N through FYM	18919	-	18919	-	21008	21008	19964
	Mean	18765	-	18765	-	24370	24370	21567
Nutrient supply	F1 - 100% RDF* of the Zones	18206	-	18206	-	32266	32266	25236
	F2 - 75 % N through RDF + 2.5 t/ha FYM	18003	-	18003	-	28846	28846	23425
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	15312	-	15312	-	27036	27036	21174
	F4 - 100% N through FYM	16509	-	16509	-	24341	24341	20425
CD (5%)	Tillage	NS	-		-	NS		
	Nutrition	NS	-		-	NS		
	T x N	NS	-		-	NS		
	N x T	NS	-		-	NS		
CV (%)		26.1	-		-	30.1		

CHAPTER II: AGRONOMY

Table II.88: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on BC ratio of pearl millet crop in Zone A1 during *kharif* 2021 and 2022

Treatment		BC ratio						Zonal mean
		BKR			MND			
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	1.71	-	1.71	-	2.59	2.59	2.15
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.53	-	1.53	-	2.44	2.44	1.99
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.65	-	1.65	-	2.32	2.32	1.98
	F4 - 100% N through FYM	1.68	-	1.68	-	2.19	2.19	1.93
	Mean	1.64	-	1.64	-	2.39	2.39	2.01
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	2.14	-	2.14	-	2.41	2.41	2.27
	F2 - 75 % N through RDF + 2.5 t/ha FYM	2.18	-	2.18	-	2.23	2.23	2.20
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.82	-	1.82	-	2.16	2.16	1.99
	F4 - 100% N through FYM	1.81	-	1.81	-	2.04	2.04	1.93
	Mean	1.99	-	1.99	-	2.21	2.21	2.10
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	1.96	-	1.96	-	2.34	2.34	2.15
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.82	-	1.82	-	2.16	2.16	1.99
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.65	-	1.65	-	2.09	2.09	1.87
	F4 - 100% N through FYM	1.68	-	1.68	-	1.95	1.95	1.82
	Mean	1.78	-	1.78	-	2.13	2.13	1.96
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	2.13	-	2.13	-	2.15	2.15	2.14
	F2 - 75 % N through RDF + 2.5 t/ha FYM	2.22	-	2.22	-	2.04	2.04	2.13
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.87	-	1.87	-	1.98	1.98	1.93
	F4 - 100% N through FYM	2.00	-	2.00	-	1.87	1.87	1.94
	Mean	2.06	-	2.06	-	2.01	2.01	2.03
Nutrient supply	F1 - 100% RDF* of the Zones	1.99	-	1.99	-	2.37	2.37	2.18
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.94	-	1.94	-	2.22	2.22	2.08
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.75	-	1.75	-	2.14	2.14	1.94
	F4 - 100% N through FYM	1.79	-	1.79	-	2.01	2.01	1.90
CD (5%)	Tillage	NS	-		-	NS		
	Nutrition	NS	-		-	NS		
	T x N	NS	-		-	NS		
	N x T	NS	-		-	NS		
CV (%)		17.4	-		-	16.3		

CHAPTER II: AGRONOMY

Table II.89: PMAT 5a1:Effect of different tillage manipulations and nutrient management practices on yield attributes of pearl millet crop in Mandor center Zone A1 during kharif 2022

Treatment		Mandor (Kharif 2022)				
Tillage Practices	Nutrient Supply	Total tillers/plant	Effective tillers/plant	Test weight (g)	Plant population ('000/ha)	Plant height (cm)
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	3.5	2.2	9.0	108.2	156.7
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.5	2.2	8.2	107.9	154.5
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.5	2.2	9.3	111.0	153.9
	F4 - 100% N through FYM	3.7	2.5	9.0	109.1	155.0
	Mean	3.5	2.3	8.9	109.1	155.0
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	3.4	2.1	8.8	109.3	156.4
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.7	2.5	8.7	109.4	154.1
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.5	2.3	8.8	107.3	151.8
	F4 - 100% N through FYM	3.3	2.0	9.0	105.0	154.6
	Mean	3.5	2.2	8.8	107.7	154.2
MT1- Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	3.6	2.3	8.5	109.2	153.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	4.0	2.9	8.9	107.0	157.3
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.4	2.1	8.6	109.2	155.5
	F4 - 100% N through FYM	3.9	2.7	8.8	107.4	152.2
	Mean	3.7	2.5	8.7	108.2	154.7
MT2- Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	3.8	2.6	9.2	109.6	153.0
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.5	2.2	8.7	107.0	149.5
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.7	2.5	8.2	111.0	153.8
	F4 - 100% N through FYM	3.7	2.5	8.3	108.9	152.1
	Mean	3.7	2.5	8.6	109.1	152.1
Nutrient supply	F1 - 100% RDF* of the Zones	3.6	2.3	8.9	109.1	155.0
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.7	2.5	8.6	107.9	153.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.5	2.3	8.7	109.6	153.8
	F4 - 100% N through FYM	3.7	2.4	8.8	107.6	153.5
CD (5%)	Tillage	NS	NS	NS	NS	NS
	Nutrition	NS	NS	NS	NS	NS
	T x N	NS	NS	NS	NS	NS
	N x T	NS	NS	NS	NS	NS
CV (%)		3.8	13.1	5.2	5.3	3.8

CHAPTER II: AGRONOMY

Table II.90: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the grain yield of pearl millet crop in Zone A during *kharif* 2020, 2021 and 2022

Treatment		Grain yield (q/ha)												Zonal Mean
		HSR				JMR				JPR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	27.08	30.84	29.36	29.09	14.70	18.17	34.35	22.41	43.32	42.70	30.57	38.87	30.12
	F2 - 75 % N through RDF + 2.5 t/ha FYM	24.63	32.37	31.89	29.63	15.76	19.94	30.89	22.20	39.96	44.00	32.40	38.79	30.20
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	23.30	28.25	30.79	27.45	15.14	18.36	30.14	21.21	39.38	37.85	28.41	35.21	27.96
	F4 - 100% N through FYM	21.13	27.79	27.23	25.38	14.24	14.54	25.17	17.98	38.69	35.70	21.42	31.94	25.10
	Mean	24.03	29.81	29.82	27.89	14.96	17.75	30.14	20.95	40.34	40.06	28.20	36.20	28.35
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	25.51	27.81	27.90	27.07	13.79	13.98	28.81	18.86	40.66	41.58	27.48	36.58	27.50
	F2 - 75 % N through RDF + 2.5 t/ha FYM	22.11	27.85	27.27	25.74	14.88	16.03	25.69	18.87	38.69	37.25	26.09	34.01	26.21
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	20.71	25.59	25.54	23.95	14.00	14.81	24.50	17.77	41.03	37.33	26.33	34.90	25.54
	F4 - 100% N through FYM	19.00	24.81	25.86	23.22	12.27	11.19	20.51	14.66	37.18	35.67	29.48	34.11	24.00
	Mean	21.83	26.52	26.64	25.00	13.74	14.00	24.88	17.54	39.39	37.96	27.35	34.90	25.81
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	24.69	29.39	28.89	27.66	14.68	13.18	30.97	19.61	43.51	42.57	29.65	38.57	28.61
	F2 - 75 % N through RDF + 2.5 t/ha FYM	21.46	31.02	27.30	26.60	15.59	18.20	28.44	20.74	41.01	41.12	24.96	35.70	27.68
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	20.56	27.60	27.51	25.22	15.22	14.83	26.20	18.75	37.90	39.75	25.88	34.51	26.16
	F4 - 100% N through FYM	18.51	26.32	25.99	23.61	13.72	11.67	20.13	15.17	37.07	34.87	20.11	30.68	23.16
	Mean	21.31	28.58	27.42	25.77	14.80	14.47	26.43	18.57	39.87	39.58	25.15	34.87	26.40
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	22.40	26.98	25.71	25.03	13.13	11.31	25.38	16.61	40.31	36.35	20.72	32.46	24.70
	F2 - 75 % N through RDF + 2.5 t/ha FYM	19.78	26.64	26.49	24.30	14.00	14.67	24.51	17.73	39.85	34.20	20.10	31.38	24.47
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	19.26	25.03	23.38	22.56	13.79	12.68	23.61	16.69	36.84	39.75	20.98	32.52	23.93
	F4 - 100% N through FYM	16.79	23.90	23.74	21.48	12.60	11.02	21.35	14.99	36.37	35.75	20.45	30.86	22.44
	Mean	19.56	25.64	24.83	23.34	13.38	12.42	23.72	16.51	38.34	36.51	20.56	31.81	23.88
Nutrient supply	F1 - 100% RDF* of the Zones	24.92	28.75	27.97	27.21	14.08	14.16	29.88	19.37	41.95	40.80	27.11	36.62	27.73
	F2 - 75 % N through RDF + 2.5 t/ha FYM	22.00	29.47	28.24	26.57	15.06	17.21	27.38	19.88	39.88	39.14	25.89	34.97	27.14
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	20.96	26.62	26.81	24.79	14.54	15.17	26.11	18.61	38.79	38.67	25.40	34.29	25.90
	F4 - 100% N through FYM	18.86	25.71	25.71	23.42	13.21	12.11	21.79	15.70	37.33	35.50	22.87	31.90	23.67
CD (5%)	Tillage	1.30	2.19	1.45		NS	2.31	3.60		NS	2.28	3.32		
	Nutrition	1.12	1.77	1.66		1.24	1.69	2.81		2.70	1.84	2.00		
	T x N	NS	NS	NS		NS	NS	NS		NS	3.88	4.31		
	N x T	NS	NS	NS		NS	NS	NS		NS	3.91	4.78		
CV (%)		6.1	7.6	7.2		10.3	13.6	12.6		8.1	5.7	9.3		

CHAPTER II: AGRONOMY

Table II.91: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the stover yield of pearl millet crop in Zone A during *kharif* 2020, 2021 and 2022

Treatment		Stover yield (q/ha)												Zonal Mean
		HSR				JMR				JPR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	56.79	77.56	73.72	69.36	26.86	35.86	57.10	39.94	108.31	92.56	78.12	93.00	67.43
	F2 - 75 % N through RDF + 2.5 t/ha FYM	54.82	83.52	75.86	71.40	29.18	39.11	54.36	40.88	98.32	95.42	82.82	92.19	68.16
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	50.86	73.40	74.28	66.18	27.26	36.26	55.70	39.74	99.80	88.52	72.59	86.97	64.30
	F4 - 100% N through FYM	49.96	74.53	72.12	65.54	26.11	32.90	49.15	36.05	95.53	80.98	55.69	77.40	59.66
	Mean	53.11	77.25	73.99	68.12	27.35	36.03	54.08	39.15	100.49	89.37	72.31	87.39	64.89
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	51.30	73.32	69.20	64.61	24.42	31.64	51.28	35.78	103.57	92.13	70.27	88.65	63.01
	F2 - 75 % N through RDF + 2.5 t/ha FYM	47.75	74.25	71.88	64.63	26.19	34.75	48.64	36.53	98.88	82.93	66.78	82.86	61.34
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	45.07	70.70	70.66	62.14	25.79	33.00	50.66	36.48	97.76	90.54	67.15	85.15	61.26
	F4 - 100% N through FYM	44.92	73.61	66.95	61.82	23.37	30.15	45.46	32.99	90.05	81.62	75.34	82.34	59.05
	Mean	47.26	72.97	69.67	63.30	24.94	32.39	49.01	35.45	97.56	86.80	69.88	84.75	61.17
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	53.33	74.72	72.15	66.73	25.70	33.30	54.70	37.90	110.75	95.40	75.81	93.99	66.21
	F2 - 75 % N through RDF + 2.5 t/ha FYM	49.05	78.49	75.04	67.53	28.63	36.44	49.18	38.08	91.96	90.51	63.83	82.10	62.57
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	48.66	75.45	73.59	65.90	26.81	34.40	51.18	37.46	102.57	89.06	66.23	85.95	63.10
	F4 - 100% N through FYM	47.86	75.42	69.43	64.24	25.28	31.32	47.19	34.60	92.11	79.46	51.38	74.32	57.72
	Mean	49.73	76.02	72.55	66.10	26.61	33.86	50.56	37.01	99.35	88.61	64.32	84.09	62.40
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	48.24	67.70	66.09	60.68	23.71	27.87	47.85	33.14	102.66	85.54	52.92	80.37	58.06
	F2 - 75 % N through RDF + 2.5 t/ha FYM	45.93	69.51	69.83	61.76	26.61	32.11	43.37	34.03	101.40	82.17	51.45	78.34	58.04
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	44.20	66.59	66.12	58.97	24.98	29.81	46.04	33.61	93.77	86.31	53.66	77.91	56.83
	F4 - 100% N through FYM	40.43	67.96	64.10	57.50	22.98	27.59	41.03	30.53	90.15	90.04	52.24	77.48	55.17
	Mean	44.70	67.94	66.54	59.73	24.57	29.35	44.57	32.83	96.99	86.02	52.57	78.53	57.03
Nutrient supply	F1 - 100% RDF* of the Zones	52.42	73.32	70.29	65.34	25.17	32.17	52.73	36.69	106.32	91.41	69.28	89.00	63.68
	F2 - 75 % N through RDF + 2.5 t/ha FYM	49.39	76.44	73.15	66.33	27.65	35.61	48.89	37.38	97.64	87.76	66.22	83.87	62.53
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	47.20	71.54	71.16	63.30	26.21	33.37	50.89	36.82	98.48	88.61	64.91	84.00	61.37
	F4 - 100% N through FYM	45.79	72.88	68.15	62.27	24.44	30.49	45.71	33.54	91.96	83.02	58.66	77.88	57.90
CD (5%)	Tillage	2.87	4.83	4.78		NS	3.82	5.11		NS	NS	7.63		
	Nutrition	4.59	3.10	2.11		2.17	1.90	2.59		7.62	5.21	4.89		
	T x N	NS	NS	NS		NS	NS	NS		NS	NS	10.48		
	N x T	NS	NS	NS		NS	NS	NS		NS	NS	11.35		
CV (%)		11.1	5.0	3.5		9.9	6.8	6.2		9.1	7.0	8.9		

CHAPTER II: AGRONOMY

Table II.92: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the WUE of pearl millet crop in Zone A during *kharif* 2020, 2021 and 2022

Treatment		Water Use Efficiency (Kg/ha-cm)										Zone Mean
		HSR				JMR		JPR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	101.9	70.5	95.2	89.2	45.9	45.9	105.7	85.9	56.3	82.6	72.6
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	97.1	65.3	104.8	89.1	49.2	49.2	97.0	88.5	59.7	81.7	73.3
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	91.2	63.3	101.9	85.5	47.3	47.3	96.0	76.1	52.3	74.8	69.2
	F ₄ - 100% N through FYM	86.1	58.3	91.4	78.6	44.5	44.5	94.0	71.8	39.4	68.4	63.8
	Mean	94.1	64.4	98.4	85.6	46.7	46.7	98.2	80.6	51.9	76.9	69.7
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	95.0	65.5	89.0	83.2	43.1	43.1	98.3	83.7	50.6	77.5	67.9
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	83.9	57.7	88.1	76.6	46.5	46.5	93.3	75.0	48.0	72.1	65.1
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	80.1	55.3	83.5	73.0	43.7	43.7	99.3	75.1	48.5	74.3	63.7
	F ₄ - 100% N through FYM	74.0	51.8	85.6	70.4	38.3	38.3	89.3	71.8	54.3	71.8	60.2
	Mean	83.3	57.6	86.6	75.8	42.9	42.9	95.1	76.4	50.4	73.9	64.2
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	85.7	67.5	93.0	82.1	45.9	45.9	104.0	85.7	54.6	81.4	69.8
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	75.8	61.1	89.0	75.3	48.7	48.7	98.3	82.7	46.0	75.7	66.6
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	72.7	58.7	90.2	73.9	47.5	47.5	92.0	80.0	47.7	73.2	64.9
	F ₄ - 100% N through FYM	66.0	54.6	86.0	68.8	42.8	42.8	90.0	70.2	37.0	65.7	59.1
	Mean	75.0	60.5	89.6	75.0	46.2	46.2	96.1	79.6	46.3	74.0	65.1
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	77.4	59.8	81.6	72.9	41.0	41.0	97.7	73.1	38.1	69.7	61.2
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	68.0	54.4	85.2	69.2	43.7	43.7	96.3	68.8	37.0	67.4	60.1
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	66.4	53.8	75.8	65.3	43.1	43.1	88.3	80.0	38.6	69.0	59.1
	F ₄ - 100% N through FYM	58.0	47.7	79.2	61.6	39.4	39.4	87.7	71.9	37.7	65.8	55.6
	Mean	67.4	53.9	80.5	67.3	41.8	41.8	92.5	73.5	37.9	67.9	59.0
Nutrient supply	F ₁ - 100% RDF* of the Zones	90.0	65.8	89.7	81.8	44.0	44.0	101.4	82.1	49.9	77.8	67.9
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	81.2	59.6	91.7	77.5	47.0	47.0	96.3	78.8	47.7	74.2	66.3
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	77.6	57.8	87.8	74.4	45.4	45.4	93.9	77.8	46.8	72.8	64.2
	F ₄ - 100% N through FYM	71.0	53.1	85.5	69.9	41.2	41.2	90.3	71.4	42.1	67.9	59.7
CD (5%)	Tillage	-	-	-		-		-	4.6	6.1		
	Nutrition	-	-	-		-		-	3.7	3.7		
	T x N	-	-	-		-		-	7.8	7.9		
	N x T	-	-	-		-		-	7.9	8.8		
CV (%)		-	-	-		-		-	5.7	9.3		

CHAPTER II: AGRONOMY

Table II.93: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the plant population, test weight and plant height of pearl millet crop in Zone A during *kharif* 2022

Treatment		Plant population ('000/ha)				Plant height (cm)				Test weight (g)			
Tillage Practices	Nutrient Supply	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean
CT1 - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	129.0	157.7	167.0	151.2	181.7	184.0	199.3	188.3	8.5	10.2	10.8	9.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	131.7	158.8	166.0	152.2	185.0	181.5	193.3	186.6	8.7	8.8	11.7	9.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	130.3	157.7	172.3	153.5	180.0	178.7	186.7	181.8	8.4	9.4	11.5	9.8
	F4 - 100% N through FYM	130.0	158.3	169.0	152.4	178.3	174.0	187.7	180.0	8.2	8.3	11.2	9.3
	Mean	130.3	158.1	168.6	152.3	181.3	179.5	191.8	184.2	8.4	9.1	11.3	9.6
CT2 - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	129.7	158.8	167.7	152.1	178.3	179.6	198.7	185.5	8.3	9.4	11.2	9.6
	F2 - 75 % N through RDF + 2.5 t/ha FYM	130.0	157.4	169.0	152.1	181.7	176.5	200.0	186.1	8.4	8.4	11.4	9.4
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	129.3	158.8	172.0	153.4	177.0	174.6	193.3	181.6	8.2	9.1	11.7	9.6
	F4 - 100% N through FYM	129.3	159.4	168.3	152.3	175.0	170.1	175.3	173.5	8.1	8.2	11.2	9.1
	Mean	129.6	158.6	169.3	152.5	178.0	175.2	191.8	181.7	8.3	8.8	11.4	9.5
MT1 -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	128.7	158.8	164.3	150.6	173.3	179.9	188.3	180.5	8.1	9.4	12.1	9.9
	F2 - 75 % N through RDF + 2.5 t/ha FYM	129.3	155.8	166.3	150.5	177.7	178.3	190.0	182.0	8.2	8.7	11.5	9.5
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	129.0	157.7	177.0	154.6	172.7	176.1	182.7	177.1	8.1	9.0	11.5	9.5
	F4 - 100% N through FYM	128.3	157.2	168.3	151.3	169.3	172.5	183.3	175.1	8.0	8.3	10.7	9.0
	Mean	128.8	157.4	169.0	151.7	173.3	176.7	186.1	178.7	8.1	8.9	11.5	9.5
MT2 -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	128.3	159.4	169.3	152.3	169.0	170.9	186.0	175.3	8.0	8.5	11.3	9.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	128.7	156.9	165.7	150.4	172.7	169.7	196.0	179.5	8.1	8.2	11.1	9.1
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	127.7	159.1	166.3	151.0	169.7	167.5	187.7	174.9	8.0	8.4	10.9	9.1
	F4 - 100% N through FYM	126.7	157.4	169.0	151.0	168.0	164.9	182.7	171.8	7.9	8.1	11.7	9.2
	Mean	127.8	158.2	167.6	151.2	169.8	168.3	188.1	175.4	8.0	8.3	11.2	9.2
Nutrient supply	F1 - 100% RDF* of the Zones	128.9	158.7	167.1	151.6	175.6	178.6	193.1	182.4	8.2	9.4	11.3	9.6
	F2 - 75 % N through RDF + 2.5 t/ha FYM	129.9	157.2	166.8	151.3	179.3	176.5	194.8	183.5	8.3	8.5	11.4	9.4
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	129.1	158.3	171.9	153.1	174.8	174.2	187.6	178.9	8.2	9.0	11.4	9.5
	F4 - 100% N through FYM	128.6	158.1	168.7	151.8	172.7	170.4	182.3	175.1	8.1	8.2	11.2	9.2
	Mean	129.1	158.1	168.4	151.7	175.4	176.4	191.3	183.4	8.2	8.8	11.4	9.4
CD (5%)	Tillage	1.2	NS	NS		7.6	5.9	NS		0.1	0.5	NS	
	Nutrition	NS	NS	NS		3.7	3.2	8.8		0.2	0.4	NS	
	T x N	NS	NS	NS		NS	NS	NS		NS	NS	0.6	
	N x T	NS	NS	NS		NS	NS	NS		NS	NS	0.7	
CV (%)		1.2	1.2	5.3		2.5	2.2	5.5		2.7	0.5	2.7	

CHAPTER II: AGRONOMY

Table II.94: PMAT 5a: Effect of different tillage manipulations and nutrient management practices on the total water use, total & effective tillers/plant of pearl millet crop in Zone A during *kharif* 2022

Treatment		Water Use (mm)					Zonal Mean	Total tillers/plant				Effective tillers/plant			
		HSR			JPR			HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	Mean		HSR	JMR	JPR	Mean	HSR	JMR	JPR	Mean
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	383.9	308.3	346.1	401.5	401.5	373.8	3.0	5.1	6.0	4.7	2.7	3.7	3.3	3.2
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	377.2	304.4	340.8	404.4	404.4	372.6	3.3	4.6	5.8	4.6	2.8	3.2	2.8	2.9
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	367.8	302.1	334.9	403.9	403.9	369.4	3.0	4.7	5.0	4.2	2.6	3.1	2.4	2.7
	F ₄ - 100% N through FYM	362.3	297.8	330.1	405.6	405.6	367.8	2.9	4.5	4.7	4.0	2.4	2.9	2.4	2.6
	Mean	372.8	303.1	338.0	403.8	403.8	370.9	3.1	4.7	5.4	4.4	2.6	3.2	2.8	2.9
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	389.5	313.4	351.4	403.0	403.0	377.2	2.9	4.8	4.5	4.1	2.6	3.3	3.0	2.9
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	383.2	309.5	346.4	402.5	402.5	374.4	3.0	4.3	4.4	3.9	2.7	2.9	2.6	2.7
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	374.3	305.7	340.0	402.1	402.1	371.1	2.7	4.5	5.5	4.2	2.5	3.1	3.6	3.0
	F ₄ - 100% N through FYM	367.0	302.3	334.6	405.2	405.2	369.9	2.6	4.1	5.7	4.1	2.4	2.7	2.4	2.5
	Mean	378.5	307.7	343.1	403.2	403.2	373.2	2.8	4.5	5.0	4.1	2.5	3.0	2.9	2.8
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	365.7	310.8	338.2	403.5	403.5	370.9	2.9	4.9	5.2	4.3	2.7	3.4	2.9	3.0
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	351.3	306.6	329.0	405.0	405.0	367.0	3.0	4.5	4.0	3.8	2.8	3.0	2.6	2.8
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	350.3	304.9	327.6	402.1	402.1	364.8	2.9	4.7	5.0	4.2	2.6	3.2	3.1	3.0
	F ₄ - 100% N through FYM	339.1	302.3	320.7	401.5	401.5	361.1	2.8	4.4	4.1	3.8	2.5	2.8	2.3	2.5
	Mean	351.6	306.1	328.9	403.0	403.0	365.9	2.9	4.6	4.6	4.0	2.6	3.1	2.7	2.8
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	374.7	315.2	344.9	399.5	399.5	372.2	2.6	4.5	5.3	4.1	2.3	3.1	2.8	2.7
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	363.7	310.9	337.3	400.3	400.3	368.8	2.7	4.3	4.3	3.8	2.5	2.7	2.2	2.5
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	358.2	308.3	333.3	399.0	399.0	366.1	2.6	4.4	4.9	4.0	2.3	2.8	2.4	2.5
	F ₄ - 100% N through FYM	351.9	299.6	325.8	402.3	402.3	364.0	2.5	4.0	3.6	3.3	2.2	2.5	2.1	2.3
	Mean	362.2	308.5	335.3	400.3	400.3	367.8	2.6	4.3	4.5	3.8	2.4	2.8	2.4	2.5
Nutrient supply	F ₁ - 100% RDF* of the Zones	378.4	311.9	345.2	401.9	401.9	373.5	2.9	4.8	5.2	4.3	2.6	3.4	3.0	3.0
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	368.9	307.8	338.4	403.0	403.0	370.7	3.0	4.5	4.7	4.0	2.7	2.9	2.5	2.7
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	362.7	305.2	333.9	401.8	401.8	367.9	2.8	4.6	5.1	4.2	2.5	3.1	2.9	2.8
	F ₄ - 100% N through FYM	355.1	300.5	327.8	403.7	403.7	365.7	2.7	4.3	4.5	3.8	2.4	2.7	2.3	2.5
CD (5%)	Tillage	-	-		-			0.2	0.3	0.4		0.2	0.3	0.3	
	Nutrition	-	-		-			0.2	0.2	0.6		0.1	0.2	0.4	
	T x N	-	-		-			NS	NS	1.2		NS	NS	NS	
	N x T	-	-		-			NS	NS	1.1		NS	NS	NS	
CV (%)		-	-		-			6.3	6.1	14.1		6.7	7.2	16.9	

CHAPTER II: AGRONOMY

Table II.95: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the bulk density and available N in soil after harvest of pearl millet crop in Zone A during *kharif* 2020, 2021 and 2022

Treatment		Soil physico- chemical properties															
		Bulk density (g/cc)							Zonal mean	Av. N (kg/ha)							Zonal mean
										HSR				JMR			
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2021	2022	Mean		2020	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	1.38	1.41	1.42	1.40	1.38	1.53	1.46	1.43	132.0	134.0	135.0	133.7	170.0	173.3	171.7	152.7
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.39	1.40	1.38	1.39	1.34	1.51	1.43	1.41	133.0	136.7	137.0	135.6	174.0	178.0	176.0	155.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.39	1.37	1.35	1.37	1.33	1.50	1.41	1.39	133.0	138.3	138.5	136.6	171.0	175.0	173.0	154.8
	F4 - 100% N through FYM	1.40	1.36	1.34	1.37	1.32	1.46	1.39	1.38	134.0	140.7	142.0	138.9	170.3	177.0	173.7	156.3
	Mean	1.39	1.39	1.34	1.37	1.34	1.50	1.42	1.40	133.0	137.4	138.1	136.2	171.3	175.8	173.6	154.9
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	1.38	1.40	1.42	1.40	1.39	1.55	1.47	1.44	131.0	135.0	136.0	134.0	173.0	174.7	173.8	153.9
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.39	1.39	1.39	1.39	1.36	1.53	1.45	1.42	133.0	137.7	138.0	136.2	176.0	180.0	178.0	157.1
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.39	1.38	1.36	1.38	1.35	1.51	1.43	1.40	134.0	138.7	140.5	137.7	173.0	177.0	175.0	156.4
	F4 - 100% N through FYM	1.39	1.37	1.35	1.37	1.34	1.48	1.41	1.39	135.0	141.0	142.0	139.3	174.3	178.7	176.5	157.9
	Mean	1.39	1.39	1.36	1.38	1.36	1.52	1.44	1.41	133.3	138.1	139.1	136.8	174.1	177.6	175.8	156.3
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	1.38	1.39	1.40	1.39	1.40	1.56	1.48	1.44	133.0	135.3	136.5	134.9	177.0	182.3	179.7	157.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.38	1.38	1.37	1.38	1.38	1.55	1.47	1.42	135.0	138.3	140.0	137.8	179.0	188.0	183.5	160.6
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.39	1.38	1.36	1.38	1.37	1.51	1.44	1.41	135.0	139.3	141.5	138.6	181.0	185.3	183.2	160.9
	F4 - 100% N through FYM	1.39	1.38	1.35	1.37	1.36	1.49	1.43	1.40	136.0	141.7	143.0	140.2	184.7	186.0	185.3	162.8
	Mean	1.39	1.38	1.38	1.38	1.38	1.53	1.45	1.42	134.8	138.7	140.3	137.9	180.4	185.4	182.9	160.4
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	1.37	1.38	1.40	1.38	1.42	1.46	1.44	1.41	134.0	136.0	138.0	136.0	180.0	185.0	182.5	159.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.37	1.37	1.37	1.37	1.39	1.42	1.41	1.39	135.0	138.7	140.0	137.9	182.0	190.0	186.0	161.9
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.38	1.36	1.36	1.37	1.38	1.40	1.39	1.38	136.0	140.0	142.5	139.5	183.0	187.0	185.0	162.3
	F4 - 100% N through FYM	1.39	1.39	1.37	1.38	1.37	1.38	1.38	1.38	136.0	142.3	145.0	141.1	186.7	190.7	188.7	164.9
	Mean	1.38	1.38	1.39	1.38	1.39	1.42	1.40	1.39	135.3	139.3	141.4	138.6	182.9	188.2	185.5	162.1
Nutrient supply	F1 - 100% RDF* of the Zones	1.38	1.40	1.40	1.39	1.40	1.53	1.46	1.43	132.5	135.1	136.4	134.7	175.0	178.8	176.9	155.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.38	1.39	1.37	1.38	1.37	1.50	1.44	1.41	134.0	137.8	138.8	136.9	177.8	184.0	180.9	158.9
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.39	1.37	1.36	1.37	1.36	1.48	1.42	1.40	134.5	139.1	140.8	138.1	177.0	181.1	179.0	158.6
	F4 - 100% N through FYM	1.39	1.38	1.35	1.37	1.35	1.46	1.40	1.39	135.3	141.4	143.0	139.9	179.0	183.1	181.0	160.5
Initial status before sowing		1.38								133.0							
CD (5%)	Tillage	NS	NS	-		NS	0.05			NS	NS	-		3.0	2.1		
	Nutrition	NS	NS	-		0.03	0.03			NS	2.4	-		2.4	2.9		
	T x N	NS	NS	-		NS	NS			NS	NS	-		NS	NS		
	N x T	NS	NS	-		NS	NS			NS	NS	-		NS	NS		
CV (%)		2.3	2.3	-		2.3	3.0			4.3	2.0	-		1.6	1.9		

CHAPTER II: AGRONOMY

Table II.96: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the available P and K in soil after harvest of pearl millet crop in Zone A during kharif 2020, 2021 and 2022

Treatment		Soil physico- chemical properties															
		Av. P (kg/ha)							Zonal mean	Av. K (kg/ha)							Zonal mean
		HSR				JMR				HSR				JMR			
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2021	2022	Mean		2020	2021	2022	Mean	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	15.70	15.80	16.00	15.83	16.62	19.57	18.10	16.96	190.0	192.5	194.0	192.2	250.0	272.7	261.3	226.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.00	16.20	16.20	16.13	16.34	19.34	17.84	16.99	193.0	196.2	198.0	195.7	264.0	280.7	272.3	234.0
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.10	16.30	16.40	16.27	15.19	18.67	16.93	16.60	193.3	197.3	200.5	197.1	273.0	288.3	280.7	238.9
	F4 - 100% N through FYM	16.30	16.53	16.50	16.44	15.55	18.69	17.12	16.78	193.7	199.2	202.0	198.3	282.0	293.3	287.7	243.0
	Mean	16.03	16.21	16.28	16.17	15.92	19.07	17.50	16.83	192.5	196.3	198.6	195.8	267.3	283.8	275.5	235.7
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	15.90	16.00	16.10	16.00	17.09	19.70	18.40	17.20	191.0	194.0	195.0	193.3	262.0	274.7	268.3	230.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.00	16.30	16.40	16.23	16.62	20.30	18.46	17.35	192.7	195.0	198.5	195.4	267.0	290.3	278.7	237.0
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.20	16.50	16.50	16.40	16.12	19.48	17.80	17.10	193.7	198.2	202.5	198.1	278.0	292.7	285.3	241.7
	F4 - 100% N through FYM	16.30	16.60	16.70	16.53	15.90	19.43	17.66	17.10	195.0	197.0	203.0	198.3	289.0	303.0	296.0	247.2
	Mean	16.10	16.35	16.43	16.29	16.43	19.73	18.08	17.19	193.1	196.0	199.8	196.3	274.0	290.2	282.1	239.2
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	16.00	16.30	16.50	16.27	16.07	19.34	17.70	16.99	192.0	194.5	196.5	194.3	264.0	287.7	275.8	235.1
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.10	16.13	16.56	16.26	16.56	19.81	18.18	17.22	193.0	196.5	199.5	196.3	273.0	291.0	282.0	239.2
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.10	16.30	16.70	16.37	16.19	19.03	17.61	16.99	193.7	197.7	203.0	198.1	285.0	302.3	293.7	245.9
	F4 - 100% N through FYM	16.30	16.50	16.80	16.53	17.03	19.65	18.34	17.44	194.7	199.7	204.5	199.6	293.0	306.0	299.5	249.6
	Mean	16.13	16.31	16.46	16.30	16.46	19.46	17.96	17.13	193.3	197.1	200.9	197.1	278.8	296.8	287.8	242.4
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	16.00	16.20	16.60	16.27	16.05	19.91	17.98	17.12	192.7	195.2	196.5	194.8	275.0	290.3	282.7	238.7
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.20	16.10	16.70	16.33	16.68	20.18	18.43	17.38	194.3	198.3	199.5	197.4	276.0	300.3	288.2	242.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.40	16.40	16.80	16.53	16.97	20.09	18.53	17.53	194.7	199.7	203.5	199.3	287.0	304.0	295.5	247.4
	F4 - 100% N through FYM	16.41	16.60	17.00	16.67	16.05	19.77	17.91	17.29	195.0	200.0	205.0	200.0	297.0	311.0	304.0	252.0
	Mean	16.25	16.33	16.78	16.45	16.44	19.99	18.21	17.33	194.2	198.3	201.1	197.9	283.8	301.4	292.6	245.2
Nutrient supply	F1 - 100% RDF* of the Zones	15.90	16.08	16.30	16.09	16.46	19.63	18.04	17.07	191.4	194.0	195.5	193.7	262.8	281.3	272.0	232.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	16.08	16.18	16.55	16.27	16.55	19.91	18.23	17.25	193.3	196.5	198.9	196.2	270.0	290.6	280.3	238.3
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	16.20	16.38	16.12	16.23	16.12	19.32	17.72	16.97	193.8	198.2	202.4	198.1	280.8	296.8	288.8	243.5
	F4 - 100% N through FYM	16.33	16.56	16.13	16.34	16.13	19.39	17.76	17.05	194.6	199.0	203.6	199.1	290.3	303.3	296.8	247.9
Initial status before sowing		16.00								192.0							
CD (5%)	Tillage	NS	NS	-		NS	0.58			NS	NS	-		5.1	9.5		
	Nutrition	NS	NS	-		NS	NS			NS	NS	-		10.6	6.8		
	T x N	NS	NS	-		0.91	NS			NS	NS	-		NS	NS		
	N x T	NS	NS	-		0.88	NS			NS	NS	-		NS	NS		
CV (%)		3.0	2.8	-		3.2	3.5			3.1	2.9	-		4.5	2.7		

CHAPTER II: AGRONOMY

Table II.97: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the soil chemical properties of pearl millet crop after harvest of Hisar in Zone A during *kharif* 2020, 2021 and 2022

Treatment		Soil chemical properties											
		EC (dS/m)				pH				OC (%)			
Tillage Practices	Nutrient Supply	HSR											
		2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	0.27	0.29	0.30	0.29	8.0	8.2	8.3	8.2	0.34	0.33	0.32	0.33
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.29	0.31	0.32	0.31	7.9	8.1	8.0	8.0	0.35	0.36	0.37	0.36
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.28	0.30	0.32	0.30	7.8	8.0	7.9	7.9	0.35	0.37	0.39	0.37
	F4 - 100% N through FYM	0.29	0.31	0.33	0.31	7.8	7.9	7.7	7.8	0.36	0.38	0.40	0.38
	Mean	0.28	0.30	0.32	0.30	7.9	8.1	8.0	8.0	0.35	0.36	0.37	0.36
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	0.28	0.31	0.32	0.30	8.0	8.1	8.2	8.1	0.35	0.34	0.33	0.34
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.30	0.33	0.34	0.32	7.9	8.0	7.9	7.9	0.35	0.36	0.38	0.36
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.29	0.32	0.34	0.32	7.9	8.0	7.8	7.9	0.36	0.37	0.38	0.37
	F4 - 100% N through FYM	0.30	0.33	0.35	0.33	7.7	7.8	7.6	7.7	0.36	0.39	0.41	0.39
	Mean	0.29	0.32	0.34	0.32	7.9	8.0	7.9	7.9	0.36	0.37	0.38	0.37
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	0.28	0.30	0.31	0.30	7.9	8.0	8.1	8.0	0.35	0.34	0.32	0.34
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.29	0.31	0.33	0.31	7.8	7.9	7.8	7.8	0.36	0.38	0.39	0.38
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.30	0.32	0.34	0.32	7.7	7.8	7.7	7.7	0.36	0.39	0.40	0.38
	F4 - 100% N through FYM	0.29	0.31	0.34	0.31	7.7	7.8	7.6	7.7	0.37	0.38	0.41	0.39
	Mean	0.29	0.31	0.33	0.31	7.8	7.9	7.8	7.8	0.36	0.37	0.38	0.37
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	0.29	0.31	0.32	0.31	7.8	8.0	7.9	7.9	0.35	0.32	0.31	0.33
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.28	0.30	0.33	0.30	7.8	8.0	7.8	7.9	0.36	0.36	0.37	0.36
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.30	0.32	0.34	0.32	7.7	7.9	7.6	7.7	0.37	0.38	0.39	0.38
	F4 - 100% N through FYM	0.30	0.32	0.34	0.32	7.7	7.9	7.5	7.7	0.37	0.39	0.41	0.39
	Mean	0.29	0.31	0.33	0.31	7.8	8.0	7.7	7.8	0.36	0.36	0.37	0.37
Nutrient supply	F1 - 100% RDF* of the Zones	0.28	0.30	0.31	0.30	7.9	8.1	8.1	8.0	0.35	0.33	0.32	0.33
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.29	0.31	0.33	0.31	7.9	8.0	8.0	8.0	0.36	0.37	0.38	0.37
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.29	0.32	0.34	0.31	7.8	7.9	7.9	7.9	0.36	0.38	0.39	0.38
	F4 - 100% N through FYM	0.30	0.32	0.34	0.32	7.7	7.9	7.9	7.8	0.37	0.39	0.41	0.39
Initial status before sowing		0.35				7.9				0.35			
CD (5%)	Tillage	NS	NS	-		NS	NS	-		NS	NS	-	
	Nutrition	NS	NS	-		NS	NS	-		NS	0.02	-	
	T x N	NS	NS	-		NS	NS	-		NS	NS	-	
	N x T	NS	NS	-		NS	NS	-		NS	NS	-	
CV (%)		0.0	0.0	-		2.9	2.9	-		8.86	8.7	-	

CHAPTER II: AGRONOMY

Table II.98: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the gross returns of pearl millet crop in Zone A during kharif 2020, 2021 and 2022

Treatments		Gross Return (Rs/ha)								Zonal Mean
		HSR				JMR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	68445	83345	83734	78508	34772	43512	80120	52801	65655
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	62814	87859	90120	80265	37354	47702	72652	52569	66417
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	59243	76768	87219	74410	35732	43972	71420	50375	62392
	F ₄ - 100% N through FYM	54415	75949	78407	69590	33702	35658	60170	43177	56384
	Mean	61229	80980	84871	75694	35390	42711	71091	49731	62712
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	64085	75763	79406	73085	32464	34288	67876	44876	58980
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	56132	76034	78453	70207	35000	39010	61128	45046	57626
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	52639	70310	74151	65700	33156	36242	59132	42843	54272
	F ₄ - 100% N through FYM	48935	69066	74167	64056	29214	28410	50112	35912	49984
	Mean	55448	72793	76546	68262	32459	34488	59562	42169	55216
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	62691	79577	82328	74865	34502	33018	72882	46801	60833
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	54976	83923	79169	72689	37106	43688	66714	49169	60929
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	52970	75682	79359	69337	35800	36540	62636	44992	57164
	F ₄ - 100% N through FYM	48419	72802	74963	65395	32496	29624	49698	37273	51334
	Mean	54764	77996	78954	70571	34976	35718	62983	44559	57565
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	56843	72884	73644	67790	31002	28194	60330	39842	53816
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	50794	72451	76218	66488	33322	35762	57696	42260	54374
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	49372	68310	68167	61950	32556	31322	56428	40102	51026
	F ₄ - 100% N through FYM	43377	66008	68608	59331	29796	27558	50906	36087	47709
	Mean	50097	69914	71660	63890	31669	30709	56340	39573	51731
Nutrient supply	F ₁ - 100% RDF* of the Zones	63016	77893	79779	73562	33185	34753	70302	46080	59821
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	56179	80067	80990	72412	35696	41541	64548	47261	59837
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	53556	72767	77224	67849	34311	37019	62404	44578	56214
	F ₄ - 100% N through FYM	48786	70957	74036	64593	31302	30313	52722	38112	51353

CHAPTER II: AGRONOMY

Table II.99: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the net returns of pearl millet crop in Zone A during kharif 2020, 2021 and 2022

Treatments		Net Return (Rs/ha)								Zonal Mean
		HSR				JMR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	14780	28338	22785	21968	14871	21689	59319	31960	26964
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	6813	29973	25105	20631	17452	25248	51220	31307	25969
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	681	18182	21122	13328	15829	20487	48957	28424	20876
	F ₄ - 100% N through FYM	-7655	15742	10471	6186	13798	7411	32945	18051	12119
	Mean	3655	23059	19871	15528	15488	18709	48110	27436	21482
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	21080	31657	30137	27625	12559	12465	47075	24033	25829
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	11033	29059	25118	21737	15094	16556	39696	23782	22759
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	4978	22626	19734	15780	13249	12757	36669	20892	18336
	F ₄ - 100% N through FYM	-2233	19760	17912	11813	9306	163	22887	10785	11299
	Mean	8715	25775	23227	19239	12552	10485	36582	19873	19556
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	10269	26192	23001	19821	14593	11195	52081	25956	22888
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	463	27659	16204	14775	17196	21234	45282	27904	21340
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	-4107	18718	15742	10117	15889	13055	40173	23039	16578
	F ₄ - 100% N through FYM	-12163	14217	10365	4140	12584	1377	22473	12145	8142
	Mean	-1385	21696	16327	12213	15066	11715	40002	22261	17237
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	15324	30401	25997	23907	11089	6371	39529	18996	21452
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	7183	27089	24933	19735	13408	13308	36264	20993	20364
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	3198	21708	16230	13712	12641	7837	33965	18148	15930
	F ₄ - 100% N through FYM	-6304	18325	15690	9237	9880	-689	23681	10957	10097
	Mean	4850	24382	20713	16648	11755	6707	33360	17274	16961
Nutrient supply	F ₁ - 100% RDF* of the Zones	15363	29147	25481	23330	13278	12930	49501	25236	24283
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	6373	28445	22840	19219	15788	19087	43116	25997	22608
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	1188	20308	18207	13234	14402	13534	39941	22626	17930
	F ₄ - 100% N through FYM	-7089	17012	13610	7844	11392	2066	25497	12985	10414

CHAPTER II: AGRONOMY

Table II.100: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the BC ratio of pearl millet crop in Zone A during kharif 2020, 2021 and 2022

Treatments		BC Ratio								Zonal Mean
		HSR				JMR				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	1.28	1.52	1.37	1.39	1.75	1.99	3.85	2.53	1.96
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	1.12	1.52	1.39	1.34	1.88	2.12	3.39	2.46	1.90
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	1.01	1.31	1.32	1.21	1.80	1.87	3.18	2.28	1.75
	F ₄ - 100% N through FYM	0.88	1.26	1.15	1.10	1.69	1.26	2.21	1.72	1.41
	Mean	1.07	1.40	1.31	1.26	1.78	1.81	3.16	2.25	1.75
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	1.49	1.72	1.61	1.61	1.63	1.57	3.26	2.15	1.88
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	1.24	1.62	1.47	1.44	1.76	1.74	2.85	2.12	1.78
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	1.10	1.47	1.36	1.31	1.67	1.54	2.63	1.95	1.63
	F ₄ - 100% N through FYM	0.96	1.40	1.32	1.23	1.47	1.01	1.84	1.44	1.33
	Mean	1.20	1.55	1.44	1.39	1.63	1.47	2.65	1.91	1.65
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	1.20	1.49	1.39	1.36	1.73	1.51	3.50	2.25	1.80
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	1.01	1.49	1.26	1.25	1.86	1.95	3.11	2.31	1.78
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.93	1.33	1.25	1.17	1.80	1.56	2.79	2.05	1.61
	F ₄ - 100% N through FYM	0.80	1.24	1.16	1.07	1.63	1.05	1.83	1.50	1.29
	Mean	0.98	1.39	1.26	1.21	1.76	1.52	2.81	2.03	1.62
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	1.37	1.72	1.55	1.54	1.56	1.29	2.90	1.92	1.73
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	1.16	1.60	1.49	1.42	1.67	1.59	2.69	1.98	1.70
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	1.07	1.47	1.31	1.28	1.63	1.33	2.51	1.82	1.55
	F ₄ - 100% N through FYM	0.87	1.38	1.30	1.18	1.50	0.98	1.87	1.45	1.32
	Mean	1.12	1.54	1.41	1.35	1.59	1.30	2.49	1.79	1.57
Nutrient supply	F ₁ - 100% RDF* of the Zones	1.33	1.60	1.47	1.47	1.67	1.59	3.38	2.21	1.84
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	1.13	1.55	1.39	1.36	1.79	1.85	3.01	2.22	1.79
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	1.03	1.39	1.31	1.24	1.73	1.58	2.78	2.03	1.63
	F ₄ - 100% N through FYM	0.88	1.32	1.23	1.14	1.57	1.08	1.94	1.53	1.33

CHAPTER II: AGRONOMY

Table II.101 PMAT 5a:Effect of different tillage manipulations and nutrient management practices on energy input, energy output, net energy, EUE and energy productivity of pearl millet crop at Hisar centre Zone A during kharif 2021 and 2022

Treatment		Energy input (MJ/ ha)			Energy Output (MJ/ ha)			Net energy (MJ/ ha)			EUE			Energy Productivity (kg/MJ/ ha)		
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
CT₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F₁ - 100% RDF* of the Zones	5376	5376	5376	142284	135309	138796	136908	129933	133420	26.47	25.17	25.82	0.57	0.55	0.56
	F₂ - 75 % N through RDF + 2.5 t/ha FYM	5465	5465	5465	151979	141704	146842	146514	136239	141377	27.81	25.93	26.87	0.59	0.58	0.59
	F₃ - 50 % N through RDF + 5.0 t/ha through FYM	5553	5553	5553	133277	138112	135694	127724	132559	130141	24.00	24.87	24.44	0.51	0.55	0.53
	F₄ - 100% N through FYM	5130	5130	5130	134014	130174	132094	128884	125044	126964	26.12	25.37	25.75	0.54	0.53	0.54
	Mean	5381	5381	5381	140388	136325	138357	135007	130944	132976	26.09	25.33	25.71	0.55	0.55	0.55
CT₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F₁ - 100% RDF* of the Zones	5062	5062	5062	132523	127517	130020	127461	122455	124958	26.18	25.19	25.69	0.55	0.55	0.55
	F₂ - 75 % N through RDF + 2.5 t/ha FYM	5151	5151	5151	133756	129932	131844	128605	124781	126693	25.97	25.22	25.60	0.54	0.53	0.54
	F₃ - 50 % N through RDF + 5.0 t/ha through FYM	5239	5239	5239	125997	125869	125933	120758	120630	120694	24.05	24.03	24.04	0.49	0.49	0.49
	F₄ - 100% N through FYM	4816	4816	4816	128479	121702	125091	123663	116886	120275	26.68	25.27	25.97	0.52	0.54	0.53
	Mean	5067	5067	5067	130188	126256	128222	125121	121189	123155	25.69	24.92	25.31	0.52	0.53	0.52
MT₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F₁ - 100% RDF* of the Zones	5151	5151	5151	136603	132656	134630	131452	127505	129479	26.52	25.75	26.14	0.57	0.56	0.57
	F₂ - 75 % N through RDF + 2.5 t/ha FYM	5240	5240	5240	143712	133932	138822	138472	128692	133582	27.43	25.56	26.49	0.59	0.52	0.56
	F₃ - 50 % N through RDF + 5.0 t/ha through FYM	5328	5328	5328	134888	132419	133654	129560	127091	128326	25.32	24.85	25.09	0.52	0.52	0.52
	F₄ - 100% N through FYM	4905	4905	4905	132970	124993	128981	128065	120088	124076	27.11	25.48	26.30	0.54	0.53	0.53
	Mean	5156	5156	5156	137043	130999	134021	131887	125843	128865	26.58	25.41	25.99	0.55	0.53	0.54
MT₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F₁ - 100% RDF* of the Zones	4748	4748	4748	124277	120414	122346	119529	115666	117598	26.17	25.36	25.77	0.57	0.54	0.55
	F₂ - 75 % N through RDF + 2.5 t/ha FYM	4926	4926	4926	126045	126232	126138	121119	121306	121212	25.59	25.63	25.61	0.54	0.54	0.54
	F₃ - 50 % N through RDF + 5.0 t/ha through FYM	5014	5014	5014	120032	117019	118525	115018	112005	113511	23.94	23.34	23.64	0.50	0.47	0.48
	F₄ - 100% N through FYM	4591	4591	4591	120087	115019	117553	115496	110428	112962	26.16	25.05	25.61	0.52	0.52	0.52
	Mean	4820	4820	4820	122610	119672	121141	117791	114852	116321	25.44	24.83	25.13	0.53	0.52	0.52
Nutrient supply	F₁ - 100% RDF* of the Zones	5084	5084	5084	133922	128975	131448	128838	123890	126364	26.34	25.37	25.85	0.57	0.55	0.56
	F₂ - 75 % N through RDF + 2.5 t/ha FYM	5196	5196	5196	138873	132950	135912	133678	127754	130716	26.73	25.58	26.16	0.57	0.54	0.56
	F₃ - 50 % N through RDF + 5.0 t/ha through FYM	5284	5284	5284	128548	128355	128452	123265	123071	123168	24.33	24.27	24.30	0.50	0.51	0.50
	F₄ - 100% N through FYM	4861	4861	4861	128888	122971	125930	124027	118111	121069	26.52	25.30	25.91	0.53	0.53	0.53

CHAPTER II: AGRONOMY

Table II.102 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on grain yield of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatments		Grain yield (q/ha)																Zone Mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	26.27	30.95	30.14	29.12	21.23	21.71	23.61	22.18	19.29	23.08	18.26	20.21	27.10	30.63	32.46	30.07	25.39
	F2 - 75 % N through RDF + 2.5 t/ha FYM	24.80	28.36	26.94	26.70	20.48	20.74	23.15	21.46	18.43	24.65	20.08	21.05	27.95	30.40	32.17	30.17	24.85
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	23.53	29.17	24.58	25.76	19.68	19.95	21.99	20.54	17.62	25.22	20.19	21.01	29.38	28.97	30.90	29.75	24.26
	F4 - 100% N through FYM	22.97	28.29	19.51	23.59	18.88	19.21	18.98	19.02	17.26	26.78	21.90	21.98	29.64	27.80	29.57	29.00	23.40
	Mean	24.39	29.19	25.29	26.29	20.07	20.40	21.93	20.80	18.15	24.93	20.11	21.06	28.52	29.45	31.28	29.75	24.48
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	24.34	25.25	28.84	26.14	21.11	21.64	29.16	23.97	18.13	21.38	17.97	19.16	25.47	31.47	31.81	29.58	24.72
	F2 - 75 % N through RDF + 2.5 t/ha FYM	23.69	27.08	25.51	25.43	20.68	20.82	23.96	21.82	17.68	22.85	20.03	20.18	28.81	30.57	30.86	30.08	24.38
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	23.07	26.09	23.49	24.22	19.25	19.83	23.03	20.70	17.29	24.13	19.31	20.24	29.90	29.80	28.36	29.36	23.63
	F4 - 100% N through FYM	22.45	24.79	17.62	21.62	19.17	19.68	19.44	19.43	15.98	25.83	20.87	20.89	30.39	27.17	27.56	28.37	22.58
	Mean	23.39	25.80	23.87	24.35	20.05	20.50	23.90	21.48	17.27	23.55	19.54	20.12	28.64	29.75	29.65	29.35	23.83
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	24.51	21.69	25.81	24.00	21.86	23.11	31.25	25.41	15.20	21.02	12.41	16.21	24.78	28.13	28.35	27.09	23.18
	F2 - 75 % N through RDF + 2.5 t/ha FYM	22.48	23.43	22.50	22.80	21.47	22.41	31.02	24.97	14.61	23.22	16.40	18.08	26.22	27.57	27.66	27.15	23.25
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	22.01	26.41	21.10	23.18	20.80	21.68	27.20	23.23	13.84	23.34	15.97	17.72	26.88	27.07	25.64	26.53	22.66
	F4 - 100% N through FYM	20.88	21.94	17.24	20.02	20.20	20.82	21.30	20.77	13.52	24.30	16.92	18.25	26.43	25.93	24.82	25.73	21.19
	Mean	22.47	23.37	21.66	22.50	21.08	22.01	27.69	23.59	14.30	22.97	15.43	17.56	26.08	27.18	26.62	26.62	22.57
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	21.71	27.78	19.28	22.92	21.42	22.08	29.28	24.26	13.71	20.39	13.11	15.74	24.76	27.77	26.92	26.48	22.35
	F2 - 75 % N through RDF + 2.5 t/ha FYM	21.25	24.07	16.57	20.63	21.09	21.11	26.04	22.75	13.65	22.44	14.50	16.86	26.63	27.20	26.34	26.72	21.74
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	21.64	22.68	14.37	19.57	19.60	20.47	23.38	21.15	13.24	22.69	14.11	16.68	26.20	26.87	24.89	25.99	20.84
	F4 - 100% N through FYM	20.47	19.44	13.98	17.96	19.45	19.84	20.60	19.96	12.93	23.47	15.16	17.19	26.33	25.87	24.26	25.49	20.15
	Mean	21.27	23.50	16.05	20.27	20.39	20.87	24.83	22.03	13.38	22.25	14.22	16.62	25.98	26.93	25.60	26.17	21.27
Nutrient supply	F1 - 100% RDF* of the Zones	24.21	26.42	26.02	25.55	21.41	22.14	28.33	23.96	16.58	21.47	15.44	17.83	25.53	29.50	29.89	28.31	23.91
	F2 - 75 % N through RDF + 2.5 t/ha FYM	23.05	25.74	22.88	23.89	20.93	21.27	26.04	22.75	16.09	23.29	17.75	19.05	27.40	28.93	29.26	28.53	23.55
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	22.57	26.09	20.89	23.18	19.83	20.48	23.90	21.41	15.50	23.84	17.40	18.91	28.09	28.18	27.45	27.91	22.85
	F4 - 100% N through FYM	21.69	23.62	17.09	20.80	19.43	19.89	20.08	19.80	14.92	25.10	18.71	19.58	28.20	26.69	26.55	27.15	21.83
	Mean	23.38	25.41	21.71	23.50	20.66	21.41	24.34	22.53	15.53	23.44	17.64	19.37	27.33	28.43	28.18	28.40	23.13
CD (5%)	Tillage	0.73	2.75	1.47		NS	1.18	NS		1.21	NS	1.34		2.37	2.05	2.50		
	Nutrition	1.04	NS	1.92		1.09	0.54	4.72		NS	1.72	1.43		1.26	1.03	1.78		
	T x N	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		
	N x T	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		
	CV (%)		5.4	12.5	10.4		6.3	3.0	22.6		16.5	8.7	9.8		5.4	4.3	7.4	

CHAPTER II: AGRONOMY

Table II.103 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on stover yield of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatments		Stover yield (q/ha)																Zone Mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	48.82	59.49	60.46	56.26	41.53	42.71	46.06	43.43	49.39	56.02	45.76	50.39	36.78	45.20	45.32	42.43	48.13
	F2 - 75 % N through RDF + 2.5 t/ha FYM	47.85	55.09	58.57	53.84	39.14	41.43	44.67	41.75	47.17	59.03	47.80	51.33	38.51	42.10	45.00	41.87	47.20
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	45.31	54.40	51.97	50.56	37.57	39.98	42.48	40.01	45.06	61.11	46.71	50.96	40.91	41.83	43.28	42.01	45.88
	F4 - 100% N through FYM	43.93	55.56	41.67	47.05	35.99	37.73	35.53	36.42	44.77	62.96	51.46	53.07	41.90	40.97	42.79	41.89	44.61
	Mean	46.48	56.14	53.17	51.93	38.56	40.46	42.18	40.40	46.60	59.78	47.93	51.44	39.52	42.53	44.10	42.05	46.45
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	48.03	54.40	56.71	53.05	41.64	42.08	58.27	47.33	47.47	54.17	43.19	48.28	37.89	44.80	44.74	42.48	47.78
	F2 - 75 % N through RDF + 2.5 t/ha FYM	45.32	46.99	52.55	48.29	39.65	41.83	46.58	42.69	46.68	55.79	45.12	49.20	39.53	44.77	43.44	42.58	45.69
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	45.75	54.40	49.17	49.77	38.24	40.07	46.53	41.61	45.53	57.18	44.93	49.21	41.64	43.50	41.08	42.07	45.67
	F4 - 100% N through FYM	43.41	46.99	35.41	41.94	37.06	39.95	38.71	38.57	44.16	60.42	47.29	50.62	43.06	39.30	41.00	41.12	43.06
	Mean	45.63	50.70	48.46	48.26	39.15	40.98	47.52	42.55	45.96	56.89	45.14	49.33	40.53	43.09	42.57	42.06	45.55
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	48.33	48.61	46.30	47.75	42.87	46.60	62.96	50.81	42.02	52.31	39.40	44.58	34.42	41.10	42.39	39.30	45.61
	F2 - 75 % N through RDF + 2.5 t/ha FYM	43.65	45.14	44.68	44.49	41.87	45.39	61.12	49.46	39.68	54.40	41.53	45.20	37.00	40.10	41.63	39.58	44.68
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	42.29	43.52	42.48	42.76	39.86	43.01	54.47	45.78	40.70	55.56	41.09	45.78	38.93	40.17	38.03	39.04	43.34
	F4 - 100% N through FYM	40.77	43.98	34.79	39.85	39.49	41.46	42.48	41.14	38.45	57.41	43.03	46.30	38.89	37.50	37.10	37.83	41.28
	Mean	43.76	45.31	42.06	43.71	41.03	44.12	55.26	46.80	40.22	54.92	41.26	45.47	37.31	39.72	39.79	38.94	43.73
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	43.03	45.60	31.60	40.08	42.13	43.54	58.54	48.07	41.59	50.93	38.24	43.59	36.51	40.17	39.85	38.84	42.64
	F2 - 75 % N through RDF + 2.5 t/ha FYM	42.96	46.99	29.35	39.77	42.38	41.62	52.66	45.55	39.07	51.62	39.75	43.48	37.38	39.93	39.58	38.96	41.94
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	42.90	43.98	28.17	38.35	38.75	41.18	45.34	41.76	37.94	53.47	38.93	43.45	37.87	40.90	37.67	38.81	40.59
	F4 - 100% N through FYM	39.45	40.05	29.63	36.38	37.18	41.69	40.17	39.68	36.79	55.56	41.32	44.56	39.03	37.03	35.74	37.27	39.47
	Mean	42.09	44.16	29.69	38.64	40.11	42.01	49.18	43.77	38.85	52.89	39.56	43.77	37.70	39.51	38.21	38.47	41.16
Nutrient supply	F1 - 100% RDF* of the Zones	47.05	52.03	48.77	49.28	42.04	43.74	56.46	47.41	45.12	53.36	41.65	46.71	36.40	42.82	43.08	40.76	46.04
	F2 - 75 % N through RDF + 2.5 t/ha FYM	44.95	48.55	46.29	46.60	40.76	42.57	51.26	44.86	43.15	55.21	43.55	47.30	38.10	41.73	42.41	40.75	44.88
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	44.06	49.07	42.95	45.36	38.61	41.06	47.21	42.29	42.31	56.83	42.92	47.35	39.84	41.60	40.01	40.48	43.87
	F4 - 100% N through FYM	41.89	46.64	35.38	41.30	37.43	40.21	39.22	38.95	41.04	59.09	45.78	48.64	40.72	38.70	39.16	39.53	42.10
	Mean	44.24	49.04	42.28	45.51	39.61	42.15	48.01	42.89	42.90	54.12	43.23	48.00	38.29	41.22	41.13	40.51	44.23
CD (5%)	Tillage	NS	2.65	4.25		NS	NS	3.01		5.08	3.94	3.02		1.31	2.77	3.76		
	Nutrition	NS	NS	5.51		3.21	1.30	3.18		NS	3.14	NS		1.85	1.73	1.84		
	T x N	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		
	N x T	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		
	Mean	NS	NS	NS		NS	NS	NS		NS	NS	NS		NS	NS	NS		
CV (%)		13.0	11.5	15.0		9.5	3.7	7.7		9.9	6.6	8.8		5.6	5.0	5.3		

CHAPTER II: AGRONOMY

Table II.104 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on water use efficiency of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatments		Water Use Efficiency (Kg/ha-cm)																Zone Mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	57.20	41.80	40.3	46.43	-	39.89	29.76	34.83	59.77	74.17	49.13	61.02	77.87	84.90	81.20	81.32	55.90
	F2 - 75 % N through RDF + 2.5 t/ha FYM	54.00	38.30	36.3	42.87	-	38.11	29.18	33.65	57.13	79.20	54.03	63.45	80.33	84.13	80.43	81.63	55.40
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	51.20	39.40	26.5	39.03	-	36.66	27.72	32.19	54.6	81.00	54.33	63.31	84.43	80.17	77.23	80.61	53.79
	F4 - 100% N through FYM	50.00	38.20	26.8	38.33	-	35.29	23.92	29.61	53.47	86.03	58.93	66.15	85.20	76.93	73.93	78.69	53.19
	Mean	53.10	39.43	32.48	41.67	-	37.49	27.65	32.57	56.24	80.10	54.11	63.48	81.96	81.53	78.20	80.56	54.57
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	53.00	34.10	40.7	42.60	-	39.76	36.76	38.26	56.17	68.70	48.37	57.75	73.20	87.13	79.53	79.96	54.64
	F2 - 75 % N through RDF + 2.5 t/ha FYM	51.60	36.60	31.2	39.80	-	38.25	30.2	34.23	54.8	73.43	53.90	60.71	82.80	84.70	77.13	81.54	54.07
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	50.20	35.20	31	38.80	-	36.43	29.03	32.73	53.57	77.53	51.97	61.02	85.90	82.57	70.90	79.79	53.09
	F4 - 100% N through FYM	48.90	33.50	20.7	34.37	-	36.16	24.51	30.34	49.53	83.03	56.17	62.91	87.30	75.17	68.90	77.12	51.18
	Mean	50.93	34.85	30.9	38.89	-	37.65	30.13	33.89	53.52	75.68	52.60	60.60	82.30	82.39	74.12	79.60	53.25
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	53.40	29.30	34	38.90	-	42.46	39.39	40.93	47.1	67.53	33.43	49.36	71.23	77.90	70.90	73.34	50.63
	F2 - 75 % N through RDF + 2.5 t/ha FYM	48.90	31.60	28.5	36.33	-	41.17	39.1	40.14	45.3	74.63	44.17	54.70	75.37	76.37	69.17	73.63	51.20
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	47.90	35.70	25.8	36.47	-	39.82	34.28	37.05	42.87	74.97	43.00	53.61	77.23	74.87	64.10	72.07	49.80
	F4 - 100% N through FYM	45.50	29.60	20.4	31.83	-	38.25	26.84	32.55	41.9	78.07	45.57	55.18	75.97	71.83	62.07	69.96	47.38
	Mean	48.93	31.55	27.18	35.88	-	40.43	34.9	37.66	44.29	73.80	41.54	53.21	74.95	75.24	66.56	72.25	49.75
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	47.30	37.50	24.2	36.33	-	40.56	36.91	38.74	42.5	65.50	35.27	47.76	71.17	76.93	67.33	71.81	48.66
	F2 - 75 % N through RDF + 2.5 t/ha FYM	46.30	32.50	18.8	32.53	-	38.77	32.82	35.80	42.3	72.10	39.03	51.14	76.50	75.37	65.87	72.58	48.01
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	47.10	30.60	19.3	32.33	-	37.60	29.47	33.54	41	72.90	37.97	50.62	75.30	74.40	62.27	70.66	46.79
	F4 - 100% N through FYM	44.60	26.20	17.4	29.40	-	36.44	25.97	31.21	40.07	75.43	40.77	52.09	75.67	71.60	60.67	69.31	45.50
	Mean	46.33	31.70	19.93	32.65	-	38.34	31.29	34.82	41.47	71.48	38.26	50.40	74.66	74.58	64.03	71.09	47.24
Nutrient supply	F1 - 100% RDF* of the Zones	52.73	35.68	34.8	41.07	-	40.67	35.71	38.19	51.38	68.98	41.55	53.97	73.37	81.72	74.74	76.61	52.46
	F2 - 75 % N through RDF + 2.5 t/ha FYM	50.20	34.75	28.7	37.88	-	39.08	32.83	35.95	49.88	74.84	47.78	57.50	78.75	80.14	73.15	77.35	52.17
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	49.10	35.23	25.65	36.66	-	37.63	30.13	33.88	48.01	76.60	46.82	57.14	80.72	78.00	68.63	75.78	50.86
	F4 - 100% N through FYM	47.25	31.88	21.33	33.48	-	36.54	25.31	30.92	46.24	80.64	50.36	59.08	81.03	73.88	66.39	73.77	49.31
	CD (5%)	Tillage	-	-			-	-			3.46	NS	3.60		6.79	5.71	6.28	
	Nutrition	-	-			-	-			NS	5.5	3.9		3.6	2.85	4.46		
	T x N	-	-			-	-			NS	NS	NS		NS	NS	NS		
	N x T	-	-			-	-			NS	NS	NS		NS	NS	NS		
CV (%)		-	-			-	-			16.5	8.7	9.8		5.5	4.3	7.4		

CHAPTER II: AGRONOMY

Table II.105 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on total & effective tillers/plant and test weight of pearl millet crop in Zone B during kharif 2022

Treatment		Total tillers/plant					Effective tillers/plant					Test weight (g)				
Tillage Practices	Nutrient Supply	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
CT1 - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	5.9	4.4	3.2	4.2	4.4	4.9	3.0	2.7	3.8	3.6	16.2	10.4	11.9	13.6	13.0
	F2 - 75 % N through RDF + 2.5 t/ha FYM	5.7	4.2	3.6	4.2	4.4	4.7	2.9	3.0	3.7	3.6	16.1	10.3	12.5	13.4	13.1
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	4.8	4.2	3.5	4.2	4.2	3.8	2.6	3.0	3.7	3.3	16.0	10.2	12.8	13.4	13.1
	F4 - 100% N through FYM	3.7	3.9	3.9	4.3	4.0	2.7	2.4	3.3	3.7	3.0	14.1	10.0	12.8	13.7	12.6
	Mean	5.0	4.2	3.6	4.2	4.2	4.0	2.7	3.0	3.7	3.4	15.6	10.2	12.5	13.5	13.0
CT2 - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	5.8	4.6	3.3	4.1	4.5	4.8	3.0	2.8	3.6	3.6	15.8	10.6	11.1	13.3	12.7
	F2 - 75 % N through RDF + 2.5 t/ha FYM	5.7	4.6	3.6	4.1	4.5	4.7	3.0	3.1	3.5	3.6	15.6	10.4	12.0	13.1	12.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	4.1	4.4	3.4	4.0	4.0	3.1	2.8	2.9	3.6	3.1	15.5	10.3	12.7	13.1	12.9
	F4 - 100% N through FYM	3.5	4.0	3.7	4.0	3.8	2.5	2.4	3.1	3.6	2.9	14.0	10.2	12.7	13.4	12.6
	Mean	4.8	4.4	3.5	4.1	4.2	3.8	2.8	3.0	3.6	3.3	15.2	10.4	12.1	13.2	12.7
MT1 -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	4.0	5.2	3.1	4.2	4.1	3.0	3.4	2.5	3.6	3.2	14.5	10.9	10.6	13.3	12.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.8	5.0	3.2	4.2	4.0	2.8	3.2	2.7	3.5	3.1	14.2	10.6	11.5	13.4	12.4
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.5	4.9	3.1	4.1	3.9	2.5	3.1	2.5	3.4	2.9	14.1	10.4	11.5	13.3	12.3
	F4 - 100% N through FYM	3.1	4.5	3.3	4.0	3.7	2.1	3.0	2.7	3.4	2.8	13.7	10.3	12.2	13.1	12.3
	Mean	3.6	4.9	3.2	4.1	4.0	2.6	3.2	2.6	3.5	3.0	14.1	10.6	11.5	13.3	12.4
MT2 -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	3.4	4.9	2.8	4.2	3.8	2.4	3.2	2.3	3.8	2.9	14.0	10.7	10.6	13.3	12.1
	F2 - 75 % N through RDF + 2.5 t/ha FYM	3.1	4.9	3.0	4.1	3.8	2.1	3.1	2.4	3.7	2.8	13.9	10.5	11.6	13.2	12.3
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	2.2	4.8	2.9	4.0	3.5	1.2	3.0	2.3	3.6	2.5	13.5	10.4	11.5	13.7	12.3
	F4 - 100% N through FYM	2.1	4.2	3.1	4.0	3.3	1.1	2.7	2.5	3.4	2.4	12.7	10.2	11.7	13.2	12.0
	Mean	2.7	4.7	2.9	4.1	3.6	1.7	3.0	2.4	3.6	2.7	13.5	10.5	11.3	13.4	12.2
Nutrient supply	F1 - 100% RDF* of the Zones	4.8	4.8	3.1	4.2	4.2	3.8	3.2	2.6	3.7	3.3	15.1	10.6	11.0	13.4	12.5
	F2 - 75 % N through RDF + 2.5 t/ha FYM	4.6	4.7	3.4	4.2	4.2	3.6	3.1	2.8	3.6	3.3	15.0	10.5	11.9	13.3	12.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	3.7	4.6	3.2	4.1	3.9	2.7	2.9	2.7	3.6	2.9	14.8	10.3	12.1	13.4	12.6
	F4 - 100% N through FYM	3.1	4.2	3.5	4.1	3.7	2.1	2.6	2.9	3.5	2.8	13.6	10.2	12.4	13.4	12.4
CD (5%)	Tillage	0.2	0.5	0.2	NS		0.2	0.0	0.2	NS		0.3	NS	0.8	NS	
	Nutrition	0.3	0.4	0.2	NS		0.3	0.1	0.2	NS		0.4	NS	NS	NS	
	T x N	0.6	NS	NS	NS		0.6	NS	NS	NS		NS	NS	NS	NS	
	N x T	0.5	NS	NS	NS		0.5	NS	NS	NS		NS	NS	NS	NS	
CV (%)		8.3	9.8	8.0	3.6		10.9	3.4	7.0	4.3		2.9	5.1	10.0	2.2	

CHAPTER II: AGRONOMY

Table II.106 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on plant height and plant populations of pearl millet crop in Zone B during kharif 2022

Tillage Practices	Treatment	Plant height (cm)					Plant population ('000/ha)				
	Nutrient Supply	ABD1	DHL	VYP	CBE	Mean	ABD1	DHL	VYP	CBE	Mean
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	184.6	182.3	151.4	184.8	175.8	220.8	135.6	136.1	148.8	160.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	183.8	170.7	164.4	183.7	175.6	217.8	134.9	133.1	149.0	158.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	180.0	170.3	161.2	180.0	172.9	221.3	134.1	131.9	146.5	158.5
	F4 - 100% N through FYM	175.5	168.0	166.7	180.1	172.6	218.5	131.0	133.8	149.9	158.3
	Mean	181.0	172.8	161.0	182.2	174.2	219.6	133.9	133.7	148.5	159.0
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	182.8	183.7	146.6	182.1	173.8	219.2	135.9	133.3	148.3	159.2
	F2 - 75 % N through RDF + 2.5 t/ha FYM	182.2	179.7	157.3	180.4	174.9	218.3	135.5	136.3	148.9	159.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	178.9	176.0	155.6	178.5	172.3	216.0	134.4	137.0	151.6	159.7
	F4 - 100% N through FYM	175.9	168.7	161.8	176.1	170.6	219.0	131.4	134.5	149.1	158.5
	Mean	179.9	177.0	155.3	179.3	172.9	218.1	134.3	135.3	149.5	159.3
MT1- Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	180.4	190.7	146.9	170.9	172.2	217.4	139.2	137.7	146.9	160.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	180.3	183.9	154.1	169.0	171.8	219.2	138.9	137.7	145.3	160.3
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	175.5	182.7	151.8	165.0	168.7	218.5	135.8	139.4	145.3	159.7
	F4 - 100% N through FYM	171.8	173.3	155.2	165.2	166.4	217.6	133.3	133.6	145.1	157.4
	Mean	177.0	182.6	152.0	167.5	169.8	218.2	136.8	137.1	145.6	159.4
MT2- Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	173.6	184.0	140.7	170.5	167.2	219.7	136.1	136.8	143.4	159.0
	F2 - 75 % N through RDF + 2.5 t/ha FYM	172.7	180.3	147.8	167.9	167.2	217.1	135.9	135.0	142.2	157.5
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	170.1	179.7	150.1	165.0	166.2	217.6	134.7	135.4	143.7	157.9
	F4 - 100% N through FYM	166.7	171.7	151.8	164.1	163.6	217.4	132.9	134.3	143.3	156.9
	Mean	170.8	178.9	147.6	166.9	166.0	217.9	134.9	135.4	143.2	157.8
Nutrient supply	F1 - 100% RDF* of the Zones	180.4	185.2	146.4	177.1	172.3	219.3	136.7	136.0	146.8	159.7
	F2 - 75 % N through RDF + 2.5 t/ha FYM	179.8	178.6	155.9	175.3	172.4	218.1	136.3	135.5	146.3	159.1
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	176.1	177.2	154.7	172.1	170.0	218.3	134.8	135.9	146.8	158.9
	F4 - 100% N through FYM	172.5	170.4	158.9	171.4	168.3	218.1	132.2	134.0	146.8	157.8
CD (5%)	Tillage	2.2	NS	7.9	3.0		NS	1.1	NS	1.4	
	Nutrition	1.5	5.1	6.2	2.1		NS	1.3	NS	NS	
	T x N	NS	NS	NS	NS		2.85	NS	NS	NS	
	N x T	NS	NS	NS	NS		3.86	NS	NS	NS	
CV (%)		1.0	3.4	4.7	1.5		0.7	1.1	4.0	1.3	

CHAPTER II: AGRONOMY

Table II.107 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on gross returns of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatment		Gross Return (Rs/ha)																Zonal mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	68530	72372	93160	78021	43659	46843	76891	55798	36641	39242	31037	35640	40651	61287	59720	53886	55836
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	65098	66396	84053	71849	42044	44806	68678	51842	35027	41902	34130	37020	41923	60767	59189	53960	53668
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	61732	67952	76439	68708	40398	43106	71396	51633	33479	42866	34323	36889	44076	57880	56863	52940	52542
	F ₄ - 100% N through FYM	60192	66329	60747	62423	38752	41440	56083	45425	32797	45522	37227	38515	44460	55533	54548	51514	49469
	Mean	63888	68262	78600	70250	41213	44049	68262	51174	34486	42383	34179	37016	42778	58867	57580	53075	52879
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	64108	59930	88959	70999	43441	46654	62532	50875	34442	36353	30553	33783	38190	62907	58557	53218	52219
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	62084	62571	79083	67913	42464	44995	81851	56437	33593	38844	34043	35494	43215	61140	56806	53720	53391
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	60830	61644	72971	65148	39634	42872	61303	47936	32863	41016	32823	35567	44850	59613	52326	52263	50229
	F ₄ - 100% N through FYM	58938	57869	54464	57090	39388	42562	51708	44553	30365	43917	35476	36586	45585	54273	50952	50270	47125
	Mean	61490	60504	73869	65288	41232	44271	64349	49950	32816	40033	33224	35357	42960	59483	54660	52368	50741
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	64548	51757	78848	65051	44964	49955	77954	57624	28883	35735	21101	28573	37175	56260	52434	48623	49968
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	59070	54796	69470	61112	44143	48455	63917	52172	27770	39474	27889	31711	39325	55140	51185	48550	48386
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	57728	60669	65261	61219	42709	46797	62806	50771	26296	39675	27145	31039	40320	54073	47391	47261	47573
	F ₄ - 100% N through FYM	54912	51581	53339	53277	41539	44965	50852	45785	25690	41304	28774	31923	39645	51860	45898	45801	44197
	Mean	59065	54701	66730	60165	43339	47543	63882	51588	27160	39047	26227	30811	39116	54333	49227	47559	47531
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	57222	63790	58398	59803	44068	47641	82229	57979	26050	34653	22281	27662	37140	55547	49755	47481	48231
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	56210	56399	50569	54393	43462	45543	64109	51038	25940	38144	24650	29578	39945	54427	48730	47701	45677
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	57046	53098	44320	51488	40340	44230	58604	47725	25144	38565	23985	29231	39305	53713	46080	46366	43703
	F ₄ - 100% N through FYM	53724	45866	43485	47692	39929	43007	54718	45885	24564	39903	25763	30077	39500	51687	44816	45334	42247
	Mean	56051	54788	49193	53344	41950	45105	64915	50657	25425	37816	24170	29137	38973	53844	47345	46720	44964
Nutrient supply	F ₁ - 100% RDF* of the Zones	63602	61962	79841	68469	44033	47773	74901	55569	31504	36496	26243	31414	38289	59000	55117	50802	51563
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	60616	60041	70794	63817	43028	45950	69639	52872	30582	39591	30178	33450	41102	57869	53978	50983	50280
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	59334	60841	64748	61641	40770	44251	63527	49516	29446	40530	29569	33182	42138	56320	50665	49708	48512
	F ₄ - 100% N through FYM	56942	55411	53009	55121	39902	42993	53340	45412	28354	42661	31810	34275	42298	53338	49054	48230	45759

CHAPTER II: AGRONOMY

Table II.108 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on net returns of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatment		Net Return (Rs/ha)																Zonal mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	41841	43683	64460	49995	17169	18763	48531	28154	23891	26492	18287	22890	16624	35210	33643	28492	32383
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	37248	36546	54153	42649	14394	15497	39076	22989	20277	27152	18803	22077	16244	32988	31410	26881	28649
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	34634	38854	47339	40276	13468	14560	42564	23531	16729	26116	9851	17565	17170	28849	27832	24617	26497
	F ₄ - 100% N through FYM	31831	35968	30347	32715	10572	11569	25914	16018	14547	27272	12031	17950	14910	23833	22848	20530	21803
	Mean	36389	38763	49075	41409	13901	15097	39021	22673	18861	26758	14743	20121	16237	30220	28933	25130	27333
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	38050	31872	60859	43594	17551	19210	34814	23858	22692	24603	19380	22225	15163	37830	33480	28824	29625
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	35064	33551	49983	39533	15614	16534	53106	28418	19843	25094	20293	21744	18536	34361	30027	27641	29334
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	34541	33355	44671	37522	13504	15174	33329	20669	17113	25266	14639	19006	18944	31582	24295	24940	25534
	F ₄ - 100% N through FYM	31379	28310	24864	28184	12008	13539	22395	15981	13115	26667	12400	17394	17035	23573	20252	20287	20461
	Mean	34759	31772	45094	37208	14669	16114	35911	22232	18191	25408	16678	20092	17420	31837	27014	25423	26239
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	38673	23882	50948	37834	19274	22724	50450	30816	17633	24485	17573	19897	13948	30983	27157	24029	28144
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	32240	25966	40570	32925	17493	20206	35386	24362	14520	26224	17073	19272	14446	28161	24206	22271	24708
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	31622	32563	37111	33765	16779	19311	35046	23712	11046	24425	11895	15789	14214	25842	19160	19739	23251
	F ₄ - 100% N through FYM	27568	22237	23939	24581	14359	16154	21753	17422	8940	24554	9735	14409	10895	20960	14998	15618	18008
	Mean	32526	26162	38142	32277	16976	19599	35659	24078	13035	24922	14069	17342	13376	26487	21380	20414	23528
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	32156	36724	31298	33393	19178	21257	55582	32006	15800	24403	18977	19727	14913	31270	25478	23887	27253
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	28543	26732	20869	25381	17612	18142	36434	24062	13690	25894	18226	19270	16066	28448	22751	22422	22784
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	31741	25793	16970	24835	15210	17592	31700	21501	10894	24315	12024	15744	14199	26482	18849	19843	20481
	F ₄ - 100% N through FYM	26708	16850	14435	19331	13549	15044	26476	18356	8814	24153	10013	14327	11750	21787	14916	16151	17041
	Mean	29787	26525	20893	25735	16387	18009	37548	23981	12300	24691	14810	17267	14232	26997	20499	20576	21890
Nutrient supply	F ₁ - 100% RDF* of the Zones	37680	34040	51891	41204	18293	20489	47344	28709	20004	24996	18554	21185	15162	33823	29940	26308	29351
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	33274	30699	41394	35122	16278	17595	41001	24958	17082	26091	18599	20591	16323	30990	27099	24804	26369
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	33135	32641	36523	34099	14740	16659	35660	22353	13946	25030	12102	17026	16132	28189	22534	22285	23941
	F ₄ - 100% N through FYM	29372	25841	23396	26203	12622	14077	24134	16944	11354	25661	11045	16020	13648	22538	18254	18146	19328

CHAPTER II: AGRONOMY

Table II.109 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on BC ratio of pearl millet crop in Zone B during kharif 2020, 2021 and 2022

Treatment		BC Ratio																Zonal mean
		ABD1				DHL				VYP				CBE				
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	2020	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	2.57	2.52	3.25	2.78	1.65	1.65	2.71	2.00	2.87	3.08	2.44	2.80	1.69	2.35	2.29	2.11	2.42
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	2.34	2.22	2.81	2.46	1.52	1.52	2.32	1.79	2.37	2.84	2.31	2.51	1.63	2.19	2.13	1.98	2.18
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	2.28	2.34	2.63	2.42	1.50	1.50	2.48	1.82	2.00	2.56	2.05	2.20	1.64	1.99	1.96	1.86	2.08
	F ₄ - 100% N through FYM	2.12	2.18	2.00	2.10	1.38	1.38	1.86	1.54	1.80	2.50	2.04	2.11	1.50	1.75	1.72	1.66	1.85
	Mean	2.33	2.32	2.67	2.44	1.51	1.51	2.34	1.79	2.26	2.74	2.21	2.40	1.62	2.07	2.025	1.90	2.13
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	2.46	2.14	3.16	2.59	1.68	1.68	2.26	1.87	2.93	3.09	2.60	2.87	1.66	2.51	2.34	2.17	2.38
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	2.30	2.16	2.72	2.39	1.58	1.58	2.85	2.00	2.44	2.82	2.47	2.58	1.75	2.28	2.12	2.05	2.26
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	2.31	2.18	2.58	2.36	1.51	1.51	2.19	1.74	2.09	2.60	2.08	2.26	1.73	2.13	1.87	1.91	2.07
	F ₄ - 100% N through FYM	2.14	1.96	1.84	1.98	1.44	1.44	1.76	1.55	1.76	2.55	2.06	2.12	1.60	1.77	1.66	1.68	1.83
	Mean	2.30	2.11	2.58	2.33	1.55	1.55	2.27	1.79	2.31	2.77	2.30	2.46	1.69	2.17	1.998	1.95	2.13
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	2.49	1.86	2.83	2.39	1.75	1.75	2.83	2.11	2.57	3.18	1.87	2.54	1.60	2.23	2.07	1.97	2.25
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	2.20	1.90	2.40	2.17	1.66	1.66	2.24	1.85	2.10	2.98	2.11	2.39	1.58	2.04	1.9	1.84	2.06
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	2.21	2.16	2.32	2.23	1.65	1.65	2.26	1.85	1.73	2.60	1.78	2.03	1.54	1.92	1.68	1.71	1.96
	F ₄ - 100% N through FYM	2.01	1.76	1.81	1.86	1.53	1.53	1.75	1.60	1.53	2.46	1.72	1.90	1.38	1.68	1.49	1.52	1.72
	Mean	2.23	1.92	2.34	2.16	1.65	1.65	2.27	1.85	1.98	2.81	1.87	2.22	1.53	1.97	1.785	1.76	2.00
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	2.28	2.36	2.15	2.26	1.77	1.77	3.08	2.21	2.54	3.38	2.17	2.70	1.67	2.29	2.05	2.00	2.29
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	2.03	1.90	1.70	1.88	1.68	1.68	2.31	1.89	2.12	3.11	2.01	2.41	1.67	2.10	1.88	1.88	2.02
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	2.25	1.94	1.62	1.94	1.61	1.61	2.18	1.80	1.77	2.71	1.68	2.05	1.57	1.97	1.69	1.74	1.88
	F ₄ - 100% N through FYM	1.99	1.58	1.50	1.69	1.51	1.51	1.94	1.65	1.56	2.53	1.64	1.91	1.42	1.73	1.5	1.55	1.70
	Mean	2.14	1.95	1.74	1.94	1.64	1.64	2.38	1.89	2.00	2.93	1.88	2.27	1.58	2.02	1.78	1.80	1.97
Nutrient supply	F ₁ - 100% RDF* of the Zones	2.45	2.22	2.85	2.51	1.71	1.71	2.72	2.05	2.73	3.18	2.27	2.73	1.66	2.35	2.188	2.06	2.34
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	2.22	2.05	2.41	2.22	1.61	1.61	2.43	1.88	2.26	2.94	2.23	2.47	1.66	2.15	2.008	1.94	2.13
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	2.26	2.16	2.29	2.24	1.57	1.57	2.28	1.80	1.90	2.62	1.90	2.14	1.62	2.00	1.8	1.81	2.00
	F ₄ - 100% N through FYM	2.07	1.87	1.79	1.91	1.46	1.46	1.83	1.58	1.66	2.51	1.86	2.01	1.48	1.73	1.593	1.60	1.78

CHAPTER II: AGRONOMY

Table II.110 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on energy input and energy output of pearl millet crop at Dhule & Coimbatore in Zone B during kharif 2020, 2021 and 2022

Treatment		Energy input (MJ/ ha)							Zonal mean	Energy Output (MJ/ ha)							Zonal mean
		CBE				DHL				CBE				DHL			
		2020	2021	2022	Mean	2021	2022	Mean		2020	2021	2022	Mean	2021	2022	Mean	
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2021	2022	Mean		2020	2021	2022	Mean	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	9422	9422	9422	9422	5249	5249	5249	7336	85811	101539	104375	97242	85303	92284	88794	93018
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	9272	9272	9272	9272	4757	4757	4757	7015	89217	97269	103536	96674	82290	89861	86076	91375
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	9122	9122	9122	9122	4598	4598	4598	6860	94333	94837	99524	96231	79303	85422	82363	89297
	F ₄ - 100% N through FYM	9283	9283	9283	9283	2480	2480	2480	5882	95944	92014	96960	94973	75404	72318	73861	84417
	Mean	9275	9275	9275	9275	4271	4271	4271	6773	91326	96415	101099	96280	80575	84971	82773	89527
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	8623	8623	8623	8623	5165	5165	5165	6894	84805	102209	102695	96570	84420	115711	100066	98318
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	8473	8473	8473	8473	4673	4673	4673	6573	91765	100917	99664	97449	82897	93448	88173	92811
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	8323	8323	8323	8323	4514	4514	4514	6419	96006	98197	93044	95749	79242	92017	85630	90689
	F ₄ - 100% N through FYM	8484	8484	8484	8484	2396	2396	2396	5440	98501	89024	91763	93096	78876	76972	77924	85510
	Mean	8476	8476	8476	8476	4187	4187	4187	6331	92769	97587	96792	95716	81359	94537	87948	91832
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	8857	8857	8857	8857	5124	5124	5124	6991	79458	92731	94662	88950	92229	124641	108435	98693
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	8707	8707	8707	8707	4632	4632	4632	6670	84786	90644	92698	89376	89688	122001	105845	97610
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	8557	8557	8557	8557	4473	4473	4473	6515	88179	89944	85232	87785	85629	108070	96850	92317
	F ₄ - 100% N through FYM	8718	8718	8718	8718	2355	2355	2355	5537	87470	84968	82851	85096	82434	84402	83418	84257
	Mean	8710	8710	8710	8710	4146	4146	4146	6428	84973	89572	88861	87802	87495	109779	98637	93219
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	8058	8058	8058	8058	5040	5040	5040	6549	82033	91009	89394	87479	86883	116222	101553	94516
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	7908	7908	7908	7908	4548	4548	4548	6228	85868	89908	88186	87987	83052	104109	93581	90784
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	7758	7758	7758	7758	4389	4389	4389	6074	85863	90613	83672	86716	81563	91043	86303	86510
	F ₄ - 100% N through FYM	7920	7920	7920	7920	2271	2271	2271	5096	87498	84241	80341	84027	81271	80499	80885	82456
	Mean	7911	7911	7911	7911	4062	4062	4062	5987	85316	88943	85398	86552	83192	97968	90580	88566
Nutrient supply	F ₁ - 100% RDF* of the Zones	8740	8740	8740		5145	5144.5			83027	96872	97782		87209	112215		
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	8590	8590	8590		4653	4652.5			87909	94685	96021		84482	102355		
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	8440	8440	8440		4494	4493.5			91095	93398	90368		81434	94138		
	F ₄ - 100% N through FYM	8601	8601	8601		2376	2375.5			92353	87562	87979		79496	78548		
	Mean	8593	8593	8593		4641	4641.5			88596	93614	93283		83304	101067		

CHAPTER II: AGRONOMY

Table II.111 PMAT 5b: Effect of different tillage manipulations and nutrient management practices on net energy and EUE of pearl millet crop at Dhule & Coimbatore in Zone B during kharif 2020, 2021 and 2022

Treatment		Net energy (MJ/ ha)							Zonal mean	EUE							Zonal mean
		CBE				DHL				CBE				DHL			
		2020	2021	2022	Mean	2021	2022	Mean		2020	2021	2022	Mean	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	76389	92118	94953	87820	80054	87034	83544	85682	9.11	10.78	11.08	10.32	16.30	17.60	16.95	13.64
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	79945	87998	94264	87402	77533	85104	81319	84360	9.62	10.49	11.17	10.43	17.30	18.90	18.10	14.26
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	85212	85715	90402	87110	74705	80824	77765	82437	10.34	10.40	10.91	10.55	17.20	18.60	17.90	14.23
	F ₄ - 100% N through FYM	86661	82731	87677	85690	72924	69838	71381	78535	10.34	9.91	10.44	10.23	30.40	29.20	29.80	20.02
	Mean	82052	87141	91824	87005	76304	80700	78502	82754	9.85	10.40	10.90	10.38	20.30	21.08	20.69	15.54
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	76182	93586	94072	87947	79255	110545	94900	91423	9.83	11.85	11.91	11.20	16.30	22.40	19.35	15.27
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	83292	92444	91191	88976	78224	88775	83500	86238	10.83	11.91	11.76	11.50	17.70	20.00	18.85	15.18
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	87683	89874	84721	87426	74728	87503	81116	84271	11.54	11.80	11.18	11.51	17.60	20.40	19.00	15.25
	F ₄ - 100% N through FYM	90016	80540	83279	84612	76480	74575	75528	80070	11.61	10.49	10.82	10.97	32.90	32.10	32.50	21.74
	Mean	84293	89111	88316	87240	77172	90350	83761	85500	10.95	11.51	11.42	11.29	21.13	23.73	22.43	16.86
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	70601	83874	85805	80093	87105	119517	103311	91702	8.97	10.47	10.69	10.04	18.00	24.30	21.15	15.60
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	76079	81937	83991	80669	85056	117369	101213	90941	9.74	10.41	10.65	10.27	19.40	26.30	22.85	16.56
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	79622	81387	76675	79228	81156	103597	92377	85802	10.30	10.51	9.96	10.26	19.10	24.20	21.65	15.95
	F ₄ - 100% N through FYM	78751	76249	74133	76378	80080	82047	81064	78721	10.03	9.75	9.50	9.76	35.00	35.80	35.40	22.58
	Mean	76263	80862	80151	79092	83349	105633	94491	86791	9.76	10.29	10.20	10.08	22.88	27.65	25.26	17.67
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	73975	82951	81336	79421	81843	111182	96513	87967	10.18	11.29	11.09	10.85	17.20	23.10	20.15	15.50
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	77960	81999	80278	80079	78504	99561	89033	84556	10.86	11.37	11.15	11.13	18.30	22.90	20.60	15.86
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	78105	82855	75914	78958	77174	86655	81915	80436	11.07	11.68	10.79	11.18	18.60	20.70	19.65	15.42
	F ₄ - 100% N through FYM	79578	76322	72421	76107	79000	78228	78614	77361	11.05	10.64	10.14	10.61	35.80	35.50	35.65	23.13
	Mean	77405	81032	77487	78641	79130	93907	86518	82580	10.79	11.25	10.79	10.94	22.48	25.55	24.01	17.48
Nutrient supply	F ₁ - 100% RDF* of the Zones	74287	88132	89042		82064	107070			9.52	11.10	11.19		16.95	21.85		
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	79319	86095	87431		79829	97702			10.26	11.05	11.18		18.18	22.03		
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	82656	84958	81928		76941	89645			10.81	11.10	10.71		18.13	20.98		
	F ₄ - 100% N through FYM	83752	78961	79378		77121	76172			10.76	10.20	10.23		33.53	33.15		

CHAPTER II: AGRONOMY

Table II.112 PMAT 5b:Effect of different tillage manipulations and nutrient management practices on energy productivity of pearl millet crop at Dhule & Coimbatore in Zone B during kharif 2020, 2021 and 2022

Treatment		Energy Productivity (kg/MJ/ ha)							Zonal mean
		CBE				DHL			
Tillage Practices	Nutrient Supply	2020	2021	2022	Mean	2021	2022	Mean	
CT ₁ - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F ₁ - 100% RDF* of the Zones	0.29	0.33	0.35	0.32	0.41	0.45	0.43	0.38
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	0.30	0.33	0.36	0.33	0.44	0.49	0.47	0.40
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.32	0.32	0.31	0.32	0.43	0.48	0.46	0.39
	F ₄ - 100% N through FYM	0.32	0.30	0.30	0.31	0.77	0.77	0.77	0.54
	Mean	0.31	0.32	0.33	0.32	0.51	0.55	0.53	0.42
CT ₂ - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F ₁ - 100% RDF* of the Zones	0.30	0.36	0.39	0.35	0.42	0.56	0.49	0.42
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	0.34	0.36	0.38	0.36	0.45	0.51	0.48	0.42
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.36	0.36	0.32	0.35	0.44	0.51	0.48	0.41
	F ₄ - 100% N through FYM	0.36	0.32	0.30	0.33	0.82	0.81	0.82	0.57
	Mean	0.34	0.35	0.35	0.35	0.53	0.60	0.57	0.46
MT ₁ -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F ₁ - 100% RDF* of the Zones	0.28	0.32	0.30	0.30	0.45	0.61	0.53	0.42
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	0.30	0.32	0.29	0.30	0.48	0.67	0.58	0.44
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.31	0.32	0.32	0.32	0.48	0.61	0.55	0.43
	F ₄ - 100% N through FYM	0.30	0.30	0.31	0.30	0.88	0.90	0.89	0.60
	Mean	0.30	0.32	0.31	0.31	0.57	0.70	0.64	0.47
MT ₂ -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F ₁ - 100% RDF* of the Zones	0.31	0.34	0.37	0.34	0.44	0.58	0.51	0.43
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	0.34	0.34	0.35	0.34	0.46	0.57	0.52	0.43
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.34	0.35	0.34	0.34	0.47	0.53	0.50	0.42
	F ₄ - 100% N through FYM	0.33	0.33	0.33	0.33	0.87	0.91	0.89	0.61
	Mean	0.33	0.34	0.35	0.34	0.56	0.65	0.60	0.47
Nutrient supply	F ₁ - 100% RDF* of the Zones	0.30	0.34	0.35		0.43	0.55		
	F ₂ - 75 % N through RDF + 2.5 t/ha FYM	0.32	0.34	0.35		0.46	0.56		
	F ₃ - 50 % N through RDF + 5.0 t/ha through FYM	0.33	0.34	0.32		0.46	0.53		
	F ₄ - 100% N through FYM	0.33	0.31	0.31		0.84	0.85		

CHAPTER II: AGRONOMY

Table II.113: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the Soil physico- chemical properties of pearl millet crop after harvest in Zone B during kharif 2021 and 2022

Treatment		Soil physico- chemical properties											
		Bulk density (g/cc)						Av. N (kg/ha)					
Tillage Practices	Nutrient Supply	DHL			VYP			DHL			VYP		
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
CT1 - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	1.21	1.21	1.21	1.29	1.26	1.28	188.7	184.5	186.6	191.3	193.9	192.6
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.21	1.21	1.21	1.30	1.28	1.29	190.4	188.2	189.3	198.2	194.3	196.3
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.21	1.21	1.21	1.30	1.29	1.30	197.7	192.4	195.0	201.4	209.3	205.3
	F4 - 100% N through FYM	1.21	1.21	1.21	1.31	1.28	1.29	210.2	198.8	204.5	206.1	216.4	211.2
	Mean	1.21	1.21	1.21	1.30	1.28	1.29	196.7	191.0	193.9	199.3	203.5	201.4
CT2 - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	1.21	1.21	1.21	1.29	1.26	1.28	189.1	182.3	185.7	190.2	189.5	189.9
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.21	1.21	1.21	1.31	1.26	1.28	190.6	188.6	189.6	200.1	195.7	197.9
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.21	1.21	1.21	1.32	1.28	1.30	198.3	191.9	195.1	205.4	203.6	204.5
	F4 - 100% N through FYM	1.21	1.21	1.21	1.31	1.28	1.29	209.5	199.1	204.3	205.2	222.6	213.9
	Mean	1.21	1.21	1.21	1.31	1.27	1.29	196.9	190.5	193.7	200.2	202.9	201.5
MT1 -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	1.21	1.21	1.21	1.31	1.31	1.31	189.3	183.6	186.5	189.4	188.5	189.0
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.21	1.21	1.21	1.30	1.30	1.30	190.3	189.5	189.9	198.7	196.6	197.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.21	1.21	1.21	1.31	1.31	1.31	197.7	191.8	194.8	202.2	203.4	202.8
	F4 - 100% N through FYM	1.21	1.21	1.21	1.31	1.31	1.31	212.4	200.2	206.3	208.5	221.8	215.2
	Mean	1.21	1.21	1.21	1.31	1.31	1.31	197.4	191.3	194.4	199.7	202.6	201.1
MT2 -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	1.21	1.21	1.21	1.31	1.34	1.32	189.3	183.7	186.5	189.5	190.0	189.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.21	1.21	1.21	1.31	1.33	1.32	190.5	188.8	189.6	200.4	206.6	203.5
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.21	1.21	1.21	1.31	1.32	1.32	197.6	192.6	195.1	204.3	214.6	209.5
	F4 - 100% N through FYM	1.21	1.21	1.21	1.32	1.33	1.33	212.6	202.5	207.5	209.7	225.1	217.4
	Mean	1.21	1.21	1.21	1.31	1.33	1.32	197.5	191.9	194.7	201.0	209.1	205.0
Nutrient supply	F1 - 100% RDF* of the Zones	1.21	1.21	1.21	1.30	1.29	1.30	189.1	183.5	186.3	190.1	190.5	190.3
	F2 - 75 % N through RDF + 2.5 t/ha FYM	1.21	1.21	1.21	1.30	1.30	1.30	190.5	188.8	189.6	199.4	198.3	198.8
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	1.21	1.21	1.21	1.31	1.30	1.31	197.8	192.2	195.0	203.3	207.7	205.5
	F4 - 100% N through FYM	1.21	1.21	1.21	1.31	1.30	1.31	211.2	200.2	205.7	207.4	221.5	214.4

CHAPTER II: AGRONOMY

Table II.114: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the Soil chemical properties of pearl millet crop after harvest in Zone B during *kharif* 2021 and 2022

Treatment		Soil chemical properties											
		Av. P (kg/ha)						Av. K (kg/ha)					
		DHL			VYP			DHL			VYP		
Tillage Practices	Nutrient Supply	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
CT1 - Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	17.38	17.4	17.39	20.67	20.17	20.42	588.0	590.0	589.0	398.8	396.4	397.6
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.22	17.21	17.22	21.38	21.21	21.29	582.0	578.0	580.0	395.7	418.2	407.0
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.14	17.16	17.15	22.67	22.10	22.39	576.0	562.0	569.0	399.1	421.8	410.4
	F4 - 100% N through FYM	16.92	16.72	16.82	21.56	22.86	22.21	552.0	544.0	548.0	402.3	426.2	414.3
	Mean	17.17	17.123	17.14	21.57	21.59	21.58	574.5	568.5	571.5	399.0	415.6	407.3
CT2 - Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	17.38	17.39	17.39	20.86	20.78	20.82	589.0	590.0	589.5	382.7	408.9	395.8
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.20	17.22	17.21	21.77	21.63	21.70	580.0	576.0	578.0	399.1	419.7	409.4
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.12	17.18	17.15	21.82	21.93	21.88	557.0	564.0	560.5	402.3	422.5	412.4
	F4 - 100% N through FYM	16.90	16.74	16.82	22.20	22.90	22.55	556.0	546.0	551.0	408.9	425.1	417.0
	Mean	17.15	17.133	17.14	21.66	21.81	21.74	570.5	569.0	569.8	398.2	419.1	408.6
MT1 -Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	17.41	17.4	17.41	20.81	20.42	20.62	589.0	594.0	591.5	392.6	403.1	397.9
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.23	17.23	17.23	21.04	21.57	21.31	582.0	582.0	582.0	395.8	417.5	406.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.18	17.19	17.19	22.62	21.82	22.22	577.0	566.0	571.5	405.9	419.7	412.8
	F4 - 100% N through FYM	16.96	16.86	16.91	22.02	22.57	22.30	558.0	552.0	555.0	405.7	426.3	416.0
	Mean	17.20	17.17	17.18	21.62	21.60	21.61	576.5	573.5	575.0	400.0	416.7	408.3
MT2 -Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	17.40	17.4	17.40	21.08	20.15	20.62	588.0	594.0	591.0	392.6	410.2	401.4
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.24	17.23	17.24	22.15	20.77	21.46	580.0	582.0	581.0	401.9	421.3	411.6
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.19	17.18	17.19	21.59	21.60	21.60	574.0	566.0	570.0	404.5	424.7	414.6
	F4 - 100% N through FYM	16.96	16.89	16.93	22.46	23.02	22.74	554.0	554.0	554.0	407.9	429.8	418.9
	Mean	17.20	17.175	17.19	21.82	21.39	21.60	574.0	574.0	574.0	401.7	421.5	411.6
Nutrient supply	F1 - 100% RDF* of the Zones	17.39	17.398	17.40	20.85	20.38	20.62	588.5	592.0	590.3	391.7	404.7	398.2
	F2 - 75 % N through RDF + 2.5 t/ha FYM	17.22	17.223	17.22	21.58	21.29	21.44	581.0	579.5	580.3	398.1	419.2	408.7
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	17.16	17.178	17.17	22.18	21.86	22.02	571.0	564.5	567.8	403.0	422.2	412.6
	F4 - 100% N through FYM	16.94	16.803	16.87	22.06	22.84	22.45	555.0	549.0	552.0	406.2	426.8	416.5

CHAPTER II: AGRONOMY

Table II.115: PMAT 5a:Effect of different tillage manipulations and nutrient management practices on the Soil physico- chemical properties of pearl millet crop after harvest in Zone B during *kharif* 2021 and 2022

Treatment		Soil physico- chemical properties																	
		EC (dS/m)						pH						OC (%)					
Tillage Practices	Nutrient Supply	DHL			VYP			DHL			VYP			DHL			VYP		
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
CT1- Conventional tillage (Two harrow + one cultivator and planking + Two Inter culture operations by kasola/wheel hand hoe/power weeder at 15-20 &30-35 DAS)	F1 - 100% RDF* of the Zones	0.46	0.48	0.47	0.35	0.33	0.34	8.02	8.10	8.06	8.26	8.27	8.27	0.56	0.50	0.53	0.64	0.64	0.64
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.44	0.46	0.45	0.35	0.34	0.34	7.97	8.03	8.00	8.23	8.25	8.24	0.59	0.52	0.56	0.66	0.66	0.66
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.42	0.45	0.44	0.35	0.33	0.34	7.95	7.98	7.97	8.28	8.26	8.27	0.59	0.54	0.57	0.63	0.62	0.63
	F4 - 100% N through FYM	0.39	0.40	0.40	0.36	0.34	0.35	7.88	7.86	7.87	8.26	8.22	8.24	0.62	0.58	0.60	0.64	0.65	0.64
	Mean	0.43	0.45	0.44	0.35	0.34	0.34	7.96	7.99	7.97	8.26	8.25	8.26	0.59	0.54	0.56	0.64	0.64	0.64
CT2- Conventional tillage (Two harrow + one cultivator and planking + One Inter culture operations by kasola/wheel hand hoe/power weeder at 21-285 DAS)	F1 - 100% RDF* of the Zones	0.46	0.47	0.47	0.35	0.33	0.34	8.02	8.12	8.07	8.26	8.27	8.26	0.56	0.50	0.53	0.66	0.64	0.65
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.45	0.46	0.46	0.36	0.33	0.35	7.97	8.04	8.01	8.30	8.28	8.29	0.58	0.53	0.56	0.65	0.64	0.65
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.42	0.44	0.43	0.36	0.34	0.35	7.96	7.97	7.97	8.31	8.27	8.29	0.59	0.54	0.57	0.60	0.62	0.61
	F4 - 100% N through FYM	0.39	0.41	0.40	0.35	0.33	0.34	7.86	7.86	7.86	8.30	8.24	8.27	0.62	0.58	0.60	0.67	0.67	0.67
	Mean	0.43	0.45	0.44	0.35	0.33	0.34	7.95	8.00	7.98	8.29	8.26	8.28	0.59	0.54	0.56	0.64	0.64	0.64
MT1-Minimum tillage (One harrow + One cultivator and planking + Two Inter culture operations kasola/wheel hand hoe/power weeder at 15-20 & 30-35 DAS)	F1 - 100% RDF* of the Zones	0.46	0.47	0.47	0.34	0.33	0.34	8.02	8.10	8.06	8.25	8.28	8.27	0.56	0.52	0.54	0.63	0.61	0.62
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.45	0.45	0.45	0.35	0.33	0.34	7.98	8.03	8.01	8.31	8.30	8.30	0.58	0.54	0.56	0.66	0.65	0.66
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.43	0.45	0.44	0.35	0.33	0.34	7.95	7.98	7.97	8.27	8.27	8.27	0.59	0.56	0.58	0.66	0.64	0.65
	F4 - 100% N through FYM	0.39	0.40	0.40	0.36	0.33	0.34	7.87	7.84	7.86	8.28	8.25	8.27	0.63	0.60	0.62	0.63	0.64	0.64
	Mean	0.43	0.44	0.44	0.35	0.33	0.34	7.96	7.99	7.97	8.28	8.28	8.28	0.59	0.56	0.57	0.65	0.64	0.64
MT2-Minimum tillage (One harrow + One cultivator and planking One Inter culture operations by kasola/wheel hand hoe/power weeder between 21-28 DAS)	F1 - 100% RDF* of the Zones	0.46	0.47	0.47	0.35	0.33	0.34	8.02	8.11	8.07	8.25	8.29	8.27	0.56	0.52	0.54	0.62	0.61	0.62
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.44	0.45	0.45	0.36	0.34	0.35	7.97	8.02	8.00	8.26	8.24	8.25	0.59	0.54	0.57	0.64	0.63	0.63
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.42	0.44	0.43	0.35	0.34	0.35	7.95	7.96	7.96	8.28	8.26	8.27	0.59	0.54	0.57	0.65	0.65	0.65
	F4 - 100% N through FYM	0.39	0.40	0.40	0.36	0.33	0.35	7.88	7.85	7.87	8.31	8.25	8.28	0.63	0.60	0.62	0.61	0.63	0.62
	Mean	0.43	0.44	0.43	0.36	0.34	0.35	7.96	7.99	7.97	8.27	8.26	8.27	0.59	0.55	0.57	0.63	0.63	0.63
Nutrient supply	F1 - 100% RDF* of the Zones	0.46	0.47	0.47	0.35	0.33	0.34	8.02	8.11	8.06	8.25	8.28	8.27	0.56	0.51	0.54	0.64	0.63	0.63
	F2 - 75 % N through RDF + 2.5 t/ha FYM	0.45	0.46	0.45	0.35	0.34	0.34	7.97	8.03	8.00	8.28	8.27	8.27	0.59	0.53	0.56	0.65	0.65	0.65
	F3 - 50 % N through RDF + 5.0 t/ha through FYM	0.42	0.45	0.43	0.35	0.34	0.35	7.95	7.97	7.96	8.28	8.26	8.27	0.59	0.55	0.57	0.64	0.63	0.63
	F4 - 100% N through FYM	0.39	0.40	0.40	0.36	0.34	0.35	7.87	7.85	7.86	8.29	8.24	8.26	0.63	0.59	0.61	0.64	0.63	0.63

CHAPTER II: AGRONOMY

Table II. 116: PMAT 6a: Effect of split application of N on productivity of pearl millet crop under different doses of N in Zone A1 during kharif 2021 and 2022

Nutrient management	Treatment	Grain yield (kg/ha)						Zonal mean	Fodder yield (q/ha)						Zonal mean
		BKR			MDR				BKR			MDR			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	39.80	19.23	29.52	18.93	19.05	18.99	24.25	56.30	48.83	52.57	39.33	35.15	37.24	44.90
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	41.37	20.80	31.08	19.40	19.48	19.44	25.26	57.57	61.60	59.58	40.23	38.05	39.14	49.36
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	45.90	22.57	34.23	20.93	20.78	20.85	27.54	59.07	62.47	60.77	43.78	41.58	42.68	51.72
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	47.17	24.37	35.77	21.05	21.03	21.04	28.40	59.43	63.57	61.50	43.83	42.53	43.18	52.34
	Mean	43.56	21.74	32.65	20.08	20.08	20.08	26.36	58.09	59.12	58.60	41.79	39.33	40.56	49.58
112.5% RDN	Entire dose of N at sowing	42.30	22.63	32.47	20.00	19.25	19.63	26.05	55.93	55.03	55.48	40.90	38.70	39.80	47.64
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	46.13	23.23	34.68	22.13	19.75	20.94	27.81	65.40	62.07	63.73	46.08	44.58	45.33	54.53
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	48.83	26.17	37.50	23.23	21.13	22.18	29.84	61.83	63.00	62.42	48.63	47.60	48.11	55.26
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	49.60	26.20	37.90	24.10	21.40	22.75	30.33	62.03	64.10	63.07	50.28	48.33	49.30	56.18
	Mean	46.72	24.56	35.64	22.36	20.38	21.37	28.50	61.30	61.05	61.18	46.47	44.80	45.63	53.40
125% RDN	Entire dose of N at sowing	44.60	26.00	35.30	22.68	19.45	21.06	28.18	63.33	69.30	66.32	46.18	42.90	44.54	55.43
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	44.43	25.40	34.92	23.00	20.23	21.61	28.26	65.70	70.97	68.33	47.90	45.78	46.84	57.59
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	41.67	28.60	35.13	22.68	21.60	22.14	28.64	65.73	72.07	68.90	45.98	43.95	44.96	56.93
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	47.93	27.37	37.65	24.03	22.08	23.05	30.35	65.13	73.97	69.55	47.68	44.75	46.21	57.88
	Mean	44.66	26.84	35.75	23.09	20.84	21.97	28.86	64.98	71.58	68.28	46.93	44.34	45.64	56.96
Nitrogen split application	Entire dose of N at sowing	42.23	22.62	32.43	20.53	19.25	19.89	26.16	58.52	57.72	58.12	42.13	38.92	40.53	49.32
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	43.98	23.14	33.56	21.51	19.82	20.66	27.11	62.89	64.88	63.88	44.73	42.80	43.77	53.83
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	45.47	25.78	35.62	22.28	21.17	21.72	28.67	62.21	65.84	64.03	46.13	44.38	45.25	54.64
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	48.23	25.98	37.11	23.06	21.50	22.28	29.69	62.20	67.21	64.71	47.26	45.20	46.23	55.47
CD (5%)	Nutrient management	1.73	2.85		NS	NS			5.05	8.14		NS	4.52		
	Nitrogen split application	3.82	2.12		NS	1.31			NS	3.02		NS	3.16		
	Nutrient management xNitrogen split application	NS	NS		NS	NS			NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS			NS	NS		NS	NS		
CV (%)		8.5	8.7		10.5	7.6			9.5	4.7		10.5	8.8		

CHAPTER II: AGRONOMY

Table II. 117: PMAT 6a: Effect of split application of N on total & effective tillers/plant, plant population and plant height of pearl millet crop under different doses of N in Zone A1 during kharif 2022

Nutrient management	Treatment	Total tillers/ plant			Effective tillers/ plant			Plant Population			Test weight (g)			Plant height (cm)		
		BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
100% RDN	Entire dose of N at sowing	2.7	4.4	3.5	1.4	2.1	1.7	130.2	109.7	120.0	6.5	9.4	7.9	159.9	176.9	168.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.5	4.7	4.1	2.7	2.3	2.5	128.2	108.1	118.1	6.4	9.2	7.8	156.3	177.1	166.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.1	4.8	3.9	2.4	2.5	2.4	129.1	107.5	118.3	6.5	9.1	7.8	159.6	178.1	168.9
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.9	4.5	3.7	1.9	2.6	2.2	128.2	110.3	119.2	6.3	9.2	7.7	164.4	183.2	173.8
	Mean	3.1	4.6	3.8	2.1	2.4	2.2	128.9	108.9	118.9	6.4	9.2	7.8	160.1	178.8	169.4
112.5% RDN	Entire dose of N at sowing	2.3	4.6	3.4	2.0	2.3	2.1	128.7	108.5	118.6	6.7	9.3	8.0	164.5	177.4	171.0
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.5	4.8	4.1	2.7	2.4	2.5	128.5	111.2	119.8	6.3	9.1	7.7	157.2	182.5	169.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.6	4.7	4.1	2.4	2.6	2.5	129.9	113.2	121.6	6.4	9.5	7.9	163.5	184.0	173.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.1	4.6	3.8	2.3	2.7	2.5	128.0	111.2	119.6	7.0	9.6	8.3	159.4	186.5	172.9
	Mean	3.1	4.7	3.9	2.4	2.5	2.4	128.8	111.0	119.9	6.6	9.4	8.0	161.2	182.6	171.9
125% RDN	Entire dose of N at sowing	3.4	4.6	4.0	2.7	2.4	2.5	132.5	110.6	121.6	6.3	9.3	7.8	159.2	178.3	168.7
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.7	4.7	4.2	2.8	2.6	2.7	130.1	112.0	121.0	6.6	9.4	8.0	170.2	184.1	177.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.2	4.5	3.9	2.4	2.7	2.5	131.1	112.9	122.0	6.1	9.2	7.6	163.1	186.2	174.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.9	4.6	4.2	2.9	2.8	2.8	130.1	110.6	120.3	6.8	9.3	8.0	165.8	189.1	177.4
	Mean	3.6	4.6	4.1	2.7	2.6	2.6	130.9	111.5	121.2	6.5	9.3	7.9	164.6	184.4	174.5
Nitrogen split application	Entire dose of N at sowing	2.8	4.5	3.7	2.0	2.3	2.1	130.5	109.6	120.0	6.5	9.3	7.9	161.2	177.5	169.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.6	4.7	4.1	2.7	2.4	2.6	128.9	110.4	119.7	6.5	9.2	7.8	161.2	181.2	171.2
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.3	4.6	4.0	2.4	2.6	2.5	130.0	111.2	120.6	6.3	9.2	7.8	162.1	182.8	172.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.3	4.6	3.9	2.4	2.7	2.5	128.7	110.7	119.7	6.7	9.3	8.0	163.2	186.2	174.7
CD (5%)	Nutrient management	0.3	NS		0.4	NS		NS	NS		NS	NS		NS	4.2	
	Nitrogen split application	0.3	NS		0.3	0.2		NS	NS		NS	NS		NS	3.5	
	Nutrient management x Nitrogen split application	0.6	NS		0.5	NS		NS	NS		NS	NS		NS	NS	
	Nitrogen split application x Nutrient management	0.5	NS		0.6	NS		NS	NS		NS	NS		NS	NS	
CV (%)		9.4	5.3		11.5	10.9		5.5	4.5		8.9	2.4		4.6	2.3	

CHAPTER II: AGRONOMY

Table II. 118: PMAT 6a:Effect of split application of N on gross returns of pearl millet crop under different doses of N in Zone A1 during kharif 2021 and 2022

Nutrient management	Treatment	Gross returns (Rs/ha)						Zonal mean
		BKR			MDR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	117687	67687	92687	62244	65852	64048	78367
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	121824	77592	99708	63763	68586	66174	82941
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	132795	82001	107398	68969	73766	71368	89383
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	135882	86610	111246	69275	74933	72104	91675
	Mean	127047	78473	102760	66063	70784	68423	85592
112.5% RDN	Entire dose of N at sowing	123161	78403	100782	65450	68440	66945	83863
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	136477	83337	109907	72819	73153	72986	91446
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	140853	90440	115646	76569	78214	77392	96519
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	142663	91052	116858	79363	79288	79325	98091
	Mean	135789	85808	110798	73550	74774	74162	92480
125% RDN	Entire dose of N at sowing	132050	93140	112595	74106	71437	72772	92683
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	132849	92606	112728	75700	74983	75342	94035
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	126608	100318	113463	74006	77129	75567	94515
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	137538	98560	118049	77894	78716	78305	98177
	Mean	132261	96156	114209	75427	75566	75496	94853
Nitrogen split application	Entire dose of N at sowing	124299	79743	102021	67267	68576	67921	84971
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	130383	84512	107447	70760	72241	71501	89474
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	133419	90920	112169	73181	76370	74775	93472
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	138694	92074	115384	75510	77646	76578	95981
CD (5%)	Nutrient management	NS	6163		NS	NS		
	Nitrogen split application	10018	5109		NS	4034		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		
CV (%)		7.6	5.9		10.3	6.5		

CHAPTER II: AGRONOMY

Table II. 119: PMAT 6a:Effect of split application of N on net returns of pearl millet crop under different doses of N in Zone A1 during kharif 2021&2022

Nutrient management	Treatment	Net returns (Rs/ha)						Zonal mean
		BKR			MDR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	96687	46687	71687	41244	41532	41388	56537
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	100524	56292	78408	42463	43966	43214	60811
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	111495	60701	86098	47669	49146	48408	67253
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	114282	65010	89646	47675	50013	48844	69245
	Mean	105747	57173	81460	44763	46164	45463	63462
112.5% RDN	Entire dose of N at sowing	102014	57256	79635	44303	43973	44138	61886
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	115031	61890	88461	51373	48387	49880	69170
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	119407	68993	94200	55123	53448	54286	74243
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	120917	69306	95111	57617	54222	55919	75515
	Mean	114342	64361	89352	52104	50007	51056	70204
125% RDN	Entire dose of N at sowing	110757	71847	91302	52813	46824	49819	70560
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	111256	71013	91135	54107	50070	52089	71612
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	105015	78725	91870	52413	52216	52314	72092
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	115645	76667	96156	56001	53503	54752	75454
	Mean	110668	74563	92616	53834	50653	52243	72430
Nitrogen split application	Entire dose of N at sowing	103153	58597	80875	46120	44109	45115	62995
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	108937	63065	86001	49314	47474	48394	67198
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	111972	69473	90723	51735	51603	51669	71196
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	116948	70328	93638	53764	52579	53172	73405
CD (5%)	Nutrient management	NS	6163		NS	NS		
	Nitrogen split application	9108	5109		NS	4034		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		
CV (%)		8.3	7.8		14.7	9.8		

CHAPTER II: AGRONOMY

Table II. 120: PMAT 6a:Effect of split application of N on BC ratio of pearl millet crop under different doses of N in Zone A1 during kharif 2021 and 2022

Nutrient management	Treatment	BC ratio						Zonal mean
		BKR			MDR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	5.61	3.23	4.42	2.97	2.71	2.84	3.63
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	5.72	3.63	4.68	3.00	2.79	2.89	3.78
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	6.23	3.87	5.05	3.24	3.00	3.12	4.08
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	6.29	4.00	5.15	3.21	3.01	3.11	4.13
	Mean	5.96	3.68	4.82	3.10	2.87	2.99	3.91
112.5% RDN	Entire dose of N at sowing	5.82	3.73	4.78	3.10	2.80	2.95	3.86
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	6.37	3.90	5.14	3.40	2.96	3.18	4.16
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	6.57	4.20	5.38	3.57	3.16	3.37	4.37
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	6.56	4.17	5.36	3.65	3.16	3.41	4.38
	Mean	6.33	4.00	5.17	3.43	3.02	3.22	4.19
125% RDN	Entire dose of N at sowing	6.20	4.37	5.29	3.48	2.90	3.19	4.24
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	6.15	4.30	5.23	3.51	3.01	3.26	4.24
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	5.86	4.63	5.25	3.43	3.10	3.26	4.26
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	6.28	4.47	5.38	3.56	3.13	3.34	4.36
	Mean	6.13	4.44	5.28	3.49	3.03	3.26	4.27
Nitrogen split application	Entire dose of N at sowing	5.88	3.78	4.83	3.18	2.80	2.99	3.91
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	6.08	3.94	5.01	3.30	2.92	3.11	4.06
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	6.22	4.23	5.23	3.41	3.09	3.25	4.24
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	6.38	4.21	5.30	3.47	3.10	3.28	4.29
CD (5%)	Nutrient management	NS	0.30		NS	NS		
	Nitrogen split application	0.33	0.24		NS	0.16		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		
CV (%)		5.4	6.0		10.2	6.46		

CHAPTER II: AGRONOMY

Table II.121: PMAT 6a:Effect of split application of N on grain yield of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Grain yield (q/ha)									Zonal mean
		JPR			HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	32.14	27.42	29.78	32.68	31.58	32.13	10.73	21.93	16.33	26.08
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	38.43	26.88	32.65	38.61	37.07	37.84	14.33	25.87	20.10	30.20
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	34.28	28.01	31.14	37.80	36.23	37.01	13.70	23.28	18.49	28.88
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	38.95	26.85	32.90	41.30	39.89	40.59	16.05	28.19	22.12	31.87
	Mean	35.95	27.29	31.62	37.60	36.19	36.89	13.70	24.81	19.26	29.26
112.5% RDN	Entire dose of N at sowing	37.08	24.50	30.79	34.94	34.65	34.79	13.10	23.79	18.45	28.01
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	41.43	30.79	36.11	42.10	39.26	40.68	17.31	28.60	22.96	33.25
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	41.99	29.93	35.96	41.43	38.40	39.92	15.51	26.13	20.82	32.23
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	45.10	31.22	38.16	44.62	41.48	43.05	20.52	33.23	26.87	36.03
	Mean	41.40	29.11	35.25	40.77	38.45	39.61	16.61	27.94	22.27	32.38
125% RDN	Entire dose of N at sowing	37.99	28.68	33.33	35.57	35.68	35.62	15.18	25.78	20.48	29.81
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	43.59	32.43	38.01	42.72	41.20	41.96	20.30	32.53	26.41	35.46
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	41.45	29.48	35.46	41.81	40.48	41.15	17.87	29.91	23.89	33.50
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	45.15	30.99	38.07	44.84	41.76	43.30	23.77	36.77	30.27	37.21
	Mean	42.04	30.39	36.22	41.24	39.78	40.51	19.28	31.25	25.26	34.00
Nitrogen split application	Entire dose of N at sowing	35.73	26.86	31.30	34.39	33.97	34.18	13.00	23.83	18.42	27.97
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	41.15	30.03	35.59	41.14	39.18	40.16	17.31	29.00	23.16	32.97
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	39.24	29.14	34.19	40.35	38.37	39.36	15.69	26.44	21.06	31.54
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	43.07	29.68	36.38	43.59	41.04	42.31	20.11	32.73	26.42	35.04
CD (5%)	Nutrient management	3.20	1.80		1.70	2.17		2.16	3.10		
	Nitrogen split application	2.94	1.85		1.92	1.69		1.91	2.72		
	Nutrient management xNitrogen split application	NS	3.35		NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	3.29		NS	NS		NS	NS		
CV (%)		8.8	7.6		5.7	5.3		13.7	11.5		

CHAPTER II: AGRONOMY

Table II.122: PMAT 6a:Effect of split application of N on stover yield of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Fodder yield (q/ha)									Zonal mean
		JPR			HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	79.83	70.07	74.95	102.31	98.47	100.39	44.38	44.86	44.62	73.32
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	95.01	68.83	81.92	112.71	106.26	109.49	47.97	48.92	48.45	79.95
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	87.95	71.61	79.78	111.73	105.13	108.43	45.46	47.58	46.52	78.24
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	96.36	72.56	84.46	119.62	111.17	115.39	49.76	51.69	50.73	83.53
	Mean	89.79	70.77	80.28	111.59	105.26	108.42	46.89	48.26	47.58	78.76
112.5% RDN	Entire dose of N at sowing	91.79	62.58	77.19	108.36	104.86	106.61	47.85	48.05	47.95	77.25
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	102.11	78.70	90.40	116.24	111.23	113.74	51.21	54.02	52.61	85.58
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	101.54	78.96	90.25	117.65	111.40	114.53	49.56	52.76	51.16	85.31
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	111.56	77.58	94.57	123.19	116.67	119.93	53.71	56.88	55.29	89.93
	Mean	101.75	74.45	88.10	116.36	111.04	113.70	50.58	52.92	51.75	84.52
125% RDN	Entire dose of N at sowing	94.22	73.32	83.77	109.40	107.48	108.44	49.52	51.50	50.51	80.91
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	107.62	82.85	95.23	119.73	113.46	116.59	53.83	56.68	55.25	89.03
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	102.25	77.24	89.74	121.04	114.27	117.65	54.15	54.95	54.55	87.32
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	110.99	77.74	94.37	125.45	120.29	122.87	57.34	61.42	59.38	92.21
	Mean	103.77	77.79	90.78	118.91	113.87	116.39	53.71	56.14	54.92	87.36
Nitrogen split application	Entire dose of N at sowing	88.61	68.66	78.64	106.69	103.60	105.15	47.25	48.14	47.69	77.16
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	101.58	76.79	89.19	116.23	110.32	113.27	51.00	53.21	52.10	84.85
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	97.25	75.94	86.59	116.81	110.27	113.54	49.72	51.76	50.74	83.62
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	106.30	75.96	91.13	122.75	116.04	119.40	53.60	56.66	55.13	88.55
CD (5%)	Nutrient management	8.68	4.01		2.62	2.87		4.95	4.92		
	Nitrogen split application	8.04	3.38		4.05	2.28		2.91	4.15		
	Nutrient management xNitrogen split application	NS	6.22		NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	6.43		NS	NS		NS	NS		
CV (%)		9.7	5.4		4.2	2.5		6.9	9.4		

CHAPTER II: AGRONOMY

Table II.123: PMAT 6a:Effect of split application of N on gross returns of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Gross returns (Rs/ha)						Zonal mean
		HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	91939	93907	92923	30334	52812	41573	67248
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	107166	108367	107766	38254	61524	49889	78828
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	105156	106162	105659	36492	56056	46274	75966
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	114449	115975	115212	42052	66718	54385	84799
	Mean	104677	106103	105390	36783	59277.5	48030	76710
112.5% RDN	Entire dose of N at sowing	98114	102400	100257	35770	57190	46480	73368
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	115642	114503	115073	44862	68004	56433	85753
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	114389	112527	113458	40912	62810	51861	82659
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	122574	120801	121687	51782	77834	64808	93248
	Mean	112680	112557	112618	43332	66459.5	54896	83757
125% RDN	Entire dose of N at sowing	99717	105339	102528	40264	61860	51062	76795
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	117676	119519	118598	51364	76396	63880	91239
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	115866	117988	116927	46570	70810	58690	87808
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	123465	122195	122830	59008	85824	72416	97623
	Mean	114181	116260	115221	49302	73722.5	61512	88366
Nitrogen split application	Entire dose of N at sowing	96590	100548	98569	35456	57287.3	46372	72470
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	113495	114129	113812	44827	68641.3	56734	85273
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	111803	112225	112014	41325	63225.3	52275	82145
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	120163	119658	119910	50947	76792.0	63870	91890

CHAPTER II: AGRONOMY

Table II.124: PMAT 6a:Effect of split application of N on net returns of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Net returns (Rs/ha)						Zonal mean
		HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	40,595	37,969	39,282	9,061	29,984	19,523	29,402
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	55,277	51,889	53,583	16,445	38,346	27,396	40,489
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	53,267	49,684	51,475	14,683	32,878	23,781	37,628
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	62,015	58,957	60,486	19,975	43,190	31,583	46,034
	Mean	52,788	49,625	51,207	15,041	36,100	25,570	38,388
112.5% RDN	Entire dose of N at sowing	46,535	46,227	46,381	14,399	34,240	24,320	35,350
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	63,518	57,790	60,654	22,955	44,704	33,830	47,242
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	62,265	55,814	59,039	19,005	39,510	29,258	44,148
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	69,905	63,548	66,726	29,607	54,184	41,896	54,311
	Mean	60,556	55,844	58,200	21,492	43,160	32,326	45,263
125% RDN	Entire dose of N at sowing	47,902	48,930	48,416	18,794	38,787	28,791	38,603
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	65,316	62,570	63,943	29,358	52,973	41,166	52,554
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	63,506	61,039	62,272	24,564	47,387	35,976	49,124
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	70,560	64,471	67,516	36,734	62,051	49,393	58,454
	Mean	61,821	59,252	60,537	27,363	50,300	38,831	49,684
Nitrogen split application	Entire dose of N at sowing	45,011	44,375	44,693	14,085	34,337	24,211	34,452
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	61,371	57,416	59,393	22,919	45,341	34,130	46,762
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	59,679	55,512	57,595	19,417	39,925	29,671	43,633
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	67,493	62,326	64,910	28,772	53,142	40,957	52,933

CHAPTER II: AGRONOMY

Table II.125: PMAT 6a:Effect of split application of N on BC ratio of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	BC ratio						Zonal mean
		HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	1.79	1.68	1.73	1.43	2.31	1.87	1.80
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.07	1.92	1.99	1.75	2.65	2.20	2.10
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.03	1.88	1.95	1.67	2.42	2.05	2.00
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.18	2.03	2.11	1.90	2.84	2.37	2.24
	Mean	2.02	1.88	1.95	1.69	2.56	2.12	2.03
112.5% RDN	Entire dose of N at sowing	1.90	1.82	1.86	1.67	2.49	2.08	1.97
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.22	2.02	2.12	2.05	2.92	2.49	2.30
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.19	1.98	2.09	1.87	2.70	2.29	2.19
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.33	2.11	2.22	2.34	3.29	2.82	2.52
	Mean	2.16	1.98	2.07	1.98	2.85	2.42	2.24
125% RDN	Entire dose of N at sowing	1.92	1.87	1.90	1.88	2.68	2.28	2.09
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.25	2.10	2.17	2.33	3.26	2.80	2.48
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.21	2.07	2.14	2.12	3.02	2.57	2.36
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.33	2.12	2.23	2.65	3.61	3.13	2.68
	Mean	2.18	2.04	2.11	2.25	3.14	2.69	2.40
Nitrogen split application	Entire dose of N at sowing	1.87	1.79	1.83	1.66	2.49	2.08	1.95
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.18	2.01	2.09	2.04	2.94	2.49	2.29
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.14	1.98	2.06	1.89	2.71	2.30	2.18
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.28	2.09	2.18	2.30	3.25	2.77	2.48

CHAPTER II: AGRONOMY

Table II.126: PMAT 6a:Effect of split application of N on total tillers, effective tillers/plant and plant population of pearl millet crop under different doses of N in Zone A during kharif 2022

Nutrient management	Treatment	Total tillers/ plant				Effective tillers/ plant				Plant Population			
		JPR	HSR	JMR	Mean	JPR	HSR	JMR	Mean	JPR	HSR	JMR	Mean
100% RDN	Entire dose of N at sowing	3.8	2.7	2.7	3.1	2.4	1.9	1.3	1.9	171.8	139.5	160.5	157.2
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	4.3	3.1	2.9	3.4	2.4	2.0	1.9	2.1	170.8	141.0	160.5	157.4
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	4.1	3.2	2.9	3.4	2.3	2.2	1.7	2.0	164.3	140.9	159.7	154.9
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	4.1	3.3	3.2	3.5	2.5	2.3	2.0	2.2	168.5	141.8	158.6	156.3
	Mean	4.1	3.1	2.9	3.3	2.4	2.1	1.7	2.0	168.8	140.8	159.8	156.5
112.5% RDN	Entire dose of N at sowing	5.1	3.0	3.1	3.7	2.6	2.1	1.8	2.2	171.0	141.5	161.0	157.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	4.3	3.3	3.5	3.7	2.8	2.2	2.2	2.4	169.0	141.8	160.5	157.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	4.1	3.2	3.2	3.5	2.7	2.3	2.0	2.3	163.0	142.0	161.3	155.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	4.6	3.4	3.7	3.9	3.0	2.4	2.4	2.6	162.5	142.3	159.2	154.6
	Mean	4.5	3.2	3.3	3.7	2.7	2.3	2.1	2.4	166.4	141.9	160.5	156.2
125% RDN	Entire dose of N at sowing	4.1	3.1	3.2	3.5	2.7	1.9	2.0	2.2	172.0	142.3	159.4	157.9
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	4.8	3.3	3.7	3.9	3.0	2.3	2.5	2.6	168.3	142.0	160.5	156.9
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	5.0	3.3	3.5	3.9	2.8	2.2	2.3	2.4	166.0	142.5	159.9	156.1
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	5.0	3.5	3.9	4.1	2.9	2.5	2.8	2.7	166.0	141.8	162.3	156.7
	Mean	4.7	3.3	3.5	3.9	2.9	2.2	2.4	2.5	168.1	142.1	160.5	156.9
Nitrogen split application	Entire dose of N at sowing	4.3	2.9	3.0	3.4	2.6	2.0	1.7	2.1	171.6	141.1	160.3	157.7
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	4.4	3.2	3.3	3.7	2.7	2.2	2.2	2.3	169.3	141.6	160.5	157.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	4.4	3.2	3.2	3.6	2.6	2.2	2.0	2.3	164.4	141.8	160.3	155.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	4.6	3.4	3.6	3.8	2.8	2.4	2.4	2.5	165.7	141.9	160.0	155.9
CD (5%)	Nutrient management	0.5	0.2	0.3		0.4	NS	0.2		NS	NS	NS	
	Nitrogen split application	NS	0.2	0.2		0.2	0.2	0.2		NS	NS	NS	
	Nutrient management x Nitrogen split application	0.6	NS	NS		NS	NS	NS		NS	NS	NS	
	Nitrogen split application x Nutrient management	0.6	NS	NS		NS	NS	NS		NS	NS	NS	
CV (%)		8.3	6.8	6.9		7.3	10.5	8.7		4.8	1.3	1.6	

CHAPTER II: AGRONOMY

Table II.127: PMAT 6a:Effect of split application of N on plant height, test weight and protein content of pearl millet crop under different doses of N in Zone A during kharif 2022

Nutrient management	Treatment	Test weight (g)				Plant height (cm)				Protein content (%)		
		JPR	HSR	JMR	Mean	JPR	HSR	JMR	Mean	JPR	HSR	Mean
100% RDN	Entire dose of N at sowing	10.1	12.3	9.7	10.7	176.0	173.8	172.5	174.1	9.0	11.7	10.3
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	10.4	12.5	10.5	11.1	183.8	182.8	179.8	182.1	9.0	11.7	10.3
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	10.4	12.5	10.2	11.0	186.3	183.0	176.7	182.0	9.1	11.9	10.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	11.0	12.9	10.7	11.5	191.3	188.0	185.7	188.3	8.7	12.0	10.4
	Mean	10.5	12.6	10.3	11.1	184.3	181.9	178.6	181.6	8.9	11.8	10.4
112.5% RDN	Entire dose of N at sowing	10.5	12.6	10.6	11.2	190.0	180.8	177.9	182.9	9.0	12.0	10.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	10.9	12.8	11.4	11.7	188.3	187.5	185.8	187.2	9.5	12.0	10.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	10.6	12.9	11.0	11.5	192.8	186.3	183.5	187.5	9.8	12.0	10.9
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	11.4	13.1	11.7	12.0	198.8	193.5	189.2	193.8	10.0	12.0	11.0
	Mean	10.8	12.8	11.2	11.6	192.4	187.0	184.1	187.8	9.6	12.0	10.8
125% RDN	Entire dose of N at sowing	11.0	12.7	11.3	11.6	188.8	184.8	181.9	185.1	9.3	12.0	10.6
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	11.6	12.9	11.9	12.1	202.5	188.8	188.2	193.1	9.5	12.0	10.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	11.4	12.8	11.6	11.9	192.5	188.0	186.6	189.0	9.5	11.9	10.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	11.7	13.0	12.2	12.3	198.8	195.8	191.6	195.4	9.6	12.1	10.8
	Mean	11.4	12.8	11.7	12.0	195.6	189.3	187.1	190.7	9.5	12.0	10.7
Nitrogen split application	Entire dose of N at sowing	10.5	12.5	10.5	11.2	184.9	179.8	177.4	180.7	9.1	11.9	10.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	11.0	12.7	11.3	11.7	191.5	186.3	184.6	187.5	9.3	11.9	10.6
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	10.8	12.7	10.9	11.5	190.5	185.8	182.3	186.2	9.5	12.0	10.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	11.4	13.0	11.5	12.0	196.3	192.4	188.8	192.5	9.4	12.0	10.7
CD (5%)	Nutrient management	0.4	NS	0.3		3.8	4.9	5.8		0.4	NS	
	Nitrogen split application	0.3	0.3	0.4		6.8	5.4	4.7		NS	NS	
	Nutrient management x Nitrogen split application	NS	NS	NS		NS	NS	NS		NS	NS	
	Nitrogen split application x Nutrient management	NS	NS	NS		NS	NS	NS		NS	NS	
CV (%)		3.2	2.8	4.4		4.3	3.4	3.1		4.54	1.72	

CHAPTER II: AGRONOMY

Tabe II.128: PMAT 6a: Effect of split application of N on N uptake (kg/ha) by grain and straw of pearl millet hybrid HHB 299 of Hisar Centre in Zone A during 2021 and 2022

Nutrient management	Treatment	Nitrogen uptake by grain (kg/ha)			Nitrogen uptake by plant (Straw) (kg/ha)			Total N uptake (kg/ha)		
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
100% RDN	Entire dose of N at sowing	55.1	58.4	56.7	54.1	40.7	47.4	109.2	99.0	104.1
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	66.2	69.4	67.8	60.5	44.4	52.5	126.7	113.8	120.3
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	64.2	68.5	66.3	60.2	43.4	51.8	124.4	111.9	118.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	71.5	76.5	74.0	67.1	47.0	57.1	138.6	123.5	131.1
	Mean	64.2	68.1	66.2	60.5	43.8	52.1	124.7	111.9	118.3
112.5% RDN	Entire dose of N at sowing	59.9	66.5	63.2	60.3	44.9	52.6	120.2	111.4	115.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	72.8	75.7	74.3	67.3	48.9	58.1	140.1	124.6	132.4
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	71.6	73.7	72.7	67.7	49.0	58.4	139.3	122.7	131.0
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	77.8	79.8	78.8	72.2	50.8	61.5	150.0	130.5	140.3
	Mean	70.5	73.9	72.2	66.9	48.4	57.6	137.4	122.3	129.9
125% RDN	Entire dose of N at sowing	61.0	68.3	64.6	62.4	45.1	53.8	123.4	113.4	118.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	74.7	79.0	76.9	70.6	49.4	60.0	145.3	128.4	136.9
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	73.3	77.6	75.5	71.6	48.6	60.1	144.9	126.2	135.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	78.7	80.7	79.7	73.3	51.5	62.4	152.0	132.2	142.1
	Mean	71.9	76.4	74.1	69.5	48.6	59.1	141.4	125.0	133.2
Nitrogen split application	Entire dose of N at sowing	58.6	64.3	61.5	58.9	43.5	51.2	117.6	107.8	112.7
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	71.3	74.7	73.0	66.1	47.5	56.8	137.4	122.2	129.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	69.7	73.3	71.5	66.5	47.0	56.7	136.2	120.2	128.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	76.0	79.0	77.5	70.9	49.7	60.3	146.9	128.6	137.8

CHAPTER II: AGRONOMY

Table II.129: PMAT 6a: Effect of split application of N on P uptake (kg/ha) by grain and straw of pearl millet hybrid HHB 299 of Hisar Centre in Zone A during 2021 and 2022

Nutrient management	Treatment	Phosphorus uptake by grain (kg/ha)			Phosphorus uptake by plant (Straw) (kg/ha)			Total P uptake (kg/ha)		
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
100% RDN	Entire dose of N at sowing	19.9	16.0	18.0	22.7	17.5	20.1	42.6	33.6	38.1
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	23.0	19.3	21.2	27.6	19.7	23.6	50.7	38.9	44.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	23.2	19.4	21.3	25.4	20.5	22.9	48.5	39.9	44.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	25.0	21.9	23.4	25.9	21.7	23.8	50.8	43.5	47.2
	Mean	22.8	19.1	20.9	25.4	19.8	22.6	48.2	38.9	43.5
112.5% RDN	Entire dose of N at sowing	20.9	19.1	20.0	25.3	20.2	22.8	46.3	39.3	42.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	26.5	22.2	24.3	24.4	22.2	23.3	50.9	44.4	47.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	25.2	21.7	23.5	26.8	22.6	24.7	52.0	44.3	48.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	27.3	23.8	25.6	29.0	23.9	26.4	56.2	47.8	52.0
	Mean	25.0	21.7	23.3	26.4	22.2	24.3	51.4	43.9	47.6
125% RDN	Entire dose of N at sowing	21.3	19.7	20.5	25.1	21.3	23.2	46.4	41.0	43.7
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	25.9	23.2	24.5	27.4	23.6	25.5	53.3	46.8	50.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	25.8	22.9	24.3	26.4	23.4	24.9	52.2	46.3	49.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	26.7	23.8	25.3	28.8	24.7	26.7	55.5	48.5	52.0
	Mean	24.9	22.4	23.7	26.9	23.2	25.1	51.8	45.6	48.7
Nitrogen split application	Entire dose of N at sowing	20.7	18.2	19.5	24.4	19.6	22.0	45.1	37.8	41.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	25.1	21.5	23.3	26.5	21.8	24.2	51.6	43.4	47.5
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	24.7	21.3	23.0	26.2	22.1	24.1	50.9	43.3	47.1
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	26.3	23.1	24.7	27.9	23.2	25.5	54.2	46.4	50.3

CHAPTER II: AGRONOMY

Tabe II.130: PMAT 6a: Effect of split application of N on K uptake (kg/ha) by grain and straw of pearl millet hybrid HHB 299 of Hisar Centre in Zone A during 2021 and 2022

Nutrient management	Treatment	Potassium uptake by grain (kg/ha)			Potassium uptake by straw (kg/ha)			Total K uptake (kg/ha)		
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean
100% RDN	Entire dose of N at sowing	24.0	23.2	23.6	167.4	172.6	170.0	191.4	195.8	193.6
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	28.6	27.8	28.2	185.4	188.4	186.9	214.1	216.2	215.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	28.0	27.8	27.9	181.4	187.7	184.5	209.5	215.5	212.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	30.4	30.5	30.4	196.5	198.4	197.5	226.9	229.0	227.9
	Mean	27.7	27.3	27.5	182.7	186.7	184.7	210.5	214.0	212.2
112.5% RDN	Entire dose of N at sowing	25.3	26.2	25.7	176.1	187.5	181.8	201.4	213.7	207.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	31.4	30.4	30.9	189.5	200.8	195.2	221.0	231.2	226.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	30.3	30.1	30.2	193.0	201.6	197.3	223.3	231.8	227.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	33.4	32.3	32.9	201.5	211.5	206.5	235.0	243.8	239.4
	Mean	30.1	29.7	29.9	190.0	200.3	195.2	220.1	230.0	225.1
125% RDN	Entire dose of N at sowing	26.0	27.2	26.6	177.4	193.5	185.4	203.4	220.7	212.0
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	31.5	31.9	31.7	196.3	205.9	201.1	227.9	237.9	232.9
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	31.0	31.7	31.4	196.8	207.4	202.1	227.8	239.1	233.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	33.7	32.8	33.2	205.8	217.1	211.5	239.5	249.9	244.7
	Mean	30.6	30.9	30.7	194.1	206.0	200.0	224.6	236.9	230.8
Nitrogen split application	Entire dose of N at sowing	25.1	25.5	25.3	173.6	184.4	179.0	198.7	209.9	204.3
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	30.5	30.0	30.3	190.4	198.3	194.4	221.0	228.4	224.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	29.8	29.9	29.9	190.4	198.8	194.6	220.2	228.7	224.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	32.5	32.0	32.3	201.3	209.0	205.1	233.8	241.0	237.4

