प्रगति प्रतिवेदन

PROGRESS REPORT

2022-23

फसल सुधार

CROP IMPROVEMENT

अखिल भारतीय समन्वित गेहूँ एवं जौ अनुसंधान परियोजना

AICRP on Wheat and Barley

भा.कृ.अनु.प.–भारतीय गेहूँ एवं जौ अनुसंधान संस्थान, करनाल

ICAR-Indian Institute of Wheat and Barley Research, Karnal

For official use only

AICRP on Wheat & Barley

PROGRESS REPORT
2022-23

CROP IMPROVEMENT

BS Tyagi
Arun Gupta
Ratan Tiwari
Satish Kumar
Vikas Gupta
AK Sharma
Hanif Khan
CN Mishra
Vishnu Kumar
Charan Singh
UR Kamble
Mamrutha HM
Sonia Sheoran
OP Ahlawat
Ajay Verma
GP Singh
Gyanendra Singh

ICAR - INDIAN INSTITUTE OF WHEAT AND BARLEY RESEARCH
PO BOX - 158, AGRASAIN MARG, KARNAL - 132 001
Haryana, India

Correct Citation:

ICAR-IIWBR 2023. Progress Report of AICRP on Wheat and Barley 2022-23, Crop Improvement. Eds: BS Tyagi, Arun Gupta, Ratan Tiwari, Satish Kumar, Vikas Gupta, AK Sharma, Hanif Khan, CN Mishra, Vishnu Kumar, Charan Singh, UR Kamble, Mamrutha HM, Sonia Sheoran, OP Ahlawat, Ajay Verma, GP Singh and Gyanendra Singh. ICAR-Indian Institute of Wheat and Barley Research, Karnal, Haryana, India. p.205.

Issued on the occasion of 62nd All India Wheat & Barley Research Workers' Meet organised at MPUAT, Udaipur during August 28-30, 2023.

Acknowledgement

I thankfully acknowledge the whole hearted support of each one of the co-operators from funded/ voluntary centres of the AICRP on Wheat & Barley for their painstaking efforts in the successful conduction of various coordinated trials, nurseries and other experiments as well as timely submission of the trial data.

I am highly grateful to our dynamic Leader and Director, Dr Gyanendra Singh for his active involvement, guidance and support in successful execution of the work plan of crop season 2022-23 and also for ensuring timely preparation of this report. I am also thankful to our previous director Dr. GP Singh for his guidance and preparation of the workplan that was executed during 2022-23 crop season.

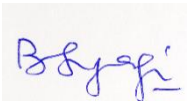
My special thanks are due to all the members of the zonal monitoring teams from the cooperating centres and ICAR-IIWBR for smooth conduct of the monitoring either in physical or virtual mode. I would like to put on record my sincere thanks to all associated scientists of Crop Improvement division in arranging seed material, coding, constitution and timely despatch of all the yield trials (AVTs, NIVTs/IVTs, SPL-HYPT) and also national nurseries to the centres. The effort of seed unit in organizing nucleus/breeder seed production is also acknowledged. The import of international trials/ nurseries and supplying indented germplasm to scientists from all over the country by the GRU Unit is appreciated.

The contributions made by the technical staff of the Crop Improvement Division namely, Sh. Om Prakash, Sh. Suresh Kumar, Sh. Rajesh Kumar, Sh. Surendra Singh, Sh. Chandrababu P, Sh. Rahul, Sh. Rajendra Kumar Gola, Dr. OP Dhillon and Sh. Yogesh Kumar, in the constitution and despatch of coordinated trials/nurseries, handling field experiments, seed production, recording observations and compilation of raw data is dully acknowledged.

Special thanks are due to Sh. Yogesh Sharma for his valuable contribution in compiling entire raw data, tabulating the analysed data and also support in preparing final progress report. Thanks, are also due to the Administration, Finance, Coordination and other units for their support in smooth functioning of the coordinated programme.

In the end, it is stated that although utmost care has been taken to avoid any error in presentation of the results in this report, any error/omission is unintended and may please be brought to the notice of the undersigned.

Dated: 22 August, 2023



(BS Tyagi)
PI- Coordination

Contents

SN	Contents	Page (s)
1.	Highlights of Crop Improvement, 2022-23	1-13
2.	Breakup of the 2022-23, Coordinated Wheat Varietal Trials	14
3.	Abbreviations used in the text	15-16
4.	Parentage of wheat entries and check varieties evaluated during 2022-23	17-30
National Initial Varietal Trials (NIVTs)		
1.	NIVT-1A (Irrigated, Timely sown, *T. aestivum*), NWPZ & NEPZ	31-38
2.	NIVT-1B (Irrigated, Timely sown, *T. aestivum*), NWPZ & NEPZ	39-46
3.	NIVT-2 (Irrigated, Timely sown, *T. aestivum*), CZ & PZ	47-52
4.	NIVT-3A (Irrigated, Late sown, *T. aestivum*), NWPZ & NEPZ	53-60
5.	NIVT-3B (Irrigated, Late sown, *T. aestivum*), CZ & PZ	61-67
6.	NIVT-4 (Irrigated, Timely sown, *T. durum*), CZ & PZ	68-72
7.	NIVT-5A (Restricted Irrigation, Timely sown, *T. aestivum*), NWPZ & NEPZ	73-80
8.	NIVT-5B (Restricted Irrigation, Timely sown, *T. aestivum, T. durum*), CZ & PZ	81-86
9.	NIVT-6(Early Sown-Irrigated, *T. aestivum*) NWPZ & CZ	87-92
Northern Hills Zone		
1.	Initial Varietal Trial (Rainfed, Timely sown)	93-96
2.	Advance Varietal Trial (Rainfed, Timely sown)	97-98
North Western Plains Zone		
1.	Advanced Varietal Trial (Irrigated, Timely sown), *T. aestivum*	99-102
2.	Advanced Varietal Trial (Irrigated, Late sown), *T. aestivum*	103-104
3.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), *T. aestivum*	105-107
North Eastern Plains Zone		
1.	Advanced Varietal Trial (Irrigated, Timely sown), *T. aestivum*	108-109
2.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), *T. aestivum*	110-111
Central Zone		
1.	Advanced Varietal Trial (Irrigated, Timely sown), *T. aestivum, T. durum*	112-114
2.	Advanced Varietal Trial (Irrigated, Late sown), *T. aestivum, T. durum*	115-117
3.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), *T. aestivum, T. durum*	118-120
Peninsular Zone		
1.	Advanced Varietal Trial (Irrigated, Timely sown), *T. aestivum, T. durum*	121-125
2.	Advanced Varietal Trial (Irrigated, Late sown), *T. aestivum, T. durum*	126-129
3.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), *T. aestivum, T. durum*	130-131
Special Trials		
1.	Special Trial - Salinity and Alkalinity, (Irrigated, Timely sown) - NWPZ	132
2.	Special Trial - High Yield Potential Trial, (Irrigated, Early sown) CZ	133

SN	Contents	Page (s)
Physiological Trial		
1.	Drought and Heat Tolerance Screening Nursery (DHTSN)	134-142
Breeder and Nucleus Seed Production		
2.	Seed Production of Wheat Varieties, 2022-23	143-158
Evaluation of Germplasm (National/ International)		
1.	National Genetic Stock Nursery	159-162
2.	International Nurseries and Trials	163-166
3.	Segregating Stock Nursery	167-168
4.	Drought and Heat Tolerance Screening Nursery (DHTSN)	169-171
5.	Salinity/ Alkalinity Tolerance Screening Nursery	172-173
Appendices		
1.	*Appendix-I*: Trials Not Reported	174-180
2.	*Appendix-II*: Zonal Monitoring Reports	181-198
3.	*Appendix-III*: Guidelines for recording of data and Sowing schedule of coordinated yield trials	199
4.	*Appendix-IV*: Norms with respect to site mean and conduction of coordinated yield trials	200
5.	*Appendix-V*: Criteria for promotion/retention of varieties under Coordinated Trials	201
6.	*Appendix-VI*: Molecular Profile of Durum Genotypes	202-205

Crop Improvement - Principal Investigator's Report

Research Highlights 2022-23

The crop season 2022-23 witnessed high rainfall at the grain filling stage in many wheat growing regions of the country, however with coordinated research activities in wheat resulted in production of 112.74 million tonnes (3rd AE, 2023) of wheat grains over an area of 34.2 mha in the country. During the reported year, entire work related to coding, constitution and dispatch of all the trials (NIVTs, IVTs, AVTs, National and International Nurseries etc.) was done at ICAR-IIWBR, Karnal. A summary of significant achievements made by the Crop Improvement division under All-India Coordinated Research Project on Wheat & Barley is presented in the subsequent pages.

Release of new wheat varieties for different zones/states

During the year 2022, the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops in its 89th meeting recommended the release and notification of 18 bread wheat varieties (PBW872, DBW371 (Karan Vrinda), DBW372 (Karan Varuna), MACS SAKAS (MACS 6768), HD3406 (Unnat HD2967), HD3411 (NICRA Pusa Wheat 341I), HD3407 (Unnat HD2932), PBW826, VL Cookies (VL2041), DBW370 (Karan Vaidehi), Pusa Wheat 3369 (HD3369), Pusa Jagrati (HI1653), Pusa Aditi (HI1654), Karan Prema (DBW316), PBW833, Pusa Ojaswi (HI1650), Vidhya (CG1036), HI1655 (Pusa Harsha)) and four durum wheat varieties (Pusa Kirti (HI8830), DDW55 (Karan Manjari), HI8826 (Pusa Poshtik)), MACS4100 (MACS Jejuri)) for different production conditions in various zones. Of these, PBW872, DBW371 (Karan Vrinda), DBW 372 (Karan Varuna), MACS 6768 (MACS Sakas) can be considered as bio-fortified varieties, while HD 3406, HD 3411 and HD 3407 were developed through marker assisted back cross breeding. The Sub-Committee also recommended the extension of areas of adoption of DBW 303 to irrigated, early/timely sown conditions of central zone.

Wheat varieties released by CVRC during 2022

Variety	Developed by	Zone	Prod. Cond.	Grain yield (q/ha)		Special features
				Av.	Pot.	
Bio-fortified bread wheat varieties						
PBW872	PAU, Ludhiana	NWPZ	IR, ES, HF	75.2	93.4	High Fe (42.3 ppm) and Zn (40.7 ppm)
DBW371 (Karan Vrinda)	ICAR-IIWBR, Karnal	NWPZ	IR, ES, HF	75.9	87.1	Protein content (12.2%) & Fe (44.9 ppm)
DBW372 (Karan Varuna)			IR, ES, HF	75.3	84.9	Protein content (12.2%) Zn (40.8 ppm)
MACS SAKAS (MACS6768)	ARI, Pune	CZ	TS, IR	56.6	92.4	Protein (12.0%), Fe (41.2ppm), Zn (45.1 ppm)
PBW826	PAU, Ludhiana	NWPZ & NEPZ	TS, IR	63.6 (NWPZ) 49.7 (NEPZ)	84.0 (NWPZ) 70.5 (NEPZ)	Resistant to wheat blast
VL Cookies (VL 2041)	ICAR-VPKAS, Almora	NHZ	TS, RF	29.6	44.4	Soft grain (GHI22.6), Biscuit spread factor (11.7)
DBW370 (Karan Vaidehi)	ICAR-IIWBR, Karnal	NWPZ	IR, ES, HF	74.9	86.9	High protein content (12.0%)

Pusa Wheat 3369 (HD 3369)	ICAR-IARI, N. Delhi	NWPZ	TS, RI	50.6	71.4	Fe content (40.6 ppm)
Pusa Jagrati (HI 1653)	ICAR-IARI RS, Indore	NWPZ	TS, RI	51.1	69.3	Resistant to wheat blast and leaf rust
Pusa Aditi (HI 1654)	ICAR-IARI RS, Indore	NWPZ	TS, RI	51.8	78.2	Tolerant to wheat blast and leaf rust
Karan Prema (DBW 316)	ICAR-IIWBR, Karnal	NEPZ	LS, IR	41	68	Resistant to wheat blast and all the three rusts, protein content (13.2%), tolerant to drought (DSI-0.88) and heat stress (HSI- 0.19)
PBW833	PAU, Ludhiana	NEPZ	LS, IR	42.75	58.8	Good chapatti quality (score 8.2) and protein content (12.9%)
Pusa Ojaswi (HI 1650)	ICAR-IARI RS, Indore	CZ	TS, IR	57.2	73.8	Highly resistance to leaf and stem rust, high zinc content (42.7 ppm)
Vidhya (CG 1036)	IGKV RS, Bilaspur	CZ	TS, RI	39.3	60.4	Hard grain, good chapati score (8.5), Resistance to leaf and stem rust
HI1655 (Pusa Harsha)	ICAR-IARI RS, Indore	CZ	TS, RI	38.8	59.8	Hard grain, good chapati score (8.4), resistance to leaf and stem rust
DBW 303 (Area extension)	ICAR-IIWBR, Karnal	CZ	IR, ES/TS, High fertility	58.3	80.3	
Varieties developed through Marker Assisted Backcross Breeding						
HD3406 (Unnat HD2967)	ICAR-IARI, N. Delhi	NWPZ	TS, IR	54.73	70.4	3.26% superior in yield to recurrent parent HD2967,
HD3411 (NICRA Pusa Wheat 341I)		NEPZ	TS, IR	46.75	65.8	1.5% superior in yield to recurrent parent HD2733
HD3407 (Unnat HD2932)		CZ	LS, IR	46.75	69.6	Better resistance to leaf and stem rust
Durum wheat						
Pusa Kirti (HI 8830)	ICAR-IARI RS, Indore	CZ	TS, RI	40.4	65.3	Resistance to leaf and stem rust, good amount of yellow pigment (7.4)
DDW55 (Karan Manjari)	ICAR-IIWBR, Karnal	CZ	TS, RI	35.6	56.5	Zn (43.3 ppm), hard grains, good hectoliter weight
HI8826 (Pusa Poshtik)	ICAR-IARI RS, Indore	PZ	TS, IR	48.8	73.7	Resistance to leaf and stem rust, hard grains
MACS4100 (MACS JEJURI)	ARI, Pune	PZ	TS, IR	46.0	61.8	Resistance to leaf rust, hard grains and good amount of yellow pigment (7.1); good pasta acceptability (6.6)

State releases

Seven wheat varieties namely K 1616, VL Gehun 2028, VL Gehun 3010, HPW 373, JAUW 672, SKW 396 and NIAW3624 were recommended for notification by the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops for different production conditions prevailing in the named states.

Wheat varieties released by SVRC during 2022-23

S.N.	Variety	Developed by	State	Production condition	Average yield (q/ha)	Potential Yield (q/ha)
1.	K 1616	CSAUAST, Kanpur	Uttar Pradesh	TS, RF	23.96	49.5
2.	VL Gehun 2028	ICAR-VPKAS, Almora	Uttarakhand	TS, RF (organic cultivation in hills)	22.7	30.7
3.	VL Gehun 3010			LS, IR	58.19	85.2
4.	Him Palam Gehun 3(HPW 373)	CSK HPKVV, Palampur	HP (lower and mid hills)	LS, RF	27.6	36.2
5.	JAUW 672	SKUAST, Jammu	Jammu region	ES/TS, RI	44.13	54.5
6.	SKW396 (Shalimar wheat3	SKUAST, Srinagar	Mid and lower hills of Kashmir valley	TS, RF	32.3	38.6
7	NIAW 3624	MPKV ARS, Niphad	Maharashtra	TS, RI	30.56	42.1

Registration of new genetic stocks

During the year 2022-23, a total of 19 genetic stocks of wheat were registered for traits like disease resistance to rusts, higher protein content, water use efficiency, heat tolerant, salt tolerancet, high grain iron and zinc content. The genetic resources unit of the IIWBR, Karnal multiplies the seeds of these registered genetic stocks and supplies to breeder across the country for use in wheat improvement

Genetic stocks registered during 2022-23

Name	Developed by	Traits
HS545	ICAR-IARI Regional Station, Shimla	Resistant to all pathotypes of brown rust presence of *Lr*24/*Sr*24.
DBW325	ICAR-IIWBR, Karnal	Highly resistant to wheat blast, resistant to leaf rust and Karnal bunt.
IC0640204 (RLBW02)		Resistant to stripe rust, resistant to leaf rust, tolerant to stem rust.
DBW342		Resistant to wheat blast resistant to stem and leaf rust.
CPIIWBR-121		Immune or complete field (adult plant) resistance against yellow rust disease at 9 different host spot locations
DBW400		Resistant to leaf rust.
BFKW-2		High grain protein (16.7%), Iron (45.7 ppm) and Zinc (47.8 ppm) Content.
BFKW-7		High grain protein (17.1%), Iron (53.3 ppm) and Zinc (54.2 ppm) Content.
IC128335	ICAR-NBPGR, N. Delhi	Drought tolerance with higher antioxidant (1.8 fold) activity.

IC416188	ICAR-NBPGR, N. Delhi	Terminal heat tolerance.
IC533742		High level of salt tolerance.
EC178071-428		High level of salt tolerance.
IC112049		Terminal heat tolerance, high productive tiller numbers, thousand grain weight and harvest index.
PAU16076	PAU, Ludhiana	Resistant to yellow rust with gene *Yr*5.
PAU16077		Possesses genes for resistant to Leaf rust-stripe rust (*Lr*57-*Yr*40). Stripe rust (*Yr*15).
PAU16078		Resistance to leaf rust (Lrtri) and stripe rust.
PAU16075		Glu-B3/GliB1 locus transfer on 1RS chromosomal arm. Resistant to stripe rust with transfer of gene *Yr*5.
UASQ 332	UAS, Dharwad, Karnataka	High Zinc content (47.3 ppm).
GW A 2019-957	WRS, SDAU, Vijapur	High Zinc content (47.0 ppm).

Registration of varieties with the PPV&FRA: Four wheat varieties namely MP(JW) 3382, DBW296, DBW327 and DBW332 were registered under extant category by the PPV&FRA, New Delhi vide registration number REG/2016/1387, REG/2021/0219, REG/2021/0220 and REG/2021/0221, respectively.

Significant results from coordinated yield trials

Conduction of coordinated trials: The wheat coordinated varietal evaluation programme entails a huge multilocation testing programme which is undertaken at 67 centers with the cooperation of 28 funded and 39 voluntary centres spread across five wheat growing zones in the country.

Zone-wise funded and voluntary centers of coordinated trials

Zone	Funded	Voluntary + ICAR centres	Total
NHZ	4	5	09
NWPZ	5	10	15
NEPZ	8	5	13
CZ	8	10	18
PZ	3	9	12
Total	**28**	**39**	**67**

During the crop season 2022-23, a total of 15 trial series (AVTs (4), NIVTs (9), IVTs (1) and SPLs (1) were laid out in the different zones under six major production conditions *viz.* Early-sown irrigated, timely-sown irrigated, late-sown irrigated, timely-sown restricted irrigation and timely-sown rainfed. This year altogether 360 test entries (251 NIVT 86 AVT and 23 IVT) were evaluated with 58 check varieties in different trials. In all, 323 trial sets were supplied to 67 centers and 319 trials were conducted (98.8%)

Breakup of yield trials during 2022-23

Zone	Proposed	Conducted	Reported	Reason for not reported
NHZ	19	18	12	LSM (4), LS&LSM (1), Faulty Design (1)
NWPZ	90	89	74	RMT (11), LSM (4))
NEPZ	57	55	45	RMT (4), LSM (4), LS (1), LSM&LS (1)
CZ	95	95	73	RMT (12), LSM (6), LS (1), LSM& HCV (3)
PZ	63	62	46	RMT (10), LSM (4), LS (1), HCV (1)
Total	**323**	**319**	**250**	**Total 69**

During the crop season, out of total 319 total trials conducted, data of 250 trials (78.4%) has been reported based on set norms for disease resistance and yield performance. Rejection by Monitoring Team was the primary reason (37) for less reporting of trials.

Percent success in trial conduction and reporting during 2022-23

Zone	Conduction (%)	Reporting (%)
NHZ	100	66.7
NWPZ	98.9	83.1
NEPZ	96.5	81.8
CZ	100	76.8
PZ	98.4	74.2
Total	**98.8**	**78.4**

Varieties in the final year evaluation in AVTs

During this crop season, total 13 entries were in the final year of yield evaluation in various AVTs and SPL trials of the different zones. One entry namely DBW359 was tested in two zones viz., Central and Peninsular Zone. The proposals received for identification would be considered by Varietal Identification Committee.

Varieties in final year of evaluation in AVTs and SPL trials during 2022-23

Zone/ Trial	Final year entries
North Western Plains Zone	
AVT-IR-TS-TAS	HD3386
AVT-RI-TS-TAS	WH1402
North Eastern Plains Zone	
AVT-IR-TS-TAS	HD3388
Central Zone	
AVT-IR-TS-TAD	NWS2194, GW547
AVT-RI-TS-TAS	DBW359, CG1040
Peninsular Zone	
AVT-IR-TS-TAD	MP1378
AVT-RI-TS-TAS	HI1665, DBW359, NIAW4028, UAS478(d), HI8840(d)
SPL-HYPT	
SPL-HYPT-IR-ES-CZ	DBW377

Marker assisted gene prospecting in AVT entries of wheat

The efficiency of varietal development program targets the productivity and adaptation, which plays a critical role in providing essential protection against biotic and abiotic challenges in wheat. To achieve these goals, AVT final year (2022-23) entries and checks were screened using various STS/ AS-PCR markers linked to specific genes including waxiness (*WxB1*), abiotic (drought tolerance) stress (*DREB*), vivipary (*Vp1B3*), leaf rust resistance (*Lr*), photoperiod response (*Ppd1*) and vernalization (*Vrn*). The dendrogram, utilising 9 STS and 39 SSR markers, demonstrated the genetic relationships between different genotypes. This analysis resulted in the formation of two distinct clusters, one for durum wheat entries and the other for bread wheat entries. In case of durum wheat entries, the dendrogram revealed that entry HI8840 was grouped together with HI8826(C) and UAS 446(C) while entry UAS478, along with check NIDW1149(C) formed another distinct group, indicating diversification among these entries. Looking at the dendrogram generated for bread wheat entries, HD 3386 and HD 3388 showed close genetic proximity, followed by the duo HD3471 and GW547, andHI1665 and

NIAW4028. DBW442 was observed to be in close alliance with DBW359 and CG1040. However, entries NWS2194, HD3470, DBW377, DBW441, WH1402 and MP1378 appeared distinct when compared with other entries.

Table: Profile of AVT final year entries and checks generated using STS / AS-PCR markers

AVT Entries / Checks	*WxB1*		*DREB*	*Vp1B3*		*Lr10*	*Lr34*		*Ppd-D1*		*VrnA1A*	*VrnA1bR2*	*DuPW004*		*Almt*		
	425	690	700	569	652	300	150	230	228	414	965	1068	250	350	426	706	836
HD3386	-	-	+	+	-	-	-	+	+	-	+	-	+	-	+	-	-
HD3470	+	+	+	+	-	+	-	+	+	-	+	-	+	+	+	-	-
WH1402	+	+	+	+	-	+	-	+	+	-	-	-	+	+	+	+	-
PBW644(C)	+	+	+	+	-	-	+	-	+	-	-	-	+	+	+	-	-
DBW296(C)	+	-	+	-	+	-	-	+	+	-	-	-	+	+	+	-	-
HI1653(C)	+	+	+	+	-	+	-	+	+	-	+	-	+	-	-	-	-
HI1654(C)	+	+	+	+	-	+	-	+	+	-	+	-	+	+	+	-	-
HD3388	+	-	-	+	-	+	-	-	+	-	+	-	+	+	-	-	-
HD3471	+	-	+	+	+	+	-	+	-	-	+	-	+	-	+	-	-
HD3249(C)	+	+	+	-	-	+	-	+	+	-	-	-	+	-	+	-	-
HD3086(C)	+	+	+	+	-	+	-	+	+	-	-	-	+	+	+	-	-
HD2967(C)	+	+	+	-	-	-	-	+	-	-	-	-	+	+	+	-	-
DBW222 (C)	+	+	+	-	-	+	-	+	+	-	+	-	+	+	+	-	-
PBW826(I)(C)	+	+	+	-	-	+	-	+	+	-	-	-	+	+	+	+	-
NWS2194	+	+	+	+	-	+	-	+	+	-	+	-	+	-	-	-	-
GW513(C)	+	-	+	+	-	-	-	+	+	-	-	-	+	-	+	-	-
HI1636(C)	+	+	+	+	-	-	-	+	+	-	+	+	+	+	+	-	-
HI1650(C)	+	-	+	+	-	-	+	+	+	-	+	-	+	+	+	+	-
MACS6768(C)	+	+	+	-	-	-	-	+	+	-	-	+	+	+	+	-	-
DBW359	+	+	+	-	-	-	-	+	+	-	-	-	+	+	+	-	-
DBW441	+	+	+	+	-	-	-	+	+	-	+	+	+	+	+	+	-
DBW442	+	+	+	+	-	-	-	+	+	-	-	+	+	+	+	+	-
CG1040	+	+	+	+	-	-	-	-	+	-	-	-	+	+	+	-	-
MP3288(C)	+	+	+	+	-	+	-	+	+	-	+	-	-	+	+	-	-
DBW110(C)	+	-	-	+	-	-	-	+	+	-	+	-	+	+	+	+	-
CG1036(C)	+	-	-	+	-	-	-	+	+	-	+	+	-	-	+	-	-
HI1655(C)	+	-	-	+	-	-	-	+	+	-	+	-	+	+	+	-	-
MP1378	-	-	-	-	+	-	-	+	+	-	+	+	+	-	+	+	-
MACS6222(C)	+	+	+	+	-	-	+	-	-	-	+	-	+	-	+	-	-
HI1665	+	+	+	-	-	-	-	+	+	-	+	-	+	+	+	-	-
NIAW4028	+	+	+	+	-	+	-	+	-	-	+	-	+	+	+	-	-
HI1605(C)	+	+	+	+	+	-	-	+	-	+	-	-	+	+	+	-	-
NIAW3170(C)	+	+	+	+	-	+	-	+	-	-	+	-	+	+	+	-	-
DBW377	+	+	+	-	+	-	-	+	+	-	-	-	+	-	+	-	-
DBW187(C)	+	+	+	-	+	-	-	+	+	-	-	-	+	+	+	-	-
DBW303(C)	+	-	+	+	-	-	-	+	+	-	-	-	+	-	-	-	-
GW322(C)	+	+	+	+	-	-	-	+	+	-	+	-	+	+	-	-	-
HD3369(C)	+	-	+	-	-	-	-	-	+	-	-	-	+	+	-	-	-
GW547	+	-	+	-	-	+	-	-	+	-	+	-	+	-	-	-	-

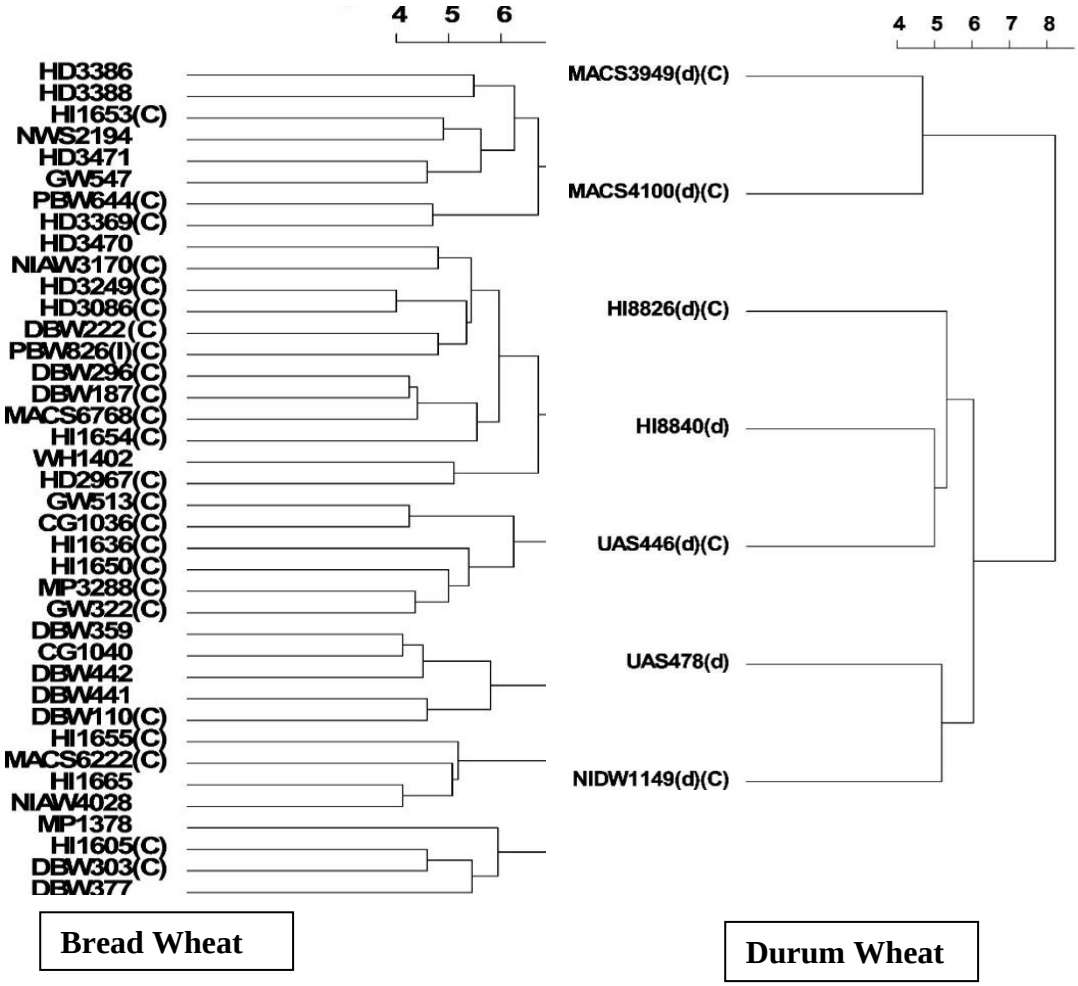


Figure: Dendrogram showing diversity among AVT final year entries and checks

Promising varieties in Advanced Varietal Trials

The criterion for promotion of varieties in AVTs was based on significant superiority of genotypes over the best zonal check of the trials. Out of total 72 genotypes were evaluated in AVT first year of different zones during this crop season, only 02 genotypes were identified to be superior on the basis of their yield performance and response to the incidence of rusts. DBW386 has been found promising in irrigated timely sown conditions of North Western Plains Zone and North eastern Plains Zone and HI1674 was found promising under late sown irrigated conditions of Peninsular Zone.

Most promising varieties in AVTs

Zone	Timely sown, irrigated	Late Sown IR
NHZ	-	-
NWPZ	DBW386	-
NEPZ	DBW386	-
PZ	-	HI1674

Promising varieties in initial trials: Among the total 274 new entries evaluated for their performance in different NIVTs/IVTs, 43 entries were found promising on the basis of high yielding ability and disease resistance. Out of total 58 promising entries, 12 entries were

observed to be promising for timely sown irrigated condition, 13 for late sown irrigated condition, 18 for restricted irrigation condition.

Most promising entries in NIVTs and IVTs

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation
NWPZ		DBW422, PBW921, WH1234, HD3455, RAJ4581, NW8071	HD3468, PBW927, JKW304, NW8053, WH1326
NEPZ			
CZ	MACS4125, MACS4135, HI8848, HI8849, HI8850, MPO1395		UAS3029, NIAW4267, DBW428, DBW432
PZ	UAS3026, MACS6837, MACS6842, MACS6844, NIAW4364, MP3570	HI1687, DBW425, DBW426, MACS6829, MACS6830, NIAW4432, UAS3027	UAS484, HI8851, HI8852, MPO1398, NIAW4267, NIAW4387, MACS4131, CG1047 GW1368

Zonal monitoring of coordinated trials and nurseries: Multidisciplinary teams constituted to monitor trials in the four zones visited centres during February to April, 2023 for assessing the conduction of trials and performance of test genotypes in each of the five wheat growing zones.

Summary of zonal monitoring (2022-23)

Zone	Period	Name of team members	Centers visited
NHZ	17-20 April,	Drs. Chuni Lal, DP Walia, Vijay Rana and Ravindra Kumar	Shimla, Bajaura and Malan
	18-21 April,	Drs. CN Mishra, Jogendra Singh and Pramod Prasad	Dehradun (NWPZ), Gaza, Almora, Majhera,
NWPZ	02-05 March	Drs. Hanif Khan, Santosh Bishnoi, P.S. Shekhawat	Sriganganagar, Durgapura, Bawal, Delhi
	13-16 March	Drs. VS Sohu, PL Kashyap, Kiran Gaikwad and Satish Kumar	Jammu, Gurdaspur, BISA-Ludhiana, PAU-Ludhiana and Bathinda
	20-22 March	Drs.BS Tyagi, SC Gill, OP Gangwar and Vikas Gupta	Karnal, Modipuram, Nagina, Pantnagar and Bulandshahr
NEPZ	10-14 March	Drs. CN Mishra, HR Saharan, PK Gupta and Hari Krishna	Kanpur, Saini, Naini, Varanasi and Ayodhya
	04-06 March	Drs. AK Sharma, Lokendra Kumar, CS Azad and Deepak Barnwal	Ranchi and Sabour
CZ	13-16 Feb.	Drs. Umesh R. Kamble, Prem Lal Kashyap, J.M. Patel, A.G. Pansuriya, Dinesh Pandey, Jogendra Singh	SK Nagar, Vijapur, Anand, Dhandhuka, Sanosara and Junagadh
	14-17 Feb.	Drs. Vishnu Kumar, RP Meena, Abhay Dashora, Prakasha TL, AP Agrawal and Neeraj Kumar	Raipur, Bilaspur, JNKVV-Jabalpur, BISA-Jabalpur, Sagar, Powarkheda and Indore
PZ	07-10 Feb.	Drs. Satish Kumar, DA Gadekar, VK Vikas, Pramod Prasad, GM Hegde and KD Lamani	Dharwad, Bagalkot, Kalloli, Ugar-Khurd, Nippani and Karad
	14-16 Feb.	Drs. Charan Singh, RS Chhokar, Yashavantha KJ, Sudhir Navathe, MA Sushir	Pune, Nashik, Niphad, Dhule, Akola, Parbhani

Out of total 67 trial conducting centres, monitoring of 53 centres (79.1%) was conducted during this crop season. The collective decisions of the monitoring team members on acceptance/rejection of a trial were considered during preparation of the monitoring reports 37 trials were rejected by the zonal monitoring team.

Trials rejected by zonal monitoring teams

Zone	Centre	Trials
NWPZ	Bawal	AVT-IR-TS, AVT-RI-TS
	Sriganganagar	AVT-RI-TS, NIVT1A, NIVT1B, NIVT5A, NIVT6, SPL-HYPT-ES
	Bulandshahr	AVT-RI-TS, NIVT5A, NIVT6
NEPZ	Sabour	AVT-IR-TS, NIVT1A, NIVT1B
	Kanpur	NIVT3A
CZ	Jabalpur	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT-ES, NIVT2, NIVT3B, NIVT5B, NIVT6
	Raipur	AVT-IR-LS, AVT-RI-TS,
	Bilaspur	SPL-HYPT-ES, NIVT6
PZ	Akola	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, NIVT2, NIVT3B, NIVT4, NIVT5B
	Ugar-Khurd	AVT-IR-LS,
	Nippani	NIVT3B, NIVT5B

The comments of the zonal teams about genetic purity of test genotypes were compiled for promotion/ dropping of a particular test entry. Based on reports from different monitoring teams, following 15 test entries have been dropped from further testing are given below.

Entries dropped from further testing

Trial	Entries dropped (code and variety names)
NIVT 1A	N120 (NW8072), N122 (HUW854)
NIVT1B	N211 (WH1318), N225(NW8075)
NIVT 2	N302(PWU16)
NIVT3A	N423(JKW303), N424 (DBW107)
NIVT 5A	N701(BRW3935), N716 (PBW925), N725 (HD3457)
NIVT5B	N802(NIAW4387), N815 (AKAW5514), N822(MP3577)
NIVT6	N928 (JWS1333)
AVT-IR-LS-PZ	PZ-LS214 (UAS3022; No germination)

Seed Production:

During 2022-23, a total indent of 13862.75q breeder seed of 147 wheat varieties was received from DA&FW, New Delhi for total 23 indenting agencies. Out of total indenting agencies, 08 (NSC, IFFDC, IFCCO, KCO, NFL, Hindustan Insecticide Ltd., KVSS and NAFED) were from public sector and private sector was represented by National Seed Association of India (NSAI). Among the indenting agencies, UP has maximum indent of 2995.00q followed by NSAI (2216.75q) for private seed companies, Madhya Pradesh (2124.00q) and Bihar (1000.00q). A total of 5409.60q (39.02 per cent) breeder seed indent of 26 latest varieties notified during 2021 and 2022 *viz*., DBW 327, HD 3293, DBW 332, DBW303, GC 1023, HD 3298, etc. The maximum indent was received for DBW 303 (1414.40q) followed by DBW 187(1352.20q) and HD 3226 (769.80q). All the top ten indented variety having share of 52.90 % in the total indent.

Breeder Seed Allocation & Production

As per the BSP 1 of 13655.55q of breeder seed was allocated of 118 varieties to 31 BSP centre for the production during 2022-23 against 13862.75q total indent. The indent of 197.20q breeder seed of 29 varieties viz., HD 2985, HD 2189, Raj 1482, HD 2329, HUW 234 etc. was not

allocated to the BSP centres as these were very old varieties and there was insufficient nucleus seed availability.

The total breeder seed production was 19812.85q during 2022-23 with surplus production of 6147.30q. Among all 31 BSP centres, ICAR-IIWBR, Karnal, produced maximum quantity *i.e*., 2771.0q of breeder seed against 2632.20q indent followed by IARI-RS, Indore (2679.00q) and PAU, Ludhiana (2107.0q) against 1055.75q. The highest quantity of breeder seed was produced for DBW 187 (1728.00q) followed DBW 303 (1583.0q) and HI8759 (995.50q) against DA&FW indent. The varieties *viz*., MP3465 (-236.50q) followed by MP 1255 (-87.60q) and HD 4728 (-85.00q) produced deficit breeder seed against the allocation of indented quantity. Only two BSP centres *viz*., SVPUA&T, Meerut (-80.65q) and SKAUST, Jammu (-0.50q) produced deficit breeder seed against the allocation.

Top five breeder seed production Centres during 2022-23

S.No.	BSP Centre	Breeder Seed Allocation (q)	Breeder Seed Production (q)	Surplus (q)
1	IIWBR, Karnal	2632.20	2771.00	138.80
2	IARI-RS, Indore	1437.30	2679.00	1241.70
3	PAU Ludhiana	1055.75	2228.60	1172.85
4	IARI, New Delhi	1253.60	1795.00	541.40
5	SKNAU, Durgapura	720.80	1719.91	999.11
	Total	**7099.65**	**11193.51**	**4093.86**

Nucleus Seed Allocation &Production

Against an allocation of 418.0q nucleus seed of 118 wheat varieties was made to the 31 BSP Centre except SVPUA&T, Meerut, BAUT, Banda, RVSKVV, Gwalior and SKAUST, Jammu. A total of 875.30q of nucleus seed was produced with a surplus of 458.80q by 31 Centres. The highest quantity (113.50) of nucleus seed was produced by IARI-RS, Indore followed by PAU, Ludhiana (107.50q) and JNKVV Jabalpur (100.0 q).

Test Stock Multiplication and Grow Out Test Report

National Seed Corporation was given target for test stock multiplication of 22 varieties identified for release during last workshop (2022). NSC has reported a total of 1076.79q seed of all 22 newly identified wheat varieties *viz*., DBW316 (99.45 q), DBW371 (86.5 q), DBW370 (81.60 q), DBW372 (76.5 q), DDW55 (76.5 q), HD3407 (54.0q) and HD3411 (52.24q), PBW872 (36.0q) and VL2041 (71.4 q) during 2022-23 on NSC farms.

ICAR-IIWBR, Karnal conducted grow out test of 80 wheat varieties received from 11BSP Centres. BSP Centres *viz*., CSAUT, Kanpur, ARI, Pune, IARI-RS, Samastipur, IGKV, Raipur, RVSKV, Gwalior, JNKVV, Jabalpur and RPCAU, Dholi did not send the samples for grow out test. All the tested varieties found genetically pure within the permissible limit.

Evaluation of National and International Nurseries/Trials

International Germplasm: During 2022-23, 136 sets of eight trials and seven nurseries comprising a total of 1470 lines (1289 bread wheat and 181 lines of durum wheat) were obtained from CIMMYT, Mexico; 11 sets of four trials comprising of 472 lines (351 bread wheat and 121 lines of durum wheat) were received from ICARDA, Morocco and 120 lines of facultative winter wheat from IWWYP, Turkey and evaluated at various wheat breeding centres One set of each of CIMMYT nursery/ trial that were planted at ICAR-IIWBR, Karnal for comprehensive evaluation, seed multiplication also facilitated *in-situ* selection by large number of wheat breeders/pathologists, and made selections at IIWBR Karnal on Field Day (16th, March 2023). The indented seed in limited quantity will be supplied as per their requirement before the ensuing crop season for utilization by respective indentors.

Promising entries identified from CIMMYT trials during 2022-23

43rd ESWYT	102, 103, 111, 115, 116,117, 120, 123, 124, 126, 128, 130, 134, 135, 142, 146, 147, 150
30th HRWYT	206, 222, 223, 226, 237, 250
21st HTWYT	4, 7, 11. 12, 13, 15, 20, 22, 23, 28, 32, 35, 36, 41, 43, 46, 48
30th SAWYT	302, 303, 305, 307, 311, 312, 314, 315, 318, 320, 322, 323, 325, 326, 327, 332, 335, 336, 337, 338, 339, 341, 342, 346
10th WYCYT	2, 5, 6, 10, 12, 18, 29, 32, 36
12th SATYN	9403, 9410, 9417, 9427, 9429, 9434, 9435, 9437, 9438, 9440, 9442,
3rd IYPTE	4, 6, 7, 9, 11, 12, 13, 14, 17, 19, 30, 33
54th IDYN	706, 709, 715, 717, 719, 720, 723, 724, 725, 728, 729, 731, 734 736, 737, 738, 741

Promising entries identified from ICARDA and trials/nurseries during 2022-23

23rd ESBWYT	3, 9, 10, 13, 15, 22, 26, 35, 36, 37, 41, 46, 48
30th FAWWON-SA	202, 212, 215, 221, 229, 230, 239, 247, 251, 252, 255, 257, 260, 262, 265, 269, 276, 281, 285
46th IDYT	4, 7, 9, 10, 11, 18, 19, 20, 22

National Nurseries: During 2022-23, national genetic stock nursery and segregating stock nursery were constituted by the institute and supplied to different co-operators located across various locations. The SATSN was constituted by the CSSRI and evaluated at 5 locations.

National Genetic Stock Nursery (NGSN): The NGSN comprising 107 genotypes including *T. aestivum* (93) and *T. durum* (14) was provided to 33 centres as "suggested crossing block". Pooled analysis of data was done for identification of promising lines and presented. The utilization report indicated 30 centres out of 33 utilized the NGSN entries. On the basis of utilization report received, it was found that 16.95% genotypes in the NGSN were utilized in hybridization as parents.

Segregating Stock Nursery: 26th Segregating Stock Nursery (SSN) comprised 209 segregating populations (F_2/F_3) was shared with 23 wheat breeding centres to select superior plants/ material as per the breeding objectives and cultural conditions. The utilization report indicated that the nursery could achieve 36.9 percent utilization across the centres. Most of the crosses were utilized by one or the other centre for various traits (yield components, disease resistance, physiological traits) and a total of 10172 plants were selected across the centers.

Promising genotypes for yield component traits in NGSN during 2022-23

Traits	Range	Mean	Criteria	Promising genotypes
Days to heading (days)	73-91	81	<75	BNSR 6 (73), MP 3535 (73), PHSL 10 (73), HD 2864 (74), GW 499(74), IC 277738 (74), VL Gehun 3010 (75), RAJ 3765 (75), GW513(75), HI1544(75)
Plant height (cm)	78.3-109.7	91.5	<85	MP 3535 (78.3), GW 1339 (d)(81.4), HI 8818 (d) (82.5), RAJ 4238 (83.4), CG 1036 (83.9), VL 3024 (84.2), VL Gehun 3010 (84.5), GW 499 (84.7), PBW 771 (84.3), HI 8823 (d) (84.9)
Tillers /m	61.5-109.4	96.0	>105	HD 3411(109.4), HD 3407 (106.6), RWP 2014-18 (105.2), KRL 35 (105.7), HD 2932 (105.0)
Grains /spike	40-58	49	>55	IC 212176(58), HD 3406 (56), QLD 118(55), HUW 838(55), QLD 121(55)
1000-grains	34.1-51.9	42.4	>46	PHSL 10(51.9), MACS 4058 (d)(49.1), HI 1653(48.1), GW 2014-596(47.9), GW 499(47.5), HI 8802 (d)(47.3), HI

weight (g)				1636(47.3), WAP 2212(46.8), WAP 2210(46.7), HS 681(46.6), GW 1339 (d)(46.1),
Spike length(cm)	6.8-13.1	9.4	≥10.6	IC 212176 (13.1), VL Gehun 2041 (12.1), PHSL 10 (11.6), WAP 2212 (10.8), KRL 35 (10.8), K 1616 (10.7), HS 679 (10.6), K 1317 (10.6), HS 628 (10.6)
Yield/plot (g)	389-665	545	>640g	HI 1653 (665) , DBW 327(655), DBW 303 (644)

Salinity/Alkalinity Tolerance Screening Nursery: The Salinity/Alkalinity Tolerance Screening Nursery was evaluated 5 centers and consisted of 15 test entries and three checks (KRL 210, Kharchia 65 and DBW 187). Superior lines were identified on the basis of the analysis of grain yield and comparison with the pooled value. Out of 15 test entries, 9 entries (KRL 2101, KRL 2105, KRL 2114, KRL 2201, KRL 2202, KRL 2203, KRL 2204, KRL 2205 and WBL 2308) were found to be promising on the basis of mean yield along with resistance to all the three rusts (stem leaf and yellow rust) as evident from IPPSN 2022-23.

Screening against wheat blast

A set of 350 wheat lines (test entries, pipeline materials and new checks) were screened against wheat blast in Bangladesh during 2022-23 through CIMMYT. Among these 350 total lines, 258 were new AICRP test entries while remaining 92 were contributed from ICAR-IIWBR breeding programmes. Based on the disease score (score <10) across two dates of sowings, 99 resistant genotypes were shortlisted.

Wheat Blast resistant genotypes identified in 2022-23

Wheat Blast reaction	**AICRP /IIWBR**	**Genotypes**	**Total**
0, 0 (Free)	AICRP	NIDW1520(d), MP3577, PBW905, PBW906, DBW439, WH1321, RAJ4583, DBW441, DBW442	9
	IIWBR	RWP2024, RWP2030, RWP1332, WAP2214, WAP2222, WAP2223, WAP2224, DBW88^{M}-11, DBW88^{M}-16, DBW88^{M}-17, DBW88^{M}-18, DBW88^{M}-19, DBW88^{M}-22, DBW88^{M}-23	14
Upto 10 (Resistant)	AICRP	DBW408, RAJ4576, RAJ4577, RAJ4578, HUW854, BRW3944, KRL2106, NWS2442, BCW28, PBW910, WH1316, UP3122, HD3449, HD3467, DBW416, DBW417, PBW914, MACS6837, GW554, PWU16, UP3126, WH1324, DBW425, MP3568, HI1687, UAS482(d), PDW364(d), MPO1396(d), MACS4135(d), GW1366(d), DBW429, K2210, DBW428, DBW432, UAS484(d), DDW64(d), MACS4131(d), HI1691, DBW433, DBW435, JWS1333, MP3572, DBW438, BRW3922, UP3130, GW557, RAUW107, DBW443	48
	IIWBR	DBW88^{M}-24, RWP1939, RWP1944, RWP1365, RWP1449, WAP2217, WAP2219, DBW88^{M}-21, NE-WB22-4, DBW88^{M}-20, RWP1350, NE-WB22-12, QLT22-1, QLT22-2, NE-WB22-14, WAP2218, DBW88^{M}-3, NE-WB22-11, WAP2220, WAP2216, NE-WB22-1, WAP2213, RWP2020, NE-WB22-3, DBW88^{M}-1, RWP2036	26
Total			97

It is important to note here that this season 23 entries were found highly resistant (0, 0 score), and 74 entries were found resistant (maximum score up to 10 only). A total of 40 entries from IIWBR breeding projects were resistant (score up to 10), thereby indicating that anticipatory breeding work at ICAR-IIWBR is effective and will be useful at national level.

Physiological studies on heat and drought stress tolerance

To assess the heat and drought tolerance in AVT genotypes, heat and drought tolerance screening trial (HDTST) was conducted under timely sown (TS), late sown (LS) and drought (DR) conditions across 12 locations during 2022-23. The pooled analysis of HDTST revealed that the HSI values ranged from 0.63 to 1.27 and DSI values ranged from 0.86 to 1.2. The promising genotypes identified for heat and drought stress tolerance in HDTST are listed below.

Table List of wheat genotypes identified as heat/ drought tolerant during 2022-23.

Genotypes	
HSI<1	**DSI<1**
HD3386 (0.76), NIAW4028 (0.85), GW547 (0.88), HD3388 (0.89), UAS478(d) (0.89), CG1040 (0.89), HI8840(d) (0.94), NWS2194 (0.97), HI1665 (0.98)	CG1040 (0.87), GW547 (0.90), NIAW4028 (0.90), HI1665 (0.91), HD3386 (0.91)

Values in the parenthesis indicates HSI /DSI

Issues for discussion during the workshop

1. Coding, Constitution and Conduction AVTs, IVTs at respective zones

2. Restoring of durum trial sin NWPZ and dicoccum trials in PZ

3. Following trial design and layout by the conducting centers

4. Joint monitoring of wheat and barley trials

5. Timely submission of UC and AUC by coordinating centers.

Break-up of Co-ordinated Wheat Varietal Trials

Proposed (PR), Conducted (CD) and Reported (RT) - 2022-23

SN	Trial Series	NHZ			NWPZ			NEPZ			CZ			PZ			ALL ZONE		
		PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT
1	AVT-IR-TS-TAS				14	14	11	13	12	8							27	26	19
2	AVT-IR-TS-TAD										15	15	12	11	11	9	26	26	21
3	AVT-IR-LS-TAS				12	12	10				12	12	9	12	12	9	36	36	28
4	AVT-RF-TS-TAS	9	9	6													9	9	6
5	AVT-RI-TS-TAS/TAD				14	13	10	12	11	10	15	15	13	11	10	7	52	49	40
6	IVT-RI-LS-TAS																0	0	0
7	IVT-RF-TS-TAS	9	9	6													9	9	6
8	NIVT-1A-IR-TS				9	9	8	6	6	5							15	15	13
9	NIVT-1B-IR-TS				8	8	7	7	7	6							15	15	13
10	NIVT-2-IR-TS										10	10	9	7	7	6	17	17	15
11	NIVT-3A-IR-LS				9	9	9	10	10	8							19	19	17
12	NIVT-3B-IR-LS										9	9	7	8	8	6	17	17	13
13	NIVT-4-IR-TS										9	9	6	7	7	5	16	16	11
14	NIVT-5A-RI-TS				10	10	8	9	9	8							19	19	16
15	NIVT-5B-RI-TS-TDM										11	11	9	7	7	4	18	18	13
16	NIVT-6A-ES-NWPZ/CZ				7	7	5				7	7	3				14	14	8
17	SPL-HYPT-NWPZ				7	7	6										7	7	6
18	SPL-HYPT-CZ										7	7	5				7	7	5
TOTAL		**18**	**18**	**12**	**90**	**89**	**74**	**57**	**55**	**45**	**95**	**95**	**73**	**63**	**62**	**46**	**323**	**319**	**250**
% of CD Trial/PR Trial		100.00			98.89			96.49			100.00			98.41			98.76		
%of RT Trial/CD Trial		66.67			83.15			81.82			76.84			74.19			78.37		
Trials Rejected by Monitoring Team		0			11			4			12			10			37		

Abbreviations used in the report

Yield	
Rk	Rank
G	Group (First non-significant)
S.E. (M)	Standard error of the means
C.D.	Critical difference
C.V.	Coefficient of variation
Rusts	
Bl	Black or stem rust
Br	Brown or leaf rust
Yl	Yellow or stripe rust
R	Resistant type of pustule
S	Susceptible type of pustule
MS	Moderately susceptible type of pustule
X/MR,MS	Mixed type of reaction, i.e., presence of both resistant and susceptible types of pustules
0	No infection
tS	Trace susceptible response
tR	Trace resistant response
5S	First figure (5) represents the severity and the later (S) for the type of pustule response
MR	Moderately resistant type of pustules=P
tMR	Traces moderately resistant
tMS	Traces moderately susceptible
ACI	Average coefficient of infection
Loose smut (LS)	
F	Free
tS	Susceptible in traces
S	Susceptible
Other diseases (OD)	
KB	Karnal bunt (%)
LB	Leaf blight (severity scoring based on double digit method)
PM	Powdery mildew (scale 0-9)
BP	Black point (%)
Agronomic characters	
Hd.R	Heading range (days)
Hd.M	Heading mean (days)
Mat.R	Maturity range (days)
Mat.M	Maturity mean (days)
Ht.R	Plant height range (cm)
Ht.M	Plant height mean (cm)
Lod.	Lodging percentage()
TGW.R	1000-grains weight Range (g)
TGW.M	1000-grains weight Mean (g)

Other symbols	
C	Check variety
(I)	Identified variety
(d or D)	Durum
*	Final year test entry
#	Entry resistant to wheat blast disease
B	Biofortified entry
AVT	Advanced Varietal Trial
NIVT	National Initial Varietal Trial
IVT	Initial Varietal Trial
IR	Irrigated
RF	Rainfed
RI	Restricted irrigation
TS	Timely sown
LS	Late sown
ES	Early sown
Q	Entry good in quality traits
M	Entry derived through Marker Assisted Backcross Breeding
TAS	Triticum aestivum
TAD	Triticum aestivum + T. durum
TDM	Triticum durum
MABB	Marker Assisted Backcross Breeding
SPL	Special
AST	Alkalinity/ Salinity Trial
HYPT	High Yield Potential Trial
HS	Highest Score
Avg.	Average
GM	Grand Mean
DoS	Date of sowing
DR	Drought
%R	Percent reduction
Zones	
NHZ	Northern Hills Zone
NWPZ	North Western Plains Zone
NEPZ	North Eastern Plains Zone
CZ	Central Zone
PZ	Peninsular Zone
NAT ZONE	National Zone – Trial conducted in two or more zones
Reasons for not reporting the data	
DNR	Data not reported
HCV	High coefficient of variation
LCV	Low coefficient of variation
LS	Late sowing
LSM	Low site mean
RMT	Rejected by monitoring team
TF	Trial failed

Parentage Details

Parentage of Wheat Genotypes, 2022-23

Contributing Centres

SN	Centre	Symbols
1.	Prayagraj, SHUATS	AAI
2.	Akola, PDKV	AKAW, AKDW
3.	Kalyani, BCKV	BCW
4.	Sabour, BAU	BRW
5.	Bilaspur, IGKVV	CG
6.	Karnal, IIWBR	DBW, DDW, WB
7.	Vijapur, SDAU	GW
8.	Junagarh, JAU	GW
9.	New Delhi, IARI	HD
10.	Indore, IARI, RS	HI
11.	Pusa, IARI, RS	HP
12.	Shimla, IARI, RS	HS
13.	Wellington, IARI, RS	HW
14.	Varanasi, BHU	HUW
15.	Malan, CSKHPKV	HPW
16.	Jammu, SKUAST	JAUW
17.	Ranchi, BAU	JKW
18.	Kanpur, CSAUA&T	K
19.	Karnal, CSSRI	KRL
20.	Sanosara, Lokbharti	LOK
21.	Pune, ARI	MACS
22.	Powarkheda, JNKVV	MP, MPO
23.	Jabalpur, JNKVV	MP
24.	Ayodhya, NDUA&T	NW
25.	Nuzivedu Seeds	NWS
26.	Niphad, MPKV	NIAW, NIDW
27.	Parbhani, VNMKV	PBND
28.	Ludhiana, PAU	PBW, PDW, HPBW
29.	Udaipur, MPUAT	PWU
30.	Durgapura, SKRAU	RAJ
31.	Kota, AU	RKD
32.	Gwalior, RVSKVV	RVW
33.	Srinagar, SKUAST	SKW
34.	Mumbai, BARC	TAW
35.	Dharwad, UAS	UAS, DDK
36.	Pantnagar, GBPUA&T	UP
37.	Almora, VPKAS	VL
38.	Hisar, CCSHAU	WH, WHD
39.	Bioseed	BW
40.	National Innovation Foundation (NIF)	BLKBALAJI

Parentage 2022-23

PDKV, Akola (Maharashtra)

1	AKAW5104	CZ/PZ-LS	SelfromSSN06-07DSS-06-967-1
2	AKAW5314	PZ-TS	AKAW4656/UAS304
3	AKAW5100	PZ-TS	SelfromNATP2002-03DL-9-74-3
4	AKAW5347	NIVT-2	M9WAWSN12,KAUZ//STAR/LUCO-M(CMBW-90M4986OTPY-47m-015y-015m-4y-OB)/AKAW-4189-7-10
5	AKAW5514	NIVT-5B	AKW-619 X DBW-31 /AKAW-4754-2
Durum			
6	AKDW5516	NIVT-4	NIDW-15/Raj-1555/AKDW-4789-4

BCKVV, Kalyani

1	BCW28	NIVT-1A	PBW780/WB2
2	BCW29	NIVT-1B	PBW780/DBW39
3	BCW30	NIVT-3A	LONG REACH CATALINA/2*MUCUY

Bihar Agricultural University, Sabour, Bhagalpur (Bihar)

1	BRW3922	NIVT-6	PAURAQ//AG/5*NAC/3/2*QUAIU#1/SOLALA//QUAIU#2
2	BRW3935	NIVT-5A	NAD#1*2/3/MUTUS/AKURI#1//MUTUS
3	BRW3941	NIVT-3A	KACHU//WBL1*2/BRAMBLING/3/KACHU/KIRITATI
4	BRW3942	NIVT-1B	BECARD#1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2
5	BRW3944	NIVT-1A	COAH90.26.31/4/2*BL2064//SW89-5124*2/FASAN/3/TILHI /5/UP2338*2/KKTS*2//YANAC/6/MUTUS/AKURI/7/PBW343*2/ KUKUNA*2//FRTL/PIFED/3/KFA/2*KACHU
6	BRW3946	NIVT-1B	SHAKTI/4/2*KACHU/3/WHEAR//2*PRL/2*PASTOR

Bioseed Research (Private)

1	BW18R6016	NIVT-2	MXI17-18\M52IBW/37SAW\555

IGKVV, TCB College of Agriculture, Bilaspur (Chhattisgarh)

1	CG1040*	CZ-RI	GW391/J04-32
2	CG1044	CZ-SPL-HF	HW2045/LBPY4-2
3	CG1045	NIVT-2	SUP152/BAJ#1/4/BAJ#1/3/KIRITATI//ATTILA*2/PASTOR/5/SUP152/BAJ#1
4	CG1046	NIVT-3B	Halna/DBW14//HW5204
5	CG1047	NIVT-5B	HW 2004/PHS 725
6	CG1049	NIVT-6	HD 5204/GW 08-153

ICAR- IIWBR, Karnal

1	DBW359	NW/NE-RI-TS	CROC-1/AE.SQUARROSA(205)//BORL95/3/PRL/SARA// TSI/ VEE#5/4/FRET2/5/TRCH/SRTU//KACHU
2	DBW386[#]	NW/NE-TS	NELOKI//SOKOLL/EXCALIBUR (38THESWYT149)
3	DBW397[Q]	NW-RI-TS	ROLF07/YANAC//TACUPETOF2001/BRAMBLING/4/WBLL1/KUKUNA//TACUPETOF2001/3/BAJ
4	DBW398	NW/NE-RI-TS	23rdSAWYT326(SOKOLL/3/PASTOR//HXL7573/2*BAU/4/GLADIUS)
5	DBW394	PZ-LS	20IBWSN159/HD3086
6	DBW395	PZ-LS	DBW17/NI5439//43rdIBWSN1137
7	DBW397[Q]	PZ-RI-TS	ROLF07/YANAC//TACUPETOF2001/BRAMBLING/4/WBLL1/ KUKUNA//TACUPETOF2001/3/BAJ
8	DBW377*[#]	CZ-SPL-HF	NADI#2*2/6/BECARD#1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ* 2/BOW//KAUZ
9	DBW380[#]	NW-SPL-HF	BECARD#1/3/PBW343*2/KUKUNA//PBW343*2/KUKUNA
10	DBW443[B]	PZ-TS	NW 1014/ HRLSN21
11	DBW444[B]	PZ-TS	MUNAL#1*2/4/HUW234+LR34/PRINIA//PBW343*2/KUKUNA /3/ROLF07*2/5/WBLL1*2/BRAMBLING*2//BAVIS

12	DBW441[M]	CZ-RI-TS	DBW110*2/SUNLIN
13	DBW442[M]	CZ-RI-TS	DBW110*2/SUNLIN
14	DBW408	NIVT-1A	NADI#2//TRCH/HUIRIVIS #1/3/NADI#1
15	DBW409	NIVT-1A	ALTAR 84/AE.SQUARROSA (221)//3*BORL95/3/URES/JUN//KAUZ/4/WBLL1*2/5/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA (213)//PGO/4/HUITES*2/6/NADI
16	DBW410	NIVT-1A	TACUPETOF2001/BRAMLING/5/NAC/TH.AC//3*PVN/3/MIRLO
17	DBW411	NIVT-1A	FRNCLN/NIINI #1//FRANCOLIN #1/3/BORL14
18	DBW412	NIVT-1A	ONIX/KBIRD//BORL14/3/ONIX/KBIRD
19	DBW413	NIVT-1B	HD3086/DBW88
20	DBW414	NIVT-1B	BORL14/CHIPAK
21	DBW415	NIVT-1B	31SAWSN 3121/EXCALIBUR
22	DBW416	NIVT-1B	PASTOR//HXL7573/2*BAU/3/WBLL1/4/SOKOLL/3/PASTOR//HXL7573/2*BAU/5/BORL14
23	DBW417	NIVT-1B	NADI*2/6/BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ
24	DBW418	NIVT-2	FRANCOLIN #1//WBLL1*2/BRAMBLING/6/WBLL1*2/KURUKU*2/5/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA (213)//PGO/4/HUITES/7/FRANCOLIN #1/WBLL1
25	DBW419	NIVT-2	DBW 92/HI 977
26	DBW420	NIVT-3A	BLOUK #1/KINGBIRD #1*2//KACHU/KIRITATI
27	DBW421	NIVT-3A	DM7/PBW 550/HD3086
28	DBW422	NIVT-3A	ONIX/KBIRD//BORL14/3/ONIX/KBIRD
29	DBW423	NIVT-3A	PBW780/NW5054
30	DBW424	NIVT-3A	FRNCLN*2/TECUE #1*2/3/ATTILA*2/PBW65*2//MURGA
31	DBW425	NIVT-3B	KACHU/SAUAL/4/ATTILA*2/PBW65//PIHA/3/ ATTILA/2*PASTOR
32	DBW426	NIVT-3B	SNTL/3/KACHU//WBLL1*2/BRAMBLING
33	DBW427	NIVT-5A	DBW14/NIAW 34
34	DBW428	NIVT-5A/5B	PBW 373/KRL 1-4
35	DBW429	NIVT-5A	FITIS*2/6/ALTAR 84/AE.SQUARROSA (221)//3*BORL95/3/URES/JUN//KAUZ/4/WBLL1/5/MUTUS
36	DBW430	NIVT-5A	47 IBWSN 1048/DBW187
37	DBW431	NIVT-5B	DBW-22/DBW-17//PBW-550
38	DBW432	NIVT-5B	SUP152/BAJ #1/4/BAJ #1/3/KIRITATI//ATTILA*2/PASTOR/5/SUP152/BAJ #1
39	DBW433	NIVT-6	HD2967/PBW644/WH1105
40	DBW434	NIVT-6	NADI#2*2/6/BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ
41	DBW435	NIVT-6	BECARD#1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ*2/6/KFA/ 2*KACHU
42	DBW436	NIVT-6	PRL/2*PASTOR//PAURAQUE #1/3/2*BORL14
43	DBW437	NIVT-6	BORL14*2//BECARD/QUAIU #1
44	DBW438	NIVT-6	MUCUY*3//RL6077/AOC-YR
45	DBW439	NIVT-6	NADI#2/MUCUY
46	DBW440	NIVT-6	SWSR22T.B./5/KAUZ//ALTAR 84/AOS/3/KAUZ/4/SW94.15464/6/2*PRL/2*PASTOR/7/WA8124/8/BAJ #1/CIRO16
47	DBW445	NIVT-6	CROC_1/AE.SQUARROSA (205)//BORL95/3/PRL/SARA//TSI/VEE#5/4/FRET2/5/CIRO16/6/BECARD/CHYAK/7/MOKUE #1
Durum			
48	DDW61	PZ-RI-TS	HI8498/PDW233//PDW291
49	DDW62	NIVT-4	MACS 2846/ HI8498
50	DDW63	NIVT-4	IDYN 726
51	DDW64	NIVT-5B	PDW314/PDW233

SDAU, Vijapur (Gujarat)

1	GW547*	CZ-TS	GW11/KLD19
2	GW538	PZ-LS	WH1013/RAJ4155//GW397
3	GW543	CZ-SPL-HF	WBLL1*2/BRAMBLING//WBLL1*2/BRAMBLING/3/2*BORL14
4	GW548	NIVT-2	GW 322 / SYN 02-25
5	GW549	NIVT-2	GW 496 / GW 404
6	GW550	NIVT-2	MP 4010 / GW 496
7	GW551	NIVT-3B	PBW 559 / QLD 43
8	GW558	NIVT-3B	HI 1527/DBW 36 // GW 496
9	GW552	NIVT-5B	GW 496/GW 404
10	GW553	NIVT-6	GW 428/GW 496
Durum			
11	GW1365	NIVT-4	GW 1216/HI 8690
12	GW1366	NIVT-4	MACS 2846/GW 1113//GW1139/3/GW1220/4/GW1220
13	GW1368	NIVT-5B	MACS 2846/GW1113//GW 139/3/GW1220/4/GW1220

JAU, Junagadh (Gujarat)

1	GW542	PZ-LS	GW467/GW273
2	GW554	NIVT-2	NIAW 2064/ GW 366
3	GW555	NIVT-2	HI 1600/ HD 2987
4	GW556	NIVT-3B	RAJ 4238/ GW 273
5	GW1367	NIVT-4	WSM 41/ RAJ 1555
6	GW1368(d)	NIVT-5B	GW 1125/CPAN 6083//GW 1280
7	GW557	NIVT-6	RSP 566/ GW 366
Durum			
8	GW1367	NIVT-4	WSM 41/ RAJ 1555

ICAR-IARI, New Delhi

1	HD3386*	NW-TS	NELOKI//SOKOLL/EXCALIBUR
2	HD3388*	NE-TS	HD2967HD2887//HD2946/HD2733
3	HD3470[M]	NW/NE-TS	DBW 43/2*HD3086
4	HD3471[M]	NW/NE-TS	HD3086*2/HI1500
5	HD3469[B]	PZ-TS	FRNCLN*2/7/CMH83.1020/HUITES/6/CMH79A.955/4/AGA/3/4*SN64/CNO67//INIA66/5/NAC/8/WBLL1*2/KURUKU//HEILO/9/WBLL1*2/KURUKU//HEILO/10/KACHU #1/T.SPELTA
6	HD3428	NW-LS	PI348764//2*KACHU/4/2*ATTILA*2//CHIL/BUC*2/3/KUKUNA CROC1/AE.SQUARROSA(210)//WBLL1*2/BRAMBLING/3/VILLAJUAREZF2009/5/BAV92//IRENA/KAUZ/3/HUITES*2/4/MURGA/6/MUTUS//ND643/2*WBLL1
7	HD3444	NIVT-1A	HD 2733/HD 3076
8	HD3445	NIVT-1A	CL1705/HD2687
9	HD3446	NIVT-1A	HD2967*3/3/HD2687*3//Cook*6/C80-1/4/ HD2967*3/HD2189 (Lr34)/5/ HD2967*3/3/HD2851*3//Avocet S*6/Yr10
10	HD3447	NIVT-1A	HD2967/HD2887//HD2946/HD2733
11	HD3448	NIVT-1B	DL3331/HD2967
12	HD3449	NIVT-1B	13SAWYT319/PBW698
13	HD3450	NIVT-2	DL3328/HD2967
14	HD3451	NIVT-2	Sr22/3*K441//2*PBW550/3/AUS91463/3*PBW550
15	HD3452	NIVT-3A	HD 3086/HD 2781
16	HD3453	NIVT-3A	TACUPETO F2001/BRAMBLING/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR*2/6/WAXWING/SRTU//WAXWING/KIRITATI
17	HD3454	NIVT-3A	HD3059*3/PBW780
18	HD3455	NIVT-3A	HD2967/PBW550//HD2967+Yr10
19	HD3456	NIVT-3B	TC870344/GUI//TEMPORALERA M 87/AGR/3/2*WBLL1/WH1105
20	HD3457	NIVT-5A	WH675/PBW698
21	HD3458	NIVT-5A	PBW343/Picilocal/RL608//HD2932

22	HD3459	NIVT-5A	HD2733/HD3043
23	HD3460	NIVT-5A	TC870344/GUI//TEMPORALERA M 87/AGR/3/2*WBLL1/WH1105
24	HD3461	NIVT-6	HD2967/HD2887//HD2946/HD2733
25	HD3462	NIVT-6	CL1705/HD2687
26	HD3463	NIVT-6	HD2967/HD2887//HD2946/HD2733
27	HD3464	NIVT-6	HDCSW18/PBW698
28	HD3466	IVT-NHZ	HD2967/HD2887//HD2946/HD2733
29	HD3467	NIVT-1B	HD3059*3/PBW780
30	HD3468	NIVT-5A	HD 3087/HD 3016
31	HD3472	NIVT-1A	CSW76/DBW172

IARI Regional Station, Indore (M.P.)

1	HI1665*	PZ-RI-TS	HI1531/HI1544
2	HI1668	NW-TS	NADI/COPIO//NADI
3	HI1669	CZ-TS	HW4059/HD2932
4	HI1670^{Q}	CZ-TS	HI1544/HI1479
5	HI1673	CZ/PZ-LS	HI1584/HI1592//HI1544
6	HI1674	CZ/PZ-LS	RAJ4238/HD2987
7	HI1675	CZ/PZ-LS	HI1563/RAJ4201
8	HI1672	PZ-LS	HI1544/HI1479
9	HI1683	NIVT-2	MACS6222/HI 1544//HI 1544
10	HI1684	NIVT-2	HI 1597 / HI 1544
11	HI1685	NIVT-3B	FLW 3 / HD 2932
12	HI1686	NIVT-3B	GW 366 / HI 1599
13	HI1687	NIVT-3B	RAJ 4268 / HD 2987
14	HI1688	NIVT-5B	4 CSISA-DRYT-203 / 4 CSISA-DRYT-222//HI 1544
15	HI1689	NIVT-5B	SUPER 152 / HI 1563
16	HI1690	NIVT-6	HW 4059 / HD 2932
17	HI1691	NIVT-6	MACS6222/HI 1544//HI 1544
18	HI1693	NIVT-5B	Gamma ray's mutant of HI1531
19	HI1691	NIVT-6	MACS6222/HI 1544//HI 1544
Durum			
20	HI8840(d)*	PZ-RI-TS	HI8681/HI8627
21	HI8841(d)	PZ-TS	HI8713/HI8663
22	HI8848	NIVT-4	HI8691/HI8663
23	HI8849	NIVT-4	HI8750/HI8713
24	HI8850	NIVT-4	HI8691/PDW233//HI8663
25	HI8851(d)	NIVT-5B	HI 8691/PDW 233
26	HI8852(d)	NIVT-5B	HI 8738/PDW 233

IARI Regional Station, Shimla (H.P.)

1	HS691	NHZ-RF	HS484/KLE/BER/2*FL-8/DONSK-POLL
2	HP1978	NIVT-1B	HD2967/HD2887//HD2946/HD2733
3	HP1979	NIVT-1B	HD2967/CP196
4	HP1980	NIVT-3A	WH1105/K 1301
5	HS692	NHZ-RF	ZANDER-33/HD2932//HS484
6	HS695	NHZ-IVT	HS526/ZANDER33
7	HS696	NHZ-IVT	FLW13/HS536//WBM2382
8	HS697	NHZ-IVT	DW1484/HD2894
9	HS698	NHZ-IVT	ZANDER33/HD2687//HS484
10	HS699	NHZ-IVT	HS461/PBW507

Banaras Hindu University, Varanasi (U.P.)