CHAPTER II: AGRONOMY

Table II.131: PMAT 6a: Effect of split application of N on available NP (kg/ha) in soil after harvest of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Available N in soil after harvest						Zonal mean	Available P2O5 in soil after harvest						Zonal mean
		HSR			JMR				HSR			JMR			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	156.0	-	156.0	110.5	128.8	119.6	137.8	16.4	-	16.4	17.8	16.8	17.3	16.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	159.6	-	159.6	122.3	130.0	126.1	142.9	16.6	-	16.6	16.0	17.1	16.6	16.6
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	160.8	-	160.8	128.5	130.8	129.6	145.2	16.6	-	16.6	15.3	16.3	15.8	16.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	162.4	-	162.4	131.5	133.5	132.5	147.4	16.8	-	16.8	15.0	16.5	15.7	16.3
	Mean	159.7	-	159.7	123.2	130.8	127.0	143.3	16.6	-	16.6	16.0	16.7	16.3	16.5
112.5% RDN	Entire dose of N at sowing	160.8	-	160.8	134.8	132.3	133.5	147.1	16.0	-	16.0	19.0	17.3	18.2	17.1
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	162.1	-	162.1	135.3	133.8	134.5	148.3	16.4	-	16.4	17.6	17.4	17.5	16.9
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	163.7	-	163.7	146.8	135.0	140.9	152.3	16.3	-	16.3	16.1	16.4	16.3	16.3
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	163.9	-	163.9	147.8	139.3	143.5	153.7	16.6	-	16.6	15.9	16.6	16.2	16.4
	Mean	162.6	-	162.6	141.1	135.1	138.1	150.4	16.3	-	16.3	17.2	16.9	17.1	16.7
125% RDN	Entire dose of N at sowing	162.6	-	162.6	148.0	164.8	156.4	159.5	15.8	-	15.8	19.4	16.9	18.2	17.0
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	165.7	-	165.7	155.0	171.0	163.0	164.4	15.9	-	15.9	17.9	17.3	17.6	16.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	166.2	-	166.2	171.8	175.3	173.5	169.9	15.9	-	15.9	17.5	16.7	17.1	16.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	168.0	-	168.0	180.5	180.8	180.6	174.3	16.3	-	16.3	17.5	16.7	17.1	16.7
	Mean	165.6	-	165.6	163.8	172.9	168.4	167.0	16.0	-	16.0	18.1	16.9	17.5	16.7
Nitrogen split application	Entire dose of N at sowing	159.8	-	159.8	131.1	141.9	136.5	148.1	16.1	-	16.1	18.7	17.0	17.9	17.0
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	162.5	-	162.5	137.5	144.9	141.2	151.8	16.3	-	16.3	17.2	17.3	17.2	16.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	163.6	-	163.6	149.0	147.0	148.0	155.8	16.3	-	16.3	16.3	16.5	16.4	16.3
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	164.8	-	164.8	153.3	151.2	152.2	158.5	16.5	-	16.5	16.1	16.6	16.4	16.4
CD (5%)	Nutrient management	2.7	-	2.7	3.2	2.4			NS	-		0.4	NS		
	Nitrogen split application	NS	-		1.9	2.6			NS	-		0.4	0.4		
	Nutrient management xNitrogen split application	NS	-		3.6	4.7			NS	-		NS	NS		
	Nitrogen split application x Nutrient management	NS	-		4.3	4.6			NS	-		NS	NS		
CV (%)		3.1	-		1.6	2.1			6.5	-		2.6	3.0		

CHAPTER II: AGRONOMY

Table II.132: PMAT 6a: Effect of split application of N on NP content from grain of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	N content from grain (%)						Zonal mean	P content from grain (%)						Zonal mean
		HSR			JMR				HSR			JMR			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	1.69	1.85	1.77	1.09	1.30	1.19	1.48	0.61	0.51	0.56	0.28	0.21	0.24	0.40
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.72	1.87	1.79	1.21	1.39	1.30	1.55	0.60	0.52	0.56	0.27	0.22	0.25	0.40
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.70	1.89	1.80	1.23	1.41	1.32	1.56	0.61	0.54	0.57	0.29	0.22	0.25	0.41
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.73	1.92	1.82	1.27	1.45	1.36	1.59	0.61	0.55	0.58	0.29	0.23	0.26	0.42
	Mean	1.71	1.88	1.80	1.20	1.38	1.29	1.54	0.61	0.53	0.57	0.28	0.22	0.25	0.41
112.5% RDN	Entire dose of N at sowing	1.71	1.92	1.82	1.13	1.55	1.34	1.58	0.60	0.55	0.57	0.28	0.23	0.26	0.42
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.73	1.93	1.83	1.16	1.62	1.39	1.61	0.63	0.57	0.60	0.28	0.24	0.26	0.43
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.73	1.92	1.83	1.19	1.66	1.42	1.62	0.61	0.57	0.59	0.28	0.26	0.27	0.43
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.75	1.92	1.83	1.28	1.73	1.50	1.67	0.61	0.58	0.59	0.29	0.27	0.28	0.43
	Mean	1.73	1.92	1.83	1.19	1.64	1.41	1.62	0.61	0.56	0.59	0.28	0.25	0.27	0.43
125% RDN	Entire dose of N at sowing	1.72	1.91	1.82	1.23	1.77	1.50	1.66	0.60	0.55	0.58	0.28	0.30	0.29	0.43
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.75	1.92	1.83	1.33	1.86	1.60	1.71	0.61	0.56	0.58	0.29	0.30	0.29	0.44
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.75	1.92	1.84	1.36	1.89	1.62	1.73	0.62	0.57	0.59	0.29	0.31	0.30	0.44
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.76	1.93	1.85	1.55	2.07	1.81	1.83	0.60	0.57	0.58	0.29	0.32	0.31	0.44
	Mean	1.75	1.92	1.83	1.37	1.90	1.63	1.73	0.60	0.56	0.58	0.29	0.31	0.30	0.44
Nitrogen split application	Entire dose of N at sowing	1.71	1.89	1.80	1.15	1.54	1.34	1.57	0.60	0.54	0.57	0.28	0.25	0.26	0.42
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.73	1.91	1.82	1.23	1.62	1.43	1.62	0.61	0.55	0.58	0.28	0.26	0.27	0.42
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.73	1.91	1.82	1.26	1.65	1.45	1.64	0.61	0.56	0.58	0.29	0.26	0.27	0.43
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.74	1.92	1.83	1.36	1.75	1.55	1.69	0.60	0.56	0.58	0.29	0.27	0.28	0.43
CD (5%)	Nutrient management	0.30	-		0.08	0.07			NS	-		NS	0.02		
	Nitrogen split application	0.20	-		0.06	0.05			NS	-		NS	0.02		
	Nutrient management xNitrogen split application	NS	-		NS	NS			NS	-		NS	NS		
	Nitrogen split application x Nutrient management	NS	-		NS	NS			NS	-		NS	NS		
CV (%)		1.8	-		5.7	3.3			9.0	-		0.0	0.0		

CHAPTER II: AGRONOMY

Table II.133: PMAT 6a: Effect of split application of N on available K in soil and K content from grain after harvest of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	Available K2O in soil after harvest						Zonal mean	K content from grain (%)						Zonal mean
		HSR			JMR				HSR			JMR			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	189.6	-	189.6	267.5	263.8	265.6	227.6	0.74	0.74	0.74	0.38	0.38	0.38	0.56
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	189.0	-	189.0	265.8	268.5	267.1	228.1	0.74	0.75	0.75	0.40	0.39	0.40	0.57
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	188.7	-	188.7	270.5	267.8	269.1	228.9	0.75	0.77	0.76	0.35	0.40	0.38	0.57
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	186.6	-	186.6	272.3	269.5	270.9	228.7	0.74	0.77	0.75	0.31	0.41	0.36	0.55
	Mean	188.5	-	188.5	269.0	267.4	268.2	228.3	0.74	0.75	0.75	0.36	0.39	0.38	0.56
112.5% RDN	Entire dose of N at sowing	186.8	-	186.8	272.0	267.8	269.9	228.4	0.72	0.76	0.74	0.39	0.40	0.39	0.57
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	188.4	-	188.4	274.8	273.3	274.0	231.2	0.75	0.78	0.76	0.37	0.40	0.38	0.57
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	188.3	-	188.3	270.5	271.8	271.1	229.7	0.73	0.79	0.76	0.40	0.41	0.40	0.58
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	186.0	-	186.0	273.0	274.3	273.6	229.8	0.75	0.78	0.76	0.37	0.41	0.39	0.58
	Mean	187.4	-	187.4	272.6	271.8	272.2	229.8	0.74	0.77	0.76	0.38	0.41	0.39	0.57
125% RDN	Entire dose of N at sowing	185.4	-	185.4	272.0	271.8	271.9	228.6	0.74	0.76	0.75	0.33	0.37	0.35	0.55
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	186.7	-	186.7	274.3	277.5	275.9	231.3	0.74	0.78	0.76	0.39	0.41	0.40	0.58
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	187.7	-	187.7	273.5	273.5	273.5	230.6	0.74	0.78	0.76	0.40	0.43	0.41	0.59
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	184.6	-	184.6	276.8	279.3	278.0	231.3	0.75	0.79	0.77	0.40	0.44	0.42	0.59
	Mean	186.1	-	186.1	274.1	275.5	274.8	230.4	0.74	0.78	0.76	0.38	0.41	0.40	0.58
Nitrogen split application	Entire dose of N at sowing	187.3	-	187.3	270.5	267.8	269.1	228.2	0.73	0.75	0.74	0.37	0.38	0.38	0.56
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	188.0	-	188.0	271.6	273.1	272.3	230.2	0.74	0.77	0.76	0.38	0.40	0.39	0.57
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	188.2	-	188.2	271.5	271.0	271.3	229.7	0.74	0.78	0.76	0.38	0.41	0.40	0.58
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	185.7	-	185.7	274.0	274.3	274.2	229.9	0.75	0.78	0.76	0.36	0.42	0.39	0.58
CD (5%)	Nutrient management	NS	-		4.0	4.1			NS	-		NS	NS		
	Nitrogen split application	NS	-		NS	2.5			NS	-		0.02	0.02		
	Nutrient management xNitrogen split application	NS	-		NS	NS			NS	-		0.03	NS		
	Nitrogen split application x Nutrient management	NS	-		NS	NS			NS	-		0.03	NS		
CV (%)		1.0	-		1.7	1.1			6.00	-		0.00	0.00		

CHAPTER II: AGRONOMY

Table II.134: PMAT 6a: Effect of split application of N on N and P content from fodder of pearl millet crop under different doses of N in Zone A during kharif 2021 and 2022

Nutrient management	Treatment	N content from fodder (%)						Zonal mean	P content from fodder (%)						Zonal mean
		HSR			JMR				HSR			JMR			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	0.53	0.41	0.47	1.09	1.51	1.30	0.89	0.22	0.18	0.20	0.27	0.25	0.26	0.23
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.54	0.42	0.48	1.21	1.52	1.36	0.92	0.24	0.19	0.21	0.28	0.26	0.27	0.24
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.54	0.41	0.48	1.23	1.58	1.40	0.94	0.23	0.20	0.21	0.29	0.27	0.28	0.25
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.56	0.42	0.49	1.27	1.64	1.45	0.97	0.22	0.20	0.21	0.30	0.28	0.29	0.25
	Mean	0.54	0.42	0.48	1.20	1.56	1.38	0.93	0.23	0.19	0.21	0.28	0.27	0.28	0.24
112.5% RDN	Entire dose of N at sowing	0.56	0.43	0.49	1.13	1.57	1.35	0.92	0.23	0.19	0.21	0.28	0.27	0.27	0.24
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.58	0.44	0.51	1.21	1.64	1.43	0.97	0.21	0.20	0.20	0.29	0.28	0.28	0.24
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.58	0.44	0.51	1.24	1.68	1.46	0.98	0.23	0.20	0.22	0.29	0.28	0.29	0.25
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.59	0.44	0.51	1.31	1.72	1.51	1.01	0.24	0.21	0.22	0.29	0.29	0.29	0.26
	Mean	0.57	0.44	0.51	1.22	1.65	1.44	0.97	0.23	0.20	0.21	0.29	0.28	0.28	0.25
125% RDN	Entire dose of N at sowing	0.57	0.42	0.50	1.23	1.62	1.42	0.96	0.23	0.20	0.21	0.30	0.28	0.29	0.25
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.59	0.44	0.51	1.33	1.70	1.52	1.01	0.23	0.21	0.22	0.30	0.28	0.29	0.25
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.59	0.43	0.51	1.36	1.73	1.54	1.03	0.22	0.21	0.21	0.31	0.29	0.30	0.25
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.60	0.43	0.51	1.55	1.90	1.72	1.12	0.23	0.21	0.22	0.31	0.30	0.30	0.26
	Mean	0.59	0.43	0.51	1.37	1.74	1.55	1.03	0.23	0.20	0.22	0.30	0.29	0.29	0.25
Nitrogen split application	Entire dose of N at sowing	0.55	0.42	0.49	1.15	1.57	1.36	0.92	0.23	0.19	0.21	0.28	0.26	0.27	0.24
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.57	0.43	0.50	1.25	1.62	1.43	0.97	0.23	0.20	0.21	0.29	0.27	0.28	0.25
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.57	0.43	0.50	1.28	1.66	1.47	0.98	0.23	0.20	0.21	0.30	0.28	0.29	0.25
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.58	0.43	0.51	1.37	1.75	1.56	1.03	0.23	0.20	0.21	0.30	0.29	0.29	0.25
CD (5%)	Nutrient management	NS	-		0.06	0.07			NS	-		0.01	NS		
	Nitrogen split application	NS	-		0.05	0.12			NS	-		0.01	0.01		
	Nutrient management xNitrogen split application	NS	-		NS	NS			NS	-		NS	NS		
	Nitrogen split application x Nutrient management	NS	-		NS	NS			NS	-		NS	NS		
CV (%)		5.60	-		5.01	8.35			5.00	-		0.00	0.00		

CHAPTER II: AGRONOMY

Table II.135: PMAT 6a: Effect of split application of N on K content from fodder of pearl millet crop under different doses of N in Zone A during kharif 2021 & 2022

Nutrient management	Treatment	K content from fodder (%)						Zonal mean
		HSR			JMR			
		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	1.64	1.75	1.69	0.33	0.34	0.33	1.01
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.65	1.77	1.71	0.33	0.36	0.35	1.03
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.63	1.79	1.71	0.36	0.37	0.36	1.03
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.64	1.79	1.71	0.37	0.38	0.38	1.04
	Mean	1.64	1.77	1.71	0.35	0.36	0.35	1.03
112.5% RDN	Entire dose of N at sowing	1.62	1.79	1.71	0.34	0.36	0.35	1.03
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.63	1.81	1.72	0.34	0.37	0.36	1.04
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.64	1.81	1.73	0.37	0.39	0.38	1.05
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.64	1.81	1.73	0.38	0.40	0.39	1.06
	Mean	1.63	1.80	1.72	0.36	0.38	0.37	1.04
125% RDN	Entire dose of N at sowing	1.62	1.80	1.71	0.36	0.39	0.37	1.04
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.64	1.82	1.73	0.37	0.40	0.38	1.06
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.63	1.82	1.72	0.38	0.41	0.39	1.06
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.64	1.81	1.72	0.39	0.42	0.40	1.06
	Mean	1.63	1.81	1.72	0.37	0.40	0.39	1.05
Nitrogen split application	Entire dose of N at sowing	1.63	1.78	1.70	0.34	0.36	0.35	1.03
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	1.64	1.80	1.72	0.35	0.38	0.36	1.04
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	1.63	1.80	1.72	0.37	0.39	0.38	1.05
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	1.64	1.80	1.72	0.38	0.40	0.39	1.06
CD (5%)	Nutrient management	NS	-		0.02	0.01		
	Nitrogen split application	NS	-		0.02	0.02		
	Nutrient management xNitrogen split application	NS	-		NS	NS		
	Nitrogen split application x Nutrient management	NS	-		NS	NS		
CV (%)		4.70	-		8.83	0.00		

CHAPTER II: AGRONOMY

Table II.136: PMAT 6b: Effect of split application of N on grain yield of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Grain yield (q/ha)												Zonal mean
		VYP			ABD1			DHL			CBE			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	19.67	19.75	19.71	23.13	26.80	24.97	28.21	25.52	26.87	25.48	22.31	23.89	23.86
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	21.49	22.63	22.06	26.69	27.85	27.27	29.86	28.91	29.38	27.25	24.15	25.70	26.10
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	21.86	22.23	22.04	26.83	25.37	26.10	32.64	29.60	31.12	27.49	24.62	26.05	26.33
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23.19	24.13	23.66	24.93	17.89	21.41	29.34	28.56	28.95	29.87	26.62	28.25	25.57
	Mean	21.55	22.19	21.87	25.39	24.48	24.94	30.01	28.15	29.08	27.52	24.42	25.97	25.46
112.5% RDN	Entire dose of N at sowing	20.15	20.55	20.35	29.79	28.94	29.36	30.73	26.91	28.82	27.00	25.50	26.25	26.20
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	21.46	22.98	22.22	33.56	31.18	32.37	32.38	29.97	31.18	28.94	28.15	28.54	28.58
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	21.69	23.41	22.55	28.29	24.17	26.23	34.84	31.08	32.96	29.12	28.61	28.86	27.65
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23.52	24.68	24.10	30.37	20.30	25.34	30.21	29.25	29.73	30.95	31.97	31.46	27.66
	Mean	21.70	22.91	22.30	30.50	26.15	28.33	32.04	29.30	30.67	29.00	28.56	28.78	27.52
125% RDN	Entire dose of N at sowing	20.94	21.08	21.01	28.47	32.11	30.29	31.96	27.34	29.65	28.90	27.48	28.19	27.29
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	22.30	23.12	22.71	37.45	34.40	35.93	33.35	30.84	32.09	30.17	30.26	30.22	30.24
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	22.73	23.40	23.06	29.86	30.60	30.23	35.42	31.97	33.69	30.51	30.45	30.48	29.37
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	24.72	26.02	25.37	31.57	24.14	27.86	32.90	29.95	31.42	32.43	33.25	32.84	29.37
	Mean	22.67	23.40	23.04	31.84	30.31	31.08	33.41	30.02	31.71	30.50	30.36	30.43	29.06
Nitrogen split application	Entire dose of N at sowing	20.25	20.46	20.36	27.13	29.28	28.21	30.30	26.59	28.45	27.13	25.10	26.11	25.78
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	21.75	22.91	22.33	32.57	31.14	31.86	31.86	29.90	30.88	28.79	27.52	28.15	28.31
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	22.09	23.01	22.55	28.33	26.71	27.52	34.30	30.88	32.59	29.04	27.89	28.46	27.78
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23.81	24.94	24.38	28.96	20.78	24.87	30.82	29.25	30.03	31.08	30.61	30.85	27.53
CD (5%)	Nutrient management	NS	NS		2.49	3.92		2.16	NS		2.03	1.05		
	Nitrogen split application	1.49	1.75		2.84	2.76		2.10	2.30		2.23	1.37		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		NS	NS		NS	NS		
CV (%)		8.1	9.1		9.7	10.3		7.8	9.4		9.1	5.8		

CHAPTER II: AGRONOMY

Table II.137: PMAT 6b: Effect of split application of N on dry fodder yield of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Fodder yield (q/ha)												Zonal mean
		VYP			ABD1			DHL			CBE			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	55.21	54.27	54.74	43.98	53.70	48.84	50.00	50.35	50.18	36.64	37.13	36.89	47.66
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	58.68	57.66	58.17	49.77	55.34	52.56	55.50	56.94	56.22	38.66	38.85	38.75	51.42
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	60.07	58.13	59.10	49.77	51.16	50.46	58.96	58.68	58.82	38.98	39.62	39.30	51.92
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	62.85	60.44	61.64	45.14	35.18	40.16	54.26	56.08	55.17	40.93	42.96	41.94	49.73
	Mean	59.20	57.62	58.41	47.17	48.85	48.01	54.68	55.51	55.10	38.80	39.64	39.22	50.18
112.5% RDN	Entire dose of N at sowing	57.64	56.75	57.20	55.56	56.02	55.79	56.73	52.64	54.68	39.78	38.43	39.10	51.69
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	60.42	59.40	59.91	67.82	58.33	63.08	59.81	58.68	59.24	41.86	37.80	39.83	55.51
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	60.94	60.51	60.72	55.56	55.09	55.33	66.01	62.67	64.34	42.17	40.56	41.37	55.44
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	62.85	61.37	62.11	59.03	38.43	48.73	52.82	58.94	55.88	43.95	44.13	44.04	52.69
	Mean	60.46	59.51	59.98	59.49	51.97	55.73	58.84	58.23	58.54	41.94	40.23	41.08	53.83
125% RDN	Entire dose of N at sowing	57.29	57.26	57.27	59.03	59.03	59.03	56.32	53.65	54.98	41.25	38.54	39.89	52.79
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	62.15	61.39	61.77	69.44	63.19	66.32	57.70	60.76	59.23	43.32	42.64	42.98	57.58
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	62.15	62.02	62.08	55.56	57.64	56.60	61.75	63.54	62.65	43.58	40.19	41.89	55.80
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	64.24	63.58	63.91	53.24	41.90	47.57	58.24	57.99	58.11	45.21	45.98	45.59	53.80
	Mean	61.46	61.06	61.26	59.32	55.44	57.38	58.50	58.98	58.74	43.34	41.84	42.59	54.99
Nitrogen split application	Entire dose of N at sowing	56.71	56.09	56.40	52.85	56.25	54.55	54.35	52.21	53.28	39.22	38.03	38.63	50.72
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	60.42	59.48	59.95	62.35	58.96	60.65	57.67	58.79	58.23	41.28	39.76	40.52	54.84
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	61.05	60.22	60.63	53.63	54.63	54.13	62.24	61.63	61.94	41.58	40.13	40.85	54.39
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	63.31	61.80	62.55	52.47	38.50	45.49	55.11	57.67	56.39	43.36	44.36	43.86	52.07
CD (5%)	Nutrient management	NS	2.31		6.05	NS		3.19	NS		2.89	NS		
	Nitrogen split application	2.43	2.97		4.00	4.81		3.82	4.41		NS	2.892		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		NS	NS		NS	NS		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		NS	NS		NS	NS		
CV (%)		4.8	5.9		7.2	9.3		7.9	9.1		9.1	8.47		

CHAPTER II: AGRONOMY

Table II.138: PMAT 6b: Effect of split application of N on gross returns of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Gross returns (Rs/ha)												Zonal mean
		VYP			ABD1			DHL			CBE			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	33442	33581	33512	54007	82845	68426	60424	67865	64144	50960	41632	46296	53094
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	36531	38474	37502	62180	85989	74084	64162	74608	69385	54500	44935	49718	57672
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	37159	37784	37471	62468	78465	70467	69994	73488	71741	54980	45808	50394	57518
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	39428	41018	40223	57878	55189	56534	63021	71804	67413	59740	49554	54647	54704
	Mean	36640	37714	37177	59133	75622	67378	64400	71941	68171	55045	45482	50264	55747
112.5% RDN	Entire dose of N at sowing	34254	34936	34595	69404	89095	79249	65997	64758	65377	54000	47193	50597	57454
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	36473	39068	37770	78979	95663	87321	69542	75752	72647	57880	51626	54753	63123
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	36868	39799	38333	66322	75826	71074	74968	79024	76996	58240	52685	55463	60466
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	39971	41963	40967	71113	62360	66737	64643	73552	69097	61900	58766	60333	59283
	Mean	36891	38941	37916	71454	80736	76095	68787	73272	71029	58005	52568	55286	60082
125% RDN	Entire dose of N at sowing	35594	35833	35713	67218	98328	82773	68422	68962	68692	57800	50570	54185	60341
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	37911	39310	38610	87196	105338	96267	71318	78043	74680	60340	55706	58023	66895
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	38633	39776	39205	69554	93954	81754	75773	81036	78405	61020	55780	58400	64441
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	42028	44227	43127	72705	73517	73111	70458	75299	72878	64860	61114	62987	63026
	Mean	38542	39786	39164	74168	92784	83476	71493	75835	73664	61005	55793	58399	63676
Nitrogen split application	Entire dose of N at sowing	34430	34783	34606	63543	90089	76816	64947	67195	66071	54253	46465	50359	56963
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	36972	38951	37961	76118	95663	85891	68340	76134	72237	57573	50756	54165	62563
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	37553	39120	38336	66114	82748	74431	73579	77849	75714	58080	51424	54752	60808
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	40475	42403	41439	67232	63689	65460	66041	73552	69796	62167	56478	59322	59004
	Mean	37383	39239	38313	68252	82844	75641	68217	74757	72454	57098	50417	54412	62539
CD (5%)	Nutrient management	NS	NS		5858	10806		4533	NS		-	-		
	Nitrogen split application	2536	2973		6064	8132		4435	5638		-	-		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		NS	NS		-	-		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		NS	NS		-	-		
CV (%)		8.1	9.1		8.9	9.8		7.7	9.1		-	-		

CHAPTER II: AGRONOMY

Table II.139: PMAT 6b: Effect of split application of N on net returns of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Net returns (Rs/ha)												Zonal mean
		VYP			ABD1			DHL			CBE			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	17923	18062	17993	24027	52845	38436	36059	41063	38561	20856	19972	20414	28851
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	20712	22655	21683	32200	55989	44095	39497	47476	43487	23496	21075	22286	32887
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	21340	21965	21652	32488	48465	40477	45329	46356	45843	23976	21948	22962	32733
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23309	24899	24104	27898	25189	26544	38056	44343	41199	26836	24594	25715	29390
	Mean	20821	21895	21358	29153	45622	37388	39735	44810	42272	23791	21897	22844	30966
112.5% RDN	Entire dose of N at sowing	17997	18679	18338	38424	58595	48509	41502	37813	39657	23764	19897	21831	32084
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	19916	22511	21213	47999	65163	56581	44747	48477	46612	26744	22130	24437	37211
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	20311	23242	21776	35342	45326	40334	50173	51750	50962	27104	23189	25147	34555
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23114	25106	24110	40133	31860	35997	39548	45948	42748	28864	28170	28517	32843
	Mean	20334	22384	21359	40474	50236	45355	43992	45997	44995	26619	23347	24983	34173
125% RDN	Entire dose of N at sowing	18480	18719	18599	36418	67328	51873	43797	41874	42836	27432	22648	25040	34587
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	20497	21896	21196	56396	74338	65367	46393	50625	48509	29072	25584	27328	40600
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	21219	22362	21791	38754	62954	50854	50848	53619	52234	29752	25658	27705	38146
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	24314	26513	25413	41905	42517	42211	45233	47551	46392	31692	29892	30792	36202
	Mean	21128	22372	21750	43368	61784	52576	46568	48417	47492	29487	25946	27716	37384
Nitrogen split application	Entire dose of N at sowing	18133	18486	18310	32956	59589	46273	40452	40250	40351	24017	20839	22428	31840
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	20375	22354	21364	45532	65163	55348	43545	48860	46202	26437	22930	24684	36899
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	20956	22523	21740	35528	52248	43888	48784	50575	49679	26944	23598	25271	35145
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	23579	25506	24542	36646	33189	34917	40946	45947	43446	29131	27552	28341	32812
CD (5%)	Nutrient management	NS	NS		5858	10806		4533	NS		-	-		
	Nitrogen split application	2536	2973		6064	8132		4435	5638		-	-		
	Nutrient management xNitrogen split application	NS	NS		NS	NS		NS	NS		-	-		
	Nitrogen split application x Nutrient management	NS	NS		NS	NS		NS	NS		-	-		
CV (%)		14.5	15.9		16.1	15.5		12.1	14.4		-	-		

CHAPTER II: AGRONOMY

Table II.140: PMAT 6b: Effect of split application of N on BC ratio of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	BC ratio												Zona mean
		VYP			ABD1			DHL			CBE			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	2.16	2.17	2.16	-	2.76	2.76	2.48	2.53	2.51	1.69	1.92	1.81	2.31
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.31	2.43	2.37	-	2.86	2.86	2.60	2.75	2.68	1.76	1.88	1.82	2.43
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.35	2.39	2.37	-	2.61	2.61	2.84	2.71	2.77	1.77	1.92	1.85	2.40
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.45	2.55	2.50	-	1.84	1.84	2.52	2.61	2.57	1.82	1.99	1.91	2.20
	Mean	2.32	2.38	2.35	-	2.52	2.52	2.61	2.65	2.63	1.76	1.93	1.84	2.34
112.5% RDN	Entire dose of N at sowing	2.10	2.15	2.13	-	2.92	2.92	2.69	2.41	2.55	1.79	1.73	1.76	2.34
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.21	2.36	2.28	-	3.14	3.14	2.81	2.78	2.79	1.86	1.75	1.81	2.50
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.23	2.40	2.32	-	2.49	2.49	3.02	2.90	2.96	1.87	1.79	1.83	2.40
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.37	2.49	2.43	-	2.05	2.05	2.58	2.67	2.62	1.87	1.92	1.90	2.25
	Mean	2.23	2.35	2.29	-	2.65	2.65	2.77	2.69	2.73	1.85	1.80	1.82	2.37
125% RDN	Entire dose of N at sowing	2.08	2.09	2.09	-	3.17	3.17	2.78	2.55	2.66	1.90	1.81	1.86	2.44
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.18	2.26	2.22	-	3.40	3.40	2.86	2.85	2.85	1.93	1.85	1.89	2.59
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.22	2.28	2.25	-	3.03	3.03	3.04	2.96	3.00	1.95	1.85	1.90	2.54
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.37	2.50	2.44	-	2.37	2.37	2.79	2.71	2.75	1.96	1.96	1.96	2.38
	Mean	2.21	2.28	2.25	-	2.99	2.99	2.87	2.77	2.82	1.94	1.87	1.90	2.49
Nitrogen split application	Entire dose of N at sowing	2.11	2.14	2.12	-	2.95	2.95	2.65	2.50	2.57	1.79	1.82	1.81	2.36
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.23	2.35	2.29	-	3.13	3.13	2.76	2.79	2.77	1.85	1.83	1.84	2.51
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.27	2.36	2.31	-	2.71	2.71	2.97	2.85	2.91	1.86	1.85	1.86	2.45
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.40	2.51	2.45	-	2.09	2.09	2.63	2.66	2.65	1.88	1.96	1.92	2.28
CD (5%)	Nutrient management	NS	NS		-	0.36		0.18	NS		-	-		
	Nitrogen split application	0.15	0.18		-	0.27		0.18	0.21		-	-		
	Nutrient management xNitrogen split application	NS	NS		-	NS		NS	NS		-	-		
	Nitrogen split application x Nutrient management	NS	NS		-	NS		NS	NS		-	-		
CV (%)		8.07	9.27		-	9.79		7.80	9.07		-	-		

CHAPTER II: AGRONOMY

Table II.141: PMAT 6b:Effect of split application of N on total & effective tillers/plant and plant populations of pearl millet crop under different doses of N in Zone B during kharif 2022

Nutrient management	Treatment	Total tillers/ plant					Effective tillers/ plant					Plant Population				
		VYP	ABD1	DHL	CBE	Mean	VYP	ABD1	DHL	CBE	Mean	VYP	ABD1	DHL	CBE	Mean
100% RDN	Entire dose of N at sowing	3.4	3.8	4.4	4.2	4.0	2.2	3.4	2.2	3.1	2.7	139.4	219.4	131.9	145.6	159.1
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.4	5.0	4.8	4.5	4.4	2.4	3.7	2.6	3.5	3.0	140.5	217.6	134.2	144.2	159.1
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.4	3.4	5.0	4.4	4.0	2.5	2.4	2.7	3.4	2.7	140.5	219.9	136.1	149.7	161.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.7	2.8	4.8	4.6	4.0	2.6	1.9	2.5	3.8	2.7	137.0	218.5	133.2	148.7	159.3
	Mean	3.4	3.7	4.8	4.4	4.1	2.4	2.9	2.5	3.4	2.8	139.3	218.9	133.9	147.0	159.8
112.5% RDN	Entire dose of N at sowing	3.5	5.0	4.7	4.4	4.4	2.5	4.0	2.4	3.6	3.1	138.7	216.7	132.8	146.0	158.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.6	5.5	5.1	4.6	4.7	2.6	4.5	2.9	4.1	3.5	140.5	219.7	135.8	145.6	160.4
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.7	4.1	5.2	4.5	4.3	2.6	3.1	3.1	4.0	3.2	137.0	219.2	138.9	148.2	160.8
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.7	3.7	5.0	4.7	4.3	2.7	2.7	2.7	4.3	3.1	138.0	218.8	135.1	148.2	160.0
	Mean	3.6	4.6	5.0	4.5	4.4	2.6	3.6	2.8	4.0	3.2	138.5	218.6	135.6	147.0	159.9
125% RDN	Entire dose of N at sowing	3.5	5.4	4.9	4.6	4.6	2.5	4.3	2.7	3.7	3.3	139.4	220.6	134.9	145.7	160.1
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.6	5.9	5.2	4.8	4.9	2.7	4.9	3.1	4.4	3.8	138.7	219.0	137.7	146.9	160.6
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.6	4.4	5.4	4.8	4.5	2.7	3.2	3.4	4.2	3.4	136.6	217.1	141.7	145.4	160.2
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.8	4.3	5.0	5.2	4.6	2.8	3.2	3.0	4.7	3.4	137.2	215.7	136.3	149.0	159.5
	Mean	3.6	5.0	5.1	4.8	4.6	2.7	3.9	3.0	4.3	3.5	138.0	218.1	137.6	146.7	160.1
Nitrogen split application	Entire dose of N at sowing	3.4	4.7	4.7	4.4	4.3	2.4	3.9	2.4	3.5	3.1	139.2	218.9	133.2	145.7	159.3
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	3.5	5.5	5.0	4.6	4.7	2.6	4.4	2.9	4.0	3.4	139.9	218.8	135.9	145.6	160.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	3.6	3.9	5.2	4.6	4.3	2.6	2.9	3.1	3.9	3.1	138.0	218.8	138.9	147.8	160.9
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	3.7	3.6	4.9	4.8	4.3	2.7	2.6	2.7	4.3	3.1	137.4	217.7	134.8	148.6	159.6
	Mean	3.5	4.4	5.1	4.6	4.4	2.5	4.0	2.9	4.0	3.4	139.3	218.9	133.9	147.0	159.8
CD (5%)	Nutrient management	NS	0.3	NS	NS		NS	0.5	0.1	0.3		NS	NS	0.6	NS	
	Nitrogen split application	NS	0.4	NS	0.3		NS	0.3	0.1	0.4		NS	NS	0.4	NS	
	Nutrient management x Nitrogen split application	NS	NS	NS	NS		NS	NS	NS	NS		NS	NS	0.8	NS	
	Nitrogen split application x Nutrient management	NS	NS	NS	NS		NS	NS	NS	NS		NS	NS	0.9	NS	
	CV (%)	6.6	8.2	9.2	6.6		9.5	9.2	4.4	10.8		3.2	0.9	0.4	2.1	

CHAPTER II: AGRONOMY

Table II.142: PMAT 6b: Effect of split application of N on test weight, protein content and plant height of pearl millet crop under different doses of N in Zone B during kharif 2022

Nutrient management	Treatment	Test weight (g)					Protein content in grain (%)				Plant height (cm)				
		VYP	ABD1	DHL	CBE	Mean	VYP	CBE	DHL	Mean	VYP	ABD1	DHL	CBE	Mean
100% RDN	Entire dose of N at sowing	12.2	16.0	10.3	14.2	13.2	12.9	10.4	9.6	11.0	161.3	177.4	179.5	171.6	172.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	12.7	16.2	10.9	14.3	13.5	13.0	11.5	9.8	11.4	169.1	179.0	181.8	173.2	175.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	12.9	15.2	11.0	14.2	13.3	12.9	10.6	9.8	11.1	171.7	174.7	184.3	175.8	176.6
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	13.1	14.9	10.8	14.3	13.3	12.8	10.8	9.9	11.2	173.6	170.4	180.8	174.7	174.9
	Mean	12.7	15.6	10.8	14.2	13.3	12.9	10.8	9.8	11.2	168.9	175.4	181.6	173.8	174.9
112.5% RDN	Entire dose of N at sowing	12.4	16.3	10.6	14.2	13.4	12.9	10.9	9.7	11.2	165.6	180.7	181.3	183.5	177.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	12.9	16.5	11.0	14.4	13.7	12.8	11.2	9.8	11.3	174.1	183.5	186.3	189.0	183.2
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	13.3	15.3	11.3	14.6	13.6	12.8	11.2	9.8	11.3	177.6	176.5	189.8	189.6	183.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	13.7	15.1	10.7	14.5	13.5	13.1	11.4	10.1	11.5	181.5	172.5	184.0	187.8	181.4
	Mean	13.1	15.8	10.9	14.4	13.5	12.9	11.2	9.8	11.3	174.7	178.3	185.3	187.5	181.4
125% RDN	Entire dose of N at sowing	12.8	16.4	10.9	14.5	13.6	13.1	11.3	9.7	11.4	168.0	182.9	190.0	196.7	184.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	13.2	16.3	11.7	14.4	13.9	13.4	11.6	9.8	11.6	176.2	184.9	197.6	198.3	189.3
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	13.4	15.5	11.9	14.6	13.8	12.9	11.7	9.9	11.5	180.3	179.4	199.5	204.2	190.8
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	13.7	15.2	11.6	14.5	13.7	13.1	11.9	10.1	11.7	183.1	178.9	192.3	202.0	189.1
	Mean	13.3	15.9	11.5	14.5	13.8	13.1	11.6	9.9	11.5	176.9	181.5	194.9	200.3	188.4
Nitrogen split application	Entire dose of N at sowing	12.4	16.2	10.6	14.3	13.4	13.0	10.9	9.7	11.2	165.0	180.3	183.6	183.9	178.2
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	12.9	16.4	11.2	14.4	13.7	13.1	11.4	9.8	11.4	173.1	182.5	188.5	186.8	182.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	13.2	15.3	11.4	14.4	13.6	12.9	11.2	9.8	11.3	176.5	176.9	191.2	189.9	183.6
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	13.5	15.1	11.0	14.4	13.5	13.0	11.4	10.0	11.5	179.4	174.0	185.7	188.2	181.8
CD (5%)	Nutrient management	NS	NS	0.3	NS		NS	0.16	NS		3.2	0.708	2.9	3.708	
	Nitrogen split application	0.6	0.478	0.5	NS		NS	0.1	0.1		3.7	1.23	4.0	NS	
	Nutrient management x Nitrogen split application	NS	NS	NS	NS		NS	0.2	NS		NS	2.185	NS	NS	
	Nitrogen split application x Nutrient management	NS	NS	NS	NS		NS	0.2	NS		NS	1.968	NS	NS	
CV (%)		5.0	3.05	5.0	2.06		4.4	1.4	0.0		2.5	0.69	2.5	3.57	

CHAPTER II: AGRONOMY

Table II.143: PMAT 6b: Effect of split application of N on available NP of soil after harvest of pearl millet crop under different doses of N in Zone b during kharif 2021 and 2022

Nutrient management	Treatment	Available Nitrogen (kg/ha) in soil after harvest									Zonal mean	Available Phosphorus (kg/ha) in soil after harvest									Zonal mean
		VYP			CBE			DHL				VYP			CBE			DHL			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	179.0	185.1	182.0	-	217.5	217.5	188.6	172.2	180.4	193.3	22.3	23.1	22.7	-	13.5	13.5	17.4	17.2	17.3	17.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	175.4	180.5	178.0	-	193.3	193.3	188.6	172.8	180.7	184.0	22.6	22.2	22.4	-	10.5	10.5	17.4	17.3	17.3	16.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	174.8	182.6	178.7	-	193.3	193.3	188.7	174.7	181.7	184.5	21.8	21.1	21.5	-	9.5	9.5	17.4	17.3	17.3	16.1
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	179.3	183.6	181.5	-	152.3	152.3	188.7	178.9	183.8	172.5	22.0	21.2	21.6	-	11.3	11.3	17.4	17.2	17.3	16.7
	Mean	177.1	182.9	180.0	-	189.1	189.1	188.7	174.7	181.7	183.6	22.2	21.9	22.0	-	11.2	11.2	17.4	17.2	17.3	16.8
112.5% RDN	Entire dose of N at sowing	175.8	191.0	183.4	-	223.5	223.5	194.3	183.7	189.0	198.6	22.8	23.3	23.1	-	10.3	10.3	17.4	17.2	17.3	16.9
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	173.4	186.3	179.8	-	210.0	210.0	193.9	184.4	189.2	193.0	22.6	22.5	22.5	-	12.8	12.8	17.3	17.2	17.3	17.5
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	172.8	182.8	177.8	-	206.8	206.8	194.7	186.2	190.4	191.7	21.8	21.6	21.7	-	16.5	16.5	17.3	17.2	17.3	18.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	170.8	184.3	177.6	-	163.0	163.0	194.8	189.3	192.1	177.5	22.1	21.7	21.9	-	13.3	13.3	17.4	17.2	17.3	17.5
	Mean	173.2	186.1	179.6	-	200.8	200.8	194.4	185.9	190.2	190.2	22.3	22.3	22.3	-	13.2	13.2	17.3	17.2	17.3	17.6
125% RDN	Entire dose of N at sowing	173.0	192.4	182.7	-	247.5	247.5	206.6	194.3	200.5	210.2	23.4	23.5	23.4	-	16.8	16.8	17.3	17.2	17.3	19.2
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	175.7	191.0	183.3	-	227.0	227.0	206.4	198.6	202.5	204.3	22.1	22.3	22.2	-	20.0	20.0	17.3	17.2	17.3	19.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	171.2	187.5	179.4	-	223.5	223.5	208.3	198.9	203.6	202.1	21.8	21.9	21.9	-	10.3	10.3	17.3	17.3	17.3	16.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	177.4	182.0	179.7	-	181.8	181.8	207.5	202.4	205.0	188.8	22.0	22.1	22.0	-	13.0	13.0	17.3	17.3	17.3	17.4
	Mean	174.3	188.2	181.3	-	219.9	219.9	207.2	198.5	202.9	201.4	22.3	22.5	22.4	-	15.0	15.0	17.3	17.2	17.3	18.2
Nitrogen split application	Entire dose of N at sowing	175.9	189.5	182.7	-	229.5	229.5	196.5	183.4	190.0	200.7	22.8	23.3	23.1	-	13.5	13.5	17.3	17.2	17.3	17.9
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	174.8	185.9	180.4	-	210.1	210.1	196.3	185.3	190.8	193.8	22.4	22.3	22.4	-	14.4	14.4	17.3	17.2	17.3	18.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	172.9	184.3	178.6	-	207.8	207.8	197.2	186.6	191.9	192.8	21.8	21.6	21.7	-	12.1	12.1	17.3	17.3	17.3	17.0
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	175.8	183.3	179.6	-	165.7	165.7	197.0	190.2	193.6	179.6	22.0	21.6	21.8	-	12.5	12.5	17.3	17.2	17.3	17.2

CHAPTER II: AGRONOMY

Table II.144: PMAT 6b: Effect of split application of N on N content in grain and plant after harvest of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Nitrogen content in grain (%)									Zonal mean	Nitrogen content in plant (%)									Zonal mean
		VYP			ABD1			DHL				VYP			ABD1			DHL			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	2.03	2.06	2.05	0.95	-	0.95	1.58	1.54	1.56	1.52	0.43	-	0.43	1.05	-	1.05	1.16	1.06	1.11	0.86
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.03	2.08	2.06	1.15	-	1.15	1.58	1.56	1.57	1.59	0.41	-	0.41	0.98	-	0.98	1.18	1.08	1.13	0.84
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.01	2.07	2.04	1.08	-	1.08	1.59	1.56	1.58	1.56	0.46	-	0.46	0.86	-	0.86	1.19	1.08	1.14	0.82
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.05	2.05	2.05	1.20	-	1.20	1.57	1.59	1.58	1.61	0.47	-	0.47	0.81	-	0.81	1.17	1.11	1.14	0.81
	Mean	2.03	2.06	2.05	1.10	-	1.10	1.58	1.56	1.57	1.57	0.44	-	0.44	0.93	-	0.93	1.18	1.08	1.13	0.83
112.5% RDN	Entire dose of N at sowing	2.06	2.07	2.06	1.01	-	1.01	1.61	1.55	1.58	1.55	0.45	-	0.45	1.25	-	1.25	1.18	1.09	1.14	0.94
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.11	2.05	2.08	1.34	-	1.34	1.61	1.57	1.59	1.67	0.48	-	0.48	1.18	-	1.18	1.19	1.11	1.15	0.94
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.05	2.05	2.05	1.18	-	1.18	1.62	1.57	1.60	1.61	0.41	-	0.41	0.81	-	0.81	1.20	1.11	1.16	0.79
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.07	2.09	2.08	1.01	-	1.01	1.61	1.61	1.61	1.57	0.50	-	0.50	0.95	-	0.95	1.19	1.14	1.17	0.87
	Mean	2.07	2.06	2.07	1.14	-	1.14	1.61	1.58	1.59	1.60	0.46	-	0.46	1.05	-	1.05	1.19	1.11	1.15	0.89
125% RDN	Entire dose of N at sowing	2.07	2.10	2.08	1.04	-	1.04	1.63	1.55	1.59	1.57	0.46	-	0.46	0.84	-	0.84	1.19	1.12	1.16	0.82
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.05	2.14	2.09	1.15	-	1.15	1.62	1.57	1.60	1.61	0.45	-	0.45	0.84	-	0.84	1.20	1.14	1.17	0.82
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.10	2.07	2.09	1.32	-	1.32	1.64	1.58	1.61	1.67	0.48	-	0.48	0.94	-	0.94	1.21	1.15	1.18	0.87
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.10	2.09	2.10	1.09	-	1.09	1.63	1.61	1.62	1.60	0.45	-	0.45	0.79	-	0.79	1.19	1.19	1.19	0.81
	Mean	2.08	2.10	2.09	1.15	-	1.15	1.63	1.58	1.60	1.61	0.46	-	0.46	0.85	-	0.85	1.20	1.15	1.17	0.83
Nitrogen split application	Entire dose of N at sowing	2.05	2.08	2.06	1.00	-	1.00	1.61	1.55	1.58	1.55	0.45	-	0.45	1.05	-	1.05	1.18	1.09	1.13	0.88
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	2.06	2.09	2.08	1.21	-	1.21	1.60	1.57	1.59	1.62	0.44	-	0.44	1.00	-	1.00	1.19	1.11	1.15	0.86
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	2.06	2.06	2.06	1.19	-	1.19	1.62	1.57	1.59	1.62	0.45	-	0.45	0.87	-	0.87	1.20	1.11	1.16	0.82
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	2.07	2.08	2.07	1.10	-	1.10	1.60	1.60	1.60	1.59	0.47	-	0.47	0.85	-	0.85	1.18	1.15	1.17	0.83

CHAPTER II: AGRONOMY

Table II.145: PMAT 6b: Effect of split application of N on P content in grain and plant after harvest of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Phosphorus content in grain (%)									Zonal mean	Phosphorus content in plant (%)									Zonal mean
		VYP			ABD1			DHL				VYP			ABD1			DHL			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	0.75	0.69	0.72	0.46	-	0.46	0.42	0.49	0.46	0.54	0.27	-	0.27	0.26	-	0.26	0.29	0.28	0.29	0.27
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.72	0.78	0.75	0.43	-	0.43	0.40	0.49	0.45	0.54	0.29	-	0.29	0.23	-	0.23	0.31	0.28	0.30	0.27
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.78	0.70	0.74	0.45	-	0.45	0.43	0.50	0.47	0.55	0.28	-	0.28	0.37	-	0.37	0.31	0.28	0.30	0.31
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.73	0.70	0.72	0.32	-	0.32	0.41	0.50	0.46	0.50	0.27	-	0.27	0.27	-	0.27	0.30	0.28	0.29	0.28
	Mean	0.74	0.72	0.73	0.42	-	0.42	0.42	0.50	0.46	0.53	0.28	-	0.28	0.28	-	0.28	0.30	0.28	0.29	0.28
112.5% RDN	Entire dose of N at sowing	0.75	0.71	0.73	0.31	-	0.31	0.42	0.50	0.46	0.50	0.29	-	0.29	0.20	-	0.20	0.29	0.28	0.29	0.26
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.78	0.74	0.76	0.44	-	0.44	0.43	0.51	0.47	0.56	0.23	-	0.23	0.21	-	0.21	0.30	0.28	0.29	0.24
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.74	0.68	0.71	0.54	-	0.54	0.44	0.50	0.47	0.57	0.28	-	0.28	0.27	-	0.27	0.31	0.28	0.30	0.28
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.73	0.75	0.74	0.51	-	0.51	0.41	0.51	0.46	0.57	0.29	-	0.29	0.23	-	0.23	0.30	0.28	0.29	0.27
	Mean	0.75	0.72	0.73	0.45	-	0.45	0.43	0.51	0.47	0.55	0.27	-	0.27	0.23	-	0.23	0.30	0.28	0.29	0.26
125% RDN	Entire dose of N at sowing	0.78	0.71	0.75	0.49	-	0.49	0.43	0.51	0.47	0.57	0.28	-	0.28	0.32	-	0.32	0.29	0.28	0.29	0.30
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.65	0.68	0.66	0.44	-	0.44	0.42	0.51	0.47	0.52	0.24	-	0.24	0.26	-	0.26	0.30	0.29	0.30	0.26
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.74	0.72	0.73	0.37	-	0.37	0.44	0.51	0.48	0.53	0.27	-	0.27	0.28	-	0.28	0.31	0.29	0.30	0.28
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.72	0.70	0.71	0.48	-	0.48	0.44	0.51	0.48	0.56	0.25	-	0.25	0.37	-	0.37	0.29	0.29	0.29	0.30
	Mean	0.72	0.70	0.71	0.45	-	0.45	0.43	0.51	0.47	0.54	0.26	-	0.26	0.31	-	0.31	0.30	0.29	0.29	0.29
Nitrogen split application	Entire dose of N at sowing	0.76	0.70	0.73	0.42	-	0.42	0.42	0.50	0.46	0.54	0.28	-	0.28	0.26	-	0.26	0.29	0.28	0.29	0.28
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.72	0.73	0.73	0.44	-	0.44	0.42	0.50	0.46	0.54	0.25	-	0.25	0.23	-	0.23	0.30	0.28	0.29	0.26
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.75	0.70	0.73	0.45	-	0.45	0.44	0.50	0.47	0.55	0.27	-	0.27	0.31	-	0.31	0.31	0.28	0.30	0.29
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.73	0.72	0.72	0.44	-	0.44	0.42	0.51	0.46	0.54	0.27	-	0.27	0.29	-	0.29	0.30	0.28	0.29	0.28

CHAPTER II: AGRONOMY

Table II.146: PMAT 6b: Effect of split application of K content in grain and plant after harvest of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Potassium content in grain (%)									Zonal mean	Potassium content in plant (%)									Zonal mean
		VYP			ABD1			DHL				VYP			ABD1			DHL			
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	0.91	0.89	0.90	1.03	-	1.03	0.84	0.82	0.83	0.92	1.12	-	1.12	2.79	-	2.79	1.34	1.37	1.36	1.75
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.94	0.95	0.94	1.05	-	1.05	0.84	0.82	0.83	0.94	1.07	-	1.07	2.56	-	2.56	1.36	1.37	1.37	1.66
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.92	0.89	0.91	1.01	-	1.01	0.85	0.82	0.84	0.92	1.06	-	1.06	2.26	-	2.26	1.37	1.38	1.38	1.56
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.83	0.89	0.86	1.17	-	1.17	0.85	0.82	0.84	0.95	1.16	-	1.16	2.13	-	2.13	1.35	1.39	1.37	1.55
	Mean	0.90	0.91	0.90	1.07	-	1.07	0.85	0.82	0.83	0.93	1.10	-	1.10	2.44	-	2.44	1.36	1.38	1.37	1.63
112.5% RDN	Entire dose of N at sowing	0.87	0.85	0.86	1.02	-	1.02	0.85	0.82	0.84	0.91	1.10	-	1.10	2.63	-	2.63	1.34	1.39	1.37	1.70
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.91	0.85	0.88	1.15	-	1.15	0.84	0.82	0.83	0.95	1.07	-	1.07	2.28	-	2.28	1.35	1.39	1.37	1.57
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.86	0.87	0.87	0.99	-	0.99	0.86	0.83	0.85	0.90	1.21	-	1.21	1.69	-	1.69	1.36	1.40	1.38	1.43
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.89	0.91	0.90	1.21	-	1.21	0.85	0.82	0.84	0.98	1.13	-	1.13	2.79	-	2.79	1.35	1.41	1.38	1.77
	Mean	0.88	0.87	0.88	1.09	-	1.09	0.85	0.82	0.84	0.94	1.13	-	1.13	2.35	-	2.35	1.35	1.40	1.37	1.62
125% RDN	Entire dose of N at sowing	0.86	0.90	0.88	1.19	-	1.19	0.87	0.82	0.85	0.97	1.08	-	1.08	2.96	-	2.96	1.36	1.42	1.39	1.81
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.86	0.89	0.87	1.06	-	1.06	0.88	0.82	0.85	0.93	1.06	-	1.06	2.52	-	2.52	1.37	1.42	1.40	1.66
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.87	0.93	0.90	1.12	-	1.12	0.89	0.83	0.86	0.96	1.11	-	1.11	2.86	-	2.86	1.38	1.43	1.41	1.79
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.90	0.87	0.89	1.24	-	1.24	0.87	0.83	0.85	0.99	1.08	-	1.08	2.18	-	2.18	1.36	1.44	1.40	1.55
	Mean	0.87	0.90	0.88	1.15	-	1.15	0.88	0.83	0.85	0.96	1.08	-	1.08	2.63	-	2.63	1.37	1.43	1.40	1.70
Nitrogen split application	Entire dose of N at sowing	0.88	0.88	0.88	1.08	-	1.08	0.85	0.82	0.84	0.93	1.10	-	1.10	2.79	-	2.79	1.35	1.39	1.37	1.75
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.90	0.89	0.90	1.09	-	1.09	0.85	0.82	0.84	0.94	1.07	-	1.07	2.45	-	2.45	1.36	1.39	1.38	1.63
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.88	0.90	0.89	1.04	-	1.04	0.87	0.83	0.85	0.93	1.12	-	1.12	2.27	-	2.27	1.37	1.40	1.39	1.59
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.88	0.89	0.88	1.21	-	1.21	0.86	0.82	0.84	0.98	1.12	-	1.12	2.37	-	2.37	1.35	1.41	1.38	1.62

CHAPTER II: AGRONOMY

Table II.147: PMAT 6b: Effect of split application of N on total N uptake by grain and straw of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Nitrogen uptake by grain (kg/ha)						Zonal mean	Nitrogen uptake by plant (Straw) (kg/ha)						Zonal mean	Total N uptake (kg/ha)						Zonal mean
		VYP			DHL				VYP			DHL				VYP			DHL			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	40.0	40.7	40.3	59.4	39.3	49.4	44.8	23.9	-	23.9	81.7	53.4	67.5	45.7	63.9	-	63.9	141.1	92.7	116.9	90.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	43.5	47.1	45.3	62.9	45.1	54.0	49.7	24.0	-	24.0	92.0	61.5	76.8	50.4	67.6	-	67.6	154.9	106.6	130.8	99.2
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	43.8	45.9	44.9	69.2	46.2	57.7	51.3	27.4	-	27.4	98.7	63.4	81.1	54.2	71.3	-	71.3	167.9	109.6	138.7	105.0
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	47.5	49.5	48.5	61.4	45.4	53.4	50.9	29.4	-	29.4	89.2	62.2	75.7	52.6	76.9	-	76.9	150.6	107.7	129.1	103.0
	Mean	43.7	45.8	44.7	63.2	44.0	53.6	49.2	26.2	-	26.2	90.4	60.1	75.3	50.7	69.9	-	69.9	153.7	104.1	128.9	99.4
112.5% RDN	Entire dose of N at sowing	41.5	42.4	41.9	66.0	41.7	53.8	47.9	25.8	-	25.8	94.1	57.4	75.7	50.8	67.3	-	67.3	160.1	99.1	129.6	98.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	45.2	47.0	46.1	69.5	47.1	58.3	52.2	28.9	-	28.9	100.0	65.1	82.6	55.7	74.0	-	74.0	169.5	112.2	140.9	107.4
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	44.5	48.0	46.3	75.3	48.8	62.0	54.1	24.9	-	24.9	111.2	69.6	90.4	57.6	69.4	-	69.4	186.5	118.4	152.4	110.9
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	48.5	51.6	50.0	64.9	47.1	56.0	53.0	31.3	-	31.3	88.6	67.2	77.9	54.6	79.8	-	79.8	153.5	114.3	133.9	106.8
	Mean	44.9	47.2	46.1	68.9	46.2	57.5	51.8	27.7	-	27.7	98.5	64.8	81.7	54.7	72.6	-	72.6	167.4	111.0	139.2	105.9
125% RDN	Entire dose of N at sowing	43.2	44.1	43.6	69.5	42.4	55.9	49.8	26.4	-	26.4	94.4	60.1	77.3	51.8	69.7	-	69.7	163.9	102.5	133.2	101.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	45.5	49.7	47.6	72.0	48.4	60.2	53.9	27.7	-	27.7	97.7	69.3	83.5	55.6	73.2	-	73.2	169.7	117.7	143.7	108.5
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	47.8	48.4	48.1	77.4	50.5	64.0	56.0	29.8	-	29.8	105.3	73.1	89.2	59.5	77.5	-	77.5	182.8	123.6	153.2	115.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	52.1	54.4	53.2	71.5	48.2	59.9	56.6	29.3	-	29.3	97.6	69.0	83.3	56.3	81.4	-	81.4	169.1	117.2	143.2	112.3
	Mean	47.2	49.1	48.1	72.6	47.4	60.0	54.1	28.3	-	28.3	98.8	67.9	83.3	55.8	75.5	-	75.5	171.4	115.2	143.3	109.4
Nitrogen split application	Entire dose of N at sowing	41.6	42.4	42.0	65.0	41.1	53.0	47.5	25.4	-	25.4	90.1	56.9	73.5	49.4	66.9	-	66.9	155.0	98.1	126.5	96.7
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	44.7	47.9	46.3	68.2	46.9	57.5	51.9	26.9	-	26.9	96.6	65.3	80.9	53.9	71.6	-	71.6	164.7	112.2	138.4	105.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	45.4	47.4	46.4	74.0	48.5	61.2	53.8	27.4	-	27.4	105.1	68.7	86.9	57.1	72.7	-	72.7	179.1	117.2	148.1	110.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	49.4	51.8	50.6	65.9	46.9	56.4	53.5	30.0	-	30.0	91.8	66.1	79.0	54.5	79.3	-	79.3	157.7	113.1	135.4	107.4

CHAPTER II: AGRONOMY

Table II.148: PMAT 6b: Effect of split application of N on total P uptake by grain and straw of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Phosphorus uptake by grain (kg/ha)						Zonal mean	Phosphorus uptake by plant (Straw) (kg/ha)						Zonal mean	Total P uptake (kg/ha)						Zonal mean
		VYP			DHL				VYP			DHL				VYP			DHL			
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean	
100% RDN	Entire dose of N at sowing	14.6	13.6	14.1	15.8	12.5	14.2	14.1	15.0	-	15.0	20.4	14.1	17.3	16.1	29.6	-	29.6	36.2	26.6	31.4	30.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	15.6	17.7	16.7	15.9	14.2	15.0	15.9	17.2	-	17.2	24.2	15.9	20.1	18.6	32.8	-	32.8	40.1	30.1	35.1	34.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	17.0	15.5	16.2	18.7	14.8	16.8	16.5	16.7	-	16.7	25.7	16.4	21.1	18.9	33.6	-	33.6	44.4	31.2	37.8	35.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	16.9	17.0	16.9	16.0	14.3	15.2	16.0	16.7	-	16.7	22.9	15.7	19.3	18.0	33.5	-	33.5	38.9	30.0	34.5	34.0
	Mean	16.0	15.9	16.0	16.6	13.9	15.3	15.6	16.4	-	16.4	23.3	15.5	19.4	17.9	32.4	-	32.4	39.9	29.5	34.7	33.5
112.5% RDN	Entire dose of N at sowing	15.1	14.5	14.8	17.2	13.5	15.3	15.1	16.5	-	16.5	23.1	14.7	18.9	17.7	31.6	-	31.6	40.3	28.2	34.3	33.0
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	16.7	17.0	16.9	18.6	15.3	16.9	16.9	14.0	-	14.0	25.2	16.4	20.8	17.4	30.7	-	30.7	43.8	31.7	37.7	34.2
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	15.9	16.0	15.9	20.4	15.5	18.0	17.0	17.0	-	17.0	28.7	17.6	23.1	20.1	32.9	-	32.9	49.2	33.1	41.1	37.0
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	17.1	18.4	17.7	16.5	14.9	15.7	16.7	17.9	-	17.9	22.3	16.5	19.4	18.7	35.0	-	35.0	38.9	31.4	35.1	35.1
	Mean	16.2	16.5	16.3	18.2	14.8	16.5	16.4	16.4	-	16.4	24.9	16.3	20.6	18.5	32.6	-	32.6	43.0	31.1	37.1	34.8
125% RDN	Entire dose of N at sowing	16.3	15.0	15.7	18.3	14.0	16.1	15.9	16.1	-	16.1	23.0	15.0	19.0	17.5	32.4	-	32.4	41.3	29.0	35.2	33.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	14.5	15.6	15.1	18.7	15.7	17.2	16.1	14.8	-	14.8	24.4	17.6	21.0	17.9	29.3	-	29.3	43.1	33.3	38.2	33.8
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	16.8	17.0	16.9	20.8	16.3	18.5	17.7	16.5	-	16.5	27.0	18.4	22.7	19.6	33.4	-	33.4	47.8	34.7	41.3	37.3
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	17.9	18.2	18.0	19.3	15.3	17.3	17.7	16.4	-	16.4	23.8	16.8	20.3	18.3	34.2	-	34.2	43.1	32.1	37.6	35.9
	Mean	16.4	16.4	16.4	19.3	15.3	17.3	16.9	15.9	-	15.9	24.6	17.0	20.8	18.3	32.3	-	32.3	43.8	32.3	38.1	35.2
Nitrogen split application	Entire dose of N at sowing	15.4	14.3	14.8	17.1	13.3	15.2	15.0	15.9	-	15.9	22.2	14.6	18.4	17.1	31.2	-	31.2	39.3	27.9	33.6	32.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	15.6	16.8	16.2	17.7	15.1	16.4	16.3	15.3	-	15.3	24.6	16.7	20.6	18.0	30.9	-	30.9	42.3	31.7	37.0	34.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	16.6	16.2	16.4	20.0	15.5	17.8	17.1	16.7	-	16.7	27.1	17.5	22.3	19.5	33.3	-	33.3	47.1	33.0	40.1	36.7
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	17.3	17.9	17.6	17.3	14.8	16.1	16.8	17.0	-	17.0	23.0	16.3	19.7	18.3	34.2	-	34.2	40.3	31.2	35.7	35.0

CHAPTER II: AGRONOMY

Table II.149: PMAT 6b: Effect of split application of N on total K uptake by grain and straw of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Potassium uptake by grain (kg/ha)						Zonal mean	Potassium uptake by plant (Straw) (kg/ha)						Zonal mean	Total K uptake (kg/ha)									Zonal mean
		VYP			DHL				VYP			DHL				VYP			DHL						
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean				
100% RDN	Entire dose of N at sowing	17.9	17.6	17.7	31.6	20.9	26.3	22.0	61.5	-	61.5	94.4	69.0	81.7	71.6	79.4	-	79.4	126.0	89.9	107.9	93.7			
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	20.3	21.4	20.9	33.4	23.7	28.6	24.7	62.2	-	62.2	106.1	78.0	92.0	77.1	82.5	-	82.5	139.5	101.7	120.6	101.6			
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	20.0	19.9	19.9	37.0	24.3	30.6	25.3	63.6	-	63.6	113.7	81.0	97.3	80.5	83.6	-	83.6	150.7	105.3	128.0	105.8			
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	19.3	21.4	20.4	33.3	23.4	28.3	24.4	72.8	-	72.8	103.0	78.0	90.5	81.6	92.1	-	92.1	136.2	101.4	118.8	105.5			
	Mean	19.4	20.1	19.7	33.8	23.1	28.5	24.1	65.0	-	65.0	104.3	76.5	90.4	77.7	84.4	-	84.4	138.1	99.6	118.8	101.6			
112.5% RDN	Entire dose of N at sowing	17.5	17.6	17.6	34.8	22.1	28.4	23.0	63.7	-	63.7	106.8	73.2	90.0	76.8	81.2	-	81.2	141.7	95.2	118.5	99.8			
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	19.5	19.5	19.5	36.3	24.6	30.4	25.0	64.7	-	64.7	113.5	81.6	97.5	81.1	84.3	-	84.3	149.7	106.1	127.9	106.1			
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	18.6	20.4	19.5	40.0	25.8	32.9	26.2	73.5	-	73.5	126.0	87.7	106.9	90.2	92.1	-	92.1	166.0	113.5	139.8	115.9			
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	21.1	22.4	21.8	34.2	24.0	29.1	25.4	71.2	-	71.2	100.5	83.1	91.8	81.5	92.2	-	92.2	134.8	107.1	120.9	106.6			
	Mean	19.2	20.0	19.6	36.3	24.1	30.2	24.9	68.3	-	68.3	111.7	81.4	96.6	82.4	87.5	-	87.5	148.0	105.5	126.8	107.1			
125% RDN	Entire dose of N at sowing	17.9	19.1	18.5	37.1	22.4	29.7	24.1	61.6	-	61.6	107.9	76.2	92.1	76.8	79.6	-	79.6	145.0	98.6	121.8	100.7			
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	19.2	20.4	19.8	39.1	25.3	32.2	26.0	66.0	-	66.0	111.5	86.3	98.9	82.4	85.2	-	85.2	150.6	111.6	131.1	108.1			
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	19.7	21.7	20.7	42.0	26.5	34.3	27.5	68.9	-	68.9	120.1	90.9	105.5	87.2	88.5	-	88.5	162.2	117.4	139.8	114.2			
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	22.2	22.6	22.4	38.2	24.9	31.5	27.0	69.2	-	69.2	111.6	83.5	97.5	83.4	91.4	-	91.4	149.7	108.4	129.1	110.2			
	Mean	19.8	21.0	20.4	39.1	24.8	31.9	26.1	66.4	-	66.4	112.8	84.2	98.5	82.5	86.2	-	86.2	151.9	109.0	130.4	108.3			
Nitrogen split application	Entire dose of N at sowing	17.8	18.1	17.9	34.5	21.8	28.2	23.0	62.3	-	62.3	103.0	72.8	87.9	75.1	80.1	-	80.1	137.5	94.6	116.1	98.1			
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	19.7	20.5	20.1	36.3	24.5	30.4	25.2	64.3	-	64.3	110.3	82.0	96.1	80.2	84.0	-	84.0	146.6	106.5	126.5	105.3			
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	19.4	20.7	20.1	39.7	25.5	32.6	26.3	68.7	-	68.7	119.9	86.5	103.2	85.9	88.1	-	88.1	159.6	112.1	135.8	112.0			
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	20.9	22.2	21.5	35.2	24.1	29.7	25.6	71.1	-	71.1	105.0	81.5	93.3	82.2	91.9	-	91.9	140.2	105.6	122.9	107.4			

CHAPTER II: AGRONOMY

Table II.150: PMAT 6b: Effect of split application of N on available K and pH of soil after harvest of pearl millet crop under different doses of N in Zone b during kharif 2021 and 2022

Nutrient management	Treatment	Available Potassium (kg/ha) in soil after harvest									Zonal mean	Soil pH after harvest							Zonal mean
		VYP			CBE			DHL				VYP			DHL				
		2021	2022	Mean	2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		
100% RDN	Entire dose of N at sowing	390	417	403	-	567	567	578	574	576	516	8.2	8.1	8.2	7.9	7.9	7.9	8.1	
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	390	409	400	-	451	451	576	570	573	475	8.3	8.2	8.2	7.9	7.9	7.9	8.1	
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	389	404	397	-	443	443	578	572	575	472	8.3	8.1	8.2	7.9	7.9	7.9	8.1	
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	380	407	393	-	357	357	579	568	574	441	8.2	8.1	8.2	7.9	7.9	7.9	8.1	
	Mean	387	409	398	-	455	455	578	571	574	476	8.2	8.1	8.2	7.9	7.9	7.9	8.1	
112.5% RDN	Entire dose of N at sowing	395	422	408	-	534	534	576	572	574	506	8.2	8.1	8.2	7.9	7.9	7.9	8.1	
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	391	412	402	-	473	473	574	570	572	482	8.3	8.1	8.2	8.0	8.0	8.0	8.1	
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	389	415	402	-	453	453	574	570	572	476	8.2	8.1	8.1	7.9	8.0	7.9	8.0	
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	387	406	396	-	330	330	575	566	571	432	8.3	8.2	8.2	7.9	7.9	7.9	8.1	
	Mean	390	414	402	-	447	447	575	570	572	474	8.2	8.1	8.2	7.9	7.9	7.9	8.1	
125% RDN	Entire dose of N at sowing	391	425	408	-	442	442	572	572	572	474	8.3	8.2	8.2	8.0	8.0	8.0	8.1	
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	395	416	405	-	408	408	574	566	570	461	8.3	8.2	8.2	7.9	8.0	8.0	8.1	
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	390	408	399	-	403	403	573	568	571	457	8.3	8.1	8.2	8.0	8.0	8.0	8.1	
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	388	403	396	-	348	348	573	565	569	438	8.3	8.1	8.2	8.0	8.0	8.0	8.1	
	Mean	391	413	402	-	400	400	573	568	570	457	8.3	8.1	8.2	8.0	8.0	8.0	8.1	
Nitrogen split application	Entire dose of N at sowing	392	421	407	-	514	514	575	573	574	498	8.2	8.1	8.2	7.9	8.0	7.9	8.1	
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	392	413	402	-	444	444	575	569	572	473	8.3	8.2	8.2	7.9	8.0	7.9	8.1	
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	389	409	399	-	433	433	575	570	573	468	8.2	8.1	8.2	7.9	8.0	7.9	8.1	
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	385	405	395	-	345	345	576	566	571	437	8.2	8.1	8.2	7.9	8.0	7.9	8.1	

CHAPTER II: AGRONOMY

Table II.151: PMAT 6b: Effect of split application of N on WUE and soil EC and soil OC after harvest of pearl millet crop under different doses of N in Zone B during kharif 2021 and 2022

Nutrient management	Treatment	Electrical conductivity (EC) (dS/m) after harvest						Zonal mean	Soil organic carbon (%) after harvest						Zonal mean	WUE (Kg/ha-cm)		
		VYP			DHL				VYP			DHL				ABD1		
		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean	2021	2022	Mean		2021	2022	Mean
100% RDN	Entire dose of N at sowing	0.32	0.33	0.32	0.42	0.44	0.43	0.38	0.67	0.68	0.68	0.53	0.52	0.53	0.60	31.2	33.8	32.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.32	0.32	0.32	0.43	0.43	0.43	0.38	0.67	0.69	0.68	0.53	0.52	0.53	0.60	36.0	35.2	35.6
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.33	0.33	0.33	0.42	0.44	0.43	0.38	0.67	0.67	0.67	0.53	0.51	0.52	0.59	36.2	32.0	34.1
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.32	0.32	0.32	0.42	0.44	0.43	0.37	0.67	0.68	0.67	0.53	0.51	0.52	0.60	33.7	22.6	28.2
	Mean	0.32	0.32	0.32	0.42	0.44	0.43	0.38	0.67	0.68	0.67	0.53	0.52	0.52	0.60	34.3	30.9	32.6
112.5% RDN	Entire dose of N at sowing	0.32	0.33	0.32	0.43	0.45	0.44	0.38	0.67	0.68	0.67	0.53	0.51	0.52	0.60	40.2	36.5	38.4
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.32	0.33	0.32	0.42	0.45	0.44	0.38	0.68	0.68	0.68	0.54	0.53	0.54	0.61	45.3	39.4	42.4
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.31	0.32	0.31	0.43	0.44	0.44	0.37	0.68	0.67	0.67	0.53	0.53	0.53	0.60	38.2	30.5	34.4
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.32	0.31	0.32	0.43	0.46	0.45	0.38	0.68	0.67	0.67	0.53	0.52	0.53	0.60	41.0	25.6	33.3
	Mean	0.32	0.32	0.32	0.43	0.45	0.44	0.38	0.68	0.67	0.67	0.53	0.52	0.53	0.60	41.2	33.0	37.1
125% RDN	Entire dose of N at sowing	0.32	0.32	0.32	0.43	0.46	0.45	0.38	0.66	0.67	0.66	0.54	0.52	0.53	0.60	38.4	40.5	39.5
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.33	0.32	0.32	0.44	0.46	0.45	0.39	0.67	0.67	0.67	0.54	0.53	0.54	0.60	50.6	43.4	47.0
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.33	0.32	0.33	0.44	0.46	0.45	0.39	0.66	0.68	0.67	0.54	0.53	0.54	0.60	40.3	38.6	39.5
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.32	0.33	0.32	0.43	0.45	0.44	0.38	0.67	0.67	0.67	0.54	0.53	0.54	0.60	42.6	30.5	36.6
	Mean	0.32	0.32	0.32	0.44	0.46	0.45	0.38	0.67	34.33	17.50	0.54	0.53	0.53	9.02	43.0	38.3	40.6
Nitrogen split application	Entire dose of N at sowing	0.32	0.32	0.32	0.43	0.45	0.44	0.38	0.66	0.68	0.67	0.53	0.52	0.53	0.60	36.6	36.9	36.8
	50 % of N at sowing + 50 % of N at tillering (20-25DAS)	0.32	0.32	0.32	0.43	0.45	0.44	0.38	0.67	0.68	0.68	0.54	0.53	0.53	0.60	44.0	39.3	41.7
	50 % of N at sowing + 50 % of N at boot stage (35-40 DAS)	0.32	0.32	0.32	0.43	0.45	0.44	0.38	0.67	0.67	0.67	0.53	0.52	0.53	0.60	38.2	33.7	36.0
	Three splits (25% basal) + 50 % of N at tillering (20-25DAS) + 25 % of N at boot stage (35-40 DAS)	0.32	0.32	0.32	0.43	0.45	0.44	0.38	0.67	0.67	0.67	0.53	0.52	0.53	0.60	39.1	26.2	32.7

CHAPTER II: AGRONOMY

Table II.152: PMAT 7A1: Effect of organic and natural farming on productivity of pearl millet crop during kharif 2022 in Zone A1

Treatment	Grain yield (q/ha)			Stover yield (q/ha)		
	BKR	MDR	Mean	BKR	MDR	Mean
T ₁ :Control	19.34	7.53	13.44	38.46	14.13	26.30
T ₂ : RDN* through Farm yard manure (FYM)	15.55	15.63	15.59	32.43	31.17	31.80
T ₃ : RDN through Vermicompost (VC)	16.39	14.73	15.56	30.55	29.40	29.98
T ₄ : RDN through Sheep or Goat manure	15.96	15.80	15.88	31.48	32.73	32.11
T ₅ : RDN through FYM+ Biofertilizer	14.28	18.53	16.41	27.16	38.70	32.93
T ₆ : RDN through Vermicompost+ Biofertilizer	16.47	17.43	16.95	32.10	34.20	33.15
T ₇ : RDN through Poultry manure + Biofertilizer	16.01	17.83	16.92	29.21	35.93	32.57
T ₈ : *** Cow based bio formulation	16.44	16.73	16.59	30.79	33.03	31.91
T ₉ : RDF**	20.51	19.83	20.17	40.52	41.37	40.94
CD at 5 %	3.02	2.90		7.29	5.47	
CV (%)	9.6	10.4		6.9	9.7	

CHAPTER II: AGRONOMY

Table II.153: PMAT 7A1: Effect of organic and natural farming on growth and yield attributes of pearl millet crop during kharif 2022 in Zone A1

Treatment	Plant height (cm)			Plant population ('000/ha)			Total tillers/plant			Effective tillers/plant		
	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
T ₁ :Control	125.7	137.7	131.7	123.6	110.4	117.0	3.6	3.1	3.4	2.8	2.4	2.6
T ₂ : RDN* through Farm yard manure (FYM)	121.2	142.6	131.9	123.4	110.4	116.9	3.3	3.6	3.4	2.9	2.9	2.9
T ₃ : RDN through Vermicompost (VC)	122.5	139.4	131.0	124.9	110.7	117.8	3.6	3.2	3.4	2.9	2.6	2.8
T ₄ : RDN through Sheep or Goat manure	124.0	141.5	132.8	122.9	110.0	116.5	3.6	3.4	3.5	3.0	2.8	2.9
T ₅ : RDN through FYM+ Biofertilizer	123.2	148.8	136.0	127.8	111.3	119.5	3.2	4.1	3.6	2.9	3.4	3.2
T ₆ : RDN through Vermicompost+ Biofertilizer	124.1	145.3	134.7	125.3	110.9	118.1	3.1	3.9	3.5	2.9	3.2	3.1
T ₇ : RDN through Poultry manure + Biofertilizer	124.0	147.8	135.9	126.3	111.7	119.0	3.2	4.0	3.6	2.8	3.3	3.0
T ₈ : *** Cow based bio formulation	125.9	143.4	134.6	125.3	113.0	119.2	3.7	3.8	3.7	3.0	3.1	3.1
T ₉ : RDF**	124.1	156.5	140.3	123.6	114.1	118.9	3.6	4.3	4.0	3.1	3.6	3.4
CD at 5 %	NS	10.0		NS	NS		0.5	0.5		0.4	0.5	
CV (%)	5.6	4.0		5.2	4.3		7.2	7.5		8.4	10.0	

Table II.154: PMAT 7A1: Effect of organic and natural farming on economics and test weight of pearl millet crop during kharif 2022 in Zone A1

Treatment	Gross returns (Rs./ha)			Net returns (Rs./ha)			BC ratio (%)			Test wt. (g)		
	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean	BKR	MDR	Mean
T ₁ :Control	83917	26178	55048	62917	9213	36065	4.0	1.5	2.8	7.4	8.1	7.8
T ₂ : RDN* through Farm yard manure (FYM)	68976	55440	62208	22976	27278	25127	1.5	2.0	1.8	7.5	8.2	7.8
T ₃ : RDN through Vermicompost (VC)	69056	52267	60662	43556	21439	32498	2.3	1.7	2.0	7.2	8.0	7.6
T ₄ : RDN through Sheep or Goat manure	68987	56777	62882	43487	23282	33384	2.3	1.7	2.0	7.2	8.2	7.7
T ₅ : RDN through FYM+ Biofertilizer	60722	66774	63748	36722	38327	37525	2.5	2.4	2.4	7.6	8.2	7.9
T ₆ : RDN through Vermicompost+ Biofertilizer	70801	61494	66148	46801	30381	38591	3.0	2.0	2.5	7.4	8.1	7.7
T ₇ : RDN through Poultry manure + Biofertilizer	66848	63476	65162	16348	29696	23022	1.3	1.9	1.6	7.3	8.0	7.7
T ₈ : *** Cow based bio formulation	69420	59163	64291	18920	35443	27181	1.4	2.5	1.9	7.6	8.1	7.8
T ₉ : RDF**	88718	71429	80073	39718	51057	45387	1.8	3.5	2.7	7.9	8.2	8.1
CD at 5 %	13924	9832		13028	9832		0.4	0.4		0.7	NS	
CV (%)	7.3	9.9		15.5	19.0		8.7	10.1		5.1	3.2	

CHAPTER II: AGRONOMY

Table II.155: PMAT 7A1: Effect of organic and natural farming on the soil microbial counts of pearl millet during *kharif* 2022 at Mandor

Treatment	Dehydrogenase $\mu\text{g TPF/g soil/day}$	Alkaline phosphatases $\mu\text{g/g soil/hr}$	Acid phosphatases $\mu\text{g/g soil/hr}$	Urease (μ moles ammonia released/g/hr)	MBC ($\mu\text{g g}^{-1}$ soil)	Bacterial count (10^6cfu/g soil)	Fungal count (10^4cfu/g soil)	Actinomycetes count (10^5cfu/g soil)
T ₁ : Control	147.77	5.25	2.50	8.01	309.07	9.31	5.40	7.24
T ₂ : RDN* through Farm yard manure (FYM)	252.07	5.39	2.91	10.13	352.40	9.67	5.79	7.78
T ₃ : RDN through Vermicompost (VC)	261.50	5.42	2.87	10.09	357.73	9.49	5.76	7.42
T ₄ : RDN through Sheep or Goat manure	244.83	5.63	3.31	9.27	398.47	9.55	5.82	7.59
T ₅ : RDN through FYM+ Biofertilizer	327.37	6.73	3.66	11.32	424.60	10.03	5.84	8.08
T ₆ : RDN through Vermicompost+ Biofertilizer	310.00	6.36	3.64	10.80	410.10	9.90	6.14	8.15
T ₇ : RDN through Poultry manure + Biofertilizer	273.60	6.07	3.47	11.25	389.53	9.84	6.15	7.97
T ₈ : *** Cow based bio formulation	187.57	5.72	3.20	8.77	337.53	9.61	6.07	8.12
T ₉ : RDF**	191.77	5.64	2.63	8.14	310.43	9.41	5.50	7.64
Initial status (before sowing)	-	-	-	-	-	8.00	4.42	6.87
CD at 5 %	31.05	NS	NS	1.12	NS	0.26	0.41	0.37
CV (%)	7.3	12.2	20.3	6.6	13.28	1.52	4.06	2.73

CHAPTER II: AGRONOMY

Table II.156: PMAT 7A: Effect of organic and natural farming on plant height and productivity of pearl millet crop during kharif 2022 in Zone A

Treatment	Grain yield (q/ha)					Stover yield (q/ha)					Plant height (cm)				
	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean
T ₁ :Control	21.36	9.99	30.34	18.19	19.97	64.90	23.43	79.75	37.12	51.30	165.3	190.5	187.0	184.6	181.9
T ₂ : RDN* through Farm yard manure (FYM)	27.71	12.71	33.31	19.73	23.37	75.97	28.33	87.31	39.25	57.71	175.0	193.9	201.7	185.0	188.9
T ₃ : RDN through Vermicompost (VC)	28.91	11.42	37.72	20.29	24.59	77.61	26.85	98.88	41.38	61.18	177.7	191.5	210.0	194.6	193.5
T ₄ : RDN through Poultry manure(PM)	29.88	15.50	38.54	21.39	26.33	84.14	31.08	96.42	42.09	63.43	180.0	199.9	218.0	195.0	198.2
T ₅ : RDN through FYM+ Biofertilizer	31.32	14.64	37.49	23.21	26.66	85.87	31.33	98.33	43.35	64.72	181.7	202.0	206.7	195.2	196.4
T ₆ : RDN through Vermicompost+ Biofertilizer	32.09	12.65	40.14	24.03	27.23	87.10	30.12	98.23	46.44	65.47	183.3	197.9	210.0	195.4	196.6
T ₇ : RDN through Poultry manure + Biofertilizer	33.28	19.37	39.72	24.90	29.32	90.15	36.76	97.33	45.40	67.41	185.0	207.2	214.7	196.8	200.9
T ₈ : *** Cow based bio formulation	26.26	13.32	38.06	20.83	24.62	75.56	30.81	99.82	41.91	62.03	170.0	194.1	204.3	191.3	189.9
T ₉ : RDF**	40.56	25.46	39.34	28.96	33.58	111.79	42.12	97.11	50.64	75.42	204.7	212.9	215.0	202.9	208.9
CD at 5 %	3.04	3.59	4.34	4.46		8.71	5.87	10.69	NS		8.1	10.0	15.6	NS	
CV (%)	5.8	13.7	6.7	11.4		6.0	10.8	6.5	10.1		2.6	2.9	4.3	6.5	

Table II.157: PMAT 7A: Effect of organic and natural farming on yield attributes of pearl millet crop during kharif 2022 in Zone A

Treatment	Total tillers/plant					Effective tillers/plant					Earhead Length (cm)				
	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean
T ₁ :Control	2.0	2.3	4.4	3.1	3.0	1.6	1.3	2.2	2.1	1.8	25.2	18.6	23.7	21.3	22.2
T ₂ : RDN* through Farm yard manure (FYM)	2.7	2.5	4.5	3.3	3.3	2.2	1.6	2.4	2.3	2.2	25.3	19.3	25.8	21.8	23.1
T ₃ : RDN through Vermicompost (VC)	3.0	2.6	5.0	3.4	3.5	2.3	1.5	2.8	2.4	2.2	25.7	19.1	25.7	22.2	23.2
T ₄ : RDN through Poultry manure(PM)	3.0	2.9	5.0	3.6	3.6	2.3	1.9	3.2	2.6	2.5	26.3	19.6	25.7	22.9	23.6
T ₅ : RDN through FYM+ Biofertilizer	3.0	3.0	4.7	3.7	3.6	2.7	2.1	2.6	2.7	2.5	26.7	20.0	26.7	23.2	24.1
T ₆ : RDN through Vermicompost+ Biofertilizer	3.1	2.7	5.7	3.8	3.8	2.7	1.8	3.3	2.8	2.7	27.0	19.4	27.0	23.3	24.2
T ₇ : RDN through Poultry manure + Biofertilizer	3.1	3.2	5.7	3.9	4.0	2.8	2.3	3.3	2.9	2.8	27.7	20.8	30.0	24.2	25.7
T ₈ : *** Cow based bio formulation	2.7	2.9	5.8	3.5	3.7	2.3	1.9	2.8	2.5	2.4	25.3	19.9	27.8	22.8	24.0
T ₉ : RDF**	3.7	3.3	5.6	4.1	4.1	3.0	2.4	3.0	3.1	2.9	29.0	22.1	27.2	24.3	25.6
CD at 5 %	0.7	0.4	1.0	NS		0.7	0.3	0.5	NS		2.0	1.1	2.7	NS	
CV (%)	14.0	8.2	10.8	16.2		17.2	10.4	9.5	21.9		4.2	3.1	5.9	7.7	

CHAPTER II: AGRONOMY

Table II.158: PMAT 7A: Effect of organic and natural farming on test weight, protein content and earhead girth of pearl millet crop during kharif 2022 in Zone A

Treatment	Test weight (g)					Protein content (%)					Earhead Girth (cm)				
	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean	HSR	JMR	JPR	JMU	Mean
T ₁ :Control	9.7	8.0	10.9	11.6	10.1	-	8.9	9.1	-	9.0	36.5	28.2	29.8	29.6	31.0
T ₂ : RDN* through Farm yard manure (FYM)	10.2	8.9	11.0	12.2	10.6	-	9.6	9.0	-	9.3	38.7	30.9	31.3	30.0	32.7
T ₃ : RDN through Vermicompost (VC)	10.6	8.7	11.6	12.3	10.8	-	9.2	9.0	-	9.1	39.8	29.6	33.7	30.2	33.3
T ₄ : RDN through Poultry manure(PM)	10.8	9.0	11.5	12.6	11.0	-	10.0	9.2	-	9.6	39.9	31.9	34.7	31.2	34.4
T ₅ : RDN through FYM+ Biofertilizer	10.9	9.1	11.1	13.0	11.0	-	9.9	9.2	-	9.5	40.7	33.0	31.8	32.1	34.4
T ₆ : RDN through Vermicompost+ Biofertilizer	11.0	9.0	11.8	13.1	11.2	-	9.6	9.8	-	9.7	41.0	31.5	33.3	32.3	34.5
T ₇ : RDN through Poultry manure + Biofertilizer	11.2	9.4	11.6	13.5	11.4	-	10.2	9.2	-	9.7	41.6	34.6	33.7	33.1	35.7
T ₈ : *** Cow based bio formulation	10.4	9.4	11.1	12.1	10.7	-	9.9	9.1	-	9.5	38.1	31.9	30.3	31.0	32.8
T ₉ : RDF**	11.7	10.0	11.6	14.6	12.0	-	9.5	9.3	-	9.4	38.2	36.8	32.3	33.7	35.3
CD at 5 %	0.9	1.0	NS	NS		-	0.7	NS	-		2.5	4.3	3.1	NS	
CV (%)	5.1	6.2	3.3	7.8		-	4.1	6.0	-		3.6	7.7	5.4	6.9	

Table II.159: PMAT 7A: Effect of organic and natural farming on physio-chemical properties and bacterial counts of pearl millet crop during kharif 2022 in Zone A

Treatment	Soil status after harvest											
	OC (%)			pH	EC	Available N (kg/ha)			Av. P	Av.	Bacterial count (106)	
	HSR	JMR	Mean	HSR		HSR	JMR	Mean	JMR	JMR	HSR	JMR
T ₁ :Control	0.32	0.51	0.42	8.31	0.27	183.3	186.1	184.7	18.2	296	-	116
T ₂ : RDN* through Farm yard manure (FYM)	0.35	0.62	0.49	8.29	0.26	188.3	191.6	190.0	22.3	300	-	182
T ₃ : RDN through Vermicompost (VC)	0.34	0.58	0.46	8.29	0.25	188.7	190.5	189.6	22.2	309	-	142
T ₄ : RDN through Poultry manure(PM)	0.34	0.65	0.49	8.30	0.26	189.0	198.3	193.6	25.0	317	-	99
T ₅ : RDN through FYM+ Biofertilizer	0.36	0.66	0.51	8.28	0.25	189.0	188.6	188.8	24.4	316	-	179
T ₆ : RDN through Vermicompost+ Biofertilizer	0.35	0.64	0.49	8.28	0.25	190.0	199.6	194.8	24.9	321	-	165
T ₇ : RDN through Poultry manure + Biofertilizer	0.36	0.68	0.52	8.29	0.25	191.0	202.9	197.0	27.0	322	-	149
T ₈ : *** Cow based bio formulation	0.33	0.59	0.46	8.30	0.27	186.7	196.6	191.6	24.4	317	-	192
T ₉ : RDF**	0.30	0.46	0.38	8.32	0.28	186.7	225.4	206.0	27.2	311	-	113
CD at 5 %	0.03	0.04		0.02	0.02	3.1	10.5		1.6	11	-	33
CV (%)	5.3	3.9		0.2	4.7	1.0	3.0		3.9	1.9	-	12.9

CHAPTER II: AGRONOMY

Table II.160: PMAT 7: Effect of organic and natural farming on the soil microbial counts of pearl millet under rainfed conditions during kharif 2022 at Hisar in Zone A

Treatment	Bacterial count (10⁵ cfu/g soil)	Fungal count (10⁴ cfu/g soil)	Actinomycetes count (10⁴ cfu/g soil)
T ₁ : Control	3.30	3.35	2.20
T ₂ : RDN through FYM	4.50	3.53	2.42
T ₃ : RDN through VC	4.60	3.52	2.40
T ₄ : RDN through Poultry Manure	4.40	3.51	2.36
T ₅ : RDN through FYM+ Biomix	5.20	3.64	2.54
T ₆ : RDN through VC+ Biomix	5.40	3.58	2.61
T ₇ : RDN through Poultry Manure+ Biomix	5.35	3.54	2.54
T ₈ : Cow based formulation	5.50	4.51	2.88
T ₉ : RDF	3.18	3.12	2.02
0-15 cm before sowing (Initial status)	3.20	3.15	2.12
CD at 5 %	1.05	0.92	0.56
CV (%)	7.6	8.7	7.5

CHAPTER II: AGRONOMY

Table II.161: PMAT 7A: Effect of organic and natural farming on plant populations and economics of pearl millet crop during kharif 2022 in Zone A

Treatment	Plant population ('000/ha)			Gross returns (Rs./ha)			Net returns (Rs./ha)			BC ratio (%)		
	HSR	JPR	Mean	HSR	JMR	Mean	HSR	JMR	Mean	HSR	JMR	Mean
T ₁ :Control	140.3	168.7	154.5	63175	24658	43917	3703	6828	5266	1.06	1.38	1.22
T ₂ : RDN* through Farm yard manure (FYM)	143.3	166.0	154.7	80320	31066	55693	5361	5236	5298	1.07	1.20	1.14
T ₃ : RDN through Vermicompost (VC)	144.7	167.7	156.2	83460	28202	55831	-8327	-5628	-6978	0.91	0.83	0.87
T ₄ : RDN through Poultry manure(PM)	145.7	172.3	159.0	87053	37193	62123	18389	17363	17876	1.27	1.88	1.57
T ₅ : RDN through FYM+ Biofertilizer	144.1	168.0	156.1	90770	35549	63159	15703	9719	12711	1.21	1.38	1.29
T ₆ : RDN through Vermicompost+ Biofertilizer	144.9	170.0	157.5	92832	31328	62080	937	-2652	-858	1.01	0.92	0.97
T ₇ : RDN through Poultry manure + Biofertilizer	145.6	168.7	157.2	96246	46085	71165	27473	26105	26789	1.40	2.31	1.85
T ₈ : *** Cow based bio formulation	142.7	170.3	156.5	76816	32799	54807	9206	10194	9700	1.14	1.45	1.29
T ₉ : RDF**	145.3	172.0	158.6	117668	59325	88496	49854	37967	43910	1.74	2.78	2.26
CD at 5 %	2.6	NS		-	-		-	-		-	-	
CV (%)	1.0	2.7		-	-		-	-		-	-	

Table II.162: PMAT 7B: Effect of organic and natural farming on productivity of pearl millet crop during kharif 2022 in Zone B

Treatment	Grain yield (q/ha)						Stover yield (q/ha)					
	ABD	DHL	VYP	CBE	PML	Mean	ABD	DHL	VYP	CBE	PML	Mean
T ₁ :Control	19.38	10.65	17.16	17.49	12.29	15.39	38.89	20.97	47.60	29.18	27.29	32.79
T ₂ : RDN* through Farm yard manure (FYM)	20.72	15.59	22.56	20.28	21.94	20.22	41.37	32.85	54.98	33.26	38.93	40.28
T ₃ : RDN through Vermicompost (VC)	21.88	14.72	23.86	20.84	22.97	20.85	43.66	29.97	55.12	32.66	41.71	40.62
T ₄ : RDN through Poultry manure(PM)	22.83	14.09	22.24	19.68	23.92	20.55	44.45	27.18	54.21	21.18	42.89	37.98
T ₅ : RDN through FYM+ Biofertilizer	25.00	18.29	24.84	20.49	30.07	23.74	46.87	35.42	57.29	31.23	48.43	43.85
T ₆ : RDN through Vermicompost+ Biofertilizer	25.72	17.37	26.03	22.58	23.59	23.06	47.34	33.80	59.54	34.57	46.81	44.41
T ₇ : RDN through Poultry manure + Biofertilizer	26.39	16.72	23.93	23.41	27.40	23.57	47.11	31.83	55.16	35.67	44.07	42.77
T ₈ : *** Cow based bio formulation	22.43	12.85	21.61	22.85	22.92	20.53	44.21	24.67	52.04	34.27	44.86	40.01
T ₉ : RDF**	33.52	19.50	26.77	28.87	32.67	28.27	58.10	37.05	61.25	40.28	53.15	49.96
CD at 5 %	5.45	2.77	3.15	3.54	6.12		7.45	8.10	6.02	4.15	6.95	
CV (%)	12.9	10.2	7.8	9.3	14.5		9.3	15.3	6.2	7.3	9.2	

CHAPTER II: AGRONOMY

Table II.163: PMAT 7B: Effect of organic and natural farming on total & effective tillers/plant and earhead length of pearl millet crop during kharif 2022 in Zone B

Treatment	Total tillers/plant						Effective tillers/plant						Earhead Length (cm)			
	ABD	DHL	VYP	CBE	PML	Mean	ABD	DHL	VYP	CBE	PML	Mean	DHL	VYP	CBE	Mean
T ₁ :Control	3.1	3.0	3.1	3.8	3.5	3.3	2.1	1.3	2.3	2.6	2.4	2.1	17.1	16.7	21.5	18.5
T ₂ : RDN* through Farm yard manure (FYM)	3.6	3.5	3.5	4.6	3.9	3.8	2.6	2.1	2.5	3.4	2.4	2.6	18.2	18.5	24.8	20.5
T ₃ : RDN through Vermicompost (VC)	3.7	3.4	3.7	4.5	4.5	4.0	2.7	2.1	2.5	3.3	2.6	2.6	18.1	18.0	24.5	20.2
T ₄ : RDN through Poultry manure(PM)	3.8	3.3	3.5	4.5	4.3	3.9	2.8	2.1	2.3	3.4	2.6	2.6	18.0	17.3	25.0	20.1
T ₅ : RDN through FYM+ Biofertilizer	4.2	3.9	3.7	4.8	4.7	4.2	3.2	2.2	2.7	3.3	2.8	2.8	18.6	18.6	27.6	21.6
T ₆ : RDN through Vermicompost+ Biofertilizer	4.4	3.9	3.7	4.7	4.6	4.3	3.3	2.2	2.8	3.7	3.0	3.0	18.4	18.9	28.6	22.0
T ₇ : RDN through Poultry manure + Biofertilizer	4.6	3.6	3.3	4.8	5.0	4.3	3.6	2.1	2.5	3.8	3.4	3.1	18.2	17.7	27.0	21.0
T ₈ : *** Cow based bio formulation	3.8	3.3	3.4	4.8	4.5	4.0	2.8	2.0	2.3	3.9	3.2	2.8	17.5	16.9	29.1	21.2
T ₉ : RDF**	5.2	4.1	3.8	5.4	5.4	4.8	4.2	2.2	2.8	4.4	3.9	3.5	18.9	18.8	31.1	22.9
CD at 5 %	0.73	NS	0.37	0.53	0.55		0.72	0.21	NS	0.57	0.67		0.9	NS	3.7	
CV (%)	10.3	11.6	6.0	6.5	7.0		13.6	5.8	8.8	9.3	13.2		2.7	5.3	8.0	

Table II.164: PMAT 7B: Effect of organic and natural farming on earhead girth, plant population and plant height of pearl millet crop during kharif 2022 in Zone B

Treatment	Earhead Girth (mm)				Plant height (cm)						Plant population ('000/ha)			
	DHL	VYP	CBE	Mean	ABD	DHL	VYP	CBE	PML	Mean	ABD	CBE	PML	Mean
T ₁ :Control	26.0	32.2	26.1	28.1	165.2	173.9	155.3	167.2	130.3	158.39	216.7	139.7	146.1	167.5
T ₂ : RDN* through Farm yard manure (FYM)	27.9	34.6	30.5	31.0	168.5	182.0	171.8	171.2	159.7	170.63	219.7	145.7	147.7	171.0
T ₃ : RDN through Vermicompost (VC)	27.5	35.1	30.1	30.9	169.3	181.7	173.9	173.3	159.7	171.57	218.1	146.7	147.3	170.7
T ₄ : RDN through Poultry manure(PM)	27.0	33.6	30.0	30.2	172.2	181.0	171.7	175.3	166.0	173.24	220.4	148.3	147.4	172.0
T ₅ : RDN through FYM+ Biofertilizer	28.3	37.3	33.3	33.0	173.4	183.7	173.2	186.4	170.7	177.46	216.7	148.0	148.1	170.9
T ₆ : RDN through Vermicompost+ Biofertilizer	28.2	38.0	34.1	33.5	174.7	183.0	179.6	184.4	170.3	178.42	217.1	145.3	147.8	170.1
T ₇ : RDN through Poultry manure + Biofertilizer	28.0	35.1	33.0	32.0	175.4	182.7	176.2	185.4	178.0	179.55	219.7	146.3	148.0	171.3
T ₈ : *** Cow based bio formulation	26.8	32.9	34.0	31.2	169.0	178.7	167.6	183.8	166.3	173.07	217.6	145.0	148.0	170.2
T ₉ : RDF**	28.8	38.8	36.0	34.5	181.1	190.3	177.1	187.4	177.3	182.65	220.6	147.7	148.0	172.1
CD at 5 %	1.2	3.8	2.7		8.7	NS	7.5	7.3	7.0		NS	NS	0.7	
CV (%)	2.4	6.2	4.9		2.9	2.9	2.5	2.3	2.4		1.0	3.1	0.3	

CHAPTER II: AGRONOMY

Table II.165: PMAT 7B: Effect of organic and natural farming on economics of pearl millet crop during kharif 2022 in Zone B

Treatment	Gross returns (Rs./ha)					Net returns (Rs./ha)					BC ratio (%)				
	ABD	DHL	CBE	PML	Mean	ABD	DHL	CBE	PML	Mean	ABD	DHL	CBE	PML	Mean
T ₁ :Control	59892	28298	32645	39328	40041	32892	8781	15745	11828	17312	2.2	1.5	1.9	1.4	1.8
T ₂ : RDN* through Farm yard manure (FYM)	64006	41603	37797	70208	53404	33006	16975	-14103	39208	18772	2.1	1.7	0.7	2.3	1.7
T ₃ : RDN through Vermicompost (VC)	67578	39197	38689	73515	54745	36078	4628	-6171	41014	18887	2.1	1.1	0.9	2.3	1.6
T ₄ : RDN through Poultry manure(PM)	70322	37394	35569	76530	54954	38322	12809	-4665	43030	22374	2.2	1.5	0.9	2.3	1.7
T ₅ : RDN through FYM+ Biofertilizer	76719	48556	37950	96235	64865	45219	23903	-14550	64435	29752	2.4	2.0	0.7	3.0	2.0
T ₆ : RDN through Vermicompost+ Biofertilizer	78771	46124	41843	75499	60559	46771	11530	-3617	42199	24221	2.5	1.3	0.9	2.3	1.7
T ₇ : RDN through Poultry manure + Biofertilizer	80578	44346	43369	87691	63996	48078	19734	2535	53491	30959	2.5	1.8	1.1	2.6	2.0
T ₈ : *** Cow based bio formulation	69200	34092	42278	73344	54729	40200	12633	15378	44344	28139	2.4	1.6	1.6	2.5	2.0
T ₉ : RDF**	102053	51720	53107	104563	77861	72053	29761	21197	74563	49394	3.4	2.4	1.7	3.5	2.7
CD at 5 %	15746	7301	-	19575		15746	7301		19574		0.5	0.3		0.6	
CV (%)	12.1	10.1	-	14.5		20.7	26.7		24.4		12.4	9.7		14.6	

Table II.166: PMAT 7B: Effect of organic and natural farming on physico chemical properties of soil after harvesting of pearl millet during kharif 2022 in Zone B

Treatment	After harvest											
	pH				EC (ds/m)				OC (%)			
	DHL	VYP	PML	Mean	DHL	VYP	PML	Mean	DHL	VYP	PML	Mean
T ₁ :Control	7.90	8.21	7.49	7.87	0.42	0.32	0.47	0.40	0.48	0.65	0.49	0.54
T ₂ : RDN* through Farm yard manure (FYM)	7.86	8.22	7.49	7.86	0.39	0.33	0.45	0.39	0.58	0.71	0.51	0.60
T ₃ : RDN through Vermicompost (VC)	7.88	8.22	7.54	7.88	0.39	0.33	0.50	0.41	0.56	0.68	0.50	0.58
T ₄ : RDN through Poultry manure(PM)	7.90	8.22	7.56	7.89	0.42	0.33	0.50	0.42	0.56	0.68	0.51	0.58
T ₅ : RDN through FYM+ Biofertilizer	7.86	8.20	7.52	7.86	0.39	0.33	0.53	0.42	0.58	0.70	0.50	0.59
T ₆ : RDN through Vermicompost+ Biofertilizer	7.88	8.20	7.54	7.87	0.39	0.33	0.51	0.41	0.56	0.71	0.50	0.59
T ₇ : RDN through Poultry manure + Biofertilizer	7.90	8.23	7.46	7.86	0.42	0.34	0.50	0.42	0.56	0.68	0.50	0.58
T ₈ : *** Cow based bio formulation	7.88	8.16	7.55	7.87	0.41	0.32	0.48	0.40	0.57	0.67	0.51	0.58
T ₉ : RDF**	7.92	8.27	7.44	7.88	0.43	0.33	0.50	0.42	0.56	0.66	0.50	0.57
CD at 5 %	-	NS	NS		-	NS	NS		-	NS	NS	
CV (%)	-	0.8	1.2		-	2.5	5.5		-	5.4	2.3	

CHAPTER II: AGRONOMY

Table II.167: PMAT 7B: Effect of organic and natural farming on average NPK of soil after harvesting of pearl millet during kharif 2022 in Zone B

Treatment	Available NPK after harvest (kg/ha)											
	N				P2O5				K2O			
	DHL	VYP	PML	Mean	DHL	VYP	PML	Mean	DHL	VYP	PML	Mean
T ₁ :Control	178.7	182.1	183.9	181.6	16.3	18.65	58.8	31.2	542.0	389.7	221.3	384.3
T ₂ : RDN* through Farm yard manure (FYM)	213.4	212.167	196.5	207.3	17.1	21.173	59.5	32.6	556.0	411.5	239.0	402.2
T ₃ : RDN through Vermicompost (VC)	209.2	223.233	188.1	206.9	17.1	21.747	68.7	35.8	556.0	416.6	220.3	397.6
T ₄ : RDN through Poultry manure(PM)	202.5	208.4	192.3	201.1	16.9	20.797	60.3	32.7	552.0	402.3	248.0	400.8
T ₅ : RDN through FYM+ Biofertilizer	213.7	221.5	183.9	206.4	17.2	21.89	56.5	31.8	558.0	423.5	233.7	405.0
T ₆ : RDN through Vermicompost+ Biofertilizer	210.7	223.667	204.8	213.1	17.1	22.063	67.6	35.6	556.0	428.5	258.0	414.2
T ₇ : RDN through Poultry manure + Biofertilizer	203.4	219.533	217.4	213.4	17.0	21.033	67.2	35.1	556.0	408.8	219.0	394.6
T ₈ : *** Cow based bio formulation	206.2	215.567	167.2	196.3	16.4	22.037	68.1	35.5	557.0	414.9	272.3	414.7
T ₉ : RDF**	197.3	211.5	209.0	205.9	17.2	20.657	67.9	35.3	568.0	395.1	213.0	392.0
CD at 5 %	-	15.6	NS		-	1.9	9.0		-	22.1	23.5	
CV (%)	-	4.2	9.1		-	5.2	8.1		-	3.1	5.7	

CHAPTER II: AGRONOMY

Table II.168: PMAT 7B: Effect of organic and natural farming on test weight, protein, Fe & Zn content of pearl millet and bacterial & fungi counts of soil after harvest during kharif 2022 in Zone B

Treatment	Test weight (g)						Protein content (%)					Fe (mg/kg)	Zn (mg/kg)	Bacteria (10 ⁶ CFU/ml after harvest			Fungi (10 ⁴ CFU/ml) after harvest
	ABD	DHL	VYP	CBE	PML	Mean	DHL	VYP	CBE	PML	Mean	VYP	VYP	VYP	PML	Mean	PML
T ₁ :Control	12.5	11.4	10.6	13.8	11.4	11.9	9.3	11.5	9.3	10.1	10.1	8.0	0.7	3.07	3.33	3.20	6.00
T ₂ : RDN* through Farm yard manure (FYM)	13.1	11.8	12.0	14.2	13.1	12.8	9.6	12.9	11.4	10.6	11.1	10.4	0.8	3.60	3.67	3.63	11.00
T ₃ : RDN through Vermicompost (VC)	13.4	11.9	12.6	14.3	13.9	13.2	9.6	13.0	12.1	10.3	11.2	9.9	0.7	3.87	8.33	6.10	14.00
T ₄ : RDN through Poultry manure(PM)	13.6	11.8	12.0	14.2	14.7	13.3	9.6	12.7	11.8	10.4	11.1	9.0	0.7	3.33	12.67	8.00	8.67
T ₅ : RDN through FYM+ Biofertilizer	14.1	12.0	12.7	14.5	14.3	13.5	9.6	13.4	11.6	10.5	11.3	10.6	0.8	4.23	11.00	7.62	10.67
T ₆ : RDN through Vermicompost+ Biofertilizer	14.3	11.9	12.6	14.5	14.3	13.5	9.6	13.5	12.0	10.6	11.4	10.8	0.8	4.70	9.33	7.02	11.67
T ₇ : RDN through Poultry manure + Biofertilizer	14.6	12.1	12.4	14.6	14.8	13.7	9.6	13.2	11.5	11.2	11.4	9.4	0.7	3.40	12.33	7.87	13.00
T ₈ : *** Cow based bio formulation	13.2	12.0	11.3	14.7	14.3	13.1	9.5	14.0	11.9	10.5	11.5	10.0	0.7	4.20	13.00	8.60	6.67
T ₉ : RDF**	15.8	12.2	12.9	15.0	15.2	14.2	9.6	13.2	11.8	11.2	11.5	11.2	0.8	3.63	5.33	4.48	6.67
CD at 5 %	1.7	NS	1.1	0.4	0.9		NS	1.2	0.4	NS		NS	NS	NS	4.17		2.64
CV (%)	7.2	2.8	5.4	1.4	3.6		2.2	5.3	2.1	4.3		13.5	9.7	19.0	27.2		15.4

CHAPTER II: AGRONOMY

Table II.169: PMAT 7B: Effect of organic and natural farming on growth, yield attributes and yields of chickpea crop in Pearl millet-chickpea cropping system during kharif 2022 in Vijayapur Zone B

Treatment	Plant height (cm)	No of primary branches/plant	No of secondary branches/plant	Number of pods/plant	Number of seeds/pod	Seed index (g) (100 seed weight)	Seed yield (q/ha)	Straw yield (q/ha)
T ₁ :Control	24.9	2.1	6.5	20.9	1.9	29.3	10.73	15.95
T ₂ : RDN* through Farm yard manure (FYM)	30.0	2.5	7.7	31.1	1.9	31.9	14.63	21.69
T ₃ : RDN through Vermicompost (VC)	30.4	2.5	8.0	33.1	2.0	32.2	16.27	22.61
T ₄ : RDN through Poultry manure(PM)	29.2	2.4	7.7	33.4	1.9	30.9	15.54	21.82
T ₅ : RDN through FYM+ Biofertilizer	30.9	2.6	8.4	35.1	2.0	33.4	17.31	22.51
T ₆ : RDN through Vermicompost+ Biofertilizer	31.8	2.6	8.5	36.5	2.0	33.2	18.65	24.01
T ₇ : RDN through Poultry manure + Biofertilizer	30.6	2.5	7.9	34.7	1.9	32.8	17.60	20.21
T ₈ : *** Cow based bio formulation	30.3	2.4	7.7	33.7	1.9	33.2	14.99	20.12
T ₉ : RDF**	32.1	2.6	8.3	36.9	2.0	32.9	17.18	25.04
CD at 5 %	2.0	NS	0.7	5.3	NS	NS	2.86	NS
CV (%)	3.8	10.0	5.0	9.3	4.7	7.2	10.3	14.0

Table II.170: PMAT 7B: Effect of organic and natural farming on NPK content in grain and plant of pearl millet after harvest during kharif 2022 in Perumallapalle in Zone B

Treatment	N content (%) of plant	N content (%) of grain	P content (%) of plant	P content (%) of grain	K content (%) of plant	K content (%) of grain	N uptake by plant (kg/ha)	N uptake by grain (kg/ha)
T ₁ :Control	1.32	1.62	0.43	0.76	0.78	1.26	35.90	1979
T ₂ : RDN* through Farm yard manure (FYM)	1.44	1.70	0.40	0.78	0.70	1.23	56.43	3729
T ₃ : RDN through Vermicompost (VC)	1.38	1.64	0.41	0.79	0.71	1.23	57.67	3760
T ₄ : RDN through Poultry manure(PM)	1.41	1.67	0.42	0.75	0.73	1.30	60.17	3970
T ₅ : RDN through FYM+ Biofertilizer	1.44	1.68	0.42	0.80	0.78	1.35	69.70	5062
T ₆ : RDN through Vermicompost+ Biofertilizer	1.49	1.69	0.44	0.80	0.77	1.29	69.83	3987
T ₇ : RDN through Poultry manure + Biofertilizer	1.43	1.79	0.42	0.81	0.85	1.32	63.23	4917
T ₈ : *** Cow based bio formulation	1.52	1.68	0.45	0.79	0.89	1.34	66.67	3869
T ₉ : RDF**	1.51	1.80	0.41	0.82	0.89	1.38	80.17	5871
CD at 5 %	NS	NS	NS	NS	0.05	0.08	12.58	1017
CV (%)	5.1	4.3	10.7	8.6	3.7	3.4	11.6	14.1

CHAPTER III

PLANT PHYSIOLOGY

PLANT PHYSIOLOGY

Six physiological trials were conducted during summer and *Kharif* 2022

S. No.	Trial	Name	Seasons	Locations	Remark
1	PMPHY 2a	Characterization for heat stress to identify parental lines of pearl millet suitable for summer cultivation	Summer	Mandor Jamnagar	✓ ✓
2	PMPHY 2b	Characterization for drought tolerance to identify parental lines of pearl millet suitable for kharif and summer cultivation	<i>Kharif</i>	Mandor Jamnagar RARI, Jaipur	✓ ✓ ✓
3	PMPHY 3	Study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition	<i>Kharif</i>	Mandor Jamnagar RARI, Jaipur	✓ ✓ ✓
4	PMPHY 4	Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition	<i>Kharif</i>	Mandor Jamnagar RARI, Jaipur	✓ ✓ ✓
5	PMPHY 5	Agro-physiological management of the drought in Pearl millet genotypes	<i>Kharif</i>	Mandor Jamnagar RARI, Jaipur	✓ ✓ ✓
6	PMPHY 7	Identification of heat stress tolerance in pearl millet genotypes at seedling stage	<i>Kharif</i>	Mandor RARI, Jaipur	✓ ✓

PMPHY-2a: Characterization for heat stress to identify parental lines of pearl millet suitable for summer cultivation

Summer trial

The trial was conducted at two locations, i.e. Mandor and Jamnagar. The experiment was conducted with the objective to identify parental lines suitable for summer cultivation and using them to develop heat tolerant hybrids. The treatments comprising of B and R lines, BIB-446, BIB-461, MS 431B, PPMI 1003, PPMI 1239, PPMI 1251, PPMI 1252, PRLT-2/89-33, JMSB 20201, JMSB 20208, J - 2579, J - 2599, MIR 513-1, MIR 519-2, MIR 520, MIR 542, MIR 612, MIR 920-1, MIR 1101 and MIR 1267 were tested for their response against heat stress in summer. The experiment was conducted in randomized block design with three replications. The early panicle initiation was recorded in genotype JMSB 20208 (25 das) followed by BIB-461(33 Days) and MIR 612 (35 Day). The high value of RWC was found in MIR 542 (83.18) at 65 DAS followed by PIB 446 and MIR 1267. The maximum grain yield was obtained in genotype PPMI1252 (4070 kg/ha) followed by PPMI 1003 (3726 kg /ha). The highest harvest index was recorded in genotype MIR 519-2 (37.71 %) being statistically at par with MS 431B followed by MIR 612 (35.12 %) at Jamnagar. The early panicle initiation and 50% flowering was recorded in genotype BIB 461 (37 days, 41days) followed by BIB-446 (46 days, 51 days). BIB 461 recorded maximum grain yield (1173 kg/ha) and harvest index (29.02%) followed by JMSB 20201 (1151 kg/ha) at Mandor (Table III-1). whereas PPMI 1003 showed maximum test weight (9.07 g) followed MIR 542 (8.27g) at Jamnagar and at Mandor centre MIR612 recorded maximum test

weight (6.37g) followed by MIR542 (6.18). The results showed that PPMI1252, PPMI 1003 and MIR 542 lines performed better under high-temperature condition in Jamnagar whereas BIB 461 and JMSB 20201 performed better at Mandor.

Kharif trial

PMPHY-2b: Characterization for drought tolerance to identify parental lines of pearl millet suitable for *Kharif* and *Summer* cultivation

This trial was conducted at three locations viz., Jaipur, Mandor and Jamnagar. The trial was conducted using 17 R and B lines (BIB-97, BIB-142, BIB-205, BIB-206, PPMI1295, PPMI1296, PPMI1297, DHLB-14B, DHLB23B, JB-1 JB-2, JB-3, 300-BCS-22, 301-BCS-22, 309-BCS-22, MIR-1803 and MIR-1804 in randomized block design with three replications in *Kharif* under rainfed condition. Among 17 lines, early 50% flowering was recorded in BIB-97 (38 day), BIB142 (40 day) and BIB -205 (40 days) followed by BIB-206 (44 days) and JB-2 (45 day). Highest grain yield was recorded in 309-BCS-22 (2616 kg/ha followed by PPMI 1295 (2473 kg/ha). The test weight recorded was high in JB-1 (10.65 g), followed by DHLB 23 B (9.81g) at Jamnagar. At Jaipur, maximum grain yield was obtained in PPMI 1297 (2395 kg/ha) and PPMI 1295 (2352 kg/ha followed by PPMI1296 (2275 kg/ha). Highest test weight was recorded in PPIM1297 (9.05 g) followed by PPMI 1295 (8.94 g) (Table III-2) at Jaipur. Early panicle initiation, 50% flowering and early to maturity was recorded in BIB-97, BIB-142 and BIB-205. The maximum grain yield was in PPMI 1295 (2387 kg/ha) followed by JB-3 (2122 kg/ ha) (Table III-2). The results showed that PPMI1295, JB-3 and PPMI 1297 performed better under drought condition at both the Centers.

PMPHY-3: Study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition

The experiment on study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition was allotted to the three centers Mandor, Jaipur and Jamnagar. It was conducted as per the technical programme at all three centers with the six selected pearl millet released hybrids/ varieties MPMH 17, MPMH 21, RHB 177, ABH 1200, Pusa composite 443 and Pusa composite 612 under rainfed condition. The data were recorded at two stages (anthesis & maturity). Grain yield, PNHI and HI were recorded at maturity whereas plant height, stem dry weight, leaf dry weight and panicle dry weight were recorded at anthesis as well as at maturity. (Table III.3). Pusa composite 612 exhibited maximum plant height (190.5 cm & 212.8 cm) stem dry weight (35.65 & 53.95 g), leaf dry weight (2.58 & 26.26 g) at both stages at Jaipur. The maximum grain yield (40.52 g) and panicle harvest index (58.21%) was recorded in MPMH 17 followed by Pusa composite-612 (56.52 %) at Jaipur. Pusa composite 612 exhibited maximum grain yield (95.7g), followed by MPMH 17 (47.27 g) at Jamnagar. The highest harvest index (41.09 and 40.56 %) was found in MPMH 21 at Jamnagar and Jaipur. At Mandor location, Pusa composite 612 exhibited maximum plant height (235.8 cm) and panicle dry weight (45.3 g) whereas ABH 1200 exhibited maximum grain yield (37.67 g) and harvest index (45.36%) at Mandor.

PMPHY-4: Identification of physiological traits for drought tolerance in pearl millet

The Identification of physiological traits for drought tolerance in pearl millet under rainfed condition was conducted at Mandor, Jaipur and Jamnagar centers with the fourteen selected pearl millet released hybrids/ varieties RHB 234, RHB 233, RHB 223, RHB 177, MPMH 17, MPMH 21, HHB 299, GHB 905, Pusa composite 1201, Pusa composite 701, Pusa composite 443, AHB 1269, DHBH 1397 and BHB 1202 in the field under rain fed condition. The data were recorded at four stages (30, 45, 60 DAS & at maturity), chlorophyll content (mg/g f.wt), plant height (cm), number of leaves, number of tillers, dry weight of stem (g), leaf dry weight (g), panicle weight (g), grain yield (kg/ plant), HI, PNHI, Crop Growth Rate (CGR $\text{g dm}^{-2} \text{ day}^{-1}$), Relative growth rate (RGR $\text{g g}^{-1} \text{ day}^{-1}$). The result showed that number of leaf, number of tillers, dry weight of stem (g), leaf dry weight (g), CGR, RGR increased significantly between 30 and 45 DAS at all centres whereas plant height, stem dry weight and panicle weight increased significantly from 45, 60 DAS and maturity in at all centres (Table III.4). CGR and RGR increased significantly from 45, 60 DAS but decreased 60 DAS to maturity at all centres. The range of CGR was found at different stages 0.143 to 0.500 $\text{g dm}^{-2} \text{ day}^{-1}$ at 45 DAS, 0.147 to 0.970 $\text{g dm}^{-2} \text{ day}^{-1}$ at 60 DAS and 0.053 to 0.787 $\text{g dm}^{-2} \text{ day}^{-1}$ on maturity at Jamnagar, 0.041 to 0.111 $\text{g dm}^{-2} \text{ day}^{-1}$ at 45 DAS, 0.160 to 0.389 $\text{g dm}^{-2} \text{ day}^{-1}$ at 60 DAS and 0.019 to 0.326 $\text{g dm}^{-2} \text{ day}^{-1}$ on maturity at Mandor and at Jaipur 0.057 to 0.112 $\text{g dm}^{-2} \text{ day}^{-1}$ on 45 DAS, 0.070 to 0.168 $\text{g dm}^{-2} \text{ day}^{-1}$ on 60 DAS and 0.031 to 0.122 $\text{g dm}^{-2} \text{ day}^{-1}$. The highest grain yield observed in MPMH 21 (112.73 g/plant), followed by HHB 299 (95.40 g/plant) at Jamnagar, 42.90 g/plant in MPMH 17 at Jaipur and 63.22g/plant in RHB 234 followed by RHB 223 at Mandor.

PMPHY-5: Agro-physiological management of the drought in Pearl millet genotypes

Agro-physiological management of the drought in Pearl millet genotypes under rainfed condition was conducted at Mandor, Jaipur and Jamnagar centers. The treatment comprised of eight treatments likewise, T2- Seed priming with water with ratio 1/2 for 6 hr, T3-Seed priming with ABA 150 ppm for 6 hrs, T4-Seed priming with KNO₃ 0.5% for 6 hrs, T5 Seed priming with KNO₃ 0.5% for 6 hrs + Spray of KNO₃ @ 1% at panicle initiation, T6 - Seed priming with salicylic acids 200 mg/L SA for 6 hrs, T7- Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation, T8-Spray of KNO₃ @ 1% at tillering and panicle initiation as compared with absolute control T1. The experiment was conducted in factorial randomized block design with three replications with two released hybrids V1(MPMH 21) and V2 (BHB 1602). Data for Biomass partitioning were recorded at four stages (30, 45, 60 and 75 DAS), Chlorophyll content (mg/g f.wt), Plant height (cm), Number of leaf, Number of tillers, Dry weight of stem (g), Leaf dry weight (g), panicle weight (g), grain yield (kg/ plant), HI, PNHI, Crop growth rate (CGR $\text{g dm}^{-2} \text{ day}^{-1}$), Relative growth rate (RGR $\text{g g}^{-1} \text{ day}^{-1}$) (Table III.5a). Data was also recorded for different parameters viz. Yield Observations at maturity, Seed setting %, Days to 50% flowering, Days to maturity, Grain yield (kg/ha), Productive tillers/plant, Test weight (g), Threshing percentage, Fodder yield (q/ha), Harvest index (%), Days to Maturity and Ear head weight (kg/ha) (Table III.5b)

The result showed that the effect of treatment reflect after 30 DAS on plant height, stem dry weight and panicle weight increased significantly from 45, 60 DAS and maturity in all treatments at all centers whereas number of leaf, number of tillers, leaf dry weight (g), increased significantly between 30, 45 and 60 DAS at all centers. Treatment T5 (Seed priming with KNO_3 0.5% for 6 hrs + Spray of KNO_3 @ 1% at panicle initiation) significantly recorded Plant height, , no of tiller, the chlorophyll content, leaf area index, dry weight of panicle, grain yield , HI and CGR at 75 DAS at Mandor and Jamnagar. At maturity of the crop treatment, T5 recorded the highest mean grain yield (1870,4521 and 3378 kg /ha) at all the three locations. The perforation of the hybrid, BHB1602 recorded significant gain yield (4953 and 3378 kg/ha) at Jaipur and Jamnagar whereas the maximum grain yield (1983 kg/ha) was recorded for MPMH 21. The maximum test weight was recorded for BHB 1602 (9.36, 9.73 and 10.3 g) at all three locations.

PMPHY-7: Identification of heat stress tolerance in pearl millet genotypes at seedling stage

The experiment was conducted to identify the heat tolerance mechanism in pearl millet at seedling stage. The experiment was conducted at Mandor and Jaipur. The pearl millet entries namely PPMI 1272, PPMI 1293, PPMI 1294, DHLB-31, B DHLB-32, B DHLB-34, B AS-1, AS-2, AS-3, 302-BCS-22, 303-BCS-22, 307-BCS-22, MIR-1409 and MIR-1802 were used for the study. Two entries i.e. PPMI 1293, PPMI 1294 and one entry- PPMI 1293 did not germinate at Mandor and Jaipur center, respectively. The plants were initially raised under normal condition in small plastic pots at Mandor. 20 days old seedlings were exposed to (40°C for 4 hrs, 44°C for 4 hrs and 46°C for 2 hrs) through oven at Jaipur and in BOD incubator at Mandor to create the heat stress condition. All the observations in control and temperature treated plants were recorded after 2 days of treatment. The results showed that shoot length, seedling dry weight, seedling vigor index, RWC, MSI, chlorophyll content decreased significantly while root length increased significantly. The genotypic difference was also found to be significant among them. Seed vigour index also showed significant genotypic variation. The genotypes- MIR1409 and 307 BCS 22 performed better having high shoot length, seedling dry weight, SVI and RWC at Mandor while DHLB 32B and MIR1409 performed better at Jaipur (Table III.6).

CHAPTER III: PLANT PHYSIOLOGY

Table III.1: Characterization for heat stress to identify parental lines of pearl millet suitable for summer cultivation at Jamnagar and Mandor during Summer 2022 (PMPHY 2a)

S. No.	Entries	Grain Yield (kg/ha)		Stover Yield (kg/ha)		Panicle Head Weight (kg/ha)		Harvest Index (%)		Threshing (%)		Days to panical initiation	
		Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor
1	BIB-446	2536	544	6330	3080	3576	1494	25.34	12.22	73.42	36.33	36	46
2	BIB-461	2271	1173	3846	2097	3604	1948	30.44	29.02	64.86	60.50	33	37
3	MS 431B	2614	0.00	3406	3955	4111	0.00	36.48	0.00	69.73	0.00	38	63
4	PPMI 1003	3726	224	8653	6111	4695	714	27.98	3.28	79.53	31.42	43	68
5	PPMI 1239	2414	0.00	6736	4514	3274	0.00	24.09	0.00	74.58	0.00	47	89
6	PPMI 1251	1756	0.00	5692	4187	2594	0.00	22.51	0.00	76.09	0.00	47	69
7	PPMI 1252	4070	688	6995	5559	5388	1376	32.94	9.94	75.78	49.96	53	69
8	PRLT-2/89-33	2993	248	6077	4059	4528	780	28.24	5.19	68.19	32.32	52	70
9	JMSB 20201	2903	1151	4537	3628	3889	2281	34.86	19.52	74.84	50.77	42	67
10	JMSB 20208	2470	0.00	8824	5809	3308	0.00	20.26	0.00	74.20	0.00	25	63
11	J - 2579	3028	268	5479	3066	4135	1015	31.49	6.63	73.34	26.38	36	52
12	J - 2599	2412	0.00	9994	5476	3286	0.00	18.10	0.00	73.00	0.00	50	49
13	MIR 513-1	2692	312	4355	4295	3972	1724	32.83	5.21	68.74	18.17	40	57
14	MIR 519-2	2788	473	3594	2476	3840	1197	37.71	12.92	73.87	39.49	38	54
15	MIR 520	2794	665	5893	2993	3778	1464	29.46	15.06	74.05	46.11	37	59
16	MIR 542	3034	416	5501	2250	3860	1120	32.93	12.65	78.92	37.23	40	58
17	MIR 612	1819	299	2530	2295	2654	682	35.12	10.22	68.82	43.97	35	53
18	MIR 920-1	2337	671	4444	3003	3778	1923	29.22	13.71	63.07	34.84	38	60
19	MIR 1101	1882	621	5593	3156	3438	2175	21.07	11.76	55.08	29.06	37	59
20	MIR 1267	1931	0.00	8392	4187	2794	0.00	17.36	0.00	69.99	0.00	49	73
	Mean	2623	388	5844	3810	3725	995	28.42	8.37	71.51	26.83	41	61
	S.E.M.±	188.62	26.43	482.11	339.17	404.42	79.12	2.52	0.87	7.59	2.08	0.6	0.9
	CD at 5%	540.16	75.69	1380.66	971.30	1158.17	226.57	7.22	2.49	NS	5.96	1.8	2.5
	CV (%)	12.45	11.81	14.29	15.42	18.80	13.78	15.37	17.98	18.40	13.43	2.7	2.5

Value 0 = No seed set at Mandor

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CHAPTER III: PLANT PHYSIOLOGY

Table III.1: Characterization for heat stress to identify parental lines of pearl millet suitable for summer cultivation at Jamnagar and Mandor during Summer 2022 (PMPHY 2a)

S. No.	Entries	Days to 50% Flowering		Days to Maturity		Test Weight (g/1000 seeds)		Productive Tillers/plant		RWC			
		Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor	Jamnagar	Mandor
		At flowering		At 65 DAS									
1	BIB-446	48	51	75	85	7.50	6.04	3.3	1.9	77.59	82.13	80.07	74.24
2	BIB-461	44	41	71	76	7.13	5.91	3.0	2.9	81.00	81.98	76.27	72.72
3	MS 431B	50	66	77	0.00	7.63	0.00	3.0	0.0	79.54	83.49	79.38	81.81
4	PPMI 1003	53	70	80	101	9.07	5.85	2.7	1.0	78.24	83.79	76.05	78.81
5	PPMI 1239	57	92	84	0.00	7.57	0.00	1.3	0.0	79.32	87.44	75.81	85.19
6	PPMI 1251	60	72	87	0.00	7.03	0.00	2.3	0.0	79.08	79.50	76.92	72.78
7	PPMI 1252	63	72	90	100	8.60	5.87	1.7	0.9	80.19	86.15	78.36	86.36
8	PRLT-2/89-33	62	72	89	100	8.00	6.15	3.3	1.7	77.29	84.98	75.29	80.00
9	JMSB 20201	52	70	79	102	7.97	6.25	2.3	2.1	78.56	86.66	77.74	79.36
10	JMSB 20208	37	65	64	98	7.17	0.00	2.7	1.1	81.01	87.30	80.06	79.94
11	J - 2579	47	55	74	93	8.23	5.82	3.7	1.5	77.95	88.95	77.67	80.47
12	J - 2599	64	53	91	0.00	7.03	0.00	2.3	0.0	80.94	87.86	78.95	86.58
13	MIR 513-1	49	61	76	92	7.50	6.01	4.3	2.0	82.22	84.56	75.88	74.85
14	MIR 519-2	48	57	75	91	7.80	4.90	3.0	2.6	79.15	77.96	78.42	72.08
15	MIR 520	48	62	75	93	7.93	4.73	4.0	2.5	81.69	90.01	76.42	78.58
16	MIR 542	51	61	78	92	8.27	6.18	3.3	2.6	79.69	85.29	83.18	72.71
17	MIR 612	45	56	72	90	7.17	6.37	4.0	1.3	79.03	86.16	69.46	69.24
18	MIR 920-1	46	63	73	94	7.10	5.77	3.3	2.7	72.72	84.61	77.28	83.37
19	MIR 1101	45	62	72	93	7.07	4.95	4.3	2.5	80.54	86.99	78.31	76.29
20	MIR 1267	59	76	86	0.00	7.13	0.00	2.7	0.0	81.58	85.36	80.07	78.77
	Mean	51.42	63.82	78.42	69.90	7.65	4.04	3.03	1.49	79.37	85.06	77.58	78.21
	S.E.M.±	0.47	0.88	0.47	1.56	0.21	0.07	0.48	0.25	2.05	2.16	2.55	2.50
	CD at 5%	1.36	2.53	1.36	4.45	0.61	0.20	1.37	0.73	NS	6.19	NS	7.15
	CV (%)	1.60	2.39	1.05	3.85	4.85	2.94	27.25	29.49	4.48	4.40	5.69	5.53

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CHAPTER III: PLANT PHYSIOLOGY

Table III.1: Characterization for heat stress to identify parental lines of pearl millet suitable for summer cultivation at Jamnagar and Mandor during Summer 2022 (PMPHY 2a)

S. No.	Entries	Chlorophyll content (mg/cm ²)		SPAD Value		Seed setting (%)	
		Jamnagar		Mandor		Jamnagar	Mandor
		At flowering	At 65 DAS	At flowering	At 65 DAS		
1	BIB-446	53.9	61.2	49.4	46.5	30.00	51.00
2	BIB-461	34.2	41.4	50.1	51.1	53.33	64.00
3	MS 431B	37.3	44.5	49.7	49.2	98.33	0.00
4	PPMI 1003	36.7	43.9	48.8	48.9	90.00	14.00
5	PPMI 1239	44.5	51.7	43.6	35.7	48.33	0.00
6	PPMI 1251	46.3	53.6	41.9	44.0	30.00	0.00
7	PPMI 1252	43.8	51.0	44.3	42.0	88.33	33.33
8	PRLT-2/89-33	30.8	38.0	44.4	42.6	20.00	26.00
9	JMSB 20201	41.9	49.1	50.5	49.9	96.67	51.67
10	JMSB 20208	23.2	30.4	45.6	50.3	20.00	0.00
11	J - 2579	56.6	63.8	48.4	49.8	88.33	15.00
12	J - 2599	30.1	37.3	40.2	38.4	60.00	0.00
13	MIR 513-1	43.7	51.0	44.2	43.8	73.33	11.67
14	MIR 519-2	41.1	48.3	48.2	50.9	76.67	34.67
15	MIR 520	34.7	41.9	49.9	48.3	93.33	12.33
16	MIR 542	36.6	43.8	49.5	51.4	91.67	18.33
17	MIR 612	28.4	35.6	42.1	46.9	23.33	14.33
18	MIR 920-1	25.0	32.2	50.2	52.0	26.67	44.00
19	MIR 1101	33.0	40.2	50.8	52.6	43.33	23.00
20	MIR 1267	24.7	31.9	48.1	53.2	31.67	0.00
	Mean	37.32	44.53	47.01	47.38	59.17	20.67
	S.E.M.±	4.07	4.07	2.34	2.34	2.18	1.39
	CD at 5%	11.67	11.67	6.69	6.70	6.25	3.97
	CV (%)	18.91	15.84	8.61	8.55	6.39	11.61

CHAPTER III: PLANT PHYSIOLOGY

Table III.2: Characterization for drought tolerance to identify parental lines of pearl millet suitable for kharif cultivation at Jamnagar, Jaipur and Mandor during kharif 2022 (PMPHY 2b)

S. No.	Entries	Grain Yield (kg/ha)			Stover Yield (kg/ha)			Ear Head Weight (kg/ha)			Harvest Index (%)			Threshing (%)		
		Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor
1	BIB-97	1162	1800	1057	5002	4665	1808	1524	2490	1334	17.78	27.87	33.42	77.27	72.41	78.72
2	BIB-142	1128	2020	1039	2832	4970	1844	1695	2656	1522	24.61	28.89	30.47	66.80	76.10	66.53
3	BIB-205	1214	1946	1352	3385	4881	2356	2038	2832	1988	22.21	28.54	30.71	59.90	68.76	67.60
4	BIB-206	1803	2126	2093	8441	4984	4389	2560	2846	2762	16.39	29.90	28.84	70.46	74.71	75.50
5	PPMI1295	2473	2352	2387	9069	5802	5006	3626	3130	3368	19.60	28.87	28.09	68.22	75.18	70.27
6	PPMI1296	2399	2275	1182	7415	5860	3856	3605	3186	1787	21.81	27.98	20.84	66.82	71.48	66.54
7	PPMI1297	1681	2395	1287	5869	6111	4519	2794	3290	2098	19.40	28.17	19.29	60.72	72.87	60.97
8	DHLB-14B	2092	1921	1977	7664	5070	3331	3154	2701	2700	19.52	27.54	32.22	66.30	71.12	73.63
9	DHLB23B	2137	1865	1853	6915	5155	4618	4004	2620	2747	19.65	26.60	25.18	53.40	71.19	68.49
10	JB-1	2083	1795	1565	4954	4452	2628	2958	2413	2196	26.27	28.77	32.58	70.48	74.43	71.24
11	JB-2	2090	1645	946	4844	4656	1675	3127	2260	1625	26.25	26.13	25.04	67.33	72.80	49.07
12	JB-3	2342	1825	2122	6331	4586	2919	4373	2588	3265	21.88	28.48	33.42	53.48	70.59	63.91
13	300-BCS-22	1144	2190	902	5494	5210	4392	1690	2897	1714	15.92	29.62	13.95	80.75	75.60	50.55
14	301-BCS-22	976	2215	1120	5665	4887	4811	2067	3032	2304	12.82	31.20	15.25	62.15	73.08	48.44
15	309-BCS-22	2616	2118	1789	7292	4755	4572	4075	3045	2898	22.99	30.81	24.45	63.97	69.58	62.10
16	MIR-1803	965	1846	1168	4331	4916	2258	2085	2447	2140	15.05	27.31	26.83	46.52	75.47	55.30
17	MIR-1804	1103	2096	1300	8490	5054	4336	2239	2931	2361	10.30	29.33	19.36	49.21	71.53	53.95
	Mean	1730	2025	1479	6117	5060	3489	2801	2786	2283	19.55	28.59	25.88	63.8	72.8	63.7
	S.E.M.±	147.5	29.6	228.2	365.91	129.77	379.45	300.7	43.8	295.8	1.42	0.65	3.16	8.7	1.5	5.6
	CD at 5%	425.2	85.4	657.8	1054.62	374.03	1093.63	866.6	126.3	852.6	4.08	1.88	9.12	NS	4.3	16.2
	CV (%)	14.8	2.5	26.7	10.36	4.44	18.84	18.6	2.7	22.4	12.55	3.96	21.17	23.8	3.6	15.3

Value 0 = No germination at Jamnagar

Value 0 = No seed set at Mandor

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CHAPTER III: PLANT PHYSIOLOGY

Table III.2: Characterization for drought tolerance to identify parental lines of pearl millet suitable for kharif cultivation at Jamnagar, Jaipur and Mandor during kharif 2022 (PMPHY 2b)

S. No.	Entries	Days to panicle initiation			Days to 50% Flowering			Days to Maturity			Test Weight (g /1000 seeds)			Productive Tillers/plant		
		Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor
1	BIB-97	34	36	35	38	44	39	79	84	71	8.43	7.95	8.00	3.3	4.3	2.0
2	BIB-142	36	33	38	40	41	44	81	86	75	7.93	8.86	6.93	4.0	3.7	3.4
3	BIB-205	36	36	38	40	44	44	81	85	77	7.53	8.45	6.98	3.0	4.3	2.5
4	BIB-206	40	36	40	44	41	48	85	85	80	8.58	8.75	7.17	3.7	4.7	3.1
5	PPMI1295	44	36	46	48	46	51	89	90	83	9.14	9.01	7.85	5.0	3.3	3.3
6	PPMI1296	44	38	59	48	48	64	89	91	85	6.85	8.94	5.71	2.7	4.7	1.7
7	PPMI1297	44	35	51	48	43	57	89	92	86	5.74	9.05	6.66	2.3	4.3	1.5
8	DHLB-14B	43	36	45	47	43	53	88	86	83	8.80	7.99	9.07	3.7	4.0	2.1
9	DHLB23B	44	34	52	48	47	57	89	89	85	9.81	7.83	8.73	4.0	3.0	1.5
10	JB-1	42	33	47	46	44	52	87	90	81	10.65	7.61	8.69	5.7	3.7	2.1
11	JB-2	41	36	44	45	48	51	86	91	80	7.92	7.26	5.42	4.7	2.7	1.4
12	JB-3	44	33	44	48	45	52	89	90	82	7.40	7.74	7.39	4.3	3.7	2.4
13	300-BCS-22	46	36	45	50	44	55	91	90	92	6.10	8.16	5.16	2.3	4.3	1.9
14	301-BCS-22	47	34	54	51	44	61	92	90	91	6.51	8.34	5.59	2.3	3.0	2.0
15	309-BCS-22	47	36	58	51	43	65	92	91	93	8.69	8.20	7.88	3.0	4.0	1.9
16	MIR-1803	43	34	47	47	47	52	88	82	82	6.33	7.86	6.31	2.7	4.3	2.3
17	MIR-1804	44	38	50	48	46	56	89	85	84	7.27	8.03	5.72	3.0	3.7	3.7
	Mean	42.35	35.33	46.71	46.35	44.55	53.02	87.35	87.90	83.00	7.86	8.24	7.02	3.51	3.86	2.29
	S.E.M.±	0.7	1.1	0.5	0.69	1.50	0.75	0.7	1.3	1.6	0.56	0.12	0.02	0.5	0.5	0.2
	CD at 5%	2.0	NS	1.4	2.00	NS	2.17	2.0	3.8	4.6	1.61	0.35	0.05	1.3	NS	0.6
	CV (%)	2.8	5.5	1.8	2.59	5.84	2.46	1.4	2.6	3.3	12.32	2.55	0.42	22.9	24.4	16.4

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CHAPTER III: PLANT PHYSIOLOGY

Table III.2: Characterization for drought tolerance to identify parental lines of pearl millet suitable for kharif cultivation at Jamnagar, Jaipur and Mandor during kharif 2022 (PMPHY 2b)

S. No.	Entries	Chlorophyll content (mg/cm ²)		Chlorophyll content (mg/g ¹ f. wt)				RWC					
		Jamnagar		Jaipur		Mandor		Jaipur		Mandor		Jamnagar	
		At flowering	At 65 DAS	At flowering	At 65 DAS	At flowering	At 65 DAS	At flowering	At 65 DAS	At flowering	At 65 DAS	At flowering	At 65 DAS
1	BIB-97	35	38	1.95	1.78	3.07	1.63	85.13	75.56	88.14	76.49	70.68	78.20
2	BIB-142	36	38	2.19	2.01	1.88	1.36	84.25	73.39	89.95	84.90	64.02	78.13
3	BIB-205	31	33	2.14	1.95	2.19	0.99	87.56	79.95	82.93	82.66	75.77	81.96
4	BIB-206	25	27	2.11	1.99	2.11	1.35	88.86	76.63	86.27	81.25	74.12	80.81
5	PPMI1295	44	46	2.16	2.03	2.33	1.94	85.53	80.96	89.30	76.54	68.71	82.75
6	PPMI1296	40	42	2.09	1.89	1.69	0.93	86.65	75.54	89.51	84.06	75.45	78.26
7	PPMI1297	40	42	2.07	1.90	1.57	1.27	84.21	74.43	89.32	84.98	70.83	80.27
8	DHLB-14B	56	58	2.23	2.05	2.49	1.70	87.79	76.29	89.33	87.50	75.95	81.88
9	DHLB23B	33	35	2.21	2.08	2.10	1.35	87.24	75.51	93.61	89.95	71.32	80.40
10	JB-1	29	32	1.98	1.75	1.95	1.32	84.49	78.82	92.36	85.54	57.90	78.12
11	JB-2	35	37	1.99	1.80	1.76	1.45	89.93	79.75	87.07	91.29	61.56	72.91
12	JB-3	37	40	2.04	1.76	2.15	0.84	85.54	76.23	89.91	83.05	63.22	73.31
13	300-BCS-22	34	37	2.25	2.10	0.84	0.77	84.43	79.93	92.84	83.06	59.80	76.60
14	301-BCS-22	35	37	2.15	1.79	1.85	1.50	88.75	81.27	86.98	88.14	74.07	81.00
15	309-BCS-22	50	52	2.34	2.08	1.23	1.54	90.36	82.27	81.33	80.30	74.57	77.31
16	MIR-1803	27	29	2.20	2.10	2.31	1.33	91.19	83.34	81.90	78.98	69.92	81.05
17	MIR-1804	34	37	2.12	1.92	2.28	2.24	89.28	80.24	78.25	76.27	74.12	76.05
	Mean	36	39	2.13	1.940	1.988	1.383	87.13	78.24	87.59	83.23	69.53	78.76
	S.E.M.±	2.45	2.45	0.04	0.028	0.136	0.036	1.20	0.98	2.75	2.98	3.86	2.64
	CD at 5%	7.06	7.06	0.11	0.080	0.391	0.104	3.46	2.83	7.93	8.58	11.12	NS
	CV (%)	11.63	10.91	3.05	2.492	11.814	4.534	2.39	2.17	5.44	6.20	9.61	5.81

CHAPTER III: PLANT PHYSIOLOGY

Table III.3: To study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur *kharif* 2020 , 2021 and 2022 (PMPHY-3)

S. No.	Entries	Plant height (cm)																	
		Mandor						Jaipur						Jamnagar					
		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23	
		At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At Maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At Maturity
1	MPMH - 17	167.3	175.1	99.3	107.5	167.0	203.7	175.2	183.3	166.2	178.0	151.5	179.0	127.7	132.3	146.2	179.8	188.7	202.0
2	MPMH - 21	164.1	179.1	108.5	113.2	185.3	187.1	153.6	163.0	153.6	162.0	145.5	169.3	133.7	154.7	156.0	200.0	177.3	201.7
3	RHB -177	167.9	181.5	99.3	115.3	188.3	191.6	165.5	174.1	167.1	179.8	159.3	180.3	135.3	138.7	160.7	207.8	193.0	197.0
4	ABH 1200	158.7	163.3	104.9	108.2	144.3	182.8	174.8	182.6	171.0	181.3	165.2	177.7	112.0	149.3	156.5	184.5	198.3	208.7
5	Pusa composite-443	203.4	217.6	115.1	120.9	200.7	225.4	215.6	225.4	199.3	207.0	185.2	208.8	142.3	169.3	145.0	166.7	228.3	274.3
6	Pusa composite-612	220.6	225.5	118.3	121.5	168.0	235.8	203.7	210.5	207.6	213.9	190.5	212.8	153.0	184.0	164.3	203.2	236.3	272.7
	G.M	180.3	190.4	107.6	114.4	175.6	204.4	181.4	189.8	177.5	187.0	166.2	188.0	134.0	154.7	154.8	190.3	203.7	226.1
	S.Em. $\pm$	5.0	3.5	3.2	2.3	7.0	7.6	3.9	2.1	1.9	2.7	1.5	3.9	3.8	4.5	2.8	3.9	3.5	6.2
	C.D.at 5%	15.7	11.2	10.1	7.4	21.9	23.9	12.2	6.7	6.1	8.4	4.7	12.3	12.1	14.2	8.9	12.4	11.0	19.6
	C.V. %	4.8	3.2	5.2	3.5	6.9	6.4	3.7	1.9	1.9	2.5	1.5	3.6	5.0	5.0	3.2	3.6	3.0	4.8

S. No.	Entries	Stem dry weight (g / plant)																	
		Mandor						Jaipur						Jamnagar					
		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23	
		At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At Maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity
1	MPMH - 17	35.3	37.5	9.7	9.8	16.5	40.9	37.58	53.30	29.25	33.30	27.35	43.79	14.33	24.67	23.3	46.5	31.1	67.9
2	MPMH - 21	32.0	35.5	12.1	12.5	15.9	48.0	34.87	53.41	25.53	26.41	23.78	40.26	20.00	54.00	74.9	113.7	36.1	77.7
3	RHB -177	21.9	22.5	7.8	11.1	16.5	38.8	32.70	45.33	21.37	22.33	21.11	35.34	24.67	37.67	64.3	119.0	20.8	46.9
4	ABH 1200	33.6	33.9	11.8	13.9	15.6	31.4	39.22	56.39	27.56	38.39	25.51	36.53	17.67	46.67	51.0	109.9	49.0	61.5
5	Pusa composite-443	38.5	50.8	12.8	13.5	15.5	27.2	46.77	66.67	44.77	53.33	34.25	50.45	18.33	31.33	29.4	38.3	36.7	191.8
6	Pusa composite-612	48.2	50.3	13.2	13.5	12.9	32.4	40.86	62.75	48.53	57.75	35.65	53.95	36.00	61.00	93.0	151.3	54.7	239.9
	G.M	34.9	38.4	11.2	12.4	15.49	36.46	38.67	56.31	32.83	38.59	27.94	43.39	21.83	42.56	56.0	96.5	38.1	114.3
	S.Em. $\pm$	3.1	5.9	0.9	0.7	0.4	2.8	1.19	1.55	1.4	2.0	0.9	1.4	1.19	1.71	3.4	3.3	1.7	6.4
	C.D.at 5%	9.66	18.56	2.93	2.36	1.28	8.94	3.76	4.88	4.52	6.26	2.97	4.35	3.74	5.37	10.61	10.34	5.31	20.21
	C.V. %	15.21	26.56	14.37	10.49	4.56	13.48	5.35	4.76	7.56	8.92	5.84	5.51	9.42	6.94	10.43	5.89	7.67	9.72

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CHAPTER III: PLANT PHYSIOLOGY

Table III.3: To study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur *kharif* 2020 , 2021 and 2022 (PMPHY-3)

S. No.	Entries	Leaf dry Weight (g / plant)																	
		Mandor						Jaipur						Jamnagar					
		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23	
		At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At Maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At Maturity
1	MPMH - 17	19.43	20.84	3.7	4.4	9.1	12.6	20.00	35.88	18.67	23.88	16.45	21.96	11.00	14.67	11.27	16.93	16.89	16.78
2	MPMH - 21	16.80	17.77	5.9	6.5	8.9	18.0	16.39	32.87	16.05	22.53	15.21	20.30	11.67	17.67	21.67	30.97	11.12	15.18
3	RHB -177	13.27	14.17	3.8	6.0	8.6	17.7	12.82	29.35	14.25	18.02	14.03	17.65	18.33	22.33	33.10	49.57	14.88	12.53
4	ABH 1200	26.00	26.93	9.1	9.5	9.6	10.4	19.25	35.31	19.58	21.31	17.28	20.25	10.33	20.67	19.97	33.77	31.43	20.26
5	Pusa composite-443	19.90	24.07	6.4	6.8	7.7	10.4	20.45	36.43	23.45	24.43	21.36	24.03	15.00	19.33	12.27	15.93	17.04	38.32
6	Pusa composite-612	25.30	26.20	10.0	10.4	7.5	13.6	17.79	32.83	25.79	25.50	23.58	26.26	18.00	30.67	38.93	54.87	44.22	38.30
	G.M	20.12	21.66	6.48	7.27	8.57	13.78	17.78	33.78	19.63	22.61	17.99	21.74	14.06	20.89	22.87	33.67	22.60	23.56
	S.Em. ±	2.1	2.1	0.5	1.0	0.6	1.6	0.9	0.6	1.1	1.8	0.3	0.3	3.84	0.84	2.29	2.33	1.35	1.38
	C.D.at 5%	6.60	6.58	1.50	3.08	NS	4.93	2.68	1.94	3.54	NS	0.88	0.90	12.10	2.65	7.22	7.34	4.25	4.35
	C.V. %	18.03	16.70	12.74	23.31	12.90	19.67	8.29	3.16	9.90	14.05	2.70	2.28	4.96	6.97	17.37	11.98	10.35	10.15

S. No.	Entries	Panicle Weight (g / plant)																	
		Mandor						Jaipur						Jamnagar					
		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23		2020-21		2021-22		2022-23	
		At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity	At anthesis	At maturity
1	MPMH - 17	12.76	67.50	5.6	19.5	3.8	35.2	11.46	97.42	12.12	74.42	11.23	69.63	16.00	68.33	24.2	56.8	15.60	71.93
2	MPMH - 21	9.26	53.63	4.4	25.7	3.7	33.9	8.76	72.69	8.90	70.02	9.24	66.95	9.67	40.67	70.0	166.5	11.01	65.60
3	RHB -177	7.53	33.13	3.9	22.7	4.7	34.7	8.57	59.43	7.90	64.43	8.76	54.03	20.67	89.33	57.2	153.3	10.85	49.83
4	ABH 1200	11.80	58.93	7.2	32.8	3.3	41.3	12.71	79.12	11.71	62.46	12.02	60.24	15.00	65.00	23.5	46.0	22.25	49.13
5	Pusa composite-443	9.90	48.90	5.4	21.9	3.5	30.8	15.22	75.31	13.55	65.64	13.12	64.69	14.00	63.33	21.9	40.6	12.91	77.70
6	Pusa composite-612	13.19	48.30	8.8	21.8	2.7	45.3	12.05	74.74	12.72	66.74	11.89	65.21	17.33	85.00	32.0	151.3	13.74	128.83
	G.M	10.74	51.73	5.89	24.07	3.60	36.87	11.46	76.45	11.15	67.28	11.04	63.46	15.44	68.61	38.12	102.42	14.39	73.84
	S.Em. ±	1.2	5.2	0.7	2.1	0.2	1.7	0.7	2.1	0.4	1.7	0.1	1.0	1.2	2.2	1.9	4.6	1.06	3.38
	C.D.at 5%	3.65	16.52	2.22	6.63	0.64	5.46	2.09	6.69	1.27	5.44	0.46	3.17	3.69	6.89	6.07	14.48	3.35	10.66
	C.V. %	18.69	17.55	20.72	15.14	9.78	8.15	10.02	4.81	6.25	4.44	2.29	2.75	13.15	5.52	8.76	7.77	12.78	7.93

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CHAPTER III: PLANT PHYSIOLOGY

Table III.3: To study the photosynthate partitioning and remobilization in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur *kharif* 2020 , 2021 and 2022 (PMPHY-3)

S. No.	Entries	Grain Yield (g /plant)									Panicle harvest Index (PNHI)								
		Mandor			Jaipur			Jamnagar			Mandor			Jaipur			Jamnagar		
		2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022-23	2020	2021	2022	2020	2021	PNHI
1	MPMH - 17	51.36	10.87	31.44	81.77	52.10	40.52	49.00	41.67	47.27	75.98	50.43	89.37	83.97	70.18	58.21	75.98	74.29	65.69
2	MPMH - 21	39.98	15.27	29.89	60.05	48.05	36.97	28.00	127.63	47.06	74.53	61.64	88.09	82.56	69.04	55.18	74.53	76.77	71.54
3	RHB -177	22.57	14.13	24.78	50.13	40.80	28.17	56.00	104.50	37.17	68.10	63.85	71.36	84.39	63.33	52.15	68.10	68.60	74.38
4	ABH 1200	44.21	21.87	37.67	65.29	47.62	29.71	43.00	30.27	36.41	74.78	66.53	90.92	82.53	76.26	49.33	74.78	67.52	74.01
5	Pusa composite-443	35.23	12.87	28.22	62.18	50.18	34.63	46.00	30.20	58.26	70.97	58.48	90.21	82.61	76.45	53.85	70.97	74.56	74.86
6	Pusa composite-612	31.41	12.53	36.07	61.67	51.49	36.90	42.67	50.33	95.07	65.01	58.13	79.66	82.50	77.24	56.52	65.01	60.02	73.71
	G.M	37.46	14.59	31.34	63.52	48.37	34.48	44.11	64.10	53.54	71.56	59.85	84.94	83.09	72.08	54.21	71.56	70.29	72.4
	S.Em. ±	4.3	1.4	2.5	1.7	1.4	2.6	2.9	3.6	3.9	1.9	3.7	4.3	1.0	3.0	4.2	1.91	2.7	2.8
	C.D.at 5%	13.60	4.45	7.90	5.47	4.31	8.13	9.15	11.49	12.44	6.01	NS	13.40	NS	9.40	NS	6.01	8.47	NS
	C.V. %	19.96	16.76	13.85	4.73	4.89	12.97	11.41	9.85	12.77	4.62	10.78	8.67	2.15	7.17	13.58	4.62	6.62	6.7

S. No.	Entries	Harvest Index (HI)								
		Mandor			Jaipur			Jamnagar		
		2020	2021	2022	2020	2021	2022	2020	2021	2022
1	MPMH - 17	45.40	30.32	35.53	39.39	39.58	29.94	45.00	34.67	30.11
2	MPMH - 21	41.79	34.93	29.98	37.75	40.56	28.95	25.00	41.09	29.71
3	RHB -177	35.91	36.34	27.24	37.38	39.08	26.44	37.33	32.58	33.97
4	ABH 1200	41.02	38.75	45.36	38.22	38.98	25.38	32.67	15.93	27.78
5	Pusa composite-443	30.26	30.77	40.96	34.87	35.02	24.95	40.00	32.00	18.92
6	Pusa composite-612	26.51	27.45	39.49	36.22	34.38	25.36	24.33	17.04	23.45
	G.M	36.81	33.10	36.43	37.31	37.93	26.84	34.06	28.88	27.32
	S.Em. ±	2.6	2.1	3.1	0.9	1.8	2.0	2.0	1.6	1.8
	C.D.at 5%	8.07	6.61	9.82	2.68	NS	NS	6.19	5.15	5.76
	C.V. %	12.05	10.98	14.82	3.96	8.11	13.18	10.00	9.81	11.60

CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Plant height (cm)											
		Mandor				Jamnagar				Jaipur			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	58.0	122.2	187.1	188.6	64.7	185.3	184.3	185.7	56.0	125.0	151.0	179.7
2	RHB 233	64.2	147.0	198.8	201.0	71.3	179.3	180.3	187.0	60.7	139.3	153.7	185.0
3	RHB 223	77.7	145.9	187.3	202.2	76.7	183.0	194.3	200.7	49.7	124.7	148.0	169.3
4	RHB 177	83.0	185.1	191.4	196.3	98.3	160.0	189.7	192.0	48.3	123.3	157.7	179.0
5	MPMH 17	74.6	142.6	188.1	190.9	65.7	179.3	186.3	191.7	66.7	148.0	162.0	186.0
6	MPMH 21	77.1	129.6	178.7	199.6	61.3	180.3	183.0	230.7	63.7	140.3	159.7	165.7
7	HHB 299	71.7	101.6	218.0	223.1	85.3	140.0	196.0	237.7	54.3	139.0	151.3	161.7
8	GHB 905	67.0	127.7	181.7	207.0	108.3	178.0	188.3	188.7	56.3	132.3	156.3	173.7
9	Pusa composite 1201	69.6	158.6	191.8	192.0	90.3	204.0	210.0	210.0	69.0	158.0	175.7	197.0
10	Pusa composite 701	70.6	145.7	252.8	255.3	68.3	212.7	245.0	249.7	65.7	168.3	170.0	193.7
11	pusa composite 443	66.4	130.8	223.6	231.1	66.0	226.7	228.3	242.7	65.0	147.0	189.3	217.7
12	AHB 1269	69.3	135.6	217.3	218.2	63.7	200.7	201.0	227.7	60.3	131.7	168.3	180.7
13	DHBH 1397	73.2	127.9	200.8	199.0	110.7	189.7	209.7	210.0	59.3	140.0	150.3	161.3
14	BHB 1202	90.0	156.7	162.2	164.2	107.3	137.3	139.0	144.3	60.3	129.0	160.0	187.7
	G.M	72.3	139.8	198.5	204.9	81.3	182.6	195.4	207.0	59.7	139.0	161.0	181.3
	S.Em. $\pm$	4.17	9.68	9.39	10.34	4.00	4.66	5.40	5.80	3.37	6.83	12.24	13.62
	C.D.at 5%	12.14	28.15	27.30	30.06	11.63	13.54	15.71	16.87	9.79	19.85	NS	NS
	C.V. %	10.00	12.00	8.19	8.74	8.53	4.42	4.79	4.85	9.77	8.51	13.17	13.02

Value 0 = was not germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Chlorophyll content (mg/g fr.wt)								Chlorophyll (mg/cm ²)			
		Mandor				Jaipur				Jamnagar			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	1.41	1.89	3.44	2.05	1.59	1.90	2.20	2.06	24.40	34.87	44.13	40.27
2	RHB 233	0.85	1.69	3.08	3.02	1.44	1.84	2.04	1.94	26.33	30.13	37.87	34.87
3	RHB 223	1.12	2.55	2.59	2.32	1.62	1.92	2.12	1.82	20.67	26.05	33.87	31.67
4	RHB 177	1.48	2.36	3.17	3.14	1.69	1.89	2.29	2.09	16.27	22.47	46.33	42.20
5	MPMH 17	1.57	1.12	2.51	2.60	1.43	1.83	2.13	1.92	18.80	25.60	31.53	29.87
6	MPMH 21	1.15	2.15	3.14	3.03	1.90	2.10	2.30	2.03	28.60	33.65	55.60	50.87
7	HHB 299	1.19	1.98	2.60	2.45	1.65	1.95	2.15	1.85	18.47	26.36	43.20	39.93
8	GHB 905	1.27	2.26	2.68	2.31	1.33	1.73	2.13	1.89	17.60	21.62	35.13	32.60
9	Pusa composite 1201	1.20	1.72	2.08	1.80	1.80	2.20	2.40	2.07	26.13	37.16	65.33	60.93
10	Pusa composite 701	0.78	1.68	1.57	1.49	1.70	2.02	2.22	1.92	41.33	48.88	78.47	73.13
11	pusa composite 443	1.08	1.57	2.32	1.45	1.88	2.18	2.28	2.01	33.20	39.44	66.27	60.47
12	AHB 1269	0.91	1.57	1.96	1.73	1.78	1.98	2.18	1.88	33.60	37.27	48.67	45.20
13	DHBH 1397	1.16	1.09	1.53	0.97	1.50	1.90	2.28	2.04	33.87	41.33	61.33	57.13
14	BHB 1202	1.40	1.77	2.02	2.37	1.39	1.79	2.19	1.80	19.67	28.93	44.93	41.27
	G.M	1.18	1.81	2.48	2.19	1.62	1.94	2.21	1.95	25.64	32.41	49.48	45.74
	S.Em. ±	0.01	0.07	0.04	0.06	0.03	0.03	0.03	0.03	3.05	2.85	3.15	3.09
	C.D.at 5%	0.03	0.21	0.11	0.18	0.08	0.08	0.10	0.09	8.88	8.30	9.17	8.97
	C.V. %	1.54	6.89	2.65	4.78	2.95	2.32	2.65	2.75	20.63	15.25	11.04	11.68

Value 0 = was not germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Number of leaves/plant											
		Mandor				Jamnagar				Jaipur			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	26	31	24	19	14	32	33	29	23	27	33	27
2	RHB 233	24	29	25	18	15	28	31	27	20	24	29	24
3	RHB 223	25	27	30	25	20	20	23	38	27	30	33	31
4	RHB 177	25	28	22	18	30	33	35	36	29	32	34	29
5	MPMH 17	23	27	28	22	27	26	34	28	23	27	30	26
6	MPMH 21	21	21	20	19	14	23	42	35	24	29	30	23
7	HHB 299	24	33	22	15	22	25	35	36	27	30	31	25
8	GHB 905	18	19	24	23	35	36	40	38	25	32	33	29
9	Pusa composite 1201	21	28	17	20	40	43	44	45	30	36	39	36
10	Pusa composite 701	16	32	25	23	42	50	47	47	26	30	31	27
11	pusa composite 443	18	28	21	17	25	29	34	32	28	34	35	29
12	AHB 1269	23	31	25	17	26	27	40	30	31	37	41	37
13	DHBH 1397	17	35	24	12	23	24	27	27	27	30	32	27
14	BHB 1202	17	18	24	19	24	28	27	28	23	28	28	22
	G.M	21	28	24	19	26	30	35	34	26	30	33	28
	S.Em. $\pm$	1.9	3.3	1.8	2.2	2.4	2.5	2.7	2.7	1.7	2.3	1.7	1.4
	C.D.at 5%	5.65	9.55	5.31	6.29	7.08	7.18	7.79	7.82	4.9	6.7	5.1	4.2
	C.V. %	15.73	20.65	13.42	19.55	16.54	14.11	13.23	13.67	11.3	13.1	9.2	8.9

Value 0 = was not germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Number of tillers/plant											
		Mandor				Jamnagar				Jaipur			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	2.3	2.0	1.89	1.56	1.4	1.9	2.47	3.20	2.0	3.0	3.7	3.7
2	RHB 233	2.2	1.9	2.44	1.22	2.1	1.9	2.73	3.40	2.3	2.7	3.3	3.3
3	RHB 223	2.6	3.0	2.44	2.89	2.5	2.3	4.47	4.00	1.7	3.3	3.7	3.7
4	RHB 177	2.6	2.7	2.11	1.78	2.6	3.0	4.13	3.80	2.3	2.7	2.7	2.7
5	MPMH 17	2.6	2.6	2.44	1.00	2.4	2.7	3.33	3.67	1.3	2.3	4.0	4.0
6	MPMH 21	1.8	1.8	1.56	0.67	2.0	1.7	2.53	4.27	1.7	3.0	3.7	3.7
7	HHB 299	1.8	1.9	1.67	0.67	2.4	3.0	2.67	2.87	1.3	2.0	3.0	3.0
8	GHB 905	2.0	2.4	2.22	1.72	1.5	3.0	2.40	3.27	1.0	2.7	5.0	5.0
9	Pusa composite 1201	1.6	1.9	1.44	1.00	1.9	2.6	2.60	3.67	1.7	2.7	3.7	3.7
10	Pusa composite 701	1.1	1.6	1.56	1.56	2.5	3.3	2.47	2.27	2.3	3.3	3.3	3.3
11	pusa composite 443	1.3	1.4	1.56	1.44	2.4	2.3	2.73	2.67	2.0	2.7	4.0	4.0
12	AHB 1269	2.2	1.6	2.00	0.67	2.1	3.1	3.60	3.27	2.0	2.7	4.3	4.3
13	DHBH 1397	0.9	1.7	1.89	0.89	2.1	2.3	2.53	2.40	2.3	3.0	3.0	3.0
14	BHB 1202	2.0	2.1	2.11	1.89	3.8	3.3	4.20	3.47	2.3	3.0	3.3	3.3
	G.M	1.9	2.0	2.0	1.4	2.3	2.6	3.1	3.3	1.9	2.8	3.6	3.6
	S.Em. $\pm$	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.4	0.5	0.6	0.6
	C.D.at 5%	0.95	0.79	NS	0.89	0.67	0.71	0.64	0.21	NS	NS	NS	NS
	C.V. %	29.57	23.09	24.18	39.24	17.43	16.23	12.52	3.73	37.9	29.5	26.5	26.5

Value 0 = was not germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Dry weight of leaves (g/plant)											
		Mandor				Jamnagar				Jaipur			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	6.4	10.3	17.67	13.56	12.6	15.5	23.07	18.00	6.23	12.25	16.89	20.45
2	RHB 233	5.4	9.7	13.89	22.33	16.7	19.2	20.67	23.13	5.98	14.36	21.25	21.65
3	RHB 223	6.12	5.11	8.11	20.11	10.67	14.68	29.27	19.13	5.22	12.45	20.50	19.98
4	RHB 177	5.3	8.6	11.11	12.22	12.0	12.7	17.33	13.20	4.03	12.15	22.65	23.03
5	MPMH 17	6.2	8.8	14.22	13.11	9.3	15.3	21.80	19.40	4.95	9.98	18.45	18.84
6	MPMH 21	6.5	6.8	8.44	11.67	8.9	9.3	16.67	12.93	5.05	9.95	20.65	16.65
7	HHB 299	8.8	11.9	20.00	21.00	15.7	18.8	44.80	47.33	6.21	10.15	21.47	16.45
8	GHB 905	4.6	5.8	11.00	12.67	11.7	13.2	14.93	20.27	5.23	12.25	19.95	17.75
9	Pusa composite 1201	5.4	9.1	10.11	10.56	12.9	15.0	19.13	20.80	6.03	11.45	18.83	15.53
10	Pusa composite 701	5.1	10.4	17.56	14.44	17.0	17.5	31.60	34.40	7.15	13.35	20.20	18.65
11	pusa composite 443	4.8	9.4	16.67	17.78	13.3	12.2	28.40	21.33	6.98	12.73	25.48	22.45
12	AHB 1269	5.7	10.2	16.78	14.56	13.2	13.6	15.33	19.27	6.39	13.26	24.41	20.95
13	DHBH 1397	5.84	11.67	14.44	11.56	11.40	16.18	21.93	19.07	7.01	14.45	25.63	24.42
14	BHB 1202	4.2	6.0	10.33	10.44	10.5	10.7	16.00	12.60	6.15	11.12	18.84	20.25
	G.M	5.75	8.84	13.60	14.71	12.56	14.57	22.92	21.49	5.90	12.14	21.09	19.79
	S.Em. $\pm$	0.53	1.29	1.25	1.73	1.26	1.21	2.14	1.85	0.09	0.18	0.32	0.31
	C.D.at 5%	1.54	3.75	3.63	5.03	3.67	3.52	6.23	5.38	0.26	0.53	0.93	0.91
	C.V. %	16.01	25.28	15.91	20.38	17.43	14.41	16.20	14.90	2.63	2.62	2.62	2.74

Value 0 = was not germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Dry weight of stem (g/plant)											
		Mandor				Jamnagar				Jaipur			
		30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity	30 DAS	45 DAS	60 DAS	At Maturity
1	RHB 234	3.24	10.44	37.33	42.78	8.73	35.88	43.53	41.13	10.0	15.2	28.9	41.1
2	RHB 233	3.33	13.11	31.56	45.33	10.53	46.62	54.80	101.33	9.5	19.9	24.6	44.9
3	RHB 223	4.50	9.56	27.33	61.22	7.20	46.42	80.67	91.07	11.6	21.2	30.1	45.0
4	RHB 177	4.74	13.89	23.11	31.56	8.07	32.20	59.40	39.60	11.2	16.8	25.5	36.6
5	MPMH 17	4.63	11.89	27.67	35.33	5.27	42.53	75.80	96.87	9.9	15.5	24.5	50.0
6	MPMH 21	4.89	10.00	19.22	38.78	5.60	28.44	36.07	44.67	10.3	17.4	25.9	45.5
7	HHB 299	4.97	9.11	46.22	46.44	12.80	44.56	127.60	198.07	8.7	14.3	23.0	33.2
8	GHB 905	3.05	8.22	22.33	33.56	12.93	33.60	34.40	72.80	10.4	20.9	30.3	50.3
9	Pusa composite 1201	3.67	16.11	24.44	31.89	10.53	50.87	53.67	54.80	12.9	20.4	32.4	56.7
10	Pusa composite 701	2.72	8.67	45.89	44.00	10.07	56.48	86.87	120.00	12.1	21.2	36.6	55.2
11	pusa composite 443	2.85	10.44	41.22	46.89	5.60	36.80	52.20	123.47	13.7	22.6	34.5	60.0
12	AHB 1269	3.34	12.44	40.78	41.44	13.53	45.22	54.87	92.93	14.2	20.9	28.6	57.8
13	DHBH 1397	4.08	12.33	37.33	33.67	11.93	41.00	58.00	64.67	11.6	17.2	34.0	46.6
14	BHB 1202	5.79	10.00	25.56	28.22	13.93	23.20	36.07	45.47	13.0	22.5	32.3	42.3
	G.M	3.98	11.16	32.14	40.08	9.77	40.27	61.00	84.78	11.4	19.0	29.4	47.5
	S.Em. $\pm$	0.31	0.92	2.10	2.64	1.05	3.65	4.17	5.31	0.2	0.3	0.3	0.5
	C.D.at 5%	0.91	2.66	6.12	7.67	3.06	10.61	12.12	15.44	0.5	0.8	1.0	1.5
	C.V. %	13.58	14.21	11.33	11.40	18.69	15.69	11.84	10.85	2.5	2.5	2.0	1.9

Value 0 = No germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Dry weight of panicle (g/plant)									Grain Yield (g)/plant		
		Mandor			Jamnagar			Jaipur			Mandor	Jamnagar	Jaipur
		45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity	At Maturity	At Maturity	At Maturity
1	RHB 234	0.89	31.78	69.89	9.82	45.07	46.07	6.12	33.12	75.53	63.22	32.53	35.72
2	RHB 233	1.43	36.89	45.56	13.68	54.60	62.33	8.01	35.56	72.25	28.00	37.67	39.16
3	RHB 223	3.74	32.33	69.67	7.57	100.93	113.53	5.95	25.85	65.55	52.22	83.13	30.13
4	RHB 177	2.51	27.44	29.11	13.11	22.20	85.60	6.75	32.14	70.02	23.11	51.47	29.78
5	MPMH 17	1.86	20.44	45.22	39.80	60.93	75.80	7.03	35.57	73.39	36.56	42.33	42.90
6	MPMH 21	3.39	19.11	43.89	14.13	43.93	162.40	5.05	35.53	65.52	35.33	112.73	37.67
7	HHB 299	1.04	17.56	63.11	33.08	86.20	144.40	5.23	27.75	62.28	46.33	95.40	30.12
8	GHB 905	0.43	21.44	46.22	7.75	42.53	81.40	6.65	28.54	65.45	32.22	57.27	28.73
9	Pusa composite 1201	2.07	21.67	36.33	8.67	25.80	63.53	7.75	33.39	72.29	30.00	41.47	34.63
10	Pusa composite 701	1.83	12.11	36.44	11.73	40.47	72.40	6.28	34.45	70.75	29.89	53.93	34.11
11	pusa composite 443	1.91	15.44	42.11	7.64	33.67	56.93	7.36	35.59	75.35	35.33	30.87	37.75
12	AHB 1269	1.11	31.00	43.33	9.73	39.80	71.33	8.15	32.29	72.23	35.67	49.67	29.60
13	DHBH 1397	0.24	19.33	44.22	11.84	46.20	56.93	8.27	35.25	73.65	38.00	35.07	33.86
14	BHB 1202	2.22	22.00	21.44	14.07	55.00	58.00	7.26	32.92	72.08	16.11	40.27	30.90
	G.M	1.76	23.47	45.47	14.47	49.81	82.19	6.85	32.71	70.45	35.86	54.56	33.93
	S.Em. $\pm$	0.21	1.69	5.37	1.57	3.06	3.44	0.09	0.54	1.12	4.55	3.65	1.82
	C.D.at 5%	0.60	4.92	15.62	4.58	8.89	9.99	0.25	1.56	3.25	13.24	10.62	5.28
	C.V. %	20.22	12.49	20.47	18.84	10.64	7.24	2.19	2.84	2.74	22.00	11.59	9.27

Value 0 = No germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Harvest Index (HI)			Panicle harvest Index (PNHI)			Crop Growth rate (CGR) (g dm ⁻² day ⁻¹)					
		Mandor	Jamnagar	Jaipur	Mandor	Jamnagar	Jaipur	Mandor			Jamnagar		
		At Maturity	At Maturity	At Maturity	At Maturity	At Maturity	At Maturity	45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity
1	RHB 234	50.02	31.08	25.25	90.33	71.14	47.26	0.072	0.391	0.146	0.240	0.303	0.053
2	RHB 233	24.45	20.10	27.43	61.07	60.23	54.21	0.093	0.349	0.122	0.313	0.303	0.340
3	RHB 223	34.55	37.16	23.82	74.88	73.22	45.96	0.055	0.288	0.326	0.307	0.857	0.083
4	RHB 177	31.75	36.97	22.97	79.52	59.85	42.52	0.089	0.220	0.048	0.230	0.247	0.237
5	MPMH 17	38.89	22.08	29.76	80.94	55.77	58.44	0.070	0.239	0.124	0.500	0.363	0.203
6	MPMH 21	36.51	51.25	27.16	79.25	69.38	57.53	0.053	0.160	0.222	0.223	0.270	0.740
7	HHB 299	35.60	24.49	26.42	73.70	65.96	48.35	0.050	0.370	0.143	0.410	0.970	0.787
8	GHB 905	35.11	32.96	22.85	69.76	70.29	44.06	0.041	0.242	0.136	0.180	0.227	0.497
9	Pusa composite 1201	38.14	30.03	23.36	82.39	65.39	47.92	0.111	0.172	0.087	0.307	0.147	0.243
10	Pusa composite 701	30.70	24.00	23.07	82.81	74.63	48.22	0.079	0.328	0.073	0.350	0.437	0.407
11	pusa composite 443	32.67	15.28	24.45	84.59	54.43	50.19	0.085	0.309	0.136	0.227	0.347	0.527
12	AHB 1269	35.74	27.05	19.45	82.24	69.47	41.09	0.088	0.389	0.041	0.250	0.250	0.443
13	DHBH 1397	42.50	24.92	22.81	85.92	61.80	46.06	0.086	0.281	0.067	0.273	0.343	0.087
14	BHB 1202	26.05	34.74	24.47	74.25	69.45	42.85	0.049	0.238	0.019	0.143	0.353	0.053
	G.M	35.19	29.44	24.52	78.69	65.79	48.19	0.073	0.284	0.121	0.282	0.387	0.336
	S.E.m. ±	2.78	1.88	0.81	3.31	3.26	2.75	0.016	0.028	0.032	0.027	0.037	0.041
	C.D.at 5%	8.07	5.47	2.36	9.64	9.47	8.01	NS	0.082	0.094	0.079	0.107	0.119
	C.V. %	13.66	11.06	5.74	7.30	8.58	9.90	38.727	17.098	46.283	16.739	16.417	21.103

Value 0 = No germinate, DAS: Days after sowing

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CHAPTER III: PLANT PHYSIOLOGY

Table III 4: Identification of physiological traits for drought tolerance in pearl millet under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-4)

S. No.	Entries	Crop Growth rate (CGR) (g dm ⁻² day ⁻¹)			Relative growth rate (RGR) (gg ⁻¹ day ⁻¹)								
		Jaipur			Mandor			Jamnagar			Jaipur		
		45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity	45 DAS	60 DAS	At Maturity
1	RHB 234	0.067	0.110	0.075	0.053	0.083	0.025	0.071	0.040	0.006	0.035	0.034	0.020
2	RHB 233	0.112	0.070	0.095	0.066	0.084	0.021	0.072	0.033	0.024	0.053	0.019	0.025
3	RHB 223	0.101	0.102	0.075	0.039	0.062	0.054	0.090	0.075	0.004	0.046	0.027	0.017
4	RHB 177	0.082	0.115	0.064	0.059	0.069	0.011	0.071	0.036	0.022	0.043	0.034	0.014
5	MPMH 17	0.064	0.104	0.125	0.048	0.055	0.027	0.127	0.033	0.013	0.036	0.035	0.031
6	MPMH 21	0.072	0.115	0.084	0.038	0.093	0.047	0.085	0.042	0.055	0.039	0.036	0.019
7	HHB 299	0.057	0.120	0.031	0.028	0.089	0.029	0.081	0.066	0.027	0.033	0.040	0.007
8	GHB 905	0.105	0.103	0.097	0.043	0.047	0.035	0.053	0.035	0.043	0.050	0.028	0.020
9	Pusa composite 1201	0.077	0.116	0.092	0.074	0.086	0.023	0.077	0.019	0.023	0.035	0.032	0.023
10	Pusa composite 701	0.092	0.134	0.076	0.066	0.081	0.014	0.077	0.042	0.024	0.039	0.033	0.018
11	pusa composite 443	0.088	0.148	0.094	0.072	0.088	0.024	0.073	0.047	0.038	0.036	0.035	0.021
12	AHB 1269	0.081	0.113	0.122	0.065	0.072	0.009	0.063	0.032	0.034	0.034	0.029	0.026
13	DHBH 1397	0.078	0.168	0.061	0.059	0.078	0.016	0.072	0.041	0.007	0.035	0.042	0.012
14	BHB 1202	0.087	0.105	0.055	0.039	0.039	0.004	0.045	0.053	0.005	0.038	0.028	0.013
	G.M	0.083	0.116	0.082	0.054	0.073	0.024	0.075	0.042	0.023	0.039	0.032	0.019
	S.Em. ±	0.002	0.004	0.006	0.010	0.009	0.006	0.006	0.005	0.003	0.001	0.001	0.001
	C.D.at 5%	0.007	0.011	0.016	NS	0.027	0.018	0.019	0.014	0.008	0.003	0.003	0.003
	C.V. %	4.831	5.409	12.000	33.690	22.164	44.994	14.884	19.529	20.717	4.553	5.332	8.526

DAS: Days after sowing

CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

A - Biomass Partitioning at different stages

S. No.	Treatments/ variety	Plant height (cm)															
		Mandor								Jaipur							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	56.3	60.3	129.0	129.8	184.7	193.9	192.9	202.8	129.3	126.0	136.7	133.3	192.0	194.0	198.3	198.3
T2	Seed priming with water with ratio 1/2 for 6 hr	56.4	61.8	131.2	137.6	185.6	194.4	189.4	191.8	155.0	182.7	172.3	190.0	197.7	198.3	199.3	215.0
T3	Seed priming with ABA 150 ppm for 6 hrs	51.3	60.6	133.6	134.6	189.6	198.9	191.6	201.9	138.3	176.0	145.7	183.3	201.7	200.7	191.7	216.7
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	55.0	53.1	134.3	132.9	191.2	199.4	196.2	204.7	135.3	174.0	142.7	181.3	206.0	200.7	192.7	193.3
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	60.7	62.8	138.4	144.4	197.0	205.1	203.0	210.9	138.7	135.3	146.0	142.7	206.0	205.7	202.0	210.0
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	50.8	64.3	132.6	137.1	185.6	200.0	193.2	207.0	132.7	156.7	140.0	164.0	206.7	210.0	206.0	210.0
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	54.8	62.6	134.0	141.9	187.2	202.1	190.9	204.8	131.0	139.7	138.3	147.0	202.7	212.3	206.0	210.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	55.9	66.2	134.1	143.3	187.8	201.3	197.7	203.6	115.0	116.0	122.3	123.3	202.7	227.7	208.3	196.0
	G.M	55.2	61.5	133.4	137.7	188.6	199.4	194.4	203.4	134.4	150.8	143.0	158.1	201.9	206.2	200.5	206.2
CD (5%)	Variety		4.4		3.5		3.2		4.2		10.0		7.8		3.6		4.9
	Treatment (T)		NS		7.0		6.3		8.5		20.0		15.6		7.3		9.7
	TXV		NS		NS		NS		NS		NS		22.1		10.3		13.7
	CV%		12.74		4.4		2.47		3.60		11.92		8.80		3.02		4.05

V1: MPMH 21

V2: BHB 1602

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Plant height (cm)								Number of Leaves							
		Jamnagar								Jaipur							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	37.3	35.0	57.0	54.7	91.0	87.0	150.0	131.7	11.7	13.0	20.3	21.0	24.3	25.0	31.0	32.0
T2	Seed priming with water with ratio 1/2 for 6 hr	41.0	36.3	60.0	55.0	88.0	82.0	145.0	126.7	13.0	15.3	22.7	22.3	26.3	26.3	33.7	33.7
T3	Seed priming with ABA 150 ppm for 6 hrs	44.3	40.0	67.3	60.0	97.0	87.0	160.0	131.7	13.0	14.7	22.3	26.7	26.0	30.7	32.3	37.7
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	34.3	35.0	57.0	55.3	92.0	82.0	155.0	123.3	14.0	14.0	20.0	28.3	25.0	32.3	32.3	40.0
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	40.0	30.3	60.0	52.0	87.0	87.3	130.0	128.3	14.0	15.0	28.3	25.0	32.0	29.0	39.3	36.3
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	45.7	29.7	68.3	50.3	92.7	86.3	136.7	131.3	15.0	13.7	26.7	30.7	30.7	34.7	38.0	41.0
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	40.3	47.0	60.0	67.7	83.0	97.0	131.7	165.3	14.7	16.0	26.0	24.0	30.3	28.0	37.3	35.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	36.7	40.0	56.0	60.7	81.7	102.0	125.0	175.0	13.7	14.3	23.0	21.0	27.0	25.0	34.3	32.7
	G.M	40.0	36.7	60.7	57.0	89.0	88.8	141.7	139.2	13.6	14.5	23.7	24.9	27.7	28.9	34.8	36.0
CD (5%)	Variety		NS		3.5		NS		NS		0.9		NS		1.1		1.2
	Treatment (T)		NS		NS		NS		10.8		NS		2.8		2.2		2.5
	TXV		NS		9.8		14.4		15.2		NS		3.9		3.1		3.5
	CV%		17.0		10.0		9.7		6.5		10.33		9.71		6.49		5.94

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Number of Leaves															
		Mandor								Jamnagar							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	22.0	34.3	25.3	32.7	21.9	29.1	18.7	27.1	17.7	23.0	24.0	34.7	29.3	47.3	28.7	47.0
T2	Seed priming with water with ratio 1/2 for 6 hr	24.7	32.8	32.3	35.7	25.2	29.9	21.6	27.4	26.3	32.0	25.3	40.0	27.0	43.3	26.0	39.7
T3	Seed priming with ABA 150 ppm for 6 hrs	25.2	36.4	31.4	37.4	30.1	32.0	22.4	29.9	23.7	39.7	36.7	42.0	37.3	55.0	36.3	43.7
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	24.4	38.1	31.2	35.2	28.9	32.4	22.8	19.5	15.7	18.7	16.0	36.0	17.7	52.7	21.7	49.0
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	23.6	36.3	39.3	35.6	28.7	34.6	26.4	30.8	28.3	30.0	30.0	42.0	33.3	52.7	31.7	57.3
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	25.8	31.4	33.1	30.3	28.9	27.4	25.7	31.1	24.7	30.7	19.3	28.3	34.3	33.7	32.7	20.7
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	24.1	35.1	28.9	39.8	26.9	31.2	21.2	31.3	31.0	35.7	33.7	54.0	39.3	62.3	37.0	62.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	28.7	30.1	28.2	31.6	22.6	29.6	20.1	25.3	29.0	36.3	34.3	45.3	37.3	60.0	33.3	48.3
	G.M	24.8	34.3	31.2	34.8	26.6	30.8	22.4	27.8	24.5	30.8	27.4	40.3	32.0	50.9	30.9	46.0
CD (5%)	Variety		2.9		2.5		1.9		2.5		3.0		3.2		4.1		3.8
	Treatment (T)		NS		5.0		3.8		5.0		5.9		6.3		8.3		7.6
	TXV		NS		NS		NS		NS		NS		NS		11.7		10.7
	CV%		16.46		12.81		11.09		17.05		18.14		15.88		16.98		16.74

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Leaf dry weight (g / plant)															
		Jaipur								Mandor							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	4.5	6.1	7.7	8.1	10.9	10.1	16.6	19.5	4.6	4.0	11.6	9.1	12.1	8.9	10.7	10.0
T2	Seed priming with water with ratio 1/2 for 6 hr	5.9	7.3	8.7	9.7	11.5	12.1	17.6	20.2	4.5	4.0	11.9	9.5	13.7	9.9	11.7	11.2
T3	Seed priming with ABA 150 ppm for 6 hrs	5.3	6.9	8.7	9.1	12.2	11.3	17.3	19.0	4.4	5.4	13.7	11.6	16.3	14.2	12.7	12.6
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	5.1	6.4	9.5	10.0	13.8	13.6	20.7	20.5	4.2	4.2	14.3	12.4	15.4	12.7	12.4	12.7
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	6.2	7.1	9.2	9.8	12.3	12.5	20.6	25.9	4.5	4.4	15.7	11.6	15.6	12.2	14.6	13.9
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	5.1	6.2	8.6	9.7	12.0	13.3	23.0	24.9	3.8	4.3	14.0	9.5	14.7	9.2	12.7	11.4
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	6.2	6.2	8.1	10.3	10.1	14.4	19.8	24.4	3.5	4.5	13.2	9.6	12.8	11.0	13.1	11.7
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	5.2	6.2	7.5	8.5	9.8	10.9	20.9	19.4	4.3	4.1	12.2	11.2	11.8	9.4	14.8	12.8
	G.M	5.4	6.5	8.5	9.4	11.6	12.3	19.6	21.7	4.2	4.4	13.3	10.6	14.1	10.9	12.8	12.0
CD (5%)	Variety		0.1		0.1		0.2		0.4		NS		1.0		1.3		NS
	Treatment (T)		0.2		0.2		0.3		0.8		NS		2.0		2.7		2.2
	TXV		0.3		0.3		0.5		1.1		NS		NS		NS		NS
	CV%		2.7		1.98		2.47		3.18		18.75		14.30		18.21		15.19

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Leaf dry weight (g / plant)								Stem dry weight (g / plant)							
		Jamnagar								Jamnagar							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	8.5	8.5	10.8	11.9	14.1	16.8	20.2	15.3	6.3	11.8	28.0	25.7	36.4	40.8	52.3	49.0
T2	Seed priming with water with ratio 1/2 for 6 hr	8.2	10.2	11.6	11.7	19.6	18.3	19.8	15.3	6.6	10.9	23.1	31.2	32.2	33.6	52.3	46.3
T3	Seed priming with ABA 150 ppm for 6 hrs	8.4	10.4	14.3	15.3	20.2	19.0	19.1	17.5	5.5	10.8	38.3	43.5	45.2	33.3	56.0	60.7
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	7.1	9.3	9.1	11.8	21.5	20.4	20.6	13.1	9.9	13.0	32.5	31.1	45.7	53.5	59.7	52.6
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	10.9	10.6	14.9	16.2	16.9	19.3	25.4	18.9	21.5	22.4	33.1	28.7	67.3	56.8	69.3	58.7
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	10.2	6.2	11.2	7.4	15.4	19.8	22.3	21.9	9.7	9.2	27.3	27.7	30.2	29.3	71.0	60.9
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	8.3	7.0	15.5	18.1	16.6	21.6	36.9	39.6	24.3	20.4	44.6	44.9	77.4	64.4	93.5	92.5
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	8.4	9.4	16.2	16.7	23.4	18.7	24.3	24.3	9.2	28.9	31.5	32.1	60.2	61.2	73.6	107.4
	G.M	8.8	9.0	12.9	13.6	18.5	19.2	23.6	20.7	11.6	15.9	32.3	33.1	49.3	46.6	65.9	66.0
CD (5%)	Variety		NS		NS		NS		1.7		1.5		NS		NS		NS
	Treatment (T)		1.8		2.2		NS		3.4		3.0		4.4		6.2		6.5
	TXV		2.5		NS		NS		NS		4.3		NS		8.8		9.2
	CV%		17.01		13.77		16.88		13.04		18.64		11.49		11.01		8.32

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Stem dry weight (g / plant)															
		Mandor								Jaipur							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	2.4	2.4	9.6	5.4	25.2	21.3	52.8	37.9	17.5	17.3	19.2	18.5	19.5	19.1	20.7	21.9
T2	Seed priming with water with ratio 1/2 for 6 hr	2.7	3.0	10.0	7.9	23.3	25.1	57.0	37.9	17.0	16.8	20.7	19.3	20.7	19.8	20.8	21.5
T3	Seed priming with ABA 150 ppm for 6 hrs	2.5	3.1	10.9	7.4	26.2	29.3	56.6	40.3	18.1	17.9	18.3	31.1	19.5	34.6	20.0	36.1
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	2.5	2.4	10.6	8.6	29.6	24.8	57.9	41.4	19.5	19.4	19.2	33.8	19.5	36.3	21.0	37.7
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	2.4	2.1	12.1	9.5	31.7	27.0	63.0	42.0	25.0	24.8	22.6	45.7	25.0	55.1	26.4	57.3
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	2.1	3.1	10.9	7.8	29.4	22.1	60.8	40.1	24.0	23.9	22.2	49.1	24.0	56.1	25.5	57.5
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	2.3	3.1	9.9	6.6	26.3	23.9	59.0	35.4	19.1	19.0	18.5	22.7	19.1	22.6	20.6	24.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	2.4	3.2	9.4	9.7	27.4	25.6	61.8	42.9	18.4	18.2	17.6	35.2	18.4	40.9	19.8	42.3
	G.M	2.41	2.81	10.42	7.87	27.41	24.88	58.60	39.72	19.83	19.65	19.79	31.93	20.72	35.56	21.86	37.29
CD (5%)	Variety		0.37		0.82		1.21		2.33		NS		1.31		1.16		0.92
	Treatment (T)		NS		1.63		2.41		4.66		1.81		2.62		2.31		1.84
	TXV		NS		NS		3.41		NS		NS		3.70		3.27		2.60
	CV%		24.24		15.15		7.83		8.04		7.78		8.58		6.96		5.28

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Chlorophyll content (mg/g f.wt)															
		Mandor								Jaipur							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	2.4	2.3	1.5	1.8	1.7	1.8	1.1	1.2	1.2	1.3	1.5	1.6	1.8	2.0	1.8	1.9
T2	Seed priming with water with ratio 1/2 for 6 hr	2.4	2.5	1.7	2.1	1.9	2.2	1.3	1.3	1.4	1.6	1.8	1.8	1.8	1.9	1.8	1.9
T3	Seed priming with ABA 150 ppm for 6 hrs	2.3	2.4	1.4	2.5	2.0	1.6	1.7	1.3	1.5	1.7	1.9	2.1	1.8	2.0	1.8	1.9
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	2.2	2.4	1.8	2.0	1.5	2.2	1.7	1.6	1.5	1.6	1.9	2.0	2.0	1.9	2.0	1.9
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	2.2	2.3	1.8	1.9	2.2	1.9	1.5	2.4	1.5	1.5	1.8	2.0	2.0	2.2	1.9	2.0
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	2.7	2.3	1.8	2.2	1.8	2.4	2.2	2.0	1.7	1.5	2.1	1.9	2.0	1.9	2.0	1.9
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	2.2	2.3	1.9	2.2	1.6	2.8	1.6	2.2	1.5	1.3	1.9	2.1	1.9	2.1	1.8	2.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	2.6	2.4	1.6	2.3	2.2	2.1	2.4	1.5	1.3	1.4	1.7	2.0	1.8	2.0	1.8	1.9
	G.M	2.38	2.38	1.68	2.11	1.87	2.12	1.70	1.69	1.48	1.49	1.83	1.92	1.90	2.01	1.87	1.93
CD (5%)	Variety		NS		0.16		0.10		NS		NS		0.05		0.06		0.04
	Treatment (T)		NS		NS		0.19		0.15		0.16		0.11		0.11		0.08
	TXV		NS		0.44		0.27		0.21		NS		0.15		0.16		0.11
	CV%		9.52		13.96		8.19		7.40		9.40		4.94		4.89		3.53

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Chlorophyll (mg/cm ²)								RWC							
		Jamnagar								Jaipur							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	15.5	11.4	25.5	13.2	38.7	25.1	22.0	16.7	76.33	75.33	78.33	78.33	78.67	81.67	78.7	78.7
T2	Seed priming with water with ratio 1/2 for 6 hr	15.7	13.5	34.8	19.5	39.3	30.4	24.1	16.8	78.67	79.33	80.67	81.33	81.67	84.00	79.3	80.3
T3	Seed priming with ABA 150 ppm for 6 hrs	20.0	14.2	39.5	28.5	47.2	32.4	25.1	21.1	81.00	82.33	83.00	84.33	85.00	86.33	81.3	83.3
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	25.0	22.2	31.5	30.2	43.5	34.0	32.9	28.3	82.67	82.67	84.67	84.67	85.00	88.00	82.7	83.7
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	28.5	26.8	56.9	34.9	45.2	52.3	36.2	30.3	81.67	82.67	83.67	84.67	85.33	87.00	83.0	83.3
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	20.3	26.1	36.5	34.3	39.8	38.5	26.3	20.8	84.33	83.67	86.33	85.67	86.33	89.67	85.3	84.3
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	30.5	27.3	36.1	34.8	45.8	41.6	35.2	32.0	81.33	81.33	83.33	83.33	84.00	86.67	81.0	82.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	24.7	26.1	51.4	39.9	56.9	51.2	33.2	20.6	81.33	82.67	83.33	86.00	86.33	86.67	81.3	86.0
	G.M	22.53	20.97	39.03	29.42	44.55	38.20	29.39	23.30	80.92	81.25	82.92	83.54	84.04	86.25	81.58	82.71
CD (5%)	Variety		NS		2.27		2.78		1.16		NS		NS		0.87		0.73
	Treatment (T)		4.09		4.53		5.56		2.32		1.95		1.64		1.75		1.46
	TXV		NS		6.41		7.87		3.28		NS		NS		NS		2.06
	CV%		15.97		11.23		11.40		7.46		2.04		1.67		1.74		1.50

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	RWC															
		Jamnagar								Mandor							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	77.80	75.53	72.47	72.93	77.87	79.87	76.87	75.13	79.97	89.40	83.02	85.15	78.30	77.05	79.90	77.05
T2	Seed priming with water with ratio 1/2 for 6 hr	77.60	80.93	65.67	59.40	79.60	78.40	72.73	78.27	93.47	87.90	89.86	86.92	85.29	81.17	82.90	82.32
T3	Seed priming with ABA 150 ppm for 6 hrs	70.67	75.00	77.40	62.60	80.73	72.87	74.53	73.40	90.77	90.07	91.34	88.32	85.71	85.80	84.66	86.04
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	71.93	71.07	75.47	65.47	83.20	72.40	73.67	71.73	92.77	95.20	91.71	89.43	88.21	85.23	80.12	85.85
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	83.47	70.67	70.27	61.07	84.07	77.73	72.20	71.27	87.60	93.93	91.71	87.51	80.38	79.14	87.55	84.24
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	81.53	86.67	76.67	75.73	80.40	80.40	71.80	72.47	93.80	94.30	89.17	87.07	79.97	84.45	85.25	77.43
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	83.07	81.13	72.53	76.13	76.60	79.93	76.53	73.33	88.17	85.03	89.45	83.49	85.92	81.68	82.53	81.74
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	86.53	81.53	77.67	71.60	84.87	77.60	75.13	72.33	92.50	88.53	88.91	88.43	78.32	77.50	81.97	82.01
	G.M	79.08	77.82	73.52	68.12	80.92	77.40	74.18	73.49	89.88	90.55	89.40	87.04	82.76	81.50	83.11	82.08
CD (5%)	Variety		NS		3.99		1.85		NS		NS		1.69		NS		NS
	Treatment (T)		NS		7.98		NS		2.96		4.94		3.38		5.74		NS
	TXV		NS		NS		5.23		NS		NS		NS		NS		NS
	CV%		10.40		9.56		3.97		3.40		4.64		3.25		5.93		4.76

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Leaf area index								Leaf area index							
		Jamnagar								Mandor							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	0.24	0.31	0.27	0.35	0.29	0.36	0.33	0.38	2.41	2.87	2.76	3.38	2.56	2.86	1.72	2.56
T2	Seed priming with water with ratio 1/2 for 6 hr	0.29	0.28	0.33	0.29	0.34	0.30	0.34	0.34	3.18	2.89	3.47	3.51	3.15	3.24	3.14	2.73
T3	Seed priming with ABA 150 ppm for 6 hrs	0.35	0.26	0.42	0.28	0.41	0.31	0.42	0.35	3.32	4.01	3.83	3.41	3.58	3.22	3.65	3.04
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	0.35	0.29	0.37	0.31	0.38	0.30	0.42	0.32	2.33	2.97	3.28	3.27	3.40	3.46	3.30	1.60
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	0.32	0.33	0.36	0.33	0.34	0.33	0.37	0.33	2.63	3.13	3.95	3.07	3.37	3.60	2.64	2.94
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	0.28	0.23	0.32	0.27	0.35	0.28	0.36	0.30	2.21	2.76	3.48	2.87	3.62	2.95	3.80	3.08
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	0.30	0.26	0.33	0.28	0.34	0.29	0.35	0.32	2.29	3.45	3.15	3.71	3.51	3.08	3.31	3.28
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	0.31	0.28	0.35	0.35	0.36	0.36	0.36	0.34	2.89	2.67	3.08	3.90	2.81	3.21	2.93	2.86
	G.M	0.30	0.28	0.34	0.31	0.35	0.32	0.37	0.33	2.66	3.09	3.38	3.39	3.25	3.20	3.06	2.76
CD (5%)	Variety		0.02		0.03		0.03		0.03		0.39		NS		NS		NS
	Treatment (T)		NS		NS		NS		NS		NS		NS		NS		0.74
	TXV		0.06		0.07		NS		NS		NS		NS		NS		NS
	CV%		13.04		13.12		13.45		12.15		22.74		18.74		15.62		21.65

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	Number of tillers/plant															
		Jamnagar								Mandor							
		30 DAS		45 DAS		60 DAS		75 DAS		30 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	2.0	3.3	2.0	2.7	2.3	3.7	3.3	4.0	3.3	3.3	2.9	3.1	2.3	2.8	1.3	1.4
T2	Seed priming with water with ratio 1/2 for 6 hr	2.3	2.7	2.0	2.0	2.7	3.0	3.3	3.3	3.3	2.7	3.7	4.3	2.3	3.2	1.9	1.4
T3	Seed priming with ABA 150 ppm for 6 hrs	2.0	3.3	2.7	4.0	3.0	3.7	4.0	4.3	3.7	3.3	3.3	4.9	2.9	3.2	1.9	2.7
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	2.3	2.7	2.7	2.7	3.3	4.7	4.0	4.0	3.7	2.7	4.0	4.9	2.2	3.4	1.8	2.0
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	2.3	3.0	3.0	4.0	4.0	5.3	5.0	5.0	3.7	3.0	4.8	4.9	3.7	3.9	3.2	2.8
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	2.0	3.0	2.3	2.7	3.0	4.0	4.0	3.3	3.4	3.4	3.4	3.4	2.4	2.2	1.8	1.6
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	2.7	4.0	2.7	4.0	3.0	4.3	5.0	4.0	3.8	3.8	3.8	4.9	2.4	2.8	2.0	1.6
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	2.7	3.0	2.7	4.7	3.3	4.7	5.0	5.0	3.4	3.4	4.1	3.7	2.2	2.8	1.4	2.2
	G.M	2.29	3.13	2.50	3.33	3.08	4.17	4.21	4.13	3.54	3.21	3.74	4.27	2.56	3.05	1.91	1.96
CD (5%)	Variety		0.46		0.46		0.51		NS		NS		0.45		0.40		NS
	Treatment (T)		NS		0.91		1.01		1.16		NS		0.89		0.80		0.77
	TXV		NS		NS		NS		NS		NS		NS		NS		NS
	CV%		28.57		26.53		23.71		23.61		18.19		18.94		24.20		33.87

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

S. No.	Treatments/ variety	dry weight of panical (g)											
		Mandor						Jamnagar					
		45 DAS		60 DAS		75 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	0.0	0.0	20.5	19.9	50.0	37.7	5.4	7.5	32.4	26.9	46.8	44.5
T2	Seed priming with water with ratio 1/2 for 6 hr	0.0	0.0	21.9	21.2	56.5	47.0	5.7	12.3	35.0	25.9	55.2	52.0
T3	Seed priming with ABA 150 ppm for 6 hrs	0.0	0.0	21.4	22.6	58.0	48.5	10.5	14.0	42.3	32.1	72.2	68.1
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	0.0	0.0	23.5	23.2	59.2	53.9	8.0	14.6	37.6	31.0	76.3	55.2
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	0.0	0.0	27.5	25.4	67.6	60.4	11.7	19.6	62.7	97.2	96.7	96.5
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	0.0	0.0	21.5	21.4	59.6	55.5	7.9	9.7	44.6	49.5	60.1	58.6
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	0.0	0.0	23.6	22.1	59.8	57.6	20.9	33.3	55.5	68.1	64.5	75.0
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	0.0	0.0	24.2	22.4	67.1	57.3	18.8	30.1	57.9	83.8	87.3	103.7
CD (5%)	G.M	0.00	0.00	23.00	22.28	59.72	52.23	11.11	17.63	46.00	51.81	69.89	69.20
	Variety	0.00	0.00		NS		2.49		1.12		3.10		NS
	Treatment (T)	0.00	0.00		2.58		4.99		2.23		6.20		6.10
	TXV	0.00	0.00		NS		NS		3.16		8.76		8.63
CV%		0.00	0.00		9.68		7.56		13.19		10.74		7.44

Note: Penical dry weight was not recorded at Mandor at 45 DAS

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

A - Biomass Partitioning at different stages

S. No.	Treatments/ variety	CGR																	
		Mandor						Jaipur						Jamnagar					
		45 DAS		60 DAS		75 DAS		45 DAS		60 DAS		75 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	0.042	0.024	0.110	0.107	0.167	0.107	0.027	0.018	0.019	0.013	0.027	0.037	0.088	0.074	0.116	0.118	0.109	0.073
T2	Seed priming with water with ratio 1/2 for 6 hr	0.044	0.031	0.111	0.116	0.199	0.120	0.030	0.025	0.020	0.011	0.019	0.037	0.077	0.102	0.139	0.068	0.121	0.107
T3	Seed priming with ABA 150 ppm for 6 hrs	0.053	0.031	0.118	0.141	0.190	0.106	0.022	0.038	0.023	0.028	0.019	0.037	0.148	0.155	0.134	0.035	0.119	0.186
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	0.055	0.043	0.131	0.119	0.183	0.142	0.020	0.046	0.029	0.027	0.025	0.037	0.098	0.105	0.166	0.143	0.155	0.048
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	0.062	0.044	0.141	0.131	0.211	0.155	0.030	0.064	0.021	0.036	0.032	0.063	0.082	0.094	0.261	0.327	0.134	0.002
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	0.057	0.029	0.122	0.106	0.202	0.163	0.020	0.056	0.020	0.040	0.039	0.057	0.079	0.088	0.132	0.161	0.189	0.128
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	0.052	0.026	0.119	0.123	0.208	0.143	0.013	0.031	0.016	0.031	0.037	0.039	0.145	0.207	0.206	0.174	0.136	0.159
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	0.045	0.041	0.125	0.109	0.241	0.167	0.012	0.045	0.017	0.026	0.038	0.049	0.147	0.122	0.224	0.255	0.131	0.215
	G.M	0.05	0.03	0.12	0.12	0.20	0.14	0.02	0.04	0.02	0.03	0.03	0.04	0.11	0.12	0.17	0.16	0.14	0.11
CD (5%)	Variety		0.01		NS		0.01		0.00		0.00		0.00		0.01		0.01		0.01
	Treatment (T)		0.01		0.01		0.03		0.01		0.01		0.01		0.02		0.02		0.03
	TXV		NS		NS		NS		0.01		0.01		0.01		0.03		0.03		0.04
CV%			21.25		9.07		13.94		22.56		35.76		15.65		15.00		12.04		18.32

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

A - Biomass Partitioning at different stages

S. No.	Treatments/ variety	RGR																	
		Mandor						Jaipur						Jamnagar					
		45 DAS		60 DAS		75 DAS		45 DAS		60 DAS		75 DAS		45 DAS		60 DAS		75 DAS	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	1.10	0.82	1.01	1.24	0.67	0.54	0.44	0.28	0.22	0.16	0.25	0.35	1.09	0.80	0.63	0.63	0.37	0.26
T2	Seed priming with water with ratio 1/2 for 6 hr	1.13	0.93	0.99	1.17	0.76	0.54	0.44	0.35	0.22	0.13	0.17	0.33	1.01	0.97	0.77	0.34	0.38	0.38
T3	Seed priming with ABA 150 ppm for 6 hrs	1.26	0.80	0.97	1.25	0.69	0.43	0.34	0.48	0.26	0.25	0.17	0.25	1.51	1.24	0.53	0.15	0.31	0.55
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	1.35	1.16	1.02	1.07	0.64	0.58	0.28	0.54	0.30	0.22	0.21	0.24	1.07	0.95	0.75	0.61	0.40	0.14
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	1.38	1.18	0.99	1.12	0.66	0.59	0.39	0.66	0.20	0.24	0.26	0.32	0.61	0.67	0.90	0.99	0.27	0.00
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	1.45	0.84	0.97	1.12	0.71	0.71	0.26	0.54	0.21	0.26	0.31	0.28	0.85	1.08	0.67	0.79	0.53	0.36
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	1.37	0.77	1.01	1.27	0.75	0.60	0.18	0.39	0.19	0.29	0.34	0.27	0.91	1.26	0.61	0.47	0.27	0.30
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	1.18	1.05	1.07	1.01	0.82	0.68	0.18	0.51	0.21	0.21	0.36	0.31	1.34	0.73	0.75	0.73	0.27	0.36
	G.M	1.28	0.95	1.00	1.16	0.71	0.58	0.32	0.47	0.23	0.22	0.26	0.29	1.05	0.96	0.70	0.59	0.35	0.29
CD (5%)	Variety		0.14		0.07		0.05		0.05		NS		0.02		NS		0.05		0.04
	Treatment (T)		NS		NS		0.11		0.10		NS		0.05		0.20		0.10		0.07
	TXV		NS		NS		NS		0.14		NS		0.07		0.29		0.14		0.10
CV%			21.27		10.47		14.00		20.99		35.75		15.34		17.13		13.40		19.41

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5A: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

A - Biomass Partitioning at different stages

S. No.	Treatments/ variety	Grain yield at maturity (g/plant)				PHNI				HI %			
		Mandor		Jamnagar		Mandor		Jamnagar		Mandor		Jamnagar	
		V1	V2	V1	V2	V1	V2	V1	V2	V1	V2	V1	V2
T1	Control	34.89	33.64	29.58	31.85	79.17	76.87	64.40	71.82	39.60	28.90	24.83	29.26
T2	Seed priming with water with ratio 1/2 for 6 hr	36.50	37.64	34.23	33.17	81.01	76.93	62.77	63.85	45.70	36.15	27.11	29.27
T3	Seed priming with ABA 150 ppm for 6 hrs	37.34	38.31	48.94	40.75	81.81	80.18	67.66	60.49	47.42	38.74	33.43	27.89
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	37.89	41.02	53.18	34.19	82.73	82.28	69.68	62.42	49.04	44.31	33.99	28.42
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	40.27	43.92	72.47	93.77	86.43	84.48	75.03	97.18	58.47	51.00	37.91	53.95
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	37.69	42.29	41.45	35.85	84.24	81.79	69.69	61.79	50.20	45.24	27.11	25.49
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	37.55	46.50	45.53	47.16	82.95	84.29	70.51	63.10	49.52	48.59	23.38	22.73
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	38.90	42.64	67.46	73.84	83.29	84.14	77.23	71.18	55.89	48.27	36.39	31.37
	G.M	37.63	40.74	49.11	48.82	82.70	81.37	69.62	68.98	49.48	42.65	30.52	31.05
CD (5%)	Variety		1.55		NS		NS		NS		2.22		NS
	Treatment (T)		3.10		7.33		4.58		13.79		4.44		5.72
	TXV		NS		10.37		NS		0.00		NS		0.00
CV%			6.71		12.70		4.74		16.88		8.17		15.77

CHAPTER III: PLANT PHYSIOLOGY

Table III 5B: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

B- Yield Observation

S. No.	Treatments/ variety	Grain yield (kg/ha)									Fodder yield (kg/ha)								
		Mandor			Jaipur			Jamnagar			Mandor			Jaipur			Jamnagar		
		V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean
T1	Control	1282	1305	1294	3081	2589	2835	2440	2440	2440	3714	3481	3598	6381	7462	6922	5193	5201	5197
T2	Seed priming with water with ratio 1/2 for 6 hr	1555	1497	1526	4163	2570	3366	2677	2924	2800	3154	3426	3290	8584	5341	6963	6089	5316	5702
T3	Seed priming with ABA 150 ppm for 6 hrs	1669	1333	1501	4329	4341	4335	2900	3064	2982	3415	3238	3327	8978	5302	7140	6193	5654	5923
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	1586	1531	1559	4205	4503	4354	2920	3001	2961	3167	2981	3074	8745	8737	8741	7033	5562	6297
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	1983	1757	1870	4089	4953	4521	3285	3378	3332	3347	3257	3302	8433	9297	8865	7386	5614	6500
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	1522	1339	1431	3274	4592	3933	2718	3156	2937	3598	2812	3205	6762	9472	8117	6559	5566	6063
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	1664	1577	1621	3768	4502	4135	2814	3296	3055	3346	2889	3118	7769	10188	8978	7521	5742	6632
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	1692	1583	1637	2800	4578	3689	3089	3266	3178	3770	3291	3531	5771	9618	7694	7652	6107	6880
Mean		1619	1490		3713	4078		2855	3066		3439	3172		7678	8177		6703	5595	
CD (5%)	Variety		93.4			237.9			159.4			NS			339.8			121.9	
	Treatment (T)		186.8			475.8			318.8			NS			679.7			243.9	
	TXV		NS			672.9			NS-2			NS			961			344.9	
CV%			10.2			10.4			9.1			19.3			7.3			3.4	

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5B: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

B- Yield Observation

S. No.	Treatments/ variety	Harvest index(%)									50 % flowering								
		Mandor			Jaipur			Jamnagar			Mandor			Jaipur			Jamnagar		
		V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean
T1	Control	23.22	25.47	24.35	32.45	25.78	29.12	27.04	27.52	27.28	47	46	47	49	53	51	47	45	46
T2	Seed priming with water with ratio 1/2 for 6 hr	29.64	27.85	28.75	32.65	32.50	32.58	26.06	30.22	28.14	49	45	47	50	53	51	45	45	45
T3	Seed priming with ABA 150 ppm for 6 hrs	30.01	26.83	28.42	32.45	44.99	38.72	26.96	30.32	28.64	50	48	49	50	52	51	42	42	42
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	30.67	30.42	30.55	32.38	34.07	33.23	24.76	29.54	27.15	50	46	48	52	49	51	47	43	45
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	35.95	33.44	34.70	32.65	34.82	33.73	26.81	31.72	29.26	48	45	46	51	52	52	45	43	44
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	27.36	29.04	28.20	32.59	32.67	32.63	25.16	31.82	28.49	48	44	46	55	51	53	44	41	42
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	29.83	32.28	31.06	32.36	30.69	31.52	23.68	31.56	27.62	48	46	47	55	50	53	46	42	44
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	28.61	29.57	29.09	32.65	32.26	32.45	25.20	30.14	27.67	46	43	45	55	49	52	45	40	43
Mean		29	29		33	33		26	30		48	45		52	51		45	43	
CD (5%)	Variety		NS			NS			1.3			1.1			0.9			1.1	
	Treatment (T)		3.8			2.2			NS			2.3			NS			2.2	
	TXV		NS			3.1			NS			NS			2.5			NS	
CV%			11.0			5.7			8.0			4.1			2.9			NS	

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5B: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

B- Yield Observation

S. No.	Treatments/ variety	Days to maturity									Test weight(g)								
		Mandor			Jaipur			Jamnagar			Mandor			Jaipur			Jamnagar		
		V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean
T1	Control	74	74	74	80	82	81	89	87	88	8.03	8.47	8.25	8.46	8.68	8.57	7.78	8.48	8.13
T2	Seed priming with water with ratio 1/2 for 6 hr	74	74	74	84	85	85	87	87	87	8.40	8.55	8.48	9.62	9.62	9.62	8.63	9.59	9.11
T3	Seed priming with ABA 150 ppm for 6 hrs	78	79	79	83	82	83	84	84	84	8.37	9.10	8.73	8.66	8.77	8.72	9.05	9.82	9.44
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	79	78	78	86	89	87	89	85	87	8.54	9.16	8.85	8.81	8.82	8.81	9.04	9.67	9.36
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	78	76	77	89	88	89	87	85	86	8.86	9.30	9.08	9.50	9.73	9.61	9.98	10.03	10.00
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	78	76	77	89	85	87	86	82	84	7.54	9.36	8.45	9.47	9.66	9.56	8.51	9.07	8.79
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	78	77	78	88	84	86	88	84	86	8.10	8.81	8.46	8.86	8.86	8.86	8.98	9.90	9.44
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	77	79	78	87	86	86	87	82	84	7.78	9.35	8.56	8.96	9.00	8.98	10.14	10.33	10.23
Mean		77.1	76.5		85.6	85.2		86.9	84.4		8.2	9.0	8.6	9.0	9.1		9.0	9.6	
CD (5%)	Variety		0.5			NS			1.1			0.4			NS			0.3	
	Treatment (T)		1.1			1.3			2.2			NS			0.3			0.6	
	TXV		1.5			1.8			NS			NS			NS			NS	
CV%			1.2			1.2			2.2			8.0			2.5			5.1	

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5B: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

B- Yield Observation

S. No.	Treatments/ variety	Productive tiller									Seed setting %					
		Mandor			Jaipur			Jamnagar			Mandor			Jamnagar		
		V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean
T1	Control	1.7	1.7	1.7	2.1	2.3	2.2	2.7	3.0	2.8	96.80	96.00	96.40	85.67	75.33	80.50
T2	Seed priming with water with ratio 1/2 for 6 hr	1.7	1.8	1.8	2.8	3.0	2.9	2.7	3.3	3.0	96.60	96.07	96.33	78.33	88.67	83.50
T3	Seed priming with ABA 150 ppm for 6 hrs	1.8	2.0	1.9	2.6	2.7	2.6	3.3	3.3	3.3	97.67	96.40	97.03	80.00	87.00	83.50
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	2.0	1.8	1.9	3.0	2.8	2.9	3.0	3.0	3.0	97.73	97.60	97.67	84.00	85.00	84.50
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	2.2	2.2	2.2	2.9	3.0	2.9	3.3	3.7	3.5	98.27	97.60	97.93	90.00	92.33	91.17
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	2.3	1.5	1.9	2.8	3.0	2.9	3.0	3.0	3.0	97.80	96.73	97.27	85.00	81.67	83.33
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	1.1	1.4	1.3	2.7	2.9	2.8	3.0	3.3	3.2	96.27	97.33	96.80	91.00	90.33	90.67
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	1.9	1.6	1.7	2.8	2.4	2.6	2.3	3.3	2.8	97.34	97.27	97.30	88.00	92.33	90.17
Mean		1.8	1.8		2.7	2.8		2.9	3.3		97.31	96.88		85.25	86.58	
CD (5%)	Variety		NS			NS			0.3			NS			NS	
	Treatment (T)		0.4			0.3			NS			0.96			4.52	
	TXV		NS			NS			NS			NS			6.39	
CV%			19.4			9.6			17.4			0.84			4.46	

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CHAPTER III: PLANT PHYSIOLOGY

Table III 5B: Agro-physiological management of drought in pearl millet genotypes under rain-fed condition at Mandor, Jamnagar and Jaipur Kharif 2022 (PMPHY-5)

B- Yield Observation

S. No.	Treatments/ variety	Ear head weight (kg/ha)						Threshing percentage					
		Mandor			Jamnagar			Mandor			Jamnagar		
		V1	V2	Mean	V1	V2	Mean	V1	V2	Mean	V1	V2	Mean
T1	Control	1811	1759	1785	3843	3666	3754	71.14	75.36	73.25	63.75	66.51	65.13
T2	Seed priming with water with ratio 1/2 for 6 hr	2122	2028	2075	4187	4364	4276	73.30	74.08	73.69	63.87	67.07	65.47
T3	Seed priming with ABA 150 ppm for 6 hrs	2196	1803	2000	4552	4455	4504	76.00	74.00	75.00	63.67	68.80	66.24
T4	Seed priming with KNO ₃ 0.5% for 6 hrs	2061	2068	2065	4783	4654	4718	77.42	74.21	75.81	61.35	65.10	63.22
T5	Seed priming with KNO ₃ 0.5% for 6 hrs + Spray of KNO ₃ @ 1% at panicle initiation	2247	1986	2117	4853	5000	4927	88.10	88.43	88.26	67.66	67.47	67.57
T6	Seed priming with salicylic acids 200 mg/L SA for 6 hrs	1957	1796	1876	4240	4345	4292	77.65	74.65	76.15	64.35	72.49	68.42
T7	Spray of thiourea @ 1000 ppm at tillering stage and panicle initiation	2276	2071	2174	4347	4691	4519	73.11	76.28	74.69	64.66	70.20	67.43
T8	Spray of KNO ₃ @ 1% at tillering and panicle initiation	2138	2064	2101	4596	4721	4658	78.93	76.93	77.93	67.27	69.15	68.21
Mean		2101	1947	2024	4425	4487		76.96	76.74		64.57	68.35	
CD (5%)	Variety		108.3			NS			NS			2.84	
	Treatment (T)		216.7			402.2			7.42			NS	
	TXV		NS			NS			NS			NS	
CV%			9.1			7.7			8.19			7.26	

CHAPTER III: PLANT PHYSIOLOGY

Table III.6: Identification of heat stress tolerance in pearl millet genotypes at seedling stage at Jaipur and Mandor *kharif* 2022 (PMPHY-7)

S. No.	Variety/ Treatment	Shoot length (cm)						Root length (cm)						Seedling dry weight (mg) / five seedling					
		Mandor			Jaipur			Mandor			Jaipur			Mandor			Jaipur		
		Control 40°C	44°C	46°C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C
1	PPMI 1272	11.9	10.3	9.6	14.6	14.2	14.0	22.4	25.2	26.1	17.9	17.9	18.1	292	273	271	647	615	587
2	PPMI 1293	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3	PPMI 1294	0.0	0.0	0.0	12.6	11.4	11.0	0.0	0.0	0.0	19.7	20.0	20.3	0	0	0	441	411	368
4	DHLB-31 B	13.9	12.8	10.2	18.8	18.1	17.7	20.1	21.1	21.4	20.8	21.0	21.1	406	344	290	550	507	491
5	DHLB-32 B	11.1	10.8	11.5	19.4	18.8	18.3	19.4	20.8	21.9	21.5	21.5	22.0	432	337	339	604	594	505
6	DHLB-34 B	11.3	9.8	9.5	15.8	12.9	12.7	22.1	22.2	23.9	16.9	17.1	17.6	347	348	355	588	560	486
7	AS-1	11.1	10.6	9.5	17.8	17.0	15.9	23.6	23.9	25.4	15.4	15.7	16.0	350	347	344	616	593	544
8	AS-2	14.9	12.4	9.2	18.4	17.8	16.5	21.1	21.7	22.5	22.1	22.8	23.1	362	382	322	479	456	426
9	AS-3	12.5	12.4	12.2	16.2	14.5	14.0	23.1	24.0	24.9	18.3	18.6	18.8	387	395	427	574	570	543
10	302-BCS-22	8.7	8.4	8.6	15.5	14.6	13.9	22.6	23.3	24.7	18.2	18.5	18.6	360	339	322	484	437	390
11	303-BCS-22	10.1	8.7	8.6	14.2	12.3	12.0	19.7	22.0	25.3	17.1	17.4	18.3	296	298	285	538	488	455
12	307-BCS-22	10.6	10.4	9.5	17.8	15.4	14.9	23.7	26.3	27.1	20.4	21.2	21.5	387	340	365	600	593	532
13	MIR-1409	15.1	13.4	12.9	18.8	17.9	17.3	21.1	21.9	22.4	22.6	23.3	23.5	398	413	376	501	481	443
14	MIR-1802	13.4	12.8	12.7	18.5	16.9	15.7	20.0	20.1	23.2	23.1	24.1	24.4	305	265	264	604	539	528
CD (5%)	Variety (V)	1.4			0.6			2.18			0.50			51.3			43.1		
	Temp (T)	0.7			0.2			1.09			0.20			NS			17.6		
	T x V	NS			1.0			NS			NS			NS			NS		
	CV (%)	12.9			3.8			10.17			2.66			15.9			8.8		

Value 0 = was not germinate

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CHAPTER III: PLANT PHYSIOLOGY

Table III.6: Identification of heat stress tolerance in pearl millet genotypes at seedling stage at Jaipur and Mandor *kharif* 2022 (PMPHY-7)

S. No.	Variety/ Treatment	Membrane stability index						Seedling vigour index						Root shoot ratio					
		Mandor			Jaipur			Mandor			Jaipur			Mandor			Jaipur		
		Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C
1	PPMI 1272	77.8	78.5	87.0	84.4	81.4	78.1	1719	1977	1636	2707	2707	2794	0.63	0.87	0.90	0.19	0.21	0.25
2	PPMI 1293	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0.0	0.0	0.0
3	PPMI 1294	0.0	0.0	0.0	82.3	82.0	82.2	0	0	0	1940	1940	1872	0.00	0.00	0.00	0.33	0.34	0.33
4	DHLB-31 B	75.5	87.4	88.2	85.6	83.3	81.2	2298	2373	2109	3506	3506	3414	0.41	0.56	0.78	0.22	0.24	0.27
5	DHLB-32 B	76.6	78.7	80.3	84.0	82.2	79.9	2475	2254	2297	3465	3465	3464	0.46	0.72	0.89	0.25	0.26	0.25
6	DHLB-34 B	72.9	75.3	87.0	86.6	85.5	83.4	2011	1810	2129	2544	2544	2488	0.58	0.73	0.92	0.29	0.28	0.30
7	AS-1	84.4	84.5	86.1	83.2	80.1	78.1	2197	2144	2361	2133	2133	2234	0.73	0.88	0.90	0.20	0.22	0.23
8	AS-2	74.5	83.7	85.2	83.4	81.1	80.2	2361	1910	2084	3586	3586	3401	0.52	0.84	1.91	0.26	0.30	0.33
9	AS-3	80.2	78.0	89.5	83.5	81.2	80.0	2121	2101	2099	2556	2556	2622	0.53	0.61	0.75	0.24	0.25	0.21
10	302-BCS-22	75.4	77.4	78.1	85.2	84.4	81.5	2535	2355	2884	2880	2880	2726	0.62	0.85	0.82	0.27	0.29	0.28
11	303-BCS-22	75.6	76.9	88.6	83.4	82.3	80.2	2442	2458	2635	2497	2497	2478	0.68	1.04	1.27	0.22	0.25	0.25
12	307-BCS-22	77.6	80.3	81.4	85.5	84.9	82.9	2402	2270	2231	3046	3046	2905	0.67	0.69	0.81	0.24	0.25	0.23
13	MIR-1409	80.0	72.5	84.5	83.3	80.2	78.3	2420	2357	2237	3635	3635	3511	0.46	0.53	0.77	0.26	0.27	0.27
14	MIR-1802	73.0	76.5	75.2	84.5	81.2	77.7	2384	2304	2434	3578	3578	3566	0.52	0.61	0.69	0.20	0.21	0.25
CD (5%)	Variety (V)	NS			2.03			249.09			89.41			0.18			0.03		
	Temp (T)	3.1			0.83			NS			NS			0.09			0.013		
	T x V	NS			NS			NS			NS			0.32			NS		
	CV (%)	8.2			2.62			11.80			3.27			25.78			13.36		

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CHAPTER III: PLANT PHYSIOLOGY

Table III.6: Identification of heat stress tolerance in pearl millet genotypes at seedling stage at Jaipur and Mandor *kharif* 2022 (PMPHY-7)

S. No.	Variety/ Treatment	RWC						Chlorophyll content (mg/g f.wt)					
		Mandor			Jaipur			Mandor			Jaipur		
		Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C	Control 40°C	44°C	46 °C
1	PPMI 1272	91.5	83.2	69.5	88.6	85.3	82.6	1.32	1.27	1.23	2.15	2.03	1.75
2	PPMI 1293	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	PPMI 1294	0.0	0.0	0.0	91.2	88.6	83.5	0.00	0.00	0.00	2.21	2.14	1.73
4	DHLB-31 B	85.9	87.9	80.6	90.4	87.8	85.5	2.19	1.94	1.81	2.30	2.03	1.86
5	DHLB-32 B	81.3	77.8	80.6	86.7	85.1	84.2	1.89	1.87	1.79	2.10	2.09	1.68
6	DHLB-34 B	75.8	85.0	83.1	87.1	85.2	83.7	2.15	2.15	1.63	2.27	2.13	1.78
7	AS-1	90.0	74.3	74.0	89.3	87.2	85.4	1.88	1.24	1.70	2.45	2.37	2.05
8	AS-2	92.9	80.3	72.9	88.0	85.4	84.4	2.85	1.99	1.87	2.17	2.03	1.81
9	AS-3	92.6	78.2	78.4	90.1	87.2	87.0	1.57	1.94	1.89	2.32	2.12	1.90
10	302-BCS-22	86.7	74.2	78.7	90.5	89.9	89.1	1.83	1.74	2.09	2.18	1.98	1.80
11	303-BCS-22	91.9	88.9	87.0	88.6	86.1	85.2	1.99	1.97	2.03	2.32	2.21	2.10
12	307-BCS-22	86.8	77.9	73.9	89.9	87.7	85.2	1.82	2.58	1.75	2.12	1.88	1.84
13	MIR-1409	86.9	83.2	79.5	91.9	89.2	88.6	1.47	1.90	2.25	2.10	1.93	1.82
14	MIR-1802	84.6	77.7	74.7	90.4	88.3	87.8	1.72	1.25	1.58	2.21	2.05	1.76
CD (5%)	Variety (V)	5.00			2.27			0.47			0.06		
	Temp (T)	2.50			0.93			NS			0.02		
	T x V	8.66			NS			NS			0.10		
	CV (%)	6.49			2.77			27.36			2.90		

CHAPTER IV

PLANT PATHOLOGY

PLANT PATHOLOGY

Downy Mildew and other diseases

All the centres were assigned to conduct the trial in sick plot using infector rows raised from mixture of 7042S (universal susceptible check) and local susceptible lines before 21 days of sowing test entries. It was suggested to maintain 30 plants in a single row of 4 m length with two replications and also suggested to have minimum of 70% disease incidence on susceptible check line (Indicator line). The downy mildew incidence at different centres was recorded on a scale as follows: 0-5% (Resistant), 5-10% (Moderately resistant), 10-25% (Susceptible) and >25% (Highly susceptible), Rust, Smut and Ergot incidence were recorded on a scale as follows: 0-20% (Resistant) and >20% (Susceptible) and Blast incidence was recorded on a scale as follow: score (0) Highly resistant, (0.1-3) Resistant, (>3-5) Moderately resistant, (>5-7) Susceptible and (>7-9) Highly susceptible.

Downy Mildew	Blast	Rust	Smut	Ergot
0-5% (Resistant)	Score (0) Highly resistant	0-20% (Resistant)	0-20% (Resistant)	0-20% (Resistant)
5-10% (Moderately resistant)	0.1-3: Resistant			
10-25% (Susceptible)	>3-5: Moderately Resistant	>20% (Susceptible)	>20% (Susceptible)	>20% (Susceptible)
>25% (Highly susceptible)	>5-7: Susceptible			
	>7-9: Highly susceptible			

PMPT I: Disease Screening Trial of Initial Pearl Millet Hybrids and Varieties

One hundred and five entries were screened in this trial at ten different centres. The overview of the results of the trial at different centers is tabulated in Table IV B. All the entries included in the trial were scored for downy mildew disease incidence at 30 DAS (tillering stage) and 60 DAS (soft-dough stage) and comparison was made. The details of the downy mildew reaction on different initial pearl millet hybrids and varieties both at tillering (30 DAS) and soft dough (60 DAS) stage were given on zonal basis.

ZONE A₁: At 30 DAS, the mean downy mildew incidence for the entries tested ranged between 0.0 to 6.6% One hundred and four entries had shown highly resistant reaction by expressing 0.00 to 4.2% disease incidence, One entry (MH 2598) was showing moderately resistant reaction with 6.6% (Table IV.1).

At 60 DAS, the mean disease incidence in Zone A₁ for the entries tested ranged between 0.5 to 17.6%. One hundred and one entries had shown highly resistant reaction by expressing 0.5 to 5.0% disease incidence followed by three entries with resistant reaction and one entry (MH 2598) showing susceptible reaction of 17.6% downy mildew incidence (Table IV.2).

ZONE A: At 30 DAS, the mean downy mildew incidence for the entries tested ranged between 0.0 to 6.2%. One hundred and four entries had shown highly resistant reaction by expressing 0.0 to 4.4% disease incidence; One entry (MH 2598) was showing moderately resistant reaction (6.2%) (Table IV.1).

At 60 DAS, the mean disease incidence in Zone A for the entries tested ranged between 0.3 to 11.8%. ninety-nine entries are shown highly resistant reaction by expressing 0.3 to 5.0% disease incidence followed by five entries are recorded for resistant reaction and one entry (MH 2598) showing susceptible reaction of 11.8% downy mildew incidence (Table IV.2).

Zone B: At 30 DAS, the mean disease incidence at 30 DAS for the entries tested ranged between 0.00 to 6.8%. One hundred and three entries were highly resistant and two were moderately resistant to downy mildew (Table IV.1).

At 60 DAS, the mean disease incidence for the entries tested in Zone B ranged from 0.00 to 10.6%. Eighty-eight entries were highly resistance followed by fifteen entries was resistant and two entries were susceptible to downy mildew (Table IV.2).

All India: At 30 DAS, the mean disease incidence for the entries tested ranged between 0.2% to 4.4%. One hundred and five entries were highly resistant to Downy mildew reaction (Table IV.1).

At 60 DAS, the mean disease incidence for the entries tested ranged between 0.5% to 10.9%. Ninety-seven entries were highly resistant and eight entries were resistant to Downy mildew reaction (Table IV.2).

Other Diseases (PMPT I): An overview of Smut, Rust, Blast and Ergot of highly resistant entries is summarized in table IV.F.

Blast: At 30 DAS: The mean blast incidence in Zones A₁, A and B was 1.1 score, 0.8 score and 1.3 score, respectively (Table IV.3).

Zone A₁: 02 entries were highly resistant, 103 entries were resistant to blast (0.0 to 2.3%) (Table IV.3).

Zone A: 02 entries were highly resistant, 103 entries were resistant to blast (0.0 to 1.8%) (Table IV.3).

Zone B: 01 entry was highly resistant, 104 entries were resistant to blast (0.0 to 3.0%) (Table IV.3).

Blast: At 45 DAS: The mean blast incidence in Zones A₁, A and B was 1.6 score, 1.4 score and 1.7 score, respectively (Table IV.3).

Zone A₁: 01 entry were highly resistant, 104 entries were resistant to blast (0.0 to 2.6%) (Table IV.3).

Zone A: 01 entry were highly resistant, 104 entries were resistant to blast (0.0 to 2.5%) (Table IV.3).

Zone B: 99 entries were resistant, 06 entry were moderately resistant to blast (0.5 to 4.0%) (Table IV.3).

Blast: At 60 DAS: The mean blast incidence in Zones A₁, A and B was 2.4 score, 2.4 score and 2.6 score, respectively (Table IV.3).

Zone A₁: 92 entries were resistant, 13 entries were resistant to blast (1.2 to 4.1%) (Table IV.3).

Zone A: 93 entries were resistant, 12 entries were resistant to blast (1.2 to 4.4%) (Table IV.3).

Zone B: 78 entries were resistant, 26 entries were moderately resistant and 01 was susceptible to blast (0.9 to 5.2%) (Table IV.3).

Smut: Highest mean disease incidence of 77.5% (MH 2620) was recorded at Gwalior. Mean smut incidence in Zone A₁ and A was 3.9% and 7.5% respectively, whereas Zone B is not considered for promotion. In Zone A₁, Smut incidence ranges from 0.0 to 13.5 and in Zone A it was 0.0 to 23.0 (Table IV.3).

Rust: At 60 DAS: The mean rust incidence in Zones A₁, A and B was 0.7, 0.5% and 9.3%, respectively. All the entries tested were resistant to rust incidence in A₁, A and Zone B (Table IV.3).

Ergot: The mean ergot incidence in Zones A₁, A and B was 2.3%, 2.3% and 0.9%, respectively. All the entries tested were resistant to ergot incidence in A₁, A and Zone B (Table IV.3).

PMPT II: Disease Screening Trial of Advanced Pearl Millet Hybrids and Varieties

Downy Mildew: A total of Fourty two entries were screened in this trial at Eleven different centres for pearl millet diseases. The overview of the results of this trial at different centres is summarized in Table IV.C.

Zone A₁: At 30 DAS, the mean disease incidence for the entries tested ranged from 0.0 to 3.0%. All the entries were highly resistant to downy mildew (Table IV.4).

At 60 DAS, the mean disease incidence for the entries tested ranged from 0.5 to 22.4% (RHB 177). In Zone A₁, thirty nine entries were highly resistant, and three entries were moderately resistant to downy mildew (Table IV.5).

Zone A: At 30 DAS, the mean disease incidence for the entries tested ranged from 0.0 to 6.3%. forty-one entries were highly resistant, and one entry were moderately resistant to downy mildew (Table IV.4).

At 60 DAS, the mean disease incidence for the entries tested ranged between 0.5 to 14.9% (RHB 177). In Zone A, thirty-eight entries were highly resistant, and four entries were moderately resistant to downy mildew (Table IV.5).

Zone B: At 30 DAS, the mean disease incidence for the entries tested ranged between 0.3 – 3.3%. All the tested entries were highly resistant, to downy mildew (Table IV.4).

At 60 DAS, the mean disease incidence for the tested entries ranged between 0.5 -7.4% (Pusa Compo. 612). Thirty-eight entries were highly resistant, and four entries were moderately resistant to downy mildew (Table IV.5).

At all India level: At 30 DAS, all the tested entries were highly resistant (0.2 to 4.0%) to downy mildew (Table IV.4).

At 60 DAS, the mean disease incidence ranged between 0.6 to 9.6% (RHB 177). Thirty-eight entries were highly resistant, and four entries were moderately resistant to downy mildew (Table IV.5).

Other Diseases (PMPT II): An overview of Smut, Rust, Blast and Ergot of highly resistant entries is summarized in table IV.G.

Blast: At 30 DAS: The mean blast incidence in Zones A₁, A and B was 1.1, 1.5 and 1.6 score, respectively (Table IV.6).

Zone A₁: All the 42 entries were resistant to blast (0.2 to 2.0%) (Table IV.6).

Zone A: All the 42 entries were resistant to blast (0.8 to 2.4%) (Table IV.6).

Zone B: 41 entries were resistant; 01 entry was moderately resistant to blast (0.6 to 3.3%) (Table IV.6).

Blast: At 45 DAS: The mean blast incidence in Zones A₁, A and B was 1.6, 2.1 and 1.6 score, respectively (Table IV.6).

Zone A₁: All the 42 entries were resistant to blast (0.8 to 2.4%) (Table IV.6).

Zone A: 41 entries were resistant; 01 entry was moderately resistant to blast (1.1 to 3.3%) (Table IV.6).

Zone B: All the 42 entries were resistant to blast (0.5 to 2.5%) (Table IV.6).

Blast: At 60 DAS: The mean blast incidence in Zones A₁, A and B was 2.4, 2.9 and 2.5 score, respectively (Table IV.6).

Zone A₁: 40 entries were resistant, 02 entries was moderately resistant to blast (1.5 to 3.5%) (Table IV.6).

Zone A: 27 entries were resistant, 15 entries was moderately resistant to blast (2.0 to 4.2%) (Table IV.6).

Zone B: 32 entries were resistant, 10 entries was moderately resistant to blast (1.4 to 4.1%) (Table IV.6).

Smut: Highest mean disease incidence of 70.0% (MPMH 21) was recorded at Gwalior. Mean smut incidence in Zone A₁ and A was 3.8% and 5.4%, respectively. Zone B is not considered for promotion. Mean smut incidence of test entries across zones ranged from 0.2% to 17.3%. All the entries tested in Zone A₁ and A was resistant to smut incidence (Table IV.6).

Rust: At 60 DAS: The mean rust incidence in Zones A₁, A and B was 0.4%, 0.2% and 11.8%, respectively. Mean rust incidence of test entries across zones ranged from 3.6% to 10.9%. In Zone A₁, A and B all the entries were resistant to rust incidence (Table IV.6).

Ergot: The mean ergot incidence in Zones A₁, A and B was 2.7%, 2.7% and 1.1%, respectively. Mean ergot incidence of test entries across zones ranged from 0.5% to 2.3%. All the entries tested were resistant to ergot incidence in A₁, A and Zone B (Table IV.6).

PMPT III: Monitoring Disease Resistance Stability of Released Popular Hybrids/ Varieties

Downy mildew: A total of Forty four entries were screened at ten different centres (Table IV D). All the entries included in this trial were scored for downy mildew disease incidence at 30 DAS pre-tillering stage and 60 DAS at soft-dough stage.

Zone A₁: At 30 DAS, the range of downy mildew incidence was 0.0-5.4%. 43 entries tested were highly resistant, and one entry was moderately resistant to downy mildew (Table IV.7).

At 60 DAS, the mean disease incidence for the entries evaluated ranged between 0.5% to 8.3%. Thirty-nine entries were highly resistant, 05 entries were moderately resistant, to downy mildew (Table IV.8).

Zone A: At 30 DAS, the range of downy mildew incidence was 0.0-4.3%. All the entries tested were highly resistant to downy mildew (Table IV.7).

At 60 DAS, the mean disease incidence for the entries evaluated ranged between 0.3-6.6%. Fourty entries were highly resistant, four entries were moderately resistant to downy mildew (Table IV.8).

Zone B: At 30 DAS, mean disease incidence for the entries evaluated ranged between 0.0-4.7%, All the entries tested were highly resistant to downy mildew (Table IV.7).

At 60 DAS, mean disease incidence for the entries evaluated ranged between 0.0-12.7%, thirty six entries were highly resistant and seven entries were moderately resistant and one entry is susceptible to downy mildew (Table IV.8).

At all India level: At 30 DAS, the range of downy mildew incidence was 0.4-3.4. All the entries tested were highly resistant to downy mildew (Table IV.7).

At 60 DAS, the mean disease incidence for the entries evaluated ranged between 0.5% to 7.2%. fourty one entries were highly resistant, three entries were moderately resistant to downy mildew (Table IV.8).

Other diseases (PMPT III): An overview of smut, rust, blast and ergot of highly resistant entries is summarized in table IV.H.

Blast: At 30 DAS, The mean blast score in Zone A₁, A and B were 1.0, 0.8 and 0.9 respectively (Table IV.9).

Zone A₁: All the entries were highly resistant to blast (0.0 to 2.0) (Table IV.9).

Zone A: All the entries were highly resistant to blast (0.0 to 1.8) (Table IV.9).

Zone B: All the entries were highly resistant to blast (0.3 to 1.5) (Table IV.9).

Blast: At 45 DAS, The mean blast score in Zone A₁, A and B were 1.5, 1.6 and 1.6 respectively (Table IV.9).

Zone A₁: All the entries were highly resistant to blast (0.0 to 2.4) (Table IV.9).

Zone A: All the entries were highly resistant to blast (0.0 to 2.6) (Table IV.9).

Zone B: All the entries were highly resistant to blast (1.0 to 2.5) Table IV.9).

Blast: At 60 DAS, The mean blast score in Zone A₁, A and B were 2.1, 2.3 and 2.9 respectively (Table IV.9).

Zone A₁: 41 entries were resistant & 03 entries were moderately resistant to blast (1.2 to 3.7) (Table IV.9).

Zone A: 37 entries were resistant & 07 entries were moderately resistant to blast (1.0 to 5.0) (Table IV.9).

Zone B: 26 entries were resistant & 18 entries were moderately resistant to blast (2.0 to 4.5) (Table IV.9).

Smut: The mean disease incidence across the zones was 5.4%. Highest mean incidence was recorded at Gwalior (65.0%). In Zone A₁ all the entries were resistant to smut. In Zone A, 43 entries were resistant and 3 entries were susceptible to smut. Zone B is not considered for promotion (Table IV.9).

Rust: At 60 DAS: The mean rust incidence in Zone A₁, A was 1.4, and 0.9% and in Zone B it was 12.1%. In Zone A₁ and A, all the entries tested resistant to rust and in Zone B, 42 entries were resistant and 2 entries were susceptible to rust (Table IV.9).

Ergot: The mean ergot incidence in Zones A₁, A and B was 2.4%, 2.4% and 1.4%, respectively. All the entries tested were resistant to ergot incidence in A₁, A and Zone B (Table IV.9).

PMPT IV: Characterization of Pathogen Diversity in Downy Mildew of Pearl Millet

Pathogenic diversity analysis by virulence nursery: The downy mildew disease incidence was recorded at the pre-tillering stage (Table IV.10) and at the soft dough stage (Table IV.11).

Pearl millet Downy Mildew Virulence Nursery (PMDMVN) is a collaborative research project of ICAR (AICRP on PM) and ICRISAT that provides information on virulence diversity among *S. graminicola* populations and resistance stability in pearl millet lines across different locations. The reliable disease pressure (>70% DM) was observed on 7042S at the soft-dough stage at 8 of the 11 locations, whereas very low DM incidence was observed on 7042S (2.0 %) at Aurangabad followed by 3.2% Anand location. In general, there was an increase in disease incidence from the pre-tillering stage (Table IV.10) to the soft-dough stage (Table IV.11).

Of the 51 test entries evaluated in PMDMVN 2021, high level of downy mildew resistance was observed at 60 DAS in eight entries (IP 18294, ZG 3, ICMB 101840, ICMR 101031, J-2571, J-2609, J-2634, HB-21-4); these lines recorded $\leq 5\%$ downy mildew incidence across all the test locations. Whereas ten lines (834 B, IP 5719-3, IP 12374-1, IP 17396-4, P 1449-2, YG 8, ICMR 100166, J-2595, J-2612, 203-BCS-21) were resistant at 6 locations. Fifteen entries were resistant at 4 locations, and eight at 3 locations, four at 2 locations, two at 2 locations, two at 2 locations, one at 4 locations and one at 2 locations.

The variation in the pathogen populations was evident from the variable DM incidence of test lines across locations as well as by the mean disease incidence levels at different locations. Considering the disease incidence at the soft-dough stage, the pathogen population at Dhule appeared most virulent (31 resistant lines), followed by the pathogen population at Mysore (30 resistant lines) (Table IV.11). Mean DM incidence at Dhule was highest among test locations with 5.8% mean downy mildew across entries followed by 5.4% mean DM across entries at Mysore. Most of the entries (46) were resistant at Aurangabad location followed by 44 resistant lines at Jamnagar, Hisar and Jaipur locations.

PMPT V: Pearl Millet Blast Variability Nursery (PMBVN)

The PMBVN-2021 comprising 50 advanced breeding and germplasm lines with susceptible check was evaluated at AICRP on PM centers (Anand, Aurangabad, Dhule, Jaipur, Gwalior, Hisar, Mysore, IARI-New Delhi, Jamnagar, Mandor and Vizianagaram) and ICRISAT, Patancheru during the rainy season of 2021.

The blast severity was recorded at the soft dough stage using a progressive 0-9 scale as: 0= no infection; 1= small brown specks of pinhead size; 2= larger brown specks; 3= small, roundish to slightly elongated, necrotic gray spots, about 1-2 mm in diameter with a brown margin; 4= typical blast lesions usually confined to the area between main veins, covering <5% of the leaf area; 5= typical blast lesions covering 6-10% of the leaf area; 6= typical blast lesions covering 11-25% of the leaf area; 7= typical blast lesions covering 26-50% of the leaf area; 8= typical blast lesions covering 51-75% of the leaf area and many leaves dead; 9= all leaves dead.

At 30 DAS:

Data from Twelve locations were used in the data analysis. No data has been reported from Anand and Jamnagar. None of the entries in the PMBVN 2021 was highly resistant at all the test locations. However, compare to entries mean 49 entries were found to be resistant and 01 entry was moderately resistant (ICMR 12777) to blast. 20 entries ICMR 06666, IP 12374-1-1-2, HP-B-458, HR-21-9, ICMR 10888, ICMR 06444, ICMB 01333, ICMR 11666, ICMR 08444, IP 17396-4-1-1, ICMR 11019, J-2571, ICMB 97222, HR-21-10, HP-B-489, ICMR 11003, DHLBI 1822, J-2612, DHLBI 1806, HP-B-460 were resistant at all test locations. Whereas 13 lines (HR-21-7, HP-B-488, HR-21-8, HP-B-465, IP 20715-1-1-5, HP-B-502, DHLBI 1825, DHLB 36 B, HR-21-6, ICMR 11009, ICMR 10999, JMSB 20191, ICMR 08111) were found resistant at nine test locations., 05 lines ICMR 08222, IP 21187-P1, IP 8863-1-1, IP 7846, MDMRRC S1-1-136-1-2-1-B were found to be resistant at eight test locations. The breeding lines showing stable blast resistance across locations could be used for the development of blast-resistant pearl millet hybrids.

The variation in the pathogen population was evident from the mean severity levels and differential reaction of the test entries at different locations. Mean blast severity across pearl millet lines was highest at New Delhi (3.9 mean score) followed by the pathogen population at Patancheru and Jaipur with 2.6 and 2.2 mean blast score, respectively; whereas the lowest mean blast severity (0.3) was observed for pathogen populations at Mandor and Gwalior location (Table IV.12). All of the entries (50) were resistant at Mandor and Gwalior location followed by Aurangabad (49 entries).

At 45 DAS:

Data from Twelve locations were used in the data analysis. No data has been reported from Aurangabad, Anand and Jamnagar. None of the entries in the PMBVN 2021 was highly resistant at all the test locations. However, compare to entries mean 34 entries were found to be resistant and 16 entries was moderately resistant to blast. 03 entries ICMR 11009, ICMR 08444, HP-B-489 were resistant at all test locations. Whereas 09 lines (ICMR 06666, HP-B-458, IP 12374-1-1-2, HR-21-9, ICMB 01333, ICMR 11666, IP 21187-P1, HR-21-10, IP 20715-1-1-5) were found resistant at eight test locations., 09 lines HR-21-7, HP-B-465, ICMR 10888, J-2571, ICMR 08222, IP 17396-4-1-1, JMSB 20191, DHLBI 1806, HP-B-502 were found to be resistant at seven test locations. The breeding lines showing stable blast resistance across locations could be used for the development of blast-resistant pearl millet hybrids.

The variation in the pathogen population was evident from the mean severity levels and differential reaction of the test entries at different locations. Mean blast severity across pearl millet lines was highest at New Delhi (4.9 mean score) followed by the pathogen population at Patancheru and Vizianagaram with 4.0 mean blast score, respectively; whereas the lowest mean blast severity (0.9) was observed for pathogen populations at Mandor followed by Gwalior location with 1.5 mean blast severity (Table IV.12). All of the entries (50) were resistant at Mandor followed by Gwalior location (46 entries).

At 60 DAS:

Data from Twelve locations were used in the data analysis. None of the entries in the PMBVN 2022 was highly resistant at all the test locations. However, compare to entries mean 17 entries were found to be resistant and 32 entries were moderately resistant and 01 entry was (ICMB 95444) to blast. 05 entries IP 12374-1-1-2, ICMR 06666, HP-B-458 , ICMR 11009, IP 21187-P1 were resistant at 10 test locations. Whereas 08 lines (ICMB 01333, ICMR 08222, ICMR 08444, HP-B-465, HP-B-502, J-2571, JMSB 20191, ICMR 11003) were found resistant at eight test locations., 07 lines IP 17396-4-1-1, ICMR 08111, ICMR 10888, ICMR 11666, ICMR 06444, DHLBI 1825, HR-21-6 were found to be resistant at seven test locations. The breeding lines showing stable blast resistance across locations could be used for the development of blast-resistant pearl millet hybrids.

The variation in the pathogen population was evident from the mean severity levels and differential reaction of the test entries at different locations. Mean blast severity across pearl millet lines was highest at New Delhi (5.2 mean score) followed by the pathogen population at Patancheru and Dhule with 5.1 and 4.8 mean blast score, respectively; whereas the lowest mean blast severity (1.5) was observed for pathogen populations at Aurangabad and Anand location (Table IV.12). 44 entries were resistant at Aurangabad and 42 entries were resistant at Anand location to blast.

2. Genetic analysis through DNA markers: Variability in downy mildew pathogen and grouping of pathotypes based on the pathogenicity test

All the existing pathotypes of pearl millet downy mildew pathogens were collected from different regions of pearl millet growing areas and maintained under greenhouse conditions and oospore samples and the host differentials are being maintained.

PMPT VI: BASIC RESEARCH

Green synthesis of Cu-chitosan mediated Pearl millet disease protection

In the present investigation we employed green synthesis of copper-chitosan nanoparticles. The synthesized nanoparticles were examined for various physicochemical analyses such as X-ray diffraction, scanning electron microscopy, energy dispersive X-ray spectroscopy, Fourier transform infrared, and dynamic light scattering (DLS) (dynamic light scattering) analysis. The synthesized Cu-chitosan nanoparticles were used to assess antifungal assays and anti-mildew property, and also demonstrate the induced systemic nature of blast and downy mildew disease resistance under greenhouse conditions.

Characterization of Effector Protein-Encoding Genes in *Sclerospora graminicola*

Effectors are the proteins secreted by several fungi and bacteria that manipulate the host cell structure and function. This current study aims to identify genes encoding effector proteins from the *S. graminicola* genome and validate them through molecular techniques. In silico analyses were employed for candidate effector prediction. A total of 845 secretory trans-membrane proteins were predicted, out of which 35 proteins carrying LxLFLAK (Leucine–any amino acid–Phenylalanine–Leucine–Alanine–Lysine) motif were crinkler, 52 RxLR (Arginine, any amino

acid, Leucine, Arginine), and 17 RxLR-dEER putative effector proteins. Gene validation analysis of 17 RxLR-dEER effector protein-producing genes was carried out, of which 5 genes were amplified on the gel. These novel gene sequences were submitted to NCBI. This study is the first report on the identification and characterization of effector genes in *S.graminicola*. This dataset will aid in the integration of effector classes that act independently, paving the way to investigate how pearl millet responds to effector protein interactions. These results will assist in identifying functional effector proteins involving the omic approach using newer bioinformatics tools to protect pearl millet plants against downy mildew disease.

PMPT VII: Management of downy mildew by using organic practices.

During the year, Integrated Disease Module which included the moderately resistant host (Dhanaksakthi), Seed Treatment @ 8.0 g/kg Microbial Consortia (Combination of Trichod/Bacillus/Pseudomonas), Seed Treatment @ 8.0 g/kg Microbial Consortia. (Combination of Mycorrh/PSB/Pseudo/Trichod) (Mysore source), Seed Treatment -Metalaxyl 35 SD (6 g/kg) and Control check was conducted for the evaluation of the IDM package against pearl millet downy mildew disease. In addition, the effect of this module on the seed germination, fodder and grain yield was also assessed in the trial. The performance of biological agent was positive in enhancing seed germination percentage, grain yield, fodder yield and protection against downy mildew disease (Table IV.13).

PMPT VIII: Management of blast disease by using chemical and bioagents.

During the year, Integrated Disease Module which included the moderately resistant host (Dhanashakti), Initium (Tryfloxystrobin + Tebuconazole @ 0.04% 2 sprays after 20 DAS and 35 DAS) and bio-control (Seed treatment with *Chitosan* @3.75g/kg seed + 2 sprays of *Pseudomonas fluorescens* @10g/lt after 20 DAS and 35 DAS, Seed treatment with *Chitosan* @3.75g/kg seed + 2 sprays of *Bacillus subtilis* @10g/lt after 20 DAS and 35 DAS, Spray treatment with *Pseudomonas fluorescens* @10g/lt 20 DAS and Tryfloxystrobin + Tebuconazole @ 0.04% after 35 DAS, Spray treatment with Tryfloxystrobin + Tebuconazole @ 0.04% 20 DAS and *Bacillus subtilis* @10g/lt after 35 DAS) was conducted for the evaluation of the IDM package against pearl millet blast disease. In addition, the effect of this module on the seed germination, fodder and grain yield was also assessed in the trial. The performances of chemical and biological agent were positive in enhancing seed germination percentage, grain yield, fodder yield and protection against blast disease (Table IV.14).

PMPT IX: Pearl Millet diseases monitoring on Farmer's Field

Madhya Pradesh: Pearl millet fields of northern region of Madhya Pradesh comprising morena, bhind and gwalior districts were surveyed during kharif 2022 to monitor the status of pearl millet diseases on the farmer fields. The diseases were recorded on 61 fields having the total area of 25.3 hectares. In all the 61 fields hybrids were commonly observed and a total of 7 known and some unknown hybrids were found on the fields. all the surveyed fields were completely free from downy mildew. smut severity was also quite low and it was in the range of 0 to traces, while blast was observed in all the surveyed fields with the severity of 2 to 15%. Rust and ergot

were not observed during the survey however, these two diseases were observed on experimental fields from last week of September 2022. (Table IV.15a).

Karnataka: The survey was conducted in Northern Karnataka during Kharif 2022. A total of 05 taluks in four districts viz., Bellary, Bagalkote, Bijapur and Koppala were surveyed for downy mildew, blast, rust and ergot in approximately 50 hectares of pearl millet crop. Majority of the fields visited witnessed heavy to moderate rainfall. Most of the Pearl Millet fields surveyed were intercropped with legumes. There was little incidence of downy mildew in Karnataka on the surveyed hybrids and average downy mildew incidence across the area surveyed was 1-7%. Rust severity ranged from 1-30% across the surveyed fields. Ergot severity ranged from 1-2%. Blast incidence was observed ranged from 1-45% in the surveyed fields (Table IV.15b).

Rajasthan: Seven districts viz., Jaipur, Sikar, Ajmer, karauli, Baratpur, Dosa and Alwar were surveyed for downy mildew and blast soft dough stage during *kharif* 2022. A total of 59 hectares were surveyed for incidence of downy mildew and it ranged from 2-15%. Blast incidence was severe in all locations and it ranged from 2-25%. Rust incidence ranged from 0-2%. Ergot and smut ranged from 2-30% and 2-70% (Table IV.15c).

Maharashtra: During *Kharif* 2022 pearl millet field surveys were conducted and fields were surveyed for the incidence of downy mildew, smut, rust, ergot and blast incidence. Majority of the fields surveyed were infected by downy mildew (1-10%), smut, and ergot (0-3%) incidence. Most of the fields surveyed were infested with rust (0-15%) and blast (1-30%) (Table IV.15d).

Gujarat: The survey of pearl millet diseases was conducted during *kharif* 2022 in Gujarat. A Total of 87 field were surveyed in different six districts i.e. Anand (11 fields), Surendranagar (13 fields), Banaskantha (35 fields), Kutch (14 fields), Mehsana (8 fields) Patan (6 fields). The downy mildew incidence was recorded 0.0 to 10% blast 0-3%, ergot 0-25%; smut 0-3% and there is no incidence of rust disease. In summer 112 fields were surveyed in eight districts viz., Anand (24 fields), Surendranagar (9 fields), Banaskantha (27 fields), Kutch (10 fields), Mehsana (19 fields) Jamnagar (4 fields), Kheda (12 fields), Morbi (7 fields). The downy mildew disease incidence is ranged from 0-7%; rust ranged from 0-9.5% and there is no incidence of blast and smut disease during summer.

Tamil Nadu: During *Kharif* 2022 field survey included seventeen locations. The crop was surveyed in a total of 21acres area. The popular cultivar was Pioneer hybrid and CO 10. Blast incidence in the fields ranged from 1-5 score, rust 2-12% and low incidence of smut, ergot, and rust was observed (Table IV.15f).

CHAPTER IV: PLANT PATHOLOGY

Table IV.B: An Overview of Downy Mildew Disease Reaction of Initial Pearl Millet Hybrids and Varieties at Different Centres - PMPT I

Range of DM inci. (%)	No. of entries showing mean disease incidence at Zone A and B																		
	Zone A										Zone B								
	MDR		JPR		HSR		JMR		GLR		MYS		DHL		ABD1		CBE		
	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	
>0-5	113.0	83.0	114.0	89.0	106.0	105.0	77.0	72.0	114.0	110.0	78.0	50.0	90.0	88.0	115.0	110.0	113.0	113.0	
>5-10	2.0	31.0	1.0	25.0	1.0	1.0	24.0	18.0	1.0	5.0	27.0	35.0	18.0	18.0	0.0	5.0	2.0	2.0	
>10-25	0.0	1.0	0.0	1.0	0.0	1.0	12.0	23.0	0.0	0.0	10.0	27.0	6.0	8.0	0.0	0.0	0.0	0.0	
>25	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	3.0	1.0	1.0	0.0	0.0	0.0	0.0	
NG					8.0	8.0													

* NG No Germination

Table IV. C: An Overview of Downy Mildew Disease Reaction of Advanced Pearl Millet Hybrids and Varieties at Different Centres - PMPT II

Range of DM inci. (%)	No. of entries showing mean disease incidence at Zone A and B																				
	Zone A										Zone B										
	MDR		JPR		HSR		JMR		GLR		MYS		DHL		ABD1		CBE		PTR		
	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	
>0-5	34.0	24.0	30.0	25.0	33.0	32.0	20.0	16.0	34.0	32.0	20.0	10.0	26.0	25.0	34.0	34.0	32.0	32.0	34.0	32.0	
>5-10	0.0	10.0	4.0	9.0	1.0	2.0	8.0	10.0	0.0	2.0	10.0	11.0	8.0	9.0	0.0	0.0	1.0	1.0	0.0	1.0	
>10-25	0.0	0.0	0.0	0.0	0.0	0.0	5.0	6.0	0.0	0.0	4.0	13.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0	
>25	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

CHAPTER IV: PLANT PATHOLOGY

Table IV.D: An Overview of Downy Mildew Disease Reaction of Initial Pearl Millet Hybrids and Varieties at Different Centres - PMPT III

Range of DM inci. (%)	No. of entries showing mean disease incidence at Zone A and B																	
	Zone A										Zone B							
	MDR		JPR		HSR		JMR		GLR		MYS		DHL		ABD1		CBE	
	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS	30 DAS	60 DAS
>0-5	38.0	25.0	34.0	21.0	37.0	36.0	29.0	21.0	37.0	37.0	38.0	25.0	35.0	34.0	38.0	38.0	37.0	31.0
>5-10	0.0	13.0	4.0	14.0	1.0	2.0	6.0	10.0	1.0	1.0	0.0	12.0	1.0	2.0	0.0	0.0	1.0	7.0
>10-25	0.0	0.0	0.0	3.0	0.0	0.0	3.0	7.0	0.0	0.0	0.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0
>25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Disease Categorations

Downy Mildew

0-5% (Resistant)

5-10% (Moderately resistant)

10-25% (Susceptible)

>25% (Highly susceptible)

Blast

Score (0) Highly resistant

0.1-3: Resistant

>3-5: Moderately Resistant

>5-7: Susceptible

>7-9: Highly susceptible

Rust

0-20% (Resistant)

>20% (Susceptible)

Smut

0-20% (Resistant)

>20% (Susceptible)

Ergot

0-20% (Resistant)

>20% (Susceptible)

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
IR I		71.8	85.9	67.5	68.5	73.4	75.0	83.8	74.2	78.9	75.1	73.4	78.0	75.4	85.9
IRII		71.4	52.1	68.7	63.9	16.9	76.0	93.4	88.1	74.2	64.1	54.6	82.9	67.2	93.4
PIT 101	MH 2662	1.4	1.7	0.0	12.8	0.0	9.8	0.0	7.4	0.0	1.1	3.2	4.3	3.7	12.8
PIT 102	MH 2663	0.0	0.0	0.0	11.8	0.0	14.3	0.0	3.7	0.0	0.0	2.4	4.5	3.3	14.3
PIT 103	MH 2664	0.0	0.0	0.0	0.0	0.0	6.7	0.0	2.0	0.0	0.0	0.0	2.2	1.0	6.7
PIT 104	MH 2665	4.8	0.0	0.0	9.6	0.0	14.1	0.0	13.3	1.6	1.6	2.9	7.2	4.8	14.1
PIT 105	MH 2666	4.4	0.0	0.0	0.0	1.4	6.0	2.9	0.0	0.0	1.5	1.2	2.2	1.6	6.0
IR I		83.6	83.6	61.5	69.2	72.3	77.5	73.1	75.7	59.2	76.3	74.1	71.4	72.9	83.6
IRII		70.0	53.4	67.1	64.5	9.7	75.7	74.0	71.9	72.6	63.5	53.0	73.6	62.1	75.7
PIT 106	MH 2667	1.9	0.0	2.8	0.0	2.9	5.9	0.0	6.2	0.0	1.6	1.5	3.0	2.2	6.2
PIT 107	MH 2668	4.1	0.0	3.8	10.0	1.3	20.7	0.0	16.2	0.0	2.6	3.8	9.2	6.2	20.7
PIT 108	MH 2669	3.3	0.0	5.5	15.0	5.1	6.6	0.0	1.0	0.0	2.9	5.8	1.9	4.1	15.0
PIT 109	MH 2670	3.2	0.0	0.0	6.9	0.0	9.3	0.0	2.3	0.0	1.1	2.0	2.9	2.4	9.3
PIT 110	MH 2671	3.5	0.0	0.0	2.4	0.0	8.5	0.0	10.4	1.4	1.2	1.2	5.1	2.9	10.4
IR I		76.8	83.3	69.6	65.1	72.8	74.5	58.8	76.8	80.3	76.6	73.5	72.6	73.1	83.3
IRII		71.2	51.9	67.5	67.7	9.0	77.5	83.8	73.6	91.2	63.6	53.5	81.5	65.9	91.2
PIT 111	MH 2672	3.5	0.0	0.0	5.7	0.0	4.8	0.0	0.0	0.0	1.2	1.8	1.2	1.6	5.7
PIT 112	MH 2673	1.6	0.0	1.6	4.7	0.0	4.7	0.0	0.0	0.0	1.1	1.6	1.2	1.4	4.7
PIT 113	MH 2674	1.5	0.0	0.0	9.5	0.0	2.8	0.0	0.0	0.0	0.5	2.2	0.7	1.5	9.5
PIT 114	MH 2675	2.7	0.0	0.0	2.6	0.0	3.5	0.0	2.9	1.7	0.9	1.1	2.0	1.5	3.5
PIT 115	MH 2676	1.6	0.0	0.0	2.0	0.0	2.0	0.0	0.0	1.5	0.5	0.7	0.9	0.8	2.0
IR I		75.3	80.9	61.2	69.1	71.8	75.4	43.8	64.9	73.7	72.5	71.7	64.4	68.4	80.9
IRII		73.4	53.2	60.4	64.4	10.8	78.5	71.3	77.6	80.0	62.4	52.5	76.8	63.3	80.0
PIT 116	MH 2677	1.6	0.0	0.0	5.3	1.3	4.8	0.0	0.0	0.0	0.5	1.6	1.2	1.4	5.3
PIT 117	MH 2678	3.9	0.0	0.0	2.7	0.0	4.1	0.0	1.2	0.0	1.3	1.3	1.3	1.3	4.1

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 118	MH 2679	3.3	0.0	0.0	2.0	0.0	3.8	0.0	0.0	0.0	1.1	1.1	1.0	1.0	3.8
PIT 119	MH 2680	1.7	0.0	0.0	0.0	0.0	3.9	0.0	3.7	0.0	0.6	0.3	1.9	1.0	3.9
PIT 120	MH 2681	2.9	1.8	0.0	2.9	0.0	4.0	0.0	0.0	0.0	1.6	1.5	1.0	1.3	4.0
IR I		71.6	81.8	58.1	76.3	75.3	78.0	65.0	76.2	86.3	70.5	72.6	76.4	74.3	86.3
IR II		70.7	53.8	62.5	54.2	6.6	78.5	57.7	81.1	74.3	62.3	49.6	72.9	59.9	81.1
PIT 121	MH 2682	1.4	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.5	0.3	0.3	0.3	1.4
PIT 122	MH 2683	3.1	0.0	0.0	0.0	0.0	3.6	0.0	1.9	0.0	1.0	0.6	1.4	1.0	3.6
PIT 123	MH 2684	1.5	0.0	0.0	0.0	0.0	3.8	0.0	1.8	1.4	0.5	0.3	1.7	0.9	3.8
PIT 124	MH 2685	3.5	2.3	0.0	2.5	2.6	5.3	1.3	7.6	0.0	1.9	2.2	3.5	2.8	7.6
PIT 125	MH 2686	0.0	0.0	NG	7.7	0.0	6.1	1.4	0.0	0.0	0.0	1.9	1.9	1.9	7.7
IR I		74.0	87.1	62.8	73.1	67.1	78.0	59.2	81.3	74.7	74.6	72.8	73.3	73.0	87.1
IR II		70.5	53.8	50.0	68.5	20.8	75.2	58.8	70.2	81.0	58.1	52.7	71.3	61.0	81.0
PIT 126	MH 2687	2.9	0.0	0.0	2.4	2.1	3.7	0.0	3.1	1.3	1.0	1.5	2.0	1.7	3.7
PIT 127	MH 2688	3.1	2.0	0.0	0.0	0.0	2.9	0.0	1.8	0.0	1.7	1.0	1.2	1.1	3.1
PIT 128	MH 2689	1.6	0.0	0.0	15.8	0.0	3.2	0.0	2.9	0.0	0.5	3.5	1.5	2.6	15.8
PIT 129	MH 2690	1.7	1.8	0.0	0.0	1.4	6.7	0.0	6.1	0.0	1.2	1.0	3.2	2.0	6.7
PIT 130	MH 2691	1.6	0.0	0.0	5.5	1.5	11.9	0.0	14.2	1.4	0.5	1.7	6.9	4.0	14.2
IR I		74.4	83.8	57.1	68.2	76.2	79.0	71.3	78.7	84.3	71.8	71.9	78.3	74.8	84.3
IR II		70.9	54.1	61.1	68.8	11.6	80.0	56.3	82.5	78.8	62.0	53.3	74.4	62.7	82.5
PIT 131	MH 2692	3.8	0.0	0.0	3.7	0.0	8.2	0.0	6.9	0.0	1.3	1.5	3.8	2.5	8.2
PIT 132	MH 2693	1.9	0.0	0.0	18.4	0.0	2.5	0.0	1.1	0.0	0.6	4.1	0.9	2.6	18.4
PIT 133	MH 2694	3.2	0.0	0.0	28.3	0.0	10.0	0.0	3.3	1.3	1.1	6.3	3.7	5.1	28.3
PIT 134	MH 2695	2.9	0.0	0.0	4.5	0.0	4.4	0.0	4.6	0.0	1.0	1.5	2.3	1.8	4.6
PIT 135	MH 2696	3.0	0.0	0.0	6.1	0.0	8.3	0.0	5.3	1.5	1.0	1.8	3.8	2.7	8.3
IR I		72.4	85.0	60.6	67.1	71.8	80.0	83.8	86.5	84.9	72.7	71.4	83.8	76.9	86.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
IR II		69.3	51.4	64.3	82.9	13.9	79.5	58.8	87.3	84.8	61.7	56.4	77.6	65.8	87.3
PIT 136	MH 2697	2.5	0.0	NG	0.0	0.0	4.0	0.0	0.0	0.0	1.3	0.6	1.0	0.8	4.0
PIT 137	MH 2698	2.5	0.0	0.0	4.2	0.0	4.6	0.0	2.1	0.0	0.8	1.3	1.7	1.5	4.6
PIT 138	MH 2699	3.9	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	1.3	0.8	0.4	0.6	3.9
PIT 139	MH 2700	4.0	0.0	0.0	0.0	0.0	4.5	1.3	2.3	0.0	1.3	0.8	2.0	1.3	4.5
PIT 140	MH 2701	2.6	2.2	1.8	5.4	0.0	81.0	0.0	5.8	1.3	2.2	2.4	22.0	11.1	81.0
IR I		73.1	88.1	61.9	61.1	70.0	75.6	83.8	84.9	83.8	74.4	70.8	82.0	75.8	88.1
IR II		71.0	52.6	78.8	83.6	10.4	79.0	83.8	80.6	80.1	67.5	59.3	80.9	68.9	83.8
PIT 141	MH 2702	3.6	1.9	0.0	0.0	0.0	2.5	0.0	1.1	1.8	1.9	1.1	1.4	1.2	3.6
PIT 142	MH 2703	1.5	0.0	0.0	0.0	0.0	4.5	2.6	0.0	0.0	0.5	0.3	1.8	1.0	4.5
PIT 143	MH 2704	3.9	0.0	0.0	1.9	0.0	4.0	0.0	0.0	0.0	1.3	1.2	1.0	1.1	4.0
PIT 144	MH 2705	1.6	2.2	NG	2.0	1.3	3.7	0.0	1.9	0.0	1.9	1.8	1.4	1.6	3.7
PIT 145	MH 2706	1.6	3.5	0.0	7.1	0.0	4.6	0.0	0.0	0.0	1.7	2.4	1.2	1.9	7.1
IR I		74.1	83.1	48.1	66.7	67.9	85.0	83.8	73.7	85.6	68.5	68.0	82.0	74.2	85.6
IR II		70.8	54.5	62.2	77.0	12.8	80.0	88.8	82.0	82.1	62.5	55.5	83.2	67.8	88.8
PIT 146	MH 2707	3.9	2.0	0.0	3.9	0.0	4.8	0.0	1.3	0.0	2.0	2.0	1.5	1.8	4.8
PIT 147	MH 2708	2.5	3.8	0.0	9.4	0.0	14.4	1.4	80.3	0.0	2.1	3.1	24.0	12.4	80.3
PIT 148	MH 2709	3.5	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	1.2	0.7	0.8	0.8	3.5
PIT 149	MH 2710	3.7	0.0	0.0	0.0	0.0	6.0	0.0	0.0	1.4	1.2	0.7	1.9	1.2	6.0
PIT 150	MH 2711	4.0	0.0	0.0	1.9	0.0	5.0	0.0	3.1	0.0	1.3	1.2	2.0	1.6	5.0
IR I		71.9	83.8	61.3	73.8	72.9	78.8	83.8	82.5	83.6	72.3	72.8	82.2	76.9	83.8
IR II		70.4	55.1	65.9	60.9	15.4	81.0	58.8	84.5	85.1	63.8	53.5	77.3	64.1	85.1
PIT 151	MH 2712	3.8	0.0	0.0	12.5	1.3	4.9	0.0	0.0	1.3	1.3	3.5	1.5	2.6	12.5
PIT 152	MH 2713	1.6	3.2	0.0	10.5	0.0	9.1	0.0	7.4	0.0	1.6	3.0	4.1	3.5	10.5
PIT 153	MH 2714	3.3	1.9	0.0	2.8	0.0	8.3	0.0	7.3	2.8	1.7	1.6	4.6	2.9	8.3

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 154	MH 2715	0.0	0.0	0.0	1.7	0.0	1.0	0.0	1.0	0.0	0.0	0.3	0.5	0.4	1.7
PIT 155	MH 2716	1.9	3.9	0.0	8.3	0.0	4.2	0.0	1.8	0.0	1.9	2.8	1.5	2.2	8.3
IR I		72.5	85.5	58.8	73.1	70.7	79.3	71.3	75.8	78.3	72.3	72.1	76.2	73.9	85.5
IR II		71.1	50.0	62.5	63.1	11.3	80.1	71.3	81.5	84.4	61.2	51.6	79.3	63.9	84.4
PIT 156	MH 2717	3.7	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.2	0.7	0.5	0.6	3.7
PIT 157	MH 2718	0.0	0.0	0.0	0.0	0.0	2.4	0.0	1.1	0.0	0.0	0.0	0.9	0.4	2.4
PIT 158	MH 2719	3.1	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.0	0.6	0.8	0.7	3.1
PIT 159	MH 2720	0.0	0.0	0.0	2.3	0.0	3.0	1.3	0.0	0.0	0.0	0.5	1.1	0.7	3.0
PIT 160	MH 2721	3.6	3.4	0.0	0.0	0.0	5.0	2.6	7.1	0.0	2.3	1.4	3.7	2.4	7.1
IR I		75.6	82.9	48.8	64.1	77.0	78.5	60.0	84.1	78.2	69.1	69.7	75.2	72.1	84.1
IR II		72.5	55.1	66.7	81.0	13.1	80.0	71.3	82.6	79.8	64.8	57.7	78.4	66.9	82.6
PIT 161	MH 2722	3.9	2.1	0.0	0.0	0.0	4.2	0.0	0.0	0.0	2.0	1.2	1.1	1.1	4.2
PIT 162	MH 2723	2.3	0.0	0.0	0.0	0.0	4.0	1.4	4.0	0.0	0.8	0.5	2.3	1.3	4.0
PIT 163	MH 2724	3.9	0.0	0.0	5.2	0.0	6.0	2.7	11.0	0.0	1.3	1.8	4.9	3.2	11.0
PIT 164	MH 2725	4.7	3.8	0.0	0.0	0.0	4.1	0.0	0.0	1.6	2.8	1.7	1.4	1.6	4.7
PIT 165	MH 2726	2.8	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.9	0.6	0.8	0.7	3.2
IR I		72.5	85.0	60.0	76.9	70.6	81.0	58.8	84.1	83.9	72.5	73.0	76.9	74.7	85.0
IR II		72.0	52.0	66.3	66.2	6.8	80.0	71.3	74.2	83.8	63.4	52.6	77.3	63.6	83.8
PIT 166	MH 2727	2.2	1.9	0.0	8.3	0.0	5.4	0.0	0.0	0.0	1.4	2.5	1.4	2.0	8.3
PIT 167	MH 2728	3.0	0.0	0.0	2.6	0.0	6.1	0.0	6.9	0.0	1.0	1.1	3.3	2.1	6.9
PIT 168	MH 2729	3.1	2.2	0.0	2.2	0.0	5.2	0.0	8.3	0.0	1.8	1.5	3.4	2.3	8.3
PIT 169	MH 2730	0.0	1.9	0.0	0.0	0.0	1.0	0.0	0.9	0.0	0.6	0.4	0.5	0.4	1.9
PIT 170	MH 2731	1.9	3.8	0.0	3.8	0.0	2.1	1.4	0.0	1.4	1.9	1.9	1.2	1.6	3.8
IR I		71.4	81.8	71.1	78.8	67.9	79.0	58.8	80.0	94.5	74.8	74.2	78.1	75.9	94.5
IR II		69.8	50.7	65.0	72.3	13.1	80.0	71.3	77.4	82.2	61.8	54.2	77.7	64.6	82.2

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 171	MH 2732	3.9	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.5	1.3	0.8	0.6	0.7	3.9
PIT 172	MH 2733	1.5	1.6	0.0	0.0	0.0	1.1	0.0	2.1	0.0	1.0	0.6	0.8	0.7	2.1
PIT 173	MH 2734	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.5	0.2	1.9
PIT 174	MH 2735	2.7	0.0	0.0	6.4	0.0	3.1	0.0	1.2	1.3	0.9	1.8	1.4	1.6	6.4
PIT 175	MH 2736	1.8	0.0	0.0	0.0	0.0	2.2	0.0	1.0	0.0	0.6	0.4	0.8	0.6	2.2
IR I		71.0	83.6	61.5	77.4	81.4	80.0	71.3	90.4	81.5	72.0	75.0	80.8	77.6	90.4
IR II		70.6	54.1	66.7	70.5	11.6	77.9	56.3	84.9	79.1	63.8	54.7	74.5	63.5	84.9
PIT 176	MH 2737	1.8	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.6	0.4	0.7	0.5	2.7
PIT 177	MH 2738	1.6	0.0	0.0	0.0	0.0	1.2	0.0	1.9	0.0	0.5	0.3	0.8	0.5	1.9
PIT 178	MH 2739	4.2	0.0	0.0	1.7	0.0	1.1	0.0	0.0	0.0	1.4	1.2	0.3	0.8	4.2
PIT 179	MH 2740	3.9	0.0	0.0	0.0	0.0	1.0	1.3	0.0	0.0	1.3	0.8	0.6	0.7	3.9
PIT 180	MP 618	5.3	0.0	NG	5.0	3.2	12.5	2.7	14.3	0.0	2.6	3.4	7.4	5.4	14.3
IR I		72.4	83.6	44.4	66.7	74.7	79.0	72.2	87.2	90.9	66.8	68.4	82.3	74.6	90.9
IR II		72.1	53.5	55.6	66.2	12.7	78.0	45.5	84.9	83.5	60.4	52.0	73.0	61.3	84.9
PIT 181	MP 619	3.5	0.0	NG	14.9	0.0	5.6	0.0	5.2	0.0	1.8	4.6	2.7	3.6	14.9
PIT 182	MP 620	1.5	0.0	0.0	7.2	0.0	4.8	0.0	2.5	0.0	0.5	1.7	1.8	1.8	7.2
PIT 183	MP 621	3.5	0.0	0.0	0.0	0.0	4.3	0.0	0.0	1.4	1.2	0.7	1.4	1.0	4.3
PIT 184	MP 622	0.0	0.0	0.0	2.2	0.0	1.3	0.0	1.0	0.0	0.0	0.4	0.6	0.5	2.2
PIT 185	MP 623	3.2	0.0	0.0	12.5	0.0	18.7	0.0	9.8	0.0	1.1	3.1	7.1	4.9	18.7
IR I		71.2	84.6	53.5	71.7	72.9	77.5	87.0	81.5	84.1	69.8	70.8	82.5	76.0	87.0
IR II		70.7	51.3	73.2	60.3	10.1	79.0	61.8	82.4	81.1	65.1	53.1	76.1	63.3	82.4
PIT 186	MP 624	4.6	2.2	0.0	7.5	0.0	8.0	4.0	9.9	6.5	2.3	2.9	7.1	4.7	9.9
PIT 187	MP 625	3.5	0.0	1.3	0.0	0.0	4.3	2.8	4.6	0.0	1.6	1.0	2.9	1.8	4.6
PIT 188	MP 626	3.7	1.7	0.0	2.2	0.0	4.7	1.3	1.2	0.0	1.8	1.5	1.8	1.6	4.7
PIT 189	MP 627	3.5	0.0	0.0	0.0	0.0	4.0	0.0	4.3	1.5	1.2	0.7	2.4	1.5	4.3

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 190	MP 628	2.4	2.0	0.0	8.8	0.0	10.0	1.3	3.7	0.0	1.5	2.6	3.7	3.1	10.0
IR I		73.2	86.2	63.4	73.4	69.9	80.0	43.8	77.6	84.5	74.2	73.2	71.5	72.4	86.2
IR II		72.6	55.1	60.9	74.6	9.9	81.0	71.3	86.6	83.6	62.9	54.6	80.6	66.2	86.6
PIT 191	MP 629	5.3	0.0	0.0	5.4	0.0	6.5	1.5	5.3	0.0	1.8	2.1	3.3	2.7	6.5
PIT 192	RHB 223	2.2	0.0	2.4	6.0	2.9	8.9	0.0	3.5	0.0	1.5	2.7	3.1	2.9	8.9
PIT 193	MPMH 21	4.9	0.0	0.0	11.9	0.0	11.1	0.0	4.2	0.0	1.6	3.4	3.8	3.6	11.9
PIT 194	HHB 67 Imp.	3.8	0.0	0.0	17.5	0.0	3.6	0.0	0.9	0.0	1.3	4.3	1.1	2.9	17.5
PIT 195	PB 1756	2.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.7	0.4	0.3	0.4	2.0
IR I		72.7	87.1	55.3	75.3	72.6	78.5	60.8	92.6	85.7	71.7	72.6	79.4	75.6	92.6
IR II		71.8	53.2	54.2	72.4	10.3	81.0	73.1	85.5	81.1	59.7	52.4	80.2	64.7	85.5
PIT 196	AHB 1200	3.7	2.2	0.0	1.6	0.0	1.3	0.0	1.1	0.0	2.0	1.5	0.6	1.1	3.7
PIT 197	MPMH 17	3.3	0.0	0.0	2.2	0.0	4.2	0.0	1.3	1.3	1.1	1.1	1.7	1.4	4.2
PIT 198	PB 1852	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	1.0	0.4	2.0
PIT 199	JKBH 1326	1.4	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.5	0.3	0.3	0.3	1.4
PIT 200	AHB 1269	3.9	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	1.3	0.8	0.8	0.8	3.9
IR I		73.3	89.1	62.8	79.5	73.8	82.0	72.2	84.4	83.6	75.1	75.7	80.5	77.8	89.1
IR II		72.5	55.1	56.8	72.5	8.0	80.0	71.3	93.9	86.2	61.5	53.0	82.8	66.3	93.9
PIT 201	86M01	3.8	5.8	0.0	0.0	0.0	6.0	1.5	6.7	0.0	3.2	1.9	3.5	2.6	6.7
PIT 202	Pratap	1.5	0.0	0.0	2.0	0.0	2.2	0.0	0.0	0.0	0.5	0.7	0.6	0.6	2.2
PIT 203	86M86	4.2	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	1.4	0.8	0.7	0.8	4.2
PIT 204	MP 7878	0.0	2.1	0.0	3.3	0.0	2.2	0.0	0.0	0.0	0.7	1.1	0.6	0.8	3.3
PIT 205	KBH 108	3.9	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.3	0.8	0.5	0.7	3.9
IR I		72.6	87.3	55.6	73.2	68.6	76.0	84.8	83.3	90.4	71.8	71.5	83.6	76.9	90.4
IR II		70.8	56.4	66.0	68.1	11.1	77.0	61.0	85.7	79.9	64.4	54.5	75.9	64.0	85.7
PIT 206	Kaveri S Boss	1.8	0.0	0.0	2.1	0.0	3.3	0.0	0.9	0.0	0.6	0.8	1.0	0.9	3.3

CHAPTER IV: PLANT PATHOLOGY

Table IV.1: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 207	NBH 4903	1.4	0.0	0.0	0.0	0.0	2.7	0.0	1.0	0.0	0.5	0.3	0.9	0.6	2.7
PIT 208	ICMV 221	2.0	0.0	NG	7.0	0.0	1.5	0.0	3.2	4.1	1.0	2.3	2.2	2.2	7.0
PIT 209	Pusa Comp. 701	1.7	2.0	0.0	0.0	0.0	2.9	0.0	0.0	6.1	1.2	0.7	2.3	1.4	6.1
PIT 210	Dhanshakti	5.0	0.0	NG	10.5	1.4	5.8	1.3	1.0	1.4	2.5	4.2	2.4	3.3	10.5
IR I		73.3	89.1	62.5	63.2	74.1	75.0	63.2	86.7	86.5	75.0	72.4	77.8	74.8	89.1
IR II		72.7	53.9	72.1	74.2	10.4	78.5	75.0	75.0	84.3	66.3	56.7	78.2	66.2	84.3
PIT 211	Pusa Comp. 383	3.5	1.5	3.9	27.3	0.0	11.1	0.0	5.7	0.0	3.0	7.2	4.2	5.9	27.3
PIT 212	JBV 2	0.0	2.6	0.0	8.2	1.3	4.2	1.4	0.0	1.4	0.9	2.4	1.7	2.1	8.2
PIT 213	Raj 171	3.0	2.0	NG	0.0	0.0	3.9	3.9	1.1	1.3	2.5	1.3	2.6	1.9	3.9
PIT 214	ABV 04	1.4	0.0	0.0	8.6	0.0	4.0	1.3	0.0	0.0	0.5	2.0	1.3	1.7	8.6
PIT 215	Pusa Comp. 612	3.5	3.3	0.0	0.0	0.0	4.0	0.0	2.1	1.3	2.3	1.4	1.9	1.6	4.0
IR I		73.3	85.5	72.0	76.5	72.0	78.5	71.3	78.8	83.2	76.9	75.9	77.9	76.8	85.5
IR II		72.7	52.6	82.2	64.1	10.7	80.0	72.2	77.4	82.4	69.2	56.4	78.0	66.0	82.4
	Mean Entries	2.6	0.7	0.2	4.2	0.3	5.0	0.4	3.4	0.5	1.2	1.6	2.3	1.9	5.0
	Mean IR I	73.5	84.9	60.0	71.2	72.4	98.4	69.4	80.9	82.5	72.8	72.4	82.8	77.0	98.4
	Mean IR II	71.3	53.3	64.9	69.2	11.5	98.9	69.1	81.3	81.5	63.2	54.1	82.7	66.8	98.9

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
IR I		98.7	98.4	72.5	90.4	96.2	98.0	91.3	90.9	90.2	89.9	91.3	92.6	91.8	98.7
IRII		93.5	69.0	67.4	90.2	19.7	100.0	98.7	91.5	87.0	76.6	68.0	94.3	79.7	100.0
PIT 101	MH 2662	4.3	8.6	0.0	12.8	0.0	13.1	0.0	9.5	0.0	4.3	5.1	5.6	5.4	13.1
PIT 102	MH 2663	2.6	2.0	0.0	11.8	0.0	17.5	1.4	3.7	3.1	1.5	3.3	6.4	4.7	17.5
PIT 103	MH 2664	0.0	0.0	0.0	0.0	0.0	6.7	3.8	2.0	0.0	0.0	0.0	3.1	1.4	6.7
PIT 104	MH 2665	6.4	1.8	0.0	19.2	0.0	8.2	0.0	14.4	3.0	2.7	5.5	6.4	5.9	19.2
PIT 105	MH 2666	4.4	1.9	0.0	0.0	4.1	15.0	2.9	4.6	0.0	2.1	2.1	5.6	3.7	15.0
IR I		100.0	96.7	91.8	89.2	100.0	99.0	97.4	88.6	81.6	96.2	95.5	91.6	93.8	100.0
IRII		90.0	72.6	81.4	80.6	20.8	98.5	98.7	89.1	83.6	81.3	69.1	92.5	79.5	98.7
PIT 106	MH 2667	3.8	8.5	14.1	0.0	4.3	8.2	0.0	14.4	1.4	8.8	6.1	6.0	6.1	14.4
PIT 107	MH 2668	14.3	6.7	3.8	12.5	2.6	34.0	0.0	16.2	2.8	8.2	8.0	13.3	10.3	34.0
PIT 108	MH 2669	10.0	5.0	7.3	17.5	8.9	7.9	2.5	4.2	3.4	7.4	9.7	4.5	7.4	17.5
PIT 109	MH 2670	3.2	2.0	0.0	13.8	0.0	20.0	1.3	2.3	0.0	1.7	3.8	5.9	4.7	20.0
PIT 110	MH 2671	3.5	0.0	0.0	2.4	0.0	12.8	2.7	13.5	2.8	1.2	1.2	7.9	4.2	13.5
IR I		100.0	97.0	69.6	88.9	93.8	99.5	87.5	91.1	94.1	88.8	89.9	93.0	91.3	100.0
IRII		94.5	74.0	75.0	84.6	16.7	98.0	91.3	92.5	98.6	81.2	69.0	95.1	80.6	98.6
PIT 111	MH 2672	5.3	3.7	1.6	3.8	0.0	15.4	0.0	1.7	0.0	3.5	2.9	4.3	3.5	15.4
PIT 112	MH 2673	6.4	5.8	1.6	4.7	0.0	9.3	0.0	0.9	0.0	4.6	3.7	2.6	3.2	9.3
PIT 113	MH 2674	1.5	0.0	0.0	11.9	0.0	5.1	0.0	0.0	0.0	0.5	2.7	1.3	2.1	11.9
PIT 114	MH 2675	2.7	1.3	0.0	2.6	0.0	9.1	1.3	2.9	1.7	1.3	1.3	3.7	2.4	9.1
PIT 115	MH 2676	1.6	0.0	0.0	4.1	0.0	10.3	0.0	0.0	1.5	0.5	1.1	3.0	2.0	10.3
IR I		100.0	97.1	65.3	90.1	92.9	98.5	90.0	94.7	87.5	87.5	89.1	92.7	90.7	100.0
IRII		96.2	72.7	72.9	87.7	21.6	99.0	95.0	85.7	85.4	80.6	70.2	91.3	79.6	99.0
PIT 116	MH 2677	1.6	1.9	0.0	5.3	2.7	10.0	1.3	0.0	0.0	1.2	2.3	2.8	2.5	10.0
PIT 117	MH 2678	5.8	6.4	0.0	2.7	0.0	4.1	0.0	2.4	0.0	4.1	3.0	1.6	2.4	6.4
PIT 118	MH 2679	3.3	1.6	0.0	2.0	0.0	5.0	0.0	0.0	1.8	1.7	1.4	1.7	1.5	5.0
PIT 119	MH 2680	1.7	0.0	0.0	0.0	0.0	8.6	0.0	3.7	0.0	0.6	0.3	3.1	1.6	8.6
PIT 120	MH 2681	2.9	1.8	0.0	5.7	0.0	6.3	0.0	1.9	0.0	1.6	2.1	2.0	2.1	6.3
IR I		94.6	100.0	76.7	88.8	100.0	100.0	95.0	92.1	91.7	90.4	92.0	94.7	93.2	100.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
IR II		98.7	73.1	77.1	77.8	15.8	97.0	89.7	90.6	85.7	82.9	68.5	90.8	78.4	98.7
PIT 121	MH 2682	1.4	1.9	0.0	0.0	4.3	2.5	2.7	0.0	0.0	1.1	1.5	1.3	1.4	4.3
PIT 122	MH 2683	3.1	0.0	0.0	0.0	0.0	7.1	0.0	1.9	0.0	1.0	0.6	2.3	1.4	7.1
PIT 123	MH 2684	1.5	1.8	0.0	0.0	0.0	5.0	2.8	1.8	1.4	1.1	0.7	2.7	1.6	5.0
PIT 124	MH 2685	5.3	9.1	0.0	2.5	3.8	3.4	2.5	9.5	0.0	4.8	4.1	3.9	4.0	9.5
PIT 125	MH 2686	2.5	0.0	NG	10.3	0.0	14.8	2.9	0.0	0.0	1.3	3.2	4.4	3.8	14.8
IR I		100.0	98.4	74.4	89.6	95.3	96.0	92.1	92.2	88.9	90.9	91.5	92.3	91.9	100.0
IR II		100.0	74.4	78.6	82.2	30.2	99.0	87.5	88.1	89.8	84.3	73.1	91.1	81.1	100.0
PIT 126	MH 2687	5.9	3.5	0.0	2.4	6.3	11.1	1.3	3.1	1.3	3.1	3.6	4.2	3.9	11.1
PIT 127	MH 2688	3.1	3.9	0.0	2.5	0.0	5.9	0.0	1.8	0.0	2.4	1.9	1.9	1.9	5.9
PIT 128	MH 2689	1.6	1.8	0.0	15.8	0.0	1.2	0.0	2.9	0.0	1.1	3.8	1.0	2.6	15.8
PIT 129	MH 2690	1.7	3.6	0.0	2.9	5.8	6.2	1.3	13.3	1.3	1.8	2.8	5.5	4.0	13.3
PIT 130	MH 2691	3.1	3.3	0.0	9.1	3.0	6.6	1.3	16.0	1.4	2.2	3.7	6.3	4.9	16.0
IR I		100.0	95.6	94.3	87.9	98.8	99.5	95.0	86.9	90.0	96.6	95.3	92.8	94.2	100.0
IR II		96.4	75.7	88.9	71.9	18.8	100.0	87.5	92.1	96.3	87.0	70.3	94.0	80.8	100.0
PIT 131	MH 2692	5.7	4.5	0.0	3.7	0.0	5.4	0.0	6.9	0.0	3.4	2.8	3.1	2.9	6.9
PIT 132	MH 2693	1.9	3.9	0.0	18.4	0.0	4.9	1.3	1.1	0.0	1.9	4.8	1.8	3.5	18.4
PIT 133	MH 2694	3.2	3.9	0.0	43.5	0.0	13.8	5.0	3.3	1.3	2.4	10.1	5.8	8.2	43.5
PIT 134	MH 2695	2.9	0.0	0.0	4.5	0.0	5.9	0.0	4.6	3.2	1.0	1.5	3.4	2.3	5.9
PIT 135	MH 2696	3.0	0.0	0.0	6.1	0.0	4.7	2.6	5.3	1.5	1.0	1.8	3.5	2.6	6.1
IR I		100.0	100.0	87.9	92.1	97.6	98.5	91.3	90.4	91.8	96.0	95.5	93.0	94.4	100.0
IR II		100.0	78.6	78.6	88.6	16.7	99.0	87.5	93.7	98.7	85.7	72.5	94.7	82.4	100.0
PIT 136	MH 2697	2.5	0.0	NG	0.0	0.0	30.0	0.0	0.0	0.0	1.3	0.6	7.5	4.1	30.0
PIT 137	MH 2698	7.5	0.0	0.0	8.3	0.0	22.2	0.0	6.4	0.0	2.5	3.2	7.2	4.9	22.2
PIT 138	MH 2699	3.9	1.7	0.0	0.0	0.0	4.2	1.4	0.0	0.0	1.9	1.1	1.4	1.2	4.2
PIT 139	MH 2700	4.0	1.9	0.0	2.1	0.0	5.9	4.0	2.3	0.0	2.0	1.6	3.0	2.2	5.9
PIT 140	MH 2701	7.7	4.3	1.8	10.8	0.0	14.3	1.3	5.8	1.3	4.6	4.9	5.7	5.3	14.3
IR I		100.0	97.0	90.5	90.3	97.5	99.0	93.8	91.8	97.0	95.8	95.1	95.4	95.2	100.0
IR II		97.1	73.1	89.8	91.0	23.9	100.0	91.3	91.0	94.6	86.6	75.0	94.2	83.5	100.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 141	MH 2702	3.6	3.8	0.0	0.0	0.0	5.0	0.0	2.3	1.8	2.5	1.5	2.3	1.8	5.0
PIT 142	MH 2703	1.5	0.0	0.0	0.0	0.0	11.3	4.0	0.0	0.0	0.5	0.3	3.8	1.9	11.3
PIT 143	MH 2704	3.9	1.9	0.0	1.9	0.0	12.5	0.0	0.0	0.0	1.9	1.5	3.1	2.2	12.5
PIT 144	MH 2705	4.7	8.7	NG	5.9	5.2	9.3	1.3	1.9	0.0	6.7	6.1	3.1	4.6	9.3
PIT 145	MH 2706	3.2	5.3	0.0	7.1	0.0	4.8	2.6	0.0	0.0	2.8	3.1	1.9	2.6	7.1
IR I		100.0	98.5	74.1	78.2	98.8	100.0	91.3	86.0	95.7	90.8	89.9	93.2	91.4	100.0
IR II		100.0	77.9	75.7	80.3	19.2	97.0	93.8	91.8	92.5	84.5	70.6	93.8	80.9	100.0
PIT 146	MH 2707	5.8	4.0	0.0	5.9	0.0	22.2	1.3	1.3	0.0	3.3	3.1	6.2	4.5	22.2
PIT 147	MH 2708	10.0	7.7	0.0	11.3	0.0	8.9	2.7	82.9	0.0	5.9	5.8	23.6	13.7	82.9
PIT 148	MH 2709	3.5	1.6	0.0	0.0	0.0	4.4	1.3	0.0	0.0	1.7	1.0	1.4	1.2	4.4
PIT 149	MH 2710	3.7	0.0	0.0	0.0	0.0	7.0	0.0	0.0	1.4	1.2	0.7	2.1	1.3	7.0
PIT 150	MH 2711	4.0	0.0	0.0	3.8	0.0	8.0	1.4	3.1	0.0	1.3	1.6	3.1	2.3	8.0
IR I		100.0	98.5	71.0	90.8	92.9	98.0	93.8	90.5	95.6	89.8	90.6	94.5	92.3	100.0
IR II		100.0	74.4	70.7	71.9	25.0	97.0	87.5	93.0	98.6	81.7	68.4	94.0	79.8	100.0
PIT 151	MH 2712	3.8	0.0	0.0	15.0	3.8	4.8	2.6	0.0	2.6	1.3	4.5	2.5	3.6	15.0
PIT 152	MH 2713	4.7	4.8	0.0	10.5	0.0	3.4	1.3	2.8	0.0	3.2	4.0	1.9	3.0	10.5
PIT 153	MH 2714	3.3	1.9	0.0	2.8	0.0	11.7	1.3	3.1	4.3	1.7	1.6	5.1	3.2	11.7
PIT 154	MH 2715	5.0	4.8	0.0	1.7	0.0	1.1	1.3	1.0	0.0	3.3	2.3	0.8	1.7	5.0
PIT 155	MH 2716	1.9	2.0	0.0	11.1	0.0	5.6	1.3	1.8	0.0	1.3	3.0	2.2	2.6	11.1
IR I		100.0	100.0	73.5	98.5	96.3	100.0	95.0	89.4	90.6	91.2	93.7	93.7	93.7	100.0
IR II		100.0	65.8	70.0	86.2	16.1	98.0	95.0	90.8	98.6	78.6	67.6	95.6	80.1	100.0
PIT 156	MH 2717	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.7	0.0	0.4	3.7
PIT 157	MH 2718	1.6	3.6	0.0	0.0	0.0	3.5	0.0	1.1	0.0	1.7	1.0	1.2	1.1	3.6
PIT 158	MH 2719	3.1	0.0	0.0	0.0	0.0	2.0	2.5	0.0	0.0	1.0	0.6	1.1	0.8	3.1
PIT 159	MH 2720	3.5	0.0	0.0	2.3	0.0	2.0	4.0	0.0	0.0	1.2	1.2	1.5	1.3	4.0
PIT 160	MH 2721	5.4	3.4	0.0	10.4	0.0	1.1	5.1	10.7	0.0	2.9	3.8	4.2	4.0	10.7
IR I		100.0	97.1	73.2	92.2	94.6	98.0	87.5	92.1	97.1	90.1	91.4	93.7	92.4	100.0
IR II		98.8	73.1	77.8	91.4	16.4	100.0	95.0	89.9	94.7	83.2	71.5	94.9	81.9	100.0
PIT 161	MH 2722	3.9	4.3	0.0	0.0	0.0	5.3	0.0	1.0	1.4	2.7	1.6	1.9	1.8	5.3