1	HUW854	NIVT-!A	KACHU/6/YAR/AE.SQUARROSA (783)/4/GOV/AZ//MUS/3/SARA/5/MYNA/VUL//JUN/7/PRL/2*PASTOR //KACHU
2	HUW855	NIVT-1B	SUP152/BAJ #1/3/SWSR22T.B./2*BLOUK #1//WBLL1*2/KURUKU

CSKHPKV, Malan (H.P.)

1	HPW484	NHZ-RF	PBW677mutant/GW322//BAJ#1(Trombay)
2	HPW489	NHZ-IVT	HPW 386 / VL 973
3	HPW490	NHZ-IVT	HPW 386 / PW 1046
4	HPW491	NHZ-IVT	VL 829 / FLW 4
5	HPW492	NHZ-IVT	HPW 296 / HPW 381
6	HPW493	NHZ-IVT	TAW 142/ DBW 88
7	HPW494	NHZ-IVT	HS490 / HPW 249

SKUAST, Jammu (J & K)

1	JAUW705	NIVT-5A	22nd SAWYT323/WH1080/9th STEMRSSN41
2	JAUW711	NIVT-1A	22nd SAWYT333/WH1080/IC 535352

BAU, Ranchi (Jharkhand)

1	JKW303	NIVT-3A	PBW765/DBW39
2	JKW304	NIVT-5A	RAJ3765/HD2967
3	JKW305	NIVT-1B	MALBEC/7/2*ALTAR84/AE.SQUARROSA(221)//3*BORL95/3/…

Sagar

1	JWS1333	NIVT-6	HD-3058 x JW-3211

CSAUA&T, Kanpur

1	K2108	NW-LS	PBW343/K0607
2	K2201	NIVT-1A	HD 2967/NW 2036
3	K2203	NIVT-1B	HD 2967/K 1006
4	K2204	NIVT-1B	K 0307/K 68
5	K2206	NIVT-3A	PASTOR/3/GEN*2//BUC/FLK/4/PASTOR/5/KAMB2/PANBION/6/02W50807/RSMF8704
6	K2207	NIVT-3A	HUBARA-3/SHUHA-4//REYNA-21
7	K2208	NIVT-3A	K 922/2K 21
8	K2210	NIVT-5A	K 9533/DBW 107

CSSRI, Karnal

1	KRL2106	NIVT-1A	KRL 213/HD2967

Lokbharti, Sanosara (Gujarat)

1	LOK79	PZ-LS	
2	LOK80	NIVT-2	ESWYT-119//S.S./C.306/S.331/Lok-1/HS 295//CPAN 4061/HW 2006/HW 2002/Lok-1
3	LOK81	NIVT-3B	HTWYT-10//HW 3064//HW 2006/CPAN 4078/ HW 2002/S.S./C.306/S.331/Lok-1/HW 888

Agharkar Research Institute, Pune (Maharashtra)

1	MACS6811	PZ-TS	CNO79//PF70354/MUS/3/PASTOR/4/BAV92*2/5/HAR311/6/BECARD/QUAIU#1/7/BECARD/QUAIU#1
2	MACS6809	PZ-TS	MACS6222*2/HI1571
3	MACS6814	PZ-LS	MACS6222/SEL111//PHS1102
4	MACS6805	PZ-LS	MACS6273/QLD26//MACS2496
5	MACS6826	NIVT-2	MACS 6222*2 /4/ SAUAL/3/KAUZ/PASTOR//PBW 3
6	MACS6829	NIVT-3B	MACS 6222 / Lok -62 // NIAW 1415
7	MACS6830	NIVT-3B	MACS 6222 / Lok 62
8	MACS6837	NIVT-2	BAJ #1/3/KIRITATI//ATTILA*2/PASTOR*2/4/MUTUS*2/TECUE #1
9	MACS6842	NIVT-2	PBW65/2*PASTOR//TACUPETO F2001*2/BRAMBLING/3/TACUPETO F2001*2/BRAMBLING/6/2*SHORTENED SR26
10	MACS6844	NIVT-2	TRANSLOCATION/4/ATTILA/3*BCN//BAV92/3/PASTOR/5/MUNAL MUU/FRNCLN/3/KACHU/BECARD//WBLL1*2/BRAMBLING/5/FRNCLN/3/ND64

Durum

11	MACS4125	NIVT-4	HI 8663 / UAS 415 // UAS 428
12	MACS4131	NIVT-5B	WHD 948*2 / HI 8708
13	MACS4135	NIVT-4	WHD 948*2 / HI 8708

JNKVV, Powarkheda (M.P.)

1	MP1378*	PZ-TS	18HRWYT218/DBW17
2	MP1386	PZ-TS	UAS-2021/HI-8627
3	MP1388	PZ-LS	MP-10-937/MP-12-204
4	MP1392	NIVT-2	HBW-273 X PBW-549
5	MP1393	NIVT-2	TRCH/SRTU//KACHU*2/3/MUU#1/SAUAL//MUU
6	MP1394	NIVT-3B	WBLL1*2/KUKUNA//KIRITATI/2*TRCH/3/BAJ#1/..
7	MP1399	NIVT-6	WBLL1*2/BRAMBLING//WBLL1*2/BRAMBLING/3/…
Durum			
8	MPO1395	NIVT-4	PHSU-227x GW-09-201
9	MPO1396	NIVT-4	MPO -1106 (D) X HI -8381 (D)
10	MPO1398	NIVT-5B	W1D22241/4/ARMENT/SRN3/NIGRTS/4/3/CANELO_9.1/5/TARRO1/2*YUAN/1/AJALA-13/YAZI/3/SOMAT-4/INTER_8/4/ARMENI//5RN/3/NIGRIS4/3/CANELO9.1

JNKVV, Jabalpur (M.P.)

1	MP3557#	CZ/PZ-LS	MP3342/MP403-2
2	MP3556#	PZ-LS	TACUPETOF2001/BRAMBLING/5/NAC/TH.AC//3*PVN/3/3MIRLO/BUC/4/2*PASTOR*2/6/WAXWING/SRTU//WAXWING/KIRTATI
3	MP3568	NIVT-3B	MP 3325/ WAS 515
4	MP3570	NIVT-2	MP 3537/MP 3549
5	MP3572	NIVT-6	SUP152/7/CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA//FRET2/6/MILAN/KAUZ//PRINIA/3/BAV92
6	MP3573	NIVT-2	35 IBWSN 159((CROC_1/AE.SQUARROSA(205)_4/CHWN Aa Squarross(TAUs)/BNC/3/KAUZ/
7	MP3575	NIVT-3B	35 IBWSN 159 ((CROC_1/AE..SQUARROSA (205)/HO 21222
8	MP3577	NIVT-5B	ATTILA*2/PBW65//TAM200/TUI/3/ATTILA*2/PBW65*2//KACHU/4/ATTILA*2/PBW65//KACHU

NDUA&T, Ayodhya (U.P.)

1	NW8053	NIVT-5A	KUTZ//KFA/2*KACHU
2	NW8055	NIVT-3A	WAXWING*2/TUKURU//KBIRD/3/2*BORL14
3	NW8071	NIVT-3A	MUTUS*2/MUU//2*MUCUY
4	NW8072	NIVT-!A	ONIX/KBIRD//BORL14/3/ONIX/KBIRD
5	NW8073	NIVT-1B	MERCATO/BECARD//BOKOTA
6	NW8075	NIVT-1B	SAUAL/3/ACHTAR*3//KANZ/KS85-8-4/4/SAUAL*2/5/KFA/2*KACHU

MPKV, Niphad (Maharashtra)

1	NIAW4028#*	PZ-RI-TS	WHEAR/SOKOLL/3/TRCH/SRTU//KACHU
2	NIAW4153	PZ-TS	HUW-620/KINGBIRD
3	NIAW4114	PZ-LS	LOK-62/NIAW-1689
4	NIAW4120	PZ-LS	LOK-62/HD-2998
5	NIAW4183	PZ-TS	UP-2691/KINGBIRD
6	NIAW4267	NIVT-5B	NIAW 1885 X NIAW 1415
7	NIAW4300	NIVT-3B	PUSA BAKER X LOK 54
8	NIAW4364	NIVT-2	NIAW 1415 X MUNAL # 1
9	NIAW4387	NIVT-5B	(NIAW 1885 X SRRSN 6022) X SRRSN 6022
10	NIAW4432	NIVT-3B	WORRAKATTA/2*PASTOR/6/KAUZ/5/PAT10/ALD//PAT72300/3/PVN/4/BOW/7/BAJ #1/3/KIRITATI//ATTILA*2/PASTOR
11	NIAW4440	NIVT-2	BOKOTA//BECARD/QUAIU #1/3/BOKOTA
Durum			
11	NIDW1499	NIVT-4	GW 1189 X NIDW 295
12	NIDW1520	NIVT-4	HI 8692 X GW 1191

13	NIDW1534	NIVT-4	ADAMAR_15//ALBIA_1/ALTAR84/3/SNITAN/4/SOMAT_4/INTER_8/5/SOOTY_9/RASCON_37/6/BICHENA/AKAKI_7/4/LIS_8/FILLO_6/3/FUUT//HORA/JOR/5/YAZI_1/AKAKI_4//SOMAT_3/3/AUK/GUIL//GREEN/7/TOPDY_18/FOCHA_1//ALTAR84/3/AJAIA_12/F3LOCAL(SEL.ETHIO.135.85)//PLATA_13/4/SO

Nuzivedu Seeds (Private)

1	NWS2194#*	CZ-TS	WBLL1*2/SHAMA//KACHU/3/PRL/6/SAUAL/4/CROC-/AE.SQUARROSA (205)//KAUZ/3/ATTILA/5/SAUAL
2	NWS2222	PZ-TS	THELIN/2*WBLL1/5/KAUZ//ALTAR84/AOS/3/KAUZ/4/SW94.15464/6/2*UP2338*2/SHAMA/3/MILAN/KAUZ//CHIL/CHUM18/4/UP2338*2/SHAMA
3	NWS2170	NIVT-2	SUP152*2/TINKIO #1
4	NWS2216	NIVT-1B	QUAIU #1//2*WHEAR/KRONSTAD F2004
5	NWS2442	NIVT-!A	NELOKI//SOKOLL/EXCALIBUR

Parbhani, VNMKV

1	PBN16-1766	NIVT-2	YANAC/3/PRL/SARA//TSI/VEE5/4/CROC(STEMRRSN 08-09-002)YR5
2	PBN16-1826	NIVT-5B	BROOKTON/WH 147

PAU, Ludhiana (Punjab)

1	PBW887	NW-TS	KACHU/KINDE*2//KACHU/KIRITATI
2	PBW889	NW-TS	BORL14*2//BECARD/QUAIU#1
3	PBW893	NW-LS	BWL4029/BWL3587
4	PBW899	NW-RI	PULSAR/2*PBW683
5	PBW891[#]	PZ-TS	NADI/COPIO//NADI
6	PBW897[Q]	PZ-LS	BWL3284/BWL3292
7	PBW903	NIVT-6	PBW723//BWL5398/PBW745
8	PBW904	NIVT-6	BABAX/LR42//BABAX*2/3/KUKUNA/4/CROSBILL #1/5/BECARD/6/KFA/2*KACHU
9	PBW905	NIVT-6	BWL 7399/BWL6271
10	PBW906	NIVT-6	CROC_1/AE.SQUARROSA (210)//WBLL1*2/BRAMBLING/3/VILLA JUAREZ F2009/5/BAV92//IRENA/KAUZ/3/HUITES*2/4/MURGA*2/6/MUTUS//ND643/2*WBLL1
11	PBW907	NIVT-6	PBW723/3/BWL5177//PBW677/WH1105
12	PBW908	NIVT-!A	PBW723//BWL4472/PBW677
13	PBW909	NIVT-!A	BWL723//BWL5177/PBW745
14	PBW910	NIVT-!A	KACHU/DANPHE//BORL14
15	PBW911	NIVT-!A	BWL5193/BWL7527
16	PBW912	NIVT-!A	BWL 1637 / WG 9068
17	PBW913	NIVT-1B	MUNAL*2/CHONTE//BWL3585
18	PBW914	NIVT-1B	PBW723//BWL5347/PBW746
19	PBW915	NIVT-1B	WBLL1*2/CHAPIO*2//MURGA/3/MUTUS/AKURI
20	PBW916	NIVT-1B	PBW723//BWL5342/PBW746
21	PBW917	NIVT-1B	FRNCLN/4/WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1/5/KACHU #1/KIRITATI//KACHU/6/MUTUS*2/TECUE #1
22	PBW918	NIVT-2	BWL5193/BWL7527
23	PBW919	NIVT-3A	BWL 2760/BWL 2752
24	PBW920	NIVT-3A	BWL3284/BWL3587
25	PBW921	NIVT-3A	BWL 4010/BWL 3275
26	PBW922	NIVT-3A	PBW723//PBW746/PBW761
27	PBW923	NIVT-3A	PBW746/PBW761
28	PBW924	NIVT-3B	BWL 2761/BWL 4427
29	PBW925	NIVT-5A	BWL780/BWL4478
30	PBW926	NIVT-5A	BWL5260//PBW723/PBW725
31	PBW927	NIVT-5A	BWL780/BWL4478
32	PBW928	NIVT-5A	BWL6246/BWL7399

33	PBW929	NIVT-6	ROLF07//LALBMONO1*4/PVN/3/BORL14
Durum			
34	PDW364	NIVT-4	HI 8703 / WHD 946
35	PDW365	NIVT-4	WGD/9632/WGD9565

MPUAT, Udaipur (Rajasthan)

1	PWU15	PZ-TS	HW4059/HI2932
2	PWU16	NIVT-2	GW 366/HW 3083
3	PWU20	NIVT-2	Super 152/hi 1531
4	PWU24	NIVT-4	HI 8737/HI 8627

SKNAU, Durgapura, Jaipur (Rajasthan)

1	RAJ4576	NIVT-!A	KACHU*2/FRNCLW//
2	RAJ4577	NIVT-!A	QLD63
3	RAJ4578	NIVT-!A	HUW640/KBRL79-2
4	RAJ4579	NIVT-1B	VEE/MJI//2*TUI/3/PASTOR/4/BERKUT/5/BAVIS/6/2*BORL14
5	RAJ4580	NIVT-3A	NW 4081/DBW 16
6	RAJ4581	NIVT-3A	FRANCOLIN#1/3/IWA 8600211//2*PBW343*2/KUKUNA/7/…
7	RAJ4582	NIVT-2	NWL 9-11/PBW 621
8	RAJ4583	NIVT-6	RAJ 4267/DBW 101

SKUAST, Srinagar (J & K)

1	SKW368	NHZ-IVT	HD3070/DPW621-50
2	SKUAW101	NHZ-IVT	Selection from HPW447 X BAJ #1/5/ATTILA/3*BCN//BAV92/3/TILHI/4/SHA7/VEE#5//ARIV92/6/WBLL1/KUKUNA//TACUPETO F2001/3/BAJ #1
3	SKUAW102	NHZ-IVT	Selection from HS634

SVPUA&T, Modipuram

1	SVPWL21-07	NIVT-1B	IM15/HD2967
2	SVPWL21-14	NIVT-3A	DBW88/HD3090
3	SVPWL21-15	NIVT-!A	HDCSW18/PBW712

UAS, Dharwad (Karnataka)

1	UAS3020	CZ/PZ-TS	C306/UAS315/(92.001E7.32.5/SLVS/5/NS-732/HER/3/PRL/SARA//TSI/VEE#5/4/FRET2/6/SOKOLL/3/PASTOR//HXL7573/2*BAU)
2	UAS3021	PZ-TS	SIALIA/4/PBW343*2/KUKUNA//SRTU/3/PBW343*2/KHVAKI/5/SAUAL/3/C80.1/3*BATAVIA//2*WBLL1/4/SAUAL#1
3	UAS3022	PZ-LS	WBLL1*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/BAJ#1/6/QUAIU #3
4	UAS3023	PZ-LS	DWR162/UAS315*2
5	UAS3025	NIVT-2	HD 2932 // UAS 304 // UAS 329
6	UAS3026	NIVT-2	BAJ #1*2/ 5 / SW89.5277 / BORL95 // SKAUZ / 3 / PRL / 2*PASTOR / 4 / HEILO
7	UAS3027	NIVT-3B	RAJ 4083 // (BAJ #1/5/ ATTILA/ 3*BCN// BAV92/3/ TILHI/4/ SHA7/ VEE#5// ARIV92/6/ WBLL1/ KUKUNA// TACUPETO F2001/3/ BAJ #1)
8	UAS3028	NIVT-3B	HI 977/ UAS 360
9	UAS3029	NIVT-5B	KACHU*2/6/YAR/ AE.SQUARROSA (783)/4/GOV/AZ// MUS/3/ SARA /5/ MYNA/ VUL//JUN

Durum

10	UAS478(d)*	PZ-RI-TS	AMRUTH/(MINIMUS/COMBUCK-2//CHAM-3/3/CANELO-9/9/USDA595/3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV-1/6/ARDENTE/7/HUI/YAV79/8/POD-9/10/TARRO-1/2*YUAN-1//AJAIA-13/YAZI/
11	UAS481(d)	PZ-RI-TS	AMRUTH/(MINIMUS/COMBUCK-2//CHAM-3/3/CANELO-/9/USDA595 /3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV-1/6/ARDENTE/7/ HUI/YAV79/8/POD-9/10/TARRO-1/2*YUAN-1//AJAIA-13/YAZI/3/SOMAT-4/INTER-8/4/ARMENT//SRN-3/NIGRIS-4/3/CANELO-9.1)

12	UAS482	NIVT-4	UAS 419 // (WID22202 /4/ SORA/ 2*PLATA_12// SOMAT_3/3/AJAIA_12 /F3LOCAL(SEL. ETHIO.135.85)// PLATA_13 /5/CF4-JS 21//TECA96/TILO_1)
13	UAS483	NIVT-4	ROLA_5 / 3 / AJAIA_12 / F3LOCAL (SEL.ETHIO.135.85) // PLATA_13 / 4 / MALMUK_1/ SERRATOR_1 / 5 / KHP*2 / D31708 // BOOMER_33 / 3 / PLATA_3 // CREX/ ALLA / 8 / SRN_3/ AJAIA_15// PICON/3/ GREEN/6/ CMH82A.1062 /3/ GERARDO VZ 394// SBA81/ PLC/4/AAZ_1/ CREX/5/ HUI// CIT71/ CII/7/ SOMAT_4/INTER_8
14	UAS484(d)	NIVT-5B	UAS 446 // (KOFA/3/ ACUATICO_1*2/ RASCON_33// ARAM/ BOOMER /4/ ARMENT// SRN_3/ NIGRIS_4/3/ CANELO_9.1)

UBKVV, Coochbehar (West Bengal)

1	UBW18	NIVT-!A	BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ*2 /6/KFA/2*KACHU
2	UBW19	NIVT-1B	ACHU/SAUAL/4/ATTILA*2/PBW65//PIHA/3/ATTILA/2*PASTOR/5/KACHU/KIRITATI
3	UBW20	NIVT-3A	MUCUY/3/KACHU #1/KIRITATI//KACHU

GBPUAT, Pantnagar (Uttarakhand)

1	UP3111	NW-RI-TS	BECARD#1/4/KIRITATI/3/2*SERI.1B*2//KAUZ*3/BOW/BAVI5/2*FRANCOLIN#1
2	UP3102	NW-TS	DBW62/FRANCOLIN#1/YANAC
3	UP3083[B]	PZ-TS	MEX94.27.1.20/3/SOKOLL//ATTILA/3*BCN/4/PUB94.15.1.12/...
4	UP3121	NIVT-!A	MUTUS/AKURI #1// MUTUS/3/KACHU #1/ KIRITATI//KACHU
5	UP3122	NIVT-!A	KACHU*2/FRNCLW// QLD63
6	UP3123	NIVT-!A	HUW640/KBRL79-2
7	UP3124	NIVT-1B	PRL/2*PASTOR// PBW343*/KUKUNA/3/ ROLF07/4/BERKUT//…./ PBW737
8	UP3125	NIVT-1B	MUCUY/5/CROC_1/AE. SQUARROSA (205)// BORL95/3/PRL/SARA// TSI/VEE#5/4/FRET2
9	UP3126	NIVT-3A	ONIX/KBIRD/HD3043
10	UP3127	NIVT-3A	BECARD/FRNCLN// 2*BORL14
11	UP3129	NIVT-5A	UP2748/PRL/2*PASTOR //PBW343/KUKUNA/3/ROLFO7/4/….
12	UP3130	NIVT-6	WBLL1*2/BRAMBLING* 2//BAVIS*2/3/BORL14
13	UP3132	NIVT-1B	NADI#2*2/6/BECARD #1 /5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ
14	UP3133	NIVT-5A	DBW88/WH1142//DBW88
15	UP3131	NHZ-IVT	PAURAQ/AG/5*NAC//
16	UP3134	NHZ-IVT	WBLL1*2/BRAMBLING*2//BAVIS/3/BORL14

VPKAS (ICAR), Almora (Uttarakhand)

1	VL3028	NHZ-RF	SUP152/BAJ#1/4/BAJ#1/3/KIRITATI//ATTILA*2/PASTOR/5/SUP152/ BAJ#1
2	VL2051	NHZ-IVT	VW 20145/ 4WON-IR-257/5/YMH/ HYS/TUR 3055/3/DGA/4/ VPM/MOS
3	VL2052	NHZ-IVT	VL 1003/ RSK/CA8055// CHAM6/4/NWT/3/ TAST/ SPRW//TAW 12399.75
4	VL2053	NHZ-IVT	VW 0956/ MONARCHA* 2/MV 17
5	VL2054	NHZ-IVT	VL 2012/ VORONA/ HD2402/3/TRICHMIR/ ICO//SABALAN
6	VL3031	NHZ-IVT	VL 930/DBW 50// RSK/CA8055//CHAM6/ 4/NWT/3/TAST/SPRW//TAW 12399.75
7	VL3032	NHZ-IVT	VW 20145/ 4WON-IR-257/5/YMH/ HYS/TUR 3055/3/DGA/4/ VPM/MOS

CCSHAU, Hisar (Haryana)

1	WH1402*	NW-RI-TS	SHORTENEDSR26TRANSLOCATION//2*WBLL1*2/KKTS/3/BECA RD
2	WH1311	NW-RI-TS	QUAIU/FRNCLN
3	WH1306	PZ-TS	CROC-1/AE.SQUARROSA(205)//BORL95/3/PRL/SARA //TSI/VEE#5/4/ FRET2/5/ CIRO16
4	WH1310	PZ-LS	P13496/P13350
5	WH1315	NIVT-1A	CHIPAK
6	WH1316	NIVT-1A	PBW65*2/PASTOR
7	WH1317	NIVT-1B	FRANCOLIN#1/8/PBW343*2/KUKUNA/6/PVN//CAR422/ANA/5/BOW /CROW//BUC/PVN/3/YR/4/TRAP#1/7/PBW343
8	WH1318	NIVT-1B	CROC_1/AE.SQUARROSA (205)// BORL95/3/ PRL/SARA// TSI/VEE #5/4/ FRET2/5/CIRO16
9	WH1320	NIVT-6	BORL14/CHIPAK
10	WH1321	NIVT-6	BORL14*2/MISR1
11	WH1322	NIVT-3A	P13020/P 13049
12	WH1323	NIVT-3A	P 12965/P 12966
13	WH1324	NIVT-3A	PBW 695/K 1203
14	WH1325	NIVT-3B	UP2338*2/SHAMA//2*BAJ #1/5/KIRITATI/ 4/2* BAV92//IRENA/KAUZ /3/HUITES /6/UP2338*2/ SHAMA/3/MILAN/ KAUZ//CHIL/ CHUM18 /4/UP2338*2/SHAMA
15	WH1326	NIVT-5A	NADI/COPIO//NADI#2
16	WH1327	NIVT-5A	FRANCOLIN 1//WBLL1*2 /BRAMBLING/3 /WBLL1*2/ BRAMBLING/4/2* NADI#1

Durum

17	WHD968	NIVT-4	YAV79/4/ARMENT//SRN_3/NIGRIS_4/3/CANELO_9.1/5/SORD_1//HUI/YAV79

PDKVV, Akola

1	WSM138	NIVT-3B	Raj-4132 x LBPY-04-1

Checks

SN	Checks	Pedigree
1	CG1029	HW2004/PHS725
2	CG1036	HW2004/PHS832
3	DBW107	TUKURU/INQLAB91
4	DBW110	KIRITATI/4/2*SERI1B*2/3/KAUZ*2/BOW//KAUZ
5	DBW173	KAUZ/AA//KAUZ//PBW602
6	DBW187	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
7	DBW222	KACHU/SAUAL/8/ATTILA*2/PBW65/6/PVN//CAR422/ANA/5/BOW/CROW//BUC/PVN/3/YR/4/TRAP#1/7/ATTILA/2*PASTOR
8	DBW252	PFAU/MILAN/5/CHEN/AE.SQ(TAUS)//BCN/3/VEE#7/BOW/4/PASTOR
9	DBW296	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/MASSIV/PPR47.89C(23SAWYT321)
10	DBW303	WBLL1*2/BRAMBLING/4/BABAX/LR42//BABAX*2/3/SHAMA*2/5/PBW343*2/KUKUNA*2//FRTL/PIFED
11	DBW327	NELOKI//SOKOLL/EXCALIBUR
12	DBW370	PREMIO/4/CROC_1/AE.SQUARROSA(205)//KAUZ/3/PIFED/5/*BORL14
13	DBW371	BORL14/CHIPAK
14	DBW372	FD08114/BECARD#1//BOKOTA
15	GW322	PBW173/GW196
16	GW513	PBW559/WR1873
17	HD2864	DL509-2/DL377-8
18	HD2932	KAUZ/STAR//HD2643
19	HD2967	ALD/CUC//URES/HD2160M/HD2278
20	HD3059	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
21	HD3086	DBW14/HD2733//HUW468
22	HD3090	SFW/VAISHALI//UP2425
23	HD3171	PBW343/HD2879
24	HD3249	PBW343*2/KUKUNA//SRTU/3/PBW343*2/KHVAKI
25	HD3293	HD2967/DBW46
26	HD3369	HD3070/HD3078
27	HI1563	MACS2496*2/MC10
28	HI1605	BOW/VEE/5/ND/VG9144//KAL//BB/3/YACO/4/CHIL/6/CASKOR/3/CROC-1/A.SQUARROSA(224)//OPATA/7/PASTOR//MILAN/KAUZ/3/BAV92
29	HI1612	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
30	HI1633	GW322/PBW498
31	HI1634	GW322/PBW498
32	HI1636	DL788-2/HW4032
33	HI1650(I)	Giant3/HI1395
34	HI1653(I)	NADI/COPIO//NADI
35	HI1654(I)	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/PANDION//FILIN/2*PASTOR/3/BERKUT
36	HI1655(I)	PASTOR/3/BERKUT MACS2496/HI1531
37	HPW349	NAC/TH.AC//3*MIRLO/BUC/4/2*PASTOR
38	HS507	KAUZ/MYNA/VUL//BUC/FLK/4/MILAN
39	HS562	OASIS/SKUAZ//4*BCN/3/2*PASTOR
40	JKW261	ISENGRAIN/KBIRD//MUNAL#1
41	K1317	K0307/K9162
42	Kharchia65	KHARCHIALOCAL/EG953

43	KRL210	PBW65/2*PASTOR
44	MACS6222	HD2189*2/MACS2496
45	MACS6768	MACS6221*2/Raj4037
46	MP3288	DOVE/BUC/DL788-2
47	MP4010	ANGOSTURA88
48	NIAW3170	SKOLL/ROLF07
49	PBW644	PBW175/HD2643
50	PBW771	PBW550//YR15/6*AVOCET/3/2*PBW550
51	PBW826	WBLL1*2/KKTS//PASTOR/KUKUNA/3/KINGBIRD#1//INQALAB91*2/TUKURU/5/KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/SAUAL
52	PBW872	MUTUS*2/MUU//2*MUCUY
53	RAJ4083	PBW343/UP2442//WR258/UP2425

Durum

54	HI8627	HD4672/PDW233
55	HI8713	HD4672/PDW233
56	HI8737	HI8177/HI8158//HI8498
57	HI8826	HI8713/HI8663
58	MACS3949	STOT//ALTAR84/ALD/3/THB/CEP7780//2*MUSK_4
59	MACS4100	CBC509CHILE/6/ECO/CMH76A.722//BIT/3/ALTAR84/4/AJAIA_2/5/KJOVE_1/7/AJAIA_12/F3LOCAL(SEL.ETHIO.135.85)//PLATA_13/8/SOOTY_9/RASCON_37//WODUCK/CHAM_3
60	NIDW1149	NIDW295/NIDW15
61	UAS446	DWR185/DWR2006//UAS419

Entries with Common pedigrees 2022-23

Sn	Genotype	Pedigree
1	WH1320	BORL14/CHIPAK
2	DBW414	
3	PBW911	BWL5193/BWL7527
4	PBW918	
5	PBW925	BWL780/BWL4478
6	PBW927	
7	HD3445	CL1705/HD2687
8	HD3462	
9	DBW441[M]	DBW110*2/SUNLIN
10	DBW442[M]	
11	HD3447	HD2967/HD2887//HD2946/HD2733
12	HP1978	
13	HD3461	
14	HD3463	
15	HD3467	HD3059*3/PBW780
16	HD3454	
17	UP3123	HUW640/KBRL79-2
18	RAJ4578	
19	HI1683	MACS6222/HI 1544//HI 1544
20	HI1691	
21	UP3132	NADI#2*2/6/BECARD #1 /5/KIRITATI/4/2*SERI.1B*2 /3/ KAUZ*2/BOW//KAUZ
22	DBW434	
23	DBW417	
24	NW8072	ONIX/KBIRD//BORL14/3/ONIX/KBIRD
25	DBW412	
26	DBW422	
27	HD3456	TC870344/GUI//TEMPORALERA M 87/AGR/3/2*WBLL1/WH1105
28	HD3460	
29	MACS4135	WHD 948*2 / HI 8708
30	MACS4131(d)	
31	NWS2442	NELOKI//SOKOLL/EXCALIBUR
32	HD3386	
33	DBW386	

National Initial Varietal Trial

2201-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ													
			Delhi			Punjab						Haryana				
			Delhi			Ludhiana			Gurdaspur			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HD3447	N101	74.9	6	1	57.4	18	0	48.9	34	0	62.8	12	0	60.5	29	0
2	UBW18	N102	71.7	14	1	46.4	33	0	50.9	29	0	55.3	31	0	73.7	2	1
3	UP3121	N103	69.5	19	1	74.9	2	1	64.6	4	1	68.4	4	1	76.6	1	1
4	RAJ4577	N104	60.0	33	0	43.2	36	0	52.9	22	0	43.8	36	0	52.7	35	0
5	WH1316	N105	76.0	5	1	53.8	23	0	57.6	18	0	60.6	15	0	65.7	14	0
6	PBW912	N106	65.7	28	0	56.4	20	0	50.1	30	0	65.6	8	0	64.8	17	0
7	JAUW711	N107	55.3	35	0	51.4	27	0	42.4	36	0	61.7	13	0	56.0	34	0
8	PBW910	N108	65.9	27	0	72.8	4	1	64.6	3	1	50.2	34	0	73.7	3	1
9	DBW408	N109	68.9	22	1	50.9	30	0	57.0	19	0	59.8	20	0	59.2	31	0
10	RAJ4576	N110	65.4	31	0	45.7	34	0	56.2	20	0	58.3	22	0	60.8	27	0
11	HD3472	N111	65.5	30	0	71.6	6	1	58.4	16	0	58.3	22	0	68.8	9	1
12	WH1315	N113	69.0	21	1	53.3	24	0	61.3	12	1	72.8	1	1	68.4	10	1
13	NWS2442	N114	74.6	7	1	59.4	16	0	63.3	7	1	70.1	3	1	65.2	15	0
14	DBW411	N115	68.6	23	1	64.6	11	0	49.5	32	0	54.4	32	0	63.7	20	0
15	BCW28	N116	67.2	25	0	50.9	29	0	61.3	13	1	54.2	33	0	64.8	16	0
16	PBW911	N117	65.5	29	0	70.8	8	1	62.2	9	1	70.3	2	1	61.4	25	0
17	SVPWL21-15	N118	76.6	3	1	54.4	22	0	52.5	23	0	64.2	10	0	63.4	22	0
18	HD3444	N119	73.5	11	1	62.0	13	0	66.9	1	1	56.5	28	0	69.4	8	1
19	NW8072	N120	69.4	20	1	63.5	12	0	52.2	24	0	58.8	21	0	59.0	32	0
20	K2201	N121	74.2	8	1	71.8	5	1	51.0	28	0	67.7	5	0	63.6	21	0
21	HUW854	N122	69.6	18	1	57.5	17	0	53.5	21	0	60.6	14	0	60.6	28	0
22	DBW410	N123	74.1	9	1	70.5	9	1	45.5	35	0	59.9	18	0	71.3	5	1
23	UP3123	N124	67.9	24	1	59.6	15	0	51.1	27	0	66.2	7	0	50.9	36	0
24	UP3122	N125	71.9	13	1	56.1	21	0	66.5	2	1	56.5	29	0	58.9	33	0
25	DBW409	N126	73.9	10	1	51.0	28	0	63.4	6	1	66.3	6	0	65.9	12	0
26	HD3446	N127	63.9	32	0	64.9	10	0	61.7	11	1	63.7	11	0	63.3	23	0
27	DBW412	N130	76.5	4	1	56.9	19	0	62.1	10	1	58.1	24	0	62.7	24	0
28	PBW909	N131	59.8	34	0	48.1	32	0	58.0	17	0	60.3	17	0	65.8	13	0
29	KRL2106	N132	48.9	36	0	44.0	35	0	49.7	31	0	47.6	35	0	61.1	26	0
30	PBW908	N133	67.1	26	0	74.5	3	1	58.7	15	0	58.0	27	0	70.9	6	1
31	HD3445	N134	78.3	1	1	50.1	31	0	62.7	8	1	56.5	30	0	60.2	30	0
32	BRW3944	N135	70.0	17	1	75.4	1	1	49.4	33	0	64.8	9	0	63.8	19	0
33	RAJ4578	N136	70.1	16	1	52.2	26	0	64.5	5	1	60.3	16	0	72.6	4	1
34	HD3086(C)	N112	72.8	12	1	52.4	25	0	51.7	26	0	58.1	24	0	64.2	18	0
35	DBW187(C)	N128	70.7	15	1	60.8	14	0	51.9	25	0	59.9	18	0	70.7	7	1
36	DBW222(C)	N129	77.9	2	1	71.2	7	1	59.3	14	0	58.1	26	0	67.2	11	0
G.M.			69.2			58.9			56.5			60.2			64.5		
S.E.(M)			4.546			3.060			2.437			1.893			3.515		
C.D. (10%)			10.9			7.4			5.8			4.5			8.4		
C.V.			9.3			7.3			6.1			4.4			7.7		
D.O.S. (dd.mm.yy)			04.11.22			01.11.22			11.11.22			05.11.22			03.11.22		

No. of Trials: Proposed = 15 Conducted = 15

Trials not reported (02) = NWPZ: Sriganganagar (RMT)
NEPZ: Sabour (RMT)

2201-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ				
			U.P.			UTK			Rajasthan			U.P.				
			Modipuram			Pantnagar			Durgapura			Kanpur			Ayodhya	
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HD3447	N101	61.1	20	0	56.9	24	0	54.6	23	0	54.2	4	0	43.9	27	0
2	UBW18	N102	56.0	32	0	67.3	7	1	60.7	10	0	45.8	20	0	47.9	23	0
3	UP3121	N103	69.4	8	0	64.4	12	0	69.6	1	1	39.6	29	0	42.5	29	0
4	RAJ4577	N104	62.7	15	0	24.8	36	0	46.6	34	0	36.5	33	0	58.3	4	0
5	WH1316	N105	57.2	29	0	67.7	6	1	61.4	8	0	46.5	13	0	44.3	25	0
6	PBW912	N106	58.9	24	0	59.9	18	0	51.1	29	0	47.2	10	0	43.2	28	0
7	JAUW711	N107	53.5	35	0	72.4	1	1	39.0	36	0	39.9	28	0	52.1	16	0
8	PBW910	N108	58.1	28	0	53.0	32	0	60.6	11	0	61.1	1	1	51.6	18	0
9	DBW408	N109	55.6	33	0	57.7	20	0	57.0	18	0	40.1	25	0	55.7	7	0
10	RAJ4576	N110	71.5	4	1	54.5	29	0	57.5	16	0	46.2	17	0	41.1	35	0
11	HD3472	N111	60.0	21	0	57.0	23	0	62.7	6	1	46.0	18	0	42.0	32	0
12	WH1315	N113	59.2	22	0	56.0	26	0	62.0	7	1	47.2	10	0	53.6	12	0
13	NWS2442	N114	70.0	6	0	56.8	25	0	58.2	14	0	53.3	6	0	55.0	9	0
14	DBW411	N115	58.7	25	0	64.2	13	0	60.6	12	0	43.1	22	0	48.1	22	0
15	BCW28	N116	62.4	16	0	46.2	34	0	56.0	21	0	47.0	12	0	55.0	8	0
16	PBW911	N117	67.2	13	0	69.1	4	1	53.0	26	0	46.0	18	0	51.9	17	0
17	SVPWL21-15	N118	74.2	2	1	44.8	35	0	50.2	30	0	42.7	23	0	53.5	13	0
18	HD3444	N119	61.6	19	0	57.2	22	0	53.2	25	0	39.6	29	0	56.0	6	0
19	NW8072	N120	69.3	9	0	53.4	31	0	47.4	33	0	47.7	9	0	48.4	21	0
20	K2201	N121	69.5	7	0	66.7	8	0	52.0	28	0	38.2	31	0	62.8	1	1
21	HUW854	N122	74.9	1	1	65.5	11	0	60.9	9	0	36.8	32	0	44.0	5	0
22	DBW410	N123	61.6	18	0	62.3	16	0	52.4	27	0	40.1	25	0	52.8	15	0
23	UP3123	N124	58.9	23	0	66.5	9	0	49.1	31	0	50.0	8	0	59.2	3	0
24	UP3122	N125	67.7	12	0	63.9	15	0	58.8	13	0	35.4	36	0	53.8	11	0
25	DBW409	N126	62.3	17	0	58.4	19	0	62.8	5	1	40.1	25	0	45.3	24	0
26	HD3446	N127	58.5	26	0	53.8	30	0	57.0	19	0	36.1	34	0	50.7	19	0
27	DBW412	N130	53.7	34	0	52.6	33	0	47.5	32	0	40.5	24	0	39.9	36	0
28	PBW909	N131	58.2	27	0	69.0	5	1	65.0	3	1	56.3	3	1	53.3	14	0
29	KRL2106	N132	51.0	36	0	55.1	27	0	42.5	35	0	53.6	5	0	57.5	5	0
30	PBW908	N133	72.7	3	1	70.4	2	1	54.1	24	0	60.4	2	1	50.7	20	0
31	HD3445	N134	71.3	5	1	54.6	28	0	57.3	17	0	36.1	34	0	41.1	34	0
32	BRW3944	N135	68.3	10	0	66.2	10	0	56.0	20	0	44.8	21	0	42.2	31	0
33	RAJ4578	N136	56.9	30	0	70.0	3	1	64.9	4	1	46.5	13	0	42.4	30	0
34	HD3086(C)	N112	56.0	31	0	60.7	17	0	67.4	2	1	46.5	13	0	41.3	33	0
35	DBW187(C)	N128	64.9	14	0	57.6	21	0	55.4	22	0	46.5	13	0	54.0	10	0
36	DBW222(C)	N129	67.9	11	0	64.1	14	0	57.7	15	0	51.7	7	0	62.8	1	1
G.M.			62.8			59.5			56.2			45.3			49.9		
S.E.(M)			1.865			2.257			3.153			2.103			1.253		
C.D. (10%)			4.5			5.5			7.6			5.0			3.0		
C.V			4.2			5.4			7.9			6.6			3.5		
D.O.S.(dd.mm.yy)			14.11.22			05.11.22			11.11.22			13.11.22			12.11.22		

2201-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ								
			U.P.			Jharkhand			W.Bengal		
			Varanasi			Ranchi			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HD3447	N101	58.3	1	1	61.8	14	1	44.0	14	1
2	UBW18	N102	50.4	17	0	50.7	33	0	29.8	35	0
3	UP3121	N103	48.1	31	0	67.4	3	1	46.9	6	1
4	RAJ4577	N104	52.1	12	0	63.9	8	1	45.8	9	1
5	WH1316	N105	54.3	2	0	55.6	27	0	51.7	1	1
6	PBW912	N106	49.3	27	0	61.1	17	1	46.5	7	1
7	JAUW711	N107	53.2	4	0	54.2	29	0	39.5	24	0
8	PBW910	N108	53.1	5	0	62.5	9	1	26.8	36	0
9	DBW408	N109	52.3	9	0	54.2	29	0	43.7	16	1
10	RAJ4576	N110	45.1	35	0	58.3	22	0	49.2	5	1
11	HD3472	N111	48.4	30	0	59.0	21	0	50.7	3	1
12	WH1315	N113	49.6	25	0	60.4	18	0	32.3	32	0
13	NWS2442	N114	51.2	16	0	59.7	20	0	37.6	26	0
14	DBW411	N115	48.8	29	0	62.5	9	1	37.2	28	0
15	BCW28	N116	47.0	33	0	68.1	1	1	45.8	9	1
16	PBW911	N117	50.1	21	0	62.5	9	1	35.4	30	0
17	SVPWL21-15	N118	52.2	10	0	56.9	26	0	44.2	13	1
18	HD3444	N119	49.0	28	0	53.5	32	0	35.1	31	0
19	NW8072	N120	44.8	36	0	54.2	29	0	39.2	25	0
20	K2201	N121	50.0	22	0	64.6	6	1	30.1	33	0
21	HUW854	N122	52.6	7	0	57.6	23	0	41.9	21	0
22	DBW410	N123	51.9	13	0	66.7	4	1	42.0	20	0
23	UP3123	N124	50.2	19	0	68.1	2	1	36.5	29	0
24	UP3122	N125	49.4	26	0	61.8	14	1	46.3	8	1
25	DBW409	N126	45.2	34	0	65.3	5	1	44.6	12	1
26	HD3446	N127	53.0	6	0	55.6	27	0	45.5	11	1
27	DBW412	N130	52.4	8	0	62.5	9	1	43.3	17	1
28	PBW909	N131	50.2	20	0	61.8	14	1	37.6	26	0
29	KRL2106	N132	50.0	24	0	64.6	6	1	39.7	23	0
30	PBW908	N133	51.8	14	0	60.4	18	0	49.5	4	1
31	HD3445	N134	50.0	23	0	50.7	33	0	29.9	34	0
32	BRW3944	N135	51.5	15	0	57.6	23	0	43.1	18	1
33	RAJ4578	N136	47.3	32	0	40.3	36	0	40.1	22	0
34	HD3086(C)	N112	53.8	3	0	49.3	35	0	44.0	14	1
35	DBW187(C)	N128	52.1	11	0	62.5	9	1	42.7	19	1
36	DBW222(C)	N129	50.3	18	0	57.6	23	0	51.1	2	1
G.M.			50.5			59.3			41.4		
S.E.(M)			1.622			3.191			3.929		
C.D. (10%)			3.9			7.6			9.4		
C.V.			4.5			7.6			13.4		
D.O.S. (dd.mm.yy)			13.11.22			10.11.22			08.11.22		

2201-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HD3447	N101	59.6	26	0	52.4	6	1	56.9	17	0
2	UBW18	N102	60.3	24	0	44.9	34	0	54.4	32	0
3	UP3121	N103	69.7	1	1	48.9	21	0	61.7	1	1
4	RAJ4577	N104	48.3	36	0	51.3	10	0	49.5	36	0
5	WH1316	N105	62.5	15	0	50.5	13	0	57.9	9	0
6	PBW912	N106	59.0	28	0	49.5	15	0	55.4	26	0
7	JAUW711	N107	54.0	34	0	47.8	28	0	51.6	34	0
8	PBW910	N108	62.4	16	0	51.0	11	0	58.0	7	0
9	DBW408	N109	58.3	32	0	49.2	18	0	54.8	28	0
10	RAJ4576	N110	58.7	31	0	48.0	25	0	54.6	29	0
11	HD3472	N111	62.8	11	0	49.2	17	0	57.6	12	0
12	WH1315	N113	62.7	12	0	48.6	22	0	57.3	14	0
13	NWS2442	N114	64.7	5	0	51.4	9	0	59.6	4	0
14	DBW411	N115	60.5	21	0	47.9	26	0	55.7	25	0
15	BCW28	N116	57.9	33	0	52.6	5	1	55.8	24	0
16	PBW911	N117	64.9	4	0	49.2	19	0	58.9	5	0
17	SVPWL21-15	N118	60.0	25	0	49.9	14	0	56.1	21	0
18	HD3444	N119	62.5	14	0	46.6	32	0	56.4	20	0
19	NW8072	N120	59.1	27	0	46.9	31	0	54.4	31	0
20	K2201	N121	64.6	6	0	49.2	20	0	58.6	6	0
21	HUW854	N122	62.9	10	0	46.6	33	0	56.6	18	0
22	DBW410	N123	62.2	17	0	50.7	12	0	57.8	10	0
23	UP3123	N124	58.8	29	0	52.8	4	1	56.5	19	0
24	UP3122	N125	62.5	13	0	49.4	16	0	57.5	13	0
25	DBW409	N126	63.0	9	0	48.1	24	0	57.3	15	0
26	HD3446	N127	60.8	20	0	48.2	23	0	56.0	23	0
27	DBW412	N130	58.8	30	0	47.7	29	0	54.5	30	0
28	PBW909	N131	60.5	22	0	51.8	7	0	57.2	16	0
29	KRL2106	N132	50.0	35	0	53.1	3	1	51.2	35	0
30	PBW908	N133	65.8	2	0	54.6	2	1	61.5	2	1
31	HD3445	N134	61.4	19	0	41.6	36	0	53.8	33	0
32	BRW3944	N135	64.2	7	0	47.8	27	0	57.9	8	0
33	RAJ4578	N136	63.9	8	0	43.3	35	0	56.0	22	0
34	HD3086(C)	N112	60.4	23	0	47.0	30	0	55.3	27	0
35	DBW187(C)	N128	61.5	18	0	51.6	8	0	57.7	11	0
36	DBW222(C)	N129	65.4	3	0	54.7	1	1	61.3	3	1
G.M.			61.0			49.3			56.5		
S.E.(M)			1.049			1.170			0.787		
C.D. (10%)			2.4			2.7			1.8		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1A-IR-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								
			Yl	ACl	Br	ACl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	HD3447	N101	10S	2.2	10S	2.4	93-116	103	134-158	147	100-114	106	40	30-48	38
2	UBW18	N102	10S	2.2	20S	14.0	88-111	98	127-158	144	97-115	105	5	36-51	43
3	UP3121	N103	20S	10.0	10S	2.0	94-110	101	134-155	147	91-111	100	5	34-50	41
4	RAJ4577	N104	10S	2.0	tS	0.2	85-103	94	131-156	142	88-101	96	10	33-41	37
5	WH1316	N105	10S	2.2	00	0.0	88-106	96	127-155	143	94-106	99	0	32-49	40
6	PBW912	N106	0	0.0	5MS	0.8	96-117	104	136-158	148	103-112	107	20	30-41	34
7	JAUW711	N107	60S	12.0	20S	8.0	91-114	101	132-158	145	99-116	105	35	28-45	38
8	PBW910	N108	60MR	4.8	20S	6.2	93-107	98	134-156	145	90-108	98	5	30-50	43
9	DBW408	N109	20S	4.8	20S	7.2	86-114	94	126-156	142	98-110	105	15	32-49	42
10	RAJ4576	N110	10S	2.0	10S	5.2	90-111	98	130-155	144	97-116	104	25	33-47	41
11	HD3472	N111	5S	1.0	20S	8.6	92-115	102	134-158	146	99-112	103	10	33-53	43
12	WH1315	N113	0	0.0	10S	2.0	91-108	99	130-156	144	89-110	99	15	32-51	43
13	NWS2442	N114	5MS	1.0	10S	3.6	93-113	101	134-154	146	90-105	98	10	31-51	42
14	DBW411	N115	10MS	1.6	30S	8.2	92-113	101	134-155	145	95-110	101	5	29-49	40
15	BCW28	N116	5S	2.0	20S	8.2	90-195	112	132-156	143	89-113	101	20	29-44	39
16	PBW911	N117	10S	3.2	00	0.0	97-112	102	134-156	145	85-110	96	20	31-44	39
17	SVPWL21-15	N118	5MR	0.4	5S	2.0	96-113	102	136-155	146	100-115	108	55	30-43	37
18	HD3444	N119	40S	8.0	10S	6.0	90-109	95	132-155	143	95-110	101	30	29-48	41
19	NW8072	N120	5S	1.0	10S	3.0	89-106	96	127-155	143	92-111	101	5	30-45	39
20	K2201	N121	20S	5.2	30S	13.0	92-114	101	132-158	145	95-121	107	10	35-49	42
21	HUW854	N122	20S	7.8	10S	2.2	89-110	98	132-156	144	90-104	96	0	31-47	39
22	DBW410	N123	20S	4.2	20S	6.2	94-112	102	137-156	147	91-112	100	5	32-49	42
23	UP3123	N124	5S	1.0	20S	9.0	100-118	108	140-155	148	92-112	102	15	29-44	35
24	UP3122	N125	10S	2.0	10S	4.0	89-109	98	128-154	144	95-108	100	20	34-53	43
25	DBW409	N126	tS	0.2	10S	4.0	89-110	97	127-155	142	89-116	104	15	31-51	43
26	HD3446	N127	5MR	0.4	10S	4.0	93-114	103	133-155	145	89-118	103	25	29-46	41
27	DBW412	N130	5MR	0.4	20S	5.2	91-104	97	131-156	144	92-109	99	5	29-48	42
28	PBW909	N131	5S	3.0	5S	2.2	97-116	106	105-158	142	99-109	104	20	36-50	44
29	KRL2106	N132	10S	4.0	10S	2.2	100-114	108	140-155	148	95-120	108	35	29-43	36
30	PBW908	N133	5MR	0.4	10S	2.2	89-109	96	126-155	143	88-109	100	5	30-43	38
31	HD3445	N134	10S	2.0	10S	2.6	88-111	98	129-158	144	96-106	101	5	30-44	38
32	BRW3944	N135	10S	2.0	40S	10.6	91-110	99	132-157	146	97-113	103	0	35-49	43
33	RAJ4578	N136	10S	3.6	10S	3.0	84-102	93	130-154	143	90-108	99	15	29-40	36
34	HD3086(C)	N112	20S	4.0	60S	25.2	86-101	94	130-155	142	96-105	100	10	31-41	37
35	DBW187(C)	N128	10MS	2.6	10S	5.2	87-106	97	126-156	144	98-113	106	10	30-48	43
36	DBW222(C)	N129	20S	5.2	00	0.0	91-112	98	130-155	143	98-111	104	10	31-49	40

1. Ancillary data from Modipuram, Delhi, Durgapura, Gurdaspur, Hisar, Karnal, Ludhiana and Pantnagar centres.
2. Yellow rust data from Delhi, Gurdaspur, Hisar, Ludhiana and Pantnagar centres.
3. Brown rust data from Gurdaspur, Hisar, Karnal, Ludhiana and Pantnagar centres.
4. Lodging data from Delhi, Durgapura, Karnal, Ludhiana and Pantnagar centres.

NIVT-1A-IR-TS-TAS, 2022-23
North Western Plains Zone

Individual Station Rust Data

SN	Variety	Code	Yellow Rust					Brown Rust				
			Ludhiana	Delhi	Gurdaspur	Hisar	Pantnagar	Karnal	Pantnagar	Hisar	Ludhiana	Gurdaspur
1	HD3447	N101	tS	0	10S	0	0	10R	0	0	10S	0
2	UBW18	N102	0	0	10S	0	tS	20S	20S	5S	20S	5S
3	UP3121	N103	10S	10S	20S	10S	0	10S	0	0	0	0
4	RAJ4577	N104	0	0	10S	0	0	0	0	tS	0	0
5	WH1316	N105	0	0	10S	tS	0	0	0	0	0	0
6	PBW912	N106	0	0	0	0	0	5MS	0	0	0	0
7	JAUW711	N107	0	0	60S	0	0	20S	10S	0	10S	0
8	PBW910	N108	0	0	60MR	0	0	20S	0	tS	10S	0
9	DBW408	N109	5MS	0	20S	0	0	10S	5S	tS	20S	0
10	RAJ4576	N110	0	0	10S	0	0	5S	5S	tS	10S	5S
11	HD3472	N111	0	0	5S	0	0	20S	10MS	0	10S	5S
12	WH1315	N113	0	0	0	0	0	10S	0	0	0	0
13	NWS2442	N114	5MS	0	0	0	tS	10MS	10s	0	0	0
14	DBW411	N115	0	0	10MS	0	0	30S	0	tS	10S	0
15	BCW28	N116	0	0	5S	5S	0	20S	tMS	0	20S	0
16	PBW911	N117	5S	0	10S	tS	0	0	0	0	0	0
17	SVPWL21-15	N118	0	0	5MR	0	0	5MS	0	tS	5S	0
18	HD3444	N119	0	0	40S	0	0	10S	5S	5S	10S	0
19	NW8072	N120	0	0	5S	0	0	5S	10S	0	0	0
20	K2201	N121	5S	0	20S	tS	0	20S	30S	0	5S	10S
21	HUW854	N122	10S	10MS	20S	tS	0	10S	tMS	0	0	0
22	DBW410	N123	0	0	20S	tS	0	20S	tMS	0	10S	0
23	UP3123	N124	0	0	5S	0	0	20S	5S	0	20S	0
24	UP3122	N125	0	0	10S	0	0	10S	10S	0	0	0
25	DBW409	N126	0	0	0	tS	0	10S	10S	0	0	0
26	HD3446	N127	0	0	5MR	0	0	10S	5S	0	5S	0
27	DBW412	N130	0	0	5MR	0	0	5S	tS	0	20S	0
28	PBW909	N131	5S	0	5S	5S	0	5S	tMS	0	5S	0
29	KRL2106	N132	10S	0	0	10S	0	tS	0	10S	0	0
30	PBW908	N133	0	0	5MR	0	0	0	0	tS	10S	0
31	HD3445	N134	0	0	10S	0	0	5MR	0	tS	10S	0
32	BRW3944	N135	0	0	10S	0	0	40S	10MS	0	5S	0
33	RAJ4578	N136	0	0	10MS	10S	0	5S	0	0	10S	0
34	HD3086(C)	N112	0	0	20S	0	0	40S	tS	5S	60S	20S
35	DBW187(C)	N128	5S	0	10MS	0	0	10S	0	tS	5S	0
36	DBW222(C)	N129	0	0	5S	20S	tS	0	0	0	0	0

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1A-IR-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							
			Br	LB (HS, Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	HD3447	N101	0	56(35)	78-94	87	129-133	130	84-112	95	38-50	43
2	UBW18	N102	0	34(23)	69-93	82	124-131	127	82-111	94	33-50	42
3	UP3121	N103	0	35(13)	71-90	84	123-138	128	88-100	94	38-50	44
4	RAJ4577	N104	0	36(24)	70-90	82	121-131	126	79-101	91	37-53	43
5	WH1316	N105	0	67(45)	68-90	82	122-132	126	81-96	90	36-56	42
6	PBW912	N106	0	45(23)	74-92	84	120-135	127	82-105	93	33-52	43
7	JAUW711	N107	0	67(46)	75-91	84	121-131	127	92-101	95	34-52	42
8	PBW910	N108	5S	67(45)	67-91	83	123-135	127	82-96	90	34-52	42
9	DBW408	N109	5S	67(45)	70-91	81	122-133	126	79-105	93	37-52	44
10	RAJ4576	N110	0	56(34)	65-85	80	121-127	124	78-103	91	35-48	42
11	HD3472	N111	0	34(23)	81-91	88	122-138	131	86-102	96	34-49	41
12	WH1315	N113	0	45(34)	73-98	87	122-139	130	83-103	95	34-46	41
13	NWS2442	N114	0	57(45)	73-88	83	123-134	128	85-104	96	36-48	43
14	DBW411	N115	0	46(24)	79-89	85	124-136	128	76-106	89	32-48	40
15	BCW28	N116	0	35(23)	77-104	86	122-137	130	86-105	99	25-48	40
16	PBW911	N117	0	67(35)	70-89	82	121-130	126	84-94	90	31-51	42
17	SVPWL21-15	N118	0	56(34)	70-97	87	124-139	129	88-110	93	31-57	43
18	HD3444	N119	0	34(12)	79-90	85	123-137	128	82-103	95	34-56	44
19	NW8072	N120	0	46(34)	65-91	81	123-129	126	88-102	95	29-48	40
20	K2201	N121	0	48(36)	68-90	84	123-135	128	86-105	93	34-51	42
21	HUW854	N122	0	34(34)	71-90	82	124-132	127	84-102	91	36-47	42
22	DBW410	N123	0	34(23)	72-91	85	126-131	129	87-104	95	37-44	41
23	UP3123	N124	0	46(34)	67-93	84	122-134	128	83-105	95	30-52	43
24	UP3122	N125	0	56(34)	70-98	85	124-138	128	83-97	91	34-48	42
25	DBW409	N126	0	78(56)	69-87	81	123-128	125	85-100	95	34-42	40
26	HD3446	N127	0	35(34)	73-91	84	124-133	128	82-100	92	36-47	42
27	DBW412	N130	0	56(35)	70-92	84	122-135	127	76-101	93	28-48	42
28	PBW909	N131	5S	45(23)	70-93	84	124-133	129	83-105	90	32-47	41
29	KRL2106	N132	0	67(45)	73-96	85	123-135	129	83-101	93	34-55	43
30	PBW908	N133	0	56(34)	75-90	84	121-138	128	85-99	92	37-50	43
31	HD3445	N134	0	56(34)	68-97	84	122-136	128	80-102	92	36-48	41
32	BRW3944	N135	0	56(34)	65-90	83	121-133	127	83-101	92	36-51	43
33	RAJ4578	N136	0	35(23)	72-91	82	121-133	127	87-103	92	36-52	43
34	HD3086 (C)	N112	40S	46(24)	70-92	83	124-133	128	87-100	93	38-49	44
35	DBW187 (C)	N128	0	67(35)	78-92	84	123-132	127	87-101	95	38-47	43
36	DBW222 (C)	N129	0	46(23)	68-90	82	121-134	126	90-104	96	36-46	41

1. Ancillary data from Ayodhya, Coochbehar, Kanpur, Ranchi and Varanasi centers.
2. Leaf blight data from Ayodhya, Sabour and Coochbehar centers.
3. Brown rust data from Kanpur center.

NIVT-1A-IR-TS-TAS, 2022-23
North Eastern Plains Zone

Individual Station Disease Data

SN	Variety	Code	Leaf Blight		
			Ayodhya	Sabour	Coochbehar
1	HD3447	N101	12	46	56
2	UBW18	N102	12	34	34
3	UP3121	N103	01	35	12
4	RAJ4577	N104	23	36	23
5	WH1316	N105	12	46	67
6	PBW912	N106	01	34	45
7	JAUW711	N107	24	46	67
8	PBW910	N108	23	35	67
9	DBW408	N109	12	45	67
10	RAJ4576	N110	12	35	56
11	HD3472	N111	12	34	13
12	WH1315	N113	23	34	45
13	NWS2442	N114	24	57	45
14	DBW411	N115	12	46	13
15	BCW28	N116	01	35	23
16	PBW911	N117	01	47	67
17	SVPWL21-15	N118	12	56	45
18	HD3444	N119	12	34	0
19	NW8072	N120	01	46	45
20	K2201	N121	23	36	48
21	HUW854	N122	24	34	34
22	DBW410	N123	01	34	34
23	UP3123	N124	12	46	35
24	UP3122	N125	01	34	56
25	DBW409	N126	34	45	78
26	HD3446	N127	34	35	23
27	DBW412	N130	12	46	56
28	PBW909	N131	01	45	34
29	KRL2106	N132	12	46	67
30	PBW908	N133	12	56	23
31	HD3445	N134	23	34	56
32	BRW3944	N135	23	56	34
33	RAJ4578	N136	12	35	23
34	HD3086 (C)	N112	01	46	34
35	DBW187 (C)	N128	01	46	67
36	DBW222 (C)	N129	12	46	0

2202-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ											
			Delhi			Punjab					Haryana			
			Delhi			Ludhiana			Gurdaspur		Hisar		Karnal	
			Yield	RK	G	Yield	RK	G	Yield	RK G	Yield	RK G	Yield	RK G
1	K2204	N201	67.3	13	1	49.9	35	0	52.9	30 0	67.1	11 0	62.0	31 0
2	BCW29	N202	61.7	30	0	55.7	27	0	57.3	24 0	65.8	13 0	75.9	10 1
3	PBW916	N203	60.6	33	0	54.8	30	0	60.7	14 1	72.0	7 0	79.1	3 1
4	JKW305	N204	64.9	22	0	67.1	13	0	59.1	19 0	60.6	24 0	72.3	14 0
5	HD3467	N205	58.1	35	0	62.8	19	0	50.0	35 0	78.1	2 1	61.9	32 0
6	DBW414	N206	69.0	9	1	58.7	24	0	57.5	23 0	65.3	14 0	78.2	4 1
7	NW8073	N207	66.6	16	1	60.9	20	0	61.6	9 1	69.6	10 0	63.8	28 0
8	BRW3946	N208	66.7	15	1	66.5	14	0	54.2	29 0	56.7	32 0	69.5	20 0
9	PBW915	N209	61.9	29	0	57.2	26	0	61.0	11 1	58.9	28 0	62.1	30 0
10	SVPWL21-07	N210	66.5	17	1	52.2	34	0	55.3	25 0	64.0	18 0	62.9	29 0
11	WH1318	N211	62.5	26	0	58.4	25	0	54.3	28 0	53.0	33 0	66.2	26 0
12	PBW914	N212	71.2	5	1	74.9	2	1	61.8	7 1	64.0	17 0	76.6	9 1
13	UBW19	N213	62.5	27	0	59.5	23	0	54.7	27 0	59.8	26 0	56.5	36 0
14	HD3448	N214	65.6	19	1	69.9	8	1	67.2	1 1	62.8	21 0	69.5	21 0
15	PBW917	N215	65.4	21	0	74.8	3	1	63.0	5 1	52.3	34 0	76.8	7 1
16	BRW3942	N216	62.4	28	0	60.7	21	0	60.2	16 1	48.6	36 0	76.7	8 1
17	DBW415	N217	61.6	31	0	62.8	18	0	52.3	31 0	57.9	30 0	61.0	34 0
18	HUW855	N218	62.5	25	0	54.9	29	0	61.8	8 1	63.3	20 0	76.9	6 1
19	DBW417	N219	72.1	4	1	72.8	4	1	61.0	12 1	74.5	5 1	69.6	19 0
20	NWS2216	N220	58.3	34	0	70.5	6	1	51.0	33 0	70.2	9 0	66.6	25 0
21	PBW913	N221	61.3	32	0	75.2	1	1	60.8	13 1	70.6	8 0	73.9	13 1
22	HD3449	N222	75.3	2	1	54.6	31	0	59.7	17 1	63.5	19 0	67.4	23 0
23	HP1979	N224	68.7	10	1	68.6	10	1	64.2	3 1	78.6	1 1	61.1	33 0
24	NW8075	N225	64.8	23	0	52.3	33	0	55.2	26 0	51.8	35 0	59.2	35 0
25	UP3132	N226	69.1	8	1	68.1	11	1	58.9	21 0	77.0	3 1	64.9	27 0
26	HP1978	N227	76.1	1	1	55.5	28	0	51.8	32 0	66.7	12 0	70.2	18 0
27	K2203	N228	65.7	18	1	48.9	36	0	61.2	10 1	59.2	27 0	71.8	15 0
28	UP3125	N229	67.3	12	1	70.4	7	1	61.9	6 1	60.2	25 0	71.0	17 0
29	DBW413	N230	67.0	14	1	67.6	12	0	58.8	22 0	56.9	31 0	71.5	16 0
30	WH1317	N231	70.1	7	1	54.2	32	0	67.1	2 1	58.3	29 0	74.0	12 1
31	UP3124	N232	75.1	3	1	70.9	5	1	47.1	36 0	73.3	6 0	81.2	1 1
32	DBW416	N233	65.5	20	0	60.3	22	0	50.1	34 0	64.0	15 0	74.4	11 1
33	RAJ4579	N234	70.8	6	1	63.4	17	0	60.3	15 1	64.0	16 0	80.1	2 1
34	DBW187(C)	N223	52.7	36	0	69.7	9	1	63.9	4 1	62.4	22 0	68.0	22 0
35	DBW222(C)	N235	64.0	24	0	63.8	16	0	59.2	18 0	75.5	4 1	77.1	5 1
36	HD3086(C)	N236	67.8	11	1	65.1	15	0	59.0	20 0	62.4	23 0	67.3	24 0
G.M.			65.8			62.6			58.2		64.1		69.9	
S.E.(M)			4.436			2.991			3.277		1.911		3.070	
C.D. (10%)			10.6			7.1			7.8		4.6		7.4	
C.V.			9.5			6.8			8.0		4.2		6.2	
D.O.S. (dd.mm.yy)			04.11.22			01.11.22			11.11.22		06.11.22		03.11.22	

No. of Trials : Proposed = 15 Conducted = 15

Trials not reported (02) = NWPZ: Sriganganagar (RMT)
NEPZ: Sabour (RMT)

2202-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ						NEPZ								
			Rajasthan			U.P.			U.P.								
			Durgapura			Bulandshahr			Kanpur			Ayodhya			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K2204	N201	57.6	16	0	66.2	9	0	43.2	34	0	49.3	18	0	49.9	15	0
2	BCW29	N202	50.0	29	0	67.8	7	0	60.2	2	1	55.0	7	0	52.0	5	1
3	PBW916	N203	63.9	7	1	70.0	2	0	54.2	22	0	48.1	20	0	50.3	11	1
4	JKW305	N204	61.8	11	0	59.7	16	0	60.2	2	1	46.0	25	0	47.5	28	0
5	HD3467	N205	55.6	21	0	63.4	13	0	57.8	14	1	53.3	9	0	49.6	17	0
6	DBW414	N206	48.6	32	0	55.0	20	0	59.0	8	1	45.1	26	0	43.9	36	0
7	NW8073	N207	50.0	29	0	49.9	28	0	33.3	36	0	46.4	24	0	47.4	29	0
8	BRW3946	N208	52.4	26	0	62.0	15	0	57.5	19	1	55.4	6	0	44.7	35	0
9	PBW915	N209	49.7	31	0	65.0	12	0	59.0	8	1	47.7	22	0	51.3	7	1
10	SVPWL21-07	N210	51.4	28	0	56.6	18	0	47.2	29	0	42.9	30	0	47.2	31	0
11	WH1318	N211	52.1	27	0	53.3	22	0	50.7	26	0	44.6	27	0	44.7	34	0
12	PBW914	N212	61.8	11	0	52.2	25	0	57.8	14	1	49.7	16	0	50.2	12	0
13	UBW19	N213	54.9	24	0	50.6	26	0	50.3	27	0	50.9	14	0	49.8	16	0
14	HD3448	N214	59.7	13	0	49.7	29	0	38.2	35	0	43.9	29	0	49.1	22	0
15	PBW917	N215	67.0	2	1	53.2	23	0	46.7	30	0	52.4	10	0	48.3	24	0
16	BRW3942	N216	56.9	18	0	42.2	35	0	57.6	17	1	48.1	20	0	48.3	25	0
17	DBW415	N217	43.8	35	0	69.7	4	0	52.8	24	0	57.8	4	0	49.1	21	0
18	HUW855	N218	57.6	16	0	55.4	19	0	59.2	7	1	41.8	31	0	49.6	18	0
19	DBW417	N219	64.6	5	1	55.0	21	0	44.8	32	0	44.4	28	0	53.0	2	1
20	NWS2216	N220	66.7	3	1	66.9	8	0	45.8	31	0	59.9	2	1	50.1	13	0
21	PBW913	N221	59.7	13	0	53.0	24	0	59.7	4	1	61.3	1	1	49.4	19	0
22	HD3449	N222	45.8	33	0	69.8	3	0	59.7	4	1	47.6	23	0	47.5	5	0
23	HP1979	N224	54.9	22	0	36.9	36	0	43.6	33	0	41.8	31	0	50.8	9	1
24	NW8075	N225	42.7	36	0	48.0	31	0	57.8	14	1	49.7	16	0	50.4	10	1
25	UP3132	N226	64.6	5	1	44.3	34	0	59.4	6	1	58.2	3	0	49.1	20	0
26	HP1978	N227	56.6	19	0	73.8	1	1	61.3	1	1	54.8	8	0	54.4	1	1
27	K2203	N228	66.0	4	1	48.0	30	0	57.5	19	1	40.8	33	0	52.3	4	1
28	UP3125	N229	56.3	20	0	66.0	10	0	55.7	21	1	37.3	34	0	47.1	32	0
29	DBW413	N230	45.8	33	0	62.8	14	0	59.0	8	1	36.1	36	0	51.4	6	1
30	WH1317	N231	54.9	22	0	65.7	11	0	52.1	25	0	55.6	5	0	48.5	23	0
31	UP3124	N232	63.9	7	1	47.6	32	0	58.0	13	1	49.0	19	0	47.2	30	0
32	DBW416	N233	63.9	7	1	69.6	6	0	47.7	28	0	52.3	12	0	50.1	14	0
33	RAJ4579	N234	59.7	13	0	45.6	33	0	53.3	23	0	50.0	15	0	51.3	8	1
34	DBW187(C)	N223	52.8	25	0	50.1	27	0	59.0	8	1	51.7	13	0	45.0	33	0
35	DBW222(C)	N235	70.1	1	1	69.6	5	0	59.0	8	1	37.0	35	0	48.0	26	0
36	HD3086(C)	N236	62.5	10	1	59.1	17	0	57.6	17	1	52.4	10	0	52.7	3	1
G.M.			56.8			57.6			53.8			48.8			49.2		
S.E.(M)			3.315			0.661			2.468			1.074			1.716		
C.D. (10%)			7.9			1.6			5.9			2.6			4.1		
C.V.			8.2			1.6			6.5			3.1			4.9		
D.O.S.(dd.mm.yy)			11.11.22			14.11.22			13.11.22			12.11.22			13.11.22		

2202-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ								
			U.P.			Jharkhand			W.Bengal		
			Prayagraj			Ranchi			Kalyani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K2204	N201	48.2	14	1	52.1	12	1	43.8	8	1
2	BCW29	N202	41.6	23	0	46.5	29	0	50.0	1	1
3	PBW916	N203	33.0	35	0	45.8	31	0	37.5	25	0
4	JKW305	N204	27.2	36	0	56.3	2	1	36.8	30	0
5	HD3467	N205	49.1	12	1	55.6	5	1	43.1	11	1
6	DBW414	N206	48.0	15	1	52.1	12	1	46.5	4	1
7	NW8073	N207	35.7	32	0	56.3	2	1	41.7	16	0
8	BRW3946	N208	42.5	22	0	51.4	16	0	40.3	19	0
9	PBW915	N209	47.3	17	1	48.6	22	0	43.1	11	1
10	SVPWL21-07	N210	45.7	20	0	53.5	9	1	35.4	33	0
11	WH1318	N211	49.6	9	1	42.4	35	0	34.0	36	0
12	PBW914	N212	34.7	33	0	53.5	10	1	34.0	35	0
13	UBW19	N213	37.8	30	0	48.6	23	0	40.3	19	0
14	HD3448	N214	49.4	11	1	49.3	20	0	45.8	5	1
15	PBW917	N215	43.2	21	0	45.1	33	0	37.5	25	0
16	BRW3942	N216	40.8	25	0	45.8	31	0	41.0	17	0
17	DBW415	N217	39.1	29	0	54.9	6	1	36.1	32	0
18	HUW855	N218	48.0	16	1	35.4	36	0	37.5	25	0
19	DBW417	N219	54.6	3	1	46.5	29	0	43.1	11	1
20	NWS2216	N220	52.5	4	1	54.2	7	1	45.8	5	1
21	PBW913	N221	49.5	10	1	47.9	26	0	37.5	25	0
22	HD3449	N222	50.6	7	1	47.9	26	0	37.5	25	0
23	HP1979	N224	59.0	1	1	45.1	33	0	41.0	17	0
24	NW8075	N225	49.1	13	1	51.4	16	0	39.6	22	0
25	UP3132	N226	37.0	31	0	49.3	20	0	36.8	30	0
26	HP1978	N227	41.4	24	0	56.3	2	1	42.4	14	0
27	K2203	N228	40.2	27	0	52.8	11	1	38.9	23	0
28	UP3125	N229	55.9	2	1	54.2	8	1	38.2	24	0
29	DBW413	N230	39.6	28	0	48.6	23	0	43.8	8	1
30	WH1317	N231	49.8	8	1	50.0	19	0	43.8	8	1
31	UP3124	N232	50.7	6	1	52.1	12	1	45.1	7	1
32	DBW416	N233	47.1	18	1	52.1	12	1	40.3	19	0
33	RAJ4579	N234	33.5	34	0	58.3	1	1	42.4	14	0
34	DBW187(C)	N223	40.5	26	0	48.6	23	0	47.2	2	1
35	DBW222(C)	N235	46.9	19	1	47.9	26	0	34.7	34	0
36	HD3086(C)	N236	51.2	5	1	51.4	16	0	47.2	2	1
G.M.			44.7			50.2			40.8		
S.E.(M)			5.373			2.863			3.061		
C.D. (10%)			13.0			6.8			7.3		
C.V.			17.0			8.1			10.6		
D.O.S.(dd.mm.yy)			15.11.22			10.11.22			15.11.22		

2202-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ			NEPZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K2204	N201	60.4	26	0	47.7	21	0	54.6	26	0
2	BCW29	N202	62.0	19	0	50.9	5	1	56.9	11	1
3	PBW916	N203	65.9	4	1	44.8	34	0	56.1	16	0
4	JKW305	N204	63.6	13	0	45.7	29	0	55.3	22	0
5	HD3467	N205	61.4	24	0	51.4	3	1	56.8	12	1
6	DBW414	N206	61.8	22	0	49.1	11	0	55.9	17	0
7	NW8073	N207	60.3	27	0	43.4	36	0	52.5	32	0
8	BRW3946	N208	61.2	25	0	48.6	13	0	55.4	21	0
9	PBW915	N209	59.4	30	0	49.5	10	1	54.8	24	0
10	SVPWL21-07	N210	58.4	32	0	45.3	32	0	52.4	33	0
11	WH1318	N211	57.1	34	0	44.3	35	0	51.2	36	0
12	PBW914	N212	66.1	3	1	46.6	25	0	57.1	9	1
13	UBW19	N213	56.9	35	0	46.3	27	0	52.0	34	0
14	HD3448	N214	63.5	14	0	46.0	28	0	55.4	20	0
15	PBW917	N215	64.6	8	0	45.5	31	0	55.8	19	0
16	BRW3942	N216	58.2	33	0	46.9	23	0	53.0	31	0
17	DBW415	N217	58.4	31	0	48.3	15	0	53.8	30	0
18	HUW855	N218	61.8	21	0	45.3	33	0	54.2	28	0
19	DBW417	N219	67.1	2	1	47.7	20	0	58.2	5	1
20	NWS2216	N220	64.3	10	0	51.4	4	1	58.4	4	1
21	PBW913	N221	64.9	6	0	50.9	6	1	58.5	3	1
22	HD3449	N222	62.3	18	0	48.5	14	0	55.9	18	0
23	HP1979	N224	61.8	20	0	46.9	24	0	54.9	23	0
24	NW8075	N225	53.4	36	0	49.7	9	1	51.7	35	0
25	UP3132	N226	63.9	12	0	48.3	16	0	56.7	14	1
26	HP1978	N227	64.4	9	0	51.7	2	1	58.6	1	1
27	K2203	N228	60.1	28	0	47.1	22	0	54.1	29	0
28	UP3125	N229	64.7	7	0	48.1	19	0	57.0	10	1
29	DBW413	N230	61.5	23	0	46.4	26	0	54.5	27	0
30	WH1317	N231	63.5	15	0	49.9	8	1	57.2	8	1
31	UP3124	N232	65.6	5	0	50.3	7	1	58.5	2	1
32	DBW416	N233	64.0	11	0	48.3	17	0	56.7	13	1
33	RAJ4579	N234	63.4	16	0	48.1	18	0	56.4	15	0
34	DBW187(C)	N223	59.9	29	0	48.7	12	0	54.7	25	0
35	DBW222(C)	N235	68.5	1	1	45.6	30	0	57.9	7	1
36	HD3086(C)	N236	63.3	17	0	52.1	1	1	58.1	6	1
G.M.			62.2			47.9			55.6		
S.E.(M)			1.142			1.254			0.844		
C.D. (10%)			2.7			2.9			2.0		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								
			Yl	ACl	Br	ACl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	K2204	N201	20S	8.8	0	0	83-105	96	134-156	141	94-108	101	10	30-49	39
2	BCW29	N202	10S	3.0	20S	6.3	90-111	101	134-157	143	98-114	106	20	29-44	38
3	PBW916	N203	5MR	0.4	20S	6.3	90-112	101	135-155	144	94-115	106	10	36-49	44
4	JKW305	N204	20S	9.0	40S	12.5	86-100	95	133-154	141	95-112	102	10	30-47	39
5	HD3467	N205	5S	1.0	20S	8.8	94-116	103	137-158	145	86-112	100	20	29-41	37
6	DBW414	N206	10S	3.0	20S	5.0	85-106	97	136-155	144	101-122	110	10	30-50	40
7	NW8073	N207	5S	1.04	20S	7.5	93-113	102	137-156	144	90-109	101	0	29-39	35
8	BRW3946	N208	60S	20.0	20S	12.5	89-109	99	137-155	143	95-115	105	10	29-47	39
9	PBW915	N209	5MR	0.4	0	0	95-116	104	137-158	145	98-112	104	10	29-44	37
10	SVPWL21-07	N210	5S	1.4	10S	2.5	86-112	100	134-157	143	90-124	107	0	30-50	42
11	WH1318	N211	5MR	0.4	20S	5.0	85-103	96	134-157	143	95-113	102	0	29-47	41
12	PBW914	N212	10S	4.4	0	0.0	92-109	100	136-155	143	74-102	94	0	30-50	41
13	UBW19	N213	0	00	40S	23.8	84-107	97	134-157	142	83-111	101	20	28-42	35
14	HD3448	N214	10S	2.0	5MS	1.0	81-104	95	132-155	141	90-113	101	10	26-42	36
15	PBW917	N215	10MR	1.0	20S	6.3	89-105	98	135-155	143	90-109	99	10	35-49	41
16	BRW3942	N216	10MR	1.0	30S	10.3	83-101	95	135-156	143	98-122	109	0	33-51	42
17	DBW415	N217	40S	12.0	5S	1.6	89-102	97	136-154	142	88-98	93	25	28-47	37
18	HUW855	N218	20S	7.0	10S	4.8	80-105	95	132-155	141	85-114	104	10	28-46	38
19	DBW417	N219	10S	3.0	10S	3.8	85-109	98	135-158	143	95-117	106	10	31-51	40
20	NWS2216	N220	10S	3.0	5S	1.3	85-105	96	131-155	142	93-116	106	10	31-52	43
21	PBW913	N221	5S	1.0	10S	6.3	87-108	99	136-156	144	96-115	105	10	29-42	37
22	HD3449	N222	10S	2.0	5S	1.3	88-108	99	135-156	143	85-122	105	10	29-47	40
23	HP1979	N224	5MR	0.4	0	0	95-117	104	139-155	146	88-106	98	0	32-42	37
24	NW8075	N225	5S	2.0	20S	6.5	94-113	102	137-157	146	90-111	101	40	29-42	36
25	UP3132	N226	5MR	0.6	10S	2.5	86-111	99	134-155	142	91-114	103	10	35-52	42
26	HP1978	N227	10S	2.0	20S	7.0	91-113	103	135-158	145	99-117	107	0	30-47	38
27	K2203	N228	10S	3.2	0	0	89-109	101	135-158	143	87-109	99	0	28-44	37
28	UP3125	N229	5S	1.0	5S	1.3	85-108	97	133-156	141	90-116	102	0	29-45	38
29	DBW413	N230	10S	2.0	20S	12.5	88-103	97	136-155	143	97-113	105	0	28-49	42
30	WH1317	N231	5S	1.4	10S	3.8	82-98	94	132-156	140	92-108	102	0	29-41	37
31	UP3124	N232	20S	8.0	20S	12.5	88-110	100	133-157	143	98-130	112	20	32-50	42
32	DBW416	N233	40S	8.0	5S	2.8	87-106	98	132-156	143	95-111	106	20	27-45	37
33	RAJ4579	N234	20S	5.0	20S	6.3	88-107	98	131-156	142	97-115	104	10	28-49	40
34	DBW187(C)	N223	10S	2.0	10S	2.8	84-108	97	131-156	141	100-114	107	15	32-48	40
35	DBW222(C)	N235	20S	12.0	10MS	2.0	84-106	98	136-156	143	99-116	106	0	32-45	38
36	HD3086(C)	N236	20S	4.0	60S	45.0	83-103	95	132-155	141	89-110	98	0	30-40	36

1. Ancillary data from Delhi, Ludhiana, Durgapura, Gurdaspur, Hisar, Karnal and Bulandshahr.
2. Yellow rust data from Delhi, Ludhiana, Gurdaspur, Hisar and Karnal.
3. Brown rust data from Karnal, Gurdaspur, Hisar and Ludhiana.
4. Lodging data from Ludhiana, Durgapura, Delhi and Karnal centres.

NIVT-1B-IR-TS-TAS, 2022-23
North Western Plains Zone

Individual Station Rust Data

SN	Variety	Code	Yellow Rust					Brown Rust			
			Ludhiana	Delhi	Karnal	Gurdaspur	Hisar	Karnal	Gurdaspur	Hisar	Ludhiana
1	K2204	N201	5MS	0	0	20S	20S	0	0	0	0
2	BCW29	N202	0	0	0	10S	5S	20S	5S	0	0
3	PBW916	N203	0	0	0	5MR	0	20S	0	0	5S
4	JKW305	N204	5S	0	0	20S	20S	40S	0	5S	5S
5	HD3467	N205	0	0	0	5S	0	20S	5S	0	10S
6	DBW414	N206	5S	0	0	10S	0	20S	0	0	0
7	NW8073	N207	5S	0	0	tR	0	20S	0	0	10S
8	BRW3946	N208	0	10S	0	60S	30S	20S	0	10S	20S
9	PBW915	N209	0	0	0	5MR	0	0	0	0	0
10	SVPWL21-07	N210	5MR	0	0	5S	0	0	10S	0	0
11	WH1318	N211	0	0	0	5MR	0	20S	0	0	0
12	PBW914	N212	5MR	5S	0	10S	5S	0	0	0	0
13	UBW19	N213	0	0	0	0	0	40S	10S	5S	40S
14	HD3448	N214	0	0	0	10S	0	5MS	0	0	0
15	PBW917	N215	0	0	0	10MR	tS	20S	5S	0	0
16	BRW3942	N216	0	0	0	10MR	tS	30S	0	tS	10S
17	DBW415	N217	20S	0	0	40S	0	tR	0	tS	5S
18	HUW855	N218	10S	5S	0	20S	0	10MS	0	tS	10S
19	DBW417	N219	0	0	5S	10S	0	10S	5S	0	0
20	NWS2216	N220	5S	0	0	10S	0	0S	0	0	5S
21	PBW913	N221	0	0	0	5S	0	10S	5S	0	10S
22	HD3449	N222	0	0	0	10S	0	0	0	5S	0
23	HP1979	N224	0	0	0	5MR	0	0	0	0	0
24	NW8075	N225	5S	0	0	5S	0	20S	0	tS	5S
25	UP3132	N226	0	0	0	5MR	tS	10S	0	0	0
26	HP1978	N227	0	0	0	10S	0	10MS	20S	0	0
27	K2203	N228	5S	0	0	10S	tS	0	0	0	0
28	UP3125	N229	0	0	0	5S	0	0	0	5S	0
29	DBW413	N230	0	0	0	10S	0	20S	10S	10S	10S
30	WH1317	N231	5MR	0	0	5S	0	10S	0	0	5S
31	UP3124	N232	0	0	0	20S	20S	20S	10S	0	20S
32	DBW416	N233	0	0	0	40S	0	5S	0	tS	5S
33	RAJ4579	N234	5S	0	0	20S	0	20S	0	0	5S
34	DBW187 (C)	N223	0	0	0	10S	0	10S	0	tS	0
35	DBW222 (C)	N235	5S	5S	0	20S	30S	10MS	0	0	0
36	HD3086 (C)	N236	0	0	0	20S	0	40S	40S	40S	60S

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							
			Br	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	K2204	N201	0	46 (35)	71-86	80	111-130	123	84-95	89	34-50	42
2	BCW29	N202	0	35 (24)	76-91	85	112-130	125	83-106	95	34-46	40
3	PBW916	N203	0	45 (34)	80-92	88	126-135	130	86-106	93	38-52	45
4	JKW305	N204	5S	58 (46)	74-85	80	112-128	123	86-105	91	32-46	39
5	HD3467	N205	0	34 (24)	78-93	88	124-134	130	78-103	91	27-49	38
6	DBW414	N206	5S	56 (24)	67-90	83	119-132	128	75-112	93	34-57	42
7	NW8073	N207	0	34 (23)	76-89	85	123-135	128	80-105	91	28-51	39
8	BRW3946	N208	0	47 (35)	70-93	86	108-134	127	89-111	97	35-51	41
9	PBW915	N209	0	58 (45)	79-93	89	112-135	129	90-112	97	33-45	39
10	SVPWL21-07	N210	0	47 (35)	67-91	84	115-134	126	93-105	98	33-51	42
11	WH1318	N211	0	46 (34)	71-86	81	112-130	123	87-100	92	35-53	42
12	PBW914	N212	0	47 (35)	71-91	84	113-132	126	82-94	90	33-51	41
13	UBW19	N213	20S	58 (46)	75-87	83	116-129	124	81-100	89	29-44	37
14	HD3448	N214	0	68 (45)	76-85	82	108-131	123	88-99	92	33-46	38
15	PBW917	N215	0	58 (35)	70-88	82	112-130	124	79-100	89	32-52	42
16	BRW3942	N216	0	46 (24)	69-87	82	117-129	124	90-106	98	38-49	44
17	DBW415	N217	0	57 (35)	74-86	82	120-130	126	82-90	84	33-48	42
18	HUW855	N218	0	68 (46)	69-84	77	108-126	121	84-107	92	34-46	39
19	DBW417	N219	0	45 (34)	74-90	85	118-137	128	88-106	93	40-58	45
20	NWS2216	N220	0	57 (35)	73-85	80	109-130	123	86-105	95	40-59	46
21	PBW913	N221	0	58 (46)	69-89	83	116-133	125	83-106	91	29-47	39
22	HD3449	N222	0	35 (25)	72-90	84	119-130	125	86-108	93	37-46	41
23	HP1979	N224	0	46 (24)	81-98	91	125-139	132	86-93	90	28-43	35
24	NW8075	N225	0	46 (35)	78-92	88	120-137	130	82-107	95	32-45	38
25	UP3132	N226	0	47 (35)	76-90	84	106-132	124	85-104	92	38-52	44
26	HP1978	N227	0	35 (24)	78-92	87	114-132	127	89-103	95	35-51	42
27	K2203	N228	0	47 (36)	73-91	84	117-133	126	80-93	85	33-47	40
28	UP3125	N229	0	68 (45)	75-87	82	115-129	124	89-100	93	32-47	39
29	DBW413	N230	5S	46 (35)	74-86	82	105-130	123	81-105	93	36-47	42
30	WH1317	N231	5S	45 (24)	68-86	80	109-128	123	71-99	88	34-48	41
31	UP3124	N232	0	35 (24)	73-90	84	118-131	125	95-116	104	39-54	44
32	DBW416	N233	0	46 (35)	71-89	83	102-129	123	86-104	93	33-49	40
33	RAJ4579	N234	0	46 (35)	74-91	85	112-134	126	89-110	95	28-47	37
34	DBW187(C)	N223	0	68 (35)	73-87	83	105-130	123	85-107	96	38-48	43
35	DBW222(C)	N235	0	34 (24)	69-87	81	118-129	125	83-109	94	36-49	39
36	HD3086(C)	N236	40S	79 (45)	66-85	80	110-131	123	79-103	91	35-45	40

1. Ancillary data from Kanpur, Ayodhya, Varanasi, Kalyani and Ranchi centres.
2. Leaf blight data from Ayodhya, Kalyani and Sabour.
3. Brown rust data from Kanpur centre only

NIVT-1B-IR-TS-TAS, 2022-23
North Eastern Plains Zone

Individual Station Leaf Blight Data

SN	Variety	Code	Leaf Blight		
			Ayodhya	Kalyani	Sabour
1	K2204	N201	12	36	46
2	BCW29	N202	12	24	35
3	PBW916	N203	23	23	45
4	JKW305	N204	23	58	46
5	HD3467	N205	23	24	34
6	DBW414	N206	12	13	56
7	NW8073	N207	12	24	34
8	BRW3946	N208	23	47	46
9	PBW915	N209	12	58	56
10	SVPWL21-07	N210	23	47	46
11	WH1318	N211	12	46	45
12	PBW914	N212	12	47	46
13	UBW19	N213	23	58	46
14	HD3448	N214	12	68	46
15	PBW917	N215	23	58	35
16	BRW3942	N216	12	24	46
17	DBW415	N217	23	57	35
18	HUW855	N218	24	68	45
19	DBW417	N219	23	24	45
20	NWS2216	N220	12	57	36
21	PBW913	N221	12	58	57
22	HD3449	N222	24	25	35
23	HP1979	N224	12	25	46
24	NW8075	N225	12	36	46
25	UP3132	N226	23	25	47
26	HP1978	N227	12	35	35
27	K2203	N228	24	36	47
28	UP3125	N229	22	68	36
29	DBW413	N230	24	36	46
30	WH1317	N231	12	25	45
31	UP3124	N232	12	24	35
32	DBW416	N233	23	25	46
33	RAJ4579	N234	24	36	46
34	DBW187 (C)	N223	12	68	34
35	DBW222 (C)	N235	12	25	34
36	HD3086 (C)	N236	12	79	35

2203-NIVT-2-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ														
			M.P.												Chhattisgarh		
			Indore			Powarkheda			Sagar			Gwalior			Bilaspur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW549	N301	51.3	23	0	52.5	9	0	56.6	23	0	38.2	28	0	44.7	28	0
2	PWU16	N302	56.4	4	1	45.9	21	0	54.5	27	0	51.8	7	0	46.1	22	0
3	MACS6844	N303	52.8	15	1	38.4	32	0	62.0	12	0	52.6	6	0	52.6	6	1
4	GW555	N304	54.6	9	1	46.9	18	0	68.4	3	0	42.8	25	0	59.0	1	1
5	MACS6842	N305	56.2	5	1	41.3	29	0	50.7	31	0	45.6	19	0	46.9	16	0
6	UAS3026	N306	54.8	8	1	50.6	11	0	63.6	11	0	43.7	23	0	56.2	4	1
7	BW18R6016	N307	52.5	17	1	54.4	8	0	61.6	13	0	36.1	31	0	45.2	26	0
8	NIAW4364	N308	53.3	14	1	45.0	23	0	60.0	19	0	48.0	14	0	46.2	21	0
9	PBN16-1766	N309	52.0	20	1	37.5	35	0	60.1	18	0	44.6	22	0	42.3	33	0
10	HD3451	N310	43.5	35	0	69.4	1	1	67.7	4	0	30.4	36	0	46.5	19	0
11	RAJ4582	N311	53.8	13	1	45.9	21	0	53.3	28	0	49.6	11	0	46.7	17	0
12	NIAW4440	N312	50.1	25	0	44.1	25	0	47.6	33	0	45.3	20	0	48.3	13	0
13	GW550	N313	51.4	22	0	39.4	31	0	61.0	16	0	49.3	12	0	42.2	34	0
14	HI1683	N314	60.7	1	1	47.8	16	0	59.2	20	0	50.4	9	0	54.4	5	1
15	MP3570	N315	48.8	31	0	68.4	2	1	52.5	30	0	48.9	13	0	45.1	27	0
16	CG1045	N316	48.2	32	0	50.6	11	0	55.4	26	0	54.3	4	0	57.4	2	1
17	MP3573	N318	42.7	36	0	38.4	32	0	43.8	35	0	34.5	35	0	48.3	12	0
18	LOK80	N319	52.6	16	1	44.1	25	0	64.4	8	0	35.5	33	0	38.6	36	0
19	UAS3025	N320	49.0	30	0	58.1	5	0	47.7	32	0	47.2	17	0	43.8	30	0
20	GW554	N321	54.5	10	1	51.6	10	0	64.3	9	0	58.2	3	0	52.4	7	0
21	HI1684	N323	57.8	3	1	41.3	29	0	79.0	1	1	64.6	1	1	42.2	34	0
22	MP1393	N324	49.3	29	0	50.6	11	0	53.2	29	0	45.3	21	0	48.5	10	0
23	DBW419	N325	52.4	18	1	46.9	18	0	42.4	36	0	50.6	8	0	44.4	29	0
24	HD3450	N326	54.5	11	1	47.8	16	0	61.4	14	0	47.9	15	0	47.7	14	0
25	MP1392	N327	59.9	2	1	45.0	23	0	56.5	24	0	60.4	2	1	47.5	15	0
26	NWS2170	N328	51.9	21	1	57.2	7	0	60.7	17	0	35.8	32	0	56.8	3	1
27	MACS6826	N329	49.7	26	0	44.1	25	0	58.1	22	0	34.7	34	0	46.0	23	0
28	DBW418	N330	54.3	12	1	58.1	5	0	58.6	21	0	40.9	26	0	45.7	24	0
29	PBW918	N331	43.9	34	0	43.1	28	0	66.7	6	0	36.7	29	0	46.3	20	0
30	MACS6837	N332	55.5	7	1	65.6	4	1	67.1	5	0	53.7	5	0	42.6	32	0
31	AKAW5347	N334	47.8	33	0	48.8	15	0	46.1	34	0	45.8	18	0	51.8	8	0
32	PWU20	N335	52.1	19	1	37.5	35	0	65.5	7	0	36.4	30	0	46.6	18	0
33	GW548	N336	49.4	28	0	38.4	32	0	61.2	15	0	49.8	10	0	45.3	25	0
34	MACS6222(C)	N317	49.5	27	0	46.9	18	0	56.5	25	0	43.5	24	0	49.9	9	0
35	GW322(C)	N322	55.8	6	1	49.7	14	0	68.5	2	0	39.1	27	0	48.5	10	0
36	DBW187(C)	N333	50.8	24	0	68.4	2	1	64.2	10	0	47.3	16	0	43.1	31	0
G.M.			52.1			48.9			58.9			45.5			47.7		
S.E.(M)			3.735			3.227			1.653			1.909			2.675		
C.D. (10%)			9.0			7.7			3.9			4.6			6.4		
C.V.			10.1			9.3			4.0			5.9			7.9		
D.O.S.(dd.mm.yy)			12.11.22			14.11.22			12.11.22			08.11.22			11.11.22		

No. of Trials : Proposed =17 Conducted =17

Trials not reported (02) = CZ : Jabalpur (RMT)

PZ : Akola (RMT)

203-NIVT-2-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ												PZ		
			Gujarat								Rajasthan				Maharashtra		
			Junagadh			Vijapur			SK Nagar			Udaipur			Niphad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW549	N301	69.0	17	0	57.6	33	0	58.5	22	0	49.1	28	0	41.7	27	0
2	PWU16	N302	59.2	34	0	63.4	24	0	52.9	27	0	61.2	11	0	33.5	36	0
3	MACS6844	N303	64.4	28	0	63.2	26	0	57.0	25	0	64.4	6	1	53.9	3	1
4	GW555	N304	76.9	1	1	76.6	2	1	73.6	3	1	55.1	20	0	46.2	16	0
5	MACS6842	N305	71.7	8	1	72.6	6	1	50.6	30	0	61.5	10	0	49.5	10	0
6	UAS3026	N306	70.3	11	0	67.4	17	0	57.4	24	0	56.5	18	0	52.2	5	0
7	BW18R6016	N307	74.1	2	1	71.2	11	1	59.5	20	1	47.3	32	0	44.8	19	0
8	NIAW4364	N308	65.6	26	0	64.8	20	0	47.2	32	0	49.4	27	0	52.3	4	0
9	PBN16-1766	N309	60.3	33	0	59.3	32	0	37.0	36	0	59.0	14	0	48.3	13	0
10	HD3451	N310	68.7	18	0	60.9	31	0	58.0	23	0	49.8	26	0	43.0	25	0
11	RAJ4582	N311	68.2	20	0	70.2	15	1	48.8	31	0	45.7	35	0	36.4	33	0
12	NIAW4440	N312	70.1	12	0	71.7	10	1	58.5	21	0	47.4	31	0	45.8	17	0
13	GW550	N313	67.5	23	0	61.9	29	0	46.3	33	0	57.8	16	0	45.0	18	0
14	HI1683	N314	69.2	16	0	77.5	1	1	62.1	15	1	68.1	3	1	50.6	7	0
15	MP3570	N315	72.8	4	1	73.2	4	1	75.8	1	1	59.2	13	0	46.4	15	0
16	CG1045	N316	72.2	6	1	63.6	23	0	61.8	16	1	50.6	24	0	49.8	9	0
17	MP3573	N318	55.0	36	0	57.1	35	0	52.7	29	0	41.0	36	0	36.0	34	0
18	LOK80	N319	66.5	25	0	70.0	16	1	68.8	8	1	51.2	23	0	50.4	8	0
19	UAS3025	N320	67.9	21	0	72.5	8	1	72.5	5	1	54.7	21	0	50.8	6	0
20	GW554	N321	63.5	29	0	72.0	9	1	61.0	18	1	66.9	5	1	44.8	20	0
21	HI1684	N323	62.6	31	0	64.5	21	0	64.2	13	1	62.1	9	0	34.4	35	0
22	MP1393	N324	72.9	3	1	70.3	14	1	62.3	14	1	72.0	1	1	54.7	2	1
23	DBW419	N325	61.3	32	0	70.5	13	1	69.9	7	1	46.7	34	0	39.0	29	0
24	HD3450	N326	69.2	14	0	64.4	22	0	73.6	2	1	48.8	29	0	48.8	11	0
25	MP1392	N327	63.4	30	0	61.8	30	0	61.7	17	1	59.2	12	0	43.9	23	0
26	NWS2170	N328	69.9	13	0	75.6	3	1	60.4	19	1	58.8	15	0	47.6	14	0
27	MACS6826	N329	72.2	5	1	63.4	24	0	66.6	11	1	47.3	32	0	38.9	30	0
28	DBW418	N330	64.9	27	0	72.5	7	1	45.6	34	0	62.8	8	0	39.6	28	0
29	PBW918	N331	67.8	22	0	61.9	28	0	67.6	10	1	53.9	22	0	48.8	12	0
30	MACS6837	N332	71.0	9	1	72.8	5	1	72.2	6	1	56.4	19	0	58.1	1	1
31	AKAW5347	N334	69.2	14	0	62.7	27	0	53.2	26	0	48.2	30	0	42.9	26	0
32	PWU20	N335	57.1	35	0	57.5	34	0	41.2	35	0	56.9	17	0	37.4	31	0
33	GW548	N336	68.5	19	0	70.8	12	1	52.7	28	0	68.8	2	1	43.3	24	0
34	MACS6222(C)	N317	66.7	24	0	54.8	36	0	73.4	4	1	50.4	25	0	44.4	22	0
35	GW322(C)	N322	72.1	7	1	66.0	19	0	68.3	9	1	68.1	3	1	37.1	5	0
36	DBW187(C)	N333	70.4	10	0	66.4	18	0	66.1	12	1	63.1	7	0	44.6	21	0
G.M.			67.6			66.7			60.0			56.1			45.1		
S.E.(M)			2.632			3.386			6.915			3.492			1.851		
C.D. (10%)			6.3			8.1			16.7			8.3			4.5		
C.V.			5.5			7.2			16.3			8.8			5.8		
D.O.S.(dd.mm.yy)			12.11.22			15.11.22			10.11.22			07.11.22			14.11.22		

2203-NIVT-2-IR-TS-TAS-NAT-ZONE, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ													
			Maharashtra								Karnataka					
			Pune			Dhule			Parbhani			Dharwad			Nippani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW549	N301	63.0	14	0	52.8	11	1	41.4	20	0	43.5	21	0	52.8	15	0
2	PWU16	N302	59.3	27	0	51.9	13	1	25.3	34	0	52.3	9	1	46.5	26	0
3	MACS6844	N303	70.0	2	1	52.8	11	1	59.3	4	1	51.1	12	1	44.4	27	0
4	GW555	N304	68.7	4	1	54.8	3	1	50.4	8	0	56.6	4	1	35.4	33	0
5	MACS6842	N305	64.7	9	0	51.0	17	0	59.9	2	1	58.1	2	1	65.3	6	1
6	UAS3026	N306	60.5	22	0	56.6	2	1	48.4	15	0	51.7	11	1	66.0	4	1
7	BW18R6016	N307	67.6	5	0	51.2	15	0	49.2	13	0	53.7	8	1	61.1	9	1
8	NIAW4364	N308	72.1	1	1	51.7	14	1	62.5	1	1	44.4	19	0	64.6	7	1
9	PBN16-1766	N309	66.8	6	0	53.5	9	1	49.3	12	0	49.0	14	1	54.2	13	0
10	HD3451	N310	56.7	32	0	42.7	27	0	38.9	22	0	33.8	33	0	31.9	35	0
11	RAJ4582	N311	53.0	35	0	41.2	32	0	37.1	24	0	25.5	36	0	53.5	14	0
12	NIAW4440	N312	61.6	18	0	54.6	4	1	46.4	16	0	30.8	34	0	51.4	17	0
13	GW550	N313	61.3	20	0	49.4	20	0	45.3	17	0	47.3	17	0	41.0	29	0
14	HI1683	N314	65.5	8	0	54.4	5	1	53.0	7	0	55.3	6	1	48.6	22	0
15	MP3570	N315	66.6	7	0	50.7	18	0	59.7	3	1	42.2	23	0	66.0	4	1
16	CG1045	N316	64.3	11	0	53.5	9	1	50.2	10	0	43.6	20	0	66.7	3	1
17	MP3573	N318	46.5	36	0	38.1	35	0	38.2	23	0	27.9	35	0	36.8	32	0
18	LOK80	N319	60.1	25	0	42.7	27	0	35.0	26	0	56.8	3	1	41.0	29	0
19	UAS3025	N320	63.2	12	0	53.9	8	1	35.1	25	0	56.6	5	1	61.8	8	1
20	GW554	N321	61.7	17	0	41.3	31	0	34.9	27	0	35.4	31	0	60.4	11	1
21	HI1684	N323	58.3	28	0	35.9	36	0	34.7	29	0	40.8	27	0	47.2	24	0
22	MP1393	N324	69.3	3	1	54.2	7	1	44.4	19	0	59.6	1	1	29.2	36	0
23	DBW419	N325	53.1	34	0	42.6	29	0	34.4	30	0	43.3	22	0	50.7	19	0
24	HD3450	N326	60.2	24	0	50.6	19	0	49.6	11	0	48.0	15	0	39.6	31	0
25	MP1392	N327	56.8	31	0	47.2	22	0	31.8	33	0	50.9	13	1	51.4	17	0
26	NWS2170	N328	61.0	21	0	62.2	1	1	21.0	35	0	34.0	32	0	49.3	21	0
27	MACS6826	N329	56.9	30	0	41.0	33	0	33.0	32	0	38.5	30	0	50.7	19	0
28	DBW418	N330	61.6	19	0	39.5	34	0	39.5	21	0	39.5	28	0	59.0	12	1
29	PBW918	N331	62.9	15	0	41.9	30	0	50.4	9	0	41.8	25	0	44.4	27	0
30	MACS6837	N332	64.6	10	0	51.0	16	0	53.7	5	0	47.8	16	0	68.8	1	1
31	AKAW5347	N334	53.4	33	0	43.2	25	0	53.3	6	0	52.0	10	1	52.8	15	0
32	PWU20	N335	62.4	16	0	45.3	23	0	21.0	36	0	41.4	26	0	67.4	2	1
33	GW548	N336	57.8	29	0	45.2	24	0	49.0	14	0	42.1	24	0	35.4	33	0
34	MACS6222(C)	N317	63.0	13	0	47.6	21	0	34.8	28	0	45.6	18	0	48.6	22	0
35	GW322(C)	N322	59.8	26	0	54.4	6	1	44.7	18	0	54.2	7	1	60.4	10	1
36	DBW187(C)	N333	60.3	23	0	43.0	26	0	33.7	31	0	38.8	29	0	47.2	24	0
G.M.			61.5			48.4			43.0			45.4			51.4		
S.E.(M)			1.760			4.556			2.910			4.548			4.653		
C.D. (10%)			4.3			10.9			7.0			11.0			11.1		
C.V.			4.0			13.3			9.6			14.2			12.8		
D.O.S.(dd.mm.yy)			14.11.22			15.11.22			09.11.22			15.11.22			15.11.22		

2203-NIVT-2-IR-TS-TAS-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW549	N301	53.1	31	0	49.2	17	0	51.5	27	0
2	PWU16	N302	54.6	24	0	44.8	29	0	50.7	30	0
3	MACS6844	N303	56.4	16	0	55.2	6	1	55.9	9	0
4	GW555	N304	61.5	2	1	52.0	12	0	57.7	4	0
5	MACS6842	N305	55.2	20	0	58.1	1	1	56.4	7	0
6	UAS3026	N306	57.8	11	0	55.9	4	1	57.1	5	0
7	BW18R6016	N307	55.8	19	0	54.6	8	0	55.3	12	0
8	NIAW4364	N308	53.3	30	0	57.9	2	1	55.1	13	0
9	PBN16-1766	N309	50.2	34	0	53.5	11	0	51.5	26	0
10	HD3451	N310	55.0	21	0	41.2	34	0	49.5	32	0
11	RAJ4582	N311	53.6	28	0	41.1	35	0	48.6	34	0
12	NIAW4440	N312	53.7	27	0	48.4	18	0	51.6	25	0
13	GW550	N313	53.0	32	0	48.2	20	0	51.1	29	0
14	HI1683	N314	61.0	3	1	54.6	9	0	58.5	2	1
15	MP3570	N315	60.5	4	1	55.3	5	1	58.4	3	1
16	CG1045	N316	57.1	14	0	54.7	7	1	56.1	8	0
17	MP3573	N318	46.0	36	0	37.2	36	0	42.5	36	0
18	LOK80	N319	54.6	23	0	47.7	21	0	51.8	23	0
19	UAS3025	N320	57.0	15	0	53.6	10	0	55.7	11	0
20	GW554	N321	60.5	5	1	46.4	25	0	54.9	14	0
21	HI1684	N323	59.8	7	1	41.9	33	0	52.6	19	0
22	MP1393	N324	58.3	10	0	51.9	13	0	55.7	10	0
23	DBW419	N325	53.9	26	0	43.8	31	0	49.9	31	0
24	HD3450	N326	57.3	13	0	49.5	16	0	54.1	15	0
25	MP1392	N327	57.3	12	0	47.0	23	0	53.2	18	0
26	NWS2170	N328	58.6	9	0	45.9	26	0	53.5	17	0
27	MACS6826	N329	53.6	29	0	43.2	32	0	49.4	33	0
28	DBW418	N330	55.9	18	0	46.5	24	0	52.1	20	0
29	PBW918	N331	54.2	25	0	48.4	19	0	51.9	21	0
30	MACS6837	N332	61.9	1	1	57.3	3	1	60.1	1	1
31	AKAW5347	N334	52.6	33	0	49.6	15	0	51.4	28	0
32	PWU20	N335	50.1	35	0	45.8	27	0	48.4	35	0
33	GW548	N336	56.1	17	0	45.5	28	0	51.9	22	0
34	MACS6222(C)	N317	54.6	22	0	47.3	22	0	51.7	24	0
35	GW322(C)	N322	59.6	8	1	51.8	14	0	56.4	6	0
36	DBW187(C)	N333	60.0	6	1	44.6	30	0	53.8	16	0
G.M.			55.9			49.2			53.2		
S.E.(M)			1.198			1.473			0.929		
C.D. (10%)			2.8			3.4			2.2		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-2-IR-TS-TAS, 2022-23**

SN	Variety	Code	Rust	Agronomic Characteristics								
			Bl.	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1.	GW549	N301	0	59-83	71	103-140	124	83-107	94	60	37-54	42
2.	PWU16	N302	0	49-79	65	105-138	122	80-105	89	50	40-57	46
3.	MACS6844	N303	0	61-88	76	107-138	125	87-110	98	0	28-46	38
4.	GW555	N304	tR	49-78	65	106-138	123	72-97	84	30	36-57	44
5.	MACS6842	N305	0	57-84	69	106-139	123	92-113	101	30	39-61	47
6.	UAS3026	N306	tMS	57-85	70	105-137	124	90-112	100	60	39-47	42
7.	BW18R6016	N307	0	57-81	69	106-141	123	87-107	97	30	39-54	45
8.	NIAW4364	N308	tMS	63-92	79	111-140	127	91-113	102	70	30-55	40
9.	PBN16-1766	N309	tMR	63-90	78	108-139	126	89-114	99	80	30-50	38
10.	HD3451	N310	0	54-86	69	107-136	123	78-104	87	0	35-49	39
11.	RAJ4582	N311	tR	58-90	74	104-140	125	85-109	94	70	35-54	44
12.	NIAW4440	N312	0	54-89	73	108-139	125	76-110	96	20	34-55	44
13.	GW550	N313	0	52-84	68	105-141	122	78-100	88	0	40-47	43
14.	HI1683	N314	0	51-79	65	103-141	122	84-108	93	50	42-55	48
15.	MP3570	N315	tMR	52-86	69	107-139	123	76-106	93	5	41-54	46
16.	CG1045	N316	10MR	57-88	73	103-141	124	83-111	95	0	39-58	46
17.	MP3573	N318	0	51-80	67	103-138	122	73-106	85	5	35-48	41
18.	LOK80	N319	tR	45-77	61	101-141	122	79-112	96	90	45-61	52
19.	UAS3025	N320	0	54-83	69	104-140	123	83-107	96	5	35-49	43
20.	GW554	N321	0	44-79	62	101-135	120	76-102	89	83	43-56	49
21.	HI1684	N323	tR	46-78	62	103-135	120	78-107	94	90	37-50	43
22.	MP1393	N324	0	57-85	71	107-137	123	85-108	95	10	35-50	41
23.	DBW419	N325	5MR	55-84	70	103-142	124	80-106	90	0	35-51	42
24.	HD3450	N326	tMR	52-80	67	103-138	122	90-112	102	60	37-48	43
25.	MP1392	N327	0	49-78	63	102-138	122	75-103	90	10	37-50	44
26.	NWS2170	N328	tMR	52-80	66	104-136	122	88-115	102	80	42-63	48
27.	MACS6826	N329	0	56-90	74	106-139	124	85-106	92	10	35-48	42
28.	DBW418	N330	0	58-88	73	106-141	126	88-110	96	35	38-56	45
29.	PBW918	N331	0	52-80	65	109-137	122	80-100	88	0	33-49	40
30.	MACS6837	N332	0	55-90	71	105-143	123	77-105	92	15	39-56	45
31.	AKAW5347	N334	0	53-85	71	106-143	123	88-111	100	30	35-55	42
32.	PWU20	N335	0	51-81	65	109-139	124	77-108	90	43	36-55	43
33.	GW548	N336	0	51-81	68	105-138	123	81-99	89	80	36-51	43
34.	MACS6222(C)	N317	0	56-89	72	106-142	124	83-103	94	45	37-53	44
35.	GW322(C)	N322	0	56-80	67	106-140	122	78-104	92	48	33-52	42
36.	DBW187(C)	N333	0	54-85	70	104-137	123	84-116	99	60	37-52	46

1. Ancillary data from Powarkheda, Bilaspur, Gwalior, Indore, Junagarh, Sagar, SK Nagar, Udaipur and Vijapur.
2. Black rust data from Vijapur centre
3. Lodging data from SK Nagar

Summary of Agronomic Characteristics

Peninsular Zone **Trial: NIVT-2-IR-TS-TAS, 2022-23**

SN	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1.	GW549	N301	49-63	58	98-112	105	77-93	86	0	33-44	39
2.	PWU16	N302	52-55	53	97-112	104	72-88	83	0	37-48	45
3.	MACS6844	N303	63-71	67	97-115	109	85-95	90	0	37-47	42
4.	GW555	N304	52-55	54	96-119	107	70-79	74	0	36-46	43
5.	MACS6842	N305	59-70	64	100-114	111	90-99	95	0	42-52	46
6.	UAS3026	N306	61-67	64	98-116	110	83-99	94	0	37-50	42
7.	BW18R6016	N307	59-65	63	98-118	111	82-95	89	0	42-46	45
8.	NIAW4364	N308	46-70	60	99-115	108	83-99	92	0	30-45	38
9.	PBN16-1766	N309	65-69	67	98-116	111	85-96	92	0	36-39	38
10.	HD3451	N310	56-66	60	98-119	110	65-83	75	0	36-39	38
11.	RAJ4582	N311	63-74	68	103-115	112	80-94	86	0	38-48	43
12.	NIAW4440	N312	61-70	66	98-116	111	72-91	82	0	40-53	45
13.	GW550	N313	56-59	57	99-111	105	64-85	79	0	36-47	43
14.	HI1683	N314	54-62	57	98-111	106	81-90	87	0	42-53	48
15.	MP3570	N315	57-65	60	97-115	107	71-93	79	0	45-54	47
16.	CG1045	N316	57-62	61	100-113	107	77-93	87	0	41-49	46
17.	MP3573	N318	52-57	55	98-109	103	61-84	71	0	33-39	37
18.	LOK80	N319	49-56	52	98-108	103	84-90	88	50	45-52	48
19.	UAS3025	N320	56-65	59	99-116	108	73-96	86	0	38-48	42
20.	GW554	N321	50-54	52	98-120	109	73-82	80	0	42-48	46
21.	HI1684	N323	49-54	52	98-106	104	75-86	82	0	37-42	40
22.	MP1393	N324	60-65	63	101-114	108	81-95	90	0	39-46	42
23.	DBW419	N325	55-65	59	99-108	105	77-92	85	10	36-50	41
24.	HD3450	N326	56-58	57	99-110	105	86-96	93	75	37-46	42
25.	MP1392	N327	50-54	53	97-110	104	73-87	80	0	42-46	44
26.	NWS2170	N328	55-57	56	98-111	105	76-95	88	40	36-49	45
27.	MACS6826	N329	57-66	60	99-118	110	71-88	83	0	35-43	38
28.	DBW418	N330	56-65	61	99-113	110	82-94	86	0	41-48	43
29.	PBW918	N331	56-58	57	99-114	109	76-87	83	0	36-42	39
30.	MACS6837	N332	58-66	61	99-115	107	80-92	85	0	41-48	44
31.	AKAW5347	N334	55-62	58	101-121	110	81-94	89	0	38-44	42
32.	PWU20	N335	55-58	57	96-121	111	68-95	79	0	27-46	42
33.	GW548	N336	55-59	57	97-110	105	74-85	79	0	38-45	43
34.	MACS6222(C)	N317	55-65	60	99-111	105	78-93	87	5	36-44	42
35.	GW322(C)	N322	57-62	59	98-116	107	76-88	85	0	36-45	38
36.	DBW187(C)	N333	57-64	60	99-111	107	79-92	84	0	41-46	44

1. Ancillary data from Pune, Niphad, Dharwad, Dhule, Nippani and Parbhani centers
2. Lodging data from Pune center

2204-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ															
			Delhi			J&K			Punjab						Haryana					
			Delhi			Jammu			Ludhiana			Gurdaspur			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW923	N401	42.5	27	0	45.9	6	1	52.3	8	1	37.1	31	0	40.9	32	0	41.9	34	0
2	SVPWL21-14	N402	50.0	10	0	45.1	8	1	33.3	36	0	48.2	9	0	52.1	11	0	54.7	13	0
3	PBW920	N403	46.2	14	0	38.9	23	0	42.6	26	0	48.5	8	0	45.4	23	0	47.0	23	0
4	NW8071	N404	44.4	23	0	38.2	27	0	48.3	12	0	49.5	6	0	56.4	5	1	58.7	8	0
5	PBW919	N405	55.5	4	1	35.1	33	0	46.1	17	0	46.5	14	0	41.3	31	0	58.2	9	0
6	HD3452	N406	40.9	30	0	40.1	22	0	37.4	32	0	38.4	28	0	48.2	16	0	53.9	14	0
7	NW8055	N407	40.6	31	0	38.6	24	0	47.9	13	0	46.5	15	0	44.6	24	0	56.8	10	0
8	RAJ4581	N408	50.8	9	0	46.5	3	1	55.8	4	1	40.7	26	0	46.3	21	0	59.7	6	0
9	DBW420	N409	39.0	34	0	38.6	24	0	46.6	16	0	44.3	21	0	59.6	1	1	55.9	12	0
10	WH1323	N410	45.3	17	0	34.7	34	0	47.7	14	0	36.7	33	0	58.1	3	1	61.1	5	0
11	HP1980	N411	48.7	12	0	41.1	19	0	50.9	9	1	50.9	3	1	46.3	22	0	50.9	17	0
12	UBW20	N412	39.9	32	0	35.5	32	0	39.2	29	0	43.5	22	0	52.7	9	1	59.5	7	0
13	DBW424	N413	38.0	35	0	43.6	12	1	46.1	18	0	49.1	7	0	54.5	8	1	50.3	20	0
14	BCW30	N414	46.1	16	0	46.3	4	1	45.0	20	0	47.0	12	0	46.7	20	0	43.9	30	0
15	UP3126	N415	52.6	6	1	38.2	27	0	41.4	28	0	45.3	19	0	49.0	14	0	44.4	28	0
16	WH1322	N416	49.7	11	0	36.6	30	0	44.8	22	0	48.1	10	0	58.8	2	1	56.2	11	0
17	DBW423	N417	42.5	28	0	48.7	1	1	35.9	34	0	36.3	34	0	40.0	33	0	43.9	31	0
18	DBW422	N418	46.2	15	0	45.5	7	1	57.2	1	1	54.9	1	1	48.5	15	0	63.7	2	1
19	K2207	N419	41.3	29	0	44.8	9	1	43.4	24	0	38.1	30	0	51.1	12	0	50.3	19	0
20	BRW3941	N420	51.8	7	0	47.1	2	1	45.8	19	0	46.2	16	0	47.7	17	0	44.9	27	0
21	DBW421	N421	39.5	33	0	42.7	16	1	47.3	15	0	41.7	25	0	44.2	26	0	49.8	21	0
22	HD3453	N422	51.2	8	0	38.4	26	0	49.7	10	0	43.5	23	0	51.1	13	0	46.9	24	0
23	JKW303	N423	44.9	18	0	36.9	29	0	34.2	35	0	31.8	36	0	39.2	35	0	43.5	33	0
24	HD3454	N425	55.1	5	1	42.1	18	0	52.9	5	1	45.1	20	0	43.6	29	0	41.3	36	0
25	PBW922	N426	44.7	20	0	42.8	15	1	55.9	3	1	46.6	13	0	43.7	27	0	62.8	4	1
26	PBW921	N428	59.5	1	1	43.1	14	1	56.7	2	1	49.9	5	1	55.2	6	1	52.9	15	0
27	K2208	N429	44.5	22	0	44.7	10	1	52.7	7	1	45.8	17	0	52.5	10	0	46.8	26	0
28	RAJ4580	N431	43.0	25	0	46.3	5	1	37.7	31	0	34.1	35	0	47.5	19	0	44.2	29	0
29	WH1324	N433	44.6	21	0	42.3	17	1	43.0	25	0	50.0	4	1	55.1	7	1	65.1	1	1
30	K2206	N434	31.4	36	0	43.3	13	1	37.3	33	0	38.3	29	0	37.7	36	0	41.3	35	0
31	HD3455	N435	57.0	2	1	40.9	20	0	48.5	11	0	53.3	2	1	47.5	18	0	49.7	22	0
32	UP3127	N436	48.4	13	0	44.4	11	1	44.9	21	0	47.2	11	0	57.7	4	1	63.2	3	1
33	DBW107(C)	N424	42.7	26	0	40.7	21	0	43.8	23	0	45.3	18	0	39.9	34	0	52.7	16	0
34	HD3059(C)	N427	56.8	3	1	34.0	36	0	42.6	27	0	36.9	32	0	44.4	25	0	46.8	25	0
35	DBW173(C)	N430	44.9	19	0	35.7	31	0	52.7	6	1	43.1	24	0	42.2	30	0	50.9	18	0
36	HI1563(C)	N432	43.6	24	0	34.3	35	0	38.6	30	0	40.1	27	0	43.7	28	0	43.6	32	0
G.M.			46.2			41.2			45.7			44.1			48.2			51.6		
S.E.(M)			3.167			2.700			2.698			2.141			2.845			1.273		
C.D. (10%)			7.6			6.5			6.5			5.2			6.9			3.1		
C.V.			9.7			9.3			8.3			6.9			8.4			3.5		
D.O.S.(dd.mm.yy)			15.12.22			08.12.22			05.12.22			05.12.22			06.12.22			08.12.22		

No. of Trials : Proposed = 19 Conducted = 19

Trials not reported (02) = NEPZ : Kanpur (RMT), RPCAU-Pusa (LSM)

2204-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ								
			UTK			Rajasthan			U.P.			U.P.						Bihar		
			Pantnagar			Durgapura			Modipuram			Ayodhya			Varanasi			Sabour		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW923	N401	46.4	20	0	39.9	32	0	59.1	23	0	44.0	16	1	55.4	17	0	32.0	33	0
2	SVPWL21-14	N402	41.4	32	0	55.8	1	1	46.6	33	0	44.5	9	1	54.0	23	0	30.9	34	0
3	PBW920	N403	45.9	22	0	44.5	19	0	66.6	10	0	39.2	30	0	54.2	20	0	37.1	22	0
4	NW8071	N404	48.1	16	0	54.9	2	1	61.2	18	0	45.5	4	1	53.1	27	0	39.6	15	0
5	PBW919	N405	46.6	19	0	34.1	35	0	56.5	25	0	44.7	6	1	53.1	28	0	37.9	21	0
6	HD3452	N406	35.6	35	0	50.1	9	1	50.9	29	0	44.6	7	1	57.2	7	1	35.0	27	0
7	NW8055	N407	43.0	28	0	45.6	16	0	66.7	9	0	39.2	30	0	50.7	32	0	38.8	19	0
8	RAJ4581	N408	43.0	29	0	47.2	15	0	70.5	4	0	43.8	17	1	56.6	9	1	49.5	2	1
9	DBW420	N409	47.1	18	0	52.7	3	1	64.9	12	0	43.0	21	0	57.0	8	1	38.2	20	0
10	WH1323	N410	51.1	11	0	43.7	20	0	70.0	6	0	36.2	33	0	59.6	1	1	47.9	6	1
11	HP1980	N411	55.1	3	1	43.3	21	0	57.7	24	0	44.4	12	1	57.7	4	1	39.2	16	0
12	UBW20	N412	40.2	33	0	41.5	30	0	55.6	27	0	33.4	36	0	48.8	36	0	27.4	35	0
13	DBW424	N413	51.8	7	1	45.1	18	0	70.4	5	0	42.5	24	0	56.0	11	1	40.1	13	0
14	BCW30	N414	51.7	8	1	49.5	11	0	74.5	3	1	39.6	28	0	57.5	6	1	39.1	17	0
15	UP3126	N415	43.3	26	0	40.5	31	0	50.8	30	0	35.3	34	0	54.2	21	0	35.5	25	0
16	WH1322	N416	48.5	15	0	51.3	5	1	46.1	34	0	46.8	1	1	55.7	12	0	40.2	12	0
17	DBW423	N417	57.6	1	1	43.1	26	0	47.6	32	0	43.5	19	0	59.4	2	1	48.6	3	1
18	DBW422	N418	55.5	2	1	43.1	25	0	74.7	2	1	44.4	13	1	57.6	5	1	50.3	1	1
19	K2207	N419	46.0	21	0	42.0	29	0	62.9	15	0	41.2	26	0	54.8	19	0	33.8	30	0
20	BRW3941	N420	48.7	14	0	49.1	12	0	63.0	14	0	39.4	29	0	53.8	24	0	39.0	18	0
21	DBW421	N421	49.1	12	0	38.9	33	0	52.6	28	0	44.4	11	1	52.2	29	0	35.7	24	0
22	HD3453	N422	52.9	6	1	43.2	22	0	60.8	20	0	45.0	5	1	54.8	18	0	34.1	29	0
23	JKW303	N423	41.7	30	0	42.9	28	0	44.6	35	0	38.9	32	0	49.8	33	0	24.1	36	0
24	HD3454	N425	43.1	27	0	50.5	8	1	61.0	19	0	33.7	35	0	53.8	25	0	32.3	32	0
25	PBW922	N426	41.4	31	0	47.5	13	0	56.2	26	0	42.6	23	0	53.4	26	0	43.2	9	0
26	PBW921	N428	45.3	24	0	50.5	7	1	69.1	7	0	46.4	2	1	56.4	10	1	45.1	8	0
27	K2208	N429	48.0	17	0	49.5	10	0	59.8	21	0	44.2	14	1	55.5	16	0	35.3	26	0
28	RAJ4580	N431	36.7	34	0	45.2	17	0	44.0	36	0	46.2	3	1	49.3	35	0	35.8	23	0
29	WH1324	N433	51.1	10	0	51.9	4	1	61.9	16	0	44.5	8	1	58.1	3	1	45.9	7	0
30	K2206	N434	44.8	25	0	43.1	24	0	49.4	31	0	41.2	27	0	52.2	30	0	32.5	31	0
31	HD3455	N435	51.6	9	1	38.7	34	0	75.3	1	1	44.5	10	1	55.6	14	0	42.2	10	0
32	UP3127	N436	45.6	23	0	43.0	27	0	68.6	8	0	42.8	22	0	51.5	31	0	34.8	28	0
33	DBW107(C)	N424	53.5	5	1	43.2	23	0	59.4	22	0	44.0	15	1	55.6	15	0	48.1	5	1
34	HD3059(C)	N427	49.0	13	0	50.7	6	1	65.9	11	0	43.4	20	0	55.7	13	0	40.4	11	0
35	DBW173(C)	N430	53.5	4	1	47.3	14	0	64.5	13	0	42.0	25	0	54.1	22	0	40.0	14	0
36	HI1563(C)	N432	25.7	36	0	33.3	36	0	61.6	17	0	43.6	18	0	49.7	34	0	48.6	4	1
G.M.			46.7			45.5			60.3			42.3			54.6			38.8		
S.E.(M)			2.556			2.388			1.632			1.236			1.503			1.317		
C.D. (10%)			6.2			5.8			3.9			3.0			3.6			3.1		
C.V.			7.7			7.4			3.8			4.1			3.9			4.8		
D.O.S.(dd.mm.yy)			14.12.22			08.12.22			14.12.22			06.12.22			08.12.22			15.12.22		

2204-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ													
			Jharkhand			W.Bengal							Assam			
			Ranchi			Kalyani			Coochbehar			Burdwan			Shillongani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW923	N401	45.8	22	0	43.7	12	0	19.1	36	0	31.7	23	0	31.4	24	0
2	SVPWL21-14	N402	44.9	24	0	39.3	21	0	34.7	8	1	24.3	35	0	24.2	33	0
3	PBW920	N403	50.4	12	0	41.3	18	0	27.5	27	0	36.1	12	0	36.7	13	0
4	NW8071	N404	51.6	7	1	30.7	36	0	20.2	35	0	32.0	22	0	35.4	15	0
5	PBW919	N405	47.9	16	0	32.9	35	0	27.8	26	0	41.3	5	0	31.3	25	0
6	HD3452	N406	44.3	27	0	41.7	16	0	31.2	20	0	31.4	24	0	26.8	31	0
7	NW8055	N407	44.7	26	0	36.2	30	0	27.9	25	0	32.9	20	0	46.1	2	0
8	RAJ4581	N408	50.1	13	0	50.1	3	1	38.3	2	1	44.9	4	0	30.4	28	0
9	DBW420	N409	50.7	10	1	43.4	13	0	26.1	28	0	34.7	16	0	30.8	27	0
10	WH1323	N410	48.4	15	0	48.5	4	1	34.9	7	1	40.7	6	0	43.7	3	0
11	HP1980	N411	57.3	1	1	38.6	22	0	36.2	5	1	29.6	28	0	39.5	7	0
12	UBW20	N412	42.1	34	0	33.9	34	0	30.7	21	0	19.4	36	0	25.7	32	0
13	DBW424	N413	45.5	23	0	42.7	14	0	31.2	19	0	37.0	10	0	35.3	16	0
14	BCW30	N414	52.7	5	1	39.5	20	0	29.9	22	0	31.4	24	0	42.0	5	0
15	UP3126	N415	46.7	19	0	44.1	11	0	23.1	32	0	36.6	11	0	37.8	11	0
16	WH1322	N416	57.3	2	1	44.2	10	0	38.8	1	1	29.8	27	0	28.3	29	0
17	DBW423	N417	52.8	4	1	47.0	5	1	25.9	30	0	45.1	3	0	34.7	17	0
18	DBW422	N418	46.3	21	0	44.9	9	0	29.6	23	0	28.4	31	0	40.8	6	0
19	K2207	N419	39.5	35	0	37.1	26	0	33.4	12	0	29.3	29	0	22.6	34	0
20	BRW3941	N420	42.9	31	0	36.6	27	0	37.6	3	1	30.3	26	0	33.7	20	0
21	DBW421	N421	46.3	20	0	42.7	15	0	24.9	31	0	56.5	1	1	36.6	14	0
22	HD3453	N422	48.6	14	0	45.3	8	0	33.7	11	0	35.0	15	0	33.9	18	0
23	JKW303	N423	51.5	8	1	35.4	32	0	23.1	33	0	39.8	8	0	32.2	23	0
24	HD3454	N425	50.4	11	1	36.1	31	0	32.3	14	0	28.5	30	0	32.2	22	0
25	PBW922	N426	42.1	33	0	41.4	17	0	34.1	9	1	28.0	33	0	37.3	12	0
26	PBW921	N428	43.5	29	0	38.5	23	0	29.1	24	0	32.5	21	0	51.6	1	1
27	K2208	N429	42.7	32	0	45.9	6	1	33.3	13	0	35.2	14	0	39.2	8	0
28	RAJ4580	N431	54.9	3	1	36.6	28	0	31.3	18	0	33.9	18	0	27.8	30	0
29	WH1324	N433	52.4	6	1	51.3	2	1	33.7	10	0	35.9	13	0	43.4	4	0
30	K2206	N434	44.3	28	0	36.2	29	0	26.1	29	0	34.3	17	0	22.3	35	0
31	HD3455	N435	50.7	9	1	45.3	7	0	31.4	17	0	32.9	19	0	31.0	26	0
32	UP3127	N436	43.3	30	0	34.4	33	0	22.9	34	0	39.4	9	0	38.7	9	0
33	DBW107(C)	N424	38.4	36	0	51.3	1	1	35.2	6	1	48.1	2	0	33.8	19	0
34	HD3059(C)	N427	44.8	25	0	37.8	24	0	36.7	4	1	26.8	34	0	33.2	21	0
35	DBW173(C)	N430	47.1	18	0	37.6	25	0	32.2	15	0	28.4	31	0	21.6	36	0
36	HI1563(C)	N432	47.6	17	0	40.6	19	0	32.0	16	0	40.3	7	0	37.9	10	0
G.M.			47.5			40.9			30.4			34.5			34.2		
S.E.(M)			2.857			2.412			2.070			1.875			0.918		
C.D. (10%)			6.9			5.8			5.0			4.5			2.2		
C.V.			8.5			8.3			9.6			7.7			3.8		
D.O.S.(dd.mm.yy)			09.12.22			10.12.22			15.12.22			14.12.22			07.12.22		

2204-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW923	N401	45.1	28	0	37.9	30	0	41.7	30	0
2	SVPWL21-14	N402	47.5	21	0	37.1	32	0	42.6	27	0
3	PBW920	N403	47.3	23	0	40.3	18	0	44.0	20	0
4	NW8071	N404	51.1	7	0	38.5	27	0	45.2	16	0
5	PBW919	N405	46.6	26	0	39.6	21	0	43.3	25	0
6	HD3452	N406	43.9	32	0	39.0	26	0	41.6	31	0
7	NW8055	N407	47.8	20	0	39.6	22	0	43.9	21	0
8	RAJ4581	N408	51.2	6	0	45.5	2	1	48.5	4	1
9	DBW420	N409	49.8	10	0	40.5	17	0	45.4	13	0
10	WH1323	N410	49.8	11	0	45.0	3	1	47.5	5	0
11	HP1980	N411	49.4	12	0	42.8	7	0	46.3	7	0
12	UBW20	N412	45.3	27	0	32.7	36	0	39.3	34	0
13	DBW424	N413	49.9	9	0	41.3	16	0	45.8	10	0
14	BCW30	N414	50.1	8	0	41.5	13	0	46.0	8	0
15	UP3126	N415	45.1	30	0	39.2	25	0	42.3	28	0
16	WH1322	N416	48.9	16	0	42.7	9	0	46.0	9	0
17	DBW423	N417	44.0	31	0	44.6	4	1	44.3	19	0
18	DBW422	N418	54.4	1	1	42.8	8	0	48.9	1	1
19	K2207	N419	46.7	25	0	36.5	34	0	41.9	29	0
20	BRW3941	N420	49.4	14	0	39.2	24	0	44.6	18	0
21	DBW421	N421	45.1	29	0	42.4	11	0	43.8	23	0
22	HD3453	N422	48.6	17	0	41.3	15	0	45.2	15	0
23	JKW303	N423	40.0	36	0	36.8	33	0	38.5	36	0
24	HD3454	N425	48.3	19	0	37.4	31	0	43.2	26	0
25	PBW922	N426	49.1	15	0	40.3	19	0	44.9	17	0
26	PBW921	N428	53.6	2	1	42.9	6	0	48.5	3	1
27	K2208	N429	49.4	13	0	41.4	14	0	45.6	12	0
28	RAJ4580	N431	42.1	33	0	39.5	23	0	40.8	33	0
29	WH1324	N433	51.7	3	0	45.7	1	1	48.8	2	1
30	K2206	N434	40.7	34	0	36.1	35	0	38.6	35	0
31	HD3455	N435	51.4	5	0	41.7	12	0	46.8	6	0
32	UP3127	N436	51.5	4	0	38.5	28	0	45.4	14	0
33	DBW107(C)	N424	46.8	24	0	44.3	5	1	45.6	11	0
34	HD3059(C)	N427	47.5	22	0	39.8	20	0	43.9	22	0
35	DBW173(C)	N430	48.3	18	0	37.9	29	0	43.4	24	0
36	HI1563(C)	N432	40.5	35	0	42.5	10	0	41.4	32	0
G.M.			47.7			40.4			44.3		
S.E.(M)			0.815			0.663			0.532		
C.D. (10%)			1.9			1.5			1.2		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-3A-IR-LS-TAS, 2022-23**

SN	Variety	Code	Rust Reaction				Agronomic Characteristics								
			Yl	ACl	Br	ACl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	PBW923	N 401	5S	1.5	0	0.0	74-90	83	111-140	125	76-112	91	15	27-42	34
2	SVPWL21-14	N 402	20S	3.6	10S	3.0	81-94	88	112-141	128	89-110	100	10	29-47	36
3	PBW920	N 403	5S	0.7	5MS	0.8	75-91	83	114-141	126	89-105	94	20	35-42	38
4	NW8071	N 404	20S	4.9	20S	4.0	74-91	83	110-139	125	77-95	88	5	37-43	40
5	PBW919	N 405	0	0.0	0	0.0	74-87	81	109-139	124	64-92	82	5	26-43	38
6	HD3452	N 406	60S	14.4	0	0.0	72-89	83	117-140	126	85-110	99	15	36-40	38
7	NW8055	N 407	60S	28.6	10S	2.0	79-96	87	111-140	127	78-103	93	15	32-44	37
8	RAJ4581	N 408	40S	10.1	0	0.0	70-88	79	110-139	124	84-106	94	20	31-49	41
9	DBW420	N 409	5S	1.4	5S	2.2	75-91	85	109-141	126	85-102	96	15	33-45	39
10	WH1323	N 410	10S	2.4	10S	4.0	73-91	84	111-141	125	86-103	95	10	33-45	40
11	HP1980	N 411	5S	1.4	0	0.0	82-95	88	112-141	126	86-104	95	20	36-46	41
12	UBW20	N 412	10S	4.6	20S	6.8	83-93	88	115-140	127	81-102	91	10	30-45	36
13	DBW424	N 413	5S	0.7	0	0.0	77-96	87	113-141	127	85-99	90	20	31-43	40
14	BCW30	N 414	40S	7.9	10S	3.0	96-92	86	116-140	126	82-103	94	20	32-47	38
15	UP3126	N 415	40S	8.6	10S	5.6	96-91	84	117-140	125	90-105	96	15	30-47	37
16	WH1322	N 416	20S	6.9	10S	2.0	79-91	85	111-140	125	81-96	90	5	35-45	41
17	DBW423	N 417	20S	8.6	tMS	0.2	72-91	84	109-140	126	94-108	101	35	31-46	40
18	DBW422	N 418	5MS	1.3	20S	4.0	72-93	82	117-139	127	85-97	91	5	33-43	39
19	K2207	N 419	60S	12.9	0	0.0	71-91	81	110-139	124	77-101	89	10	28-45	40
20	BRW3941	N 420	40S	16.3	0	0.0	81-95	87	112-141	128	86-109	97	20	32-44	38
21	DBW421	N 421	20S	6.6	30S	13.8	72-86	81	109-139	124	86-109	99	25	32-44	35
22	HD3453	N 422	5S	1.4	5S	1.0	74-96	86	110-141	126	82-105	94	15	35-54	40
23	JKW303	N 423	20S	5.0	40S	14.8	78-94	87	109-140	125	78-102	91	20	27-45	33
24	HD3454	N 425	0	0.0	20S	5.0	79-93	85	111-141	126	84-105	94	15	30-42	35
25	PBW922	N 426	5S	0.7	0	0.0	72-88	81	115-139	124	75-95	86	5	30-43	36
26	PBW921	N 428	0	0.0	0	0.0	77-89	84	112-141	125	81-95	86	10	30-45	36
27	K2208	N 429	10S	3.6	0	0.0	72-91	83	109-140	125	82-95	89	15	35-45	41
28	RAJ4580	N 431	5S	1.4	20S	5.8	80-94	87	118-141	126	87-112	99	15	33-42	39
29	WH1324	N 433	10S	2.7	0	0.0	71-91	84	117-140	125	89-104	97	10	35-43	41
30	K2206	N 434	20S	5.7	0	0.0	81-98	88	119-141	126	83-113	100	25	25-48	34
31	HD3455	N 435	10S	2.9	0	0.0	74-91	84	113-141	126	85-104	93	20	29-43	37
32	UP3127	N 436	10S	2.9	0	0.0	79-94	86	114-141	126	82-101	94	15	35-44	40
33	DBW107(C)	N 424	60S	15.0	20S	10.0	71-88	81	114-141	124	78-101	91	15	31-44	36
34	HD3059(C)	N 427	40S	12.9	5S	1.0	78-96	86	110-141	126	86-102	94	20	31-45	36
35	DBW173(C)	N 430	10S	3.4	0	0.0	80-97	88	109-141	127	78-105	95	20	35-43	37
36	HI1563(C)	N 432	60S	40.0	30S	10.0	70-91	80	109-141	124	82-102	93	20	29-43	36

1. Ancillary data from Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar centres. 2. Yellow rust data from Delhi, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar centres.
2. Brown rust data from Gurdaspur, Jammu, Karnal, Ludhiana and Pantnagar centres. 4. Lodging data from Delhi, Hisar, Jammu, Karnal, Ludhiana and Pantnagar centres.

NIVT-3A-IR-LS-TAS, 2022-23
North Western Plains Zone

Individual Station Rust Data

SN	Variety	Code	Yellow rust							Brown rust				
			Delhi	Gurdaspur	Hisar	Jammu	Karnal	Ludhiana	Pantnagar	Gurdaspur	Jammu	Karnal	Ludhiana	Pantnagar
1	PBW923	N 401	0	tR	tS	5MS	0	5S	0	0	0	0	0	0
2	SVPWL21-14	N 402	0	5S	0	20S	0	0	0	0	0	10S	tR	5S
3	PBW920	N 403	0	5S	0	0	0	0	0	0	5MS	0	0	0
4	NW8071	N 404	0	tR	0	5S	5MS	20S	5S	0	0	0	0	20S
5	PBW919	N 405	0	0	0	0	0	0	0	0	0	0	0	0
6	HD3452	N 406	0	0	tS	60S	0	40S	0	0	0	0	0	0
7	NW8055	N 407	0	20S	20S	40S	20S	60S	40S	0	0	10S	0	0
8	RAJ4581	N 408	0	40S	tS	10S	0	20S	0	0	0	0	0	0
9	DBW420	N 409	0	5S	0	0	0	5S	0	0	5S	0	5S	tMS
10	WH1323	N 410	0	10S	0	5S	0	TS	tS	0	5S	10S	5S	0
11	HP1980	N 411	0	5MR	0	0	0	5S	tS	0	0	0	0	0
12	UBW20	N 412	5MS	10S	0	5MS	0	10S	5MS	0	0	20S	10S	5MS
13	DBW424	N 413	0	0	0	0	0	5S	0	0	0	0	0	0
14	BCW30	N 414	0	5S	0	5S	0	40S	5S	0	0	10S	0	5S
15	UP3126	N 415	0	40S	0	10S	0	10S	0	0	5S	10S	10MS	5S
16	WH1322	N 416	5MS	10S	0	10S	0	20S	5MS	0	0	10S	0	0
17	DBW423	N 417	0	40S	0	tR	0	20S	0	0	0	0	0	tMS
18	DBW422	N 418	0	0	0	5MS	0	10MR	tS	0	0	20S	0	0
19	K2207	N 419	0	20S	0	60S	5MS	5S	tS	0	0	0	0	0
20	BRW3941	N 420	5MS	20S	0	40S	0	40S	10S	0	0	0	0	0
21	DBW421	N 421	0	20S	0	5S	0	20S	ts	5MS	10S	30S	5S	20S
22	HD3453	N 422	0	0	0	5S	0	5S	0	0	5S	0	0	0
23	JKW303	N 423	0	10S	0	0	0	20S	5S	0	5MS	40S	10S	20S
24	HD3454	N 425	0	0	0	0	0	0	0	0	0	20S	5S	0
25	PBW922	N 426	0	0	0	5S	0	0	0	0	0	0	0	0
26	PBW921	N 428	0	0	0	0	0	0	0	0	0	0	0	0
27	K2208	N 429	0	0	0	10S	0	10S	5S	0	0	0	0	0
28	RAJ4580	N 431	0	5S	0	5S	0	0	0	0	0	20S	5S	5MS
29	WH1324	N 433	0	5MS	tS	5MS	0	10S	0	0	0	0	0	0
30	K2206	N 434	0	10S	0	10MS	0	20S	tS	0	0	0	0	0
31	HD3455	N 435	0	5S	5S	0	0	10S	0	0	0	0	0	0
32	UP3127	N 436	0	5S	0	5S	0	10S	0	0	0	0	0	0
33	DBW107(C)	N 424	0	0	0	60S	0	40S	5S	0	0	20S	10S	20S
34	HD3059 (C)	N 427	0	20S	0	10S	0	40S	20S	0	0	0	0	5S
35	DBW173(C)	N 430	0	10S	0	0	0	10S	5MS	0	0	0	0	0
36	HI1563(C)	N 432	20S	60S	20S	60S	0	60S	60S	0	0	30S	20S	0

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT 3A-IR-LS-TAS, 2022-23**

SN	Variety	Code	Rust Reaction	Agronomic Characteristics							
			LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	PBW923	N 401	68(35)	56-77	68	90-118	105	77-99	86	28-41	32
2	SVPWL21-14	N 402	46(25)	63-80	73	96-120	110	81-100	90	28-42	34
3	PBW920	N 403	46(34)	57-79	69	91-121	110	79-92	87	26-43	36
4	NW8071	N 404	57(35)	61-80	70	95-120	109	73-109	87	30-45	37
5	PBW919	N 405	57(34)	59-79	69	99-121	109	57-96	74	32-41	36
6	HD3452	N 406	46(34)	58-76	68	91-116	106	56-101	87	28-41	35
7	NW8055	N 407	46(35)	63-80	72	95-122	110	84-97	89	28-40	35
8	RAJ4581	N 408	46(35)	53-71	65	89-115	104	82-98	90	31-43	37
9	DBW420	N 409	46(35)	57-78	68	89-116	106	74-100	88	32-47	37
10	WH1323	N 410	57(34)	57-77	68	90-116	106	88-103	96	33-47	39
11	HP1980	N 411	45(34)	65-83	74	95-124	111	86-98	92	35-42	39
12	UBW20	N 412	57(34)	68-83	77	101-125	114	84-99	90	27-44	34
13	DBW424	N 413	57(35)	60-80	72	95-118	110	81-99	89	26-43	34
14	BCW30	N 414	57(34)	62-83	73	95-124	111	91-99	94	28-44	36
15	UP3126	N 415	46(34)	59-77	70	93-119	108	85-99	93	36-50	39
16	WH1322	N 416	45(35)	65-79	72	99-120	110	81-97	90	29-43	36
17	DBW423	N 417	46(35)	58-77	70	92-119	107	94-101	97	37-46	40
18	DBW422	N 418	45(35)	58-74	67	91-116	105	82-98	89	32-42	36
19	K2207	N 419	57(35)	56-76	67	90-116	105	79-101	87	26-46	37
20	BRW3941	N 420	35(34)	65-79	72	96-124	110	85-98	90	32-46	36
21	DBW421	N 421	68(34)	58-75	67	90-116	105	84-105	96	32-43	37
22	HD3453	N 422	36(35)	61-80	70	94-120	108	87-100	92	32-51	41
23	JKW303	N 423	46(34)	57-80	71	95-118	108	83-96	90	24-39	34
24	HD3454	N 425	57(35)	59-80	72	95-122	110	80-97	88	29-42	36
25	PBW922	N 426	57(35)	54-73	64	87-116	104	68-99	80	30-41	36
26	PBW921	N 428	46(35)	57-79	70	91-120	109	72-95	82	29-41	35
27	K2208	N 429	57(35)	62-78	70	90-118	107	80-99	90	28-44	38
28	RAJ4580	N 431	57(35)	62-82	74	95-125	111	86-102	95	29-46	37
29	WH1324	N 433	46(35)	58-76	69	91-117	106	86-97	92	34-47	40
30	K2206	N 434	45(24)	63-83	73	99-125	111	80-102	92	26-44	35
31	HD3455	N 435	46(34)	55-75	66	91-117	105	81-99	89	31-42	36
32	UP3127	N 436	46(34)	59-82	71	94-124	109	88-99	92	30-45	37
33	DBW107(C)	N 424	36(34)	58-73	67	94-117	106	81-98	91	28-43	36
34	HD3059(C)	N 427	46(35)	58-79	71	91-120	109	86-99	91	26-45	36
35	DBW173(C)	N 430	46(35)	60-81	72	94-124	110	83-96	89	29-43	37
36	HI1563(C)	N 432	68(35)	54-71	64	90-116	103	80-101	93	33-46	38

1. Ancillary data from Ayodhya, Kalyani, Kanpur, Ranchi, RPCAU-Pusa, Sabour, Shillongani and Varanasi.
2. Brown rust data from Kanpur. 3. Leaf blight data from Ayodhya, Kalyani, RPCAU-Pusa, Sabour and Shillongani.