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 162	MH 2723	2.3	1.8	0.0	0.0	0.0	1.3	5.7	5.9	0.0	1.4	0.8	3.2	1.9	5.9
PIT 163	MH 2724	5.8	1.9	0.0	8.6	0.0	1.1	4.0	11.0	0.0	2.5	3.2	4.0	3.6	11.0
PIT 164	MH 2725	6.3	5.7	0.0	0.0	0.0	1.1	0.0	0.0	1.6	4.0	2.4	0.7	1.6	6.3
PIT 165	MH 2726	2.8	5.3	0.0	0.0	0.0	2.4	1.3	0.0	0.0	2.7	1.6	0.9	1.3	5.3
IR I		100.0	100.0	87.5	89.7	92.9	100.0	87.5	92.8	97.4	95.8	94.0	94.4	94.2	100.0
IR II		100.0	80.0	90.6	86.8	16.4	98.0	95.0	89.4	94.2	90.2	74.8	94.2	83.4	100.0
PIT 166	MH 2727	6.5	3.8	0.0	8.3	0.0	4.7	1.3	0.0	0.0	3.5	3.7	1.5	2.7	8.3
PIT 167	MH 2728	3.0	0.0	0.0	2.6	0.0	3.3	1.3	6.9	0.0	1.0	1.1	2.9	1.9	6.9
PIT 168	MH 2729	3.1	4.3	0.0	2.2	0.0	1.2	0.0	3.1	0.0	2.5	1.9	1.1	1.6	4.3
PIT 169	MH 2730	3.3	1.9	0.0	0.0	0.0	1.0	1.3	0.9	0.0	1.7	1.0	0.8	0.9	3.3
PIT 170	MH 2731	3.7	3.8	0.0	3.8	0.0	3.2	2.8	0.0	1.4	2.5	2.3	1.8	2.1	3.8
IR I		100.0	97.0	78.9	97.0	93.8	98.5	87.5	92.0	98.7	92.0	93.3	94.2	93.7	100.0
IR II		100.0	80.8	85.0	78.5	16.4	98.0	95.0	90.6	94.1	88.6	72.1	94.4	82.0	100.0
PIT 171	MH 2732	3.9	0.5	0.0	0.0	0.0	2.3	0.0	0.0	1.5	1.5	0.9	0.9	0.9	3.9
PIT 172	MH 2733	1.5	1.6	0.0	0.0	0.0	2.1	0.0	2.1	1.5	1.0	0.6	1.4	1.0	2.1
PIT 173	MH 2734	1.7	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.6	0.3	0.5	0.4	1.9
PIT 174	MH 2735	5.5	5.3	0.0	6.4	0.0	1.1	0.0	1.2	1.3	3.6	3.4	0.9	2.3	6.4
PIT 175	MH 2736	3.6	4.2	0.0	0.0	0.0	4.3	2.5	2.0	0.0	2.6	1.5	2.2	1.8	4.3
IR I		100.0	100.0	79.5	98.1	100.0	96.7	95.0	96.2	93.9	93.2	95.5	95.4	95.5	100.0
IR II		100.0	68.9	73.3	82.0	15.9	56.6	87.5	88.7	97.5	80.8	68.0	82.6	74.5	100.0
PIT 176	MH 2737	3.6	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	1.2	0.7	1.0	0.8	4.0
PIT 177	MH 2738	6.3	5.3	0.0	0.0	0.0	3.5	0.0	1.9	0.0	3.8	2.3	1.3	1.9	6.3
PIT 178	MH 2739	6.3	5.5	0.0	1.7	0.0	1.1	0.0	0.0	0.0	3.9	2.7	0.3	1.6	6.3
PIT 179	MH 2740	3.9	1.9	0.0	2.0	0.0	1.0	5.3	0.0	0.0	1.9	1.5	1.6	1.6	5.3
PIT 180	MP 618	5.3	1.9	NG	5.0	4.8	15.0	4.1	8.2	0.0	3.6	4.2	6.8	5.5	15.0
IR I		100.0	98.4	75.6	98.3	100.0	99.0	96.2	91.5	98.5	91.3	94.4	96.3	95.3	100.0
IR II		100.0	77.5	75.6	80.3	18.3	98.0	93.5	92.5	96.2	84.3	70.3	95.0	81.3	100.0
PIT 181	MP 619	5.3	5.9	NG	16.2	0.0	7.3	1.3	5.2	0.0	5.6	6.8	3.4	5.1	16.2
PIT 182	MP 620	1.5	2.1	0.0	7.2	0.0	10.4	0.0	2.5	0.0	1.2	2.2	3.2	2.6	10.4

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 183	MP 621	3.5	2.0	0.0	0.0	0.0	7.1	1.3	0.0	2.7	1.8	1.1	2.8	1.8	7.1
PIT 184	MP 622	5.9	6.1	0.0	2.2	0.0	5.0	0.0	1.0	0.0	4.0	2.8	1.5	2.2	6.1
PIT 185	MP 623	4.8	4.0	0.0	23.4	0.0	26.7	1.4	9.8	0.0	2.9	6.4	9.5	7.8	26.7
IR I		100.0	96.9	74.4	100.0	100.0	100.0	97.4	90.7	98.6	90.4	94.3	96.7	95.3	100.0
IR II		100.0	77.6	78.0	82.4	18.8	99.0	92.1	91.2	92.4	85.2	71.4	93.7	81.3	100.0
PIT 186	MP 624	6.8	8.9	0.0	17.0	0.0	10.7	6.6	9.9	6.5	5.2	6.5	8.4	7.4	17.0
PIT 187	MP 625	3.5	0.0	1.3	2.1	0.0	8.6	7.0	4.6	0.0	1.6	1.4	5.0	3.0	8.6
PIT 188	MP 626	3.7	3.4	0.0	2.2	0.0	10.7	4.0	1.2	0.0	2.4	1.9	4.0	2.8	10.7
PIT 189	MP 627	5.3	6.0	0.0	5.9	0.0	8.0	1.3	4.3	1.5	3.8	3.4	3.8	3.6	8.0
PIT 190	MP 628	7.1	6.1	0.0	8.8	2.4	12.5	2.6	4.9	0.0	4.4	4.9	5.0	4.9	12.5
IR I		100.0	96.9	78.0	91.1	94.0	100.0	90.0	89.8	96.2	91.7	92.0	94.0	92.9	100.0
IR II		100.0	76.9	73.9	77.5	16.9	94.0	95.0	92.5	93.1	83.6	69.0	93.7	80.0	100.0
PIT 191	MP 629	5.3	2.4	0.0	5.4	0.0	13.0	2.9	5.3	0.0	2.5	2.6	5.3	3.8	13.0
PIT 192	RHB 223	6.5	7.3	2.4	6.0	5.8	17.8	0.0	3.5	0.0	5.4	5.6	5.3	5.5	17.8
PIT 193	MPMH 21	4.9	0.0	0.0	19.4	0.0	15.6	0.0	4.2	0.0	1.6	4.9	4.9	4.9	19.4
PIT 194	HHB 67 Imp.	3.8	4.3	0.0	20.0	0.0	7.3	1.3	3.6	1.4	2.7	5.6	3.4	4.6	20.0
PIT 195	PB 1756	2.0	2.1	0.0	0.0	0.0	4.0	0.0	0.0	0.0	1.4	0.8	1.0	0.9	4.0
IR I		100.0	98.4	70.2	98.8	100.0	97.0	88.6	94.4	96.8	89.5	93.5	94.2	93.8	100.0
IR II		100.0	70.9	64.6	84.2	17.6	94.0	97.4	93.4	93.2	78.5	67.5	94.5	79.5	100.0
PIT 196	AHB 1200	3.7	2.2	0.0	3.3	0.0	3.8	0.0	3.4	0.0	2.0	1.8	1.8	1.8	3.8
PIT 197	MPMH 17	3.3	4.3	0.0	2.2	0.0	10.8	0.0	1.3	2.5	2.6	2.0	3.6	2.7	10.8
PIT 198	PB 1852	0.0	2.2	0.0	0.0	0.0	2.7	1.5	2.0	0.0	0.7	0.4	1.5	0.9	2.7
PIT 199	JKBH 1326	2.9	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	1.0	0.6	0.9	0.7	3.8
PIT 200	AHB 1269	3.9	0.0	0.0	0.0	0.0	6.7	2.6	2.2	0.0	1.3	0.8	2.9	1.7	6.7
IR I		100.0	98.4	76.7	100.0	95.2	94.0	96.2	88.9	97.3	91.7	94.1	94.1	94.1	100.0
IR II		100.0	75.6	68.2	87.0	14.7	97.0	95.0	92.7	98.5	81.3	69.1	95.8	81.0	100.0
PIT 201	86M01	3.8	10.1	0.0	0.0	0.0	3.2	1.5	6.7	0.0	4.6	2.8	2.8	2.8	10.1
PIT 202	Pratap	2.9	4.2	0.0	3.9	0.0	4.4	1.4	0.9	0.0	2.4	2.2	1.7	2.0	4.4
PIT 203	86M86	4.2	3.5	0.0	0.0	0.0	4.0	1.4	0.0	0.0	2.6	1.5	1.4	1.5	4.2

CHAPTER IV: PLANT PATHOLOGY

Table IV.2: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 204	MP 7878	1.6	4.2	0.0	3.3	0.0	4.4	0.0	0.0	0.0	1.9	1.8	1.1	1.5	4.4
PIT 205	KBH 108	3.9	0.0	0.0	0.0	0.0	6.0	2.6	0.0	0.0	1.3	0.8	2.2	1.4	6.0
IR I		100.0	98.4	80.0	98.8	96.5	99.0	92.4	92.9	98.4	92.8	94.7	95.7	95.2	100.0
IR II		100.0	76.9	74.5	89.9	18.1	96.0	90.9	92.9	98.7	83.8	71.9	94.6	82.0	100.0
PIT 206	Kaveri S Boss	1.8	7.9	0.0	2.1	0.0	8.3	1.3	0.9	0.0	3.3	2.4	2.6	2.5	8.3
PIT 207	NBH 4903	4.3	8.3	0.0	0.0	0.0	4.0	1.3	1.0	0.0	4.2	2.5	1.6	2.1	8.3
PIT 208	ICMV 221	6.0	3.8	NG	8.8	0.0	3.1	1.4	7.5	4.1	4.9	4.6	4.0	4.3	8.8
PIT 209	Pusa Comp. 701	1.7	4.0	0.0	0.0	0.0	4.4	2.7	3.8	6.1	1.9	1.1	4.3	2.5	6.1
PIT 210	Dhanshakti	7.5	2.2	NG	10.5	4.3	5.8	2.5	6.2	1.4	4.9	6.1	4.0	5.1	10.5
IR I		100.0	98.4	68.8	91.2	98.8	98.0	92.1	93.3	97.3	89.1	91.4	95.2	93.1	100.0
IR II		100.0	78.9	76.7	87.1	13.4	97.0	100.0	89.3	95.9	85.2	71.2	95.6	82.1	100.0
PIT 211	Pusa Comp. 383	5.2	9.0	3.9	33.3	2.9	13.3	0.0	6.8	0.0	6.0	10.8	5.0	8.3	33.3
PIT 212	JBV 2	0.0	2.6	0.0	8.2	3.9	8.3	2.7	1.1	1.4	0.9	3.0	3.4	3.1	8.3
PIT 213	Raj 171	4.6	2.0	NG	0.0	2.3	7.8	3.9	3.3	1.3	3.3	2.2	4.1	3.2	7.8
PIT 214	ABV 04	5.4	6.1	0.0	11.4	0.0	14.0	1.3	5.4	0.0	3.8	4.6	5.2	4.8	14.0
PIT 215	Pusa Comp. 612	3.5	11.7	0.0	0.0	0.0	10.0	0.0	3.2	1.3	5.1	3.0	3.6	3.3	11.7
IR I		100.0	96.8	86.2	91.4	96.0	98.0	95.0	89.4	94.3	94.3	94.1	94.2	94.1	100.0
IR II		100.0	78.2	86.4	82.8	16.0	99.0	96.2	87.1	95.9	88.2	72.7	94.6	82.4	100.0
	Mean Entries	4.0	3.2	0.4	5.5	0.7	7.7	1.5	4.0	0.7	2.5	2.7	3.5	3.1	7.7
	Mean IR I	99.7	98.1	77.9	92.6	96.8	98.5	92.4	91.2	94.1	91.9	93.0	94.1	93.5	99.7
	Mean IR II	98.5	74.9	77.1	83.5	18.5	96.2	93.2	90.8	93.9	83.5	70.5	93.5	80.7	98.5

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 30 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	0.0	1.0	1.1	0.0	0.5	1.0	0.0	1.0	0.0	0.7	0.5	0.5	0.5	1.1
PIT 102	MH 2663	0.5	1.0	1.1	0.5	0.0	0.0	0.0	0.5	0.0	0.9	0.6	0.1	0.4	1.1
PIT 103	MH 2664	0.0	1.0	1.6	0.0	1.0	1.0	0.0	1.5	0.0	0.9	0.7	0.6	0.7	1.6
PIT 104	MH 2665	0.0	1.5	2.1	0.3	1.3	1.3	1.5	3.5	0.5	1.2	1.0	1.7	1.3	3.5
PIT 105	MH 2666	0.0	1.5	3.9	0.5	1.0	1.0	1.5	3.5	0.0	1.8	1.4	1.5	1.4	3.9
PIT 106	MH 2667	0.0	1.0	1.7	0.0	1.0	2.0	2.0	3.5	0.0	0.9	0.7	1.9	1.2	3.5
PIT 107	MH 2668	0.0	1.0	1.7	0.3	0.5	0.5	0.0	1.5	0.0	0.9	0.7	0.5	0.6	1.7
PIT 108	MH 2669	0.0	1.0	1.2	0.2	0.0	1.0	0.0	1.5	0.0	0.7	0.5	0.6	0.5	1.5
PIT 109	MH 2670	0.5	1.0	2.4	0.9	0.0	2.1	0.5	4.5	0.5	1.3	1.0	1.9	1.4	4.5
PIT 110	MH 2671	0.5	0.5	1.2	0.4	0.0	1.3	0.0	1.5	0.5	0.7	0.5	0.8	0.7	1.5
PIT 111	MH 2672	0.0	1.0	2.0	0.2	0.0	0.4	1.0	2.5	0.0	1.0	0.6	1.0	0.8	2.5
PIT 112	MH 2673	0.0	1.0	1.2	0.0	0.0	2.1	0.0	3.0	0.0	0.7	0.4	1.3	0.8	3.0
PIT 113	MH 2674	0.0	0.5	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	0.3	0.3	0.3	1.0
PIT 114	MH 2675	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.7	0.4	0.5	0.4	1.0
PIT 115	MH 2676	0.0	1.0	1.6	0.1	0.5	0.0	0.5	0.5	0.0	0.9	0.6	0.3	0.5	1.6
PIT 116	MH 2677	1.0	1.0	1.3	0.1	0.5	0.5	0.0	2.0	0.5	1.1	0.8	0.8	0.8	2.0
PIT 117	MH 2678	0.5	1.0	1.6	0.0	0.0	0.0	0.0	1.5	0.0	1.0	0.6	0.4	0.5	1.6
PIT 118	MH 2679	0.5	1.5	1.2	1.0	0.0	0.0	1.0	0.5	0.0	1.1	0.8	0.4	0.6	1.5
PIT 119	MH 2680	0.0	1.0	1.2	0.4	0.0	1.0	0.0	1.5	0.0	0.7	0.5	0.6	0.6	1.5
PIT 120	MH 2681	0.5	1.0	1.7	0.0	0.0	0.0	0.5	2.0	0.0	1.1	0.6	0.6	0.6	2.0
PIT 121	MH 2682	0.5	1.0	3.1	0.1	0.5	0.0	0.5	0.5	0.0	1.5	1.0	0.3	0.7	3.1
PIT 122	MH 2683	0.5	0.5	1.6	0.0	0.0	0.5	0.0	1.0	0.0	0.9	0.5	0.4	0.5	1.6
PIT 123	MH 2684	0.5	1.0	1.2	0.0	0.0	1.0	1.5	0.5	0.0	0.9	0.5	0.8	0.6	1.5
PIT 124	MH 2685	0.5	1.5	1.4	0.2	0.0	1.0	0.5	1.5	0.0	1.1	0.7	0.8	0.7	1.5
PIT 125	MH 2686	0.0	1.0	NG	0.0	0.0	0.0	0.5	0.5	0.0	0.5	0.3	0.3	0.3	1.0
PIT 126	MH 2687	0.0	1.5	1.1	0.0	0.5	1.0	0.0	2.0	0.5	0.9	0.6	0.9	0.7	2.0
PIT 127	MH 2688	0.0	0.5	1.1	0.0	0.0	0.5	0.0	1.5	0.0	0.5	0.3	0.5	0.4	1.5
PIT 128	MH 2689	0.0	0.5	1.1	0.0	0.0	1.0	0.0	1.5	0.0	0.5	0.3	0.6	0.5	1.5
PIT 129	MH 2690	0.0	0.5	1.1	0.0	0.0	2.0	1.0	2.5	0.0	0.5	0.3	1.4	0.8	2.5
PIT 130	MH 2691	0.5	1.0	1.1	1.1	0.0	2.0	0.0	3.5	0.5	0.9	0.7	1.5	1.1	3.5
PIT 131	MH 2692	1.0	1.0	1.5	0.0	0.5	1.0	1.0	3.0	0.0	1.2	0.8	1.3	1.0	3.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 30 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	2.5	1.0	1.6	0.0	1.0	1.0	1.0	2.0	0.0	1.7	1.2	1.0	1.1	2.5
PIT 133	MH 2694	1.0	1.0	1.2	0.0	0.5	2.0	0.0	2.5	0.0	1.1	0.7	1.1	0.9	2.5
PIT 134	MH 2695	0.5	1.5	1.9	0.0	0.0	1.0	0.0	3.0	0.0	1.3	0.8	1.0	0.9	3.0
PIT 135	MH 2696	0.5	1.0	2.3	0.3	1.0	2.0	2.0	3.5	0.0	1.3	1.0	1.9	1.4	3.5
PIT 136	MH 2697	0.0	1.0	NG	0.0	0.0	0.0	0.0	1.5	0.0	0.5	0.3	0.4	0.3	1.5
PIT 137	MH 2698	0.5	1.5	1.5	0.0	0.0	1.5	0.0	2.5	0.0	1.2	0.7	1.0	0.8	2.5
PIT 138	MH 2699	1.0	2.0	2.5	0.9	1.0	2.0	1.0	3.5	0.0	1.8	1.5	1.6	1.5	3.5
PIT 139	MH 2700	0.5	2.0	4.0	1.2	1.0	1.0	0.0	3.5	0.5	2.2	1.7	1.3	1.5	4.0
PIT 140	MH 2701	0.5	1.0	1.2	0.0	0.0	1.0	0.0	1.5	0.0	0.9	0.5	0.6	0.6	1.5
PIT 141	MH 2702	0.0	1.5	1.1	0.0	0.0	1.0	1.0	2.5	0.0	0.9	0.5	1.1	0.8	2.5
PIT 142	MH 2703	0.0	1.0	1.5	0.0	0.5	0.0	1.0	2.5	0.0	0.8	0.6	0.9	0.7	2.5
PIT 143	MH 2704	1.0	1.0	3.5	0.0	0.5	1.5	0.0	3.5	0.0	1.8	1.2	1.3	1.2	3.5
PIT 144	MH 2705	0.5	1.5	NG	0.0	0.0	1.0	0.0	1.5	0.0	1.0	0.5	0.6	0.6	1.5
PIT 145	MH 2706	0.0	1.5	2.4	0.0	0.0	1.0	2.0	2.5	0.0	1.3	0.8	1.4	1.0	2.5
PIT 146	MH 2707	0.0	1.0	1.3	0.0	0.0	0.0	0.0	1.0	0.0	0.8	0.5	0.3	0.4	1.3
PIT 147	MH 2708	0.0	0.5	1.1	0.3	0.0	0.5	0.5	2.0	0.0	0.5	0.4	0.8	0.5	2.0
PIT 148	MH 2709	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.1	1.2
PIT 149	MH 2710	0.0	1.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.2	1.2
PIT 150	MH 2711	0.0	0.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.2	1.1
PIT 151	MH 2712	0.0	0.0	1.0	0.0	0.0	0.5	2.0	0.0	0.0	0.3	0.2	0.6	0.4	2.0
PIT 152	MH 2713	0.0	0.0	1.0	0.0	0.0	0.5	0.0	1.5	0.0	0.3	0.2	0.5	0.3	1.5
PIT 153	MH 2714	0.0	0.5	1.2	0.0	0.0	0.0	1.0	1.0	0.0	0.6	0.3	0.5	0.4	1.2
PIT 154	MH 2715	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.2	1.0
PIT 155	MH 2716	0.0	0.5	1.1	0.0	0.0	0.5	0.0	1.5	0.0	0.5	0.3	0.5	0.4	1.5
PIT 156	MH 2717	0.0	1.0	1.1	0.0	0.5	0.5	0.0	2.0	0.0	0.7	0.5	0.6	0.6	2.0
PIT 157	MH 2718	0.0	0.0	1.1	0.0	0.5	0.0	0.0	1.0	0.0	0.4	0.3	0.3	0.3	1.1
PIT 158	MH 2719	0.0	0.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.2	1.1
PIT 159	MH 2720	0.0	1.0	1.0	0.6	0.0	0.0	1.0	0.0	0.0	0.7	0.5	0.3	0.4	1.0
PIT 160	MH 2721	0.0	0.5	1.0	0.0	0.5	1.0	0.0	0.5	0.0	0.5	0.4	0.4	0.4	1.0
PIT 161	MH 2722	0.0	1.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.2	1.1
PIT 162	MH 2723	0.0	0.5	1.4	0.0	0.5	0.0	1.0	1.0	0.0	0.6	0.5	0.5	0.5	1.4

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	0.0	1.0	1.1	0.0	1.0	1.4	0.0	3.0	0.0	0.7	0.6	1.1	0.8	3.0
PIT 164	MH 2725	0.5	1.0	1.0	0.0	0.0	1.0	0.0	1.5	0.5	0.8	0.5	0.8	0.6	1.5
PIT 165	MH 2726	0.5	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.0	0.8	0.6	0.3	0.4	1.0
PIT 166	MH 2727	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.5	0.0	0.7	0.5	0.3	0.4	1.0
PIT 167	MH 2728	0.0	0.0	1.1	0.0	1.0	0.0	0.0	0.5	0.0	0.4	0.4	0.1	0.3	1.1
PIT 168	MH 2729	0.0	1.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.2	1.2
PIT 169	MH 2730	0.0	0.5	1.0	0.0	0.0	0.5	0.5	0.5	0.0	0.5	0.3	0.4	0.3	1.0
PIT 170	MH 2731	0.0	1.0	1.2	0.0	0.5	1.0	0.0	2.5	0.0	0.7	0.5	0.9	0.7	2.5
PIT 171	MH 2732	0.0	1.0	1.1	0.0	1.0	1.0	2.0	2.0	0.0	0.7	0.6	1.3	0.9	2.0
PIT 172	MH 2733	0.0	1.0	1.2	0.0	0.5	1.5	0.0	1.5	0.0	0.7	0.5	0.8	0.6	1.5
PIT 173	MH 2734	0.5	0.5	1.0	0.0	0.0	1.0	0.0	1.5	0.0	0.7	0.4	0.6	0.5	1.5
PIT 174	MH 2735	0.0	1.0	1.8	0.0	0.5	1.0	0.0	1.5	0.5	0.9	0.7	0.8	0.7	1.8
PIT 175	MH 2736	0.0	1.0	1.2	0.0	0.5	0.5	0.0	0.5	0.0	0.7	0.5	0.3	0.4	1.2
PIT 176	MH 2737	0.0	1.0	1.6	0.0	0.5	0.0	0.0	0.0	0.0	0.9	0.6	0.0	0.3	1.6
PIT 177	MH 2738	0.0	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.6	0.0	0.3	1.8
PIT 178	MH 2739	0.0	1.0	2.3	0.0	0.0	0.5	0.0	0.0	0.0	1.1	0.7	0.1	0.4	2.3
PIT 179	MH 2740	0.0	1.0	1.1	0.2	0.0	0.5	0.0	0.5	0.0	0.7	0.5	0.3	0.4	1.1
PIT 180	MP 618	0.0	1.0	NG	0.0	0.5	0.5	0.5	1.0	0.0	0.5	0.4	0.5	0.4	1.0
PIT 181	MP 619	0.0	1.0	NG	0.0	0.5	1.0	0.5	2.0	0.0	0.5	0.4	0.9	0.6	2.0
PIT 182	MP 620	0.0	0.5	1.8	0.0	0.5	0.3	2.0	1.0	0.0	0.8	0.6	0.8	0.7	2.0
PIT 183	MP 621	0.5	1.0	2.3	0.0	0.0	1.5	0.0	1.5	0.0	1.3	0.8	0.8	0.8	2.3
PIT 184	MP 622	0.0	1.0	2.2	0.0	0.5	0.5	0.5	1.0	0.5	1.1	0.7	0.6	0.7	2.2
PIT 185	MP 623	0.5	1.5	1.7	0.0	1.0	1.7	2.0	3.0	0.0	1.2	0.9	1.7	1.3	3.0
PIT 186	MP 624	0.5	1.0	3.5	0.0	1.0	2.0	2.0	3.0	0.0	1.7	1.2	1.8	1.4	3.5
PIT 187	MP 625	0.0	1.0	1.6	1.3	0.0	2.0	1.0	3.0	0.0	0.9	0.8	1.5	1.1	3.0
PIT 188	MP 626	0.5	1.0	2.6	0.3	0.0	1.0	1.0	2.0	0.0	1.4	0.9	1.0	0.9	2.6
PIT 189	MP 627	0.5	0.5	1.1	0.8	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.0	0.3	1.1
PIT 190	MP 628	0.0	1.0	1.6	0.1	1.0	0.5	0.0	1.0	0.0	0.9	0.7	0.4	0.6	1.6
PIT 191	MP 629	0.0	1.0	1.5	0.0	0.0	0.5	0.0	1.5	0.0	0.8	0.5	0.5	0.5	1.5
PIT 192	RHB 223	0.0	1.0	1.2	0.0	0.5	1.2	0.0	2.0	0.0	0.7	0.5	0.8	0.7	2.0
PIT 193	MPMH 21	0.0	1.0	1.1	0.0	1.0	1.5	1.0	3.0	0.0	0.7	0.6	1.4	1.0	3.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	0.5	1.0	1.3	1.5	1.0	2.0	2.0	4.5	0.0	0.9	1.1	2.1	1.5	4.5
PIT 195	PB 1756	0.0	0.5	1.1	0.0	0.5	1.0	0.0	1.0	0.0	0.5	0.4	0.5	0.5	1.1
PIT 196	AHB 1200	0.0	1.0	2.4	0.0	0.0	3.0	2.0	3.0	0.0	1.1	0.7	2.0	1.3	3.0
PIT 197	MPMH 17	0.0	1.0	2.5	0.0	1.0	2.0	1.0	2.0	0.0	1.2	0.9	1.3	1.1	2.5
PIT 198	PB 1852	0.0	0.5	1.1	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.3	0.1	0.2	1.1
PIT 199	JKBH 1326	0.0	1.0	1.3	0.0	0.0	1.5	2.0	1.5	0.0	0.8	0.5	1.3	0.8	2.0
PIT 200	AHB 1269	0.5	1.0	2.9	0.0	1.0	2.0	1.5	3.5	0.0	1.5	1.1	1.8	1.4	3.5
PIT 201	86M01	0.0	1.0	4.1	0.0	1.0	1.5	1.5	3.5	0.0	1.7	1.2	1.6	1.4	4.1
PIT 202	Pratap	0.0	1.0	3.0	1.1	1.0	2.0	1.0	3.0	0.0	1.3	1.2	1.5	1.3	3.0
PIT 203	86M86	0.0	1.0	1.2	0.0	0.5	0.0	0.0	0.0	0.0	0.7	0.5	0.0	0.3	1.2
PIT 204	MP 7878	0.5	1.5	2.7	0.0	0.0	2.0	0.0	3.0	0.0	1.6	0.9	1.3	1.1	3.0
PIT 205	KBH 108	0.0	1.5	2.8	0.0	0.0	1.5	0.0	2.0	0.0	1.4	0.9	0.9	0.9	2.8
PIT 206	Kaveri S Boss	0.0	0.5	1.6	0.0	1.0	1.0	1.0	1.0	0.5	0.7	0.6	0.9	0.7	1.6
PIT 207	NBH 4903	0.5	1.5	2.6	0.0	1.1	2.0	0.0	3.0	0.0	1.5	1.1	1.3	1.2	3.0
PIT 208	ICMV 221	0.0	1.0	NG	0.0	1.5	2.0	2.0	4.0	0.0	0.5	0.6	2.0	1.3	4.0
PIT 209	Pusa Comp. 701	0.0	1.0	1.3	0.0	1.0	2.5	2.0	3.5	0.0	0.8	0.7	2.0	1.3	3.5
PIT 210	Dhanshakti	0.0	1.0	NG	0.0	1.0	2.0	3.0	4.0	0.0	0.5	0.5	2.3	1.4	4.0
PIT 211	Pusa Comp. 383	0.0	0.5	1.9	0.0	0.5	1.5	1.0	2.0	0.0	0.8	0.6	1.1	0.8	2.0
PIT 212	JBV 2	0.5	0.5	1.6	0.2	0.5	1.5	0.0	2.5	0.0	0.9	0.7	1.0	0.8	2.5
PIT 213	Raj 171	0.5	0.5	NG	0.5	0.5	2.0	0.0	3.0	0.0	0.5	0.5	1.3	0.9	3.0
PIT 214	ABV 04	0.5	1.0	1.5	0.0	0.0	1.0	1.0	2.0	0.0	1.0	0.6	1.0	0.8	2.0
PIT 215	Pusa Comp. 612	0.0	1.0	1.0	0.0	0.0	1.5	0.0	2.5	0.0	0.7	0.4	1.0	0.7	2.5
	Entry Mean	0.2	0.9	1.6	0.1	0.4	0.9	0.5	1.7	0.0	0.9	0.6	0.8	0.7	2.1

Note:- * Data Not included

Zone A₁ Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 45 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	0.0	2.0	1.4	0.7	2.0	2.0	1.0	2.5	0.0	1.1	1.2	1.4	1.3	2.5
PIT 102	MH 2663	0.5	2.0	2.1	1.1	1.1	1.0	0.0	1.0	0.0	1.5	1.4	0.5	1.0	2.1
PIT 103	MH 2664	0.0	2.0	2.5	0.9	2.0	2.0	1.0	2.5	0.0	1.5	1.5	1.4	1.4	2.5
PIT 104	MH 2665	0.0	2.5	3.6	1.1	4.0	4.0	2.0	5.0	1.0	2.0	2.2	3.0	2.6	5.0
PIT 105	MH 2666	0.5	2.0	3.9	1.3	3.0	4.0	3.5	6.0	0.0	2.1	2.1	3.4	2.7	6.0
PIT 106	MH 2667	0.0	2.0	3.3	0.4	3.2	4.0	3.0	4.5	0.0	1.8	1.8	2.9	2.3	4.5
PIT 107	MH 2668	0.0	2.0	2.5	0.4	2.1	3.0	1.5	2.5	0.0	1.5	1.4	1.8	1.6	3.0
PIT 108	MH 2669	0.0	2.0	2.1	0.8	2.0	1.0	1.5	2.5	0.0	1.4	1.4	1.3	1.3	2.5
PIT 109	MH 2670	0.5	2.0	5.5	1.3	2.0	4.0	2.0	6.0	1.0	2.7	2.3	3.3	2.7	6.0
PIT 110	MH 2671	0.5	2.0	2.4	0.5	1.5	2.0	1.5	2.5	1.0	1.6	1.4	1.8	1.5	2.5
PIT 111	MH 2672	0.0	2.0	2.5	0.6	1.0	3.0	2.0	3.5	0.0	1.5	1.2	2.1	1.6	3.5
PIT 112	MH 2673	0.0	2.0	2.7	0.6	1.5	3.5	1.0	4.0	0.0	1.6	1.4	2.1	1.7	4.0
PIT 113	MH 2674	0.0	2.0	1.7	0.4	0.9	1.0	0.0	2.0	0.0	1.2	1.0	0.8	0.9	2.0
PIT 114	MH 2675	0.0	2.0	1.1	0.5	1.0	0.5	2.0	0.5	0.5	1.0	0.9	0.9	0.9	2.0
PIT 115	MH 2676	0.5	2.0	3.9	0.9	1.8	1.0	1.0	1.5	0.0	2.1	1.8	0.9	1.4	3.9
PIT 116	MH 2677	1.0	2.0	2.5	0.8	2.0	2.0	0.0	3.0	1.0	1.8	1.7	1.5	1.6	3.0
PIT 117	MH 2678	0.5	2.0	3.8	0.0	1.0	1.5	0.0	2.5	0.0	2.1	1.5	1.0	1.3	3.8
PIT 118	MH 2679	0.5	1.5	3.0	1.3	1.1	1.3	1.5	2.0	0.0	1.7	1.5	1.2	1.4	3.0
PIT 119	MH 2680	0.0	2.0	2.2	0.0	1.5	2.0	1.0	2.5	0.0	1.4	1.1	1.4	1.2	2.5
PIT 120	MH 2681	0.5	2.0	3.7	0.5	1.0	2.0	1.0	3.0	0.0	2.1	1.5	1.5	1.5	3.7
PIT 121	MH 2682	0.5	2.0	3.4	0.4	2.0	1.0	0.5	1.5	0.0	2.0	1.7	0.8	1.3	3.4
PIT 122	MH 2683	0.5	2.0	2.3	0.4	1.0	1.0	0.0	2.0	0.0	1.6	1.2	0.8	1.0	2.3
PIT 123	MH 2684	0.5	2.0	2.0	0.0	1.1	1.5	2.0	1.5	0.5	1.5	1.1	1.4	1.2	2.0
PIT 124	MH 2685	0.5	2.0	3.0	0.6	0.8	2.0	1.0	2.5	0.0	1.8	1.4	1.4	1.4	3.0
PIT 125	MH 2686	0.0	2.0	NG	0.0	0.5	1.0	0.5	1.5	0.0	1.0	0.6	0.8	0.7	2.0
PIT 126	MH 2687	0.0	2.0	3.1	0.0	1.5	2.0	0.5	3.0	2.0	1.7	1.3	1.9	1.6	3.1
PIT 127	MH 2688	0.0	2.0	2.3	0.0	1.0	0.5	0.0	2.5	0.0	1.4	1.1	0.8	0.9	2.5
PIT 128	MH 2689	0.0	2.0	2.7	0.0	1.5	1.0	0.0	3.0	0.0	1.6	1.2	1.0	1.1	3.0
PIT 129	MH 2690	0.0	2.0	1.8	0.0	1.0	2.0	1.5	3.5	0.0	1.3	1.0	1.8	1.3	3.5
PIT 130	MH 2691	0.5	2.0	2.5	1.6	1.5	3.0	1.5	4.5	1.0	1.7	1.6	2.5	2.0	4.5
PIT 131	MH 2692	1.0	2.0	2.2	0.0	1.5	2.0	1.5	4.0	0.5	1.7	1.3	2.0	1.6	4.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 45 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	3.0	2.0	2.1	0.0	2.5	2.0	1.0	3.5	0.0	2.4	1.9	1.6	1.8	3.5
PIT 133	MH 2694	1.0	2.0	2.3	1.1	2.0	3.0	1.5	4.0	0.0	1.8	1.7	2.1	1.9	4.0
PIT 134	MH 2695	0.5	2.0	3.5	0.0	1.5	2.0	1.5	4.0	0.0	2.0	1.5	1.9	1.7	4.0
PIT 135	MH 2696	0.5	2.0	2.9	0.6	2.0	3.0	2.0	4.5	0.0	1.8	1.6	2.4	1.9	4.5
PIT 136	MH 2697	0.0	2.0	NG	0.0	1.0	1.5	2.0	3.0	1.0	1.0	0.8	1.9	1.3	3.0
PIT 137	MH 2698	0.5	2.0	2.7	0.0	1.0	2.0	2.0	4.0	0.0	1.7	1.2	2.0	1.6	4.0
PIT 138	MH 2699	1.0	2.0	3.8	1.6	2.5	2.0	2.0	5.0	0.0	2.3	2.2	2.3	2.2	5.0
PIT 139	MH 2700	0.5	2.0	4.3	1.3	2.5	1.0	2.0	5.0	1.5	2.3	2.1	2.4	2.2	5.0
PIT 140	MH 2701	0.5	2.0	1.6	0.0	1.0	1.0	1.0	2.5	0.0	1.4	1.0	1.1	1.1	2.5
PIT 141	MH 2702	0.0	2.0	2.4	1.1	1.0	1.0	1.0	3.5	0.0	1.5	1.3	1.4	1.3	3.5
PIT 142	MH 2703	0.0	2.0	2.3	0.5	2.0	1.0	1.5	3.5	0.5	1.4	1.4	1.6	1.5	3.5
PIT 143	MH 2704	1.0	2.0	3.9	0.0	2.0	3.0	1.0	4.5	0.0	2.3	1.8	2.1	1.9	4.5
PIT 144	MH 2705	0.5	2.0	NG	0.0	1.5	1.5	1.0	2.5	0.0	1.3	1.0	1.3	1.1	2.5
PIT 145	MH 2706	0.0	2.0	3.0	0.9	1.1	3.0	2.5	4.0	0.0	1.7	1.4	2.4	1.8	4.0
PIT 146	MH 2707	0.0	1.5	1.5	0.0	2.0	1.0	0.0	2.0	0.0	1.0	1.0	0.8	0.9	2.0
PIT 147	MH 2708	0.0	2.0	1.6	1.2	1.8	2.0	1.0	3.0	0.0	1.2	1.3	1.5	1.4	3.0
PIT 148	MH 2709	0.0	2.0	1.6	0.0	1.0	0.5	0.0	0.5	0.5	1.2	0.9	0.4	0.7	2.0
PIT 149	MH 2710	0.0	2.0	1.6	1.0	1.5	1.5	0.0	1.0	0.0	1.2	1.2	0.6	1.0	2.0
PIT 150	MH 2711	0.0	1.5	1.5	0.0	1.0	1.0	0.0	1.0	0.0	1.0	0.8	0.5	0.7	1.5
PIT 151	MH 2712	0.0	2.0	2.1	0.0	0.5	1.0	1.5	0.0	0.0	1.4	0.9	0.6	0.8	2.1
PIT 152	MH 2713	0.0	1.0	1.4	0.0	0.5	1.0	1.0	2.0	0.0	0.8	0.6	1.0	0.8	2.0
PIT 153	MH 2714	0.0	2.0	1.7	0.0	1.0	2.0	1.0	2.5	0.0	1.2	0.9	1.4	1.1	2.5
PIT 154	MH 2715	0.0	2.0	1.4	0.0	1.5	0.5	1.5	1.0	0.0	1.1	1.0	0.8	0.9	2.0
PIT 155	MH 2716	0.0	2.0	1.4	0.0	1.3	1.5	1.0	2.5	0.5	1.1	0.9	1.4	1.1	2.5
PIT 156	MH 2717	0.0	2.0	2.6	0.0	1.5	2.0	0.0	2.5	0.0	1.5	1.2	1.1	1.2	2.6
PIT 157	MH 2718	0.0	1.0	1.5	0.0	1.4	1.0	0.0	1.5	0.0	0.8	0.8	0.6	0.7	1.5
PIT 158	MH 2719	0.0	2.0	1.5	0.0	0.8	0.5	0.5	0.0	0.0	1.2	0.9	0.3	0.6	2.0
PIT 159	MH 2720	0.0	2.0	1.1	0.8	1.0	0.5	1.0	0.5	0.5	1.0	1.0	0.6	0.8	2.0
PIT 160	MH 2721	0.0	2.0	1.2	0.0	1.5	1.5	0.0	1.5	0.0	1.1	0.9	0.8	0.9	2.0
PIT 161	MH 2722	0.0	2.0	2.2	0.5	0.0	1.0	1.5	1.0	0.0	1.4	0.9	0.9	0.9	2.2
PIT 162	MH 2723	0.0	2.0	1.8	0.0	1.5	1.0	1.5	1.5	0.0	1.3	1.1	1.0	1.0	2.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 45 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	0.0	2.0	2.1	1.1	2.5	3.0	0.0	4.0	0.0	1.4	1.5	1.8	1.6	4.0
PIT 164	MH 2725	0.5	2.0	1.8	0.0	1.0	2.0	2.0	2.5	1.0	1.4	1.1	1.9	1.4	2.5
PIT 165	MH 2726	0.5	2.0	1.9	0.0	1.2	1.0	1.0	1.0	0.0	1.5	1.1	0.8	1.0	2.0
PIT 166	MH 2727	0.0	2.0	1.1	0.0	1.6	1.3	0.5	1.5	0.0	1.0	0.9	0.8	0.9	2.0
PIT 167	MH 2728	0.0	1.5	1.2	0.7	2.5	1.0	0.0	1.5	0.0	0.9	1.2	0.6	0.9	2.5
PIT 168	MH 2729	0.0	2.0	1.6	0.0	1.0	1.0	1.0	0.5	0.0	1.2	0.9	0.6	0.8	2.0
PIT 169	MH 2730	0.0	2.0	1.7	0.0	2.0	1.0	1.0	1.5	0.0	1.2	1.1	0.9	1.0	2.0
PIT 170	MH 2731	0.0	2.0	2.5	0.0	1.8	2.0	0.0	2.5	0.0	1.5	1.3	1.1	1.2	2.5
PIT 171	MH 2732	0.0	2.0	1.8	0.0	2.5	2.0	2.5	3.0	0.0	1.3	1.3	1.9	1.5	3.0
PIT 172	MH 2733	0.0	2.0	1.8	0.0	2.0	2.5	1.0	2.5	0.0	1.3	1.2	1.5	1.3	2.5
PIT 173	MH 2734	0.5	2.0	1.5	0.0	1.2	1.7	0.0	2.5	0.0	1.3	1.0	1.1	1.0	2.5
PIT 174	MH 2735	0.0	2.0	2.1	0.0	1.5	2.0	1.0	2.5	0.5	1.4	1.1	1.5	1.3	2.5
PIT 175	MH 2736	0.0	2.0	1.8	0.5	2.0	0.5	0.5	1.5	0.0	1.3	1.3	0.6	1.0	2.0
PIT 176	MH 2737	0.0	2.0	2.0	0.2	1.1	0.5	1.5	0.0	0.5	1.3	1.1	0.6	0.9	2.0
PIT 177	MH 2738	0.0	2.0	2.2	0.3	0.8	0.0	1.5	0.5	0.0	1.4	1.1	0.5	0.8	2.2
PIT 178	MH 2739	0.0	2.0	2.8	0.1	0.9	1.0	1.0	1.0	0.0	1.6	1.2	0.8	1.0	2.8
PIT 179	MH 2740	0.0	2.0	1.6	0.8	1.1	1.0	1.0	1.0	0.0	1.2	1.1	0.8	0.9	2.0
PIT 180	MP 618	0.0	2.0	NG	1.4	1.5	1.5	1.0	2.0	0.0	1.0	1.2	1.1	1.2	2.0
PIT 181	MP 619	0.0	2.0	NG	0.0	1.5	2.0	1.5	3.0	0.0	1.0	0.9	1.6	1.3	3.0
PIT 182	MP 620	0.0	2.0	2.0	0.9	2.0	1.0	2.5	2.0	0.0	1.3	1.4	1.4	1.4	2.5
PIT 183	MP 621	0.5	2.0	2.6	0.0	0.5	2.0	1.0	2.5	0.0	1.7	1.1	1.4	1.2	2.6
PIT 184	MP 622	0.0	2.0	2.9	0.6	2.0	1.0	1.0	1.5	1.0	1.6	1.5	1.1	1.3	2.9
PIT 185	MP 623	0.5	2.0	2.2	0.8	2.5	3.0	2.0	4.0	0.0	1.6	1.6	2.3	1.9	4.0
PIT 186	MP 624	0.5	2.0	4.2	0.6	2.3	3.0	3.0	4.0	0.0	2.2	1.9	2.5	2.2	4.2
PIT 187	MP 625	0.0	2.0	3.1	1.5	0.9	3.0	3.0	4.0	0.0	1.7	1.5	2.5	1.9	4.0
PIT 188	MP 626	0.5	2.0	2.9	0.9	1.8	2.0	2.5	3.0	0.0	1.8	1.6	1.9	1.7	3.0
PIT 189	MP 627	0.5	2.0	1.5	1.2	1.0	0.5	2.5	1.0	0.0	1.3	1.2	1.0	1.1	2.5
PIT 190	MP 628	0.0	2.0	2.3	0.7	2.5	1.0	1.0	2.0	1.5	1.4	1.5	1.4	1.4	2.5
PIT 191	MP 629	0.0	2.0	2.2	0.0	1.1	1.0	1.5	2.5	0.0	1.4	1.1	1.3	1.1	2.5
PIT 192	RHB 223	0.0	2.0	1.9	0.0	2.0	2.0	2.0	3.5	0.0	1.3	1.2	1.9	1.5	3.5
PIT 193	MPMH 21	0.0	2.0	2.0	0.0	2.0	2.5	3.5	4.0	0.0	1.3	1.2	2.5	1.8	4.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) 45 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	0.5	2.0	2.5	3.3	2.5	3.5	2.5	5.5	0.0	1.7	2.2	2.9	2.5	5.5
PIT 195	PB 1756	0.0	2.0	1.8	0.0	1.5	2.5	2.5	2.0	0.0	1.3	1.1	1.8	1.4	2.5
PIT 196	AHB 1200	0.0	2.0	2.9	0.0	2.0	3.5	2.5	4.0	0.5	1.6	1.4	2.6	1.9	4.0
PIT 197	MPMH 17	0.0	2.0	3.2	0.0	2.5	2.5	3.5	3.0	0.0	1.7	1.5	2.3	1.9	3.5
PIT 198	PB 1852	0.0	1.5	2.0	0.0	1.0	1.0	2.0	1.0	0.0	1.2	0.9	1.0	0.9	2.0
PIT 199	JKBH 1326	0.0	2.0	1.5	0.0	1.7	2.0	2.5	2.5	0.0	1.2	1.0	1.8	1.4	2.5
PIT 200	AHB 1269	0.5	2.0	3.7	1.0	3.0	2.5	2.0	5.0	0.0	2.1	2.0	2.4	2.2	5.0
PIT 201	86M01	0.0	2.0	4.3	2.0	2.3	3.5	3.0	4.5	0.0	2.1	2.1	2.8	2.4	4.5
PIT 202	Pratap	0.0	2.0	3.8	1.4	3.0	3.0	2.0	4.0	0.0	1.9	2.0	2.3	2.1	4.0
PIT 203	86M86	0.0	2.0	1.6	0.0	1.5	0.5	0.5	0.0	0.0	1.2	1.0	0.3	0.7	2.0
PIT 204	MP 7878	0.5	2.0	3.2	0.0	1.0	3.0	1.0	4.0	0.0	1.9	1.3	2.0	1.6	4.0
PIT 205	KBH 108	0.0	2.0	3.2	0.0	1.0	2.0	0.0	3.0	0.0	1.7	1.2	1.3	1.2	3.2
PIT 206	Kaveri S Boss	0.0	2.0	1.8	0.0	2.0	2.0	1.5	2.0	1.0	1.3	1.2	1.6	1.4	2.0
PIT 207	NBH 4903	0.5	2.0	2.8	1.3	2.5	3.0	1.5	4.0	0.0	1.8	1.8	2.1	2.0	4.0
PIT 208	ICMV 221	0.0	2.0	NG	0.0	3.0	4.0	2.5	5.5	0.0	1.0	1.3	3.0	2.1	5.5
PIT 209	Pusa Comp. 701	0.0	2.0	2.3	0.7	2.5	4.0	3.0	4.5	0.0	1.4	1.5	2.9	2.1	4.5
PIT 210	Dhanshakti	0.0	2.0	NG	0.0	3.0	4.5	3.5	5.0	0.0	1.0	1.3	3.3	2.3	5.0
PIT 211	Pusa Comp. 383	0.0	2.0	2.7	0.0	2.3	2.0	1.5	3.0	0.0	1.6	1.4	1.6	1.5	3.0
PIT 212	JBV 2	0.5	2.0	2.2	0.4	1.5	3.0	2.0	3.5	0.0	1.6	1.3	2.1	1.7	3.5
PIT 213	Raj 171	0.5	2.0	NG	1.3	1.0	3.0	2.0	4.0	0.0	1.3	1.2	2.3	1.7	4.0
PIT 214	ABV 04	0.5	2.0	3.1	0.0	1.5	2.0	2.0	3.0	0.0	1.9	1.4	1.8	1.6	3.1
PIT 215	Pusa Comp. 612	0.0	2.0	2.6	0.0	1.5	2.5	2.5	3.5	0.0	1.5	1.2	2.1	1.6	3.5
	Entry Mean	0.2	2.0	2.4	0.4	1.6	1.9	1.4	2.7	0.2	1.5	1.3	1.5	1.4	3.1

Note:- * Data Not included
Zone A₁ Mandor, Jaipur, Hisar
Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior
Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	0.0	3.0	1.7	1.1	4.0	4.0	1.0	4.0	0.0	1.6	2.0	2.3	2.1	4.0
PIT 102	MH 2663	0.5	2.5	2.5	1.2	3.5	2.5	1.5	2.0	0.5	1.8	2.0	1.6	1.9	3.5
PIT 103	MH 2664	0.0	3.0	2.9	0.9	4.5	3.0	2.5	3.5	0.0	2.0	2.3	2.3	2.3	4.5
PIT 104	MH 2665	1.0	4.0	4.7	1.4	5.5	5.0	3.0	6.5	3.0	3.2	3.3	4.4	3.8	6.5
PIT 105	MH 2666	0.5	4.0	4.1	4.3	6.0	6.0	6.0	7.5	0.0	2.9	3.8	4.9	4.3	7.5
PIT 106	MH 2667	0.0	3.0	3.6	2.1	5.0	5.5	3.5	6.5	0.0	2.2	2.7	3.9	3.2	6.5
PIT 107	MH 2668	0.5	2.5	2.9	0.8	5.0	4.0	2.5	3.5	0.0	2.0	2.3	2.5	2.4	5.0
PIT 108	MH 2669	0.0	2.5	2.4	1.3	4.5	3.0	2.5	3.0	0.0	1.6	2.1	2.1	2.1	4.5
PIT 109	MH 2670	1.0	2.5	6.1	6.3	3.5	5.0	3.5	7.5	1.0	3.2	3.9	4.3	4.0	7.5
PIT 110	MH 2671	0.5	3.0	2.8	0.9	3.0	3.0	2.5	4.0	2.0	2.1	2.0	2.9	2.4	4.0
PIT 111	MH 2672	0.0	2.5	2.8	1.4	3.0	4.0	3.0	5.5	0.0	1.8	1.9	3.1	2.5	5.5
PIT 112	MH 2673	0.0	3.0	3.2	1.2	3.0	4.0	4.5	5.5	0.0	2.1	2.1	3.5	2.7	5.5
PIT 113	MH 2674	0.0	2.5	2.1	1.0	2.5	2.0	0.0	2.5	0.0	1.5	1.6	1.1	1.4	2.5
PIT 114	MH 2675	0.0	2.5	1.2	1.1	3.0	2.0	2.5	2.0	1.0	1.2	1.6	1.9	1.7	3.0
PIT 115	MH 2676	0.5	2.5	4.6	1.1	3.5	2.0	4.0	2.5	0.0	2.5	2.4	2.1	2.3	4.6
PIT 116	MH 2677	1.0	3.0	3.2	1.2	5.0	3.0	0.0	4.0	2.0	2.4	2.7	2.3	2.5	5.0
PIT 117	MH 2678	0.5	3.0	4.1	0.5	4.0	3.0	0.5	3.5	0.0	2.5	2.4	1.8	2.1	4.1
PIT 118	MH 2679	0.5	2.5	3.7	3.3	3.0	2.0	2.0	3.0	0.0	2.2	2.6	1.8	2.2	3.7
PIT 119	MH 2680	0.0	3.0	2.9	0.5	3.5	3.0	1.5	3.0	0.0	2.0	2.0	1.9	1.9	3.5
PIT 120	MH 2681	1.5	3.0	4.1	1.1	3.0	3.0	3.0	3.5	0.0	2.9	2.5	2.4	2.5	4.1
PIT 121	MH 2682	1.0	3.0	3.8	1.0	4.0	3.5	1.5	3.0	0.0	2.6	2.6	2.0	2.3	4.0
PIT 122	MH 2683	1.0	2.0	2.5	1.0	3.0	2.0	0.0	3.0	0.0	1.8	1.9	1.3	1.6	3.0
PIT 123	MH 2684	1.0	2.5	2.0	1.0	3.0	2.5	2.5	2.5	1.5	1.8	1.9	2.3	2.1	3.0
PIT 124	MH 2685	1.0	2.5	3.3	1.1	3.0	3.0	1.5	3.0	0.0	2.3	2.2	1.9	2.0	3.3
PIT 125	MH 2686	0.0	2.5	NG	1.2	2.5	2.0	2.0	2.0	0.0	1.3	1.6	1.5	1.5	2.5
PIT 126	MH 2687	0.0	2.0	3.8	1.3	3.5	3.0	1.5	4.5	3.0	1.9	2.1	3.0	2.5	4.5
PIT 127	MH 2688	0.0	2.5	3.0	0.0	3.0	1.5	0.0	2.5	0.0	1.8	1.7	1.0	1.4	3.0
PIT 128	MH 2689	0.0	2.5	3.0	0.0	4.0	3.5	0.0	3.5	0.0	1.8	1.9	1.8	1.8	4.0
PIT 129	MH 2690	0.0	3.5	2.5	1.3	3.0	3.5	2.0	4.5	0.0	2.0	2.1	2.5	2.3	4.5
PIT 130	MH 2691	0.5	3.0	2.7	3.4	3.5	4.0	2.5	5.5	3.5	2.1	2.6	3.9	3.2	5.5
PIT 131	MH 2692	1.0	2.0	2.6	0.0	4.0	4.0	1.5	5.0	2.5	1.9	1.9	3.3	2.5	5.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	3.5	2.5	2.3	1.1	4.0	3.0	2.0	4.0	0.0	2.8	2.7	2.3	2.5	4.0
PIT 133	MH 2694	1.0	2.5	2.8	1.6	3.5	3.5	2.0	4.5	0.0	2.1	2.3	2.5	2.4	4.5
PIT 134	MH 2695	1.0	4.0	4.0	0.2	4.0	3.5	2.5	4.5	0.0	3.0	2.6	2.6	2.6	4.5
PIT 135	MH 2696	0.5	3.0	3.7	1.0	4.5	4.0	3.5	5.0	0.0	2.4	2.5	3.1	2.8	5.0
PIT 136	MH 2697	0.0	2.5	NG	0.0	3.5	2.0	3.0	3.5	2.5	1.3	1.5	2.8	2.1	3.5
PIT 137	MH 2698	0.5	2.5	2.9	2.5	3.0	3.0	5.5	5.0	0.0	2.0	2.3	3.4	2.8	5.5
PIT 138	MH 2699	2.0	4.0	4.3	4.8	4.5	4.0	4.5	6.5	0.5	3.4	3.9	3.9	3.9	6.5
PIT 139	MH 2700	0.5	4.0	5.3	3.9	5.5	5.0	3.0	6.0	2.5	3.3	3.8	4.1	4.0	6.0
PIT 140	MH 2701	1.0	2.0	2.0	0.0	3.0	2.0	3.0	2.5	0.5	1.7	1.6	2.0	1.8	3.0
PIT 141	MH 2702	0.0	3.0	3.0	1.3	3.0	2.5	2.0	4.5	0.0	2.0	2.1	2.3	2.1	4.5
PIT 142	MH 2703	0.5	2.5	2.8	1.4	3.5	2.0	2.0	5.0	2.0	1.9	2.1	2.8	2.4	5.0
PIT 143	MH 2704	1.5	2.5	4.6	0.3	4.0	4.0	1.0	5.5	0.0	2.9	2.6	2.6	2.6	5.5
PIT 144	MH 2705	1.0	2.5	NG	3.1	3.0	1.5	1.5	3.0	0.5	1.8	2.4	1.6	2.0	3.1
PIT 145	MH 2706	0.5	3.0	3.4	3.1	3.5	4.0	3.0	5.0	0.0	2.3	2.7	3.0	2.8	5.0
PIT 146	MH 2707	0.0	2.0	2.1	0.0	4.0	2.0	0.0	3.0	0.0	1.4	1.6	1.3	1.5	4.0
PIT 147	MH 2708	0.0	3.0	2.2	3.6	2.0	2.5	1.5	4.0	0.0	1.7	2.2	2.0	2.1	4.0
PIT 148	MH 2709	0.0	2.0	1.9	1.9	3.0	2.0	0.5	1.5	2.5	1.3	1.8	1.6	1.7	3.0
PIT 149	MH 2710	0.0	2.5	2.3	1.6	3.0	2.0	0.0	2.0	0.0	1.6	1.9	1.0	1.5	3.0
PIT 150	MH 2711	0.0	2.0	1.9	0.0	3.0	2.0	0.5	2.0	0.0	1.3	1.4	1.1	1.3	3.0
PIT 151	MH 2712	0.0	2.0	2.4	0.0	1.5	1.5	2.5	0.0	0.0	1.5	1.2	1.0	1.1	2.5
PIT 152	MH 2713	0.0	2.0	1.6	0.0	1.5	2.0	2.0	2.5	0.0	1.2	1.0	1.6	1.3	2.5
PIT 153	MH 2714	0.0	2.5	2.0	2.2	3.0	3.0	2.0	3.0	0.0	1.5	1.9	2.0	2.0	3.0
PIT 154	MH 2715	0.0	2.5	2.0	0.0	3.5	1.0	2.0	2.0	0.0	1.5	1.6	1.3	1.4	3.5
PIT 155	MH 2716	0.0	2.0	1.8	0.0	4.0	2.5	1.5	3.0	2.0	1.3	1.6	2.3	1.9	4.0
PIT 156	MH 2717	0.0	2.0	3.1	1.4	3.5	2.5	0.0	3.0	0.0	1.7	2.0	1.4	1.7	3.5
PIT 157	MH 2718	0.0	2.0	2.1	0.0	3.5	2.0	0.0	2.5	1.0	1.4	1.5	1.4	1.5	3.5
PIT 158	MH 2719	0.0	2.0	2.1	1.4	2.0	1.0	2.0	0.5	0.0	1.4	1.5	0.9	1.2	2.1
PIT 159	MH 2720	0.0	2.0	1.5	1.3	2.5	1.5	2.0	1.0	3.0	1.2	1.5	1.9	1.6	3.0
PIT 160	MH 2721	0.0	2.5	1.5	0.0	3.0	2.0	1.5	2.5	0.0	1.3	1.4	1.5	1.4	3.0
PIT 161	MH 2722	0.0	3.0	2.7	1.6	1.5	2.0	2.5	2.0	0.0	1.9	1.8	1.6	1.7	3.0
PIT 162	MH 2723	0.0	2.5	2.4	1.8	3.0	2.0	3.0	2.5	0.0	1.6	1.9	1.9	1.9	3.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	0.5	3.0	2.8	3.3	3.5	4.0	1.5	5.5	0.0	2.1	2.6	2.8	2.7	5.5
PIT 164	MH 2725	0.5	2.5	2.5	0.0	3.0	3.0	2.5	3.0	1.0	1.8	1.7	2.4	2.0	3.0
PIT 165	MH 2726	0.5	3.0	2.4	0.0	3.0	2.0	2.5	2.0	0.0	2.0	1.8	1.6	1.7	3.0
PIT 166	MH 2727	0.0	2.5	1.6	0.0	3.5	1.5	1.5	2.0	0.0	1.4	1.5	1.3	1.4	3.5
PIT 167	MH 2728	0.0	2.0	1.4	1.7	4.0	2.5	1.5	1.0	0.0	1.1	1.8	1.3	1.6	4.0
PIT 168	MH 2729	0.0	2.0	1.9	1.6	3.0	1.5	2.0	2.0	0.0	1.3	1.7	1.4	1.6	3.0
PIT 169	MH 2730	0.0	2.0	2.3	0.0	3.5	2.0	2.0	2.0	0.0	1.4	1.6	1.5	1.5	3.5
PIT 170	MH 2731	0.0	2.5	2.7	0.0	3.5	3.0	1.0	5.5	0.0	1.7	1.7	2.4	2.0	5.5
PIT 171	MH 2732	0.0	2.0	2.9	1.3	3.5	3.0	3.0	3.5	0.0	1.6	1.9	2.4	2.1	3.5
PIT 172	MH 2733	0.0	2.5	2.2	0.0	3.0	2.5	2.0	3.5	0.0	1.6	1.5	2.0	1.7	3.5
PIT 173	MH 2734	0.5	2.0	2.7	0.0	3.0	2.3	0.0	3.0	0.0	1.7	1.6	1.3	1.5	3.0
PIT 174	MH 2735	0.0	2.5	3.0	2.2	3.5	3.0	1.5	4.0	2.5	1.8	2.2	2.8	2.5	4.0
PIT 175	MH 2736	0.0	2.0	2.8	0.0	3.0	2.0	2.0	2.5	0.0	1.6	1.6	1.6	1.6	3.0
PIT 176	MH 2737	0.0	2.5	2.8	1.5	3.0	1.0	2.5	0.0	1.5	1.8	2.0	1.3	1.6	3.0
PIT 177	MH 2738	0.0	2.5	3.4	1.1	2.5	1.5	3.0	1.0	0.0	2.0	1.9	1.4	1.7	3.4
PIT 178	MH 2739	0.5	2.0	3.6	1.0	3.0	2.0	1.5	2.5	0.0	2.0	2.0	1.5	1.8	3.6
PIT 179	MH 2740	0.0	2.5	2.6	1.3	3.5	2.5	1.5	1.0	0.5	1.7	2.0	1.4	1.7	3.5
PIT 180	MP 618	0.0	3.0	NG	1.8	3.5	2.5	2.5	4.5	0.5	1.5	2.1	2.5	2.3	4.5
PIT 181	MP 619	0.0	3.0	NG	0.0	4.5	3.5	2.0	4.0	0.0	1.5	1.9	2.4	2.1	4.5
PIT 182	MP 620	0.0	2.0	2.9	0.9	3.5	2.5	3.0	3.0	0.0	1.6	1.9	2.1	2.0	3.5
PIT 183	MP 621	0.5	2.0	3.3	0.0	2.0	2.5	2.5	3.0	0.0	1.9	1.6	2.0	1.8	3.3
PIT 184	MP 622	0.0	2.0	3.3	1.5	3.0	2.0	2.0	2.0	3.0	1.8	2.0	2.3	2.1	3.3
PIT 185	MP 623	0.5	2.5	2.8	1.2	4.0	4.5	5.0	6.0	0.5	1.9	2.2	4.0	3.0	6.0
PIT 186	MP 624	1.0	3.0	5.1	2.8	4.0	4.0	5.0	6.0	0.0	3.0	3.2	3.8	3.4	6.0
PIT 187	MP 625	0.0	3.0	4.1	4.1	3.5	4.0	4.5	6.0	0.0	2.4	2.9	3.6	3.2	6.0
PIT 188	MP 626	1.0	2.5	3.2	1.3	4.0	4.0	4.0	3.5	0.0	2.2	2.4	2.9	2.6	4.0
PIT 189	MP 627	0.5	2.5	2.0	2.3	3.5	2.5	3.0	1.5	0.0	1.7	2.2	1.8	2.0	3.5
PIT 190	MP 628	0.0	2.5	2.7	2.0	4.0	3.0	2.5	3.0	2.0	1.7	2.2	2.6	2.4	4.0
PIT 191	MP 629	0.0	2.5	2.6	0.7	3.5	3.0	2.0	3.5	0.0	1.7	1.9	2.1	2.0	3.5
PIT 192	RHB 223	0.0	3.0	2.0	0.0	3.5	3.0	3.0	3.5	0.5	1.7	1.7	2.5	2.1	3.5
PIT 193	MPMH 21	0.0	2.5	2.5	0.3	4.5	4.0	4.0	5.5	0.0	1.7	2.0	3.4	2.6	5.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Blast (0-9 scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	0.5	3.0	3.1	6.8	4.5	5.0	5.5	6.5	0.0	2.2	3.6	4.3	3.9	6.8
PIT 195	PB 1756	0.0	3.0	2.9	0.2	3.5	3.0	3.0	2.5	0.0	2.0	1.9	2.1	2.0	3.5
PIT 196	AHB 1200	0.0	3.0	3.5	0.1	4.0	4.0	4.5	5.5	2.0	2.2	2.1	4.0	3.0	5.5
PIT 197	MPMH 17	0.0	3.0	4.0	0.0	4.5	3.0	5.5	3.0	0.0	2.3	2.3	2.9	2.6	5.5
PIT 198	PB 1852	0.0	2.0	2.8	0.7	3.5	2.5	3.5	2.0	0.0	1.6	1.8	2.0	1.9	3.5
PIT 199	JKBH 1326	0.0	2.0	1.9	0.0	4.0	3.5	3.5	3.0	0.0	1.3	1.6	2.5	2.0	4.0
PIT 200	AHB 1269	1.5	3.0	4.6	3.2	4.5	5.5	2.5	6.5	0.0	3.0	3.4	3.6	3.5	6.5
PIT 201	86M01	0.0	3.5	5.9	4.5	4.5	6.0	4.0	6.5	0.0	3.1	3.7	4.1	3.9	6.5
PIT 202	Pratap	0.0	4.0	4.6	3.4	6.0	6.0	3.5	5.5	0.0	2.9	3.6	3.8	3.7	6.0
PIT 203	86M86	0.0	2.5	1.9	0.2	3.5	1.5	2.5	1.0	0.0	1.5	1.6	1.3	1.5	3.5
PIT 204	MP 7878	0.5	2.0	3.7	0.2	3.0	4.0	3.5	4.5	0.0	2.1	1.9	3.0	2.4	4.5
PIT 205	KBH 108	0.0	2.5	3.8	0.1	3.0	3.0	1.0	3.5	0.0	2.1	1.9	1.9	1.9	3.8
PIT 206	Kaveri S Boss	0.0	2.5	2.4	0.0	3.5	3.0	2.0	3.5	1.5	1.6	1.7	2.5	2.0	3.5
PIT 207	NBH 4903	0.5	2.5	3.3	0.0	4.5	4.5	2.5	5.0	0.0	2.1	2.2	3.0	2.5	5.0
PIT 208	ICMV 221	1.0	3.5	NG	0.0	5.0	6.5	4.5	7.0	0.0	2.3	2.4	4.5	3.4	7.0
PIT 209	Pusa Comp. 701	0.0	2.0	3.0	0.7	4.5	4.5	3.5	5.0	0.0	1.7	2.0	3.3	2.6	5.0
PIT 210	Dhanshakti	0.0	3.0	NG	0.0	4.5	5.0	4.0	7.0	0.0	1.5	1.9	4.0	2.9	7.0
PIT 211	Pusa Comp. 383	0.0	2.0	3.3	0.0	4.0	3.5	2.5	4.0	0.0	1.8	1.9	2.5	2.1	4.0
PIT 212	JBV 2	0.5	2.5	2.6	1.4	3.0	3.5	3.0	4.0	0.0	1.9	2.0	2.6	2.3	4.0
PIT 213	Raj 171	0.5	2.5	NG	2.3	3.0	3.5	3.5	5.0	0.0	1.5	2.1	3.0	2.5	5.0
PIT 214	ABV 04	0.5	2.5	3.8	0.5	3.5	3.0	4.0	4.0	0.0	2.3	2.2	2.8	2.4	4.0
PIT 215	Pusa Comp. 612	0.0	2.5	3.0	0.0	3.0	3.0	3.0	4.5	0.0	1.8	1.7	2.6	2.1	4.5
Entry Mean		0.3	2.6	3.0	1.2	3.5	3.0	2.4	3.7	0.5	1.9	2.1	2.4	2.2	4.2

Note:- * Data Not included
Zone A₁ Mandor, Jaipur, Hisar
Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior
Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Rust (% leaf area) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	*	1.5	0.0	0.0	4.5	5.0	2.5	0.0	9.0	0.8	1.5	4.1	2.8	9.0
PIT 102	MH 2663	*	1.0	0.0	0.0	8.5	15.0	5.0	5.0	10.0	0.5	2.4	8.8	5.6	15.0
PIT 103	MH 2664	*	1.5	0.0	0.0	7.5	12.0	5.0	10.0	6.5	0.8	2.3	8.4	5.3	12.0
PIT 104	MH 2665	*	1.5	0.0	0.0	6.5	10.0	8.0	2.5	16.5	0.8	2.0	9.3	5.6	16.5
PIT 105	MH 2666	*	1.0	0.0	0.0	15.0	5.0	17.5	0.0	20.0	0.5	4.0	10.6	7.3	20.0
PIT 106	MH 2667	*	1.5	0.0	0.0	12.5	7.5	15.0	2.5	20.0	0.8	3.5	11.3	7.4	20.0
PIT 107	MH 2668	*	1.5	4.5	0.0	13.5	5.0	10.0	2.5	13.5	3.0	4.9	7.8	6.3	13.5
PIT 108	MH 2669	*	1.0	9.0	0.0	15.0	10.0	11.0	5.0	17.5	5.0	6.3	10.9	8.6	17.5
PIT 109	MH 2670	*	1.0	0.0	0.0	0.0	5.0	9.0	0.0	11.0	0.5	0.3	6.3	3.3	11.0
PIT 110	MH 2671	*	1.0	0.0	0.0	12.5	10.0	5.0	10.0	15.0	0.5	3.4	10.0	6.7	15.0
PIT 111	MH 2672	*	2.5	13.0	0.0	17.5	12.5	15.0	10.0	16.5	7.8	8.3	13.5	10.9	17.5
PIT 112	MH 2673	*	2.0	4.5	0.0	22.5	15.5	20.0	12.5	16.5	3.3	7.3	16.1	11.7	22.5
PIT 113	MH 2674	*	3.0	17.5	0.0	27.5	7.5	17.5	10.0	20.0	10.3	12.0	13.8	12.9	27.5
PIT 114	MH 2675	*	2.0	4.0	0.0	27.5	12.0	4.0	17.5	23.5	3.0	8.4	14.3	11.3	27.5
PIT 115	MH 2676	*	1.5	17.5	0.0	20.0	15.5	10.0	17.5	19.0	9.5	9.8	15.5	12.6	20.0
PIT 116	MH 2677	*	1.5	0.0	0.0	16.0	12.5	2.5	5.0	16.5	0.8	4.4	9.1	6.8	16.5
PIT 117	MH 2678	*	1.5	4.5	0.0	17.5	10.0	5.0	10.0	22.5	3.0	5.9	11.9	8.9	22.5
PIT 118	MH 2679	*	2.0	0.0	0.0	12.5	15.5	1.5	12.5	13.5	1.0	3.6	10.8	7.2	15.5
PIT 119	MH 2680	*	1.5	4.5	0.0	17.5	20.0	3.0	12.5	11.0	3.0	5.9	11.6	8.8	20.0
PIT 120	MH 2681	*	2.0	19.5	0.0	15.0	10.0	6.0	10.0	20.0	10.8	9.1	11.5	10.3	20.0
PIT 121	MH 2682	*	1.0	0.0	0.0	7.5	15.0	3.5	2.5	6.0	0.5	2.1	6.8	4.4	15.0
PIT 122	MH 2683	*	1.0	0.0	0.0	7.5	5.0	0.0	0.0	0.0	0.5	2.1	1.3	1.7	7.5
PIT 123	MH 2684	*	1.0	0.0	0.0	6.5	5.0	0.0	0.0	9.0	0.5	1.9	3.5	2.7	9.0
PIT 124	MH 2685	*	1.0	0.0	0.0	10.0	10.5	3.5	5.0	6.5	0.5	2.8	6.4	4.6	10.5
PIT 125	MH 2686	*	1.0	NG	0.0	4.0	12.0	2.5	7.5	12.5	1.0	1.7	8.6	5.6	12.5
PIT 126	MH 2687	*	1.0	0.0	0.0	10.0	15.0	0.0	7.5	9.0	0.5	2.8	7.9	5.3	15.0
PIT 127	MH 2688	*	1.0	0.0	0.0	14.0	10.0	1.0	7.5	10.0	0.5	3.8	7.1	5.4	14.0
PIT 128	MH 2689	*	1.5	0.0	0.0	8.0	5.5	2.5	1.0	15.0	0.8	2.4	6.0	4.2	15.0
PIT 129	MH 2690	*	1.0	0.0	0.0	9.0	15.0	1.0	15.0	6.0	0.5	2.5	9.3	5.9	15.0
PIT 130	MH 2691	*	1.0	0.0	0.0	8.5	5.5	0.0	0.0	7.5	0.5	2.4	3.3	2.8	8.5
PIT 131	MH 2692	*	1.0	0.0	0.0	12.5	10.0	0.0	0.0	17.5	0.5	3.4	6.9	5.1	17.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Rust (% leaf area) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	*	1.0	0.0	0.0	14.0	5.0	0.5	0.0	15.0	0.5	3.8	5.1	4.4	15.0
PIT 133	MH 2694	*	1.0	0.0	0.0	12.5	10.0	3.0	0.0	13.5	0.5	3.4	6.6	5.0	13.5
PIT 134	MH 2695	*	1.5	0.0	0.0	12.5	2.0	3.5	0.0	14.0	0.8	3.5	4.9	4.2	14.0
PIT 135	MH 2696	*	1.0	0.0	0.0	7.5	5.5	0.0	0.0	14.0	0.5	2.1	4.9	3.5	14.0
PIT 136	MH 2697	*	1.0	NG	0.0	7.5	7.5	2.5	2.5	11.0	1.0	2.8	5.9	4.6	11.0
PIT 137	MH 2698	*	1.0	0.0	0.0	8.0	5.5	10.0	5.0	19.0	0.5	2.3	9.9	6.1	19.0
PIT 138	MH 2699	*	1.5	0.0	0.0	5.5	2.0	6.5	2.5	13.5	0.8	1.8	6.1	3.9	13.5
PIT 139	MH 2700	*	1.0	0.0	0.0	9.0	2.0	1.5	0.0	20.0	0.5	2.5	5.9	4.2	20.0
PIT 140	MH 2701	*	1.0	0.0	0.0	10.0	10.0	6.0	0.0	13.5	0.5	2.8	7.4	5.1	13.5
PIT 141	MH 2702	*	1.0	0.0	0.0	11.5	2.0	0.0	0.0	12.5	0.5	3.1	3.6	3.4	12.5
PIT 142	MH 2703	*	1.0	0.0	0.0	10.0	5.5	0.0	0.0	12.5	0.5	2.8	4.5	3.6	12.5
PIT 143	MH 2704	*	1.0	0.0	0.0	10.0	5.0	0.0	0.0	19.0	0.5	2.8	6.0	4.4	19.0
PIT 144	MH 2705	*	1.0	NG	0.0	10.0	2.5	0.0	0.0	13.5	1.0	3.7	4.0	3.9	13.5
PIT 145	MH 2706	*	1.0	0.0	0.0	5.0	15.0	5.0	0.0	20.0	0.5	1.5	10.0	5.8	20.0
PIT 146	MH 2707	*	1.0	0.0	0.0	7.5	5.5	0.0	2.5	16.5	0.5	2.1	6.1	4.1	16.5
PIT 147	MH 2708	*	1.0	0.0	0.0	10.0	2.0	2.5	0.0	22.5	0.5	2.8	6.8	4.8	22.5
PIT 148	MH 2709	*	1.0	0.0	0.0	1.5	5.0	0.0	0.0	15.0	0.5	0.6	5.0	2.8	15.0
PIT 149	MH 2710	*	1.0	0.0	0.0	10.0	2.5	0.0	2.5	9.0	0.5	2.8	3.5	3.1	10.0
PIT 150	MH 2711	*	1.0	0.0	0.0	10.0	5.0	0.0	5.0	21.5	0.5	2.8	7.9	5.3	21.5
PIT 151	MH 2712	*	1.0	0.0	0.0	7.5	10.0	0.0	0.0	6.0	0.5	2.1	4.0	3.1	10.0
PIT 152	MH 2713	*	1.0	0.0	0.0	12.5	5.0	0.0	0.0	9.5	0.5	3.4	3.6	3.5	12.5
PIT 153	MH 2714	*	1.0	0.0	0.0	9.0	15.0	0.0	0.0	16.5	0.5	2.5	7.9	5.2	16.5
PIT 154	MH 2715	*	1.0	0.0	0.0	6.5	2.0	0.0	0.0	13.5	0.5	1.9	3.9	2.9	13.5
PIT 155	MH 2716	*	1.0	3.0	0.0	7.5	5.0	0.0	0.0	17.5	2.0	2.9	5.6	4.3	17.5
PIT 156	MH 2717	*	1.0	4.0	0.0	7.5	15.0	0.0	5.0	14.0	2.5	3.1	8.5	5.8	15.0
PIT 157	MH 2718	*	1.0	6.0	0.0	12.5	5.0	0.0	2.5	16.5	3.5	4.9	6.0	5.4	16.5
PIT 158	MH 2719	*	1.0	1.0	0.0	9.0	2.0	0.0	0.0	18.0	1.0	2.8	5.0	3.9	18.0
PIT 159	MH 2720	*	0.5	0.0	0.0	7.0	5.0	0.0	0.0	17.5	0.3	1.9	5.6	3.8	17.5
PIT 160	MH 2721	*	1.5	0.0	0.0	10.0	5.5	0.0	2.5	20.0	0.8	2.9	7.0	4.9	20.0
PIT 161	MH 2722	*	1.0	0.0	0.0	2.5	10.0	0.0	0.0	8.5	0.5	0.9	4.6	2.8	10.0
PIT 162	MH 2723	*	1.0	0.0	0.0	1.0	2.0	0.0	0.0	13.5	0.5	0.5	3.9	2.2	13.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Rust (% leaf area) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	*	1.0	0.0	0.0	3.5	5.0	0.0	5.0	15.0	0.5	1.1	6.3	3.7	15.0
PIT 164	MH 2725	*	1.5	0.0	0.0	8.0	20.0	0.0	12.5	21.0	0.8	2.4	13.4	7.9	21.0
PIT 165	MH 2726	*	1.0	0.0	0.0	8.5	5.0	0.0	0.0	16.5	0.5	2.4	5.4	3.9	16.5
PIT 166	MH 2727	*	1.0	0.0	0.0	10.0	2.0	0.5	0.0	15.0	0.5	2.8	4.4	3.6	15.0
PIT 167	MH 2728	*	1.0	0.0	0.0	12.5	10.0	1.0	0.0	21.0	0.5	3.4	8.0	5.7	21.0
PIT 168	MH 2729	*	1.0	0.0	0.0	11.0	5.0	0.0	5.0	6.5	0.5	3.0	4.1	3.6	11.0
PIT 169	MH 2730	*	1.0	0.0	0.0	3.5	5.5	0.0	2.5	0.0	0.5	1.1	2.0	1.6	5.5
PIT 170	MH 2731	*	1.0	0.0	0.0	6.5	10.0	0.0	2.5	9.0	0.5	1.9	5.4	3.6	10.0
PIT 171	MH 2732	*	1.0	0.0	0.0	2.5	5.0	0.5	2.5	7.5	0.5	0.9	3.9	2.4	7.5
PIT 172	MH 2733	*	1.0	0.0	0.0	2.5	5.0	2.0	5.0	10.0	0.5	0.9	5.5	3.2	10.0
PIT 173	MH 2734	*	1.0	1.5	0.0	5.5	10.5	2.5	7.5	5.0	1.3	2.0	6.4	4.2	10.5
PIT 174	MH 2735	*	1.0	0.0	0.0	6.5	5.0	4.5	2.5	13.5	0.5	1.9	6.4	4.1	13.5
PIT 175	MH 2736	*	1.0	1.0	0.0	9.0	20.0	5.0	15.0	16.5	1.0	2.8	14.1	8.4	20.0
PIT 176	MH 2737	*	1.0	0.0	0.0	4.0	12.5	2.5	12.5	17.5	0.5	1.3	11.3	6.3	17.5
PIT 177	MH 2738	*	1.0	0.0	0.0	7.5	10.0	2.5	0.0	9.0	0.5	2.1	5.4	3.8	10.0
PIT 178	MH 2739	*	1.0	0.0	0.0	8.0	2.0	3.5	2.5	10.0	0.5	2.3	4.5	3.4	10.0
PIT 179	MH 2740	*	1.0	0.0	0.0	12.5	7.5	0.0	7.5	12.5	0.5	3.4	6.9	5.1	12.5
PIT 180	MP 618	*	1.0	NG	0.0	12.5	5.0	0.5	2.5	5.5	1.0	4.5	3.4	3.9	12.5
PIT 181	MP 619	*	1.0	NG	0.0	22.5	10.0	3.5	7.5	9.0	1.0	7.8	7.5	7.6	22.5
PIT 182	MP 620	*	1.0	0.0	0.0	20.0	20.0	3.5	27.5	12.5	0.5	5.3	15.9	10.6	27.5
PIT 183	MP 621	*	1.0	0.0	0.0	12.5	20.0	4.0	25.0	0.0	0.5	3.4	12.3	7.8	25.0
PIT 184	MP 622	*	1.0	0.0	0.0	13.5	17.5	6.0	20.0	11.0	0.5	3.6	13.6	8.6	20.0
PIT 185	MP 623	*	1.0	0.0	0.0	17.5	12.5	7.5	10.0	20.0	0.5	4.6	12.5	8.6	20.0
PIT 186	MP 624	*	2.0	0.0	0.0	10.0	2.0	13.5	0.0	17.5	1.0	3.0	8.3	5.6	17.5
PIT 187	MP 625	*	1.5	0.0	0.0	6.5	7.5	11.5	5.0	20.0	0.8	2.0	11.0	6.5	20.0
PIT 188	MP 626	*	1.0	0.0	0.0	10.0	20.0	10.0	20.0	20.0	0.5	2.8	17.5	10.1	20.0
PIT 189	MP 627	*	1.0	0.0	0.0	10.0	10.0	1.0	2.5	16.5	0.5	2.8	7.5	5.1	16.5
PIT 190	MP 628	*	1.0	0.0	0.0	11.0	2.5	5.0	2.5	21.0	0.5	3.0	7.8	5.4	21.0
PIT 191	MP 629	*	1.5	0.0	0.0	15.0	2.0	2.5	0.0	15.5	0.8	4.1	5.0	4.6	15.5
PIT 192	RHB 223	*	2.0	2.5	0.0	17.5	20.0	5.0	15.0	16.5	2.3	5.5	14.1	9.8	20.0
PIT 193	MPMH 21	*	2.0	0.0	0.0	20.0	20.0	3.5	7.5	20.0	1.0	5.5	12.8	9.1	20.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Rust (% leaf area) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	*	1.5	0.0	0.0	12.5	5.0	8.5	5.0	27.5	0.8	3.5	11.5	7.5	27.5
PIT 195	PB 1756	*	1.5	0.0	0.0	13.5	2.0	0.0	2.5	15.0	0.8	3.8	4.9	4.3	15.0
PIT 196	AHB 1200	*	2.0	1.0	0.0	4.0	2.5	11.0	5.0	20.0	1.5	1.8	9.6	5.7	20.0
PIT 197	MPMH 17	*	1.5	0.0	0.0	9.0	10.5	12.5	10.0	22.5	0.8	2.6	13.9	8.3	22.5
PIT 198	PB 1852	*	1.0	0.0	0.0	11.0	5.0	10.0	2.5	9.0	0.5	3.0	6.6	4.8	11.0
PIT 199	JKBH 1326	*	1.0	0.0	0.0	15.0	2.5	7.5	2.5	22.5	0.5	4.0	8.8	6.4	22.5
PIT 200	AHB 1269	*	1.5	0.0	0.0	10.0	0.0	10.0	0.0	11.0	0.8	2.9	5.3	4.1	11.0
PIT 201	86M01	*	1.5	0.0	0.0	1.0	0.0	2.5	0.0	18.0	0.8	0.6	5.1	2.9	18.0
PIT 202	Pratap	*	1.5	0.0	0.0	4.0	10.0	0.0	0.0	22.5	0.8	1.4	8.1	4.8	22.5
PIT 203	86M86	*	1.0	0.0	0.0	5.5	0.0	5.0	0.0	13.5	0.5	1.6	4.6	3.1	13.5
PIT 204	MP 7878	*	1.0	0.0	0.0	10.0	5.0	2.5	0.0	8.5	0.5	2.8	4.0	3.4	10.0
PIT 205	KBH 108	*	1.0	0.0	0.0	10.0	0.0	1.0	2.5	17.5	0.5	2.8	5.3	4.0	17.5
PIT 206	Kaveri S Boss	*	1.0	0.0	0.0	7.5	5.0	0.0	2.5	20.0	0.5	2.1	6.9	4.5	20.0
PIT 207	NBH 4903	*	1.0	0.0	0.0	8.0	0.0	2.5	0.0	18.0	0.5	2.3	5.1	3.7	18.0
PIT 208	ICMV 221	*	1.5	NG	0.0	6.5	0.0	7.5	2.5	19.0	1.5	2.7	7.3	5.3	19.0
PIT 209	Pusa Comp. 701	*	1.0	0.0	0.0	7.5	5.0	10.0	2.5	27.5	0.5	2.1	11.3	6.7	27.5
PIT 210	Dhanshakti	*	1.5	NG	0.0	10.0	20.0	7.5	17.5	25.0	1.5	3.8	17.5	11.6	25.0
PIT 211	Pusa Comp. 383	*	2.0	7.5	0.0	17.5	5.0	3.0	2.5	13.5	4.8	6.8	6.0	6.4	17.5
PIT 212	JBV 2	*	2.0	0.0	0.0	12.5	12.5	7.5	15.0	16.5	1.0	3.6	12.9	8.3	16.5
PIT 213	Raj 171	*	2.0	NG	0.0	15.0	10.0	5.0	5.0	20.0	2.0	5.7	10.0	8.1	20.0
PIT 214	ABV 04	*	1.5	0.5	0.0	12.5	2.5	2.5	0.0	20.5	1.0	3.6	6.4	5.0	20.5
PIT 215	Pusa Comp. 612	*	1.5	0.0	0.0	20.0	7.5	12.5	5.0	13.5	0.8	5.4	9.6	7.5	20.0
	Entry Mean	*	1.2	1.2	0.0	10.4	8.0	4.0	4.7	14.7	1.2	3.2	7.9	5.5	14.7

* No Data Provided - Mandor

Note:-

Zone A₁ Jaipur, Hisar

Zone A Jaipur, Hisar, Gwalior, Jamnagar

Zone B Mysore, Dhule, Aurangabad, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Smut (severity %) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	*	0.0	5.0	0.0	7.0	2.0	0.0	2.5	0.0	2.5	3.0	1.1	2.1	7.0
PIT 102	MH 2663	*	0.0	0.0	0.0	10.0	0.0	0.0	15.0	0.0	0.0	2.5	3.8	3.1	15.0
PIT 103	MH 2664	*	0.0	8.0	2.2	12.5	2.0	0.0	10.5	0.0	4.0	5.7	3.1	4.4	12.5
PIT 104	MH 2665	*	0.0	2.6	0.0	0.0	2.5	0.0	2.0	1.0	1.3	0.7	1.4	1.0	2.6
PIT 105	MH 2666	*	0.0	4.6	1.2	0.0	5.0	0.0	10.5	0.0	2.3	1.5	3.9	2.7	10.5
PIT 106	MH 2667	*	2.0	0.5	0.0	12.5	0.0	0.0	5.5	0.0	1.3	3.8	1.4	2.6	12.5
PIT 107	MH 2668	*	3.0	0.5	0.0	5.0	2.0	0.0	3.5	0.0	1.8	2.1	1.4	1.8	5.0
PIT 108	MH 2669	*	0.0	3.1	0.0	15.0	2.5	0.0	1.0	0.0	1.6	4.5	0.9	2.7	15.0
PIT 109	MH 2670	*	0.0	14.1	0.0	4.5	0.0	0.0	6.0	0.0	7.1	4.7	1.5	3.1	14.1
PIT 110	MH 2671	*	0.0	12.0	6.5	10.0	2.0	0.0	27.5	1.0	6.0	7.1	7.6	7.4	27.5
PIT 111	MH 2672	*	1.5	8.0	0.0	10.0	2.5	0.0	6.0	0.0	4.8	4.9	2.1	3.5	10.0
PIT 112	MH 2673	*	1.0	15.0	0.0	7.5	2.0	0.0	7.5	0.0	8.0	5.9	2.4	4.1	15.0
PIT 113	MH 2674	*	0.0	1.0	0.0	0.0	5.0	0.0	1.5	0.0	0.5	0.3	1.6	0.9	5.0
PIT 114	MH 2675	*	1.5	0.7	0.0	7.5	2.5	0.0	2.0	1.0	1.1	2.4	1.4	1.9	7.5
PIT 115	MH 2676	*	0.0	0.5	0.0	2.5	2.5	0.0	1.5	0.0	0.3	0.8	1.0	0.9	2.5
PIT 116	MH 2677	*	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.1	0.1	0.5
PIT 117	MH 2678	*	1.5	4.1	0.0	30.0	2.0	0.0	20.0	0.0	2.8	8.9	5.5	7.2	30.0
PIT 118	MH 2679	*	1.5	2.1	2.3	25.0	2.0	0.0	20.0	0.0	1.8	7.7	5.5	6.6	25.0
PIT 119	MH 2680	*	0.0	1.5	0.0	7.5	5.0	0.0	5.0	1.5	0.8	2.3	2.9	2.6	7.5
PIT 120	MH 2681	*	0.0	1.1	0.0	17.5	2.0	0.0	27.5	0.5	0.6	4.7	7.5	6.1	27.5
PIT 121	MH 2682	*	0.0	0.0	0.0	7.5	0.0	0.0	1.5	0.0	0.0	1.9	0.4	1.1	7.5
PIT 122	MH 2683	*	0.0	0.2	3.2	7.5	2.5	0.0	0.5	0.0	0.1	2.7	0.8	1.7	7.5
PIT 123	MH 2684	*	0.0	0.0	0.0	11.0	2.0	0.0	6.0	0.0	0.0	2.8	2.0	2.4	11.0
PIT 124	MH 2685	*	0.5	0.1	0.0	0.0	2.5	0.0	1.0	0.0	0.3	0.2	0.9	0.5	2.5
PIT 125	MH 2686	*	1.5	NG	0.0	0.0	0.0	0.0	0.5	0.0	1.5	0.5	0.1	0.3	1.5
PIT 126	MH 2687	*	1.5	0.0	0.0	42.5	0.0	0.0	3.5	0.5	0.8	11.0	1.0	6.0	42.5
PIT 127	MH 2688	*	0.0	0.1	0.0	17.5	2.0	0.0	25.0	0.5	0.1	4.4	6.9	5.6	25.0
PIT 128	MH 2689	*	0.5	0.5	0.0	15.0	0.0	0.0	0.5	1.0	0.5	4.0	0.4	2.2	15.0
PIT 129	MH 2690	*	1.0	13.5	0.0	20.0	0.0	0.0	15.5	0.0	7.3	8.6	3.9	6.3	20.0
PIT 130	MH 2691	*	1.5	1.0	8.5	20.0	2.0	0.0	12.5	0.0	1.3	7.8	3.6	5.7	20.0
PIT 131	MH 2692	*	2.0	0.5	0.0	12.5	5.0	0.0	7.5	0.5	1.3	3.8	3.3	3.5	12.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Smut (severity %) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	*	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.3	2.5
PIT 133	MH 2694	*	2.5	1.1	3.0	10.0	0.0	0.0	2.5	0.0	1.8	4.2	0.6	2.4	10.0
PIT 134	MH 2695	*	0.0	0.5	0.0	15.0	0.0	0.0	2.5	0.0	0.3	3.9	0.6	2.3	15.0
PIT 135	MH 2696	*	0.0	0.1	0.0	5.0	0.0	0.0	1.5	0.0	0.1	1.3	0.4	0.8	5.0
PIT 136	MH 2697	*	0.0	NG	8.5	12.5	0.0	0.0	0.5	0.0	0.0	7.0	0.1	3.1	12.5
PIT 137	MH 2698	*	0.0	1.5	0.0	10.0	2.0	0.0	3.0	0.0	0.8	2.9	1.3	2.1	10.0
PIT 138	MH 2699	*	2.0	4.0	0.0	10.0	2.0	0.0	12.5	0.0	3.0	4.0	3.6	3.8	12.5
PIT 139	MH 2700	*	1.0	16.1	0.0	27.5	2.5	0.0	6.5	0.0	8.6	11.2	2.3	6.7	27.5
PIT 140	MH 2701	*	0.0	6.0	0.0	17.5	0.0	0.0	0.0	0.0	3.0	5.9	0.0	2.9	17.5
PIT 141	MH 2702	*	0.0	4.5	0.0	22.5	0.0	0.0	1.0	1.0	2.3	6.8	0.5	3.6	22.5
PIT 142	MH 2703	*	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8	6.5
PIT 143	MH 2704	*	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.3	0.1	1.0
PIT 144	MH 2705	*	0.0	NG	0.0	12.5	0.0	0.0	0.0	0.0	0.0	4.2	0.0	1.8	12.5
PIT 145	MH 2706	*	0.0	0.1	0.0	0.0	2.0	0.0	3.5	1.0	0.1	0.0	1.6	0.8	3.5
PIT 146	MH 2707	*	0.0	0.6	0.0	2.5	0.0	0.0	3.5	0.0	0.3	0.8	0.9	0.8	3.5
PIT 147	MH 2708	*	1.0	1.2	0.0	27.5	2.5	0.0	4.0	0.0	1.1	7.4	1.6	4.5	27.5
PIT 148	MH 2709	*	0.0	0.0	4.2	5.0	5.0	0.0	6.0	0.0	0.0	2.3	2.8	2.5	6.0
PIT 149	MH 2710	*	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.6	4.5
PIT 150	MH 2711	*	0.0	1.0	3.0	12.5	0.0	0.0	2.5	0.0	0.5	4.1	0.6	2.4	12.5
PIT 151	MH 2712	*	0.0	3.0	0.0	47.5	2.5	0.0	2.0	0.0	1.5	12.6	1.1	6.9	47.5
PIT 152	MH 2713	*	0.0	0.7	0.0	17.5	0.0	0.0	1.5	0.5	0.4	4.6	0.5	2.5	17.5
PIT 153	MH 2714	*	0.0	1.1	0.0	7.5	2.0	0.0	6.0	0.0	0.6	2.2	2.0	2.1	7.5
PIT 154	MH 2715	*	0.0	0.0	0.0	0.0	5.0	0.0	1.5	0.0	0.0	0.0	1.6	0.8	5.0
PIT 155	MH 2716	*	0.0	0.0	0.0	0.0	2.5	0.0	0.5	0.0	0.0	0.0	0.8	0.4	2.5
PIT 156	MH 2717	*	1.0	0.0	0.0	7.5	2.5	0.0	4.0	0.0	0.5	2.1	1.6	1.9	7.5
PIT 157	MH 2718	*	0.0	0.2	10.0	5.0	0.0	0.0	1.0	1.0	0.1	3.8	0.5	2.2	10.0
PIT 158	MH 2719	*	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.1	0.5
PIT 159	MH 2720	*	0.0	0.0	12.0	15.0	0.0	0.0	0.0	0.0	0.0	6.8	0.0	3.4	15.0
PIT 160	MH 2721	*	0.0	2.0	0.0	7.5	0.0	0.0	0.5	0.0	1.0	2.4	0.1	1.3	7.5
PIT 161	MH 2722	*	0.0	0.0	0.0	3.0	2.5	0.0	2.5	0.0	0.0	0.8	1.3	1.0	3.0
PIT 162	MH 2723	*	1.5	0.0	0.4	0.0	0.0	0.0	1.5	1.0	0.8	0.5	0.6	0.6	1.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Smut (severity %) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	*	0.0	0.0	1.5	10.0	5.0	0.0	22.5	0.0	0.0	2.9	6.9	4.9	22.5
PIT 164	MH 2725	*	1.0	1.0	10.5	10.0	2.5	0.0	2.0	0.0	1.0	5.6	1.1	3.4	10.5
PIT 165	MH 2726	*	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.1	0.5
PIT 166	MH 2727	*	0.0	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	1.0	0.5	2.0
PIT 167	MH 2728	*	0.0	0.5	0.0	0.0	2.5	0.0	1.5	0.0	0.3	0.1	1.0	0.6	2.5
PIT 168	MH 2729	*	0.0	0.0	0.0	12.5	0.0	0.0	1.0	0.0	0.0	3.1	0.3	1.7	12.5
PIT 169	MH 2730	*	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.6	4.5
PIT 170	MH 2731	*	0.0	0.0	0.0	5.0	0.0	0.0	0.5	0.0	0.0	1.3	0.1	0.7	5.0
PIT 171	MH 2732	*	0.0	0.0	0.0	10.0	0.0	0.0	1.0	0.0	0.0	2.5	0.3	1.4	10.0
PIT 172	MH 2733	*	0.0	0.7	0.0	7.5	2.0	0.0	5.0	1.0	0.4	2.1	2.0	2.0	7.5
PIT 173	MH 2734	*	0.0	0.6	0.0	3.0	0.0	0.0	1.0	0.5	0.3	0.9	0.4	0.6	3.0
PIT 174	MH 2735	*	0.0	0.1	0.0	7.5	2.5	0.0	2.0	0.0	0.1	1.9	1.1	1.5	7.5
PIT 175	MH 2736	*	0.0	0.6	0.0	5.0	0.0	0.0	1.5	0.0	0.3	1.4	0.4	0.9	5.0
PIT 176	MH 2737	*	1.0	0.5	0.0	17.5	0.0	0.0	0.5	0.0	0.8	4.8	0.1	2.4	17.5
PIT 177	MH 2738	*	0.0	0.0	0.0	5.0	2.5	0.0	2.0	0.0	0.0	1.3	1.1	1.2	5.0
PIT 178	MH 2739	*	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.3	0.1	0.1	0.1	0.5
PIT 179	MH 2740	*	2.5	10.5	0.0	27.5	2.0	0.0	22.5	0.0	6.5	10.1	6.1	8.1	27.5
PIT 180	MP 618	*	0.0	NG	0.0	3.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.4	3.0
PIT 181	MP 619	*	0.0	NG	0.0	12.5	0.0	0.0	1.5	0.5	0.0	4.2	0.5	2.1	12.5
PIT 182	MP 620	*	0.0	0.0	0.0	12.5	0.0	0.0	1.0	0.0	0.0	3.1	0.3	1.7	12.5
PIT 183	MP 621	*	0.0	0.5	0.0	10.0	0.0	0.0	0.0	0.0	0.3	2.6	0.0	1.3	10.0
PIT 184	MP 622	*	2.0	0.0	0.0	7.5	2.5	0.0	2.0	0.0	1.0	2.4	1.1	1.8	7.5
PIT 185	MP 623	*	0.0	0.0	3.0	12.5	5.0	0.0	4.0	0.0	0.0	3.9	2.3	3.1	12.5
PIT 186	MP 624	*	2.5	1.0	0.0	5.0	0.0	0.0	5.0	0.0	1.8	2.1	1.3	1.7	5.0
PIT 187	MP 625	*	0.0	0.0	0.0	0.0	5.0	0.0	3.5	0.0	0.0	0.0	2.1	1.1	5.0
PIT 188	MP 626	*	0.0	0.0	0.0	15.0	2.5	0.0	2.5	0.0	0.0	3.8	1.3	2.5	15.0
PIT 189	MP 627	*	0.0	0.0	0.0	7.5	0.0	0.0	2.5	0.0	0.0	1.9	0.6	1.3	7.5
PIT 190	MP 628	*	0.0	0.0	0.0	5.0	0.0	0.0	2.5	0.0	0.0	1.3	0.6	0.9	5.0
PIT 191	MP 629	*	1.0	0.0	2.8	7.5	5.0	0.0	7.5	0.0	0.5	2.8	3.1	3.0	7.5
PIT 192	RHB 223	*	1.0	0.0	0.0	15.0	2.5	0.0	16.0	0.0	0.5	4.0	4.6	4.3	16.0
PIT 193	MPMH 21	*	0.0	5.1	0.0	7.5	2.0	0.0	5.0	0.0	2.6	3.2	1.8	2.5	7.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Smut (severity %) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	*	2.0	6.6	0.0	7.5	5.0	0.0	11.0	0.0	4.3	4.0	4.0	4.0	11.0
PIT 195	PB 1756	*	0.0	0.5	0.0	3.0	2.5	0.0	2.0	0.0	0.3	0.9	1.1	1.0	3.0
PIT 196	AHB 1200	*	5.5	0.0	0.0	7.5	2.0	0.0	15.0	0.0	2.8	3.3	4.3	3.8	15.0
PIT 197	MPMH 17	*	0.0	0.5	4.6	12.5	2.0	0.0	35.0	0.0	0.3	4.4	9.3	6.8	35.0
PIT 198	PB 1852	*	0.0	0.1	0.0	0.0	0.0	0.0	1.0	0.0	0.1	0.0	0.3	0.1	1.0
PIT 199	JKBH 1326	*	0.0	0.0	0.0	10.0	0.0	0.0	1.0	0.0	0.0	2.5	0.3	1.4	10.0
PIT 200	AHB 1269	*	0.0	0.0	0.0	17.5	5.0	0.0	20.0	1.0	0.0	4.4	6.5	5.4	20.0
PIT 201	86M01	*	0.0	0.0	0.0	0.0	2.0	0.0	3.5	0.0	0.0	0.0	1.4	0.7	3.5
PIT 202	Pratap	*	1.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.5	0.3	1.0	0.6	4.0
PIT 203	86M86	*	0.0	0.0	2.5	0.0	0.0	0.0	0.5	0.0	0.0	0.6	0.1	0.4	2.5
PIT 204	MP 7878	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PIT 205	KBH 108	*	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.1	1.0
PIT 206	Kaveri S Boss	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PIT 207	NBH 4903	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PIT 208	ICMV 221	*	0.5	NG	0.0	0.0	2.0	0.0	15.0	0.0	0.5	0.2	4.3	2.5	15.0
PIT 209	Pusa Comp. 701	*	0.0	0.0	0.0	5.0	5.0	0.0	11.0	0.0	0.0	1.3	4.0	2.6	11.0
PIT 210	Dhanshakti	*	1.5	NG	0.0	3.0	2.0	0.0	30.0	0.5	1.5	1.5	8.1	5.3	30.0
PIT 211	Pusa Comp. 383	*	2.5	0.6	0.0	7.5	5.0	0.0	15.0	0.0	1.6	2.7	5.0	3.8	15.0
PIT 212	JBV 2	*	0.0	0.1	0.0	17.5	0.0	0.0	5.0	0.0	0.1	4.4	1.3	2.8	17.5
PIT 213	Raj 171	*	0.0	NG	0.0	10.0	2.5	0.0	5.0	0.0	0.0	3.3	1.9	2.5	10.0
PIT 214	ABV 04	*	0.0	0.5	3.0	12.5	0.0	0.0	2.0	0.5	0.3	4.0	0.6	2.3	12.5
PIT 215	Pusa Comp. 612	*	0.0	0.6	0.0	25.0	2.0	0.0	5.0	0.0	0.3	6.4	1.8	4.1	25.0
	Entry Mean	*	0.5	1.6	1.0	8.8	1.5	0.0	5.4	0.1	1.1	3.0	1.8	2.4	8.8

* No Data Provided - Mandor

Note:-

Zone A1 Jaipur, Hisar

Zone A Jaipur, Hisar, Gwalior, Jamnagar

Zone B Mysore, Dhule, Aurangabad, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Ergot severity at 60 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 101	MH 2662	*	*	2.0	2.5	*	1.5	12.5	1.0	0.0	2.0	2.3	3.8	3.3	12.5
PIT 102	MH 2663	*	*	2.0	0.0	*	0.0	10.0	0.5	0.0	2.0	1.0	2.6	2.1	10.0
PIT 103	MH 2664	*	*	2.0	1.5	*	1.0	10.0	2.0	1.0	2.0	1.8	3.5	2.9	10.0
PIT 104	MH 2665	*	*	2.5	0.0	*	0.5	17.5	1.0	0.0	2.5	1.3	4.8	3.6	17.5
PIT 105	MH 2666	*	*	2.0	2.5	*	0.5	6.5	1.0	0.0	2.0	2.3	2.0	2.1	6.5
PIT 106	MH 2667	*	*	2.0	12.5	*	0.0	2.0	0.0	0.0	2.0	7.3	0.5	2.8	12.5
PIT 107	MH 2668	*	*	2.0	7.5	*	0.5	1.0	1.0	3.5	2.0	4.8	1.5	2.6	7.5
PIT 108	MH 2669	*	*	2.0	27.5	*	0.0	5.0	1.0	0.0	2.0	14.8	1.5	5.9	27.5
PIT 109	MH 2670	*	*	2.0	2.5	*	0.5	12.5	1.0	0.0	2.0	2.3	3.5	3.1	12.5
PIT 110	MH 2671	*	*	2.0	7.5	*	0.5	17.5	1.0	0.0	2.0	4.8	4.8	4.8	17.5
PIT 111	MH 2672	*	*	2.0	7.5	*	0.0	1.5	0.0	0.0	2.0	4.8	0.4	1.8	7.5
PIT 112	MH 2673	*	*	2.0	17.5	*	1.0	5.0	0.5	2.0	2.0	9.8	2.1	4.7	17.5
PIT 113	MH 2674	*	*	2.0	1.0	*	0.0	17.5	0.0	0.0	2.0	1.5	4.4	3.4	17.5
PIT 114	MH 2675	*	*	2.0	2.0	*	0.0	3.0	0.0	0.0	2.0	2.0	0.8	1.2	3.0
PIT 115	MH 2676	*	*	1.5	0.0	*	0.0	12.5	0.0	0.0	1.5	0.8	3.1	2.3	12.5
PIT 116	MH 2677	*	*	2.0	7.5	*	0.0	12.5	0.0	0.0	2.0	4.8	3.1	3.7	12.5
PIT 117	MH 2678	*	*	2.0	0.0	*	0.0	6.0	0.0	2.0	2.0	1.0	2.0	1.7	6.0
PIT 118	MH 2679	*	*	2.0	17.5	*	0.5	1.0	1.0	0.0	2.0	9.8	0.6	3.7	17.5
PIT 119	MH 2680	*	*	2.0	6.5	*	0.0	4.0	0.0	0.0	2.0	4.3	1.0	2.1	6.5
PIT 120	MH 2681	*	*	2.0	10.0	*	0.0	2.0	0.0	0.0	2.0	6.0	0.5	2.3	10.0
PIT 121	MH 2682	*	*	2.0	0.0	*	0.0	3.0	0.0	1.0	2.0	1.0	1.0	1.0	3.0
PIT 122	MH 2683	*	*	1.5	5.0	*	0.5	1.0	1.0	0.0	1.5	3.3	0.6	1.5	5.0
PIT 123	MH 2684	*	*	2.0	0.0	*	0.0	0.5	0.5	0.0	2.0	1.0	0.3	0.5	2.0
PIT 124	MH 2685	*	*	2.0	10.0	*	1.0	7.5	1.5	0.0	2.0	6.0	2.5	3.7	10.0
PIT 125	MH 2686	*	*	2.0	0.0	*	0.0	7.5	0.0	0.0	2.0	1.0	1.9	1.6	7.5
PIT 126	MH 2687	*	*	2.0	17.5	*	0.0	15.0	0.0	2.0	2.0	9.8	4.3	6.1	17.5
PIT 127	MH 2688	*	*	2.0	5.0	*	2.0	17.5	2.5	0.0	2.0	3.5	5.5	4.8	17.5
PIT 128	MH 2689	*	*	2.0	2.5	*	0.0	12.5	0.0	0.0	2.0	2.3	3.1	2.8	12.5
PIT 129	MH 2690	*	*	2.0	15.0	*	5.0	20.0	5.0	0.0	2.0	8.5	7.5	7.8	20.0
PIT 130	MH 2691	*	*	2.0	5.0	*	2.0	9.0	5.0	3.0	2.0	3.5	4.8	4.3	9.0
PIT 131	MH 2692	*	*	2.5	0.0	*	5.0	60.0	2.5	0.0	2.5	1.3	16.9	11.7	60.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Ergot severity at 60 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 132	MH 2693	*	*	2.0	0.0	*	0.0	62.5	0.0	0.0	2.0	1.0	15.6	10.8	62.5
PIT 133	MH 2694	*	*	2.0	7.5	*	0.0	15.0	0.5	0.0	2.0	4.8	3.9	4.2	15.0
PIT 134	MH 2695	*	*	2.5	17.5	*	2.0	27.5	2.5	0.0	2.5	10.0	8.0	8.7	27.5
PIT 135	MH 2696	*	*	2.0	3.0	*	5.0	40.0	10.0	1.5	2.0	2.5	14.1	10.3	40.0
PIT 136	MH 2697	*	*	2.0	0.0	*	1.0	2.5	1.5	0.0	2.0	1.0	1.3	1.2	2.5
PIT 137	MH 2698	*	*	2.0	7.5	*	1.0	22.5	1.0	0.0	2.0	4.8	6.1	5.7	22.5
PIT 138	MH 2699	*	*	3.0	0.5	*	1.0	12.5	2.0	3.0	3.0	1.8	4.6	3.7	12.5
PIT 139	MH 2700	*	*	2.0	2.5	*	1.0	40.0	1.5	0.0	2.0	2.3	10.6	7.8	40.0
PIT 140	MH 2701	*	*	2.5	2.5	*	0.0	2.5	0.0	0.0	2.5	2.5	0.6	1.3	2.5
PIT 141	MH 2702	*	*	2.0	0.5	*	0.0	23.5	0.0	0.0	2.0	1.3	5.9	4.3	23.5
PIT 142	MH 2703	*	*	2.0	2.5	*	0.0	45.0	0.0	1.5	2.0	2.3	11.6	8.5	45.0
PIT 143	MH 2704	*	*	2.0	0.5	*	1.0	2.0	1.0	0.0	2.0	1.3	1.0	1.1	2.0
PIT 144	MH 2705	*	*	2.0	0.0	*	0.0	0.0	0.0	0.5	2.0	1.0	0.1	0.4	2.0
PIT 145	MH 2706	*	*	2.0	3.0	*	0.0	17.5	0.0	0.0	2.0	2.5	4.4	3.8	17.5
PIT 146	MH 2707	*	*	2.0	0.0	*	0.0	12.5	0.0	0.0	2.0	1.0	3.1	2.4	12.5
PIT 147	MH 2708	*	*	2.0	2.5	*	1.0	9.0	1.0	0.0	2.0	2.3	2.8	2.6	9.0
PIT 148	MH 2709	*	*	2.0	5.0	*	2.0	22.5	2.5	0.0	2.0	3.5	6.8	5.7	22.5
PIT 149	MH 2710	*	*	3.0	2.5	*	1.0	12.5	1.0	0.0	3.0	2.8	3.6	3.3	12.5
PIT 150	MH 2711	*	*	2.0	2.5	*	3.0	5.0	3.0	1.0	2.0	2.3	3.0	2.8	5.0
PIT 151	MH 2712	*	*	2.0	2.5	*	5.0	49.0	5.5	0.0	2.0	2.3	14.9	10.7	49.0
PIT 152	MH 2713	*	*	2.5	0.0	*	5.0	25.0	6.0	0.0	2.5	1.3	9.0	6.4	25.0
PIT 153	MH 2714	*	*	2.0	0.0	*	2.0	17.5	1.0	3.5	2.0	1.0	6.0	4.3	17.5
PIT 154	MH 2715	*	*	2.0	0.0	*	1.0	40.0	1.0	0.0	2.0	1.0	10.5	7.3	40.0
PIT 155	MH 2716	*	*	2.0	5.0	*	0.0	30.0	1.0	0.5	2.0	3.5	7.9	6.4	30.0
PIT 156	MH 2717	*	*	2.0	0.0	*	5.0	45.0	2.5	0.0	2.0	1.0	13.1	9.1	45.0
PIT 157	MH 2718	*	*	1.5	0.0	*	0.0	0.0	0.5	0.0	1.5	0.8	0.1	0.3	1.5
PIT 158	MH 2719	*	*	1.5	0.0	*	2.0	3.5	2.5	1.5	1.5	0.8	2.4	1.8	3.5
PIT 159	MH 2720	*	*	1.5	0.5	*	5.0	32.5	5.0	0.0	1.5	1.0	10.6	7.4	32.5
PIT 160	MH 2721	*	*	1.5	2.5	*	5.0	25.0	3.5	0.0	1.5	2.0	8.4	6.3	25.0
PIT 161	MH 2722	*	*	2.0	5.0	*	1.0	10.0	1.0	0.0	2.0	3.5	3.0	3.2	10.0
PIT 162	MH 2723	*	*	2.0	0.0	*	0.0	15.0	0.0	0.0	2.0	1.0	3.8	2.8	15.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Ergot severity at 60 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 163	MH 2724	*	*	2.5	1.0	*	0.0	21.0	0.5	2.5	2.5	1.8	6.0	4.6	21.0
PIT 164	MH 2725	*	*	1.5	0.0	*	0.0	10.0	0.0	0.0	1.5	0.8	2.5	1.9	10.0
PIT 165	MH 2726	*	*	2.5	0.0	*	0.0	13.0	0.0	0.0	2.5	1.3	3.3	2.6	13.0
PIT 166	MH 2727	*	*	2.0	0.0	*	0.0	10.5	0.0	0.0	2.0	1.0	2.6	2.1	10.5
PIT 167	MH 2728	*	*	2.0	0.0	*	2.0	32.5	2.0	1.5	2.0	1.0	9.5	6.7	32.5
PIT 168	MH 2729	*	*	2.0	2.5	*	1.0	30.0	1.0	0.0	2.0	2.3	8.0	6.1	30.0
PIT 169	MH 2730	*	*	2.0	5.0	*	0.0	3.5	1.0	0.0	2.0	3.5	1.1	1.9	5.0
PIT 170	MH 2731	*	*	2.0	5.0	*	0.0	27.5	0.0	0.0	2.0	3.5	6.9	5.8	27.5
PIT 171	MH 2732	*	*	2.5	2.5	*	0.0	2.0	0.0	0.0	2.5	2.5	0.5	1.2	2.5
PIT 172	MH 2733	*	*	2.0	2.5	*	1.0	6.0	1.0	1.0	2.0	2.3	2.3	2.3	6.0
PIT 173	MH 2734	*	*	2.0	0.0	*	0.0	10.5	0.0	0.0	2.0	1.0	2.6	2.1	10.5
PIT 174	MH 2735	*	*	2.0	2.5	*	0.0	40.0	0.5	0.0	2.0	2.3	10.1	7.5	40.0
PIT 175	MH 2736	*	*	2.5	2.5	*	2.0	75.0	2.0	0.0	2.5	2.5	19.8	14.0	75.0
PIT 176	MH 2737	*	*	2.0	0.0	*	0.0	35.0	0.0	0.0	2.0	1.0	8.8	6.2	35.0
PIT 177	MH 2738	*	*	2.0	0.0	*	2.0	17.5	1.5	0.0	2.0	1.0	5.3	3.8	17.5
PIT 178	MH 2739	*	*	2.0	5.0	*	10.0	6.0	6.0	0.0	2.0	3.5	5.5	4.8	10.0
PIT 179	MH 2740	*	*	2.5	0.0	*	5.0	82.5	5.5	1.5	2.5	1.3	23.6	16.2	82.5
PIT 180	MP 618	*	*	2.0	0.0	*	0.0	3.5	1.0	0.0	2.0	1.0	1.1	1.1	3.5
PIT 181	MP 619	*	*	2.0	0.0	*	0.0	2.5	0.0	0.0	2.0	1.0	0.6	0.8	2.5
PIT 182	MP 620	*	*	2.0	0.0	*	0.0	10.0	0.0	0.0	2.0	1.0	2.5	2.0	10.0
PIT 183	MP 621	*	*	1.5	0.0	*	1.0	0.0	1.0	0.0	1.5	0.8	0.5	0.6	1.5
PIT 184	MP 622	*	*	2.0	0.0	*	0.0	0.0	0.0	2.0	2.0	1.0	0.5	0.7	2.0
PIT 185	MP 623	*	*	2.0	0.0	*	0.0	20.0	0.0	0.0	2.0	1.0	5.0	3.7	20.0
PIT 186	MP 624	*	*	2.5	2.5	*	0.0	35.0	0.0	0.0	2.5	2.5	8.8	6.7	35.0
PIT 187	MP 625	*	*	2.0	2.5	*	0.0	20.0	0.0	1.0	2.0	2.3	5.3	4.3	20.0
PIT 188	MP 626	*	*	2.0	0.0	*	1.0	16.0	2.0	0.0	2.0	1.0	4.8	3.5	16.0
PIT 189	MP 627	*	*	2.5	7.5	*	3.0	12.5	2.5	2.0	2.5	5.0	5.0	5.0	12.5
PIT 190	MP 628	*	*	2.0	10.0	*	3.0	15.0	3.5	0.0	2.0	6.0	5.4	5.6	15.0
PIT 191	MP 629	*	*	2.0	10.0	*	2.0	3.5	1.0	0.0	2.0	6.0	1.6	3.1	10.0
PIT 192	RHB 223	*	*	2.0	12.5	*	2.0	8.5	2.0	0.0	2.0	7.3	3.1	4.5	12.5
PIT 193	MPMH 21	*	*	2.0	17.5	*	0.0	17.5	0.0	0.0	2.0	9.8	4.4	6.2	17.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.3: Disease screening of Initial Pearl Millet Hybrids and Varieties (PMPT I): Ergot severity at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX
											Zone A ₁	Zone A	Zone B	India	
PIT 194	HHB 67 Imp.	*	*	2.5	7.5	*	5.0	12.5	5.0	1.5	2.5	5.0	6.0	5.7	12.5
PIT 195	PB 1756	*	*	2.0	10.0	*	2.0	12.5	1.0	0.0	2.0	6.0	3.9	4.6	12.5
PIT 196	AHB 1200	*	*	3.5	7.5	*	4.0	35.0	2.5	0.0	3.5	5.5	10.4	8.8	35.0
PIT 197	MPMH 17	*	*	2.0	10.0	*	4.0	45.0	2.5	0.0	2.0	6.0	12.9	10.6	45.0
PIT 198	PB 1852	*	*	2.0	2.5	*	2.0	0.0	1.0	0.5	2.0	2.3	0.9	1.3	2.5
PIT 199	JKBH 1326	*	*	2.0	2.5	*	2.0	21.0	2.0	0.0	2.0	2.3	6.3	4.9	21.0
PIT 200	AHB 1269	*	*	2.0	22.5	*	2.5	18.5	1.5	2.5	2.0	12.3	6.3	8.3	22.5
PIT 201	86M01	*	*	2.0	0.0	*	0.0	10.0	0.0	0.0	2.0	1.0	2.5	2.0	10.0
PIT 202	Pratap	*	*	2.0	0.0	*	0.0	12.5	0.0	0.0	2.0	1.0	3.1	2.4	12.5
PIT 203	86M86	*	*	2.0	0.0	*	0.0	25.0	0.0	0.0	2.0	1.0	6.3	4.5	25.0
PIT 204	MP 7878	*	*	2.0	0.0	*	1.0	17.0	0.0	0.0	2.0	1.0	4.5	3.3	17.0
PIT 205	KBH 108	*	*	2.0	0.0	*	0.0	22.5	0.0	0.0	2.0	1.0	5.6	4.1	22.5
PIT 206	Kaveri S Boss	*	*	2.0	0.0	*	0.0	31.0	0.0	2.0	2.0	1.0	8.3	5.8	31.0
PIT 207	NBH 4903	*	*	2.0	0.0	*	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.3	2.0
PIT 208	ICMV 221	*	*	2.5	2.5	*	1.0	17.5	0.0	0.0	2.5	2.5	4.6	3.9	17.5
PIT 209	Pusa Comp. 701	*	*	2.0	10.0	*	0.0	20.5	0.0	0.0	2.0	6.0	5.1	5.4	20.5
PIT 210	Dhanshakti	*	*	2.0	2.5	*	0.0	25.0	0.0	0.0	2.0	2.3	6.3	4.9	25.0
PIT 211	Pusa Comp. 383	*	*	2.5	0.0	*	2.0	12.5	2.0	0.0	2.5	1.3	4.1	3.2	12.5
PIT 212	JBV 2	*	*	2.0	2.5	*	2.0	30.0	1.0	0.0	2.0	2.3	8.3	6.3	30.0
PIT 213	Raj 171	*	*	2.0	5.0	*	1.0	16.0	1.5	0.0	2.0	3.5	4.6	4.3	16.0
PIT 214	ABV 04	*	*	2.5	7.5	*	2.0	10.0	1.0	0.0	2.5	5.0	3.3	3.8	10.0
PIT 215	Pusa Comp. 612	*	*	2.5	10.0	*	4.0	5.5	2.5	0.0	2.5	6.3	3.0	4.1	10.0
	Entry Mean	*	*	2.1	4.0	*	1.2	17.1	1.2	0.4	2.1	3.0	5.0	4.3	17.1

* No Data Provided - Mandor, Hisar, Jamnagar

Note:-

Zone A1 Jaipur

Zone A Jaipur, Gwalior

Zone B Mysore, Dhule, Aurangabad, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.4: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Downy mildew (%) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
IR I		76.3	83.9	68.1	72.2	73.3	76.0	75.0	79.6	79.0	81.0	76.1	74.7	78.1	76.4	83.9
IR II		72.2	60.3	66.0	68.4	7.7	76.8	90.5	84.4	82.1	68.9	66.1	54.9	80.5	67.7	90.5
PAT 201	MH 2553	2.7	0.0	0.0	2.4	0.0	1.0	0.0	0.0	0.0	0.0	0.9	1.0	0.2	0.6	2.7
PAT 202	MH 2555	0.0	0.0	0.0	0.0	0.0	3.0	0.0	3.7	0.0	0.0	0.0	0.0	1.3	0.7	3.7
PAT 203	MH 2661	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.4	0.0	0.5	0.0	0.0	1.0	0.5	2.4
PAT 204	MH 2619	1.7	0.0	0.0	0.0	0.0	3.0	0.0	2.0	0.0	0.0	0.6	0.3	1.0	0.7	3.0
PAT 205	MH 2564 (R)	1.7	0.0	0.0	5.8	0.0	8.0	0.0	7.8	0.0	2.0	0.6	1.5	3.6	2.5	8.0
IR I		72.0	87.7	61.9	71.0	69.0	76.5	86.8	87.5	78.5	73.7	73.8	72.3	80.6	76.5	87.7
IR II		71.6	56.0	58.5	65.5	10.0	77.0	85.5	78.5	76.0	72.4	62.0	52.3	77.9	65.1	85.5
PAT 206	MH 2606	1.8	2.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.3	0.8	0.2	0.5	2.1
PAT 207	MH 2577	0.0	2.0	0.0	1.8	0.0	2.0	0.0	0.0	0.0	0.0	0.7	0.8	0.4	0.6	2.0
PAT 208	MH 2580	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.5	0.0	0.0	0.7	0.4	3.0
PAT 209	MH 2626	0.0	0.0	0.0	5.4	0.0	5.5	0.0	4.2	0.0	0.0	0.0	1.1	1.9	1.5	5.5
PAT 210	MH 2631	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.1	0.0	1.6	0.0	0.0	1.0	0.5	2.0
IR I		72.4	86.8	63.3	69.0	70.6	78.0	90.5	83.7	81.7	81.3	74.1	72.4	83.0	77.7	90.5
IR II		71.3	53.9	59.0	69.4	9.0	77.0	93.3	83.3	83.7	70.8	61.4	52.5	81.6	67.1	93.3
PAT 211	MP 610	1.7	3.7	0.0	2.0	1.4	5.0	0.0	4.1	3.0	2.2	1.8	1.8	2.9	2.3	5.0
PAT 212	MP 612	1.7	0.0	7.3	4.0	1.5	7.0	0.0	5.7	2.8	2.2	3.0	2.9	3.5	3.2	7.3
PAT 213	MP 613	1.9	0.0	0.0	2.0	0.0	3.0	0.0	3.2	0.5	1.2	0.6	0.8	1.6	1.2	3.2
PAT 214	MPMH 21	3.2	2.0	0.0	2.6	0.0	6.0	0.0	5.4	0.0	0.0	1.7	1.5	2.3	1.9	6.0
PAT 215	HHB 67 Imp.	1.4	0.0	0.0	6.5	2.4	3.0	0.0	1.0	0.0	0.0	0.5	2.0	0.8	1.4	6.5
IR I		75.3	93.9	64.7	67.6	70.4	75.0	73.1	82.0	77.4	73.2	78.0	74.4	76.1	75.3	93.9
IR II		73.8	51.9	76.1	74.1	8.2	77.0	83.1	85.1	83.6	64.8	67.3	56.8	78.7	67.8	85.1
PAT 216	RHB 177	1.8	1.9	2.9	13.5	1.3	9.0	0.0	4.3	0.0	1.2	2.2	4.3	2.9	3.6	13.5
PAT 217	GHB 538	0.0	3.6	4.4	30.0	0.0	13.0	0.0	6.5	15.3	1.2	2.7	7.6	7.2	7.4	30.0
PAT 218	AHB 1200	0.0	2.0	0.0	4.5	0.0	5.0	0.0	3.9	0.0	0.0	0.7	1.3	1.8	1.5	5.0
PAT 219	HHB 272	1.5	0.0	0.0	3.9	2.9	7.0	0.0	5.2	0.0	2.4	0.5	1.7	2.9	2.3	7.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.4: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Downy mildew (%) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 220	MPMH 17	1.7	0.0	0.0	0.0	0.0	2.0	0.0	1.1	0.0	2.3	0.6	0.3	1.1	0.7	2.3
IR I		75.3	88.7	53.1	74.3	80.0	77.0	71.1	90.4	82.3	78.9	72.4	74.3	79.9	77.1	90.4
IR II		74.1	53.2	56.4	73.2	10.4	74.0	72.2	85.7	88.4	67.2	61.2	53.4	77.5	65.5	88.4
PAT 221	PB 1705	1.3	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.4	0.3	0.6	0.4	3.0
PAT 222	86M01	1.7	5.6	0.0	6.7	0.0	7.0	0.0	4.8	0.0	0.9	2.4	2.8	2.5	2.7	7.0
PAT 223	Pratap	1.4	8.0	0.0	4.1	0.0	3.0	0.0	3.5	0.0	0.0	3.1	2.7	1.3	2.0	8.0
PAT 224	AHB 1269	1.7	0.0	0.0	6.5	0.0	5.0	0.0	5.6	0.0	1.7	0.6	1.6	2.5	2.1	6.5
PAT 225	NBH 5767	1.6	1.6	0.0	2.1	0.0	2.0	0.0	0.0	0.0	0.5	1.1	1.1	0.5	0.8	2.1
IR I		74.4	90.8	68.9	61.0	72.9	77.0	59.2	81.5	80.7	76.4	78.0	73.6	75.0	74.3	90.8
IR II		71.8	55.1	65.0	70.8	11.9	76.0	93.4	92.6	79.3	67.4	64.0	54.9	81.7	68.3	93.4
PAT 226	KBH 108	4.0	0.0	0.0	3.8	0.0	3.0	0.0	1.3	0.0	0.8	1.3	1.6	1.0	1.3	4.0
PAT 227	86M86	0.0	2.0	0.0	6.7	0.0	6.0	0.0	0.0	0.0	0.0	0.7	1.7	1.2	1.5	6.7
PAT 228	MP-7792	0.0	7.0	0.0	5.6	0.0	8.0	0.0	3.3	0.0	2.8	2.3	2.5	2.8	2.7	8.0
PAT 229	ICMV 221	3.6	1.7	0.0	3.8	0.0	8.0	0.0	6.9	5.1	0.0	1.8	1.8	4.0	2.9	8.0
PAT 230	Pusa Comp. 701	3.4	3.6	0.0	13.3	0.0	11.0	0.0	1.9	1.4	5.0	2.3	4.1	3.9	4.0	13.3
IR I		74.7	90.8	43.8	73.7	73.8	78.0	82.9	83.3	80.6	82.5	69.7	71.3	81.5	76.4	90.8
IR II		73.8	52.6	51.2	82.1	20.3	76.0	74.0	87.0	82.4	64.0	59.2	56.0	76.7	66.3	87.0
PAT 231	Dhanshakti	1.9	5.9	0.0	16.1	0.0	16.0	0.0	7.0	2.6	2.9	2.6	4.8	5.7	5.2	16.1
PAT 232	Pusa Comp. 383	3.4	3.8	2.3	8.9	2.4	11.0	0.0	2.3	2.6	3.6	3.1	4.1	3.9	4.0	11.0
PAT 233	JBV 2	0.0	1.8	0.0	14.0	0.0	4.0	0.0	1.5	0.0	1.1	0.6	3.2	1.3	2.2	14.0
PAT 234	Raj 171	1.3	3.3	0.0	14.3	0.0	5.0	0.0	2.5	0.0	2.2	1.5	3.8	1.9	2.9	14.3
IR I		75.3	86.8	65.0	86.5	82.5	78.0	65.8	84.1	82.6	*	75.7	79.2	77.6	78.5	86.8
IR II		73.2	52.6	67.4	71.0	7.8	75.0	88.3	87.3	81.6	*	64.4	54.4	83.0	67.1	88.3
	Mean Entries	1.4	1.8	0.5	5.6	0.3	5.4	0.0	3.0	1.0	1.1	1.2	1.9	2.1	2.0	5.6
	Mean IR I	74.4	88.7	61.1	71.9	74.1	76.9	75.6	84.0	80.3	78.1	74.7	74.0	79.0	76.5	88.7
	Mean IR II	72.7	54.5	62.4	71.8	10.7	76.1	85.1	85.5	82.1	67.9	63.2	54.4	79.3	66.9	85.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.5: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Downy mildew (%) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
IR I		100.0	96.8	75.1	92.6	100.0	97.0	97.4	87.8	94.9	99.0	90.6	92.9	95.2	94.0	100.0
IR II		98.7	75.0	86.0	87.7	14.1	96.0	94.6	91.1	94.1	88.7	86.6	72.3	92.9	82.6	98.7
PAT 201	MH 2553	6.8	4.9	0.0	2.4	0.0	5.3	0.0	1.6	0.0	0.6	3.9	2.8	1.5	2.2	6.8
PAT 202	MH 2555	2.6	3.8	0.0	0.0	0.0	4.0	1.4	3.7	0.0	0.0	2.2	1.3	1.8	1.6	4.0
PAT 203	MH 2661	1.3	1.8	0.0	0.0	0.0	3.5	0.0	3.7	0.0	0.5	1.0	0.6	1.5	1.1	3.7
PAT 204	MH 2619	3.3	3.7	0.0	0.0	0.0	3.0	1.5	2.0	0.0	0.0	2.3	1.4	1.3	1.4	3.7
PAT 205	MH 2564 (R)	5.1	4.9	0.0	7.7	0.0	11.0	0.0	7.8	0.0	4.1	3.3	3.5	4.6	4.1	11.0
IR I		100.0	96.9	85.7	96.8	94.4	97.0	92.1	93.8	91.1	99.1	94.2	94.8	94.6	94.7	100.0
IR II		100.0	76.0	90.2	86.2	17.1	97.0	92.1	90.8	92.4	94.2	88.7	73.9	93.3	83.6	100.0
PAT 206	MH 2606	3.6	2.1	0.0	0.0	0.0	3.5	2.9	0.0	0.0	1.1	1.9	1.1	1.5	1.3	3.6
PAT 207	MH 2577	2.8	3.9	0.0	1.8	0.0	3.0	0.0	1.0	0.0	0.0	2.2	1.7	0.8	1.3	3.9
PAT 208	MH 2580	2.8	3.6	0.0	2.1	0.0	3.5	1.5	0.0	0.0	0.5	2.1	1.7	1.1	1.4	3.6
PAT 209	MH 2626	4.1	1.9	0.0	7.1	0.0	10.0	0.0	4.2	0.0	0.0	2.0	2.6	2.8	2.7	10.0
PAT 210	MH 2631	1.7	1.9	0.0	0.0	0.0	3.0	0.0	1.1	0.0	3.3	1.2	0.7	1.5	1.1	3.3
IR I		100.0	94.1	73.5	100.0	96.5	97.0	96.0	89.8	92.9	97.8	89.2	92.8	94.7	93.7	100.0
IR II		100.0	71.1	76.9	91.8	16.4	98.5	94.7	89.4	91.1	94.4	82.7	71.2	93.6	82.4	100.0
PAT 211	MP 610	5.0	7.4	0.0	4.1	4.2	9.0	0.0	4.1	3.0	2.7	4.1	4.1	3.8	4.0	9.0
PAT 212	MP 612	5.1	1.9	7.3	6.0	2.9	11.0	2.7	5.7	2.8	3.9	4.8	4.6	5.2	4.9	11.0
PAT 213	MP 613	3.7	3.9	2.2	2.0	0.0	3.5	0.0	3.2	1.5	4.8	3.3	2.4	2.6	2.5	4.8
PAT 214	MPMH 21	4.8	2.0	0.0	2.6	0.0	7.0	0.0	5.4	0.0	0.0	2.2	1.9	2.5	2.2	7.0
PAT 215	HNB 67 Imp.	1.4	0.0	3.3	16.1	4.7	9.5	2.9	4.0	0.0	1.1	1.6	5.1	3.5	4.3	16.1
IR I		100.0	98.5	72.5	94.4	95.1	75.0	89.7	88.5	93.8	99.0	90.3	92.1	89.2	90.7	100.0
IR II		100.0	79.2	82.6	85.2	13.1	77.0	96.1	91.9	96.1	90.1	87.3	72.0	90.2	81.1	100.0
PAT 216	RHB 177	5.4	9.3	5.9	17.3	2.6	14.0	3.0	5.4	0.0	5.0	6.8	8.1	5.5	6.8	17.3
PAT 217	GHB 538	1.3	3.6	4.4	30.0	0.0	18.0	0.0	7.5	15.3	1.2	3.1	7.9	8.4	8.1	30.0
PAT 218	AHB 1200	1.5	4.0	0.0	6.8	0.0	8.0	1.5	3.9	1.3	0.5	1.8	2.5	3.0	2.7	8.0
PAT 219	HNB 272	1.5	4.9	0.0	3.9	5.8	11.0	0.0	5.2	0.0	3.1	2.1	3.2	3.8	3.5	11.0
PAT 220	MPMH 17	1.7	4.2	0.0	0.0	0.0	3.5	1.4	1.1	0.0	4.2	1.9	1.2	2.0	1.6	4.2
IR I		100.0	98.6	81.6	90.0	96.5	98.0	100.0	92.3	94.9	97.7	93.4	93.3	96.6	95.0	100.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.5: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Downy mildew (%) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
IR II		100.0	75.9	84.6	89.3	15.6	95.0	92.4	91.4	97.1	94.2	86.9	73.1	94.0	83.6	100.0
PAT 221	PB 1705	1.3	3.8	0.0	0.0	0.0	5.5	0.0	0.9	0.0	0.0	1.7	1.0	1.3	1.1	5.5
PAT 222	86M01	5.2	7.4	0.0	6.7	0.0	12.0	0.0	4.8	0.0	1.8	4.2	3.9	3.7	3.8	12.0
PAT 223	Pratap	1.4	8.0	0.0	4.1	0.0	10.0	0.0	3.5	0.0	0.0	3.1	2.7	2.7	2.7	10.0
PAT 224	AHB 1269	5.2	4.9	0.0	6.5	0.0	8.0	3.3	5.6	0.0	2.6	3.4	3.3	3.9	3.6	8.0
PAT 225	NBH 5767	3.1	4.9	0.0	8.3	0.0	9.0	0.0	0.0	0.0	1.1	2.7	3.3	2.0	2.6	9.0
IR I		100.0	98.5	80.0	89.6	98.8	97.0	90.8	88.9	93.8	99.0	92.8	93.4	93.9	93.6	100.0
IR II		100.0	76.9	77.5	98.5	17.9	98.0	96.1	92.6	95.7	91.1	84.8	74.2	94.7	84.4	100.0
PAT 226	KBH 108	4.0	3.9	0.0	3.8	0.0	3.5	0.0	1.3	0.0	0.8	2.6	2.3	1.1	1.7	4.0
PAT 227	86M86	1.5	2.0	0.0	8.3	0.0	13.0	0.0	0.0	0.0	0.0	1.2	2.4	2.6	2.5	13.0
PAT 228	MP-7792	3.2	7.0	0.0	5.6	0.0	10.0	0.0	3.3	0.0	4.0	3.4	3.2	3.5	3.3	10.0
PAT 229	ICMV 221	5.4	6.9	0.0	7.5	0.0	12.0	0.0	6.9	5.1	0.5	4.1	4.0	4.9	4.4	12.0
PAT 230	Pusa Comp. 701	5.2	8.9	0.0	15.6	3.5	17.0	0.0	3.9	1.4	10.2	4.7	6.6	6.5	6.6	17.0
IR I		100.0	98.5	75.0	100.0	97.5	98.0	93.4	91.7	97.5	100.0	91.2	94.2	96.1	95.2	100.0
IR II		100.0	73.7	72.1	92.9	16.5	98.0	94.8	90.7	95.6	94.0	81.9	71.0	94.6	82.8	100.0
PAT 231	Dhanshakti	5.8	7.8	0.0	29.0	2.7	25.0	0.0	7.0	3.9	4.6	4.5	9.1	8.1	8.6	29.0
PAT 232	Pusa Comp. 383	5.1	7.5	2.3	11.1	6.0	16.0	0.0	2.3	2.6	7.1	5.0	6.4	5.6	6.0	16.0
PAT 233	JBV 2	0.0	3.6	0.0	16.0	2.6	14.0	0.0	1.5	0.0	3.7	1.2	4.4	3.8	4.1	16.0
PAT 234	Raj 171	2.6	4.9	0.0	14.3	2.6	11.0	0.0	2.5	0.0	3.7	2.5	4.9	3.4	4.2	14.3
IR I		100.0	97.1	78.5	97.3	100.0	98.0	88.2	92.8	95.6	*	91.9	94.6	93.6	94.1	100.0
IR II		100.0	81.6	77.5	93.5	17.2	86.0	84.4	90.1	92.3	*	86.4	74.0	88.2	80.3	100.0
	Mean Entries	3.4	4.6	7.3	0.7	1.1	9.1	0.7	3.4	1.1	2.3	5.1	3.4	3.3	3.4	9.1
	Mean IR I	100.0	97.4	95.1	77.7	97.3	94.6	93.4	90.7	94.3	98.8	97.5	93.5	94.4	93.9	100.0
	Mean IR II	99.8	76.2	90.6	80.9	16.0	93.2	93.1	91.0	94.3	92.4	88.9	72.7	92.8	82.8	99.8