NIVT 3A-IR-LS-TAS, 2022-23

North Eastern Plains Zone

Individual Station Leaf Blight Data

SN	Variety	Code	Ayodhya	Sabour	Burdwan	Coochbehar	Kalyani	Shillongani
1	PBW923	N 401	12	35	46	35	24	68
2	SVPWL21-14	N 402	23	46	24	25	25	24
3	PBW920	N 403	24	34	23	36	23	46
4	NW8071	N 404	12	46	34	45	25	57
5	PBW919	N 405	12	34	12	34	35	57
6	HD3452	N 406	12	45	24	35	25	46
7	NW8055	N 407	24	34	35	45	24	46
8	RAJ4581	N 408	35	34	35	46	35	35
9	DBW420	N 409	34	35	46	35	25	35
10	WH1323	N 410	12	56	23	23	24	57
11	HP1980	N 411	24	45	12	34	23	35
12	UBW20	N 412	23	36	0	35	35	57
13	DBW424	N 413	12	35	24	36	35	57
14	BCW30	N 414	12	34	24	45	24	57
15	UP3126	N 415	12	35	24	46	23	35
16	WH1322	N 416	23	35	45	45	25	35
17	DBW423	N 417	24	35	35	46	35	46
18	DBW422	N 418	25	45	34	25	25	35
19	K2207	N 419	34	35	34	23	25	57
20	BRW3941	N 420	34	34	23	25	24	35
21	DBW421	N 421	24	46	0	35	23	68
22	HD3453	N 422	23	35	24	36	24	35
23	JKW303	N 423	12	46	34	34	24	35
24	HD3454	N 425	23	46	34	36	24	57
25	PBW922	N 426	24	35	57	35	24	24
26	PBW921	N 428	34	46	45	25	24	46
27	K2208	N 429	12	46	34	45	25	57
28	RAJ4580	N 431	24	45	35	25	35	57
29	WH1324	N 433	12	46	24	36	25	46
30	K2206	N 434	23	45	23	35	24	24
31	HD3455	N 435	34	34	23	45	23	46
32	UP3127	N 436	35	35	23	46	24	24
33	DBW107(C)	N 424	12	36	23	34	35	35
34	HD3059(C)	N 427	35	35	45	36	25	46
35	DBW173(C)	N 430	12	36	23	46	36	35
36	HI1563(C)	N 432	23	35	24	35	26	68

2205-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ													
			M.P.								Chhattisgarh			Gujarat		
			Indore			Powarkheda			Gwalior			Bilaspur			Junagadh	
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW4432	N502	51.9	8	1	43.8	12	0	41.3	23	0	32.2	24	0	41.2	18	0
2	HD3456	N503	50.6	12	1	47.9	7	0	54.9	4	1	37.3	20	0	43.4	11	0
3	MACS6829	N504	55.5	1	1	37.5	22	0	53.8	7	0	45.0	8	0	42.7	13	0
4	HI1686	N505	44.7	21	0	44.8	10	0	54.9	4	1	40.5	15	0	38.7	22	0
5	MP3568	N506	52.2	5	1	39.6	16	0	55.9	3	1	41.3	14	0	42.9	12	0
6	LOK81	N507	48.7	13	1	39.6	16	0	46.3	18	0	43.6	10	0	32.8	25	0
7	MACS6830	N508	51.3	9	1	56.3	2	1	51.4	10	0	43.3	11	0	53.2	1	1
8	HI1685	N510	52.1	6	1	49.0	6	0	52.0	9	0	39.5	16	0	42.7	14	0
9	UAS3027	N511	50.7	11	1	43.8	12	0	48.5	16	0	38.4	19	0	44.2	9	0
10	GW551	N512	43.4	24	0	44.8	10	0	44.1	21	0	52.7	1	1	40.7	20	0
11	PBW924	N513	48.7	14	1	35.4	24	0	36.7	25	0	36.0	21	0	43.7	10	0
12	GW558	N514	46.5	19	1	39.6	16	0	42.9	22	0	41.6	13	0	37.9	24	0
13	DBW426	N515	47.7	17	1	43.8	12	0	56.2	2	1	33.2	23	0	49.0	4	1
14	NIAW4300	N516	55.2	2	1	37.5	22	0	49.6	15	0	44.9	9	0	46.3	7	1
15	WH1325	N517	48.0	15	1	34.4	25	0	39.5	24	0	42.0	12	0	42.2	17	0
16	MP3575	N518	44.0	22	0	41.7	15	0	50.0	12	0	34.9	22	0	38.8	21	0
17	GW556	N519	50.8	10	1	38.5	19	0	49.7	13	0	52.1	2	1	49.7	2	1
18	UAS3028	N520	43.6	23	0	46.9	8	0	48.0	17	0	38.6	17	0	49.1	3	1
19	WSM138	N521	47.8	16	1	46.9	8	0	56.6	1	1	48.2	4	1	42.3	16	0
20	HI1687	N522	55.0	3	1	52.1	3	1	46.3	18	0	48.1	5	1	46.0	8	1
21	CG1046	N523	42.1	25	0	38.5	19	0	53.5	8	0	51.9	3	1	38.4	23	0
22	DBW425	N524	52.6	4	1	50.0	5	1	54.7	6	1	46.9	6	1	48.1	5	1
23	MP1394	N525	46.5	18	1	38.5	19	0	49.7	14	0	31.5	25	0	41.0	19	0
24	HD2864(C)	N501	46.0	20	1	57.3	1	1	50.9	11	0	46.6	7	1	42.3	15	0
25	HD2932(C)	N509	52.1	7	1	52.1	3	1	45.0	20	0	38.5	18	0	46.3	6	1
G.M.			49.1			44.0			49.3			42.0			43.3		
S.E.(M)			3.966			3.192			1.080			2.598			3.006		
C.D. (10%)			9.8			7.7			2.6			6.4			7.4		
C.V.			11.4			10.3			3.1			8.8			9.8		
D.O.S.(dd.mm.yy)			13.12.22			08.12.22			06.12.22			11.12.22			14.12.22		

No. of Trials : Proposed = 17 Conducted = 17

Trials not reported (04) = CZ : Jabalpur (RMT), SK Nagar (LSM, HCV)

PZ : Akola (RMT), Nippani (RMT)

2205-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ						PZ								
			Gujarat						Maharashtra								
			Vijapur			Lok-Bharti			Niphad			Pune			Dhule		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW4432	N502	35.6	15	0	44.3	7	1	56.9	1	1	60.8	1	1	44.2	10	0
2	HD3456	N503	36.2	13	0	41.0	13	0	35.9	19	0	55.6	6	1	34.3	22	0
3	MACS6829	N504	33.5	21	0	40.2	17	0	46.4	5	0	53.6	9	0	48.8	4	1
4	HI1686	N505	41.3	6	1	48.5	1	1	44.0	10	0	48.6	15	0	40.9	17	0
5	MP3568	N506	40.0	8	0	39.1	19	0	42.1	13	0	44.6	21	0	43.3	13	0
6	LOK81	N507	25.5	25	0	43.2	9	0	27.0	25	0	56.8	5	1	40.6	18	0
7	MACS6830	N508	35.0	17	0	45.2	5	1	48.7	2	0	59.3	2	1	54.1	2	1
8	HI1685	N510	38.7	9	0	44.6	6	1	45.3	6	0	52.5	10	0	51.9	3	1
9	UAS3027	N511	35.0	16	0	40.7	14	0	44.9	8	0	48.2	16	0	45.6	7	0
10	GW551	N512	29.5	23	0	42.2	10	0	46.9	3	0	47.3	18	0	46.7	5	0
11	PBW924	N513	33.8	19	0	39.0	21	0	37.5	17	0	34.3	25	0	33.5	23	0
12	GW558	N514	36.8	11	0	36.8	24	0	33.2	21	0	42.3	22	0	36.6	20	0
13	DBW426	N515	38.5	10	0	40.4	15	0	44.8	9	0	59.2	3	1	43.6	12	0
14	NIAW4300	N516	41.7	4	1	42.0	11	0	37.0	18	0	52.3	12	0	42.8	15	0
15	WH1325	N517	36.3	12	0	35.0	25	0	35.5	20	0	45.3	19	0	41.4	16	0
16	MP3575	N518	29.4	24	0	39.1	20	0	27.3	24	0	45.2	20	0	59.5	1	1
17	GW556	N519	45.1	2	1	47.6	2	1	38.8	15	0	52.5	11	0	44.6	9	0
18	UAS3028	N520	34.5	18	0	37.0	23	0	38.8	16	0	54.5	7	1	43.1	14	0
19	WSM138	N521	44.8	3	1	47.6	3	1	44.9	7	0	52.1	14	0	29.2	25	0
20	HI1687	N522	33.7	20	0	43.9	8	1	46.8	4	0	52.2	13	0	45.6	5	0
21	CG1046	N523	35.9	14	0	39.8	18	0	31.2	22	0	37.3	24	0	29.6	24	0
22	DBW425	N524	45.7	1	1	41.1	12	0	40.9	14	0	54.1	8	1	44.1	11	0
23	MP1394	N525	32.4	22	0	38.7	22	0	43.6	11	0	41.5	23	0	37.9	19	0
24	HD2864(C)	N501	40.7	7	1	40.3	16	0	42.2	12	0	47.6	17	0	36.0	21	0
25	HD2932(C)	N509	41.5	5	1	45.6	4	1	28.4	23	0	56.9	4	1	46.4	6	0
G.M.			36.8			41.7			40.4			50.2			42.6		
S.E.(M)			2.115			2.091			1.763			2.737			4.535		
C.D. (10%)			5.2			5.2			4.4			6.8			11.2		
C.V.			8.1			7.1			6.2			7.7			15.1		
D.O.S.(dd.mm.yy)			10.12.22			12.12.22			15.12.22			10.12.22			12.12.22		

2205-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ								
			Maharashtra			Karnataka					
			Parbhani			Bagalkot			Dharwad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW4432	N502	66.6	15	0	41.5	13	0	56.2	2	1
2	HD3456	N503	64.7	19	0	42.2	12	0	41.1	22	0
3	MACS6829	N504	68.1	12	1	40.1	15	0	52.5	4	1
4	HI1686	N505	75.0	2	1	37.7	17	0	44.7	17	0
5	MP3568	N506	63.6	21	0	42.3	11	0	46.3	15	0
6	LOK81	N507	68.3	11	1	44.2	8	0	39.6	23	0
7	MACS6830	N508	65.4	18	0	47.0	5	1	48.0	12	0
8	HI1685	N510	69.4	8	1	35.9	20	0	50.7	6	0
9	UAS3027	N511	68.6	10	1	51.6	2	1	54.2	3	1
10	GW551	N512	67.8	13	1	40.9	14	0	45.9	16	0
11	PBW924	N513	56.0	25	0	38.7	16	0	35.5	25	0
12	GW558	N514	73.0	4	1	31.8	24	0	44.5	18	0
13	DBW426	N515	65.5	17	0	43.9	9	0	50.1	8	0
14	NIAW4300	N516	71.0	6	1	46.9	6	1	41.1	21	0
15	WH1325	N517	57.3	24	0	35.0	21	0	43.2	20	0
16	MP3575	N518	68.8	9	1	36.3	19	0	50.1	7	0
17	GW556	N519	63.8	20	0	44.7	7	0	51.2	5	0
18	UAS3028	N520	66.1	16	0	28.5	25	0	46.4	14	0
19	WSM138	N521	72.0	5	1	48.6	3	1	47.6	13	0
20	HI1687	N522	70.9	7	1	55.3	1	1	49.5	9	0
21	CG1046	N523	59.1	23	0	37.6	18	0	43.2	19	0
22	DBW425	N524	75.1	1	1	47.4	4	1	60.1	1	1
23	MP1394	N525	67.0	14	0	43.8	10	0	36.2	24	0
24	HD2864(C)	N501	61.0	22	0	33.4	22	0	48.1	11	0
25	HD2932(C)	N509	74.0	3	1	33.0	23	0	48.9	10	0
G.M.			67.1			41.1			47.0		
S.E.(M)			3.316			3.912			3.536		
C.D. (10%)			8.0			9.7			8.7		
C.V.			7.0			13.5			10.6		
D.O.S.(dd.mm.yy)			06.12.22			08.12.22			09.12.22		

2205-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW4432	N502	41.5	19	0	54.4	1	1	47.4	8	0
2	HD3456	N503	44.5	11	0	45.6	19	0	45.0	17	0
3	MACS6829	N504	44.0	14	0	51.6	6	1	47.5	7	0
4	HI1686	N505	44.8	10	0	48.5	13	0	46.5	13	0
5	MP3568	N506	44.4	12	0	47.0	16	0	45.6	14	0
6	LOK81	N507	40.0	21	0	46.1	18	0	42.8	20	0
7	MACS6830	N508	47.9	2	1	53.7	2	1	50.6	2	1
8	HI1685	N510	45.5	8	0	51.0	8	0	48.0	6	0
9	UAS3027	N511	43.0	15	0	52.2	5	1	47.3	10	0
10	GW551	N512	42.5	18	0	49.3	10	0	45.6	15	0
11	PBW924	N513	39.0	25	0	39.3	25	0	39.1	25	0
12	GW558	N514	40.3	20	0	43.6	22	0	41.8	22	0
13	DBW426	N515	44.1	13	0	51.2	7	1	47.4	9	0
14	NIAW4300	N516	45.3	9	0	48.5	12	0	46.8	12	0
15	WH1325	N517	39.6	24	0	43.0	23	0	41.2	24	0
16	MP3575	N518	39.7	23	0	47.9	15	0	43.5	19	0
17	GW556	N519	47.7	4	1	49.3	9	0	48.4	4	0
18	UAS3028	N520	42.5	17	0	46.2	17	0	44.2	18	0
19	WSM138	N521	47.7	3	1	49.1	11	0	48.3	5	0
20	HI1687	N522	46.4	5	1	53.4	4	1	49.6	3	1
21	CG1046	N523	42.9	16	0	39.7	24	0	41.4	23	0
22	DBW425	N524	48.4	1	1	53.6	3	1	50.8	1	1
23	MP1394	N525	39.8	22	0	45.0	20	0	42.2	21	0
24	HD2864(C)	N501	46.3	6	1	44.7	21	0	45.6	16	0
25	HD2932(C)	N509	45.9	7	0	47.9	14	0	46.8	11	0
G.M.			43.8			48.1			45.7		
S.E.(M)			1.027			1.394			0.849		
C.D. (10%)			2.4			3.3			2.0		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-3B-IR-LS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics								
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	NIAW4432	N-502	0	TR	54-79	64	93-122	110	75-97	89	5	28-54	39
2	HD3456	N-503	0	tMR	59-82	68	98-126	113	79-101	90	0	35-51	40
3	MACS6829	N-504	0	0	52-80	61	94-120	108	79-113	100	5	36-51	41
4	HI1686	N-505	0	tR	50-72	56	93-118	107	74-113	87	0	35-52	44
5	MP3568	N-506	0	tMR	51-75	58	93-119	107	72-97	82	0	32-51	40
6	LOK81	N-507	tMR	40S	45-75	56	95-119	107	64-95	80	0	38-52	44
7	MACS6830	N-508	0	0	54-81	64	94-122	111	85-121	103	15	36-53	47
8	HI1685	N-510	0	tR	51-77	59	94-119	108	74-94	87	0	40-53	44
9	UAS3027	N-511	0	tMS	54-76	64	94-123	110	73-102	88	0	35-53	41
10	GW551	N-512	0	0	51-80	61	94-121	109	80-106	93	0	34-52	43
11	PBW924	N-513	5MR	20MR	57-79	68	100-126	113	66-106	80	0	31-47	37
12	GW558	N-514	0	0	50-78	59	95-120	109	67-97	81	0	30-51	41
13	DBW426	N-515	0	20MS	57-79	65	97-126	111	72-98	85	0	42-53	46
14	NIAW4300	N-516	0	0	59-81	66	101-122	112	85-109	94	0	41-53	47
15	WH1325	N-517	tMR	10MR	55-80	65	98-126	111	76-109	86	0	37-50	41
16	MP3575	N-518	tR	tMR	57-79	67	98-125	112	64-100	81	0	31-52	37
17	GW556	N-519	0	tR	52-77	61	95-121	110	68-94	81	0	37-48	43
18	UAS3028	N-520	0	20MR	54-79	63	96-122	109	79-102	92	0	30-54	40
19	WSM138	N-521	0	0	54-81	65	94-123	111	83-105	94	0	37-51	42
20	HI1687	N-522	0	tR	51-75	61	95-121	110	71-105	86	0	41-52	46
21	CG1046	N-523	5R	0	53-78	61	95-120	110	86-111	99	15	34-53	46
22	DBW425	N-524	tR	20MR	55-79	65	95-123	111	80-111	95	0	36-50	42
23	MP1394	N-525	0	0	52-71	59	91-117	107	74-107	87	0	29-52	42
24	HD2864(C)	N-501	0	0	44-76	57	96-122	109	70-94	81	0	33-51	40
25	HD2932(C)	N-509	20S	20MR	53-79	63	95-124	111	81-121	87	0	35-50	41

1. Ancillary data from Indore, Powarkheda, Bilaspur, Gwalior, Junagadh, Lok Bharti and Vijapur centers
2. Lodging data from Powarkheda and Vijapur
3. Rust data from Junagadh and Vijapur centers.

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-3B-IR-LS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction	Agronomic Characteristics							
			Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	NIAW4432	N-502	0	54-62	57	91-112	103	85-91	87	27-42	39
2	HD3456	N-503	0	55-70	64	102-114	109	85-98	91	31-40	35
3	MACS6829	N-504	0	49-64	57	92-113	104	100-106	102	34-45	42
4	HI1686	N-505	0	49-58	53	91-120	105	79-87	84	33-47	44
5	MP3568	N-506	0	48-65	56	87-111	102	76-84	80	27-41	37
6	LOK81	N-507	0	46-61	54	89-110	102	75-83	79	32-47	41
7	MACS6830	N-508	0	50-64	57	91-112	104	100-105	102	24-49	43
8	HI1685	N-510	0	48-63	56	90-111	103	82-87	86	38-49	44
9	UAS3027	N-511	0	54-70	61	92-116	105	85-89	87	23-44	40
10	GW551	N-512	0	51-63	56	91-111	103	89-95	92	33-48	43
11	PBW924	N-513	0	52-73	62	100-116	107	74-80	77	30-35	33
12	GW558	N-514	0	48-58	53	93-109	104	75-85	79	31-46	42
13	DBW426	N-515	0	54-66	62	93-115	107	78-85	82	34-49	45
14	NIAW4300	N-516	0	57-71	66	100-115	109	89-101	94	20-45	38
15	WH1325	N-517	0	54-63	60	100-112	107	79-89	86	32-43	40
16	MP3575	N-518	0	56-70	65	101-115	110	75-85	80	22-41	34
17	GW556	N-519	0	50-59	54	92-110	103	71-82	76	28-43	39
18	UAS3028	N-520	0	55-63	59	99-112	107	86-91	89	30-47	40
19	WSM138	N-521	0	54-62	58	92-111	103	91-98	93	31-43	39
20	HI1687	N-522	0	48-64	56	92-112	104	80-85	84	40-48	45
21	CG1046	N-523	0	49-64	58	93-113	104	96-100	98	25-50	42
22	DBW425	N-524	0	55-69	61	90-113	104	84-96	93	36-44	41
23	MP1394	N-525	0	49-59	55	92-109	102	81-87	84	25-46	40
24	HD2864(C)	N-501	0	48-63	54	91-111	103	72-84	80	31-43	39
25	HD2932(C)	N-509	10S	54-62	58	92-113	104	83-93	88	31-40	35

1. Ancillary data from Niphad, Pune, Bagalkot, Dharwad, Dhule and Parbhani centers
2. Black Rust data from Dharwad center

NIVT-3B-IR-LS-TAS, 2022-23
Peninsular Zone

Individual Station Brown rust and Leaf blight data

SN	Variety	Code	Brown rust			Leaf blight	
			Dharwad	Nippani	Ugar khurd	Dharwad	Nippani
1	NIAW4120	N501	0	0	0	12	12
2	HI1672	N502	0	10MS	0	02	01
3	HI1673	N503	0	0	0	12	01
4	GW542	N505	60S	0	10MS	00	01
5	CG1042	N507	60S	10MS	20S	00	02
6	MP1388	N508	0	tMR	0	12	01
7	LOK79	N509	0	5MS	0	12	02
8	AKAW5104	N510	10S	tMR	0	24	01
9	HI1675	N511	0	0	0	02	01
10	WH1310	N512	0	0	0	00	01
11	MACS6805	N513	10MS	0	0	00	02
12	PBW897	N514	10MS	tMR	5MS	00	02
13	NIAW4114	N515	0	0	0	12	01
14	GW538	N516	0	0	0	02	01
15	HI1674	N517	0	0	0	02	01
16	DBW395	N518	30S	10MS	0	00	01
17	MP3556	N519	60S	30S	5S	00	12
18	MACS6814	N520	0	0	0	00	01
19	RVW4355	N521	30S	10S	0	00	02
20	MP3557	N522	10S	0	5MS	00	00
21	DBW394	N523	10S	10MS	0	00	02
22	UAS3023	N524	60S	10S	20MS	00	12
23	UAS3022	N525	10MS	0	0	00	02
24	HD2864(C)	N504	0	0	0	12	01
25	HD2932(C)	N506	60S	10MS	80S	00	01

2206-NIVT-4-IR-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ																	
			M.P.						Gujarat										Rajasthan	
			Powarkheda			Indore			Junagadh			Vijapur			SK Nagar			Udaipur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8850	N601	73.1	1	1	57.7	6	1	60.6	7	1	86.2	1	1	58.9	11	0	67.6	2	1
2	MPO1396	N602	71.3	2	1	57.5	8	1	54.0	17	0	56.5	20	0	52.5	16	0	60.7	14	0
3	PWU24	N603	43.1	21	0	47.8	22	0	55.7	15	0	59.6	18	0	49.6	17	0	66.7	4	1
4	GW1367	N604	53.4	12	0	50.3	18	0	60.7	6	1	74.0	7	0	53.5	15	0	48.2	24	0
5	DDW63	N605	52.5	14	0	48.8	21	0	61.1	5	1	63.7	15	0	70.6	2	1	55.4	21	0
6	MACS4135	N606	64.7	5	0	66.5	1	1	57.5	13	0	73.2	8	0	84.2	1	1	66.2	5	1
7	HI8849	N607	70.3	3	1	60.3	4	1	56.4	14	0	68.2	11	0	56.0	13	0	66.7	3	1
8	DDW62	N608	59.1	9	0	57.6	7	1	48.5	21	0	75.6	6	0	62.8	8	0	53.2	22	0
9	MACS4125	N609	62.8	8	0	53.5	13	0	58.4	9	1	76.5	5	0	66.0	6	0	63.9	9	1
10	PDW364	N610	39.4	24	0	49.1	20	0	34.7	25	0	35.0	24	0	25.9	25	0	56.8	17	0
11	NIDW1499	N612	67.5	4	1	55.6	11	0	61.3	4	1	65.8	13	0	67.9	4	0	55.7	19	0
12	UAS483	N614	45.9	20	0	51.6	16	0	55.3	16	0	68.1	12	0	47.3	19	0	63.9	8	1
13	NIDW1520	N615	48.8	17	0	50.8	17	0	49.8	20	0	48.9	22	0	42.5	23	0	58.4	16	0
14	UAS482	N616	50.6	15	0	49.5	19	0	52.8	18	0	59.1	19	0	47.8	18	0	62.9	12	1
15	GW1365	N617	49.7	16	0	56.9	9	0	65.8	2	1	84.6	2	1	57.7	12	0	55.8	18	0
16	GW1366	N618	53.4	12	0	45.6	23	0	66.1	1	1	68.5	9	0	44.2	21	0	64.7	6	1
17	PDW365	N619	35.6	25	0	36.8	25	0	36.5	24	0	33.4	25	0	34.4	24	0	47.5	25	0
18	MPO1395	N620	64.7	5	0	60.9	3	1	57.8	11	1	78.5	4	1	61.7	9	0	58.9	15	0
19	WHD968	N621	43.1	21	0	45.2	24	0	52.5	19	0	65.7	14	0	59.3	10	0	62.2	13	0
20	HI8848	N622	55.3	11	0	59.7	5	1	58.4	10	1	79.4	3	1	69.2	3	1	63.0	10	1
21	AKDW5516	N623	41.3	23	0	56.3	10	0	57.6	12	0	41.2	23	0	43.4	22	0	50.3	23	0
22	NIDW1534	N624	48.8	17	0	53.4	14	0	62.8	3	1	63.0	16	0	67.8	5	0	69.4	1	1
23	HI8737(C)	N611	48.8	17	0	55.0	12	0	47.3	22	0	60.9	17	0	54.4	14	0	55.5	20	0
24	MACS3949(C)	N613	56.3	10	0	53.2	15	0	46.0	23	0	68.4	10	0	64.2	7	0	62.9	11	1
25	HI8713(C)	N625	63.8	7	0	62.7	2	1	59.9	8	1	56.1	21	0	46.1	20	0	64.0	7	1
G.M.			54.5			53.7			55.1			64.4			55.5			60.0		
S.E.(M)			3.934			3.994			3.431			3.700			6.454			2.810		
C.D. (10%)			9.5			9.7			8.5			9.1			15.9			6.9		
C.V.			10.2			10.5			8.8			8.1			16.4			6.6		
D.O.S.(dd.mm.yy)			14.11.22			12.11.22			12.11.22			15.11.22			10.11.22			07.11.22		

No. of Trials: Proposed = 16 Conducted = 16

Trials not reported (05) = CZ : Gwalior (LSM), Dhandhuka (LSM), Kota (LSM)

PZ : Akola (RMT), Niphad (LSM)

2206-NIVT-4-IR-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ													
			Maharashtra						Karnataka							
			Pune			Parbhani			Dharwad			Bagalkot			Nippani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8850	N601	80.0	2	1	51.2	11	0	61.8	2	1	56.6	8	1	61.1	6	1
2	MPO1396	N602	60.4	21	0	50.7	12	0	49.9	10	0	53.9	17	1	45.8	21	0
3	PWU24	N603	70.1	9	0	32.8	23	0	45.7	22	0	61.2	4	1	54.9	13	0
4	GW1367	N604	59.1	22	0	45.4	17	0	48.4	16	0	50.0	19	0	55.6	11	0
5	DDW63	N605	65.9	18	0	39.3	19	0	49.9	12	0	57.5	5	1	54.9	13	0
6	MACS4135	N606	78.2	3	1	51.3	10	0	49.3	13	0	49.6	21	0	69.4	2	1
7	HI8849	N607	71.8	6	0	71.8	1	1	60.6	4	1	49.2	22	0	54.2	16	0
8	DDW62	N608	66.5	15	0	45.8	16	0	51.8	9	0	62.4	3	1	64.6	3	1
9	MACS4125	N609	80.4	1	1	64.9	3	0	49.0	14	0	62.7	2	1	54.2	17	0
10	PDW364	N610	55.1	23	0	36.0	21	0	42.2	24	0	54.0	12	1	50.7	18	0
11	NIDW1499	N612	72.6	4	0	44.6	18	0	58.2	6	1	54.8	11	1	54.9	13	0
12	UAS483	N614	67.1	14	0	37.4	20	0	43.2	23	0	53.9	16	1	38.9	24	0
13	NIDW1520	N615	70.3	8	0	49.3	13	0	59.8	5	1	52.9	18	0	45.1	22	0
14	UAS482	N616	66.4	16	0	31.2	24	0	46.4	21	0	53.9	13	1	56.3	9	0
15	GW1365	N617	66.3	17	0	51.4	9	0	48.4	15	0	63.9	1	1	36.8	25	0
16	GW1366	N618	65.5	19	0	35.5	22	0	47.4	19	0	48.5	23	0	46.5	20	0
17	PDW365	N619	52.5	24	0	48.0	14	0	47.3	20	0	55.6	10	1	41.7	23	0
18	MPO1395	N620	70.4	7	0	54.4	8	0	55.2	7	1	53.9	15	1	57.2	7	0
19	WHD968	N621	64.3	20	0	57.7	7	0	49.9	11	0	49.7	20	0	70.8	1	1
20	HI8848	N622	69.7	10	0	63.0	4	0	47.6	18	0	56.9	5	1	61.8	5	1
21	AKDW5516	N623	44.2	25	0	47.5	15	0	40.4	25	0	47.7	24	0	56.9	8	0
22	NIDW1534	N624	72.6	5	0	61.0	6	0	63.8	1	1	56.5	9	1	48.6	19	0
23	HI8737(C)	N611	69.6	11	0	21.4	25	0	54.4	8	1	46.1	25	0	56.3	9	0
24	MACS3949(C)	N613	68.2	12	0	62.9	5	0	47.8	17	0	57.0	6	1	63.9	4	1
25	HI8713(C)	N625	67.9	13	0	67.2	2	1	60.8	3	1	53.9	14	1	55.6	11	0
G.M.			67.0			48.9			51.2			54.5			54.3		
S.E.(M)			2.808			2.553			4.398			4.111			5.229		
C.D. (10%)			6.8			6.2			10.9			10.2			12.7		
C.V.			5.9			7.4			12.2			10.7			13.6		
D.O.S.(dd.mm.yy)			14.11.22			10.11.22			15.11.22			15.11.22			15.11.22		

]2206-NIVT-4-IR-TS-TDM-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8850	N601	67.4	2	1	62.1	2	1	65.0	1	1
2	MPO1396	N602	58.8	11	0	52.2	17	0	55.8	15	0
3	PWU24	N603	53.8	20	0	52.9	16	0	53.4	17	0
4	GW1367	N604	56.7	16	0	51.7	18	0	54.4	16	0
5	DDW63	N605	58.7	13	0	53.5	14	0	56.3	14	0
6	MACS4135	N606	68.7	1	1	59.6	8	1	64.6	2	1
7	HI8849	N607	63.0	6	0	61.5	3	1	62.3	4	1
8	DDW62	N608	59.5	10	0	58.2	11	1	58.9	11	0
9	MACS4125	N609	63.5	5	0	62.2	1	1	62.9	3	1
10	PDW364	N610	40.1	24	0	47.6	24	0	43.5	24	0
11	NIDW1499	N612	62.3	7	0	57.0	12	0	59.9	8	0
12	UAS483	N614	55.4	17	0	48.1	23	0	52.1	21	0
13	NIDW1520	N615	49.9	22	0	55.5	13	0	52.4	20	0
14	UAS482	N616	53.8	19	0	50.8	19	0	52.4	19	0
15	GW1365	N617	61.8	8	0	53.4	15	0	57.9	12	0
16	GW1366	N618	57.1	15	0	48.7	22	0	53.3	18	0
17	PDW365	N619	37.4	25	0	49.0	21	0	42.7	25	0
18	MPO1395	N620	63.8	4	0	58.2	10	1	61.2	6	0
19	WHD968	N621	54.7	18	0	58.5	9	1	56.4	13	0
20	HI8848	N622	64.2	3	0	59.8	7	1	62.2	5	1
21	AKDW5516	N623	48.3	23	0	47.3	25	0	47.9	23	0
22	NIDW1534	N624	60.9	9	0	60.5	5	1	60.7	7	0
23	HI8737(C)	N611	53.6	21	0	49.5	20	0	51.8	22	0
24	MACS3949(C)	N613	58.5	14	0	60.0	6	1	59.2	10	0
25	HI8713(C)	N625	58.8	12	0	61.1	4	1	59.8	9	0
G.M.			57.2			55.2			56.3		
S.E.(M)			1.719			1.766			1.235		
C.D. (10%)			4.0			4.1			2.9		

Summary of Disease Data and Agronomic Characteristics

Central Zone **NIVT-4-IR-TS-TDM, 2022-23**

S.N.	Variety	Code	Disease Reaction	Agronomic Characteristics								
			Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod. M	TGW.R	TGW.M
1	HI8850	N601	0	64-85	73	113-138	124	73-103	91	0	43-53	49
2	MPO1396	N602	0	64-87	74	112-137	125	76-103	89	0	40-52	45
3	PWU24	N603	0	63-90	75	113-140	126	76-105	91	0	41-53	48
4	GW1367	N604	tR	61-82	71	110-137	123	69-98	83	0	39-62	54
5	DDW63	N605	0	58-86	73	109-141	126	69-104	87	0	43-52	48
6	MACS4135	N606	0	52-84	67	107-136	121	71-110	89	0	45-58	52
7	HI8849	N607	0	60-86	73	108-137	123	79-110	92	35	42-51	46
8	DDW62	N608	0	64-87	75	112-139	124	72-103	86	10	39-53	46
9	MACS4125	N609	0	61-86	72	108-137	123	76-113	94	0	43-60	52
10	PDW364	N610	0	78-95	85	122-138	130	88-106	97	10	26-47	38
11	NIDW1499	N612	0	61-85	72	110-137	124	78-107	94	0	41-57	46
12	UAS483	N614	0	60-88	74	110-138	124	77-107	92	10	36-49	44
13	NIDW1520	N615	0	67-93	80	112-145	128	78-107	94	30	37-52	43
14	UAS482	N616	0	68-89	77	113-138	126	73-102	90	10	31-46	37
15	GW1365	N617	0	61-84	71	109-137	124	69-101	82	0	44-54	49
16	GW1366	N618	0	51-81	66	105-140	121	70-106	89	10	42-59	47
17	PDW365	N619	0	72-94	83	124-144	131	70-99	86	25	28-49	37
18	MPO1395	N620	tR	54-82	69	109-136	123	81-109	93	15	46-56	52
19	WHD968	N621	0	65-93	78	117-139	127	72-104	88	0	38-48	43
20	HI8848	N622	tR	65-81	72	110-134	124	75-106	90	30	40-54	46
21	AKDW5516	N623	0	58-86	72	109-138	124	73-106	89	0	41-52	47
22	NIDW1534	N624	0	62-88	74	110-140	124	81-108	93	10	39-46	42
23	HI8737 (C)	N611	tR	60-85	72	110-139	123	71-101	84	25	46-60	51
24	MACS3949 (C)	N613	0	66-87	76	113-135	124	74-101	90	0	42-53	46
25	HI8713 (C)	N625	0	67-90	77	111-139	126	76-105	94	10	40-48	43

1. Ancillary data from Indore, Junagadh, Powarkheda, SK Nagar, Udaipur and Vijapur centres.
2. Black rust data from Vijapur center.
3. Lodging Data reported from SK Nagar and Vijapur centers.

Summary of Agronomic Characteristics

Peninsular Zone **NIVT-4-IR-TS-TDM, 2022-23**

S.N.	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	HI8850	N601	57-65	63	108-116	113	81-92	88	10	42-55	46
2	MPO1396	N602	58-67	64	108-120	115	78-84	82	0	37-50	42
3	PWU24	N603	58-68	64	106-117	114	73-89	84	5	40-50	44
4	GW1367	N604	57-62	60	109-117	113	72-81	75	5	37-62	49
5	DDW63	N605	56-63	61	103-115	111	71-85	80	0	40-51	45
6	MACS4135	N606	54-58	56	102-113	109	74-83	77	5	41-56	48
7	HI8849	N607	56-62	61	109-117	113	77-87	84	0	42-52	47
8	DDW62	N608	57-70	66	108-124	117	71-87	78	0	40-49	44
9	MACS4125	N609	56-68	64	106-120	115	84-97	91	0	39-60	49
10	PDW364	N610	74-89	79	118-130	125	81-97	89	5	34-47	39
11	NIDW1499	N612	58-68	64	106-118	113	82-96	90	0	41-53	46
12	UAS483	N614	57-70	64	107-118	115	81-92	84	20	44-54	47
13	NIDW1520	N615	64-66	65	112-120	116	82-89	86	0	39-51	45
14	UAS482	N616	56-70	67	102-122	115	72-94	85	0	30-40	37
15	GW1365	N617	56-65	61	108-116	113	73-79	77	0	36-53	43
16	GW1366	N618	54-58	56	97-115	108	70-85	76	0	37-49	42
17	PDW365	N619	74-87	77	116-128	123	71-85	80	10	35-43	38
18	MPO1395	N620	57-63	61	108-116	113	85-91	88	20	38-55	47
19	WHD968	N621	62-73	67	108-118	114	74-90	80	5	36-47	40
20	HI8848	N622	58-68	64	108-115	113	83-91	86	15	31-48	43
21	AKDW5516	N623	55-62	60	100-117	110	82-90	88	0	36-54	43
22	NIDW1534	N624	57-66	63	107-120	116	82-92	89	5	36-44	41
23	HI8737 (C)	N611	58-64	62	105-121	115	67-87	81	10	42-51	47
24	MACS3949 (C)	N613	59-70	67	107-122	117	76-92	82	0	41-55	47
25	HI8713 (C)	N625	59-70	66	108-120	116	83-93	90	5	40-51	45

1. Ancillary data from Pune, Dharwad, Nippani and Parbhani centres.
2. No disease incidence reported from any centre.
3. Lodging Data reported from Pune and Parbhani centres.

2207-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

	Variety	Code	NWPZ															
			Delhi			J&K			Punjab						Haryana				
			Delhi			Jammu			Gurdaspur			Ludhiana			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	BRW3935	N701	38.3	17	0	56.7	11	0	40.5	23	0	58.6	7	0	56.3	6	1	60.7	3	1
2	DBW427	N702	42.6	4	0	67.0	5	1	45.6	15	0	57.9	8	0	51.4	12	0	51.6	16	0
3	NW8053	N703	39.0	11	0	42.0	25	0	49.5	12	0	60.6	2	0	61.8	1	1	51.8	14	0
4	DBW430	N704	38.9	12	0	57.5	10	0	43.7	19	0	59.2	5	0	54.9	8	1	53.3	9	0
5	PBW926	N706	36.3	20	0	66.7	6	1	55.4	4	1	60.4	3	0	56.3	7	1	45.9	22	0
6	HD3459	N707	41.7	6	0	44.1	23	0	40.1	24	0	48.3	17	0	51.4	13	0	57.2	5	1
7	UP3133	N708	38.3	15	0	58.3	9	0	39.1	25	0	53.9	13	0	58.3	5	1	48.5	20	0
8	HD3458	N710	55.1	1	1	50.8	12	0	54.6	6	1	46.2	19	0	48.6	19	0	47.7	21	0
9	WH1326	N711	42.2	5	0	42.6	24	0	53.1	8	1	45.0	20	0	61.8	1	1	61.0	1	1
10	WH1327	N712	38.8	13	0	49.0	15	0	57.5	1	1	44.4	22	0	61.1	3	1	45.8	23	0
11	HD3468	N713	47.0	2	0	44.6	21	0	55.5	3	1	53.0	14	0	54.2	10	1	60.9	2	1
12	K2210	N714	41.0	8	0	46.9	19	0	53.4	7	1	43.5	24	0	51.4	13	0	55.3	7	0
13	DBW429	N715	36.2	21	0	46.2	20	0	45.0	17	0	44.7	21	0	47.9	21	0	55.4	6	0
14	PBW925	N716	32.6	25	0	49.0	15	0	46.6	14	0	43.3	25	0	43.8	25	0	55.3	8	0
15	JKW304	N717	40.7	10	0	63.8	8	0	51.5	10	1	51.5	16	0	50.7	16	0	51.8	15	0
16	PBW927	N718	42.8	3	0	71.2	3	1	55.1	5	1	52.2	15	0	45.1	24	0	51.9	13	0
17	HD3460	N720	37.5	18	0	65.3	7	0	41.9	21	0	59.7	4	0	59.7	4	1	57.5	4	1
18	PBW928	N721	34.3	23	0	49.0	15	0	52.0	9	1	55.8	10	0	47.9	22	0	49.9	19	0
19	UP3129	N722	36.8	19	0	71.5	2	1	42.9	20	0	59.0	6	0	54.2	10	1	50.5	17	0
20	JAUW705	N723	33.9	24	0	47.6	18	0	41.0	22	0	55.2	11	0	54.2	9	1	52.8	12	0
21	DBW428	N724	38.4	14	0	50.7	13	0	44.6	18	0	44.2	23	0	51.4	13	0	43.5	24	0
22	HD3457	N725	40.8	9	0	50.4	14	0	49.1	13	0	47.6	18	0	45.8	23	0	52.9	11	0
23	K1317(C)	N705	41.4	7	0	70.8	4	1	49.5	11	0	55.1	12	0	47.9	20	0	41.3	25	0
24	PBW644(C)	N709	38.3	16	0	44.4	22	0	45.2	16	0	56.2	9	0	50.0	17	0	53.3	10	0
25	HI1612(C)	N719	34.5	22	0	73.7	1	1	56.6	2	1	67.8	1	1	49.3	18	0	50.2	18	0
G.M.			39.5			55.2			48.4			52.9			52.6			52.2		
S.E.(M)			2.104			3.950			2.554			2.059			3.591			1.563		
C.D. (10%)			5.2			9.6			6.3			5.1			8.7			3.9		
C.V.			7.5			10.1			7.5			5.5			9.7			4.2		
D.O.S. (dd.mm.yy)			02.11.22			01.11.22			29.10.22			01.11.22			30.10.22			26.10.22		

No. of Trials : Proposed = 19 Conducted = 19

Trials not reported (03) = NWPZ: Bulandshahr (RMT), Sriganganagar (RMT)

NEPZ: Ranchi (LSM)

2207-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ						NEPZ									
			U.P.			Rajasthan			U.P.						Bihar			
			Modipuram			Durgapura			Kanpur			Varanasi			RPCAU-Pusa			Sabour		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	BRW3935	N701	60.4	8	0	46.5	5	1	37.9	19	0	47.6	5	1	34.4	17	0	38.3	3	0
2	DBW427	N702	54.8	21	0	48.3	2	1	37.6	20	0	47.9	2	1	31.8	21	0	32.6	11	0
3	NW8053	N703	60.6	7	0	46.5	4	1	33.7	25	0	44.5	21	0	35.4	14	0	35.3	5	0
4	DBW430	N704	56.2	15	0	47.9	3	1	54.2	2	0	45.5	15	1	39.1	10	0	38.8	2	0
5	PBW926	N706	55.9	17	0	41.7	15	0	49.5	4	0	45.5	13	1	30.4	23	0	35.1	7	0
6	HD3459	N707	62.6	4	0	44.8	10	0	49.4	6	0	43.8	23	0	28.6	25	0	31.9	12	0
7	UP3133	N708	55.7	19	0	43.8	12	0	38.6	18	0	44.8	18	0	31.6	22	0	30.0	14	0
8	HD3458	N710	49.1	24	0	45.8	7	1	37.3	21	0	47.6	3	1	51.0	1	1	29.1	18	0
9	WH1326	N711	58.4	12	0	41.3	16	0	37.2	22	0	47.2	6	1	40.8	7	0	36.2	4	0
10	WH1327	N712	60.0	11	0	35.8	24	0	48.3	9	0	40.0	25	0	39.5	9	0	26.0	23	0
11	HD3468	N713	62.0	5	0	43.1	13	0	44.1	13	0	45.5	12	1	32.5	20	0	25.7	24	0
12	K2210	N714	60.4	9	0	46.2	6	1	47.9	10	0	44.5	20	0	35.6	13	0	41.2	1	1
13	DBW429	N715	69.7	1	1	42.0	14	0	47.0	11	0	48.6	1	1	33.5	19	0	35.2	6	0
14	PBW925	N716	56.1	16	0	45.5	8	1	54.1	3	0	45.5	14	1	37.6	11	0	32.8	10	0
15	JKW304	N717	57.4	13	0	45.1	9	0	44.4	12	0	46.9	7	1	45.0	3	0	29.7	16	0
16	PBW927	N718	47.2	25	0	51.0	1	1	36.5	24	0	44.8	19	0	34.7	15	0	30.5	13	0
17	HD3460	N720	61.0	6	0	37.8	23	0	58.3	1	1	47.6	4	1	46.7	2	1	28.8	19	0
18	PBW928	N721	51.3	23	0	38.2	21	0	48.7	7	0	46.5	9	1	41.1	6	0	27.6	20	0
19	UP3129	N722	63.8	3	0	44.4	11	0	42.6	14	0	45.4	5	1	36.1	12	0	27.0	21	0
20	JAUW705	N723	54.9	20	0	34.4	25	0	42.4	15	0	46.5	10	1	34.5	16	0	34.3	8	0
21	DBW428	N724	57.0	14	0	38.2	21	0	48.5	8	0	43.7	24	0	29.5	24	0	25.3	25	0
22	HD3457	N725	55.8	18	0	41.3	16	0	49.4	5	0	44.1	22	0	34.0	18	0	29.9	15	0
23	K1317(C)	N705	67.6	2	1	38.9	20	0	39.3	17	0	46.5	8	1	41.5	5	0	34.0	9	0
24	PBW644(C)	N709	54.7	22	0	40.3	18	0	36.7	23	0	45.2	17	0	40.1	8	0	29.4	17	0
25	HI1612(C)	N719	60.0	10	0	40.3	19	0	40.0	16	0	46.2	11	1	42.0	4	0	26.4	22	0
G.M.			58.1			42.8			44.1			45.7			37.1			31.6		
S.E.(M)			1.760			2.540			1.606			1.360			1.989			0.840		
C.D. (10%)			4.3			6.1			4.0			3.4			4.8			2.0		
C.V.			4.3			8.4			5.1			4.2			7.6			3.8		
D.O.S.(dd.mm.yy)			04.11.22			03.11.22			30.10.22			05.11.22			04.11.22			05.11.22		

2207-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ											
			W.Bengal								Assam			
			Kalyani			Coochbehar			Burdwan			Shillongani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	BRW3935	N701	33.3	13	0	22.6	18	0	27.2	22	0	35.2	10	0
2	DBW427	N702	38.2	4	1	28.2	7	0	32.5	12	0	38.4	6	0
3	NW8053	N703	36.1	8	0	39.7	1	1	35.7	5	0	39.2	5	0
4	DBW430	N704	31.3	16	0	21.4	22	0	30.8	14	0	36.9	8	0
5	PBW926	N706	38.9	2	1	26.9	9	0	24.2	24	0	33.5	14	0
6	HD3459	N707	38.2	4	1	33.8	4	1	29.0	19	0	35.2	10	0
7	UP3133	N708	29.2	22	0	23.1	17	0	46.2	2	1	39.3	4	0
8	HD3458	N710	38.2	4	1	27.0	8	0	31.1	13	0	32.8	16	0
9	WH1326	N711	38.9	2	1	25.0	13	0	33.1	11	0	28.9	23	0
10	WH1327	N712	31.3	16	0	25.7	11	0	37.7	4	0	33.5	13	0
11	HD3468	N713	29.9	20	0	25.2	12	0	34.2	10	0	42.0	2	0
12	K2210	N714	25.7	25	0	21.2	24	0	30.1	16	0	31.2	19	0
13	DBW429	N715	34.0	12	0	21.3	23	0	35.4	6	0	28.5	24	0
14	PBW925	N716	30.6	18	0	30.9	5	1	28.3	20	0	40.5	3	0
15	JKW304	N717	32.6	14	0	19.8	25	0	35.0	7	0	45.6	1	1
16	PBW927	N718	31.9	15	0	24.6	14	0	30.0	18	0	29.8	22	0
17	HD3460	N720	30.6	19	0	37.3	2	1	27.6	21	0	29.9	21	0
18	PBW928	N721	34.7	11	0	21.9	20	0	26.7	23	0	27.9	25	0
19	UP3129	N722	35.4	9	0	23.1	16	0	30.3	15	0	35.2	9	0
20	JAUW705	N723	28.5	23	0	24.4	15	0	34.2	9	0	33.6	12	0
21	DBW428	N724	27.8	24	0	22.4	19	0	30.0	17	0	32.1	17	0
22	HD3457	N725	43.1	1	1	29.2	6	0	35.0	7	0	37.4	7	0
23	K1317(C)	N705	37.5	7	1	37.0	3	1	46.8	1	1	29.9	20	0
24	PBW644(C)	N709	35.4	9	0	21.4	21	0	20.2	25	0	31.7	18	0
25	HI1612(C)	N719	29.9	20	0	26.4	10	0	40.2	3	0	33.0	15	0
G.M.			33.6			26.4			32.5			34.4		
S.E.(M)			2.985			3.902			2.272			0.598		
C.D. (10%)			7.2			9.4			5.5			1.5		
C.V.			12.5			20.9			9.9			2.5		
D.O.S.(dd.mm.yy)			05.11.22			29.10.22			04.11.22			04.11.22		

2107-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2022-23

ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	BRW3935	N701	52.2	7	1	34.6	20	0	43.4	11	0
2	DBW427	N702	52.4	5	1	35.9	11	0	44.2	7	1
3	NW8053	N703	51.5	11	0	37.5	5	1	44.5	5	1
4	DBW430	N704	51.5	12	0	37.2	7	0	44.4	6	1
5	PBW926	N706	52.3	6	1	35.5	13	0	43.9	8	0
6	HD3459	N707	48.8	18	0	36.2	9	0	42.5	15	0
7	UP3133	N708	49.5	16	0	35.3	15	0	42.4	17	0
8	HD3458	N710	49.7	15	0	36.8	8	0	43.3	13	0
9	WH1326	N711	50.7	13	0	35.9	10	0	43.3	12	0
10	WH1327	N712	49.0	17	0	35.2	16	0	42.1	19	0
11	HD3468	N713	52.5	4	1	34.9	17	0	43.7	9	0
12	K2210	N714	49.7	14	0	34.7	19	0	42.2	18	0
13	DBW429	N715	48.4	19	0	35.4	14	0	41.9	21	0
14	PBW925	N716	46.5	24	0	37.5	4	1	42.0	20	0
15	JKW304	N717	51.6	9	0	37.4	6	1	44.5	4	1
16	PBW927	N718	52.1	8	1	32.8	23	0	42.5	16	0
17	HD3460	N720	52.5	3	1	38.3	2	1	45.4	1	1
18	PBW928	N721	47.3	22	0	34.4	22	0	40.8	22	0
19	UP3129	N722	52.9	2	1	34.4	21	0	43.6	10	0
20	JAUW705	N723	46.7	23	0	34.8	18	0	40.8	23	0
21	DBW428	N724	46.0	25	0	32.4	25	0	39.2	25	0
22	HD3457	N725	48.0	20	0	37.8	3	1	42.9	14	0
23	K1317(C)	N705	51.6	10	0	39.1	1	1	45.3	2	1
24	PBW644(C)	N709	47.8	21	0	32.5	24	0	40.2	24	0
25	HI1612(C)	N719	54.1	1	1	35.5	12	0	44.8	3	1
G.M.			50.2			35.7			42.9		
S.E.(M)			0.933			0.778			0.607		
C.D. (10%)			2.2			1.8			1.4		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-5A-RI-TS-TAS 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								
			Yl	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	BRW3935	N701	20S	8.0	10S	2.0	88-110	102	129-162	149	82-116	102	5	35-47	39
2	DBW427	N702	40S	18.0	40S	12.0	84-109	99	125-159	146	84-110	98	0	35-46	39
3	NW8053	N703	40S	20.0	20S	7.0	84-112	102	127-161	149	81-119	101	0	32-52	41
4	DBW430	N704	40S	19.0	10S	2.8	87-112	102	126-161	148	84-116	101	0	34-49	41
5	PBW926	N706	60S	21.0	10S	5.0	92-111	103	128-159	147	79-119	100	0	34-49	42
6	HD3459	N707	20S	7.0	10S	4.0	82-106	97	126-160	147	87-114	101	25	31-48	40
7	UP3133	N708	40S	14.4	5S	1.0	92-114	105	128-160	148	81-114	98	0	36-48	41
8	HD3458	N710	10S	5.0	40S	16.0	84-107	100	125-163	149	83-108	96	0	33-47	41
9	WH1326	N711	40S	13.0	10S	4.0	84-107	101	127-160	147	75-120	102	0	31-55	45
10	WH1327	N712	10S	5.0	00	0.0	82-107	99	125-160	146	77-110	95	0	31-45	39
11	HD3468	N713	60S	14.0	20S	9.0	87-108	101	126-162	146	87-118	100	0	29-45	37
12	K2210	N714	60S	14.6	20S	6.0	83-112	101	125-162	148	82-113	97	0	32-52	41
13	DBW429	N715	60S	24.0	5S	1.0	93-114	106	128-160	150	83-112	97	0	29-46	38
14	PBW925	N716	60S	18.0	10S	2.0	83-107	98	128-162	147	87-114	98	0	29-46	41
15	JKW304	N717	60S	18.0	30S	12.0	92-112	104	129-161	150	87-117	103	5	30-51	42
16	PBW927	N718	5S	2.8	5S	2.0	88-112	103	126-161	147	88-112	98	0	34-46	41
17	HD3460	N720	60S	25.0	20S	6.0	92-114	106	128-161	149	81-120	99	0	27-49	37
18	PBW928	N721	10S	4.0	40S	22.0	95-114	108	130-163	150	78-113	99	0	28-44	37
19	UP3129	N722	40S	16.0	00	0.0	91-113	105	128-162	150	86-110	97	0	32-47	39
20	JAUW705	N723	40S	12.0	10S	5.8	90-112	102	128-161	149	90-133	108	0	29-49	38
21	DBW428	N724	10S	5.0	00	0.0	87-109	101	129-159	147	84-118	100	0	33-55	41
22	HD3457	N725	10S	2.0	00	0.0	87-113	103	127-161	148	84-109	93	0	35-47	40
23	K1317(C)	N705	60S	15.0	tS	0.2	92-113	104	127-161	149	86-117	101	0	32-54	44
24	PBW644(C)	N709	40S	22.0	20S	8.0	90-110	103	125-161	147	88-124	107	10	30-45	39
25	HI1612(C)	N719	60S	26.0	10MS	1.6	93-114	107	130-163	150	90-122	102	25	31-47	38

1. Ancillary data from Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Modipuram centres.
2. Yellow rust data from Gurdaspur, Hisar, Jammu, Karnal and Ludhiana centres.
3. Brown rust data from Gurdaspur, Hisar, Jammu, Karnal and Ludhiana centres.
4. Lodging data from Hisar and Ludhiana centres.

NIVT 5A-RI-TS-TAS, 2022-23
North Western Plains Zone

Individual Station Rust Data

SN	Variety	Code	Yellow rust					Brown rust				
			Gurdaspur	Hisar	Jammu	Karnal	Ludhiana	Gurdaspur	Hisar	Jammu	Karnal	Ludhiana
1	BRW3935	N701	20S	0	0	0	20S	0	0	0	10S	0
2	DBW427	N702	40S	10S	40S	0	0	0	10S	0	10S	40S
3	NW8053	N703	40S	0	40S	0	20S	0	0	20S	5S	10S
4	DBW430	N704	40S	5S	10S	0	40S	0	0	5MS	10S	0
5	PBW926	N706	20S	5S	60S	0	20S	10S	0	5S	10S	0
6	HD3459	N707	20S	0	5S	0	10S	0	0	0	10S	10S
7	UP3133	N708	20S	10S	5MR	0	40S	0	0	0	5S	0
8	HD3458	N710	10S	5S	10S	0	0	40S	0	0	20S	20S
9	WH1326	N711	20S	0	40S	0	55	0	0	0	10S	10S
10	WH1327	N712	5S	0	10S	0	0	0	0	0	0	0
11	HD3468	N713	10S	0	60S	0	0	0	20S	10S	5S	10S
12	K2210	N714	20MR	0	60S	0	5S	0	0	0	10S	20S
13	DBW429	N715	40S	0	60S	0	20S	0	0	5S	0	0
14	PBW925	N716	10S	0	60S	0	20S	0	0	10S	0	0
15	JKW304	N717	10S	0	60S	0	20S	10S	0	10S	30S	10S
16	PBW927	N718	5MS	0	5S	0	5S	0	0	0	5S	5S
17	HD3460	N720	60S	0	40S	5S	20S	0	0	5S	20S	5S
18	PBW928	N721	10S	0	0	0	10S	10S	0	40S	40S	20S
19	UP3129	N722	40S	0	20S	0	20S	0	0	0	0	0
20	JAUW705	N723	40S	5S	10S	0	5S	0	10S	5MS	10S	5S
21	DBW428	N724	10S	0	10S	0	5S	0	0	0	0	0
22	HD3457	N725	0	0	10S	0	0	0	0	0	0	0
23	K1317(C)	N705	0	0	60S	5S	10S	0	0	0	tS	0
24	PBW644(C)	N709	40S	10S	20S	0	40S	0	0	0	20S	20S
25	HI1612(C)	N719	40S	60S	10S	TR	20S	0	0	0	10MS	0

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-5A-RI-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							
			Br	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	BRW3935	N701	5S	46(35)	60-88	76	104-138	122	74-99	90	35-44	39
2	DBW427	N702	40S	79(46)	58-86	75	106-140	123	76-98	88	32-47	39
3	NW8053	N703	20S	68(45)	54-88	76	105-138	124	81-96	89	36-50	42
4	DBW430	N704	0	46(35)	58-86	74	103-142	122	77-102	90	32-46	39
5	PBW926	N706	0	46(35)	60-91	77	106-137	123	79-101	93	32-52	42
6	HD3459	N707	15S	57(35)	57-88	74	105-139	123	81-100	91	35-45	39
7	UP3133	N708	5S	56(45)	62-93	81	106-141	125	75-93	85	30-48	39
8	HD3458	N710	20S	78(46)	55-88	76	105-139	125	74-95	86	30-48	40
9	WH1326	N711	0	67(45)	54-86	72	108-137	123	69-104	89	30-54	43
10	WH1327	N712	0	78(46)	62-88	78	103-139	123	72-93	83	30-46	39
11	HD3468	N713	tMS	56(45)	61-91	77	105-140	124	75-98	90	33-46	39
12	K2210	N714	20S	56(45)	58-86	74	104-138	123	74-98	83	32-45	40
13	DBW429	N715	0	57(45)	62-93	80	107-142	124	77-91	85	29-45	38
14	PBW925	N716	0	57(35)	54-92	75	107-139	125	78-95	88	33-45	39
15	JKW304	N717	60S	45(34)	62-95	81	106-140	126	78-101	92	33-47	39
16	PBW927	N718	5MS	78(56)	58-88	76	104-139	123	71-92	86	32-48	39
17	HD3460	N720	40S	46(35)	63-95	81	106-140	126	81-102	92	33-47	39
18	PBW928	N721	20S	57(34)	63-96	82	105-142	125	85-97	91	31-54	39
19	UP3129	N722	10S	78(46)	61-90	79	106-138	126	69-97	85	32-48	38
20	JAUW705	N723	5S	56(35)	57-88	76	106-137	123	81-101	94	27-49	40
21	DBW428	N724	0	46(35)	58-89	76	102-136	122	72-98	90	34-48	40
22	HD3457	N725	0	67(46)	58-88	75	105-138	124	66-93	79	30-45	37
23	K1317(C)	N705	0	67(45)	61-92	79	104-140	124	78-103	94	35-49	42
24	PBW644(C)	N709	0	56(35)	63-91	79	108-140	124	89-101	96	30-44	39
25	HI1612(C)	N719	0	46(35)	67-94	83	107-141	126	80-100	88	30-45	38

1. Ancillary data from Sabour, Burdwan, Coochbehar, Kalyani, Kanpur, RPCAU-Pusa, Shillongani and Varanasi centres.
2. Brown rust data from Kanpur centre only.
3. Leaf blight data from Sabour, Burdwan, Coochbehar, Kalyani, RPCAU-PUSA and Shillongani centres
4. Lodging data from Shillongani centre only.

NIVT-5A-RI-TS-TAS, 2022-23
North Eastern Plains Zone

Individual Station Leaf Blight Data

SN	Variety	Code	Sabour	Burdwan	Coochbehar	Kalyani	RPCAU-PUSA	Shillongani
1	BRW3935	N701	34	24	34	46	45	35
2	DBW427	N702	45	34	25	79	56	35
3	NW8053	N703	46	45	23	68	34	35
4	DBW430	N704	46	24	34	35	45	46
5	PBW926	N706	46	34	34	36	45	46
6	HD3459	N707	35	45	23	57	23	46
7	UP3133	N708	45	56	34	23	34	35
8	HD3458	N710	35	45	45	24	78	46
9	WH1326	N711	45	67	23	35	67	35
10	WH1327	N712	34	24	35	47	78	46
11	HD3468	N713	35	45	34	46	56	35
12	K2210	N714	46	56	23	46	45	46
13	DBW429	N715	35	24	34	57	56	35
14	PBW925	N716	46	24	34	34	45	57
15	JKW304	N717	35	45	23	24	34	35
16	PBW927	N718	34	78	45	68	56	46
17	HD3460	N720	34	46	34	23	45	35
18	PBW928	N721	35	23	23	24	34	57
19	UP3129	N722	35	78	23	25	56	46
20	JAUW705	N723	35	56	23	23	45	46
21	DBW428	N724	34	46	23	46	45	35
22	HD3457	N725	35	67	34	58	34	57
23	K1317(C)	N705	35	56	34	24	67	46
24	PBW644(C)	N709	35	35	23	24	56	46
25	HI1612(C)	N719	36	45	34	23	45	46

2208-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ														
			M.P.								Chhattisgarh			Rajasthan		
			Indore			Sagar			Powarkheda			Bilaspur			Udaipur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBN16-1826	N801	37.9	7	1	47.2	9	0	32.6	10	0	36.5	13	0	46.7	16	0
2	NIAW4387	N802	35.7	13	0	51.6	2	1	31.6	14	0	40.4	9	1	50.9	6	0
3	DBW428	N803	37.5	9	1	48.6	7	1	42.3	1	1	37.4	12	0	50.7	7	0
4	UAS3029	N804	38.6	6	1	45.4	14	0	36.7	4	1	35.3	16	0	50.1	10	0
5	UAS484(d)	N806	38.7	5	1	46.1	12	0	28.2	16	0	34.8	18	0	44.5	20	0
6	GW1368(d)	N807	28.3	24	0	41.4	21	0	28.2	16	0	35.3	17	0	47.1	15	0
7	HI8852(d)	N808	38.8	4	1	50.2	4	1	26.3	19	0	33.2	19	0	46.5	17	0
8	MACS4131(d)	N809	33.0	19	0	51.0	3	1	33.1	8	0	39.3	10	0	48.3	13	0
9	HI1688	N810	39.8	2	1	49.8	5	1	32.6	11	0	40.7	8	1	47.8	14	0
10	DBW432	N811	37.9	8	1	46.6	11	0	35.6	6	0	30.3	23	0	50.6	8	0
11	MPO1398(d)	N812	32.0	20	0	45.4	15	0	18.6	24	0	41.4	5	1	56.0	1	1
12	NIAW4267	N813	37.5	10	1	46.9	10	0	35.8	5	0	38.9	11	0	55.7	2	1
13	HI1689	N814	33.7	17	0	45.9	13	0	39.3	3	1	45.2	1	1	46.3	19	0
14	AKAW5514	N815	34.7	14	0	52.1	1	1	41.4	2	1	40.9	7	1	39.4	22	0
15	HI1693	N816	34.2	16	0	35.1	25	0	22.2	22	0	41.4	4	1	50.6	9	0
16	GW552	N817	30.2	21	0	44.8	17	0	26.8	18	0	32.6	20	0	44.0	21	0
17	DBW431	N818	29.8	22	0	36.3	24	0	24.6	21	0	35.5	15	0	37.9	24	0
18	MP3577	N822	33.4	18	0	38.6	23	0	30.5	15	0	30.8	22	0	49.9	11	0
19	DDW64(d)	N823	40.4	1	1	43.3	19	0	20.7	23	0	29.2	25	0	53.3	4	1
20	HI8851(d)	N824	34.3	15	0	48.9	6	1	25.4	20	0	44.4	2	1	49.0	12	0
21	CG1047	N825	39.8	3	1	45.4	16	0	31.9	13	0	41.3	6	1	38.2	23	0
22	DBW110(C)	N805	37.2	11	1	43.7	18	0	32.7	9	0	35.5	14	0	54.6	3	1
23	HI1605(C)	N820	36.6	12	1	48.6	7	1	35.3	7	0	31.9	21	0	46.5	18	0
24	HI8627(d)(C)	N819	29.3	23	0	43.1	20	0	32.0	12	0	43.1	3	1	52.8	5	1
25	UAS446(d)(C)	N821	21.8	25	0	38.8	22	0	14.4	25	0	29.5	24	0	36.2	25	0
G.M.			34.8			45.4			30.3			37.0			47.7		
S.E.(M)			2.605			1.742			2.384			1.953			2.046		
C.D. (10%)			6.3			4.2			5.9			4.8			5.1		
C.V.			10.6			5.4			11.1			7.5			6.1		
D.O.S.(dd.mm.yy)			03.11.22			04.11.22			03.11.22			03.11.22			30.10.22		

No. of Trials : Proposed = 18 Conducted = 18

Trials not reported (05)= CZ: Jabalpur (RMT), SK Nagar (LSM,HCV)
PZ: Akola (RMT), Nippani (RMT), Niphad (LSM)

2208-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ										PZ		
			Rajasthan			Gujarat							Maharashtra		
			Kota			Vijapur			Junagadh			Dhandhuka		Pune		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBN16-1826	N801	67.2	16	0	50.7	6	0	33.6	10	0	34.0	6	0	33.0	5	1
2	NIAW4387	N802	54.8	23	0	45.2	15	0	38.7	2	1	34.0	6	0	35.2	1	1
3	DBW428	N803	79.5	3	1	57.8	2	1	30.6	15	0	27.1	21	0	29.6	13	0
4	UAS3029	N804	79.9	2	1	53.8	5	1	42.2	1	1	41.7	2	1	30.2	11	1
5	UAS484(d)	N806	80.3	1	1	44.1	18	0	29.0	20	0	31.3	11	0	31.1	9	1
6	GW1368(d)	N807	65.3	19	0	34.9	24	0	20.6	25	0	43.8	1	1	25.3	21	0
7	HI8852(d)	N808	71.1	10	0	44.6	16	0	30.8	14	0	29.9	14	0	32.3	7	1
8	MACS4131(d)	N809	58.7	21	0	39.9	21	0	29.2	18	0	29.2	16	0	34.7	3	1
9	HI1688	N810	70.8	11	0	50.3	7	0	29.8	16	0	27.8	20	0	31.8	8	1
10	DBW432	N811	68.8	14	0	55.3	3	1	36.7	5	0	37.8	4	0	27.4	17	0
11	MPO1398(d)	N812	66.0	18	0	36.0	22	0	28.9	21	0	29.2	16	0	26.0	19	0
12	NIAW4267	N813	66.7	17	0	59.6	1	1	35.8	6	0	34.9	5	0	32.5	6	1
13	HI1689	N814	57.9	22	0	48.4	10	0	32.0	13	0	21.4	23	0	35.1	2	1
14	AKAW5514	N815	53.8	25	0	50.0	8	0	38.2	3	1	33.0	9	0	29.6	12	0
15	HI1693	N816	68.9	13	0	35.7	23	0	29.7	17	0	38.9	3	0	25.9	20	0
16	GW552	N817	74.8	5	1	46.5	14	0	33.2	11	0	29.9	13	0	27.7	16	0
17	DBW431	N818	67.7	15	0	47.7	12	0	34.5	7	0	28.1	19	0	26.3	18	0
18	MP3577	N822	73.3	7	1	49.9	9	0	28.8	22	0	19.4	24	0	21.1	5	0
19	DDW64(d)	N823	72.2	8	1	43.7	19	0	32.2	12	0	25.7	22	0	28.7	15	0
20	HI8851(d)	N824	61.8	20	0	44.6	17	0	29.1	19	0	28.8	18	0	30.5	10	1
21	CG1047	N825	73.5	6	1	54.1	4	1	34.1	9	0	31.0	12	0	34.6	4	1
22	DBW110(C)	N805	54.6	24	0	48.1	11	0	34.3	8	0	34.0	8	0	28.8	14	0
23	HI1605(C)	N820	71.8	9	1	47.7	13	0	37.9	4	1	31.9	10	0	25.2	22	0
24	HI8627(d)(C)	N819	76.1	4	1	40.5	20	0	21.7	24	0	29.9	14	0	24.8	23	0
25	UAS446(d)(C)	N821	69.3	12	0	33.6	25	0	21.8	23	0	16.3	25	0	22.3	24	0
G.M.			68.2			46.5			31.7			30.8			29.2		
S.E.(M)			3.693			2.709			2.225			1.556			2.469		
C.D. (10%)			9.1			6.6			5.5			3.8			6.0		
C.V.			7.7			8.2			9.9			7.2			12.0		
D.O.S.(dd.mm.yy)			04.11.22			05.11.22			03.11.22			04.11.22			05.11.22		

2208-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ								
			Maharashtra						Karnataka		
			Dhule			Parbhani			Dharwad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBN16-1826	N801	27.1	17	0	37.0	10	0	31.6	13	0
2	NIAW4387	N802	36.5	2	1	56.3	1	1	35.1	4	1
3	DBW428	N803	25.3	21	0	15.0	25	0	27.1	21	0
4	UAS3029	N804	34.4	8	1	37.7	8	0	38.7	1	1
5	UAS484(d)	N806	28.5	12	0	35.5	14	0	29.2	17	0
6	GW1368(d)	N807	26.7	19	0	34.5	16	0	31.3	15	0
7	HI8852(d)	N808	31.4	10	0	37.5	9	0	28.5	20	0
8	MACS4131(d)	N809	26.4	20	0	51.3	2	1	31.2	16	0
9	HI1688	N810	34.5	7	1	34.4	17	0	34.2	5	0
10	DBW432	N811	35.4	5	1	38.9	6	0	32.7	10	0
11	MPO1398(d)	N812	24.7	22	0	31.6	20	0	25.7	22	0
12	NIAW4267	N813	35.6	4	1	40.8	4	0	35.9	3	1
13	HI1689	N814	27.1	16	0	40.7	5	0	33.5	6	0
14	AKAW5514	N815	36.5	2	1	36.6	11	0	29.0	18	0
15	HI1693	N816	33.7	9	1	30.2	21	0	31.6	11	0
16	GW552	N817	28.1	14	0	33.4	19	0	32.8	9	0
17	DBW431	N818	28.5	12	0	36.0	13	0	31.5	14	0
18	MP3577	N822	22.8	23	0	35.4	15	0	25.6	23	0
19	DDW64(d)	N823	27.1	17	0	22.5	24	0	31.6	12	0
20	HI8851(d)	N824	29.2	11	0	43.1	3	0	33.3	7	0
21	CG1047	N825	37.5	1	1	33.7	18	0	36.6	2	1
22	DBW110(C)	N805	17.4	24	0	36.2	12	0	28.9	19	0
23	HI1605(C)	N820	34.7	6	1	38.6	7	0	32.9	8	0
24	HI8627(d)(C)	N819	28.1	14	0	25.3	22	0	21.7	25	0
25	UAS446(d)(C)	N821	15.0	25	0	24.2	23	0	23.7	24	0
G.M.			29.3			35.5			31.0		
S.E.(M)			2.488			2.411			1.470		
C.D. (10%)			6.0			6.0			3.6		
C.V.			12.0			9.6			6.7		
D.O.S.(dd.mm.yy)			04.11.22			05.11.22			03.11.22		

2208- NIVT-5B-RI-TS-TDM-NAT-ZONE, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBN16-1826	N801	42.9	8	0	32.2	13	0	39.6	9	0
2	NIAW4387	N802	42.6	10	0	40.8	1	1	42.0	3	1
3	DBW428	N803	45.7	3	1	24.3	24	0	39.1	10	0
4	UAS3029	N804	47.1	1	1	35.2	5	0	43.4	1	1
5	UAS484(d)	N806	41.9	11	0	31.1	14	0	38.6	14	0
6	GW1368(d)	N807	38.3	23	0	29.5	18	0	35.6	22	0
7	HI8852(d)	N808	41.3	13	0	32.4	12	0	38.6	15	0
8	MACS4131(d)	N809	40.2	18	0	35.9	3	0	38.9	12	0
9	HI1688	N810	43.3	5	0	33.8	8	0	40.3	6	0
10	DBW432	N811	44.4	4	0	33.6	9	0	41.1	4	0
11	MPO1398(d)	N812	39.3	22	0	27.0	21	0	35.5	23	0
12	NIAW4267	N813	45.7	2	1	36.2	2	0	42.8	2	1
13	HI1689	N814	41.1	14	0	34.1	6	0	39.0	11	0
14	AKAW5514	N815	42.6	9	0	32.9	10	0	39.6	8	0
15	HI1693	N816	39.6	20	0	30.3	17	0	36.8	18	0
16	GW552	N817	40.3	17	0	30.5	16	0	37.3	17	0
17	DBW431	N818	38.0	24	0	30.6	15	0	35.7	21	0
18	MP3577	N822	39.4	21	0	26.2	22	0	35.4	24	0
19	DDW64(d)	N823	40.1	19	0	27.5	20	0	36.2	19	0
20	HI8851(d)	N824	40.7	16	0	34.0	7	0	38.7	13	0
21	CG1047	N825	43.2	6	0	35.6	4	0	40.9	5	0
22	DBW110(C)	N805	41.6	12	0	27.8	19	0	37.4	16	0
23	HI1605(C)	N820	43.1	7	0	32.8	11	0	40.0	7	0
24	HI8627(d)(C)	N819	40.9	15	0	25.0	23	0	36.0	20	0
25	UAS446(d)(C)	N821	31.3	25	0	21.3	25	0	28.2	25	0
G.M.			41.4			31.2			38.3		
S.E.(M)			0.800			1.125			0.653		
C.D. (10%)			1.9			2.6			1.5		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT 5B-RI-TS-TDM, 2022-23**

SN	Variety	Code	Disease Reaction	Agronomic Characteristics								
			Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	PBN16-1826	N801	tR	50-84	68	96-139	121	75-109	90	0	35-48	40
2	NIAW4387	N802	0	47-85	63	103-141	121	74-108	92	0	38-51	45
3	DBW428	N803	0	50-83	66	97-142	121	68-105	89	0	45-59	52
4	UAS3029	N804	0	56-84	69	102-140	123	71-102	87	0	43-54	47
5	UAS484(d)	N806	0	58-80	69	105-144	123	72-97	88	0	42-60	48
6	GW1368(d)	N807	0	52-79	62	98-141	118	55-96	67	0	37-55	50
7	HI8852(d)	N808	0	53-81	65	99-140	120	64-100	75	0	43-57	50
8	MACS4131(d)	N809	0	53-86	66	99-138	120	67-105	82	0	41-53	47
9	HI1688	N810	0	47-87	61	95-138	116	62-110	86	0	40-51	47
10	DBW432	N811	tR	53-81	66	99-133	120	69-102	82	0	42-54	48
11	MPO1398(d)	N812	0	59-87	74	110-138	126	67-103	80	0	40-55	47
12	NIAW4267	N813	0	52-83	65	96-142	121	73-104	90	0	37-47	43
13	HI1689	N814	0	50-79	61	97-130	118	73-100	86	0	38-52	45
14	AKAW5514	N815	0	57-82	70	110-136	124	84-119	105	20	35-51	42
15	HI1693	N816	0	59-83	71	105-137	124	62-101	76	0	34-48	40
16	GW552	N817	0	54-86	69	97-137	120	69-100	84	0	35-46	39
17	DBW431	N818	0	61-90	74	109-138	125	61-100	76	0	34-46	39
18	MP3577	N822	0	44-86	60	96-140	118	57-100	74	0	37-52	44
19	DDW64(d)	N823	tR	57-84	71	109-140	123	66-101	84	0	37-53	44
20	HI8851(d)	N824	0	54-81	66	100-138	120	71-103	83	0	43-56	51
21	CG1047	N825	0	52-79	65	96-132	118	75-115	93	0	32-52	42
22	DBW110(C)	N805	tR	57-89	68	100-139	121	73-105	86	0	38-50	45
23	HI1605(C)	N820	0	54-89	68	100-137	120	77-104	89	0	38-46	41
24	HI8627(d)(C)	N819	0	61-87	74	112-138	125	63-101	87	0	36-48	44
25	UAS446(d)(C)	N821	0	60-89	71	103-139	122	70-98	82	5	37-54	42

1. Ancillary data from Sagar, Kota, Udaipur, Powarkheda, Bilaspur, Dhanduka, Indore, Junagadh and Vijapur centres
2. Black rust data from Vijapur center.
3. Data on lodging from Sagar and Udaipur centers.

Summary of Agronomic Characteristics

Peninsular Zone **Trial: NIVT 5B-RI-TS-TDM, 2022-23**

SN	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	PBN16-1826	N801	52-65	60	98-117	107	67-79	76	0	32-39	35
2	NIAW4387	N802	44-62	55	95-116	106	72-83	80	0	32-46	41
3	DBW428	N803	52-63	58	99-113	106	67-82	75	0	42-52	46
4	UAS3029	N804	58-68	62	103-117	109	70-80	75	0	38-47	41
5	UAS484(d)	N806	57-64	59	103-115	109	77-89	84	20	40-51	43
6	GW1368(d)	N807	47-61	55	101-112	105	56-67	62	0	40-51	43
7	HI8852(d)	N808	52-64	57	102-114	107	66-79	70	25	43-50	47
8	MACS4131(d)	N809	52-63	58	99-115	107	70-80	74	0	36-49	42
9	HI1688	N810	42-61	53	93-115	103	68-80	74	20	41-49	46
10	DBW432	N811	55-64	59	101-116	108	66-76	72	0	37-46	42
11	MPO1398(d)	N812	62-72	65	107-117	111	66-77	72	0	24-51	41
12	NIAW4267	N813	52-62	58	100-114	108	69-80	77	25	37-45	41
13	HI1689	N814	44-62	54	96-112	104	66-84	76	0	37-45	41
14	AKAW5514	N815	62-68	65	107-118	112	77-107	100	0	23-46	36
15	HI1693	N816	57-69	64	102-119	110	67-75	71	0	28-41	35
16	GW552	N817	47-67	61	102-112	106	67-76	71	0	29-40	36
17	DBW431	N818	61-75	68	104-122	113	64-78	69	0	29-39	35
18	MP3577	N822	43-62	54	95-114	103	61-71	65	0	38-48	42
19	DDW64(d)	N823	62-68	65	106-117	111	74-83	78	0	38-47	42
20	HI8851(d)	N824	52-63	58	99-113	107	70-84	76	0	42-50	47
21	CG1047	N825	55-63	60	99-112	106	80-83	81	0	28-52	44
22	DBW110(C)	N805	57-64	61	104-117	110	67-78	74	0	37-43	39
23	HI1605(C)	N820	55-63	60	100-115	109	74-81	78	0	35-39	38
24	HI8627(d)(C)	N819	63-74	69	107-121	113	62-79	69	0	37-50	44
25	UAS446(d)(C)	N821	59-71	66	105-117	111	67-82	75	0	33-48	40

1. Ancillary data Pune, Dhule, Parbhani and Dharwad centers.
2. Data on Lodging from Parbhani center.

2209-NIVT-6-ES-IR-NWPZ/CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ											
			Delhi			Punjab						Haryana		
			Delhi			Ludhiana			Ladowal			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW553	N902	67.9	19	0	63.4	30	0	60.0	33	0	65.9	23	0	52.2	34	0
2	DBW433	N903	54.1	36	0	74.8	18	0	78.8	17	0	63.7	26	0	71.7	16	0
3	GW557	N904	61.8	30	0	58.1	34	0	68.3	31	0	67.1	19	0	49.7	36	0
4	DBW440	N905	72.1	9	1	75.6	16	0	82.6	11	0	68.6	12	0	77.1	11	1
5	DBW434	N906	68.5	17	0	57.9	35	0	81.5	13	0	71.0	9	0	79.0	10	1
6	PBW903	N907	60.8	32	0	79.2	9	1	73.6	26	0	63.6	28	0	67.4	27	0
7	DBW435	N908	62.7	29	0	81.7	5	1	82.4	12	0	69.0	11	0	84.4	4	1
8	MP1399	N910	73.3	6	1	79.0	12	1	88.8	3	1	72.0	7	0	67.0	29	0
9	WH1320	N911	63.6	27	0	78.6	13	1	86.5	5	1	68.5	13	0	71.4	18	0
10	PBW904	N912	66.4	23	0	79.9	8	1	76.5	21	0	70.6	10	0	67.8	24	0
11	HD3464	N913	66.6	21	0	58.6	32	0	55.6	35	0	56.1	34	0	72.9	14	0
12	DBW436	N914	77.5	3	1	71.4	20	0	76.0	22	0	64.3	25	0	79.8	9	1
13	HI1690	N915	64.6	25	0	66.2	28	0	68.1	32	0	72.1	6	0	67.2	28	0
14	RAJ4583	N916	70.4	12	1	65.9	29	0	49.5	36	0	60.5	32	0	50.7	35	0
15	DBW438	N917	74.5	5	1	76.1	15	0	83.2	8	0	73.6	3	0	87.2	2	1
16	BRW3922	N918	65.1	24	0	62.3	31	0	78.9	16	0	67.5	17	0	70.2	20	0
17	HI1691	N919	60.4	33	0	70.3	21	0	75.5	23	0	67.6	16	0	65.6	31	0
18	MP3572	N920	70.0	14	0	82.9	3	1	74.9	24	0	68.0	15	0	76.1	12	1
19	PBW905	N921	67.5	20	0	80.4	7	1	69.5	30	0	71.2	8	0	69.4	21	0
20	HD3461	N922	70.6	11	1	69.8	23	0	71.7	27	0	63.6	27	0	83.2	6	1
21	CG1049	N923	61.5	31	0	68.9	25	0	70.5	28	0	52.6	36	0	56.9	33	0
22	DBW439	N925	63.6	28	0	70.1	22	0	90.4	2	1	72.1	5	0	81.1	8	1
23	DBW437	N926	71.3	10	1	84.5	1	1	83.0	9	0	63.1	29	0	72.5	15	0
24	HD3462	N927	74.5	4	1	79.2	10	1	74.9	25	0	62.4	30	0	67.4	25	0
25	JWS1333	N928	60.1	34	0	58.3	33	0	58.3	34	0	66.1	21	0	58.4	32	0
26	PBW929	N930	68.2	18	0	84.5	2	1	88.7	4	1	67.4	18	0	71.5	17	0
27	HD3463	N931	78.0	2	1	76.4	14	0	81.4	14	0	80.2	1	1	66.4	30	0
28	DBW445	N932	64.6	26	0	72.3	19	0	85.8	6	1	65.3	24	0	69.2	22	0
29	PBW906	N933	79.8	1	1	79.1	11	1	82.9	10	0	68.3	14	0	81.1	7	1
30	WH1321	N934	66.4	22	0	74.8	17	0	78.6	18	0	73.1	4	0	84.3	5	1
31	PBW907	N935	69.2	15	0	67.9	27	0	78.0	19	0	66.9	20	0	67.4	26	0
32	UP3130	N936	72.8	7	1	67.9	26	0	70.1	29	0	60.0	33	0	68.6	23	0
33	DBW187(C)	N901	68.6	16	0	53.9	36	0	77.5	20	0	66.0	22	0	73.0	13	0
34	GW322(C)	N909	58.0	35	0	69.2	24	0	79.0	15	0	55.1	35	0	70.5	19	0
35	DBW303(C)	N924	70.1	13	0	81.6	6	1	84.6	7	1	61.7	31	0	86.0	3	1
36	DBW327(C)	N929	72.6	8	1	82.4	4	1	93.3	1	1	77.9	2	1	87.4	1	1
G.M.			67.7			72.3			76.6			66.7			71.4		
S.E.(M)			3.901			3.110			3.668			1.817			5.235		
C.D. (10%)			9.4			7.5			8.8			4.4			12.5		
C.V.			8.1			6.1			6.8			3.9			10.4		
D.O.S.(dd.mm.yy)			25.10.22			28.10.22			27.10.22			30.10.22			27.10.22		

No. of Trials : Proposed = 14 Conducted = 14

Trials not reported (06)= NWPZ: Sriganganagar (RMT), Bulandshahr (RMT)

CZ: Bilaspur (RMT), Jabalpur (RMT), Indore (LSM), Powarkheda (LSM)

2209-NIVT-6-ES-IR-NWPZ/CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ								
			M.P.			Gujarat					
			BISA-Jabalpur			Junagadh			Vijapur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW553	N902	99.9	9	1	52.6	34	0	65.2	19	0
2	DBW433	N903	93.8	23	0	63.8	18	0	68.9	9	1
3	GW557	N904	88.4	30	0	52.5	35	0	61.2	28	0
4	DBW440	N905	98.5	12	1	62.6	21	0	64.9	21	0
5	DBW434	N906	103.8	4	1	68.6	13	1	75.9	2	1
6	PBW903	N907	91.2	28	0	52.7	33	0	68.6	10	1
7	DBW435	N908	84.2	34	0	68.1	14	1	64.5	22	0
8	MP1399	N910	99.4	11	1	70.7	7	1	76.6	1	1
9	WH1320	N911	96.3	15	0	67.9	15	0	71.1	5	1
10	PBW904	N912	84.9	32	0	59.5	27	0	56.9	32	0
11	HD3464	N913	84.5	33	0	61.0	24	0	39.6	36	0
12	DBW436	N914	104.3	3	1	72.3	3	1	64.9	20	0
13	HI1690	N915	101.9	5	1	57.0	30	0	65.8	17	0
14	RAJ4583	N916	91.6	26	0	50.9	36	0	66.3	15	0
15	DBW438	N917	101.0	7	1	57.8	29	0	58.9	31	0
16	BRW3922	N918	98.3	13	1	60.5	26	0	63.6	25	0
17	HI1691	N919	95.5	20	0	61.9	22	0	49.6	34	0
18	MP3572	N920	94.8	22	0	61.7	23	0	60.6	29	0
19	PBW905	N921	95.6	19	0	65.3	17	0	66.5	14	0
20	HD3461	N922	99.8	10	1	70.7	8	1	65.9	16	0
21	CG1049	N923	97.1	14	0	63.4	19	0	73.9	3	1
22	DBW439	N925	104.9	2	1	61.0	25	0	66.9	13	0
23	DBW437	N926	79.7	36	0	69.7	10	1	64.5	23	0
24	HD3462	N927	88.5	29	0	63.2	20	0	56.1	33	0
25	JWS1333	N928	81.7	35	0	53.3	32	0	48.8	35	0
26	PBW929	N930	95.1	21	0	71.4	4	1	73.9	3	1
27	HD3463	N931	95.8	17	0	73.7	1	1	65.5	18	0
28	DBW445	N932	101.5	6	1	70.5	9	1	67.9	11	1
29	PBW906	N933	96.0	16	0	71.1	5	1	69.4	8	1
30	WH1321	N934	95.6	18	0	69.5	11	1	61.5	27	0
31	PBW907	N935	91.4	27	0	71.0	6	1	63.3	26	0
32	UP3130	N936	86.7	31	0	68.7	12	1	63.8	24	0
33	DBW187(C)	N901	93.0	24	0	57.9	28	0	67.8	12	1
34	GW322(C)	N909	106.4	1	1	66.0	16	0	69.5	7	1
35	DBW303(C)	N924	91.9	25	0	55.6	31	0	59.3	30	0
36	DBW327(C)	N929	100.4	8	1	73.2	2	1	70.3	6	1
G.M.			94.8			63.8			64.4		
S.E.(M)			3.753			2.321			3.876		
C.D. (10%)			9.0			5.6			9.3		
C.V.			5.6			5.1			8.5		
D.O.S.(dd.mm.yy)			06.11.22			04.11.22			05.11.22		

2209-NIVT-6-ES-IR-NWPZ/CZ, 2022-23
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			CZ			National		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW553	N902	61.9	33	0	72.6	24	0	65.9	32	0
2	DBW433	N903	68.6	25	0	75.5	16	0	71.2	22	0
3	GW557	N904	61.0	34	0	67.3	33	0	63.4	33	0
4	DBW440	N905	75.2	11	0	75.3	17	0	75.3	12	0
5	DBW434	N906	71.6	20	0	82.8	1	1	75.8	9	0
6	PBW903	N907	68.9	23	0	70.8	28	0	69.6	29	0
7	DBW435	N908	76.0	6	0	72.3	26	0	74.6	13	0
8	MP1399	N910	76.0	8	0	82.2	2	1	78.3	3	0
9	WH1320	N911	73.7	15	0	78.4	10	1	75.5	10	0
10	PBW904	N912	72.2	16	0	67.1	34	0	70.3	26	0
11	HD3464	N913	62.0	32	0	61.7	35	0	61.9	35	0
12	DBW436	N914	73.8	14	0	80.5	5	1	76.3	7	0
13	HI1690	N915	67.6	29	0	74.9	19	0	70.4	25	0
14	RAJ4583	N916	59.4	36	0	69.6	29	0	63.2	34	0
15	DBW438	N917	78.9	2	1	72.6	23	0	76.6	6	0
16	BRW3922	N918	68.8	24	0	74.2	20	0	70.8	23	0
17	HI1691	N919	67.9	26	0	69.0	31	0	68.3	30	0
18	MP3572	N920	74.4	13	0	72.3	25	0	73.6	17	0
19	PBW905	N921	71.6	19	0	75.8	14	0	73.2	19	0
20	HD3461	N922	71.8	17	0	78.8	9	1	74.4	5	0
21	CG1049	N923	62.1	31	0	78.1	12	0	68.1	31	0
22	DBW439	N925	75.4	10	0	77.6	13	0	76.3	8	0
23	DBW437	N926	74.9	12	0	71.3	27	0	73.5	18	0
24	HD3462	N927	71.7	18	0	69.3	30	0	70.8	24	0
25	JWS1333	N928	60.2	35	0	61.2	36	0	60.6	36	0
26	PBW929	N930	76.0	7	0	80.1	6	1	77.6	4	0
27	HD3463	N931	76.5	5	0	78.3	11	1	77.2	5	0
28	DBW445	N932	71.4	21	0	80.0	7	1	74.6	14	0
29	PBW906	N933	78.3	3	0	78.8	8	1	78.5	2	0
30	WH1321	N934	75.5	9	0	75.5	15	0	75.5	11	0
31	PBW907	N935	69.9	22	0	75.2	18	0	71.9	20	0
32	UP3130	N936	67.9	27	0	73.1	21	0	69.8	27	0
33	DBW187(C)	N901	67.8	28	0	72.9	22	0	69.7	28	0
34	GW322(C)	N909	66.4	30	0	80.7	4	1	71.7	21	0
35	DBW303(C)	N924	76.8	4	0	68.9	32	0	73.8	16	0
36	DBW327(C)	N929	82.7	1	1	81.3	3	1	82.2	1	1
G.M.			71.0			74.3			72.2		
S.E.(M)			1.662			1.958			1.272		
C.D. (10%)			3.9			4.6			3.0		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-6-IR-ES-TAS, 2022-23**

SN	Variety	Code	Rust Reaction			Agronomic Characteristics								
			Yl	ACl	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	GW553	N 902	tMS	0.3	0	84-100	95	140-159	150	90-118	103	45	39-45	42
2	DBW433	N 903	0	0.0	10S	107-118	112	146-161	153	97-113	103	25	35-43	39
3	GW557	N 904	5S	1.9	0	91-104	98	140-159	150	90-97	94	30	38-45	42
4	DBW440	N 905	0	0.0	0	100-111	105	143-158	150	93-109	100	30	37-44	40
5	DBW434	N 906	0	0.0	5S	97-111	102	141-160	150	98-120	106	20	42-47	44
6	PBW903	N 907	tS	0.3	0	102-112	107	145-158	152	92-111	100	35	40-46	43
7	DBW435	N 908	0	0.0	20S	105-116	110	145-158	153	100-124	108	45	37-48	42
8	MP1399	N 910	0	0.0	0	98-108	103	144-157	151	90-122	103	20	40-50	44
9	WH1320	N 911	0	0.0	10S	97-116	105	143-159	151	92-108	100	25	35-46	39
10	PBW904	N 912	tMS	0.3	0	104-115	109	145-159	152	92-96	94	30	33-49	39
11	HD3464	N 913	5S	1.7	10S	101-122	114	145-168	157	96-120	105	45	37-42	39
12	DBW436	N 914	0	00	20S	100-111	105	142-158	151	100-114	105	35	38-47	41
13	HI1690	N 915	40S	23.3	0	91-109	99	139-161	150	88-115	97	35	34-39	36
14	RAJ4583	N 916	5S	1.9	5S	93-107	101	142-164	152	95-105	100	30	39-42	41
15	DBW438	N 917	0	0.0	10S	101-116	109	146-164	153	95-112	102	20	40-47	44
16	BRW3922	N 918	20S	6.7	0	103-116	109	145-160	153	97-112	103	35	33-43	39
17	HI1691	N 919	30S	14.7	0	91-105	100	140-158	149	97-106	101	30	43-47	44
18	MP3572	N 920	10S	6.0	0	93-107	101	143-158	150	90-102	98	30	34-39	37
19	PBW905	N 921	0	0.0	10S	104-118	111	146-159	154	100-118	108	30	30-42	35
20	HD3461	N 922	0	0.0	30S	106-121	111	145-165	154	99-112	105	40	40-41	41
21	CG1049	N 923	20S	11.7	tS	99-116	108	145-159	152	99-116	105	40	37-43	40
22	DBW439	N 925	tMS	0.3	5S	93-110	101	140-155	149	93-110	101	30	44-46	45
23	DBW437	N 926	0	0.0	0	95-109	104	139-155	148	97-103	99	25	39-44	41
24	HD3462	N 927	0	0.0	0	108-121	112	145-161	154	90-113	102	35	35-44	38
25	JWS1333	N 928	10S	5MS	30S	108-123	116	145-165	156	100-113	107	30	31-38	35
26	PBW929	N 930	0	0.0	0	103-114	108	146-165	153	85-107	94	20	34-43	38
27	HD3463	N 931	0	0.0	0	110-118	113	146-160	152	97-113	106	35	36-49	40
28	DBW445	N 932	tMS	0.3	0	101-111	106	144-158	152	95-112	102	30	38-45	41
29	PBW906	N 933	0	0.0	5S	100-113	106	145-159	151	95-114	102	25	45-49	47
30	WH1321	N 934	0	0.0	0	106-117	111	146-161	152	99-110	106	35	35-43	39
31	PBW907	N 935	0	0.0	40S	109-118	113	146-161	153	100-114	106	40	36-46	40
32	UP3130	N 936	0	0.0	0	105-117	110	146-159	152	99-119	106	35	33-40	36
33	DBW187(C)	N 901	tMS	0.3	5MS	95-116	105	143-160	152	97-115	103	27	40-47	44
34	GW322(C)	N 909	5S	1.7	5S	91-106	100	140-158	150	88-106	97	40	33-38	36
35	DBW303(C)	N 924	0	0.0	0	96-109	103	143-153	149	93-109	102	25	30-40	36
36	DBW327(C)	N 929	0	0.0	10S	102-115	108	146-160	153	93-106	99	20	44-51	47

1. Ancillary data from BISA-Ludhiana, Delhi, Hisar, Karnal and Ludhiana centres.
2. Yellow rust data from Delhi, Hisar and Karnal centres.
3. Brown rust data from Delhi and Karnal centres.

NIVT-6-IR-ES-TAS, 2022-23
North Western Plains Zone

Individual Station Rust Data

SN	Variety	Code	Yellow rust			Brown rust	
			Delhi	Hisar	Karnal	Delhi	Karnal
1	GW553	N 902	0	0	tMS	0	0
2	DBW433	N 903	0	0	0	0	10S
3	GW557	N 904	5S	0	tMS	0	0
4	DBW440	N 905	0	0	0	0	0
5	DBW434	N 906	0	0	0	0	5S
6	PBW903	N 907	0	tS	0	0	0
7	DBW435	N 908	0	0	0	0	20S
8	MP1399	N 910	0	0	0	0	0
9	WH1320	N 911	0	0	0	0	10S
10	PBW904	N 912	0	0	tMS	0	0
11	HD3464	N 913	0	0	5S	0	10S
12	DBW436	N 914	0	0	0	0	20S
13	HI1690	N 915	0	30S	40S	0	0
14	RAJ4583	N 916	0	5S	tMS	0	5S
15	DBW438	N 917	0	0	0	0	10S
16	BRW3922	N 918	0	20S	0	0	0
17	HI1691	N 919	10S	30S	5MS	0	0
18	MP3572	N 920	10S	0	10MS	0	0
19	PBW905	N 921	0	0	0	0	10S
20	HD3461	N 922	0	0	0	0	30S
21	CG1049	N 923	5S	20S	10S	0	TS
22	DBW439	N 925	0	0	tMS	0	5S
23	DBW437	N 926	0	0	0	0	0
24	HD3462	N 927	0	0	0	0	0
25	JWS1333	N 928	0	10S	5MS	0	30S
26	PBW929	N 930	0	0	0	0	0
27	HD3463	N 931	0	0	0	0	0
28	DBW445	N 932	0	0	tMS	0	0
29	PBW906	N 933	0	0	0	0	5S
30	WH1321	N 934	0	0	0	0	0
31	PBW907	N 935	0	0	0	0	40S
32	UP3130	N 936	0	0	0	0	0
33	DBW187(C)	N 901	0	0	tMS	0	5MS
34	GW322(C)	N 909	5S	0	0	5S	0
35	DBW303(C)	N 924	0	0	0	0	0
36	DBW327(C)	N 929	0	0	0	0	10S

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-6-IR-ES-TAS, 2022-23**

SN	Variety	Code	Rust Reaction		Agronomic Characteristics								
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.%	TGW.R	TGW.M
1	GW553	N 902	0	0	56-71	62	103-125	116	71-104	88	70	44-54	50
2	DBW433	N 903	5MR	0	60-86	75	115-134	125	79-98	89	0	34-43	39
3	GW557	N 904	0	0	52-75	63	96-127	116	53-91	74	0	43-48	45
4	DBW440	N 905	tR	0	53-79	66	100-130	119	76-99	88	0	40-49	46
5	DBW434	N 906	5S	0	60-79	66	110-126	119	75-99	87	0	46-54	49
6	PBW903	N 907	0	0	52-81	70	100-133	121	78-105	89	0	35-48	43
7	DBW435	N 908	5S	5S	61-80	72	111-132	123	83-104	92	0	39-46	43
8	MP1399	N 910	0	0	64-78	69	112-131	122	75-97	88	0	39-53	47
9	WH1320	N 911	0	0	64-79	68	114-127	122	78-96	89	0	39-49	45
10	PBW904	N 912	5MS	0	53-82	71	101-134	122	74-86	80	0	35-43	40
11	HD3464	N 913	0	0	54-99	82	102-140	127	90-99	95	30	33-41	37
12	DBW436	N 914	5MS	0	56-80	69	104-133	123	80-101	92	0	37-51	45
13	HI1690	N 915	0	0	46-77	62	100-126	117	63-98	80	40	37-50	45
14	RAJ4583	N 916	0	0	54-77	63	105-126	118	65-99	84	0	39-52	45
15	DBW438	N 917	0	0	45-85	70	97-133	121	80-97	90	0	44-54	48
16	BRW3922	N 918	0	0	66-83	74	119-130	125	80-109	94	0	37-45	42
17	HI1691	N 919	0	0	51-75	64	98-129	117	69-100	84	10	44-54	49
18	MP3572	N 920	0	0	59-76	66	112-130	122	74-99	87	0	39-49	43
19	PBW905	N 921	0	0	52-88	76	100-135	124	80-96	88	0	35-44	39
20	HD3461	N 922	0	5S	52-88	75	101-133	124	81-98	90	0	39-48	44
21	CG1049	N 923	0	0	60-87	72	116-133	125	67-102	90	0	45-56	51
22	DBW439	N 925	0	0	46-78	63	97-126	116	77-100	90	0	43-52	48
23	DBW437	N 926	0	0	51-78	68	98-133	121	76-96	85	0	44-50	47
24	HD3462	N 927	0	0	62-90	74	116-132	125	79-104	89	0	38-43	40
25	JWS1333	N 928	0	0	47-98	79	100-139	126	89-99	94	0	30-41	36
26	PBW929	N 930	0	0	50-79	68	98-134	122	74-100	88	0	43-51	45
27	HD3463	N 931	0	0	52-87	74	99-134	123	80-103	93	0	41-52	47
28	DBW445	N 932	0	0	65-77	69	116-130	124	82-97	89	0	44-56	50
29	PBW906	N 933	5S	0	63-80	70	114-130	123	80-94	88	0	42-52	50
30	WH1321	N 934	0	0	62-87	78	118-131	127	92-99	95	0	40-47	44
31	PBW907	N 935	5MS	0	51-88	75	100-132	123	84-96	90	0	38-46	43
32	UP3130	N 936	tR	0	52-83	70	101-135	122	78-106	92	0	34-44	40
33	DBW187(C)	N 901	0	0	59-80	68	112-133	122	73-100	88	0	45-53	48
34	GW322(C)	N 909	0	0	48-75	64	98-127	117	72-97	86	25	32-41	38
35	DBW303(C)	N 924	0	0	46-78	64	98-129	118	73-97	86	0	36-42	40
36	DBW327(C)	N 929	5S	0	62-80	72	116-134	125	76-97	88	0	43-50	47

1. Ancillary data from BISA-Jabalpur, Junagadh and Vijapur centres.
2. Brown and black rust data from Junagadh centre only.
3. Lodging data from BISA-Jabalpur centre only.

Northern Hills Zone

2211-IVT-RF-TS-TAS-NHZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.									UTK			J&K					
			Malan			Shimla			Bajaura			Majhera			Khudwani			Wadura		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW489	NHIVT202	45.5	5	1	27.4	9	0	24.4	24	0	24.6	14	0	32.7	16	0	42.9	7	0
2	VL3032	NHIVT203	29.1	22	0	28.5	6	0	36.7	3	0	22.3	21	0	33.6	13	0	27.4	23	0
3	VL2051	NHIVT204	27.1	23	0	30.4	3	0	33.4	9	0	29.0	4	0	37.3	8	0	34.8	10	0
4	VL2053	NHIVT205	31.6	16	0	29.1	5	0	35.5	6	0	24.1	16	0	35.3	10	0	27.1	24	0
5	HS697	NHIVT206	31.5	17	0	28.2	7	0	34.3	8	0	25.0	11	0	30.8	21	0	34.2	12	0
6	UP3131	NHIVT207	30.3	20	0	23.7	19	0	22.9	25	0	27.2	9	0	31.8	17	0	44.3	6	0
7	HPW492	NHIVT209	48.1	2	1	23.0	20	0	32.7	11	0	25.0	11	0	45.4	4	0	28.3	20	0
8	HS699	NHIVT210	26.3	25	0	26.5	10	0	36.9	2	0	21.0	24	0	31.0	20	0	30.1	16	0
9	HD3466	NHIVT211	32.4	15	0	24.8	16	0	28.4	19	0	27.7	8	0	31.3	18	0	22.3	26	0
10	VL3031	NHIVT212	41.4	8	0	24.9	15	0	36.0	5	0	25.4	10	0	33.6	14	0	32.4	14	0
11	SKW368	NHIVT213	35.8	12	0	23.9	17	0	27.9	21	0	28.6	5	0	40.4	6	0	32.6	13	0
12	VL2052	NHIVT214	31.2	18	0	32.2	2	1	35.1	7	0	23.7	18	0	40.2	7	0	30.8	15	0
13	HS696	NHIVT215	34.4	13	0	21.6	22	0	26.0	23	0	21.4	23	0	30.7	22	0	25.3	25	0
14	HPW491	NHIVT216	37.4	11	0	20.3	24	0	21.7	26	0	24.6	14	0	31.1	19	0	29.5	19	0
15	VL2054	NHIVT217	45.8	4	1	21.0	23	0	28.9	18	0	25.0	11	0	41.9	5	0	28.3	20	0
16	SKUAW102	NHIVT218	38.2	10	0	17.7	25	0	29.3	17	0	30.8	2	1	33.0	15	0	27.7	22	0
17	HS695	NHIVT219	26.6	24	0	25.4	13	0	29.3	16	0	22.3	21	0	48.6	2	1	36.7	8	0
18	UP3134	NHIVT220	45.0	7	0	25.5	12	0	26.5	22	0	27.7	7	0	34.0	12	0	46.7	4	1
19	SKUAW101	NHIVT221	33.0	14	0	17.7	26	0	36.1	4	0	22.8	20	0	29.5	24	0	48.8	2	1
20	HPW493	NHIVT222	30.1	21	0	29.4	4	0	31.9	13	0	28.6	5	0	47.0	3	1	29.8	18	0
21	HPW494	NHIVT223	49.1	1	1	34.0	1	1	32.0	12	0	24.1	16	0	34.8	11	0	48.5	3	1
22	HS698	NHIVT225	31.0	19	0	25.2	14	0	33.2	10	0	19.6	26	0	50.4	1	1	35.4	9	0
23	HPW490	NHIVT226	45.3	6	1	25.7	11	0	27.9	20	0	30.4	3	1	36.2	9	0	49.4	1	1
24	HS562(C)	NHIVT201	41.3	9	0	28.0	8	0	42.3	1	1	32.1	1	1	28.5	26	0	34.8	10	0
25	VL892(C)	NHIVT208	20.2	26	0	22.1	21	0	30.6	15	0	21.0	24	0	28.8	25	0	30.1	16	0
26	HS507(C)	NHIVT224	46.4	3	1	23.8	18	0	30.8	14	0	23.7	18	0	29.7	23	0	45.2	5	0
G.M.			35.9			25.4			31.2			25.3			35.7			34.7		
S.E.(M)			1.736			0.932			1.203			0.934			1.783			1.701		
C.D. (10%)			4.1			2.2			2.8			2.2			4.2			4.0		
C.V.			9.7			7.3			7.7			7.4			10.0			9.8		
D.O.S.(dd.mm.yy)			25.10.22			27.10.22			28.10.22			01.11.22			23.10.22			20.10.22		

No. of Trials : Proposed = 09 Conducted = 09

Trials not reported (03) = Almora (LSM), Gaja (LS, LSM), Imphal (Faulty Design)

2211-IVT-RF-TS-TAS-NHZ, 2022-23
STATE AND ZONAL MEAN (q/ha)

SN	Variety	Code	H.P.			UTK			J&K			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW489	NHIVT202	32.4	8	0	24.6	14	0	37.8	9	0	32.9	7	0
2	VL3032	NHIVT203	31.4	12	0	22.3	21	0	30.5	21	0	29.6	20	0
3	VL2051	NHIVT204	30.3	15	0	29.0	4	0	36.0	13	0	32.0	12	0
4	VL2053	NHIVT205	32.1	10	0	24.1	16	0	31.2	19	0	30.4	18	0
5	HS697	NHIVT206	31.4	13	0	25.0	11	0	32.5	17	0	30.7	17	0
6	UP3131	NHIVT207	25.6	25	0	27.2	9	0	38.1	8	0	30.0	19	0
7	HPW492	NHIVT209	34.6	3	0	25.0	11	0	36.8	11	0	33.7	5	0
8	HS699	NHIVT210	29.9	16	0	21.0	24	0	30.5	20	0	28.6	22	0
9	HD3466	NHIVT211	28.5	20	0	27.7	8	0	26.8	26	0	27.8	23	0
10	VL3031	NHIVT212	34.1	4	0	25.4	10	0	33.0	16	0	32.3	10	0
11	SKW368	NHIVT213	29.2	18	0	28.6	5	0	36.5	12	0	31.5	14	0
12	VL2052	NHIVT214	32.8	7	0	23.7	18	0	35.5	14	0	32.2	11	0
13	HS696	NHIVT215	27.3	22	0	21.4	23	0	28.0	25	0	26.6	25	0
14	HPW491	NHIVT216	26.5	24	0	24.6	14	0	30.3	23	0	27.4	24	0
15	VL2054	NHIVT217	31.9	11	0	25.0	11	0	35.1	15	0	31.8	13	0
16	SKUAW102	NHIVT218	28.4	21	0	30.8	2	1	30.4	22	0	29.5	21	0
17	HS695	NHIVT219	27.1	23	0	22.3	21	0	42.7	3	1	31.5	15	0
18	UP3134	NHIVT220	32.3	9	0	27.7	7	0	40.3	5	1	34.2	4	0
19	SKUAW101	NHIVT221	28.9	19	0	22.8	20	0	39.1	6	0	31.3	16	0
20	HPW493	NHIVT222	30.5	14	0	28.6	5	0	38.4	7	0	32.8	8	0
21	HPW494	NHIVT223	38.4	1	1	24.1	16	0	41.6	4	1	37.1	1	1
22	HS698	NHIVT225	29.8	17	0	19.6	26	0	42.9	1	1	32.5	9	0
23	HPW490	NHIVT226	32.9	6	0	30.4	3	1	42.8	2	1	35.8	2	1
24	HS562(C)	NHIVT201	37.2	2	1	32.1	1	1	31.6	18	0	34.5	3	0
25	VL892(C)	NHIVT208	24.3	26	0	21.0	24	0	29.4	24	0	25.4	26	0
26	HS507(C)	NHIVT224	33.7	5	0	23.7	18	0	37.5	10	0	33.3	6	0
G.M.			30.8			25.3			35.2			31.4		
S.E.(M)			0.770			0.934			1.232			0.584		
C.D. (10%)			1.8			2.2			2.9			1.4		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: IVT-RF-TS-TAS-NHZ, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics						Grain Characteristics	
			Yl	ACl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	HPW489	NHIVT202	10S	3.5	0	1	113-180	143	180-237	201	92-115	101	52-63	57
2	VL3032	NHIVT203	90S	22.8	0	3	119-179	147	176-240	200	86-117	101	43-63	54
3	VL2051	NHIVT204	5S	2.5	0	2	117-180	147	180-240	200	93-116	100	39-61	51
4	VL2053	NHIVT205	80S	24.3	5S	2	114-181	143	175-237	199	83-100	90	43-65	54
5	HS697	NHIVT206	80S	29.3	0	2	95-180	136	169-239	197	92-119	101	42-56	48
6	UP3131	NHIVT207	60S	22.8	0	3	108-180	139	171-237	196	83-107	92	40-61	52
7	HPW492	NHIVT209	40MS	12.3	0	2	104-179	145	175-238	199	90-109	101	44-58	51
8	HS699	NHIVT210	80S	21.0	0	1	109-179	139	175-239	198	82-108	95	39-50	44
9	HD3466	NHIVT211	80S	36.3	5S	2	115-179	143	178-239	200	84-107	97	43-56	48
10	VL3031	NHIVT212	60MS	12.3	0	3	110-180	142	173-238	199	79-107	93	44-63	53
11	SKW368	NHIVT213	60S	16.5	20S	2	113-180	142	178-236	199	81-114	95	45-59	51
12	VL2052	NHIVT214	70S	17.6	0	2	122-180	147	178-239	200	92-108	100	44-53	49
13	HS696	NHIVT215	80S	21.5	0	2	104-180	140	179-238	200	94-105	100	41-50	46
14	HPW491	NHIVT216	80S	37.5	10S	3	105-181	139	177-241	199	79-101	89	46-60	54
15	VL2054	NHIVT217	80S	45.0	0	2	122-180	147	181-240	201	97-110	103	42-50	46
16	SKUAW102	NHIVT218	70S	35.0	0	2	105-181	139	171-237	197	80-98	89	47-56	50
17	HS695	NHIVT219	5R	0.5	0	2	106-182	142	175-239	199	82-117	98	37-53	45
18	UP3134	NHIVT220	60S	25.3	0	2	122-179	147	182-238	200	98-118	106	47-55	50
19	SKUAW101	NHIVT221	60S	38.0	0	2	105-177	137	172-237	196	81-106	91	48-59	52
20	HPW493	NHIVT222	80S	20.3	0	2	105-179	139	171-237	197	84-108	94	41-54	48
21	HPW494	NHIVT223	60S	35.0	20S	3	123-179	148	182-238	200	87-115	102	47-59	53
22	HS698	NHIVT225	60MS	14.0	0	3	110-180	140	179-239	198	92-110	99	43-59	50
23	HPW490	NHIVT226	70S	17.8	0	3	91-182	138	179-238	199	91-104	97	46-53	50
24	HS562(C)	NHIVT201	60S	18.8	10S	2	117-178	144	179-238	200	81-116	94	47-55	50
25	VL892(C)	NHIVT208	60MS	19.0	0	3	81-177	132	169-237	194	78-114	94	42-54	48
26	HS507(C)	NHIVT224	60S	26.3	10S	2	116-180	145	180-240	200	85-105	94	43-49	46

1. Ancillary data from Bajaura, Khudwani, Majhera, Malan, Shimla and Wadura.
2. Yellow rust data from Khudwani, Malan, Shimla and Wadura;
3. Brown rust & powdery mildew data from Malan

IVT-RF-TS-TAS-NHZ, 2022-23
Individual Station Yellow rust data

SN	Variety	Code	Yellow rust				Brown rust
			Khudwani	Malan	Shimla	Wadura	Malan
1	HPW489	NHIVT202	20MR	0	0	10S	0
2	VL3032	NHIVT203	5R	0	0	90S	0
3	VL2051	NHIVT204	10MR	5S	0	5R	0
4	VL2053	NHIVT205	20MR	5S	5MS	80S	5S
5	HS697	NHIVT206	40MS	5S	0	80S	0
6	UP3131	NHIVT207	60S	20S	10S	5R	0
7	HPW492	NHIVT209	40MS	5S	0	30MR	0
8	HS699	NHIVT210	10MR	0	0	80S	0
9	HD3466	NHIVT211	60S	5S	0	80S	5S
10	VL3031	NHIVT212	R	0	tMS	60MS	0
11	SKW368	NHIVT213	60S	5S	0	5R	20S
12	VL2052	NHIVT214	R	0	0	70S	0
13	HS696	NHIVT215	5R	0	5S	80S	0
14	HPW491	NHIVT216	60S	10S	0	80S	10S
15	VL2054	NHIVT217	60S	40S	0	80S	0
16	SKUAW102	NHIVT218	60S	5S	5S	70S	0
17	HS695	NHIVT219	5R	0	0	5R	0
18	UP3134	NHIVT220	60S	40S	0	5R	0
19	SKUAW101	NHIVT221	60S	40S	5MS	60MS	0
20	HPW493	NHIVT222	5R	0	0	80S	0
21	HPW494	NHIVT223	60S	10S	10S	60S	20S
22	HS698	NHIVT225	20MR	0	0	60MS	0
23	HPW490	NHIVT226	5R	0	0	70S	0
24	HS562(C)	NHIVT201	60S	5S	0	10S	10S
25	VL892(C)	NHIVT208	20MR	20S	0	60MS	0
26	HS507(C)	NHIVT224	40S	5S	0	60S	10S

2112-AVT-RF-TS-TAS-NHZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.									UTK			J&K					
			Malan			Shimla			Bajaura			Majhera			Khudwani			Wadura		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL3028	NHRF103	30.1	6	0	30.8	5	0	33.3	5	0	32.1	4	0	41.6	4	1	41.8	2	1
2	HPW484	NHRF104	39.7	1	1	34.9	2	1	30.4	6	0	33.9	2	1	41.0	5	1	41.2	3	1
3	HS691	NHRF106	38.8	2	1	36.3	1	1	28.4	8	0	28.0	7	0	38.7	7	0	24.4	9	0
4	HS692	NHRF108	23.4	9	0	26.1	7	0	36.8	2	1	28.3	5	0	44.8	2	1	37.3	6	0
5	VL907(C)	NHRF101	34.4	5	0	29.7	6	0	37.5	1	1	28.3	6	0	44.4	3	1	29.9	7	0
6	HPW349(C)	NHRF105	25.0	7	0	26.1	8	0	27.8	9	0	26.5	8	0	37.3	8	0	42.0	1	1
7	VL892(C)	NHRF107	23.5	8	0	24.1	9	0	29.9	7	0	25.0	9	0	37.0	9	0	27.8	8	0
8	HS562(C)	NHRF109	36.0	4	0	32.3	4	0	36.1	3	1	33.9	2	1	44.9	1	1	37.7	5	0
9	VL2041(I)(C)	NHRF102	36.2	3	0	34.6	3	1	34.4	4	0	35.4	1	1	38.9	6	0	39.7	4	1
G.M.			31.9			30.5			32.7			30.2			40.9			35.7		
S.E.(M)			1.205			1.173			0.995			0.678			1.852			1.040		
C.D. (10%)			2.9			2.8			2.4			1.6			4.4			2.5		
C.V.			9.3			9.4			7.4			5.5			11.1			7.1		
D.O.S.(dd.mm.yy)			26.10.22			26.10.22			29.10.22			01.11.22			23.10.22			20.10.22		

No. of Trials : Proposed = 09 Conducted = 09
Trials not reported (03) = Almora (LSM), Gaja (LSM), Imphal (LSM)

2212-AVT-RF-TS-TAS-NHZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	H.P.			UTK			J&K			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL3028	NHRF103	31.4	6	0	32.1	4	0	41.7	1	1	35.0	4	0
2	HPW484	NHRF104	35.0	2	1	33.9	2	1	41.1	3	1	36.9	1	1
3	HS691	NHRF106	34.5	4	1	28.0	7	0	31.5	9	0	32.4	7	0
4	HS692	NHRF108	28.8	7	0	28.3	5	0	41.0	4	1	32.8	6	0
5	VL907(C)	NHRF101	33.8	5	1	28.3	6	0	37.1	7	0	34.0	5	0
6	HPW349(C)	NHRF105	26.3	8	0	26.5	8	0	39.7	5	1	30.8	8	0
7	VL892(C)	NHRF107	25.8	9	0	25.0	9	0	32.4	8	0	27.9	9	0
8	HS562(C)	NHRF109	34.8	3	1	33.9	2	1	41.3	2	1	36.8	2	1
9	VL2041(I)(C)	NHRF102	35.1	1	1	35.4	1	1	39.3	6	1	36.5	3	1
G.M.			31.7			30.2			38.3			33.7		
S.E.(M)			0.651			0.678			1.062			0.494		
C.D. (10%)			1.5			1.6			2.5			1.1		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RF-TS-TAS-NHZ, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics						Grain Characteristics	
			Yl	ACl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	VL3028	NHRF103	80S	32.5	0	2	112-176	139	176-238	198	64-134	98	45-58	51.7
2	HPW484	NHRF104	80S	40.8	0	3	113-178	139	177-237	197	73-133	98	54-61	56.5
3	HS691	NHRF106	80S	29.3	0	6	119-182	147	181-241	201	81-141	108	44-58	49.6
4	HS692	NHRF108	40S	21.3	0	3	89-180	133	173-240	199	70-132	101	43-55	49.6
5	VL907(C)	NHRF101	80S	35.0	20S	2	110-180	142	178-240	199	72-115	97	42-52	47.0
6	HPW349(C)	NHRF105	80S	43.8	5S	5	114-180	141	179-240	198	60-135	94	38-57	46.5
7	VL892(C)	NHRF107	80S	36.3	10S	3	85-178	132	174-238	196	54-132	95	41-59	47.6
8	HS562(C)	NHRF109	80S	37.5	20S	2	117-179	144	180-239	200	72-138	99	45-61	51.0
9	VL2041(I)(C)	NHRF102	70S	20.5	10S	2	119-181	147	182-241	203	77-142	108	45-55	50.5

1. Ancillary data from Bajaura, Khudwani, Majhera, Malan, Shimla and Wadura.
2. Yellow rust data from Khudwani, Malan, Shimla and Wadura;
3. Brown rust& powdery mildew data from Malan

Individual Station Rust Data

SN	Variety	Code	Yellow rust				Brown rust
			Khudwani	Malan	Shimla	Wadura	Malan
1	VL3028	NHRF103	40S	5S	5S	80S	0
2	HPW484	NHRF104	80S	30S	5S	60MS	0
3	HS691	NHRF106	40MS	5S	0	80S	0
4	HS692	NHRF108	40S	5S	0	50MS	0
5	VL907(C)	NHRF101	40S	20S	0	80S	20S
6	HPW349(C)	NHRF105	80S	10S	5S	80S	5S
7	VL892(C)	NHRF107	60S	5S	0	80S	10S
8	HS562(C)	NHRF109	60S	10S	0	80S	20S
9	VL2041(I)(C)	NHRF102	10MR	10S	0	70S	10S

North Western Plains Zone

2221-AVT-IR-TS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi			J & K			Punjab						Haryana						Rajasthan						U.P						UTK		
			Delhi			Jammu			Ludhiana			Gurdaspur			Hisar			Karnal			Sriganganagar			Durgapura			Bulandshahr			Modipuram			Pantnagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3386*	NWTS113	76.9	1	1	56.0	5	0	64.3	6	1	55.8	7	0	69.8	2	1	59.1	3	0	62.7	5	0	63.4	3	1	56.2	6	0	65.9	6	0	65.3	3	1
2	UP3102#	NWTS102	70.1	7	1	56.3	4	1	59.6	11	0	53.1	9	0	60.3	10	0	55.1	7	0	56.9	8	0	53.5	11	0	54.8	8	0	66.3	5	0	51.8	10	0
3	DBW386#	NWTS109	72.5	5	1	55.6	6	0	65.3	5	1	55.8	8	0	61.6	9	0	58.1	4	0	70.1	2	0	65.5	1	1	56.9	3	0	72.1	1	1	61.8	4	0
4	HD3470M	NWTS101	70.0	8	1	49.1	13	0	61.4	10	0	48.5	13	0	67.5	3	1	54.3	8	0	45.8	13	0	58.0	8	0	46.2	13	0	58.7	11	0	51.5	11	0
5	HD3471M	NWTS112	69.7	9	0	51.5	10	0	57.9	12	0	51.0	11	0	64.6	4	0	50.8	10	0	67.4	4	0	59.0	7	0	53.9	11	0	64.3	8	0	48.8	13	0
6	PBW887	NWTS106	69.1	10	0	49.8	12	0	66.5	4	1	59.8	2	1	63.8	6	0	64.4	1	1	51.6	12	0	65.5	1	1	58.5	1	1	69.7	3	0	65.5	2	1
7	HI1668	NWTS107	68.6	11	0	54.9	7	0	66.7	3	1	61.6	1	1	70.6	1	1	63.5	2	1	68.5	3	0	53.5	12	0	54.1	10	0	71.2	2	1	58.1	5	0
8	PBW889	NWTS111	71.5	6	1	52.8	9	0	68.4	1	1	59.4	3	1	57.5	12	0	57.8	5	0	53.6	11	0	61.5	5	1	55.6	7	0	62.5	10	0	52.5	8	0
9	HD2967(C)	NWTS103	52.1	13	0	61.4	1	1	50.1	13	0	48.5	12	0	57.3	13	0	37.4	13	0	56.6	9	0	53.4	13	0	56.6	4	0	51.3	13	0	52.0	9	0
10	DBW187(C)	NWTS104	58.5	12	0	57.9	2	1	63.8	8	1	57.9	5	0	64.6	4	0	56.8	6	0	75.2	1	1	57.6	10	0	51.2	12	0	64.4	7	0	57.1	7	0
11	HD3086(C)	NWTS105	72.7	4	1	50.2	11	0	62.5	9	1	52.8	10	0	62.9	8	0	48.6	11	0	57.6	7	0	61.8	4	1	54.7	9	0	53.4	12	0	50.1	12	0
12	DBW222(C)	NWTS110	75.5	2	1	57.2	3	1	63.9	7	1	57.7	6	0	63.4	7	0	47.0	12	0	61.7	6	0	58.0	8	0	57.6	2	0	63.9	9	0	66.5	1	1
13	PBW826(I)(C)	NWTS108	74.6	3	1	53.6	8	0	66.9	2	1	58.0	4	0	59.6	11	0	53.4	9	0	55.0	10	0	61.1	6	0	56.5	5	0	67.0	4	0	57.3	6	0
G.M.			69.4			54.3			62.9			55.4			63.3			54.3			60.2			59.4			54.8			63.9			56.8		
S.E.(M)			2.911			2.197			2.691			1.274			1.790			1.668			0.679			1.691			0.281			1.014			0.862		
C.D. (10%)			6.9			5.2			6.4			3.0			4.3			4.0			1.6			4.0			0.7			2.4			2.1		
C.V.			8.4			8.1			8.6			4.6			5.7			6.1			2.3			5.7			1.0			3.2			3.0		
D.O.S. (dd.mm.yy)			04.11.22			08.11.22			01.11.22			09.11.22			05.11.22			04.11.22			05.11.22			11.11.22			14.11.22			12.11.22			02.11.22		

No. of Trials : Proposed = 14 Conducted = 14

Trials not reported (03) = Bawal (RMT), Nagina (LSM), Dehradun (LSM)

2221-AVT-IR-TS-TAS-NWPZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi			J & K			Punjab			Haryana			Rajasthan			U.P			UTK			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3386*	NWTS113	76.9	1	1	56.0	5	0	60.1	8	0	64.4	2	1	63.1	4	0	61.0	5	0	65.3	3	1	63.2	1	1
2	UP3102#	NWTS102	70.1	7	1	56.3	4	1	56.4	10	0	57.7	8	0	55.2	11	0	60.6	7	0	51.8	10	0	58.0	10	0
3	DBW386#	NWTS109	72.5	5	1	55.6	6	0	60.5	7	0	59.8	6	0	67.8	1	1	64.5	1	1	61.8	4	0	63.2	2	1
4	HD3470M	NWTS101	70.0	8	1	49.1	13	0	55.0	11	0	60.9	4	0	51.9	13	0	52.5	13	0	51.5	11	0	55.6	12	0
5	HD3471M	NWTS112	69.7	9	0	51.5	10	0	54.4	12	0	57.7	7	0	63.2	3	0	59.1	8	0	48.8	13	0	58.1	9	0
6	PBW887	NWTS106	69.1	10	0	49.8	12	0	63.1	3	1	64.1	3	0	58.5	8	0	64.1	2	1	65.5	2	1	62.2	4	1
7	HI1668	NWTS107	68.6	11	0	54.9	7	0	64.2	1	1	67.0	1	1	61.0	5	0	62.7	3	0	58.1	5	0	62.8	3	1
8	PBW889	NWTS111	71.5	6	1	52.8	9	0	63.9	2	1	57.7	9	0	57.6	10	0	59.0	9	0	52.5	8	0	59.4	8	0
9	HD2967(C)	NWTS103	52.1	13	0	61.4	1	1	49.3	13	0	47.4	13	0	55.0	12	0	53.9	12	0	52.0	9	0	52.4	13	0
10	DBW187(C)	NWTS104	58.5	12	0	57.9	2	1	60.9	5	1	60.7	5	0	66.4	2	1	57.8	10	0	57.1	7	0	60.5	6	0
11	HD3086(C)	NWTS105	72.7	4	1	50.2	11	0	57.7	9	0	55.7	11	0	59.7	7	0	54.1	11	0	50.1	12	0	57.0	11	0
12	DBW222(C)	NWTS110	75.5	2	1	57.2	3	1	60.8	6	1	55.2	12	0	59.8	6	0	60.7	6	0	66.5	1	1	61.1	5	0
13	PBW826(I)(C)	NWTS108	74.6	3	1	53.6	8	0	62.4	4	1	56.5	10	0	58.1	9	0	61.8	4	0	57.3	6	0	60.3	7	0
G.M.			69.4			54.3			59.1			58.8			59.8			59.4			56.8			59.5		
S.E.(M)			2.911			2.197			1.489			1.223			0.911			0.526			0.862			0.525		
C.D. (10%)			6.9			5.2			3.5			2.9			2.1			1.2			2.1			1.2		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-IR-TS-TAS-NWPZ, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								
			Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	HD3386*	NWTS113	20S	7.5	10S	4.3	84-105	96	129-157	143	88-99	99	12	42-55	47
2	UP3102#	NWTS102	0	0.0	10S	2.9	83-110	100	129-158	144	95-106	106	38	29-45	37
3	DBW386#	NWTS109	10S	2.5	20S	3.5	87-106	97	134-157	144	89-100	100	25	37-54	46
4	HD3470M	NWTS101	30S	8.3	60S	22.1	82-104	92	129-157	142	87-98	98	17	34-44	40
5	HD3471M	NWTS112	20S	5.1	10S	3.1	86-106	96	128-156	143	89-101	101	10	34-50	43
6	PBW887	NWTS106	10MS	2.2	10S	4.4	84-106	97	127-158	143	90-99	99	19	35-48	41
7	HI1668	NWTS107	10S	2.6	20S	5.0	84-104	93	128-157	142	92-105	105	13	33-56	47
8	PBW889	NWTS111	tR	0.0	5S	0.8	85-104	94	127-158	142	86-100	100	10	35-50	43
9	HD2967(C)	NWTS103	20S	3.3	60S	32.6	80-117	104	130-158	147	92-102	102	35	30-53	38
10	DBW187(C)	NWTS104	20S	5.0	10S	2.9	88-106	97	126-157	142	82-100	100	24	30-51	42
11	HD3086(C)	NWTS105	60S	31.7	60S	14.3	78-101	94	126-156	141	88-101	101	21	32-45	39
12	DBW222(C)	NWTS110	10S	1.7	20S	5.7	84-108	97	130-157	144	95-103	103	16	35-48	41
13	PBW826(I)(C)	NWTS108	20S	11.7	20S	7.1	80-104	96	125-157	142	85-98	98	18	36-56	46

1. Ancillary data from Bulandshahar, Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana, Modipuram, Pantnagar and Sriganganagar.
2. Lodging data from Delhi, Durgapura, Hisar, Karnal, Ludhiana and Pantnagar.
3. Yellow rust data from Delhi, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar; Brown rust data from Delhi, Gurdaspur, Jammu, Karnal, Ludhiana and Pantnagar.

AVT-IR-TS-TAS-NWPZ, 2022-23

Individual Station Rust Data

SN	Variety	Code	Yellow rust							Brown rust					
			Delhi	Gurdaspur	Hisar	Jammu	Karnal	Ludhiana	Pantnagar	Delhi	Gurdaspur	Jammu	Karnal	Ludhiana	Pantnagar
1	HD3386*	NWTS113	0	10S	0	10S	0	10S	0	0	10S	0	10S	5S	20S
2	UP3102#	NWTS102	0	10S	0	10S	0	0	0	0	0	0	0	0	0
3	DBW386#	NWTS109	0	20S	0	5MS	tMR	0	0	0	0	0	10S	0	5S
4	HD3470M	NWTS101	0	60S	10S	60S	5MS	20S	tS	0	10S	0	30S	10S	0
5	HD3471 M	NWTS112	0	10S	0	10S	0	5MR	0	0	5S	5S	20S	0	tMS
6	PBW887	NWTS106	0	10S	0	10S	0	10S	tS	0	0	5S	10MS	0	0
7	HI1668	NWTS107	0	10S	0	20S	0	5S	0	0	0	5S	10S	0	tMS
8	PBW889	NWTS111	0	0	0	5S	tMS	0	0	0	tR	0	0	0	0
9	HD2967(C)	NWTS103	20S	40S	20S	40S	10MS	60S	40S	0	0	0	20S	0	0
10	DBW187(C)	NWTS104	0	10S	0	10S	0	0	0	0	0	0	20S	0	10S
11	HD3086(C)	NWTS105	0	40S	0	60S	0	0	0	10S	40S	20S	40S	20S	60S
12	DBW222(C)	NWTS110	0	10S	0	20S	0	5S	5S	0	0	10S	0	0	0
13	PBW826(I)(C)	NWTS108	0	20S	0	20S	0	10S	0	0	10S	10S	20S	10S	20S

2222-AVT-IR-LS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi	J & K	Punjab		Haryana		Rajasthan	U.P.		UTK
			Delhi	Jammu	Ludhiana	Gurdaspur	Hisar	Karnal	Durgapura	Bulandshahr	Modipuram	Pantnagar
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	K2108	NWLS202	38.5 6 0	38.4 5 0	48.3 4 0	44.5 5 0	49.6 6 0	48.5 5 1	41.4 7 0	50.7 3 0	59.7 6 0	44.3 5 0
2	PBW893	NWLS205	42.7 4 0	37.0 7 0	53.3 1 1	45.9 2 1	47.5 7 0	52.5 1 1	50.0 2 1	50.4 5 0	64.5 2 1	46.7 4 0
3	HD3428	NWLS206	39.3 5 0	47.0 1 1	49.4 2 0	45.5 4 0	52.8 3 1	49.9 2 1	47.5 3 0	51.4 1 1	64.3 3 0	55.6 1 1
4	DBW173(C)	NWLS201	44.2 2 0	42.3 3 1	47.7 5 0	42.7 6 0	52.1 5 1	49.6 3 1	43.9 6 0	50.1 6 0	60.3 5 0	47.4 3 0
5	HD3059(C)	NWLS203	38.3 7 0	44.0 2 1	39.6 7 0	48.6 1 1	52.4 4 1	49.4 4 1	45.3 5 0	51.1 2 1	58.1 7 0	50.9 2 0
6	JKW261(C)	NWLS204	44.0 3 0	37.3 6 0	48.6 3 0	41.7 7 0	54.5 2 1	48.4 7 0	51.8 1 1	49.3 7 0	61.3 4 0	40.7 6 0
7	PBW771(C)	NWLS207	52.9 1 1	42.2 4 1	47.6 6 0	45.8 3 1	55.1 1 1	48.4 6 0	46.9 4 0	50.6 4 0	66.7 1 1	40.7 7 0
G.M.			42.8	41.2	47.8	44.9	52.0	49.5	46.7	50.5	62.2	46.6
S.E.(M)			2.069	2.146	1.381	1.212	1.715	1.674	1.059	0.206	0.941	0.758
C.D. (10%)			5.1	5.3	3.4	3.0	4.2	4.1	2.6	0.5	2.3	1.9
C.V.			9.7	10.4	5.8	5.4	6.6	6.8	4.5	0.8	3.0	3.3
D.O.S.(dd.mm.yy)			15.12.22	08.12.22	05.12.22	05.12.22	06.12.22	08.12.22	08.12.22	06.12.22	14.12.22	14.12.22

No. of Trials: Proposed = 12 Conducted = 12
Trials not reported (02) = Nagina (LSM), Dehradun (LSM)

2222-AVT-IR-LS-TAS-NWPZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi	J & K	Punjab	Haryana	Rajasthan	U.P.	UTK	Zonal
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	K2108	NWLS202	38.5 6 0	38.4 5 0	46.4 4 0	49.1 7 1	41.4 7 0	55.2 5 0	44.3 5 0	46.4 7 0
2	PBW893	NWLS205	42.7 4 0	37.0 7 0	49.6 1 1	50.0 6 1	50.0 2 1	57.5 3 0	46.7 4 0	49.0 3 0
3	HD3428	NWLS206	39.3 5 0	47.0 1 1	47.4 2 1	51.3 3 1	47.5 3 0	57.8 2 1	55.6 1 1	50.3 1 1
4	DBW173(C)	NWLS201	44.2 2 0	42.3 3 1	45.2 6 0	50.8 5 1	43.9 6 0	55.2 6 0	47.4 3 0	48.0 4 0
5	HD3059(C)	NWLS203	38.3 7 0	44.0 2 1	44.1 7 0	50.9 4 1	45.3 5 0	54.6 7 0	50.9 2 0	47.8 5 0
6	JKW261(C)	NWLS204	44.0 3 0	37.3 6 0	45.2 5 0	51.4 2 1	51.8 1 1	55.3 4 0	40.7 6 0	47.8 6 0
7	PBW771(C)	NWLS207	52.9 1 1	42.2 4 1	46.7 3 0	51.7 1 1	46.9 4 0	58.7 1 1	40.7 7 0	49.7 2 1
G.M.			42.8	41.2	46.4	50.8	46.7	56.3	46.6	48.4
S.E.(M)			2.069	2.146	0.919	1.198	1.059	0.481	0.758	0.454
C.D. (10%)			5.1	5.3	2.2	2.9	2.6	1.1	1.9	1.1

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-IR-LS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								
			Br	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	K2108	NWLS202	5S	20S	7.6	79-91	86	112-141	126	86-106	96	24	31-43	39
2	PBW893	NWLS205	0	10S	2.1	73-90	84	113-140	125	75-105	88	10	29-45	37
3	HD3428	NWLS206	5S	5S	1.7	77-94	86	112-141	126	82-104	93	23	29-43	39
4	DBW173(C)	NWLS201	0	10S	5.7	77-94	87	115-141	127	88-104	94	16	35-42	39
5	HD3059(C)	NWLS203	0	40S	15.0	76-92	86	112-140	124	79-102	92	21	31-45	40
6	JKW261(C)	NWLS204	0	20S	11.3	75-92	85	115-140	125	85-101	94	28	25-43	37
7	PBW771(C)	NWLS207	5S	40S	11.3	76-92	84	111-139	124	75-94	84	13	28-44	39

1. Ancillary data from Bulandshahar, Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana, Modipuram and Pantnagar
2. Lodging data from Delhi, Hisar, Jammu, Karnal and Ludhiana.
3. Yellow rust data from Delhi, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar; Brown rust data from Karnal and Ludhiana.

Individual Station Rust Data

SN	Variety	Code	Yellow rust							Brown rust	
			Delhi	Gurdaspur	Hisar	Jammu	Karnal	Ludhiana	Pantnagar	Karnal	Ludhiana
1	K2108	NWLS202	5MS	10MR	0	5S	10S	20S	10S	5S	0
2	PBW893	NWLS205	0	10S	5S	0	0	0	0	0	0
3	HD3428	NWLS206	0	5MR	0	5MS	0	5S	tS	0	5S
4	DBW173(C)	NWLS201	5S	10S	0	5S	0	10S	10S	0	0
5	HD3059(C)	NWLS203	5MS	20S	tS	20S	0	40S	20S	0	0
6	JKW261(C)	NWLS204	10MS	20S	0	20S	tS	20S	10S	0	0
7	PBW771(C)	NWLS207	5S	10S	0	5MS	0	20S	40S	0	5S

2223-AVT-RI-TS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi			J & K			Punjab						Haryana						U.P						Rajasthan			UTK		
			Delhi			Jammu			Ludhiana			Gurdaspur			Hisar			Karnal			Modipuram			Nagina			Durgapura			Pantnagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH1402*	NWRI305	48.3	7	0	47.5	6	0	44.9	9	0	48.3	7	0	62.9	1	1	46.4	12	0	51.1	11	0	38.8	4	0	42.6	6	0	53.5	3	1
2	UP3111	NWRI301	42.8	11	0	36.7	12	0	37.6	12	0	37.9	12	0	38.0	12	0	51.5	7	0	54.0	9	0	34.7	12	0	45.7	3	1	49.2	8	0
3	WH1311	NWRI303	55.2	3	0	45.8	8	0	47.7	7	0	48.5	6	0	62.7	2	1	48.8	10	0	57.4	3	0	35.0	11	0	41.8	9	0	54.1	2	1
4	DBW397	NWRI304	59.8	1	1	60.6	2	1	51.1	6	0	49.6	3	0	61.5	4	1	54.7	4	0	55.8	6	0	35.3	10	0	39.6	12	0	50.3	6	0
5	PBW899	NWRI309	45.5	9	0	42.0	10	0	55.2	2	1	53.6	2	1	54.7	8	0	51.3	8	0	53.6	10	0	38.4	5	0	42.3	8	0	51.8	5	0
6	DBW398	NWRI310	47.4	8	0	42.7	9	0	39.0	11	0	45.9	10	0	58.9	6	0	56.4	2	1	60.6	2	1	40.3	3	0	45.9	2	1	50.2	7	0
7	DBW296(C)	NWRI302	48.7	6	0	46.7	7	0	52.9	3	0	48.2	8	0	54.5	9	0	53.6	6	0	54.2	8	0	36.5	6	0	42.5	7	0	44.2	10	0
8	PBW644(C)	NWRI308	41.9	12	0	61.0	1	1	45.2	8	0	40.9	11	0	42.9	11	0	46.9	11	0	54.4	7	0	36.4	8	0	41.4	11	0	52.5	4	0
9	NIAW3170(C)	NWRI312	50.4	5	0	41.5	11	0	44.7	10	0	48.5	5	0	48.1	10	0	50.2	9	0	49.9	12	0	43.9	1	1	45.1	4	1	44.1	11	0
10	HI1654(I)(C)	NWRI306	43.9	10	0	52.1	3	0	51.3	5	0	49.4	4	0	55.4	7	0	55.6	3	1	61.8	1	1	36.4	7	0	41.8	10	0	45.6	9	0
11	HD3369(I)(C)	NWRI307	58.1	2	1	50.3	5	0	52.3	4	0	47.6	9	0	61.8	3	1	54.2	5	0	56.5	5	0	42.2	2	1	44.5	5	1	43.3	12	0
12	HI1653(I)(C)	NWRI311	53.2	4	0	50.8	4	0	57.1	1	1	56.7	1	1	61.1	5	1	58.0	1	1	56.9	4	0	36.2	9	0	46.4	1	1	56.0	1	1
G.M.			49.6			48.1			48.2			47.9			55.2			52.3			55.5			37.8			43.3			49.6		
S.E.(M)			1.568			2.386			0.806			1.908			1.321			1.173			1.120			0.821			1.165			1.096		
C.D. (10%)			3.8			5.7			1.9			4.6			3.2			2.8			2.7			2.0			2.8			2.6		
C.V.			6.3			9.9			3.3			8.0			4.8			4.5			4.0			4.3			5.4			4.4		
D.O.S.(dd.mm.yy)			02.11.22			01.11.22			01.11.22			28.10.22			30.10.22			27.10.22			04.11.22			05.11.22			03.11.22			01.11.22		

No. of Trials : Proposed = 14 Conducted = 13

Trial not conducted (01) = Dehradun

Trials not reported (03) = Bawal (RMT), Sriganganagar (RMT), Bulandshahr (RMT)

2223-AVT-RI-TS-TAS-NWPZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi			J & K			Punjab			Haryana			U.P.			Rajasthan			UTK			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH1402*	NWRI305	48.3	7	0	47.5	6	0	46.6	8	0	54.7	7	0	45.0	11	0	42.6	6	0	53.5	3	1	48.4	8	0
2	UP3111	NWRI301	42.8	11	0	36.7	12	0	37.8	12	0	44.8	12	0	44.4	12	0	45.7	3	1	49.2	8	0	42.8	12	0
3	WH1311	NWRI303	55.2	3	0	45.8	8	0	48.1	7	0	55.7	5	0	46.2	6	0	41.8	9	0	54.1	2	1	49.7	4	0
4	DBW397	NWRI304	59.8	1	1	60.6	2	1	50.4	4	0	58.1	2	1	45.6	8	0	39.6	12	0	50.3	6	0	51.8	2	0
5	PBW899	NWRI309	45.5	9	0	42.0	10	0	54.4	2	0	53.0	9	0	46.0	7	0	42.3	8	0	51.8	5	0	48.8	6	0
6	DBW398	NWRI310	47.4	8	0	42.7	9	0	42.5	11	0	57.6	4	1	50.5	1	1	45.9	2	1	50.2	7	0	48.7	7	0
7	DBW296(C)	NWRI302	48.7	6	0	46.7	7	0	50.6	3	0	54.0	8	0	45.4	10	0	42.5	7	0	44.2	10	0	48.2	9	0
8	PBW644(C)	NWRI308	41.9	12	0	61.0	1	1	43.1	10	0	44.9	11	0	45.4	9	0	41.4	11	0	52.5	4	0	46.4	11	0
9	NIAW3170(C)	NWRI312	50.4	5	0	41.5	11	0	46.6	9	0	49.2	10	0	46.9	4	0	45.1	4	1	44.1	11	0	46.6	10	0
10	HI1654(I)(C)	NWRI306	43.9	10	0	52.1	3	0	50.3	5	0	55.5	6	0	49.1	3	1	41.8	10	0	45.6	9	0	49.3	5	0
11	HD3369(I)(C)	NWRI307	58.1	2	1	50.3	5	0	50.0	6	0	58.0	3	1	49.3	2	1	44.5	5	1	43.3	12	0	51.1	3	0
12	HI1653(I)(C)	NWRI311	53.2	4	0	50.8	4	0	56.9	1	1	59.6	1	1	46.6	5	0	46.4	1	1	56.0	1	1	53.2	1	1
G.M			49.6			48.1			48.1			53.8			46.7			43.3			49.6			48.8		
S.E.(M)			1.568			2.386			1.036			0.883			0.694			1.165			1.096			0.498		
C.D. (10%)			3.8			5.7			2.4			2.1			1.6			2.8			2.6			1.2		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-RI-TS-TAS, 2022-23**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								
			Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	TGW.R	TGW.M
1	WH1402*	NWRI305	0	0.0	5S	2.5	82-109	99	126-161	144	83-114	96	0	38-49	43
2	UP3111	NWRI301	10S	4.2	60S	21.3	81-107	96	126-160	144	91-118	107	20	30-48	42
3	WH1311	NWRI303	0	0.0	40S	15.3	87-112	102	127-162	144	85-117	102	17	34-43	39
4	DBW397	NWRI304	20S	8.2	20S	15.0	87-112	102	128-161	148	87-112	102	3	35-48	43
5	PBW899	NWRI309	0	0.0	5S	3.8	91-110	103	129-162	147	80-124	104	33	32-45	40
6	DBW398	NWRI310	5S	1.0	60S	18.8	85-110	99	125-162	145	95-112	103	12	31-53	45
7	DBW296(C)	NWRI302	5S	1.0	40S	13.8	90-112	103	128-162	148	84-116	103	18	38-48	44
8	PBW644(C)	NWRI308	40S	18.0	40S	17.5	88-112	102	127-160	145	89-122	109	34	28-44	39
9	NIAW3170(C)	NWRI312	10S	3.0	40S	16.8	78-103	94	125-162	144	95-118	108	14	38-48	43
10	HI1654(I)(C)	NWRI306	0	0.0	10S	7.5	81-112	102	125-161	146	83-111	100	0	28-48	42
11	HD3369(I)(C)	NWRI307	10S	4.2	40S	17.5	85-109	100	126-161	146	84-116	103	2	40-57	45
12	HI1653(I)(C)	NWRI311	10S	4.0	20S	12.5	83-108	95	127-162	144	86-119	108	5	36-56	48

1. Ancillary data from Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana, Modipuram and Pantnagar
2. Lodging data from Hisar, Karnal and Ludhiana.
3. Yellow rust data from Gurdaspur, Jammu, Ludhiana and Pantnagar; Brown rust data from Gurdaspur, Hisar, Karnal, Ludhiana and Pantnagar.