Note:-

* Data Not included

Zone A₁

Mandor, Jaipur, Hisar

Zone A

Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B

Mysuru, Aurangabad, Dhule, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	0.0	1.0	1.9	0.0	0.0	2.0	1.0	1.0	1.5	0.0	*	1.0	0.8	0.9	0.8	2.0
PAT 202	MH 2555	0.0	1.0	0.5	0.0	0.0	3.0	1.0	0.5	0.5	0.5	*	0.5	0.8	0.6	0.7	3.0
PAT 203	MH 2661	0.0	1.0	1.1	0.0	0.0	3.0	1.0	0.5	1.5	0.0	*	0.7	0.9	0.8	0.8	3.0
PAT 204	MH 2619	0.0	1.0	1.0	0.0	0.0	2.0	1.0	0.0	1.0	0.0	*	0.7	0.7	0.5	0.6	2.0
PAT 205	MH 2564 (R)	0.0	1.0	1.5	0.0	0.0	2.0	1.0	0.5	1.5	0.0	*	0.8	0.8	0.8	0.8	2.0
PAT 206	MH 2606	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.5	*	0.7	0.5	0.1	0.4	1.0
PAT 207	MH 2577	0.0	1.0	1.1	0.0	0.0	1.0	0.0	0.5	0.0	0.0	*	0.7	0.5	0.1	0.4	1.1
PAT 208	MH 2580	0.0	1.0	1.4	0.0	0.0	2.0	0.0	0.0	0.5	0.0	*	0.8	0.7	0.1	0.5	2.0
PAT 209	MH 2626	0.0	1.0	1.1	0.0	0.0	2.0	0.0	0.5	0.5	0.0	*	0.7	0.7	0.3	0.5	2.0
PAT 210	MH 2631	0.0	1.0	1.2	0.0	0.0	2.0	0.0	0.0	0.0	0.5	*	0.7	0.7	0.1	0.5	2.0
PAT 211	MP 610	0.0	1.0	1.5	0.5	0.5	3.0	1.0	1.0	1.5	0.0	*	0.8	1.1	0.9	1.0	3.0
PAT 212	MP 612	0.0	1.0	1.7	0.0	0.0	3.0	1.0	0.0	1.0	0.5	*	0.9	1.0	0.6	0.8	3.0
PAT 213	MP 613	0.0	1.0	1.2	0.7	0.0	3.0	1.0	0.0	0.5	0.0	*	0.7	1.0	0.4	0.7	3.0
PAT 214	MPMH 21	0.0	1.0	1.2	0.0	0.5	3.0	0.5	0.5	2.0	0.0	*	0.7	1.0	0.8	0.9	3.0
PAT 215	HHB 67 Imp.	0.0	1.0	1.2	1.4	1.0	3.0	1.0	1.0	2.5	0.0	*	0.7	1.3	1.1	1.2	3.0
PAT 216	RHB 177	0.0	1.0	1.1	0.8	0.5	5.0	1.0	1.0	2.0	0.0	*	0.7	1.4	1.0	1.2	5.0
PAT 217	GHB 538	0.0	1.0	1.5	0.0	0.5	4.0	1.0	0.0	2.5	0.0	*	0.8	1.2	0.9	1.1	4.0
PAT 218	AHB 1200	0.0	1.0	1.8	0.1	0.5	4.0	1.0	0.5	3.0	0.5	*	0.9	1.2	1.3	1.2	4.0
PAT 219	HHB 272	0.0	1.0	1.8	0.4	0.5	3.0	0.5	0.5	2.0	0.0	*	0.9	1.1	0.8	1.0	3.0
PAT 220	MPMH 17	0.0	1.0	1.6	0.0	0.0	3.0	1.0	0.5	1.5	0.0	*	0.9	0.9	0.8	0.9	3.0
PAT 221	PB 1705	0.0	1.0	2.2	0.0	0.5	3.0	1.0	1.0	2.0	0.5	*	1.1	1.1	1.1	1.1	3.0
PAT 222	86M01	0.0	1.0	2.5	0.0	1.0	5.0	2.0	1.5	2.5	0.0	*	1.2	1.6	1.5	1.6	5.0
PAT 223	Pratap	0.0	1.0	2.3	0.0	1.0	6.0	3.0	1.0	2.5	0.5	*	1.1	1.7	1.8	1.7	6.0
PAT 224	AHB 1269	0.0	1.0	2.5	0.0	1.0	5.0	2.0	0.0	2.0	0.0	*	1.2	1.6	1.0	1.4	5.0
PAT 225	NBH 5767	0.0	1.0	1.9	0.0	1.0	3.0	1.0	0.0	1.5	0.0	*	1.0	1.2	0.6	0.9	3.0
PAT 226	KBH 108	0.0	1.0	2.2	0.0	0.5	2.0	1.0	0.5	0.5	0.0	*	1.1	1.0	0.5	0.8	2.2
PAT 227	86M86	0.0	0.5	1.1	0.0	0.0	2.0	1.0	0.0	0.0	0.0	*	0.5	0.6	0.3	0.5	2.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 228	MP-7792	0.0	1.0	2.0	0.0	0.0	3.0	1.0	0.5	3.5	0.0	*	1.0	1.0	1.3	1.1	3.5
PAT 229	ICMV 221	0.0	1.0	1.5	0.8	0.5	4.0	1.0	1.0	3.0	0.0	*	0.8	1.3	1.3	1.3	4.0
PAT 230	Pusa Comp. 701	0.0	1.0	1.4	0.0	0.5	4.0	1.0	0.0	1.5	0.0	*	0.8	1.2	0.6	0.9	4.0
PAT 231	Dhanshakti	0.0	1.0	2.5	0.0	1.0	5.0	2.0	0.5	2.5	0.5	*	1.2	1.6	1.4	1.5	5.0
PAT 232	Pusa Comp. 383	0.0	1.0	2.3	0.0	1.0	3.0	1.0	0.5	1.0	0.0	*	1.1	1.2	0.6	1.0	3.0
PAT 233	JBV 2	0.0	1.0	1.1	0.0	1.0	3.0	1.0	1.5	0.0	0.0	*	0.7	1.0	0.6	0.9	3.0
PAT 234	Raj 171	0.0	1.0	1.2	0.0	0.5	5.0	2.0	1.0	0.5	0.0	*	0.7	1.3	0.9	1.1	5.0
	Mean Entry	0.0	1.0	1.6	0.1	0.4	3.1	1.0	0.5	1.4	0.1	0.0	0.8	1.0	0.8	0.9	3.2

Note:- * Data Not included

Zone A₁ Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior, New Delhi

Zone B Mysuru, Aurangabad, Dhule, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 45 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	0.0	2.0	3.0	0.0	1.0	3.0	2.0	2.0	3.0	0.0	*	1.7	1.5	1.8	1.6	3.0
PAT 202	MH 2555	0.5	2.0	0.5	0.0	0.5	3.0	2.0	1.0	1.5	1.0	*	1.0	1.1	1.4	1.2	3.0
PAT 203	MH 2661	0.5	2.0	1.1	0.0	1.0	3.0	1.5	1.0	2.5	0.0	*	1.2	1.3	1.3	1.3	3.0
PAT 204	MH 2619	1.0	2.0	2.3	0.0	1.5	2.0	2.0	0.0	2.0	0.0	*	1.8	1.5	1.0	1.3	2.3
PAT 205	MH 2564 (R)	0.5	2.0	1.9	0.0	1.0	3.0	2.0	0.5	3.0	0.0	*	1.5	1.4	1.4	1.4	3.0
PAT 206	MH 2606	0.5	1.5	1.3	0.0	1.0	1.0	1.0	0.0	0.0	1.0	*	1.1	0.9	0.5	0.7	1.5
PAT 207	MH 2577	1.0	2.0	1.8	0.0	1.0	3.0	2.0	1.5	1.0	0.0	*	1.6	1.5	1.1	1.3	3.0
PAT 208	MH 2580	0.5	2.0	1.9	0.0	1.0	2.0	2.0	1.0	2.0	0.0	*	1.5	1.2	1.3	1.2	2.0
PAT 209	MH 2626	0.5	2.0	1.9	0.0	1.0	2.0	2.0	1.0	2.0	0.0	*	1.5	1.2	1.3	1.2	2.0
PAT 210	MH 2631	1.0	2.0	1.9	0.0	1.5	3.0	1.0	0.0	1.0	1.5	*	1.6	1.6	0.9	1.3	3.0
PAT 211	MP 610	0.5	2.0	1.8	1.3	2.0	5.0	2.0	1.5	2.5	0.0	*	1.4	2.1	1.5	1.9	5.0
PAT 212	MP 612	0.5	2.0	1.7	0.0	1.0	5.0	3.0	0.0	2.0	1.0	*	1.4	1.7	1.5	1.6	5.0
PAT 213	MP 613	0.5	2.0	1.9	1.2	1.5	5.0	2.0	1.5	1.5	0.0	*	1.5	2.0	1.3	1.7	5.0
PAT 214	MPMH 21	0.5	2.0	2.1	0.0	1.5	5.0	3.0	2.0	3.0	0.5	*	1.5	1.9	2.1	2.0	5.0
PAT 215	HHB 67 Imp.	0.5	2.0	2.2	2.4	2.0	5.0	2.0	1.5	3.5	0.0	*	1.6	2.4	1.8	2.1	5.0
PAT 216	RHB 177	1.0	2.0	2.2	1.9	3.0	5.0	2.0	2.5	3.0	0.0	*	1.7	2.5	1.9	2.3	5.0
PAT 217	GHB 538	0.5	2.0	1.9	0.0	1.3	5.0	2.0	1.0	3.5	0.0	*	1.5	1.8	1.6	1.7	5.0
PAT 218	AHB 1200	0.0	2.0	2.4	0.7	2.0	6.0	1.5	3.0	4.0	0.5	*	1.5	2.2	2.3	2.2	6.0
PAT 219	HHB 272	0.0	2.0	2.0	1.2	1.4	5.0	3.0	1.0	3.0	0.0	*	1.3	1.9	1.8	1.9	5.0
PAT 220	MPMH 17	0.0	1.5	2.3	0.0	1.0	3.0	3.0	0.5	2.5	0.0	*	1.3	1.3	1.5	1.4	3.0
PAT 221	PB 1705	0.5	2.0	2.6	0.0	1.5	3.0	3.0	1.5	3.0	1.0	*	1.7	1.6	2.1	1.8	3.0
PAT 222	86M01	0.5	2.5	3.8	0.0	2.0	6.0	5.0	4.0	3.5	0.0	*	2.3	2.5	3.1	2.7	6.0
PAT 223	Pratap	0.0	2.0	3.3	0.0	1.7	8.0	3.5	2.0	3.5	1.5	*	1.8	2.5	2.6	2.6	8.0
PAT 224	AHB 1269	0.0	2.0	2.6	0.0	2.5	5.0	3.0	3.0	3.0	0.0	*	1.5	2.0	2.3	2.1	5.0
PAT 225	NBH 5767	1.0	2.0	2.8	0.0	3.0	5.0	3.0	0.0	3.0	0.0	*	1.9	2.3	1.5	2.0	5.0
PAT 226	KBH 108	0.5	2.0	3.0	0.0	1.5	2.0	2.0	0.5	1.5	0.5	*	1.8	1.5	1.1	1.4	3.0
PAT 227	86M86	0.0	2.0	1.2	0.0	1.0	3.0	2.0	0.0	1.0	0.0	*	1.1	1.2	0.8	1.0	3.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 45 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 228	MP-7792	0.5	1.5	2.5	0.0	0.5	3.0	2.0	1.0	4.5	0.5	*	1.5	1.3	2.0	1.6	4.5
PAT 229	ICMV 221	0.5	2.0	3.0	1.3	1.3	5.0	2.0	1.0	4.0	0.0	*	1.8	2.2	1.8	2.0	5.0
PAT 230	Pusa Comp. 701	0.5	2.0	2.2	0.0	1.5	5.0	2.5	0.0	2.5	0.0	*	1.6	1.9	1.3	1.6	5.0
PAT 231	Dhanshakti	0.5	2.0	3.4	0.0	1.8	5.0	3.0	1.5	3.5	1.0	*	2.0	2.1	2.3	2.2	5.0
PAT 232	Pusa Comp. 383	0.5	2.0	2.4	0.0	2.0	5.0	2.0	1.5	1.5	0.0	*	1.6	2.0	1.3	1.7	5.0
PAT 233	JBV 2	0.5	2.0	2.0	0.7	2.0	5.0	2.0	2.0	1.0	0.0	*	1.5	2.0	1.3	1.7	5.0
PAT 234	Raj 171	0.5	2.0	1.9	0.0	1.3	5.0	2.5	1.5	2.0	0.0	*	1.5	1.8	1.5	1.7	5.0
	Mean Entry	0.5	2.0	2.2	0.3	1.5	4.1	2.3	1.2	2.5	0.3	0.0	1.5	1.8	1.6	1.7	4.2

Note:- * Data Not included

Zone A₁ Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior, New Delhi

Zone B Mysuru, Aurangabad, Dhule, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	0.0	2.5	3.7	0.6	3.0	3.0	3.0	3.0	4.0	0.0	4.0	2.1	2.1	2.8	2.4	4.0
PAT 202	MH 2555	0.5	2.0	0.6	0.1	2.5	4.0	3.0	1.5	2.0	3.0	4.5	1.0	1.6	2.8	2.2	4.5
PAT 203	MH 2661	0.5	2.0	1.3	0.1	3.0	4.0	2.5	1.5	2.5	0.0	4.3	1.3	1.8	2.2	2.0	4.3
PAT 204	MH 2619	1.0	2.5	2.7	0.4	4.0	3.0	4.0	0.0	2.5	0.0	3.8	2.1	2.3	2.1	2.2	4.0
PAT 205	MH 2564 (R)	1.0	3.0	2.6	0.3	2.5	3.0	4.0	2.5	4.0	0.0	4.5	2.2	2.1	3.0	2.5	4.5
PAT 206	MH 2606	1.5	2.5	1.6	1.1	2.0	3.0	3.0	1.0	1.0	2.0	4.8	1.9	2.0	2.4	2.1	4.8
PAT 207	MH 2577	0.5	2.0	2.5	0.0	2.5	3.0	3.0	1.5	2.0	0.0	4.5	1.7	1.8	2.2	2.0	4.5
PAT 208	MH 2580	1.0	2.0	2.4	0.0	3.0	3.0	3.0	1.5	3.0	0.0	3.8	1.8	1.9	2.3	2.1	3.8
PAT 209	MH 2626	0.0	2.0	2.3	0.0	3.0	3.0	2.0	2.0	3.0	0.0	4.0	1.4	1.7	2.2	1.9	4.0
PAT 210	MH 2631	1.5	2.0	2.5	0.7	3.0	3.0	3.0	0.0	2.0	3.0	4.5	2.0	2.1	2.5	2.3	4.5
PAT 211	MP 610	0.5	2.5	2.5	2.2	3.5	5.0	3.0	2.5	3.0	0.0	5.5	1.8	2.7	2.8	2.7	5.5
PAT 212	MP 612	0.5	2.5	2.5	0.2	3.0	5.0	4.0	0.0	3.0	2.5	4.5	1.8	2.3	2.8	2.5	5.0
PAT 213	MP 613	1.0	3.0	2.5	2.1	3.5	5.0	4.0	2.0	2.5	0.0	6.0	2.2	2.9	2.9	2.9	6.0
PAT 214	MPMH 21	1.0	3.0	2.4	0.1	4.0	5.0	3.5	4.5	3.5	1.0	4.3	2.1	2.6	3.4	2.9	5.0
PAT 215	HNB 67 Imp.	0.5	3.0	2.6	5.0	4.5	5.0	4.0	4.5	5.5	0.0	4.5	2.0	3.4	3.7	3.6	5.5
PAT 216	RHB 177	1.5	3.0	2.5	3.2	5.0	5.0	5.0	3.0	4.5	0.0	4.5	2.3	3.4	3.4	3.4	5.0
PAT 217	GHB 538	0.5	3.0	2.3	1.4	4.0	5.0	3.0	3.5	3.5	0.0	5.0	1.9	2.7	3.0	2.8	5.0
PAT 218	AHB 1200	0.0	3.0	2.8	1.3	4.0	6.0	4.0	4.0	5.0	1.0	4.5	1.9	2.9	3.7	3.2	6.0
PAT 219	HNB 272	0.0	3.5	2.6	2.2	3.5	5.0	4.0	3.0	4.5	0.0	4.0	2.0	2.8	3.1	2.9	5.0
PAT 220	MPMH 17	0.5	2.5	2.9	0.2	3.0	4.0	4.0	1.0	3.5	0.0	4.5	2.0	2.2	2.6	2.4	4.5
PAT 221	PB 1705	1.0	3.0	3.2	0.0	4.0	3.0	3.0	2.0	5.5	2.0	4.5	2.4	2.4	3.4	2.8	5.5
PAT 222	86M01	0.5	3.5	4.4	1.3	4.0	6.0	5.0	4.5	4.0	0.0	4.0	2.8	3.3	3.5	3.4	6.0
PAT 223	Pratap	0.0	3.5	4.2	0.0	5.0	8.0	5.5	3.5	5.0	2.5	6.0	2.6	3.5	4.5	3.9	8.0
PAT 224	AHB 1269	0.5	3.0	3.6	0.7	4.5	5.0	4.5	3.5	5.5	0.0	6.0	2.4	2.9	3.9	3.3	6.0
PAT 225	NBH 5767	1.0	3.0	3.7	0.0	5.5	5.0	4.0	0.5	4.0	0.0	4.0	2.6	3.0	2.5	2.8	5.5
PAT 226	KBH 108	0.5	2.5	3.6	0.3	4.0	4.0	3.0	2.0	3.0	1.0	3.8	2.2	2.5	2.6	2.5	4.0
PAT 227	86M86	0.0	2.5	1.5	0.0	3.0	3.0	3.0	0.0	2.0	0.0	3.8	1.3	1.7	1.8	1.7	3.8

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Blast (0-9 scale) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	Delhi	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
													Zone A ₁	Zone A	Zone B	India	
PAT 228	MP-7792	0.5	3.0	2.9	1.0	2.0	4.0	5.0	1.0	5.5	0.5	5.8	2.1	2.2	3.6	2.8	5.8
PAT 229	ICMV 221	1.0	3.0	3.4	4.5	3.0	5.0	3.0	3.5	6.0	0.0	4.5	2.5	3.3	3.4	3.4	6.0
PAT 230	Pusa Comp. 701	1.0	3.0	2.7	0.1	3.0	5.0	3.0	0.0	3.0	0.0	3.8	2.2	2.5	2.0	2.2	5.0
PAT 231	Dhanshakti	0.5	3.0	3.9	1.5	3.5	5.0	4.0	3.0	4.5	2.0	4.8	2.5	2.9	3.7	3.2	5.0
PAT 232	Pusa Comp. 383	0.5	2.5	3.6	0.8	3.5	5.0	3.0	2.0	2.0	0.0	5.5	2.2	2.7	2.5	2.6	5.5
PAT 233	JBV 2	1.5	3.0	2.1	2.6	3.0	5.0	4.0	2.0	2.0	0.5	4.3	2.2	2.9	2.6	2.7	5.0
PAT 234	Raj 171	0.0	3.0	2.4	2.7	3.5	5.0	3.0	2.0	3.0	0.0	4.0	1.8	2.8	2.4	2.6	5.0
	Mean Entry	0.6	2.7	2.7	1.1	3.5	4.4	3.6	2.1	3.5	0.6	4.5	2.0	2.5	2.9	2.7	5.0

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior, New Delhi

Zone B Mysuru, Aurangabad, Dhule, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Rust (% leaf area) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	*	1.5	27.0	0.0	17.5	15.0	0.0	0.0	13.5	47.5	14.3	11.5	15.2	13.6	47.5
PAT 202	MH 2555	*	1.0	22.5	0.0	20.0	20.0	2.5	15.0	22.5	42.5	11.8	10.9	20.5	16.2	42.5
PAT 203	MH 2661	*	1.0	0.0	0.0	7.5	15.0	0.0	5.0	8.5	50.0	0.5	2.1	15.7	9.7	50.0
PAT 204	MH 2619	*	0.0	0.0	0.0	9.0	10.0	0.0	0.0	16.5	52.5	0.0	2.3	15.8	9.8	52.5
PAT 205	MH 2564 (R)	*	1.0	0.0	0.0	6.5	5.0	2.5	0.0	16.5	47.5	0.5	1.9	14.3	8.8	47.5
PAT 206	MH 2606	*	1.5	0.0	0.0	12.5	10.0	2.0	2.5	17.5	42.5	0.8	3.5	14.9	9.8	42.5
PAT 207	MH 2577	*	1.0	0.0	0.0	11.5	5.0	10.0	2.5	22.5	50.0	0.5	3.1	18.0	11.4	50.0
PAT 208	MH 2580	*	1.0	0.0	0.0	12.0	10.0	7.5	2.5	20.0	52.5	0.5	3.3	18.5	11.7	52.5
PAT 209	MH 2626	*	0.5	7.0	0.0	9.0	20.0	15.0	5.0	23.5	40.0	3.8	4.1	20.7	13.3	40.0
PAT 210	MH 2631	*	0.0	0.0	0.0	8.5	5.0	0.5	0.0	22.5	50.0	0.0	2.1	15.6	9.6	50.0
PAT 211	MP 610	*	1.0	0.0	0.0	17.5	0.0	5.0	0.0	27.5	27.5	0.5	4.6	12.0	8.7	27.5
PAT 212	MP 612	*	1.0	0.0	0.0	17.5	15.0	0.0	2.5	13.5	37.5	0.5	4.6	13.7	9.7	37.5
PAT 213	MP 613	*	1.0	0.0	0.0	16.5	20.0	10.0	10.0	19.0	22.5	0.5	4.4	16.3	11.0	22.5
PAT 214	MPMH 21	*	1.0	15.5	0.0	12.5	5.0	8.5	2.5	16.5	37.5	8.3	7.3	14.0	11.0	37.5
PAT 215	HHB 67 Imp.	*	1.0	0.0	0.0	9.0	10.0	7.5	0.0	13.5	42.5	0.5	2.5	14.7	9.3	42.5
PAT 216	RHB 177	*	1.5	0.0	0.0	13.5	20.0	5.0	2.5	20.0	40.0	0.8	3.8	17.5	11.4	40.0
PAT 217	GHB 538	*	1.0	0.0	0.0	12.5	5.0	1.0	0.0	22.5	25.0	0.5	3.4	10.7	7.4	25.0
PAT 218	AHB 1200	*	1.0	0.0	0.0	11.5	15.0	2.5	2.5	20.0	42.5	0.5	3.1	16.5	10.6	42.5
PAT 219	HHB 272	*	1.5	0.0	0.0	9.0	5.0	0.0	2.5	27.5	25.0	0.8	2.6	12.0	7.8	27.5
PAT 220	MPMH 17	*	1.5	0.0	0.0	12.5	20.0	0.0	2.5	16.5	42.5	0.8	3.5	16.3	10.6	42.5
PAT 221	PB 1705	*	1.0	0.0	0.0	11.0	5.0	2.5	2.5	15.0	50.0	0.5	3.0	15.0	9.7	50.0
PAT 222	86M01	*	1.0	0.0	0.0	6.5	15.0	0.0	0.0	19.0	55.0	0.5	1.9	17.8	10.7	55.0
PAT 223	Pratap	*	1.0	0.0	0.0	5.5	10.0	0.0	0.0	27.5	25.0	0.5	1.6	12.5	7.7	27.5
PAT 224	AHB 1269	*	1.0	0.0	0.0	4.0	5.0	0.5	0.0	23.5	20.0	0.5	1.3	9.8	6.0	23.5
PAT 225	NBH 5767	*	1.0	0.0	0.0	9.0	5.0	0.0	0.0	17.5	45.0	0.5	2.5	13.5	8.6	45.0
PAT 226	KBH 108	*	1.0	0.0	0.0	9.0	10.0	0.0	0.0	30.0	42.5	0.5	2.5	16.5	10.3	42.5
PAT 227	86M86	*	1.5	0.0	0.0	13.5	0.0	0.0	2.5	25.0	42.5	0.8	3.8	14.0	9.4	42.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Rust (% leaf area) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 228	MP-7792	*	1.0	4.0	0.0	10.0	5.0	0.0	0.0	16.5	25.0	2.5	3.8	9.3	6.8	25.0
PAT 229	ICMV 221	*	1.0	0.0	0.0	7.5	15.0	5.0	0.0	23.5	30.0	0.5	2.1	14.7	9.1	30.0
PAT 230	Pusa Comp. 701	*	1.0	0.0	0.0	15.0	7.5	0.0	5.0	25.0	47.5	0.5	4.0	17.0	11.2	47.5
PAT 231	Dhanshakti	*	1.0	0.0	0.0	10.0	20.0	5.0	2.5	26.0	45.0	0.5	2.8	19.7	12.2	45.0
PAT 232	Pusa Comp. 383	*	1.0	0.0	0.0	16.0	15.0	12.5	2.5	16.5	25.0	0.5	4.3	14.3	9.8	25.0
PAT 233	JBV 2	*	1.5	0.0	0.0	12.5	5.0	5.0	2.5	27.5	47.5	0.8	3.5	17.5	11.3	47.5
PAT 234	Raj 171	*	1.0	0.0	0.0	10.0	10.0	5.0	10.0	25.0	45.0	0.5	2.8	19.0	11.8	45.0
	Mean Entry		1.0	2.2	0.0	11.3	10.5	3.4	2.5	20.5	40.1	1.6	3.7	15.4	10.2	40.1

* No Data Provided - Mandor

Note:-

Zone A1 Jaipur, Hisar

Zone A Jaipur, Hisar, Gwalior, Jamnagar

Zone B Mysore, Dhule, Aurangabad, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Smut (severity %) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	*	0.0	0.0	0.0	3.0	2.0	0.0	5.0	0.0	0.0	0.0	0.8	1.4	1.1	5.0
PAT 202	MH 2555	*	0.0	16.5	1.9	15.0	0.0	0.0	1.0	1.0	0.0	8.3	8.4	0.4	3.9	16.5
PAT 203	MH 2661	*	0.0	4.5	0.0	32.5	2.5	0.0	6.5	0.0	0.0	2.3	9.3	1.8	5.1	32.5
PAT 204	MH 2619	*	0.0	0.0	0.0	0.0	3.0	0.0	5.0	0.0	0.0	0.0	0.0	1.6	0.9	5.0
PAT 205	MH 2564 (R)	*	0.0	0.0	0.0	10.0	2.0	0.0	3.5	0.0	0.0	0.0	2.5	1.1	1.7	10.0
PAT 206	MH 2606	*	0.0	0.0	0.0	7.5	0.0	0.0	2.5	1.5	0.0	0.0	1.9	0.8	1.3	7.5
PAT 207	MH 2577	*	0.0	0.0	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	1.9	17.5
PAT 208	MH 2580	*	0.0	0.0	6.5	1.0	2.5	0.0	5.0	0.0	0.0	0.0	1.9	1.5	1.7	6.5
PAT 209	MH 2626	*	0.0	0.5	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.3	7.6	0.0	3.4	30.0
PAT 210	MH 2631	*	0.0	0.0	2.2	12.5	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	1.6	12.5
PAT 211	MP 610	*	0.0	0.0	2.5	5.0	2.5	0.0	5.0	1.0	0.0	0.0	1.9	1.7	1.8	5.0
PAT 212	MP 612	*	0.0	0.0	0.0	27.5	2.0	0.0	1.0	1.0	0.0	0.0	6.9	0.8	3.5	27.5
PAT 213	MP 613	*	0.0	0.0	0.0	12.5	0.0	0.0	3.5	0.0	5.0	0.0	3.1	1.7	2.3	12.5
PAT 214	MPMH 21	*	0.0	3.5	2.8	62.5	2.5	0.0	5.0	0.0	0.0	1.8	17.2	1.5	8.5	62.5
PAT 215	HHB 67 Imp.	*	0.0	6.5	0.0	5.0	0.0	0.0	5.5	0.0	0.0	3.3	2.9	1.1	1.9	6.5
PAT 216	RHB 177	*	0.0	4.5	0.0	15.0	5.0	0.0	12.5	0.0	0.0	2.3	4.9	3.5	4.1	15.0
PAT 217	GHB 538	*	0.0	4.1	0.0	42.5	2.0	0.0	3.5	0.0	0.0	2.1	11.7	1.1	5.8	42.5
PAT 218	AHB 1200	*	0.0	1.0	5.5	22.5	5.0	0.0	10.0	0.0	0.0	0.5	7.3	3.0	4.9	22.5
PAT 219	HHB 272	*	0.0	10.0	0.0	40.0	2.0	0.0	17.5	0.0	0.0	5.0	12.5	3.9	7.7	40.0
PAT 220	MPMH 17	*	0.0	2.0	0.0	25.0	5.0	0.0	45.0	0.0	0.0	1.0	6.8	10.0	8.6	45.0
PAT 221	PB 1705	*	0.0	0.0	0.0	0.0	2.0	0.0	5.0	0.0	0.0	0.0	0.0	1.4	0.8	5.0
PAT 222	86M01	*	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.1	0.3	2.0
PAT 223	Pratap	*	0.0	0.0	0.0	0.0	3.0	0.0	4.0	0.0	0.0	0.0	0.0	1.4	0.8	4.0
PAT 224	AHB 1269	*	1.5	1.0	2.6	7.5	2.0	0.0	11.0	0.0	0.0	1.3	3.2	2.6	2.8	11.0
PAT 225	NBH 5767	*	2.0	0.0	0.0	6.0	2.0	0.0	5.0	0.0	0.0	1.0	2.0	1.4	1.7	6.0
PAT 226	KBH 108	*	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	2.6	0.1	1.2	10.5
PAT 227	86M86	*	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.4	0.2	1.0
PAT 228	MP-7792	*	2.0	0.0	0.0	2.5	2.5	0.0	6.0	0.0	0.0	1.0	1.1	1.7	1.4	6.0
PAT 229	ICMV 221	*	1.5	1.0	0.0	16.5	0.0	0.0	15.0	0.0	0.0	1.3	4.8	3.0	3.8	16.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Smut (severity %) at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 230	Pusa Comp. 701	*	2.0	0.5	0.0	18.5	3.0	0.0	1.0	1.0	0.0	1.3	5.3	1.0	2.9	18.5
PAT 231	Dhanshakti	*	0.0	1.0	0.0	10.0	5.0	0.0	10.0	0.0	0.0	0.5	2.8	3.0	2.9	10.0
PAT 232	Pusa Comp. 383	*	0.0	0.0	6.1	15.0	2.0	0.0	10.0	0.0	0.0	0.0	5.3	2.4	3.7	15.0
PAT 233	JBV 2	*	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.8	7.5
PAT 234	Raj 171	*	0.0	0.0	5.0	30.0	0.0	0.0	0.5	0.0	2.5	0.0	8.8	0.6	4.2	30.0
	Mean Entry		0.3	1.7	1.4	14.7	1.8	0.0	6.0	0.2	0.2	1.0	4.5	1.6	2.9	14.7

* No Data Provided - Mandor

Note:-

Zone A1 Jaipur, Hisar

Zone A Jaipur, Hisar, Gwalior, Jamnagar

Zone B Mysore, Dhule, Aurangabad, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Ergot severity at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 201	MH 2553	*	*	0.0	3.0	*	0.0	5.5	0.0	0.0	0.0	0.0	1.5	1.1	1.2	5.5
PAT 202	MH 2555	*	*	0.0	3.0	*	1.0	12.5	1.0	0.0	0.0	0.0	1.5	2.9	2.5	12.5
PAT 203	MH 2661	*	*	0.0	3.0	*	0.0	8.5	0.0	0.0	2.5	0.0	1.5	2.2	2.0	8.5
PAT 204	MH 2619	*	*	0.0	2.5	*	0.0	10.0	0.0	2.0	0.0	0.0	1.3	2.4	2.1	10.0
PAT 205	MH 2564 (R)	*	*	0.0	5.0	*	2.0	8.0	2.5	0.0	0.0	0.0	2.5	2.5	2.5	8.0
PAT 206	MH 2606	*	*	0.0	5.0	*	1.0	7.5	0.5	0.0	0.0	0.0	2.5	1.8	2.0	7.5
PAT 207	MH 2577	*	*	0.0	2.5	*	2.0	15.0	1.0	0.0	2.5	0.0	1.3	4.1	3.3	15.0
PAT 208	MH 2580	*	*	0.0	0.0	*	3.0	17.5	2.5	1.5	0.0	0.0	0.0	4.9	3.5	17.5
PAT 209	MH 2626	*	*	0.0	0.5	*	1.0	3.5	2.0	0.0	0.0	0.0	0.3	1.3	1.0	3.5
PAT 210	MH 2631	*	*	0.0	2.5	*	2.0	5.0	1.0	2.5	7.5	0.0	1.3	3.6	2.9	7.5
PAT 211	MP 610	*	*	0.0	5.0	*	0.0	15.0	0.5	0.0	0.0	0.0	2.5	3.1	2.9	15.0
PAT 212	MP 612	*	*	0.0	0.0	*	1.0	6.0	1.0	0.5	12.5	0.0	0.0	4.2	3.0	12.5
PAT 213	MP 613	*	*	0.0	0.5	*	0.0	12.5	0.0	0.0	10.0	0.0	0.3	4.5	3.3	12.5
PAT 214	MPMH 21	*	*	0.0	12.5	*	0.0	4.5	0.0	3.0	12.5	0.0	6.3	4.0	4.6	12.5
PAT 215	HNB 67 Imp.	*	*	1.5	12.5	*	0.0	7.5	0.0	0.0	2.5	1.5	7.0	2.0	3.4	12.5
PAT 216	RHB 177	*	*	1.5	7.5	*	1.0	3.5	1.5	0.0	2.5	1.5	4.5	1.7	2.5	7.5
PAT 217	GHB 538	*	*	2.0	0.0	*	1.0	10.0	1.0	3.5	22.5	2.0	1.0	7.6	5.7	22.5
PAT 218	AHB 1200	*	*	2.5	0.0	*	2.0	6.5	2.5	0.0	2.5	2.5	1.3	2.7	2.3	6.5
PAT 219	HNB 272	*	*	2.5	7.5	*	2.0	8.0	2.5	0.0	12.5	2.5	5.0	5.0	5.0	12.5
PAT 220	MPMH 17	*	*	2.0	17.5	*	1.0	3.0	0.0	1.5	0.0	2.0	9.8	1.1	3.6	17.5
PAT 221	PB 1705	*	*	2.0	2.5	*	0.0	10.0	0.0	0.0	0.0	2.0	2.3	2.0	2.1	10.0
PAT 222	86M01	*	*	1.0	0.0	*	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.1	1.0
PAT 223	Pratap	*	*	2.0	0.0	*	0.0	3.0	0.0	1.5	0.0	2.0	1.0	0.9	0.9	3.0
PAT 224	AHB 1269	*	*	2.0	0.0	*	2.0	2.5	1.0	0.0	5.0	2.0	1.0	2.1	1.8	5.0
PAT 225	NBH 5767	*	*	2.0	5.0	*	0.0	12.5	0.0	0.0	7.5	2.0	3.5	4.0	3.9	12.5
PAT 226	KBH 108	*	*	0.0	0.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAT 227	86M86	*	*	0.0	2.5	*	0.0	0.0	0.0	1.0	0.0	0.0	1.3	0.2	0.5	2.5
PAT 228	MP-7792	*	*	2.0	7.5	*	0.0	4.5	0.0	0.0	0.0	2.0	4.8	0.9	2.0	7.5
PAT 229	ICMV 221	*	*	2.0	2.5	*	0.0	5.0	0.0	0.0	10.0	2.0	2.3	3.0	2.8	10.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.6: Disease screening of Advance Pearl Millet Hybrids and Varieties (PMPT II): Ergot severity at 60 DAS-Kharif 2022

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	PTR	Mean				MAX
												Zone A ₁	Zone A	Zone B	India	
PAT 230	Pusa Comp. 701	*	*	1.5	2.5	*	0.0	12.5	0.0	0.0	5.0	1.5	2.0	3.5	3.1	12.5
PAT 231	Dhanshakti	*	*	1.5	2.5	*	0.0	8.5	0.0	2.0	0.0	1.5	2.0	2.1	2.1	8.5
PAT 232	Pusa Comp. 383	*	*	2.0	7.5	*	0.0	5.5	0.0	0.0	10.0	2.0	4.8	3.1	3.6	10.0
PAT 233	JBV 2	*	*	2.0	0.0	*	2.0	12.5	1.5	0.0	15.0	2.0	1.0	6.2	4.7	15.0
PAT 234	Raj 171	*	*	2.0	7.5	*	1.0	13.5	1.0	0.5	17.5	2.0	4.8	6.7	6.1	17.5
	Mean Entry	*	*	1.0	3.8	*	0.7	7.6	0.7	0.6	4.7	1.0	2.4	2.9	2.7	7.6

* No Data Provided - Mandor, Hisar, Jamnagar

Note:-

Zone A1 Jaipur

Zone A Jaipur, Gwalior

Zone B Mysore, Dhule, Aurangabad, Coimbatore, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.7: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Downy mildew (%) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
IR-I		76.5	86.4	66.7	74.3	71.6	75.0	89.3	73.6	81.9	76.5	75.1	80.0	77.3	89.3
IR-II		73.5	56.0	74.3	10.4	78.7	77.0	83.6	83.1	81.0	67.9	58.6	81.2	68.6	83.6
PRT 301	RHB 223	1.7	4.3	0.0	0.0	3.2	4.0	0.0	1.3	0.0	2.0	1.9	1.3	1.6	4.3
PRT 302	PB 1756	2.6	0.0	0.0	0.0	2.2	1.0	0.0	0.0	0.0	0.9	1.0	0.3	0.6	2.6
PRT 303	MPMH 21	2.6	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.9	0.5	0.3	0.4	2.6
PRT 304	GHB 719	1.7	4.3	1.4	5.3	4.1	2.0	0.0	2.1	0.0	2.4	3.3	1.0	2.3	5.3
PRT 305	HHB 67 Imp.	2.8	2.0	2.9	0.0	0.0	1.0	0.0	0.0	1.6	2.6	1.5	0.6	1.1	2.9
IR-I		72.9	84.3	58.5	72.6	75.4	78.0	91.1	79.3	76.1	71.9	72.7	81.1	76.5	91.1
IR-II		71.4	51.9	63.8	15.1	72.3	74.0	94.7	87.0	82.2	62.4	54.9	84.5	68.1	94.7
PRT 306	GHB 538	2.4	0.0	0.0	1.3	17.4	3.0	0.0	1.0	8.5	0.8	4.2	3.1	3.7	17.4
PRT 307	PB 1852	1.1	5.8	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.3	1.4	0.5	1.0	5.8
PRT 308	PB 1705	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0	0.4	0.3	0.3	2.0
PRT 309	MPMH 17	1.9	2.1	0.0	0.0	1.8	2.0	0.0	1.2	0.0	1.3	1.2	0.8	1.0	2.1
PRT 310	GHB 905	0.0	3.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.2	0.7	0.5	0.6	3.5
IR-I		74.7	91.5	76.7	68.7	79.2	78.0	87.3	81.5	81.8	81.0	78.2	82.2	79.9	91.5
IR-II		74.1	55.8	67.3	8.1	76.7	75.0	85.3	84.2	79.6	65.8	56.4	81.0	67.3	85.3
PRT 311	RHB 173	1.9	0.0	0.0	0.0	7.3	3.0	1.4	1.9	0.0	0.6	1.8	1.6	1.7	7.3
PRT 312	GHB 732	1.3	1.9	0.0	0.0	4.8	3.0	0.0	2.5	0.0	1.1	1.6	1.4	1.5	4.8
PRT 313	GHB 744	1.5	2.1	0.0	0.0	8.2	2.0	0.0	0.0	0.0	1.2	2.4	0.5	1.5	8.2
PRT 314	MP 7878	0.0	0.0	0.0	0.0	7.1	3.0	0.0	0.0	0.0	0.0	1.4	0.8	1.1	7.1
PRT 315	KBH 108	4.8	0.0	0.0	0.0	4.9	3.0	0.0	0.0	0.0	1.6	1.9	0.8	1.4	4.9
IR-I		72.5	90.6	72.9	71.6	83.1	80.0	84.0	78.6	80.2	78.7	78.2	80.7	79.3	90.6
IR-II		71.4	52.6	60.0	8.1	81.6	81.0	91.1	84.0	82.5	61.4	54.7	84.7	68.0	91.1
PRT 316	Kaveri S Boss	2.6	3.4	0.0	0.0	1.7	2.0	0.0	0.0	0.0	2.0	1.6	0.5	1.1	3.4
PRT 317	86M86	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	1.0
PRT 318	MP-7792	0.0	2.3	0.0	0.0	0.0	2.0	1.4	0.0	0.0	0.8	0.5	0.9	0.6	2.3
PRT 319	Proagro 9444	2.9	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.0	0.6	0.5	0.5	2.9
PRT 320	GHB 558	3.4	2.1	5.1	1.3	5.9	1.0	0.0	0.0	0.0	3.5	3.5	0.3	2.1	5.9
IR-I		74.4	91.4	75.0	71.4	68.2	81.0	83.3	87.5	79.5	80.3	76.1	82.8	79.1	91.4
IR-II		73.7	53.8	64.7	10.1	74.2	80.0	89.2	84.6	75.4	64.1	55.3	82.3	67.3	89.2
PRT 321	RHB 234	2.4	2.0	1.4	0.0	0.0	5.0	0.0	4.7	0.0	1.9	1.2	2.4	1.7	5.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.7: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Downy mildew (%) at 30 DAS-Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 322	RHB 233	1.9	0.0	0.0	0.0	2.3	2.0	0.0	3.5	0.0	0.6	0.8	1.4	1.1	3.5
PRT 323	AHB 1269	3.7	0.0	0.0	0.0	0.0	2.0	0.0	0.9	0.0	1.2	0.7	0.7	0.7	3.7
PRT 324	HHB 299	1.9	3.9	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.9	1.2	0.3	0.8	3.9
PRT 325	AHB 1200	3.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.6	0.3	0.4	3.0
IR-I		74.7	88.4	75.0	72.6	74.4	78.0	80.3	78.9	80.3	79.4	77.0	79.4	78.1	88.4
IR-II		71.1	52.6	64.9	6.4	70.6	80.0	85.5	85.3	80.3	62.9	53.1	82.8	66.3	85.5
PRT 326	Dhanshakti	3.6	0.0	0.0	0.0	0.0	1.0	1.4	1.7	0.0	1.2	0.7	1.0	0.8	3.6
PRT 327	ICMV 221	1.5	2.9	0.0	0.0	0.0	2.0	0.0	0.0	0.0	1.4	0.9	0.5	0.7	2.9
PRT 328	Pusa Comp. 701	3.0	0.0	0.0	0.0	11.5	2.0	0.0	2.2	2.8	1.0	2.9	1.7	2.4	11.5
PRT 329	Pusa Comp. 383	1.8	3.9	0.0	0.0	3.5	2.0	0.0	3.4	3.8	1.9	1.8	2.3	2.0	3.9
PRT 330	JBV 2	1.9	1.9	0.0	1.4	10.9	3.0	0.0	0.0	0.0	1.2	3.2	0.8	2.1	10.9
IR-I		75.3	89.7	53.2	74.3	71.4	78.0	83.3	79.3	80.3	72.7	72.8	80.2	76.1	89.7
IR-II		72.4	53.2	65.0	7.8	73.9	75.0	84.4	75.8	84.9	63.5	54.5	80.0	65.8	84.9
PRT 331	Raj 171	1.3	0.0	0.0	1.4	7.8	3.0	0.0	3.8	0.0	0.4	2.1	1.7	1.9	7.8
PRT 332	NBH 5767	0.0	10.0	0.0	0.0	0.0	1.0	0.0	1.8	1.3	3.3	2.0	1.0	1.6	10.0
PRT 333	Pratap (MH 1642)	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.3	0.0	0.0	0.6	0.3	1.3
PRT 334	NBH 4903	0.0	6.3	0.0	0.0	0.0	2.0	1.3	3.2	1.4	2.1	1.3	2.0	1.6	6.3
PRT 335	86M64	4.8	5.1	0.0	0.0	0.0	5.0	0.0	12.9	0.0	3.3	2.0	4.5	3.1	12.9
IR-I		74.4	88.9	58.0	70.8	76.7	78.0	80.3	81.6	77.2	73.7	73.7	79.3	76.2	88.9
IR-II		72.8	54.1	55.1	12.3	74.1	81.0	85.5	115.5	79.8	60.7	53.7	90.5	70.0	115.5
PRT 336	Pusa Comp. 612	2.6	3.5	1.1	1.4	4.7	2.0	1.5	6.7	1.4	2.4	2.6	2.9	2.8	6.7
PRT 337	ABV 04	0.0	3.4	0.0	0.0	0.0	2.0	0.0	1.9	1.4	1.1	0.7	1.3	1.0	3.4
PRT 338	ICMV 155	3.5	1.6	0.0	1.6	7.8	2.0	0.0	12.0	1.4	1.7	2.9	3.8	3.3	12.0
IR-I		75.9	89.4	75.0	77.3	71.6	75.0	89.9	88.2	82.4	80.1	77.8	83.9	80.5	89.9
IR-II		74.7	51.3	51.2	5.3	65.5	79.0	77.9	84.6	79.8	59.1	49.6	80.3	63.3	84.6
	Mean Entries	1.9	2.1	0.3	0.4	3.1	2.1	0.2	1.8	0.7	1.4	1.6	1.2	1.4	3.1
	Mean IR I	74.6	89.0	67.9	72.6	74.6	77.9	85.4	80.9	80.0	77.1	75.7	81.1	78.1	89.0
	Mean IR II	72.8	53.5	62.9	9.3	74.2	78.0	86.4	87.1	80.6	63.1	54.5	83.0	67.2	87.1

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.8: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Downy mildew (%) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
IR-I		100.0	97.0	84.4	97.3	91.9	98.0	92.0	90.6	94.3	93.8	94.1	93.7	93.9	100.0
IR-II		98.8	77.3	82.9	14.3	88.5	97.0	89.0	91.5	92.4	86.3	72.4	92.5	81.3	98.8
PRT 301	RHB 223	5.2	8.7	0.0	2.9	14.3	5.0	0.0	1.3	0.0	4.6	6.2	1.6	4.1	14.3
PRT 302	PB 1756	2.6	0.0	0.0	0.0	2.2	3.0	0.0	0.9	0.0	0.9	1.0	1.0	1.0	3.0
PRT 303	MPMH 21	2.6	4.3	0.0	0.0	0.0	1.0	1.3	0.0	0.0	2.3	1.4	0.6	1.0	4.3
PRT 304	GHB 719	5.1	8.5	1.4	6.6	14.3	5.5	0.0	2.1	4.9	5.0	7.2	3.1	5.4	14.3
PRT 305	HHB 67 Imp.	2.8	3.9	7.2	1.3	5.1	4.0	1.6	0.0	1.6	4.7	4.1	1.8	3.1	7.2
IR-I		100.0	97.1	80.5	97.3	100.0	98.0	96.2	92.5	94.0	92.5	95.0	95.2	95.1	100.0
IR-II		98.7	73.4	72.3	18.9	87.7	96.0	84.2	92.6	94.3	81.5	70.2	91.8	79.8	98.7
PRT 306	GHB 538	2.4	3.8	1.8	3.8	17.4	7.0	2.9	3.9	8.5	2.7	5.8	5.6	5.7	17.4
PRT 307	PB 1852	1.1	7.7	0.0	0.0	0.0	3.0	1.4	0.0	0.0	2.9	1.8	1.1	1.5	7.7
PRT 308	PB 1705	0.0	1.7	0.0	0.0	5.9	3.0	0.0	0.0	0.0	0.6	1.5	0.8	1.2	5.9
PRT 309	MPMH 17	1.9	8.3	0.0	0.0	3.5	7.0	1.5	1.2	5.1	3.4	2.7	3.7	3.2	8.3
PRT 310	GHB 905	1.4	7.0	0.0	0.0	0.0	5.0	0.0	1.0	6.6	2.8	1.7	3.1	2.3	7.0
IR-I		100.0	98.6	86.0	94.0	100.0	97.0	88.6	92.6	94.8	94.9	95.7	93.2	94.6	100.0
IR-II		100.0	77.9	69.4	16.1	96.7	97.0	96.0	92.1	97.3	82.4	72.0	95.6	82.5	100.0
PRT 311	RHB 173	3.8	2.4	0.0	0.0	9.1	4.0	1.4	1.9	0.0	2.1	3.1	1.8	2.5	9.1
PRT 312	GHB 732	3.9	3.8	0.0	0.0	8.1	3.5	0.0	3.8	0.0	2.6	3.2	1.8	2.6	8.1
PRT 313	GHB 744	1.5	4.3	0.0	0.0	8.2	3.0	0.0	0.0	0.0	1.9	2.8	0.8	1.9	8.2
PRT 314	MP 7878	2.7	3.8	0.0	0.0	7.1	3.7	1.4	0.0	0.0	2.2	2.7	1.3	2.1	7.1
PRT 315	KBH 108	7.1	2.5	0.0	0.0	6.6	3.0	0.0	1.5	1.6	3.2	3.2	1.5	2.5	7.1
IR-I		100.0	98.4	83.3	98.6	100.0	95.0	94.7	91.1	94.3	93.9	96.1	93.8	95.1	100.0
IR-II		100.0	76.3	69.1	16.1	100.0	99.0	96.2	93.3	97.3	81.8	72.3	96.5	83.0	100.0
PRT 316	Kaveri S Boss	3.9	8.6	0.0	0.0	3.4	5.0	4.3	0.0	0.0	4.2	3.2	2.3	2.8	8.6
PRT 317	86M86	0.0	0.0	0.0	0.0	4.8	3.0	1.5	0.0	0.0	0.0	1.0	1.1	1.0	4.8
PRT 318	MP-7792	4.5	6.8	0.0	0.0	0.0	3.0	2.9	0.0	2.9	3.8	2.3	2.2	2.2	6.8
PRT 319	Proagro 9444	2.9	2.1	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1.7	1.0	0.9	1.0	3.5
PRT 320	GHB 558	5.1	8.3	6.8	2.5	8.8	5.7	3.1	0.0	0.0	6.7	6.3	2.2	4.5	8.8
IR-I		100.0	97.1	84.1	94.3	87.9	98.0	92.3	91.7	89.8	93.7	92.7	92.9	92.8	100.0
IR-II		100.0	75.6	80.4	15.9	95.2	99.0	91.9	92.3	91.4	85.3	73.4	93.7	82.4	100.0
PRT 321	RHB 234	7.1	2.0	1.4	0.0	0.0	8.0	0.0	7.1	1.4	3.5	2.1	4.1	3.0	8.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.8: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Downy mildew (%) at 60 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	JPR	HSR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 322	RHB 233	5.6	8.3	0.0	0.0	2.3	4.5	0.0	3.5	5.5	4.6	3.2	3.4	3.3	8.3
PRT 323	AHB 1269	3.7	2.8	0.0	0.0	0.0	3.0	0.0	0.9	0.0	2.2	1.3	1.0	1.2	3.7
PRT 324	HHB 299	5.6	5.9	0.0	0.0	3.1	1.0	0.0	0.0	0.0	3.8	2.9	0.3	1.7	5.9
PRT 325	AHB 1200	3.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	1.0	0.6	0.5	0.6	3.0
IR-I		100.0	98.6	92.5	100.0	100.0	97.0	93.4	92.3	95.5	97.0	98.2	94.6	96.6	100.0
IR-II		98.8	76.3	81.1	12.8	92.6	99.0	93.4	93.3	93.4	85.4	72.3	94.8	82.3	99.0
PRT 326	Dhanshakti	3.6	0.0	0.0	0.0	2.9	3.0	1.4	5.0	5.6	1.2	1.3	3.8	2.4	5.6
PRT 327	ICMV 221	4.4	8.6	0.0	0.0	0.0	5.0	0.0	2.7	0.0	4.3	2.6	1.9	2.3	8.6
PRT 328	Pusa Comp. 701	3.0	4.1	0.0	0.0	19.2	8.0	1.4	3.3	5.6	2.4	5.3	4.6	5.0	19.2
PRT 329	Pusa Comp. 383	5.5	9.8	0.0	0.0	5.3	11.0	2.8	3.4	3.8	5.1	4.1	5.2	4.6	11.0
PRT 330	JBV 2	5.6	7.4	1.4	1.4	12.5	8.0	1.6	1.9	3.2	4.8	5.7	3.7	4.8	12.5
IR-I		100.0	100.0	78.7	100.0	95.7	98.0	92.4	90.6	93.4	92.9	94.9	93.6	94.3	100.0
IR-II		98.7	76.6	77.5	11.7	97.1	95.0	92.2	90.9	97.3	84.3	72.3	93.8	81.9	98.7
PRT 331	Raj 171	3.8	0.0	1.2	2.8	15.7	6.0	1.5	3.8	0.0	1.7	4.7	2.8	3.9	15.7
PRT 332	NBH 5767	5.1	13.3	0.0	0.0	0.0	8.0	0.0	2.8	2.6	6.1	3.7	3.3	3.5	13.3
PRT 333	Pratap (MH 1642)	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	1.3	0.0	0.0	0.8	0.4	2.0
PRT 334	NBH 4903	3.0	14.6	0.0	0.0	0.0	3.5	2.7	3.2	1.4	5.9	3.5	2.7	3.2	14.6
PRT 335	86M64	7.1	11.9	0.0	0.0	3.6	9.0	0.0	12.9	0.0	6.3	4.5	5.5	4.9	12.9
IR-I		100.0	100.0	76.0	95.4	96.7	98.0	93.4	91.8	90.7	92.0	93.6	93.5	93.6	100.0
IR-II		100.0	78.4	67.3	16.4	94.8	98.0	93.4	131.0	95.6	81.9	71.4	104.5	86.1	131.0
PRT 336	Pusa Comp. 612	5.1	7.0	1.1	1.4	7.8	10.0	4.5	8.7	1.4	4.4	4.5	6.1	5.2	10.0
PRT 337	ABV 04	1.3	3.4	0.0	0.0	0.0	3.0	0.0	1.9	1.4	1.6	0.9	1.6	1.2	3.4
PRT 338	ICMV 155	5.3	4.9	0.0	4.7	10.9	9.0	1.3	13.3	6.7	3.4	5.2	7.6	6.2	13.3
IR-I		100.0	97.0	78.5	97.0	91.0	75.0	97.1	94.1	92.8	91.8	92.7	89.7	91.4	100.0
IR-II		100.0	77.6	76.2	10.7	87.9	79.0	94.8	89.2	95.7	84.6	70.5	89.7	79.0	100.0
	Mean Entries	3.6	5.3	0.6	0.7	5.3	4.8	1.1	2.4	1.9	3.2	3.1	2.6	2.9	5.3
	Mean IR I	100.0	98.2	82.7	97.1	95.9	94.9	93.4	91.9	93.3	93.6	94.8	93.4	94.1	100.0
	Mean IR II	99.4	76.6	75.1	14.8	93.4	95.4	92.4	96.3	95.0	83.7	71.9	94.8	82.0	99.4

Note:- * Data Not included-

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 scale) 30 DAS- *Kharif 2022*

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	0.0	1.5	1.4	0.0	0.5	0.5	0.0	0.5	0.0	1.0	0.7	0.3	0.5	1.5
PRT 302	PB 1756	0.0	1.5	1.0	0.0	0.0	0.0	0.5	0.5	0.0	0.8	0.5	0.3	0.4	1.5
PRT 303	MPMH 21	0.0	1.5	1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.8	0.5	0.1	0.3	1.5
PRT 304	GHB 719	0.0	1.5	1.1	0.0	0.5	1.5	0.0	3.5	0.5	0.9	0.6	1.4	1.0	3.5
PRT 305	HHB 67 Imp.	0.0	1.5	1.5	0.4	1.0	1.0	0.0	4.0	0.0	1.0	0.9	1.3	1.0	4.0
PRT 306	GHB 538	0.0	1.5	1.2	0.0	0.0	1.0	2.0	2.0	0.0	0.9	0.5	1.3	0.9	2.0
PRT 307	PB 1852	0.0	1.5	1.0	0.0	0.5	0.0	0.0	0.0	0.0	0.8	0.6	0.0	0.3	1.5
PRT 308	PB 1705	0.0	1.0	2.4	0.0	1.0	1.0	0.0	2.0	0.0	1.1	0.9	0.8	0.8	2.4
PRT 309	MPMH 17	0.0	1.5	1.9	0.1	1.0	0.5	1.0	1.5	0.0	1.1	0.9	0.8	0.8	1.9
PRT 310	GHB 905	0.0	1.5	3.2	0.0	1.0	0.5	0.5	1.0	0.0	1.6	1.1	0.5	0.9	3.2
PRT 311	RHB 173	0.0	1.5	1.3	0.0	1.0	1.0	1.0	1.0	0.0	0.9	0.8	0.8	0.8	1.5
PRT 312	GHB 732	0.0	1.5	1.2	0.0	0.5	1.0	0.0	0.5	0.0	0.9	0.6	0.4	0.5	1.5
PRT 313	GHB 744	0.0	1.0	1.1	0.0	0.0	0.5	0.0	0.0	0.0	0.7	0.4	0.1	0.3	1.1
PRT 314	MP 7878	0.0	1.5	2.7	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.0	0.5	2.7
PRT 315	KBH 108	0.0	1.5	2.4	0.0	0.0	1.0	0.0	1.5	0.0	1.3	0.8	0.6	0.7	2.4
PRT 316	Kaveri S Boss	0.0	1.5	1.2	0.5	0.5	1.0	0.5	1.5	0.0	0.9	0.7	0.8	0.7	1.5
PRT 317	86M86	0.0	1.5	1.2	0.0	0.0	0.5	1.0	0.0	0.0	0.9	0.5	0.4	0.5	1.5
PRT 318	MP-7792	0.0	1.5	2.1	0.2	1.0	1.0	0.5	2.0	0.5	1.2	1.0	1.0	1.0	2.1
PRT 319	Proagro 9444	0.5	1.0	2.3	0.3	1.0	1.0	0.0	2.5	0.0	1.3	1.0	0.9	1.0	2.5
PRT 320	GHB 558	0.5	1.5	2.0	0.6	1.0	1.0	1.0	2.0	0.0	1.3	1.1	1.0	1.1	2.0
PRT 321	RHB 234	0.0	1.5	2.1	0.0	1.0	0.5	1.0	2.0	0.0	1.2	0.9	0.9	0.9	2.1
PRT 322	RHB 233	0.0	1.5	1.7	0.7	1.5	0.0	1.5	1.0	0.0	1.1	1.1	0.6	0.9	1.7
PRT 323	AHB 1269	1.0	1.0	3.1	0.0	1.0	1.0	1.5	2.5	0.0	1.7	1.2	1.3	1.2	3.1
PRT 324	HHB 299	0.0	1.5	0.5	0.0	1.0	1.0	0.0	0.0	0.0	0.7	0.6	0.3	0.4	1.5
PRT 325	AHB 1200	0.0	1.5	1.7	0.0	0.5	1.0	0.0	2.5	0.5	1.1	0.7	1.0	0.9	2.5
PRT 326	Dhanshakti	0.0	2.0	2.5	0.0	1.0	1.5	0.5	3.0	0.0	1.5	1.1	1.3	1.2	3.0
PRT 327	ICMV 221	0.0	1.5	1.8	0.3	1.5	1.0	1.0	4.5	0.0	1.1	1.0	1.6	1.3	4.5
PRT 328	Pusa Comp. 701	0.0	1.5	1.1	0.0	1.5	1.0	1.0	1.5	0.0	0.9	0.8	0.9	0.8	1.5
PRT 329	Pusa Comp. 383	0.0	1.5	1.5	0.0	1.0	0.0	0.0	1.0	0.0	1.0	0.8	0.3	0.6	1.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 scale) 30 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 330	JBV 2	0.0	1.5	1.3	0.0	1.0	0.0	1.0	1.5	0.0	0.9	0.8	0.6	0.7	1.5
PRT 331	Raj 171	0.0	1.5	3.1	0.0	1.0	1.5	1.0	1.5	0.0	1.5	1.1	1.0	1.1	3.1
PRT 332	NBH 5767	0.0	1.5	2.5	0.0	1.0	0.5	0.5	1.0	0.0	1.3	1.0	0.5	0.8	2.5
PRT 333	Pratap (MH 1642)	0.5	2.0	2.6	0.0	1.5	1.0	1.0	2.5	0.0	1.7	1.3	1.1	1.2	2.6
PRT 334	NBH 4903	0.0	1.5	1.8	0.0	1.0	1.0	0.0	1.5	0.0	1.1	0.9	0.6	0.8	1.8
PRT 335	86M64	0.0	2.0	1.8	0.0	1.0	1.0	0.5	2.0	0.0	1.3	1.0	0.9	0.9	2.0
PRT 336	Pusa Comp. 612	0.0	1.5	1.9	0.7	1.0	0.0	1.0	0.5	0.5	1.1	1.0	0.5	0.8	1.9
PRT 337	ABV 04	0.5	1.5	1.4	0.0	0.0	0.0	0.5	1.0	0.0	1.1	0.7	0.4	0.5	1.5
PRT 338	ICMV 155	0.5	1.5	3.0	0.7	1.0	1.0	1.0	2.0	0.0	1.7	1.3	1.0	1.2	3.0
	Mean Entry	0.1	1.5	1.8	0.1	0.8	0.7	0.6	1.5	0.1	1.1	0.9	0.7	0.8	2.2

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 scale) 45 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	0.5	2.0	1.8	0.0	2.5	1.0	1.0	1.0	0.0	1.4	1.4	0.8	1.1	2.5
PRT 302	PB 1756	0.0	2.0	1.4	0.0	2.0	1.0	0.5	2.0	0.5	1.1	1.1	1.0	1.0	2.0
PRT 303	MPMH 21	0.5	2.0	1.0	0.0	1.5	1.0	1.5	2.5	0.0	1.2	1.0	1.3	1.1	2.5
PRT 304	GHB 719	0.0	2.0	1.9	0.7	2.5	2.0	2.0	4.5	1.0	1.3	1.4	2.4	1.8	4.5
PRT 305	HHB 67 Imp.	0.5	2.0	2.6	1.9	3.0	3.0	1.5	5.5	0.0	1.7	2.0	2.5	2.2	5.5
PRT 306	GHB 538	0.5	2.0	2.5	0.0	3.0	2.0	2.5	3.0	0.0	1.7	1.6	1.9	1.7	3.0
PRT 307	PB 1852	0.0	2.0	1.1	0.0	3.0	1.0	0.5	0.5	0.0	1.0	1.2	0.5	0.9	3.0
PRT 308	PB 1705	1.0	1.0	2.7	0.0	3.0	2.0	0.0	3.0	0.0	1.6	1.5	1.3	1.4	3.0
PRT 309	MPMH 17	1.0	2.0	3.1	0.8	2.0	1.0	1.5	2.5	0.0	2.0	1.8	1.3	1.5	3.1
PRT 310	GHB 905	0.0	2.0	3.3	0.0	2.5	1.0	1.5	2.0	0.5	1.8	1.6	1.3	1.4	3.3
PRT 311	RHB 173	0.5	2.0	1.4	0.0	2.5	1.5	1.0	2.0	0.0	1.3	1.3	1.1	1.2	2.5
PRT 312	GHB 732	0.5	2.0	1.2	0.0	1.5	1.0	0.0	1.5	0.0	1.2	1.0	0.6	0.9	2.0
PRT 313	GHB 744	0.0	1.0	1.2	0.0	1.0	1.0	0.0	1.0	0.0	0.7	0.6	0.5	0.6	1.2
PRT 314	MP 7878	0.0	2.0	2.9	0.0	2.0	1.0	0.5	1.5	0.0	1.6	1.4	0.8	1.1	2.9
PRT 315	KBH 108	1.0	2.0	2.8	0.0	2.0	2.0	0.0	3.0	0.0	1.9	1.6	1.3	1.4	3.0
PRT 316	Kaveri S Boss	0.5	2.0	1.2	1.0	2.0	2.0	0.5	2.5	0.0	1.2	1.3	1.3	1.3	2.5
PRT 317	86M86	1.0	2.0	1.3	0.0	1.5	2.0	1.5	2.5	0.0	1.4	1.2	1.5	1.3	2.5
PRT 318	MP-7792	0.0	2.0	2.5	1.0	3.0	2.0	1.5	3.0	1.0	1.5	1.7	1.9	1.8	3.0
PRT 319	Proagro 9444	0.5	1.5	2.4	0.7	3.0	2.0	2.0	4.0	0.0	1.5	1.6	2.0	1.8	4.0
PRT 320	GHB 558	0.5	2.0	2.3	1.2	3.0	2.0	1.5	3.0	0.0	1.6	1.8	1.6	1.7	3.0
PRT 321	RHB 234	0.5	2.0	2.5	0.6	2.5	2.0	2.0	3.0	0.5	1.7	1.6	1.9	1.7	3.0
PRT 322	RHB 233	0.5	2.0	1.7	1.3	3.0	1.0	1.5	2.0	0.0	1.4	1.7	1.1	1.4	3.0
PRT 323	AHB 1269	1.0	1.5	3.5	0.0	2.5	2.0	1.5	3.5	0.0	2.0	1.7	1.8	1.7	3.5
PRT 324	HHB 299	0.5	1.5	0.5	0.0	3.0	1.0	0.5	0.5	0.0	0.8	1.1	0.5	0.8	3.0
PRT 325	AHB 1200	0.5	2.0	2.3	0.0	2.0	2.0	0.0	3.5	1.5	1.6	1.4	1.8	1.5	3.5
PRT 326	Dhanshakti	0.5	2.0	2.6	0.9	3.0	3.0	1.0	5.0	0.0	1.7	1.8	2.3	2.0	5.0
PRT 327	ICMV 221	1.0	2.0	2.3	0.7	3.5	2.0	2.5	6.0	0.5	1.8	1.9	2.8	2.3	6.0
PRT 328	Pusa Comp. 701	0.0	2.0	2.1	0.0	4.0	2.0	1.5	2.5	0.5	1.4	1.6	1.6	1.6	4.0
PRT 329	Pusa Comp. 383	0.5	2.0	2.3	0.0	3.0	1.0	0.5	2.0	0.0	1.6	1.6	0.9	1.3	3.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 scale) 45 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 330	JBV 2	0.5	2.0	2.0	0.3	3.0	1.0	1.0	2.5	0.0	1.5	1.6	1.1	1.4	3.0
PRT 331	Raj 171	0.5	2.0	3.1	0.9	3.0	2.0	2.0	3.0	0.0	1.9	1.9	1.8	1.8	3.1
PRT 332	NBH 5767	0.5	2.0	3.6	0.0	3.0	2.0	0.5	2.0	0.0	2.0	1.8	1.1	1.5	3.6
PRT 333	Pratap (MH 1642)	0.5	2.0	3.1	0.0	3.0	2.0	1.5	3.0	0.0	1.9	1.7	1.6	1.7	3.1
PRT 334	NBH 4903	0.0	2.0	2.6	0.0	3.5	2.0	1.0	2.5	0.5	1.5	1.6	1.5	1.6	3.5
PRT 335	86M64	0.5	2.0	2.3	0.2	3.0	2.0	1.0	3.5	0.0	1.6	1.6	1.6	1.6	3.5
PRT 336	Pusa Comp. 612	0.5	1.0	2.3	1.5	3.5	1.0	2.0	1.5	1.0	1.3	1.8	1.4	1.6	3.5
PRT 337	ABV 04	0.5	2.0	1.9	0.0	1.5	1.0	1.5	2.0	0.0	1.5	1.2	1.1	1.2	2.0
PRT 338	ICMV 155	1.0	2.0	3.4	1.1	2.0	1.5	1.5	3.5	0.0	2.1	1.9	1.6	1.8	3.5
	Mean Entry	0.5	1.9	2.2	0.4	2.6	1.6	1.2	2.7	0.2	1.5	1.5	1.4	1.5	3.2

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 Scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	0.5	2.5	2.3	0.8	5.0	1.5	1.5	2.0	0.0	1.8	2.2	1.3	1.8	5.0
PRT 302	PB 1756	0.0	2.0	2.2	0.0	4.5	1.5	1.0	2.5	1.0	1.4	1.7	1.5	1.6	4.5
PRT 303	MPMH 21	0.5	2.0	1.0	0.0	4.5	3.0	2.0	4.0	0.0	1.2	1.6	2.3	1.9	4.5
PRT 304	GHB 719	0.0	2.5	2.2	1.4	5.0	3.0	4.0	6.0	2.0	1.6	2.2	3.8	2.9	6.0
PRT 305	HHB 67 Imp.	0.5	3.0	2.9	5.5	5.0	4.0	2.0	7.0	0.0	2.1	3.4	3.3	3.3	7.0
PRT 306	GHB 538	0.5	3.5	3.2	0.8	5.5	3.0	3.0	4.0	0.0	2.4	2.7	2.5	2.6	5.5
PRT 307	PB 1852	0.0	2.5	1.5	0.7	4.5	2.0	0.5	1.0	0.0	1.3	1.8	0.9	1.4	4.5
PRT 308	PB 1705	1.0	2.0	3.5	0.0	5.5	3.5	0.0	5.0	0.0	2.2	2.4	2.1	2.3	5.5
PRT 309	MPMH 17	1.5	3.0	4.0	1.9	3.5	2.0	2.5	3.5	0.0	2.8	2.8	2.0	2.4	4.0
PRT 310	GHB 905	0.0	2.5	3.8	0.0	4.5	2.0	2.5	4.0	1.5	2.1	2.2	2.5	2.3	4.5
PRT 311	RHB 173	0.5	2.5	1.6	0.6	4.5	2.0	1.0	2.5	0.0	1.5	1.9	1.4	1.7	4.5
PRT 312	GHB 732	0.5	2.5	1.8	1.2	4.0	2.0	0.0	2.5	0.0	1.6	2.0	1.1	1.6	4.0
PRT 313	GHB 744	0.0	2.0	1.5	1.2	3.0	2.0	1.0	2.0	0.0	1.2	1.5	1.3	1.4	3.0
PRT 314	MP 7878	0.0	2.5	3.7	0.0	4.0	2.5	1.5	3.5	0.0	2.1	2.0	1.9	2.0	4.0
PRT 315	KBH 108	1.0	3.0	3.7	0.2	5.0	3.0	0.0	4.0	0.0	2.6	2.6	1.8	2.2	5.0
PRT 316	Kaveri S Boss	0.5	2.5	1.8	1.6	3.0	2.5	1.5	3.5	0.0	1.6	1.9	1.9	1.9	3.5
PRT 317	86M86	1.5	2.5	1.9	0.6	3.5	2.5	1.5	2.5	0.0	2.0	2.0	1.6	1.8	3.5
PRT 318	MP-7792	0.0	3.0	3.1	2.0	6.0	2.0	1.5	3.5	2.0	2.0	2.8	2.3	2.6	6.0
PRT 319	Proagro 9444	1.0	2.5	3.0	1.4	5.5	2.0	3.0	5.0	0.0	2.2	2.7	2.5	2.6	5.5
PRT 320	GHB 558	1.0	2.5	3.1	2.5	6.0	3.0	2.0	4.0	0.0	2.2	3.0	2.3	2.7	6.0
PRT 321	RHB 234	0.5	3.0	3.4	2.1	5.0	3.0	3.5	5.0	1.5	2.3	2.8	3.3	3.0	5.0
PRT 322	RHB 233	0.5	3.0	2.2	3.1	6.0	2.0	1.5	3.0	0.0	1.9	3.0	1.6	2.4	6.0
PRT 323	AHB 1269	2.0	2.5	4.0	0.8	6.5	3.0	2.0	5.0	0.0	2.8	3.2	2.5	2.9	6.5
PRT 324	HHB 299	0.5	2.5	1.0	0.0	5.0	2.0	0.5	1.0	0.0	1.3	1.8	0.9	1.4	5.0
PRT 325	AHB 1200	0.5	3.0	2.8	1.6	4.0	3.0	0.0	5.5	2.5	2.1	2.4	2.8	2.5	5.5
PRT 326	Dhanshakti	0.5	3.0	3.2	2.0	5.5	3.5	3.0	6.5	0.0	2.2	2.8	3.3	3.0	6.5
PRT 327	ICMV 221	1.0	2.5	3.1	2.1	6.0	4.0	3.0	7.0	1.0	2.2	2.9	3.8	3.3	7.0
PRT 328	Pusa Comp. 701	0.0	3.0	2.9	0.0	5.5	3.0	1.5	3.5	1.5	2.0	2.3	2.4	2.3	5.5
PRT 329	Pusa Comp. 383	0.5	3.0	3.2	1.4	5.0	2.0	3.0	3.0	0.0	2.2	2.6	2.0	2.3	5.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Blast (0-9 Scale) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 330	JBV 2	0.5	2.5	2.9	0.9	5.0	2.0	1.0	3.5	0.0	2.0	2.4	1.6	2.0	5.0
PRT 331	Raj 171	1.0	3.0	4.4	2.5	5.5	2.5	1.5	3.5	0.0	2.8	3.3	1.9	2.7	5.5
PRT 332	NBH 5767	0.5	3.0	4.6	0.4	6.0	2.5	1.0	3.5	0.0	2.7	2.9	1.8	2.4	6.0
PRT 333	Pratap (MH 1642)	1.5	3.0	4.1	0.1	6.5	2.0	1.5	5.0	0.0	2.9	3.0	2.1	2.6	6.5
PRT 334	NBH 4903	0.0	2.5	3.2	2.2	6.0	3.0	2.5	4.5	1.0	1.9	2.8	2.8	2.8	6.0
PRT 335	86M64	0.5	3.0	2.9	1.4	5.0	1.0	3.5	4.5	0.0	2.1	2.6	2.3	2.4	5.0
PRT 336	Pusa Comp. 612	1.0	2.0	3.3	3.5	6.0	2.0	2.0	2.5	2.0	2.1	3.2	2.1	2.7	6.0
PRT 337	ABV 04	1.0	2.5	2.5	0.0	3.5	2.0	1.5	3.0	0.0	2.0	1.9	1.6	1.8	3.5
PRT 338	ICMV 155	1.5	3.0	3.7	3.6	4.0	3.0	2.5	4.5	0.0	2.7	3.2	2.5	2.9	4.5
	Mean Entry	0.6	2.7	2.9	1.3	4.9	2.5	1.8	3.8	0.4	2.1	2.5	2.1	2.3	5.2

Note:- * Data Not included

Zone A1 Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior

Zone B Mysuru, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Rust (% leaf area) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	*	1.0	0.0	0.0	5.0	10.0	2.5	12.5	17.5	0.5	1.5	10.6	6.1	17.5
PRT 302	PB 1756	*	1.0	0.0	0.0	6.5	10.0	0.0	12.5	19.0	0.5	1.9	10.4	6.1	19.0
PRT 303	MPMH 21	*	1.0	4.0	0.0	4.0	10.0	2.5	7.5	25.0	2.5	2.3	11.3	6.8	25.0
PRT 304	GHB 719	*	1.0	0.0	0.0	5.5	0.0	7.5	0.0	6.5	0.5	1.6	3.5	2.6	7.5
PRT 305	HHB 67 Imp.	*	2.5	0.0	0.0	7.5	0.0	6.0	2.5	22.5	1.3	2.5	7.8	5.1	22.5
PRT 306	GHB 538	*	1.0	0.0	0.0	2.5	10.0	2.5	20.0	32.5	0.5	0.9	16.3	8.6	32.5
PRT 307	PB 1852	*	1.0	0.0	0.0	1.0	10.0	2.5	7.5	0.0	0.5	0.5	5.0	2.8	10.0
PRT 308	PB 1705	*	1.0	0.0	0.0	6.5	10.0	0.0	10.0	11.0	0.5	1.9	7.8	4.8	11.0
PRT 309	MPMH 17	*	1.5	1.0	0.0	7.5	20.0	6.0	35.0	15.0	1.3	2.5	19.0	10.8	35.0
PRT 310	GHB 905	*	1.0	0.0	0.0	12.5	20.0	2.5	30.0	19.0	0.5	3.4	17.9	10.6	30.0
PRT 311	RHB 173	*	2.0	0.0	0.0	17.5	10.0	0.0	12.5	21.0	1.0	4.9	10.9	7.9	21.0
PRT 312	GHB 732	*	1.0	0.0	0.0	12.5	30.0	0.0	25.0	6.0	0.5	3.4	15.3	9.3	30.0
PRT 313	GHB 744	*	1.0	0.0	0.0	11.5	5.0	2.5	5.0	11.0	0.5	3.1	5.9	4.5	11.5
PRT 314	MP 7878	*	1.0	0.0	0.0	15.0	0.0	0.0	2.5	15.0	0.5	4.0	4.4	4.2	15.0
PRT 315	KBH 108	*	1.5	0.0	0.0	12.5	10.0	0.0	10.0	4.0	0.8	3.5	6.0	4.8	12.5
PRT 316	Kaveri S Boss	*	1.0	0.0	0.0	22.5	10.0	0.0	7.5	5.0	0.5	5.9	5.6	5.8	22.5
PRT 317	86M86	*	2.0	0.0	0.0	23.5	10.0	0.0	7.5	3.0	1.0	6.4	5.1	5.8	23.5
PRT 318	MP-7792	*	1.0	0.0	0.0	20.0	10.0	2.5	7.5	9.0	0.5	5.3	7.3	6.3	20.0
PRT 319	Proagro 9444	*	1.5	0.0	0.0	22.5	20.0	1.0	15.0	22.5	0.8	6.0	14.6	10.3	22.5
PRT 320	GHB 558	*	1.0	0.0	0.0	15.0	20.0	7.5	20.0	21.0	0.5	4.0	17.1	10.6	21.0
PRT 321	RHB 234	*	1.0	0.0	0.0	21.0	20.0	5.0	30.0	16.5	0.5	5.5	17.9	11.7	30.0
PRT 322	RHB 233	*	2.0	0.0	0.0	20.0	20.0	5.0	25.0	11.0	1.0	5.5	15.3	10.4	25.0
PRT 323	AHB 1269	*	1.0	0.0	0.0	13.5	10.0	2.5	12.5	22.5	0.5	3.6	11.9	7.8	22.5
PRT 324	HHB 299	*	1.0	0.0	0.0	17.5	15.0	0.0	12.5	8.5	0.5	4.6	9.0	6.8	17.5
PRT 325	AHB 1200	*	1.0	0.0	0.0	13.5	10.0	3.5	7.5	11.0	0.5	3.6	8.0	5.8	13.5
PRT 326	Dhanshakti	*	1.5	0.0	0.0	19.0	15.0	5.0	12.5	12.5	0.8	5.1	11.3	8.2	19.0
PRT 327	ICMV 221	*	1.5	0.0	0.0	20.0	15.0	8.5	12.5	15.0	0.8	5.4	12.8	9.1	20.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Rust (% leaf area) at 60 DAS- *Kharif* 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 328	Pusa Comp. 701	*	1.0	0.0	0.0	17.5	20.0	2.5	15.0	21.0	0.5	4.6	14.6	9.6	21.0
PRT 329	Pusa Comp. 383	*	2.0	0.0	0.0	21.0	15.0	10.0	12.5	19.0	1.0	5.8	14.1	9.9	21.0
PRT 330	JBV 2	*	1.5	0.0	0.0	20.0	15.0	5.0	20.0	5.5	0.8	5.4	11.4	8.4	20.0
PRT 331	Raj 171	*	1.0	0.0	0.0	10.0	10.0	2.5	12.5	22.5	0.5	2.8	11.9	7.3	22.5
PRT 332	NBH 5767	*	1.0	0.0	0.0	17.5	10.0	2.5	12.5	27.5	0.5	4.6	13.1	8.9	27.5
PRT 333	Pratap (MH 1642)	*	1.0	0.0	0.0	19.0	0.0	0.0	0.0	12.5	0.5	5.0	3.1	4.1	19.0
PRT 334	NBH 4903	*	2.0	0.0	0.0	22.5	0.0	0.0	0.0	10.0	1.0	6.1	2.5	4.3	22.5
PRT 335	86M64	*	1.0	0.0	0.0	5.5	0.0	5.0	2.5	13.5	0.5	1.6	5.3	3.4	13.5
PRT 336	Pusa Comp. 612	*	1.0	0.0	0.0	22.5	15.0	10.0	15.0	17.5	0.5	5.9	14.4	10.1	22.5
PRT 337	ABV 04	*	2.0	0.0	0.0	21.5	5.0	2.5	5.0	13.5	1.0	5.9	6.5	6.2	21.5
PRT 338	ICMV 155	*	2.0	0.0	0.0	17.5	15.0	3.5	20.0	25.0	1.0	4.9	15.9	10.4	25.0
	Mean Entry		1.3	0.1	0.0	14.5	11.4	3.1	12.6	15.0	0.7	4.0	10.5	7.3	15.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Smut (severity %) at 60 DAS- *Kharif* 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	*	0.0	0.0	0.0	15.0	2.0	0.0	6.0	0.0	0.0	3.8	2.0	2.9	15.0
PRT 302	PB 1756	*	0.0	0.6	0.0	10.0	0.0	0.0	0.0	1.0	0.3	2.7	0.3	1.5	10.0
PRT 303	MPMH 21	*	1.5	1.1	0.0	20.0	0.0	0.0	0.0	0.0	1.3	5.7	0.0	2.8	20.0
PRT 304	GHB 719	*	0.0	0.0	0.0	12.5	0.0	0.0	1.0	0.0	0.0	3.1	0.3	1.7	12.5
PRT 305	HHB 67 Imp.	*	0.0	1.1	0.0	10.0	2.0	0.0	12.5	0.0	0.6	2.8	3.6	3.2	12.5
PRT 306	GHB 538	*	1.5	1.0	0.0	17.5	3.0	0.0	12.5	0.0	1.3	5.0	3.9	4.4	17.5
PRT 307	PB 1852	*	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.5	4.0
PRT 308	PB 1705	*	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.6	0.3	2.5
PRT 309	MPMH 17	*	0.0	0.1	0.0	0.0	2.0	0.0	25.0	0.0	0.1	0.0	6.8	3.4	25.0
PRT 310	GHB 905	*	0.0	0.6	0.0	7.5	2.5	0.0	17.5	1.5	0.3	2.0	5.4	3.7	17.5
PRT 311	RHB 173	*	0.0	0.5	0.0	17.5	2.0	0.0	11.0	0.0	0.3	4.5	3.3	3.9	17.5
PRT 312	GHB 732	*	0.0	0.6	0.0	27.5	2.5	0.0	12.5	0.5	0.3	7.0	3.9	5.5	27.5
PRT 313	GHB 744	*	0.0	0.0	0.0	7.5	2.0	0.0	7.5	0.0	0.0	1.9	2.4	2.1	7.5
PRT 314	MP 7878	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRT 315	KBH 108	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.6	0.3	2.5
PRT 316	Kaveri S Boss	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRT 317	86M86	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRT 318	MP-7792	*	0.0	0.0	0.0	0.0	2.0	0.0	3.5	0.0	0.0	0.0	1.4	0.7	3.5
PRT 319	Proagro 9444	*	0.0	3.5	0.0	3.0	2.0	0.0	3.5	1.5	1.8	1.6	1.8	1.7	3.5
PRT 320	GHB 558	*	0.0	8.5	0.0	10.0	2.0	0.0	3.5	0.0	4.3	4.6	1.4	3.0	10.0
PRT 321	RHB 234	*	0.0	1.0	0.0	7.5	3.0	0.0	15.0	0.0	0.5	2.1	4.5	3.3	15.0
PRT 322	RHB 233	*	1.5	0.0	0.0	20.0	0.0	0.0	3.5	0.0	0.8	5.4	0.9	3.1	20.0
PRT 323	AHB 1269	*	0.0	0.6	0.0	15.0	2.0	0.0	7.5	1.5	0.3	3.9	2.8	3.3	15.0
PRT 324	HHB 299	*	0.0	0.0	0.0	0.0	2.0	0.0	10.0	0.0	0.0	0.0	3.0	1.5	10.0
PRT 325	AHB 1200	*	0.0	3.5	0.0	15.0	2.0	0.0	7.5	0.0	1.8	4.6	2.4	3.5	15.0
PRT 326	Dhanshakti	*	1.0	0.1	0.0	3.0	2.0	0.0	25.0	1.0	0.6	1.0	7.0	4.0	25.0
PRT 327	ICMV 221	*	0.0	0.0	0.0	10.0	2.0	0.0	15.0	0.5	0.0	2.5	4.4	3.4	15.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Smut (severity %) at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	JPR	HSR	JMR	GLR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 328	Pusa Comp. 701	*	0.0	0.0	0.0	3.0	2.5	0.0	5.0	0.0	0.0	0.8	1.9	1.3	5.0
PRT 329	Pusa Comp. 383	*	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.9	7.5
PRT 330	JBV 2	*	0.0	4.0	0.0	27.5	2.0	0.0	5.0	0.0	2.0	7.9	1.8	4.8	27.5
PRT 331	Raj 171	*	0.0	1.0	0.0	7.5	0.0	0.0	1.0	1.5	0.5	2.1	0.6	1.4	7.5
PRT 332	NBH 5767	*	1.0	0.0	0.0	27.5	2.0	0.0	5.0	0.0	0.5	7.1	1.8	4.4	27.5
PRT 333	Pratap (MH 1642)	*	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.3	0.1	1.0
PRT 334	NBH 4903	*	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.1	0.5
PRT 335	86M64	*	0.0	0.0	0.0	5.0	2.0	0.0	2.0	1.0	0.0	1.3	1.3	1.3	5.0
PRT 336	Pusa Comp. 612	*	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.3	0.1	1.0
PRT 337	ABV 04	*	0.0	5.5	0.0	10.0	0.0	0.0	2.5	0.0	2.8	3.9	0.6	2.3	10.0
PRT 338	ICMV 155	*	1.5	0.0	0.0	17.5	0.0	0.0	0.0	0.5	0.8	4.8	0.1	2.4	17.5
	Mean Entry		0.2	1.0	0.0	8.8	1.2	0.0	5.9	0.3	0.6	2.5	1.9	2.2	8.8

* No Data Provided - Mandor

Note:-

Zone A1 Jaipur, Hisar

Zone A Jaipur, Hisar, Gwalior, Jamnagar

Zone B Mysore, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Ergot severity at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 301	RHB 223	*	*	2.0	7.5	*	5.0	5.0	5.0	0.0	2.0	4.8	3.8	4.1	7.5
PRT 302	PB 1756	*	*	0.0	15.0	*	0.0	3.5	0.0	0.0	0.0	7.5	0.9	3.1	15.0
PRT 303	MPMH 21	*	*	2.0	12.5	*	0.0	12.5	0.0	1.5	2.0	7.3	3.5	4.8	12.5
PRT 304	GHB 719	*	*	2.0	12.5	*	0.0	14.0	2.5	0.0	2.0	7.3	4.1	5.2	14.0
PRT 305	HHB 67 Imp.	*	*	2.0	17.5	*	5.0	3.5	3.5	0.0	2.0	9.8	3.0	5.3	17.5
PRT 306	GHB 538	*	*	2.0	15.0	*	0.0	3.0	1.0	1.5	2.0	8.5	1.4	3.8	15.0
PRT 307	PB 1852	*	*	2.0	0.0	*	0.0	0.0	0.0	0.0	2.0	1.0	0.0	0.3	2.0
PRT 308	PB 1705	*	*	2.0	0.0	*	0.0	3.5	0.0	0.0	2.0	1.0	0.9	0.9	3.5
PRT 309	MPMH 17	*	*	2.0	2.5	*	0.0	7.5	0.0	1.0	2.0	2.3	2.1	2.2	7.5
PRT 310	GHB 905	*	*	2.0	15.0	*	0.0	13.5	0.0	0.0	2.0	8.5	3.4	5.1	15.0
PRT 311	RHB 173	*	*	2.0	0.0	*	5.0	15.0	3.5	0.0	2.0	1.0	5.9	4.3	15.0
PRT 312	GHB 732	*	*	2.0	7.5	*	15.0	20.0	12.5	0.0	2.0	4.8	11.9	9.5	20.0
PRT 313	GHB 744	*	*	2.0	2.5	*	5.0	27.5	3.5	1.0	2.0	2.3	9.3	6.9	27.5
PRT 314	MP 7878	*	*	1.5	0.0	*	0.0	0.0	0.0	0.0	1.5	0.8	0.0	0.3	1.5
PRT 315	KBH 108	*	*	1.5	0.5	*	0.0	3.0	0.0	0.0	1.5	1.0	0.8	0.8	3.0
PRT 316	Kaveri S Boss	*	*	2.0	5.0	*	5.0	7.5	3.5	0.0	2.0	3.5	4.0	3.8	7.5
PRT 317	86M86	*	*	2.0	0.0	*	0.0	0.0	1.0	1.0	2.0	1.0	0.5	0.7	2.0
PRT 318	MP-7792	*	*	2.0	7.5	*	0.0	12.5	1.5	0.0	2.0	4.8	3.5	3.9	12.5
PRT 319	Proagro 9444	*	*	2.0	0.0	*	0.0	12.5	0.0	0.0	2.0	1.0	3.1	2.4	12.5
PRT 320	GHB 558	*	*	2.0	2.5	*	5.0	12.0	3.5	4.0	2.0	2.3	6.1	4.8	12.0
PRT 321	RHB 234	*	*	2.0	7.5	*	10.0	15.0	10.0	0.0	2.0	4.8	8.8	7.4	15.0
PRT 322	RHB 233	*	*	2.0	17.5	*	5.0	13.5	7.5	0.0	2.0	9.8	6.5	7.6	17.5
PRT 323	AHB 1269	*	*	2.0	5.0	*	7.5	22.5	7.5	1.0	2.0	3.5	9.6	7.6	22.5
PRT 324	HHB 299	*	*	1.0	2.5	*	10.0	20.0	15.0	0.0	1.0	1.8	11.3	8.1	20.0
PRT 325	AHB 1200	*	*	2.0	7.5	*	7.5	15.0	7.5	2.0	2.0	4.8	8.0	6.9	15.0
PRT 326	Dhanshakti	*	*	2.0	10.0	*	0.0	10.0	1.0	0.0	2.0	6.0	2.8	3.8	10.0
PRT 327	ICMV 221	*	*	2.0	0.5	*	0.0	12.5	2.5	2.5	2.0	1.3	4.4	3.3	12.5

CHAPTER IV: PLANT PATHOLOGY

Table IV.9: Disease screening of Released Pearl Millet Hybrids and Varieties (PMPT III): Ergot severity at 60 DAS- Kharif 2022

Project Code	Entry Name	MDR	HSR	JPR	GLR	JMR	MYS	ABD1	DHL	CBE	Mean				MAX.
											Zone A ₁	Zone A	Zone B	India	
PRT 328	Pusa Comp. 701	*	*	1.5	2.5	*	0.0	0.0	0.0	0.0	1.5	2.0	0.0	0.7	2.5
PRT 329	Pusa Comp. 383	*	*	2.0	5.0	*	0.0	3.5	0.0	0.0	2.0	3.5	0.9	1.8	5.0
PRT 330	JBV 2	*	*	1.5	0.0	*	0.0	0.0	1.0	0.0	1.5	0.8	0.3	0.4	1.5
PRT 331	Raj 171	*	*	2.0	0.0	*	0.0	2.0	1.0	0.0	2.0	1.0	0.8	0.8	2.0
PRT 332	NBH 5767	*	*	1.5	0.0	*	5.0	17.5	2.5	2.5	1.5	0.8	6.9	4.8	17.5
PRT 333	Pratap (MH 1642)	*	*	2.0	0.0	*	0.0	22.5	0.0	0.0	2.0	1.0	5.6	4.1	22.5
PRT 334	NBH 4903	*	*	2.0	0.0	*	5.0	0.0	2.5	0.0	2.0	1.0	1.9	1.6	5.0
PRT 335	86M64	*	*	1.5	7.5	*	2.5	5.0	1.5	2.0	1.5	4.5	2.8	3.3	7.5
PRT 336	Pusa Comp. 612	*	*	2.0	5.0	*	2.5	3.0	1.0	0.0	2.0	3.5	1.6	2.3	5.0
PRT 337	ABV 04	*	*	2.0	7.5	*	7.5	15.0	6.0	0.0	2.0	4.8	7.1	6.3	15.0
PRT 338	ICMV 155	*	*	2.0	5.0	*	10.0	5.5	5.0	0.5	2.0	3.5	5.3	4.7	10.0
	Mean Entry	*	*	1.8	5.4	*	3.1	9.4	3.0	0.5	1.8	3.6	4.0	3.9	9.4

* No Data Provided - Mandor, Hisar, Jamnagar

Note:-

Zone A1 Jaipur

Zone A Jaipur, Gwalior

Zone B Mysore, Aurangabad, Dhule, Coimbatore

CHAPTER IV: PLANT PATHOLOGY

Table IV.10: Downy mildew incidence of PMDMVN-2022 (PMPT IV) entries at -30 DAS- *Kharif 2022*

Identity	PMDMVN Code-2022	Downy mildew Incidence (%) 30 DAS										Entry Mean
		ABD	CBE	DHL	GLR	HSR	JPR	MDR	JMR	MYS	PTR	
IP 18292	ICPMDML-1	1.3	0.0	4.9	0.0	0.0	1.2	3.5	15.8	5.0	3.6	3.5
IP 18293	ICPMDML-2	0.7	4.1	6.1	2.2	1.9	2.6	1.9	0.0	7.5	2.5	2.9
7042 S	ICPMDML-3	1.3	53.3	98.3	73.2	12.5	78.8	52.1	4.6	86.0	79.6	54.0
IP 18294	ICPMDML-4	0.0	0.0	0.0	1.6	0.0	1.8	0.0	0.0	1.0	1.0	0.5
834 B	ICPMDML-5	3.2	0.0	6.7	2.1	0.0	0.0	3.1	6.2	8.0	4.8	3.4
IP 9645	ICPMDML-6	0.7	0.0	0.0	0.0	0.0	1.8	3.0	0.0	2.0	2.0	1.0
IP 11930	ICPMDML-7	0.6	0.0	0.0	0.0	0.0	2.0	3.2	0.0	1.0	0.5	0.7
IP 5719-3	ICPMDML-8	0.6	0.0	4.3	0.0	0.0	0.0	1.7	0.0	6.0	0.0	1.3
IP 6193-2	ICPMDML-9	0.7	3.3	3.6	0.0	0.0	2.4	1.6	0.0	3.0	0.0	1.4
IP 8418-3	ICPMDML-10	0.0	0.0	1.5	1.6	0.0	0.0	3.3	5.1	2.0	0.7	1.4
IP 12374-1	ICPMDML-11	1.4	0.0	6.2	0.0	0.0	8.8	3.6	10.3	8.5	3.0	4.2
IP 17396-3	ICPMDML-12	1.3	1.3	0.0	0.0	0.0	2.6	1.8	0.0	1.0	2.2	1.0
IP 18295	ICPMDML-13	0.7	1.9	11.0	4.3	0.0	2.3	1.5	11.6	14.0	2.9	5.0
P 1449-2	ICPMDML-14	0.7	0.0	4.5	3.0	2.5	4.9	1.7	2.7	6.0	1.5	2.7
IP 18298	ICPMDML-15	0.7	10.3	15.2	11.7	0.0	1.5	4.8	12.6	11.5	22.1	9.0
YG 8	ICPMDML-16	0.0	0.0	0.0	0.0	0.0	6.7	2.3	3.2	2.0	0.0	1.4
TG 4	ICPMDML-17	0.0	2.6	8.2	0.0	0.0	0.0	3.4	0.0	5.0	0.4	2.0
IP 9997	ICPMDML-18	0.0	1.9	1.8	0.0	0.0	4.7	2.8	0.0	6.0	10.1	2.7
ZG 3	ICPMDML-19	0.7	0.0	2.0	2.8	0.0	3.2	3.1	3.1	4.0	1.0	2.0
ICPMDMBL-1	ICPMDML-20	0.0	0.0	3.5	0.0	0.0	0.0	2.6	0.0	1.0	0.5	0.8
ICPMDMBL-2	ICPMDML-21	0.0	0.0	1.7	0.0	0.0	2.9	2.9	0.0	2.0	3.5	1.3
ICPMDMBL-3	ICPMDML-22	1.3	0.0	0.0	0.0	0.0	2.5	1.7	0.0	2.0	0.5	0.8
ICPMDMBL-4	ICPMDML-23	0.7	0.0	9.3	0.0	0.0	0.0	1.8	7.3	4.0	1.5	2.4
ICPMDMBL-5	ICPMDML-24	0.7	0.7	3.6	0.0	0.0	5.9	0.0	0.0	6.0	0.0	1.7
ICPMDMBL-6	ICPMDML-25	0.0	0.0	1.7	2.0	0.0	5.2	2.1	7.8	5.0	4.3	2.8
ICPMDMRL-7	ICPMDML-26	0.0	2.8	1.7	1.5	0.0	0.0	1.5	1.3	8.0	7.1	2.4
ICPMDMRL-8	ICPMDML-27	1.3	0.0	2.0	0.0	0.0	2.3	2.3	1.6	2.0	1.5	1.3
ICPMDMRL-9	ICPMDML-28	3.3	0.0	3.6	2.5	0.0	7.3	3.6	13.2	6.0	0.5	4.0
ICPMDMRL-10	ICPMDML-29	0.7	0.0	4.8	0.0	0.0	0.0	1.7	0.0	5.0	0.0	1.2

CHAPTER IV: PLANT PATHOLOGY

Table IV.10: Downy mildew incidence of PMDMVN-2022 (PMPT IV) entries at -30 DAS- *Kharif 2022*

Identity	PMDMVN Code-2022	Downy mildew Incidence (%) 30 DAS										Entry Mean
		ABD	CBE	DHL	GLR	HSR	JPR	MDR	JMR	MYS	PTR	
ICPMDMRL-11	ICPMDML-30	2.0	0.0	4.2	0.0	3.8	2.0	3.4	0.0	4.0	0.9	2.0
ICPMDMRL-12	ICPMDML-31	0.0	0.0	1.0	0.0	0.0	1.6	3.4	0.0	4.0	0.0	1.0
ICPMDMRL-13	ICPMDML-32	0.0	0.0	1.7	2.6	0.0	0.0	1.6	9.5	1.0	0.0	1.6
J-2587	ICPMDML-33	2.0	0.0	3.4	0.0	0.0	2.5	1.4	12.3	4.0	1.6	2.7
J-2588	ICPMDML-34	2.0	0.0	2.0	5.3	0.0	3.7	1.2	2.9	3.0	0.6	2.1
J-2598	ICPMDML-35	1.4	0.0	3.7	0.0	0.0	7.0	1.4	0.0	8.0	1.0	2.2
J-2599	ICPMDML-36	1.3	0.0	2.4	0.0	2.7	0.0	0.0	28.5	4.0	1.2	4.0
J-2606	ICPMDML-37	0.0	0.0	5.2	0.0	0.0	7.1	1.2	0.0	7.0	2.2	2.3
JMSB-20213	ICPMDML-38	0.7	0.6	1.0	4.8	0.0	5.3	1.6	0.0	3.0	7.5	2.4
JMSB-20216	ICPMDML-39	1.4	0.7	16.4	0.0	0.0	0.0	4.2	10.0	21.0	1.1	5.5
237-BCS-22	ICPMDML-40	0.0	1.4	4.0	0.0	0.0	4.0	2.6	1.6	5.0	1.6	2.0
233-BCS-22	ICPMDML-41	0.0	0.0	0.0	0.0	0.0	1.3	3.3	0.0	0.0	1.1	0.6
HB/HR-1	ICPMDML-42	2.0	0.0	8.4	4.7	7.7	14.0	3.6	5.4	8.0	6.0	6.0
HB/HR-2	ICPMDML-43	0.7	13.4	9.5	9.8	5.0	8.8	4.8	3.6	11.0	7.2	7.4
HB/HR-3	ICPMDML-44	1.3	1.4	16.5	1.4	3.0	8.0	4.9	12.0	13.0	3.6	6.5
HB/HR-4	ICPMDML-45	0.0	0.0	3.6	4.4	0.0	1.9	1.7	0.0	2.0	0.0	1.4
HB/HR-5	ICPMDML-46	2.7	0.7	0.0	1.2	1.7	2.9	2.4	14.3	3.0	7.9	3.7
DHLB-15 B	ICPMDML-47	0.0	0.0	4.8	0.0	0.0	0.0	1.5	0.0	5.0	0.0	1.1
DHLB-14 B	ICPMDML-48	0.0	0.0	1.6	0.0	0.0	0.0	0.0	1.6	2.0	4.6	1.0
DHLB-30 B	ICPMDML-49	0.7	5.5	1.6	2.0	0.0	0.0	1.9	0.0	3.0	11.7	2.6
DHLB-32 B	ICPMDML-50	0.7	0.0	11.3	0.0	0.0	1.4	4.1	0.0	5.0	1.2	2.4
DHLB-34 B	ICPMDML-51	1.3	0.0	0.0	3.7	0.0	5.1	4.5	0.0	2.0	1.2	1.8
Location Mean		0.8	2.1	6.0	2.9	0.8	4.5	3.4	4.1	6.6	4.3	

Check	Downy mildew Incidence (%) 30 DAS				
	ABD	CBE	HSR	JMR	MDR
IR-I: 7042S = Indicator row.	83.0	78.8	66.9	77.8	76.0

CHAPTER IV: PLANT PATHOLOGY

Table IV.10: Downy mildew incidence of PMDMVN-2022 (PMPT IV) entries at -60 DAS-*Kharif 2022*

Identity	PMDMVN Code-2022	Downy mildew Incidence (%) 60 DAS										Entry Mean	Resistant ($\leq 5\%$ DM) at number of locations
		ABD	CBE	DHL	GLR	HSR	JPR	MDR	JMR	MYS	PTR		
IP 18292	ICPMDML-1	7.1	0.0	4.9	0.0	0.0	1.2	5.3	20.7	8.0	4.6	5.2	6
IP 18293	ICPMDML-2	2.7	5.5	6.1	4.4	1.9	2.6	5.6	0.0	12.0	9.5	5.0	5
7042 S	ICPMDML-3	2.0	54.7	98.3	100.0	18.8	98.9	100.0	8.6	100.0	100.0	68.1	1
IP 18294	ICPMDML-4	0.6	11.2	1.3	2.4	0.0	7.4	4.1	0.0	6.0	2.0	3.5	7
834 B	ICPMDML-5	2.6	0.0	6.7	4.2	0.0	2.3	4.7	10.8	11.0	5.8	4.8	6
IP 9645	ICPMDML-6	2.6	0.0	0.0	0.0	0.0	5.4	3.0	0.0	5.0	4.1	2.0	9
IP 11930	ICPMDML-7	1.9	0.0	0.0	0.0	0.0	4.9	4.8	0.0	4.0	0.5	1.6	10
IP 5719-3	ICPMDML-8	1.9	0.0	4.3	0.0	0.0	0.0	3.3	0.0	7.0	0.0	1.7	9
IP 6193-2	ICPMDML-9	1.3	3.3	3.6	0.0	0.0	14.1	3.1	0.0	9.0	0.0	3.4	8
IP 8418-3	ICPMDML-10	0.6	2.0	1.5	3.3	1.6	0.0	5.0	8.5	10.0	1.2	3.4	8
IP 12374-1	ICPMDML-11	7.4	0.0	6.2	0.0	0.0	12.6	7.1	17.2	16.0	4.0	7.1	4
IP 17396-3	ICPMDML-12	1.9	2.0	1.0	0.0	0.0	9.2	3.6	1.7	7.0	3.3	3.0	8
IP 18295	ICPMDML-13	0.7	3.2	11.0	6.5	0.0	2.3	4.4	11.6	16.0	4.9	6.1	6
P 1449-2	ICPMDML-14	0.7	0.0	4.5	5.9	2.5	18.3	5.1	9.6	11.0	2.0	6.0	5
IP 18298	ICPMDML-15	2.7	11.7	15.2	14.8	2.6	22.2	11.9	19.9	27.0	35.6	16.3	2
YG 8	ICPMDML-16	1.4	0.0	0.0	0.0	0.0	15.8	18.2	11.3	5.0	0.0	5.2	7
TG 4	ICPMDML-17	0.0	3.2	8.2	0.0	0.0	5.6	5.1	0.0	8.0	2.1	3.2	6
IP 9997	ICPMDML-18	1.3	3.1	1.8	0.0	0.0	9.4	2.8	1.9	7.0	12.2	3.9	7
ZG 3	ICPMDML-19	1.3	7.8	2.0	4.9	0.0	4.2	6.3	9.4	5.0	2.1	4.3	7
ICPMDMBL-1	ICPMDML-20	0.0	0.0	3.5	0.0	0.0	4.7	5.3	0.0	4.0	0.9	1.8	9
ICPMDMBL-2	ICPMDML-21	0.0	0.0	1.7	0.0	0.0	9.0	4.4	0.0	5.0	9.6	3.0	8
ICPMDMBL-3	ICPMDML-22	2.6	0.0	0.0	0.0	0.0	5.0	5.0	0.0	4.0	0.5	1.7	10
ICPMDMBL-4	ICPMDML-23	1.3	0.0	9.3	0.0	0.0	1.6	5.3	18.5	7.0	5.5	4.8	5
ICPMDMBL-5	ICPMDML-24	3.3	0.7	4.9	0.0	0.0	8.7	2.8	0.0	7.0	0.6	2.8	8
ICPMDMBL-6	ICPMDML-25	0.6	2.0	1.7	2.6	0.0	8.5	6.3	17.9	7.5	7.1	5.4	5
ICPMDMRL-7	ICPMDML-26	0.0	4.2	3.3	2.2	0.0	7.1	4.6	7.4	19.0	21.8	7.0	6
ICPMDMRL-8	ICPMDML-27	2.0	2.7	7.9	0.0	0.0	6.8	6.8	5.5	6.0	3.1	4.1	5
ICPMDMRL-9	ICPMDML-28	4.0	0.0	7.1	3.3	0.0	13.1	3.6	17.9	9.0	2.1	6.0	6
ICPMDMRL-10	ICPMDML-29	2.0	0.0	4.8	0.0	0.0	1.3	3.4	0.0	6.0	0.0	1.7	9
ICPMDMRL-11	ICPMDML-30	3.3	0.0	4.2	0.0	3.8	9.8	5.2	0.0	8.0	1.4	3.6	8
ICPMDMRL-12	ICPMDML-31	0.0	0.7	1.0	0.0	0.0	1.6	5.2	0.0	5.0	0.0	1.3	9

CHAPTER IV: PLANT PATHOLOGY

Table IV.10: Downy mildew incidence of PMDMVN-2022 (PMPT IV) entries at -60 DAS-*Kharif 2022*

Identity	PMDMVN Code-2022	Downy mildew Incidence (%) 60 DAS										Entry Mean	Resistant ($\leq 5\%$ DM) at number of locations
		ABD	CBE	DHL	GLR	HSR	JPR	MDR	JMR	MYS	PTR		
ICPMDMRL-13	ICPMDML-32	0.0	1.4	1.7	5.3	0.0	0.0	3.1	10.7	6.0	0.0	2.8	7
J-2587	ICPMDML-33	3.3	1.3	3.4	0.0	0.0	4.2	1.4	17.4	5.0	2.7	3.9	9
J-2588	ICPMDML-34	8.4	1.3	2.0	9.0	0.0	3.7	2.4	4.4	8.0	1.1	4.0	7
J-2598	ICPMDML-35	6.5	4.2	3.7	1.3	0.0	8.3	4.1	0.0	11.0	2.1	4.1	7
J-2599	ICPMDML-36	1.3	0.0	2.4	0.0	0.0	0.0	1.4	34.9	7.0	3.0	5.0	8
J-2606	ICPMDML-37	0.7	4.5	5.2	0.0	0.0	13.0	2.4	0.0	16.0	3.8	4.6	7
JMSB-20213	ICPMDML-38	2.0	1.9	1.0	8.9	0.0	8.0	1.6	3.4	8.0	9.9	4.5	6
JMSB-20216	ICPMDML-39	2.0	1.3	22.7	0.0	0.0	11.9	14.6	20.0	23.0	2.3	9.8	5
237-BCS-22	ICPMDML-40	0.0	4.1	4.0	0.0	0.0	6.1	2.6	8.6	7.5	2.8	3.6	7
233-BCS-22	ICPMDML-41	2.0	1.9	0.0	0.0	0.0	1.3	5.0	6.6	3.0	1.7	2.2	9
HB/HR-1	ICPMDML-42	3.3	3.5	8.4	9.3	11.5	30.2	5.4	12.0	21.0	13.9	11.8	2
HB/HR-2	ICPMDML-43	1.4	15.5	9.5	14.4	5.0	19.1	9.5	8.4	24.0	28.0	13.5	2
HB/HR-3	ICPMDML-44	3.3	6.6	18.3	4.2	10.2	18.1	17.1	15.3	23.0	8.1	12.4	2
HB/HR-4	ICPMDML-45	0.7	0.0	3.6	8.9	0.0	6.1	6.7	1.3	7.0	0.0	3.4	6
HB/HR-5	ICPMDML-46	3.4	1.3	0.0	1.8	1.7	4.8	4.8	14.4	7.5	9.8	4.9	7
DHLB-15 B	ICPMDML-47	1.3	4.8	4.8	0.0	0.0	6.7	3.1	0.0	8.0	0.5	2.9	8
DHLB-14 B	ICPMDML-48	1.3	5.8	3.1	0.0	0.0	4.9	2.1	4.2	6.0	6.9	3.4	7
DHLB-30 B	ICPMDML-49	2.0	6.1	1.6	4.7	2.6	10.2	1.9	0.0	15.0	24.5	6.9	6
DHLB-32 B	ICPMDML-50	1.4	0.0	11.3	0.0	0.0	8.1	8.2	0.0	11.0	1.8	4.2	6
DHLB-34 B	ICPMDML-51	1.3	0.6	0.0	7.4	0.0	11.5	6.8	0.0	8.0	1.8	3.7	6
Location Mean		2.1	3.6	6.5	4.5	1.2	9.6	7.2	7.1	11.5	7.3	6.1	4

* No Germination

Note:-

Zone A1

Mandor, Jaipur, and Hissar

Zone A

Mandor, Jaipur, Hissar, Gwalior, Jamnagar

Zone B

Mysuru, Aurangabad, Dhule, Coimbatore and Patancheru

Check	Downy mildew Incidence (%) 60 DAS			
	ABD	CBE	HSR	JMR
IR-I: 7042S = Indicator row.	92.3	91.7	71.3	96.6

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -30 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 30 DAS											Entry Mean
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR	
ICMB 01333	ICPMBL-1	1.0	1	1	2	2	0	1.0	0	3	0	2	1.2
ICMR 11003	ICPMBL-2	0.0	2	1	1	1	1	1.0	0	1	0	2	0.9
ICMR 06444	ICPMBL-3	1.5	2	1	2	1	0	2.0	0	3	0	2	1.3
IP 21187-P1	ICPMBL-4	0.5	0	0	1	1	1	2.0	0	4	1	2	1.0
ICMB 95444	ICPMBL-5	3.0	4	2	3	2	1	5.0	0	6	1	5	2.8
IP 12374-1-1-2	ICPMBL-6	0.5	0	1	1	1	1	1.0	0	4	*	2	1.1
ICMR 10888	ICPMBL-7	1.0	4	1	2	1	1	1.0	0	2	0	2	1.3
ICMR 06666	ICPMBL-8	1.5	0	1	1	1	0	1.0	0	3	0	2	1.0
ICMR 11666	ICPMBL-9	1.0	1	1	1	1	1	1.0	0	5	0	2	1.2
HP-B-458	ICPMBL-10	0.0	0	1	1	1	0	0.0	0	3	0	2	0.7
HP-B-465	ICPMBL-11	0.5	0	1	1	2	0	0.0	0	5	0	2	1.0
HP-B-502	ICPMBL-12	0.5	1	0	3	1	0	1.0	0	3	0	2	1.1
PBPMPOP-I-30-1-3	ICPMBL-13	1.5	1	1	1	2	0	1.0	0	3	0	2	1.0
PBPMPOP 3 -98-1-1	ICPMBL-14	0.5	2	2	3	1	1	1.0	0	3	0	2	1.3
PBPMPOP 3 -80-1-1	ICPMBL-15	1.5	2	1	3	2	1	1.0	0	5	0	2	1.5
PBPMPOP 4-153-2-5	ICPMBL-16	2.0	2	1	4	1	0	2.0	1	5	1	2	1.7
PBPMPOP 4-155-1-5	ICPMBL-17	2.0	3	0	1	1	2	1.0	0	5	0	2	1.4
PBPMPOP 4-190-1-4	ICPMBL-18	1.5	2	0	1	1	0	2.0	0	5	0	2	1.3
ICPMBBL-1	ICPMBL-19	0.5	0	1	1	1	0	2.0	0	3	0	3	1.0
ICPMBBL-2	ICPMBL-20	1.0	2	0	2	1	0	1.0	0	2	1	3	1.2
ICPMBBL-3	ICPMBL-21	1.0	2	0	1	1	0	1.0	0	3	0	2	1.0
ICPMBBL-4	ICPMBL-22	1.0	0	1	2	1	0	1.0	0	4	0	3	1.1
ICPMBBL-5	ICPMBL-23	1.5	3	1	2	1	2	1.0	0	5	0	2	1.6
ICPMBBL-6	ICPMBL-24	1.5	3	1	3	2	2	1.0	0	4	0	2	1.7
ICPMBBL-7	ICPMBL-25	1.0	0	1	1	1	3	0.0	0	3	0	2	1.0
ICPMBBL-8	ICPMBL-26	1.0	*	0	3	2	1	1.0	0	3	1	2	1.3
ICPMBRL-9	ICPMBL-27	0.0	2	1	4	1	0	2.0	0	4	2	4	1.7
ICPMBRL-10	ICPMBL-28	0.5	0	1	1	1	0	2.0	1	3	0	2	0.9
ICPMBRL-11	ICPMBL-29	1.0	0	1	1	1	0	2.0	0	3	0	3	1.1
ICPMBRL-12	ICPMBL-30	1.5	2	1	1	1	0	2.0	0	5	0	3	1.5
ICPMBRL-13	ICPMBL-31	2.0	4	1	3	1	2	2.0	0	5	2	3	2.2
ICPMBRL-14	ICPMBL-32	1.0	1	1	1	1	2	1.0	0	4	2	2	1.3
ICPMBRL-15	ICPMBL-33	0.5	2	1	1	2	0	1.0	0	3	0	2	1.1
ICPMBRL-16	ICPMBL-34	2.5	4	0	3	2	1	2.0	0	5	1	3	2.1
J-2587	ICPMBL-35	1.0	1	1	3	1	2	1.0	0	3	0	3	1.3
J-2588	ICPMBL-36	2.0	4	1	3	2	1	2.0	0	5	0	3	2.0
J-2598	ICPMBL-37	1.0	2	0	2	1	1	2.0	0	2	1	2	1.1
J-2599	ICPMBL-38	2.0	2	1	3	2	1	2.0	0	3	0	2	1.6
J-2606	ICPMBL-39	3.0	3	1	5	2	1	1.0	0	5	1	3	2.2

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -30 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 30 DAS											Entry Mean
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR	
JMSB-20213	ICPMBL-40	2.5	3	0	2	2	2	2.0	0	5	2	4	2.2
JMSB-20216	ICPMBL-41	3.5	3	2	4	2	2	1.0	0	5	1	5	2.4
237-BCS-22	ICPMBL-42	1.5	3	0	3	2	1	2.0	0	4	2	4	1.9
233-BCS-22	ICPMBL-43	1.5	2	0	2	1	0	2.0	0	4	1	4	1.6
223-BCS-22	ICPMBL-44	2.5	2	0	3	2	1	1.0	0	3	1	4	1.6
HSR-1	ICPMBL-45	1.0	3	0	1	1	0	1.0	0	3	1	3	1.2
HSR-2	ICPMBL-46	1.5	1	1	2	2	1	3.0	0	5	0	4	1.7
HSR-3	ICPMBL-47	1.0	1	2	2	2	2	2.0	0	5	0	2	1.7
HSR-4	ICPMBL-48	2.0	2	1	2	1	0	2.0	0	5	0	3	1.5
HSR-5	ICPMBL-49	1.5	5	2	1	2	2	2.0	0	5	2	3	2.3
DHLB-15 B	ICPMBL-50	1.5	4	1	3	1	3	2.0	1	5	0	3	2.1
DHLB-14 B	ICPMBL-51	1.5	1	0	1	1	3	1.0	0	4	0	3	1.3
DHLB-30 B	ICPMBL-52	1.5	3	2	3	1	2	2.0	0	5	1	3	2.0
DHLB-32 B	ICPMBL-53	2.0	2	1	3	1	2	2.0	0	5	*	3	2.1
DHLB-34 B	ICPMBL-54	0.5	1	0	1	2	3	2.0	1	4	1	2	1.4
PBPMPOP 2-206-3-7-5	ICPMBL-55	0.0	0	*	2	1	1	1.0	0	2	*	2	0.9
PBPMPOP 2-72-1-1-4	ICPMBL-56	1.0	0	2	1	1	0	1.0	0	0	2	2	0.9
Location Mean		1.3	1.6	0.7	2.0	1.2	0.8	1.5	0.2	3.8	0.6	2.4	

* No Germination

Check	DAS	Blast severity score (0-9 scale)										
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR
IR-I: ICMB 95444 = Indicator row	30	3.2	4.3	2.3	3.4	*	4.5	5.5	1.2	7.0	2.6	4.5
	45											
	60											

* No data

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -45 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 45 DAS											Entry Mean
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR	
ICMB 01333	ICPMBL-1	3.0	1.5	2.5	2.0	1.5	1.0	3.0	0.4	5.0	2.9	3.8	2.4
ICMR 11003	ICPMBL-2	2.5	3.5	3.0	1.1	2.0	1.0	2.0	1.5	3.0	0.6	2.5	2.1
ICMR 06444	ICPMBL-3	3.5	2.5	3.0	2.2	2.0	1.0	3.0	0.1	5.0	1.2	3.0	2.4
IP 21187-P1	ICPMBL-4	2.5	0.5	1.5	1.3	2.0	1.0	3.0	0.4	5.0	2.8	2.5	2.0
ICMB 95444	ICPMBL-5	3.5	5.5	3.0	4.0	4.0	2.5	6.0	0.2	7.0	3.7	7.0	4.2
IP 12374-1-1-2	ICPMBL-6	2.0	0.0	3.0	1.2	2.0	1.0	3.0	0.6	5.0	*	3.0	2.1
ICMR 10888	ICPMBL-7	3.5	4.0	3.0	2.0	2.0	0.5	2.0	0.9	3.0	1.0	3.0	2.3
ICMR 06666	ICPMBL-8	3.0	0.5	2.5	1.1	2.0	1.0	2.0	1.3	3.0	1.1	2.5	1.8
ICMR 11666	ICPMBL-9	2.0	1.5	2.0	1.4	2.0	1.0	2.0	0.5	5.0	1.0	2.5	1.9
HP-B-458	ICPMBL-10	2.5	0.0	3.0	1.0	2.0	1.0	2.0	0.5	5.0	1.8	2.5	1.9
HP-B-465	ICPMBL-11	3.0	0.0	3.0	1.0	2.0	0.5	3.0	0.9	5.0	0.8	2.5	2.0
HP-B-502	ICPMBL-12	2.5	1.0	1.0	3.4	2.0	0.0	2.0	0.8	5.0	2.0	2.5	2.0
PBPMPOP-I-30-1-3	ICPMBL-13	3.0	1.5	2.5	1.6	2.0	0.0	3.0	0.4	5.0	1.7	3.0	2.2
PBPMPOP 3 -98-1-1	ICPMBL-14	1.0	3.0	3.5	2.8	2.0	3.0	3.0	0.7	5.0	1.5	2.5	2.5
PBPMPOP 3 -80-1-1	ICPMBL-15	2.5	2.0	2.5	3.2	2.0	0.5	2.0	1.2	5.0	0.7	2.5	2.2
PBPMPOP 4-153-2-5	ICPMBL-16	2.5	2.0	2.0	3.9	2.0	0.0	3.0	1.5	6.0	1.8	3.0	2.5
PBPMPOP 4-155-1-5	ICPMBL-17	2.0	3.5	1.5	1.5	2.5	2.5	3.0	0.5	6.0	0.3	2.0	2.3
PBPMPOP 4-190-1-4	ICPMBL-18	2.5	2.5	2.0	1.4	2.0	0.0	3.0	0.0	5.0	1.6	2.5	2.0
ICPMBBL-1	ICPMBL-19	2.5	0.0	2.5	1.0	2.0	1.0	3.0	1.0	5.0	1.0	3.5	2.0
ICPMBBL-2	ICPMBL-20	3.5	2.5	1.0	2.0	1.5	0.0	2.0	0.4	4.0	2.7	3.5	2.1
ICPMBBL-3	ICPMBL-21	3.0	2.5	3.0	1.4	2.0	0.5	4.0	0.5	5.0	1.2	3.3	2.4
ICPMBBL-4	ICPMBL-22	3.0	0.5	3.0	1.6	2.0	0.5	4.0	0.3	5.0	1.4	4.3	2.3
ICPMBBL-5	ICPMBL-23	3.5	3.0	3.0	2.0	2.0	2.5	3.0	0.6	5.0	1.9	3.3	2.7
ICPMBBL-6	ICPMBL-24	3.5	4.0	3.5	3.9	2.5	2.0	3.0	0.5	5.0	2.3	3.0	3.0
ICPMBBL-7	ICPMBL-25	3.0	1.0	2.5	1.3	2.0	3.0	2.0	0.6	5.0	0.7	3.0	2.2
ICPMBBL-8	ICPMBL-26	2.5	*	1.5	4.0	2.0	1.0	2.0	1.4	5.0	1.5	3.0	2.4
ICPMBRL-9	ICPMBL-27	0.0	3.0	3.0	5.2	2.0	1.5	2.5	1.0	5.0	2.1	5.5	2.8
ICPMBRL-10	ICPMBL-28	2.5	0.0	2.0	1.1	2.0	0.5	2.5	1.3	4.0	1.5	2.5	1.8
ICPMBRL-11	ICPMBL-29	2.5	0.0	3.0	1.3	2.0	1.0	3.0	1.2	5.0	1.6	3.8	2.2
ICPMBRL-12	ICPMBL-30	3.5	3.0	3.0	1.5	2.0	0.5	4.0	0.8	6.0	2.2	3.8	2.8
ICPMBRL-13	ICPMBL-31	3.0	5.5	3.5	3.3	2.0	2.5	4.0	1.7	5.0	3.7	4.5	3.5
ICPMBRL-14	ICPMBL-32	1.5	1.5	3.5	1.6	2.5	2.5	2.0	0.7	5.0	2.0	3.0	2.3
ICPMBRL-15	ICPMBL-33	1.5	2.5	3.5	1.2	2.5	0.0	3.0	0.5	3.0	0.6	3.0	1.9
ICPMBRL-16	ICPMBL-34	2.5	5.0	2.0	3.3	2.0	3.0	4.0	1.0	6.0	1.8	5.0	3.2
J-2587	ICPMBL-35	2.0	2.0	2.5	3.1	2.0	2.5	4.0	1.2	5.0	1.0	3.8	2.6
J-2588	ICPMBL-36	2.0	4.5	3.0	3.8	2.0	1.0	4.0	1.4	5.0	1.7	4.5	3.0
J-2598	ICPMBL-37	2.5	2.0	1.0	2.5	2.0	0.5	3.0	0.4	3.0	1.9	2.5	1.9
J-2599	ICPMBL-38	3.0	3.0	3.5	2.9	2.0	2.5	3.0	1.2	5.0	1.8	3.0	2.8
J-2606	ICPMBL-39	2.5	4.0	5.0	4.5	2.0	2.0	3.0	0.7	5.0	2.3	4.3	3.2

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -45 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 45 DAS											Entry Mean
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR	
JMSB-20213	ICPMBL-40	3.5	4.0	2.0	2.9	2.5	3.0	3.0	0.0	6.0	2.7	6.3	3.3
JMSB-20216	ICPMBL-41	3.0	4.0	5.5	4.2	2.5	2.5	2.0	0.3	5.0	1.5	6.5	3.4
237-BCS-22	ICPMBL-42	2.0	3.0	1.5	3.6	2.0	1.0	3.0	0.8	6.0	2.8	5.8	2.9
233-BCS-22	ICPMBL-43	3.5	3.0	2.0	3.7	2.0	0.5	3.0	1.2	5.0	1.5	6.3	2.9
223-BCS-22	ICPMBL-44	3.5	3.0	2.0	3.7	2.0	0.5	3.0	0.0	3.0	2.0	6.0	2.6
HSR-1	ICPMBL-45	3.0	3.5	2.0	1.2	2.0	0.0	3.0	0.7	5.0	1.9	4.3	2.4
HSR-2	ICPMBL-46	2.5	2.0	2.5	1.9	2.0	1.0	4.0	0.3	6.0	1.3	4.0	2.5
HSR-3	ICPMBL-47	1.0	2.5	4.0	2.8	2.0	3.0	4.0	0.6	5.0	2.4	3.5	2.8
HSR-4	ICPMBL-48	3.0	3.0	2.0	2.2	2.0	0.5	3.0	1.4	5.0	2.1	4.3	2.6
HSR-5	ICPMBL-49	2.5	5.5	5.0	3.2	3.0	3.0	4.0	0.5	6.0	2.7	4.8	3.7
DHLB-15 B	ICPMBL-50	3.0	5.0	3.0	3.7	2.0	4.5	4.0	1.6	6.0	2.2	4.8	3.6
DHLB-14 B	ICPMBL-51	2.0	2.0	1.5	2.6	2.5	3.5	4.0	0.9	5.0	2.1	4.3	2.8
DHLB-30 B	ICPMBL-52	3.5	4.5	3.5	4.7	2.0	2.5	3.0	1.5	6.0	2.4	4.0	3.4
DHLB-32 B	ICPMBL-53	2.5	3.0	3.0	3.6	2.5	3.0	4.0	0.6	5.0	*	4.8	3.2
DHLB-34 B	ICPMBL-54	2.5	2.0	2.5	1.6	2.5	3.5	4.0	1.6	4.0	2.3	4.3	2.8
PBPMPOP 2-206-3-7-5	ICPMBL-55	0.0	0.0	*	2.0	2.0	0.5	2.0	0.3	3.0	*	2.0	1.3
PBPMPOP 2-72-1-1-4	ICPMBL-56	2.0	1.0	4.5	1.4	2.0	0.5	2.0	0.9	0.0	2.8	2.0	1.7
Location Mean		2.6	2.5	2.7	2.5	2.1	1.4	3.0	0.8	4.8	1.8	3.7	

* No Germination

Check	DAS	Blast severity score (0-9 scale)										
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR
IR-I: ICMB 95444 = Indicator row	30											
	45	4.6	6.3	5.9	4.7	*	5.5		3.1	9.0	5.7	6.9
	60											

* No data

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -60 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 60 DAS											Entry Mean	Resistant (≤ 3.0 score) at no. of locations
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR		
ICMB 01333	ICPMBL-1	5.5	2.5	4.0	2.6	2.5	1.0	5.5	0.7	5.0	3.8	5.0	3.5	5
ICMR 11003	ICPMBL-2	4.5	3.5	5.5	1.4	2.0	1.0	3.0	4.8	3.0	1.0	3.0	3.0	7
ICMR 06444	ICPMBL-3	5.0	4.5	5.0	2.4	2.5	1.5	5.0	0.6	5.0	1.7	4.0	3.4	5
IP 21187-P1	ICPMBL-4	4.5	3.0	3.0	1.8	3.0	2.0	4.0	1.3	5.0	4.8	3.0	3.2	7
ICMB 95444	ICPMBL-5	5.0	7.5	6.0	4.7	7.0	7.5	8.0	0.6	8.0	5.7	9.0	6.3	1
IP 12374-1-1-2	ICPMBL-6	4.0	0.5	6.0	2.2	2.5	1.0	4.0	2.3	5.0	*	3.0	3.1	6
ICMR 10888	ICPMBL-7	6.0	5.0	5.0	2.3	3.0	0.5	6.0	1.8	3.0	1.4	3.0	3.4	7
ICMR 06666	ICPMBL-8	5.0	1.0	5.0	1.1	3.0	1.0	5.0	3.2	3.0	2.2	3.0	3.0	7
ICMR 11666	ICPMBL-9	5.0	1.5	4.5	1.4	2.5	1.5	5.0	1.6	5.0	2.4	3.8	3.1	6
HP-B-458	ICPMBL-10	4.0	0.0	4.5	1.3	2.5	1.5	4.5	1.8	5.0	3.6	3.5	2.9	5
HP-B-465	ICPMBL-11	4.5	0.5	5.0	1.2	3.0	1.0	5.0	1.0	5.0	2.0	3.8	2.9	6
HP-B-502	ICPMBL-12	3.5	3.0	2.5	4.1	2.5	1.0	4.5	1.2	5.0	2.9	3.5	3.1	6
PBPMPOP-I-30-1-3	ICPMBL-13	4.0	3.5	4.0	1.9	2.5	1.5	4.0	0.6	5.0	3.4	4.8	3.2	4
PBPMPOP 3 -98-1-1	ICPMBL-14	1.5	4.0	6.0	3.0	3.0	4.5	4.0	2.0	5.0	2.2	3.0	3.5	6
PBPMPOP 3 -80-1-1	ICPMBL-15	3.5	2.0	4.0	3.9	3.0	1.0	3.0	4.3	5.0	1.0	3.0	3.1	6
PBPMPOP 4-153-2-5	ICPMBL-16	5.0	2.5	3.0	4.4	3.0	1.5	5.0	4.7	6.0	3.2	4.5	3.9	4
PBPMPOP 4-155-1-5	ICPMBL-17	4.5	4.5	4.0	1.7	4.0	5.5	4.5	1.2	6.0	0.6	3.0	3.6	3
PBPMPOP 4-190-1-4	ICPMBL-18	4.0	3.5	3.0	1.7	2.5	1.5	4.0	0.0	5.0	2.1	3.0	2.8	7
ICPMBBL-1	ICPMBL-19	4.0	0.5	4.0	1.2	2.5	1.0	4.0	3.4	5.0	2.6	4.8	3.0	5
ICPMBBL-2	ICPMBL-20	6.0	3.5	3.0	2.2	2.5	1.5	5.0	1.1	4.0	4.2	4.0	3.4	6
ICPMBBL-3	ICPMBL-21	4.0	3.5	4.0	2.0	2.5	1.0	5.0	0.7	5.0	1.9	4.5	3.1	5
ICPMBBL-4	ICPMBL-22	4.0	0.5	5.0	2.0	3.0	0.5	5.0	1.7	5.0	2.0	6.0	3.2	6
ICPMBBL-5	ICPMBL-23	5.0	4.0	4.5	2.2	3.0	3.5	4.0	2.0	5.0	3.7	4.0	3.7	3
ICPMBBL-6	ICPMBL-24	6.0	4.0	5.5	4.6	3.5	4.0	6.0	0.7	5.0	3.9	3.0	4.2	1
ICPMBBL-7	ICPMBL-25	4.0	2.5	5.5	1.5	2.5	3.5	4.0	0.9	5.0	1.6	4.5	3.2	5
ICPMBBL-8	ICPMBL-26	4.0	*	3.0	4.6	3.0	1.0	3.0	4.2	5.0	2.5	3.8	3.4	5
ICPMBRL-9	ICPMBL-27	0.0	5.0	5.0	7.6	3.0	2.0	6.0	3.5	5.0	2.9	7.3	4.3	4
ICPMBRL-10	ICPMBL-28	2.5	0.0	3.5	1.2	2.5	0.5	4.0	2.0	4.0	2.6	3.5	2.4	7
ICPMBRL-11	ICPMBL-29	5.0	2.0	5.0	1.5	2.5	1.0	5.0	2.1	5.0	2.7	4.5	3.3	6
ICPMBRL-12	ICPMBL-30	4.0	5.5	5.0	1.7	2.5	1.0	5.0	1.4	6.0	3.6	5.3	3.7	4
ICPMBRL-13	ICPMBL-31	4.0	6.5	5.0	3.3	3.0	6.5	5.0	3.4	5.0	7.3	6.0	5.0	1
ICPMBRL-14	ICPMBL-32	2.5	2.5	5.5	1.7	3.5	6.0	3.0	1.7	5.0	3.4	3.0	3.4	6
ICPMBRL-15	ICPMBL-33	2.0	3.5	6.5	2.1	3.0	0.5	4.0	1.7	3.0	0.9	4.0	2.8	7
ICPMBRL-16	ICPMBL-34	5.0	6.0	4.5	4.0	3.5	5.5	5.0	1.7	6.0	2.9	7.8	4.7	2

CHAPTER IV: PLANT PATHOLOGY

Table IV.11: Blast severity of PMBVN-2022 (PMPT-V) entries at -60 DAS- Kharif 2022

Identity	Code-2022	Blast severity score (0-9 scale) 60 DAS											Entry Mean	Resistant (≤ 3.0 score) at no. of locations
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR		
J-2587	ICPMBL-35	2.5	3.0	4.5	3.4	3.0	4.0	4.0	3.2	5.0	1.9	5.8	3.7	4
J-2588	ICPMBL-36	3.5	5.5	5.0	4.5	3.0	1.0	5.0	2.3	5.0	2.5	5.5	3.9	4
J-2598	ICPMBL-37	3.5	4.0	3.0	3.1	2.5	1.0	4.0	0.5	3.0	3.1	3.5	2.8	5
J-2599	ICPMBL-38	4.5	4.5	6.5	3.3	2.5	4.5	4.0	3.4	5.0	2.6	3.5	4.0	2
J-2606	ICPMBL-39	4.0	5.5	7.0	6.0	3.5	4.0	4.0	0.8	5.0	4.6	5.5	4.5	1
JMSB-20213	ICPMBL-40	5.5	6.0	4.5	3.7	4.0	5.5	5.0	0.0	6.0	5.4	7.3	4.8	1
JMSB-20216	ICPMBL-41	4.0	5.5	7.5	6.2	3.5	5.5	4.0	1.2	5.0	3.6	8.5	5.0	1
237-BCS-22	ICPMBL-42	3.0	5.0	5.0	4.0	3.0	1.5	5.0	2.4	6.0	4.5	7.5	4.3	4
233-BCS-22	ICPMBL-43	6.0	4.0	3.0	4.6	3.0	2.0	6.0	1.9	5.0	2.8	7.5	4.2	5
223-BCS-22	ICPMBL-44	4.5	4.5	3.5	5.1	3.0	1.5	5.0	0.0	5.0	2.9	7.5	3.9	4
HSR-1	ICPMBL-45	5.0	5.0	3.0	2.0	2.5	0.5	5.0	1.4	5.0	3.7	5.8	3.5	5
HSR-2	ICPMBL-46	4.0	3.5	5.0	2.1	3.0	1.0	5.0	1.3	6.0	2.4	5.5	3.5	5
HSR-3	ICPMBL-47	2.0	4.0	5.5	3.5	3.0	3.5	5.0	2.1	5.0	3.1	4.5	3.7	3
HSR-4	ICPMBL-48	5.0	4.0	4.5	2.6	3.0	1.0	4.0	3.9	5.0	4.2	5.5	3.9	3
HSR-5	ICPMBL-49	3.5	6.5	7.5	3.4	4.0	4.0	5.0	0.8	6.0	3.5	7.0	4.7	1
DHLB-15 B	ICPMBL-50	5.5	8.0	5.0	4.3	3.0	7.5	5.0	2.7	6.0	3.8	6.0	5.2	2
DHLB-14 B	ICPMBL-51	2.5	3.0	3.0	3.0	3.5	4.0	5.0	2.8	5.0	3.6	5.0	3.7	5
DHLB-30 B	ICPMBL-52	7.0	6.0	6.0	5.9	3.0	5.0	4.0	3.6	6.0	3.3	5.8	5.1	1
DHLB-32 B	ICPMBL-53	5.0	5.5	5.0	4.5	4.0	6.0	5.0	1.9	5.0	*	7.0	4.9	1
DHLB-34 B	ICPMBL-54	3.5	3.0	4.5	1.8	3.5	5.5	5.5	4.7	5.0	3.3	5.8	4.2	2
PBPMPOP 2-206-3-7-5	ICPMBL-55	0.0	0.0	*	2.8	2.0	1.0	4.0	1.7	3.0	*	3.0	1.9	7
PBPMPOP 2-72-1-1-4	ICPMBL-56	4.0	1.5	7.0	2.0	2.0	0.5	4.0	2.3	0.0	3.7	2.5	2.7	7
Location Mean		4.1	3.6	4.7	3.0	3.0	2.6	4.6	2.0	4.9	3.0	4.8	3.7	5

* No Germination

Check	DAS	Blast severity score (0-9 scale)										
		ABD	DHL	GLR	HSR	JPR	MDR	MYS	JMR	NDL	Tirupathi	PTR
IR-I: ICMB 95444 = Indicator row	30											
	45											
	60	6.6	8.7	8.9	6.7	*	8.0		7.2	9.0	7.9	8.7

Note:-

* Data Not included

* No data

Zone A1

Mandor, Jaipur, Hisar

Zone A Mandor, Jaipur, Hisar, Jamnagar, Gwalior, New Delhi

Zone B Mysuru, Aurangabad, Dhule, Tirupathi, Patancheru

CHAPTER IV: PLANT PATHOLOGY

Table IV.13: Management of downy mildew by using organic practices (PMPT VI) Kharif 2022.

Downy mildew disease incidence (%) at Pre-tillering stage (30 DAS)

Trial No	Treatment	Zone A					Zone B				
		MDR	JPR	HSR	GLR	JMR	MYS	CBE	PTR	DHL	ABD1
T1	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Trichod/Bacillus/Pseudomonas)	3.8	*	7.6	1.7	11.0	4.5	2.6	1.8	1.4	4.3
T2	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Mycorrh/PSB/Pseudo/ Trichod) (Mysore source)	2.5	*	6.2	1.7	10.0	6.0	2.5	5.1	0.9	3.8
T3	Seed Treatment Metalaxyl 35 SD (6 g/kg)	2.0	*	1.3	0.7	10.0	1.0	0.4	0.0	0.3	2.3
T4	Control	10.5	*	27.5	3.4	16.0	18.5	4.1	7.5	4.3	10.3
	SE ±	0.20	*	0.04	0.02	0.35	0.25	0.03	0.53	0.08	0.07
	CD at 5%	0.66	*	0.88	0.10	1.59	1.13	0.21	1.71	0.36	0.33
	CV %	4.50	*	3.00	1.80	4.30	4.80	0.90	5.10	6.50	2.10

Downy mildew disease incidence (%) at Pre-tillering stage (60 DAS)

Trial No	Treatment	Zone A					Zone B				
		MDR	JPR	HSR	GLR	JMR	MYS	CBE	PTR	DHL	ABD1
T1	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Trichod/Bacillus	7.5	15.5	8.2	2.9	15.0	6.0	3.2	3.6	1.6	6.5
T2	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Mycorrh/PSB/Pseudo/ Trichod) (Mysore source)	6.3	15.7	6.5	2.8	18.0	8.0	3.1	8.3	0.9	6.5
T3	Seed Treatment Metalaxyl 35 SD (6 g/kg)	4.3	11.1	1.3	1.3	17.0	2.1	0.7	2.8	0.3	4.8
T4	Control	13.3	36.0	27.5	4.3	27.0	18.5	6.2	13.9	5.8	11.5
	SE ±	0.04	0.03	0.43	0.03	0.50	0.23	0.04	0.70	0.21	0.23
	CD at 5%	0.21	1.95	1.41	0.14	2.25	1.06	0.17	2.25	0.97	1.06
	CV %	0.90	3.10	2.60	1.60	3.70	3.90	2.00	4.80	14.80	4.60

Seedling Emergence

Trial No	Treatment	Zone A					Zone B				
		MDR	JPR	HSR	GLR	JMR	MYS	CBE	PTR	DHL	ABD1
T1	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Trichod/Bacillus	79.0	78.9	74.2	60.1	80.0	88.0	85.6	91.3	88.0	84.8
T2	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Mycorrh/PSB/Pseudo/ Trichod) (Mysore source)	78.5	77.5	76.9	58.5	73.0	91.0	85.6	94.0	92.7	91.8
T3	Seed Treatment Metalaxyl 35 SD (6 g/kg)	74.5	84.3	79.4	58.3	76.0	89.0	85.4	95.0	91.4	94.3
T4	Control	81.0	76.8	67.7	57.5	81.0	81.0	87.4	97.5	81.3	76.3
	SE ±	0.45	0.38	0.38	0.52	0.50	0.25	0.31	1.25	0.57	0.32
	CD at 5%	2.05	1.80	1.80	2.34	2.25	1.12	1.80	3.99	2.58	1.45
	CV %	0.80	1.10	1.10	1.30	0.90	0.40	1.10	2.60	0.90	0.50

CHAPTER IV: PLANT PATHOLOGY

Table IV.13: Management of downy mildew by using organic practices (PMPT VI) Kharif 2022.

Grain Yeild (Kg/Ha)

Trial No	Treatment	Zone A					Zone B				
		MDR	JPR	HSR	GLR	JMR	MYS	CBE	PTR	DHL	ABD1
T1	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Trichod/Bacillus	1233.8	1150.0	1902.5	2096.9	1420.0	1855.5	2248.0	*	1795.5	1778.1
T2	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Mycorrh/PSB/Pseudo/ Trichod) (Mysore source)	1337.5	1137.5	1977.0	2028.1	1628.0	2157.3	2252.0	*	2279.3	1970.6
T3	Seed Treatment Metalaxyl 35 SD (6 g/kg)	1573.8	1916.7	2537.5	2118.8	1626.0	1760.0	2320.0	*	1666.0	2337.5
T4	Control	842.5	925	1455	1994	1339	1443	2168	*	1552	1700
	SE ±	20.80	24.40	22.60	43.80	22.40	11.73	40.80	*	19.10	18.75
	CD at 5%	93.70	110.20	100.80	197.20	100.60	52.80	168.70	*	85.90	84.40
	CV %	2.30	2.60	2.70	3.00	2.10	0.90	3.10	*	1.50	1.30

Fodder Yeild (Kg/Ha)

Trial No	Treatment	Zone A					Zone B				
		MDR	JPR	HSR	GLR	JMR	MYS	CBE	PTR	DHL	ABD1
T1	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Trichod/Bacillus	1843.8	3162.5	4962.5	6010.6	3659.0	5062.0	3862.0	*	6475.0	3846.9
T2	Seed Treat @ 8.0 g/kg Microb Cons. (Combination of Mycorrh/PSB/Pseudo/ Trichod) (Mysore source)	1985.0	3128.1	5092.5	6050.5	4484.0	5062.0	3671.0	*	7675.0	4259.3
T3	Seed Treatment Metalaxyl 35 SD (6 g/kg)	2340.0	5270.8	5275.0	6200.4	4099.0	4851.0	4027.0	*	6650.0	4325.0
T4	Control	1251.3	2507.8	3997.5	5820.1	3613.0	4387.0	3544.0	*	6575.0	3546.9
	SE ±	35.20	28.40	25.40	35.50	31.50	29.90	30.60	*	11.90	57.80
	CD at 5%	158.40	127.70	120.70	159.80	141.90	134.60	131.80	*	53.80	260.10
	CV %	2.70	1.10	1.90	0.80	1.10	0.90	1.80	*	0.20	2.00

CHAPTER IV: PLANT PATHOLOGY

Table IV.14: Management of Blast disease by using Chemicals and bioagents (PMPT VI) Kharif 2022.

Blast disease incidence at 30 DAS

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Pseudomonas fluorescens</i> @ 10 g /lit after 20 DAS and 35 DAS	12.8	*	*	10.0	15.8	20.0	22.2	19.4	22.2
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Bacillus subtilis</i> @ 10 g /lit after 20 DAS and 35 DAS	13.9	*	*	8.9	16.1	21.5	23.9	19.7	17.8
T3	Spray treatment with <i>Pseudomonas fluorescens</i> @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	12.5	*	*	8.3	13.1	20.5	22.9	16.4	13.3
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and <i>Bacillus subtilis</i> @ 10 g /lit after 35 DAS	11.9	*	*	1.4	12.5	19.5	23.8	25.3	6.7
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	7.0	*	*	1.7	10.3	15.0	22.2	11.7	4.4
T6	Control	20.6	*	*	12.8	21.4	29.0	36.1	38.1	42.2
	SE ±	0.32	*	*	0.23	0.43	0.60	0.75	0.40	0.28
	CD at 5%	1.17	*	*	0.85	1.53	2.20	2.19	1.46	1.04
	CV %	3.40	*	*	4.60	4.10	4.10	5.80	2.60	2.30

Blast disease incidence at 45 DAS

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Pseudomonas fluorescens</i> @ 10 g /lit after 20 DAS and 35 DAS	13.9	*	*	25.3	19.4	32.0	43.4	31.1	31.1
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Bacillus subtilis</i> @ 10 g /lit after 20 DAS and 35 DAS	16.7	*	*	24.4	21.9	27.0	45.8	31.9	24.4
T3	Spray treatment with <i>Pseudomonas fluorescens</i> @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	13.3	*	*	17.5	16.7	29.5	39.6	27.8	20.0
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and <i>Bacillus subtilis</i> @ 10 g /lit after 35 DAS	12.8	*	*	18.9	21.9	29.0	45.5	37.2	13.3
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	10.6	*	*	10.6	13.9	25.0	38.5	23.1	11.1
T6	Control	23.3	*	*	37.7	27.8	40.0	56.6	48.9	55.6
	SE ±	0.19	*	*	0.47	0.57	0.72	1.11	0.28	0.11
	CD at 5%	0.69	*	*	1.70	1.92	2.84	3.36	1.03	0.43
	CV %	1.80	*	*	2.90	3.70	3.60	5.00	1.20	0.60

CHAPTER IV: PLANT PATHOLOGY

Table IV.14: Management of Blast disease by using Chemicals and bioagents (PMPT VI) Kharif 2022.

Blast disease incidence at 60 DAS

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Pseudomonas fluorescens</i> @ 10 g /lit after 20 DAS and 35 DAS	16.1	34.3	36.8	56.3	43.9	41.5	64.2	52.8	46.7
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Bacillus subtilis</i> @ 10 g /lit after 20 DAS and 35 DAS	20.3	25.3	36.8	57.2	43.3	30.2	65.3	50.0	42.4
T3	Spray treatment with <i>Pseudomonas fluorescens</i> @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	15.0	23.8	30.7	36.6	30.8	37.5	59.7	44.4	35.6
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and <i>Bacillus subtilis</i> @ 10 g /lit after 35 DAS	12.2	21.8	21.4	41.1	41.9	32.8	63.5	46.1	24.4
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	11.4	11.8	15.6	25.8	26.7	28.5	53.8	36.9	15.6
T6	Control	36.7	43.6	69.3	65.2	58.1	47.8	71.9	61.1	62.2
	SE ±	0.23	0.13	0.36	0.28	0.25	0.16	1.02	0.20	0.27
	CD at 5%	0.56	0.49	1.31	1.03	0.92	0.59	3.07	0.76	0.98
	CV %	1.80	0.70	1.40	0.80	0.90	0.60	3.20	0.60	1.00

Seedling Emergence

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Pseudomonas fluorescens</i> @ 10 g /lit after 20 DAS and 35 DAS	85.0	76.6	74.2	58.4	71.8	81.0	90.0	94.7	90.0
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of <i>Bacillus subtilis</i> @ 10 g /lit after 20 DAS and 35 DAS	84.2	79.2	74.8	58.0	70.0	85.0	91.3	93.7	92.3
T3	Spray treatment with <i>Pseudomonas fluorescens</i> @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	84.4	81.7	71.5	57.0	70.4	83.0	95.0	85.0	86.8
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and <i>Bacillus subtilis</i> @ 10 g /lit after 35 DAS	81.0	82.0	70.8	56.8	75.7	84.5	93.8	88.1	88.0
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	80.8	82.9	73.1	57.3	68.9	82.0	97.5	86.6	88.5
T6	Control	85.6	75.4	71.0	57.8	71.4	78.0	97.5	86.4	77.5
	SE ±	0.29	0.28	0.26	0.17	0.25	0.12	1.08	0.32	0.44
	CD at 5%	1.07	1.01	0.94	0.62	0.94	0.46	3.27	1.18	1.61
	CV %	0.50	0.50	0.50	0.40	0.50	0.20	2.30	0.50	0.70

CHAPTER IV: PLANT PATHOLOGY

Table IV.14: Management of Blast disease by using Chemicals and bioagents (PMPT VI) Kharif 2022.

Grain Yeild (Kg/Ha)

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of Pseudomonas fluorescens @ 10 g /lit after 20 DAS and 35 DAS	1298.8	981.3	2905.0	2028.0	2035.1	1990.2		1673.8	1340.0
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of Bacillus subtilis @ 10 g /lit after 20 DAS and 35 DAS	1171.3	1068.8	2985.0	2050.0	1911.9	2012.8	*	1621.8	1239.4
T3	Spray treatment with Pseudomonas fluorescens @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	1546.3	1193.8	3075.0	2144.0	2206.0	1981.1	*	1755.3	1348.8
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and Bacillus subtilis @ 10 g /lit after 35 DAS	1678.8	1256.3	3210.0	2131.0	2110.7	1943.0	*	1732.0	1384.4
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	1781.3	1675.0	3507.5	2194.0	2308.9	2024.0	*	1924.5	1785.9
T6	Control	851.3	828.1	2302.5	1959.0	1627.4	1786.1	*	1504.3	1118.1
	SE ±	10.93	19.38	20.12	35.10	153.50	37.90	*	34.30	37.80
	CD at 5%	39.75	70.45	73.13	127.60	557.90	137.70	*	124.70	137.30
	CV %	1.10	2.30	0.90	2.40	10.80	2.70	*	2.80	3.80

Fodder Yeild (Kg/Ha)

Trial No	Treatment	Zone A					Zone B			
		MDR	JPR	HSR	GLR	JMR	MYS	PTR	DHL	ABD1
T1	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of Pseudomonas fluorescens @ 10 g /lit after 20 DAS and 35 DAS	1977.5	2561.1	7782.5	5550.9	5050.3	3672.0		7525.0	4375.0
T2	Seed treatment with Chitosan @ 3.75g/kg seed + 2 sprays of Bacillus subtilis @ 10 g /lit after 20 DAS and 35 DAS	1731.3	2789.4	7850.0	5710.2	4710.5	3888.4	*	7250.0	4187.5
T3	Spray treatment with Pseudomonas fluorescens @ 10g/lit 20 DAS and Trifloxystrobin + Tebuconazole @ 0.04 after 35DAS	2363.8	3115.7	7987.5	6010.9	5400.9	3456.1	*	6900.0	5475.8
T4	Spray treatment with Trifloxystrobin + Tebuconazole @ 0.04 after 20DAS and Bacillus subtilis @ 10 g /lit after 35 DAS	2542.5	3278.8	8265.0	6035.0	4820.6	3342.2	*	7725.0	4246.3
T5	Trifloxystrobin + Tebuconazole @ 0.04 2 sprays after 20 DAS and 35DAS	2741.3	4371.8	8780.0	6290.0	5720.5	3991.5	*	8300.0	5893.8
T6	Control	1258.8	2111.4	6820.0	5505.0	4210.4	2873.2	*	6475.0	3995.0
	SE ±	203.30	18.40	13.12	23.25	11.64	22.34	*	23.96	17.18
	CD at 5%	783.90	67.19	47.69	84.88	42.32	81.22	*	87.11	62.45
	CV %	14.00	0.80	0.20	0.60	0.30	0.90	*	0.51	0.52

CHAPTER V

ENTOMOLOGY

ENTOMOLOGY

The entomological trials (total 7 locations) were conducted at Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar, Regional Research Station, Anand Agricultural University, Anand in Gujarat state, RARI, Duragpura, Jaipur, Fatehpur-Shekhawati, Sikar and ARS Mandor, Jodhpur in Rajasthan, National Agriculture Research Project, Aurangabad in Maharashtra & RARS, Vijayapur in Karnataka .

Seasonal features & Insect-pest population build up

Jamnagar (Gujarat): During, *kharif*-2022, monsoon commenced in the second week of June. Total rainfall *i.e.* 649 mm was received in 35 rainy days. Sowing of entomological trials was done on 16th July, 2022. Incidence of various insect-pests on pearl millet crop *viz.*, shoot fly, stem borer, leaf binder, grass hopper, FAW, blister beetles, chaffer beetles, hairy cater pillar and *Helicoverpa* were observed during crop period. Natural enemies *i.e.* lady bird beetle and chrysopa were also observed during the crop period. Amongst major insect-pests, the incidence of shoot fly was higher (av. 15.45%) as compared to stem borer (14.55%). Overall crop condition was good. Harvesting was done in the 2nd week of October.

Anand (Gujarat): Sowing of the trials was done during 3rd week of July (18.07.2022). Total 469.50 mm rainfall was recorded from 26 rainy days during the crop period. The overall crop condition & weather was good. Harvesting was done during 2nd week of November (13.11.2022). The major insect pests were shoot fly, stem borer, leaf roller, grass hopper, *Helicoverpa* and *Eublemma silicula*. Amongst major insect-pests, the incidence of shoot fly (9.23%) was lower as compared to stem borer (10.00%). The natural enemy lady bird beetle was also observed during the season.

Jaipur (Rajasthan): Sowing of the trials was done during first week of August (05.08.22) to get sufficient pest pressure. The total rainfall was 312.3 mm from 27 rainy days during the crop period. The overall crop condition & weather was good. Harvesting was done during last week of October (26.10.22). The major insect-pests were shoot fly, stem borer, leaf roller, white grub & termite.

Mandor-Jodhpur (Rajasthan): Sowing of the trial was done on 6th July, 2022. Total 525.50 mm rainfall received from 24 rainy days. The overall crop condition rainfall was good. Harvesting was done during 1st week of October (02.10.22). The major insect-pests were shoot fly, termite, leaf roller grass hopper, grey weevil, chaffer beetle and *Helicoverpa*. Overall, shoot fly (9.17%), grass hopper (6.25%) and termite (4.58%) incidence was high and it was observed throughout the crop period.

Fatehpur-Shekhawati, Sikar (Rajasthan): During, *kharif*-2022, total rainfall *i.e.* 252.80 mm was received from 22 rainy days during the crop period. Sowing of entomological trials was done on 6th July, 2022. Incidence of various insect-pests on pearl millet crop *viz.*, shoot fly, stem borer, termite, white grub, leaf binder, grass hopper, grey weevil, hairy cater pillar, blister beetles, chaffer beetles, *Eublemma* and *Helicoverpa* were observed during crop period. Natural enemies *i.e.* lady bird beetle, chrysopa and spiders were also observed during the crop period.

Amongst major insect-pests, the incidence of shoot fly was very high (av. 22.50%) as compared to stem borer (12.92%). Overall crop condition was good. Harvesting was done in the 1st week of October (03.10.2022).

Aurangabad (Maharashtra): During, *kharif*-2022, total rainfall i.e. 442.60 mm was received in 31 rainy days during the crop period. Sowing of the experiment was done on 15th July, 2022. The major insect-pests were shoot fly & stem borer. The average incidence of shoot fly was 17.08%. Whereas, for stem borer it was 6.67%. The other insect-pests were viz., fall army worm, hairy cater pillar & chaffer beetle. The Fall Army Worm (FAW) damage was around 5.83%. The natural enemy lady bird beetle & chrysopa were also observed during the crop period. Harvesting was done in the 1st week of October (02.10.2022).

Vijayapur (Karnataka): Total rainfall was 469.9 mm from 28 rainy days during the crop period. Sowing of the trial was done on 9th July, 2022. The major insect-pests were shoot fly, stem borer, white grub, grass hopper, fall army worm and *Helicoverpa*. Whereas, the minor insect pests were grey weevil, blister beetle, chaffer beetle & *Eublema silicula*. The natural enemy lady bird beetle & chrysopa were also observed during the crop period.

METHODOLOGY AND OBSERVATIONS

1. PMET-1A: Screening of pearl millet lines against major insect pest (Initial lines/populations). Centres: Jamnagar & Jaipur

Methodology: At vegetative stage (28 DAG), observations were recorded from total plants of net plot plants by counting the dead hearts. Thus, shoot fly dead heart percent incidence was worked out. For stem borer, plant showing parallel holes due to stem borer larvae in the leaves were considered as damaged plant and percent damaged plant was calculated. At ear head stage, number of ear heads showing shoot fly (deformed ear head) and stem borer (empty/white ear head) damage were recorded separately and thus percent ear head damage was worked out from ear heads of total plants of net plot. Whereas, for *Helicoverpa armigera*, the population of larvae was counted from 5 ear heads of the randomly selected. Leaf roller damage score (0-10) was worked out on 5 plant basis at ear head stage.

Observations recorded:

- a. **Shoot fly** – Per cent infestation at 28 DAG (Vegetative stage) and ear head stage.
- b. **Stem borer** – Per cent plant damage at 28 DAG (Vegetative stage) and at ear head stage.
- c. ***Helicoverpa* larvae** – Number of larvae/ 5 ear heads.
- d. **Leaf roller** – Damage score (0-10) at ear head stage.

Criteria:

- a. **Shoot fly** – Percent infestation at vegetative stage (28 DAG) & at ear head stage (Criteria: 0.0%= Resistant, 0.1-5.0%=Moderate resistant, 5.1-10.0% = Tolerant, 10.1-20.00%= Susceptible & Above 20.00% = Highly susceptible)

- b. **Stem borer** – Percent infestation at vegetative stage (28 DAG) & at ear head stage (Criteria: 0.0%= Resistant, 0.1-5.0%=Moderate resistant, 5.1-10.0% = Tolerant, 10.1-20.00%= Susceptible & Above 20.00% = Highly susceptible)
 - c. ***Helicoverpa* larvae** – Number of larvae/ 5 ear head
 - d. **Leaf roller**- Damage score (0-10)
2. **PMET-1B: Screening of pearl millet lines against major insect pest (advance lines)**
Centres: Jamnagar, Mandor-Jodhpur & Jaipur
N.B.: Methodology, observations recorded and criteria as per PMET-1A experiment.
3. **PMET-1C: Screening of pearl millet lines against major insect pest (Germ plasm lines)**
Centres: Jamnagar.
N.B.: Methodology, observations recorded and criteria as per PMET-1A experiment.
4. **PMET-2: Monitoring of major insect pests of pearl millet**
Centres: Jamnagar, Anand, Jaipur, Mandor-Jodhpur, Fatehpur-Shekhawati, Aurangabad & Vijayapur.

Methodology:

- (A) **Untreated plot:** Sowing of released pearl millet variety was done over an area of 100 m² which was kept free from insecticidal application during crop season. Incidence (%) and population of various insect pests observed during the crop period were recorded at weekly interval from 20 randomly selected plants 7 days after germination (DAG) of the crop till maturity. The presence of bio agents was also recorded simultaneously. Weather data also recorded on weekly basis (Meteorological Standard Weather Week).
- (B) **Treated plot:** One treated plot (fully protected plot) of 100 m² was maintained by taking recommended package of practices for insect pest management to get the information of yield purpose for losses.

The following treatments were adopted for treated plot.

1. Shoot fly, stem borer, white grub & termite: Seed treatment imidacloprid 600 FS @ 8.75 ml/kg seed.
2. Shoot fly, stem borer foliar spray: Spray of fipronil 5 SC @ 0.01%, at 35 days after germination of crop or spray of imidacloprid 17.8 SL 0.009% at 35 DAG or spraying of novaluron 10 EC 0.01%, at 35 DAG.
3. *Helicoverpa armigera* : Spraying of novaluron 10 EC 0.01%, at ear head stage at pest appearance.
4. Fall Army Worm: *Beauveria bassiana* 5 g/ litre whorl application (1X10⁸ cfu/g) at the initiation of pest appearance and repeat it after 10 days if required.
5. Leaf binder, grass hopper, grey weevil, hairy cater pillar and any other leaf feeding insects: Spraying of NSKE 5%.

Observations to be recorded:

1. From Un-treated plot, incidence (%) and population of various insect pests observed during the crop period were recorded at weekly interval from 20 randomly selected plants

7 days after germination (DAG) of the crop till maturity. The presence of bio agents was also recorded simultaneously.

2. Yield kg/ha from treated as well as un-treated plot.

5. PMET-3: Survey of insect pests of the pearl millet crop on farmer's field

Centres: Jamnagar, Anand, Jaipur, Mandor-Jodhpur & Aurangabad

Survey of insect pests was carried (minimum 25-50 fields) out at vegetative and ear head stage of pearl millet crop during *Kharif* season at different locations. Incidence of various insect pests infesting pearl millet was recorded. For shoot fly and stem borer per cent incidence was worked out from 20 randomly selected plants. Whereas, for rest of the insects, population was recorded from randomly selected 5 plants/ear heads as the case may be. The population of bio-agents was also recorded from randomly selected 5 plants/ear heads. For grey weevil damage score was worked out as 0-10 scale basis.

6. PMET-5: Testing of IPM modules against pest complex of pearl millet.

Centres: Jamnagar, Jaipur & Mandor-Jodhpur.

Observations:

- a. Percent shoot fly infestation at vegetative stage (28 DAG) and at ear head stage.
- b. Percent infestation of stem borer at vegetative stage (28 DAG) and at ear head stage.
- c. Larval population of *Helicoverpa* /5 ear heads before 24 hrs of spray and 24 hrs, 3 days & 7 days after spray.
- d. Per cent grass hopper damage at 45 DAG
- e. Per cent FAW incidence at 45 DAG
- f. Grey weevil damage score at ear head stage (0-10)
- g. Percent plant damage due to soil pests (termite & white grub).
- h. Grain & Fodder Yield (kg/ha) in different treatments.

7. PMET 7: Survey of insect- pests of summer pearl millet on farmers' field.

Centres: Jamnagar and Anand

Survey of insect pests was carried out at vegetative and ear head stages of the pearl millet crop on farmer's field during summer season. Incidence/population of insect pests infesting pearl millet crop was recorded from 20 randomly selected plants per field. For shoot fly and stem borer per cent incidence was worked out from 20 randomly selected plants. Whereas, for rest of the insects, population was recorded from randomly selected 5 plants/ear heads as the case may be. The population of bio-agents was also recorded from randomly selected 5 plants/ear heads. For grey weevil damage score was worked out as 0-10 scale basis.

8. PMET-8: Relative susceptibility of pearl millet advanced entries to storage insect pests

Centres: Jamnagar, Anand, Jaipur, Mandor-Jodhpur and Anathpuram

Since installation of storage trial was done after the harvest of *kharif* trial, the observations recorded at 3 & 6 months of period of 2021-22 are presented in this year.

Observations:

- a. Number of adults emerged at 3 & 6 months period of storage
- b. Per cent grain damage at 3 & 6 months period of storage
- c. Per cent weight loss at 3 & 6 months period of storage
- d. Germination percentage was recorded at the end of experiment (6 months)

9. PMET-9: Monitoring of Fall Army worm (*Spodoptera frugiperda*) in Kharif pearl millet Centres: Jamnagar, Anand, Jaipur, Mandor-Jodhpur & Aurangabad.

Methodology & Observations recorded: The pheromone traps of fall army worm (5 traps) were installed in the general pearl millet crop field of the station. The catches per 5 traps were recorded at weekly interval as per standard weather week. The mean catches per week were worked out to know the population fluctuations. Simultaneously, damage per cent was also recorded.

N.B.: The traps were supplied by PI (Entomology), Pearl millet Research Station, JAU, Jamnagar to the above locations.

RESULTS-2021

1. PMET-1A: Screening of pearl millet lines against major insect pests (Initial lines/populations)

One hundred fifteen different pearl millet entries were screened for their resistance against major insect pests. This trial was conducted at Jamnagar and Jaipur (Table V.1a). However, the data of Jaipur centre was not received hence; the results of Jamnagar centre have been reported here only.

Shoot fly incidence: At vegetative stage, 22 entries were found resistant (0.0%), 76 entries were found moderate resistant (0.1 to 5.0% damage), 15 entries were found tolerant (5.1-10.0%), two entries were found susceptible (10.1-20.0% damage) and the overall range of incidence was 0.0% to 12.50% (Table V.1b). At ear head stage, 58 entries were found free from damage (Resistant), 50 entries were found moderate resistant, seven entries were found tolerant and the overall range of incidence was 0.0 to 10.00%. The overall incidence was higher at vegetative stage (2.95%) as compared to ear head stage (1.44%).

Stem borer incidence: At vegetative stage, 18 entries were found resistant or free from damage, 76 entries were found to be moderate resistant, 13 entries were found tolerant, 8 entries were found susceptible and the overall range of incidence was 0.0 to 16.25% (Table V.1b). At ear head stage, 91 entries were found resistant. Moreover, 23 entries were moderate resistant (< 5.0%) and one entry was tolerant (5.1-10.0%). The overall range of incidence was 0.0-10.00%. The overall incidence was higher at vegetative stage (3.40%) as compared to ear head stage (0.47%).

***Helicoverpa armigera*:** The larval population of *H. armigera* recorded at ear head stage revealed that 40 entries were found free, 53 entries recorded larval population in the range of 0.1 to 2.0 larvae/5 ear heads, 23 entries recorded larval population in the range of 2.1 to 5.0 larvae/5 ear heads, two entries recorded larval population above 5.0 larvae/5 ear heads (Table V.1c). The overall range of population was 0.0 to 7.5 larvae/5 ear heads and the average population was 1.19 larvae/5 ear heads.

2. PMET-IB: Screening of pearl millet lines against major insect-pest (advance lines)

Thirty four different advance entries were screened for their resistance against major insect pests. This trial was conducted at Jamnagar, Jaipur & Jodhpur (Table V.2a). However, the data of Jaipur centre was not received and hence not included.

Shoot fly incidence: At vegetative stage, none of the entry was found resistant (0.0%), 12 entries were found moderate resistant (0.1 to 5.0% damage), 22 entries were found tolerant (5.1-10.0%) and the overall range of incidence was 3.32% to 9.93% (Table V.2b). The overall average incidence was 5.84%. As far as location wise incidence is concerned it was higher at Jodhpur (8.59%) as compared to Jamnagar (3.08%). At ear head stage, three entries were found free from damage (Resistant), 30 entries were found moderate resistant, one entry was found tolerant and the overall range of incidence was 0.0 to 5.43%. As far as location wise incidence is concerned it was higher at Jodhpur (3.25%) as compared to Jamnagar (1.74%). The overall incidence was higher at vegetative stage (5.84%) as compared to ear head stage (2.49%).

Stem borer incidence: It was observed and recorded at Jamnagar only. At vegetative stage, two entries were found resistant or free, 17 entries were found to be moderate resistant, 15 entries were found tolerant. The overall range of incidence was 0.0-10.00% (Table V.2b). At ear head stage, 16 entries were found free-resistant, 18 entries were moderate resistant (< 5.0%) and the overall range of incidence was 0.0 to 3.0%. The overall incidence was higher at vegetative stage (4.42%) as compared to ear head stage (0.69%).

***Helicoverpa armigera*:** The larval population of *H. armigera* recorded at ear head stage revealed that none of the entry was found free. Twenty nine entries recorded larval population in the range of 0.1 to 2.0 larvae/5 ear heads, 5 entries recorded larval population in the range of 2.1 to 5.0 larvae/5 ear heads. The overall range of population was 0.33 to 3.00 larvae/5 ear heads and the average population was 1.19 larvae/5 ear heads (Table V.2c). The mean population was higher at Jodhpur (1.37 larvae/5 ear heads) as compared to Jamnagar (1.01 larvae/5 ear heads).

3. PMET-IC: Screening of pearl millet lines against major insect-pest (Germplasm lines).

Jamnagar: Two hundred and thirty five germplasm lines were screened against major insect-pests at Jamnagar (Gujarat), table-V.3a.

Shoot fly incidence: At vegetative stage, 52 entries were found resistant (0.0%), 98 entries were found moderate resistant, 58 entries were found tolerant (5.1-10.0%), 22 entries were found susceptible (10.0-20.0% damage), five entries were highly susceptible and the overall range of incidence was 0.0% to 46.67% (Table V.3b). At ear head stage, 150 entries were found free from damage, 32 entries were found moderate resistant, 28 entries were found tolerant, 23 entries were found susceptible (10.1-20.0%), two entries were found highly susceptible (>20.00%) and the overall range of incidence was 0.0% to

33.33%. The overall incidence was higher at vegetative stage (5.49%) as compared to ear head stage (3.33%).

Stem borer incidence: At vegetative stage, 150 entries were found resistant or free from damage, 68 entries were found moderate resistant, 12 entries were found tolerant and five entries found susceptible and the overall range of incidence was 0.0% to 20.00% (Table V.3b). At ear head stage, 229 entries were found resistant, 4 entries were moderate resistant (< 5.0%), two entries were tolerant (5.1-10.0%) and the overall range was 0.0-6.67%. The overall incidence was higher at vegetative stage (1.57%) as compared to ear head stage (0.13%).

***Helicoverpa armigera*:** The larval population of *H. armigera* recorded at ear head stage revealed that 131 entries were found free, 100 entries recorded larval population in the range of 0.1 to 2.0 larvae/5 ear heads, four entries recorded larval population in the range of 2.1 to 5.0 larvae/5 ear heads and the overall range of population was 0.0 to 3.0 larvae/5 ear heads and the average population was 0.53 larvae/5 ear heads (Table V.3c).

Mean of 2 years (2021 & 2022) of Jamnagar centre (Table- V.3d):

Shoot fly incidence: At vegetative stage, only one entry (IP 7915) were found resistant (0.0%), 17 entries were found moderate resistant, 49 entries were found tolerant (5.1-10.0%), 119 entries were found susceptible (10.0-20.0% damage), 49 were highly susceptible and the overall range of incidence was 0.0% to 51.25% (Table V.3e). At ear head stage, 74 entries were found free from damage, 67 entries were found moderate resistant, 55 entries were found tolerant, 34 entries were found susceptible (10.1-20.0%), five entries were found highly susceptible (>20.00%) and the overall range of incidence was 0.0% to 44.17%. The overall incidence was higher at vegetative stage (14.92%) as compared to ear head stage (5.26%).

Stem borer incidence: At vegetative stage, 104 entries were found resistant or free from damage, 106 entries were found moderate resistant, 22 entries were found tolerant and three entries found susceptible and the overall range of incidence was 0.0% to 15.54% (Table V.3e). At ear head stage, 164 entries were found resistant, 70 entries were moderate resistant (< 5.0%), one entry was tolerant (5.1-10.0%) and the overall range was 0.0-7.50%. The overall incidence was higher at vegetative stage (1.92%) as compared to ear head stage (0.74%).

***Helicoverpa armigera*:** The larval population of *H. armigera* recorded at ear head stage revealed that 50 entries were found free and 185 entries recorded larval population in the range of 0.1 to 2.0 larvae/5 ear heads and the overall range of population was 0.0 to 2.0 larvae/5 ear heads and the average population was 0.68 larvae/5 ear heads (Table V.3f).

4. PMET-2: Monitoring of major insect pests of pearl millet

With a view to study the population fluctuation of different insect pests of pearl millet during crop season i.e. on station monitoring, a study was conducted at Jamnagar & Anand in Gujarat, Jaipur, Fatehpur-Shekhawati & Mandor-Jodhpur in Rajasthan, Aurangabad in Maharashtra and Vijayapur in Karnataka. Incidence of different insect pests was recorded at weekly intervals. Moreover, correlation of these pests was worked with different weather parameters. The loss caused by insect-pest complex was also worked out.

Centre: Jamnagar

The weekly incidence of insect-pests was recorded on variety GHB 558 at Pearl Millet Research Station, JAU, Jamnagar (Table- V.4a).

Insect-pest incidence: Shoot fly incidence: The initiation of shoot fly incidence (5.00%) was found in 31st Standard Meteorological Week (SMW). The highest shoot fly incidence (25.0%) was observed during 40th SMW. The average incidence was 15.45% during the crop period. **Stem borer incidence:** The initiation of stem borer was found from 32nd SMW (5.0%). However, its incidence was found highest (25.00%) during 36th SMW with an average incidence of 14.55% during the crop period. The overall range of other insect pests viz., **leaf roller** (0.0-5.0 damage score), **grass hopper (0.0-20.0%)**, **FAW (0.0-5.00%)**, **hairy caterpillar** (0.0-4.00/20 ear heads), **chaffer beetles** (0.0-2.0/20 ear heads), **blister beetle** (0.0-3.0/20 ear heads) and **Helicoverpa** (0.0-10.0 larvae/20 ear heads) observed. The natural enemy **lady bird beetle** (0.0-3.0/ 20 plants) and **chrysopa** (0.0-2.0/ 20 plants) were also observed in pearl millet eco-system.

Losses: The treated plot recorded 2818 kg/ha grain and 5617 kg/ha fodder yield. The losses in grain yield were 25.32% and 21.21% in fodder yield (Table- V.4b).

Correlation: The correlation (Table- V.4c) of shoot fly incidence with temperature minimum ($r = -0.709^{**}$) and wind speed ($r = -0.699^{**}$) was found negative and highly significant. Moreover, it was also negative and significant with relative humidity evening ($r = -0.586^{*}$). Similarly, the correlation of stem borer incidence was negative and significant with wind speed ($r = -0.627^{*}$) and significantly positive with evaporation rate ($r = 0.559^{*}$). As far as *Helicoverpa armigera* population is concerned its correlation was found negative and highly significant with temperature minimum ($r = -0.827^{**}$) and significant and negative with relative humidity evening ($r = -0.653^{*}$). Moreover, its correlation was found positive and highly significant with bright sunshine hours ($r = 0.763^{**}$)

Centre: Anand:

Weekly incidence and population was recorded on pearl millet variety GHB 1129 at Regional Research Station, Anand Agricultural University, Anand (Table-V.4d)

Incidence: Shoot fly: Its incidence initiated in 33rd SMW (5.00%) and it was highest during 36th to 42nd SMW (15.00%) with an average of 9.23%. **Stem borer** incidence initiated in 34th SMW (5.0%) and it was highest during 40-42nd SMW (20.0%) with an average of 10.00%. **Grass hopper** damage ranged from 0.0-10.0% (av. 6.15%). The

overall population range of other insect pests viz. **Helicoverpa** (0-4/20 ear heads), **leaf roller damage score** (0.0-2.0), **Eublemma silicula** (0-4.0 larvae/ 20 ear heads) and **grey weevil** damage score (0.0-1.0). The natural enemy **lady bird beetles** (0-4 beetles/20 plants) was also observed with an average of 1.46 beetles/ 20 plants in pearl millet eco-system.

N.B.: There was no incidence of fall army worm throughout the crop period.

Losses: There was 13.85% grain and 12.08% fodder loss in pearl millet due to insect-pest complex during *Kharif* 2022 (Table V.4e).

Correlation: The correlation of major insect-pests with weather parameters has been depicted in table V.4f. The correlation of shoot fly per cent incidence was found negatively significant with temperature minimum (-0.557*) positive and highly significant with temperature maximum (0.703**) and bright sun shine hours (0.694**). The correlation of stem borer per cent incidence was negatively significant with temperature minimum (-0.748*) and positive with temperature maximum (0.621*). Moreover, the correlation was positive and highly significant with bright sun shine hours (0.751**). The correlation of *Helicoverpa* larval population was significantly and positive with BSS (0.756*) and evaporation rate (0.568*). Whereas, it was negative with rainfall (-0.628*) and rainy days (-0.646*).

Centre: Mandor-Jodhpur:

Incidence: Weekly observations on incidence of various insect pests during *kharif* 2022 on pearl millet crop (variety MPMH 17) was recorded at ARS, Mandor, Jodhpur- Rajasthan (Table V.4j).

Incidence: Shoot fly: The infestation was noticed during 29th to 39th MSW and the maximum infestation of 15.00% was recorded in 31st MSW with an average of 9.17% during the crop period. **Termite:** The incidence initiated in the 31st MSW and it remained till harvest. It was maximum (10.00%) during 38th and 39th MSW with an average of 4.58%. **Leaf roller:** The damage initiated in 32nd MSW (5.00%) and the maximum was during 34-35th MSW (20.00%) with an average of 5.83% during the crop period. **Grass hopper:** The damage observed during 32nd MSW to 39th MSW with an average of 6.25%. Its population was observed with an average of 1.25 nymph/adult per 20 plants. **Grey weevil:** The grey weevil damage score ranged from 0.0-3.0, with an average of 2.08 during the season. **Helicoverpa:** Its population was observed high (15.00 larvae/ 20 ear heads) during 37th MSW with an average of 3.00 larvae/20 ear heads. Chaffer beetle: Its range was 0.0-2.0 adults/20 ear heads with an average of 0.42 adults/20 ear heads.

Losses: There was 17.57% loss in grain and 15.66% in fodder yield due to pest complex in pearl millet (Table V.4k).

Correlation: The correlation of major insect-pests with weather parameters has been depicted in table V.4l. The correlation of shoot fly incidence was found negatively significant with temperature maximum (-0.632*). The correlation of termite per cent damage was found significantly negative with temperature minimum (-0.680*). The correlation of grass hopper per cent damage was negative and highly significant with temperature minimum (-0.933**). The correlation of leaf roller damage per cent was negative with temperature minimum (-0.738*) and temperature maximum (-0.598**). Whereas, it was positive and significant with rainy days (0.628*).

Centre: Fatehpur-Shekhawati:

Weekly observations on incidence of various insect pests during *kharif* 2022 on pearl millet crop (variety MPMH 17) was recorded at ARS, Fatehpur-Shekhawati, Sikar, Rajasthan (Table V.4m).

Incidence: Shoot fly: The infestation was noticed during 29th to 39th MSW and the maximum infestation of 35.00% was recorded 36-39th MSW with an average of 22.50% during the crop period. **Stem borer:** Its incidence initiated in 31st MSW (10.00%) and then after remained present throughout the crop period. The maximum incidence was 20.00% with an average of 12.92%. **Termite:** The incidence initiated in the 30th MSW and it remained till harvest. It was maximum (15.00%) during 36th to 39th MSW with an average of 6.25%. **Leaf roller:** The damage was observed throughout the crop period with an average of 4.0 damage score. **White grub:** The incidence of white grub was very low and it was observed only once during 31st MSW (5.00%). **Grass hopper:** The damage observed during 30th to 39th MSW with an average of 7.92%. **Grey weevil:** The grey weevil damage score ranged from 0.0-4.0, with an average of 2.58 during the season. **Hairy caterpillar:** Its population was observed in the range of 0.0-4.00 larvae/20 plants with an average of 1.17 larvae/ 20 plants. **Blister beetles:** It was observed during 36-38th MSW with an average of 0.92 beetle/20 ear heads. **Chaffer beetles:** The population was low and it was observed only during 37 and 38th MSW with an average of 0.25 beetles/20 ear heads. **Helicoverpa:** Its population was observed during 36-38th MSW with an average of 0.92 larvae/ 20 ear heads. The maximum 4.0 larvae/20 ear heads was recorded during 37th and 38th MSW. **Eublemma:** The larvae was observed only at ear head stage with maximum of 9.0 larvae/20 ear heads during 38th MSW with an average of 1.58 larvae/20 ear heads. The natural enemies viz., lady bird beetle (0.0-6.00/20 plants), chrysopa (0.0-4.0/20 plants) and spiders (0.0-11.0/20 plants) were observed in good numbers in pearl millet eco-system.

Losses: There was 31.12% loss in grain and 27.82% in fodder yield due to pest complex in pearl millet (Table V.4n).

Correlation: The correlation of major insect-pests with weather parameters has been depicted in table V.4o. The correlation of shoot fly incidence was found negatively significant with temperature minimum (-0.791**), morning relative humidity (-0.594*) and rainy days (-0.849**). The correlation of stem borer incidence was found negatively significant with temperature minimum (-0.711**), morning relative humidity (-0.615*) and rainy days (-0.946**). The correlation of termite per cent damage was found significantly negative with temperature minimum (-0.666*).

Centre: Aurangabad:

Weekly incidence and population of insect pests was recorded on pearl millet variety AHB 1200 Fe at National Agriculture Research Project, Aurangabad in Maharashtra (Table V.4p).

Incidence: Shoot fly: Its incidence initiated in 30th MSW (10.0%) and it was highest during 32nd to 40th MSW (20.0%) with an average of 17.08% during the season. **Stem borer** incidence initiated in 32nd MSW (5.00%) and it was highest during 34-40th MSW (10.0%) with an average of 6.67% during the crop period. **Fall Army Worm:** Its damage

was observed during 32nd MSW (5.00%) to 37th MSW with an average of 5.83% damage. **Hairy cater pillar:** Its population was observed from mid stage (33rd MSW) till maturity (40th MSW) ranging from 0.0-14.00 larvae/20 plants with an average of 3.83 larvae/20 plants. **Chaffer beetle:** It was observed at maturity stage ranging from 0.0-9.0 beetles/20 ear heads with an average of 1.50 beetles/20 ear heads. The natural enemy **lady bird beetle** (0.0-4.00/20 plants) and **chrysopa** (0.0-1.0/ 20 plants) was observed during the crop stage in pearl millet eco-system.

Losses: There was 12.50% loss in grain and 10.71% loss in fodder due to pest complex in pearl millet (Table V.4q).

Correlation: There was a non significant correlation of major insect-pests with different weather parameters, table V.4r.

Centre: Vijayapur:

Monitoring of different insect-pest in pearl millet variety VPMH 7 was done at weekly interval (Table V.4s).

Incidence: The incidence of **shoot fly** was observed from 30th to 41st MSW. The highest incidence was recorded in 32nd MSW (10.80%) with an average of 5.24% during the crop period. **Stem borer** incidence initiated from 31st MSW (0.75%) and observed till maturity with a range of 0.0-6.12% with an average of 2.71%. The **white grub** incidence was observed with an average of 2.00%. **Grass hopper** damage was observed throughout the crop period with an average 2.87%. **Fall army worm** damage was low, ranging from 0.0-3.30% with an average of 1.44%. Whereas, average fall army worm population was 6.33 larvae/20 plants. Mean **grey weevil** damage score was 0.63. **Hairy cater pillar** per cent damage ranged from 0.0-16.65% with an average of 5.42%. **Blister beetle** population was observed from 35th MSW till 40th MSW with an average of 6.37 beetles/20 ear heads. **Chaffer beetle** was moderate (range 0.0-16.00) with an average of 4.01 adults/20 ear heads. **Helicoverpa** larval population was high at ear head stage and it was highest (31.50 larvae/ 20 ear heads) during 39th SWW (77 DAG) with an average of 8.01 larvae/20 ear heads. **Eublemma silicula** was low and it observed from 38th to 40th MSW (av. 0.48 larvae/20 ear heads). The natural enemy lady bird beetle (Av. 5.43/20 plants) and chrysopa (Av. 3.27/20plants) was observed from mid to later stage of the crop.

Losses: The losses in grain was 9.17%. Whereas, in case of fodder it was 6.58% due to insect- pest complex in pearl millet (Table V.4t).

Correlation: There was non significant correlation of shoot fly, stem borer and FAW was observed with different weather parameters. Whereas, *Helicoverpa* larval population was highly significant and negative with temperature minimum (-0.744**), table V.4u.

Centre: Jaipur:

Weekly observations on incidence of various insect pests during kharif 2022 on pearl millet crop (Variety MPMH 17) was recorded at RARI, Durgapura, Jaipur , Rajasthan (Table V.4v).

Incidence: Shoot fly: The infestation initiated from 34th SWW (2.22%) and afterwards it was observed throughout the crop period. The maximum infestation was recorded during

38th MSW (16.66%) and 43rd MSW (19.35%) week with an average of 8.88%. **Stem borer:** Overall stem borer incidence was very low (0.64%) during the season and it was observed only at later crop stage and its incidence was observed during 39th MSW (1.61%) & 40th MSW (4.83%). **Termite and white grubs:** Incidence of termite and white grubs was high during 2022 and it was highest during 43rd MSW (12.54%) i.e. at the crop maturity stage with an average of 5.43%. **Leaf roller:** The population was observed at later stage of the crop during 38th to 43rd MSW with an average of 1.60/5 plants. **Chaffer beetle:** It was observed during 39th to 42nd MSW, with an average of 1.60/5 plants.

Losses: There was 25.21% loss in grain & 26.60% in fodder yield due to pest complex in pearl millet (Table V.4w).

Correlation: Data presented in table V.4x indicates that, there was a negative and significant correlation of shoot fly% incidence with total rainfall (-0.674*). There was a non significant correlation of stem borer with different weather parameters. Whereas, Termite and white grub % incidence was negative and significant with temperature maximum (-0.728*), Morning relative humidity (-0.723*), evening relative humidity (-0.782**) and rainy days (-0.652*).

5. PMET-3: Survey of insect pests of the pearl millet crop on farmer's field

With a view to examine the intensity of different insect pests of pearl millet on farmer's fields, a field survey was conducted by Jamnagar & Anand centre in Gujarat, Jaipur & Mandor-Jodhpur centre in Rajasthan and by Aurangabad centre in Maharashtra.

Centre: Jamnagar & Anand:

Scientist of Jamnagar centre (Sr. no. 1 to 87, table- V.5a) carried out survey at pearl millet farmer's fields comprising of six districts (Anand, Banaskantha, Kutch, Mehsana, Patan and Surendranagar) of Gujarat state during *khari* 2022. Whereas, survey was carried in 33 fields in two Districts (Anand and Kheda) at vegetative and ear head stage at farmer's fields by scientists of Anand centre (Sr. no.88 to 120, table-V.5a). Shoot fly, stem borer *Helicoverpa*, Blister beetle, chaffer beetle, grass hopper, grey weevil and leaf binder were found pre dominantly in the fields and its intensity was low to high. The pest wise intensity has been given in details (Table- V.5a). Whereas, District wise situation is given in table- V.5b.

- (a) **Shoot fly:** Its incidence ranged from 0.0% to 25.0% at different locations/fields with an average of 7.31% in surveyed fields. The highest incidence (25.0%) was observed at Umreth, Simlej, Hirapura and Bhetasi of Anand District.
- (b) **Stem borer:** Its incidence ranged from 0.0% to 25.0% at different locations/fields with an average of 6.94% in surveyed fields. The highest incidence (25.0%) was observed at Hirapura and Dahemi (Tehsil-Borsad of Anand District) in Desi variety at ear head stage.
- (c) **Ear head worm (*Helicoverpa*):** Average population of these larvae was 1.76 larvae/5 ear heads in surveyed fields. Its range was 0.0 to 5.0 larvae/5 ear heads and it was recorded highest (5.0 larvae/5 ear heads) at Bandhani and Harmanpura of Anand District in surveyed fields.
- (d) **Blister beetle:** The population of blister beetle ranged from 0 to 4.0/5 ear heads (average 0.45 beetles/ 5 ear heads) in surveyed fields. The highest number of blister beetle population (4.0/5 ear heads) was observed at Piprala (Tehsil- Santalpur, Patan District) in surveyed fields.

- (e) **Grass hopper:** The damage of grass hopper was in the range of 0 to 20.0% and it was highest at Bodal (Tehsil- Borsad, District Anand) in forage Pearl millet at vegetative stage with an average of 4.35% in surveyed fields.
- (f) **Grey weevil damage score:** Its damage score was in the range of 0.0-5.0 with an average of 1.26 damage score in surveyed fields. It was highest at Limdi and Sayla (District Surendranagar) in variety Sagar 222 at ear head stage in surveyed fields.
- (g) **Chaffer beetle:** It ranged from 0-5.0/5 ear heads with an average of 0.53/5 ear heads. It was highest (5.0/5 ear heads) at Baliyasan (Tehsil and District Mehsana) in variety Nandi 75 at ear head stage.
- (h) **Leaf binder:** Its damage score was in the range of 0.0-5.0 with an average of 0.91 damage score in surveyed fields. It was highest at Limdi and Sayla (District Surendranagar) in variety Sagar 222 at ear head stage in surveyed fields.
- (i) **Lady bird beetle:** The natural enemy lady bird beetle (range 0.0-5.0/5 plants) was observed at many places but in few numbers with an average of 0.89 adults/5 plants.
- (j) **Chrysopa:** The natural enemy chrysopa was observed at few locations surveyed ranging from 0.0-5.0/5 plants with an average of 0.53/5 plants.

As far as the district wise insect pest situation is concerned, shoot fly per cent incidence was highest in Banaskantha district (8.49%). Whereas, stem borer incidence was recorded highest in Kheda district (10.00%). *Helicoverpa armigera* larval population was recorded highest in Anand District (2.05 larvae/ 5 ear heads). Blister beetle was found highest in Patan district (1.50 adults/5 ear heads). Whereas, grey weevil damage score was highest in Surendranagar district (2.77 DS). Chaffer beetle population was found highest in Mehsana District (1.75 adults/ 5 ear heads). Grass hopper per cent damage was highest in Kheda Pocket (10.00%). Leaf binder was highest in Kutch district (1.07 damage score). The natural enemy lady bird beetle (0.88/5 pl.) & chrysopa (0.54/5 pl.) were highest in Anand pocket (Table- V.5b).

Centres: Jaipur & Mandor-Jodhpur

A survey of insect pests of pearl millet was carried out in 12 districts of Rajasthan during *kharif* 2022. Seven districts were surveyed by scientists of RARI, Durgapura, Jaipur centre (Ajmer, Alwar, Bharatpur, Dausa, Jaipur, Karoli and Sikar). Hence, for Jaipur centre field number 1-74) will be considered. Whereas, for Mandor-Jodhpur centre field number 75-140 will be considered. Hence, the results are presented here based on survey conducted in whole region by both the centres, (Table V.5c).

- a. **Shoot fly:** Its damage was observed in majority of the fields and the highest damage (20.0%) was recorded at Ringus (Tehsil-Khandela, District-Sikar), Pratappura, Malikpur, Govindgarh, and Gadota of Jaipur district in surveyed fields. The mean incidence was 4.72%.
- b. **Stem borer:** Its damage was found in few fields and its range was 0.0-2.00% with an average of 0.11% in surveyed fields. Its incidence was found highest (2.00%) at Ram Pura Davdi , Renwal and Pallu kala (District- Jaipur).
- c. **White grub % damage:** Its damage was found only in few fields and it ranged from 0.0-30.00% with an average of 1.22% in surveyed fields. The highest (30.00%) was recorded at Nandoti (Karoli district).

- d. **Termite % damage:** Its incidence was found in many of the fields & highest damage (15.00%) was observed at Lampua (Tehsil- Khandela, District Sikar). The mean incidence was 3.64%.
- e. ***Helicoverpa*:** It was observed at many places with an average of 1.39 larvae/5 ear heads. The overall range was 0.0-10.00 larvae/ 5 ear heads. It was found highest (10 larvae/5 ear heads) at Thana Gaji (Tehsil-Thanagazi, District-Alwar) and Kaimati (Tehsil-Bayana, District-Bharatpur) in unknown hybrid.
- f. **Grass hopper:** Its infestation was found at many locations with an average of 6.44% infestation in surveyed fields and it was highest (40.00%) at Kemla (Tehsil and District Karoli) in unknown hybrid.
- g. **Grey weevil:** Its damage was found ranging from 0.0-5.0 damage, with an average of 1.02 damage score. Its highest damage score was recorded at Jaitaran (Tehsil-Jaitaran, District-Pali).
- h. **Blister beetles:** Its population was found low and it was observed only at few locations ranging from 0.0-1.0 adults/ 5 plants with an average of 0.06 adults/ 5 plants.
- i. **Chaffer beetles:** Its population was found low and it was observed only at few locations ranging from 0.0-2.0 adults/ 5 ear heads with an average of 0.06 ear heads/ 5 plants.
- j. **Leaf binder:** Its damage was observed at many places, ranging from 0.0-10.00% with an average of 2.46%.

The natural enemy lady bird beetles were observed at few locations.

District wise insect-pest incidence:

Shoot fly per cent incidence was recorded in almost all Districts and it was highest in Pali (10.00%) in surveyed fields. Whereas, **stem borer** was very low and was observed in few Districts viz., Ajmer (0.43%), Alwar (0.22%), Bharatpur (0.15%), Jaipur (0.38%) and Dausa (0.205) in surveyed fields.. **White grub** damage was observed only in Ajmer (0.29%), Alwar (1.00%), Bharatpur (1.15%), Jaipur (3.05%), Karoli (3.75%) and Sikar (4.64%) in surveyed fields. Whereas, **termite** damage % was observed in many of the Districts and it was highest in Sikar (7.27%) in surveyed fields. ***Helicoverpa armigera*** larval population was observed in majority of the Districts and it was highest in Alwar (2.44 larvae/5 ear heads) in surveyed fields. **Blister beetle** population was observed only in Bharatpur (0.15 adults/ 5 plants) and Jaipur (0.29 adults/ 5 plants) Districts. **Grass hopper** damage % was observed in all the Districts and it was highest in Dausa (20.00%) in surveyed fields. **Grey weevil** damage was observed in majority of the Districts with highest in Pali (3.50 damage score) in surveyed fields. **Leaf binder** % damage was observed in all the Districts and was highest in Jaisalmer (5.83%). The natural enemy **lady bird beetle** was observed in few districts, table V.5 d.

Centre: Aurangabad:

Survey was carried out in 25 fields of Aurangabad and Jalna District at ear head stage at farmer's fields (Table V.5e).

- a. **Shoot fly:** Its incidence ranged from 0.0% to 40.0% at different locations/fields with an average of 9.60% in surveyed fields. The highest incidence (40.0%) was observed at Dabhrul (Tehsil-Paithan, District-Aurangabad) and Nihalsingwadi (Tehsil-Ambad, District-Jalna) in variety at ear head stage.

- b. **Stem borer:** Its incidence was observed at few locations ranging from 0.0% to 20.0% at different locations/fields with an average of 4.00%. It was highest (20.00%) at Rohilagad (Jalna), Tidiwadi, Janefal, Aadhur and Taherpur of Aurangabad in surveyed fields.
- c. **Blister beetle:** The population of blister beetle ranged from 0.0 to 2.00 adults/5 ear heads (average 0.36 beetles/5 ear heads) in surveyed fields.
- d. **Chaffer beetle:** The population of adults ranged from 0.0-5.0 adults/5 ear heads with an average of 1.00 adults/5 ear heads.
- e. **Fall Army worm:** The damage was highest (20.00%) and observed only at five locations viz., Zari , Dabhrul , Tidiwadi , Janefal and Aadhur of Aurangabad during the survey and the mean damage was 5.60% in these locations.
- f. **Hairy caterpillar:** Its population was observed ranging from 0.0-5.00 larvae/ 5 plants with an average of 1.0 larvae/ 5 plants.
The natural enemy lady bird beetle (av.0.24 adults/ 5 plants) and chrysopa (av.0.08 adults/ 5 plants) was observed at few places and in few numbers.

6. PMET-5: Testing of IPM modules against pest complex of pearl Millet.

The objective of this trial is to evaluate IPM modules against pest complex (shoot fly, stem borer, *Helicoverpa*, Grass hopper, grey weevil, white grub & termite) of pearl millet. Six IPM modules were evaluated, (Table V.6a) with control. This experiment was conducted at Jamnagar, Mandor-Jodhpur and Jaipur during 2022.

Centre: Jamnagar

- (a) **Shoot fly:** Among the different modules tested for their effectiveness against shoot fly, IPM module-V recorded lowest shoot fly incidence at vegetative stage (5.08%). However, it was at par with IPM module III (6.08%) and IPM module-IV (6.04%). Whereas, 17.96% incidence was recorded in control. At ear head stage, again IPM module-V recorded lowest shoot fly incidence (5.10%) and it was at par with IPM module-III (5.64%) & IPM module-IV (5.44%). Whereas, 16.89% incidence was recorded in control (Table- V.6a).
- (b) **Stem borer:** At vegetative stage, IPM module-V recorded least stem borer damage i.e. 2.94%. However, it was statistically at par with IPM module-III (4.19%) & IPM module-IV (3.90%). Whereas, it was 15.46% in control. At ear head stage the lowest stem borer incidence i.e. 4.99% was recorded in IPM module-V. However, it was at par with IPM module-III (6.13%) and IPM module-IV (5.85%) as compared to 11.29% in control (Table- V.6a).
- (c) **Ear head worm (*Helicoverpa armigera*):** The results of before spray were non significant. After 7 days of spray the lowest *H. armigera* population was recorded in IPM module-V (1.25 larvae/5 ear heads). However, it was at par with IPM module-II (1.75 larvae/ 5 ear heads), IPM module III (1.50 larvae/5 ear heads), IPM module-IV (1.50 larvae/ 5 ear heads) and IPM module VI (2.50 larvae/5 ear heads). Whereas it was 5.75 larvae/ 5 ear heads in control, Table- V.6a.
- (d) **Grass hopper:** The lowest grass hopper per cent incidence was recorded in IPM module-V (2.33%). However, it was at par with IPM module-IV (2.80%). Whereas, it was 11.73% in control, table- V.6a.
- (e) **Yield:** The Highest grain yield was recorded in IPM module V (3266.67 kg/ha). However, it was at par IPM module-III (2984.72 kg/ha) and IPM module-IV (3045.84

kg/ha) .Whereas, it was 1933.33 kg/ha in control. The highest fodder yield was again recorded in IPM module V (6821.88 kg/ha). However, it was at par with IPM module III (5886.81 kg/ha) and IPM module VI (6429.87 kg/ha). Whereas, it was 3780.21 kg/ha in control, table- V.6a.

- (f) **ICBR:** Highest additional income (35432/- per hectare) & net return (Rs. 26905/- per hectare) was recorded in IPM module V. ICBR was found highest in IPM module III (1:7.39), table- V.6b.

Centre: Jaipur

- (a) **Shoot fly:** Among the different modules tested for their effectiveness against shoot fly, IPM module-V recorded significantly the lowest shoot fly incidence at vegetative stage (2.18%). Whereas, 14.66% incidence was recorded in control. At ear head stage, IPM module-V recorded significantly the lowest shoot fly incidence (3.23%). Whereas, 13.75% incidence was recorded in control (Table -V.6c).
- (b) **White grub & termite damage:** At vegetative stage, the lowest white grub & termite per cent damage was recorded in IPM module V (2.44%). However, it was at par with IPM module-IV (3.66%). Whereas, it was 17.88% in T7-control. At maturity stage, significantly the lowest white grub & termite per cent damage was again recorded in IPM module V (1.41%).Whereas, it was 14.76% in T7-control, table- V.6c.
- (c) **Yield:** Significantly, the highest grain and fodder yield was recorded in IPM module V i.e. 2583 kg/ha and 6021 kg/ha, respectively (Table -V.6c).
- (d) **ICBR:** Highest additional income (35126/- per hectare) & net return (Rs. 26599/- per hectare) was recorded in IPM module V. But due to highest total expenditure (Rs.8527/- per hectare) the ICBR was 1:4.12, table- V.6d.

Centre: Jodhpur

- (a) **Shoot fly:** Among the different modules tested for their effectiveness against shoot fly, IPM module-V recorded lowest shoot fly incidence at vegetative stage (2.91%). However, it was at par with IPM module-IV (3.82%). Whereas, 14.87% incidence was recorded in control. At ear head stage, again IPM module-V recorded the lowest shoot fly incidence (3.43%) and it was at par with IPM module-IV (4.37%). Whereas, 9.52% incidence was recorded in control (Table- V.6e).
- (b) **Grass hopper:** The lowest grass hopper per cent incidence was recorded in IPM module-V (2.47%). However, it was at par with IPM module-IV (3.02%). Whereas, it was 8.43% in control, table- V.6e.
- (c) **Ear head worm (*Helicoverpa armigera*):** The results of before spray were non significant. After 7 days of spray the lowest *H. armigera* population was recorded in IPM module-V (2.25 larvae/5 ear heads). However, it was at par with IPM module-II (2.50 larvae/ 5 ear heads) IPM module-III (2.50 larvae/ 5 ear heads), IPM module IV (3.50 larvae/5 ear heads) & IPM module-VI (3.50 larvae/ 5 ear heads). Whereas it was 9.00 larvae/ 5 ear heads in control, table- V.6e.
- (d) **Yield:** The Highest grain yield was recorded in IPM module V (2875.00 kg/ha). However, it was at par with IPM module-IV (2604.17 kg/ha). Whereas, it was 1916.67 kg/ha in control. Significantly, the highest fodder yield was recorded in IPM module V (3895.84 kg/ha). Whereas, it was 2458.33 kg/ha in control, table- V.6e

- (e) **ICBR:** Highest additional income (Rs. 22036/-) and highest net return (Rs. 13609/-) was recorded in IPM module V. ICBR was found highest in IPM module I (1:3.33), table-V.6f.

Pooled Information for PMET-5: Testing of IPM modules against pest complex of pearl Millet.

Centre: Jamnagar

The experiment was conducted for 3 years (2020-21, 2021-22 and 2022-23) at Pearl Millet Research Station, Junagadh Agricultural University, Jamnagar. The data of incidence and yield has been pooled and the economics has been worked out.

- (a) **Shoot fly:** Pooled data presented in table-V.6g revealed that at vegetative stage, the least incidence was recorded in IPM module-V (5.92%). However, it was at par with IPM module-IV (6.96%). At ear head stage, again the least incidence was recorded in IPM module-V (5.39%). However, it was at par with IPM module-IV (6.01%) and IPM module-III (6.11%).
- (b) **Stem borer:** The least damage per cent at vegetative stage was recorded in IPM module-V (4.57%). However, it was at par with IPM module-IV (5.19%). At ear head stage, again the least incidence was recorded in IPM module-V (5.82%). However, it was at par with IPM module-IV (6.43%) and IPM module-III (6.76%).
- (c) ***Helicoverpa armigera* population:** The least larval population after 7 days of spray was recorded in IPM module-V (0.58 larvae/5 ear heads). However, it was at par with IPM module-IV (0.75 larvae/ 5 ear heads), IPM module-III (0.83 larvae/ 5 ear heads) and IPM module-II (0.83 larvae/ 5 ear heads).
- (d) **Grass hopper damage:** The lowest grass hopper damage at vegetative stage (45 DAG) was recorded in IPM module-V (3.34%). However, it was at par with IPM module-IV (4.22%).
- (e) **Grain yield:** The highest grain yield was recorded in IPM module-V (3131 kg/ha). However, it was at par with IPM module-IV (2915 kg/ha) and IPM module-III (2881 kg/ha).
- (f) **Fodder yield:** The highest fodder yield was recorded in IPM module-V (6200 kg/ha). However, it was at par with IPM module-IV (5962 kg/ha) and IPM module-III (5429 kg/ha).
- (g) **Economics:** The highest additional income (Rs. 35288/-) and net return (Rs. 26861/-) was observed in IPM module-V. The highest ICBR was recorded in IPM module III (1:7.84).

Centre: Mandor-Jodhpur

The experiment was conducted for 2 years (2021-22 and 2022-23) at ARS Mandor-Jodhpur. The data of incidence and yield has been pooled and the economics has been worked out.

Shoot fly: Significantly the lowest incidence of shoot fly was recorded at vegetative stage (3.11%) and ear head stage (3.27%) was recorded in IPM module-V (Table- V.6i).

Grass hopper damage: Significantly the lowest incidence was recorded at vegetative stage-45 DAG in IPM module-V (2.79%), table- V.6i.

***Helicoverpa armigera* population:** The least larval population after 7 days of spray was recorded in IPM module-V (1.63 larvae/5 ear heads). However, it was at par with IPM module-IV (1.78 larvae/ 5 ear heads), IPM module-III (1.75 larvae/ 5 ear heads) and IPM module-II (1.63 larvae/ 5 ear heads).

Grain yield: The highest grain yield (Table- V.6i) was recorded in IPM module-V (2344 kg/ha). However, it was at par with IPM module-IV (2271 kg /ha) and IPM module-III (2135 kg/ha).

Fodder yield: The highest fodder yield (Table- V.6i) was recorded in IPM module-V (3948kg/ha). However, it was at par with IPM module-IV (3667kg /ha).

Economics: The highest additional income (Table- V.6j) was found in IPM module-V (Rs.17828/-), the highest net return of rupees 9633/- per hectare was recorded in IPM module-IV and the highest ICBR was recorded in IPM module-I (1:8.19).

Centre: Jaipur: The Pooled data not received.

7. PMET 7: Survey of insect- pests of summer pearl millet on farmers' field.

Centre: Jamnagar and Anand (Gujarat only).

Survey was carried out in pearl millet at farmer's fields by scientists of Jamnagar centre (Field no. 1-121) and Anand centre (Field no. 122-152) during summer 2022 (Table- V.7a). It was carried out in 8 Districts covering 34 Tehsils of major summer growing pockets of Gujarat. Total 152 fields were observed during the survey.

- a. **Shoot fly:** The shoot fly per cent incidence ranged from 0.0 to 20.00% with an average of 3.86% in surveyed fields. The highest incidence was recorded at Dalapura (Tehsil- Anand, District- Anand) in Desi variety at vegetative stage in surveyed fields. Whereas, at ear head stage it was highest (15.00%) at Morad, Ratanpura, Navapura, Ode, Ambav, Dedarda and Napa of Anand District in different varieties in surveyed fields.
- b. **Stem borer:** The stem borer per cent incidence ranged from 0.0 to 20.00% with an average of 4.08% in surveyed fields. The highest incidence was recorded at Napad, Ambav and Napa (District Anand) in Desi variety at ear head stage in surveyed fields.
- c. ***Helicoverpa armigera*:** The larval population ranged from 0.0-4.0 larvae/ 5 ear heads with an average of 0.82 larvae/ 5 ear heads at ear head stage in surveyed fields. The highest larval population (4.0 larvae/5 ear heads) was recorded at Ratanpura (Tehsil- Umreth & District Anand) in Desi pearl millet variety at ear head stage in surveyed fields.
- d. **Fall Army Worm (FAW):** The FAW damage incidence ranged from 0.0 to 15.00% with an average of 1.15% in surveyed fields. The highest incidence (15.00%) was observed at Morad (Tehsil-Petlad, District-Anand) in variety Dhanya in surveyed fields.
- e. **Grey weevil:** The grey weevil damage score ranged from 0.0 to 5.0 with an average of 1.13 in surveyed fields. The highest damage (5.0 Damage score) was observed at Palasva (Tehsil- Rapar , District- Kutch) in variety 86M11 in surveyed fields.

District wise pest situation: The overall incidence of various insect-pests was low to moderate. Shoot fly incidence was observed in all the Districts and it was highest in Jamnagar District (5.15%) in surveyed fields. Stem borer incidence was also observed in all the Districts and it was highest in Morbi District (6.43%) in surveyed fields. The number of *Helicoverpa armigera*

larvae per 5 ear heads was higher in Banaskantha (1.11 larvae/5 ear heads) and Anand (0.82 larvae/5 ear heads) Districts in surveyed fields. During summer 2022, Fall Army Worm was observed at farmer's fields in Kheda (4.17%) and Anand (1.15%) districts in surveyed fields. Grey weevil damage was observed high in Surendranagar District (2.78 Damage score) in surveyed fields, table -V.7b.

- 8. PMET-8: Relative susceptibility of pearl millet advanced entries to storage insect pests.** This is laboratory trial and it was conducted at 3 locations (Jamnagar, Anand and Jaipur). Since the installation of storage trial was done after the harvest of PMET-1B trial of *Kharif season* of 2021 and the observations were recorded at 3 & 6 months of period (2021-22). So, the final results have been presented in this year's report.

Centre: Jamnagar

Forty two advance lines were screened in laboratory at Jamnagar against red rust flour beetle, *Tribolium castaneum*.

Grain damage: At 3 months storage period (Table-V.8a), least per cent grain damage (0.25%) was recorded in MH 2564, MH 2574, MH 2575, GHB 905 & Kaveri Super Boss. The highest damage was recorded in ICMV 155 (1.75%). At 6 months storage period (Table-V.8a), least per cent grain damage (0.75%) was recorded in MH 2555, MH 2574 & GHB 905. However, it was at par with MH 2564, MH 2575, 86M01, Pratap, MH 2580, RHB 177, HHB 67 Imp., PB 1705, MH 2559 & MP 609. The highest damage was recorded in ICMV 155 (12.00%).

Adult population (*Tribolium* sp): At 3 months storage period (Table-V.8a), least adult population (6.00 adults/100g seeds) was recorded in MH 2564. However, it was at par with MH 2574, 86M01, MH 2575, HHB 67 Imp. , MH 2573, MH 2580, MH 2658, GHB 905 , MPMH 21 , MH 2582, MH 2559, MH 2581 & NBH 4903 .The highest adult population (66.50 adults/100g seeds) was observed in ICMV 155. At 6 months storage period (Table-V.8a), the least adult population was recorded in GHB 905 (24.00 adults/100g seeds). However, it was at par with MH 2574, MH 2555, MH 2575, Pratap, MH 2580, MH 2564, HHB 67 Imp. , 86M01 , RHB 177 , MH 2559, Raj 171 , MH 2661, MP 609, PB 1705 , MH 2581, HHB 272 , MH 2480 & MPMH 21. The highest number of adults was recorded in ICMV 155 (375.00 adults/100g seeds).

Weight loss: At 3 months storage period (Table-V.8a), least per cent weight loss *i.e.* 1.00% was recorded in MH 2575 & 86M01. However, it was at par with MH 2573, MH 2574, MP 609, HHB 67 Imp. , MH 2480, MH 2580, Kaveri Super Boss, MH 2559, MH 2562, MH 2564, MH 2581, NBH 4903 , PB 1705 , MH 2577, MH 2582, MH 2658, MH 2661, RHB 177 , HHB 272 , GHB 538 & Raj 171. The highest per cent weight loss was observed in ICMV 155 (6.00%). At 6 months storage period (Table-V.8a), least per cent weight loss (2.50%) was recorded in MH 2575 & HHB 67 Improved. However, it was at par with MH 2564, MH 2573, GHB 905, 86M01, MH 2574, MH 2559, MH 2580, MH 2555, MH 2661, PB 1705, Pratap, MP 609, RHB 177 & NBH 4903. The highest per cent weight loss was recorded in Pusa Comp. 612 (27.00%).

Germination: At 6 months storage period (Table-V.8a), the highest germination *i.e.* 94.25% was recorded in MH 2555, MH 2574 & GHB 905. However, it was at par with MH 2564, MH 2575, 86M01, Pratap, MH 2580, RHB 177, HHB 67 Imp., PB 1705, MH 2559, MH

2573, MH 2581, MH 2661, MP 609, Raj 171, MH 2562, MH 2660 & MPMH 21. The least germination was recorded in ICMV 155 (83.00%).

Conclusion: On the basis of per cent grain damage (up to 1.0%), adult emergence (up to 50 adults/100g seeds), per cent weight loss (up to 5.0%) and germination percentage (above 90.00%) at 6 months storage period the entries viz., MH 2574, GHB 905, MH 2564, MH 2575, MH 2555 and 86M01 were found to be promising against *Tribolium sp* at Jamnagar.

Centre: Anand

Grain damage: At 3 months storage period (Table-V.8b), least per cent grain damage (2 %) was recorded in MH 2559, MH 2564, MH 2574, MH 2575, MH 2577, MP 609 & RHB 177. However, these entries were at par with MH 2480, MH 2555, MH 2573, MH 2580, MH 2581, MH 2661, HHB 67 Imp. , AHB 1269 , GHB 538 , Raj 171 , MH 2562, MH 2582, MH 2658, HHB 272 , GHB 905 and ABV 04. The highest damage was recorded in NBH 5767 (1.75%). At 6 months storage period (Table-V.8b), least per cent grain damage (2 %) was recorded in MH 2564, MH 2575, MH 2580, HHB 67 Imp. and RHB 177. However, these entries were at par with MH 2559, MH 2581, MH 2480, MH 2573, MH 2574, MH 2577, MH 2582, MH 2658, MH 2661, MP 609, HHB 272 , Pratap and Raj 171. The highest damage was recorded in NBH 5767 (13.00%).

Adult population (*Rhyzopertha dominica*): At 3 months storage period (Table-V.8b) the least, adult population was recorded in MH 2575 (1.00 adults/100g seeds). However, it was at par with MH 2580, MH 2582, RHB 177 , HHB 67 Imp. , MH 2480, MH 2581, MH 2573, MH 2574, HHB 272 , MH 2559, MP 609, MH 2577, MH 2658, Pratap and Raj 171. The highest adult population (19.50 adults/100g seeds) was observed in NBH 5767. At 6 months storage period (Table-V.8b) the least adult population was recorded in MH 2564 (2.00 adults/100g seeds). However, it was at par with MH 2562, MH 2575, MH 2580, HHB 67 Imp., MH 2559, RHB 177, MH 2581, HHB 272, MH 2480, MP 609, Raj 171, MH 2574, MH 2577, MH 2658, MH 2661, Pratap and MH 2573. The highest number of adults was recorded in NBH 5767 (22.00 adults/100g seeds).

Weight loss: At 3 months storage period (Table-V.8b), least per cent weight loss i.e. 1.00% was recorded in MH 2575, MH 2580, MH 2581, MH 2582, RHB 177 and HHB 67 Imp. However, it was at par with MH 2480, MH 2564, MH 2573, MH 2574, MP 609 and HHB 272. The highest per cent weight loss was observed in NBH 5767 (7.00%). At 6 months storage period (Table-V.8b) least per cent weight loss (1.50%) was recorded in MH 2564, MH 2580, RHB 177 and HHB 67 Imp. However, it was at par with MH 2559, MH 2574, MH 2581, MP 609, HHB 272 , Raj 171 , MH 2577, MH 2661, AHB 1269 GHB 538 , MH 2555, MH 2658, GHB 905 , 86M01 , Pratap ABV 04 , MH 2562, MH 2573, MH 2575, MH 2582, MPMH 21 NBH 4903 and MH 2659. The highest per cent weight loss was recorded in NBH 5767 (10.00%).

Germination: At 6 months storage period (Table-V.8b), the highest germination i.e. 95 % was recorded in MH 2480 and MH 2661. The least germination was recorded in MH 2555 (83.00%).

Conclusion: On the basis of per cent grain damage , adult emergence and per cent weight loss at 6 months storage period the entries viz., MH 2564, MH 2575, MH 2580,

RHB 177, HHB 67 IMP., MH 2581, MH 2573, MH 2574, MH 2577, MH 2582, MH 2658, MH 2661, MP 609, HHB 272, Pratap and RAJ 171 were found to be promising against *Rhyzopertha dominica* at Anand.

Centre: Jaipur: The data of this trial has not received.

9. **PMET-9: Monitoring of Fall Army worm (*Spodoptera frugiperda*) in Kharif pearl millet.**
Centres: Jamnagar, Anand, Mandor-Jodhpur, Fatehpur-Shekhawati, Jaipur, & Aurangabad.

The study on monitoring of FAW through pheromone traps revealed that there were no catches of male moths of FAW at Anand, Mandor-Jodhpur, Fatehpur-Shekhawati and Jaipur. Whereas, very few catches were recorded at Jamnagar and Aurangabad.

Centre: Jamnagar: The data presented in table- V.9a indicates that, observations of FAW moth catches were observed from 31st SMW to 36th SMW. The number of catches was very low during the crop period and its range was 0-0.4 adults/ pheromone trap. Simultaneously, damage was also recorded in pearl millet and it was found that it was observed during 32nd to 37th SMW. The range was 0.0-5.0%. There was non significant correlation of moth catches and damage with different weather parameters.

Centre: Aurangabad: The data presented in table- V.9b indicates that, observations of FAW moth catches were observed from 34th MSW to 36th MSW. The number of catches was very low during the crop period and its range was 0-0.6 adults/ pheromone trap. Simultaneously, damage was also recorded in pearl millet and it was found that it was observed during 32nd to 37th MSW. The range was 0.0-15.0%. There was non significant correlation of moth catches and damage with different weather parameters.

CHAPTER V: ENTOMOLOGY

Table-V.1a: (PMET-1A) Screening of different pearl millet lines against major insect pests complex (Initial entries/populations), Centre: Jamnagar

S. No	Entry code	Entry name	% Shoot fly incidence		% Stem borer incidence		<i>Helicoverpa</i> larvae/ 5 ear heads
			28 DAG	Ear head stage	28 DAG	Ear head stage	
1	PIT 101	MH 2662	0.00	5.00	0.00	0.00	0.0
2	PIT 102	MH 2663	2.50	1.67	2.50	0.00	0.5
3	PIT 103	MH 2664	1.25	2.50	2.50	0.00	2.0
4	PIT 104	MH 2665	0.00	1.82	5.00	0.00	3.5
5	PIT 105	MH 2666	5.00	7.50	1.25	0.00	2.0
6	PIT 106	MH 2667	0.00	2.73	0.00	0.91	4.0
7	PIT 107	MH 2668	1.25	4.33	0.00	0.00	3.5
8	PIT 108	MH 2669	0.00	3.50	0.00	0.00	3.5
9	PIT 109	MH 2670	3.75	2.50	0.00	0.00	5.0
10	PIT 110	MH 2671	3.25	1.25	1.25	0.00	7.5
11	PIT 111	MH 2672	4.50	3.64	0.00	0.00	2.5
12	PIT 112	MH 2673	0.00	1.67	0.00	0.00	4.0
13	PIT 113	MH 2674	0.00	0.00	0.00	0.00	0.5
14	PIT 114	MH 2675	2.50	1.25	1.25	0.00	0.5
15	PIT 115	MH 2676	3.75	0.00	2.50	0.00	2.5
16	PIT 116	MH 2677	3.75	1.11	6.25	0.00	3.0
17	PIT 117	MH 2678	3.75	1.00	1.25	0.77	4.5
18	PIT 118	MH 2679	2.50	1.67	3.75	0.00	0.0
19	PIT 119	MH 2680	1.25	2.34	1.25	0.00	2.0
20	PIT 120	MH 2681	0.00	2.08	0.00	0.00	5.5
21	PIT 121	MH 2682	1.25	0.00	5.00	0.00	0.5
22	PIT 122	MH 2683	2.50	0.00	5.00	0.00	0.0
23	PIT 123	MH 2684	2.50	0.00	6.25	0.00	0.5
24	PIT 124	MH 2685	1.25	1.43	8.75	1.43	0.0
25	PIT 125	MH 2686	5.00	0.00	15.00	5.00	0.0
26	PIT 126	MH 2687	5.00	2.50	8.75	0.00	1.0
27	PIT 127	MH 2688	3.75	0.00	5.00	4.17	1.0
28	PIT 128	MH 2689	2.50	4.29	11.25	0.00	0.5
29	PIT 129	MH 2690	3.75	7.62	1.25	0.00	3.0
30	PIT 130	MH 2691	5.25	3.75	5.25	1.25	0.0
31	PIT 131	MH 2692	0.00	0.00	0.00	0.00	0.5
32	PIT 132	MH 2693	1.25	0.00	1.25	0.00	0.0
33	PIT 133	MH 2694	2.50	1.25	1.25	0.00	2.0
34	PIT 134	MH 2695	1.25	10.00	2.50	0.00	1.5
35	PIT 135	MH 2696	1.25	0.00	2.50	0.00	0.5
36	PIT 136	MH 2697	5.00	6.67	5.00	3.33	1.5
37	PIT 137	MH 2698	12.50	0.00	12.50	3.33	2.0
38	PIT 138	MH 2699	0.00	2.11	12.50	0.00	3.5
39	PIT 139	MH 2700	1.25	1.11	10.00	0.00	2.0
40	PIT 140	MH 2701	0.00	0.00	2.50	0.00	0.0
41	PIT 141	MH 2702	2.92	0.00	5.42	0.00	0.0
42	PIT 142	MH 2703	0.00	0.83	5.00	0.00	0.5
43	PIT 143	MH 2704	1.25	0.00	5.00	0.00	0.0
44	PIT 144	MH 2705	2.50	0.00	6.25	0.00	0.0
45	PIT 145	MH 2706	2.50	2.22	2.50	0.83	0.5
46	PIT 146	MH 2707	8.75	2.00	11.25	0.00	1.0
47	PIT 147	MH 2708	7.50	0.00	2.50	10.00	0.5
48	PIT 148	MH 2709	1.25	0.00	3.75	0.00	0.5
49	PIT 149	MH 2710	2.50	0.00	1.25	0.00	0.0
50	PIT 150	MH 2711	0.00	0.00	11.25	0.00	0.0

CHAPTER V: ENTOMOLOGY

S. No	Entry code	Entry name	% Shoot fly incidence		% Stem borer incidence		<i>Helicoverpa</i> larvae/ 5 ear heads
			28 DAG	Ear head stage	28 DAG	Ear head stage	
51	PIT 151	MH 2712	0.00	1.43	3.75	0.00	0.0
52	PIT 152	MH 2713	0.00	1.25	1.25	0.00	0.0
53	PIT 153	MH 2714	8.75	3.33	2.50	3.33	0.0
54	PIT 154	MH 2715	1.25	0.00	1.25	0.00	1.0
55	PIT 155	MH 2716	2.50	0.00	2.50	0.00	0.0
56	PIT 156	MH 2717	1.25	0.00	1.25	0.00	0.0
57	PIT 157	MH 2718	1.25	0.00	3.75	0.00	0.0
58	PIT 158	MH 2719	2.50	0.00	1.25	0.00	0.0
59	PIT 159	MH 2720	0.00	1.43	1.25	0.00	0.0
60	PIT 160	MH 2721	0.00	0.00	5.00	0.00	0.0
61	PIT 161	MH 2722	2.50	1.43	11.25	0.00	0.5
62	PIT 162	MH 2723	2.50	0.00	5.00	0.00	0.0
63	PIT 163	MH 2724	3.75	8.73	7.50	1.11	1.5
64	PIT 164	MH 2725	0.00	0.00	16.25	0.00	0.0
65	PIT 165	MH 2726	2.50	0.00	2.50	0.00	1.0
66	PIT 166	MH 2727	0.00	0.00	0.00	0.00	0.0
67	PIT 167	MH 2728	1.25	0.00	5.00	0.00	0.0
68	PIT 168	MH 2729	2.50	0.00	5.00	0.00	0.0
69	PIT 169	MH 2730	1.25	0.00	1.25	0.00	0.0
70	PIT 170	MH 2731	1.25	0.00	0.00	0.00	1.0
71	PIT 171	MH 2732	2.50	0.00	1.25	1.43	0.5
72	PIT 172	MH 2733	1.25	2.50	3.75	0.00	0.0
73	PIT 173	MH 2734	2.50	1.25	3.75	0.00	0.5
74	PIT 174	MH 2735	7.50	0.00	2.50	0.00	1.0
75	PIT 175	MH 2736	5.00	0.00	1.25	0.00	0.5
76	PIT 176	MH 2737	6.25	0.00	1.25	0.00	0.5
77	PIT 177	MH 2738	2.50	0.00	2.50	0.00	1.0
78	PIT 178	MH 2739	2.50	0.00	1.25	0.00	0.0
79	PIT 179	MH 2740	6.25	0.00	3.75	0.00	0.0
80	PIT 180	MP 618	8.33	0.00	3.33	0.00	0.0
81	PIT 181	MP 619	2.50	0.00	2.50	1.43	1.5
82	PIT 182	MP 620	5.00	0.00	2.50	0.00	2.0
83	PIT 183	MP 621	6.25	0.00	1.25	0.00	0.0
84	PIT 184	MP 622	0.00	0.00	5.00	0.00	1.0
85	PIT 185	MP 623	6.25	3.33	1.25	0.00	1.0
86	PIT 186	MP 624	3.75	1.25	1.25	1.25	1.0
87	PIT 187	MP 625	5.00	0.00	2.50	1.25	4.0
88	PIT 188	MP 626	1.25	4.17	0.00	0.00	0.5
89	PIT 189	MP 627	7.50	2.00	1.25	0.00	2.5
90	PIT 190	MP 628	1.25	3.25	1.25	0.00	0.0
91	PIT 191	MP 629	1.25	3.33	1.25	0.00	0.0
92	PIT 192	RHB 223	8.33	4.52	3.33	1.67	3.5
93	PIT 193	MPMH 21	12.50	1.00	3.75	0.00	3.5
94	PIT 194	HHB 67 Imp.	2.50	2.33	0.00	2.33	2.0
95	PIT 195	PB 1756	0.00	0.00	0.00	0.00	2.0
96	PIT 196	AHB 1200	7.50	0.00	3.75	0.00	1.0
97	PIT 197	MPMH 17	3.75	0.00	1.25	0.83	2.0
98	PIT 198	PB 1852	1.25	0.00	0.00	0.00	1.0
99	PIT 199	JKBH 1326	3.75	0.00	1.25	0.00	0.0
100	PIT 200	AHB 1269	0.00	1.25	3.75	1.25	3.0
101	PIT 201	86M01	2.50	2.00	1.25	0.00	1.0
102	PIT 202	Pratap	2.50	0.00	0.00	0.00	1.0

CHAPTER V: ENTOMOLOGY

S. No	Entry code	Entry name	% Shoot fly incidence		% Stem borer incidence		<i>Helicoverpa</i> larvae/ 5 ear heads
			28 DAG	Ear head stage	28 DAG	Ear head stage	
103	PIT 203	86M86	1.25	0.00	6.25	0.00	0.5
104	PIT 204	MP 7878	1.25	0.00	6.25	0.00	0.0
105	PIT 205	KBH 108	2.92	0.00	6.67	1.43	0.0
106	PIT 206	Kaveri S Boss	5.00	0.00	8.75	0.00	0.0
107	PIT 207	NBH 4903	0.00	1.67	5.00	0.00	0.0
108	PIT 208	ICMV 221	1.25	6.67	1.25	1.11	2.5
109	PIT 209	Pusa Comp. 701	8.75	1.43	3.75	0.00	1.5
110	PIT 210	Dhanshakti	5.00	1.67	0.00	1.67	3.0
111	PIT 211	Pusa Comp. 383	2.50	0.00	1.25	0.00	0.5
112	PIT 212	JBV 2	3.75	1.25	3.75	0.00	1.5
113	PIT 213	Raj 171	5.00	1.67	1.25	0.00	1.5
114	PIT 214	ABV 04	7.50	8.33	1.25	3.33	0.5
115	PIT 215	Pusa Comp. 612	5.00	0.00	1.25	0.00	3.0
Mean			2.95%	1.44%	3.40%	0.47%	1.19

N. B.: The data of Jaipur centre was not received hence, not included.

Table-V.1b: Summarized shoot fly & stem borer incidence in different initial pearl millet lines (PMET-1A)

S. No.	Range of percent infestation	Number of entries showing shoot fly incidence at		Number of entries showing stem borer incidence at	
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage
1	Free (0.0%)	22	58	18	91
2	0.1 to 5.0% (Moderate resistant)	76	50	76	23
3	5.1 to 10.00% (Tolerant)	15	7	13	1
4	10.1-20.00 (Susceptible)	02	0	08	0
5	Above 20.00% (Highly susceptible)	0	0	0	0
6	Range (Mini. to Maxi.)	0.0-12.50%	0.0-10.00%	0.0-16.25%	0.0-10.00%
7	Average	2.95%	1.44%	3.40%	0.47%
8	Number of entries tested	115			

Table-V.1c: Summarized *Helicoverpa* incidence in different Initial bajra lines (PMET-1A)

S. No.	Range of larval population/ 5 ear heads	Number of entries showing <i>Helicoverpa</i> incidence at ear head stage
1	Free (0.0)	40
2	0.1-2.0	53
3	2.1-5.0	20
4	Above 5.0	2
5	Range Minimum to maximum	0.0-7.5
6	Average larval population/ 5 ear heads	1.19
7	Entries screened	115

CHAPTER V: ENTOMOLOGY

Table-V.2a: (PMET-1B) Screening of different pearl millet lines against major insect pests complex (Advance line), centre: Jamnagar, Jaipur & Jodhpur.

S. No	Entry no.	Name	Shoot fly % Vegetative stage (28 DAG)			Shoot fly % Ear head stage			Stem borer %		<i>Helicoverpa</i> larval population / 5 ear heads		
									Vegetative stage (28 DAG)	Ear head stage			
			JMR	JOD	MEAN	JMR	JOD	MEAN	JMR	JMR	JMR	JOD	MEAN
1	PET 201	MH 2553	6.07	6.96	6.51	0.74	1.33	1.04	2.50	1.67	2.33	1.67	2.00
2	PET 202	MH 2555	3.89	5.34	4.62	0.00	0.00	0.00	2.78	0.00	1.33	2.00	1.67
3	PET 203	MH 2661	0.00	6.73	3.37	2.09	1.67	1.88	0.00	0.00	1.67	1.00	1.33
4	PET 204	MH 2619	0.83	5.96	3.40	0.00	0.00	0.00	2.50	0.74	0.00	1.00	0.50
5	PET 205	MH 2564 (R)	3.33	6.61	4.97	0.00	1.19	0.60	4.17	0.95	0.00	1.67	0.83
6	PET 206	MH 2606	2.86	11.34	7.10	4.19	6.67	5.43	5.24	1.90	0.33	1.67	1.00
7	PET 207	MH 2577	1.67	7.47	4.57	4.11	1.11	2.61	0.83	1.11	0.00	1.00	0.50
8	PET 208	MH 2580	3.33	9.25	6.29	0.00	2.22	1.11	7.50	0.00	0.33	1.33	0.83
9	PET 209	MH 2626	6.67	13.20	9.93	0.00	4.29	2.14	1.67	0.00	0.00	0.67	0.33
10	PET 210	MH 2631	3.33	11.36	7.35	1.33	5.95	3.64	9.17	1.33	0.00	1.00	0.50
11	PET 211	MP 610	0.83	5.81	3.32	0.00	1.11	0.56	5.83	0.00	0.00	1.00	0.50
12	PET 212	MP 612	3.33	10.71	7.02	1.11	6.35	3.73	3.33	0.00	0.33	1.00	0.67
13	PET 213	MP 613	0.83	13.06	6.94	0.00	4.17	2.08	3.28	0.00	0.33	1.33	0.83
14	PET 214	MPMH 21	4.54	7.01	5.78	3.89	0.95	2.42	2.17	0.74	2.33	2.33	2.33
15	PET 215	HHB 67 Imp.	2.62	8.95	5.78	3.25	2.78	3.01	0.95	1.35	1.00	1.00	1.00
16	PET 216	RHB 177	4.72	6.03	5.38	1.39	0.00	0.69	0.00	0.00	4.33	1.67	3.00
17	PET 217	GHB 538	4.17	8.23	6.20	1.40	4.44	2.92	0.83	0.51	3.67	2.33	3.00
18	PET 218	AHB 1200	3.33	7.92	5.63	4.76	2.78	3.77	1.67	0.95	1.67	1.33	1.50
19	PET 219	HHB 272	3.33	5.16	4.25	1.78	0.00	0.89	5.83	2.89	4.00	1.33	2.67
20	PET 220	MPMH 17	2.50	7.02	4.76	1.27	1.85	1.56	7.00	0.00	3.00	2.33	2.67
21	PET 221	PB 1705	1.67	9.55	5.61	0.00	7.37	3.68	6.67	0.00	0.33	1.00	0.67
22	PET 222	86M01	1.33	6.75	4.04	0.00	0.00	0.00	6.22	0.00	0.00	1.33	0.67
23	PET 223	Pratap	1.67	10.32	5.99	0.95	1.67	1.31	8.33	0.95	0.33	1.33	0.83
24	PET 224	AHB 1269	2.50	5.04	3.77	2.86	1.39	2.12	10.00	0.95	1.00	1.67	1.33
25	PET 225	NBH 5767	1.67	11.12	6.39	0.00	8.33	4.17	10.00	1.67	0.67	1.67	1.17
26	PET 226	KBH 108	5.50	5.00	5.25	3.89	1.39	2.64	5.50	0.00	0.00	0.67	0.33
27	PET 227	86M86	3.33	10.90	7.12	0.00	9.17	4.58	4.17	0.00	0.00	1.33	0.67
28	PET 228	MP-7792	5.83	5.64	5.74	1.33	7.62	4.48	5.83	0.00	0.00	1.33	0.67
29	PET 229	ICMV 221	4.17	4.86	4.51	7.83	0.00	3.92	1.67	3.00	2.00	1.67	1.83

CHAPTER V: ENTOMOLOGY

S. No	Entry no.	Name	Shoot fly % Vegetative stage (28 DAG)			Shoot fly % Ear head stage			Stem borer %		<i>Helicoverpa</i> larval population / 5 ear heads		
									Vegetative stage (28 DAG)	Ear head stage			
			JMR	JOD	MEAN	JMR	JOD	MEAN	JMR	JMR	JMR	JOD	MEAN
30	PET 230	Pusa Comp. 701	4.17	8.49	6.33	2.78	1.19	1.98	4.52	0.00	0.33	1.33	0.83
31	PET 231	Dhanshakti	1.67	7.79	4.73	2.95	4.29	3.62	2.50	0.67	0.67	1.33	1.00
32	PET 232	Pusa Comp. 383	2.50	15.13	8.81	1.11	5.00	3.06	8.33	0.00	0.67	1.00	0.83
33	PET 233	JBV 2	4.17	15.00	9.58	2.22	6.39	4.31	2.50	1.11	0.33	1.00	0.67
34	PET 234	Raj 171	2.50	12.47	7.49	1.90	7.78	4.84	6.67	0.95	1.33	1.33	1.33
		Mean	3.08	8.59	5.84	1.74	3.25	2.49	4.42	0.69	1.01	1.37	1.19

N.B.: JMR= Jamnagar, JOD= Jodhpur, The data of Jaipur centre was not received

Table-V.2b: Summarized shoot fly & stem borer incidence in different initial pearl millet lines (PMET-1B)

S. No.	Range of percent infestation	Number of entries showing shoot fly incidence at		Number of entries showing stem borer incidence at	
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage
1	Free (0.0%)	0	3	2	16
2	0.1 to 5.0% (Moderate resistant)	12	30	17	18
3	5.1 to 10.00% (Tolerant)	22	1	15	0
4	10.1-20.00 (Susceptible)	0	0	0	0
5	Above 20.00% (Highly susceptible)	0	0	0	0
6	Range (Mini. to Maxi.)	3.32-9.93%	0.0-5.43%	0.0-10.00%	0.0-3.00%
7	Average	5.84%	2.49%	4.42%	0.69%
8	Number of entries tested	34			

Table-V.2c : *Helicoverpa* incidence in different Initial bajra lines (PMET-1B)

S. No.	Range of larval population/ 5 ear heads	Number of entries showing <i>Helicoverpa</i> incidence at ear head stage
1	Free (0.0)	0
2	0.1-2.0	29
3	2.1-5.0	5
4	Above 5.0	0
5	Range Minimum to maximum	0.33-3.00 larvae/ 5 ear heads
6	Average larval population/ 5 ear heads	1.01
7	Entries screened	34

CHAPTER V: ENTOMOLOGY

Table-V.3a: (PMET-1C) Screening of different pearl millet lines against major insect pests complex (Germ plasm lines), centre: Jamnagar

S. No.	Accession number	Shoot fly % incidence at 28 DAG	Stem borer % incidence at 28 DAG	Shoot fly % incidence at ear head stage	Stem borer % incidence at ear head stage	<i>Helicoverpa</i> 5 ear heads
1	IP 196	2.50	2.50	0.00	0.00	1
2	IP 277	0.00	0.00	0.00	0.00	0
3	IP 446	14.29	0.00	5.00	0.00	0
4	IP 869	7.50	0.00	0.00	0.00	1
5	IP 952	10.00	0.00	4.00	0.00	0
6	IP 1060	2.63	0.00	5.00	0.00	1
7	IP 1098	2.50	0.00	5.56	0.00	1
8	IP 1405	5.00	0.00	15.00	0.00	1
9	IP 1536	5.13	0.00	12.00	0.00	0
10	IP 1566	10.00	0.00	4.00	4.00	2
11	IP 1625	2.50	0.00	6.67	3.33	2
12	IP 1834	7.50	0.00	0.00	0.00	0
13	IP 1917	5.00	2.50	0.00	0.00	1
14	IP 2083	2.50	0.00	0.00	0.00	1
15	IP 2167	0.00	2.50	20.00	5.00	1
16	IP 2246	0.00	2.50	0.00	0.00	0
17	IP 2322	5.00	2.50	5.00	0.00	2
18	IP 2704	2.50	2.50	0.00	0.00	0
19	IP 2761	2.50	0.00	0.00	0.00	0
20	IP 2789	0.00	0.00	33.33	0.00	3
21	IP 3110	2.50	2.50	5.00	0.00	1
22	IP 3329	2.50	0.00	0.00	0.00	0
23	IP 3432	7.50	2.50	0.00	0.00	0
24	IP 3489	2.50	0.00	5.00	0.00	1
25	IP 3525	2.50	0.00	0.00	0.00	0
26	IP 3626	16.00	0.00	0.00	0.00	0
27	IP 3642	10.00	0.00	0.00	0.00	1
28	IP 3646	6.67	6.67	10.00	0.00	1
29	IP 3706	12.50	2.50	0.00	0.00	1
30	IP 3852	10.00	0.00	5.00	0.00	1
31	IP 4177	7.50	0.00	18.18	0.00	1
32	IP 4291	5.71	0.00	23.33	0.00	1
33	IP 4363	0.00	0.00	18.18	0.00	0
34	IP 4488	10.00	0.00	5.00	0.00	1
35	IP 4747	7.50	2.50	15.00	0.00	1
36	IP 4903	0.00	5.00	0.00	0.00	1
37	IP 4979	0.00	0.00	0.00	0.00	0
38	IP 5085	0.00	0.00	5.56	0.00	1
39	IP 5153	6.67	0.00	0.00	6.67	1
40	IP 5185	5.00	0.00	0.00	0.00	0
41	IP 5261	0.00	0.00	0.00	0.00	0
42	IP 5389	0.00	0.00	0.00	0.00	0
43	IP 5407	0.00	0.00	0.00	0.00	1
44	IP 5438	0.00	0.00	0.00	0.00	0
45	IP 5455	2.50	0.00	0.00	0.00	1
46	IP 5581	5.00	0.00	0.00	0.00	1
47	IP 5711	2.50	0.00	5.56	0.00	1
48	IP 5719	0.00	2.50	0.00	0.00	0
49	IP 5793	0.00	0.00	10.00	5.00	0

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence at 28 DAG	Stem borer % incidence at 28 DAG	Shoot fly % incidence at ear head stage	Stem borer % incidence at ear head stage	<i>Helicoverpa</i> 5 ear heads
50	IP 5869	0.00	2.50	0.00	0.00	0
51	IP 5957	0.00	0.00	0.00	0.00	0
52	IP 5964	5.00	2.50	0.00	0.00	0
53	IP 6057	5.00	5.00	0.00	0.00	0
54	IP 6113	2.50	2.50	0.00	0.00	0
55	IP 6193	0.00	0.00	0.00	0.00	0
56	IP 6275	2.50	2.50	0.00	0.00	0
57	IP 6278	2.86	2.86	0.00	0.00	0
58	IP 6324	0.00	0.00	0.00	0.00	0
59	IP 6340	2.50	2.50	0.00	0.00	0
60	IP 6517	5.00	0.00	6.67	0.00	1
61	IP 6769	8.57	2.86	4.55	0.00	2
62	IP 6798	10.00	2.50	12.00	0.00	1
63	IP 6805	5.00	0.00	0.00	0.00	1
64	IP 7118	12.50	2.50	10.00	0.00	1
65	IP 7259	7.50	0.00	8.00	0.00	1
66	IP 7358	10.00	0.00	15.00	0.00	1
67	IP 7422	2.50	0.00	0.00	0.00	0
68	IP 7497	2.50	0.00	0.00	0.00	0
69	IP 7537	7.50	0.00	2.86	0.00	1
70	IP 7675	5.71	2.86	4.00	0.00	3
71	IP 7829	5.71	0.00	18.18	0.00	2
72	IP 7846	10.00	0.00	0.00	0.00	1
73	IP 7860	7.50	5.00	13.33	0.00	1
74	IP 7886	33.33	20.00	5.00	0.00	2
75	IP 7915	0.00	2.50	0.00	0.00	0
76	IP 7978	2.50	0.00	17.50	0.00	3
77	IP 8022	0.00	2.50	3.33	0.00	1
78	IP 8051	2.50	0.00	0.00	0.00	1
79	IP 8074	25.00	15.00	8.00	0.00	1
80	IP 8155	4.00	4.00	0.00	0.00	0
81	IP 8205	2.50	0.00	6.67	0.00	3
82	IP 8220	15.00	2.50	15.00	0.00	1
83	IP 8245	0.00	0.00	0.00	0.00	1
84	IP 8276	0.00	2.50	5.00	0.00	1
85	IP 8288	5.00	2.50	5.00	0.00	1
86	IP 8350	0.00	2.50	0.00	0.00	2
87	IP 8418	0.00	0.00	0.00	0.00	0
88	IP 8472	0.00	0.00	0.00	0.00	0
89	IP 8529	5.00	0.00	0.00	0.00	0
90	IP 8540	2.50	2.50	0.00	0.00	0
91	IP 8562	20.00	5.00	6.67	0.00	0
92	IP 8672	17.50	7.50	0.00	0.00	0
93	IP 8707	2.50	2.50	0.00	0.00	0
94	IP 8818	0.00	2.50	0.00	0.00	0
95	IP 8863	0.00	0.00	0.00	0.00	0
96	IP 8913	0.00	0.00	0.00	0.00	0
97	IP 9000	2.50	0.00	0.00	0.00	0
98	IP 9026	7.50	2.50	0.00	0.00	0
99	IP 9157	7.50	0.00	0.00	0.00	0
100	IP 9198	2.50	2.50	15.00	0.00	1

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence at 28 DAG	Stem borer % incidence at 28 DAG	Shoot fly % incidence at ear head stage	Stem borer % incidence at ear head stage	<i>Helicoverpa</i> 5 ear heads
101	IP 9449	10.00	0.00	0.00	0.00	0
102	IP 9464	5.00	0.00	2.86	5.71	1
103	IP 9492	5.00	0.00	2.50	0.00	1
104	IP 9527	2.50	10.00	10.00	0.00	1
105	IP 9596	0.00	7.50	4.00	0.00	0
106	IP 9617	7.50	7.50	0.00	0.00	0
107	IP 9645	2.50	2.50	0.00	0.00	1
108	IP 9692	5.00	0.00	0.00	0.00	1
109	IP 9795	0.00	0.00	0.00	0.00	0
110	IP 9813	2.50	2.50	0.00	0.00	0
111	IP 9934	5.00	0.00	0.00	0.00	0
112	IP 10085	0.00	0.00	13.33	0.00	1
113	IP 10151	2.50	0.00	0.00	0.00	0
114	IP 10263	0.00	0.00	0.00	0.00	0
115	IP 10371	2.50	0.00	6.67	0.00	0
116	IP 10399	0.00	0.00	2.86	0.00	1
117	IP 10467	7.50	5.00	10.00	0.00	1
118	IP 10601	5.00	7.50	0.00	0.00	0
119	IP 10632	7.50	0.00	0.00	0.00	0
120	IP 10665	10.00	0.00	0.00	0.00	0
121	IP 10713	6.67	6.67	0.00	0.00	0
122	IP 10729	12.50	7.50	6.67	0.00	0
123	IP 10761	2.50	7.50	0.00	0.00	0
124	IP 10925	10.00	0.00	6.67	0.00	0
125	IP 10953	2.50	7.50	0.00	0.00	1
126	IP 11010	2.50	2.50	0.00	0.00	0
127	IP 11036	7.50	2.50	5.00	0.00	1
128	IP 11044	12.50	0.00	7.50	0.00	2
129	IP 11113	5.71	0.00	12.50	0.00	1
130	IP 11247	5.00	0.00	0.00	0.00	1
131	IP 11268	0.00	0.00	0.00	0.00	0
132	IP 11405	7.50	2.50	0.00	0.00	0
133	IP 11428	2.50	0.00	0.00	0.00	0
134	IP 11546	2.50	0.00	0.00	0.00	0
135	IP 11666	5.00	0.00	0.00	0.00	1
136	IP 11799	7.50	0.00	4.00	0.00	1
137	IP 11811	0.00	0.00	6.67	0.00	1
138	IP 11930	10.00	0.00	0.00	0.00	1
139	IP 11943	2.50	0.00	0.00	0.00	0
140	IP 12221	0.00	2.50	0.00	0.00	0
141	IP 12364	0.00	0.00	0.00	0.00	1
142	IP 12374	0.00	2.50	0.00	0.00	0
143	IP 12418	2.50	2.50	16.67	0.00	2
144	IP 12431	5.00	0.00	5.00	0.00	1
145	IP 12498	12.50	0.00	5.00	0.00	1
146	IP 12533	5.00	0.00	10.00	0.00	1
147	IP 12546	2.50	5.00	5.00	0.00	0
148	IP 12644	5.00	2.50	0.00	0.00	0
149	IP 12650	0.00	0.00	0.00	0.00	0
150	IP 12669	2.50	2.50	3.33	0.00	2
151	IP 12731	5.00	5.00	8.57	0.00	1

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence at 28 DAG	Stem borer % incidence at 28 DAG	Shoot fly % incidence at ear head stage	Stem borer % incidence at ear head stage	<i>Helicoverpa</i> 5 ear heads
152	IP 12805	2.50	0.00	0.00	0.00	1
153	IP 12839	5.00	0.00	0.00	0.00	0
154	IP 12993	2.50	0.00	0.00	0.00	0
155	IP 13261	2.50	2.50	0.00	0.00	0
156	IP 13345	2.50	2.50	0.00	0.00	0
157	IP 13387	0.00	0.00	0.00	0.00	0
158	IP 13523	15.00	0.00	0.00	0.00	0
159	IP 13623	0.00	0.00	0.00	0.00	1
160	IP 13624	10.00	5.00	5.00	0.00	0
161	IP 13760	10.00	0.00	3.33	0.00	1
162	IP 13875	7.50	0.00	0.00	0.00	0
163	IP 13991	2.50	2.50	0.00	0.00	0
164	IP 14294	2.50	0.00	0.00	0.00	0
165	IP 14428	2.50	0.00	0.00	0.00	1
166	IP 14522	3.33	0.00	0.00	0.00	0
167	IP 14537	5.00	2.50	0.00	0.00	0
168	IP 14542	2.50	0.00	0.00	0.00	0
169	IP 14599	0.00	0.00	0.00	0.00	0
170	IP 14753	10.00	0.00	0.00	0.00	0
171	IP 14776	5.00	5.00	0.00	0.00	0
172	IP 14787	5.71	0.00	15.00	0.00	0
173	IP 15095	10.00	2.50	0.00	0.00	0
174	IP 15119	7.50	0.00	0.00	0.00	0
175	IP 15256	0.00	2.50	0.00	0.00	0
176	IP 15273	20.00	0.00	0.00	0.00	1
177	IP 15372	7.50	0.00	0.00	0.00	1
178	IP 15448	0.00	0.00	10.00	0.00	2
179	IP 15556	10.00	0.00	0.00	0.00	0
180	IP 15829	5.00	2.50	0.00	0.00	0
181	IP 15836	5.00	0.00	0.00	0.00	0
182	IP 15953	5.00	2.50	5.00	0.00	2
183	IP 16402	7.50	5.00	6.67	0.00	0
184	IP 16489	7.50	5.00	16.00	0.00	1
185	IP 16540	25.00	12.50	20.00	0.00	0
186	IP 16754	2.50	0.00	0.00	0.00	1
187	IP 16863	2.50	0.00	0.00	0.00	0
188	IP 17396	5.00	0.00	0.00	0.00	0
189	IP 17465	2.50	0.00	0.00	0.00	1
190	IP 17490	5.00	0.00	8.00	0.00	1
191	IP 17532	0.00	0.00	0.00	0.00	0
192	IP 17775	12.50	2.50	0.00	0.00	1
193	IP 18040	25.00	12.50	0.00	0.00	1
194	IP 18353	5.00	10.00	0.00	0.00	1
195	IP 18545	20.00	5.00	0.00	0.00	0
196	IP 18579	12.50	12.50	0.00	0.00	0
197	IP 18657	5.00	5.00	0.00	0.00	1
198	IP 18824	2.50	0.00	0.00	0.00	0
199	IP 18854	10.00	0.00	0.00	0.00	0
200	IP 18900	10.00	0.00	0.00	0.00	0
201	IP 19072	7.50	0.00	0.00	0.00	0
202	IP 19141	17.50	0.00	0.00	0.00	0

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence at 28 DAG	Stem borer % incidence at 28 DAG	Shoot fly % incidence at ear head stage	Stem borer % incidence at ear head stage	<i>Helicoverpa</i> 5 ear heads
203	IP 19305	7.50	0.00	6.67	0.00	0
204	IP 19415	2.50	0.00	0.00	0.00	0
205	IP 19425	12.50	0.00	0.00	0.00	0
206	IP 19448	5.00	0.00	0.00	0.00	0
207	IP 19629	15.00	0.00	20.00	0.00	1
208	IP 19722	0.00	0.00	10.00	0.00	1
209	IP 19816	7.50	0.00	0.00	0.00	0
210	IP 19851	6.67	6.67	0.00	0.00	1
211	IP 19913	2.50	2.50	5.00	0.00	1
212	IP 19964	0.00	0.00	5.00	0.00	0
213	IP 20249	7.50	0.00	0.00	0.00	0
214	IP 20274	5.00	0.00	0.00	0.00	1
215	IP 20409	2.50	0.00	0.00	0.00	0
216	IP 20576	0.00	0.00	0.00	0.00	0
217	IP 20577	46.67	0.00	0.00	0.00	0
218	IP 20611	0.00	0.00	0.00	0.00	0
219	IP 20715	7.50	0.00	0.00	0.00	0
220	IP 20768	2.50	2.50	0.00	0.00	0
221	IP 20929	17.50	0.00	0.00	0.00	0
222	IP 20955	2.50	2.50	0.00	0.00	0
223	IP 21066	2.50	0.00	5.71	0.00	0
224	IP 21093	5.00	0.00	0.00	0.00	1
225	IP 21127	2.50	0.00	5.00	0.00	0
226	IP 21187	10.00	0.00	0.00	0.00	0
227	IP 21201	5.00	0.00	13.33	0.00	0
228	IP 21244	13.33	0.00	0.00	0.00	1
229	IP 21283	0.00	0.00	0.00	0.00	0
230	IP 21312	0.00	0.00	0.00	0.00	0
231	IP 21438	12.50	0.00	0.00	0.00	0
232	IP 21503	12.50	0.00	8.57	0.00	1
233	IP 22269	7.50	0.00	0.00	0.00	1
234	IP 22449	0.00	0.00	20.00	0.00	1
235	IP 22489	2.50	0.00	15.56	0.00	1
	Mean	5.49	1.57	3.33	0.13	0.53

Table-V.3b: Summarized shoot fly & stem borer incidence in different initial pearl millet lines (PMET-1C)

S No.	Range of percent infestation	Number of entries showing shoot fly incidence at		Number of entries showing stem borer incidence at	
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage
1	Free (0.0%)	52	150	150	229
2	0.1 to 5.0% (Moderate resistant)	98	32	68	4
3	5.1 to 10.00% (Tolerant)	58	28	12	2
4	10.1-20.00 (Susceptible)	22	23	5	0
5	Above 20.00% (Highly susceptible)	5	2	0	0
6	Range (Mini. to Maxi.)	0.0-46.67%	0.0-33.33%	0.0-20.00%	0.0-6.67%
7	Average	5.49%	3.33%	1.57%	0.13%
8	Number of entries tested	235			

CHAPTER V: ENTOMOLOGY

Table-V.3c : *Helicoverpa* incidence in different Initial bajra lines (PMET-1C)

Sr. No.	Range of larval population/ 5 ear heads	Number of entries showing <i>Helicoverpa</i> incidence at ear head stage
1	Free (0.0)	131
2	0.1-2.0	100
3	2.1-5.0	4
4	Above 5.0	0
5	Range Minimum to maximum	0.0-3.00 larvae/ 5 ear heads
6	Average larval population/ 5 ear heads	0.53
7	Entries screened	235

Table-V.3d: (PMET-1C) Screening of different pearl millet lines against major insect pests complex (Germplasm lines), Mean of 2 years 2021 and 2022, centre: Jamnagar.

S. No.	Accession number	Shoot fly % incidence		Stem borer % incidence		<i>Helicoverpa</i> larvae/5 ear heads
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage	
1	IP 196	8.75	3.00	2.50	0.00	0.50
2	IP 277	16.67	3.33	0.00	0.00	0.50
3	IP 446	20.56	4.50	0.00	0.00	0.00
4	IP 869	13.75	5.00	1.43	0.00	0.50
5	IP 952	12.58	17.00	3.03	0.00	0.50
6	IP 1060	16.32	12.50	3.33	1.67	1.00
7	IP 1098	8.19	12.78	0.00	0.00	1.00
8	IP 1405	9.64	12.50	0.00	0.00	1.00
9	IP 1536	19.23	12.25	0.00	0.00	0.50
10	IP 1566	16.25	6.29	0.00	3.43	1.50
11	IP 1625	13.09	6.67	1.32	1.67	1.50
12	IP 1834	15.87	12.50	0.00	0.00	0.00
13	IP 1917	13.93	5.00	2.68	0.00	0.50
14	IP 2083	15.54	2.00	1.43	0.00	1.00
15	IP 2167	10.00	10.00	1.25	2.50	1.50
16	IP 2246	12.50	1.67	1.25	1.67	0.00
17	IP 2322	8.50	2.50	1.25	0.00	1.50
18	IP 2704	1.25	0.00	1.25	0.00	0.00
19	IP 2761	5.00	2.50	1.25	0.00	0.50
20	IP 2789	12.86	44.17	0.00	0.00	1.50
21	IP 3110	12.19	2.50	1.25	0.00	0.50
22	IP 3329	27.92	10.00	6.67	2.00	0.00
23	IP 3432	3.75	6.67	1.25	0.00	0.50
24	IP 3489	14.58	5.00	0.00	0.00	1.00
25	IP 3525	11.25	6.00	0.00	0.00	1.50
26	IP 3626	17.52	10.00	3.57	1.00	0.00
27	IP 3642	16.25	0.00	0.00	1.25	1.00
28	IP 3646	13.33	8.33	3.33	0.00	1.50
29	IP 3706	26.25	10.00	1.25	0.00	0.50
30	IP 3852	12.50	14.50	0.00	0.00	1.50
31	IP 4177	19.75	14.09	0.00	0.00	1.00
32	IP 4291	14.11	26.67	0.00	2.50	0.50
33	IP 4363	11.25	21.59	0.00	0.00	0.50
34	IP 4488	21.67	7.50	0.00	0.00	1.00
35	IP 4747	13.75	11.50	1.25	2.00	0.50
36	IP 4903	4.76	2.50	2.50	0.00	1.00
37	IP 4979	6.25	2.50	0.00	0.00	0.50
38	IP 5085	7.50	12.78	0.00	0.00	1.00

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence		Stem borer % incidence		<i>Helicoverpa</i> larvae/5 ear heads
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage	
39	IP 5153	8.33	0.00	0.00	3.33	0.50
40	IP 5185	15.00	0.00	0.00	0.00	1.00
41	IP 5261	4.29	0.00	0.00	0.00	0.50
42	IP 5389	7.50	0.00	0.00	0.00	0.50
43	IP 5407	5.71	0.00	4.29	0.00	1.00
44	IP 5438	7.14	2.78	0.00	0.00	1.00
45	IP 5455	8.75	3.33	0.00	0.00	1.00
46	IP 5581	10.00	0.00	0.00	0.00	0.50
47	IP 5711	10.71	6.11	0.00	0.00	1.00
48	IP 5719	10.53	0.00	1.25	0.00	0.00
49	IP 5793	7.50	12.89	0.00	2.50	0.50
50	IP 5869	3.75	0.00	2.50	0.00	0.00
51	IP 5957	7.89	0.00	2.63	0.00	0.00
52	IP 5964	10.39	0.00	1.25	0.00	0.50
53	IP 6057	11.96	0.00	2.50	0.00	0.00
54	IP 6113	8.39	0.00	1.25	0.00	0.00
55	IP 6193	7.89	0.00	0.00	3.33	1.00
56	IP 6275	6.51	0.00	1.25	0.00	0.50
57	IP 6278	1.43	3.33	1.43	0.00	0.50
58	IP 6324	3.75	0.00	0.00	0.00	0.00
59	IP 6340	5.00	0.00	1.25	0.00	0.50
60	IP 6517	7.50	3.33	0.00	3.33	1.00
61	IP 6769	13.04	14.77	1.43	0.00	1.50
62	IP 6798	12.50	16.00	1.25	2.50	1.50
63	IP 6805	11.25	3.33	0.00	0.00	1.00
64	IP 7118	12.50	10.56	1.25	0.00	1.00
65	IP 7259	10.00	14.00	0.00	0.00	1.00
66	IP 7358	11.25	14.77	0.00	0.00	1.00
67	IP 7422	1.25	0.00	0.00	0.00	0.50
68	IP 7497	6.25	2.50	0.00	0.00	0.50
69	IP 7537	3.75	9.12	0.00	0.00	1.00
70	IP 7675	20.36	11.38	1.43	0.00	2.00
71	IP 7829	2.86	14.65	1.32	3.33	1.50
72	IP 7846	10.00	5.00	0.00	0.00	1.00
73	IP 7860	10.00	10.00	5.00	1.67	1.00
74	IP 7886	27.92	7.50	10.00	0.00	2.00
75	IP 7915	0.00	1.67	1.25	0.00	0.50
76	IP 7978	1.25	11.25	0.00	0.00	2.00
77	IP 8022	5.71	4.17	1.25	0.00	1.50
78	IP 8051	9.82	7.14	0.00	0.00	1.00
79	IP 8074	19.64	5.67	7.50	1.67	1.00
80	IP 8155	16.29	3.33	2.00	3.33	1.00
81	IP 8205	10.46	7.33	0.00	0.00	1.50
82	IP 8220	15.00	11.79	2.50	0.00	0.50
83	IP 8245	7.50	2.50	0.00	2.50	1.00
84	IP 8276	11.67	12.50	1.25	0.00	0.50
85	IP 8288	16.79	2.50	1.25	0.00	1.00
86	IP 8350	8.75	3.75	1.25	0.00	1.50
87	IP 8418	3.75	0.83	1.25	0.00	0.00
88	IP 8472	8.75	0.00	2.50	0.00	0.50
89	IP 8529	18.29	0.00	0.00	0.00	0.00
90	IP 8540	21.25	0.00	1.25	2.00	0.50

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence		Stem borer % incidence		<i>Helicoverpa</i> larvae/5 ear heads
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage	
91	IP 8562	30.00	7.08	2.50	0.00	0.50
92	IP 8672	23.04	0.00	6.61	0.00	1.50
93	IP 8707	10.00	0.00	1.25	0.00	0.00
94	IP 8818	13.16	0.00	1.25	0.00	0.00
95	IP 8863	22.50	5.00	0.00	0.00	0.50
96	IP 8913	3.75	3.33	1.25	0.00	0.50
97	IP 9000	5.54	0.00	0.00	0.00	0.50
98	IP 9026	11.25	1.67	2.50	0.00	0.50
99	IP 9157	18.75	1.67	0.00	1.67	0.50
100	IP 9198	7.50	10.00	1.25	0.00	1.00
101	IP 9449	12.50	4.17	0.00	0.00	0.00
102	IP 9464	10.00	7.43	1.25	2.86	0.50
103	IP 9492	11.25	7.25	0.00	2.00	1.00
104	IP 9527	10.00	13.33	6.25	0.00	1.00
105	IP 9596	12.50	8.00	3.75	0.00	0.50
106	IP 9617	15.59	3.75	5.07	1.25	1.00
107	IP 9645	9.82	2.50	1.25	0.00	0.50
108	IP 9692	11.07	0.00	0.00	0.00	0.50
109	IP 9795	8.75	0.00	0.00	0.00	1.00
110	IP 9813	21.25	0.00	1.25	0.00	0.00
111	IP 9934	16.25	0.00	0.00	0.00	0.50
112	IP 10085	10.00	6.67	0.00	3.33	1.50
113	IP 10151	7.92	0.00	0.00	0.00	0.00
114	IP 10263	15.00	1.67	0.00	1.67	0.50
115	IP 10371	15.00	5.33	0.00	4.00	0.50
116	IP 10399	3.95	16.43	2.63	1.25	1.50
117	IP 10467	23.75	6.67	2.50	1.67	1.00
118	IP 10601	17.50	2.50	5.00	0.00	0.50
119	IP 10632	10.00	0.00	0.00	0.00	1.00
120	IP 10665	23.57	1.67	0.00	0.00	0.50
121	IP 10713	23.33	0.00	4.58	0.00	0.00
122	IP 10729	23.75	3.33	3.75	0.00	1.00
123	IP 10761	19.58	6.67	3.75	0.00	0.50
124	IP 10925	26.05	5.33	0.00	2.00	0.50
125	IP 10953	19.82	0.00	3.75	0.00	0.50
126	IP 11010	34.11	2.50	1.25	0.00	0.50
127	IP 11036	20.00	10.00	2.50	0.00	1.00
128	IP 11044	17.68	5.42	0.00	1.67	1.50
129	IP 11113	24.52	10.00	1.67	0.00	0.50
130	IP 11247	26.79	0.00	2.86	1.67	1.00
131	IP 11268	17.11	1.67	0.00	0.00	0.50
132	IP 11405	13.75	1.25	1.25	0.00	1.00
133	IP 11428	11.25	0.00	0.00	0.00	0.00
134	IP 11546	5.00	6.25	0.00	0.00	0.50
135	IP 11666	10.39	0.00	0.00	0.00	2.00
136	IP 11799	27.08	8.00	0.00	0.00	1.00
137	IP 11811	18.57	6.67	0.00	0.00	0.50
138	IP 11930	45.00	5.00	0.00	0.00	1.00
139	IP 11943	51.25	0.00	0.00	0.00	0.00
140	IP 12221	14.29	3.33	1.25	3.33	0.50
141	IP 12364	23.75	0.00	0.00	0.00	1.50
142	IP 12374	13.33	0.00	1.25	0.00	0.50

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence		Stem borer % incidence		<i>Helicoverpa</i> larvae/5 ear heads
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage	
143	IP 12418	16.96	20.33	5.54	0.00	1.50
144	IP 12431	22.50	4.17	1.43	0.00	1.50
145	IP 12498	25.99	8.75	0.00	0.00	1.00
146	IP 12533	22.50	21.67	0.00	0.00	1.00
147	IP 12546	16.25	7.50	2.50	0.00	0.50
148	IP 12644	22.50	7.14	1.25	1.43	0.50
149	IP 12650	15.00	5.00	0.00	0.00	0.50
150	IP 12669	27.50	1.67	2.50	0.00	1.50
151	IP 12731	26.50	4.29	2.50	0.00	1.50
152	IP 12805	16.96	2.86	0.00	1.43	1.00
153	IP 12839	11.25	2.50	0.00	0.00	0.00
154	IP 12993	18.39	0.00	0.00	0.00	0.00
155	IP 13261	16.25	2.50	1.25	0.00	0.50
156	IP 13345	7.92	8.33	4.58	1.67	1.00
157	IP 13387	7.14	5.00	7.14	0.00	0.50
158	IP 13523	14.64	4.29	7.14	0.00	1.50
159	IP 13623	11.43	4.29	0.00	0.00	2.00
160	IP 13624	12.50	4.17	2.50	1.67	0.50
161	IP 13760	18.75	1.67	0.00	1.67	1.50
162	IP 13875	12.50	0.00	0.00	0.00	0.50
163	IP 13991	6.25	6.67	5.00	3.33	0.50
164	IP 14294	21.25	0.00	0.00	0.00	1.00
165	IP 14428	20.00	0.00	0.00	0.00	0.50
166	IP 14522	10.42	0.00	0.00	0.00	0.50
167	IP 14537	15.00	0.00	1.25	0.00	1.00
168	IP 14542	13.75	0.00	0.00	0.00	0.50
169	IP 14599	12.50	0.00	0.00	0.00	0.00
170	IP 14753	22.50	0.00	0.00	0.00	0.00
171	IP 14776	17.50	0.00	2.50	0.00	0.00
172	IP 14787	21.61	10.00	0.00	2.50	0.50
173	IP 15095	26.43	0.00	8.39	5.00	0.50
174	IP 15119	12.50	8.33	2.50	1.67	0.50
175	IP 15256	10.00	2.86	5.00	1.43	0.50
176	IP 15273	23.75	6.67	0.00	0.00	1.00
177	IP 15372	16.91	6.25	1.32	1.25	0.50
178	IP 15448	15.00	15.00	2.50	1.43	1.00
179	IP 15556	18.16	0.00	0.00	0.00	0.00
180	IP 15829	29.64	0.00	15.54	0.00	0.00
181	IP 15836	27.50	0.00	10.00	0.00	0.00
182	IP 15953	22.50	15.00	10.00	0.00	1.50
183	IP 16402	23.19	10.00	2.50	3.33	0.50
184	IP 16489	18.75	16.33	5.00	3.33	1.00
185	IP 16540	27.50	18.00	12.50	0.00	0.50
186	IP 16754	13.75	0.00	5.00	0.00	1.00
187	IP 16863	13.75	0.00	5.00	3.33	1.00
188	IP 17396	18.75	0.00	6.25	0.00	0.50
189	IP 17465	19.82	11.11	4.29	0.00	0.50
190	IP 17490	20.15	17.75	4.41	0.00	0.50
191	IP 17532	8.75	8.57	3.75	2.86	0.50
192	IP 17775	14.58	6.00	3.63	2.00	1.00
193	IP 18040	26.25	12.50	6.25	4.17	1.50
194	IP 18353	13.75	3.33	7.50	1.67	1.00

CHAPTER V: ENTOMOLOGY

S. No.	Accession number	Shoot fly % incidence		Stem borer % incidence		<i>Helicoverpa</i> larvae/5 ear heads
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage	
195	IP 18545	22.50	0.00	5.00	2.50	0.00
196	IP 18579	18.75	0.00	8.75	2.50	0.00
197	IP 18657	12.50	2.00	6.25	2.00	1.00
198	IP 18824	17.50	4.00	2.50	0.00	0.00
199	IP 18854	27.00	0.00	10.00	3.33	0.00
200	IP 18900	15.00	2.50	5.00	2.50	0.50
201	IP 19072	20.00	0.00	5.00	7.50	0.00
202	IP 19141	30.00	2.50	6.25	2.50	0.50
203	IP 19305	20.00	7.33	2.50	2.00	0.00
204	IP 19415	6.81	0.00	0.00	0.00	1.00
205	IP 19425	24.82	2.50	7.14	2.50	0.50
206	IP 19448	10.00	0.00	2.50	0.00	0.00
207	IP 19629	12.50	13.33	0.00	1.67	1.00
208	IP 19722	11.90	8.33	0.00	0.00	0.50
209	IP 19816	15.65	5.56	5.95	0.00	0.50
210	IP 19851	12.08	1.43	10.83	0.00	0.50
211	IP 19913	11.25	10.00	2.50	2.50	0.50
212	IP 19964	12.50	5.36	1.25	1.43	0.00
213	IP 20249	13.75	0.00	0.00	0.00	0.00
214	IP 20274	25.00	5.00	0.00	2.00	0.50
215	IP 20409	7.50	0.00	0.00	0.00	0.00
216	IP 20576	18.33	8.75	3.33	2.50	0.00
217	IP 20577	30.48	0.00	0.00	0.00	0.00
218	IP 20611	10.53	0.00	0.00	3.33	0.50
219	IP 20715	12.50	0.00	0.00	0.00	0.00
220	IP 20768	17.50	0.00	1.25	0.00	0.00
221	IP 20929	18.75	0.00	0.00	0.00	1.00
222	IP 20955	11.25	0.00	7.50	3.33	0.00
223	IP 21066	12.50	6.19	3.75	3.33	0.50
224	IP 21093	9.26	8.89	1.35	0.00	1.00
225	IP 21127	13.75	7.50	2.50	0.00	0.00
226	IP 21187	20.00	0.00	0.00	0.00	0.00
227	IP 21201	11.07	12.92	0.00	0.00	0.00
228	IP 21244	18.10	4.44	0.00	0.00	1.00
229	IP 21283	30.00	0.00	0.00	0.00	1.00
230	IP 21312	43.33	0.00	0.00	3.33	0.00
231	IP 21438	13.39	2.86	0.00	0.00	0.00
232	IP 21503	13.39	10.00	1.43	0.00	1.50
233	IP 22269	12.08	1.67	0.00	0.00	0.50
234	IP 22449	7.14	18.33	0.00	0.00	0.50
235	IP 22489	9.25	14.44	0.00	0.00	1.00
	Mean	14.92	5.26	1.92	0.74	0.68

CHAPTER V: ENTOMOLOGY

Table-V.3e: Summarized shoot fly & stem borer incidence in different initial pearl millet lines (PMET-1C)

S. No.	Range of percent infestation	Number of entries showing shoot fly incidence at		Number of entries showing stem borer incidence at	
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage
1	Free (0.0%)	1	74	104	164
2	0.1 to 5.0% (Moderate resistant)	17	67	106	70
3	5.1 to 10.00% (Tolerant)	49	55	22	1
4	10.1-20.00 (Susceptible)	119	34	3	0
5	Above 20.00% (Highly susceptible)	49	5	0	0
6	Range (Mini. to Maxi.)	0.0-51.25%	0.0-44.17%	0.0-15.54%	0.0-7.50%
7	Average	14.92%	5.26%	1.92%	0.74%
8	Number of entries tested	235			

Table-V.3f: *Helicoverpa* incidence in different Initial bajra lines (PMET-1C)

S. No.	Range of larval population/ 5 ear heads	Number of entries showing <i>Helicoverpa</i> incidence at ear head stage
1	Free (0.0)	50
2	0.1-2.0	185
3	2.1-5.0	0
4	Above 5.0	0
5	Range Minimum to maximum	0.0-2.00 larvae/ 5 ear heads
6	Average larval population/ 5 ear heads	0.68
7	Entries screened	235

CHAPTER V: ENTOMOLOGY

Table-V.4a: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Jamnagar)

S. No.	S M W	Date of Observation	Days After Germination	Shoot fly % inc.	Stem borer % inc.	leaf roller damage score (0-10)	Grass hopper % damage	FAW % damage	Hairy caterpillar /20pl.	Blister beetle 20/EH	Chaffer beetle 20 / EH	<i>Helicoverpa</i> larvae/ 20 EH	Lady bird beetle/ 20 pl.	Chrysopa/ 20 pl.
1	30	25.07.22	7 DAG	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0
2	31	01.08.22	14 DAG	5.00	0.00	1.00	0.00	0.00	0	0	0	0	1	1
3	32	08.08.22	21 DAG	10.00	5.00	2.00	5.00	5.00	0	0	0	0	2	1
4	33	15.08.22	28 DAG	15.00	10.00	3.00	10.00	5.00	0	0	0	0	3	2
5	34	22.08.22	35 DAG	20.00	15.00	3.00	15.00	5.00	0	0	0	0	2	2
6	35	29.08.22	42 DAG	20.00	20.00	4.00	20.00	5.00	0	0	0	0	2	1
7	36	05.09.22	49 DAG	15.00	25.00	5.00	20.00	5.00	2	0	0	1	1	0
8	37	12.09.22	56 DAG	20.00	20.00	5.00	15.00	5.00	3	2	1	4	2	0
9	38	19.09.22	63 DAG	20.00	15.00	4.00	10.00	0.00	4	3	2	8	1	0
10	39	26.09.22	70 DAG	20.00	15.00	3.00	5.00	0.00	0	0	2	10	0	0
11	40	03.10.22	77 DAG	25.00	15.00	1.00	0.00	0.00	0	0	1	5	0	0
			Mean	15.45	14.55	2.82	9.09	2.73	0.82	0.45	0.55	2.55	1.27	0.64

N.B.: sowing date: 16.07.2022, Harvesting date: 09.10.2022, Variety: GHB 558, Rainfall: 276 mm, Rainy days: 17

Table-V.4b: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Jamnagar)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	2818	2105	25.32
2. Fodder	5617	4426	21.21

CHAPTER V: ENTOMOLOGY

Table-V.4c: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Jamnagar)

S. No.	S M W	Date of Observation	Days After Germination	Temp. O Maxi.	Temp. O Mini.	R.H. Morn.	R.H. Even.	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	30	25.07.22	7 DAG	31.8	26.0	90	77	10.9	4.2	4.4	3.0	0
2	31	01.08.22	14 DAG	33.1	26.1	90	70	9.9	4.9	4.8	13.0	2
3	32	08.08.22	21 DAG	32.8	26.7	94	73	6.1	4.8	4.1	59.0	4
4	33	15.08.22	28 DAG	30.8	25.8	93	78	9.5	3.1	3.9	74.0	3
5	34	22.08.22	35 DAG	31.6	25.6	89	70	9.3	3.8	4.6	1.5	0
6	35	29.08.22	42 DAG	31.8	25.2	88	66	5.5	5.6	5.3	2.5	1
7	36	05.09.22	49 DAG	33.8	26.1	84	60	7.5	7.8	5.8	2.0	0
8	37	12.09.22	56 DAG	33.3	25.5	94	75	5.2	4.0	4.3	121.0	7
9	38	19.09.22	63 DAG	32.7	24.6	86	61	7.1	9.2	4.7	0.0	0
10	39	26.09.22	70 DAG	32.9	24.4	83	57	6.6	9.0	5.0	0.0	0
11	40	03.10.22	77 DAG	33.4	24.6	80	55	5.6	9.3	5.3	0.0	0
Correlation			Shoot fly%	0.155 ^{NS}	<u>-0.709**</u>	-0.461 ^{NS}	<u>-0.586*</u>	<u>-0.699**</u>	0.473 ^{NS}	0.330 ^{NS}	0.010 ^{NS}	-0.044 ^{NS}
			Stem Borer%	0.288 ^{NS}	-0.420 ^{NS}	-0.392 ^{NS}	-0.500 ^{NS}	<u>-0.627*</u>	0.387 ^{NS}	<u>0.559*</u>	0.019 ^{NS}	-0.034 ^{NS}
			Helicoverpa/5 EH	0.395 ^{NS}	<u>-0.827**</u>	-0.551 ^{NS}	<u>-0.653*</u>	-0.443 ^{NS}	<u>0.763**</u>	0.201 ^{NS}	-0.144 ^{NS}	-0.181 ^{NS}

CHAPTER V: ENTOMOLOGY

Table-V.4d: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Anand)

S. No.	S M W	Date of Observation	Days After Germination	Shoot fly % incidence	Stem borer % incidence	leaf roller damage score (0-10)	Grass hopper % damage	Mean Grey weevil damage score (0-10)	<i>Helicoverpa</i> larvae/20 EH	<i>Eublemma silicula</i> /20 E.H.	Lady bird beetle/20 pl.
1	30	7/25/2022	7 DAG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	31	8/1/2022	14 DAG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	32	8/8/2022	21 DAG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	33	8/15/2022	28 DAG	5.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
5	34	8/22/2022	35 DAG	5.00	5.00	0.00	0.00	0.00	2.00	0.00	0.00
6	35	8/29/2022	42 DAG	5.00	10.00	1.00	10.00	0.00	2.00	0.00	0.00
7	36	9/5/2022	49 DAG	15.00	10.00	1.00	10.00	1.00	3.00	0.00	2.00
8	37	9/12/2022	56 DAG	15.00	15.00	1.00	10.00	1.00	2.00	1.00	2.00
9	38	9/19/2022	63 DAG	15.00	15.00	2.00	10.00	1.00	3.00	3.00	3.00
10	39	9/26/2022	70 DAG	15.00	15.00	2.00	10.00	1.00	4.00	3.00	2.00
11	40	10/3/2022	77 DAG	15.00	20.00	2.00	10.00	1.00	3.00	3.00	3.00
12	41	10/10/2022	84 DAG	15.00	20.00	2.00	10.00	1.00	2.00	4.00	4.00
13	42	10/17/2022	91 DAG	15.00	20.00	2.00	10.00	1.00	3.00	2.00	3.00
			Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Maxi.	15.00	20.00	2.00	10.00	1.00	4.00	4.00	4.00
			Mean	9.23	10.00	1.00	6.15	0.54	1.92	1.23	1.46

N.B.: Date of sowing: 18/07/2022, Date of Harvesting: 13/11/2022, Variety: GHB 1129, Rainfall: 469.50, Rainy says: 26

Table-V.4e: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Anand)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	2577	2220	13.85
2. Fodder	5424	4769	12.08

CHAPTER V: ENTOMOLOGY

Table-V.4f: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Anand)

S. No.	S M W	Date of Observation	Days After Germination	Temp. O Mini.	Temp. O Maxi.	R.H. Morn.	R.H. Even.	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	30	7/25/2022	7 DAG	25.0	32.8	96.0	66.0	5.6	2.3	3.5	131.8	6.0
2	31	8/1/2022	14 DAG	26.0	33.0	96.0	60.0	5.1	5.0	3.7	42.6	2.0
3	32	8/8/2022	21 DAG	25.5	33.0	96.0	72.0	4.1	1.8	2.8	35.2	2.0
4	33	8/15/2022	28 DAG	25.0	32.0	100.0	25.0	7.0	3.5	3.0	76.2	7.0
5	34	8/22/2022	35 DAG	24.5	32.2	93.0	59.0	6.2	3.4	3.4	7.0	2.0
6	35	8/29/2022	42 DAG	24.5	34.2	94.3	52.0	3.2	5.9	3.4	0.8	0.0
7	36	9/5/2022	49 DAG	26.0	37.5	89.8	49.3	4.1	7.3	4.3	0.0	0.0
8	37	9/12/2022	56 DAG	23.5	37.5	97.0	53.0	3.8	3.0	3.5	84.0	4.0
9	38	9/19/2022	63 DAG	24.8	33.2	97.0	56.0	5.9	6.8	4.2	3.2	1.0
10	39	9/26/2022	70 DAG	23.5	34.5	95.0	51.0	4.6	6.9	4.0	1.4	0.0
11	40	10/3/2022	77 DAG	23.0	35.5	96.0	40.0	5.9	8.8	5.3	44.8	0.0
12	41	10/10/2022	84 DAG	19.5	34.8	100.0	30.0	2.9	5.8	2.7	42.5	2.0
13	42	10/17/2022	91 DAG	19.0	35.0	91.0	31.0	2.7	10.1	3.8	0.0	0.0
			Shoot fly %	<u>-0.557*</u>	<u>0.703**</u>	-0.136 ^{NS}	-0.531 ^{NS}	-0.304 ^{NS}	<u>0.694**</u>	0.474 ^{NS}	-0.385 ^{NS}	-0.476 ^{NS}
			Stem borer %	<u>-0.748**</u>	<u>0.621*</u>	-0.103 ^{NS}	-0.510 ^{NS}	-0.467 ^{NS}	<u>0.751**</u>	0.433 ^{NS}	-0.392 ^{NS}	<u>-0.588*</u>
			<i>Helicoverpa</i> larvae/ 5EH	-0.406 ^{NS}	0.518 ^{NS}	-0.354 ^{NS}	-0.411 ^{NS}	-0.189 ^{NS}	<u>0.756**</u>	<u>0.568*</u>	<u>-0.628*</u>	<u>-0.646*</u>

CHAPTER V: ENTOMOLOGY

Table-V.4j: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Jodhpur)

S. No.	S M W	Date of Observation	Days After Germination	Shoot fly % incidence	Termite %Inci.	leaf roller % damage	Grass hopper/ % damage	Grass hopper/20 pl.	Mean Grey weevil damage score (0-10)	Chaffer beetle /20 EH	<i>Helicoverpa</i> larvae/20 EH
1	28	13.07.2022	7 DAG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	29	20.07.2022	14 DAG	5.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
3	30	27.07.2022	21 DAG	10.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
4	31	3.08.2022	28 DAG	15.00	5.00	0.00	0.00	0.00	3.00	0.00	0.00
5	32	10.08.2022	35 DAG	10.00	5.00	5.00	5.00	1.00	3.00	0.00	0.00
6	33	17.08.2022	42 DAG	10.00	5.00	10.00	10.00	2.00	3.00	0.00	0.00
7	34	24.08.2022	49 DAG	10.00	5.00	20.00	10.00	2.00	2.00	0.00	0.00
8	35	31.08.2022	56 DAG	10.00	5.00	20.00	10.00	2.00	2.00	0.00	2.00
9	36	07.09.2022	63 DAG	10.00	5.00	10.00	10.00	2.00	2.00	2.00	10.00
10	37	14.09.2022	70 DAG	10.00	5.00	5.00	10.00	2.00	2.00	2.00	15.00
11	38	21.09.2022	77 DAG	10.00	10.00	0.00	10.00	2.00	2.00	1.00	7.00
12	39	28.09.2022	84 DAG	10.00	10.00	0.00	10.00	2.00	2.00	0.00	2.00
			Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Maxi.	15.00	10.00	20.00	10.00	2.00	3.00	2.00	15.00
			Mean	9.17	4.58	5.83	6.25	1.25	2.08	0.42	3.00

N.B.: Date of sowing: 06.07.22, Date of harvesting: 2.10.22, Variety: MPMH 17, Rainfall: 528.5 mm, Rainy days: 24

Table-V.4k: PMET-2: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Jodhpur)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	2845	2345	17.57
2. Fodder	4565	3850	15.66

CHAPTER V: ENTOMOLOGY

Table-V.4I: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Jodhpur)

S. No.	S M W	Date of Observation	Days After Germination	Temp. O Mini.	Temp. O Maxi.	R.H. Morn.	R.H. Even.	Rainfall (mm)	Rainy Days
1	28	13.07.2022	7 DAG	25.43	38.07	76.3	64.9	7	1
2	29	20.07.2022	14 DAG	25.31	36.67	71.07	60	29	2
3	30	27.07.2022	21 DAG	24.79	33.86	79.74	66.7	256	3
4	31	3.08.2022	28 DAG	24.1	32.03	68.47	55.7	4	0
5	32	10.08.2022	35 DAG	22.7	32.29	75.23	55.3	78.2	3
6	33	17.08.2022	42 DAG	21.56	31.81	87.39	71.2	74.3	4
7	34	24.08.2022	49 DAG	20.59	29.2	85.29	71.2	48	4
8	35	31.08.2022	56 DAG	21.21	32.07	71.49	53.5	0	4
9	36	07.09.2022	63 DAG	21.4	36	70.37	45.2	0	0
10	37	14.09.2022	70 DAG	22.16	36.43	71.97	53.3	32	3
11	38	21.09.2022	77 DAG	22.7	35.09	70.61	49.6	0	0
12	39	28.09.2022	84 DAG	21.53	33.9	68.56	50.9	0	0
Correlation			Shoot fly %	-0.483 ^{NS}	<u>-0.632*</u>	-0.115 ^{NS}	-0.263 ^{NS}	0.086 ^{NS}	0.000 ^{NS}
			Termite %	<u>-0.680*</u>	-0.298 ^{NS}	-0.283 ^{NS}	-0.523 ^{NS}	-0.464 ^{NS}	-0.319 ^{NS}
			Grass hopper %	<u>-0.933**</u>	-0.292 ^{NS}	0.089 ^{NS}	-0.295 ^{NS}	-0.355 ^{NS}	0.166 ^{NS}
			Leaf roller %	<u>-0.738**</u>	<u>-0.598*</u>	0.411 ^{NS}	0.183 ^{NS}	-0.136 ^{NS}	<u>0.628*</u>

CHAPTER V: ENTOMOLOGY

Table-V.4m: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Fatehpur-Shekhawati)

S M W	Date of Observation	Days After Germin ation	Shoot fly % inci	Stem borer % inci	Termite % Inci.	White grub % Inci.	leaf roller damage score (0-10)	Grass hopper % damage	Mean Grey weevil damage score (0- 10)	Hiary caterpill ar/20 pl.	Blister beetles/ 20 EH	Chaffer beetle 20 / EH	<i>Helicoverpa</i> larvae/ 20 EH	<i>Eublemma</i> <i>silicula</i> / 20 E.H.	Lady bird beetle/ 20 pl.	Chrysopa/ 20 pl.	Spider /20 pl.
28	7/11/2022	1 DAG	0.00	0.00	0.00	0.00	0	0.00	0	0	0	0	0	0	0	0	0
29	7/18/2022	7 DAG	5.00	0.00	0.00	0.00	1	0.00	1	0	0	0	0	0	0	0	0
30	7/25/2022	14 DAG	10.00	0.00	5.00	0.00	3	5.00	2	4	0	0	0	0	0	1	2
31	8/2/2022	21 DAG	15.00	10.00	10.00	5.00	4	10.00	2	2	0	0	0	0	2	0	1
32	8/9/2022	28 DAG	20.00	15.00	0.00	0.00	4	10.00	3	0	0	0	0	0	6	0	6
33	8/16/2022	35 DAG	20.00	15.00	0.00	0.00	5	10.00	4	0	0	0	0	0	4	3	5
34	8/23/2022	42 DAG	25.00	15.00	0.00	0.00	5	10.00	4	0	0	0	0	0	5	4	7
35	8/30/2022	49 DAG	35.00	20.00	0.00	0.00	6	10.00	4	0	0	0	0	0	4	2	8
36	9/7/2022	56 DAG	35.00	20.00	15.00	0.00	6	10.00	3	0	2	0	3	2	6	3	8
37	9/14/2022	63 DAG	35.00	20.00	15.00	0.00	7	10.00	4	2	5	1	4	8	0	3	10
38	9/21/2022	70 DAG	35.00	20.00	15.00	0.00	7	10.00	4	4	4	2	4	9	0	0	11
39	9/28/2022	77 DAG	35.00	20.00	15.00	0.00	0	10.00	0	2	0	0	0	0	0	0	0
		Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Maxi.	35.00	20.00	15.00	5.00	7.00	10.00	4.00	4.00	5.00	2.00	4.00	9.00	6.00	4.00	11.00
		Mean	22.50	12.92	6.25	0.42	4.00	7.92	2.58	1.17	0.92	0.25	0.92	1.58	2.25	1.33	4.83

N.B.: Date of sowing: 06-07-2022, Date of Harvesting: 03/10/2022, Variety: MPMH 17, Rainfall: 162.2 mm

Table-V.4n: PMET-2: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Fatehpur- Shekhawati)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	3750	2583	31.12
2. Fodder	4791	3458	27.82

CHAPTER V: ENTOMOLOGY

Table-V.4o: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Fatehpur- Shekhawati)

S M W	Date of Observation	Days After Germination	Temp. O Mini.	Temp. O Maxi.	R.H. Morn.	R.H. Even.	BSS (hrs)	Rainfall (mm)
28	7/11/2022	1 DAG	26.3	36.3	50.5	88.5	6.4	43
29	7/18/2022	7 DAG	25.5	35.7	55.8	91.7	7.1	34.3
30	7/25/2022	14 DAG	25.2	32.9	73.2	95.5	5.2	49.9
31	8/2/2022	21 DAG	24.5	33	60	89.1	4.8	9.4
32	8/9/2022	28 DAG	26.04	35.3	52.7	85	7.9	0
33	8/16/2022	35 DAG	24.4	32.9	62.7	94	5.9	11.3
34	8/23/2022	42 DAG	24.6	32.8	56.5	86.5	6.6	3
35	8/30/2022	49 DAG	24.4	35.4	43	81.4	8	0
36	9/7/2022	56 DAG	23.7	36.5	43.4	88.1	8.9	0
37	9/14/2022	63 DAG	24.5	36.3	44.8	91.2	6.9	0
38	9/21/2022	70 DAG	23.5	35.5	48.7	87	7.2	2.8
39	9/28/2022	77 DAG	22.2	33.2	45.8	90.7	6.7	8.5
Correlation		Shoot fly %	<u>-0.791**</u>	0.213 ^{NS}	<u>-0.594*</u>	-0.444 ^{NS}	0.544 ^{NS}	<u>-0.849**</u>
		Stem borer %	<u>-0.711**</u>	0.180 ^{NS}	<u>-0.615*</u>	-0.510 ^{NS}	0.530 ^{NS}	<u>-0.946**</u>
		Termite %	<u>-0.666*</u>	0.303 ^{NS}	-0.325 ^{NS}	0.102 ^{NS}	0.125 ^{NS}	-0.347 ^{NS}

CHAPTER V: ENTOMOLOGY

Table-V.4p: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Aurangabad)

S. No.	S M W	Period of Observation	Days After Germination	Shoot fly % inci.	Stem borer % inci.	FAW % damage	Mean Grey weevil damage score (0-10)	Hiary cater pillar /20 pl.	Blister beetles/ 20 EH	Chaffer beetle 20 / EH	Helicoverpa larvae/ 20 EH	Eublemma silicula/ 20 E.H.	Lady bird beetle/ 20 pl.	Chrysopa/ 20 pl.
1	29	16-22 July	7 DAG	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0
2	30	23-29 July	14 DAG	10.00	0.00	0.00	0.00	0	0	0	0	0	2	0
3	31	30 July-5 Aug.	21 DAG	15.00	0.00	0.00	0.00	0	0	0	0	0	3	1
4	32	6-12 Aug.	28 DAG	20.00	5.00	5.00	0.00	0	0	0	0	0	2	0
5	33	13-19 Aug	35 DAG	20.00	5.00	10.00	0.00	1	0	0	0	0	3	1
6	34	20-26 Aug.	42 DAG	20.00	10.00	10.00	0.00	2	0	0	0	0	4	1
7	35	27 Aug.-2 Sept.	49 DAG	20.00	10.00	15.00	0.00	1	0	0	0	0	2	0
8	36	3-9 Sept.	56 DAG	20.00	10.00	15.00	0.00	3	0	0	0	0	2	1
9	37	10-16 Sept.	63 DAG	20.00	10.00	15.00	0.00	4	0	0	0	0	2	0
10	38	17-23 Sept.	70 DAG	20.00	10.00	0.00	0.00	11	0	4	0	0	3	0
11	39	24-30 Sept.	77 DAG	20.00	10.00	0.00	0.00	14	0	5	0	0	4	0
12	40	1-7 Oct.	84 DAG	20.00	10.00	0.00	0.00	10	0	9	0	0	4	0
			Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Maxi.	20.00	10.00	15.00	0.00	14.00	0.00	9.00	0.00	0.00	4.00	1.00
			Mean	17.08	6.67	5.83	0.00	3.83	0.00	1.50	0.00	0.00	2.58	0.33

N.B.: Date of sowing: 15.07.2022, Date of Harvesting: 02.10.2022, Variety: AHB-1200Fe, Rainfall: 442.60, Rainy days: 31

Table-V.4q: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Aurangabad)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	2800	2450	12.50
2. Fodder	5600	5000	10.71

CHAPTER V: ENTOMOLOGY

Table-V.4r: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Aurangabad)

S. No.	S M W	Days After Germination	Temp. O Maxi.	Temp. O Mini.	R.H. Morn.	R.H. Even.	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	29	7 DAG	29.64	20.29	91.29	79.71	4.76	1.51	2.23	35.50	3.00
2	30	14 DAG	28.21	20.50	91.00	72.00	2.99	1.96	2.34	17.90	3.00
3	31	21 DAG	31.86	20.71	86.57	70.29	2.34	4.80	3.51	19.00	1.00
4	32	28 DAG	28.79	20.64	93.00	81.14	4.06	2.00	2.30	68.90	4.00
5	33	35 DAG	29.14	20.07	91.71	76.86	5.57	3.94	2.64	9.70	1.00
6	34	42 DAG	30.07	20.21	88.86	71.14	4.46	3.86	2.93	4.50	1.00
7	35	49 DAG	32.43	20.00	82.00	68.43	2.83	5.94	3.46	69.00	3.00
8	36	56 DAG	31.57	19.86	91.14	74.00	2.45	4.06	2.63	55.70	5.00
9	37	63 DAG	29.43	20.86	89.71	77.86	3.79	0.70	2.47	40.30	4.00
10	38	70 DAG	28.43	19.29	89.43	70.43	3.33	3.34	2.11	28.80	3.00
11	39	77 DAG	31.64	19.57	87.29	61.29	2.30	6.10	3.40	37.20	2.00
12	40	84 DAG	31.57	19.57	77.57	62.14	2.88	5.79	3.86	56.10	1.00
Correlation		Shoot fly%	0.234 ^{NS}	-0.288 ^{NS}	-0.256 ^{NS}	-0.331 ^{NS}	-0.209 ^{NS}	0.440 ^{NS}	0.328 ^{NS}	0.204 ^{NS}	-0.049 ^{NS}
		Stem borer %	0.308 ^{NS}	-0.548 ^{NS}	-0.367 ^{NS}	-0.409 ^{NS}	-0.192 ^{NS}	0.386 ^{NS}	0.257 ^{NS}	0.334 ^{NS}	0.124 ^{NS}
		FAW %	0.193 ^{NS}	0.209 ^{NS}	0.099 ^{NS}	0.308 ^{NS}	0.169 ^{NS}	-0.061 ^{NS}	-0.047 ^{NS}	0.235 ^{NS}	0.386 ^{NS}

CHAPTER V: ENTOMOLOGY

Table- V.s: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Vijayapur)

S. No	S M W	Date of Observation	Days After Germination	Shoot fly % inci.	Stem borer % inci.	White grub % inci.	Grass hopper/ % damage	Grass hopper/ 20 pl.	FAW % Pl. Damage	FAW larvae/ 20 pl.	Mean Grey weevil damage score (0-10)	HCP % damage	HCP /20 pl.	Blister beetles/ 20 EH	Chaffer beetle 20/ EH	Helicovera larvae/ 20 EH	<i>Eublemma silicula</i> / 20 E.H.	Lady bird beetle /20 pl.	Chrys opa/ 20 pl.
1	29	16/7	7 DAG	0.00	0.00	0.00	2.05	4.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	30	23/7	14 DAG	8.50	0.00	0.00	3.25	4.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	31	30/7	21 DAG	9.30	0.75	0.00	4.85	6.00	0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	32	6/8	28 DAG	10.80	0.90	0.00	5.30	7.00	0.00	3.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	33	13/8	35 DAG	10.20	2.50	1.02	6.80	9.00	0.67	5.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	34	20/8	42 DAG	5.30	3.50	2.08	4.80	7.00	1.38	10.00	1.10	6.00	1.20	0.00	0.00	0.00	0.00	3.00	1.70
7	35	27/8	49 DAG	5.10	4.38	3.18	3.20	4.00	2.30	12.00	1.20	6.65	1.33	6.00	1.00	0.00	0.00	4.70	2.70
8	36	3/9	56 DAG	4.80	5.38	4.80	2.10	3.00	2.93	12.00	1.00	8.50	1.70	11.35	2.35	4.00	0.00	6.70	4.00
9	37	10/9	63 DAG	3.90	5.97	4.37	1.18	4.00	3.17	12.00	0.00	11.90	2.38	12.85	4.85	11.35	0.00	8.00	8.00
10	38	17/9	70 DAG	3.20	6.12	3.97	0.80	1.00	3.20	12.00	0.00	14.90	2.98	21.00	5.35	20.00	1.85	13.00	8.70
11	39	27/9	77 DAG	2.80	4.02	3.02	0.87	2.00	3.30	12.00	0.00	16.65	3.33	18.35	10.60	31.50	2.15	18.00	9.30
12	40	1/10	84 DAG	2.00	0.82	2.82	0.47	3.00	1.20	1.00	0.00	0.00	0.00	5.00	16.00	20.50	1.00	8.00	4.00
13	41	8/10	91 DAG	1.90	0.20	0.00	0.32	1.00	0.20	2.00	0.00	0.00	0.00	0.00	4.00	1.35	0.00	2.00	1.30
			Mini.	0.00	0.00	0.00	0.32	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Maxi.	10.80	6.12	4.80	6.80	9.00	3.30	12.00	1.20	16.65	3.33	21.00	16.00	31.50	2.15	18.00	9.30
			Mean	5.24	2.71	2.00	2.87	4.33	1.44	6.33	0.63	5.42	1.08	6.37	4.01	8.01	0.48	5.43	3.27