Individual Station Rust Data

SN	Variety	Code	Yellow rust				Brown rust				
			Gurdaspur	Jammu	Ludhiana	Pantnagar	Gurdaspur	Hisar	Karnal	Ludhiana	Pantnagar
1	WH1402*	NWRI305	5S	5S	0	0	0	0	0	0	0
2	UP3111	NWRI301	20S	60S	5S	0	0	0	10S	10S	tMS
3	WH1311	NWRI303	20S	40S	tS	0	0	0	0	0	0
4	DBW397	NWRI304	20S	20S	20S	0	0	0	20S	20S	tMS
5	PBW899	NWRI309	5S	5S	5S	0	0	0	0	0	0
6	DBW398	NWRI310	5S	60S	10S	0	0	0	5S	0	0
7	DBW296(C)	NWRI302	10S	40S	5S	0	0	0	5S	0	0
8	PBW644(C)	NWRI308	40S	20S	10S	0	10S	0	30S	40S	10S
9	NIAW3170(C)	NWRI312	20S	40S	5MR	5S	0	10S	0	0	5S
10	HI1654(I)(C)	NWRI306	10S	10S	10S	0	0	0	0	0	0
11	HD3369(I)(C)	NWRI307	20S	40S	10S	0	10S	0	10S	0	tMS
12	HI1653(I)(C)	NWRI311	20S	20S	10S	0	0	0	10S	0	10S

North Eastern Plains Zone

2231-AVT-IR-TS-TAS-NEPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P.									Bihar			W.Bengal						Jharkhand			Assam		
			Kanpur			Ayodhya			Varanasi			RPCAU-Pusa			Kalyani			Burdwan			Ranchi			Shillongani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3388*	NETS106	57.9	1	1	58.1	3	1	56.4	2	1	46.5	7	0	37.0	10	0	45.7	7	0	48.1	5	0	50.3	2	1
2	HD3471^{M}	NETS101	46.5	7	0	52.9	7	0	40.9	10	0	49.7	3	0	41.1	6	0	55.9	1	1	38.5	10	0	36.4	9	0
3	HD3470^{M}	NETS103	45.1	8	0	51.3	8	0	48.1	9	0	40.7	10	0	41.0	7	0	38.9	8	0	41.3	9	0	29.7	10	0
4	DBW386$^{\#}$	NETS108	57.5	2	1	54.9	5	0	56.6	1	1	53.2	1	1	42.0	3	0	50.1	4	1	51.9	3	1	42.1	5	0
5	DBW187(C)	NETS104	52.1	4	0	59.5	2	1	53.1	4	0	48.3	4	0	45.7	2	1	37.0	9	0	43.1	8	0	41.8	6	0
6	HD3086(C)	NETS105	43.5	10	0	54.3	6	0	51.7	6	0	52.1	2	1	41.3	4	0	46.0	6	0	49.0	4	0	50.8	1	1
7	DBW222(C)	NETS107	55.4	3	0	56.6	4	0	53.4	3	0	47.0	5	0	39.4	8	0	51.6	2	1	45.8	6	0	45.9	4	0
8	HD2967(C)	NETS109	47.0	6	0	59.8	1	1	50.6	7	0	41.2	9	0	38.9	9	0	35.8	10	0	52.8	2	1	40.8	8	0
9	HD3249(C)	NETS110	48.7	5	0	49.3	9	0	52.6	5	0	45.7	8	0	46.4	1	1	47.1	5	0	45.7	7	0	41.1	7	0
10	PBW826(I)(C)	NETS102	44.2	9	0	44.4	10	0	49.4	8	0	46.9	6	0	41.3	4	0	51.1	3	1	55.2	1	1	47.2	3	0
G.M.			49.8			54.1			51.3			47.1			41.4			45.9			47.1			42.6		
S.E.(M)			1.011			0.861			1.160			0.955			1.771			2.631			1.438			0.879		
C.D. (10%)			2.4			2.1			2.8			2.3			4.3			6.3			3.5			2.1		
C.V.			4.1			3.2			4.5			4.1			8.6			11.5			6.1			4.1		
D.O.S.(dd.mm.yy)			13.11.22			13.11.22			14.11.22			14.11.22			14.11.22			10.11.22			12.11.22			12.11.22		

No. of Trials : Proposed =13 Conducted = 12 Trial not conducted (01) = Mau

Trials not reported (04) =Sabour (RMT), Prayagraj (LSM, LS), Dumka (LSM), Coochbehar (LSM)

2231-AVT-IR-TS-TAS-NEPZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	U.P.			Bihar			W.Bengal			Jharkhand			Assam			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3388*	NETS106	57.5	1	1	46.5	7	0	41.3	8	0	48.1	5	0	50.3	2	1	50.0	2	1
2	HD3471^{M}	NETS101	46.8	9	0	49.7	3	0	48.5	1	1	38.5	10	0	36.4	9	0	45.2	9	0
3	HD3470^{M}	NETS103	48.2	8	0	40.7	10	0	40.0	9	0	41.3	9	0	29.7	10	0	42.0	10	0
4	DBW386$^{\#}$	NETS108	56.3	2	1	53.2	1	1	46.0	4	1	51.9	3	1	42.1	5	0	51.0	1	1
5	DBW187(C)	NETS104	54.9	4	0	48.3	4	0	41.3	7	0	43.1	8	0	41.8	6	0	47.6	5	0
6	HD3086(C)	NETS105	49.8	7	0	52.1	2	1	43.7	6	0	49.0	4	0	50.8	1	1	48.6	4	0
7	DBW222(C)	NETS107	55.1	3	0	47.0	5	0	45.5	5	1	45.8	6	0	45.9	4	0	49.4	3	0
8	HD2967(C)	NETS109	52.4	5	0	41.2	9	0	37.3	10	0	52.8	2	1	40.8	8	0	45.9	8	0
9	HD3249(C)	NETS110	50.2	6	0	45.7	8	0	46.7	2	1	45.7	7	0	41.1	7	0	47.1	7	0
10	PBW826(I)(C)	NETS102	46.0	10	0	46.9	6	0	46.2	3	1	55.2	1	1	47.2	3	0	47.5	6	0
G.M.			51.7			47.1			43.7			47.1			42.6			47.4		
S.E.(M)			0.588			0.955			1.585			1.438			0.879			0.514		
C.D. (10%)			1.4			2.3			3.8			3.5			2.1			1.2		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: AVT-IR-TS-TAS-NEPZ, 2022-23**

SN	Variety	Code	Disease reaction	Agronomic Characteristics							
			Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	HD3388*	NETS106	0	67-90	79	110-134	124	85-106	95	38-47	43
2	HD3471[M]	NETS101	0	58-86	76	108-135	123	84-102	92	33-48	42
3	HD3470 [M]	NETS103	0	54-81	72	104-133	120	73-95	85	35-46	40
4	DBW386[#]	NETS108	5S	64-87	77	110-135	124	77-97	88	41-55	46
5	DBW187(C)	NETS104	0	58-85	75	106-135	122	78-104	93	38-50	43
6	HD3086(C)	NETS105	20S	57-84	73	105-136	121	88-98	92	34-47	39
7	DBW222(C)	NETS107	0	66-88	78	109-137	124	89-103	95	37-51	42
8	HD2967(C)	NETS109	5S	69-95	85	111-139	131	89-106	98	30-44	38
9	HD3249(C)	NETS110	0	61-89	77	105-134	122	75-109	93	40-50	44
10	PBW826(I)(C)	NETS102	5S	61-85	77	110-137	123	78-95	87	40-51	46

1. Ancillary data from Ayodhya, Sabour, Burdwan, Coochbehar, Dumka, Kalyani, Kanpur, Prayagraj, Ranchi, RPCAU-Pusa, Shillongani and Varanasi.
2. Brown rust data reported from Kanpur.

2233-AVT-RI-TS-TAS-NEPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P.									Bihar						W.Bengal									Jharkhand			Assam		
			Kanpur			Prayagraj			Varanasi			Sabour			RPCAU-Pusa			Coochbehar			Kalyani			Burdwan			Ranchi			Shillongani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW398	NERI306	48.9	1	1	34.0	6	0	35.2	6	0	36.1	1	1	30.7	4	0	26.6	3	0	35.2	3	0	32.6	3	1	33.5	1	1	35.1	3	0
2	HI1612(C)	NERI301	42.8	3	0	41.5	3	1	38.5	2	1	34.3	2	0	38.1	1	1	25.2	4	0	34.2	6	0	30.1	4	0	28.8	4	0	37.5	2	1
3	HD3171(C)	NERI302	40.2	6	0	43.1	2	1	37.9	3	1	32.2	3	0	27.0	5	0	20.2	6	0	34.9	4	0	29.3	5	0	30.7	3	1	24.3	6	0
4	K1317(C)	NERI303	42.8	4	0	40.5	5	1	39.9	1	1	31.5	4	0	33.2	2	0	34.6	1	1	34.7	5	0	27.6	6	0	33.3	2	1	34.1	4	0
5	HD3293(C)	NERI304	42.3	5	0	41.3	4	1	37.9	3	1	30.2	6	0	24.2	6	0	24.1	5	0	38.0	1	1	33.7	1	1	26.6	6	0	27.9	5	0
6	DBW252(C)	NERI305	45.7	2	1	44.6	1	1	37.3	5	1	30.4	5	0	31.4	3	0	27.3	2	0	37.3	2	1	33.2	2	1	28.3	5	0	37.7	1	1
G.M.			43.8			40.8			37.8			32.5			30.8			26.3			35.7			31.1			30.2			32.8		
S.E.(M)			2.254			3.092			1.545			0.659			0.999			1.366			0.911			0.675			1.711			0.696		
C.D. (10%)			5.6			7.7			3.8			1.6			2.5			3.4			2.3			1.7			4.2			1.7		
C.V.			10.3			15.1			8.2			4.1			6.5			10.4			5.1			4.3			11.3			4.2		
D.O.S. (dd.mm.yy)			30.10.22			03.11.22			04.11.22			05.11.22			05.11.22			01.11.22			04.11.22			04.11.22			03.11.22			04.11.22		

No. of Trials: **Proposed = 12** **Conducted = 11**

Trial not conducted (01) = Mau

Trials not reported (01) = Dumka (LS)

2233-AVT-RI-TS-TAS-NEPZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	U.P.			Bihar			W.Bengal			Jharkhand			Assam			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW398	NERI306	39.4	6	1	33.4	2	0	31.5	4	1	33.5	1	1	35.1	3	0	34.8	4	1
2	HI1612(C)	NERI301	41.0	3	1	36.2	1	1	29.8	5	0	28.8	4	0	37.5	2	1	35.1	3	1
3	HD3171(C)	NERI302	40.4	5	1	29.6	5	0	28.1	6	0	30.7	3	1	24.3	6	0	32.0	6	0
4	K1317(C)	NERI303	41.1	2	1	32.4	3	0	32.3	2	1	33.3	2	1	34.1	4	0	35.2	2	1
5	HD3293(C)	NERI304	40.5	4	1	27.2	6	0	32.0	3	1	26.6	6	0	27.9	5	0	32.6	5	0
6	DBW252(C)	NERI305	42.5	1	1	30.9	4	0	32.6	1	1	28.3	5	0	37.7	1	1	35.3	1	1
G.M.			40.8			31.6			31.0			30.2			32.8			34.2		
S.E.(M)			1.376			0.598			0.592			1.711			0.696			0.500		
C.D. (10%)			3.3			1.4			1.4			4.2			1.7			1.2		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: AVT-RI-TS-TAS-NEPZ, 2022-23**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							
			LB, HS(Av)	Br rust	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	DBW398	NERI306	56(45)	20S	57-90	74	105-138	124	76-97	88	35-52	45
2	HI1612(C)	NERI301	46(35)	0	63-96	83	107-141	126	78-101	91	32-48	40
3	HD3171(C)	NERI302	57(46)	10S	51-86	70	103-139	123	76-99	90	32-50	42
4	K1317(C)	NERI303	57(35)	0	60-92	79	107-140	126	87-108	97	33-51	43
5	HD3293(C)	NERI304	56(35)	10S	61-90	79	109-138	126	90-109	99	36-50	42
6	DBW252(C)	NERI305	45(34)	0	62-92	81	108-141	126	88-106	96	31-47	41

1. Ancillary data from Sabour, Burdwan, Coochbehar, Dumka, Kalyani, Kanpur, Prayagraj, Ranchi, RPCAU-Pusa, Shillongani and Varanasi centres.
2. Brown rust data reported from Kanpur.
3. Leaf blight data from Sabour, Burdwan, Coochbehar, Kalyani and RPCAU- Pusa.

Individual Station Leaf Blight Data

SN	Variety	Code	Leaf blight				
			Sabour	Burdwan	Coochbehar	Kalyani	RPCAU- Pusa
1	DBW398	NERI306	56	45	23	46	45
2	HI1612(C)	NERI301	46	35	13	25	45
3	HD3171(C)	NERI302	35	57	45	36	56
4	K1317(C)	NERI303	36	57	34	25	45
5	HD3293(C)	NERI304	46	45	23	25	56
6	DBW252(C)	NERI305	35	45	34	24	34

Central Zone

2241 - AVT-IR-TS-TAD-CZ , 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat										U.P.			M.P.		
			Vijapur			SK Nagar			Junagadh			Anand			Banda			Sagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW547*	CZTS103	74.0	4	1	51.2	7	0	69.7	2	1	60.2	9	0	64.4	8	0	58.8	5	0
2	NWS2194#*	CZTS104	73.0	5	1	52.1	4	0	69.1	3	1	62.7	5	1	67.9	5	1	47.7	9	0
3	HI1670Q	CZTS108	73.0	6	1	47.4	10	0	64.8	9	0	63.4	4	1	65.9	6	0	48.7	7	0
4	HI1669	CZTS101	76.1	1	1	59.8	2	1	67.4	6	1	61.2	7	0	74.2	2	1	63.6	2	1
5	UAS3020	CZTS107	68.0	8	0	51.6	6	0	70.1	1	1	67.2	2	1	61.6	10	0	46.7	10	0
6	GW513(C)	CZTS105	74.3	3	1	52.1	5	0	65.5	7	0	51.5	10	0	75.1	1	1	59.9	4	0
7	HI1636(C)	CZTS109	64.5	10	0	50.7	8	0	63.6	10	0	62.2	6	0	62.7	9	0	61.9	3	0
8	GW322(C)	CZTS110	68.0	9	0	50.3	9	0	68.3	5	1	67.9	1	1	69.4	4	1	48.7	8	0
9	HI1650(I)(C)	CZTS102	72.7	7	1	56.8	3	0	68.6	4	1	60.6	8	0	70.7	3	1	52.8	6	0
10	MACS6768(I)(C)	CZTS106	75.7	2	1	66.6	1	1	65.5	8	0	64.9	3	1	65.9	7	0	65.5	1	1
G.M.			71.9			53.9			67.3			62.2			67.8			55.4		
S.E.(M)			1.793			3.291			1.423			2.215			3.348			1.449		
C.D. (10%)			4.3			7.9			3.4			5.3			8.1			3.5		
C.V.			5.0			12.2			4.2			7.1			9.9			5.2		
D.O.S. (dd.mm.yy)			15.11.22			10.11.22			12.11.22			15.11.22			15.11.22			13.11.22		

No. of Trials : Proposed = 15 Conducted = 15

Trials not reported (03) = Jabalpur (RMT), Dhandhuka (LSM), Jhansi (LS)

2241 - AVT-IR-TS-TAD-CZ , 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	M.P.									Rajasthan			Chhattisgarh					
			Gwalior			Powarkheda			Indore			Udaipur			Bilaspur			Raipur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW547*	CZTS103	59.6	4	0	58.1	7	0	53.8	7	0	53.0	10	0	44.4	9	0	45.2	5	0
2	NWS2194#*	CZTS104	51.5	10	0	62.1	4	0	52.6	8	0	65.8	4	1	45.7	7	0	45.5	4	0
3	HI1670Q	CZTS108	66.0	1	1	61.6	5	0	59.0	1	1	56.7	9	0	43.0	10	0	42.9	9	0
4	HI1669	CZTS101	65.0	2	1	60.7	6	0	58.7	2	1	59.7	7	0	47.0	3	0	46.0	3	0
5	UAS3020	CZTS107	59.5	5	0	56.0	9	0	50.4	10	0	65.7	5	1	46.4	5	0	48.6	1	1
6	GW513(C)	CZTS105	63.4	3	0	57.2	8	0	54.2	5	0	61.5	6	0	44.9	8	0	44.5	7	0
7	HI1636(C)	CZTS109	52.8	9	0	63.0	3	0	51.1	9	0	57.9	8	0	46.1	6	0	41.9	10	0
8	GW322(C)	CZTS110	59.5	6	0	55.8	10	0	56.1	4	1	66.1	3	1	48.2	2	1	43.4	8	0
9	HI1650(I)(C)	CZTS102	57.1	8	0	70.1	1	1	58.0	3	1	67.4	1	1	51.4	1	1	47.7	2	1
10	MACS6768(I)(C)	CZTS106	59.4	7	0	63.8	2	0	54.1	6	0	66.8	2	1	46.6	4	0	45.0	6	0
G.M.			59.4			60.8			54.8			62.1			46.4			45.1		
S.E.(M)			0.729			2.007			1.799			2.316			1.324			0.482		
C.D. (10%)			1.8			4.8			4.3			5.6			3.2			1.2		
C.V.			2.5			6.6			6.6			7.5			5.7			2.1		
D.O.S. (dd.mm.yy)			07.11.22			14.11.22			12.11.22			05.11.22			07.11.22			10.11.22		

2241 - AVT-IR-TS-TAD-CZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			U.P.			M.P.			Rajasthan			Chhattisgarh			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW547*	CZTS103	63.8	6	0	64.4	8	0	57.6	6	0	53.0	10	0	44.8	7	0	57.7	8	0
2	NWS2194#*	CZTS104	64.2	4	0	67.9	5	1	53.5	9	0	65.8	4	1	45.6	6	0	58.0	6	0
3	HI1670Q	CZTS108	62.2	8	0	65.9	6	0	58.8	4	0	56.7	9	0	42.9	10	0	57.7	7	0
4	HI1669	CZTS101	66.1	2	1	74.2	2	1	62.0	1	1	59.7	7	0	46.5	3	0	61.6	2	1
5	UAS3020	CZTS107	64.2	5	0	61.6	10	0	53.2	10	0	65.7	5	1	47.5	2	0	57.7	9	0
6	GW513(C)	CZTS105	60.9	9	0	75.1	1	1	58.6	5	0	61.5	6	0	44.7	8	0	58.7	4	0
7	HI1636(C)	CZTS109	60.3	10	0	62.7	9	0	57.2	7	0	57.9	8	0	44.0	9	0	56.5	10	0
8	GW322(C)	CZTS110	63.6	7	0	69.4	4	1	55.0	8	0	66.1	3	1	45.8	4	0	58.5	5	0
9	HI1650(I)(C)	CZTS102	64.7	3	0	70.7	3	1	59.5	3	0	67.4	1	1	49.5	1	1	61.2	3	1
10	MACS6768(I)(C)	CZTS106	68.2	1	1	65.9	7	0	60.7	2	1	66.8	2	1	45.8	5	0	61.6	1	1
G.M.			63.8			67.8			57.6			62.1			45.7			58.9		
S.E.(M)			1.145			3.348			0.786			2.316			0.704			0.586		
C.D. (10%)			2.7			8.1			1.8			5.6			1.7			1.4		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-IR-TS-TAD-CZ, 2022-23**

SN	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	GW547*	CZTS103	52-83	68	103-138	123	77-105	94	40	41-54	47
2	NWS2194#*	CZTS104	56-82	70	100-137	121	75-108	95	5	37-50	44
3	HI1670Q	CZTS108	45-80	62	104-136	122	65-92	81	25	37-51	46
4	HI1669	CZTS101	49-82	67	97-136	120	71-102	88	40	40-49	44
5	UAS3020	CZTS107	58-88	73	106-139	125	83-110	95	0	41-53	45
6	GW513(C)	CZTS105	48-79	63	97-135	119	77-105	93	30	39-55	47
7	HI1636(C)	CZTS109	48-82	65	100-136	122	71-103	91	15	41-58	50
8	GW322(C)	CZTS110	54-84	69	101-134	121	71-100	88	30	32-46	41
9	HI1650(I)(C)	CZTS102	52-84	68	98-134	121	78-100	91	35	37-53	46
10	MACS6768(I)(C)	CZTS106	47-80	64	99-133	119	71-102	85	10	37-49	44

1. Ancillary data from Powarkheda, Anand, Banda, Bilaspur, Dhanduka, Gwalior, Indore, Jabalpur, Jhansi, Junagadh, Raipur, Sagar, SK Nagar, Udaipur and Vijapur centres.
2. Lodging data reported from Anand, CAU- Jhansi, SK Nagar and Vijapur centres.

2242 - AVT-IR-LS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat										U.P.		
			Vijapur			Junagadh			Anand			Lok-Bharti			Banda		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3557#	CZLS207	44.7	3	1	39.4	9	0	55.3	10	0	40.9	7	0	53.7	10	0
2	HI1674	CZLS204	43.2	4	1	40.2	6	0	66.1	2	1	48.0	1	1	63.0	1	1
3	HI1673	CZLS205	44.8	2	1	39.8	8	0	60.2	5	0	44.1	5	0	61.8	5	1
4	HI1675	CZLS206	28.7	10	0	45.5	3	1	56.8	9	0	42.9	6	0	62.0	3	1
5	AKAW5104	CZLS208	40.0	5	0	40.6	5	0	64.1	3	1	44.7	3	1	61.0	6	1
6	CG1029 (C)	CZLS201	36.1	8	0	39.9	7	0	60.1	6	0	45.4	2	1	62.0	4	1
7	MP4010 (C)	CZLS202	33.9	9	0	43.6	4	1	58.3	8	0	39.4	9	0	58.1	8	1
8	HD2932 (C)	CZLS203	44.9	1	1	48.6	1	1	66.7	1	1	44.5	4	0	62.6	2	1
9	HI1634 (C)	CZLS209	37.3	7	0	36.9	10	0	59.1	7	0	39.5	8	0	56.6	9	0
10	Filler	CZLS210	39.2	6	0	46.6	2	1	61.9	4	1	36.7	10	0	60.0	7	1
G.M.			39.3			42.1			60.9			42.6			60.1		
S.E.(M)			1.455			2.228			2.116			1.398			2.596		
C.D. (10%)			3.5			5.4			5.1			3.4			6.3		
C.V.			7.4			10.6			7.0			6.6			8.6		
D.O.S. (dd.mm.yy)			10.12.22			14.12.22			08.12.22			12.12.22			12.12.22		

No. of Trials : Proposed =12 Conducted = 12

Trials not reported (03) = Jabalpur (RMT), Raipur (RMT), S.K.Nagar (LSM, HCV)

242 - AVT-IR-LS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	M.P.									Chhattisgarh		
			Gwalior			Powarkheda			Indore			Bilaspur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3557#	CZLS207	49.7	9	0	50.3	3	1	39.6	10	0	35.1	10	0
2	HI1674	CZLS204	64.8	1	1	55.2	1	1	45.0	5	1	41.2	5	0
3	HI1673	CZLS205	64.3	2	1	47.4	6	0	43.5	7	1	37.8	6	0
4	HI1675	CZLS206	56.8	3	0	46.9	8	0	43.8	6	1	36.5	8	0
5	AKAW5104	CZLS208	56.5	4	0	48.4	4	0	45.8	3	1	43.2	4	0
6	CG1029 (C)	CZLS201	50.3	7	0	53.6	2	1	41.5	8	0	47.9	1	1
7	MP4010 (C)	CZLS202	49.9	8	0	46.9	9	0	41.0	9	0	37.5	7	0
8	HD2932 (C)	CZLS203	51.4	6	0	46.4	10	0	45.7	4	1	44.2	2	1
9	HI1634 (C)	CZLS209	55.8	5	0	47.1	7	0	47.9	1	1	36.0	9	0
10	Filler	CZLS210	49.2	10	0	48.4	4	0	47.0	2	1	44.1	3	1
G.M.			54.9			49.1			44.1			40.3		
S.E.(M)			0.925			2.247			2.097			1.630		
C.D. (10%)			2.2			5.4			5.1			3.9		
C.V.			3.4			9.2			9.5			8.1		
D.O.S. (dd.mm.yy)			05.12.22			08.12.22			13.12.22			11.12.22		

2242 - AVT-IR-LS-TAD-CZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			U.P.			M.P.			Chhattisgarh			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3557#	CZLS207	45.1	7	0	53.7	10	0	46.5	9	0	35.1	10	0	45.4	9	0
2	HI1674	CZLS204	49.4	2	1	63.0	1	1	55.0	1	1	41.2	5	0	51.9	1	1
3	HI1673	CZLS205	47.2	4	0	61.8	5	1	51.7	2	0	37.8	6	0	49.3	4	0
4	HI1675	CZLS206	43.5	9	0	62.0	3	1	49.2	5	0	36.5	8	0	46.6	7	0
5	AKAW5104	CZLS208	47.4	3	0	61.0	6	1	50.2	4	0	43.2	4	0	49.4	3	0
6	CG1029 (C)	CZLS201	45.4	6	0	62.0	4	1	48.5	6	0	47.9	1	1	48.5	5	0
7	MP4010 (C)	CZLS202	43.8	8	0	58.1	8	1	45.9	10	0	37.5	7	0	45.4	10	0
8	HD2932 (C)	CZLS203	51.2	1	1	62.6	2	1	47.8	8	0	44.2	2	1	50.5	2	1
9	HI1634 (C)	CZLS209	43.2	10	0	56.6	9	0	50.3	3	0	36.0	9	0	46.2	8	0
10	Filler	CZLS210	46.1	5	0	60.0	7	1	48.2	7	0	44.1	3	1	48.1	6	0
G.M.			46.2			60.1			49.3			40.3			48.1		
S.E.(M)			0.919			2.596			1.070			1.630			0.640		
C.D. (10%)			2.2			6.3			2.5			3.9			1.5		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-IR-LS-TAD-CZ, 2022-23**

SN	Variety	Code	Disease reaction		Agronomic Characteristics								
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	MP3557#	CZLS207	0	5S	53-78	63	93-120	107	78-108	95	15	34-51	39
2	HI1674	CZLS204	tR	tMR	50-75	60	93-123	108	62-90	75	0	33-52	43
3	HI1673	CZLS205	tR	10MR	50-75	59	93-118	105	73-110	88	0	29-50	40
4	HI1675	CZLS206	0	tR	49-71	57	94-121	106	75-110	88	5	35-53	42
5	AKAW5104	CZLS208	0	tR	50-73	60	93-119	107	74-101	87	5	32-50	39
6	CG1029(C)	CZLS201	0	tMR	51-80	62	93-121	108	73-112	89	0	37-58	47
7	MP4010(C)	CZLS202	5MR	40S	49-80	61	95-119	107	71-98	81	0	31-51	39
8	HD2932(C)	CZLS203	20MR	20MR	52-79	64	96-123	109	75-105	88	0	32-54	40
9	HI1634(C)	CZLS209	0	tMR	51-79	62	92-122	107	74-98	85	5	31-54	40
10	Filler	CZLS210	0	20MS	55-81	66	96-122	109	74-99	87	10	31-57	39

1. Ancillary data from Powarkheda, Anand, Banda, Bilaspur, Gwalior, Indore, Jabalpur, Junagadh, Lokbharti, SK Nagar and Vijapur
2. Black and brown rust data reported from Junagadh and Vijapur centres.
3. Lodging data reported from Anand and Vijapur centres.

Individual Centre Rust Data

SN	Entry	Code	Brown rust		Black rust	
			Junagadh	Vijapur	Junagadh	Vijapur
1	MP3557#	CZLS207	0	0	0	5S
2	HI1674	CZLS204	0	tR	0	tMR
3	HI1673	CZLS205	0	tR	tMR	10MR
4	HI1675	CZLS206	0	0	0	tR
5	AKAW5104	CZLS208	0	0	0	tR
6	CG1029(C)	CZLS201	0	0	0	tMR
7	MP4010(C)	CZLS202	5MR	tMR	tMR	40S
8	HD2932(C)	CZLS203	20MR	10MS	tMR	20MR
9	HI1634(C)	CZLS209	0	0	0	tMR
10	Filler	CZLS210	0	0	0	20MS

2243- AVT-RI-TS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat											
			Vijapur			SK Nagar			Dhandhuka			Junagadh			Anand		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW359*	CZRI302	49.8	2	1	30.8	6	0	31.0	8	0	33.8	4	1	42.3	8	0
2	CG1040*	CZRI306	49.4	3	1	31.9	4	1	35.4	5	0	35.4	2	1	50.5	4	0
3	DBW442[M]	CZRI303	41.8	8	0	30.5	7	0	38.4	1	1	32.3	6	0	56.1	1	1
4	DBW441[M]	CZRI307	44.9	6	0	33.1	2	1	35.0	7	0	34.9	3	1	50.7	3	0
5	MP3288(C)	CZRI301	49.1	4	1	27.2	8	0	37.3	4	1	32.5	5	0	47.4	6	0
6	DBW110(C)	CZRI308	44.0	7	0	31.0	5	0	37.6	2	1	35.5	1	1	51.6	2	1
7	CG1036(I)(C)	CZRI304	52.3	1	1	34.1	1	1	35.3	6	0	31.1	8	0	49.7	5	0
8	HI1655(I)(C)	CZRI305	47.8	5	0	32.2	3	1	37.5	3	1	31.4	7	0	46.9	7	0
G.M.			47.4			31.4			35.9			33.4			49.4		
S.E.(M)			1.700			1.209			0.776			1.039			2.054		
C.D. (10%)			4.1			2.9			1.9			2.5			5.0		
C.V.			7.2			7.7			4.3			6.2			8.3		
D.O.S. (dd.mm.yy)			05.11.22			05.11.22			04.11.22			03.11.22			05.11.22		

No. of Trials: Proposed = 15 Conducted = 15
Trials not reported (02) = Jabalpur (RMT), Raipur (RMT)

2243- AVT-RI-TS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD(q/ha)

SN	Variety	Code	U.P.						M.P.								
			Banda			Jhansi			Powarkheda			Sagar			Indore		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW359*	CZRI302	61.3	4	1	60.8	2	1	26.7	7	0	36.6	6	1	38.9	4	1
2	CG1040*	CZRI306	60.8	5	1	60.6	4	1	38.0	1	1	37.2	5	1	39.5	2	1
3	DBW442[M]	CZRI303	58.6	7	1	59.2	5	1	26.9	6	0	39.1	1	1	39.3	3	1
4	DBW441[M]	CZRI307	62.5	1	1	54.5	8	0	26.5	8	0	37.3	3	1	37.5	8	1
5	MP3288(C)	CZRI301	62.2	2	1	64.6	1	1	27.8	5	0	35.1	7	0	37.6	7	1
6	DBW110(C)	CZRI308	59.1	6	1	55.0	7	1	34.9	2	0	37.3	4	1	38.9	5	1
7	CG1036(I)(C)	CZRI304	58.3	8	1	60.6	3	1	31.9	3	0	38.0	2	1	38.7	6	1
8	HI1655(I)(C)	CZRI305	62.1	3	1	56.4	6	1	30.8	4	0	32.5	8	0	40.2	1	1
G.M.			60.6			59.0			30.4			36.6			38.8		
S.E.(M)			2.567			3.989			1.223			1.642			1.328		
C.D. (10%)			6.2			9.7			3.0			4.0			3.2		
C.V.			8.5			13.5			8.0			9.0			6.8		
D.O.S. (dd.mm.yy)			02.11.22			03.11.22			04.11.22			03.11.22			03.11.22		

2243- AVT-RI-TS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Rajasthan						Chhattisgarh		
			Kota			Udaipur			Bilaspur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW359*	CZRI302	55.3	2	1	49.2	3	1	35.9	3	1
2	CG1040*	CZRI306	53.8	3	1	52.5	1	1	38.6	1	1
3	DBW442[M]	CZRI303	56.3	1	1	43.9	8	0	34.8	4	0
4	DBW441[M]	CZRI307	46.5	7	0	45.7	7	0	34.2	5	0
5	MP3288(C)	CZRI301	51.0	4	0	47.2	4	0	36.2	2	1
6	DBW110(C)	CZRI308	48.0	6	0	50.3	2	1	33.9	6	0
7	CG1036(I)(C)	CZRI304	49.3	5	0	46.5	6	0	32.1	8	0
8	HI1655(I)(C)	CZRI305	45.3	8	0	46.9	5	0	33.4	7	0
G.M.			50.7			47.8			34.9		
S.E.(M)			2.057			1.591			1.308		
C.D. (10%)			5.0			3.9			3.2		
C.V.			8.1			6.7			7.5		
D.O.S. (dd.mm.yy)			04.11.22			30.10.22			03.11.22		

2243- AVT-RI-TS-TAD-CZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			U.P.			M.P.			Rajasthan			Chhattisgarh			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW359*	CZRI302	37.5	8	0	61.1	2	1	34.1	6	0	52.2	2	1	35.9	3	1	42.5	6	0
2	CG1040*	CZRI306	40.5	1	1	60.7	3	1	38.2	1	1	53.1	1	1	38.6	1	1	44.9	1	1
3	DBW442[M]	CZRI303	39.8	4	1	58.9	6	1	35.1	4	0	50.1	3	1	34.8	4	0	42.8	4	0
4	DBW441[M]	CZRI307	39.7	5	1	58.5	7	1	33.8	7	0	46.1	7	0	34.2	5	0	41.8	7	0
5	MP3288(C)	CZRI301	38.7	7	0	63.4	1	1	33.5	8	0	49.1	5	0	36.2	2	1	42.7	5	0
6	DBW110(C)	CZRI308	40.0	3	1	57.1	8	0	37.0	2	1	49.1	4	0	33.9	6	0	42.9	3	0
7	CG1036(I)(C)	CZRI304	40.5	2	1	59.5	4	1	36.2	3	0	47.9	6	0	32.1	8	0	42.9	2	0
8	HI1655(I)(C)	CZRI305	39.1	6	1	59.3	5	1	34.5	5	0	46.1	8	0	33.4	7	0	41.8	8	0
G.M.			39.5			59.8			35.3			49.2			34.9			42.8		
S.E.(M)			0.640			2.372			0.814			1.300			1.308			0.528		
C.D. (10%)			1.5			5.6			1.9			3.1			3.2			1.2		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-RI-TS-TAD-CZ, 2022-23**

SN	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod. %	TGW.R	TGW.M
1	DBW359*	CZRI302	46-91	63	90-141	117	51-103	79	**0**	32-54	45
2	CG1040*	CZRI306	53-89	71	101-137	122	72-105	92	**0**	34-54	44
3	DBW442^{M}	CZRI303	57-88	72	105-147	126	74-104	92	**0**	34-51	43
4	DBW441^{M}	CZRI307	55-88	70	103-142	123	69-101	88	**0**	31-55	44
5	MP3288(C)	CZRI301	57-88	71	102-141	123	72-108	90	**0**	34-48	40
6	DBW110(C)	CZRI308	56-91	70	102-142	123	70-103	87	**0**	37-53	44
7	CG1036(I)(C)	CZRI304	52-90	70	96-140	120	71-113	92	**0**	38-54	43
8	HI1655(I)(C)	CZRI305	51-88	66	96-144	121	74-114	96	**10**	38-47	42

1. Ancillary data from Powarkheda, Anand, Banda, Bilaspur, Dhandhuka, Indore, Jabalpur, CAU- Jhansi, Junagadh, Kota, Sagar, SK Nagar, Udaipur and Vijapur centres.
2. Lodging data from Vijapur centre.

Peninsular Zone

2251 - AVT-IR-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra													
			Niphad			Pune			Dhule			Parbhani			Nashik		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP1378*	PZTS112	46.2	9	0	62.0	3	0	56.1	2	1	65.9	18	0	39.2	18	0
2	PBW891#	PZTS101	46.5	8	0	57.5	13	0	54.7	5	1	80.5	2	0	47.6	3	1
3	HD3469[B]	PZTS104	46.9	6	0	59.4	9	0	54.3	8	1	71.9	12	0	45.8	9	1
4	DBW444[B]	PZTS106	41.0	18	0	46.4	24	0	47.8	22	1	61.0	20	0	38.6	19	0
5	DBW443[B]	PZTS123	44.3	13	0	60.9	4	0	54.4	7	1	77.6	6	0	46.4	7	1
6	NIAW4153	PZTS102	45.1	11	0	60.4	5	0	53.2	10	1	65.6	19	0	35.7	22	0
7	AKAW5100	PZTS105	41.4	17	0	52.5	21	0	52.0	12	1	73.0	9	0	47.6	4	1
8	UAS3020	PZTS107	35.5	22	0	59.5	8	0	53.9	9	1	79.9	4	0	46.3	8	1
9	HI8841(d)	PZTS108	52.5	2	1	70.5	2	1	50.0	18	1	88.1	1	1	38.2	20	0
10	WH1306	PZTS109	47.1	5	0	60.1	6	0	55.8	3	1	72.8	10	0	42.4	15	0
11	MACS6809	PZTS110	46.1	10	0	56.9	15	0	44.0	23	0	60.1	22	0	43.5	13	0
12	AKAW5314	PZTS114	41.9	16	0	51.4	22	0	50.0	16	1	60.4	21	0	38.2	21	0
13	NIAW4183	PZTS115	49.1	4	0	58.3	10	0	50.8	15	1	72.5	11	0	39.4	17	0
14	PWU15	PZTS117	35.6	21	0	51.3	23	0	49.7	20	1	59.0	23	0	34.6	23	0
15	UAS3021	PZTS119	44.6	12	0	56.6	16	0	51.1	14	1	66.3	17	0	44.7	10	1
16	MP1386	PZTS120	34.5	23	0	54.3	20	0	51.5	13	1	66.5	16	0	43.8	11	0
17	NWS2222	PZTS121	46.7	7	0	55.8	18	0	54.7	6	1	70.1	14	0	43.6	12	0
18	MACS6811	PZTS122	49.4	3	0	57.8	12	0	56.9	1	1	79.1	5	0	46.9	5	1
19	GW322(C)	PZTS103	38.5	19	0	56.4	17	0	52.9	11	1	71.6	13	0	50.7	2	1
20	DBW187(C)	PZTS116	38.1	20	0	54.9	19	0	43.8	24	0	58.4	24	0	28.8	24	0
21	MACS6222(C)	PZTS118	43.4	15	0	57.4	14	0	55.3	4	1	69.6	15	0	46.6	6	1
22	MACS3949(d)(C)	PZTS113	43.9	14	0	59.5	7	0	50.0	17	1	75.0	8	0	42.6	14	0
23	HI8826(d)(I)(C)	PZTS124	54.2	1	1	74.4	1	1	48.2	21	1	76.2	7	0	53.2	1	1
24	MACS4100(d)(I)(C)	PZTS111	23.7	24	0	58.3	11	0	49.8	19	1	80.4	3	0	41.2	16	0
G.M.			43.2			58.0			51.7			70.9			42.7		
S.E.(M)			1.387			1.429			3.779			1.140			3.135		
C.D.(10%)			3.9			4.0			10.7			3.2			8.8		
C.V.			6.4			4.9			14.6			3.2			14.7		
D.O.S.(dd.mm.yy)			14.11.22			14.11.22			15.11.22			14.11.22			08.11.22		

No. of Trials : Proposed = 11 Conducted=11

Trials not reported (02) = Akola (RMT), Karad (LS)

2251 - AVT-IR-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD(q/ha)

SN	Variety	Code	Karnataka											
			Dharwad			Ugar-Khurd			Kalloli			Nippani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP1378*	PZTS112	48.5	2	1	52.8	3	1	59.4	2	1	29.2	23	0
2	PBW891#	PZTS101	43.8	11	1	44.5	11	0	53.4	10	1	40.3	15	0
3	HD3469[B]	PZTS104	41.9	15	0	47.6	5	0	56.7	4	1	49.3	6	0
4	DBW444[B]	PZTS106	40.7	19	0	33.5	22	0	40.1	23	0	44.4	13	0
5	DBW443[B]	PZTS123	42.8	13	1	46.3	8	0	55.5	6	1	28.8	24	0
6	NIAW4153	PZTS102	41.8	16	0	42.7	15	0	44.7	22	0	56.8	2	1
7	AKAW5100	PZTS105	45.4	9	1	44.4	12	0	55.2	7	1	49.1	8	0
8	UAS3020	PZTS107	47.6	4	1	47.9	4	0	58.8	3	1	49.3	5	0
9	HI8841(d)	PZTS108	41.0	18	0	35.6	21	0	52.7	11	0	33.0	19	0
10	WH1306	PZTS109	45.9	8	1	46.4	7	0	54.3	8	1	35.8	17	0
11	MACS6809	PZTS110	47.4	5	1	46.1	9	0	49.6	17	0	30.7	21	0
12	AKAW5314	PZTS114	42.4	14	1	43.6	13	0	49.2	18	0	59.5	1	1
13	NIAW4183	PZTS115	46.1	6	1	42.5	16	0	48.8	21	0	45.7	11	0
14	PWU15	PZTS117	37.9	23	0	30.6	24	0	37.0	24	0	45.8	10	0
15	UAS3021	PZTS119	41.0	17	0	43.0	14	0	48.9	20	0	41.0	14	0
16	MP1386	PZTS120	44.1	10	1	45.6	10	0	49.7	16	0	35.1	18	0
17	NWS2222	PZTS121	48.3	3	1	52.9	2	1	55.8	5	1	47.2	9	0
18	MACS6811	PZTS122	48.9	1	1	58.2	1	1	61.4	1	1	38.2	16	0
19	GW322(C)	PZTS103	45.9	7	1	41.2	18	0	50.7	14	0	50.7	4	0
20	DBW187(C)	PZTS116	40.3	20	0	31.4	23	0	50.2	15	0	52.8	3	1
21	MACS6222(C)	PZTS118	43.0	12	1	42.4	17	0	51.5	13	0	49.1	7	0
22	MACS3949(d)(C)	PZTS113	38.9	22	0	38.8	20	0	53.7	9	1	45.0	12	0
23	HI8826(d)(I)(C)	PZTS124	37.8	24	0	46.8	6	0	52.4	12	0	32.5	20	0
24	MACS4100(d)(I)(C)	PZTS111	39.5	21	0	40.6	19	0	48.9	19	0	29.7	22	0
G.M.			43.4			43.6			51.6			42.5		
S.E.(M)			2.458			2.724			2.946			2.496		
C.D.(10%)			6.9			7.7			8.3			7.0		
C.V.			11.3			12.5			11.4			11.8		
D.O.S.(dd.mm.yy)			15.11.22			15.11.22			11.11.22			15.11.22		

2251-AVT-IR-TS-TAD-PZ,2022-23
STATE AND ZONAL MEANS

SN	Variety	Code	Maharashtra			Karnataka			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP1378*	PZTS112	53.9	14	0	47.5	7	0	51.0	10	0
2	PBW891#	PZTS101	57.3	4	0	45.5	13	0	52.1	6	0
3	HD3469[B]	PZTS104	55.7	6	0	48.9	4	1	52.6	5	0
4	DBW444[B]	PZTS106	46.9	22	0	39.7	22	0	43.7	23	0
5	DBW443[B]	PZTS123	56.7	5	0	43.4	19	0	50.8	13	0
6	NIAW4153	PZTS102	52.0	17	0	46.5	10	0	49.6	16	0
7	AKAW5100	PZTS105	53.3	15	0	48.5	6	0	51.2	8	0
8	UAS3020	PZTS107	55.0	8	0	50.9	3	1	53.2	2	0
9	HI8841(d)	PZTS108	59.8	2	1	40.6	21	0	51.3	7	0
10	WH1306	PZTS109	55.6	7	0	45.6	12	0	51.2	9	0
11	MACS6809	PZTS110	50.1	19	0	43.5	18	0	47.2	20	0
12	AKAW5314	PZTS114	48.4	21	0	48.7	5	1	48.5	18	0
13	NIAW4183	PZTS115	54.0	13	0	45.8	11	0	50.4	14	0
14	PWU15	PZTS117	46.0	23	0	37.8	24	0	42.4	24	0
15	UAS3021	PZTS119	52.7	16	0	43.5	17	0	48.6	17	0
16	MP1386	PZTS120	50.1	20	0	43.6	16	0	47.2	19	0
17	NWS2222	PZTS121	54.2	11	0	51.0	2	1	52.8	4	0
18	MACS6811	PZTS122	58.0	3	0	51.7	1	1	55.2	1	1
19	GW322(C)	PZTS103	54.0	12	0	47.1	8	0	51.0	11	0
20	DBW187(C)	PZTS116	44.8	24	0	43.7	15	0	44.3	22	0
21	MACS6222(C)	PZTS118	54.5	9	0	46.5	9	0	50.9	12	0
22	MACS3949(d)(C)	PZTS113	54.2	10	0	44.1	14	0	49.7	15	0
23	HI8826(d)(I)(C)	PZTS124	61.2	1	1	42.4	20	0	52.9	3	0
24	MACS4100(d)(I)(C)	PZTS111	50.7	18	0	39.7	23	0	45.8	21	0
G.M.			53.3			45.3			49.7		
S.E.(M)			1.084			1.332			0.844		
C.D.(10%)			2.5			3.1			2.0		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-IR-TS-TAD-PZ, 2022-23**

SN	Variety	Code	Disease reaction		Agronomic Characteristics								
			Bl	LB	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TGW.R	TGW.M
1	MP1378 *	PZTS112	0	01	59-72	66	103-116	112	76-88	85	20	35-41	39
2	PBW891[#]	PZTS101	0	00	42-73	61	101-116	109	77-95	89	0	39-51	44
3	HD3469[B]	PZTS104	0	01	58-72	65	104-120	113	83-98	90	0	39-51	44
4	DBW444[B]	PZTS106	tMR	01	59-72	66	103-120	112	75-97	89	0	40-54	46
5	DBW443[B]	PZTS123	0	01	57-73	64	103-115	110	86-95	91	0	42-49	44
6	NIAW4153	PZTS102	0	12	46-60	53	91-110	103	80-88	86	6	44-52	48
7	AKAW5100	PZTS105	0	12	54-65	60	102-113	109	83-93	89	25	34-49	40
8	UAS3020	PZTS107	10S	01	57-70	64	99-114	108	86-102	96	63	39-52	44
9	HI8841(d)	PZTS108	0	00	55-70	64	102-121	111	83-100	94	66	32-53	44
10	WH1306	PZTS109	5MS	12	54-66	61	100-113	107	77-97	91	0	41-50	43
11	MACS6809	PZTS110	0	12	48-62	56	91-114	106	82-96	93	37	41-52	44
12	AKAW5314	PZTS114	0	01	50-65	57	96-112	107	82-98	91	14	39-51	45
13	NIAW4183	PZTS115	0	24	48-62	55	90-112	105	78-87	85	1	43-53	48
14	PWU15	PZTS117	0	12	44-59	53	90-110	104	73-84	80	3	40-46	43
15	UAS3021	PZTS119	0	01	55-69	61	102-112	107	90-100	95	0	45-54	49
16	MP1386	PZTS120	0	24	49-62	56	96-111	105	77-90	85	0	45-52	48
17	NWS2222	PZTS121	0	12	50-64	57	98-112	105	73-92	88	2	37-46	42
18	MACS6811	PZTS122	0	01	59-72	66	103-116	110	81-100	95	3	40-47	44
19	GW322(C)	PZTS103	5S	12	52-64	58	99-112	106	83-96	88	3	38-50	41
20	DBW187(C)	PZTS116	0	12	52-66	60	99-114	108	72-97	89	3	39-47	43
21	MACS6222(C)	PZTS118	0	12	51-66	58	93-111	106	74-94	88	0	41-49	44
22	MACS3949(d)(C)	PZTS113	0	00	58-74	65	105-117	112	75-96	83	2	42-52	47
23	HI8826(d)(I)(C)	PZTS124	0	00	59-71	66	104-116	111	79-109	91	70	42-52	49
24	MACS4100(d)(I)(C)	PZTS111	0	01	50-64	57	92-110	105	73-89	83	60	36-50	42

1. Ancillary data from Pune, Niphad, Dharwad, Dhule, Kalloli, Karad, Nashik, Nippani, Parbhani and Ugar-Khurd
2. Black rust data from Dharwad and Ugar-Khurd centres: Leaf blight data from Kalloli and Ugar-Khurd centres
3. Lodging data from Pune and Parbhani centres

AVT-IR-TS-TAD-PZ, 2022-23

Individual Station Black Rust and Leaf Blight Data

SN	Variety	Code	Black rust			Leaf blight	
			Dharwad	Ugar-khurd		Kalloli	Ugar-khurd
1	MP1378 *	PZTS112	0	0		01	00
2	PBW891[#]	PZTS101	0	0		00	00
3	HD3469[B]	PZTS104	0	0		01	00
4	DBW444[B]	PZTS106	tMR	0		01	00
5	DBW443[B]	PZTS123	0	0		01	00
6	NIAW4153	PZTS102	0	0		12	01
7	AKAW5100	PZTS105	0	0		12	01
8	UAS3020	PZTS107	0	10S		01	00
9	HI8841(d)	PZTS108	0	0		00	00
10	WH1306	PZTS109	0	5MS		12	00
11	MACS6809	PZTS110	0	0		12	01
12	AKAW5314	PZTS114	0	0		01	00
13	NIAW4183	PZTS115	0	0		24	01
14	PWU15	PZTS117	0	0		12	12
15	UAS3021	PZTS119	0	0		01	00
16	MP1386	PZTS120	0	0		24	00
17	NWS2222	PZTS121	0	0		12	00
18	MACS6811	PZTS122	0	0		00	01
19	GW322(C)	PZTS103	0	5S		12	00
20	DBW187(C)	PZTS116	0	0		12	12
21	MACS6222(C)	PZTS118	0	0		12	00
22	MACS3949(d)(C)	PZTS113	0	0		00	00
23	HI8826(d)(I)(C)	PZTS124	0	0		00	00
24	MACS4100(d)(I)(C)	PZTS111	0	0		01	00

2252 - AVT-IR-LS-TAS-PZ, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra													
			Niphad			Pune			Nashik			Dhule			Karad		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3556#	PZLS218	31.2	23	0	40.2	24	0	39.1	22	0	45.5	18	0	47.1	21	0
2	PBW897Q	PZLS219	38.4	16	0	48.6	11	1	41.5	18	0	42.2	23	0	45.6	23	0
3	MP1388	PZLS201	39.3	14	0	43.7	22	0	44.6	11	0	52.7	10	1	58.0	9	0
4	GW538	PZLS203	42.6	9	0	47.0	14	0	45.3	9	0	46.5	17	0	56.3	12	0
5	DBW395	PZLS205	34.4	20	0	43.7	21	0	35.2	24	0	44.9	21	0	53.2	17	0
6	MACS6805	PZLS206	40.5	13	0	50.7	8	1	43.5	13	0	54.6	8	1	61.5	2	1
7	HI1672	PZLS207	43.1	8	0	46.2	17	0	44.1	12	0	45.3	19	0	60.1	6	1
8	HI1674	PZLS208	46.3	4	1	49.7	9	1	45.4	7	0	56.6	7	1	61.2	3	1
9	UAS3023	PZLS209	23.2	24	0	49.5	10	1	43.1	15	0	59.0	2	1	53.7	15	0
10	AKAW5104	PZLS210	46.0	6	1	42.5	23	0	51.5	1	1	56.7	6	1	57.5	10	0
11	LOK79	PZLS211	48.3	1	1	47.9	13	0	48.4	3	1	49.2	14	0	64.8	1	1
12	HI1675	PZLS212	46.8	3	1	46.1	18	0	41.5	19	0	43.0	22	0	53.3	16	0
13	MP3557	PZLS215	35.2	19	0	44.4	20	0	42.6	16	0	47.1	16	0	48.3	20	0
14	NIAW4120	PZLS216	42.1	10	0	52.8	1	1	41.2	20	0	58.3	3	1	54.5	14	0
15	GW542	PZLS217	32.5	21	0	47.9	12	0	48.7	2	1	34.9	24	0	56.4	11	0
16	WH1310	PZLS220	35.6	17	0	52.6	2	1	42.3	17	0	52.7	9	1	42.6	24	0
17	HI1673	PZLS221	46.1	5	1	46.4	16	0	48.2	4	1	51.1	11	0	59.7	7	1
18	MACS6814	PZLS222	38.8	15	0	51.9	5	1	46.8	6	1	56.7	5	1	52.9	18	0
19	NIAW4114	PZLS224	44.1	7	0	52.3	3	1	45.0	10	0	49.6	12	0	60.9	4	1
20	DBW394	PZLS225	41.0	11	0	51.3	7	1	38.8	23	0	57.9	4	1	50.9	19	0
21	HD3090(C)	PZLS202	47.8	2	1	51.4	6	1	43.5	14	0	62.2	1	1	55.7	13	0
22	HD2932(C)	PZLS204	32.3	22	0	52.0	4	1	47.3	5	1	47.9	15	0	60.4	5	1
23	RAJ4083(C)	PZLS213	35.4	18	0	45.7	19	0	45.3	8	0	45.1	20	0	45.8	22	0
24	HI1633(C)	PZLS223	40.6	12	0	46.9	15	0	41.2	20	0	49.6	13	0	59.4	8	1
G.M.			39.7			48.0			43.9			50.4			55.0		
S.E.(M)			1.467			1.618			2.075			3.630			2.348		
C.D. (10%)			4.1			4.6			5.9			10.2			6.6		
C.V.			7.4			6.7			9.4			14.4			8.5		
D.O.S.(dd.mm.yy)			15.12.22			10.12.22			14.12.22			12.12.22			13.12.22		

No. of Trials : Proposed = 12 Conducted = 12

Trials not reported (03) = Akola (RMT), Ugar-Khurd (RMT), Nippani (HCV)

Note: PZLS214 - No Germination in this entry and hence not included for analysis.

2252 - AVT-IR-LS-TAS-PZ, 2022-23

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra			Karnataka								
			Parbhani			Dharwad			Bagalkot			Kalloli		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3556#	PZLS218	53.2	24	0	40.7	21	0	30.8	22	0	36.1	22	0
2	PBW897Q	PZLS219	65.3	9	1	51.4	6	1	32.5	18	0	49.0	7	1
3	MP1388	PZLS201	55.2	23	0	39.1	23	0	34.1	14	0	44.4	15	0
4	GW538	PZLS203	60.5	17	0	46.0	13	1	33.5	15	0	52.8	3	1
5	DBW395	PZLS205	59.5	19	0	42.6	18	0	35.4	13	0	42.5	17	0
6	MACS6805	PZLS206	69.9	2	1	45.8	14	1	29.6	23	0	49.8	6	1
7	HI1672	PZLS207	62.3	14	0	55.2	1	1	39.8	3	1	47.4	12	0
8	HI1674	PZLS208	63.4	12	0	54.8	2	1	38.2	7	1	53.1	2	1
9	UAS3023	PZLS209	65.2	10	1	51.5	5	1	32.9	17	0	36.0	23	0
10	AKAW5104	PZLS210	67.7	5	1	48.6	10	1	36.2	11	0	44.1	16	0
11	LOK79	PZLS211	69.7	3	1	46.6	12	1	37.3	8	1	48.0	10	0
12	HI1675	PZLS212	61.1	16	0	50.0	8	1	32.3	19	0	42.4	18	0
13	MP3557	PZLS215	58.2	21	0	39.6	22	0	33.0	16	0	51.0	4	1
14	NIAW4120	PZLS216	70.2	1	1	45.1	16	0	39.2	4	1	49.0	8	1
15	GW542	PZLS217	63.2	13	0	48.2	11	1	38.7	5	1	41.4	20	0
16	WH1310	PZLS220	61.4	15	0	41.4	20	0	30.9	21	0	41.2	21	0
17	HI1673	PZLS221	67.3	7	1	52.2	4	1	29.1	24	0	47.4	11	0
18	MACS6814	PZLS222	67.8	4	1	39.0	24	0	36.8	9	0	50.9	5	1
19	NIAW4114	PZLS224	65.9	8	1	49.9	9	1	36.1	12	0	56.3	1	1
20	DBW394	PZLS225	56.7	22	0	43.5	17	0	43.6	1	1	48.5	9	0
21	HD3090(C)	PZLS202	58.5	20	0	42.3	19	0	38.2	6	1	46.6	13	0
22	HD2932(C)	PZLS204	63.8	11	0	51.0	7	1	40.6	2	1	32.9	24	0
23	RAJ4083(C)	PZLS213	60.2	18	0	52.3	3	1	31.3	20	0	46.5	14	0
24	HI1633(C)	PZLS223	67.4	6	1	45.4	15	0	36.6	10	0	41.9	19	0
G.M.			63.1			46.8			35.3			45.8		
S.E.(M)			1.843			3.365			2.290			2.733		
C.D. (10%)			5.2			9.5			6.5			7.7		
C.V.			5.8			14.4			13.0			11.9		
D.O.S.(dd.mm.yy)			06.12.22			09.12.22			08.12.22			07.12.22		

2252 - AVT-IR-LS-TAS-PZ, 2022-23
STATE AND ZONAL MEANS

SN	Variety	Code	Maharashtra			Karnataka			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MP3556#	PZLS218	42.7	24	0	35.9	24	0	40.4	24	0
2	PBW897Q	PZLS219	47.0	20	0	44.3	6	0	46.1	16	0
3	MP1388	PZLS201	48.9	16	0	39.2	22	0	45.7	19	0
4	GW538	PZLS203	49.7	13	0	44.1	7	0	47.8	12	0
5	DBW395	PZLS205	45.2	23	0	40.2	20	0	43.5	23	0
6	MACS6805	PZLS206	53.5	4	1	41.7	15	0	49.6	8	0
7	HI1672	PZLS207	50.2	12	0	47.4	2	1	49.3	9	0
8	HI1674	PZLS208	53.8	2	1	48.7	1	1	52.1	1	1
9	UAS3023	PZLS209	48.9	15	0	40.1	21	0	46.0	17	0
10	AKAW5104	PZLS210	53.6	3	1	43.0	10	0	50.1	5	0
11	LOK79	PZLS211	54.7	1	1	44.0	8	0	51.1	2	1
12	HI1675	PZLS212	48.6	17	0	41.6	16	0	46.3	15	0
13	MP3557	PZLS215	46.0	22	0	41.2	19	0	44.4	22	0
14	NIAW4120	PZLS216	53.2	5	1	44.4	5	0	50.3	4	1
15	GW542	PZLS217	47.3	19	0	42.7	12	0	45.8	18	0
16	WH1310	PZLS220	47.9	18	0	37.9	23	0	44.5	21	0
17	HI1673	PZLS221	53.1	7	1	42.9	11	0	49.7	6	0
18	MACS6814	PZLS222	52.5	9	0	42.3	14	0	49.1	10	0
19	NIAW4114	PZLS224	53.0	8	1	47.4	3	1	51.1	3	1
20	DBW394	PZLS225	49.4	14	0	45.2	4	1	48.0	11	0
21	HD3090(C)	PZLS202	53.2	6	1	42.4	13	0	49.6	7	0
22	HD2932(C)	PZLS204	50.6	11	0	41.5	17	0	47.6	14	0
23	RAJ4083(C)	PZLS213	46.3	21	0	43.4	9	0	45.3	20	0
24	HI1633(C)	PZLS223	50.8	10	0	41.3	18	0	47.7	13	0
G.M.			50.0			42.6			47.5		
S.E.(M)			0.930			1.634			0.825		
C.D. (10%)			2.2			3.8			1.9		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-IR-LS-TAS-PZ, 2022-23**

SN	Variety	Code	Disease reaction		Agronomic Characteristics							
			Bl	LB	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	MP3556#	PZLS218	0	12	50-65	56	93-112	104	69-93	77	32-42	36
2	PBW897Q	PZLS219	10MS	12	46-71	64	101-116	109	79-96	90	36-52	43
3	MP1388	PZLS201	0	12	49-60	53	90-111	103	90-108	102	37-46	41
4	GW538	PZLS203	0	12	47-60	53	92-112	103	74-87	81	37-54	43
5	DBW395	PZLS205	0	01	60-71	65	100-116	109	91-108	100	43-51	45
6	MACS6805	PZLS206	0	01	47-63	57	97-115	106	91-100	94	38-46	42
7	HI1672	PZLS207	0	24	45-58	51	96-112	104	72-96	79	40-52	44
8	HI1674	PZLS208	0	24	49-60	53	97-111	104	72-95	79	40-47	44
9	UAS3023	PZLS209	0	12	50-70	64	101-116	109	90-102	97	27-44	37
10	AKAW5104	PZLS210	0	12	49-58	53	92-110	103	81-95	89	35-50	43
11	LOK79	PZLS211	0	12	49-59	54	92-111	103	78-89	85	40-47	43
12	HI1675	PZLS212	0	12	47-58	52	91-111	103	74-96	91	39-47	44
13	MP3557	PZLS215	0	01	50-66	56	94-113	105	81-88	83	37-41	38
14	NIAW4120	PZLS216	0	12	50-63	55	96-113	105	82-95	85	44-53	48
15	GW542	PZLS217	10MS	12	50-59	55	93-110	104	81-94	88	41-51	47
16	WH1310	PZLS220	0	01	44-75	68	102-118	112	80-95	88	32-52	40
17	HI1673	PZLS221	0	12	48-64	54	96-111	104	84-94	91	35-53	41
18	MACS6814	PZLS222	0	01	46-68	59	99-112	106	95-102	98	37-52	42
19	NIAW4114	PZLS224	0	24	50-62	55	93-113	103	79-94	90	40-52	42
20	DBW394	PZLS225	0	12	47-64	59	100-116	108	84-95	91	37-51	42
21	HD3090(C)	PZLS202	0	12	53-69	60	100-114	107	89-102	95	34-44	40
22	HD2932(C)	PZLS204	5MS	12	50-64	56	93-113	104	80-93	87	36-44	42
23	RAJ4083(C)	PZLS213	0	12	49-59	53	92-111	103	77-90	82	36-51	42
24	HI1633(C)	PZLS223	0	12	50-62	56	94-113	104	76-93	84	38-52	44

1. Ancillary data from Pune, Niphad, Bagalkot, Dharwad, Dhule, Kalloli, Karad, Nashik, Nippani and Parbhani
2. Black rust and leaf blight data from Kalloli centre

2253-AVT-RI-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra						Karnataka					
			Niphad			Nashik			Dharwad			Nippani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIAW4028#*	PZRI302	35.5	3	0	30.8	6	0	33.8	1	1	31.1	9	0
2	DBW359*	PZRI306	33.8	5	0	31.2	5	0	33.5	3	1	36.7	1	1
3	HI1665*	PZRI307	33.9	4	0	35.9	1	1	31.1	9	1	30.3	10	0
4	UAS478(d)*	PZRI305	29.5	9	0	26.9	9	0	32.2	6	1	34.9	3	1
5	HI8840(d)*	PZRI312	33.1	6	0	32.0	3	0	29.8	10	0	32.7	7	1
6	DBW397Q	PZRI303	37.4	2	1	31.5	4	0	33.8	2	1	26.9	12	0
7	UAS481(d)	PZRI304	26.3	10	0	25.1	10	0	32.0	8	1	33.1	5	1
8	DDW61(d)	PZRI308	24.8	12	0	23.0	12	0	26.9	12	0	28.8	11	0
9	NIAW3170(C)	PZRI301	38.8	1	1	32.3	2	0	32.9	4	1	31.6	8	0
10	HI1605 (C)	PZRI310	32.0	7	0	28.4	8	0	32.2	7	1	34.8	4	1
11	NIDW1149(d)(C)	PZRI309	30.6	8	0	29.7	7	0	32.7	5	1	34.9	2	1
12	UAS446(d)(C)	PZRI311	25.6	11	0	23.2	11	0	28.5	11	0	33.1	6	1
G.M.			31.8			29.2			31.6			32.4		
S.E.(M)			0.962			1.417			1.526			2.081		
C.D. (10%)			2.3			3.4			3.7			5.0		
C.V.			6.1			9.7			9.7			12.8		
D.O.S.(dd.mm.yy)			05.11.22			04.11.22			03.11.22			04.11.22		

No. of Trials : Proposed = 11 Conducted = 10 Trial not conducted (01)= Karad
Trials not reported (03) = Akola (RMT), Pune (LSM), Parbhani (LSM)

2253-AVT-RI-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka								
			Bagalkot			Ugar-Khurd			Kalloli		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIAW4028#*	PZRI302	34.2	4	1	35.0	5	1	32.7	4	1
2	DBW359*	PZRI306	37.2	1	1	35.9	2	1	35.4	2	1
3	HI1665*	PZRI307	36.1	2	1	32.1	9	0	36.7	1	1
4	UAS478(d)*	PZRI305	34.1	7	1	35.4	4	1	31.9	6	0
5	HI8840(d)*	PZRI312	29.3	10	0	30.0	10	0	30.5	10	0
6	DBW397Q	PZRI303	34.2	5	1	34.9	6	1	29.7	11	0
7	UAS481(d)	PZRI304	33.2	8	0	32.9	7	0	31.1	7	0
8	DDW61(d)	PZRI308	27.4	12	0	27.8	11	0	29.4	12	0
9	NIAW3170(C)	PZRI301	34.5	3	1	35.8	3	1	32.7	5	1
10	HI1605 (C)	PZRI310	34.1	6	1	37.8	1	1	33.6	3	1
11	NIDW1149(d)(C)	PZRI309	33.0	9	0	32.7	8	0	31.1	8	0
12	UAS446(d)(C)	PZRI311	28.5	11	0	25.8	12	0	30.8	9	0
G.M.			33.0			33.0			32.1		
S.E.(M)			1.604			1.542			1.801		
C.D. (10%)			3.8			3.7			4.3		
C.V.			9.7			9.3			11.2		
D.O.S.(dd.mm.yy)			05.11.22			05.11.22			03.11.22		

2253-AVT-RI-TS-TAD-PZ, 2022-23
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Maharashtra			Karnataka			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIAW4028#*	PZRI302	33.2	4	0	33.4	5	0	33.3	4	0
2	DBW359*	PZRI306	32.5	6	0	35.7	1	1	34.8	1	1
3	HI1665*	PZRI307	34.9	2	1	33.3	6	0	33.7	3	1
4	UAS478(d)*	PZRI305	28.2	9	0	33.7	3	0	32.1	7	0
5	HI8840(d)*	PZRI312	32.5	5	0	30.4	10	0	31.0	9	0
6	DBW397Q	PZRI303	34.4	3	1	31.9	9	0	32.6	6	0
7	UAS481(d)	PZRI304	25.7	10	0	32.5	8	0	30.5	10	0
8	DDW61(d)	PZRI308	23.9	12	0	28.1	12	0	26.9	12	0
9	NIAW3170(C)	PZRI301	35.6	1	1	33.5	4	0	34.1	2	1
10	HI1605 (C)	PZRI310	30.2	7	0	34.5	2	1	33.3	5	0
11	NIDW1149(d)(C)	PZRI309	30.1	8	0	32.9	7	0	32.1	8	0
12	UAS446(d)(C)	PZRI311	24.4	11	0	29.3	11	0	27.9	11	0
G.M.			30.5			32.4			31.9		
S.E.(M)			0.857			0.771			0.603		
C.D. (10%)			2.0			1.8			1.4		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-RI-TS-TAD-PZ, 2022-23**

	Variety	Code	Disease reaction		Agronomic Characteristics							
			Br	LB	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	TGW.R	TGW.M
1	NIAW4028#*	PZRI302	tMR	12	50-62	54	94-116	104	70-82	75	38-43	41
2	DBW359*	PZRI306	0	01	50-60	53	98-114	105	65-79	71	32-45	40
3	HI1665*	PZRI307	0	12	48-66	54	100-118	108	70-82	76	31-43	40
4	UAS478(d)*	PZRI305	0	12	49-63	54	100-116	105	68-75	72	33-46	42
5	HI8840(d)*	PZRI312	0	01	48-61	53	99-116	106	65-76	71	37-47	42
6	DBW397Q	PZRI303	0	12	51-65	55	102-118	106	66-80	72	35-43	40
7	UAS481(d)	PZRI304	0	01	54-68	59	104-119	108	62-71	68	29-43	39
8	DDW61(d)	PZRI308	0	01	52-69	61	107-118	112	66-77	72	22-43	37
9	NIAW3170(C)	PZRI301	0	12	47-57	51	95-116	102	75-84	79	35-44	39
10	HI1605(C)	PZRI310	0	12	52-64	57	99-120	108	69-82	76	31-46	39
11	NIDW1149(d)(C)	PZRI309	0	12	48-59	53	93-115	104	69-73	72	40-53	45
12	UAS446(d)(C)	PZRI311	0	12	57-66	59	103-121	111	69-77	73	31-45	39

1. Ancillary data from Pune, Niphad, Bagalkot, Dharwad, Kalloli, Nashik, Nippani, Parbhani and Ugar-Khurd centres
2. Brown rust and leaf blight data from Kalloli centre

Special Trials

2261-SPL-HYPT-IR-ES-TAS-NWPZ, 2022-23

LOCATIONWISE & ZONAL MEAN YIELD (q/ha)

SN	Variety	Code	Delhi	Punjab		Haryana		U.P.	Zonal
			Delhi	Ludhiana	Ladowal	Hisar	Karnal	Modipuram	
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	DBW380#	SPL-HYPT-106	62.6 5 0	81.8 1 1	64.6 6 0	61.2 7 0	67.6 6 0	82.8 4 0	70.1 6 0
2	DBW187(C)	SPL-HYPT-103	59.1 7 0	74.2 6 0	64.1 7 0	67.3 3 0	74.9 2 1	86.1 1 1	70.9 5 0
3	DBW303(C)	SPL-HYPT-107	65.6 4 0	70.5 7 0	69.3 4 0	61.6 6 0	69.6 4 0	78.2 6 0	69.1 7 0
4	PBW872(I)(C)	SPL-HYPT-101	72.8 1 1	81.7 2 1	75.6 2 1	74.6 1 1	76.0 1 1	76.8 7 0	76.3 1 1
5	DBW371(I)(C)	SPL-HYPT-102	59.4 6 0	80.7 4 1	67.5 5 0	72.7 2 1	71.3 3 0	84.2 2 1	72.6 3 0
6	DBW372(I)(C)	SPL-HYPT-104	67.8 3 1	81.5 3 1	73.2 3 0	64.3 4 0	68.3 5 0	81.9 5 0	72.8 2 0
7	DBW370(I)(C)	SPL-HYPT-105	69.3 2 1	78.6 5 1	76.7 1 1	61.9 5 0	64.3 7 0	83.0 3 0	72.3 4 0
G.M.			65.2	78.4	70.1	66.2	70.3	81.9	72.0
S.E.(M)			2.921	2.466	1.236	1.599	1.846	0.958	0.800
C.D. (10%)			7.2	6.0	3.0	3.9	4.5	2.4	1.9
C.V.			9.0	6.3	3.5	4.8	5.3	2.3	
D.O.S. (dd.mm.yy)			25.10.22	28.10.22	27.10.22	29.10.22	27.10.22	04.11.22	

No. of Trials: Proposed = 07 Conducted = 07

Trials not reported (01) = Sriganganagar (RMT)

Summary of Disease Data and Agronomic Characteristics

SN	Variety	Code	Rust Reaction		Agronomic Characteristics								
			Yl	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod. %	TKW.R	TKW.M
1	DBW380#	HYPT106	tMR	0	103-116	109	147-163	154	100-118	107	63	38-47	41
2	DBW187(C)	HYPT103	tMS	10S	101-116	107	143-162	152	95-118	105	59	40-46	42
3	DBW303(C)	HYPT107	0	0	97-115	103	143-159	149	72-107	95	50	33-40	36
4	PBW872(I)(C)	HYPT101	10S	20S	97-114	104	144-158	151	92-101	97	40	42-49	45
5	DBW371(I)(C)	HYPT102	0	5MS	104-116	109	146-160	152	95-117	106	70	38-49	44
6	DBW372(I)(C)	HYPT104	10S	10S	103-118	110	145-158	151	95-109	100	33	37-42	39
7	DBW370(I)(C)	HYPT105	10S	5MS	99-116	105	143-160	149	84-109	100	24	35-41	38

1. Ancillary data from BISA-Ladhowal, Delhi, Hisar, Karnal, Ludhiana and Modipuram.
2. Yellow rust data from Hisar and Karnal centres.
3. Brown rust data from Karnal centre only.
4. Lodging data from BISA-Ladhowal, Delhi, Hisar and Karnal centres.