N.B.: Date of sowing: 9.7.2022, Date of Harvesting: 26.10.2022, Variety: Hybrid: VPMH 7, Rainfall: 469.9 mm, Rainy days: 28

Table- V.4t: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Vijayapur)

Parameters	Yield kg/ha in treated plot	Yield kg/ha in Un-treated plot	% losses
1. Grain	2280	2071	9.17
2. Fodder	6350	6100	6.58

CHAPTER V: ENTOMOLOGY

Table-V.4u: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Vijayapur)

S. No.	S M W	Date of Observation	Days After Germination	Temp. O Maxi.(C)	Temp. O Mini.(C)	R.H. Morn.(%)	R.H. Even.(%)	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	29	16.07.2022	7 DAG	30.6	20.6	90	63	11.6	5.2	3.7	6.8	1
2	30	23.07.2022	14 DAG	30.1	20.9	91	61	8.8	2.7	3.5	4.8	1
3	31	30.07.2022	21 DAG	30.6	20.6	96	73	6.3	4.3	3.3	202.8	7
4	32	06.08.2022	28 DAG	28.1	20.7	89	68	14.5	3.2	3.1	7.8	1
5	33	13.08.2022	35 DAG	29.3	20.3	88	61	12.1	4.4	3.2	0.5	0
6	34	20.08.2022	42 DAG	30.9	20.4	89	55	11.4	5.7	4.1	2.6	1
7	35	27.08.2022	49 DAG	31.1	20.9	92	64	5.3	3.9	3.2	44.2	2
8	36	03.09.2022	56 DAG	30.8	21.0	96	62	4.6	4.9	3.6	63.1	5
9	37	10.09.2022	63 DAG	29.1	20.4	92	70	10.6	3.6	3.0	22.4	3
10	38	17.09.2022	70 DAG	29.5	18.9	90	56	9.7	3.4	4.1	0.0	0
11	39	24.09.2022	77 DAG	30.3	19.6	91	67	6.7	4.9	3.3	9.5	2
12	40	01.10.2022	84 DAG	31.3	20.0	90	58	8.0	5.1	4.1	37.2	2
13	41	08.10.2022	91 DAG	29.3	20.1	96	70	3.8	4.3	2.8	68.2	3
			Shoot fly %	-0.387 ^{NS}	0.391 ^{NS}	-0.134 ^{NS}	0.171 ^{NS}	0.338 ^{NS}	-0.462 ^{NS}	-0.289 ^{NS}	0.185 ^{NS}	0.059 ^{NS}
			Stem borer %	0.011 ^{NS}	-0.307 ^{NS}	0.002 ^{NS}	-0.212 ^{NS}	-0.092 ^{NS}	-0.007 ^{NS}	0.133 ^{NS}	-0.211 ^{NS}	-0.016 ^{NS}
			FAW larvae/20 pl	0.069 ^{NS}	-0.256 ^{NS}	0.030 ^{NS}	-0.156 ^{NS}	-0.169 ^{NS}	0.077 ^{NS}	0.062 ^{NS}	-0.199 ^{NS}	0.002 ^{NS}
			Helicoverpa/20 EH	0.103 ^{NS}	-0.744^{**}	-0.147 ^{NS}	-0.135 ^{NS}	-0.145 ^{NS}	0.129 ^{NS}	0.281 ^{NS}	-0.218 ^{NS}	-0.115 ^{NS}

CHAPTER V: ENTOMOLOGY

Table-V.4v: PMET-2: Incidence of insect-pests and population (per 20 plants/ ear heads) & natural enemies (Centre: Jaipur)

Date of obs.	M S W	Temp. min	Temp. max	RH Morn.	RH Even.	Total rainfall (mm)	Rainy days	% Damage Shoot fly	% Damage Stem borer	% Termite & White grub inci.	Leaf roller pop./ 5 pl.	Chaffer Beetle/ 5 pl.
14.08.22	33	24.5	31.1	90	77	93.9	6	0.00	0.0	0.0	0.0	0.0
21.08.22	34	24.3	30.3	88	77	34.9	4	2.22	0.0	0.0	0.0	0.0
28.08.22	35	25.9	34.3	71	59	14.3	2	8.88	0.0	0.0	0.0	0.0
06.09.22	36	26.3	35.3	67	50	5.7	1	13.33	0.0	1.6	0.0	0.0
14.09.22	37	26	33.8	81	72	4.3	2	15.55	0.0	3.11	0.0	0.0
21.09.22	38	24.9	33.8	80	68	15.3	3	16.66	0.0	6.45	1.0	0.0
28.09.22	39	24.6	33.9	76	52	66.4	3	1.61	1.61	9.42	4.0	4.0
05.10.22	40	24.7	34	68	54	0	0	3.22	4.83	9.42	5.0	6.0
16.10.22	42	19.7	32.9	54	35	0	0	8.06	0.0	11.82	6.0	6.0
26.10.22	43	18.6	32.9	54	28	0	0	19.35	0.0	12.54	2.0	0.0
Minimum								1.61	0.00	1.60	1.0	0.00
Maximum								19.35	4.83	12.54	6.0	6.00
Average								8.88	0.64	5.43	1.6	1.60

N.B.: Sowing date: 05.8.2022, Harvesting date: 26.10.2022 , Variety sown: MPMH -17 , MSW = Meteorological Standard Week, Rainfall= 252.80 mm, Rainy days=22

Table-V.4w: PMET-2: PMET-2: Statement showing losses in pearl millet due to insect pest complex (Centre: Jaipur)

Yields (kg/ha)	Protected Plot kg/ha	Unprotected Plot kg/ha	Losses %
Grain Yield	2340	1750	25.21
Fodder Yield	4700	3450	26.60

CHAPTER V: ENTOMOLOGY

Table-V.4x: PMET-2: Correlation of major insect-pests of pearl millet with different weather parameters (Centre: Jaipur)

Date Of obs.	M S W	Temp. min	Temp. max	RH Morn.	RH Even.	Total rainfall (mm)	Rainy days
14.08.22	33	24.5	31.1	90	77	93.9	6
21.08.22	34	24.3	30.3	88	77	34.9	4
28.08.22	35	25.9	34.3	71	59	14.3	2
06.09.22	36	26.3	35.3	67	50	5.7	1
14.09.22	37	26	33.8	81	72	4.3	2
21.09.22	38	24.9	33.8	80	68	15.3	3
28.09.22	39	24.6	33.9	76	52	66.4	3
05.10.22	40	24.7	34	68	54	0	0
16.10.22	42	19.7	32.9	54	35	0	0
26.10.22	43	18.6	32.9	54	28	0	0
Correlation	Shoot fly%	-0.223 ^{NS}	0.456 ^{NS}	-0.436 ^{NS}	-0.365 ^{NS}	<u>-0.674*</u>	-0.489 ^{NS}
	Stem borer %	0.127 ^{NS}	0.227 ^{NS}	-0.106 ^{NS}	-0.101 ^{NS}	-0.098 ^{NS}	-0.315 ^{NS}
	Termite & white grub %	<u>-0.728*</u>	0.207 ^{NS}	<u>-0.723*</u>	<u>-0.782**</u>	-0.358 ^{NS}	<u>-0.652*</u>

CHAPTER V: ENTOMOLOGY

Table V.5a: PMET-3: Survey of insect pests on farmer's field in pearl millet (Centre: Jamnagar & Anand)

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Helico verpa larvae/ 5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle/5 Pl.	Chrysopa/ 5 Pl.
Survey conducted by Jamnagar Scientists																	
1	19.09.22	Lakadiya	Bhachau	Kutch	Avani 4444	0.5	E.H.	5.0	10.0	1	0	0	10.0	2.0	1.0	0	0
2	19.09.22	Junakatariya	Bhachau	Kutch	sagar 222	1.0	E.H.	10.0	5.0	1	1	0	5.0	1.0	1.0	1	0
3	19.09.22	Navakatariya	Bhachau	Kutch	Jivkar 4444	1.0	E.H.	10.0	5.0	1	0	0	5.0	2.0	1.0	0	0
4	19.09.22	Khodasar	Bhachau	Kutch	9444	0.5	E.H.	5.0	5.0	0	1	1	0.0	0.0	0.0	0	1
5	19.09.22	Mevasa	Rapar	Kutch	Pionner	1.0	E.H.	5.0	5.0	0	2	0	5.0	0.0	0.0	0	0
6	19.09.22	Gagodhar	Rapar	Kutch	Jivkar 4444	1.0	E.H.	5.0	2.0	1	1	1	5.0	1.0	1.0	0	1
7	19.09.22	Jadavas	Rapar	Kutch	Sagar 222	0.5	E.H.	5.0	5.0	0	1	0	5.0	1.0	1.0	0	0
8	19.09.22	Rahadi	Rapar	Kutch	86M11	1.0	E.H.	5.0	5.0	0	1	0	5.0	1.0	1.0	0	1
9	19.09.22	Kanmer	Rapar	Kutch	86M22	0.5	E.H.	5.0	1.0	1	1	0	5.0	1.0	1.0	1	0
10	19.09.22	Maangadh	Rapar	Kutch	86M22	1.0	E.H.	10.0	0.0	2	0	1	5.0	1.0	1.0	0	0
11	19.09.22	Palansva	Rapar	Kutch	Jivkar 4444	2.0	E.H.	5.0	5.0	0	1	1	15.0	1.0	5.0	2	1
12	19.09.22	Adesar	Rapar	Kutch	Jivkar 4444	1.0	E.H.	5.0	0.0	2	1	1	5.0	1.0	1.0	0	0
13	19.09.22	Makhel	Rapar	Kutch	9444	1.0	E.H.	5.0	5.0	0	0	0	5.0	1.0	0.0	1	0
14	19.09.22	Bamansar	Rapar	Kutch	9444G	1.0	E.H.	5.0	0.0	1	0	0	5.0	1.0	1.0	2	1
15	19.09.22	Piprala	Santalpur	Patan	9444	1.0	E.H.	0.0	5.0	1	4	0	0.0	0.0	0.0	1	0
16	19.09.22	Santalpur	Santalpur	Patan	9119	2.0	E.H.	5.0	5.0	1	1	1	0.0	1.0	0.0	1	0
17	19.09.22	Par	Santalpur	Patan	9444	1.0	E.H.	10.0	5.0	1	1	1	0.0	2.0	0.0	1	2
18	19.09.22	Sidhada	Santalpur	Patan	MP 7333	1.0	E.H.	5.0	0.0	0	1	1	0.0	2.0	0.0	1	1
19	19.09.22	Varahi	Santalpur	Patan	9444	1.0	E.H.	0.0	0.0	1	1	0	5.0	1.0	2.0	0	0
20	19.09.22	Radhanpur	Radhanpur	Patan	9444	2.0	E.H.	0.0	0.0	1	1	0	5.0	2.0	0.0	1	0
21	19.09.22	Maanpura	Vadgam	Banaskantha	Jivkar 4444	1.5	E.H.	5.0	5.0	3	0	0	0.0	1.0	0.0	1	0
22	19.09.22	Tharra	Kankrej	Banaskantha	9444	2.5	E.H.	20.0	5.0	1	0	0	5.0	2.0	0.0	2	0
23	19.09.22	Dungrasan	Kankrej	Banaskantha	9444G	1.0	E.H.	15.0	0.0	1	0	0	0.0	1.0	0.0	1	0
24	19.09.22	Sihori	Kankrej	Banaskantha	JKBH 1486	1.0	E.H.	10.0	5.0	3	0	0	0.0	3.0	0.0	1	0
25	19.09.22	Chekhla	Palanpur	Banaskantha	MP 7333	1.0	E.H.	5.0	5.0	1	0	0	0.0	1.0	1.0	1	0
26	19.09.22	Khodla	Palanpur	Banaskantha	9119	2.0	E.H.	10.0	5.0	2	0	0	5.0	2.0	1.0	1	1
27	19.09.22	Mudetha	Deesa	Banaskantha	4314	1.0	E.H.	5.0	0.0	1	0	0	5.0	1.0	0.0	0	0
28	19.09.22	Khetwa	Deesa	Banaskantha	4314	2.0	E.H.	5.0	5.0	1	1	1	0.0	1.0	1.0	1	2
29	19.09.22	Lorwada	Deesa	Banaskantha	MP 7333	1.0	E.H.	2.0	5.0	3	1	1	5.0	1.0	1.0	1	0
30	19.09.22	Vaghpura	Deesa	Banaskantha	9119	1.0	E.H.	5.0	5.0	2	0	1	5.0	1.0	1.0	1	1
31	19.09.22	Vadaval	Deesa	Banaskantha	9119	2.0	E.H.	5.00	10.00	3	1	1	5.0	2.0	1.0	0	2
32	19.09.22	Kunpat	Deesa	Banaskantha	4314	1.0	E.H.	5.0	5.0	1	0	0	0.0	1.0	1.0	1	0
33	19.09.22	Malgadh	Deesa	Banaskantha	4314	2.0	E.H.	15.0	5.0	3	1	1	0.0	1.0	1.0	1	1
34	19.09.22	Akhol	Deesa	Banaskantha	MP 7333	3.0	E.H.	20.0	5.0	1	0	0	5.0	1.0	1.0	1	1
35	19.09.22	Kant	Deesa	Banaskantha	MP 7890	2.0	E.H.	10.0	5.0	3	1	1	5.0	1.0	1.0	1	1
36	19.09.22	Vaghrol	Dantiwada	Banaskantha	JKBH 1486	3.0	E.H.	10.0	5.0	1	1	1	0.0	1.0	1.0	1	0
37	19.09.22	Motibhakhar	Dantiwada	Banaskantha	KPH 6310	2.0	E.H.	10.0	5.0	3	1	1	5.0	1.0	1.0	5	1
38	19.09.22	Nanibhakhar	Dantiwada	Banaskantha	KPH 6310	1.0	E.H.	5.0	10.0	1	0	2	0.0	1.0	0.0	1	1
39	19.09.22	Dabhipura	Dantiwada	Banaskantha	JKBH 1486	2.0	E.H.	15.0	5.0	1	0	1	0.0	1.0	1.0	0	0
40	19.09.22	Dantiwada	Dantiwada	Banaskantha	86M20	2.0	E.H.	15.0	5.0	3	0	1	5.0	1.0	1.0	5	1
41	20.09.22	Ganeshpura	Dantiwada	Banaskantha	MP 7890	1.0	E.H.	5.0	5.0	1	0	1	5.0	1.0	1.0	1	1

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Helico verpa larvae/ 5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle/5 Pl.	Chrysopa/ 5 Pl.
42	20.09.22	Neelpur	Dantiwada	Banaskantha	4314	1.0	E.H.	5.0	5.0	2	1	1	0.0	1.0	1.0	1	0
43	20.09.22	Dangiya	Dantiwada	Banaskantha	9119	2.0	E.H.	10.0	10.0	1	1	1	0.0	1.0	1.0	1	0
44	20.09.22	Madana	Palanpur	Banaskantha	9119	1.0	E.H.	5.0	0.0	2	1	0	0.0	1.0	0.0	1	1
45	20.09.22	Chandisar	Palanpur	Banaskantha	4314	2.0	E.H.	10.0	5.0	3	0	1	5.0	1.0	1.0	1	0
46	20.09.22	Kushkal	Palanpur	Banaskantha	4314	1.0	E.H.	5.0	0.0	3	0	1	5.0	1.0	1.0	1	1
47	20.09.22	Badarpura	Vadgam	Banaskantha	86M22	2.0	E.H.	10.0	5.0	1	0	1	5.0	2.0	2.0	1	1
48	20.09.22	Chadotar	Palanpur	Banaskantha	MP 7333	1.5	E.H.	5.0	5.0	3	1	1	5.0	1.0	1.0	2	1
49	20.09.22	Jodnapura	Palanpur	Banaskantha	ADV 936	2.0	E.H.	10.0	5.0	3	0	1	0.0	1.0	1.0	2	0
50	20.09.22	Sherpura	Deesa	Banaskantha	JBKH 1486	1.0	E.H.	5.0	10.0	2	0	1	5.0	2.0	3.0	1	1
51	20.09.22	Majadar	Vadgam	Banaskantha	JBKH 1486	1.0	E.H.	10.0	5.0	2	1	1	0.0	1.0	1.0	0	0
52	20.09.22	Markawada	Vadgam	Banaskantha	JBKH 1486	2.0	E.H.	5.0	10.0	3	1	1	5.0	1.0	0.0	1	1
53	20.09.22	Rajosana	Vadgam	Banaskantha	ADV 936	1.0	E.H.	10.0	5.0	2	0	0	0.0	2.0	0.0	1	0
54	20.09.22	Teniwada	Vadgam	Banaskantha	Nandi 52	2.0	E.H.	5.0	5.0	2	0	0	5.0	1.0	1.0	1	0
55	20.09.22	Chapi	Vadgam	Banaskantha	Nandi 65	0.5	E.H.	5.0	5.0	3	2	1	0.0	1.0	0.0	0	0
56	20.09.22	Brahmanwada	Unjha	Mehsana	86M74	1.0	E.H.	5.0	5.0	1	1	1	0.0	1.0	1.0	1	0
57	20.09.22	Kamli	Unjha	Mehsana	KPH 6310	1.0	E.H.	0.0	0.0	1	0	3	5.0	1.0	0.0	0	3
58	20.09.22	Maktapur	Unjha	Mehsana	RBX 001	1.0	E.H.	5.0	5.0	1	0	1	5.0	0.0	1.0	0	0
59	20.09.22	Unjha	Unjha	Mehsana	MP 7333	2.0	E.H.	0.0	0.0	2	0	1	5.0	1.0	2.0	1	0
60	20.09.22	Bhandu	Visnagar	Mehsana	RBX 001	1.0	E.H.	5.0	0.0	1	2	1	5.0	1.0	1.0	0	2
61	20.09.22	Soneripura	Mehsana	Mehsana	KPH 6310	1.0	E.H.	5.0	5.0	1	1	1	5.0	1.0	1.0	1	1
62	20.09.22	Motidau	Mehsana	Mehsana	MP 7333	2.0	E.H.	5.0	0.0	1	1	1	0.0	1.0	1.0	1	0
63	20.09.22	Baliyasan	Mehsana	Mehsana	Nandi 75	1.0	E.H.	5.0	5.0	0	1	5	0.0	1.0	0.0	0	0
64	21.09.22	Dhebakuva	Petlad	Anand	Hanuman	1.0	E.H.	10.0	10.0	3	1	1	5.0	1.0	4.0	3	1
65	21.09.22	Ravipura	Petlad	Anand	Kedar 888	1.0	E.H.	5.0	15.0	3	1	1	5.0	1.0	2.0	2	2
66	21.09.22	Bandhani	Petlad	Anand	Ekta 31	2.0	E.H.	10.0	10.0	5	2	1	5.0	1.0	2.0	2	2
67	21.09.22	Porda	Petlad	Anand	Kavya 17	1.0	E.H.	10.0	10.0	2	1	1	5.0	1.0	1.0	3	5
68	21.09.22	Sunav	Petlad	Anand	Triveni 972	1.0	E.H.	5.0	10.0	2	0	0	10.0	1.0	2.0	2	2
69	21.09.22	Piplav	Sojitra	Anand	Kedar 888	2.0	E.H.	10.0	10.0	2	0	1	5.0	1.0	1.0	3	5
70	21.09.22	Isnav	Sojitra	Anand	Deepak 18	1.0	E.H.	5.0	10.0	3	1	1	5.0	1.0	1.0	2	1
71	21.09.22	Sojitra	Sojitra	Anand	7111	2.0	E.H.	10.0	10.0	2	2	2	10.0	1.0	2.0	3	2
72	21.09.22	Harmanpura	Sojitra	Anand	United 4444	1.0	E.H.	5.0	10.0	5	0	0	0.0	0.0	0.0	2	1
73	21.09.22	Dali	Borsad	Anand	Dhanya787 8	1.0	E.H.	10.0	10.0	3	1	2	5.0	1.0	1.0	3	1
74	21.09.22	Runaj	Sojitra	Anand	Avani 41	1.0	E.H.	5.0	10.0	3	1	1	0.0	1.0	1.0	3	1
75	21.09.22	Limdi	Limdi	Surendranagar	Sagar 222	0.5	E.H.	5.0	0.0	0	0	0	0.0	5.0	0.0	1	0
76	21.09.22	Sayla	Sayla	Surendranagar	Sagar 222	1.0	E.H.	0.0	5.0	0	0	0	5.0	5.0	1.0	0	0
77	21.09.22	Navimorwad	Chuda	Surendranagar	Avani 4444	0.5	E.H.	0.0	5.0	0	0	0	0.0	4.0	0.0	0	1
78	21.09.22	Thoryali	Sayla	Surendranagar	Nandi 52	1.0	E.H.	5.0	5.0	0	1	1	5.0	1.0	1.0	0	0
79	21.09.22	Navasudamda	Sayla	Surendranagar	Avani 4444	0.5	E.H.	0.0	5.0	0	0	4	0.0	2.0	1.0	0	2
80	21.09.22	Doliya	Sayla	Surendranagar	Avani 4444	1.0	E.H.	5.0	5.0	0	0	0	5.0	4.0	1.0	1	0
81	21.09.22	Aya	Sayla	Surendranagar	Avani 4444	0.5	E.H.	0.0	5.0	0	0	0	0.0	3.0	0.0	0	1
82	21.09.22	Dhedhuki	Sayla	Surendranagar	Avani 4444	1.0	E.H.	5.0	5.0	0	1	1	0.0	1.0	1.0	0	0
83	21.09.22	Maghrikhada	Chotila	Surendranagar	Nandi 52	0.5	E.H.	5.0	5.0	0	1	0	0.0	1.0	1.0	0	0

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Helico verpa larvae/ 5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle/5 Pl.	Chrysopa/ 5 Pl.
84	21.09.22	Nanakandhasar	Chotila	Surendranagar	Avani 4444	1.0	E.H.	0.0	5.0	1	1	1	5.0	1.0	1.0	0	0
85	21.09.22	Kumbhara	Chotila	Surendranagar	Sagar 222	0.5	E.H.	0.0	5.0	0	0	0	0.0	5.0	0.0	0	0
86	21.09.22	Chotila	Chotila	Surendranagar	Avani 4444	1.0	E.H.	5.0	0.0	1	0	0	0.0	4.0	0.0	1	0
87	21.09.22	Nanimoldi	Chotila	Surendranagar	Sagar 222	0.5	E.H.	0.0	5.0	1	0	0	2.0	0.0	0.0	1	0
Survey conducted by Anand Scientists																	
88	8.9.22	Dalapura	Samarkha	Anand	Desi	0.1	VS	10.00	5.00	2	0	0	0.00	0	0	2	0
89	8.9.22	Rahtalav	Anand	Anand	Forage	0.2	VS	5.00	15.00	3	0	0	10.00	2.0	0.0	0	0
90	8.9.22	Rahtalav	Anand	Anand	Forage	0.2	VS	0.00	15.00	1	0	0	15.00	3.0	0.0	2	0
91	8.9.22	Bhalej	Umreth	Anand	Desi	0.1	VS	10.00	15.00	4	0	0	5.00	0.0	1.0	0	0
92	8.9.22	Jakhala	Umreth	Anand	Sagar 222	0.2	VS	10.00	5.00	2	0	0	0.00	0.0	0.0	0	0
93	8.9.22	Jakhala	Umreth	Anand	Desi	0.2	VS	15.00	10.00	2	0	0	10.00	0.0	2.0	0	0
94	8.9.22	Lingada	Umreth	Anand	Forage	0.3	VS	5.00	10.00	0	0	0	10.00	0.0	0.0	0	0
95	8.9.22	Lingada	Umreth	Anand	Forage	0.2	VS	0.00	5.00	1	0	0	15.00	2.0	0.0	0	0
96	8.9.22	Parvata	Umreth	Anand	Desi	0.2	VS	15.00	15.00	5	0	0	0.00	0.0	0.0	0	0
97	28.9.22	Umreth	Umreth	Anand	Desi	0.2	VS	25.00	5.00	3	0	0	5.00	0.0	2.0	3	0
98	28.9.22	Simlej	Umreth	Anand	Forage	0.1	EH	0.00	10.00	1	0	0	15.00	0.0	0.0	0	0
99	28.9.22	Simlej	Umreth	Anand	Desi	0.1	VS	5.00	5.00	2	0	0	0.00	1.0	1.0	0	0
100	28.9.22	Simlej	Umreth	Anand	Desi	0.2	VS	25.00	10.00	2	0	0	15.00	0.0	0.0	0	1
101	28.9.22	Simlej	Umreth	Anand	Sagar laxmi	0.3	EH	10.00	15.00	3	0	0	10.00	0.0	0.0	1	0
102	28.9.22	Kalsar	Thasra	Kheda	Sagar laxmi	0.1	VS	5.00	15.00	2	0	0	5.00	2.0	0.0	0	0
103	28.9.22	Nesh	Thasra	Kheda	Forage	0.1	EH	5.00	5.00	2	0	0	15.00	0.0	2.0	0	0
104	28.9.22	Khankhanpur	Umreth	Anand	Sagar laxmi	0.2	VS	10.00	20.00	3	0	0	5.00	3.0	2.0	0	1
105	28.9.22	Bhaliyasar	Umreth	Anand	Forage	0.2	VS	5.00	5.00	1	0	0	10.00	0.0	3.0	2	0
106	28.9.22	Bhaliyasar	Umreth	Anand	Dhanya	0.1	EH	15.00	15.00	4	0	0	10.00	0.0	0.0	0	0
107	6.10.22	Ode	Anand	Anand	Dhanya	0.2	EH	15.00	15.00	3	0	0	5.00	3.0	0.0	2	0
108	6.10.22	Dahemi	Borsad	Anand	Desi	0.3	VS	10.00	5.00	4	0	0	15.00	0.0	2.0	0	0
109	6.10.22	Dahemi	Borsad	Anand	Desi	0.1	EH	5.00	25.00	4	0	0	0.00	2.0	0.0	1	0
110	6.10.22	Hirapura	Borsad	Anand	Desi	0.3	EH	25.00	25.00	3	0	0	0.00	2.0	2.0	0	0
111	6.10.22	Harkhpura	Borsad	Anand	Sagar laxmi	0.2	VS	5.00	15.00	2	0	0	0.00	1.0	2.0	0	0
112	24.10.22	Bodal	Borsad	Anand	Forage	0.3	VS	0.00	5.00	1	0	0	20.00	0.0	3.0	0	0
113	24.10.22	Ambav	Anklav	Anand	Sagar laxmi	0.2	VS	10.00	15.00	2	0	0	15.00	0.0	3.0	0	0
114	24.10.22	Ambav	Anklav	Anand	Desi	0.1	EH	15.00	20.00	3	0	0	5.00	2.0	0.0	2	0
115	24.10.22	Ambali	Anklav	Anand	Desi	0.3	EH	15.00	20.00	2	0	0	0.00	2.0	0.0	0	0
116	24.10.22	Kantharia	Anklav	Anand	Forage	0.2	EH	5.00	5.00	2	0	0	0.00	2.0	2.0	0	0
117	24.10.22	Kantharia	Anklav	Anand	Forage	0.3	EH	5.00	5.00	3	0	0	0.00	1.0	3.0	0	0
118	24.10.22	Bhetasi	Anklav	Anand	Dhanya	0.1	EH	25.00	15.00	2	0	0	10.00	2.0	2.0	0	0
119	24.10.22	Vasad	Anand	Anand	Dhanya	0.1	EH	5.00	10.00	3	0	0	5.00	0.0	1.0	2	2
120	24.10.22	Vasad	Anand	Anand	Dhanya	0.2	EH	15.00	15.00	4	0	0	10.00	3.0	0.0	1	0
							Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
							Maxi.	25.00	25.00	5.00	4.00	5.00	20.00	5.00	5.00	5.00	5.00
							Mean	7.31	6.94	1.76	0.45	0.53	4.35	1.26	0.91	0.89	0.53

CHAPTER V: ENTOMOLOGY

Table V.5b: PMET-3: District wise insect pest situation on farmer's field in pearl millet in Gujarat (Centre: Jamnagar & Anand)

S. No.	District	Shoot fly %	Stem borer %	<i>Helicoverpa</i> larvae/5 E.H.	Blister beetles/5 E.H.	Chaffer beetle/5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle/5 Pl.	Chrysopa/5 Pl.
1	Kutch	6.07	3.79	0.71	0.71	0.36	<u>5.71</u>	1.00	<u>1.07</u>	0.50	0.36
2	Patan	3.33	2.50	0.83	<u>1.50</u>	0.50	1.67	1.33	0.33	0.83	0.50
3	Banaskantha	<u>8.49</u>	5.14	2.03	0.43	0.69	2.57	1.23	0.80	1.17	0.54
4	Mehsana	3.75	2.50	1.00	0.75	<u>1.75</u>	3.13	0.88	0.88	0.50	0.75
5	Anand	7.81	9.91	<u>2.05</u>	0.25	0.32	5.56	1.39	1.00	<u>0.88</u>	<u>0.54</u>
6	Surendranagar	2.31	4.23	0.23	0.31	0.54	1.69	<u>2.77</u>	0.54	0.31	0.31
7	Kheda	5.00	<u>10.00</u>	2.00	0.00	0.00	<u>10.00</u>	1.00	1.00	0.00	0.00
	Overall mean	7.31	6.94	1.76	0.45	0.53	4.35	1.26	0.91	0.89	0.53

Table V.5 c: PMET-3: Survey of insect pests on farmer's field in pearl millet (Centre: Jaipur & Jodhpur)

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	<i>Helicoverpa</i> larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed	
		Survey conducted by scientists of RARI, Durgapura, Jaipur																		
1	20.9.22	Badod Maiv	Badod Maiv	Alwar	Unknown	0.50	HD	10.00	1.00	2.00	5.00	1.00	0.00	0.00	20.00	1.00	1.00	0.00	Nil	
2	20.9.22	Jugrawar	Ramgarh	Alwar	Unknown	1.00	HD	10.00	1.00	1.00	5.00	1.00	0.00	0.00	30.00	1.00	1.00	0.00	Nil	
3	20.9.22	Umren	Alwar	Alwar	Unknown	0.50	HD	10.00	0.00	0.00	0.00	1.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil	
4	20.9.22	Saavdi	Alwar	Alwar	Unknown	0.50	HD	5.00	0.00	0.00	2.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil	
5	20.9.22	Dharampura	Alwar	Alwar	Unknown	1.00	HD	5.00	0.00	2.00	5.00	1.00	0.00	0.00	20.00	1.00	1.00	0.00	Nil	
6	20.9.22	Kushaalgarh	Alwar	Alwar	Unknown	0.75	HD	5.00	0.00	2.00	5.00	1.00	0.00	0.00	10.00	1.00	0.00	0.00	Nil	
7	20.9.22	Taal vrax Mundawara	Thanagazi	Alwar	Unknown	0.50	HD	2.00	0.00	2.00	5.00	1.00	0.00	0.00	10.00	1.00	0.00	0.00	Nil	
8	20.9.22	Thana Gaji	Thanagazi	Alwar	Unknown	1.00	HD	10.00	0.00	0.00	0.00	10.00	0.00	0.00	5.00	1.00	0.00	0.00	Nil	
9	20.9.22	Ghata Islaa	Thanagazi	Alwar	Avni 555	0.50	HD	10.00	0.00	0.00	5.00	5.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil	
10	16.9.22	Ringus	Khandela	Sikar	Unknown	0.25	HD	20.00	0.00	5.00	10.00	1.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil	
11	16.9.22	Lakhani	Khandela	Sikar	Unknown	0.50	HD	5.00	0.00	5.00	5.00	1.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil	
12	16.9.22	Lampua	Khandela	Sikar	Unknown	0.25	HD	2.00	0.00	5.00	15.00	0.00	0.00	0.00	10.00	2.00	1.00	0.00	Nil	
13	16.9.22	Khatu	Dantaramgarh	Sikar	Pioneer 86M88	1.00	HD	2.00	0.00	5.00	10.00	1.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil	
14	16.9.22	Jhamas	Dantaramgarh	Sikar	Unknown	0.50	HD	2.00	0.00	5.00	5.00	1.00	0.00	0.00	2.00	1.00	1.00	0.00	Nil	
15	16.9.22	Dhingpur	Dantaramgarh	Sikar	Unknown	0.25	HD	2.00	0.00	20.00	10.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil	
16	16.9.22	Baay	Dantaramgarh	Sikar	Local	0.25	HD	2.00	0.00	2.00	5.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil	
17	16.9.22	Mota Ka Bass	Dantaramgarh	Sikar	Local	1.00	HD	2.00	0.00	2.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil	

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	Helicoverpa larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed
18	16.9.22	Daanta	Dantaramgarh	Sikar	Local	1.50	HD	5.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
19	16.9.22	Karnipura	Dantaramgarh	Sikar	Local	1.00	HD	15.00	0.00	2.00	5.00	0.00	0.00	0.00	5.00	0.00	2.00	0.00	Nil
20	16.9.22	Kuli	Dantaramgarh	Sikar	Pioneer8 6M88	0.50	HD	2.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
21	17.09.22	Ram Pura Davdi	Amer	Jaipur	Local	1.50	HD	10.00	2.00	5.00	5.00	1.00	0.00	0.00	5.00	0.00	1.00	0.00	Nil
22	17.09.22	jahota	Amer	Jaipur	Super-27	0.75	HD	2.00	0.00	12.00	10.00	1.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
23	17.09.22	Dev gudda	Amer	Jaipur	Dhanya	1.00	HD	2.00	0.00	2.00	10.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	Nil
24	17.09.22	Pratappura	Amer	Jaipur	Unknown	0.50	HD	20.00	0.00	2.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil
25	17.09.22	Malikpur	Govindgarh	Jaipur	Local	1.00	HD	20.00	0.00	2.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil
26	17.09.22	Govindgarh	Govindgarh	Jaipur	Unknown	1.50	HD	20.00	0.00	5.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil
27	17.09.22	Renwal	Renwal	Jaipur	Local	1.00	HD	2.00	2.00	2.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nil
28	17.09.22	Pachkudiya	Renwal	Jaipur	Unknown	0.50	HD	5.00	0.00	5.00	10.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
29	17.09.22	Hathoj	jothwara	Jaipur	Unknown	0.50	HD	2.00	1.00	5.00	5.00	0.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
30	17.09.22	Bagru	Dudu	Jaipur	Unknown	0.75	HD	2.00	0.00	0.00	10.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
31	17.09.22	Nasnoda	Dudu	Jaipur	Pioneer	1.00	HD	2.00	0.00	0.00	5.00	1.00	1.00	0.00	5.00	0.00	0.00	0.00	Nil
32	17.09.22	Gadota	Dudu	Jaipur	Unknown	1.00	HD	20.00	0.00	0.00	10.00	1.00	1.00	0.00	5.00	1.00	1.00	0.00	Nil
33	17.09.22	Pallu kala	Dudu	Jaipur	Unknown	0.50	HD	5.00	2.00	0.00	10.00	1.00	1.00	0.00	5.00	0.00	1.00	0.00	Nil
34	17.09.22	Benad Mod	Bassi	Jaipur	Unknown	0.25	HD	5.00	0.00	5.00	10.00	1.00	1.00	1.00	5.00	0.00	0.00	0.00	Nil
35	17.09.22	Khori	Bassi	Jaipur	Pioneer8 6M94,Kav eri Super Boss	1.50	HD	5.00	1.00	5.00	10.00	1.00	1.00	0.00	5.00	0.00	1.00	0.00	Nil
36	17.09.22	Jatwada	Bassi	Jaipur	NBH-4903	0.50	HD	5.00	0.00	2.00	10.00	1.00	0.00	0.00	20.00	1.00	1.00	0.00	Nil
37	17.09.22	Papdi Viratnagar	Viratnagar	Jaipur	Unknown	0.25	HD	5.00	0.00	10.00	2.00	5.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
38	17.09.22	Beelwadi	Viratnagar	Jaipur	Unknown	0.75	HD	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil
39	17.09.22	Ghasipura	Viratnagar	Jaipur	Unknown	1.00	HD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil
40	17.09.22	Manoharpur	Shahpura	Jaipur	Unknown	1.25	HD	0.00	0.00	0.00	0.00	1.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
41	17.09.22	Achrol	Amer	Jaipur	Local	0.75	HD	2.00	0.00	2.00	5.00	1.00	1.00	0.00	5.00	0.00	0.00	0.00	Nil
42	17.9.22	Padasoli	Kishangarh	Ajmer	Unknown	1.00	HD	2.00	0.00	2.00	5.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
43	17.09.22	Dantari Madhopura	Kishangarh	Ajmer	Unknown	1.25	HD	10.00	0.00	0.00	2.00	2.00	0.00	0.00	5.00	1.00	0.00	0.00	Nil
44	17.09.22	Badgaon	Kishangarh	Ajmer	Unknown	0.50	HD	2.00	1.00	0.00	5.00	1.00	0.00	0.00	10.00	0.00	0.00	0.00	Nil
45	17.09.22	Udaipur Kala	Kishangarh	Ajmer	Unknown	0.25	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
46	17.09.22	Badliya	Kishangarh	Ajmer	Unknown	0.25	HD	10.00	0.00	0.00	10.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	Nil
47	17.09.22	Saradhana	Kishangarh	Ajmer	Unknown	1.00	HD	2.00	1.00	0.00	5.00	1.00	0.00	0.00	10.00	1.00	2.00	0.00	Nil
48	17.09.22	ATC Ajmer	Ajmer	Ajmer	Unknown	0.50	HD	5.00	1.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	1.00	0.00	Nil
49	19.9.22	Dausa	Dausa	Dausa	Pioneer 86M20	1.25	HD	5.00	1.00	0.00	5.00	1.00	0.00	0.00	5.00	0.00	1.00	0.00	Nil
50	19.09.22	Bhanadarej	Dausa	Dausa	Pro agro9001	1.50	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	20.00	1.00	0.00	0.00	Nil
51	19.09.22	Dubbi	Dausa	Dausa	Unknown	1.50	HD	2.00	0.00	0.00	2.00	1.00	0.00	0.00	20.00	0.00	0.00	0.00	Nil

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	Helicoverpa larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed
52	19.09.22	Sikandra	Sikandara	Dausa	Unknown	0.75	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	25.00	1.00	1.00	0.00	Nil
53	19.09.22	Gijgarh	Sikandara	Dausa	Unknown	0.50	HD	10.00	0.00	0.00	5.00	1.00	0.00	0.00	30.00	1.00	1.00	0.00	Nil
54	19.09.22	Gaddi Gerota	sikray	Karoli	Unknown	0.75	HD	2.00	0.00	0.00	2.00	1.00	0.00	0.00	25.00	0.00	0.00	0.00	Nil
55	19.09.22	Taalcheda	Karoli	Karoli	Unknown	0.50	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	20.00	0.00	0.00	0.00	Nil
56	19.09.22	Ravtala	Nandoti	Karoli	JK-2702,Kaveri Super Boss	0.50	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	25.00	0.00	0.00	0.00	Nil
57	19.09.22	Nandoti	Nandoti	Karoli	Unknown	0.75	HD	5.00	0.00	30.00	5.00	1.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
58	19.09.22	Kemla	Karoli	Karoli	Unknown	1.50	HD	5.00	0.00	0.00	0.00	1.00	0.00	0.00	40.00	0.00	0.00	0.00	Nil
59	19.09.22	Shri Mahaveer ji	Karoli	Karoli	9001,86M 90,86M20	2.25	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	20.00	0.00	0.00	0.00	Nil
60	19.09.22	Badalpur	Karoli	Karoli	Unknown	1.50	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	10.00	0.00	0.00	0.00	Nil
61	19.09.22	Khedla	Karoli	Karoli	Unknown	1.00	HD	2.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00	1.00	0.00	Nil
62	20.09.22	Sooroth	Hindoncity	Bharatpur	Unknown	1.00	HD	5.00	0.00	0.00	2.00	5.00	0.00	2.00	30.00	0.00	0.00	0.00	Nil
63	20.09.22	Samogar	Hindoncity	Bharatpur	Jinomax 104	0.75	HD	2.00	0.00	0.00	2.00	0.00	0.00	0.00	5.00	0.00	1.00	0.00	Nil
64	20.09.22	Bayana	Bayana	Bharatpur	Unknown	0.50	HD	2.00	0.00	10.00	5.00	1.00	0.00	0.00	30.00	0.00	0.00	0.00	Nil
65	20.09.22	Aggawali	Bayana	Bharatpur	Dhanya	1.50	HD	5.00	0.00	0.00	5.00	1.00	0.00	0.00	10.00	0.00	0.00	0.00	Nil
66	20.09.22	Kaimati	Bayana	Bharatpur	Unknown	0.50	HD	2.00	0.00	5.00	5.00	10.00	0.00	0.00	10.00	0.00	0.00	0.00	Nil
67	20.09.22	Gangla Jyotsingh	Kumher	Bharatpur	Unknown	0.50	HD	5.00	1.00	0.00	5.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	Nil
68	20.09.22	Hawai patti Palla	Kumher	Bharatpur	Unknown	1.50	HD	5.00	0.00	0.00	2.00	2.00	0.00	0.00	5.00	0.00	1.00	0.00	Nil
69	20.09.22	Nagla Chaahar	Deeg	Bharatpur	Unknown	1.00	HD	2.00	0.00	0.00	5.00	1.00	0.00	0.00	5.00	1.00	1.00	0.00	Nil
70	20.09.22	Ding	Deeg	Bharatpur	Unknown	0.50	HD	2.00	0.00	0.00	2.00	1.00	0.00	0.00	10.00	1.00	1.00	0.00	Nil
71	20.09.22	Panohari	Deeg	Bharatpur	Unknown	0.75	HD	5.00	0.00	0.00	5.00	1.00	0.00	2.00	10.00	1.00	1.00	0.00	Nil
72	20.09.22	Khakhawali	Nagar	Bharatpur	Unknown	0.50	HD	5.00	1.00	0.00	10.00	1.00	0.00	1.00	10.00	1.00	1.00	0.00	Nil
73	20.09.22	Kala	Nagar	Bharatpur	Unknown	0.25	HD	5.00	0.00	0.00	5.00	1.00	1.00	1.00	10.00	1.00	1.00	0.00	Nil
74	20.09.22	Imrawali	Laxmangarh	Bharatpur	MP7288, Sona	0.50	HD	2.00	0.00	0.00	5.00	1.00	1.00	1.00	10.00	1.00	1.00	0.00	Nil
Survey conducted by scientists of ARS, Mandore, Jodhpur																			
75	16.09.22	Bhandu kalla	Luni	Jodhpur	Proagro 9444	3.0	EH	5.00	0.00	0.00	2.00	0.00	0.00	0.00	5.00	2.00	0.00	0.00	Nil
76	16.09.22	Dawa	Luni	Jodhpur	Unknown hybrid	2.0	EH	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	5.00	0.00	Nil
77	16.09.22	Kalyanpur	Baltora	Barmer	Unknown hybrid	5.0	EH	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	5.00	0.00	Nil
78	16.09.22	Dhandhu	Barmer	Barmer	Unknown hybrid	3.0	EH	2.00	0.00	0.00	5.00	2.00	0.00	0.00	2.00	2.00	2.00	0.00	Nil
79	16.09.22	Pachpadra	Pachpadra	Barmer	Unknown hybrid	4.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	5.00	0.00	Nil

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	Helicoverpa larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed
80	16.09.22	Bagundi	Pachpadra	Barmer	Unknown hybrid	4.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	2.00	2.00	5.00	1.00	Nil
81	16.09.22	Baytoo	Baytoo	Barmer	Unknown hybrid	2.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	2.00	2.00	0.00	Nil
82	16.09.22	Kanod	Jaisalmer	Jaisalmer	Unknown hybrid	2.0	VS	10.00	0.00	0.00	5.00	0.00	0.00	0.00	3.00	3.00	5.00	0.00	Nil
83	16.09.22	Karimnagar	Jaisalmer	Jaisalmer	Unknown hybrid	2.0	EH	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	10.00	0.00	Nil
84	16.09.22	Joraniyo ki dhani	Jaisalmer	Jaisalmer	Unknown hybrid	1.0	EH	2.00	0.00	0.00	2.00	1.00	0.00	0.00	0.00	1.00	5.00	0.00	Nil
85	16.09.22	Parashar	Falsund	Jaisalmer	Unknown hybrid	2.0	EH	5.00	0.00	0.00	5.00	0.00	0.00	0.00	2.00	3.00	5.00	0.00	Nil
86	16.09.22	Bhurjgarh	Sankra	Jaisalmer	Unknown hybrid	1.0	VS	10.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	2.00	10.00	0.00	Nil
87	16.09.22	Khinvsar	Jaisalmer	Jaisalmer	Unknown hybrid	2.0	EH	5.00	0.00	0.00	5.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	Nil
88	16.09.22	Chawa	Sindhari	Barmer	Unknown hybrid	3.0	EH	2.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	2.00	5.00	2.00	Nil
89	16.09.22	Shergarh	Shergarh	Jodhpur	Unknown hybrid	2.0	VS	5.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	3.00	5.00	0.00	Nil
90	16.09.22	Balesar	Balesar	Jodhpur	Unknown hybrid	3.0	EH	10.00	0.00	0.00	10.00	2.00	0.00	0.00	2.00	1.00	10.00	0.00	Nil
91	16.09.22	Keru	Mandor	Jodhpur	MPMH 17	4.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	Nil
92	17.09.22	Rampura	Mandor	Jodhpur	Unknown hybrid	1.0	EH	5.00	0.00	0.00	5.00	2.00	0.00	0.00	5.00	2.00	5.00	0.00	Nil
93	17.09.22	Mathaniya	Osian	Jodhpur	Unknown hybrid	2.0	VS	10.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	1.00	2.00	0.00	Nil
94	17.09.22	Tiwri	Osian	Jodhpur	Unknown hybrid	1.0	VS	5.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	Nil
95	17.09.22	Ghewda	Osian	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	1.00	0.00	0.00	Nil
96	17.09.22	Cherai	Osian	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	10.00	2.00	0.00	0.00	0.00	0.00	10.00	0.00	Nil
97	17.09.22	Chamu	Balesar	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	5.00	0.00	Nil
98	17.09.22	Dechu	Shergarh	Jodhpur	Unknown hybrid	3.0	EH	2.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	Nil
99	17.09.22	Peelwa	Phalodi	Jodhpur	Unknown hybrid	2.0	EH	5.00	0.00	0.00	0.00	3.00	0.00	0.00	2.00	1.00	10.00	0.00	Nil
100	17.09.22	Sadri	Lohawat	Jodhpur	Unknown hybrid	3.0	VS	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	1.00	3.00	0.00	Nil
101	17.09.22	Lohawat	Lohawat	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	1.00	3.00	0.00	Nil
102	17.09.22	Harlaya	Lohawat	Jodhpur	Unknown	2.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	2.00	3.00	5.00	0.00	Nil

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	Helicoverpa larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed
					hybrid														
103	17.09.22	Jambeshwar Nagar	Lohawat	Jodhpur	Unknown hybrid	3.0	VS	10.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	2.00	5.00	0.00	Nil
104	17.09.22	Bhikamkhor	Lohawat	Jodhpur	Unknown hybrid	2.0	VS	5.00	0.00	0.00	5.00	0.00	0.00	0.00	4.00	1.00	10.00	0.00	Nil
105	17.09.22	Osian	Osian	Jodhpur	Unknown hybrid	2.0	VS	5.00	0.00	0.00	2.00	0.00	0.00	0.00	5.00	2.00	2.00	0.00	Nil
106	17.09.22	Nevra	Osian	Jodhpur	Unknown hybrid	1.0	EH	2.00	0.00	0.00	5.00	2.00	0.00	0.00	0.00	2.00	5.00	0.00	Nil
107	17.09.22	Bhawad	Osian	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	3.00	2.00	2.00	Nil
108	18.09.22	Bawdi	Osian	Jodhpur	Unknown hybrid	3.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	10.00	1.00	5.00	0.00	Nil
109	18.09.22	Sawant Kuan	Lavera Baori	Jodhpur	Unknown hybrid	2.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	2.00	5.00	0.00	Nil
110	18.09.22	Kherapa	Bhopalgarh	Jodhpur	Unknown hybrid	4.0	VS	10.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
111	18.09.22	Soyla	Bhopalgarh	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00	2.00	3.00	0.00	Nil
112	18.09.22	Lalawas khimsar	Kheemsar	Nagaur	Proagro 9444	3.0	EH	0.00	0.00	0.00	5.00	2.00	0.00	0.00	5.00	1.00	5.00	2.00	Nil
113	18.09.22	Kheemsar	Kheemsar	Nagaur	Unknown hybrid	1.0	VS	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	2.00	5.00	0.00	Nil
114	18.09.22	Tankla	Nagaur	Nagaur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	3.00	0.00	0.00	5.00	1.00	0.00	0.00	Nil
115	18.09.22	Bhakrod	Nagaur	Nagaur	Unknown hybrid	3.0	EH	0.00	0.00	0.00	0.00	5.00	0.00	0.00	2.00	1.00	5.00	0.00	Nil
116	18.09.22	Nagaur	Nagaur	Nagaur	Unknown hybrid	1.0	VS	10.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	2.00	10.00	0.00	Nil
117	18.09.22	Inana	Mundwa	Nagaur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	Nil
118	18.09.22	Bhadana	Mundwa	Nagaur	Unknown hybrid	2.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	5.00	1.00	Nil
119	18.09.22	Kuchera	Mundwa	Nagaur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	1.00	10.00	0.00	Nil
120	18.09.22	Butati	Degana	Nagaur	Unknown hybrid	1.0	EH	2.00	0.00	0.00	0.00	4.00	0.00	0.00	5.00	1.00	5.00	0.00	Nil
121	18.09.22	Merta	Merta	Nagaur	Unknown hybrid	2.0	EH	0.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	2.00	5.00	0.00	Nil
122	18.09.22	Katyasani	Merta	Nagaur	Unknown hybrid	4.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	Nil
123	18.09.22	Jasnagar	Merta	Nagaur	Unknown hybrid	1.0	EH	5.00	0.00	0.00	0.00	1.00	0.00	0.00	2.00	1.00	5.00	1.00	Nil
124	18.09.22	Anandpur	Jaitaran	Pali	Unknown	2.0	EH	10.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	2.00	2.00	0.00	Nil

CHAPTER V: ENTOMOLOGY

S. No.	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	Helicoverpa larvae/5 E.H.	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage score (0-10)	Lady bird beetle /5 Pl.	If Any other pest observed
		Kallu			hybrid														
125	18.09.22	Jaitaran	Jaitaran	Pali	Unknown hybrid	5.0	VS	10.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	5.00	5.00	0.00	Nil
126	18.09.22	Bilara	Bilara	Jodhpur	Unknown hybrid	4.0	EH	5.00	0.00	0.00	2.00	1.00	0.00	0.00	2.00	3.00	2.00	0.00	Nil
127	18.09.22	Kapara	Bilara	Jodhpur	Unknown hybrid	2.0	EH	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	Nil
128	18.09.22	Dangiyawas	Jodhpur	Jodhpur	Unknown hybrid	1.0	EH	2.00	0.00	0.00	0.00	5.00	0.00	0.00	2.00	1.00	10.00	2.00	Nil
129	19.09.22	Surpura	Samdari	Barmer	Unknown hybrid	1.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	Nil
130	19.09.22	Samdari	Siwana	Barmer	Unknown hybrid	3.0	EH	5.00	0.00	0.00	0.00	1.00	0.00	0.00	5.00	0.00	2.00	0.00	Nil
131	19.09.22	Ranideshipura	Siwana	Barmer	Unknown hybrid	2.0	EH	5.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	4.00	5.00	0.00	Nil
132	19.09.22	Ajit	Samdari	Barmer	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	2.00	1.00	1.00	0.00	Nil
133	19.09.22	Dhundhara	Luni	Jodhpur	Unknown hybrid	1.0	EH	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	Nil
134	19.09.22	Lolasani	Luni	Jodhpur	Unknown hybrid	3.0	EH	5.00	0.00	0.00	2.00	1.00	0.00	0.00	2.00	3.00	2.00	0.00	Nil
135	19.09.22	Bhacharana	Luni	Jodhpur	Unknown hybrid	2.0	EH	2.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	2.00	5.00	0.00	Nil
136	19.09.22	Satlana	Luni	Jodhpur	Unknown hybrid	2.0	EH	5.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	10.00	0.00	Nil
137	19.09.22	Kakani	Luni	Jodhpur	Unknown hybrid	5.0	VS	5.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	10.00	0.00	Nil
138	19.09.22	Guda	Luni	Jodhpur	Unknown hybrid	1.0	EH	5.00	0.00	0.00	0.00	2.00	0.00	0.00	5.00	1.00	10.00	0.00	Nil
139	19.09.22	Khejarli	Luni	Jodhpur	Unknown hybrid	1.0	EH	0.00	0.00	0.00	0.00	1.00	0.00	0.00	5.00	3.00	5.00	0.00	Nil
140	19.09.22	Birami	Jodhpur	Jodhpur	Unknown hybrid	1.5	EH	5.00	0.00	0.00	0.00	4.00	0.00	0.00	2.00	2.00	2.00	1.00	Nil
							Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
							Maxi.	20.00	2.00	30.00	15.00	10.00	1.00	2.00	40.00	5.00	10.00	2.00	0.00
							Mean	4.72	0.11	1.22	3.64	1.39	0.06	0.06	6.44	1.02	2.46	0.10	--

CHAPTER V: ENTOMOLOGY

Table V.5 d: PMET-3: District-wise situation of insect-pest incidence in Jaipur & Jodhpur pockets of Rajasthan.

District	Shoot fly %	Stem borer %	White grub damage %	Termite damage %	<i>Helicoverpa</i> larvae/5 E.H.	Blister beetles /5 E.H.	Grass hopper % damage	Grey weevil damage score (0-10)	Leaf binder damage %	Lady bird beetle/ 5 Pl.
Ajmer	4.71	0.43	0.29	5.29	1.71	0.00	5.00	0.57	1.00	0.00
Alwar	7.44	0.22	1.00	3.56	2.44	0.00	13.33	1.00	0.67	0.00
Barmer	3.20	0.00	0.00	0.50	1.50	0.00	1.70	1.60	3.40	0.30
Bharatpur	3.62	0.15	1.15	4.46	2.08	0.15	11.31	0.46	0.77	0.00
Dausa	4.20	0.20	0.00	4.40	1.00	0.00	20.00	0.60	0.60	0.00
Jaipur	6.62	0.38	3.05	6.52	0.76	0.29	5.95	0.33	0.48	0.00
Jaisalmer	6.17	0.00	0.00	3.67	0.50	0.00	2.00	2.17	5.83	0.00
Jodhpur	4.14	0.00	0.00	1.92	1.53	0.00	2.53	1.56	4.64	0.19
Karoli	2.75	0.00	3.75	4.00	0.88	0.00	18.75	0.00	0.13	0.00
Nagaur	2.92	0.00	0.00	1.25	2.17	0.00	2.58	1.25	4.75	0.33
Pali	10.00	0.00	0.00	0.00	1.00	0.00	3.00	3.50	3.50	0.00
Sikar	5.36	0.00	4.64	7.27	0.45	0.00	6.09	0.64	0.73	0.00

CHAPTER V: ENTOMOLOGY

Table V.5 e: PMET-3: Survey of insect pests on farmer's field in pearl millet (Centre: Aurangabad)

No. of farmer	Date of survey	Location	Taluka/ Tehsil	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Blister beetles/ 5 E.H.	Chaffer beetle/ 5 E.H.	Fall Army Worm % damage	Lady bird beetle/ 5 Pl.	Chrysopa/ 5 Pl.	(Hairy Caterpillar/ 5 plants)
1	01.09.22	Wadgaon	Khultabad	Aurangabad	Local	0.4	EH	0.0	0.0	0	0	0.00	0	0	2
2	01.09.22	Wadgaon	Khultabad	Aurangabad	86-M-84	0.6	EH	20.0	0.0	0	2	0	0	0	0
3	01.09.22	Zari	Khultabad	Aurangabad	Nirmal 240	0.4	EH	0.0	0.0	0	0	20	1	0	0
4	01.09.22	Zari	Khultabad	Aurangabad	Local	0.4	EH	20.0	0.0	1	2	0	0	0	1
5	08.09.22	Dabhrul	Paithan	Aurangabad	Pioneer	0.2	EH	20.0	0.0	0	0	20	0	0	0
6	08.09.22	Dabhrul	Paithan	Aurangabad	Nirmal 240	0.4	EH	40.0	0.0	0	0	20	0	0	0
7	08.09.22	Dabhrul	Paithan	Aurangabad	Kaveri Boss	0.4	EH	0.0	0.0	2	0	0	0	1	5
8	08.09.22	Dabhrul	Paithan	Aurangabad	Pioneer	0.6	EH	20.0	0.0	0	0	20	1	0	2
9	08.09.22	Nihalsingwadi	Ambad	Jalna	7872	0.4	EH	40.0	0.0	0	2	0	0	0	1
10	08.09.22	Rohilagad	Ambad	Jalna	7872	0.8	EH	0.0	20.0	2	0	0	0	0	0
11	08.09.22	Kingaon	Ambad	Jalna	86-M-34	0.2	EH	0.0	0.0	0	5	0	0	0	2
12	08.09.22	Kingaonwadi	Ambad	Jalna	7872	0.4	EH	0.0	0.0	0	2	0	0	0	0
13	08.09.22	Kingaonwadi	Ambad	Jalna	7872	0.8	EH	0.0	0.0	0	0	0	1	0	2
14	16.09.22	Tidiwadi	Vaijapur	Aurangabad	AHB 1200Fe	2.0	EH	0.0	20.0	0	2	20	0	0	2
15	16.09.22	Tidi	Vaijapur	Aurangabad	86-M-84	0.8	EH	0.0	0.0	2	0	0	1	0	0
16	16.09.22	Khandala	Vaijapur	Aurangabad	AHB 1200Fe	0.4	EH	20.0	0.0	0	0	0	0	0	0
17	16.09.22	Janefal	Vaijapur	Aurangabad	7872	0.6	EH	0.0	0.0	0	2	0	1	1	0
18	16.09.22	Janefal	Vaijapur	Aurangabad	AHB 1200Fe	0.4	EH	0.0	20.0	0	0	20	0	0	1
19	16.09.22	Aadhur	Vaijapur	Aurangabad	Local	0.4	EH	20.0	0.0	0	0	0	0	0	2
20	16.09.22	Aadhur	Vaijapur	Aurangabad	Local	0.6	EH	0.0	20.0	0	1	0	0	0	0
21	16.09.22	Aadhur	Vaijapur	Aurangabad	332	0.2	EH	0.0	0.0	2	0	0	0	0	0
22	16.09.22	Aadhur	Vaijapur	Aurangabad	Nirmal 240	0.4	EH	20.0	0.0	0	2	0	0	0	0
23	16.09.22	Aadhur	Vaijapur	Aurangabad	Local	0.6	EH	0.0	0.0	0	0	20	0	0	1
24	03.10.22	Taherpur	Paithan	Aurangabad	7872	1.0	EH	20.0	0.0	0	5	0	1	0	2
25	03.10.22	Taherpur	Paithan	Aurangabad	Local	0.4	EH	0.0	20.0	0	0	0	0	0	2
							Mini.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
							Maxi.	40.00	20.00	2.00	5.00	20.00	1.00	1.00	5.00
							Mean	9.60	4.00	0.36	1.00	5.60	0.24	0.08	1.00

CHAPTER V: ENTOMOLOGY

Table V.6a: (PMET-5) Testing of IPM modules with farmers practices against pest complex of pearl millet (Centre: Jamnagar)

No.	Treatments	Per cent shoot fly incidence		Per cent stem borer incidence		% Grass hopper damage at 45 DAG	<i>Helicoverpa armigera</i> larval population per 5 ear heads				Yield kg/ha.	
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage		24 hrs before spray	24 hrs after spray	3 days after spray	7 days after spray	Grain	Fodder
T1	IPM module-I	18.35* (9.94)	19.73* (11.40)	18.10* (9.72)	18.52* (10.14)	18.19* (9.94)	2.12# (4.50)	2.12# (4.50)	2.17# (4.75)	2.28# (4.75)	2028.82	3820.14
T2	IPM module-II	15.17 (6.86)	15.36 (7.18)	15.21 (6.90)	16.65 (8.33)	14.65 (6.52)	1.99 (4.00)	1.93 (3.75)	1.80 (3.25)	1.49 (1.75)	2521.18	5325.35
T3	IPM module-III	14.27 (6.08)	13.50 (5.64)	11.51 (4.19)	14.27 (6.13)	13.04 (3.65)	2.05 (4.25)	1.93 (3.75)	1.72 (3.00)	1.40 (1.50)	2984.72	5886.81
T4	IPM module-IV	14.17 (6.04)	13.35 (5.44)	11.20 (3.90)	13.93 (5.85)	9.55 (2.80)	1.99 (4.00)	1.81 (3.50)	1.64 (2.75)	1.40 (1.50)	3045.84	6429.87
T5	IPM module-V	13.00 (5.08)	12.88 (5.10)	9.56 (2.94)	12.73 (4.99)	8.74 (2.33)	1.99 (4.00)	1.86 (3.50)	1.54 (2.5)	1.31 (1.25)	3266.67	6821.88
T6	IPM module-VI (AICRP check)	20.42 (12.22)	17.30 (8.90)	16.93 (8.72)	17.51 (9.09)	17.13 (8.69)	1.96 (4.00)	1.90 (3.75)	1.85 (3.50)	1.68 (2.50)	2286.81	4630.91
T7	Control	25.07 (17.96)	24.20 (16.89)	23.02 (15.46)	19.55 (11.29)	19.99 (11.73)	2.23 (5.00)	2.23 (5.00)	2.40 (5.75)	2.50 (5.75)	1933.33	3780.21
	SEm ±	0.63	0.78	1.10	0.58	0.92	0.14	0.16	0.13	0.13	140.3266	438.89
	C.D. 5%	1.87	2.31	3.27	1.72	2.73	NS	NS	0.38	0.38	416.9472	1304.06
	CV %	7.32	9.34	14.58	7.15	12.70	13.90	16.18	13.60	14.99	10.87	16.74

N.B.: (*) arcsine transformed values, (#) Square root $\sqrt{X+0.5}$ values, Figure in parenthesis are original values.

1. T1-IPM module-I: 10% higher seed rate + seed treatment of imidacloprid 600 FS @ 8.75 ml/kg + removal of shoot fly dead hearts + fish meal trap @ 10/ha.
2. T2-IPM module-II: T1 + seed treatment of PSB @ 10 ml/kg seed + spray azadirachtin 1500 ppm (40 ml/10 litres of water) at 30 DAG and at ear head stage.
3. T3-IPM module-III: T1 + seed treatment of PSB @ 10 ml/kg seed + furrow application of *Trichoderma harzanium* @ 2.5 kg/ha mixed in 500 kg well decomposed FYM at the time of sowing + spray azadirachtin 1500 ppm (40 ml/10 litres of water) at 30 DAG and at ear head stage.
4. T4-IPM module-IV: T1 + seed treatment of PSB @ 10 ml/kg seed + neem cake @ 250 kg/hactare furrow application at the time of sowing + spray azadirachtin 1500 ppm (40 ml/10 litres of water) at 30 DAG and at ear head stage.
5. T5-IPM module-V: T1 + seed treatment of PSB @ 10 ml/kg seed + neem cake @ 500 kg/hactare furrow application at the time of sowing + spray azadirachtin 1500 ppm (40 ml/10 litres of water) at 30 DAG and at ear head stage.
6. T6-IPM module-VI: Seed treatment of imidacloprid 600 FS @ 8.75 ml/kg, installation of fish meal trap @ 10/ha and spraying of NSKE 5% at ear head stage (Standard check-earlier recommendation)
7. T7-Untreated-control

CHAPTER V: ENTOMOLOGY

Table-V.6b: PMET-5: Economics of various treatments for the management of pest complex in pearl millet (Centre: Jamnagar)

S. No.	Treatments	Yield increase over control kg/ha		Additional income (Rs.)	Total Expenditure (Rs.)	Net return (Rs.)	I.C.B.R.
		Grain	fodder				
1	IPM module-I	96	40	2192	422	1670	1:4.20
2	IPM module-II	588	1545	16026	3427	12499	1:4.54
3	IPM module-III	1052	2107	27358	3602	23656	1:7.39
4	IPM module-IV	1113	2650	29786	7177	23759	1:4.94
5	IPM module-V	1334	3042	35432	10927	26905	1:4.16
6	IPM module-VI (AICRP check)	354	851	9490	1882	7508	1:4.79

N.B.:

1. Bajra grains @ Rs. 22.0 / kg, Bajra fodder @ Rs. 2.0 / kg
2. Seed trt. Of Imidachlorpid 600 FS @ 8.75 ml/kg, total 35 ml used/ 4.0 kg seed, cost is Rs. 5.20 per ml
3. Cost of Azdirachtin 1500 ppm Rs. 500/- litre, total 2.0 litre used per spray
4. 10 Fish meal traps/ha., such 10 traps were installed, cost of each trap @ Rs. 20 per trap.
5. Cost of Azadirachtin 1500 pmm, 470/- per litre, total 2.0 litre used
6. Cost of Neem cake Rs. 500/- per 50 kg, total 250 & 500 Kg used as per trt.
7. 500 Litres of water used for spray, Labour charges were Rs 500/-ha.
8. Cost of Bajra seeds, Rs. 100/- per Kg, 4.0 kg/ha, 10% high seed rate will cost Rs. 40/-
9. Cost of Trichoderma Rs. 70/- per kg, total 2.5 kg used
10. Cost of PSB RS. 120/- litre, total 44 ml used
11. Cost of NSKE @ 20.00/ kg, total 25.0 kg/ha used per ha., Rs 500/- per 500 labour, total Rs. 1000/-

CHAPTER V: ENTOMOLOGY

Table V.6c: (PMET-5) Testing of IPM modules with farmers practices against pest complex of pearl millet (Centre: Jaipur)

No.	Treatments	Per cent shoot fly incidence		White grub & Termite % at		Yield kg/ha.	
		Vegetative stage	Ear head stage	Vegetative stage	Maturity stage	Grain	Fodder
T1	IPM module-I	9.68* (2.84)	15.80* (7.49)	11.48* (3.98)	12.31* (4.55)	1406	3833
T2	IPM module-II	9.48 (2.75)	16.51 (8.15)	10.45 (3.34)	10.69 (3.50)	1771	5354
T3	IPM module-III	10.29 (3.22)	16.38 (7.97)	11.90 (4.33)	11.14 (3.78)	1989	5396
T4	IPM module-IV	11.11 (3.79)	13.77 (5.68)	11.01 (3.66)	10.60 (3.40)	2083	5521
T5	IPM module-V	8.44 (2.18)	10.24 (3.23)	8.94 (2.44)	6.74 (1.41)	2583	6021
T6	IPM module-VI	10.98 (3.67)	14.44 (6.25)	12.14 (4.43)	11.54 (4.02)	1896	4979
T7	Control	22.45 (14.66)	21.71 (13.75)	24.87 (17.88)	22.49 (14.76)	1208	3583
	SEm ±	0.69	0.69	0.69	0.60	0.76	0.95
	C.D. 5%	2.08	2.06	2.08	1.79	226	285
	CV %	11.79	8.84	10.69	9.78	8.18	3.84

N.B.: Figure in brackets is original values, whereas outside values are arcsine transformation

Table-V.6d: PMET-5: Economics of various treatments for the management of pest complex in pearl millet (Centre: Jaipur)

S. No.	Treatments	Yield increase over control kg/ha		Additional income (Rs.)	Total Expenditure (Rs.)	Net return (Rs.)	I.C.B.R.
		Grain	fodder				
1	IPM module-I	198	250	4856	522	4334	1:9.30
2	IPM module-II	563	1771	15928	3527	12401	1:4.52
3	IPM module-III	781	1813	20808	3702	17106	1:5.62
4	IPM module-IV	875	1938	23126	6027	17099	1:3.84
5	IPM module-V	1375	2438	35126	8527	26599	1:4.12
6	IPM module-VI	688	1396	17928	522	4334	1:9.30

N.B.:

1. Bajra grains @ Rs. 22.0 / kg, Bajra fodder @ Rs. 2.0 / kg
2. Seed trt. Of Imidachlorprid 600 FS @ 8.75 ml/kg, total 35 ml used/ 4.0 kg seed, cost is Rs. 5.20 per ml
3. Cost of Azdirachtin 1500 ppm Rs. 500/- litre, total 2.0 litre used per spray
4. 10 Fish meal traps/ha., such 10 traps were installed, cost of each trap @ Rs. 20 per trap.
5. Cost of Azadirachtin 1500 pmm, 470/- per litre, total 2.0 litre used

CHAPTER V: ENTOMOLOGY

6. Cost of Neem cake Rs. 500/- per 50 kg, total 250 & 500 Kg used as per trt.
7. 500 Litres of water used for spray, Labour charges were Rs 500/-ha.
8. Cost of Bajra seeds, Rs. 100/- per Kg, 4.0 kg/ha, 10% high seed rate will cost Rs. 40/-
9. Cost of Trichoderma Rs. 70/- per kg, total 2.5 kg used
10. Cost of PSB RS. 120/- litre, total 44 ml used
11. Cost of NSKE @ 20.00/ kg, total 25.0 kg/ha used per ha., Rs 500/- per 500 labour, total Rs. 1000/-

Table V.6e: (PMET-5) Testing of IPM modules with farmers practices against pest complex of pearl millet (Centre: Jodhpur)

No.	Treatments	Per cent shoot fly incidence		% Grass hopper damage at 45 DAG	<i>Helicoverpa armigera</i> larval population per 5 ear heads				Yield (kg/ha)	
		Vegetative stage	Ear head stage		24 hrs before spray	24 hrs after spray	3 days after spray	7 days after spray	Grain	Fodder
T1	IPM module-I	7.98 (16.31)	8.51 (16.91)	6.06 (14.20)	6.25 (2.68)	6.50 (2.73)	7.75 (2.95)	8.25 (3.03)	1958	2750
T2	IPM module-II	5.83 (13.92)	5.91 (14.05)	3.76 (11.09)	6.25 (2.69)	6.00 (2.64)	4.25 (2.28)	2.50 (1.86)	2271	3063
T3	IPM module-III	5.84 (13.89)	5.40 (13.42)	4.20 (11.79)	5.50 (2.55)	5.00 (2.43)	4.00 (2.24)	2.50 (1.87)	2333	3271
T4	IPM module-IV	3.82 (11.17)	4.37 (12.03)	3.02 (9.98)	6.50 (2.73)	6.25 (2.69)	3.50 (2.10)	2.50 (1.87)	2604	3458
T5	IPM module-V	2.91 (9.59)	3.43 (10.61)	2.47 (8.97)	7.00 (2.82)	6.25 (2.68)	3.00 (1.98)	2.25 (1.80)	2875	3896
T6	IPM module-VI (AICRP check)	8.96 (17.40)	7.00 (15.33)	6.25 (14.43)	5.50 (2.55)	5.25 (2.49)	4.25 (2.28)	3.50 (2.12)	2125	2875
T7	Control	14.87 (22.64)	9.52 (17.88)	8.43 (16.81)	6.75 (2.77)	7.25 (2.87)	8.50 (3.07)	9.00 (3.16)	1917	2458
	SEm ±	0.88	0.61	0.71	0.11	0.13	0.14	0.11	159.87	140.24
	C.D. 5%	2.61	1.80	2.10	NS	NS	0.41	0.32	473.35	415.24
	CV %	11.47	8.92	11.24	8.48	10.24	11.98	10.15	13.22	8.89

N.B.: Figure in parenthesis are transformed values, whereas outside are original values.

Table-V.6f: Economics of various treatments for the management of shoot fly and stem borer in pearl millet (Centre: Jodhpur)

S. No.	Treatments	Yield increase over control kg/ha		Additional income (Rs.)	Total Expenditure (Rs.)	Net return (Rs.)	I.C.B.R.
		Grain	fodder				
1	IPM module-I	41	292	1404	422	982	1:3.33
2	IPM module-II	354	605	8290	3427	4863	1:2.42
3	IPM module-III	416	813	9946	3602	6344	1:2.76
4	IPM module-IV	687	1000	15740	5927	9813	1:2.66
5	IPM module-V	958	1438	22036	8427	13609	1:2.61
6	IPM module-VI	208	417	4994	1882	3112	1:2.65

CHAPTER V: ENTOMOLOGY

N.B.:

12. Bajra grains @ Rs. 22.0 / kg, Bajra fodder @ Rs. 2.0 / kg
13. Seed trt. Of Imidachlorprid 600 FS @ 8.75 ml/kg, total 35 ml used/ 4.0 kg seed, cost is Rs. 5.20 per ml
14. Cost of Azdirachtin 1500 ppm Rs. 500/- litre, total 2.0 litre used per spray
15. 10 Fish meal traps/ha., such 10 traps were installed, cost of each trap @ Rs. 20 per trap.
16. Cost of Azadirachtin 1500 pmm, 470/- per litre, total 2.0 litre used
17. Cost of Neem cake Rs. 500/- per 50 kg, total 250 & 500 Kg used as per trt.
18. 500 Litres of water used for spray, Labour charges were Rs 500/-ha.
19. Cost of Bajra seeds, Rs. 100/- per Kg, 4.0 kg/ha, 10% high seed rate will cost Rs. 40/-
20. Cost of Trichoderma Rs. 70/- per kg, total 2.5 kg used
21. Cost of PSB RS. 120/- litre, total 44 ml used
22. Cost of NSKE @ 20.00/ kg, total 25.0 kg/ha used per ha., Rs 500/- per 500 labour, total Rs. 1000/-

Table-V.6g: Statement showing effect of IPM modules on incidence of insect-pest complex and yield of pearl millet (Jamnagar-Pooled of 3 years).

No.	Treatments	Shoot fly % damage		Stem borer % damage		<i>Helicoverpa</i> larval population/5 ear heads 7 days after spray	Grass hopper % damage at 45 DAG (Veg. st.)	Grain yield kg/ha	Fodder yield Kg/ha	ICBR
		Vegetative stage	Ear head stage	Vegetative stage	Ear head stage					
1	T1	18.81* (10.48)	20.34* (12.11)	18.01* (9.67)	19.10* (10.79)	2.13# (4.08)	17.63* (9.38)	1849	3655	1:4.73
2	T2	16.34 (7.96)	15.10 (6.95)	15.21 (6.94)	15.98 (7.79)	1.10 (0.83)	14.85 (6.66)	2368	5040	1:4.72
3	T3	16.14 (7.79)	14.08 (6.11)	13.62 (5.83)	14.97 (6.76)	1.11 (0.83)	14.11 (6.08)	2881	5429	1:7.84
4	T4	15.19 (6.96)	14.05 (6.01)	12.89 (5.19)	14.62 (6.43)	1.07 (0.75)	11.69 (4.22)	2915	5962	1:4.19
5	T5	14.02 (5.92)	13.19 (5.39)	11.88 (4.57)	13.87 (5.82)	1.00 (0.58)	10.39 (3.34)	3131	6200	1:3.23
6	T6	20.21 (12.06)	18.19 (9.82)	17.96 (9.73)	17.84 (9.43)	1.38 (1.50)	16.64 (8.29)	2107	4451	1:4.92
7	T7	24.96 (17.89)	23.08 (15.46)	22.65 (15.00)	20.52 (12.35)	2.38 (5.17)	19.36 (11.10)	1780	3417	--
T	S.Em +/-	0.49	0.44	0.54 ()	0.39	0.07	0.63	89.99	327.56	--
	C.D. at 5%	1.40	1.24	1.53	1.12	0.20	1.78	258.32	940.30	--
Y	S.Em +/-	0.32	0.29	0.35	0.26	0.05	0.41	48.10	175.09	--
	C.D. at 5%	0.92	NS	1.00	0.73	0.13	NS	138.08	502.61	--
YXT	S.Em +/-	0.86	0.76	0.93	0.68	0.12	1.09	127.27	463.25	--
	C.D. at 5%	NS	NS	NS	NS	NS	NS	NS	NS	--
	C.V.%	9.53	8.99	11.66	8.15	16.87	14.57	10.46	18.99	--

N.B.: (*) indicates arcsine values, (#) indicates SQR X+0.5 values. Whereas, figure in brackets are original values.

CHAPTER V: ENTOMOLOGY

Table-V.6h: Economics of various treatments for the management of shoot fly and stem borer in pearl millet (Jamnagar)

S. No.	Treatments	Yield increase over control kg/ha		Additional income (Rs.)	Total Expenditure (Rs.)	Net return (Rs.)	I.C.B.R.
		Grain	fodder				
1	IPM module-I	69	238	1994	422	1572	1:4.73
2	IPM module-II	588	1623	16182	3427	12755	1:4.72
3	IPM module-III	1101	2012	28246	3602	24644	1:7.84
4	IPM module-IV	1135	2545	30060	5927	24133	1:5.07
5	IPM module-V	1351	2783	35288	8427	26861	1:4.19
6	IPM module-VI (AICRP check)	327	1034	9262	1882	7380	1:4.92

N.B.:

1. Bajra grains @ Rs. 22.0 / kg, Bajra fodder @ Rs. 2.0 / kg
2. Seed trt. Of Imidachlorpid 600 FS @ 8.75 ml/kg, total 35 ml used/ 4.0 kg seed, cost is Rs. 5.20 per ml
3. Cost of Azdirachtin 1500 ppm Rs. 500/- litre, total 2.0 litre used per spray
4. 10 Fish meal traps/ha., such 10 traps were installed, cost of each trap @ Rs. 20 per trap.
5. Cost of Azadirachtin 1500 pmm, 470/- per litre, total 2.0 litre used
6. Cost of Neem cake Rs. 500/- per 50 kg, total 250 & 500 Kg used as per trt.
7. 500 Litres of water used for spray, Labour charges were Rs 500/-ha.
8. Cost of Bajra seeds, Rs. 100/- per Kg, 4.0 kg/ha, 10% high seed rate will cost Rs. 40/-
9. Cost of Trichoderma Rs. 70/- per kg, total 2.5 kg used
10. Cost of PSB RS. 120/- litre, total 44 ml used
11. Cost of NSKE @ 20.00/ kg, total 25.0 kg/ha used per ha., Rs 500/- plus 500 labour charge for preparation, total Rs. 1000/-

CHAPTER V: ENTOMOLOGY

Table- V.6i: Statement showing the incidence of various insect- pests and yield in pearl millet (Jodhpur-Pooled of 2 years)

No.	Treatment	Per cent shoot fly incidence		% Grass hopper damage at 45 DAG	<i>Helicoverpa armigera</i> larval population per 5 ear heads				Yield (kg/ha)	
		Vegetative stage	Ear head stage		24 hrs before spray	24 hrs after spray	3 days after spray	7 days after spray	Grain	Fodder
T1	IPM module-I	8.31 (16.66)	8.65 (17.05)	6.31 (14.51)	4.00 (2.17)	4.25 (2.24)	5.13 (2.41)	5.88 (2.57)	1854	2563
T2	IPM module-II	6.38 (14.57)	5.63 (13.70)	4.24 (11.80)	3.88 (2.13)	3.75 (2.11)	2.75 (1.89)	1.63 (1.58)	2104	3281
T3	IPM module-III	6.37 (14.54)	5.10 (13.04)	4.16 (11.73)	3.75 (2.14)	3.38 (2.05)	2.63 (1.87)	1.75 (1.64)	2135	3427
T4	IPM module-IV	4.21 (11.75)	4.35 (12.01)	3.31 (10.43)	4.00 (2.15)	3.88 (2.13)	2.38 (1.80)	1.75 (1.64)	227	3667
T5	IPM module-V	3.11 (9.95)	3.27 (10.36)	2.79 (9.50)	4.13 (2.16)	3.63 (2.03)	2.00 (1.70)	1.63 (1.61)	2344	3948
T6	IPM module-VI (AICRP check)	9.35 (17.76)	7.04 (15.37)	6.75 (15.02)	3.75 (2.13)	3.38 (2.05)	2.75 (1.89)	2.38 (1.81)	2042	3208
T7	Control	15.79 (23.37)	9.60 (17.99)	7.45 (16.04)	4.25 (2.22)	4.88 (2.37)	5.75 (2.53)	6.00 (2.58)	1688	2250
	SEm ±	0.55	0.38	0.45	0.07	0.07	0.09	0.08	73.72	131.78
	C.D. 5%	1.56	1.09	1.29	NS	0.21	0.24	0.23	210.15	375.66
	CV %	9.70	8.04	9.92	8.97	9.69	12.68	12.47	9.90	11.41

N.B.: Figure in parenthesis are transformed values, whereas outside are original values.

Table- V.6j: Economics of various treatments for the management of shoot fly and stem borer in pearl millet (PMET-5) (Pooled)-Jodhpur

S. No.	Treatment	Yield increase over control kg/ha		Additional income (Rs.)	Total Expenditure (Rs.)	Net return (Rs.)	I.C.B.R.
		Grain	fodder				
1	IPM module-I	166.00	312.00	4276	522	3754	<u>1:8.19</u>
2	IPM module-II	416.00	1031.00	11214	3527	7687	1:3.18
3	IPM module-III	447.00	1177.00	12188	3702	8486	1:3.29
4	IPM module-IV	583.00	1417.00	15660	6027	<u>9633</u>	1:2.60
5	IPM module-V	656.00	1698.00	<u>17828</u>	8527	9301	1:2.09
6	IPM module-VI	354.00	958.00	9704	1982	7722	1:4.90

N.B.:

1. Bajra grains @ Rs. 22.0 / kg, Bajra fodder @ Rs. 2.0 / kg
2. Seed trt. Of Imidachlorpid 600 FS @ 8.75 ml/kg, total 35 ml used/ 4.0 kg seed, cost is Rs. 5.20 per ml
3. Cost of Azadirachtin 1500 ppm Rs. 500/- litre, total 2.0 litre used per spray
4. 10 Fish meal traps/ha., such 10 traps were installed, cost of each trap @ Rs. 20 per trap.
5. Cost of Azadirachtin 1500 pmm, 470/- per litre, total 2.0 litre used
6. Cost of Neem cake Rs. 500/- per 50 kg, total 250 & 500 Kg used as per trt.
7. 500 Litres of water used for spray, Labour charges were Rs 500/-ha.
8. Cost of Bajra seeds, Rs. 100/- per Kg, 4.0 kg/ha, 10% high seed rate will cost Rs. 40/-
9. Cost of Trichoderma Rs. 70/- per kg, total 2.5 kg used
10. Cost of PSB RS. 120/- litre, total 44 ml used
11. Cost of NSKE @ 20.00/ kg, total 25.0 kg/ha used per ha., Rs 500/- plus 500 labour charge for preparation, total Rs. 1000/-

CHAPTER V: ENTOMOLOGY

Table V.7a: (PMET-7) Survey of insect- pests of summer bajra 2021 on farmers' field-Jamnagar-Gujarat

No	Date of survey	Location	Taluka	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Heli./ 5 EH	FAW % damage	GWDS	Remarks
Survey conducted by Jamnagar centre													
1	04.05.22	Hapa	Jamnagar	Jamnagar	GHB 1129	0.5	E.H.	5.0	5.0	1	0.0	1	Nil
2	04.05.22	Shekhpatt	Jamnagar	Jamnagar	GHB 538	0.5	E.H.	5.0	5.0	1	0.0	1	Nil
3	04.05.22	Khimaliya	Jamnagar	Jamnagar	Sagar 222+	1.0	E.H.	5.0	5.0	1	0.0	1	Nil
4	04.05.22	Chavda	Jamnagar	Jamnagar	Sagar 222+	1.0	E.H.	5.0	5.0	1	0.0	2	Nil
5	04.05.22	Matli	Kalawad	Jamnagar	GHB 1129	0.5	E.H.	5.0	2.0	1	0.0	1	Nil
6	04.05.22	Hadiana	Jodia	Jamnagar	GHB 732	0.5	E.H.	7.0	5.0	1	0.0	1	Nil
7	04.05.22	Suryapara	Jamnagar	Jamnagar	GHB 732	0.5	E.H.	5.0	5.0	0	0.0	1	Nil
8	04.05.22	Sapar	Jamnagar	Jamnagar	GHB 732	0.5	E.H.	5.0	5.0	1	0.0	1	Nil
9	04.05.22	Matva	Jamnagar	Jamnagar	GHB 1129	0.5	E.H.	7.0	2.0	1	0.0	1	Nil
10	18.05.22	Laiyala	Dhrol	Jamnagar	Sagar 222+	0.5	E.H.	3.0	3.0	0	0.0	2	Nil
11	18.05.22	Dhrol	Dhrol	Jamnagar	Avani 444	0.5	E.H.	5.0	2.0	1	0.0	1	Nil
12	18.05.22	Fala	Jamnagar	Jamnagar	Sagar 222+	0.5	E.H.	5.0	4.0	0	0.0	2	Nil
13	18.05.22	Jambuda	Jamnagar	Jamnagar	Sagar 222+	0.5	E.H.	5.0	5.0	1	0.0	1	Nil
14	16.05.22	Sakatsanala	Morbi	Morbi	Sagar 222+	1.0	E.H.	0.0	5.0	1	0.0	1	Nil
15	16.05.22	Morbi	Morbi	Morbi	Sagar 222+	1.0	E.H.	2.0	5.0	2	0.0	1	Nil
16	16.05.22	Nava sadulka	Morbi	Morbi	Manglam	1.0	E.H.	1.0	5.0	1	0.0	1	Nil
17	16.05.22	Gungad	Morbi	Morbi	Sagar 222+	0.5	E.H.	1.0	10.0	0	0.0	1	Nil
18	16.05.22	Nagdavas	Morbi	Morbi	Sagar 222+	1.5	E.H.	2.0	5.0	1	0.0	2	Nil
19	16.05.22	Bahadurgadh	Morbi	Morbi	Sagar 222+	0.5	E.H.	1.0	5.0	0	0.0	1	Nil
20	16.05.22	Maliya	Maliya	Morbi	Sagar 222+	1.0	E.H.	1.0	10.0	0	0.0	1	Nil
21	16.05.22	Adesar	Rapar	Kutch	Sagar 222+	0.5	E.H.	1.0	1.0	1.0	0.0	1.0	Nil
22	16.05.22	Samakhiali	Bhachau	Kutch	86M11	0.5	E.H.	2.0	3.0	1.0	0.0	1.0	Nil
23	16.05.22	Shikarpur	Bhachau	Kutch	86M11	1.0	E.H.	1.0	1.0	0.0	0.0	0.0	Nil
24	16.05.22	Vandhiya	Bhachau	Kutch	Sagar 222+	1.0	E.H.	1.0	1.0	0.0	0.0	1.0	Nil
25	16.05.22	Lakadia	Bhachau	Kutch	Sagar 222+	0.5	E.H.	1.0	2.0	0.0	0.0	1.0	Nil
26	16.05.22	Mevasa	Rapar	Kutch	Sagar 222+	0.5	E.H.	2.0	3.0	1.0	0.0	2.0	Nil
27	16.05.22	Gagodar	Rapar	Kutch	Sagar 222+	0.5	E.H.	1.0	5.0	1.0	0.0	1.0	Nil
28	16.05.22	Somani vandh	Rapar	Kutch	Sagar 222+	0.5	E.H.	1.0	1.0	0.0	0.0	0.0	Nil
29	16.05.22	Katariya Juna	Bhachau	Kutch	86M11	1.0	E.H.	5.0	1.0	0	0.0	4.0	Nil
30	16.05.22	Palasva	Rapar	Kutch	86M11	1.0	E.H.	1.0	2.0	0	0.0	5.0	Nil

CHAPTER V: ENTOMOLOGY

No	Date of survey	Location	Taluka	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Heli./ 5 EH	FAW % damage	GWDS	Remarks
31	16.05.22	Dungrasan	Kankrej	B.Kantha	86M22	1.0	V.S.	5.0	5.0	2	0.0	1	Nil
32	16.05.22	Manpura	Kankrej	B.Kantha	86M11	1.0	E.H.	1.0	2.0	1	0.0	1	Nil
33	16.05.22	Shihori	Kankrej	B.Kantha	86M22	0.5	E.H.	1.0	1.0	0	0.0	2	Nil
34	16.05.22	Khodla	Kankrej	B.Kantha	Dhanya	1.0	E.H.	2.0	3.0	2	0.0	2	Nil
35	16.05.22	Bhiladi	Deesa	B.Kantha	86M11	1.0	V.S.	5.0	5.0	2	0.0	1	Nil
36	16.05.22	Mudetha	Deesa	B.Kantha	Sagar 222+	1.0	E.H.	1.0	1.0	2	0.0	1	Nil
37	16.05.22	Khetwa	Deesa	B.Kantha	Dhanya	1.0	E.H.	1.0	1.0	1	0.0	0	Nil
38	16.05.22	Lorwada	Deesa	B.Kantha	Nitya Hanuman	1.0	V.S.	5.0	2.0	0	0.0	1	Nil
39	16.05.22	Dedol	Deesa	B.Kantha	86M11	1.0	E.H.	1.0	1.0	2	0.0	1	Nil
40	16.05.22	Vadaval	Deesa	B.Kantha	Kaver 6310	1.0	E.H.	2.0	0.0	1	0.0	1	Nil
41	16.05.22	Kumpat	Deesa	B.Kantha	86M11	1.0	V.S.	10.0	1.0	2	0.0	5	Leaf binder 10%
42	16.05.22	Maalgadh	Deesa	B.Kantha	86M22	1.0	V.S.	10.0	5.0	2	0.0	1	Nil
43	16.05.22	Ajapura	Deodar	B.Kantha	Kaver 6310	1.0	E.H.	1.0	1.0	0	0.0	1	Nil
44	16.05.22	Waghrol	Dantiwada	B.Kantha	86M11	1.0	E.H.	1.0	1.0	3	0.0	2	Nil
45	16.05.22	Kant	Deesa	B.Kantha	Dhanya	1.0	V.S.	5.0	5.0	0	0.0	1	Nil
46	16.05.22	Bhakhar nani	Dantiwada	B.Kantha	86M22	1.0	E.H.	1.0	0.0	2	0.0	1	Nil
47	16.05.22	Bhakhar moti	Dantiwada	B.Kantha	86M11	1.0	V.S.	10.0	1.0	0	0.0	2	Nil
48	16.05.22	Dabhipura	Dantiwada	B.Kantha	86M22	1.0	E.H.	1.0	0.0	2	0.0	1	Nil
49	16.05.22	Lodapa	Dantiwada	B.Kantha	Dhanya	1.0	V.S.	5.0	0.0	0	0.0	2	Nil
50	17.05.22	Nilpur	Dantiwada	B.Kantha	Aditya 55	1.0	E.H.	1.0	1.0	1	0.0	1	Nil
51	17.05.22	Ruppura	Palanpur	B.Kantha	Mahyco 2222	1.0	V.S.	5.0	2.0	0	0.0	1	Nil
52	17.05.22	Dangiya	Dantiwada	B.Kantha	Kaver 6310	0.5	E.H.	1.0	0.0	2	0.0	1	Nil
53	17.05.22	Madana	Palanpur	B.Kantha	86M11	1.0	V.S.	5.0	1.0	0	0.0	1	Nil
54	17.05.22	Chandisar	Palanpur	B.Kantha	Kaver 6310	1.0	E.H.	1.0	1.0	1	0.0	0	Nil
55	17.05.22	Kushkal	Palanpur	B.Kantha	Dhanya	1.0	E.H.	1.0	1.0	1	0.0	0	Nil
56	17.05.22	Chadotar	Palanpur	B.Kantha	86M22	0.5	E.H.	2.0	0.0	1	0.0	0	Nil
57	17.05.22	Jodnapura	Palanpur	B.Kantha	86M11	1.0	V.S.	5.0	1.0	0	0.0	2	Nil
58	17.05.22	Jagnathpur a	Unjha	Mehsana	Nandi-5	1.0	E.H.	3.0	1.0	1	0.0	0	Nil
59	17.05.22	Kahoda	Unjha	Mehsana	Sagar 222+	1.0	E.H.	1.0	1.0	0	0.0	0	Nil
60	17.05.22	Khatasna	Khreralu	Mehsana	Sagar 222+	0.5	E.H.	2.0	1.0	0	0.0	1	Nil
61	17.05.22	Lunva	Khreralu	Mehsana	86M22	1.0	E.H.	1.0	2.0	1	0.0	1	Nil
62	17.05.22	Rampura	Khreralu	Mehsana	Sagar 222+	1.0	E.H.	3.0	1.0	0	0.0	1	Nil

CHAPTER V: ENTOMOLOGY

No	Date of survey	Location	Taluka	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Heli./ 5 EH	FAW % damage	GWDS	Remarks
63	17.05.22	Malekpar	Khreralu	Mehsana	86M22	1.0	E.H.	5.0	1.0	0	0.0	1	Nil
64	17.05.22	Mehkubpur a	Khreralu	Mehsana	Sagar 222+	1.0	E.H.	1.0	1.0	1	0.0	1	Nil
65	17.05.22	Kheralu	Khreralu	Mehsana	Sagar 222+	1.0	E.H.	2.0	1.0	1	0.0	0	Nil
66	17.05.22	Shekhpur	Vadnagar	Mehsana	Nandi-5	1.0	E.H.	1.0	1.0	1	0.0	0	Nil
67	17.05.22	Sulipur	Vadnagar	Mehsana	86M22	1.0	E.H.	3.0	2.0	0	0.0	1	Nil
68	17.05.22	Kesimpa	Vadnagar	Mehsana	86M22	1.0	E.H.	1.0	1.0	1	0.0	2	Nil
69	17.05.22	Vadnagar	Vadnagar	Mehsana	Sagar 222+	0.5	E.H.	5.0	1.0	1	0.0	2	Nil
70	17.05.22	Kahipur	Vadnagar	Mehsana	Sagar 222+	0.5	E.H.	1.0	1.0	1	0.0	2	Nil
71	17.05.22	Mirzapur	Vadnagar	Mehsana	86M22	1.0	E.H.	5.0	1.0	1	0.0	1	Nil
72	17.05.22	Malaav	Vijapur	Mehsana	Nandi-5	1.0	E.H.	1.0	2.0	1	0.0	4	Nil
73	17.05.22	Jantral	Vijapur	Mehsana	Sagar 222+	0.5	E.H.	1.0	1.0	0	0.0	3	Nil
74	17.05.22	Radhupura	Satlasna	Mehsana	Nandi-5	1.0	E.H.	2.0	3.0	1	0.0	1	Nil
75	17.05.22	Ladol	Vijapur	Mehsana	Sagar 222+	0.5	E.H.	1.0	1.0	1	0.0	1	Nil
76	17.05.22	Bhavsor	Vijapur	Mehsana	Sagar 222+	1.0	E.H.	0.0	1.0	0	0.0	0	Nil
77	17.05.22	Sundha	Mehmedabad	Kheda	Dhanya	1.0	E.H.	1.0	1.0	1	0.0	1	Nil
78	17.05.22	Mehmedabad	Mehmedabad	Kheda	86M11	1.0	E.H.	2.0	1.0	1	5	1	Nil
79	17.05.22	Marida	Nadiad	Kheda	Aditya 775	1.0	E.H.	2.0	0.0	0	5.0	0	Nil
80	17.05.22	Kheda	Kheda	Kheda	Sagar 222+	1.0	E.H.	1.0	1.0	0	5	2	Nil
81	17.05.22	Chaklasi	Nadiad	Kheda	Ekta 31	1.0	E.H.	1.0	1.0	1	0.0	3	Nil
82	17.05.22	Kanjari	Nadiad	Kheda	Kavya 17	1.0	E.H.	2.0	1.0	1	5.0	3	Nil
83	17.05.22	Nadiad	Nadiad	Kheda	Sagar 222+	1.0	E.H.	1.0	1.0	0	5.0	1	Nil
84	17.05.22	Erandiyapura	Nadiad	Kheda	86M22	1.0	E.H.	2.0	5.0	1	5.0	1	Nil
85	17.05.22	Mankwa	Mehmedabad	Kheda	86M11	1.0	E.H.	1.0	1.0	0	5.0	1	Nil
86	17.05.22	Jinjar	Mehmedabad	Kheda	86M11	0.5	E.H.	2.0	1.0	1	5.0	2	Nil
87	17.05.22	Wanthvali	Mehmedabad	Kheda	Mahyco 2222	1.0	E.H.	1.0	1.0	1	5.0	1	Nil
88	17.05.22	Marida	Nadiad	Kheda	Ekta 31	1.0	E.H.	1.0	1.0	0	5.0	1	Nil
89	17.05.22	Chikhodra	Anand	Anand	Mahyco 2222	1.0	E.H.	1.0	2.0	1	10.0	3	Nil
90	18.05.22	Karamsad	Anand	Anand	Keshav	1.0	E.H.	1.0	1.0	0	5.0	0	Nil
91	18.05.22	Ravipura	Petlad	Anand	Manglam 252	1.0	E.H.	1.0	2.0	0	5.0	0	Nil
92	18.05.22	Morad	Petlad	Anand	Dhanya	1.0	E.H.	15.0	2.0	0	15.0	5	Nil
93	18.05.22	Dhebakuva	Petlad	Anand	Kaver 6310	1.0	E.H.	1.0	1.0	1	5.0	1	Nil
94	18.05.22	Porda	Petlad	Anand	Prashant 44	1.0	E.H.	2.0	1.0	0	10.0	2	Nil
95	18.05.22	Sunav	Petlad	Anand	Triveni	1.0	E.H.	2.0	1.0	0	5.0	2	Nil
96	18.05.22	Bandhani	Petlad	Anand	Adventa 936	1.0	E.H.	3.0	0.0	0	5.0	1	Nil

CHAPTER V: ENTOMOLOGY

No	Date of survey	Location	Taluka	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Heli./ 5 EH	FAW % damage	GWDS	Remarks
97	18.05.22	Palaj	Petlad	Anand	Triveni	0.5	E.H.	2.0	0.0	1	5.0	2	Nil
98	18.05.22	Piplav	Sojitra	Anand	Triveni	1.0	E.H.	1.0	1.0	0	5.0	3	Nil
99	18.05.22	Isnav	Sojitra	Anand	Triveni	0.5	E.H.	2.0	1.0	0	5.0	1	Nil
100	18.05.22	Sojitra	Sojitra	Anand	Sagar 222+	0.5	E.H.	3.0	1.0	1	5.0	2	Nil
101	18.05.22	Harmanpur a	Petlad	Anand	Avani 444	1.0	E.H.	1.0	1.0	0	5.0	0	Nil
102	18.05.22	Devataj	Petlad	Anand	Triveni	1.0	E.H.	1.0	0.0	0	0.0	0	Nil
103	18.05.22	Parol	Sojitra	Anand	86M22	1.0	E.H.	1.0	0.0	0	5.0	1	Nil
104	18.05.22	Isarwada	Tarapur	Anand	Triveni	1.0	E.H.	1.0	0.0	1	0.0	1	Nil
105	18.05.22	Tol	Tarapur	Anand	Mahyco 2222	1.0	E.H.	2.0	0.0	0	0.0	0	Nil
106	18.05.22	Dali	Borsad	Anand	Triveni	1.0	E.H.	3.0	1.0	0	5.0	2	Nil
107	18.05.22	Indranaj	Tarapur	Anand	Dhanya	2.0	E.H.	2.0	1.0	0	10.0	2	Nil
108	18.05.22	Varasada	Tarapur	Anand	Mahyco 2222	2.0	E.H.	3.0	1.0	1	5.0	0	Nil
109	18.05.22	Galiyana	Tarapur	Anand	Triveni	1.5	E.H.	2.0	1.0	0	5.0	1	Nil
110	18.05.22	Gada	Sojitra	Anand	Triveni	1.3	E.H.	3.0	0.0	0	0.0	0	Nil
111	18.05.22	Runaj	Sojitra	Anand	Triveni	1.0	E.H.	2.0	1.0	1	5.0	3	Nil
112	18.05.22	Tarapur	Tarapur	Anand	Triveni	1.0	E.H.	3.0	0.0	0	0.0	2	Nil
113	18.05.22	Choraniya	Limdi	Surendranagar	Sagar 222+	0.5	E.H.	1.0	2.0	1	0.0	1	Nil
114	18.05.22	Navi Morwad	Chuda	Surendranagar	Manglam	0.5	E.H.	2.0	3.0	0	0.0	2	Nil
115	18.05.22	Doliya	Sayla	Surendranagar	86M22	1.0	E.H.	1.0	4.0	0	0.0	3	Nil
116	18.05.22	Maghrikhad a	Chotila	Surendranagar	86M11	1.0	E.H.	1.0	3.0	0	0.0	5	Nil
117	18.05.22	Janivadla	Chotila	Surendranagar	Sagar 222+	0.5	E.H.	0.0	2.0	0	0.0	3	Nil
118	18.05.22	Nava Sudamda	Sayla	Surendranagar	Sagar 222+	0.5	E.H.	0.0	3.0	1	0.0	4	Nil
119	18.05.22	Baldana	Wadhwan	Surendranagar	Sagar 222+	0.8	E.H.	1.0	3.0	0	0.0	2	Nil
120	18.05.22	Vadod	Wadhwan	Surendranagar	Sagar 222+	1.0	E.H.	1.0	2.0	0	0.0	3	Nil
121	18.05.22	Nana Kandhasar	Chotila	Surendranagar	Sagar 222+	1.0	E.H.	1.0	3.0	1	0.0	2	Nil
Survey conducted by Anand centre													
122	02.04.22	Dalapura	Anand	Anand	Desi	0.2	V.S.	15.00	5.00	0.00	0.00	0.00	Nil

CHAPTER V: ENTOMOLOGY

No	Date of survey	Location	Taluka	District	Variety	Area (ha.)	Crop stage	Shoot fly %	Stem borer %	Heli./ 5 EH	FAW % damage	GWDS	Remarks
123	02.04.22	Dalapura	Anand	Anand	Desi	0.1	V.S.	20.00	2.00	0.00	5.00	0.00	Nil
124	02.04.22	Rahtalav	Anand	Anand	Balram 222	0.6	E.H.	10.00	5.00	0.00	0.00	0.00	Nil
125	02.04.22	Fatepura	Tarapur	Anand	86M84	0.4	E.H.	5.00	15.00	2.00	0.00	0.00	Nil
126	02.04.22	Ashipura	Umreth	Anand	Sagar 222	0.7	E.H.	5.00	5.00	1.00	0.00	0.00	Nil
127	02.04.22	Ashipura	Umreth	Anand	Sagar 222	0.4	E.H.	5.00	5.00	3.00	0.00	0.00	Nil
128	02.04.22	Gangapura	Umreth	Anand	Advanta	0.5	E.H.	5.00	10.00	2.00	0.00	0.00	Nil
129	02.04.22	Ratanpura	Umreth	Anand	Balram 222	0.3	E.H.	10.00	15.00	0.00	0.00	0.00	Nil
130	02.04.22	Ratanpura	Umreth	Anand	Desi	0.1	E.H.	15.00	15.00	4.00	0.00	0.00	Nil
131	02.04.22	Ratanpura	Umreth	Anand	86M11	0.5	E.H.	5.00	15.00	2.00	0.00	0.00	Nil
132	02.04.22	Navapura	Umreth	Anand	Desi	0.2	E.H.	15.00	15.00	1.00	0.00	0.00	Nil
133	02.04.22	Bechari	Umreth	Anand	Advanta 5151	0.5	V.S.	10.00	5.00	2.00	0.00	0.00	Nil
134	02.04.22	Bechari	Umreth	Anand	Advanta	0.5	E.H.	5.00	15.00	0.00	0.00	0.00	Nil
135	02.04.22	Bechari	Umreth	Anand	Balram 222	0.4	V.S.	15.00	15.00	0.00	0.00	0.00	Nil
136	02.04.22	Ode	Anand	Anand	Advanta 555	1.0	V.S.	5.00	0.00	0.00	0.00	0.00	Nil
137	02.04.22	Ode	Anand	Anand	Dhany 555	0.5	E.H.	15.00	15.00	3.00	0.00	0.00	Nil
138	02.04.22	Khambholaj	Anand	Anand	86M84	0.9	E.H.	10.00	15.00	2.00	0.00	0.00	Nil
139	18.04.22	Navali	Anand	Anand	Dhany 555	0.7	E.H.	5.00	15.00	3.00	0.00	0.00	Nil
140	18.04.22	Napad	Anand	Anand	Sagar 555	1.2	E.H.	10.00	10.00	2.00	0.00	0.00	Nil
141	18.04.22	Napad	Anand	Anand	Desi	0.4	E.H.	10.00	20.00	1.00	0.00	0.00	Nil
142	18.04.22	Khadol	Anklav	Anand	86M84	0.3	E.H.	5.00	15.00	3.00	0.00	0.00	Nil
143	18.04.22	Khadol	Anklav	Anand	86M84	0.4	E.H.	5.00	15.00	2.00	0.00	0.00	Nil
144	18.04.22	Ambav	Anklav	Anand	Desi	0.1	E.H.	15.00	20.00	3.00	0.00	0.00	Nil
145	18.04.22	Ambav	Anklav	Anand	Desi	0.5	E.H.	10.00	20.00	1.00	0.00	0.00	Nil
146	18.04.22	Munjkuva	Anklav	Anand	Sagar 222	0.9	E.H.	5.00	15.00	2.00	0.00	0.00	Nil
147	18.04.22	Nisaraya	Borsad	Anand	Sagar 222	0.8	E.H.	10.00	10.00	2.00	0.00	0.00	Nil
148	18.04.22	Nisaraya	Borsad	Anand	Advanta 5151	0.7	E.H.	0.00	10.00	0.00	0.00	0.00	Nil
149	18.04.22	Dedarda	Borsad	Anand	Advanta	0.3	E.H.	5.00	15.00	1.00	0.00	0.00	Nil
150	18.04.22	Dedarda	Borsad	Anand	Pioneer	0.4	E.H.	15.00	15.00	2.00	0.00	0.00	Nil
151	18.04.22	NAPA	Borsad	Anand	Desi	0.2	E.H.	15.00	20.00	2.00	0.00	0.00	Nil
152	18.04.22	Khandhali	Anand	Anand	Advanta	0.2	E.H.	5.00	5.00	0.00	0.00	0.00	Nil
							Mini.	0.00	0.00	0.00	0.00	0.00	--
							Maxi.	20.00	20.00	4.00	15.00	5.00	--
							Mean	3.86	4.08	0.82	1.15	1.13	--

CHAPTER V: ENTOMOLOGY

Table- V.7b: Summary statement showing the details of survey of major insect-pests at farmers fields (summer pearl millet, 2022)

Districts	Shoot fly %	Stem borer %	<i>Helicoverpa</i> /5 EH	FAW % damage	GWDS
1. Jamnagar	<u>5.15</u>	4.08	0.77	0.00	1.23
2. Morbi	1.14	<u>6.43</u>	0.71	0.00	1.14
3. Kutch	1.60	2.00	0.40	0.00	1.60
4. Banaskantha	3.30	1.56	<u>1.11</u>	0.00	1.22
5. Mehsana	2.05	1.26	0.63	0.00	1.16
6. Kheda	1.42	1.25	0.58	<u>4.17</u>	1.42
7. Anand	3.86	4.08	0.82	1.15	1.13
8. Surendranagar	0.89	2.78	0.33	0.00	<u>2.78</u>
Overall mean	3.86	4.08	0.82	1.15	1.13

Table V.8a: Relative susceptibility of pearl millet advanced entries to storage insect pests (*Tribolium castaneum*) at Jamnagar, Kharif 2021

Entry code	Entry name	Adult <i>Tribolium</i> population/250g		Per cent grain damage		Per cent weight loss		Germination %
		At 3 months	At 6 months	At 3 months	At 6 months	At 3 months	At 6 months	At 6 months
PET 201	MH 2474	5.78# (32.50)	9.96# (98.50)	7.58* (1.75)	12.22* (4.50)	12.85* (5.00)	21.11* (13.00)	90.50
PET 202	MH 2480	4.35 (18.50)	8.35 (72.50)	4.90 (0.75)	10.75 (3.50)	7.85 (2.00)	15.30 (7.00)	91.50
PET 203	MH 2553	5.15 (27.50)	12.22 (148.50)	4.90 (0.75)	13.43 (5.50)	11.15 (4.00)	22.54 (15.50)	89.50
PET 204	MH 2555	5.02 (24.50)	5.50 (29.50)	6.08 (1.13)	4.90 (0.75)	10.75 (3.50)	12.92 (5.00)	94.25
PET 205	MH 2559	4.13 (16.50)	7.30 (52.50)	5.74 (1.00)	7.58 (1.75)	8.13 (2.00)	12.22 (4.50)	93.25
PET 206	MH 2562	4.35 (18.00)	10.27 (105.00)	4.05 (0.50)	9.05 (2.50)	8.13 (2.00)	15.30 (7.00)	92.50
PET 207	MH 2564	2.64 (6.00)	6.12 (37.50)	2.87 (0.25)	5.74 (1.00)	8.13 (2.00)	10.52 (3.50)	94.00
PET 208	MH 2573	3.74 (13.00)	8.57 (72.50)	4.05 (0.50)	8.13 (2.00)	6.93 (1.50)	10.75 (3.50)	93.00
PET 209	MH 2574	2.88 (7.50)	5.29 (27.50)	2.87 (0.25)	4.90 (0.75)	6.93 (1.50)	11.73 (4.50)	94.25
PET 210	MH 2575	3.46 (11.00)	5.94 (35.00)	2.87 (0.25)	5.74 (1.00)	5.74 (1.00)	9.05 (2.50)	94.00
PET 211	MH 2577	5.33 (27.50)	12.27 (15.00)	7.03 (1.50)	11.44 (4.00)	9.05 (2.50)	17.35 (9.00)	91.00
PET 212	MH 2580	3.80 (13.50)	5.99 (35.00)	3.63 (0.40)	6.38 (1.25)	7.85 (2.00)	12.22 (4.50)	93.75
PET 213	MH 2581	4.18 (16.50)	8.10 (65.00)	4.05 (0.50)	8.13 (2.00)	8.13 (2.00)	16.39 (8.00)	93.00
PET 214	MH 2582	4.11 (16.00)	8.70 (75.00)	4.05 (0.50)	10.75 (3.50)	9.05 (2.50)	16.42 (8.00)	91.50
PET 215	MH 2658	3.86 (14.00)	13.78 (19.00)	4.90 (0.75)	12.22 (4.50)	9.05 (2.50)	19.81 (11.50)	90.50
PET 216	MH 2659	6.20 (37.50)	10.76 (115.00)	4.05 (0.50)	10.75 (3.50)	10.75 (3.50)	16.94 (8.50)	91.50
PET 217	MH 2660	6.06 (36.00)	10.98 (120.00)	7.58 (1.75)	9.05 (2.50)	11.53 (4.00)	18.41 (10.00)	92.50
PET 218	MH 2661	5.78 (32.50)	7.75 (60.00)	4.05 (0.50)	8.13 (2.00)	9.05 (2.50)	13.43 (5.50)	93.00

CHAPTER V: ENTOMOLOGY

Entry code	Entry name	Adult <i>Tribolium</i> population/250g		Per cent grain damage		Per cent weight loss		Germination %
		At 3 months	At 6 months	At 3 months	At 6 months	At 3 months	At 6 months	At 6 months
PET 219	MP 609	4.29 (17.50)	7.80 (60.00)	4.05 (0.50)	7.85 (2.00)	6.93 (1.50)	13.54 (5.50)	93.00
PET 220	RHB 177	4.35 (18.00)	7.06 (50.00)	4.05 (0.50)	6.93 (1.50)	9.05 (2.50)	14.17 (6.00)	93.50
PET 221	HHB 67 Imp.	3.46 (11.00)	6.36 (40.00)	3.46 (0.38)	6.93 (1.50)	6.93 (1.50)	9.05 (2.50)	93.50
PET 222	MPMH 21	4.08 (16.00)	8.42 (70.00)	3.46 (0.38)	9.05 (2.50)	9.83 (3.00)	15.88 (7.50)	92.50
PET 223	HHB 272	4.29 (17.50)	8.24 (67.50)	5.35 (0.88)	10.75 (3.50)	9.05 (2.50)	15.30 (7.00)	91.50
PET 224	MPMH 17	4.42 (19.00)	14.16 (200.00)	4.90 (0.75)	13.54 (5.50)	10.52 (3.50)	23.94 (16.50)	89.50
PET 225	PB 1705	4.45 (19.50)	7.80 (60.00)	3.46 (0.38)	6.93 (1.50)	8.64 (2.50)	13.43 (5.50)	93.50
PET 226	GHB 905	4.00 (15.00)	4.98 (24.00)	2.87 (0.25)	4.90 (0.75)	9.97 (3.00)	10.75 (3.50)	94.25
PET 227	86M01	3.24 (9.50)	6.92 (47.00)	3.46 (0.38)	5.74 (1.00)	5.74 (1.00)	10.75 (3.50)	94.00
PET 228	Pratap	4.89 (23.50)	5.94 (35.00)	3.46 (0.38)	5.74 (1.00)	10.75 (3.50)	13.43 (5.50)	94.00
PET 229	AHB 1269	6.39 (40.00)	9.51 (90.00)	4.05 (0.50)	12.22 (4.50)	11.44 (4.00)	17.43 (9.00)	90.50
PET 230	NBH 5767	5.52 (30.50)	15.66 (250.00)	3.46 (0.38)	18.41 (10.00)	11.44 (4.00)	23.66 (16.50)	85.00
PET 231	86M86	7.18 (50.50)	12.32 (160.00)	6.38 (1.25)	17.43 (9.00)	12.22 (4.50)	22.23 (14.50)	86.00
PET 232	MP-7792	7.58 (56.50)	11.19 (125.00)	6.72 (1.38)	13.43 (5.50)	12.85 (5.00)	23.15 (15.50)	89.50
PET 233	KBH 108	5.28 (27.00)	11.53 (135.00)	6.42 (1.25)	12.85 (5.00)	10.52 (3.50)	21.49 (14.00)	90.00
PET 234	Kaveri S Boss	5.13 (25.50)	10.98 (120.00)	2.87 (0.25)	12.07 (4.50)	7.85 (2.00)	16.59 (8.50)	90.50
PET 235	NBH 4903	4.20 (17.00)	10.31 (108.50)	4.05 (0.50)	12.07 (4.50)	8.13 (2.00)	14.67 (6.50)	90.50
PET 236	GHB 538	4.35 (18.00)	9.51 (90.00)	4.90 (0.75)	10.75 (3.50)	9.05 (2.50)	15.88 (7.50)	91.50
PET 237	Raj 171	5.54 (30.00)	7.45 (55.00)	6.08 (1.13)	8.13 (2.00)	9.05 (2.50)	16.94 (8.50)	93.00
PET 238	ICMV 221	7.13 (50.00)	12.41 (157.50)	5.74 (1.00)	14.13 (6.00)	13.54 (5.50)	23.05 (15.50)	89.00
PET 239	ABV 04	6.16 (37.00)	11.14 (125.00)	5.74 (1.00)	13.54 (5.50)	10.75 (3.50)	19.78 (11.50)	89.50
PET 240	Pusa Comp. 612	6.97 (48.50)	18.23 (335.00)	6.72 (1.38)	19.34 (11.00)	14.13 (6.00)	31.28 (27.00)	84.00
PET 241	Dhanshakti	6.85 (49.00)	12.27 (150.00)	6.42 (1.25)	10.75 (3.50)	12.22 (4.50)	20.69 (12.50)	91.50
PET 242	ICMV 155	8.21 (66.50)	19.09 (375.00)	7.58 (1.75)	20.24 (12.00)	14.17 (6.00)	24.96 (18.00)	83.00
	SE.m +/-	0.57	1.21	0.42	1.04	1.30	2.05	0.72
	C.D. 5%	1.63	3.47	1.21	2.97	3.72	5.88	2.05
	C.V. %	16.16	17.69	12.54	14.20	19.02	17.30	1.11

N.B.: (#) indicates square root transformed values, (*) indicates arcsine transformed values, figure in brackets are original values.

CHAPTER V: ENTOMOLOGY

Table V.8b: Relative susceptibility of pearl millet advanced entries to storage insect pests (*Rhizopertha dominica*) at Anand , Kharif 2021

Entry code	Entry name	Adult <i>Rhizopertha dominica</i> /100g		Per cent grain damage		Per cent weight loss		Germination %
		At 3 months	At 6 months	At 3 months	At 6 months	At 3 months	At 6 months	At 6 months
PET 201	MH 2474	#2.92(8.00)	#3.61(12.50)	*14.18(6.00)	*16.43(8.00)	*11.54(4.00)	*13.56(5.50)	87.00
PET 202	MH 2480	1.58(2.00)	2.35(5.00)	9.97(3.00)	11.54(4.00)	7.03(1.50)	13.56(5.50)	95.00
PET 203	MH 2553	2.65(6.50)	3.81(14.00)	14.18(6.00)	17.46(9.00)	10.78(3.50)	13.56(5.50)	88.00
PET 204	MH 2555	2.45(5.50)	2.74(7.00)	9.97(3.00)	12.92(5.00)	9.97(3.00)	9.97(3.00)	83.00
PET 205	MH 2559	1.87(3.00)	2(3.50)	8.13(2.00)	9.97(3.00)	8.13(2.00)	8.13(2.00)	89.00
PET 206	MH 2562	2.12(4.00)	2.92(8.00)	11.54(4.00)	14.18(6.00)	9.1(2.50)	10.78(3.50)	87.00
PET 207	MH 2564	1.58(2.00)	1.58(2.00)	8.13(2.00)	8.13(2.00)	7.03(1.50)	7.03(1.50)	88.00
PET 208	MH 2573	1.73(2.50)	2.65(6.50)	9.97(3.00)	11.54(4.00)	7.03(1.50)	10.78(3.50)	92.00
PET 209	MH 2574	1.73(2.50)	2.45(5.50)	8.13(2.00)	11.54(4.00)	7.03(1.50)	8.13(2.00)	89.00
PET 210	MH 2575	1.22(1.00)	1.87(3.00)	8.13(2.00)	8.13(2.00)	5.74(1.00)	10.78(3.50)	87.00
PET 211	MH 2577	2(3.50)	2.45(5.50)	8.13(2.00)	11.54(4.00)	8.13(2.00)	9.1(2.50)	91.00
PET 212	MH 2580	1.41(1.50)	1.87(3.00)	9.97(3.00)	8.13(2.00)	5.74(1.00)	7.03(1.50)	91.00
PET 213	MH 2581	1.58(2.00)	2.24(4.50)	9.97(3.00)	9.97(3.00)	5.74(1.00)	8.13(2.00)	88.00
PET 214	MH 2582	1.41(1.50)	2.55(6.00)	11.54(4.00)	11.54(4.00)	5.74(1.00)	10.78(3.50)	87.00
PET 215	MH 2658	2(3.50)	2.55(6.00)	11.54(4.00)	11.54(4.00)	8.13(2.00)	9.97(3.00)	89.00
PET 216	MH 2659	2.74(7.00)	3.54(12.00)	14.18(6.00)	16.43(8.00)	10.78(3.50)	11.54(4.00)	88.00
PET 217	MH 2660	3(8.50)	3.74(13.50)	15.34(7.00)	16.43(8.00)	12.25(4.50)	12.25(4.50)	91.00
PET 218	MH 2661	2.12(4.00)	2.55(6.00)	9.97(3.00)	11.54(4.00)	8.13(2.00)	9.1(2.50)	95.00
PET 219	MP 609	1.87(3.00)	2.35(5.00)	8.13(2.00)	11.54(4.00)	7.03(1.50)	8.13(2.00)	92.00
PET 220	RHB 177	1.41(1.50)	2(3.50)	8.13(2.00)	8.13(2.00)	5.74(1.00)	7.03(1.50)	93.00
PET 221	HHB 67 Imp.	1.41(1.50)	1.87(3.00)	9.97(3.00)	8.13(2.00)	5.74(1.00)	7.03(1.50)	89.00
PET 222	MPMH 21	2.65(6.50)	3.08(9.00)	12.92(5.00)	14.18(6.00)	10.78(3.50)	10.78(3.50)	89.00
PET 223	HHB 272	1.73(2.50)	2.24(4.50)	11.54(4.00)	11.54(4.00)	7.03(1.50)	8.13(2.00)	93.00
PET 224	MPMH 17	2.92(8.00)	3.87(14.50)	14.18(6.00)	17.46(9.00)	11.54(4.00)	13.56(5.50)	89.00
PET 225	PB 1705	2.92(8.00)	3.94(15.00)	15.34(7.00)	17.46(9.00)	12.25(4.50)	14.18(6.00)	91.00
PET 226	GHB 905	2.35(5.00)	2.83(7.50)	11.54(4.00)	12.92(5.00)	9.97(3.00)	9.97(3.00)	93.00
PET 227	86M01	2.65(6.50)	3(8.50)	12.92(5.00)	12.92(5.00)	10.78(3.50)	9.97(3.00)	87.00
PET 228	Pratap	2(3.50)	2.55(6.00)	12.92(5.00)	11.54(4.00)	8.13(2.00)	9.97(3.00)	92.00
PET 229	AHB 1269	2.24(4.50)	2.74(7.00)	9.97(3.00)	12.92(5.00)	9.1(2.50)	9.1(2.50)	90.00
PET 230	NBH 5767	4.47(19.50)	4.74(22.00)	17.46(9.00)	21.13(13.00)	15.34(7.00)	18.43(10.00)	89.00
PET 231	86M86	3.46(11.50)	3.81(14.00)	14.18(6.00)	17.46(9.00)	14.18(6.00)	14.18(6.00)	88.00
PET 232	MP-7792	3(8.50)	3.39(11.00)	12.92(5.00)	15.34(7.00)	12.25(4.50)	12.25(4.50)	89.00
PET 233	KBH 108	3.61(12.50)	3.94(15.00)	15.34(7.00)	17.46(9.00)	14.77(6.50)	13.56(5.50)	91.00
PET 234	Kaveri S Boss	2.83(7.50)	3.24(10.00)	12.92(5.00)	14.18(6.00)	11.54(4.00)	11.54(4.00)	87.00
PET 235	NBH 4903	2.45(5.50)	3.08(9.00)	14.18(6.00)	14.18(6.00)	9.97(3.00)	10.78(3.50)	88.00
PET 236	GHB 538	2.24(4.50)	2.74(7.00)	9.97(3.00)	12.92(5.00)	9.1(2.50)	9.1(2.50)	86.00

CHAPTER V: ENTOMOLOGY

Entry code	Entry name	Adult <i>Rhyzopertha dominica</i> /100g		Per cent grain damage		Per cent weight loss		Germination %
		At 3 months	At 6 months	At 3 months	At 6 months	At 3 months	At 6 months	At 6 months
PET 237	Raj 171	2(3.50)	2.35(5.00)	9.97(3.00)	11.54(4.00)	8.13(2.00)	8.13(2.00)	90.00
PET 238	ICMV 221	2.92(8.00)	3.32(10.50)	12.92(5.00)	14.18(6.00)	11.54(4.00)	11.54(4.00)	85.00
PET 239	ABV 04	2.35(5.00)	2.83(7.50)	11.54(4.00)	14.18(6.00)	9.97(3.00)	9.97(3.00)	88.00
PET 240	Pusa Comp. 612	3.16(9.50)	3.54(12.00)	14.18(6.00)	16.43(8.00)	12.92(5.00)	12.92(5.00)	91.00
PET 241	Dhanshakti	3(8.50)	3.61(12.50)	14.18(6.00)	16.43(8.00)	12.25(4.50)	12.92(5.00)	87.00
PET 242	ICMV 155	2.83(7.50)	3.87(14.50)	12.92(5.00)	18.43(10.00)	11.54(4.00)	14.18(6.00)	94.00
	SE.m±	0.29	0.40	1.52	1.65	0.74	1.42	4.34
	C.D. 5%	0.82	1.14	4.35	4.71	2.12	4.06	12.39
	C.V. %	17.39	19.62	18.49	17.59	11.00	18.92	6.87

N.B.: (#) indicates square root transformed values, (*) indicates arcsine transformed values, figure in brackets are original values.

Table V.9a: PMET-9: Statement showing the adult catches of fall army worm along with weather parameters during *kharif-2022* (Centre: Jamnagar)

No.	S M W	Date of Observation	Days After Germination	Fall army worm adult catches per 5 traps	Fall army worm % damage	Temp. O Maxi.	Temp. O Mini.	R.H. Morn.	R.H. Even.	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	30	25.07.22	7 DAG	0.0	0.00	31.8	26.0	90	77	10.9	4.2	4.4	3.0	0
2	31	01.08.22	14 DAG	0.2	0.00	33.1	26.1	90	70	9.9	4.9	4.8	13.0	2
3	32	08.08.22	21 DAG	0.2	5.00	32.8	26.7	94	73	6.1	4.8	4.1	59.0	4
4	33	15.08.22	28 DAG	0.2	5.00	30.8	25.8	93	78	9.5	3.1	3.9	74.0	3
5	34	22.08.22	35 DAG	0.2	5.00	31.6	25.6	89	70	9.3	3.8	4.6	1.5	0
6	35	29.08.22	42 DAG	0.4	5.00	31.8	25.2	88	66	5.5	5.6	5.3	2.5	1
7	36	05.09.22	49 DAG	0.2	5.00	33.8	26.1	84	60	7.5	7.8	5.8	2.0	0
8	37	12.09.22	56 DAG	0.0	5.00	33.3	25.5	94	75	5.2	4.0	4.3	121.0	7
9	38	19.09.22	63 DAG	0.0	0.00	32.7	24.6	86	61	7.1	9.2	4.7	0.0	0
10	39	26.09.22	70 DAG	0.0	0.00	32.9	24.4	83	57	6.6	9.0	5.0	0.0	0
11	40	03.10.22	77 DAG	0.0	0.00	33.4	24.6	80	55	5.6	9.3	5.3	0.0	0
		Correlation of moth catches of FAW				-0.326 ^{NS}	-0.113 ^{NS}	0.131 ^{NS}	0.069 ^{NS}	-0.247 ^{NS}	-0.169 ^{NS}	0.177 ^{NS}	0.101 ^{NS}	0.076 ^{NS}
		Correlation of FAW damage				-0.244 ^{NS}	0.480 ^{NS}	0.512 ^{NS}	0.405 ^{NS}	-0.218 ^{NS}	-0.542 ^{NS}	-0.158 ^{NS}	0.510 ^{NS}	0.478 ^{NS}

N.B.: Date of sowing: 16.07.2022, Harvesting: 09.10.2022, Variety: General bajra crop

CHAPTER V: ENTOMOLOGY

Table V.9b: PMET-9: Statement showing the adult catches of fall army worm along with weather parameters during *kharif-2022* (Centre: Aurangabad)

No.	S W W	Date of Obs.	Days after Germi.	FAW adult catches per trap	FAW larval counts per 20 plants	FAW % damaged Plants	Temp. O Maxi.	Temp. O Mini.	R.H. Morn.	R.H. Even.	Wind speed km/hr	BSS (hrs)	Eo (mm)	Rainfall (mm)	Rainy Days
1	29	(16-22 July 22)	7 DAG	0	0	0	29.64	20.29	91.29	79.71	4.76	1.51	2.23	35.50	3.00
2	30	(23 July- 29 July 22)	14 DAG	0	0	0	28.21	20.50	91.00	72.00	2.99	1.96	2.34	17.90	3.00
3	31	(30 July- 5 Aug. 22)	21 DAG	0	0	0	31.86	20.71	86.57	70.29	2.34	4.80	3.51	19.00	1.00
4	32	(6 Aug.-12 Aug. 22)	28 DAG	0	0	5	28.79	20.64	93.00	81.14	4.06	2.00	2.30	68.90	4.00
5	33	(13 Aug.-19 Aug. 22)	35 DAG	0	1	10	29.14	20.07	91.71	76.86	5.57	3.94	2.64	9.70	1.00
6	34	(20 Aug.-26 Aug. 22)	42 DAG	0.6	1	10	30.07	20.21	88.86	71.14	4.46	3.86	2.93	4.50	1.00
7	35	(27 Aug.-2 Sept. 22)	49 DAG	0.4	1	15	32.43	20.00	82.00	68.43	2.83	5.94	3.46	69.00	3.00
8	36	(3 Sept.-9 Sept. 22)	56 DAG	0.4	0	15	31.57	19.86	91.14	74.00	2.45	4.06	2.63	55.70	5.00
9	37	(10 Sept.-16 Sept. 22)	63 DAG	0	0	15	29.43	20.86	89.71	77.86	3.79	0.70	2.47	40.30	4.00
10	38	(17 Sept.-23 Sept. 22)	70 DAG	0	0	0	28.43	19.29	89.43	70.43	3.33	3.34	2.11	28.80	3.00
11	39	(24 Sept.-30 Sept. 22)	77 DAG	0	0	0	31.64	19.57	87.29	61.29	2.30	6.10	3.40	37.20	2.00
12	40	(1 Oct.-7 Oct. 22)	84 DAG	0	0	0	31.57	19.57	77.57	62.14	2.88	5.79	3.86	56.10	1.00
Correlation of moth catches of FAW							0.369 ^{NS}	-0.095 ^{NS}	-0.098 ^{NS}	-0.086 ^{NS}	-0.033 ^{NS}	0.273 ^{NS}	0.171 ^{NS}	0.018 ^{NS}	0.056 ^{NS}

N.B.: Date of sowing: 15.07.2022, Date of Harvesting: 02.10.2022, Variety: AHB-1200Fe, Rainfall: 442.60, Rainy days: 31

CHAPTER VI
FRONT LINE
DEMONSTRATIONS

FRONTLINE DEMONSTRATIONS

The front line demonstrations (FLD's) on different production aspects of pearl millet were conducted on 380 ha area against the target plan of 400 ha in the states of Rajasthan, Haryana, Gujarat, Madhya Pradesh, Uttar Pradesh, Punjab, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu. The area under *kharif* and *summer* FLD's is 350 and 30 ha, respectively. The summary results are given in Table VI.I:

S. No.	Name of the centre	Area (ha)	No. of Demo.	Grain yield (kg/ha)		% imp. in grain yield	Stover yield (kg/ha)		Type of Demonstration
				IP	FP		IP	FP	
1	Bikaner (Rajasthan)	30	30	2060	1430	44.1	2767	2033	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
2	Jaipur (Rajasthan)	20	30	2702	1899	42.3	6960	-	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) and RHB 234 v/s Farmer's practices
3	Hisar (Haryana)	20	54	2613	2246	16.3	7540	6658	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
4	Gurgaon (Haryana)	10	25	2976	2770	7.4	6446	6258	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
5	Jamnagar (Gujarat) (Summer)	20	50	3794	3563	6.5	7166	6586	Improved biofortified hybrid (GHB 1129, GHB 732 and GHB 538) v/s Local variety
6	Jamnagar (Gujarat) (Kharif)	10	25	3138	2820	11.3	8044	7021	Improved biofortified hybrid (GHB 1129 and 1225) v/s Local variety
7	Gwalior (Madhya Pradesh)	10	25	2912	2280	27.7	5638	4852	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
8	Ananthapuram (Andhra Pradesh)	10	20	1797	1469	22.4	3195	2701	Improved practices (Bio-fortified variety ABV 04; Fe-70 ppm & Zn-63 ppm) v/s Farmer's practices
9	Ludhiana (Punjab)	10	10	3655	3272	11.7	8364	7467	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
10	Dhule (Maharashtra)	10	25	2057	1751	17.5	3354	2912	Improved practices (Aadishakti) v/s Farmer's practices
11	Vijayapur (Karnataka)	10	10	2279	2015	13.1	5544	5083	Improved practices (Bio-fortified hybrid VPMH 7; Fe-67 ppm & Zn-52 ppm) v/s Farmer's practices

CHAPTER VI: FRONT LINE DEMONSTRATIONS

S. No.	Name of the centre	Area (ha)	No. of Demo.	Grain yield (kg/ha)		% imp. in grain yield	Stover yield (kg/ha)		Type of Demonstration
				IP	FP		IP	FP	
12	Vizianagaram (Andhra Pradesh)	30	50	2174	1650	31.8	7563	7468	Improved practices (Bio-fortified variety ABV 04; Fe-70 ppm & Zn-63ppm) v/s Farmer's practices
13	Coimbatore (Tamil Nadu)	10	25	3082	1830	68.4	4218	2920	Full Package of practices (Bio-fortified hybrid AHB 1200; Fe-77 ppm & Zn-39 ppm and Co 10) v/s Farmer's practices
14	Aurangabad (Maharashtra)	10	25	2110	1691	24.8	4161	3310	Full Package of practices (Bio-fortified hybrid AHB 1200; Fe-77 ppm & Zn-39 ppm) v/s Farmer's practices
15	KVK CAZRI, Jodhpur (Rajasthan)	10	25	2120	1685	25.8	4002	1804	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
16	DEE, AU, Jodhpur (Rajasthan)	20	20	1474	1033	42.7	2179	1679	Improved practices (MPMH 17) v/s Farmer's practices
17	KVK Chandgothi, Churu (Rajasthan)	10	25	1455	1218	19.5	2704	2277	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
18	KVK Phalodi Jodhpur (Rajasthan)	20	20	2145	1726	24.3	3352	2795	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
19	KVK Keshwana, Jalore (Rajasthan) (Kharif)	20	20	2122	1455	45.8	3840	3218	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
20	KVK Athiyasan, Nagaur (Rajasthan)	10	25	1868	1485	25.8	5848	4553	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
21	KVK Maulasar, Nagaur (Rajasthan)	10	25	2652	2225	19.2	3526	3652	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
22	KVK Gudamalani, Barmer (Rajasthan)	20	20	1152	759	51.9	1694	1099	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
23	COA, Sumerpur (Rajasthan)	10	20	1378	1034	33.2	2390	2060	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
24	Perumallapalle (Andhra Pradesh)	10	22	2045	1723	18.7	3783	3208	Improved practices (Bio-fortified variety ABV 04; Fe-70 ppm & Zn-63 ppm) v/s Farmer's practices

CHAPTER VI: FRONT LINE DEMONSTRATIONS

S. No.	Name of the centre	Area (ha)	No. of Demo.	Grain yield (kg/ha)		% imp. in grain yield	Stover yield (kg/ha)		Type of Demonstration
				IP	FP		IP	FP	
25	Biozone (Uttar Pradesh)	10	25	2978	2544	17.0	6778	5838	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) v/s Farmer's practices
26	ICAR-AICRP on Pearl Millet, ARS Mandor	20	20	1572	1297	21.5	3105	2343	Improved practices (Bio-fortified hybrid HHB 299; Fe-73 ppm & Zn-41 ppm) and HHB 223 v/s Farmer's practices
G. Total		380	671						

Total No. of FLD's allotted	400 ha.	FLD's with Biofortified hybrid/variety		320 ha
Total No. of FLD's conducted	380 ha.	% FLD's with Biofortified hybrid/variety		84.2%
		Zone	No. of FLD's	Biofortified
No. of FLD's conducted (<i>khari</i>)	350 ha.	Zone A ₁	180	160
No. of FLD's conducted (<i>summer</i>)	30 ha.	Zone A	90	80
		Zone B	80	70
		<i>Summer</i>	30	10

Bikaner: During *Kharif* 2022 season, thirty FLD's on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices in pearl millet were conducted in 30 ha area. The improved package of practices (Full package of practices and biofortified hybrid HHB 299) recorded 44.1% higher grain yield (2060 kg/ha) compared to the 1430 kg/ha obtained with farmer's practices.

Jaipur: To demonstrate the production potential of improved hybrids (RHB 234 and HHB 299) twenty nine frontline demonstrations (20 ha area) were conducted in Ajmer districts of Rajasthan. An average grain yield of 2702 kg/ha was recorded with adoption of improved hybrids as compared to the farmers practices (1899 kg/ha). The average increase in grain yield was to the tune of 42.3% over the farmer's practices.

Hisar: During *Kharif* 2022, twenty eighty FLD's on pearl millet in 20 ha area were conducted on different production aspects i.e. Improved practices (Use of improved hybrid HHB 299, Recommended dose of Nitrogen & Phosphorus along with Zn, biomix and herbicide Atrazine +1 HW) v/s Farmer's Practices (Use of Pvt. Hybrid, Suboptimal use of N (40-60 kg/ha) only + 1 HW, negligible or no use of P, ZnSO₄ fertilizers, biomix biofertilizer and herbicide Atrazine). The overall average increase of 16.3% in grain yield was recorded with adoption of improved practices (2613 kg/ha) as compared to the farmers practice (2246 kg/ha).

ICAR-IARI, KVK Shikohpur, Gurgaon: Twenty five FLD's were conducted during *Kharif* 2022 in 10 ha area on the improved practices (Use of micro nutrients, improved biofortified hybrid HHB 299 and Atrazine) v/s farmer's practices. The mean grain yield of 2976 kg/ha was recorded with adoption of

improved cultivation practices against farmer's practices (2770 kg/ha). The average increase in grain yield was 7.4% over the farmer's practices.

Jamnagar (Summer): Twenty five FLD's in 20 ha area on improved biofortified hybrids *i.e.* GHB 1129, GHB 732 and GHB 538 were conducted at different locations of Gujarat. An average grain yield of 3794 kg/ha was obtained by adoption of improved hybrid as compared to the local variety (3563 kg/ha) and the average increase in the grain yield was 6.5%.

Jamnagar (Kharif): Twenty five FLD's in 10 ha area on improved biofortified hybrids *i.e.* GHB 1129 and 1225 were conducted at different locations of Gujarat. An average grain yield of 3138 kg/ha was obtained by adoption of improved biofortified hybrid (GHB 1231) as compared to the local variety (2820 kg/ha) and the average increase in the grain yield was 11.3%.

Gwalior: Twenty five FLD's on improved practices (HHB 299) v/s farmer's practices were conducted at Gwalior district of Madhya Pradesh in 10 ha area. An average grain yield of 2912 kg/ha was obtained by adoption of improved biofortified hybrid (HHB 299) as compared to the local variety (2280 kg/ha) and the average increase in the grain yield was 27.7%.

Ananthapuram: During *Kharif* 2022, twenty FLD's were conducted in 10 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison ABV 04 v/s local variety (Pittaganti) v/s farmer's practices. The average grain yield of 1797 kg/ha was obtained in case of improved practices compared to the 1469 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 22.4% over the farmer's practices.

Ludhiana: During *Kharif* 2022, ten FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 3655 kg/ha was obtained in case of improved practices compared to the 3272 kg/ha recorded by the farmer's practices. The average increase in the grain yield was to the tune of 11.7% over the farmer's practices.

Dhule: During *Kharif* 2022, twenty five FLD's were conducted in 10 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison of different hybrid Aadishakti v/s local variety) v/s farmer's practices. The average grain yield of 2057 kg/ha was obtained in case of improved practices compared to the 1751 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 17.5% over the farmer's practices.

Vijayapur: During *Kharif* 2022, ten FLD's in 10 ha area were conducted on improved practices (varietal aspect of pearl millet *i.e.* VPMH 7 v/s farmer's practices. The mean grain yield of pearl millet 2279 kg/ha was recorded in case of improved practices compared to the 2015 kg/ha obtained with farmer's practices. The average increase in the grain yield was 13.1% over the farmer's practices.

Vizianagaram: Fifty FLD's were conducted in 20 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison ABV 04 v/s Pittaganti) v/s farmer's practices. The average grain yield of 2174 kg/ha was obtained in case of improved practices as compared to the farmer's practices (1650 kg/ha). The average increase in grain yield was 31.8% over the farmer's practices.

Coimbatore: During *kharif* 2022 season, twenty five demonstrations in 10 ha area on popularization of TNAU cumbu hybrid CO 10 and AHB 1200 along with improved practices v/s farmers practices (Local variety *i.e.* Nattu cumbu) were conducted at different locations of Coimbatore (Tamil Nadu). The results revealed that average grain yield of 3082 kg/ha with improved crop management practices compared to 1830 kg/ha in farmer's practices (Local variety). It was observed that by adoption of improved hybrids, the grain yield was enhanced by 68.4% over local variety of farmers.

Aurangabad: During *Kharif* 2022, twenty five FLD's were conducted in 10 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison AHB 1200 v/s local variety (MP7333) v/s farmer's practices. The average grain yield of 2110 kg/ha was obtained in case of improved practices compared to the 1691 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 24.8% over the farmer's practices.

ICAR-CAZRI-KVK, Jodhpur: Twenty five FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 2120 kg/ha was obtained in case of improved practices compared to the 1685 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 25.8% over the farmer's practices. Most of the demonstrations were failed due prolonged dry spell during the crop season.

DEE (Agriculture University, Jodhpur): Twenty FLD's were conducted in 20 ha area on improved practices of pearl millet (Full package of practices, micronutrients (Zn & Fe) and use of improved hybrid MPMH 17) v/s farmer's practices. The average grain yield of 1474 kg/ha was obtained in case of improved practices and use of improved hybrid MPMH 17 compared to the 1033 kg/ha by the farmer's practices. The average increase in grain yield was 42.7% over the farmer's practices.

KVK Chandgothi, Churu (SKRAU, Bikaner): Twenty five FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 1455 kg/ha was obtained in case of improved practices as compared to the 1218 kg/ha by the farmer's practices. The average increase in grain yield was 19.5% over the farmer's practices.

KVK Phalodi, Jodhpur (Agriculture University, Jodhpur): Twenty FLD's were conducted in 20 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 2145 kg/ha was obtained in case of improved practices as compared to the 1726 kg/ha by the farmer's practices. The average increase in grain yield was 24.3% over the farmer's practices.

KVK Keshwana, Jalore (Agriculture University, Jodhpur) (Kharif): Twenty FLD's were conducted in 20 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 2122 kg/ha was obtained in case of improved practices as compared to the 1455 kg/ha by the farmer's practices. The average increase in grain yield was 45.8% over the farmer's practices.

KVK Athiyasan, Nagaur-I (Agriculture University, Jodhpur): Twenty five FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved

biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 1868 kg/ha was obtained in case of improved practices as compared to the 1485 kg/ha by the farmer's practices. The average increase in grain yield was 25.8% over the farmer's practices.

KVK Maulasar, Nagaur-II (Agriculture University, Jodhpur): Twenty five FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 2652 kg/ha was obtained in case of improved practices as compared to the 2225 kg/ha by the farmer's practices. The average increase in grain yield was 19.2% over the farmer's practices.

KVK Gudamalani, Barmer (Agriculture University, Jodhpur): Twenty FLD's were conducted in 20 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 1152 kg/ha was obtained in case of improved practices as compared to the 759 kg/ha by the farmer's practices. The average increase in grain yield was 51.9% over the farmer's practices.

COA, Sumerpur-Pali (Agriculture University, Jodhpur): Twenty FLD's were conducted in 10 ha area on improved practices of pearl millet (Full package of practices and use of improved biofortified hybrid HHB 299) v/s farmer's practices. The average grain yield of 1378 kg/ha was obtained in case of improved practices as compared to the 1034 kg/ha by the farmer's practices. The average increase in grain yield was 33.2% over the farmer's practices.

Perumallapalle: During *Summer* 2022, twenty two FLD's were conducted in 10 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison ABV 04 v/s farmer's practices. The average grain yield of 2045 kg/ha was obtained in case of improved practices compared to the 1723 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 18.7% over the farmer's practices.

Biozone: During *Summer* 2022, twenty FLD's were conducted in 10 ha area on improved practices (varietal aspect of pearl millet *i.e.* comparison ABV 04 v/s farmer's practices. The average grain yield of 1881 kg/ha was obtained in case of improved practices compared to the 1578 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 19.2% over the farmer's practices.

ICAR-AICRP on Pearl Millet Mandor: During *Kharif* 2022, twenty FLD's were conducted in 20 ha area on improved practices (Full package of practices (HHB 223) and use of improved biofortified hybrid HHB 299) v/s farmer's practices). The average grain yield of 1572 kg/ha was obtained in case of improved practices compared to the 1297 kg/ha recorded by the farmer's practices. The average increase in the grain yield was 21.5% over the farmer's practices.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.2: Result of FLD's conducted by ARS (SKRAU), Bikaner - Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice Trials

S. No.	Name of Beneficiary	Address	Type of Demon.	Test Variety	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)		GR (Rs./ha)		NR (Rs./ha)	
						IP	FP		IP	FP	IP	FP	IP	FP
1	Kalyan Singh	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	2400	1600	50.0	3100	2000	4990000	1107500	4978000	1096500
2	Bidam Kunwar	Kalyanpura, Churu	Wider spacing	HHB 299	F ₂ Seed	1600	1000	60.0	2200	1500	3250000	879000	3238000	868000
3	Santosh Kunwar	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	2400	1700	41.2	2800	2300	5055000	1238529	5043000	1227529
4	Kailash Singh	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	1500	1200	25.0	1900	1600	3530000	853750	3518000	842750
5	Kheema Ram	Kalyanpura, Churu	Varietal	HHB 299	F ₂ Seed	1500	1300	15.4	1800	1500	3695000	783077	3683000	772077
6	Dharma Ram	Kalyanpura, Churu	Varietal	HHB 299	F ₂ Seed	2000	1400	42.9	2500	2100	4260000	1142143	4248000	1131143
7	Bhagwan Ram	Kalyanpura, Churu	Wider spacing	HHB 299	F ₂ Seed	1800	1300	38.5	2200	1700	3895000	932692	3883000	921692
8	Lalchand Suthar	Kalyanpura, Churu	Weed control	HHB 299	F ₂ Seed	1700	1400	21.4	2100	1700	4060000	896071	4048000	885071
9	Kalu Ram Meghwal	Kalyanpura, Churu	Weed control	HHB 299	F ₂ Seed	1500	1100	36.4	2000	1500	3365000	828182	3353000	817182
10	Dharmendra Kumar	Kalyanpura, Churu	Weed control	HHB 299	F ₂ Seed	1400	1100	27.3	2000	1400	3365000	758636	3353000	747636
11	Rameshwar Singh	Kalyanpura, Churu	Wider spacing	HHB 299	F ₂ Seed	2800	1800	55.6	3600	2700	5670000	1469444	5658000	1458444
12	Usha Kanwar	Kalyanpura, Churu	Weed control	HHB 299	F ₂ Seed	1600	1000	60.0	2200	1500	3250000	879000	3238000	868000
13	Moti Lal	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	2800	1900	47.4	3500	2500	5835000	1351842	5823000	1340842
14	Bhiva Ram	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	1600	1100	45.5	2300	1600	3515000	897727	3503000	886727
15	Omparkash Charan	Kalyanpura, Churu	Full POP	HHB 299	F ₂ Seed	3000	1900	57.9	4000	2700	6085000	1474474	6073000	1463474
16	Santosh Kunwar	Udasar, Churu	Wider spacing	HHB 299	F ₂ Seed	2800	1900	47.4	3600	2800	5885000	1501842	5873000	1490842
17	Sh. Jagdishdan	Udasar, Churu	Weed control	HHB 299	F ₂ Seed	1500	1100	36.4	2100	1600	3415000	878182	3403000	867182
18	Kalu Singh	Udasar, Churu	Full POP	HHB 299	F ₂ Seed	2600	1800	44.4	3600	2600	5670000	1395556	5658000	1384556
19	Nandkishore	Udasar, Churu	Wider spacing	HHB 299	F ₂ Seed	1600	1000	60.0	2200	1800	3250000	1029000	3238000	1018000
20	Tulcha Kanwar	Udasar, Churu	Wider spacing	HHB 299	F ₂ Seed	1600	1200	33.3	2100	1500	3630000	821667	3618000	810667
21	Shyamsundar Sharma	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	2000	1300	53.8	2700	1900	4145000	1065769	4133000	1054769
22	Dayal Singh	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	3200	2100	52.4	4300	3000	6665000	1612619	6653000	1601619
23	Aditya Rajpurohit	Udasar, Churu	Weed control	HHB 299	F ₂ Seed	1600	1100	45.5	2300	1600	3515000	897727	3503000	886727
24	Sakuntala	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	2200	1400	57.1	3100	2200	4560000	1222857	4548000	1211857
25	Sudhir Kumar	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	1700	1300	30.8	3100	2200	4345000	1166154	4333000	1155154
26	Usha Kanwar	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	1900	1400	35.7	2800	2100	4410000	1126786	4398000	1115786
27	Sumati Kumar	Udasar, Churu	Weed control	HHB 299	F ₂ Seed	1500	1000	50.0	2200	1500	3250000	857500	3238000	846500
28	Jitendra Kumar	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	1600	1200	33.3	2300	1700	3730000	921667	3718000	910667
29	Manaveer Karsau Chaurse	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	2400	1800	33.3	3300	2500	5520000	1321667	5508000	1310667
30	Moniram Chirang	Udasar, Churu	Varietal	HHB 299	F ₂ Seed	4000	2500	60.0	5100	3700	7925000	1979000	7913000	1968000
Total						61800	42900		83000	61000	133735000	33290060	133375000	32960060
Mean						2060	1430	44.1	2767	2033	4457833	1109669	4445833	1098669

Full POP: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.3: Result of FLD's conducted by RARI (SKNAU, Jobner), Jaipur-Kharif 2022

Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid RHB 234 and HHB 299) v/s Farmer's Practices

S. No.	Name & Address of Beneficiary	Address	Variety/ Hybrid	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield Demo Plot (q/ha)
					IP	FP		
1	Lala Ram S/o Bheru	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2600	1850	40.5	66
2	Ramkaran S/o Bheru	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2500	2050	22.0	69
3	Smt. Kaju W/o Laxman Das	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2550	1900	34.2	70
4	Shivji Ram S/o Pusa Gurjar	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2700	1850	45.9	71
5	Girdhari Lal S/o Magna Gurjar	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2650	2150	23.3	65
6	Dayal S/o Pusa	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2550	1800	41.7	65
7	Shivraj S/o Heera	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2850	2050	39.0	72
8	Omprakash / Kanaram	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2600	1900	36.8	68
9	Ramawtar S/o Trilokram	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2500	1850	35.1	69
10	Tejuram S/o Sukhdev	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2850	1950	46.2	67
11	Ghewarchand S/o Ladu Ram	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2700	1850	45.9	68
12	Omprakash S/o Ramdev	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2650	1950	35.9	68
13	Hanuman S/o Jagroop	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2550	1800	41.7	67
14	Santop Devi W/o Dayalram	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2850	2000	42.5	69
15	Parmal Singh S/o Ram Singh	Nuriyawas, Ajmer	RHB 234	F ₂ seed	2550	1850	37.8	65
16	Mahendra S/o Hathiram	Nuriyawas, Ajmer	HHB 299	F ₂ seed	3050	1700	79.4	75
17	Gopal Lal S/o Narayan Lal	Nuriyawas, Ajmer	HHB 299	F ₂ seed	2850	1900	50.0	72
18	Dhanna Ram S/o Sopal Kalas	Nuriyawas, Ajmer	HHB 299	F ₂ seed	2700	1900	42.1	69
19	Dharmaram S/o Heera Lal	Nuriyawas, Ajmer	HHB 299	F ₂ seed	2600	2050	26.8	69
20	Shanti W/o Hardev	Nuriyawas, Ajmer	HHB 299	F ₂ seed	2550	1950	30.8	65
21	Dilip S/o Shankarlal	Budhawara, Ajmer	HHB 299	F ₂ seed	2800	1850	51.4	74
22	Ranvir S/o Jaswant Singh	Budhawara, Ajmer	HHB 299	F ₂ seed	2950	1700	73.5	75
23	Sar Mohd. S/o Mohd. Ramjan	Budhawara, Ajmer	HHB 299	F ₂ seed	2700	2050	31.7	69
24	Sikandar S/o Mohd. Ramjan	Budhawara, Ajmer	HHB 299	F ₂ seed	2650	1860	42.5	68
25	Kalu Ram S/o Chatra	Budhawara, Ajmer	HHB 299	F ₂ seed	2650	1900	39.5	70
26	Ammi W/o Ismyl	Budhawara, Ajmer	HHB 299	F ₂ seed	2560	1700	50.6	66
27	Vipul S/o Gopal Poshak	Budhawara, Ajmer	HHB 299	F ₂ seed	2900	1850	56.8	71
28	Geeta Devi W/o Beeramsingh	Beer, Srinagar, Ajmer	HHB 299	F ₂ seed	2850	1650	72.7	84
29	Gajendra Singh S/o Deep Singh	Bhawanta, Ajmer	HHB 299	F ₂ seed	2600	2000	30.0	68
30	Bharat Singh S/o Gopal Singh	Bhawanta, Ajmer	HHB 299	F ₂ seed	3010	2100	43.3	74
Total					81070	56960		2088
Mean					2702	1899	42.3	69.6

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.4: Results of FLD's conducted by CCS HAU, Hisar during *Kharif 2022*

Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practices

S. No.	Name of Farmer	Fathers/ Husband Name	Address	Variety/ Hybrids	Test Variety	Grain Yield (kg/ha)		% improvement in Grain yield	Fodder Yield (q/ha)	
						IP	FP		IP	FP
1	Hawa Singh	Bhagwana Ram	Umra, Tehsil Hansi, District Hisar	HHB 299	Local	4200	3600	16.7	10200	9300
2	Puja	Ranbir Singh	Umra, Tehsil Hansi, District Hisar	HHB 299	Local	4000	3200	25.0	10000	8800
3	Rakesh Sharma	Satbir Singh	Bhojraj, VPO Dahima, District Hisar	HHB 299	Local	4000	3400	17.6	10600	9200
4	Rohtash	Maan Singh	Bhojraj, VPO Dahima, District Hisar	HHB 299	Local	4000	3200	25.0	10500	8700
5	Abhimanyu Jakhar	Mahabir Jakhar	Balawas, VPO Nalwa, District Hisar	HHB 299	Local	2600	2300	13.0	8000	7500
6	Sombir	Satbir Jakhar	Balawas, VPO Nalwa, District Hisar	HHB 299	Local	2800	2500	12.0	8800	7400
7	Ram Kishan	Chandgi Ram	Patan, District Hisar	HHB 299	Local	3900	3600	8.3	9800	9000
8	Vikram Singh	Lal Singh	Jamawadi, Tehsil Hansi, Distt. Hisar	HHB 299	Local	Trial failed				
9	Raj Kamal	Banwari Lal	Khirmana, District and Tehsil Hisar	HHB 299	Local	Trial failed				
10	Rajbir Singh	Om Parkash	Dayiyad, District Fatehabad	HHB 299	Local	2500	2100	19.0	8000	7500
11	Ashok	Ramjivan	Sasroli, Matanhel, District Jhajjar	HHB 299	Local	1500	1400	7.1	4100	3500
12	Shyam Lal	Tek Chand	Sasroli, Matanhel, District Jhajjar	HHB 299	Local	1700	1500	13.3	4200	4600
13	Mahender	Suraj Bhan	Sasroli, Matanhel, District Jhajjar	HHB 299	Local	1500	1300	15.4	4100	3800
14	Jai Parkash	Harphool	Bhagwan Pur, Narwana, Distt. Jind	HHB 300	Local	1200	1100	9.1	2700	2500
15	Rajender Singh	Ratan Singh	Malwai, Tehsil Julana, District Jind	HHB 301	Local	Trial failed				
16	Amit Khatri	Shamsher Khatri	Jatwada, Tehsil & District Sonapat	HHB 302	Local	2500	2200	13.6	7100	6600
17	Laxmi Narain	Shivram	Palri Panihara, Distt. Mahendragarh	HHB 303	Local	2600	2200	18.2	8500	7000
18	Amit Yadav	Nand Kishore	Palri Panihara, Distt. Mahendragarh	HHB 304	Local	2500	2100	19.0	7800	6900
19	Ajay Kumar	Hariram	Akoda, District Mahendragarh	HHB 305	Local	2120	1760	20.5	6210	5400
20	Parveen Kumar	Ramanand	Akoda, District Mahendragarh	HHB 306	Local	2250	1850	21.6	6750	5670
21	Michael	Sawarn	Akoda, District Mahendragarh	HHB 307	Local	2340	1980	18.2	6840	5850
22	Ashok Kumar	Ranjeet Singh	Adalpur, District Mahendragarh	HHB 308	Local	2160	1710	26.3	6480	5220
23	Pawan Kumar	Sumer Singh	Bucholi, District Mahendragarh	HHB 309	Local	1980	1710	15.8	5940	5130
24	Vijender	Lakhi Ram	Ghari, District Mahendragarh	HHB 310	Local	2160	1800	20.0	6120	5400
25	Rajender	Lakhi Ram	Ghari, District Mahendragarh	HHB 311	Local	2340	1980	18.2	6840	5940
26	Sanwal Ram	Sadhu Ram	Kakrala, District Mahendragarh	HHB 312	Local	2160	1890	14.3	6210	5490

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.4: Results of FLD's conducted by CCS HAU, Hisar during *Kharif 2022*

Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practices

S. No.	Name of Farmer	Fathers/ Husband Name	Address	Vaiety/ Hybrids	Test Variety	Grain Yield (kg/ha)		% improvement in Grain yield	Fodder Yield (q/ha)	
						IP	FP		IP	FP
27	Manphool	Hari Singh	Kakrala, District Mahendragarh	HHB 313	Local	2070	1800	15.0	5940	5490
28	Birender Singh	Bisan Singh	Kakrala, District Mahendragarh	HHB 314	Local	2160	1890	14.3	6210	5580
29	Dharmbir	Hoshiyar Singh	Kakrala, District Mahendragarh	HHB 315	Local	1980	1710	15.8	5940	5130
30	Krishan Singh	Umrao Singh	Kakrala, District Mahendragarh	HHB 316	Local	2160	1800	20.0	6120	5400
31	Rameshwar	Chhaju Ram	Kakrala, District Mahendragarh	HHB 317	Local	2340	1980	18.2	6840	5940
32	Karishana Devi Yadav	Rameshwar	Kakrala, District Mahendragarh	HHB 318	Local	2340	1980	18.2	6840	5850
33	Rajesh Devi	Vijay Singh	Kakrala, District Mahendragarh	HHB 319	Local	1980	1710	15.8	5940	5130
34	Satish	Chandan Singh	Bhadani, Distt. Jhajjar	HHB 299	Local	3450	2600	32.7	8500	7800
35	Sunder	Surjain Singh	Bhadani, Distt. Jhajjar	HHB 299	Local	3300	2750	20.0	9000	8600
36	Devender	Ram Kanwar	Dulina, Distt. Jhajjar	HHB 299	Local	3000	2600	15.4	9400	8000
37	Jitender	Satpal	Bhadani, Distt. Jhajjar	HHB 299	Local	3300	2950	11.9	9800	8900
38	Salochna Rani	Om Prakash	Sunderheti, Distt. Jhajjar	HHB 299	Local	2900	2600	11.5	8700	8000
39	Joginder	Rajender Singh	Haluhera, Musepur, Distt. Rewari	HHB 299	Local	2800	2300	21.7	8000	7200
40	Sanjay Kumar	Mahipal	Salawas, Distt. Jhajjar	HHB 299	Local	3200	2800	14.3	9600	8200
41	Rajender Kumar	Nafe Singh	Bichpari, Sarsod, Distt. Hisar	HHB 299	Local	2700	2300	17.4	7600	6500
42	Ravinder Byan	Nafe Singh	Bichpari, Sarsod, Distt. Hisar	HHB 299	Local	2800	2400	16.7	8500	7600
43	Suresh Kumar	Rai Sahab	Landhari, Distt. Hisar	HHB 300	Local	Trial failed				
44	Ram Singh	Chabil Das	Gangwa, Distt. Hisar	HHB 299	Local	2500	2300	8.7	6200	5500
Total (A)						103990	88850		294920	261220
Mean (A)						2600	2221	17.0	7373	6531

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.4: Results of FLD's conducted by CCS HAU, Hisar during *Kharif 2022*

Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practices

S. No.	Name of Farmer	Fathers/ Husband Name	Address	Vaiety/ Hybrids	Test Variety	Grain Yield (kg/ha)		% improvement in Grain yield	Fodder Yield (q/ha)	
						IP	FP		IP	FP
1	Paramjeet	Anand Parkash	Sehri, Kharkhoda, District Sonipat	HHB 299	Local	2550	2200	15.9	7400	6800
2	Rajeev	Ashok Kumar	Adalpur, District Mahendragarh	HHB 299	Local	2350	2100	11.9	7600	6500
3	Sawarn	Munshi ram	Akoda, District Mahendragarh	HHB 299	Local	2200	1950	12.8	7200	5800
4	Rajkumar	Mohanlal	Khatod, District Mahendragarh	HHB 299	Local	2100	1800	16.7	6600	5700
5	Gajraj	Ramotar	Khudana, District Mahendragarh	HHB 300	Local	2400	2150	11.6	6800	6000
6	Tularam	Ramotar	Khudana, District Mahendragarh	HHB 301	Local	2450	2200	11.4	7600	6600
7	Satpal	Chandan Singh	Bhadani, Distt. Jhajjar	HHB 302	Local	3500	3200	9.4	10300	9500
8	Salochna Rani	Om Prakash	Sunderheti, Distt. Jhajjar	HHB 303	Local	3100	2650	17.0	9800	8400
9	Devender	Ram Kanwar	Dulina, Distt. Jhajjar	HHB 304	Local	3200	2700	18.5	10200	8600
10	Joginder	Rajender Singh	Haluhera, Musepur, Distt. Rewari	HHB 299	Local	2800	2500	12.0	8600	7800
Total (B)						26650	23450		82100	71700
Mean (B)						2665	2345	13.6	8210	7170
G. Total (A+B)						130640	112300		377020	332920
G. Mean						2613	2246	16.3	7540	6658

Type of FLD: A: Farmer's Practices (FP) v/s Improved Practices (IP)

T₁: Farmers' Practices : Use of Pvt. Hybrid, Suboptimal use of N (40-60 kg/ha) only + 1 HW, negligible or no use of P, ZnSO₄ fertilizers,biomix biofertilizer and herbicide Atrazine.

T₂: Improved Practices: Use of improved hybrid HHB 299, Recommended dose of Nitrogen & Phosphorus along with Zn, biomix and herbicide Atrazine +1 HW).

Type of FLD: B: Farmer's Practices (without FeSO₄) v/s Improved Practices (with FeSO₄)

T₁: Farmers' Practices : Use of HHB 299 Hybrid, Suboptimal use of N (40-60 kg/ha) only + 1 HW, negligible or no use of MOP, ZnSO₄ fertilizers, biomix biofertilizer and without FeSO₄ spray).

T₂: Improved Practices: Use of improved hybrid HHB 299, Recommended dose of Nitrogen & Phosphorus along with MOP, Zn, biomix and herbicide Atrazine +1 HW and with FeSO₄ spray.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.5: Result of FLD's conducted by KVK, Shikohpur (ICAR-IARI, New Delhi) – Kharif 2022

Type of Demonstration: Improved practices (Improved biofortified hybrid HHB 299) v/s Farmer's Practice (JK 26 and Dhanya 7878)

S. No.	Name & Address of the Beneficiary	Variety/Hybrids	Test Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
1	Sh. Krishan Kumar S/o Sh. Ramkalla, Vill-Jhanjhrola Kheda	HHB 299	Local	2840	2440	16.4	6260	5620
2	Sh. Jai Narayan S/o Sh. Prabhu dayal, Vill-Sultanpur	HHB 299	Local	3140	2750	14.2	7010	6230
3	Sh.Krishan Chandra S/o Sh. Ramchandra, Vill-Khera Khurampur	HHB 299	Local	3040	2790	9.0	6820	6280
4	Sh. Sujeet Singh S/o Sh. Krishan,Vill-Jhanjhrola Kheda	HHB 299	Local	3120	2850	9.5	7030	6260
5	Sh. Jaiprakash S/o Sh. Har Narayan, Vill-Daboda	HHB 299	Local	2960	2810	5.3	6350	6860
6	Smt. Sawaotri W/o Sh. Jaiprakash, Vill-Daboda	HHB 299	Local	3010	2780	8.3	6280	6350
7	Sh. Ramkishan S/o Sh. Nathuram, Vill-Khandewla	HHB 299	Local	2960	2810	5.3	6050	6000
8	Sh. Omprakas S/o Nathuram, Vill- Khandewla	HHB 299	Local	3030	2890	4.8	6150	6020
9	Sh. Pradeep Kumar S/o Sh. Ramniwas, Vill- Jhanjhrola Kheda	HHB 299	Local	2950	2860	3.1	6220	6350
10	Sh. Ramniwas S/o Amichand, Vill- Jhanjhrola Kheda	HHB 299	Local	2890	2790	3.6	6320	6280
11	Sh. Jitesh Kumar S/o Sh. Ramniwas Vill-Jhanjhrola Kheda	HHB 299	Local	2960	2750	7.6	6350	6250
12	Smt. Savita Devi W/o Sh. Pradeep Kumar, Vill-Jhanjhrola Kheda	HHB 299	Local	2870	2790	2.9	6450	6350
13	Sh. Vikash Kumar S/o Ramniwas, Vill-Jhanjhrola Kheda	HHB 299	Local	2960	2790	6.1	6350	6250
14	Sh. Dev Yadav S/o Sh Vikash Kumar, Vill- Jhanjhrola Kheda	HHB 299	Local	3050	2820	8.2	6520	6350
15	Sh. Ajeet Singh S/o Ramvatar, Vill-Basonda	HHB 299	Local	2980	2810	6.0	6420	6240
16	Sh. Raju Singh S/oTarachand, Vill-Basonda	HHB 299	Local	2970	2780	6.8	6330	6250
17	Sh. Pratap Singh S/o Aplatun Singh, Vill-Basunda	HHB 299	Local	2950	2750	7.3	6440	6220
18	Sh. Kanvar Singh S/o Aplatun Singh,Vill-Basunda	HHB 299	Local	2890	2680	7.8	6320	6150
19	Sh. Ashok S/o Sh. Ramavtar, Vill-Basunda	HHB 299	Local	2970	2700	10.0	6430	6340
20	Sh. Rajkumar S/o Sh. Ramavtar, Vill-Basunda	HHB 299	Local	3040	2850	6.7	6630	6350
21	Sh. Lalaram S/o Sh. Tarachandra, Vill-Basunda	HHB 299	Local	2960	2750	7.6	6420	6210
22	Sh. Dharmpal S/o Sh. Sh.Ramavtar, Vill-Basunda	HHB 299	Local	3020	2650	14.0	6350	6150
23	Sh. Rajendra S/o Sh. Banwari, Vill-Basunda	HHB 299	Local	3100	2950	5.1	6650	6540
24	Sh. Suresh S/o Sh. Ramswarup, Vill-Basunda	HHB 299	Local	2920	2770	5.4	6550	6320
25	Sh. Babulal S/o Sh. Balwan, Vill-Tirpari	HHB 299	Local	2830	2650	6.8	6450	6240
Total				74410	69260		161150	156460
Mean				2976	2770	7.4	6446	6258

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.6: Result of FLD's conducted by Junagadh Agricultural University, Jamnagar - Summer 2021

Type of Demonstration: Varietal Trial: GHB 538 and biofortified hybrids GHB 1129, GHB 732 and GHB 538

S. No.	Name of Beneficiary	Location	Variety/Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Sarojben Nathubhai Chandravadiya	Butavadar, Jam Jodhpur	GHB 732	Local	3850	3610	6.6	6950	6450
2	Vejiben Ramabhai Dhrangu	Butavadar, Jam Jodhpur	GHB 732	Local	3650	3480	4.9	7250	6570
3	Somatbhai Lakhmanbhai Dhrangu	Butavadar, Jam Jodhpur	GHB 732	Local	3800	3640	4.4	7080	6420
4	Karshanbhai Jethabhai Chandravadiya	Butavadar, Jam Jodhpur	GHB 732	Local	3780	3560	6.2	7350	6680
5	Denish Nathubhai Chandravadiya	Butavadar, Jam Jodhpur	GHB 538	Local	3650	3450	5.8	6820	6150
6	Nathubhai Arjanbhai Chandravadiya	Butavadar, Jam Jodhpur	GHB 1129	Local	3900	3600	8.3	7250	6570
7	Bhupatbhai Ramabhai Dhrangu	Butavadar, Jam Jodhpur	GHB 1129	Local	3850	3625	6.2	7050	6520
8	Sudhirbhai Amrutlal Tala	Butavadar, Jam Jodhpur	GHB 1129	Local	4050	3750	8.0	7850	7040
9	Manojkumar Jetsibhai Dangar	Butavadar, Jam Jodhpur	GHB 1129	Local	3875	3600	7.6	7550	6720
10	Dhrupatba Batukbha Zala	Butavadar, Jam Jodhpur	GHB 1129	Local	4030	3750	7.5	7120	6630
11	Govindbhai Ramabhai Chandravadiya	Butavadar, Jam Jodhpur	GHB 1129	Local	3820	3620	5.5	7220	6850
12	Amrutlal Parsottambhai Zala	Butavadar, Jam Jodhpur	GHB 1129	Local	3940	3550	11.0	7430	6720
13	Jenish Vitthaldas Bhanderi	Mandasani, Jam Jodhpur	GHB 732	Local	3750	3420	9.6	7150	6550
14	Bhaishankar Narsibhai Joshi	Moti Gop, Jam Jodhpur	GHB 732	Local	3880	3480	11.5	7320	6720
15	Jivrambhai Narsibhai Joshi	Moti Gop, Jam Jodhpur	GHB 1129	Local	4030	3620	11.3	7200	6690
16	Kantilal Narsibhai Joshi	Moti Gop, Jam Jodhpur	GHB 538	Local	3580	3480	2.9	6550	6200
17	Shailesh Arjanbhai Abhangi	Narmana, Jam Jodhpur	GHB 732	Local	3740	3550	5.4	7080	6310
18	Naradbhai Lavabhai Abhangi	Narmana, Jam Jodhpur	GHB 1129	Local	3850	3570	7.8	6980	6380
19	Dilipbhai Haribhai Chachapara	Gaduka, Jamnagar	GHB 732	Local	3700	3520	5.1	7240	6380
20	Chhaganbhai Viraji Nakum	Hadiyana, Jamnagar	GHB 732	Local	3760	3580	5.0	7050	6560
21	Badridan Vaktaji Rohadiya	Hapa, Jamnagar	GHB 1129	Local	4150	3650	13.7	7950	7150
22	Arjan Madhavji Satvara	Khimaliya, Jamnagar	GHB 1129	Local	3970	3720	6.7	7350	6880
23	Kiritsinh Navalsang Jadeja	Lakhani Motavas, Jamnagar	GHB 732	Local	3850	3650	5.5	6960	6440
24	Pradhyumansinh Khumansinh Jadeja	Lakhani Nanovas, Jamnagar	GHB 732	Local	3720	3550	4.8	7320	6750
25	Sukhdevsinh Dhirubha Jadeja	Lakhani Nanovas, Jamnagar	GHB 732	Local	3920	3670	6.8	6980	6220
26	Kiritsinh Dhirubha Jadeja	Lakhani Nanovas, Jamnagar	GHB 732	Local	3800	3550	7.0	7150	6520
27	Narendrasinh Balvantsinh Jadeja	Lakhani Nanovas, Jamnagar	GHB 1129	Local	3870	3650	6.0	7550	6950

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.6: Result of FLD's conducted by Junagadh Agricultural University, Jamnagar - Summer 2021

Type of Demonstration: Varietal Trial: GHB 538 and biofortified hybrids GHB 1129, GHB 732 and GHB 538

S. No.	Name of Beneficiary	Location	Variety/Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
28	Balvantsinh Balubha Jadeja	Lakhani Nanovas, Jamnagar	GHB 1129	Local	4040	3650	10.7	7270	6810
29	Trikambhai Popatbhai Bhanderi	Matva, Jamnagar	GHB 1129	Local	3900	3630	7.4	7450	6720
30	Samjuben Trikamabhai Bhanderi	Matva, Jamnagar	GHB 732	Local	3770	3450	9.3	7300	6670
31	Ladhabhai Chakubhai Sanghani	Matva, Jamnagar	GHB 1129	Local	3970	3590	10.6	7100	6650
32	Bhikhubhai Jerambhai Varsani	Matva, Jamnagar	GHB 732	Local	3680	3520	4.5	7140	6540
33	Prakashbhai Karshanbhai Bhanderi	Matva, Jamnagar	GHB 1129	Local	4050	3770	7.4	7240	6750
34	Mathurbhai Kalabhai Bhanderi	Matva, Jamnagar	GHB 1129	Local	3880	3620	7.2	7520	6630
35	Bhagvanjibhai Ramjibhai Vadoliya	Sapar, Jamnagar	GHB 732	Local	3750	3650	2.7	7230	6500
36	Kantilal Pragjibhai Kanjariya	Shekhpatt, Jamnagar	GHB 538	Local	3630	3520	3.1	6700	6350
37	Ramjibhai Manjibhai Rangani	Suryapara, Jamnagar	GHB 732	Local	3600	3470	3.7	7090	6620
38	Tulsibhai Laljibhai Sanghani	Veratiya, Jamnagar	GHB 732	Local	3780	3520	7.4	7180	6550
39	Gordhanbhai Ramajibhai Dudagara	Virpar (Vijaypur), Jamnagar	GHB 732	Local	3420	3200	6.9	6950	6450
40	Madhabhai Veljibhai Parmar	Hadiyana, Jodiya	GHB 732	Local	3820	3630	5.2	7220	6550
41	Mathurbhai Parbatbhai Sanghani	Nani Vavdi, Kalavad	GHB 538	Local	3550	3400	4.4	6620	6150
42	Kishanbhai Markhibhai Chandravadiya	Pipli, Lalpur	GHB 1129	Local	3950	3580	10.3	7280	6820
43	Kasturben Jadavji Charol	Amreli, Morbi	GHB 538	Local	3400	3450	-1.4	6850	6750
44	Arvindbhai Avcharbhai Moradiya	Amreli, Morbi	GHB 538	Local	3460	3400	1.8	6750	6330
45	Kuldipkumar Dineshbhai Goriya	Gor Khijadiya, Morbi	GHB 538	Local	3340	3370	-0.9	6800	6670
46	Shivlal Tribhovanbhai Goriya	Gor Khijadiya, Morbi	GHB 538	Local	3670	3450	6.4	6900	6250
47	Damjibhai Mohanbhai Nakum	Morbi, Morbi	GHB 538	Local	3550	3480	2.0	6620	6200
48	Hirabhai Khimabhai Piprotar	Rupamora, Bhanvad	GHB 1129	Local	4070	3650	11.5	7850	6970
49	Naranbhai Virabhai Karmata	Jalodar, Maliya Hatina	GHB 1129	Local	3930	3650	7.7	7720	7140
50	Jentilal Madhavjibhai Suthar	Advana, Porbandar	GHB 538	Local	3720	3580	3.9	6780	6220
Total					189695	178125		358310	329310
Mean					3794	3563	6.5	7166	6586

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.7: Result of FLD's conducted by Junagadh Agricultural University, Jamnagar - Kharif 2021

Type of Demonstration: Varietal Trial: Biofortified hybrid GHB 1129 and GHB 1225

S. No.	Name of Beneficiary	Location	Variety/Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Kiritbhai Vibhaji Sodha	Dhandha, Jamnagar	GHB 1129	Local	3054	2715	12.5	8083	7342
2	Bharatbhai Pababhai Nanera	Rupamora, Bhanvad	GHB 1129	Local	2962	2672	10.9	8175	7003
3	Hirabhai Khimabhai Piprotar	Rupamora, Bhanvad	GHB 1225	Local	3036	2764	9.8	8083	6910
4	Lakhamanbhai Anandbhai Piprotar	Rupamora, Bhanvad	GHB 1129	Local	3073	2641	16.4	7959	6694
5	Maniben Lakhamanbhai Piprotar	Rupamora, Bhanvad	GHB 1225	Local	3276	2962	10.6	8268	7311
6	Rudabhai Jerambhai Piprotar	Rupamora, Bhanvad	GHB 1129	Local	3116	2727	14.3	8330	7281
7	Alpesh Dyalji Sonagara	Verad, Bhanvad	GHB 1225	Local	3381	3036	11.4	7700	6756
8	Bhavesbhai Bavanjibhai Sonagara	Verad, Bhanvad	GHB 1225	Local	3147	2869	9.7	7959	7157
9	Dinkar Damajibhai Sonagara	Verad, Bhanvad	GHB 1225	Local	3196	2931	9.0	7898	7065
10	Parsotam Chhaganbhai Sonagara	Verad, Bhanvad	GHB 1225	Local	2980	2622	13.7	8144	7003
11	Vishal Arvindbhai Sonagara	Verad, Bhanvad	GHB 1129	Local	3270	2962	10.4	8502	7034
12	Kishorbhai Ramjibhai Khungala	Khirsara, Maliya	GHB 1225	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
13	Maganbhai Mohanbhai Jilariya	Khirsara, Maliya	GHB 1129	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
14	Bhanubhai Labhubhai Miyatra	Mota Dahisara, Maliya	GHB 1225	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
15	Bhavanbhai Parbatbhai Dangar	Mota Dahisara, Maliya	GHB 1129	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
16	Kacharabhai Savabhai Miyatra	Mota Dahisara, Maliya	GHB 1225	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
17	Kamuben Jethabhai Miyatra	Mota Dahisara, Maliya	GHB 1225	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
18	Labhuben Bhanubhai Miyatra	Mota Dahisara, Maliya	GHB 1225	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
19	Labhuben Bhavanbhai Dangar	Mota Dahisara, Maliya	GHB 1129	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
20	Lakhamanbhai Naranbhai Balsara	Mota Dahisara, Maliya	GHB 1129	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
21	Lalajibhai Raydhanbhai Balsara	Mota Dahisara, Maliya	GHB 1129	Local	Trial failed due to heavy and continuous rainfall at seedling stage				
22	Dineshbhai Kalabhai Chaudhary	Pechhadal, Deesa	GHB 1129	Local	3023	2777	8.9	7743	6633
23	Hirabhai Kalabhai Chaudhary	Pechhadal, Deesa	GHB 1129	Local	3147	2869	9.7	7898	6941
24	Kalabhai Dharambhai Kanabi	Pechhadal, Deesa	GHB 1225	Local	3289	2931	12.2	8175	7250
25	Rameshbhai Bhurabhai Chaudhary	Pechhadal, Deesa	GHB 1225	Local	3116	2826	10.3	7743	6941
Total					47066	42304		120660	105321
Mean					3138	2820	11.3	8044	7021

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.8: Result of FLD's conducted by AICRP-PM, RVSKVV, Gwalior - Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice Trials

S. No.	Name of the Beneficiary	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Dharm Singh	Gwalior	HHB 299	F ₂ seed	3000	2600	15.4	5500	4350
2	Arun Pratap Singh	Gwalior	HHB 299	F ₂ seed	2700	2350	14.9	5700	4500
3	Jitendra Singh	Gwalior	HHB 299	F ₂ seed	3250	2530	28.5	6200	4850
4	Ramkaran Kirar	Gwalior	HHB 299	F ₂ seed	3380	2600	30.0	6250	4800
5	Sudhar Singh	Gwalior	HHB 299	F ₂ seed	3100	2440	27.0	5750	4460
6	Bikram Singh	Gwalior	HHB 299	F ₂ seed	2750	2220	23.9	5500	4620
7	Birendra Singh	Gwalior	HHB 299	F ₂ seed	3100	2450	26.5	5800	4950
8	Manish Parihar	Gwalior	HHB 299	F ₂ seed	3150	2050	53.7	5500	4900
9	Gopal Parashar	Gwalior	HHB 299	F ₂ seed	2700	1960	37.8	5800	5100
10	Ajay Parashar	Gwalior	HHB 299	F ₂ seed	2800	2130	31.5	6200	5400
11	Avdesh	Gwalior	HHB 299	F ₂ seed	2750	1880	46.3	5000	4850
12	Vishambhar Gurjar	Gwalior	HHB 299	F ₂ seed	2675	1950	37.2	5150	4770
13	Shailendra Rajput	Gwalior	HHB 299	F ₂ seed	2850	2210	29.0	5350	4400
14	Rakesh	Gwalior	HHB 299	F ₂ seed	2940	2300	27.8	5500	4600
15	Jagdish Singh	Gwalior	HHB 299	F ₂ seed	3050	2450	24.5	5300	4380
16	Madho Singh	Gwalior	HHB 299	F ₂ seed	3000	2320	29.3	5250	4450
17	Ramavtar Jatav	Gwalior	HHB 299	F ₂ seed	2975	2540	17.1	5500	5150
18	Kishan Lal	Gwalior	HHB 299	F ₂ seed	3000	2430	23.5	5500	4880
19	Kushum	Gwalior	HHB 299	F ₂ seed	2625	2150	22.1	5750	4900
20	Pooja Jatav	Gwalior	HHB 299	F ₂ seed	2500	1970	26.9	6000	5300
21	Kartar Singh	Gwalior	HHB 299	F ₂ seed	3100	2550	21.6	5750	5150
22	Ravi Kushwah	Gwalior	HHB 299	F ₂ seed	2600	2040	27.5	5000	4800
23	Rati Bai	Gwalior	HHB 299	F ₂ seed	3000	2350	27.7	6000	5400
24	Mahesh Kushwah	Gwalior	HHB 299	F ₂ seed	3300	2420	36.4	6200	5500
25	Narayani Kushwah	Gwalior	HHB 299	F ₂ seed	2500	2110	18.5	5500	4850
Total					72795	57000		140950	121310
Mean					2912	2280	27.7	5638	4852

Improved practices: Use of Improved biofortified hybrids (HHB 299), Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.9: Result of FLD's conducted by AICRP on Pearl Millet, ARS, ANGRAU, Ananthapuramu *Kharif 2022*

Type of Demonstration: Improved Practices (Varietal trial: Biofortified variety ABV-04) v/s Farmer's Practices

S. No.	Name of Beneficiary	Address	Variety/ Hybrids	Check Variety	Grain Yield (Kg/ ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	M. Nagappa	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1729	1497	15.5	3082	2619
2	G. Kondanna	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1891	1745	8.4	3352	3068
3	K. Rajayya	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1702	1419	19.9	3026	2469
4	P. Obulamma	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1748	1150	52.1	3098	1998
5	C. Obul Reddy	Garladinne, Ananthapuramu	ABV-04	Pittaganti	2215	1893	17.0	3962	3365
6	P. Chennamma	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1915	1538	24.5	3337	3030
7	Y. Parveen	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1824	1352	35.0	3267	2391
8	G. Hemalatha	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1908	1777	7.4	3430	3179
9	Thimakka	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1924	1474	30.6	3347	2587
10	M. Maniamma	Garladinne, Ananthapuramu	ABV-04	Pittaganti	1636	1349	21.3	2914	2405
11	M. Eswaramma	CK Palle, Ananthapuramu	ABV-04	Pittaganti	2003	1617	23.9	3564	3272
12	S. Venkata Lakshmi	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1637	1388	17.9	2941	2437
13	P. Amarnath	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1386	1201	15.5	2487	2140
14	S. Narayana Swamy	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1386	1134	22.2	2412	2402
15	T. Deepti	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1889	1410	34.0	3382	2461
16	K. Venkatalakshmi	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1515	1260	20.2	2698	2246
17	C. Ramu	CK Palle, Ananthapuramu	ABV-04	Pittaganti	2386	1885	26.6	4220	3845
18	C. Anjineyulu	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1975	1597	23.7	3543	2849
19	K. Yugandhar	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1639	1309	25.2	2892	2837
20	N. Malyala	CK Palle, Ananthapuramu	ABV-04	Pittaganti	1638	1385	18.3	2938	2429
Total					35946	29376		63894	54028
Mean					1797	1469	22.4	3195	2701

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.10: Result of FLD's conducted by PAU, Ludhiana (Punjab) Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice Trials

S. No.	Name of the Beneficiary	Address	Variety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Sh. Sandeep Singh	Bhawal Bassi, Abohar	HHB 299	Private hybrid	3670	3250	12.9	7840	7300
2	Sh. Jagjot Singh	Bhawal Bassi, Abohar	HHB 299	Private hybrid	3425	3200	7.0	8350	7550
3	Sh. Swarn Singh	Bhawal Bassi, Abohar	HHB 299	Private hybrid	3775	2900	30.2	8770	7440
4	Sh. Vinod Kumar	Bakainwala, Khuaian Sarvar	HHB 299	Private hybrid	3400	3150	7.9	8400	7670
5	Sh. Parvinder Kumar	Jhottian Wala, Jalalabad	HHB 299	Private hybrid	3800	3050	24.6	8200	7950
6	Sh. Jugraj Singh	Khote Pipli, Bhatinda	HHB 299	Private hybrid	3930	3450	13.9	8500	7050
7	Sh. Hardeep Singh	Khote Pipli, Bhatinda	HHB 299	Private hybrid	3730	3570	4.5	8600	7370
8	Sh. Gurmeet Singh	Bakainwala, Khuaian Sarvar	HHB 299	Private hybrid	3600	3100	16.1	8230	7500
9	Sh. Gurpreet Singh	Dharanwala, Abohar	HHB 299	Private hybrid	3770	3500	7.7	8050	7390
10	Sh. Kashmir Chand	Jhottian Wala, Jalalabad	HHB 299	Private hybrid	3445	3550	-3.0	8700	7450
Total					36545	32720		83640	74670
Mean					3655	3272	11.7	8364	7467

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.11: Result of FLD's conducted by B.R.S., College of Agriculture, Dhule (Maharashtra) - Kharif 2022

Technology Demonstration: Full package of practices V/s Farmers practice

S. No.	Name & Address of the Beneficiary	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
1	Sh. Shashank Bansilal Gulecha, At/Post- Lohoner, Ta- Devala, Dist- Nashik	Aadishakti	Local	2025	1700	19.1	3445	2675
2	Sh. Sunil Jasraj Kankaria, At/Post- Lohoner, Ta- Devala, Dist- Nashik	Aadishakti	Local	1850	1600	15.6	3145	2300
3	Sh. Ramesh Kalu Hire, At/Post- Nimgaon, Ta- Malegaon, Dist- Nashik	Aadishakti	Local	1900	1650	15.2	3040	2870
4	Sh. Ritesh Bhagawan Marathe, 35A, Balaji nagar, Karvand road, Shirpur, Dist-Dhule	Aadishakti	Local	1900	1650	15.2	3135	2420
5	Sh. Shirish Dungal Wagh, At/Post- Balapur, Ta/Dist- Dhule	Aadishakti	Local	2100	1800	16.7	3570	2510
6	Sh. Ravindra Hiranman Patil, At/Post- Thalner, Ta- Shirpur, Dist- Dhule	Aadishakti	Local	2150	1800	19.4	3550	3090
7	Sh. Shivaji Shantaram Ahire, At/Post- Dhavalivihar, Ta- Sakri, Dist- Dhule	Aadishakti	Local	1850	1550	19.4	2942	2440
8	Sh. Santosh Gulabrao Dhangar, At- Ghotane, Post-Nyahali, Ta/Dist- Nandurbar	Aadishakti	Local	2050	1700	20.6	3280	3030
9	Sh. Sagar Dhondu Dhangar, At- Ghotane, Post-Nyahali, Ta/Dist- Nandurbar	Aadishakti	Local	2100	1850	13.5	3465	3065
10	Sh. Ganesh Ishwar Bava, At- Ghotane, Post-Nyahali, Ta/Dist- Nandurbar	Aadishakti	Local	2150	1820	18.1	3440	3010
11	Sh. Vijay Devapuri Bava (Gosavi), At- Ghotane, Post-Nyahali, Ta/Dist- Nandurbar	Aadishakti	Local	2230	1900	17.4	3680	3100
12	Sh. Rajendra Bhaidas Gosavi (Buva), At- Ghotane, Post-Nyahali, Ta/Dist- Nandurbar	Aadishakti	Local	1920	1600	20.0	3070	2875
13	Sh. Amarsing Noprya Gavit, At-Zamanzira Suli, Ta- Navapur, Dist- Nandurbar	Aadishakti	Local	1750	1470	19.0	2880	2650
14	Sh. Vikas Yashwant Desale, At/Post: Deur Kh., Tal/Dist: Dhule	Aadishakti	Local	2100	1860	12.9	3150	3040
15	Sh. Amar Shivaji Desale, At/Post: Deur Kh., Tal/Dist: Dhule	Aadishakti	Local	2200	1980	11.1	3410	3020
16	Sh. Yusuf Pinjari, At/Post: Mhasadi, Tal: Sakri, Dist: Dhule	Aadishakti	Local	2125	1800	18.1	3420	3000
17	Sh. Dilip Tukaram Deore, At/Post: Mhasadi, Tal: Sakri, Dist: Dhule	Aadishakti	Local	2025	1750	15.7	3340	2850
18	Sh. Bhaiyya Muralidhar Bedase, At/Post: Mhasadi, Tal: Sakri, Dist: Dhule	Aadishakti	Local	2150	1850	16.2	3550	3150
19	Sh. Pratap Dhansing Gavit, At- Borzar, Post- Nagzari, Ta- Navapur, Dist- Nandurbar	Aadishakti	Local	2170	1800	20.6	3580	3250
20	Sh. Pandharinath Waman Patil, At/Post- Kudane, Ta/Dist- Dhule	Aadishakti	Local	2240	1950	14.9	3550	3250
21	Sh. Ankush Ananda Mavali, At/Post- Kelipada, Ta- Sakri, Dist- Dhule	Aadishakti	Local	1980	1650	20.0	3260	2800
22	Sh. Dasharath Ramchandra Malich, At/Post-Darkhel, Ta- Sakri, Dist- Dhule	Aadishakti	Local	2025	1650	22.7	3400	2925
23	Sh. Dilip Krishna Malich, At/Post-Darkhel, Ta- Sakri, Dist- Dhule	Aadishakti	Local	2030	1750	16.0	3350	3080
24	Sh. Amol Gangadhar Wagh, At/Post- Borkund, Ta/Dist- Dhule	Aadishakti	Local	2150	1800	19.4	3550	3150
25	Sh. Mahendara Magan Dhivare, At/Post-Saver, Ta- Shirpur, Dist- Dhule	Aadishakti	Local	2250	1850	21.6	3650	3240
Total				51420	43780		83852	72790
Mean				2057	1751	17.5	3354	2912

Full POP: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.12: Result of FLD's conducted by RARS (UAS) Vijayapur - Kharif 2022

S. No.	Name & Address of Beneficiary	Area (ha)	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)		Gross Returns (Rs./ha)*	
			IP	FP		IP	FP	IP	FP
Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid VPMH 7) v/s Farmer's Practices									
1	Sh. Bhimasing Kakhandaki, At/Po: Toravi Hobli: Tikota Tq: Tikota, Dist: Vijayapur	1.0	2250	2069	8.7	5210	4839	38250	35181
2	Smt. Gouravva Hattarakihal, At/Po: Hegadihal Hobli: Hegadihal Tq & Dist: Vijayapur	1.0	1910	1451	31.6	4633	4124	32465	24674
3	Sh. Gangappa Harijan, At/Po: Bijjargi, Hobli: Tikota Tq: Tikota, Dist: Vijayapur	1.0	2514	2167	16.0	5775	5238	42736	36833
4	Sh. Shankara Khubu Nayak, At/Po: Kudgi Tq: Basavan Bagevadi, Dist: Vijayapur	1.0	2583	2076	24.4	5682	5053	43917	35299
5	Sh. Sadashiva Pundalik Chavan, At/Po: Hittinhalli Tq: Vijayapur, Dist: Vijayapur	1.0	1382	1236	11.8	4435	4279	23493	21014
6	Smt. Adivemma P Diodaman, At/Po: Kudari Tq: Basavan Bagevadi, Dist: Vijayapur	1.0	3417	3139	8.9	7636	7350	58083	53361
7	Sh. Yallappa B Jakkenala, At/Po: Kudari Salavadagi, Tq: Basavan Bagevadi, Dist: Vijayapur	1.0	2160	1917	12.7	5541	4787	36715	32583
8	Sh. Shivanand Vitthal Reddi, At/Po: Satalagaon Hobli: Chadachan, Tq: Chadachan, Dist: Vijayapur	1.0	1486	1389	7.0	4249	3972	25264	23611
9	Sh. Hanamanta Sangapur, At/Po: Kalgurki Tq: Basavan Bagevadi, Dist: Vijayapur	1.0	2306	2153	7.1	5573	5134	39194	36597
10	Sh. Prakash Kalasagond, At/Po: Talewad Hobli: Kolar, Tq: Kolar, Dist: Vijayapur	1.0	2785	2549	9.3	6705	6058	47340	43326
Total		10.0	22793	20146		55439	50834	387457	342479
Mean			2279	2015	13.1	5544	5083	38746	34248

IP = Improved Practice FP=Farmer's Practice

*Gross returns includes income of only grain yields

Market Prices: Grain: Pear millet @ Rs. 17.00/kg

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.13: Result of FLD's conducted by A.R.S., Vizianagaram, Andhra Pradesh - Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid ABV 04) v/s Farmer's Practice Trials

S. No.	Name & Address of the Beneficiary	Variety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
1	Chukka. Buchamma, Guddanganivalsa, Salur, Vizianagaram	ABV 04	Pittaganti	2200	1690	30.2	7650	7000
2	Barla. Birasayya, Guddanganivalsa, Salur, Vizianagaram	ABV 04	Pittaganti	2080	1550	34.2	7800	7550
3	Barla. Ramakrishna, Guddanganivalsa, Salur, Vizianagaram	ABV 04	Pittaganti	2130	1590	34.0	7720	7480
4	Reddi. Chinnammi, Guddanganivalsa, Salur, Vizianagaram	ABV 04	Pittaganti	2080	1540	35.1	7750	7650
5	Korra Parvathi, Guddanganivalsa, Salur, Vizianagaram	ABV 04	Pittaganti	2160	1600	35.0	7240	7700
6	Tadangi. Adivinaidu, Tadangivalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2150	1630	31.9	7450	7450
7	Tadangi. Sambayya, Tadangivalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2220	1650	34.5	7600	7300
8	Majji. Lakshmi, Tadangivalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2260	1570	43.9	7540	7400
9	Kola. Adivamma, Tadangivalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2190	1520	44.1	7630	7500
10	Macha. Bheema Rao, Mettavalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2070	1610	28.6	7300	7460
11	Macha. Lakshmi, Mettavalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2300	1550	48.4	7550	7600
12	Muvala. Laxmi, Mettavalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2260	1700	32.9	7790	7350
13	Macha. Dasu, Mettavalasa, Salur, Vizianagaram	ABV 04	Pittaganti	2220	1600	38.8	7370	7500
14	Vemula. Durgarao, Kurukuti, Salur, Vizianagaram	ABV 04	Pittaganti	2340	1690	38.5	7480	7550
15	Gemmala. Gowrish, Kurukuti, Salur, Vizianagaram	ABV 04	Pittaganti	2280	1700	34.1	7500	7700
16	Gemmala. Buchayya, Kurukuti, Salur, Vizianagaram	ABV 04	Pittaganti	2200	1540	42.9	7800	7550
17	Alamanda. Laxman, Kurukuti, Salur, Vizianagaram	ABV 04	Pittaganti	2190	1590	37.7	7500	7750
18	Murla. Veeramma, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2190	1550	41.3	7550	7500
19	Tomala. Yarakayya, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2000	1670	19.8	7800	7650
20	Bachala. Seetamma, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2150	1620	32.7	7860	7450
21	Bachala. Buchamma, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2170	1610	34.8	7800	7300
22	Bopala. Chinnammi, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2320	1630	42.3	7550	7400
23	Gammela. Parayya, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2280	1590	43.4	7760	7480
24	Korra. Kannamma, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2160	1500	44.0	7340	7170
25	Chadala. Kannamma, Chinnabarigam, Salur, Vizianagaram	ABV 04	Pittaganti	2050	1550	32.3	7500	7400
26	Nirujogi. Satyavathi, Cheepuruvalasa, Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2240	1690	32.5	7200	7580
27	Annam Reddy Krishna, Cheepuruvalasa, Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2180	1730	26.0	7700	7340

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.13: Result of FLD's conducted by A.R.S., Vizianagaram, Andhra Pradesh - Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid ABV 04) v/s Farmer's Practice Trials

S. No.	Name & Address of the Beneficiary	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
28	Bokim Ramu Naidu,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2100	1800	16.7	7400	7450
29	Chalumuri. Satyavathi,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2140	1630	31.3	7800	7500
30	Annam Reddy. Nagamani,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2190	1710	28.1	7450	7490
31	Annam Reddy. Demudamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2200	1750	25.7	7930	7390
32	Annam Reddy. Demudamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2260	1700	32.9	7500	7470
33	Annam Reddy. Padma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2160	1750	23.4	7650	7420
34	Annam Reddy Yerrayamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2180	1670	30.5	7300	7500
35	Annam Reddy Demudamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2100	1630	28.8	7750	7280
36	Annam Reddy Akkamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2070	1590	30.2	7550	7380
37	Ravada. Yerrinamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2020	1750	15.4	7550	7750
38	Annam Reddy Pushpaveni,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2260	1700	32.9	7050	7640
39	Annam Reddy Demudu,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2210	1590	39.0	7550	7400
40	Annam Reddy Kotamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2140	1650	29.7	7650	7350
41	Jami. Demudamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2200	1700	29.4	7700	7530
42	Annam Reddy Chellamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2100	1810	16.0	7500	7600
43	Behara Siva Laxmi,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2020	1770	14.1	7500	7550
44	Behera Govindamma,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2150	1790	20.1	7700	7600
45	Bonugu. Satyavathi,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2210	1640	34.8	7400	7200
46	Bonugu. Manikyam,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2300	1730	32.9	7600	7350
47	Randhi.Laxmi,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2150	1650	30.3	7400	7400
48	Randi. Surya Kumari,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2230	1770	26.0	7500	7580
49	Kotana Appala Konda,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2150	1600	34.4	7500	7390
50	Bonuku. Lalitha,Cheepuruvalasa,Kothavalasa, Vizianagaram	ABV 04	Pittaganti	2100	1650	27.3	7500	7400
Total				108710	82490		378160	373380
Mean				2174	1650	31.8	7563	7468

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.14: Result of FLD's conducted by CPBG, TNAU, Coimbatore - *Kharif 2022*

Technology Demonstrated: Popularization of cumbu variety Co 10 & Biofortified hybrid AHB 1200 with improved crop management practices

S. No.	Name & Address of Beneficiary	Variety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)		GR (Rs./ha)		NR (Rs./ha)	
				TV	CV		TV	CV	TV	CV	TV	CV
1	R. Chandrasekaran S/o Ramasamy, Ariyalur	CO 10	Nattu Cumbu	2743	1637	67.6	3468	2794	44613	32260	21613	14260
2	S. Kanaiyan S/o Subramanian, Ariyalur	CO 10	Nattu Cumbu	2728	1529	78.4	3923	2437	44843	29959	21843	11959
3	V. Senthamizhselvan S/o Veerasamy, Ariyalur	CO 10	Nattu Cumbu	2737	1634	67.5	3846	2824	44901	32236	21901	14236
4	S. Chandrasekar S/o Veerasamy, Ariyalur	CO 10	Nattu Cumbu	2724	1709	59.4	3834	2819	44694	33581	21694	15581
5	K. Pandiyan S/o Kunjidhapadam, Ariyalur	CO 10	Nattu Cumbu	3127	1834	70.5	4229	2672	51134	35684	28134	17684
Total (A)				14059	8343		19300	13546	230185	163720	115185	73720
Mean (A)				2812	1669	68.5	3860	2709	46037	32744	23037	14744
6	M. Sakkaravarthi, S/o MurugaPadayachi, Ariyalur	AHB 1200	Nattu Cumbu	3209	1751	83.3	4394	2657	52529	34175	29529	16175
7	R. Thamilarasi W/o Rajaduari, Ariyalur	AHB 1200	Nattu Cumbu	3087	1796	71.9	4282	2916	50587	35244	27587	17244
8	K. Karunanidhi S/o Kannappan, Ariyalur	AHB 1200	Nattu Cumbu	3241	1882	72.2	4457	2835	53072	36711	30072	18711
9	C. Balaiya S/o Chandrakasi, Ariyalur	AHB 1200	Nattu Cumbu	3182	1675	90.0	4374	2543	52104	32693	29104	14693
10	K. Jayagandhi S/o. Krishnasami, Ariyalur	AHB 1200	Nattu Cumbu	2958	1734	70.6	3934	2649	48304	33861	25304	15861
11	R. Venkatachalapathy S/o Ramasamy, Ariyalur	AHB 1200	Nattu Cumbu	3242	1723	88.2	4037	2924	52667	33938	29667	15938
12	M. Saroja D/o Pattusamy, Ariyalur	AHB 1200	Nattu Cumbu	3183	1625	95.9	3961	2538	51706	31788	28706	13788
13	S. Kannayan S/o Chandrakasan, Ariyalur	AHB 1200	Nattu Cumbu	3021	1802	67.6	4204	2892	49519	35328	26519	17328
14	R. Purushothaman S/o Renganathan, Ariyalur	AHB 1200	Nattu Cumbu	3012	1689	78.3	4327	2839	49507	33241	26507	15241
15	R. Rajakumar S/o Ramamirtham, Ariyalur	AHB 1200	Nattu Cumbu	3115	1841	69.2	4430	2943	51155	36081	28155	18081
16	K. Ramakrishnan S/o Kunjithapatham, Ariyalur	AHB 1200	Nattu Cumbu	3024	1627	85.9	4308	2831	49668	32117	26668	14117
17	C. Magimaiddass S/o Chinnappan, Ariyalur	AHB 1200	Nattu Cumbu	3128	1739	79.9	4213	2890	51133	34192	28133	16192
18	R. Tamilarasan S/o Ramakrishnan, Ariyalur	AHB 1200	Nattu Cumbu	3205	1924	66.6	4308	3083	52383	37715	29383	19715
19	S. Sivasamy S/o Samidurai, Ariyalur	AHB 1200	Nattu Cumbu	3245	2028	60.0	4527	3109	53202	39613	30202	21613
20	P. Dharmadurai S/o Palanivel, Ariyalur	AHB 1200	Nattu Cumbu	3027	2179	38.9	4319	3348	49724	42570	26724	24570
21	K. Pannerselvam S/o Kaliyaperumal, Ariyalur	AHB 1200	Nattu Cumbu	3267	2049	59.4	4607	3272	53612	40154	30612	22154
22	R. Vengatesan S/o Ramachandran, Ariyalur	AHB 1200	Nattu Cumbu	3146	2138	47.1	4381	3492	51571	41976	28571	23976
23	S. Muthukrishnan S/o Santhanam, Ariyalur	AHB 1200	Nattu Cumbu	3357	2241	49.8	4685	3567	55040	43905	32040	25905
24	A. Swarnalatha C/o S.Muthukrishnan, Ariyalur	AHB 1200	Nattu Cumbu	3273	2037	60.7	4384	3011	53479	39677	30479	21677
25		AHB 1200	Nattu Cumbu	3063	1924	59.2	4027	3127	49972	37759	26972	19759
Total (B)				62985	37404		86159	59466	1030934	732738	570934	372738
Mean (B)				3149	1870	68.4	4308	2973	51547	36637	28547	18637
G. Total (A+B)				77044	45747		105459	73012	1261119	896458	686119	446458
G. Mean				3082	1830	68.4	4218	2920	50445	35858	27445	17858

TV: Test Variety

CV: Check Variety/Local Variety

GR: Gross Returns

NR: Net Returns

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.15: Result of FLD's conducted by AICRP-PM, NARP, Aurangabad - Kharif 2022

Technology Demonstration: Improved practices (Biofortified hybrid AHB 1200) v/s Farmer's Practices Trials

S. No.	Name & Address of the Beneficiary	Vaity/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
Technology Demonstration:Improved practices (IP) v/s Farmer's Practices (FP)								
1	Dastagir Khan Pathan, Khandala Tq. Vaijapur	AHB 1200	MP 7333	2518	2055	22.5	4887	4015
2	Kadu Baburao Jagtap, Tidiwadi Tq. Vaijapur	AHB 1200	MP 7333	1896	1470	29.0	3566	2874
3	Chandrabhan Suryabhan Gawli, Tidiwadi Tq. Vaijapur	AHB 1200	MP 7333	2050	1854	10.6	3840	3425
4	Harun Karim Shah, Tidi Tq. Vaijapur	AHB 1200	MP 7333	1745	1321	32.1	3144	2344
5	Sanjay Sominal Bankar, Adhu Tq. Vaijapur	AHB 1200	MP 7333	1850	1454	27.2	3546	2655
6	Rahibai Shankarrao Mandalkar, Gaikwad wasti Tq. Vaijapur	AHB 1200	MP 7333	1847	1479	24.9	3690	2850
7	Raju Karim Shah, Tidi Tq. Vaijapur	AHB 1200	MP 7333	2241	1977	13.4	4365	3874
8	Milind Prakash Pawar, Khandala Tq. Vaijapur	AHB 1200	MP 7333	2100	1724	21.8	4350	3348
9	Eknath Bandu Gawali, Tq. Vaijapur	AHB 1200	MP 7333	2360	1875	25.9	4522	3547
10	Gorakh Nana Magar, Kolhi Tq. Vaijapur	AHB 1200	MP 7333	2435	1940	25.5	4980	3910
11	Kantabai Rustum Magar, Kolhi Tq. Vaijapur	AHB 1200	MP 7333	2210	1870	18.2	4360	3740
12	Chabu Ananda Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	1490	1190	25.2	2970	2348
13	Karbhari Bhagaji Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	1738	1525	14.0	3541	3160
14	Anita Santosh Bagul, Ballakisgun Tq. Vaijapur	AHB 1200	MP 7333	1980	1634	21.2	3960	3128
15	Chabu Pandurang Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	2564	1639	56.4	5230	3280
16	Hiraman Genu Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	2479	2019	22.8	4855	4035
17	Chabu Fakira Pathare, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	1843	1571	17.3	3690	3170
18	Babasaheb Rangnath Galande, Mahalgaon Tq. Vaijapur	AHB 1200	MP 7333	2264	1466	54.4	4489	2964
19	Bhimrao Punjaji Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	2641	2019	30.8	5360	4179
20	Apparao Mogal Thorat, Rotegaon Tq. Vaijapur	AHB 1200	MP 7333	1987	1766	12.5	3870	3380
21	Sachin Dnyandev Thorat, kapuswadgaon Tq. Vaijapu	AHB 1200	MP 7333	2411	1744	38.2	4836	3458
22	Satyabhamabai Shahadu Suryawanshi, Khandala Tq. Vaijapur	AHB 1200	MP 7333	1874	1577	18.8	3587	3115
23	Ashok Jagganath Pawar, Khandala Tq. Vaijapur	AHB 1200	MP 7333	1755	1690	3.8	3418	3264
24	Sudam Changdev Pawar, Khandala Tq. Vaijapur	AHB 1200	MP 7333	2024	1128	79.4	4014	2217
25	Navnath Bhivsen Welanjkar, Khandala Tq. Vaijapur	AHB 1200	MP 7333	2449	2287	7.1	4963	4469
Total				52751	42274		104033	82749
Mean				2110	1691	24.8	4161	3310

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.16: Result of FLD's conducted by CAZRI KVK, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice Trials

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Sh. Rajendra Prasad	Sh. Surta Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2135	1750	22.0	3900	1800
2	Sh. Tilla Ram	Sh. Jala Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2250	1750	28.6	4100	1850
3	Sh. Prema Ram	Sh. Ghewar Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2150	1700	26.5	4050	1900
4	Sh. Bholi Ram	Sh. Simrtha Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2030	1725	17.7	3950	1800
5	Sh. Kistur Ram	Sh. Harchand Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2100	1650	27.3	4000	1750
6	Sh. Kewal Ram	Sh. Mangla Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2075	1675	23.9	3850	1700
7	Sh. Jetha Ram	Sh. Soma Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2150	1700	26.5	4100	1800
8	Sh. Jeeta Ram	Sh. Nara Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2200	1725	27.5	4200	1850
9	Sh. Raju Ram	Sh. Kheta Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2025	1675	20.9	3900	1750
10	Sh. Bhura Ram	Sh. Rana Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2050	1675	22.4	4000	1800
11	Sh. Bhiya Ram	Sh. Achala am	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2100	1625	29.2	4000	1750
12	Sh. Narayan Ram	Sh. Gorakh Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2150	1600	34.4	4100	1700
13	Sh. Nena Ram	Sh. Megha Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2075	1650	25.8	4000	1750
14	Sh. Deva Ram	Sh. Mangla Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2025	1700	19.1	4100	1850
15	Sh. Babu Ram	Sh. Chautha Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2075	1725	20.3	3850	1850
16	Sh. Beeja Ram	Sh. Mala Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2100	1675	25.4	4000	1750
17	Sh. Sawroop Ram	Sh. Mala Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2200	1650	33.3	4100	1750
18	Sh. Beeja Ram	Sh. Puna Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2175	1700	27.9	4000	1850
19	Sh. Durga Ram	Sh. Narayan Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2050	1725	18.8	3900	1900
20	Sh. Karna Ram	Sh. Moola Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2100	1700	23.5	4000	1950
21	Sh. Ghena Ram	Sh. Megha Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2200	1650	33.3	4100	1800
22	Sh. Rawat Ram	Sh. Mala Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2075	1600	29.7	3900	1750
23	Sh. Karna Ram	Sh. Kheta Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2125	1625	30.8	4000	1700
24	Sh. Kana Ram	Sh. Mangi Lal	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2200	1725	27.5	3950	1850
25	Sh. Kana Ram	Sh. Aidan Ram	Rabariya, Dhawa, Jodhpur	HHB 299	Local	2175	1750	24.3	4000	1900
Total						52990	42125		100050	45100
Mean						2120	1685	25.8	4002	1804

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.17: Result of FLD's conducted by Directorate of Extension Education, Agriculture University, Jodhpur (Rajasthan) *Kharif* 2022

Technology Demonstration: Improved practices (Varietal trial: MPMH 17) v/s Farmer's Practice

S. No.	Name of the Beneficiary	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)		GR (Rs./ha)		NR (Rs./ha)		B:C ratio	
					IP	FP		IP	FP	IP	FP	IP	FP	IP	FP
1	Joga Ram Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1556	1012	53.8	2023	1769	50727	36165	31727	19165	2.67	2.13
2	Tulcharam Prajapat	Khudiyala, Jodhpur	MPMH 17	Local	1400	900	55.6	2413	1600	49791	32350	31291	14750	2.69	1.84
3	Sohanlal Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1456	963	51.2	2416	1653	51128	34202	32228	17902	2.71	2.10
4	Kevalram Bhil	Khudiyala, Jodhpur	MPMH 17	Local	1523	1050	45.0	2213	1702	51282	36589	32082	20389	2.67	2.26
5	Sukharam Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1480	1102	34.3	2301	1654	50887	37475	31787	20975	2.66	2.27
6	Jalam Singh	Khudiyala, Jodhpur	MPMH 17	Local	1456	1020	42.7	1902	1752	47530	36234	28930	19434	2.56	2.16
7	Omdas Sadh	Khudiyala, Jodhpur	MPMH 17	Local	1412	1023	38.0	2014	1642	47280	35535	28580	18535	2.53	2.09
8	Jagmala Ram Prajapat	Khudiyala, Jodhpur	MPMH 17	Local	1369	1090	25.6	2314	1642	48370	37109	29070	19509	2.51	2.11
9	Ganga Ram	Khudiyala, Jodhpur	MPMH 17	Local	1568	902	73.8	2413	1723	53739	33258	34839	16958	2.84	2.04
10	Kishan Kumar	Khudiyala, Jodhpur	MPMH 17	Local	1485	1150	29.1	1945	1654	48513	38603	29513	22403	2.55	2.38
11	Hukmaram Prajapat	Khudiyala, Jodhpur	MPMH 17	Local	1469	1120	31.2	2014	1652	48620	37884	30120	20984	2.63	2.24
12	Pappa Ram Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1450	1013	43.1	2016	1632	48187	35230	29287	18130	2.55	2.06
13	Mahendra Singh	Khudiyala, Jodhpur	MPMH 17	Local	1600	900	77.8	2023	1742	51761	33344	32561	16144	2.70	1.94
14	Mangu Das Sadh	Khudiyala, Jodhpur	MPMH 17	Local	1524	963	58.3	2413	1653	52705	34202	33605	18202	2.76	2.14
15	Anuparihar Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1567	1200	30.6	2416	1702	53737	40114	35137	23714	2.89	2.45
16	Ajaypal Rajput	Khudiyala, Jodhpur	MPMH 17	Local	1399	1102	27.0	2213	1654	48368	37475	29668	20975	2.59	2.27
17	Bhanwar Singh	Khudiyala, Jodhpur	MPMH 17	Local	1485	1020	45.6	2301	1752	51005	36234	31705	19434	2.64	2.16
18	Mahendra Singh Rajput	Khudiyala, Jodhpur	MPMH 17	Local	1469	1023	43.6	1902	1642	47836	35535	28936	18635	2.53	2.10
19	Devidas Sadh	Khudiyala, Jodhpur	MPMH 17	Local	1358	1205	12.7	2014	1642	46011	39812	26911	23812	2.41	2.49
20	Pancharam Meghwal	Khudiyala, Jodhpur	MPMH 17	Local	1461	902	62.0	2314	1723	50532	33258	31932	16858	2.72	2.03
Total					29487	20660		43580	33585	998005	720605	619905	386905	52.8	43.24
Mean					1474	1033	42.7	2179	1679	49900	36030	30995	19345	2.64	2.16

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.18: Result of FLD's conducted by Krishi Vigyan Kendra, Chandgothi (Churu), SKRAU, Bikaner (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice Trials

S. No.	Name of the Beneficiary	Address	Variety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Rajendra Singh	Nanda ka Bas, Sadulpur, Churu	HHB 299	F ₂ Seed	1460	1212	20.5	2672	2271
2	Ram Singh	Thimau, Sadulpur, Churu	HHB 299	F ₂ Seed	1310	1100	19.1	2437	2047
3	Lado Devi	Thimau, Sadulpur, Churu	HHB 299	F ₂ Seed	1320	1082	22.0	2468	2098
4	Tara Chand	Thimau, Sadulpur, Churu	HHB 299	F ₂ Seed	1510	1268	19.1	2778	2334
5	Tara Chand	Nanda ka Bas, Sadulpur, Churu	HHB 299	F ₂ Seed	1610	1352	19.1	2995	2545
6	Smt. Taravati	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1530	1301	17.6	2892	2458
7	Smt. Meena	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1350	1121	20.4	2498	2148
8	Maya Chand	Thimau Badi, Sadulpur, Churu	HHB 299	F ₂ Seed	1480	1243	19.1	2782	2337
9	Mahipal	Thimau Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1530	1301	17.6	2861	2432
10	Dalbir	Chandgothi, Sadulpur, Churu	HHB 299	F ₂ Seed	1420	1179	20.4	2641	2192
11	Mahesh	Chandgothi, Sadulpur, Churu	HHB 299	F ₂ Seed	1380	1159	19.1	2594	2205
12	Raviendra	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1560	1310	19.1	2870	2411
13	Arjun Singh	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1350	1107	22.0	2511	2134
14	Sandeep	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1350	1134	19.0	2552	2143
15	Hawa Singh	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1420	1179	20.4	2627	2180
16	Raghuveer singh	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1410	1184	19.1	2651	2227
17	Hukmi Chand	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1420	1179	20.4	2613	2169
18	Banshi Lal	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1360	1142	19.1	2530	2125
19	Santosh	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1580	1311	20.5	2986	2479
20	Smt. Kiran Kanvar	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1530	1285	19.1	2831	2378
21	Chanv Kanvar	Thirpali Choti, Sadulpur, Churu	HHB 299	F ₂ Seed	1540	1309	17.6	2895	2461
22	Anil Poonia	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1430	1187	20.5	2617	2172
23	Baljeet Jhahadiya	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1480	1243	19.1	2708	2275
24	Virendra	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1510	1268	19.1	2809	2359
25	Manoj	Dingli, Sadulpur, Churu	HHB 299	F ₂ Seed	1530	1285	19.1	2785	2339
Total					36370	30441		67603	56919
Mean					1455	1218	19.5	2704	2277

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.19: Result of FLD's conducted by Krishi Vigyan Kendra, Phalodi (Jodhpur), Agriculture University, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Biofortified hybrid HHB 299 v/s Farmer's Practice (FP) Trials

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Labhu Ram	Kisna Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	1789	1420	26.0	3250	2800
2	Jagdish	Khamu Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2033	1688	20.4	3565	2940
3	Gomad Ram	Arjun Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2150	1756	22.4	3560	2880
4	Koshla Ram	Madhu Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2280	1790	27.4	3600	3070
5	Shambhu Dayaal	Kesra Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2356	1820	29.5	3720	3264
6	Shravan Ram	Kesha Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2054	1568	31.0	3315	2950
7	Magha Ram	Rawat Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	1686	1354	24.5	3640	2570
8	Raju Ram	Pokar Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	1822	1632	11.6	3550	2890
9	Simratha Ram	Chena Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	1945	1765	10.2	2900	2350
10	Mula Ram	Arjun Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2065	1730	19.4	3260	2930
11	Prema Ram	Bira Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2185	1843	18.6	3150	2580
12	Hamira Ram	Bira Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2384	1890	26.1	3240	2830
13	Chanana Ram	Shankra Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2272	1821	24.8	2850	2520
14	Achala Ram	Purkha Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2049	1670	22.7	2770	2350
15	Sura Ram	Pokar Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2075	1670	24.3	3440	2400
16	Tilok Singh	Anand Singh	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2420	1832	32.1	3550	3290
17	Mohan Ram	Khamu Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2455	1785	37.5	3430	3080
18	Reshma Devi	Chena Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2265	1860	21.8	3480	2900
19	Dhana Ram	Chuna Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2275	1745	30.4	3290	2850
20	Tilok Chand	Pura Ram	Vijaynagar, Phalodi, Jodhpur	HHB 299	F ₂ Seed	2335	1873	24.7	3475	2454
Total						42895	34512		67035	55898
Mean						2145	1726	24.3	3352	2795

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.20: Result of FLD's conducted by KVK, Keshwana, Jalore (Rajasthan) *Kharif 2022*

Technology Demonstration: Biofortified hybrid HHB 299 + Micronutrients (Zn & Fe) (IP) v/s Farmer's Practice (FP) Trials

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Sonaram	Lakhma	Keshwana, Jalore	HHB 299	F ₂ Seed	2100	1621	29.5	3600	3080
2	Dinesh Kumar	Lakhma	Keshwana, Jalore	RHB 173	F ₂ Seed	2200	1430	53.8	3860	2940
3	Arjun Kumar	Lakhma	Keshwana, Jalore	RHB 173	F ₂ Seed	2050	1480	38.5	3930	3020
4	Chatra Ram	Kastur	Keshwana, Jalore	RHB 173	F ₂ Seed	2180	1520	43.4	3860	3070
5	Meethalal	Kapoorra	Keshwana, Jalore	RHB 173	F ₂ Seed	2120	1590	33.3	3600	3160
6	Jayantilal	Darya	Keshwana, Jalore	RHB 174	F ₂ Seed	2100	1450	44.8	3720	3470
7	Meka Ram	Punma	Keshwana, Jalore	RHB 175	F ₂ Seed	1950	1380	41.3	4020	3260
8	Mahendra Kumar	Harjiram	Keshwana, Jalore	RHB 176	F ₂ Seed	2290	1430	60.1	4000	3180
9	Paru Devi	Lakhma	Keshwana, Jalore	RHB 177	F ₂ Seed	2000	1390	43.9	3910	4010
10	Jabra Ram	Ram	Keshwana, Jalore	RHB 178	F ₂ Seed	2080	1621	28.3	4260	3470
11	Pooram	Sona	Keshwana, Jalore	RHB 179	F ₂ Seed	2200	1260	74.6	3860	2940
12	Sanwala Ram	Babra Ram	Keshwana, Jalore	RHB 180	F ₂ Seed	2050	1520	34.9	3930	3020
13	Kala Ram	Vela Ram	Keshwana, Jalore	RHB 181	F ₂ Seed	2180	1360	60.3	3860	3070
14	Pakaram	Mukaram	Keshwana, Jalore	RHB 182	F ₂ Seed	2120	1540	37.7	3600	3160
15	Jamtaram	Parsaram	Keshwana, Jalore	RHB 183	F ₂ Seed	2100	1450	44.8	3720	3470
16	Iaxmanaram	Asha	Keshwana, Jalore	RHB 173	F ₂ Seed	1950	1370	42.3	4020	3260
17	Kumaram	Parsa	Keshwana, Jalore	RHB 173	F ₂ Seed	2290	1430	60.1	3720	3470
18	Rabtaram	Aatmaj	Keshwana, Jalore	RHB 173	F ₂ Seed	2180	1360	60.3	3860	3070
19	Sadaram	Bhagaram	Keshwana, Jalore	RHB 173	F ₂ Seed	2180	1360	60.3	3860	3070
20	Sandar	Sadaram	Keshwana, Jalore	RHB 173	F ₂ Seed	2120	1540	37.7	3600	3160
Total						42440	29102		76790	64350
Mean						2122	1455	45.8	3840	3218

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Micronutrients, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.21: Result of FLD's conducted by Krishi Vigyan Kendra, Athiyasan (Nagaur-I), Agriculture University, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Biofortified hybrid HHB 299) v/s Farmer's Practice

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Salaudin	Aladin	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1805	1415	27.6	5525	4725
2	Omprakash	Megaram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1857	1382	34.4	5812	3905
3	Bharat kumar	Sarvan kumar	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1871	1445	29.5	5623	4355
4	Omprakash	Madanram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1828	1497	22.1	5575	4621
5	Kailash	Nathuram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1886	1499	25.8	5829	5112
6	Rameshwar	Ramprasad	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1897	1495	26.9	6023	4228
7	Chenaram Bhati	Hiraram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1902	1512	25.8	5798	4465
8	Sahiram Khoja	Chelaram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1867	1384	34.9	5955	4368
9	Ramprasad	Chela ram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	2055	1467	40.1	6526	5223
10	Madaram	Mehram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1911	1493	28.0	5815	3975
11	Kuldeep singh	Ajit singh	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1831	1525	20.1	5675	4329
12	Anand singh	Nathu singh	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1681	1485	13.2	5234	4501
13	Ramprasad	Kishnaram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1865	1505	23.9	5926	3885
14	Ramgopal bhati	Hira ram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1845	1488	24.0	5226	4426
15	Babu lal bera	Bhanwara lal	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1799	1496	20.3	6128	5335
16	Nemaram khoja	Hemaram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1879	1485	26.5	5688	5015
17	Jitendra	Mahesh khoja	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1853	1472	25.9	6171	4325
18	Janaram	Piraram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1932	1522	26.9	6325	4726
19	Govind ram	Bhawara ram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1873	1509	24.1	5622	4456
20	Nemaram	Jagdish ram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1872	1497	25.1	6215	4595
21	Manjit singh	Nathu singh	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1849	1515	22.0	5726	4845
22	Sonsingh	Ramsingh	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1859	1494	24.4	5926	4238
23	Surendra	Kailash khoja	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1877	1526	23.0	5379	4195
24	Dipendra singh	Dayal singh	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1893	1517	24.8	6426	5055
25	Sukhram	Kishorram	Nimbdi chandawata, Degana	HHB 299	F ₂ Seed	1913	1499	27.6	6045	4917
Total						46700	37124		146193	113820
Mean						1868	1485	25.8	5848	4553

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Micronutrients, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.22: Result of FLD's conducted by Krishi Vigyan Kendra, Maulasar (Nagaur-II), Agriculture University, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practice

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Phuli Devi	Omprakash	Sawatgarh, Kuchaman, Nagaur	HHB 299	Local	2550	2040	25.0	3650	3430
2	Omprakash	Hema Ram	Sawatgarh, Kuchaman, Nagaur	HHB 299	Local	2650	2250	17.8	3680	3480
3	Devendra	Omprakash	Sawatgarh, Kuchaman, Nagaur	HHB 299	Local	2550	2150	18.6	3600	3660
4	Pushpendra	Omprakash	Sawatgarh, Kuchaman, Nagaur	HHB 299	Local	2760	2260	22.1	3480	3600
5	Vimla Devi	Parma Ram	Chandpura, Kuchaman, Nagaur	HHB 299	Local	2740	2240	22.3	3540	3650
6	Kani Devi	Prabhu Ram	Bhairupura, Kuchaman, Nagaur	HHB 299	Local	2620	2030	29.1	3350	3770
7	Santosh Devi	Banna Ram	Chandpura, Kuchaman, Nagaur	HHB 299	Local	2850	2350	21.3	3450	3900
8	Jadav Devi	Hanumana Ram	Chandpura, Kuchaman, Nagaur	HHB 299	Local	2556	2250	13.6	3500	4000
9	Sukhi Devi	Chatra Ram	Chandpura, Kuchaman, Nagaur	HHB 299	Local	2300	2100	9.5	3370	3770
10	Praveen	Banna Ram	Chandpura, Kuchaman, Nagaur	HHB 299	Local	2550	2050	24.4	3600	3470
11	Nolaram	Prabhu Ram	Bhairupura, Kuchaman, Nagaur	HHB 299	Local	2360	2060	14.6	3480	3900
12	Ranjeet	Prabhu Ram	Bhairupura, Kuchaman, Nagaur	HHB 299	Local	2440	2140	14.0	3540	3670
13	Santosh Devi	Madana Ram	Bhairupura, Kuchaman, Nagaur	HHB 299	Local	3020	2520	19.8	3650	3650
14	Suresh	Madana Ram	Bhairupura, Kuchaman, Nagaur	HHB 299	Local	2850	2350	21.3	3400	3670
15	Mohan	Dalla Ram	Nangwada, Kuchaman, Nagaur	HHB 299	Local	2500	2230	12.1	3600	3660
16	Devaram	Bhuwana Ram	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	2560	2260	13.3	3570	3860
17	Chetaram	Balu Ram	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	2640	2120	24.5	3340	3700
18	Suman	Madan Lal	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	2620	2420	8.3	3600	3570
19	Prabhati Devi	Mewa Ram	Nangwada, Kuchaman, Nagaur	HHB 299	Local	2550	2030	25.6	3460	3650
20	Prahlad	Baga Ram	Nangwada, Kuchaman, Nagaur	HHB 299	Local	2556	2356	8.5	3540	3460
21	Govind	Balu Ram	Nangwada, Kuchaman, Nagaur	HHB 299	Local	2300	2000	15.0	3560	3560
22	Naresh	Rajendra	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	3050	2120	43.9	3400	3430
23	Rajendra	Dunga Ram	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	2960	2670	10.9	3650	3780
24	Sumitra	Ramkaran	Gugadwar, Kuchaman, Nagaur	HHB 299	Local	3020	2210	36.7	3500	3360
25	Bhuwana Ram	Sewa Ram	Chitawa, Kuchaman, Nagaur	HHB 299	Local	2750	2420	13.6	3650	3660
Total						66302	55626		88160	91310
Mean						2652	2225	19.2	3526	3652

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.23: Result of FLD's conducted by Krishi Vigyan Kendra, Gudamalani (Barmer), Agriculture University, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practice

S. No.	Name of the Beneficiary	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Murli Dhar S/o Aamba Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	877	501	75.0	1506	722
2	Dalu Devi W/o Amba Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1045	677	54.4	1400	900
3	Banu Devi W/o Harkha Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	974	625	55.8	1481	1204
4	Bali Devi W/o Bhopa Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	945	733	28.9	1552	1100
5	Damatyi Devi W/o Jodha Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1167	722	61.6	1578	1166
6	Chuni Devi W/o Sona Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1236	612	102.0	1788	807
7	Ruga Ram S/o Pokara Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1202	782	53.7	1743	1166
8	Uma Ram S/o Goma Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1222	600	103.7	1907	900
9	Pana Ram S/o Asla Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	844	677	24.7	1378	1011
10	Bhawri Devi W/o Bhaga Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1344	997	34.8	1803	1219
11	Leela Devi W/o Moola Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	983	655	50.1	1455	921
12	Girdhari Ram S/o Goma Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	991	669	48.1	1383	1008
13	Dali Devi W/o Kesa Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1119	819	36.6	1639	1186
14	Paru Devi W/o Rana Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1208	700	72.6	1800	1100
15	Bhoma Ram S/o Amba Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1214	963	26.1	1689	1018
16	Mooli Devi W/o Umbar Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1266	946	33.8	2008	1200
17	Dama Ram S/o Uma Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1245	833	49.5	2007	1398
18	Veero Devi W/o Ratna Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1520	717	112.0	1904	1195
19	Jay Ram Choudhary S/o Chima Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1333	974	36.9	1974	1344
20	Omprakash S/o Jiya Ram	Kau Ka Khera, Barmer, Rajasthan	HHB 299	F ₂ Seed	1308	969	35.0	1887	1422
Total					23043	15171		33882	21987
Mean					1152	759	51.9	1694	1099

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.24: Result of FLD's conducted by College of Agriculture, Sumerpur-Pali, Agriculture University, Jodhpur (Rajasthan) *Kharif 2022*

Technology Demonstration: Improved practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practice

S. No.	Name of the Beneficiary	Fathers/ Husband/ Name	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
						IP	FP		IP	FP
1	Anda Ram	Puka Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1360	1080	25.9	2600	2100
2	Kana Ram	Durga Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1420	1000	42.0	2700	2400
3	Bhanwar Lal	Mula Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1420	980	44.9	2500	2100
4	Basti Ram	Bhana Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1300	1020	27.5	2400	2000
5	Salag Ram	Sona Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1490	1040	43.3	2600	2200
6	Raja Ram	Pema Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1350	1000	35.0	2300	2200
7	Narayana Ram	Kesha Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1300	950	36.8	2000	1900
8	Dayal Ram	Ashu ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1400	1020	37.3	2500	2100
9	Tulcha Ram	Bhana Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1400	1040	34.6	2300	2000
10	Gopa Ram	Naina Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1280	900	42.2	2600	2000
11	Raju Ram	Durga Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1180	1000	18.0	2100	2000
12	Oma Ram	Lakha Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1420	1000	42.0	2300	2200
13	Gaina Ram	Kesha Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1300	950	36.8	2400	1800
14	Sharvan Ram	Peera Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1500	1080	38.9	2600	2000
15	Usha devi	Amra Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1300	1080	20.4	2200	2000
16	Dariya Devi	Raju Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1520	1050	44.8	2500	1800
17	Usha Devi	Gopa Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1520	1150	32.2	2500	2000
18	Champadevi	Gorakh Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1380	1000	38.0	2200	2000
19	Gajridevi	Bhanwar Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1350	1120	20.5	2200	2200
20	Jagga Ram	Vinja Ram	Mukunpura, Pali	HHB 299	F ₂ Seed	1360	1220	11.5	2300	2200
Total						27550	20680		47800	41200
Mean						1378	1034	33.2	2390	2060

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, Line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control & Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.25: Result of FLD's conducted by AICRP on Pearl Millet, ARS, ANGRAU, Perumallapalle Summer 2022

Type of Demonstration: Improved Practices (Varietal trial: Biofortified hybrid ABV-04) v/s Farmer's Practices

S. No.	Name of Beneficiary	Address	Vaiety/ Hybrids	Check Variety	Grain Yield (Kg/ ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
					IP	FP		IP	FP
1	Ethirajulu	Nagiri	ABV-04	Local	2350	2078	13.1	4078	3546
2	K. Gayathri	Nagiri	ABV-04	Local	2036	1692	20.3	3712	3100
3	K. Janardhan	Nagiri	ABV-04	Local	1921	1543	24.5	3394	3075
4	K. Rajendrudu	Nagiri	ABV-04	Local	2228	1911	16.6	3491	2877
5	K. Krishnamma	Nagiri	ABV-04	Local	1729	1455	18.8	3459	2798
6	K. Nava mohan	Nagiri	ABV-04	Local	2192	2007	9.2	3702	3203
7	A. Nagabhushanamma	Nagiri	ABV-04	Local	1857	1561	19.0	3670	3144
8	K. Sampooramma	Nagiri	ABV-04	Local	2047	1714	19.4	4018	3689
9	K. Ramachandra	Nagiri	ABV-04	Local	2118	1857	14.1	3901	3207
10	K. Appa Naidu	Nagiri	ABV-04	Local	1873	1536	21.9	3600	2984
11	K. Krishnaiah	Nagiri	ABV-04	Local	1779	1375	29.4	3702	2997
12	K. Purushottham	Puttur	ABV-04	Local	2205	2049	7.6	3399	3146
13	K. Kannaiah	Puttur	ABV-04	Local	2375	2127	11.7	4000	3472
14	K. L. Subramanyam	Puttur	ABV-04	Local	2298	1875	22.6	4090	3679
15	S. Desamma	Puttur	ABV-04	Local	2019	1637	23.3	4067	3501
16	K. Thangavelu Naidu	Puttur	ABV-04	Local	1998	1589	25.7	3919	3200
17	K. Varalu Naidu	Puttur	ABV-04	Local	1675	1497	11.9	3368	2345
18	Ramesh Babu	Puttur	ABV-04	Local	2390	2073	15.3	4126	3800
19	K. Hari	Puttur	ABV-04	Local	2075	1609	29.0	3876	3100
20	K. Jayamma	Puttur	ABV-04	Local	1936	1472	31.5	3659	2984
21	K. Umapathi	Puttur	ABV-04	Local	1899	1571	20.9	3900	3222
22	K. Sugunamma	Puttur	ABV-04	Local	2000	1675	19.4	4097	3513
Total					45000	37903		83228	70582
Mean					2045	1723	18.7	3783	3208

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.26: Result of FLD's conducted by Biozone Research Foundation, Gorakhpur Summer 2022

Technology Demonstration: Improved practices (Varietal trial: Biofortified hybrid HHB 299) v/s Farmer's Practice

S. No.	Name & Address of the Beneficiary	Vaieity/ Hybrids	Check Variety	Grain Yield (Kg/ha)		% improvement in Grain yield	Fodder Yield (Kg/ha)	
				IP	FP		IP	FP
Technology Demonstration:Improved practices (IP) v/s Farmer's Practices (FP)								
1	Sh. Rajkumar Singh S/o Sh. Brij N. Singh, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	3050	2640	15.5	7160	6250
2	Sh Bhola Singh S/o Sh. B. N. Singh, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	3160	2750	14.9	6850	6000
3	Sh. Anil Singh S/o Sh. Tej Bahadur, Rampurwa, Deoria (U.P.)	HHB 299	PC 383	2760	2350	17.4	6550	5250
4	Sh. Awadesh S/o Sh. Ramnath, Rampurwa, Deoria (U.P.)	HHB 299	PC 383	3200	2720	17.6	7230	6150
5	Sh. Rajendra S/o Sh. Ravindra Singh, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2950	2550	15.7	6850	5560
6	Sh. Nandu S/o Late Sh. Lalji, Pidra, Deoria (U.P.)	HHB 299	PC 383	2660	2250	18.2	6520	5220
7	Sh. Rana Pratap S/o Late Sh. Ramvilas, Pidra, Deoria (U.P.)	HHB 299	PC 383	2950	2430	21.4	6720	5300
8	Sh. Jaichand S/o Sh. Ramvriksh, Pidra, Deoria (U.P.)	HHB 299	PC 383	3120	2450	27.3	6960	5400
9	Sh. Ashwani S/o Sh. Kashi, Pachlary, Deoria (U.P.)	HHB 299	PC 383	2850	2250	26.7	6840	5720
10	Sh. Rishimuni S/o Sh. Inderdev, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2900	2620	10.7	6750	5950
11	Sh. Anshuman Singh S/o Sh. Kant Singh, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2940	2620	12.2	6500	5450
12	Sh. Dhanjay S/o Sh. Ram sevak, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2950	2430	21.4	6250	5700
13	Sh. Chandra Pratap S/o Sh. Sampurnand, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2950	2160	36.6	6720	5650
14	Sh. Amarnath S/o Sh. Deep Naryan, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	3020	2250	34.2	7030	5950
15	Sh. Prem Kumar S/o Sh. Paramhans, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	3120	2950	5.8	7250	6840
16	Sh. Ramdhyan S/o Sh. Khaderu, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	3240	2820	14.9	6800	6320
17	Sh. Dwigvijay Nath S/o Sh. Yamuna, Pidra, Deoria (U.P.)	HHB 299	PC 383	3010	2750	9.5	6950	6020
18	Sh. Dinesh S/o Sh. Munni Lal, Pachlari, Deoria (U.P.)	HHB 299	PC 383	2860	2530	13.0	6280	5640
19	Sh. Vijendra Sharma S/o Sh. Ramashankar, Ratanpur, Deoria (U.P.)	HHB 299	PC 383	2850	2840	0.4	6800	6050
20	Sh. Bheem S/o Late Sh. Shivbachan, Baraipur, Deoria (U.P.)	HHB 299	PC 383	2620	2250	16.4	6350	5950
21	Sh. Girijendra Srivastava S/o Late Sh. S.K.Srivastava, Lalarampur Badli, Deoria (U.P.)	HHB 299	PC 383	2840	2350	20.9	6220	5640
22	Smt Kalawati W/o Sh. Meharchand, Baraipur, Deoria (U.P.)	HHB 299	PC 383	3020	2640	14.4	6980	6140
23	Sh. Ram Nayan Nishad S/o Sh. Banwarilal, Baraipur, Deoria (U.P.)	HHB 299	PC 383	3050	2720	12.1	6800	6300
24	Sh. Triveni Prasad, Baraipur, Deoria (U.P.)	HHB 299	PC 383	3220	2650	21.5	7250	5550
25	Sh. Mohan Yadav S/o Sh. Janghi Prasad, Baraipur, Deoria (U.P.)	HHB 299	PC 383	3150	2640	19.3	6850	5960
Total				74440	63610		169460	145960
Mean				2978	2544	17.0	6778	5838

Improved practices: Use of Improved hybrids, Seed treatment, Sowing by Seed drill, line sowing, Maintain recommended spacing, Use of RDF, Chemical weed control and Use of thresher etc.

CHAPTER VI: FRONT LINE DEMONSTRATIONS

Table VI.27: Results of FLD's conducted by ICAR-AICRP on Pearl Millet, Mandor during Kharif 2022

Type of Demonstration: Full Packahe of practives v/s Farmer's Practices and Varietal trial: Biofortified hybrid HHB 299 v/s Local

S. No.	Name of Farmer	Fathers/ Husband Name	Address	Vaiety/ Hybrids	Test Variety	Grain Yield (kg/ha)		% improvement in Grain yield	Fodder Yield (q/ha)	
						IP	FP		IP	FP
1	Poona Ram	Luna Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1650	1350	22.2	3350	2540
2	Bhanwari Devi	Khema Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1600	1300	23.1	3220	2400
3	Shanti Devi	Rawla Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1625	1320	23.1	3250	2450
4	Dhalki Devi	Teekam Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1590	1280	24.2	3200	2360
5	Kamla Devi	Deepa Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1500	1250	20.0	3015	2240
6	Madhu Devi	Fata Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1550	1270	22.0	3100	2320
7	Anada Ram	Poona Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1850	1400	32.1	3750	2590
8	Lachho Devi	Magha Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1575	1300	21.2	3150	2400
9	Suman Lata	Tara Chand	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1650	1290	27.9	3340	2380
10	Lakha Ram	Fata Ram	Dheerpura, Balesar, Jodhpur	HHB 299	Local	1560	1270	22.8	3310	2350
Total (A)						16150	13030		32685	24030
Mean (A)						1615	1303	23.9	3269	2403
1	Natha Ram	Amiya Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1420	1190	19.3	2680	2050
2	Ghama Ram	Misri Lal	Tinwari, Osian, Jodhpur	HHB 223	Local	1510	1240	21.8	2950	2230
3	Santosh Ram	Maga Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1550	1300	19.2	3080	2310
4	Narsinga Ram	Ama Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1500	1270	18.1	2960	2250
5	Hari Ram Solanki	Chitra Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1610	1350	19.3	3070	2400
6	Siriya	Bijaram	Tinwari, Osian, Jodhpur	HHB 223	Local	1580	1340	17.9	3050	2390
7	Hansa Ram	Ama Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1560	1320	18.2	3010	2350
8	Dilip	Khusala Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1460	1250	16.8	2750	2250
9	Diparam	Laburam	Tinwari, Osian, Jodhpur	HHB 223	Local	1450	1210	19.8	2710	2150
10	Manak Ram	Urja Ram	Tinwari, Osian, Jodhpur	HHB 223	Local	1650	1375	20.0	3150	2450
Total (B)						15290	12845		29410	22830
Mean (B)						1529	1285	19.0	2941	2283
G. Total (A+B)						31440	25875		62095	46860
G. Mean						1572	1294	21.5	3105	2343

CHAPTER VII

PLANT

BIOTECHNOLOGY

PLANT BIOTECHNOLOGY

Molecular Breeding experiments were carried out at PC Unit, ICAR-AICRP on Pearl millet, Jodhpur.

PMMB 1: VALIDATION OF MARKERS IN PEARL MILLET

Experiment 1: Validation of drought tolerance markers in pearl millet drought/heat tolerant genotypes suitable for A₁ zone.

Plant Material

A total of 16 pearl millet drought/heat tolerant lines suitable for A₁ zone were used for molecular characterization under this experiment (Table 1.1.1). Development of high yielding, dual purpose disease resistant cultivars for low rainfall areas i.e. A₁ zone is of utmost priority for increasing pearl millet productivity at national level and some new initiatives were taken last year to screen germplasm for A₁ zone and develop some hybrids for this specific zone. Keeping this in view, this experiment was useful for screening and developing drought/heat tolerant hybrids for A₁ zone.

Genomic DNA isolation and quantification

Good quality genomic DNA having sharp band was successfully isolated from fresh and young leaves of 16 pearl millet 16 lines using the CTAB method (Murray and Thompson, 1980) with slight modifications and it was also observed that good quality DNA was extracted even without using liquid nitrogen for grinding of hard leaf tissues like pearl millet which can reduce cost of isolation.

Table 1.1.1 List of pearl millet lines used for molecular characterization

S. No.	Name of genotype/line	Organization
1.	BIB-97	SKRAU, Bikaner
2.	BIB-142	SKRAU, Bikaner
3.	BIB-205	SKRAU, Bikaner
4.	BIB-206	SKRAU, Bikaner
5.	PPMI1295	IARI, New Delhi
6.	PPMI1296	IARI, New Delhi
7.	DHLB-14B	BRS, Dhule
8.	DHLB-23B	BRS, Dhule
9.	JB-1	CCS HAU, Hisar
10.	JB-2	CCS HAU, Hisar
11.	JB-3	CCS HAU, Hisar
12.	300-BCS-22	JAU, Jamnagar
13.	301-BCS-22	JAU, Jamnagar
14.	309-BCS-22	JAU, Jamnagar
15.	MIR-1803	PC Unit, Mandor, Jodhpur
16.	MIR-1804	PC Unit, Mandor, Jodhpur

Molecular characterization and SSR analysis

For PCR reaction, DNA was diluted accordingly to make available final concentration of 10 ng/μl and amplification reactions were carried out in a volume of 10 μl containing 10 mM Tris HCl (pH 8.3), 50 mM KCl, 1.5 mM MgCl₂, 200 mM each dNTP, 0.4 μM 10-mer primer, 1 unit Taq NA polymerase (GeNei, India) and 10 ng of template DNA. Amplifications were carried out in a 96-well thermal cycler (Agilent Technologies). Thermal cycler was programmed to 1 cycle of 5 min at 94°C for initial strand separation. This was followed by 35 cycles of 30s at 94°C for denaturation, 30 s of 58°C for annealing and 1 min at 72°C for primer extension. Finally, 1 cycle of 10 mins at 72°C was used for final extension, followed by hold at 4°C. A total of 15 SSR primers specifically reported for drought were used for PCR amplification and molecular characterization among 16 pearl millet genotypes. All the 15 SSRs amplified products of varying sizes ranging between 110-480 bp (Fig. 1.1.1). A total of 37 alleles were obtained in this study and the number of alleles per locus varied between 2 to 4 with an average of 2.46 alleles. Polymorphic Information Content (PIC) varied from 0.38 to 0.73 with an average of 0.57 PIC value

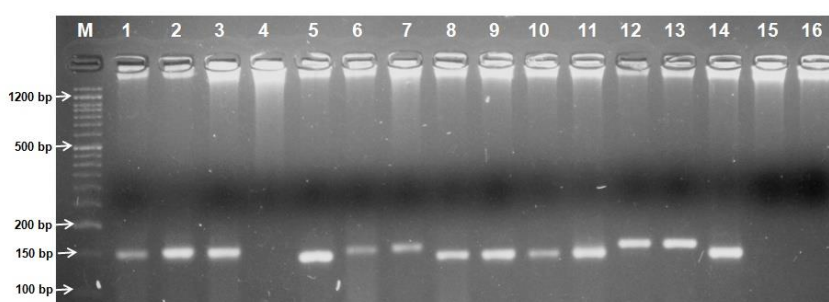


Fig. 1.1.1 Agarose gel showing amplification profiles of pearl millet genotypes using primer PSMP2077. Lane M-50 bp ladder, Lane 1-16 pearl millet drought/heat tolerant lines

Experiment 2: Molecular characterization of disease tolerant genotypes

Plant Material

A total of 51 entries of downy mildew nursery trials and 56 entries of blast nursery trials were used for molecular characterization using markers identified for downy mildew and blast, respectively under this experiment (Table 1.2.1, 1.2.2). Downy mildew and blast are two major diseases affecting pearl millet. Hence, screening of pearl millet lines resistant to these diseases will be useful for developing disease resistant pearl millet hybrids/varieties.

Genomic DNA isolation and quantification

Good quality genomic DNA having sharp band was successfully isolated from fresh and young leaves of 51 entries of downy mildew nursery trials and 56 entries of blast nursery trials as described in PMMB 1 and quantified on agarose gel.

Table 1.2.1 List of entries of downy mildew nursery trials used for molecular characterization

S. No.	Entry Code	S. No.	Entry Code
1	ICPMDML-1	27	ICPMDML-27
2	ICPMDML-2	28	ICPMDML-28

CHAPTERVII: PLANT BIOTECHNOLOGY

3	ICPMDML-3	29	ICPMDML-29
4	ICPMDML-4	30	ICPMDML-30
5	ICPMDML-5	31	ICPMDML-31
6	ICPMDML-6	32	ICPMDML-32
7	ICPMDML-7	33	ICPMDML-33
8	ICPMDML-8	34	ICPMDML-34
9	ICPMDML-9	35	ICPMDML-35
10	ICPMDML-10	36	ICPMDML-36
11	ICPMDML-11	37	ICPMDML-37
12	ICPMDML-12	38	ICPMDML-38
13	ICPMDML-13	39	ICPMDML-39
14	ICPMDML-14	40	ICPMDML-40
15	ICPMDML-15	41	ICPMDML-41
16	ICPMDML-16	42	ICPMDML-42
17	ICPMDML-17	43	ICPMDML-43
18	ICPMDML-18	44	ICPMDML-44
19	ICPMDML-19	45	ICPMDML-45
20	ICPMDML-20	46	ICPMDML-46
21	ICPMDML-21	47	ICPMDML-47
22	ICPMDML-22	48	ICPMDML-48
23	ICPMDML-23	49	ICPMDML-49
24	ICPMDML-24	50	ICPMDML-50
25	ICPMDML-25	51	ICPMDML-51
26	ICPMDML-26		

Table 1.2.2 List of entries of blast nursery trials used for molecular characterization

S. No.	Entry Code	S. No.	Entry Code
1	ICPMBL-1	29	ICPMBL-29
2	ICPMBL-2	30	ICPMBL-30
3	ICPMBL-3	31	ICPMBL-31
4	ICPMBL-4	32	ICPMBL-32
5	ICPMBL-5	33	ICPMBL-33
6	ICPMBL-6	34	ICPMBL-34
7	ICPMBL-7	35	ICPMBL-35
8	ICPMBL-8	36	ICPMBL-36
9	ICPMBL-9	37	ICPMBL-37
10	ICPMBL-10	38	ICPMBL-38
11	ICPMBL-11	39	ICPMBL-39
12	ICPMBL-12	40	ICPMBL-40
13	ICPMBL-13	41	ICPMBL-41
14	ICPMBL-14	42	ICPMBL-42
15	ICPMBL-15	43	ICPMBL-43
16	ICPMBL-16	44	ICPMBL-44
17	ICPMBL-17	45	ICPMBL-45
18	ICPMBL-18	46	ICPMBL-46
19	ICPMBL-19	47	ICPMBL-47
20	ICPMBL-20	48	ICPMBL-48

21	ICPMBL-21	49	ICPMBL-49
22	ICPMBL-22	50	ICPMBL-50
23	ICPMBL-23	51	ICPMBL-51
24	ICPMBL-24	52	ICPMBL-52
25	ICPMBL-25	53	ICPMBL-53
26	ICPMBL-26	54	ICPMBL-54
27	ICPMBL-27	55	ICPMBL-55
28	ICPMBL-28	56	ICPMBL-56

Molecular characterization and SSR analysis

For PCR reaction, DNA was diluted accordingly to make available final concentration of 10 ng/μl and amplification reactions were carried out in a volume of 10 μl as described in PMMB1. A total of 44 SSR primers were used for PCR amplification with 51 entries of downy mildew nursery trials. Out of 44 SSRs, 39 primers amplified products of varying sizes ranging from 110 to 420 bp and 23 (52.3 %) were polymorphic and 16 (36.4 %) were monomorphic (Table 1.2.3 and Fig. 1.2.1). A total of 58 alleles were obtained in this study and the number of alleles per locus varied between 2 to 4 with an average of 2.52 alleles. Polymorphic Information Content (PIC) varied from 0.36 to 0.79 with an average of 0.55 PIC value.

Table 1.2.3 Results of SSR primers used for PCR

Markers	Markers for DM	Markers for blast
Number of SSR markers used	44	42
Number of amplified markers	39	38
Number of non- amplified markers	05	04
Number of polymorphic markers	23	25
Number of monomorphic markers	16	13

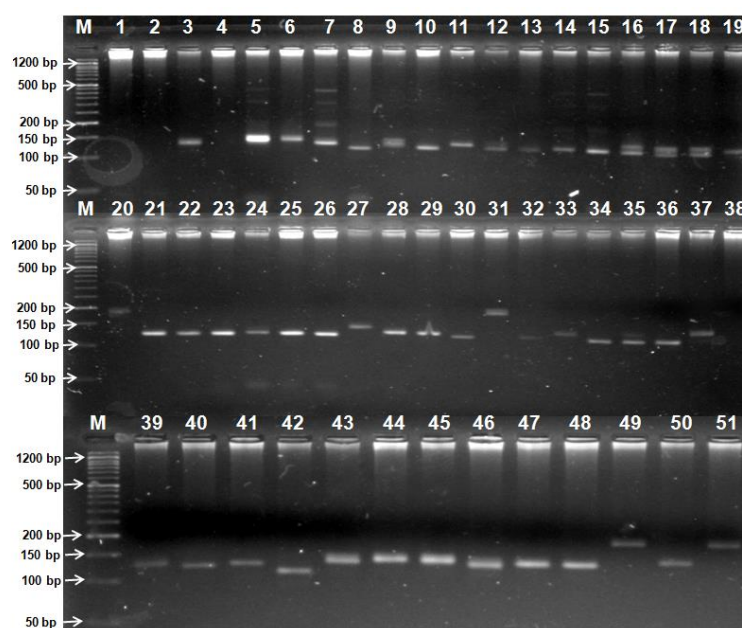


Fig. 1.2.1 Agarose gel showing amplification profiles of entries of downy mildew nursery trials using the primer PSMP2089. Lane M-50 bp ladder, Lane 1-51 entries of pearl millet downy mildew nursery trials

A total of 42 SSR primers were used for PCR amplification with 56 entries of blast nursery trials. Out of 42 SSRs, 38 primers amplified products of varying sizes ranging from 120 to 380 bp and 25 (59.5 %) were polymorphic and 13 (30.9%) were monomorphic (Table 1.2.3 and Fig. 1.2.2). A total of 60 alleles were obtained in this study and the number of alleles per locus varied between 2 to 5 with an average of 2.40 alleles. Polymorphic Information Content (PIC) varied from 0.32 to 0.78 with an average of 0.51 PIC value.

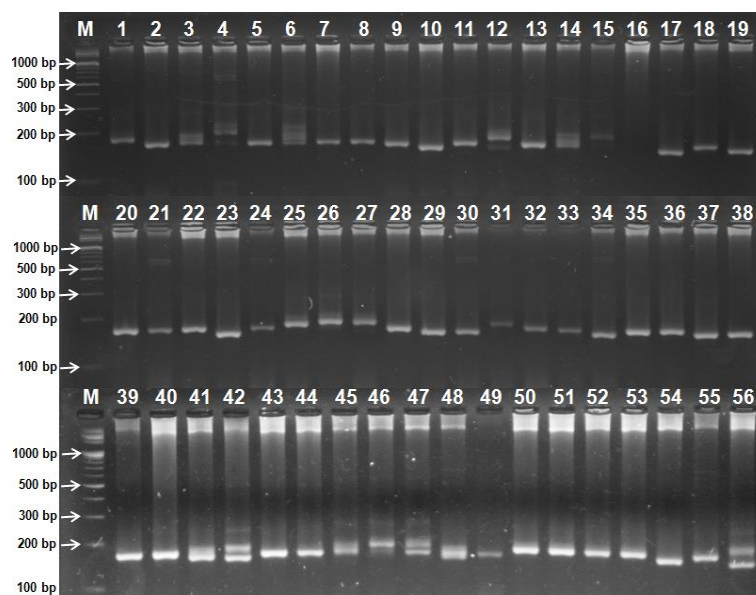


Fig. 1.2.2 Agarose gel showing amplification profiles of entries of blast nursery trials using the primer PSMP2273. Lane M-100 bp ladder, Lane 1-56 entries of pearl millet blast nursery trials

PMMB 2: MOLECULAR CHARACTERIZATION OF GERMPLASM OF PEARL MILLET

Experiment 1: Molecular characterization of hybrids and varieties of pearl millet released during last five years

Plant Material

A total of 16 popular pearl millet hybrids and varieties were used for molecular characterization under this experiment (Table 2.1.1). Database on various morphological parameters for these hybrids/varieties is already available but till now no molecular database is existing. Thus, this experiment was conducted to screen some SSR markers to accomplish genomic studies on these hybrids and varieties in pearl millet under ICAR-AICRP on Pearl millet.

Genomic DNA isolation and quantification

Good quality genomic DNA having sharp band was successfully isolated from fresh and young leaves of 16 popular pearl millet hybrids and varieties two checks as described in PMMB1 and quantified on agarose gel.

Table 2.1.1 List of genotypes used for molecular characterization

S. No.	Name Hybrid/Variety	Year	Organization

1	86M80 (MH 2439)	2022	Pioneer Overseas Corp., (Corteva Agri Sci.), Hyderabad
2	MPMH 35 (MH 2474) (Maru Sampada)	2022	PC Unit, ICAR-AICRP on Pearl millet, Jodhpur
3	86M94 (MH 2480)	2022	Pioneer Overseas Corp., (Corteva AgriSci.), Hyderabad
4	NBH5929 (MH2423)	2021	Nuziveedu Seeds Ltd, Telangana
5	MP7366	2021	Metahelix Life Sciences, Hyderabad
6	GBL 2(ABC165)	2021	ICAR-AICRP, PAU, Ludhiana
7	Motishakti (GHB1225)	2020	ICAR-AICRP-PM, Jamnagar
8	Mahabeej1005 (MH1852)	2017	MSSCL, Akola
9	86M13(MSH276)	2016	Pioneer Overseas Corp., Hyderabad
10	86M88 (MH 1816)	2015	Pioneer Overseas Corp., Hyderabad
11	MP7171	-	Metahelix Life Sciences
12	MP7878	2018	Metahelix Life Sciences
13	Dhodsar local	-	L.C Sikar ICAR-AICRP on Pearl Millet, Mandor
14	Damodara Bajri	-	L.C. Jaisalmer ICAR-AICRP on Pearl Millet, Mandor
15	Pearl Millet CO 10 (MP 522) (UCC 32)	2016	AICRP-Pearl Millet, TNAU, Coimbatore
16	Pusa 23 (MH 169)	1987	IARI, New Delhi

Molecular characterization and SSR analysis

For PCR reaction, DNA was diluted accordingly to make available final concentration of 10 ng/μl and amplification reactions were carried out in a volume of 10 μl as described in PMMB 1. A total of 124 SSR primers were used for PCR amplification and study of molecular diversity among 16 pearl millet genotypes. Out of 124 SSRs, 102 primers amplified products of varying sizes ranging from 120 to 550 bp and 37 (29.8%) were monomorphic and 65 (52.4%) were polymorphic (Table 2.1.2 and Fig. 2.1.1). A total of 184 alleles were obtained in this study and the number of alleles per locus varied between 2 to 4 with an average of 2.83 alleles. Polymorphic Information Content (PIC) varied from 0.32 to 0.81 with an average of 0.59 PIC value.

Table 2.1.2 Results of SSR primers used for PCR

Markers	No. of markers
Number of SSR markers used	124
Number of amplified markers	102
Number of non- amplified markers	22
Number of polymorphic markers	65
Number of monomorphic markers	37

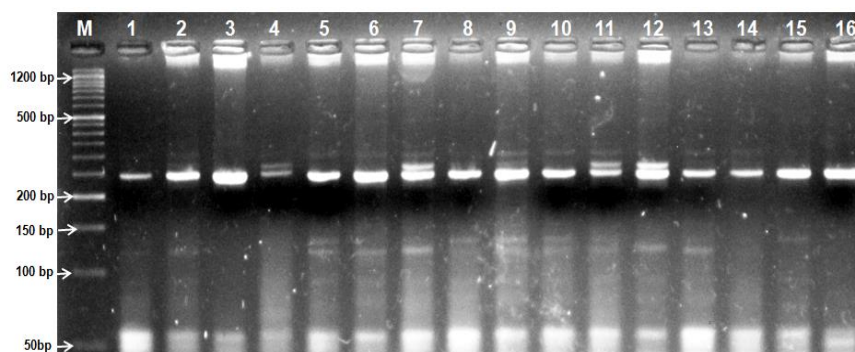


Fig. 2.1.1 Agarose gel showing amplification profiles of pearl millet hybrid/varieties using the primer IPES0218. Lane M-50 bp ladder, Lane 1-16 pearl millet hybrids/varieties

Experiment 2: DNA fingerprinting of identified/advanced hybrid entries of third year testing

Plant Material

The two advanced hybrid entries (MH 2553 and MH 2555) of third year testing from AHPT I (E) to AHPT II (E) trial along with two checks (MPMH21, RHB 223) and two advanced hybrid entries (MH 2577 and MH 2580) of third year testing from AHT I (L) A to AHT II (L) trial along with two checks (MP 7878, KBH 108) were used for DNA fingerprinting under this experiment. The entries promoted for third year testing will be later identified for release and hence need DNA profile for submission of proposal. Thus, this experiment is useful for authenticity of identification proposal and can meet the basic requirements of proposal submission.

Genomic DNA isolation and quantification

Good quality genomic DNA having sharp band was successfully isolated from fresh and young leaves of two advanced hybrid entries and two checks as described in PMMB1 and quantified on agarose gel.

DNA profiling using SSRs

For PCR reaction, DNA was diluted accordingly to make available final concentration of 10 ng/μl and amplification reactions were carried out in a volume of 10 μl as described in PMMB 1. A total of 36 SSR primers were used for PCR amplification and DNA profiling of advanced hybrid entries of pearl millet. Among the advanced hybrid entries (MH 2553 and MH 2555) of third year testing from AHPT I (E) to AHPT II (E) trial, analysis of MH 2553 using 36 primers displayed a unique profile for this genotype (Fig. 2.2.1). Out of the 36 primers used, 20 SSR primers (55.5%) were found polymorphic between the three genotypes. Similarly, analysis of MH2555 using the same 36 primers displayed a unique profile for this genotype (Fig. 2.2.2). Out of the 36 primers used, 22 SSR primers (61.1%) were found polymorphic between the three genotypes.

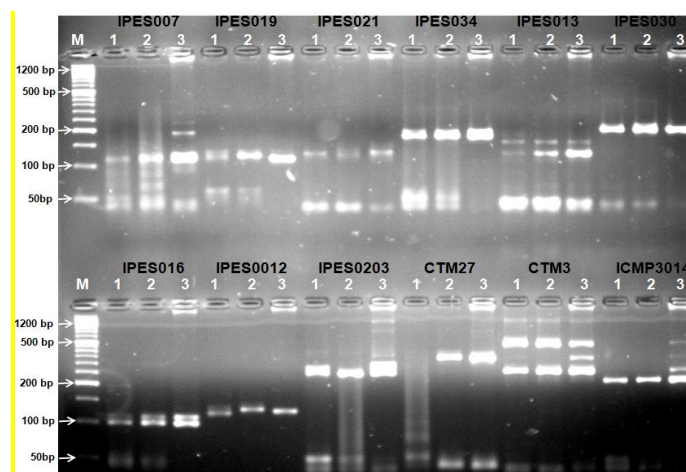


Fig 2.2.1 Gel photograph showing SSR allelic profile of MH2553 with 12 SSRs. M-50 bp DNA ladder; Lane 1- MPMH 21 (Check), 2- RHB 223 (Check), 3- MH2553

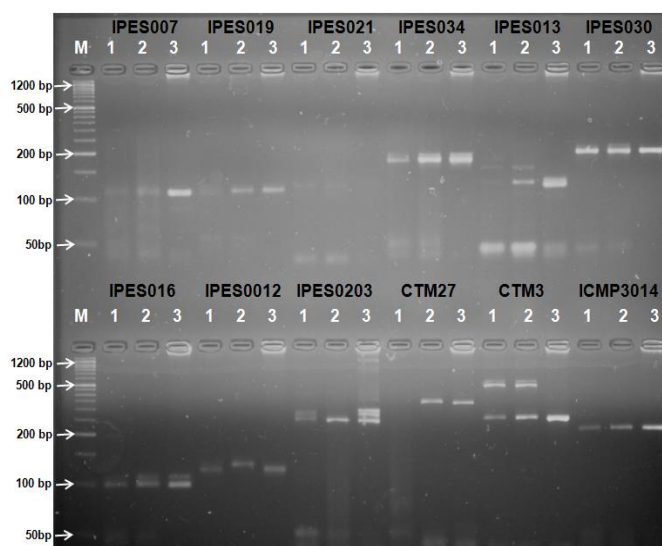


Fig 2.2.2 Gel photograph showing SSR allelic profile of MH2555 with 12 SSRs. M-50 bp DNA ladder; Lane 1- MPMH 21 (Check), 2- RHB 223 (Check), 3- MH2555

Among the advanced hybrid entries (MH 2577 and MH 2580) of third year testing from AHT I (L) A to AHT II (L) trial, analysis of MH 2577 using 36 primers displayed a unique profile for this genotype (Fig. 2.2.3). Out of the 36 primers used, 27 SSR primers (75.0 %) were found polymorphic between the three genotypes. Similarly, analysis of MH2580 using the same 36 primers displayed a unique profile for this genotype (Fig. 2.2.4). Out of the 36 primers used, 28 SSR primers (77.7%) were found polymorphic between the three genotypes.

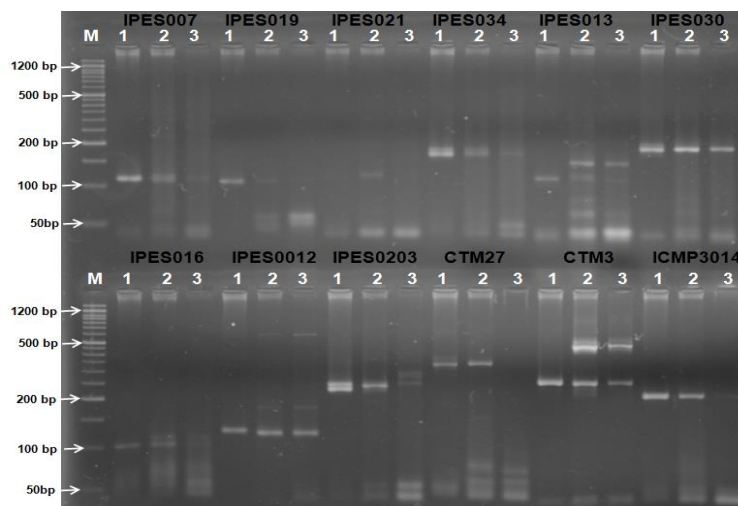


Fig 2.2.3 Gel photograph showing SSR allelic profile of MH2577 with 12 SSRs. M-50 bp DNA ladder; Lane 1- MP7878 (Check), 2- KBH108 (Check), 3- MH2577

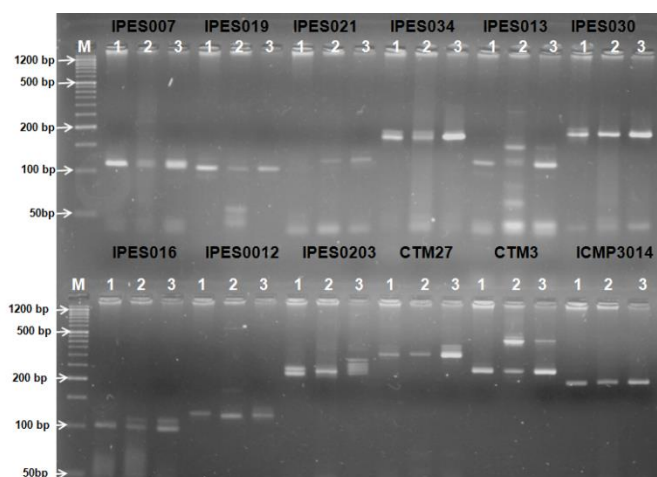


Fig 2.2.4 Gel photograph showing SSR allelic profile of MH2580 with 12 SSRs. M-50 bp DNA ladder; Lane 1- MP7878 (Check), 2- KBH108 (Check), 3- MH2580

APPENDICES

Appendix I

Appendix I: Rainfall pattern at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks	Date	RAJ								HAR						GUJ				MP				PUN		DEL	
		MDR		JDR		BKR		FTR		HSR		BWL		TLJ		JMR		AND		GLR		LDA		NDL			
		RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD		
6	5 Feb.-11 Feb.	1	0	-	-	7	1	4	1	6	1	-	-	0	0	-	-	0	0	0	0	13	-	2	1		
7	12 Feb.-18 Feb.	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	31	-	0	0		
8	19 Feb. - 25 Feb.	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	1	0	0		
9	26 Feb. - 4 Mar	0	0	-	-	0	0	1	1	0	0	-	-	0	0	-	-	0	0	0	0	0	1	2	2		
10	5 Mar - 11 Mar	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	3	0	0	0		
11	12 Mar - 18 Mar	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	9	0	0	0		
12	19 Mar -25 Mar	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	0	0	0		
13	26 Mar - 1 Apr	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	0	0	0		
14	2 Apr. - 8 Apr.	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	0	0	0		
15	9 Apr - 15 Apr	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	0	0	0		
16	16 Apr - 22 Apr	0	0	-	-	0	0	0	0	2	0	-	-	0	0	-	-	0	0	0	0	0	-	0	0		
17	23 Apr - 29 Apr.	0	0	-	-	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	0	0	-	0	0		
18	30 Apr - 6 May	0	0	-	-	0	0	0	0	0	0	8	1	0	0	-	-	0	0	0	0	0	-	0	0		
19	7 May - 13 May	0	0	-	-	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	-	0	0		
20	14 May - 20 May	0	0	-	-	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	-	0	0		
21	21 May - 27 May	0	0	-	-	1	0	2	1	26	2	34	2	0	0	-	-	0	0	4	1	19	-	8	3		
22	28 May - 3 June	0	0	-	-	0	0	11	1	6	1	3	1	0	0	-	-	0	0	0	0	6	1	1	1		
23	4 June - 10 June	0	0	-	-	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	-	0	0		
24	11 June -17 June	0	0	-	-	8	1	0	0	0	0	6	1	18	2	6	1	1	0	1	0	35	2	0	1		
25	18 June - 24 June	2	0	-	-	62	4	30	3	11	2	32	3	11	1	0	0	54	2	9	1	3	1	3	1		
26	25 June - 1 July	40	1	-	-	9	1	20	1	0	0	56	2	29	2	8	2	40	1	12	1	71	4	19	2		
27	2 July -8 July	52	4	80	4	38	2	28	3	2	0	5	1	114	5	127	6	64	4	31	3	75	4	2	1		
28	9 July - 15 July	7	1	16	2	89	5	43	2	46	3	37	2	53	5	209	7	171	6	69	3	5	1	8	2		
29	16 July - 22 July	29	2	35	1	80	3	34	3	101	3	143	5	27	2	24	2	112	5	55	3	196	5	14	4		
30	23 July - 29 July	256	3	207	4	28	3	50	2	18	1	65	5	28	6	3	0	132	6	3	1	22	3	4	3		
31	30 July - 5 Aug	4	0	6	2	2	0	9	1	132	4	38	4	28	3	13	2	43	2	27	4	31	2	10	4		
32	6 Aug - 12 Aug	78	3	44	3	12	3	0	0	2	0	0	0	37	4	59	4	35	2	87	4	23	2	0	0		
33	13 Aug - 19 Aug	74	4	96	6	18	2	11	2	55	2	7	1	17	2	74	3	76	7	65	4	5	1	5	3		
34	10 Aug - 26 Aug	48	4	56	3	1	0	3	1	0	0	34	3	3	1	2	0	7	2	135	3	26	1	2	2		
35	27 Aug - 2 Sept	0	4	0	0	8	1	0	0	0	0	7	1	4	1	3	1	1	0	10	2	0	0	3	1		
36	3 Sept - 9 Sept	0	0	0	0	0	0	0	0	0	0	0	0	4	2	2	0	0	0	0	0	0	0	0	0		
37	10 Sept - 16 Sept	32	3	0	0	0	0	0	0	1	0	9	1	58	3	121	7	84	4	60	4	53	3	6	3		
38	17 Sept -23 Sept	0	0	0	0	1	0	3	1	44	2	58	3	20	1	0	0	3	1	61	2	11	3	13	4		
39	24 Sept - 30 Sept	0	0	0	0	0	0	9	2	147	2	152	2	35	1	0	0	1	0	14	1	126	1	9	2		
40	1 Oct - 7 Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	8	2	3	1	0	0		
41	8 Oct - 14 Oct	52	4	0	0	0	0	12	2	1	0	84	3	0	0	0	0	43	2	103	3	3	1	19	4		
42	15 Oct - 21 Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
43	22 Oct - 28 Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
44	29 Oct - 4 Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Appendix I

Appendix I: Rainfall pattern at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks	Date	MS				KS		AP		TN		OD	
		ABD1		DHL		VYP		APR		CBE		SMG	
		RF	RD	RF	RD	RF	RD	RF	RD	RF	RD	RF	RD
6	5 Feb. - 11 Feb.	0	0	-	-	0	0	0	0	0	0	0	0
7	12 Feb. - 18 Feb.	0	0	-	-	0	0	0	0	0	0	0	0
8	19 Feb. - 25 Feb.	0	0	-	-	0	0	0	0	0	0	0	0
9	26 Feb. - 4 Mar	0	0	-	-	0	0	0	0	0	0	0	0
10	5 Mar - 11 Mar	0	0	-	-	0	0	0	0	0	0	0	0
11	12 Mar - 18 Mar	0	0	-	-	0	0	0	0	0	0	0	0
12	19 Mar - 25 Mar	0	0	-	-	0	0	0	0	1	0	0	0
13	26 Mar - 1 Apr	0	0	-	-	0	0	0	0	8	1	0	0
14	2 Apr. - 8 Apr.	0	0	-	-	3	1	0	0	0	0	84	1
15	9 Apr - 15 Apr	0	0	-	-	13	2	0	0	10	2	64	4
16	16 Apr - 22 Apr	0	0	-	-	21	3	4	1	31	1	15	2
17	23 Apr - 29 Apr.	0	0	-	-	34	2	0	0	1	0	6	1
18	30 Apr - 6 May	0	0	-	-	0	0	0	0	1	0	6	1
19	7 May - 13 May	0	0	-	-	38	1	39	3	7	1	34	3
20	14 May - 20 May	0	0	-	-	75	2	16	2	6	1	19	3
21	21 May - 27 May	0	0	-	-	9	1	0	0	6	1	31	3
22	28 May - 3 June	0	0	-	-	4	1	12	1	1	0	5	1
23	4 June - 10 June	24	2	0	0	36	3	20	1	0	0	0	0
24	11 June - 17 June	13	2	87	2	0	0	60	2	8	1	47	2
25	18 June - 24 June	39	2	12	2	5	1	36	2	1	0	26	3
26	25 June - 1 July	77	3	54	4	15	1	9	1	6	1	19	3
27	2 July - 8 July	70	4	70	4	12	2	26	1	19	4	38	4
28	9 July - 15 July	105	6	128	5	32	4	0	0	21	3	140	7
29	16 July - 22 July	36	3	48	2	7	1	0	0	23	3	72	5
30	23 July - 29 July	18	3	26	4	5	1	29	2	13	1	45	4
31	30 July - 5 Aug	19	1	147	3	203	7	78	5	34	3	41	2
32	6 Aug - 12 Aug	69	4	109	5	8	1	0	0	10	1	188	5
33	13 Aug - 19 Aug	10	1	18	1	1	0	0	0	0	0	181	4
34	20 Aug - 26 Aug	5	1	5	1	3	1	99	1	4	1	58	5
35	27 Aug - 2 Sept	73	3	64	2	44	2	85	3	111	4	8	1
36	3 Sept - 9 Sept	56	5	5	1	63	5	98	4	8	1	88	3
37	10 Sept - 16 Sept	40	4	174	6	22	3	3	0	2	0	69	4
38	17 Sept - 23 Sept	29	3	116	4	0	0	0	0	0	0	71	4
39	24 Sept - 30 Sept	37	2	11	1	10	2	10	2	3	0	58	3
40	1 Oct - 7 Oct	56	1	55	2	37	2	64	4	16	2	31	3
41	8 Oct - 14 Oct	109	4	0	0	68	3	68	4	31	1	112	6
42	15 Oct - 21 Oct	20	3	0	0	26	4	4	1	40	4	13	2
43	22 Oct - 28 Oct	0	0	0	0	0	0	0	0	5	1	0	0
44	29 Oct - 4 Nov	0	0	0	0	0	0	9	2	13	1	25	2

Appendix II

Appendix II: Temperature (°C) at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks	Date	RAJ								HAR				GUJ				MP		PUN		DEL	
		MDR		JDR		BKR		FTR		HSR		BWL		JMR		AND		GLR		LDA		NDL	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	5 Feb- 11 Feb.	14	24	-	-	9	25	7	23	8	22	-	-	14	29	9	31	7	24	8	20	7	21
7	12 Feb- 18 Feb.	17	27	-	-	10	29	7	26	6	25	-	-	15	30	12	31	8	26	7	23	7	25
8	19 Feb. - 25 Feb.	18	29	-	-	12	30	4	28	10	25	-	-	17	32	13	33	10	29	10	23	11	25
9	26 Feb. - 4 Mar	19	29	-	-	11	28	10	28	9	25	-	-	18	32	15	35	11	28	10	22	11	25
10	5 Mar - 11 Mar	22	34	-	-	14	33	12	30	11	27	-	-	19	34	15	36	13	30	13	27	13	28
11	12 Mar - 18 Mar	26	34	-	-	19	40	14	36	15	33	-	-	21	37	17	40	15	34	17	32	17	32
12	19 Mar -25 Mar	29	35	-	-	19	39	17	37	17	35	-	-	21	35	20	40	14	37	19	34	18	36
13	26 Mar - 1 Apr	31	36	-	-	19	41	15	33	16	38	-	-	22	37	19	40	17	40	17	36	17	37
14	2 Apr. - 8 Apr.	30	40	-	-	20	43	14	40	15	39	-	-	23	38	21	41	17	42	18	38	17	39
15	9 Apr - 15 Apr	31	38	-	-	23	43	20	41	20	41	-	-	23	38	21	42	21	43	22	40	20	40
16	16 Apr - 22 Apr	32	40	-	-	25	42	21	41	21	40	-	-	25	37	23	41	22	43	22	38	21	40
17	23 Apr - 29 Apr.	34	40	-	-	25	44	20	35	20	40	-	-	24	39	22	43	22	37	22	40	21	40
18	30 Apr - 6 May	33	41	-	-	27	43	25	42	24	42	24	42	27	38	24	41	26	44	26	38	24	40
19	7 May - 13 May	34	43	-	-	26	46	24	44	26	42	25	44	27	37	26	43	28	43	27	40	26	39
20	14 May - 20 May	34	44	-	-	29	46	26	45	26	44	27	45	28	38	26	40	29	46	27	43	26	43
21	21 May - 27 May	29	43	-	-	26	41	24	37	22	37	23	38	28	36	27	40	26	42	23	36	22	37
22	28 May - 3 June	29	42	-	-	29	44	26	42	25	41	25	44	28	36	26	41	28	45	26	41	25	40
23	4 June - 10 June	29	43	-	-	30	44	29	43	26	44	27	45	28	37	27	41	31	45	28	44	26	44
24	11 June -17 June	29	42	-	-	29	42	29	41	28	43	28	42	28	36	27	39	31	43	29	40	27	43
25	18 June - 24 June	29	40	-	-	22	35	22	35	23	33	21	34	29	37	23	38	26	38	24	33	24	35
26	25 June - 1 July	30	40	-	-	29	41	28	42	29	40	23	39	28	37	25	38	28	40	27	39	27	39
27	2 July -8 July	26	38	27	36	26	38	27	35	29	37	24	38	27	33	26	35	27	38	28	34	28	36
28	9 July - 15 July	25	38	27	36	25	36	26	36	27	36	23	36	26	31	24	32	23	37	28	34	27	36
29	16 July - 22 July	25	37	27	34	25	35	26	36	27	35	22	34	26	32	25	32	26	36	26	33	26	36
30	23 July - 29 July	25	34	26	31	25	33	25	33	27	33	28	33	26	32	25	33	26	32	28	33	25	34
31	30 July - 5 Aug	24	32	27	33	26	36	25	33	26	32	25	33	26	33	26	33	27	33	27	32	25	33
32	6 Aug - 12 Aug	23	32	27	35	26	36	26	35	28	34	26	33	27	33	26	33	26	33	27	34	26	33
33	13 Aug - 19 Aug	22	32	25	31	24	33	24	33	26	34	25	34	26	31	25	32	22	30	28	34	25	34
34	10 Aug - 26 Aug	21	29	25	31	24	34	25	33	26	34	25	33	26	32	25	32	24	43	27	34	26	35
35	27 Aug - 2 Sept	21	32	25	34	24	37	24	35	26	36	25	36	25	32	25	34	26	34	27	35	25	35
36	3 Sept - 9 Sept	21	36	26	36	24	38	24	37	25	37	25	38	26	34	26	38	26	35	26	35	25	36
37	10 Sept - 16 Sept	22	36	28	37	25	38	25	36	28	35	25	34	26	33	24	38	25	32	26	33	25	34
38	17 Sept -23 Sept	23	35	25	36	23	37	24	36	25	35	24	33	25	33	25	33	24	31	25	33	23	32
39	24 Sept - 30 Sept	22	34	24	36	22	38	22	33	24	30	23	34	24	33	24	35	24	33	23	30	23	33
40	1 Oct - 7 Oct	21	34	25	37	20	38	20	37	23	34	22	33	25	33	23	36	23	34	23	33	24	34
41	8 Oct - 14 Oct	26	38	23	35	19	34	19	29	21	27	20	28	25	36	20	35	22	30	20	30	22	28
42	15 Oct - 21 Oct	20	33	19	36	16	37	15	35	18	33	17	34	0	0	19	35	18	33	19	32	19	32
43	22 Oct - 28 Oct	20	33	19	35	15	36	13	34	16	32	16	33	0	0	18	35	15	33	15	31	17	31
44	29 Oct - 4 Nov	20	31	18	35	14	36	13	34	16	32	16	38	0	0	16	35	15	33	0	0	16	31

Appendix II

Appendix II: Temperature (°C) at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks Date		MS				KS		AP		TN		OD	
		ABD1		DHL		VYP		APR		CBE		SMG	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	5 Feb- 11 Feb.	13	30	-	-	15	32	18	32	21	32	10	26
7	12 Feb- 18 Feb.	14	31	-	-	16	32	18	32	21	31	10	27
8	19 Feb. - 25 Feb.	15	33	-	-	17	34	18	34	22	33	14	30
9	26 Feb. - 4 Mar	17	34	-	-	17	34	17	34	19	33	12	31
10	5 Mar - 11 Mar	18	34	-	-	19	34	19	35	21	33	13	31
11	12 Mar - 18 Mar	18	38	-	-	19	36	20	38	21	35	15	33
12	19 Mar -25 Mar	20	39	-	-	23	37	24	38	23	35	18	34
13	26 Mar - 1 Apr	19	39	-	-	23	39	26	40	24	35	18	35
14	2 Apr. - 8 Apr.	21	41	-	-	23	39	25	40	25	35	19	34
15	9 Apr - 15 Apr	19	40	-	-	23	39	25	39	24	33	19	33
16	16 Apr - 22 Apr	22	40	-	-	23	38	26	39	24	35	20	33
17	23 Apr - 29 Apr.	23	41	-	-	22	38	26	41	25	35	19	34
18	30 Apr - 6 May	22	40	-	-	23	40	27	41	25	35	20	34
19	7 May - 13 May	23	41	-	-	25	39	25	36	24	33	21	31
20	14 May - 20 May	23	41	-	-	22	34	24	35	24	31	23	34
21	21 May - 27 May	22	38	-	-	21	33	25	35	24	33	22	33
22	28 May - 3 June	23	39	-	-	22	36	25	38	23	34	22	34
23	4 June - 10 June	22	39	25	41	21	35	25	36	24	34	22	33
24	11 June -17 June	22	39	22	37	22	34	24	36	23	34	21	32
25	18 June - 24 June	22	35	22	36	22	33	23	33	24	32	20	29
26	25 June - 1 July	21	32	22	35	21	32	24	35	24	31	20	28
27	2 July -8 July	21	31	22	27	22	32	23	33	23	30	21	26
28	9 July - 15 July	20	27	20	28	21	26	23	31	23	29	20	24
29	16 July - 22 July	20	30	21	31	21	31	24	35	23	30	20	25
30	23 July - 29 July	21	28	21	31	21	30	23	32	23	31	20	27
31	30 July - 5 Aug	21	32	21	33	21	31	23	33	23	31	20	29
32	6 Aug - 12 Aug	21	29	21	31	21	28	23	32	23	29	20	24
33	13 Aug - 19 Aug	20	29	21	32	20	29	23	34	23	32	20	26
34	10 Aug - 26 Aug	20	30	20	31	20	31	23	35	23	31	20	27
35	27 Aug - 2 Sept	20	32	20	33	21	31	22	33	23	30	20	30
36	3 Sept - 9 Sept	20	32	22	34	21	31	22	33	23	31	20	29
37	10 Sept - 16 Sept	21	29	20	32	20	29	22	32	23	30	20	26
38	17 Sept -23 Sept	19	28	20	30	19	30	21	33	22	32	20	26
39	24 Sept - 30 Sept	20	32	22	34	20	30	22	33	22	32	20	29
40	1 Oct - 7 Oct	20	32	22	34	20	31	21	31	23	31	20	26
41	8 Oct - 14 Oct	20	30	20	31	20	29	21	31	23	31	19	27
42	15 Oct - 21 Oct	20	30	19	32	20	30	22	33	23	31	17	28
43	22 Oct - 28 Oct	0	0	14	32	14	30	17	32	21	31	13	27
44	29 Oct - 4 Nov	0	0	12	32	15	30	20	30	23	30	14	28

Appendix III

Appendix III: Humidity (%) at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks	Date	RAJ								HAR				GUJ				MP		PUN		DEL	
		MDR		JDR		BKR		FTR		HSR		BWL		JMR		AND		GLR		LDA		NDL	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	5 Feb- 11 Feb.	53	79	-	-	31	84	35	98	48	96	-	-	36	82	24	93	56	90	49	93	65	91
7	12 Feb- 18 Feb.	76	71	-	-	21	71	20	83	48	97	-	-	28	80	26	86	43	88	42	94	37	90
8	19 Feb. - 25 Feb.	46	60	-	-	21	71	20	88	46	87	-	-	25	85	24	91	49	87	41	85	40	91
9	26 Feb. - 4 Mar	44	71	-	-	28	81	32	95	49	95	-	-	25	71	22	85	55	83	57	91	44	83
10	5 Mar - 11 Mar	33	53	-	-	25	78	20	90	43	93	-	-	20	70	22	82	47	83	58	91	37	88
11	12 Mar - 18 Mar	34	67	-	-	16	69	17	78	40	91	-	-	24	75	18	76	38	86	45	90	44	83
12	19 Mar -25 Mar	45	77	-	-	15	61	14	63	31	85	-	-	34	90	18	82	30	53	33	83	22	68
13	26 Mar - 1 Apr	36	47	-	-	7	48	16	53	17	73	-	-	35	86	23	98	32	61	23	79	22	68
14	2 Apr. - 8 Apr.	29	52	-	-	8	49	17	70	28	76	-	-	34	88	19	94	19	53	13	73	11	69
15	9 Apr - 15 Apr	40	58	-	-	15	43	18	66	40	68	-	-	28	85	13	96	19	41	16	61	14	67
16	16 Apr - 22 Apr	32	52	-	-	12	37	22	72	42	71	-	-	42	85	19	92	22	46	18	49	17	69
17	23 Apr - 29 Apr.	32	40	-	-	13	33	16	57	28	63	-	-	32	89	16	71	20	46	13	47	19	57
18	30 Apr - 6 May	42	55	-	-	16	36	16	44	25	59	18	41	39	76	25	92	25	48	27	52	40	69
19	7 May - 13 May	35	53	-	-	16	31	14	38	22	59	15	53	41	80	24	92	26	56	27	53	34	71
20	14 May - 20 May	37	53	-	-	15	37	12	33	27	56	10	34	39	80	31	92	23	46	17	39	24	68
21	21 May - 27 May	32	58	-	-	27	55	18	53	39	66	33	67	38	73	38	78	37	64	34	54	42	81
22	28 May - 3 June	37	53	-	-	17	42	21	49	31	62	15	47	47	75	30	77	26	46	22	53	32	75
23	4 June - 10 June	37	59	-	-	15	38	15	39	30	46	13	28	51	76	31	81	24	40	16	43	33	44
24	11 June -17 June	40	58	-	-	31	48	27	52	41	55	33	48	56	80	40	86	37	54	36	54	39	57
25	18 June - 24 June	42	54	-	-	57	82	50	86	50	84	54	83	52	83	43	96	43	68	50	78	49	73
26	25 June - 1 July	39	53	-	-	36	59	38	71	43	68	44	69	59	86	45	96	45	65	36	59	54	68
27	2 July -8 July	62	70	58	86	56	84	51	90	56	82	54	83	89	95	60	100	47	84	68	81	61	79
28	9 July - 15 July	65	76	56	80	68	85	51	89	66	84	55	79	87	96	74	98	55	82	64	73	64	76
29	16 July - 22 July	60	71	58	82	61	87	56	92	73	90	69	90	75	90	70	97	62	77	67	84	81	81
30	23 July - 29 July	67	80	78	92	71	91	73	96	77	90	72	93	77	90	66	96	76	91	63	79	68	86
31	30 July - 5 Aug	56	68	60	89	62	82	60	89	83	95	76	90	70	90	60	96	59	89	71	88	71	88
32	6 Aug - 12 Aug	55	75	65	83	55	85	53	85	65	86	59	87	73	94	72	96	66	91	87	81	67	80
33	13 Aug - 19 Aug	71	87	78	91	69	89	63	94	64	88	62	85	78	93	25	100	74	88	79	77	64	80
34	10 Aug - 26 Aug	71	85	69	92	59	84	57	87	64	90	66	87	70	89	59	93	73	89	64	81	71	79
35	27 Aug - 2 Sept	54	71	54	83	45	77	43	81	53	86	55	78	66	88	52	94	61	86	57	81	65	78
36	3 Sept - 9 Sept	45	70	43	74	43	73	43	88	48	84	42	78	60	84	49	90	56	80	52	83	64	76
37	10 Sept - 16 Sept	53	72	45	74	48	77	45	91	59	85	57	84	75	94	53	97	72	95	62	87	78	86
38	17 Sept -23 Sept	50	71	43	81	46	77	49	87	65	89	71	86	61	86	56	97	75	93	63	87	78	86
39	24 Sept - 30 Sept	51	69	42	75	38	70	46	91	69	93	58	91	57	83	51	95	58	89	64	95	55	91
40	1 Oct - 7 Oct	57	64	28	63	33	67	33	88	52	84	46	86	55	80	40	96	61	89	51	91	66	89
41	8 Oct - 14 Oct	62	70	31	68	43	80	64	91	72	94	67	88	47	82	30	100	70	94	55	90	77	93
42	15 Oct - 21 Oct	56	68	16	57	28	56	20	77	41	84	29	76	0	0	31	91	56	85	34	79	42	87
43	22 Oct - 28 Oct	49	66	18	56	25	65	19	82	49	90	25	75	0	0	23	87	47	81	32	88	43	86
44	29 Oct - 4 Nov	50	61	16	57	27	72	15	83	55	93	25	70	0	0	20	95	44	90	0	0	42	92

Appendix III

Appendix III: Humidity (%) at pearl millet trial locations during crop growth period kharif 2022

Met. Weeks	Date	MS				KS		AP		TN		OD	
		ABD1		DHL		VYP		APR		CBE		SMG	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
6	5 Feb. 11 Feb.	26	60	-	-	31	77	48	87	40	85	50	93
7	12 Feb- 18 Feb.	27	57	-	-	28	64	44	90	45	83	52	93
8	19 Feb. - 25 Feb.	24	58	-	-	24	64	23	82	39	83	48	92
9	26 Feb. - 4 Mar	28	48	-	-	18	53	23	85	28	78	44	82
10	5 Mar - 11 Mar	27	51	-	-	24	56	26	79	41	77	48	88
11	12 Mar - 18 Mar	13	27	-	-	19	52	22	65	30	78	40	85
12	19 Mar -25 Mar	19	43	-	-	26	78	35	73	44	85	48	86
13	26 Mar - 1 Apr	15	44	-	-	19	55	31	73	45	87	42	84
14	2 Apr. - 8 Apr.	14	49	-	-	24	63	30	77	40	83	60	89
15	9 Apr - 15 Apr	16	45	-	-	29	77	31	73	57	85	54	88
16	16 Apr - 22 Apr	20	35	-	-	26	68	32	67	48	85	57	86
17	23 Apr - 29 Apr.	16	42	-	-	27	73	24	62	46	85	63	83
18	30 Apr - 6 May	14	44	-	-	20	81	33	65	50	82	54	81
19	7 May - 13 May	13	43	-	-	35	72	48	73	55	80	75	86
20	14 May - 20 May	19	55	-	-	55	87	53	79	62	85	72	89
21	21 May - 27 May	16	71	-	-	42	86	40	79	56	82	57	88
22	28 May - 3 June	24	65	-	-	34	79	39	78	51	79	51	86
23	4 June - 10 June	39	67	27	59	44	84	42	76	49	83	63	86
24	11 June -17 June	27	64	38	72	46	85	46	81	52	83	69	85
25	18 June - 24 June	51	78	44	72	51	86	52	84	50	82	86	91
26	25 June - 1 July	56	85	47	78	60	84	38	80	56	78	77	92
27	2 July -8 July	78	93	59	84	57	88	60	82	63	79	88	94
28	9 July - 15 July	91	94	66	88	84	91	54	79	66	81	92	96
29	16 July - 22 July	80	91	60	84	63	90	51	79	65	83	87	95
30	23 July - 29 July	72	91	62	84	61	91	55	84	55	87	86	95
31	30 July - 5 Aug	70	87	55	84	73	96	61	90	64	86	81	93
32	6 Aug - 12 Aug	81	93	61	87	68	89	56	77	63	80	94	96
33	13 Aug - 19 Aug	77	92	55	84	61	88	46	79	54	85	87	95
34	10 Aug - 26 Aug	71	89	60	82	55	89	47	80	58	86	85	95
35	27 Aug - 2 Sept	68	82	60	89	64	92	57	90	65	87	82	88
36	3 Sept - 9 Sept	74	91	59	87	62	96	61	89	59	83	85	92
37	10 Sept - 16 Sept	78	90	64	93	70	92	57	85	57	78	87	94
38	17 Sept -23 Sept	70	89	63	92	56	90	45	82	46	74	86	95
39	24 Sept - 30 Sept	61	87	50	85	67	91	59	83	52	69	88	93
40	1 Oct - 7 Oct	62	78	52	89	58	90	60	80	52	84	92	95
41	8 Oct - 14 Oct	80	87	62	94	70	96	64	89	59	85	88	95
42	15 Oct - 21 Oct	72	89	57	85	68	96	53	86	63	87	83	92
43	22 Oct - 28 Oct	0	0	31	75	34	84	43	87	53	85	70	89
44	29 Oct - 4 Nov	0	0	20	82	37	82	60	86	62	83	76	87



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