2262-SPL-HYPT-IR-ES-TAS-CZ, 2022-23
LOCATIONWISE & ZONAL MEAN YIELD (q/ha)

SN	Variety	Code	M.P.									Gujarat						Zonal		
			Indore			Powarkheda			BISA-Jabalpur			Junagadh			Vijapur					
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW377#*	SPL-HYPT-203	53.4	4	1	47.3	4	0	86.4	6	0	65.8	3	1	67.9	3	1	64.2	4	0
2	GW543	SPL-HYPT-202	54.6	3	1	49.5	3	0	88.0	3	1	68.1	1	1	70.3	1	1	66.1	2	1
3	CG1044	SPL-HYPT-204	54.9	2	1	59.1	2	1	87.6	4	1	66.8	2	1	68.8	2	1	67.4	1	1
4	DBW303(C)	SPL-HYPT-201	51.5	6	1	43.4	6	0	86.5	5	0	64.8	4	0	55.8	6	0	60.4	6	0
5	DBW187(C)	SPL-HYPT-205	52.9	5	1	45.5	5	0	88.5	2	1	62.7	5	0	61.4	5	0	62.2	5	0
6	GW322(C)	SPL-HYPT-206	55.7	1	1	59.3	1	1	92.0	1	1	60.2	6	0	62.1	4	0	65.9	3	1
G.M.			53.8			50.7			88.2			64.7			64.4			64.4		
S.E.(M)			2.512			1.461			1.952			1.303			2.119			0.859		
C.D.(10%)			6.2			3.6			4.8			3.2			5.3			2.0		
C.V.			9.3			5.8			4.4			4.0			6.6					
D.O.S.(dd.mm.yy)			10.11.22			07.11.22			06.11.22			04.11.22			05.11.22					

No. of Trials : Proposed = 07 Conducted=07

Trials not reported (02) = Bilaspur (RMT), JNKVV-Jabalpur (RMT)

Summary of Disease Data and Agronomic Characteristics

SN	Variety	Code	Agronomic Characteristics								
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	TKW.R	TKW.M
1	DBW377#*	HYPT203	57-85	71	103-134	122	74-98	86	0	40-51	48
2	GW543	HYPT202	52-77	66	98-129	118	72-99	87	60	46-50	48
3	CG1044	HYPT204	58-80	69	102-132	122	83-110	92	80	43-51	47
4	DBW303(C)	HYPT201	54-81	65	106-129	119	76-95	86	0	37-45	41
5	DBW187(C)	HYPT205	50-81	66	100-129	119	78-103	89	10	44-51	47
6	GW322(C)	HYPT206	55-77	66	98-130	119	76-97	87	60	39-48	43

1. Ancillary data from BISA-Jabalpur, Indore, Jabalpur, Junagadh, Powarkheda and Vijapur centres.
2. Lodging data from BISA-Jabalpur centre only.

Physiological Trial

Physiological investigations on heat and drought stress tolerance in wheat

Heat and Drought Tolerance Screening Trial (HDTST) was conducted to identify the temperature and drought stress tolerant lines among AVT final year genotypes and the trial was planted under timely sown (TS), late sown (LS) and drought stress (DR) conditions. The HDTST trial was conducted using 25 entries including checks sown in 5 x 5 lattice square design with two replications during the crop season 2022-23. The trial was planted at 12 locations under TS (November) and LS (December) conditions keeping at least 21 days difference between the sowing dates to expose the crop to optimum and high temperature environments, respectively. In addition, one set was also planted under drought stress condition with pre sown irrigation. Observations on weather, growth and yield parameters were recorded at all the locations in the prescribed format. Physiological parameters namely Normalized Difference Vegetation Index (NDVI), canopy temperature (CT) and chlorophyll content index (CCI) were recorded at 15 days after anthesis (DAA) and 21DAA at Karnal, Ludhiana, Hisar, Sabour, Junagadh, Vijapur, Dharwad and Pune locations. The data from Ranchi centre was not included for analysis, as there was no yield reduction under stress conditions and rest of the 11 locations data were considered for pooled analysis.

Magnitude of heat and drought stress:

- In NWPZ and NEPZ, the mean minimum and maximum temperature across centres was higher by 1.3^0C and 1.1^0C respectively, under reproductive stage in LS compared to TS conditions. The RH ranged from 42-73% and the rainfall received was more under LS reproductive stage compared to TS.
- In CZ and PZ, the mean minimum and maximum temperature across centres was higher by 1.9^0C and 1.8^0C respectively, under reproductive stage in LS compared to TS conditions. The RH ranged from 38-70% and the rainfall received was higher in reproductive phase in both the zones.

Impact of heat/drought stress was adjudged by taking into account, Heat Sensitivity Index (HSI) and Drought Sensitivity Index (DSI). HSI/DSI was calculated using the formula HSI/DSI=(1-YD/Yi)/(1-XD/Xi) Where, YD and Yi are the grain yield for each genotype under stress and control conditions respectively. XD and Xi are the means of all study genotypes grain yield under stress and control conditions respectively. For reference, HSI/DSI<0.5 is considered as highly tolerant, HSI/DSI<0.5-1 as moderately tolerant and HSI/DSI>1.0 as stress susceptible genotypes.

Under heat stress, the genotype HD3386 showed lowest HSI (0.76) with a minimum yield reduction of 18.6%, but was higher than the best check WH730 (0.63). Under drought condition, CG1040 showed lower DSI (0.87) and was also slightly higher than the best check MACS6768 (0.86) with a minimum yield reduction of 32.6%. The list of genotypes showing HSI /DSI <1 in HDTST is listed in Table 1.

Table 1: List of wheat genotypes identified as heat/ drought tolerant (HSI/DSI<1.0) in HDTST during 2022-23.

Trial	Genotypes	
	HSI<1	**DSI<1**
HDTST	HD3386 (0.76), NIAW4028 (0.85), GW547 (0.88), HD3388 (0.89), UAS478(d) (0.89), CG1040 (0.89), HI8840(d) (0.94), NWS2194 (0.97), HI1665 (0.98).	CG1040 (0.87), GW547 (0.90), NIAW4028 (0.90), HI1665 (0.91), HD3386 (0.91).

Values in the paranthesis indicates HSI /DSI

Correlation of grain yield with different traits under late sown and drought conditions

The correlation of different growth, yield and physiological traits with yield under late sown condition indicated that, the grain yield is positively correlated with biomass and thousand grain

weight. Whereas,it is negatively correlated with CT at both the stages. The grain yield under drought condition is positively correlated with tiller number, biomass, plant height and NDVI at both one month after germination and

21 DAA.

Table 2: Correlation (r^2) of pooled analysis traits with GYLS and GYDR

Traits	GYLS	GYDR
Days to heading	0.23	0.11
Days to maturity	0.29	0.21
Tiller number	0.19	0.39*
Biomass	0.69**	0.84**
Thousand grain weight	0.49*	0.26
Plant height	0.38	0.38*
Harvest index	0.14	0.23
Grain filling Period	0.21	0.24
Grain number per spike	0.24	0.13
Grain weight per spike	0.23	0.27
CT at 15DAA	-0.43*	0.23
CT at 21DAA	-0.55**	0.32
CCI at 15DAA	0.24	0.21
CCI at 21DAA	0.16	0.18
NDVI at 1month after germination.	0.32	0.44*
NDVI at 21 DAA	0.13	0.42*

* Significant@ 5%, ** @ 1%.

Annexure I: The grain yield, HSI, DSI and yield reduction percentage of genotypes pooled across locations during 2022-23.

Genotype	Grain Yield/plot (g)					Yield reduction %	
	TS	LS	DR	HSI	DSI	HS	DS
CG1040	1183.0	922.9	798.0	0.89	0.87	22.0	32.6
DBW359	1397.8	988.2	803.0	1.19	1.14	29.3	42.6
DBW377	1364.3	948.9	826.1	1.24	1.06	30.5	39.4
GW547	1146.8	899.0	761.0	0.88	0.90	21.6	33.6
HD3386	1293.1	1052.4	853.3	0.76	0.91	18.6	34.0
HD3388	1237.0	966.9	743.1	0.89	1.07	21.8	39.9
HI1665	1226.9	930.0	810.1	0.98	0.91	24.2	34.0
HI8840(d)	1219.8	936.8	696.7	0.94	1.15	23.2	42.9
MP1378	1199.8	861.3	708.1	1.15	1.10	28.2	41.0
NIAW4028	1237.1	978.2	820.3	0.85	0.90	20.9	33.7
NWS2194	1258.1	957.6	750.3	0.97	1.08	23.9	40.4
UAS478(d)	1030.9	805.3	635.1	0.89	1.03	21.9	38.4
WH1402	1184.2	862.4	729.0	1.10	1.03	27.2	38.4
DBW110 (C)	1243.0	867.7	821.8	1.23	0.91	30.2	33.9
DBW187(C)	1277.9	954.3	759.9	1.03	1.09	25.3	40.5
GW322(C)	1224.2	840.8	757.0	1.27	1.02	31.3	38.2
HD2932(C)	1263.4	950.9	832.4	1.00	0.92	24.7	34.1
HD3086(C)	1152.4	812.8	702.9	1.20	1.05	29.5	39.0
HI1605(C)	1252.8	950.1	766.4	0.98	1.04	24.2	38.8
HI1650(C)	1164.6	875.3	743.8	1.01	0.97	24.8	36.1
MACS6768(C)	1185.7	961.0	806.0	0.77	0.86	18.9	32.0
NIAW3170(C)	1320.0	969.0	827.7	1.08	1.00	26.6	37.3
NIDW1149(d)(C)	1236.5	885.9	754.7	1.15	1.05	28.4	39.0
RAJ3765(C)	1049.3	834.9	673.5	0.83	0.96	20.4	35.8
WH730(C)	1105.8	934.7	716.2	0.63	0.95	15.5	35.2

HS-Heat stress, DS-Drought stress

Annexure 2a: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Hisar and Karnal locations during 2022-23

SN	Genotype	Hisar							Karnal						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D	GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D
1	CG1040	1409	911	1291	0.87	0.53	35.3	8.4	1685	1297.5	1648	1.34	0.15	23.0	2.2
2	DBW359	1632	983	1505	0.98	0.49	39.8	7.8	1872.5	1655	1599	0.68	0.97	11.6	14.6
3	DBW377	1950	972.5	1550	1.23	1.30	50.1	20.5	1735	1600	1611	0.45	0.47	7.8	7.1
4	GW547	1492	939.5	1163	0.91	1.40	37.0	22.1	1617.5	1240	1316	1.36	1.23	23.3	18.6
5	HD3386	1440.5	956	1288	0.83	0.67	33.6	10.6	1960	1610	1754	1.04	0.69	17.9	10.5
6	HD3388	1740.5	881.5	1220	1.21	1.90	49.4	29.9	1837.5	1852.5	1393	-0.05	1.60	-0.8	24.2
7	HI1665	1651	997	1330	0.98	1.23	39.6	19.4	1570	1347.5	1793	0.83	-0.94	14.2	-14.2
8	HI8840(d)	1452	958.5	1339	0.84	0.49	34.0	7.8	1520	1030	1108	1.88	1.79	32.2	27.1
9	MP1378	1881.5	991.5	1335.5	1.16	1.84	47.3	29.0	1850	1370	1463	1.51	1.38	25.9	20.9
10	NIAW4028	1720	947	1475.5	1.11	0.90	44.9	14.2	1747.5	1677.5	1444	0.23	1.15	4.0	17.4
11	NWS2194	1922	899.5	1385	1.31	1.77	53.2	27.9	1785	1600	1263	0.60	1.93	10.4	29.2
12	UAS478(d)	1405.5	777	1134.5	1.10	1.22	44.7	19.3	1252.5	1235	964	0.08	1.52	1.4	23.0
13	WH1402	1573	1130	1433.5	0.69	0.56	28.2	8.9	1617.5	1517.5	1483	0.36	0.55	6.2	8.3
14	DBW110 (C)	1768.5	998.5	1603	1.07	0.59	43.5	9.4	1902.5	1545	1622	1.09	0.97	18.8	14.7
15	DBW187(C)	1679	944	1563	1.08	0.44	43.8	6.9	1782.5	1392.5	1329	1.27	1.68	21.9	25.4
16	GW322(C)	1643	1024.5	1328	0.93	1.21	37.6	19.2	1297.5	752.5	1196	2.45	0.52	42.0	7.8
17	HD2932(C)	1389	937	1322.5	0.80	0.30	32.5	4.8	1575	1075	1259	1.85	1.33	31.7	20.1
18	HD3086(C)	1348	854.5	1267.5	0.90	0.38	36.6	6.0	1532.5	1307.5	1381	0.85	0.65	14.7	9.9
19	HI1605(C)	1539.5	998	1341.5	0.87	0.82	35.2	12.9	1552.5	1385	1441	0.63	0.47	10.8	7.2
20	HI1650(C)	1506.5	995	1332.5	0.84	0.73	34.0	11.5	1272.5	1080	1550	0.88	-1.44	15.1	-21.8
21	MACS6768(C)	1885	1000.5	1359	1.16	1.77	46.9	27.9	1427.5	770	1374	2.68	0.25	46.1	3.7
22	NIAW3170(C)	1780.5	968	1506	1.12	0.98	45.6	15.4	1700	1432.5	1208	0.92	1.91	15.7	28.9
23	NIDW1149(d)(C)	1508	934.5	1247	0.94	1.10	38.0	17.3	1630	1317.5	1264	1.12	1.48	19.2	22.5
24	RAJ3765(C)	1369.5	892	1269	0.86	0.47	34.9	7.3	1310	970	909.5	1.51	2.02	26.0	30.6
25	WH730(C)	1683	1079.5	1409	0.88	1.03	35.9	16.3	1572.5	1570	1108.5	0.01	1.95	0.2	29.5

Annexure 2b: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Ludhiana and Pusa locations during 2022-23

SN	Genotype	Ludhiana							Pusa						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D	GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D
1	CG1040	820.5	1176.5	1028.5	-1.45	-1.16	-43.4	-25.4	555	293	439	1.11	0.55	47.2	20.9
2	DBW359	1815	998	902.5	1.50	2.30	45.0	50.3	610	297.5	292	1.20	1.38	51.2	52.1
3	DBW377	1714	597.5	863.5	2.17	2.27	65.1	49.6	770	452	449	0.97	1.10	41.3	41.7
4	GW547	917.5	911.5	1007	0.02	-0.45	0.7	-9.8	595	339.5	456	1.01	0.62	42.9	23.4
5	HD3386	1728	1077	1110.5	1.26	1.63	37.7	35.7	473	532.5	597	-0.30	-0.69	-12.6	-26.2
6	HD3388	1314	836	975	1.21	1.18	36.4	25.8	560	367	395	0.81	0.78	34.5	29.5
7	HI1665	1158	718	871	1.27	1.13	38.0	24.8	725	337.5	327	1.25	1.45	53.4	54.9
8	HI8840(d)	1561.5	975	750	1.25	2.37	37.6	52.0	290	235	102.5	0.44	1.71	19.0	64.7
9	MP1378	953	752.5	687	0.70	1.27	21.0	27.9	560	304	375.5	1.07	0.87	45.7	32.9
10	NIAW4028	680	688	854.5	-0.04	-1.17	-1.2	-25.7	572.5	259	315	1.28	1.19	54.8	45.0
11	NWS2194	1312	854.5	948	1.16	1.27	34.9	27.7	467	302	293	0.83	0.98	35.3	37.3
12	UAS478(d)	1296.5	892	922	1.04	1.32	31.2	28.9	387.5	183.5	141	1.23	1.68	52.6	63.6
13	WH1402	1610	1020	1177	1.22	1.23	36.6	26.9	355	274.5	347	0.53	0.06	22.7	2.3
14	DBW110 (C)	1240	587	1231	1.76	0.03	52.7	0.7	328	185.5	260	1.02	0.55	43.4	20.7
15	DBW187(C)	1386	976.5	992	0.99	1.30	29.5	28.4	737.5	324	347	1.32	1.40	56.1	52.9
16	GW322(C)	1211	864	910	0.96	1.13	28.7	24.9	432.5	279.5	359	0.83	0.45	35.4	17.0
17	HD2932(C)	1149.5	760	1182	1.13	-0.13	33.9	-2.8	752.5	320	390	1.35	1.27	57.5	48.2
18	HD3086(C)	1340	892.5	1073.5	1.11	0.91	33.4	19.9	685	407	455	0.95	0.89	40.6	33.6
19	HI1605(C)	1249	863	1057	1.03	0.70	30.9	15.4	630	424.5	277	0.77	1.48	32.6	56.0
20	HI1650(C)	1112.5	891	829	0.66	1.16	19.9	25.5	373	205	195	1.06	1.26	45.0	47.7
21	MACS6768(C)	884.5	753.5	939.5	0.49	-0.28	14.8	-6.2	550	385.5	380	0.70	0.82	29.9	30.9
22	NIAW3170(C)	1256.5	1010.5	963	0.65	1.07	19.6	23.4	557.5	230	358	1.38	0.95	58.7	35.8
23	NIDW1149(d)(C)	1197	957	1086.5	0.67	0.42	20.1	9.2	355	200	110	1.02	1.82	43.7	69.0
24	RAJ3765(C)	1211.5	936.5	1036	0.76	0.66	22.7	14.5	422.5	242	350	1.00	0.45	42.7	17.2
25	WH730(C)	1158.5	907	1031.5	0.72	0.50	21.7	11.0	613.7	283.4	293.3	1.26	1.38	53.8	52.2

GYTS - Grain yield under timely sown(g), GYLS - Grain yield under late sown(g), GYDR - Grain yield under drought(g), YR%H - Yield reduction percentage under heat stress, YR%D - Yield reduction percentage under drought stress

Annexure 2c: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Sabour and Dharwad locations during 2022-23

SN	Genotype	Sabour							Dharwad						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D	GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D
1	CG1040	440	270	247.5	1.08	0.76	38.6	43.8	1517.5	1182.5	695	0.94	1.15	22.1	54.2
2	DBW359	682.5	450	245	0.95	1.11	34.1	64.1	1553.5	974	750	1.59	1.10	37.3	51.7
3	DBW377	637.5	364	257.5	1.20	1.04	42.9	59.6	1421	1255	916.5	0.50	0.75	11.7	35.5
4	GW547	485	345	295	0.80	0.68	28.9	39.2	1217.5	1026	634.5	0.67	1.02	15.7	47.9
5	HD3386	537.5	480	200	0.30	1.09	10.7	62.8	1334.5	1215.5	776.5	0.38	0.89	8.9	41.8
6	HD3388	575	351	300	1.09	0.83	39.0	47.8	1339.5	980.5	695	1.14	1.02	26.8	48.1
7	HI1665	550	481.5	210	0.35	1.08	12.5	61.8	1467	1130	792	0.98	0.98	23.0	46.0
8	HI8840(d)	552.5	280	230	1.37	1.02	49.3	58.4	1378	1128	595.5	0.77	1.21	18.1	56.8
9	MP1378	595	372.5	345	1.04	0.73	37.4	42.0	1422	1175	631	0.74	1.18	17.4	55.6
10	NIAW4028	490	382	140	0.61	1.24	22.0	71.4	1504.5	1156.5	899.5	0.99	0.85	23.1	40.2
11	NWS2194	670	390	235	1.16	1.13	41.8	64.9	1368	1115	938.5	0.79	0.67	18.5	31.4
12	UAS478(d)	310	175.5	172.5	1.21	0.77	43.4	44.4	1343	932	771	1.31	0.90	30.6	42.6
13	WH1402	520.5	243	230	1.49	0.97	53.3	55.8	1382	935.5	774	1.38	0.93	32.3	44.0
14	DBW110 (C)	465	247	217.5	1.31	0.93	46.9	53.2	1566.5	1230	664	0.92	1.22	21.5	57.6
15	DBW187(C)	632.5	426	185	0.91	1.23	32.6	70.8	1365.5	957.5	757	1.27	0.95	29.9	44.6
16	GW322(C)	550	340	245	1.06	0.96	38.2	55.5	1571	1070	829	1.36	1.00	31.9	47.2
17	HD2932(C)	582.5	505	297.5	0.37	0.85	13.3	48.9	1369.5	1123	799.5	0.77	0.88	18.0	41.6
18	HD3086(C)	637.5	295.5	215	1.49	1.15	53.6	66.3	1358	863	599	1.56	1.19	36.5	55.9
19	HI1605(C)	592.5	215	200	1.77	1.15	63.7	66.2	1345.5	1178	671.5	0.53	1.06	12.4	50.1
20	HI1650(C)	552.5	230	207.5	1.63	1.09	58.4	62.4	1311.5	1175.5	716	0.44	0.96	10.4	45.4
21	MACS6768(C)	617.5	490	325	0.58	0.82	20.6	47.4	1269.5	930	731.5	1.14	0.90	26.7	42.4
22	NIAW3170(C)	647.5	442.5	240	0.88	1.09	31.7	62.9	1498.5	1036.5	823.5	1.32	0.96	30.8	45.0
23	NIDW1149(d)(C)	425	140	217.5	1.87	0.85	67.1	48.8	1486.5	954	720.5	1.53	1.09	35.8	51.5
24	RAJ3765(C)	575.5	427.5	217.5	0.72	1.08	25.7	62.2	1279.5	982.5	507	0.99	1.28	23.2	60.4
25	WH730(C)	495	513.5	190	-0.10	1.07	-3.7	61.6	1200.5	991.5	759	0.74	0.78	17.4	36.8

GYTS - Grain yield under timely sown(g), GYLS - Grain yield under late sown(g), GYDR -Grain yield under drought(g), YR%H -Yield reduction percentage under heat stress, YR%D - Yield reduction percentage under drought stress.

Annexure 2d: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Pune and Niphad locations during 2022-23

SN	Genotype	Pune							Niphad						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D	GYTS	GYLS	GYDR	HSI	DSI	YR%	YR%D
1	CG1040	1247	1031	311	2.63	1.11	17.3	75.1	1336.5	705	682	1.93	1.43	47.3	49.0
2	DBW359	1252	1209	378	0.52	1.03	3.4	69.8	1122.5	793	540	1.20	1.51	29.4	51.9
3	DBW377	1282	1102	396	2.13	1.02	14.0	69.1	961.5	688	705.5	1.16	0.78	28.4	26.6
4	GW547	1040	886	378	2.25	0.94	14.8	63.7	917.5	795.5	817	0.54	0.32	13.3	11.0
5	HD3386	1120	1111	330	0.12	1.04	0.8	70.5	1118	801	753	1.16	0.95	28.4	32.6
6	HD3388	1217	995	337	2.77	1.07	18.2	72.3	937	1239	752.5	-1.32	0.57	-32.2	19.7
7	HI1665	1176	1113	403	0.81	0.97	5.4	65.7	1308.5	752.5	738.5	1.74	1.27	42.5	43.6
8	HI8840(d)	1200	1270	390	-0.88	1.00	-5.8	67.5	904.5	959	590.5	-0.25	1.01	-6.0	34.7
9	MP1378	964	979	229	-0.24	1.13	-1.6	76.2	1058.5	623	692.5	1.68	1.01	41.1	34.6
10	NIAW4028	1201	1071	503	1.64	0.86	10.8	58.1	1095.5	896	825.5	0.75	0.72	18.2	24.6
11	NWS2194	1134	1033	395	1.35	0.96	8.9	65.2	1000	775	638.5	0.92	1.05	22.5	36.2
12	UAS478(d)	872	1018	273	-2.54	1.02	-16.7	68.7	907.5	678	670.5	1.03	0.76	25.3	26.1
13	WH1402	1094	1008	389	1.19	0.95	7.9	64.4	925.5	622.5	395	1.34	1.67	32.7	57.3
14	DBW110 (C)	1129	934	292	2.62	1.10	17.3	74.1	1215.5	625	762.5	1.99	1.08	48.6	37.3
15	DBW187(C)	1064	958	420	1.51	0.89	10.0	60.5	893	807.5	466	0.39	1.39	9.6	47.8
16	GW322(C)	1322	1049	468	3.13	0.95	20.7	64.6	832.5	608.5	679	1.10	0.54	26.9	18.4
17	HD2932(C)	1127	1169	352	-0.57	1.02	-3.7	68.8	1162.5	638.5	721	1.84	1.11	45.1	38.0
18	HD3086(C)	1055	920	297	1.94	1.06	12.8	71.8	934	506.5	609	1.87	1.01	45.8	34.8
19	HI1605(C)	1170	1032	305	1.79	1.09	11.8	73.9	947	712.5	827	1.01	0.37	24.8	12.7
20	HI1650(C)	1085	1233	426	-2.07	0.90	-13.6	60.7	1057	748.5	644	1.19	1.14	29.2	39.1
21	MACS6768(C)	1016	1065	387	-0.73	0.92	-4.8	61.9	1000	1165	749.5	-0.68	0.73	-16.5	25.1
22	NIAW3170(C)	1246	1017	348	2.79	1.07	18.4	72.1	1001.5	844	769.5	0.64	0.67	15.7	23.2
23	NIDW1149(d)(C)	1244	1067	374	2.16	1.03	14.2	69.9	1085.5	758.5	699.5	1.23	1.04	30.1	35.6
24	RAJ3765(C)	959	999	401	-0.63	0.86	-4.2	58.2	895	742	465.5	0.70	1.40	17.1	48.0
25	WH730(C)	842	933	298	-1.64	0.96	-10.8	64.6	785.5	712	482.3	0.38	1.12	9.4	38.6

GYTS - Grain yield under timely sown(g), GYLS - Grain yield under late sown(g), GYDR -Grain yield under drought(g), YR%H -Yield reduction percentage under heat stress, YR%D - Yield reduction percentage under drought stress

Annexure 2e: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Indore and Junagadh locations during 2022-23

SN	Genotype	Indore							Junagadh						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D	GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D
1	CG1040	1395.5	1567.5	1383	1.33	0.16	-12.3	0.9	1395	565	510	1.04	0.99	59.5	63.4
2	DBW359	1665.5	1571	1468.5	-0.61	2.06	5.7	11.8	1590	645	515	1.04	1.06	59.4	67.6
3	DBW377	1339	1499	1396	1.29	-0.74	-11.9	-4.3	1455	515	485	1.13	1.04	64.6	66.7
4	GW547	1355.5	1640.5	1227	2.27	1.65	-21.0	9.5	1515	645	535	1.01	1.01	57.4	64.7
5	HD3386	1443	1921	1407	3.58	0.44	-33.1	2.5	1520	685	685	0.96	0.86	54.9	54.9
6	HD3388	1426.5	1566	1386.5	1.06	0.49	-9.8	2.8	1275	525	425	1.03	1.04	58.8	66.7
7	HI1665	1440.5	1653	1406.5	1.59	0.41	-14.8	2.4	1310	455	610	1.14	0.84	65.3	53.4
8	HI8840(d)	1649.5	1621.5	1588.5	-0.18	0.65	1.7	3.7	1215	485	335	1.05	1.13	60.1	72.4
9	MP1378	1343.5	1392	1188	0.39	2.02	-3.6	11.6	1235	490	405	1.06	1.05	60.3	67.2
10	NIAW4028	1662.5	1855.5	1509	1.25	1.61	-11.6	9.2	1455	645	515	0.98	1.01	55.7	64.6
11	NWS2194	1454	1852.5	1357.5	2.96	1.16	-27.4	6.6	1290	547.5	420	1.01	1.05	57.6	67.4
12	UAS478(d)	1347.5	1569.5	1225	1.78	1.59	-16.5	9.1	1265	550	440	0.99	1.02	56.5	65.2
13	WH1402	1204	1265	1040.5	0.55	2.37	-5.1	13.6	1470	515	400	1.14	1.14	65.0	72.8
14	DBW110 (C)	1555	1578	1495	0.16	0.67	-1.5	3.9	1270	560	470	0.98	0.98	55.9	63.0
15	DBW187(C)	1337	1756.5	1297	3.39	0.52	-31.4	3.0	1550	580	510	1.10	1.05	62.6	67.1
16	GW322(C)	1712	1465.5	1318	-1.56	4.01	14.4	23.0	1635	735	535	0.96	1.05	55.0	67.3
17	HD2932(C)	1537	1657	1457.5	0.84	0.90	-7.8	5.2	1655	905	670	0.79	0.93	45.3	59.5
18	HD3086(C)	1256.5	1386.5	1177	1.12	1.10	-10.3	6.3	1150	470	445	1.04	0.96	59.1	61.3
19	HI1605(C)	1374.5	1633	1220	2.03	1.96	-18.8	11.2	1730	640	490	1.10	1.12	63.0	71.7
20	HI1650(C)	1595	1520.5	1377	-0.50	2.38	4.7	13.7	1520	610	520	1.05	1.03	59.9	65.8
21	MACS6768(C)	1338	1617	1365.5	2.25	-0.36	-20.9	-2.1	1555	820	585	0.83	0.97	47.3	62.4
22	NIAW3170(C)	1484.5	1825.5	1426.5	2.48	0.68	-23.0	3.9	1532.5	595	520	1.07	1.03	61.2	66.1
23	NIDW1149(d)(C)	1432.5	1404	1515	-0.21	-1.00	2.0	-5.8	1310	650	500	0.88	0.97	50.4	61.8
24	RAJ3765(C)	1264.5	1312.5	1403.5	0.41	-1.92	-3.8	-11.0	1225	600	580	0.89	0.82	51.0	52.7
25	WH730(C)	1585	1441.5	1483	-0.98	1.12	9.1	6.4	1285	760	650	0.72	0.77	40.9	49.4

GYTS - Grain yield under timely sown(g), GYLS - Grain yield under late sown(g), GYDR -Grain yield under drought(g), YR%H -Yield reduction percentage under heat stress, YR%D - Yield reduction percentage under drought stress.

Annexure 2f: The grain yield, HSI, DSI and yield reduction percentage of genotypes at Vijapur location during 2022-23

SN	Genotype	Vijapur						
		GYTS	GYLS	GYDR	HSI	DSI	YR%H	YR%D
1	CG1040	1212.5	1152.5	542.5	0.29	0.83	4.9	55.3
2	DBW359	1580	1295	637.5	1.05	0.90	18.0	59.7
3	DBW377	1742.5	1392.5	457.5	1.16	1.11	20.1	73.7
4	GW547	1462.5	1120	542.5	1.36	0.94	23.4	62.9
5	HD3386	1550	1187.5	485	1.36	1.03	23.4	68.7
6	HD3388	1385	1042.5	295	1.43	1.18	24.7	78.7
7	HI1665	1140	1245	430	-0.53	0.94	-9.2	62.3
8	HI8840(d)	1695	1362.5	635	1.14	0.94	19.6	62.5
9	MP1378	1335	1025	437.5	1.35	1.01	23.2	67.2
10	NIAW4028	1480	1182.5	542.5	1.17	0.95	20.1	63.3
11	NWS2194	1437.5	1165	380	1.10	1.10	19.0	73.6
12	UAS478(d)	952.5	847.5	272.5	0.64	1.07	11.0	71.4
13	WH1402	1275	955	350	1.46	1.09	25.1	72.5
14	DBW110 (C)	1232.5	1055	422.5	0.83	0.99	14.4	65.7
15	DBW187(C)	1630	1375	492.5	0.91	1.05	15.6	69.8
16	GW322(C)	1260	1060	460	0.92	0.95	15.9	63.5
17	HD2932(C)	1597.5	1370	705	0.83	0.84	14.2	55.9
18	HD3086(C)	1380	1037.5	212.5	1.44	1.27	24.8	84.6
19	HI1605(C)	1650	1370	600	0.98	0.96	17.0	63.6
20	HI1650(C)	1425	940	385	1.97	1.10	34.0	73.0
21	MACS6768(C)	1500	1575	670	-0.29	0.83	-5.0	55.3
22	NIAW3170(C)	1815	1257.5	942.5	1.78	0.72	30.7	48.1
23	NIDW1149(d)(C)	1927.5	1362.5	567.5	1.70	1.06	29.3	70.6
24	RAJ3765(C)	1030	1080	270	-0.28	1.11	-4.9	73.8
25	WH730(C)	1007.9	1087.5	190.2	-0.46	1.22	-7.9	81.1

GYTS - Grain yield under timely sown(g), GYLS - Grain yield under late sown(g), GYDR -Grain yield under drought (g), YR%H -Yield reduction percentage under heat stress, YR%D - Yield reduction percentage under drought stress

Breeder Seed Production

Breeder & Nucleus Seed Indent and Production during 2022-23

During 2022-23, a total indent of 13862.75q breeder seed of 147 wheat varieties was received from DA&FW, New Delhi for total 23 indenting agencies. Out of total indenting agencies, 08 public sector agencies (NSC, IFFDC, IFCCO, KCO, NFL, Hindustan Insecticide Ltd., KVSS and NAFED) and National Seed Association of India (NSAI) representing private seed sector. Among the indenting agencies, UP has maximum indent of 2995.00q followed by NSAI (2216.75q) for private seed companies, Madhya Pradesh (2124.00q) and Bihar (1000.00q). A total of 5409.60q (39.02 per cent) breeder seed indent of 26 latest varieties notified during 2021 and 2022 *viz*., DBW 327, HD 3293, DBW 332, DBW 303, GC 1023, HD 3298, etc. The maximum indent was received for DBW 303 (1414.40q) followed by DBW 187 (1352.20q) and HD 3226 (769.80q). All the top ten indented variety having share of 52.90 % in the total indent.

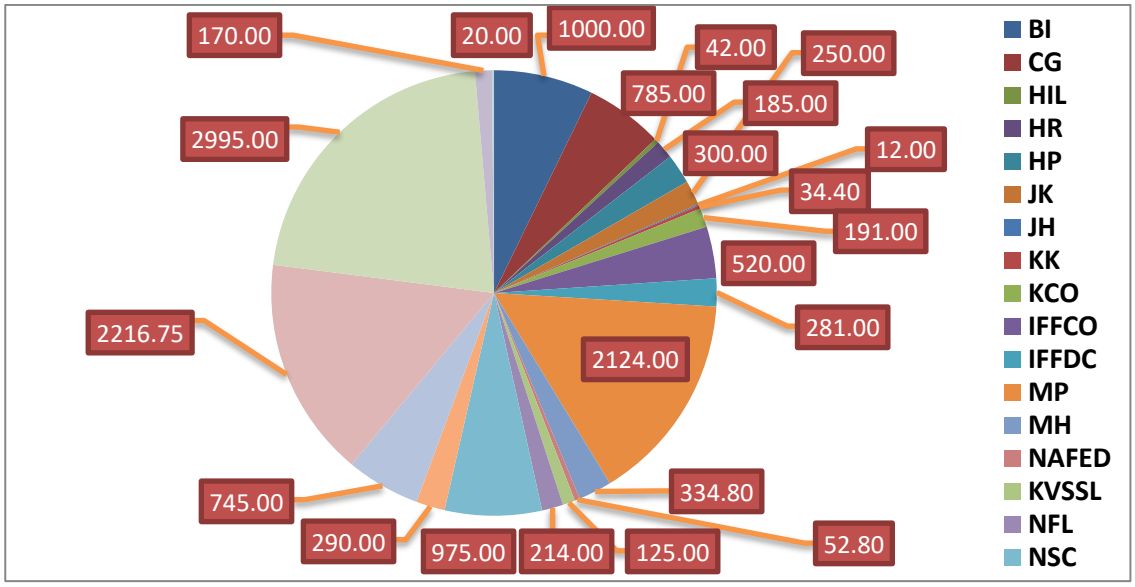


Fig.1: Breeder seed indent by different indenting agencies

Breeder Seed Allocation & Production

Total allocation 13655.55q of breeder seed of 118 varieties was made to 31 BSP centre for the production during 2022-23 against 13862.75q total indent. The indent of 197.20q breeder seed of 29 varieties viz., HD 2985, HD 2189, Raj 1482, HD 2329, Malviya 234, HUW 234 etc. was not allocated to the BSP Centres due very old varieties and insufficient nucleus seed availability.

The total breeder seed production was 19812.85q during 2022-23 with surplus production of 6147.30q. Among all 31 BSP centres, ICAR-IIWBR, Karnal, produced maximum quantity *i.e*., 2771.00 q of breeder seed against 2632.20q indent followed by IARI-RS, Indore (2679.00q) and PAU, Ludhiana (2107.0q) against 1055.75q. The highest quantity of breeder seed was produced for DBW 187 (1728.00q) followed DBW 303 (1583.0q) and HD8759 (995.50q) against DA&FW indent. The varieties *viz*., MP3465 (-236.50q) followed by MP 1255 (-87.60q) and HD 4728 (-85.00q) produced deficit breeder seed against the allocation of indented quantity. Only two BSP centres *viz*., SVPUA&T, Meerut (-80.65q) and SKAUST, Jammu (-0.50q) produced deficit breeder seed against the allocation.

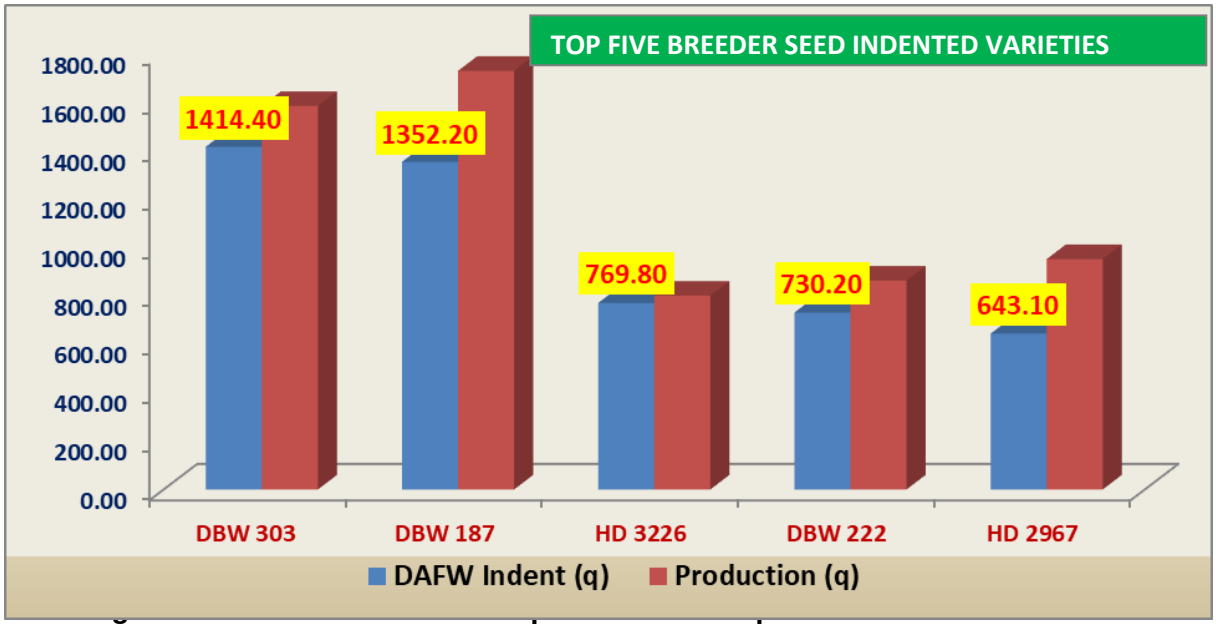


Table 1: Top ten indented wheat varieties and their breeder seed production 2022-23

Variety	Year of Release	DAFW Indent (q)	Production (q)
DBW 303 (Karan Vaishnavi)	2021	1414.40	1583.00
DBW 187 (Karan Vandana)	2020	1352.20	1728.00
HD 3226 (Pusa Yashasvi)	2019	769.80	800.00
DBW 222 (Karan Narendra)	2020	730.20	862.00
HD 2967	2014	643.10	951.00
HI 8759 (Pusa Tejas)	2017	598.80	995.50
HD 3086 (Pusa Gautami)	2014	488.10	650.00
MP 3382 (JW 3382)	2016	461.00	424.55
WH 1270	2021	447.00	705.50
RAJ-4238	2016	429.40	947.90
Total		**7334.00**	**9647.45**
Per cent Share		**52.90**	**48.99**

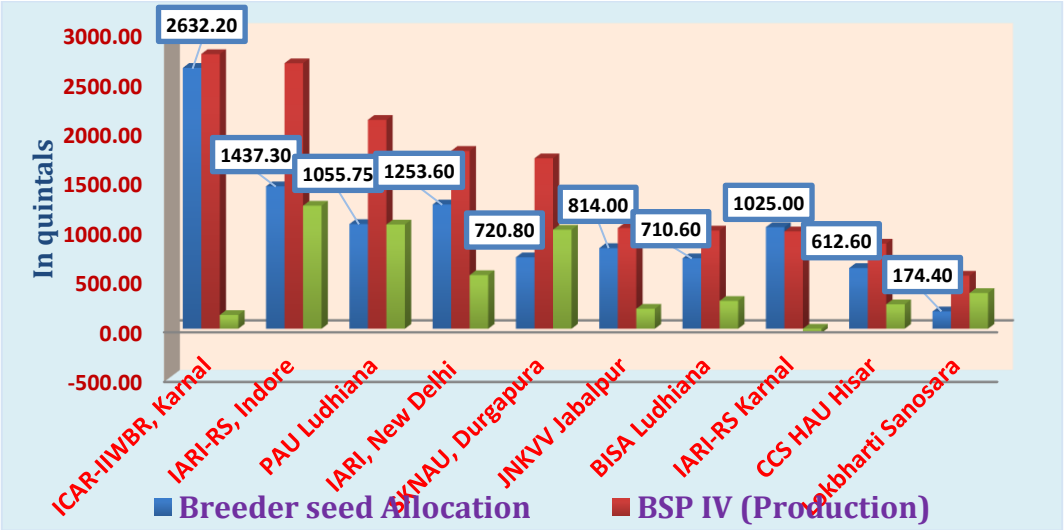


Fig: 3: Top ten breeder seed production centres of wheat during 2022-23

Table 2: Top ten breeder seed production Centres during 2022-23

SN	BSP Centre	Breeder Seed Allocation	BSP IV (Production)	Surplus /Deficit ±	Nucleus Seed allocation	BNS IV (Production)	Surplus /Deficit ±
1	IIWBR, Karnal	2632.20	2771.00	138.80	85.00	94.00	9.00
2	IARI-RS, Indore	1437.30	2679.00	1241.70	45.50	113.50	68.00
3	PAU Ludhiana	1055.75	2228.60	1172.85	55.00	107.50	52.50
4	IARI, New Delhi	1253.60	1795.00	541.40	29.50	65.70	36.20
5	SKNAU, Durgapura	720.80	1719.91	999.11	18.00	28.60	10.60
6	JNKVV Jabalpur	814.00	1015.60	201.60	24.00	100.00	76.00
7	BISA Ludhiana	710.60	991.00	280.40	15.00	27.10	12.10
8	IARI-RS Karnal	1025.00	982.00	- 43.00	13.00	15.15	2.15
9	CCS HAU Hisar	612.60	859.10	246.50	19.00	43.55	24.55
10	Lok Bharti Sanosara	174.40	535.00	360.60	7.00	35.00	28.00
	Total	**10436.25**	**15454.61**	**5018.36**	**311.00**	**630.10**	**319.10**

Table 3: Centre Wise Breeder/Nucleus Seed production.

SN	BSP Centre	Breeder seed Allocation	BSP IV (Production)	Surplus /Deficit ±	Nucleus Seed allocation	BNS IV (Production)	Surplus /Deficit ±
1	ARI, Pune (MH)	63.90	241.50	177.60	4.50	7.50	3.00
2	IARI, New Delhi	1253.60	1795.00	541.40	29.50	65.70	36.20
3	IIWBR, Karnal	2632.20	2771.00	138.80	85.00	94.00	9.00
4	Lokbharti Sanosara	174.40	535.00	360.60	7.00	35.00	28.00
5	MPKV Niphad	64.00	85.30	21.30	6.00	6.65	0.65
6	SKUA&T, Jammu	99.00	225.00	126.00	0.00	0.00	0.00
7	BAU, Sabour, Bihar	200.00	246.39	46.39	5.50	26.00	20.50
8	BISA Jabalpur (MP)	159.00	196.00	37.00	4.50	6.01	1.51
9	BISA Ludhiana	650.60	991.00	340.40	15.00	27.10	12.10
10	BISA Pusa (Bihar)	371.00	517.00	146.00	8.00	15.60	7.60
11	BUAT, Banda	110.00	164.00	54.00	2.00	0.00	-2.00
12	CCS HAU Hisar	612.60	859.10	246.50	19.00	43.55	24.55
13	CSAUA&T Kanpur	14.00	162.23	148.23	2.00	8.35	6.35
14	GBPUAT Pantnagar	22.00	80.00	58.00	3.00	7.00	4.00
15	IARI-RS Karnal	1025.00	982.00	-43.00	13.00	15.15	2.15
16	IARI-RS Pusa	350.00	393.00	43.00	12.00	0.00	-12.00

17	IARI-RS, Indore	1437.30	2679.00	1241.70	45.50	113.50	68.00
18	ICAR-IISS, Mau	312.20	275.00	-37.20	10.00	10.00	0.00
19	IGKVV Raipur	489.00	489.40	0.40	13.00	42.30	29.30
20	JAU Junagarh	60.80	63.20	2.40	3.00	3.70	0.70
21	JNKVV Jabalpur	814.00	1015.60	201.60	24.00	100.00	76.00
22	PAU Ludhiana	1055.75	2228.60	1172.85	55.00	107.50	52.50
23	PDKV, Akola	12.40	80.00	67.60	1.50	1.50	1.50
24	RPCAU, Dholi	224.20	196.50	-27.70	8.00	9.67	1.67
25	RVSKVV, Gwalior	200.00	285.00	85.00	0.00	0.00	0.00
26	SDAU Vijapur	284.40	299.22	14.82	12.50	57.90	45.40
27	SKNAU, Durgapura	720.80	1719.91	999.11	18.00	28.60	10.60
28	SKUA&T, Srinagar	20.00	10.00	-10.00	1.50	1.00	-0.50
29	SVPUA&T Meerut	130.00	95.00	-35.00	0.00	0.00	0.00
30	UAS, Dharwad	47.40	50.40	3.00	6.50	12.65	6.15
31	VPKAS Almora	56.00	82.50	26.50	3.50	4.50	1.00
	Total	**13665.55**	**19812.85**	**6147.30**	**418.00**	**875.30**	**458.80**

Nucleus Seed Allocation & Production

Against an allocation of 418.0 q nucleus seed of 118 wheat varieties was made to the 31 BSP Centre except SVPUA&T, Meerut, BAUT, Banda, RVSKVV, Gwalior and SKAUST, Jammu. A total of 875.30q of nucleus seed was produced with a surplus of 458.80q by 31 Centres. The highest quantity (113.50) of nucleus seed was produced by IARI-RS, Indore followed by PAU, Ludhiana (107.50q), JNKVV Jabalpur (100.0 q) and IIWBR, Karnal (94.0q). The maximum nucleus seed of variety MP3465 (50.0q) followed by DBW187 (40.50 q), Lok1 (35.0q), GW496 (34.70q) and DBW222 (32.50 q).

Test Stock Multiplication and Grow Out Test Report

National Seed Corporation was given target for test stock multiplication of 22 varieties identified for release during last workshop (2022) during 2022-23. NSC has reported a total of 1076.79q seed of all 22 newly identified wheat varieties *viz*., DBW 316 (99.45 q), DBW371 (86.5 q), DBW 370 (81.60 q), DBW 372 (76.5 q) and DDW 55 (76.5 q), HD 3407 (54.0q) and HD 3411 (52.24q), PBW 872 (36.0q) and VL2041 (71.4 q) during 2022-23 on NSC farms at Hisar, Surathgarh, Sardargarh and Jetsar. ICAR-IIWBR, Karnal conducted grow out test of 80 wheat varieties received from 11 BSP Centres. BSP Centres *viz*., CSAUT, Kanpur, ARI, Pune, IARI-RS, Samastipur, IGKV, Raipur, RVSKV, Gwalior, JNKVV, Jabalpur and RPCAU, Dholi did not send the samples for grow out test. All the tested varieties found genetically pure within the permissible limit.

Annexure 1: Variety wise Breeder Seed & Nucleus Seed Production Programme of wheat varieties during 2022-23

(Figures in quintals)

SN	Variety	BSP Centre	Year of release	DAFW Indent	Breeder seed Allocation	BSP IV (Production)	Surplus /Deficit ±	Nucleus Seed allocation	BNS IV (Production)	Surplus /Deficit ±
1	C-306	CCS HAU Hisar	1978	17.40	17.40	11.90	-5.50	1.00	2.00	1.00
2	CG 1018	IGKVV Raipur	2019	50.00	50.00	36.00	-14.00	1.50	4.78	3.28
3	CG-1013	IGKVV Raipur	2018	25.00	25.00	36.00	11.00	1.00	7.38	6.38
4	CG 1015	IGKVV Raipur	2018	50.00	50.00	58.00	8.00	1.00	8.00	7.00
5	CG 1023	IGKVV Raipur	2021	60.00	60.00	62.20	2.20	1.50	3.94	2.44
6	DBW 107	RPCAU, Dholi,	2015	11.00	11.00	12.50	1.50	1.00	0.67	-0.33
7	DBW 110	BISA Jabalpur (MP)	2015	69.00	69.00	111.00	42.00	2.00	6.01	4.01
8	DBW 168	UAS , Dharwad	2018	10.00	10.00	5.50	-4.50	1.00	0.00	-1.00
9	DBW 173	SKUA&T, Jammu	2018	76.20	15.00	55.00	40.00	0.00	0.00	0.00
		SVPUA&T Meerut	2018	76.20	61.20	65.00	3.80	0.00	0.00	0.00
			Total		**76.20**	**120.00**	**43.80**	**0.00**	**0.00**	**0.00**
10	DBW 187 (Karan Vandana)	ICAR-IIWBR, Karnal	2021	1352.20	654.20	700.00	45.80	20.00	25.00	5.00
		BISA Ludhiana (Pb)	2021	1352.20	162.00	311.00	149.00	4.00	9.90	5.90
		BISA Pusa (Bihar)	2021	1352.20	211.00	296.00	85.00	2.50	5.60	3.10
		BUAT, Banda	2021	1368.20	100.00	155.00	55.00	1.00	0.00	-1.00
		ICAR-IISS, Mau	2021	1368.20	100.00	89.00	-11.00	3.00	0.00	-3.00
		SKUA&T, Jammu	2021	1352.20	25.00	27.00	2.00	0.00	0.00	0.00
		RVSKVV, Gwalior	2021	1352.20	100.00	150.00	50.00	0.00	0.00	0.00
			Total		**1352.20**	**1728.00**	**375.80**	**30.50**	**40.50**	**10.00**
11	DBW 296 (Karan Aishwarya)	ICAR-IIWBR, Karnal	2021	121.00	50.00	60.00	10.00	5.00	5.00	0.00
		BISA Ludhiana (Pb)	2021	121.00	71.00	72.00	1.00	2.00	0.00	-2.00
			Total		**121.00**	**132.00**	**11.00**	**7.00**	**5.00**	**-2.00**
12	DBW 303 (Karan Vaishnavi)	ICAR-IIWBR, Karnal	2021	1414.40	984.40	1000.00	15.60	20.00	21.00	1.00
		BISA Ludhiana (Pb)	2021	1414.40	310.00	405.00	95.00	6.00	6.70	0.70
		SKUA&T, Jammu	2021	1414.40	20.00	43.00	23.00	0.00	0.00	0.00
		RVSKVV, Gwalior	2021	1414.40	100.00	135.00	35.00	0.00	0.00	0.00
			Total		**1414.40**	**1583.00**	**168.60**	**26.00**	**27.70**	**1.70**
13	DBW 327	ICAR-IIWBR, Karnal	2021	346.40	346.40	351.00	4.60	15.00	15.00	0.00
14	DBW-17	SVPUA&T Meerut	2007	18.80	18.80	0.00	-18.80	0.00	0.00	0.00
15	DBW-93	UAS , Dharwad	2015	2.00	2.00	0.00	-2.00	0.50	0.00	-0.50
16	DBW 221	CCS HAU Hisar	2021	8.00	8.00	20.40	12.40	1.50	2.50	1.00

17	DDW 47	JNKVV Jabalpur	2020	0.00	0.00	50.00	50.00	0.00	8.00	8.00
		BISA Jabalpur (MP)	2020	100.00	90.00	85.00	-5.00	2.50	0.00	-2.50
		BUAT, Banda	2020	100.00	10.00	9.00	-1.00	1.00	0.00	-1.00
			Total		**100.00**	**144.00**	**44.00**	**3.50**	**8.00**	**4.50**
18	DDW 48(Durum)	UAS , Dharwad	2021	2.00	2.00	4.50	2.50	1.00	0.00	-1.00
19	GJW 463	JAU Junagarh	2017	10.80	10.80	11.20	0.40	1.00	1.20	0.20
20	GW496	SDAU Vijapur	1990	111.00	111.00	65.20	-45.80	3.00	34.70	31.70
21	GW 273	SDAU Vijapur	1998	15.00	15.00	12.80	-2.20	1.00	5.50	4.50
22	GW 451	SDAU Vijapur	2016	85.60	85.60	74.80	-10.80	3.00	6.40	3.40
23	GW 499	SDAU Vijapur	2021	20.60	25.60	24.41	-1.19	2.00	1.90	-0.10
24	GW 513	SDAU Vijapur	2021	12.00	12.00	85.60	73.60	2.00	7.30	5.30
25	GW-322	SDAU Vijapur	2002	35.20	35.20	36.41	1.21	1.50	2.10	0.60
26	GW-366	JAU Junagarh	2007	50.00	50.00	52.00	2.00	2.00	2.50	0.50
27	HD 2967	IARI, New Delhi	2014	643.10	443.10	700.00	256.90	10.00	21.50	11.50
		BISA Pusa (Bihar)	2014	643.10	100.00	164.00	64.00	4.00	0.00	-4.00
		ICAR-IISS, Mau	2014	643.10	100.00	87.00	-13.00	3.00	0.00	-3.00
			Total		**643.10**	**951.00**	**307.90**	**17.00**	**21.50**	**4.50**
28	HD 3171	IARI-RS Pusa, (Bihar)	2017	102.00	102.00	114.00	12.00	3.00	8.35	5.35
29	HD 3237	IARI, New Delhi	2019	30.40	30.40	45.00	14.60	1.00	2.50	1.50
30	HD 3293	IARI, New Delhi	2021	112.00	112.00	150.00	38.00	2.50	5.20	2.70
31	HD 3298	IARI, New Delhi	2021	138.00	138.00	200.00	62.00	4.00	9.10	5.10
32	HD-2851	IARI-RS Karnal	2005	147.20	147.20	125.00	-22.20	3.00	1.50	-1.50
33	HI 1633	IARI-RS, Indore (MP)	2021	5.40	5.40	102.50	97.10	1.50	10.00	8.50
34	HI 1634	IARI-RS, Indore (MP)	2021	328.40	328.40	570.00	241.60	12.00	18.00	6.00
35	HI 8759	IARI-RS, Indore (MP)	2017	598.80	598.80	995.50	396.70	15.00	17.00	2.00
36	HI-1620	IARI-RS Karnal	2019	2.00	2.00	10.00	8.00	1.00	2.40	1.40
37	HS-542	IARI-RS Karnal	2015	80.00	80.00	20.00	-60.00	2.00	0.00	-2.00
38	JW-3288	JNKVV Jabalpur	2012	20.00	20.00	99.33	79.33	1.00	7.00	6.00
39	K-1317	CSAUA&T Kanpur	2018	6.00	6.00	141.23	135.23	1.00	6.35	5.35
40	K-7903	CSAUA&T Kanpur	2001	6.00	6.00	0.00	-6.00	0.50	0.00	-0.50
41	K-9423	CSAUA&T Kanpur	2005	2.00	2.00	21.00	19.00	0.50	2.00	1.50
42	CG 1029	IGKVV Raipur	2021	254.00	254.00	256.80	2.80	5.00	15.38	10.38
43	DBW 332	ICAR-IIWBR, Karnal	2021	154.60	154.60	195.00	40.40	15.00	16.00	1.00
44	DBW 222 (Karan Narendra)	ICAR-IIWBR, Karnal	2020	730.20	442.60	465.00	22.40	10.00	12.00	2.00
		BISA Ludhiana (Pb)	2020	730.20	107.60	203.00	35.40	3.00	10.50	7.50
		BISA Pusa (Bihar)	2020	719.20	60.00	57.00	-3.00	1.50	10.00	8.50
		ICAR-IISS, Mau	2020	730.20	100.00	86.00	-14.00	3.00	0.00	-3.00
		SKUA&T, Jammu	2020	730.20	20.00	51.00	31.00	0.00	0.00	0.00
			Total		**730.20**	**862.00**	**71.80**	**17.50**	**32.50**	**15.00**

45	DBW 252	RPCAU, Dholi,	2020	113.20	113.20	100.00	-13.20	3.00	8.15	5.15
		ICAR-IISS, Mau	2020	113.20	12.20	13.00	0.80	1.00	0.00	-1.00
			Total		**125.40**	**113.00**	**-12.40**	**4.00**	**8.15**	**4.15**
46	LOK-1	Lokbharti Sanosara	1982	174.40	174.40	535.00	360.60	7.00	35.00	28.00
47	MACS 6222	ARI , Pune (MH)	2010	50.40	50.40	60.00	9.60	2.00	3.00	1.00
48	MACS 6478	ARI , Pune (MH)	2014	12.00	12.00	180.00	168.00	1.50	4.00	2.50
49	MACS-4028 (d)	ARI , Pune (MH)	2018	1.50	1.50	1.50	0.00	1.00	0.50	-0.50
50	MP 3336	JNKVV Jabalpur	2013	5.00	5.00	113.12	108.12	1.00	10.00	9.00
51	MP 3382	JNKVV Jabalpur	2016	461.00	461.00	424.55	-36.45	12.00	20.00	8.00
52	MP 3465	JNKVV Jabalpur	2021	292.00	292.00	276.40	-15.60	8.00	50.00	42.00
53	MPO 1255	JNKVV Jabalpur	2016	36.00	36.00	52.20	16.20	2.00	5.00	3.00
54	NIAW-1415	MPKV Niphad	2011	2.00	2.00	2.10	0.10	1.00	0.45	-0.55
55	NIDW 1149 (Durum)	MPKV Niphad	2021	10.00	10.00	9.60	-0.40	2.00	0.40	-1.60
56	PBW 1Zn (HPBW 01)	PAU Ludhiana	2017	62.80	62.80	63.00	0.20	2.00	8.00	6.00
57	PBW 644	PAU Ludhiana	2012	10.00	10.00	25.00	15.00	3.00	3.00	0.00
58	PBW 677	PAU Ludhiana	2016	112.40	112.40	240.00	127.60	2.00	8.50	6.50
59	PBW 752	PAU Ludhiana	2019	31.80	31.80	55.00	23.20	2.00	2.50	0.50
60	PBW 757	PAU Ludhiana	2019	27.00	27.00	27.00	0.00	1.50	2.00	0.50
61	PBW 766	PAU Ludhiana	2021	27.40	27.40	100.00	72.60	1.50	9.50	8.00
62	PBW 771	PAU Ludhiana	2020	16.00	16.00	35.00	19.00	1.00	1.50	0.50
63	PBW 803	PAU Ludhiana	2021	23.20	23.20	38.00	14.80	2.00	9.00	7.00
64	PBW 824	PAU Ludhiana	2021	30.60	30.60	100.00	69.40	8.00	10.00	2.00
65	PBW 869	PAU Ludhiana	2021	42.80	42.80	140.00	97.20	3.00	9.50	6.50
66	PBW Chapati 1	PAU Ludhiana	2022	10.00	10.00	45.00	35.00	2.00	2.50	0.50
67	PBW-154	PAU Ludhiana	1988	30.60	30.60	0.00	-30.60	1.50	0.75	-0.75
68	PBW-502	PAU Ludhiana	2004	19.80	19.80	0.00	-19.80	2.00	1.25	-0.75
69	PBW-550	PAU Ludhiana	2008	21.35	21.35	15.00	-6.35	1.50	2.00	0.50
70	PBW-725	PAU Ludhiana	2017	124.40	124.40	150.00	25.60	5.00	8.50	3.50
71	PBW 826	PAU Ludhiana	2023	20.00	20.00	750.00	730.00	5.00	11.00	6.00
72	PDKV SARDAR (AKAW-4210-6)	PDKV, Akola	2016	12.00	12.00	68.00	56.00	0.50	11.26	10.76
73	PDKV Washim	PDKV, Akola	2012	0.40	0.40	12.00	11.60	1.00	0.12	-0.88
74	PhuleAnupam	MPKV Niphad		2.00	2.00	3.60	1.60	1.00	0.40	-0.60
75	PhuleSamadhan	MPKV Niphad	2016	50.00	50.00	70.00	20.00	2.00	5.40	3.40
76	Purna(HI-1544)	IARI-RS, Indore (MP)	2008	97.20	97.20	307.00	209.80	4.00	16.00	12.00

77	Pusa Anmol (HI 8737)	IARI-RS, Indore (MP)	2015	201.00	201.00	190.00	-11.00	5.00	10.00	5.00
78	HD 3086	IARI, New Delhi	2020	488.10	488.10	650.00	161.90	10.00	22.70	12.70
79	Pusa Malwi (HD 4728)	IARI-RS, Indore (MP)	2016	159.00	159.00	125.00	-34.00	4.00	11.00	7.00
80	Pusa Prabhat (HI 8823)	IARI-RS, Indore (MP)	2021	7.00	7.00	91.50	84.50	1.00	15.00	14.00
81	Pusa Vakula (HI 1636)	IARI-RS, Indore (MP)	2021	17.00	17.00	152.00	135.00	1.00	9.00	8.00
82	HI-1612	IARI-RS Pusa, (Bihar)	2018	100.00	100.00	116.00	16.00	4.00	2.52	-1.48
83	HI 1621	IARI-RS Karnal	2020	22.00	22.00	22.00	0.00	2.00	0.20	-1.80
84	HI 1628	IARI-RS Karnal	2020	4.00	4.00	5.00	1.00	1.00	0.55	-0.45
85	HD 3249	IARI-RS Pusa, (Bihar)	2020	148.00	148.00	163.00	15.00	4.00	14.00	10.00
86	HD 3271	IARI, New Delhi	2020	42.00	42.00	50.00	8.00	2.00	4.70	2.70
87	HI 8777	IARI-RS, Indore (MP)	2018	23.50	23.50	145.50	122.00	2.00	7.50	5.50
88	HD 3226	IARI-RS Karnal	2019	769.80	769.80	800.00	30.20	4.00	10.50	6.50
89	RAJ 4037	SKNAU, Durgapura	2014	194.40	194.40	371.02	176.62	5.00	7.50	2.50
90	RAJ-1482	SKNAU, Durgapura	1983	32.00	32.00	64.00	32.00	1.50	4.00	2.50
91	RAJ-3077	SKNAU, Durgapura	1989	26.80	26.80	178.20	151.40	1.00	2.00	1.00
92	RAJ-3765	SKNAU, Durgapura	1996	26.20	26.20	122.75	96.55	1.00	2.10	1.10
93	Raj-4079	SKNAU, Durgapura	2011	12.00	12.00	36.04	24.04	1.50	4.00	2.50
94	RAJ-4238	SKNAU, Durgapura	2016	429.40	429.40	947.90	518.50	8.00	9.00	1.00
95	Ratan (CG 5016)	IGKVV Raipur	2009	50.00	50.00	40.40	-9.60	3.00	2.82	-0.18
96	Sabour Nirjal	BAU, Sabour, Bihar	2017	100.00	100.00	144.39	44.39	2.50	13.50	11.00
97	Sabour Samriddhi	BAU, Sabour, Bihar	2017	50.00	50.00	52.00	2.00	1.50	6.00	4.50
98	Sabour Shreshtha (BRW 934)	BAU, Sabour, Bihar	2017	50.00	50.00	50.00	0.00	1.50	6.50	5.00
99	Shalimar Wheat-2	SKUA&T, Srinagar	2015	20.00	20.00	10.00	-10.00	1.50	1.00	-0.50
100	UAS 347	UAS, Dharwad	2015	1.50	1.50	1.90	0.40	0.50	1.20	0.70
101	UAS-162	UAS, Dharwad	1993	20.90	20.90	21.00	0.10	1.00	3.00	2.00
102	UAS-304	UAS, Dharwad	2013	6.00	6.00	7.50	1.50	0.50	3.00	2.50
103	UAS-334	UAS, Dharwad	2018	1.50	1.50	4.50	3.00	1.00	3.00	2.00
104	UAS-375	UAS , Dharwad	2018	3.50	3.50	5.50	2.00	1.00	2.45	1.45
105	Unnat PBW 343	PAU Ludhiana	2017	309.80	309.80	309.80	0.00	8.00	9.00	1.00
106	Unnat PBW 550	PAU Ludhiana	2019	135.80	135.80	135.80	0.00	4.00	9.00	5.00

107	UP 2784	GBPUAT Pantnagar	2016	20.00	20.00	45.00	25.00	1.50	4.50	3.00
108	UP 2938	GBPUAT Pantnagar	2021	2.00	2.00	35.00	33.00	1.50	2.50	1.00
109	VL Gehun 2015	VPKAS Almora.	2021	5.00	5.00	5.00	0.00	1.00	1.00	0.00
110	VL Gehun 953	VPKAS Almora.	2016	15.00	15.00	29.00	14.00	1.00	1.50	0.50
111	VL Gehun 967	VPKAS Almora	2019	36.00	36.00	48.50	12.50	1.50	2.00	0.50
112	WB 02	RPCAU, Dholi, Muzaffarpur	2021	169.00	100.00	84.00	-16.00	4.00	0.85	-3.15
		SKUA&T, Jammu	2021	169.00	19.00	49.00	30.00	0.00	0.00	0.00
		SVPUA&T Meerut	2021	169.00	50.00	30.00	-20.00	0.00	0.00	0.00
			Total		**169.00**	**163.00**	**-6.00**	**4.00**	**0.85**	**-3.15**
113	WH 1105	CCS HAU Hisar	2013	44.60	44.60	41.00	-3.60	1.50	8.00	6.50
114	WH 1124	CCS HAU Hisar	2014	19.00	19.00	37.75	18.75	1.50	3.00	1.50
115	WH 1270	CCS HAU Hisar	2021	447.00	447.00	705.50	258.50	10.00	22.00	12.00
116	WH 711	CCS HAU Hisar	2002	44.80	44.80	29.75	-15.05	1.50	4.00	2.50
117	WH-147	CCS HAU Hisar	1980	19.00	19.00	0.00	-19.00	1.00	1.25	0.25
118	WH-283	CCS HAU Hisar	1985	12.80	12.80	12.80	0.00	1.00	0.80	-0.20

Annexure 2: Centre -wise BSP/BNS Programme of wheat varieties during 2022-23

(Figures in quintals)

SN	Production Centre	Variety	Year of release	DAFW Indent	Breeder seed Allocation	BSP IV (Prod.)	Surplus /Deficit	Nucleus seed allocation	BNS IV (Prod.)	Surplus /Deficit
1	ARI, Pune	MACS 6222	2010	50.40	50.40	60.00	9.60	2.00	3.00	1.00
		MACS 6478	2014	12.00	12.00	180.00	168.00	1.50	4.00	2.50
		MACS-4028 (d)	2018	1.50	1.50	1.50	0.00	1.00	0.50	-0.50
		Total			**63.90**	**241.50**	**177.60**	**4.50**	**7.50**	**3.00**
2	BAU, Sabour	Sabour Nirjal	2017	100.00	100.00	144.39	44.39	2.50	13.50	11.00
		Sabour Samriddhi	2017	50.00	50.00	52.00	2.00	1.50	6.00	4.50
		Sabour Shreshtha	2017	50.00	50.00	50.00	0.00	1.50	6.50	5.00
		Total			**200.00**	**246.39**	**46.39**	**5.50**	**26.00**	**20.50**
3	BISA, Jabalpur	DBW 110	2015	69.00	69.00	111.00	42.00	2.00	6.01	4.01
		DDW 47	2020	100.00	90.00	85.00	-5.00	2.50	0.00	-2.50
		Total			**159.00**	**196.00**	**37.00**	**4.50**	**6.01**	**1.51**
4	BISA, Ludhiana	DBW 187	2021	1352.20	162.00	311.00	149.00	4.00	9.90	5.90
		DBW 303	2021	1414.40	310.00	405.00	95.00	6.00	6.70	0.70
		DBW 222	2020	730.20	107.60	203.00	95.40	3.00	10.50	7.50
		DBW 296	2021	121.00	71.00	72.00	1.00	2.00	0.00	-2.00
		Total			**650.60**	**991.00**	**340.40**	**15.00**	**27.10**	**12.10**
5	BUAT, Banda	DDW 47	2020	100.00	10.00	9.00	-1.00	1.00	0.00	-1.00
		DBW 187	2021	1368.20	100.00	155.00	55.00	1.00	0.00	-1.00
		Total			**110.00**	**164.00**	**54.00**	**2.00**	**0.00**	**-2.00**
6	BISA, Pusa	DBW 187	2021	1352.20	211.00	296.00	85.00	2.50	5.60	3.10
		DBW 222	2020	719.20	60.00	57.00	-3.00	1.50	10.00	8.50
		HD 2967	2014	643.10	100.00	164.00	64.00	4.00	0.00	-4.00
		Total			**371.00**	**517.00**	**146.00**	**8.00**	**15.60**	**7.60**
7	CCS HAU, Hisar	WH 1105	2013	44.60	44.60	41.00	-3.60	1.50	8.00	6.50
		WH 1124	2014	19.00	19.00	37.75	18.75	1.50	3.00	1.50

		WH 1270	2021	447.00	447.00	705.50	258.50	10.00	22.00	12.00
		WH 711	2002	44.80	44.80	29.75	-15.05	1.50	4.00	2.50
		WH-147	1980	19.00	19.00	0.00	-19.00	1.00	1.25	0.25
		WH-283	1985	12.80	12.80	12.80	0.00	1.00	0.80	-0.20
		C-306	1978	17.40	17.40	11.90	-5.50	1.00	2.00	1.00
		DBWH 221 (DBW 221)	2021	8.00	8.00	20.40	12.40	1.50	2.50	1.00
		Total			**612.60**	**859.10**	**246.50**	**19.00**	**43.55**	**24.55**
8	CSAUA&T, Kanpur	K-1317	2018	6.00	6.00	141.23	135.23	1.00	6.35	5.35
		K-7903	2001	6.00	6.00	0.00	-6.00	0.50	0.00	-0.50
		K-9423 (Unnat Halna)	2005	2.00	2.00	21.00	19.00	0.50	2.00	1.50
		Total			**14.00**	**162.23**	**148.23**	**2.00**	**8.35**	**6.35**
9	GBPUAT, Pantnagar	UP 2784	2016	20.00	20.00	45.00	25.00	1.50	4.50	3.00
		UP 2938	2021	2.00	2.00	35.00	33.00	1.50	2.50	1.00
		Total			**22.00**	**80.00**	**58.00**	**3.00**	**7.00**	**4.00**
10	IARI, New Delhi	HD 2967	2014	643.10	443.10	700.00	256.90	10.00	21.50	11.50
		HD 3237 Pusa Wheat 3237	2019	30.40	30.40	45.00	14.60	1.00	2.50	1.50
		HD 3293	2021	112.00	112.00	150.00	38.00	2.50	5.20	2.70
		HD 3298	2021	138.00	138.00	200.00	62.00	4.00	9.10	5.10
		Pusa Gautami (HD 3086)	2020	488.10	488.10	650.00	161.90	10.00	22.70	12.70
		Pusa Wheat 3271	2020	42.00	42.00	50.00	8.00	2.00	4.70	2.70
		Total			**1253.60**	**1795.00**	**541.40**	**29.50**	**65.70**	**36.20**
11	IARI-RS, Indore	HI 1633 (Pusa Vani)	2021	5.40	5.40	102.50	97.10	1.50	10.00	8.50
		HI 1634 (Pusa Ahilya)	2021	328.40	328.40	570.00	241.60	12.00	18.00	6.00
		Pusa Vakula (HI 1636)	2021	17.00	17.00	152.00	135.00	1.00	9.00	8.00
		HI 8759 (PUSA TEJAS)	2017	598.80	598.80	995.50	396.70	15.00	17.00	2.00
		Purna(HI-1544)	2008	97.20	97.20	307.00	209.80	4.00	16.00	12.00

		Pusa Anmol (HI 8737)	2015	201.00	201.00	190.00	-11.00	5.00	10.00	5.00
		Pusa Malwi (HD 4728)	2016	159.00	159.00	125.00	-34.00	4.00	11.00	7.00
		Pusa Prabhat (HI 8823)	2021	7.00	7.00	91.50	84.50	1.00	15.00	14.00
		Pusa Wheat 8777	2018	23.50	23.50	145.50	122.00	2.00	7.50	5.50
		Total			**1437.30**	**2679.00**	**1241.70**	**45.50**	**113.50**	**68.00**
12	IARI-RS, Karnal	HD-2851(Pusa Vishesh)	2005	147.20	147.20	125.00	-22.20	3.00	1.50	-1.50
		HD 3226	2019	769.80	769.80	800.00	30.20	4.00	10.50	6.50
		HI 1628	2020	4.00	4.00	5.00	1.00	1.00	0.55	-0.45
		HI 1621	2020	22.00	22.00	22.00	0.00	2.00	0.20	-1.80
		HI-1620	2019	2.00	2.00	10.00	8.00	1.00	2.40	1.40
		HS-542 (Pusa Kiran)	2015	80.00	80.00	20.00	-60.00	2.00	0.00	-2.00
		Total			**1025.00**	**982.00**	**-43.00**	**13.00**	**15.15**	**2.15**
13	IARI-RS, Pusa	Pusa Wheat 3249 (HD 3249)	2020	148.00	148.00	163.00	15.00	4.00	14.00	10.00
		HI-1612	2018	100.00	100.00	116.00	16.00	4.00	2.52	-1.48
		HD 3171	2017	102.00	102.00	114.00	12.00	3.00	8.35	5.35
		Total			**350.00**	**393.00**	**43.00**	**12.00**	**24.87**	**12.87**
14	IGKVV, Raipur	CG 1023	2021	60.00	60.00	62.20	2.20	1.50	3.94	2.44
		CG 1018	2019	50.00	50.00	36.00	-14.00	1.50	4.78	3.28
		CG-1013	2018	25.00	25.00	36.00	11.00	1.00	7.38	6.38
		ChhCG 1015	2018	50.00	50.00	58.00	8.00	1.00	8.00	7.00
		CG 1029	2021	254.00	254.00	256.80	2.80	5.00	15.38	10.38
		Ratan (CG 5016)	2009	50.00	50.00	40.40	-9.60	3.00	2.82	-0.18
		Total			**489.00**	**489.40**	**0.40**	**13.00**	**42.30**	**29.30**
15	ICAR-IISS, Mau	DBW 252	2020	113.20	12.20	13.00	0.80	1.00	0.00	-1.00
		DBW 187	2021	1368.20	100.00	89.00	-11.00	3.00	0.00	-3.00
		DBW 222	2020	730.20	100.00	86.00	-14.00	3.00	0.00	-3.00
		HD 2967	2014	643.10	100.00	87.00	-13.00	3.00	0.00	-3.00
		Total			**312.20**	**275.00**	**-37.20**	**10.00**	**10.00**	**0.00**

16	ICAR-IIWBR, Karnal	DBW 187	2021	1352.20	654.20	700.00	45.80	20.00	25.00	5.00
		DBW 296	2021	121.00	50.00	60.00	10.00	5.00	5.00	0.00
		DBW 303	2021	1414.40	984.40	1000.00	15.60	20.00	21.00	1.00
		DBW 327	2021	346.40	346.40	351.00	4.60	15.00	15.00	0.00
		DBW 332	2021	154.60	154.60	195.00	40.40	15.00	16.00	1.00
		DBW 222	2020	730.20	442.60	465.00	22.40	10.00	12.00	2.00
		Total			**2632.20**	**2771.00**	**138.80**	**85.00**	**94.00**	**9.00**
17	JAU, Junagarh	GW-366	2007	50.00	50.00	52.00	2.00	2.00	2.50	0.50
		Gujrat Junagarh Wheat-463	2017	10.80	10.80	11.20	0.40	1.00	1.20	0.20
		Total			**60.80**	**63.20**	**2.40**	**3.00**	**3.70**	**0.70**
18	JNKVV, Jabalpur	MP 3336 (JW 3336)	2013	5.00	5.00	113.12	108.12	1.00	10.00	9.00
		MP 3382(JW 3382)	2016	461.00	461.00	424.55	-36.45	12.00	20.00	8.00
		MP 3465 (JW 3465)	2021	292.00	292.00	276.40	-15.60	8.00	50.00	42.00
		MPO 1255(MPO(JW)1255)	2016	36.00	36.00	52.20	16.20	2.00	5.00	3.00
		JW-3288	2012	20.00	20.00	99.33	79.33	1.00	7.00	6.00
		DDW 47	2020	0.00	0.00	50.00	50.00	0.00	8.00	8.00
		Total			**814.00**	**1015.60**	**201.60**	**24.00**	**100.00**	**76.00**
19	Lokbharti, Sanosara	LOK-1	1982	174.40	174.40	535.00	360.60	7.00	35.00	28.00
		Total			**174.40**	**535.00**	**360.60**	**7.00**	**35.00**	**28.00**
20	MPKV, Niphad	Netravati (NIAW-1415)	2011	2.00	2.00	2.10	0.10	1.00	0.45	-0.55
		NIDW 1149 (Durum)	2021	10.00	10.00	9.60	-0.40	2.00	0.40	-1.60
		Phule Anupam (NIAW-3624)		2.00	2.00	3.60	1.60	1.00	0.40	-0.60
		Phule Samadhan (NIAW-1994)	2016	50.00	50.00	70.00	20.00	2.00	5.40	3.40
		Total			**64.00**	**85.30**	**21.30**	**6.00**	**6.65**	**0.65**
21	PAU, Ludhiana	PBW 1Zn (HPBW 01)	2017	62.80	62.80	63.00	0.20	2.00	8.00	6.00
		PBW 803	2021	23.20	23.20	38.00	14.80	2.00	9.00	7.00

		PBW 644	2012	10.00	10.00	25.00	15.00	3.00	3.00	0.00
		PBW 677	2016	112.40	112.40	240.00	127.60	2.00	8.50	6.50
		PBW 752	2019	31.80	31.80	55.00	23.20	2.00	2.50	0.50
		PBW 757	2019	27.00	27.00	27.00	0.00	1.50	2.00	0.50
		PBW 766	2021	27.40	27.40	100.00	72.60	1.50	9.50	8.00
		PBW 771	2020	16.00	16.00	35.00	19.00	1.00	1.50	0.50
		PBW 824	2021	30.60	30.60	100.00	69.40	8.00	10.00	2.00
		PBW 869	2021	42.80	42.80	140.00	97.20	3.00	9.50	6.50
		PBW Chapati 1	2022	10.00	10.00	45.00	35.00	2.00	2.50	0.50
		PBW-154	1988	30.60	30.60	0.00	-30.60	1.50	0.75	-0.75
		PBW-502	2004	19.80	19.80	0.00	-19.80	2.00	1.25	-0.75
		PBW-550	2008	21.35	21.35	15.00	-6.35	1.50	2.00	0.50
		Unnat PBW 550 (PBW 761)	2019	135.80	135.80	135.00	0.00	4.00	9.00	5.00
		New Variety (PBW 826)	2023	20.00	20.00	750.00	730.00	5.00	11.00	6.00
		Unnat PBW 343 (PBW 723)	2017	309.80	309.80	309.80	0.00	8.00	9.00	1.00
		PBW-725	2017	124.40	124.40	150.00	25.60	5.00	8.50	3.50
		Total			**1055.75**	**2228.60**	**1172.85**	**55.00**	**107.50**	**52.50**
22	PDKV, Akola	AKAW-4210-6	2016	12.00	12.00	68.00	56.00	0.50	11.26	10.76
		PDKV Washim (WSM 1472)	2012	0.40	0.40	12.00	11.60	1.00	0.12	-0.88
		Total			**12.40**	**80.00**	**67.60**	**1.50**	**1.50**	**1.50**
23	SKNAU, Durgapura	RAJ 4037	2014	194.40	194.40	371.02	176.62	5.00	7.50	2.50
		RAJ-1482	1983	32.00	32.00	64.00	32.00	1.50	4.00	2.50
		RAJ-3077	1989	26.80	26.80	178.20	151.40	1.00	2.00	1.00
		RAJ-3765	1996	26.20	26.20	122.75	96.55	1.00	2.10	1.10
		Raj-4079	2011	12.00	12.00	36.04	24.04	1.50	4.00	2.50
		RAJ-4238	2016	429.40	429.40	947.90	518.50	8.00	9.00	1.00
		Total			**720.80**	**1719.91**	**999.11**	**18.00**	**28.60**	**10.60**

24	SDAU, Vijapur	GW-322	2002	35.20	35.20	36.41	1.21	1.50	2.10	0.60
		GUJRAT WHEAT-496	1990	111.00	111.00	65.20	-45.80	3.00	34.70	31.70
		GW 273	1998	15.00	15.00	12.80	-2.20	1.00	5.50	4.50
		GW 451	2016	85.60	85.60	74.80	-10.80	3.00	6.40	3.40
		GW 499	2021	20.60	25.60	24.41	-1.19	2.00	1.90	-0.10
		GW 513	2021	12.00	12.00	85.60	73.60	2.00	7.30	5.30
		Total			**284.40**	**299.22**	**14.82**	**12.50**	**57.90**	**45.40**
25	SKUA&T, Jammu	DBW 173	2018	76.20	15.00	55.00	40.00	0.00	0.00	0.00
		WB 02 (Rajendra Genhu-3)	2021	169.00	19.00	49.00	30.00	0.00	0.00	0.00
		DBW 187	2021	1352.20	25.00	27.00	2.00	0.00	0.00	0.00
		DBW 222	2020	730.20	20.00	51.00	31.00	0.00	0.00	0.00
		DBW 303	2021	1414.40	20.00	43.00	23.00	0.00	0.00	0.00
		Total			**99.00**	**225.00**	**126.00**	**0.00**	**0.00**	**0.00**
26	RVSKVV, Gwalior	DBW 303	2021	1414.40	100.00	135.00	35.00	0.00	0.00	0.00
		DBW 187 (Karan Vandana)	2021	1352.20	100.00	150.00	50.00	0.00	0.00	0.00
		Total			**200.00**	**285.00**	**85.00**	**0.00**	**0.00**	**0.00**
27	SKUA&T, Srinagar	Shalimar Wheat-2 (SKW-355)	2015	20.00	20.00	10.00	-10.00	1.50	1.00	-0.50
		Total			**20.00**	**10.00**	-10.00	**1.50**	**1.00**	-0.50
28	SVPUA&T, Meerut	DBW 173	2018	76.20	61.20	65.00	3.80	0.00	0.00	0.00
		DBW-17	2007	18.80	18.80	0.00	-18.80	0.00	0.00	0.00
		WB 02 (Rajendra Genhu-3)	2021	169.00	50.00	30.00	-20.00	0.00	0.00	0.00
		Total			**130.00**	**95.00**	**-35.00**	**0.00**	**0.00**	**0.00**
29	UAS, Dharwad	DBW 168	2018	10.00	10.00	5.50	-4.50	1.00	0.00	-1.00
		DBW-93	2015	2.00	2.00	0.00	-2.00	0.50	0.00	-0.50
		DDW 48(Durum)	2021	2.00	2.00	4.50	2.50	1.00	0.00	-1.00
		UAS-162	1993	20.90	20.90	21.00	0.10	1.00	3.00	2.00
		UAS 347	2015	1.50	1.50	1.90	0.40	0.50	1.20	0.70

		UAS-304	2013	6.00	6.00	7.50	1.50	0.50	3.00	2.50
		UAS-334	2018	1.50	1.50	4.50	3.00	1.00	3.00	2.00
		UAS-375	2018	3.50	3.50	5.50	2.00	1.00	2.45	1.45
		Total			**47.40**	**50.40**	**3.00**	**6.50**	**12.65**	**6.15**
30	VPKAS, Almora	(VL 967) VL Gehun 967	2019	36.00	36.00	48.50	12.50	1.50	2.00	0.50
		VL 2015 (VL Gehun 2015)	2021	5.00	5.00	5.00	0.00	1.00	1.00	0.00
		VL 953 (VL Gehun 953)	2016	15.00	15.00	29.00	14.00	1.00	1.50	0.50
		Total			**56.00**	**82.50**	**26.50**	**3.50**	**4.50**	**1.00**
31	RPCAU, Dholi	DBW 107	2015	11.00	11.00	12.50	1.50	1.00	0.67	-0.33
		KARAN SHRIYA (DBW 252)	2020	113.20	113.20	100.00	-13.20	3.00	8.15	5.15
		WB 02 (Rajendra Genhu-3)	2021	169.00	100.00	84.00	-16.00	4.00	0.85	-3.15
		Total			**224.20**	**196.50**	**-27.70**	**8.00**	**9.67**	1.67
		Grand Total		**13862.75**	**13665.55**	**19691.25**	**6025.70**	**418.00**	**875.30**	**458.80**

Evaluation of National and International Germplasm

National Genetic Stock Nursery

National Genetic Stock Nursery (NGSN) is considered as "Suggested crossing block" and is constituted with the objective to provide new germplasm lines to cooperating centres under AICW&BIP for utilization in wheat improvement programmes. The NGSN comprising 107 genotypes including *T. aestivum* (93) and *T. durum* (14) was provided to 33 centers. All the centers reported the data. The bread wheat genotypes were categorized as released varieties, disease resistant and registered genetic stocks/elite lines. Durum genotypes were categorized as released varieties and disease resistant lines.

The nursery was conducted in augmented design with three bread wheat checks Sonalika, HD2967 and DBW187 along with durum check DDW48 which were accommodated once in a block of 15 entries. An infector row was also included for observing disease incidence. The data were recorded on grain yield (g/plot) and its component traits, namely, days to heading, plant height (cm), tillers/m, grain number/spike, 1000-grains weight (g) and spike length (cm). The data from all the 33 locations were pooled and mean values (Table 4) were considered for identification of promising genotypes. Based on pooled mean values of the data, promising genotypes were identified for various traits (Table 1).

Table 1: Promising genotypes for yield component traits in NGSN during 2022-23

Traits	Range	Mean	Criteria	Promising genotypes	Best check
Days to heading (days)	73-91	81	<75	BNSR 6 (73), MP 3535 (73), PHSL 10 (73), HD 2864 (74), GW 499(74), IC 277738 (74), VL Gehun 3010 (75), RAJ 3765 (75), GW513(75), HI1544(75)	Sonalika (74)
Plant height (cm)	78.3-109.7	91.5	<85	MP 3535 (78.3), GW 1339 (d)(81.4), HI 8818 (d) (82.5), RAJ 4238 (83.4), CG 1036 (83.9), VL 3024 (84.2), VL Gehun 3010 (84.5), GW 499 (84.7), PBW 771 (84.3), HI 8823 (d) (84.9)	DDW48 (86.0)
Tillers /m	61.5-109.4	96.0	>105	HD 3411(109.4), HD 3407 (106.6), RWP 2014-18 (105.2), KRL 35 (105.7), HD 2932 (105.0)	Sonalika (98.7)
Grains /spike	40-58	49	>55	IC 212176(58), HD 3406 (56), QLD 118(55), HUW 838(55), QLD 121(55)	DBW187 (54)
1000-grains weight (g)	34.1-51.9	42.4	>46	PHSL 10(51.9), MACS 4058 (d)(49.1), HI 1653(48.1), GW 2014-596(47.9), GW 499(47.5), HI 8802 (d)(47.3), HI 1636(47.3), WAP 2212(46.8), WAP 2210(46.7), HS 681(46.6), GW 1339 (d)(46.1),	DBW187 (45.0)
Spike length(cm)	6.8-13.1	9.4	≥10.6	IC 212176 (13.1), VL Gehun 2041 (12.1), PHSL 10 (11.6), WAP 2212 (10.8), KRL 35 (10.8), K 1616 (10.7), HS 679 (10.6), K 1317 (10.6), HS 628 (10.6)	Sonalika (10.1)
Yield/plot (g)	389-665	545	>640g	HI 1653 (665) , DBW 327(655), DBW 303 (644)	DBW 187 (634g)

Value in parenthesis indicates the values of the traits

Disease resistance

Response of genotypes was recorded at multilocations under natural conditions against black rust (Vijapur and Niphad), brown rust (Almora, Junagadh, Vijapur, Pantnagar, Niphad, Pune and Indore), yellow rust (Hisar, Jammu, Malan, Ludhiana and Almora) and leaf blight (Ayodhya,, Sabour, Coochbehar and Kalyani) diseases. Based on highest reactions genotypes exhibiting resistant response were identified (Table 2).

Table 2: Genotypes showing resistance to diseases in NGSN under field conditions

Disease	Resistant genotypes
Yellow rust (≤10S reaction)	DDW 47 (d), HD 3407, PBW 771, HD 3293, DBW 296, DBW 327, HPW 373, DBW 308, DBW 316, HI 8818 (d), VL 3024, PBW 835, DBW 187 (Check), PBW 875
Brown rust (0 or TR reaction)	HD 3407, UP 2944, MP (JW) 3465, HUW 838, HS 628, HS 661, WAP 2211, DBW 187 (Check), HD 2967 (Check), DBW 308, DBW 316, HI 1650, HI 1655, HI 8826(d), GW 2014-596, MACS 6768, HS 679, HS 681, HD 2864, HI 8818 (d), DBW 318, HI 1544, PBW 835
Black rust (0 or TR reaction)	WH 1270, HI 1650, HI 1654, GW 2014-596, HS 679, HS 681
Leaf blight (≤34)	HD 3406, HI 8823 (d),HD 3293

Utilization of genotypes

The utilization report indicated 30 centres out of 33 utilised the NGSN genotypes. The overall utilization was 16.95% (Table 3) and all the genotypes except GW1346(d), HI8830(d) and MPO1357 were utilized by one or other centers for different purposes. Bread wheat genotypes were utilized by 30 centres whereas *durum* genotypes were utilized by 13 centres, only. High grain protein genotypes IC252459 was used by 16 centres, whereas genotypes QLD122, IC277738 and GW477 were used by 14, 13, and 11 centers, respectively. Maximum utilization was done by Junagadh (65 genotypes) followed by Udaipur (37 genotypes), Parbhani (35 genotypes) and Ayodhya (32 genotypes) centers.

Table 3: Utilization of genotypes in NGSN during 2022-23

Category	# Entries	Utilization	
		Frequency	%
T. aestivum			
Released varieties	61	290	15.85
Disease resistance	14	77	18.33
Elite lines or Genetic stocks	18	142	26.29
Sub total	*93*	*509*	*18.24*
T. durum			
Released varieties	11	29	8.8
Disease resistance	3	6	6.7
Sub total	*14*	*35*	8.33
Total	***107***	***544***	***16.95***

Validation of grain protein content in high grain protein lines

The high grain protein genotypes namely IC 277738 and IC 252459 were grown at 33 centers under optimum condition. The harvested seed of these genotypes along with check variety DBW187 were received from 21 centres for the estimation of grain protein content. The grain protein was estimated using NIR. Maximum grain protein content at 12% grain moisture (Mean of 21 locations) was recorded in IC277738 (Mean:13.71±1.77%; Range:10.42-16.67%) followed by IC252459(Mean:13.28±1.84%; Range:9.6-15.74%) and DBW187(Mean:11.88±1.47%; Range:9.18-15.33%).

Table 4: Pooled performance of genotypes for various traits in NGSN during 2022-23

Genotypes	Days to heading	Pl. ht. (cm)	Tillers /m row	Grains /spike	1000-gr. wt. (g)	Sp. Length (cm)	Gr Yield/ plot(g)
HD 3411	84	95.2	109.4	49	41	9.7	571
HD 3406	86	95.8	104.6	56	39.6	10.5	585
DDW 47 (d)	85	89.4	95.2	53	41.3	7.0	523
GW 1346 (d)	83	98.5	99.2	44	43.8	7.7	494
HI 8802 (d)	85	110	89.6	50	47.3	7.5	519
HI 8805 (d)	83	102	89.6	52	45.8	7.4	504
DDW 48 (d)	85	84.5	96.7	49	42.1	6.9	526
HI 8823 (d)	87	84.9	92.2	49	45.0	7.6	566
MACS 4058 (d)	77	110	83.0	48	49.1	7.9	524
GW 1339 (d)	77	81.4	94.7	44	46.1	7.5	490
DBW 88	81	89.7	94.7	52	40.9	9.7	586
HD 2932	79	88.7	105.0	48	40.6	9.3	588
IC 212176	76	109	61.5	58	43.5	13.1	433
HD 3086	79	90.6	96.1	47	41.0	9.5	574
RAJ 3765	75	88	93.5	48	42.0	9.4	554
RAJ 4238	77	83.4	102.7	41	41.4	8.7	506
HD 3407	78	88.8	106.6	45	40.5	9.1	586
DBW 107	77	86.8	94.3	46	41.1	9.7	570
DBW 110	82	90.5	97.8	49	41.8	10.1	549
PBW 723	87	89.8	95.6	50	43.8	10.2	525
K 1317	85	97.8	95.8	49	44.7	10.6	613
DBW 173	83	92.8	87.7	49	41.0	9.7	504
DBW 168	86	90.3	93.8	54	43.7	9.4	621
KRL 283	82	85.5	98.0	49	40.1	9.5	555
PBW 752	82	90.9	93.6	50	42.5	9.6	551
QLD 118	84	95.4	100.4	55	41.9	10.1	524
DBW 222	82	92.9	98.9	53	41.1	10.5	540
DBW 252	84	97.3	101.7	52	42.4	10.1	600
PBW 771	82	84.3	98.9	47	40.7	9.5	540
HD 3293	82	98.4	104.0	49	44.3	10.3	591
WH 1270	81	90.1	92.1	48	43.1	9.6	550
CG 1029	78	89.5	92.3	44	45.4	9.2	520
DBW 296	84	89.8	88.5	44	45	9.0	509
DBW 327	82	87.4	98.4	50	45.8	9.8	655
DBW 332	80	88.4	96.9	45	40.2	9.4	529
HI 1633	77	86.5	93.6	51	40.7	9.8	591
HI 1636	78	92.6	86.2	47	47.3	9.5	525
CG 1023	82	101	92.2	52	42.3	8.8	561
DBWH 221	81	87.7	96.1	48	36.4	8.9	520
GW 477	77	88.2	103.5	42	45.5	8.3	564
GW 499	74	84.7	99.9	40	47.5	8.6	498
HPW 360	90	88.3	89.1	53	36.4	10.3	433
HPW 368	87	93.9	101.1	48	39.9	9.6	513
HPW 373	82	95	97.9	52	37.6	10.0	498
UP 2903	80	87.2	94.0	51	40.9	9.4	527
UP 2938	81	88	94.1	49	41.6	9.9	490
UP 2944	76	88.7	97.7	45	41.6	8.5	547
VL Gehun 2015	82	89.8	95.5	46	41.5	9.6	525
MP (JW) 3465	80	91.8	102.8	48	40.4	9.2	591
MP (JW) 1358	81	98	94.2	47	43	9.1	574
HUW 838	80	90.3	90.1	55	40.3	10.1	565
JKW 261	82	92.1	99.0	51	39.1	9.6	596
QLD 120	83	89.4	92.3	49	43.1	9.5	547
QLD 121	85	92.8	93.3	55	41.6	9.8	529
QLD 122	85	92.3	87.1	50	44.1	9.4	502
BNSR 6	73	87	103.1	49	43.2	9.4	511
IIWBR DN 502	78	86.5	100.2	53	39.8	10.5	493
RWP 2018-32	83	89.2	103.6	51	39.9	9.7	602

HS 628	84	97.6	99.0	51	34.1	10.6	454
HS 661	85	92.1	95.2	49	39.3	10.5	518
DBW 370	84	91.2	98.3	52	39.6	10.5	587
DBW 371	82	91.6	96.9	52	43.7	9.5	594
DBW 372	85	90.8	96.8	47	41.1	9.5	547
IC 277738	74	106	95.3	44	36.8	8.7	389
IC 252459	83	95.5	99.8	49	35.9	9.9	438
MP 1323	81	94.3	96.2	51	43.5	9.7	569
MP 3535	73	78.3	98.5	44	41.4	8.1	445
PHSL 10	73	107	77.0	46	51.9	11.6	402
RWP 2014-18	81	95.6	105.2	51	39.9	9.7	606
WAP 2210	77	92.9	92.7	49	46.7	10.2	584
WAP 2211	79	93.6	87.7	51	45.5	9.9	574
WAP 2212	83	92.5	88.9	50	46.8	10.8	551
KRL 35	82	99	105.7	51	40.6	10.8	515
KRL 99	77	88.4	98.7	44	35.8	9.9	447
VL Gehun 2041	91	103	101.8	51	37	12.1	524
VL Gehun 2028	81	93.5	92.7	48	39.5	10.2	577
VL Gehun 3010	75	84.5	95.6	44	41.1	9.4	488
DBW 303	78	90.7	92.9	52	41	9.4	644
DBW 308	83	92.7	102.2	47	42	9.8	579
DBW 316	80	93.5	99.6	42	44.2	9.2	602
GW 513	75	92.7	99.1	46	43.2	10.1	564
HI 1650	78	91.1	93.0	49	42.1	10.1	587
HI 1653	79	97.9	88.8	49	48.1	10.0	665
HI 1654	83	94	92.7	48	42.1	9.3	524
HI 1655	79	99.8	97.1	47	41.5	10.0	540
HI 8826(d)	82	91.3	98.1	48	45	8.5	575
HI 8830(d)	82	89.3	91.2	50	45.9	8.1	570
GW 2014-596	79	97.2	82.2	45	47.9	9.1	479
CG 1036	77	83.9	103.2	41	41.6	9.0	501
K 1616	83	98	92.2	46	45.2	10.7	549
MACS 4100 (d)	79	85.5	92.0	45	40.2	6.8	499
MACS 6768	76	88.4	102.7	48	41.6	9.3	561
MPO 1357 (d)	83	85.6	92.5	47	43	7.4	530
HS 679	83	92.6	97.3	46	40.4	10.6	446
HS 681	84	93.8	96.9	45	46.6	9.8	547
RAJ 4541	80	91.4	92.8	46	42	9.1	541
HD 2864	74	85.2	102.6	41	40.6	9.4	577
HI 8818 (d)	85	82.5	86.9	45	44.6	8.1	490
VL 3024	83	84.2	101.0	53	39.9	9.9	562
DBW 318	82	87.6	93.6	46	42.7	9.0	554
GW 528	78	89.6	90.3	48	42.1	10.1	534
HI 1544	75	88	99.9	46	40.3	9.5	535
HI 8627 (d)	87	90.3	90.1	49	44.4	8.2	509
PBW 835	78	91.4	100.6	48	40.5	10.4	598
DBW 342	84	93	88.5	50	41.4	9.8	531
PBW 875	82	88.4	99.7	46	42.4	9.2	583
DBW 357	81	94.2	91.3	46	42.5	10.4	501
DBW187 (Check)	**79**	**92.8**	**96.8**	**54**	**45.0**	**10.2**	**634**
DDW48(d)(Check)	**84**	**86.0**	**98.4**	**49**	**42.6**	**7.3**	**531**
HD 2967 (Check)	**81**	**89.6**	**97.9**	**52**	**41.2**	**9.4**	**584**
Sonalika (Check)	**74**	**93.7**	**98.7**	**44**	**44.1**	**10.1**	**516**

International Nurseries and Trials

The ICAR-Indian Institute of Wheat and Barley Research, Karnal being a nodal centre for exchange of germplasm, annually procures wheat lines from CIMMYT, Mexico; ICARDA, Syria and International Winter Wheat Yield Programme (IWWYP), Turkey in the form of International trials and nurseries to further enrich the ongoing breeding programmes at various centres in the country. These trials and nurseries are evaluated at various locations spread across the zones in India. Also, one set of this material is planted at Karnal to facilitate in-situ selections and also disease screening particularly stripe rust. The details of the material collected and its evaluation are described below.

Nurseries/ trials received during 2022-23

During 2022-23, 136 sets of eight trials and seven nurseries comprising a total of 1470 lines (1289 bread wheat and 181 lines of durum wheat) were received from CIMMYT, Mexico; 11 sets of four trials comprising of 472 lines (351 bread wheat and 121 lines of durum wheat) were received from ICARDA, Morocco and 120 lines of facultative winter wheat from IWWYP, Turkey and evaluated at various wheat breeding centres (Table 1 & 2). Duly filled-in data booklets were received from most of the indented centres except Varanasi.

Table 1: International germplasm shared with centres during 2022-23

S. N.	Trial/Nursery	Entries #	Rep. #	Set	Co-operating centres
Bread wheat					
1.	43rd ESWYT	50	2	15	Karnal, Ludhiana, Hisar, Kanpur, RAU-Pusa, Indore, Pantnagar, Jabalpur, Gwalior, Powarkheda, Niphad, Dharwad, Vijapur, Parbhani
2.	30th HRWYT	50	2	2	Karnal, Shillongani
3.	21st HTWYT	50	2	21	Karnal, Ludhiana, Durgapura, Hisar, Udaipur, Kanpur, Ayodhya, Indore, Jabalpur, Vijapur, Powarkheda, Junagadh, Jodhpur, Bilaspur, Pune, Niphad, Dharwad, Wellington, Pusa-Bihar, Kalyani, Varanasi*
4.	30th SAWYT	50	2	19	Karnal, Ludhiana, Hisar, Durgapura, Pantnagar, Kanpur, Ayodhya, , Ranchi, Bilaspur, Indore, Jabalpur, Powarkheda, Vijapur, Niphad, Dharwad, Parbhani, Jammu, CSSRI-Karnal, Varanasi*
5.	10th WYCYT	40	2	6	Karnal, Pantnagar, Ludhiana, Udaipur, Dharwad, Malan
6.	12th SATYN	42	2	4	Indore, Karnal, Ludhiana, Dharwad
7.	3rd IYPTE	33	3	5	Ludhiana, Karnal, Indore, Vijapur, Delhi
8.	55th IBWSN	228	-	18	Karnal, Hisar, Ludhiana, Durgapura, Pantnagar, Ayodhya, Gwalior, Coochbehar, Wellington, SKAUST- Jammu, Vijapur, Bilaspur, Kanpur, Kalyani, Malan, CSSRI-Karnal, Jodhpur, Varanasi*
9.	33rd HRWSN	156	-	4	Karnal, Pune, Wellington, Shillongani
10.	40th SAWSN	284	-	18	Karnal, Hisar, Ludhiana, Durgapura, Kanpur, Ayodhya, RPCAU-Pusa, Ranchi, Sabour, Jabalpur, Powarkheda, Junagadh, Bilaspur, Niphad, Pune, Dharwad, Vijapur, Jammu
11.	17th STEMRRSN	104	-	3	Karnal, Junagadh, Wellington
12.	14th HLBSN	52	-	7	Karnal, Ayodhya, Sabour, Coochbehar, RPCAU- Pusa, Kalyani, Varanasi*
13.	2nd EDPIE	150	2	1	Karnal
Durum wheat					
14.	54th IDYN	50	2	8	Karnal, Ludhiana, Niphad, Pune, Indore, Vijapur, Dharwad, Hisar
15.	54th IDSN	131	-	5	Karnal, Ludhiana, Pune, Indore, Niphad

Data not received

Table 2: International germplasm received from ICARDA, Morocco and IWWYP, Turkey **during 2022-23**

SN	Trial /Nursery	Entries #	Rep #	Set #	Cooperating centres
Bread wheat					
1.	23rd ESBWYT	50	2	2	Karnal, Jabalpur, Pantnagar
2.	30th FAWWON-SA	90	-	3	Almora, Malan, Khudwani
3.	23rd SBWON-HT&DT	301	-	4	Karnal, Jammu, Dharwad, Hisar
4.	24th IWWYT	30		1	Almora
Durum wheat					
5.	46th IDYT	25	2	3	Karnal, Indore, Vijapur
6.	46th IDON	96	-	1	Karnal

Based on yield *per se* and field screening for multiple diseases under different agro-climatic conditions, promising lines were identified for grain yield, thousand grain weight and resistance to rust and other disease for various zones (Table 3&4).

Table 3: Promising lines identified for higher grain yield and disease resistance in various yield trials

Trial	Zone/centre	Promising entries better than best check	Disease reaction
Bread wheat			
43rd ESWYT	NWPZ	115, 116, 120, 142, 146 **DBW 187 (57.5)**	Yr (0-20S)Br (0-20S)
	NEPZ	146, 150, **DBW 187 (45)**	-
	CZ	102, 108, 117, 123, 134, 135, 150, **HI 1544 (54)**	-
	PZ	102, 111, 124, 126, 128, 130, 146, 147, **NIAW 917 (50)**	-
30th HRWYT	NWPZ	No entry better than check, **DBW 187 (63.5)**	Lr (0-10S)
	NEPZ	206, 222, 223, 226, 237, 250, **HD2967 (42)**	
21st HTWYT	NWPZ	7, 13, 20, 22, 23, **DBW187 (64)**	Yr (0-10S), Br (0-20S)
	NEPZ	12, 41, 43, 46, 48, **NW2036 (37)**	LB (0-23)
	CZ	4, 7, 11, 12, 35, 36 41, 43, **CG1029 (49)**	
	PZ	11, 12, 15, 28, 32, 36, **UAS304 (42)**	Lr (0-10S); Sr (0-10MR)
30th SAWYT	NWPZ	336, 339, 346, **DBW187 (56)**	Yr (0-10S); Br (0-20S)
	NEPZ	302, 303, 311, 318, 332, 335, 338, **DBW187 (47)**	-
	CZ	318, 319, 320, 322, 323, 327, 337, 339, 346 **GW322 (47)**	-
	PZ	305, 307, 314, 315, 323, 326, 332, 337, 341, 350, **NIAW 1994 (45)**	
	NHZ	302, 303, 305, 312, 325, 338, 342, **DBW 187 (55)**	-
10th WYCYT	NHZ	5, 6, 10, 28, **HS 562 (25)**	
	NWPZ	2, **DBW 187 (63)**	Yr (0-10S), Br (0)
	CZ	12, 28, 29, 32, 36, **Raj4037 (52)**	
	PZ	2, 10, 18, **UAS 304 (33)**	Br (0)
12th SATYN	NWPZ	9440, **DBW187 (65)**	Yr (0-20S); Br (0-10S)
	PZ	9403, 9427, 9429, 9434, 9437, 9442, **UAS 304 (35)**	
	CZ	9410, 9417, 9434, 9435, 9438, **HI 1605 (37)**	
3rd IYPTE	NWPZ	No entry better than check **DBW 187(66)**	
	CZ	4, 6, 7, 9, 11, 12, 13, 14, 17, 19, 30, 33 **GW 451 (50)**	-
Durum wheat			
54th IDYN	NWPZ	709, 715, 719, 724, 729, 731, 736, 738, 741, **PDW 291 (49)**	Yr (0-10S)
	PZ	706, 717, 719, 723, 728, 734, 738, **MACS 3949 (40)**	-
	CZ	706, 709, 717, 720, 724, 725, 729, 734, 736, 737, 738 **GW 1339 (53)**	

Value in parenthesis indicates yield in q/ha

Table 4: Promising lines identified for 1000-gr. wt. and disease resistance in different nurseries

Trial/Nursery	Zone	Promising entries	Disease reaction
Bread wheat			
55th IBWSN	NWPZ	1002, 1019, 1049, 1057, 1090, 1095, 1118, 1139, 1172, 1184, **DBW 187 (43)**	Lr (0-20S); Yr (0-20S)
	NEPZ	1088, 1095, 1101, 1118, 1128, 1129, 1139, 1148, 1155, 1161, 1166, 1182, 1183, 1179, **NW 1067 (40)**	LB (1-12)
	PZ	1028, 1095, 1129, 1180, 1183, **Kalyansona (45)**	Lr (0-10MR); Sr (0-10MS),
	CZ	1008, 1024, 1053, 1058, 1059, 1069, 1073, 1088, 1090, 1139, 1155, 1184, **GW 322 (48)**	Sr (0-20S)
	NHZ	1001, 1002, 1004, 1005, 1020, 1054, 1056, 1069, 1104, 1143, 1148, 1151 1160, 1178, 1206, **DBW 187 (44)**	Yr (0-10S)
33th HRWSN	PZ	2016, 2020, 2021, 2023, 2028, 2045, 2069, **Kalyansona (64)**	Lr (0-10MR); Sr (0-10MS)
	NWPZ	2003, 2011, 2012, 2015, 2017, 2019, 2023, 2028, 2041, 2058, 2062, 2065, 2074, 2080, 2085, 2101, 2102 **DBW187 (42)**	Lr (0-10S); Yr (0-10S)
	NEPZ	2026, **HD2967 (47)**	LB (24)
40th SAWSN	NWPZ	3021, 3039, 3044, 3056, 3057, 3073, 3080, 3082, 3117, 3185, 3187, 3214, **DBW 187 (44)**	Lr (0-10S); Yr (0-10S)
	NEPZ	3057, 3113, 3147, 3166, 3171, 3182, 3185, **HD 2967** (43)	-
	CZ	3002, 3008, 3011, 3057, 3073, 3182, **GW 322 (50)**	Sr (0-10S)
	PZ	3011, 3015, 3021, 3024, 3026, 3039, 3047, 3145, 3190, 3215, 3222, 3224, **UAS 304 (50**)	LB (0)
	NHZ	3015, 3030, 3046, 3072, 3088, 3114, 3130, 3156, 3172, 3198, 3214, **DBW 187 (45)**	Yr (0-5MS)
17th STEMRRSN	NWPZ	6008, 6031, 6034, 6035, 6040, 6041, 6044, 6047, 6098, 6101, **DBW 187 (46)**	Lr (0-5S); Yr(0-5S)
	PZ	6019, 6034, 6035, 6040, 6045, 6056, 6066, 6072, 6070, 6084, 6085, 6086, 6088, 6101, 6102, **Kalyansona (46)**	Lr (0-5S); Sr (0-10S)
	CZ	6002, 6034, **GW451 (52)**	Lr (0); Sr (0-5MR)
14th HLBSN	NWPZ	10, 17, 42, **DBW187 (46)**	Lr (0-5MR); Yr (0)
	NEPZ	1, 3, **NW 2036 (38)**	Lr (0); LB (24)
Durum wheat			
54th IDSN	NWPZ	7015, 7016, 7038, 7052, 7069, 7096, 7112, **PDW 291 (44)**	Lr (0-5R)
	PZ	7016, 7038, **NIDW 295 (49)**	Lr (0); Sr (0)
	CZ	7046, 7125, **HI 8826 (51)**	-

Value in parenthesis indicates check value

Various promising entries were also identified from ICARDA and IWWYP trials & nurseries as listed in Table 5.

Table 5: Promising lines identified for grain yield from ICARDA and IWWYP trials/nurseries during 2022-23

Trial/Nursery	Location, yield criteria(g/plot)	Promising entries	Check, yield (g/plot)	Disease reaction
Bread wheat				
23rd ESBWYT	Karnal (>7080)	10, 22, 26, 48	DBW 187 (7056)	
	Jabalpur (>1000)	3, 9, 13, 15, 26, 35, 36, 37, 41, 46	DBW187 (815)	
23rd SBWON-HT&DT	Karnal (>640)	77, 78, 95, 139, 201	DBW 187(625)	
	Hisar (>7000)	29, 37, 62, 68, 85, 99, 161	WH1124 (4120)	
	Dharwad (>6600)	163, 252, 259, 264, 265, 271, 289, 295	Check (4490)	
	Jammu (> 5000)	5, 19, 27, 41, 49, 63, 71, 93, 107, 159, 155, 195, 247, 287, 297	Check (4500)	
30th FAWWON-SA	Almora (>640)	212, 215, 221, 239, 247, 251, 252, 255, 257, 260, 262, 265	Check (632)	Yr (0-MS)
	Malan (>152)	229, 230, 262, 269, 281	HS562 (150)	Yr (0-10S)
	Khudwani (>250)	202, 276, 285	Check (245)	Yr (0-20S)
Durum wheat				
46th IDYT	Karnal	No entry better than check	PDW 274 (1620)	-
	Indore (>4780)	7	Check (4753)	-
	Vijapur (>5000)	4, 7, 9, 10, 11, 18, 19, 20, 22	Check (4175)	-
46th IDON	Karnal (>8000)	IDON46-55, IDON46-91	PDW 274 (7693)	-

One set of each of CIMMYT nursery/ trial that were planted at ICAR-IIWBR, Karnal for comprehensive evaluation, seed multiplication also facilitated *in-situ* selection by large number of wheat breeders/pathologists, and made selections at IIWBR Karnal on Field Day (16th, March 2023). The indented seed in limited quantity will be supplied as per their requirement before the ensuing crop season for utilization by respective indentors.

Segregating Stock Nursery

The 26th Segregating Stock Nursery (SSN) comprised 209 segregating populations (F_2/F_3) that were contributed by WRS, SDAU, Vijapur; ICAR-VPKAS, Almora; CCS HAU, Hisar; GBPUA&T, Pantnagar; ARI, Pune; UAS Dharwad, ICAR-IARI, Indore and ICAR-IIWBR, Karnal during 2022-23. From ICAR-IIWBR, the contributors were rice-wheat programme, leaf blight programme, warmer area programme and pre-breeding programme. The main objective of the SSN is to share promising segregating material with upcoming wheat breeding centers under All India Coordinated Research Project on Wheat and Barley. The nursery provides an opportunity to select superior plants and further advancement of selected progenies. During 2022-23, the nursery was supplied to 23 wheat breeding centers across five wheat growing zones namely; Khudwani and Wadura in NHZ; Jammu, Hisar, Pantnagar and Durgapura in NWPZ; Ayodhya, Kalyani, Ranchi and Sabour in NEPZ; Bilaspur, Jabalpur, Udaipur, Lok Bharti, Powarkheda, Junagadh, Sagar and Mandor in CZ; and Parbhani, Akola, Niphad, Pune and Dharwad in PZ. Data were not received from Wadura center.

The feedback/utilization report indicated that all the 209 crosses were utilized by one or the other centre for various traits (yield components, disease resistance, physiological traits) and a total of 10172 plants were selected across the centers. The utilization report indicated that the nursery could achieve an overall utilization of 36.9% across centers.

Utilization pattern of segregating populations in 26th SSN

Institute name/programme	Segregating Populations	Frequency of Utilization	Utilization (%)	#Plants Selected
ICAR-VPKAS, Almora	60	502	38.0	2110
CCSHAU, Hisar	20	145	33.0	529
ICAR-IARI, Indore	20	154	35.0	1776
GBPUA&T, Pantnagar	20	180	40.9	746
ARI, Pune	10	60	27.3	261
SDAU, Vijapur	10	78	35.5	524
UAS, Dharwad	6	62	47.0	839
ICAR-IIWBR, Karnal				
Leaf blight	25	226	41.1	1046
Warmer area	15	142	43.0	1447
Rice-wheat	13	108	37.8	449
Pre-breeding	10	61	27.7	445
Total	**209**	**1718**	**36.9**	**10172**

The maximum number of plant selection was carried out at Pune (3100) followed by Powarkheda (1199), Pantnagar(947) and Parbhani (794) centers (Table). Pantnagar, Parbhani and Powarkheda centers reported 100% utilization of 26th Segregating Stock Nursery.

Centre-wise utilization of segregating stocks in 26th SSN

SN	Centre	Plants selected	Crosses utilized	Utilization (%)	Selection criteria
NHZ					
1	Khudwani	85	17	8.1	Yellow rust resistance
NWPZ					
2	Jammu	256	29	13.9	For further utilization
3	Hisar	27	26	12.4	Disease resistance and yield components
4	Pantnagar	947	209	100.0	Disease resistance, tillers, plant type(erect leaves)
5	Durgapura	178	30	14.4	Disease resistance and yield components
NEPZ					
6	Ayodhya	353	32	15.3	Yield components, disease resistance and seed traits
7	Kalyani	423	88	42.1	Disease resistance and yield components
8	Ranchi	99	90	43.1	Ear traits, plant length and earliness
9	Sabour	55	35	16.7	Disease resistance, morphological traits and yield components
CZ					
10	Bilaspur	559	102	48.8	Yield components, disease resistance, Morpho-physiological traits and seed traits
11	Jabalpur	248	39	18.7	Yield components and disease resistance
12	Udaipur	61	24	11.5	Yield components and maturity
13	Lokbharti	403	159	76.1	Yield components, Morpho-physiological traits and seed traits
14	Junagadh	69	61	29.2	Yield components and disease resistance
15	Powarkheda	1199	209	100.0	Yield component, disease resistance and morphological traits
16	Sagar	566	111	53.1	Yield components and seed traits
17	Mandor	174	82	39.2	Yield components and Morpho-physiological traits
PZ					
18	Akola	83	17	8.1	Yield component and morphological traits
19	Dharwad	382	76	36.4	Disease resistance, yield component and morphological traits
20	Niphad	111	42	20.1	Plant height, maturity and seed traits
21	Parbhani	794	209	100.0	Yield component and morpho-physiological traits
22	Pune	3100	31	14.8	Yield components and disease resistance
Total		**10172**	**1718**	**37.4**	

Drought and Heat Tolerance Screening Nursery (DHTSN)

The 34th Drought and Heat Tolerance Screening Nursery (DHTSN) comprising 49 wheat genotypes including 6 checks (DBW187, DBW296, GW322, NIAW3170, RW5 and WH730) was conducted at 8 centres (Hisar, Karnal, Pusa, Sabour, Indore, Junagadh, Pune and Dharwad) to identify wheat genotypes having tolerance to drought and heat stress. The nursery was sown in 7x7 simple lattice design (7blocks X 7 plots) under drought (DR), irrigated (IR) and late sown (LS)conditions with a plot size of 1.5m length of 3 rows. Except pre-sowing irrigation, no irrigation was given under drought treatment, while recommended irrigations were provided under irrigated and late sown treatments. One of the entry DTS182 did not germinate and hence not reported.

Weather conditions during the crop season (2022-23)

In the current crop season (2022-23) varying amount of rainfall was received. During TS vegetative phase Karnal (14.9mm), Hisar (8.9mm), Dharwad (6mm) and Indore (4.1mm) received little amount of rainfall and rest of the centres did not receive any rainfall. During TS reproductive period, Sabour received highest rainfall of 69.4mm followed by Karnal (43.1mm), Pusa (19.8mm) and Hisar (18.0mm). Under LS condition, the rainfall trend remained same as that of TS condition across locations in both the stages. Hisar was reported with minimum temperature both under TS (7.9°C) and LS (7.0°C) conditions. During reproductive phase, maximum temperature was recorded at Junagadh both under TS (32.6°C) and LS (35.7°C) conditions.

Impact of drought and heat stress

Impact of drought/heat stress was adjudged by taking into account Drought Sensitivity Index (DSI)/Heat Sensitivity Index (HSI). DSI/HSI was calculated using the formula DSI/HSI= (1-YD/Yi)/(1-XD/Xi) Where, YD and Yi are the grain yield for each genotype under stress and control conditions respectively. XD and Xi are the means of all study genotypes grain yield under stress and control conditions respectively. For reference, DSI/HSI<0.5 is considered as highly tolerant, DSI/HSI<0.5-1 as moderately tolerant and DSI/HSI>1.0 as susceptible genotypes.

Drought and heat tolerant genotypes identified

Under drought stress, the genotypes DTS116(0.40), UASD-22-5(0.62), HI1672(0.65), DBW-EMS339 (0.66), BBP-MABB-50(0.73), HI1670(0.78) showed lower DSI against best check NIAW3170 (0.80). Under heat stress, the genotypes HI1672(0.56), HI1673 (0.58), BBP-MABB-41(0.62), UASD-22-5(0.73), showed lower HSI but were higher than the best check WH730 (0.5). The list of promising genotypes showing DSI / HSI <1 in DHTSN is listed in Table 1.

Table 1: List of promising wheat genotypes identified as drought/heat tolerant (DSI/HSI<1.0) in DHTSN during 2022-23.

Genotypes	
DSI<1	**HSI<1**
DTS116(0.40),UASD-22-5(0.62), HI1672(0.65), DBW-EMS339 (0.66), BBP-MABB-0(0.73), HI1670(0.78), DBW-EMS268 (0.81), NEHDT-22-3 (0.88), DBW424 (0.89), DBW430 (0.91),BBP-MABB-41 (0.93), DBW429 (0.93), P13787 (0.95), HI1673 (0.95), UASD-22-1 (0.96), P13031 (0.96), GW-2011-362 (0.96), DBW432 (0.99), GW-2014-582 (1.00), GW-2017-803 (1.00), NEHDT-22-1 (1.00)	HI1672(0.56),HI1673(0.58), BBP-MABB-41(0.62), UASD-22-5(0.73),HI1670(0.74), DBW353 (0.76), PBS-2022-1 (0.76), DBW-EMS268 (0.77),BBP-MABB-50 (0.78), DBW424 (0.78), UASD-22-2 (0.78), HI1675 (0.80), DBW432 (0.83), DBW429 (0.87), HI1669 (0.88), GW-2011-362 (0.89), DBW-EMS339 (0.90), GW-2017-803 (0.91), P13787 (0.91), WH1402 (0.93), BBP-MABB-11 (0.99)

Values in the parenthesis indicates DSI / HIS.

Table 2: Drought Sensitivity Index of promising DHTSN genotypes (DSI<1) and yield reduction (%) across locations along with checks

	Drought Sensitivity Index (DSI)								Pooled			
Genotype	Hisar	Karnal	Pusa	Sabour	Dharwad	Pune	Indore	Junagadh	DSI	GYI	GYD	YR %
BBP-MABB-41	0.69	2.54	0.96	0.47	1.62	1.00	-3.53	0.90	0.93	652.9	463.4	29.0
BBP-MABB-50	0.76	1.34	0.64	0.81	2.40	1.03	-8.17	0.77	0.73	555.9	428.4	22.9
DBW424	1.10	0.20	1.00	-0.15	0.55	0.99	1.63	0.81	0.89	612.5	442.3	27.8
DBW429	1.12	1.07	1.03	0.93	-5.87	0.86	-1.90	1.18	0.93	608.0	430.6	29.2
DBW430	0.90	-0.12	0.90	1.01	0.67	1.04	2.96	0.91	0.91	660.4	470.9	28.7
DBW432	1.01	0.69	0.78	0.64	1.06	0.95	3.48	1.03	0.99	693.4	477.7	31.1
DBW-EMS268	0.33	1.99	0.90	0.00	1.96	0.96	-5.49	0.71	0.81	566.1	421.9	25.5
DBW-EMS339	0.81	-0.51	1.06	1.12	1.31	0.95	-6.42	0.78	0.66	516.6	409.0	20.8
DTS 116	0.50	-2.93	1.11	-0.55	1.81	0.25	-4.29	0.49	0.40	318.9	279.1	12.5
GW-2011-362	1.00	0.05	1.10	-1.13	1.92	1.10	-0.47	1.11	0.96	512.3	357.9	30.1
GW-2014-582	0.90	1.09	1.07	-0.28	1.44	0.94	-0.19	1.29	1.0	601.4	413.3	31.3
GW-2017-803	1.23	-1.14	0.97	-0.04	1.32	1.25	-2.87	1.06	1.0	542.0	372.2	31.3
HI1670	1.02	-0.36	1.01	1.03	2.84	0.93	-3.92	0.87	0.78	599.1	452.4	24.5
HI1672	0.29	-0.86	1.02	0.50	0.90	0.84	0.08	0.80	0.65	565.4	449.9	20.4
HI1673	1.49	0.75	1.06	0.18	1.78	0.82	0.78	1.00	0.95	598.0	419.3	29.9
NEHDT-22-1	0.91	1.38	0.92	1.00	1.82	0.93	-0.79	1.05	1.0	645.0	442.2	31.4
NEHDT-22-3	0.60	0.34	0.92	1.96	-0.65	1.02	-1.78	0.97	0.88	633.3	457.7	27.7
P13031	0.91	0.27	0.96	0.08	1.73	0.98	3.37	1.31	0.96	591.8	413.8	30.1
P13787	1.29	-0.70	1.10	1.55	1.86	1.14	-1.12	1.10	0.95	666.2	467.6	29.8
UASD-22-1	1.02	0.94	0.89	1.22	2.18	0.95	-4.50	1.11	0.96	639.9	447.8	30.0
UASD-22-5	0.86	-0.79	1.16	-0.48	1.67	0.98	2.74	-0.54	0.62	550.4	443.4	19.5
DBW187 (C)	0.34	0.58	1.17	0.27	0.56	1.11	1.39	0.96	0.86	652.0	475.1	27.1
DBW296 (C)	1.51	0.50	1.04	1.60	1.37	1.05	0.67	1.06	1.03	657.9	445.8	32.2
GW322 (C)	1.03	0.52	1.11	1.04	2.25	0.98	1.16	1.11	1.11	619.7	404.8	34.7
NIAW3170 (C)	0.20	-0.04	1.05	0.91	-3.37	0.97	-2.81	0.98	0.80	627.7	470.9	25.0
RW5 (C)	1.37	2.01	0.83	0.55	0.81	1.01	-0.59	0.99	1.03	620.0	419.9	32.3
WH730 (C)	0.37	2.23	1.01	0.85	2.24	0.92	0.48	0.87	0.89	536.6	387.4	27.8

GYI -Grain yield per plot(g) under irrigated condition, GYD-Grain yield per plot(g) under drought condition

Table 3: Heat Sensitivity Index (HSI) of promising DHTSN genotypes (HSI<1) and yield reduction (%) across locations along with checks

	Heat Sensitivity Index(HSI)								Pooled			
Genotype	Hisar	Karnal	Pusa	Sabour	Dharwad	Pune	Indore	Junagadh	HSI	GYTS	GYLS	YR%
BBP-MABB-11	0.97	0.56	1.05	1.17	5.36	1.38	0.93	1.05	0.99	672.3	498.8	25.8
BBP-MABB-41	1.14	0.51	0.99	-0.61	-6.36	0.01	3.98	0.98	0.62	652.9	547.1	16.2
BBP-MABB-50	0.86	0.82	0.73	0.57	4.50	0.84	3.14	1.33	0.78	555.9	442.9	20.3
DBW353	1.14	1.08	0.89	1.44	-0.68	0.83	3.53	0.95	0.76	699.6	560.9	19.8
DBW424	0.82	-0.22	1.03	0.55	-1.26	1.38	-0.08	1.02	0.78	612.5	488.1	20.3
DBW429	0.92	0.25	1.03	0.76	-28.56	0.24	0.15	1.03	0.87	608.0	470.2	22.7
DBW432	0.91	0.32	0.77	0.06	4.58	0.62	1.74	1.03	0.83	693.4	542.4	21.8
DBW-EMS268	0.58	0.92	0.83	-0.55	6.42	1.51	2.22	1.04	0.77	566.1	452.4	20.1

DBW-EMS339	0.66	0.38	1.04	1.28	0.05	3.58	1.96	1.03	0.90	516.6	394.5	23.6
GW-2011-362	0.77	1.70	1.00	-1.22	4.65	0.72	1.00	1.11	0.89	512.3	392.4	23.4
GW-2017-803	1.07	1.33	1.05	0.66	1.63	1.23	2.57	1.05	0.91	542.0	412.9	23.8
HI1669	0.66	1.06	1.07	0.77	0.28	0.03	-0.27	0.90	0.88	646.4	497.4	23.0
HI1670	1.21	1.07	1.06	1.03	-4.19	0.10	5.03	0.92	0.74	599.1	483.6	19.3
HI1672	0.86	1.08	1.04	0.52	-4.78	0.56	3.67	0.78	0.56	565.4	483.2	14.5
HI1673	1.10	1.22	0.97	-0.44	4.88	-1.37	2.59	0.88	0.58	598.0	507.5	15.1
HI1675	0.22	1.00	0.99	1.04	8.57	0.34	1.22	0.78	0.80	601.4	476.1	20.8
P13787	1.05	0.84	1.16	1.27	6.46	1.02	3.75	1.17	0.91	666.2	506.7	23.9
PBS-2022-1	0.94	-0.01	1.15	1.00	-0.22	0.30	-0.08	0.92	0.76	637.1	509.6	20.0
UASD-22-2	0.57	0.77	0.64	0.91	-9.66	0.73	1.40	1.04	0.78	567.2	450.7	20.5
UASD-22-5	0.83	0.86	1.20	-0.61	5.41	1.95	-0.18	0.57	0.73	550.4	445.0	19.2
WH1402	1.11	0.71	1.04	1.65	-1.30	1.08	2.89	0.99	0.93	632.3	478.1	24.4
DBW187 (C)	0.85	1.68	1.12	0.82	-5.87	1.53	0.17	1.03	1.28	652.0	433.5	33.5
DBW296 (C)	1.19	0.87	0.99	0.79	7.72	0.48	-0.40	1.06	1.14	657.9	461.8	29.8
GW322 (C)	0.81	1.75	1.11	1.95	4.78	1.09	1.91	1.08	1.05	619.7	449.3	27.5
NIAW3170 (C)	0.89	0.64	0.95	1.66	1.50	1.68	2.20	0.88	0.92	627.7	476.1	24.2
RW5 (C)	1.20	1.79	0.82	0.98	1.73	0.01	0.69	1.12	1.10	620.0	442.3	28.7
WH730 (C)	0.87	1.40	0.97	-0.14	-25.92	0.81	2.39	0.63	0.50	536.6	465.7	13.2

GYTS - Grain yield per plot(g) under timely sown condition, GYLS- Grain yield per plot(g) under late sown condition

Correlation of grain yield with different traits under drought and late sown conditions

The correlation of different growth, yield and physiological traits with yield under drought and late sown conditions indicated that, the grain yield under drought is significantly positively correlated with tiller number, bbiomass, thousand grain weight, harvest index, NDVI at 1month after germination and Plant height. The grain yield under late-sowing is positively correlated with tiller number, biomass, harvest index and NDVI at 21DAA.

Table 4: Correlation of pooled analysis traits (r^2) with GYD and GYLS

Agromorphological traits	GYDR	GYLS	Physiological traits	GYDR	GYLS
Days to heading	0.13	-0.25	Grain Number/spike	0.26	0.13
Days to maturity	0.21	-0.17	Grain weight/spike	0.16	0.23
Tiller number	0.37**	0.51**	CT at 15DAA	0.23	0.15
Biomass	0.71**	0.67**	CT at 21DAA	0.23	0.21
Thousand grain weight	0.44**	0.23	CCI at 15DAA	0.19	0.18
Plant height	0.32*	0.11	CCI at 21DAA	0.11	0.14
Harvest Index	0.47**	0.61**	NDVI at 1month after germination	0.53**	0.18
Grain filling duration	0.21	0.12	NDVI at 21 DAA	0.21	0.35*

* Significant@ 5%, ** @ 1%.

Salinity Alkalinity Tolerance Screening Nursery 2022-23

Neeraj Kulshreshtha and Arvind Kumar
ICAR-Central Soil Salinity Research Institute, Karnal

The Salinity/Alkalinity Tolerance Screening Nursery was constituted with the aim to identify wheat lines that can perform better under salt affected soils. This nursery also serves as the source of test entry for Special Variety Evaluation Trial for salt stress conditions under AICW&BIP. During the year 2022-23 the nurseries were conducted at 5 centers. The data of Karnal, Ludhiana, Ayodhya and Bharuch were pooled to obtain the mean values.

The nursery consisted of 15 test entries and three checks: KRL 210, Kharchia 65 and DBW 187 in alpha lattice design with two replications. Each replication was having 6 blocks and each block comprised of 3 test entries/ checks. Superior lines were identified on the basis of the analysis of grain yield and comparison with the pooled value.

SOIL STATUS			
Location	**pH_2**	**EC_e : dSM^{-1}**	**EC_{iw} dSM^{-1}**
Karnal	9.1	0.7	-
Ludhiana	8.9 with waterlogging	8.9	-
Ayodhya	9.2	-	-
Bharuch	-	-	7-8
Lucknow	8.9	0.8	-

Out of 15 test entries, 9 entries were found to be promising on the basis of mean yield along with resistance to all the three rusts (stem leaf and yellow rust) as evident from IPPSN 2022-23. The entry KRL 2101 was found to have better Fe concentration in grains (Table 1). These 9 entries are given in table 2 and might be considered for testing in Salinity-Alkalinity Trial to be conducted during 2023-24.

Table 1: Performance of promising entries with respect to Fe and Zn concentration

SN	Variety	Fe (ppm)	Zn (ppm)
1	KRL 2101	46.1	30.8
2	KRL 2105	38.1	27.2
3	KRL 2114	35.5	24.7
4	KRL 2201	38.2	24.6
5	KRL 2202	35.5	26
6	KRL 2203	32.9	25.3
7	KRL 2204	37.6	32.3
8	KRL 2205	39.6	22.1
9	WBL 2308	39.8	28
Checks			
	KRL 210 (C)	45.3	32.8
	Kharchia 65 (C)	43.8	40.1
	DBW 187 (C)	38.3	28.9

Table 2 :Mean performance of the entries in Salinity/Alkalinity Tolerance Screening Nursery

SN	Entry	Mean Yield (q/ha)	Rk	G	MSTI	Rk	Stem rust		Leaf rust (S)		Leaf rust (N)		Stripe rust	
							ACI	HS	ACI	HS	ACI	HS	ACI	HS
1	KRL 2101	36.0	14	1	0.78	2	2.8	10S	1.6	10MS	5.7	40S	6.4	20S
2	KRL 2105	38.9	5	1	0.69	8	0.5	5MR	1.5	10MS	1.5	10S	10.8	30S
3	KRL 2114	38.6	6	1	0.56	14	14.5	40S	3.4	20MS	6.1	20S	5.9	20MS
4	KRL 2201	40.1	3	1	0.50	17	16.8	60S	15	60S	9.5	40S	16.4	60S
5	KRL 2202	41.2	1	1	0.56	13	7.1	20S	6.1	20MS	6.1	40S	15.8	60S
6	KRL 2203	38.6	7	1	0.88	1	15.5	40S	14.8	40S	10.7	60S*	12.6	40S
7	KRL 2204	40.3	2	1	0.51	16	1	10MR	4	20S	12.1	40S	24	40S
8	KRL 2205	38.4	9	1	0.56	15	10.5	20S	5.8	20MS	9.4	40S	11.4	40S
9	WBL 2308	39.5	4	1	0.70	6	9.1	20S	4	20S	1.4	10S	1.3	5MS
Checks														
KRL 210 (C)		38.3	10	1	0.73	4	29.9	60S	19.5	60S	37.1	80S	7.4	20S
Kharchia 65 (C)		30.6	17	0	0.71	5	24.4	60S	33.5	80S	34.3	60S	53.6	80S
DBW 187 (C)		36.7	12	1	0.61	11	7.3	20S	2.8	10S	8	20S	7.3	20MS
G.M.		37.2												
C.D.		6.4												

Appendix - I

Trials not reported

2201-NIVT-1A-IR-TS-TAS-NAT-ZONE,2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (02) =
NWPZ: Sriganganagar (RMT)
NEPZ: Sabour (RMT)

2202-NIVT-1B-IR-TS-TAS-NAT-ZONE,2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (02) =
NWPZ: Sriganganagar (RMT)
NEPZ: Sabour (RMT)

2203-NIVT-2-IR-TS-TAS-NAT-ZONE,2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (02) =
CZ : Jabalpur (RMT)
PZ : Akola (RMT)

2204-NIVT-3A-IR-LS-TAS-NAT-ZONE,2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ		
			Bihar		
			RPCAU-Pusa		
			Yield	RK	G
1	PBW923	N401	30.5	28	0
2	SVPWL21-14	N402	31.9	26	0
3	PBW920	N403	40.3	1	1
4	NW8071	N404	28.9	35	0
5	PBW919	N405	35.5	11	0
6	HD3452	N406	36.4	9	1
7	NW8055	N407	35.1	14	0
8	RAJ4581	N408	35.6	10	1
9	DBW420	N409	38.8	2	1
10	WH1323	N410	35.1	14	0
11	HP1980	N411	29.9	31	0
12	UBW20	N412	30.3	29	0
13	DBW424	N413	31.2	27	0
14	BCW30	N414	33.6	22	0
15	UP3126	N415	35.0	16	0
16	WH1322	N416	28.9	34	0
17	DBW423	N417	33.9	21	0
18	DBW422	N418	38.3	3	1
19	K2207	N419	33.6	24	0
20	BRW3941	N420	29.5	33	0
21	DBW421	N421	30.3	30	0
22	HD3453	N422	32.0	25	0
23	JKW303	N423	34.3	20	0
24	HD3454	N425	37.7	5	1
25	PBW922	N426	35.5	11	0
26	PBW921	N428	36.5	8	1
27	K2208	N429	28.1	36	0
28	RAJ4580	N431	29.6	32	0
29	WH1324	N433	38.3	4	1
30	K2206	N434	35.0	16	0
31	HD3455	N435	35.3	13	0
32	UP3127	N436	34.7	18	0
33	DBW107(C)	N424	37.5	6	1
34	HD3059(C)	N427	36.8	7	1
35	DBW173(C)	N430	34.6	19	0
36	HI1563(C)	N432	33.6	23	0
G.M.			34.0		
S.E.(M)			1.949		
C.D. (10%)			4.7		
C.V.			8.1		
D.O.S.(dd.mm.yy)			07.12.22		

Trials not reported (02) =
NEPZ: Kanpur (RMT), RPCAU-Pusa (LSM)

2205-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ		
			Gujarat		
			SK Nagar		
			Yield	RK	G
1	NIAW4432	N502	31.9	11	1
2	HD3456	N503	33.7	8	1
3	MACS6829	N504	36.7	4	1
4	HI1686	N505	28.8	16	0
5	MP3568	N506	33.9	7	1
6	LOK81	N507	20.9	23	0
7	MACS6830	N508	33.3	9	1
8	HI1685	N510	23.8	21	0
9	UAS3027	N511	17.4	25	0
10	GW551	N512	18.7	24	0
11	PBW924	N513	28.0	17	0
12	GW558	N514	28.9	15	0
13	DBW426	N515	38.4	3	1
14	NIAW4300	N516	25.3	20	0
15	WH1325	N517	30.2	14	1
16	MP3575	N518	35.9	5	1
17	GW556	N519	23.8	21	0
18	UAS3028	N520	28.0	18	0
19	WSM138	N521	32.6	10	1
20	HI1687	N522	31.6	12	1
21	CG1046	N523	35.6	6	1
22	DBW425	N524	27.2	19	0
23	MP1394	N525	38.6	2	1
24	HD2864(C)	N501	30.2	13	1
25	HD2932(C)	N509	39.7	1	1
G.M.			30.1		
S.E.(M)			5.298		
C.D. (10%)			12.8		
C.V.			24.9		
D.O.S.(dd.mm.yy)			08.12.22		

Trials not reported (04) =
CZ : Jabalpur (RMT), SK Nagar (LSM, HCV)
PZ : Akola (RMT), Nippani (RMT)

2207-NIVT-5A-RI-TS-TAS-NAT-ZONE,2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ		
			Jharkhand		
			Ranchi		
			Yield	RK	G
1	BRW3935	N701	20.5	23	0
2	DBW427	N702	31.9	5	0
3	NW8053	N703	26.4	17	0
4	DBW430	N704	44.4	1	1
5	PBW926	N706	27.8	10	0
6	HD3459	N707	25.7	18	0
7	UP3133	N708	26.4	15	0
8	HD3458	N710	33.3	3	0
9	WH1326	N711	26.4	15	0
10	WH1327	N712	20.1	24	0
11	HD3468	N713	25.7	18	0
12	K2210	N714	28.5	9	0
13	DBW429	N715	27.8	10	0
14	PBW925	N716	24.3	20	0
15	JKW304	N717	29.9	7	0
16	PBW927	N718	15.3	25	0
17	HD3460	N720	35.1	2	0
18	PBW928	N721	27.1	14	0
19	UP3129	N722	27.1	12	0
20	JAUW705	N723	30.6	6	0
21	DBW428	N724	23.6	21	0
22	HD3457	N725	29.2	8	0
23	K1317(C)	N705	27.1	12	0
24	PBW644(C)	N709	22.2	22	0
25	HI1612(C)	N719	32.6	4	0
G.M.			27.6		
S.E.(M)			2.332		
C.D. (10%)			5.6		
C.V.			12.0		
D.O.S.(dd.mm.yy)			03.11.22		

Trials not reported (03) =
NWPZ: Bulandshahr (RMT),
Sriganganagar (RMT)
NEPZ : Ranchi (LSM)

2206-NIVT-4-IR-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ									PZ		
			M.P.			Gujarat			Rajasthan			Maharashtra		
			Gwalior			Dhandhuka			Kota			Niphad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8850	N601	47.6	2	1	42.8	2	1	66.3	11	1	38.2	12	0
2	MPO1396	N602	40.4	8	0	38.3	4	0	68.8	4	1	42.0	8	0
3	PWU24	N603	29.1	22	0	25.5	20	0	56.3	24	0	37.2	15	0
4	GW1367	N604	45.8	3	1	31.2	14	0	62.5	19	1	36.7	18	0
5	DDW63	N605	36.4	14	0	31.9	11	0	58.8	22	0	46.1	3	1
6	MACS4135	N606	42.6	6	0	34.2	7	0	67.5	5	1	48.8	1	1
7	HI8849	N607	36.5	13	0	41.9	3	1	67.5	5	1	43.6	6	0
8	DDW62	N608	51.4	1	1	28.0	17	0	71.3	3	1	41.5	9	0
9	MACS4125	N609	39.7	10	0	24.7	22	0	53.8	25	0	39.1	11	0
10	PDW364	N610	28.3	24	0	23.1	24	0	66.9	10	1	35.6	19	0
11	NIDW1499	N612	33.3	18	0	34.0	8	0	66.3	11	1	33.0	20	0
12	UAS483	N614	36.0	15	0	34.2	6	0	63.8	18	1	32.8	21	0
13	NIDW1520	N615	37.9	11	0	26.3	18	0	58.8	22	0	44.7	5	1
14	UAS482	N616	36.8	12	0	28.5	16	0	65.0	15	1	37.5	14	0
15	GW1365	N617	34.1	17	0	33.5	9	0	67.5	5	1	37.1	16	0
16	GW1366	N618	32.4	21	0	28.8	15	0	67.5	5	1	27.5	24	0
17	PDW365	N619	35.1	16	0	14.7	25	0	66.3	11	1	30.9	22	0
18	MPO1395	N620	42.6	6	0	43.4	1	1	72.5	1	1	37.9	13	0
19	WHD968	N621	33.3	19	0	24.7	22	0	67.5	5	1	23.6	25	0
20	HI8848	N622	40.1	9	0	35.6	5	0	66.3	11	1	43.5	7	0
21	AKDW5516	N623	24.0	25	0	26.0	19	0	62.5	19	1	28.8	23	0
22	NIDW1534	N624	44.6	5	0	33.0	10	0	65.0	15	1	45.8	4	1
23	HI8737(C)	N611	32.6	20	0	31.5	12	0	61.9	21	1	37.0	17	0
24	MACS3949(C)	N613	29.1	22	0	31.3	13	0	72.5	1	1	41.0	10	0
25	HI8713(C)	N625	45.7	4	1	25.4	21	0	65.0	15	1	47.6	2	1
G.M.			37.4			30.9			65.1			38.3		
S.E.(M)			2.221			0.955			4.697			1.939		
C.D. (10%)			5.4			2.3			11.4			4.7		
C.V.			8.4			4.4			10.2			7.2		
D.O.S.(dd.mm.yy)			09.11.22			04.11.22			14.11.22			14.11.22		

Trials not reported (05) = CZ : Gwalior (LSM), Dhandhuka (LSM), Kota (LSM)
PZ : Akola (RMT), Niphad (LSM)

2208-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ			PZ		
			Gujarat			Maharashtra		
			SK Nagar			Niphad		
			Yield	RK	G	Yield	RK	G
1	PBN16-1826	N801	29.5	10	0	17.7	25	0
2	NIAW4387	N802	24.0	15	0	21.6	20	0
3	DBW428	N803	27.4	12	0	21.4	21	0
4	UAS3029	N804	40.3	1	1	28.3	7	1
5	UAS484(d)	N806	21.1	16	0	27.6	9	1
6	GW1368(d)	N807	15.4	24	0	22.5	17	0
7	HI8852(d)	N808	20.6	17	0	22.1	18	0
8	MACS4131(d)	N809	18.8	20	0	28.9	4	1
9	HI1688	N810	31.6	8	1	21.9	19	0
10	DBW432	N811	27.7	11	0	27.3	10	1
11	MPO1398(d)	N812	17.4	21	0	23.0	15	0
12	NIAW4267	N813	34.0	6	1	29.3	3	1
13	HI1689	N814	15.3	25	0	25.5	12	0
14	AKAW5514	N815	37.4	2	1	31.5	1	1
15	HI1693	N816	25.4	14	0	18.9	23	0
16	GW552	N817	33.5	7	1	22.6	16	0
17	DBW431	N818	29.7	9	0	20.9	22	0
18	MP3577	N822	15.7	23	0	24.3	13	0
19	DDW64(d)	N823	17.2	22	0	26.2	11	0
20	HI8851(d)	N824	26.3	13	0	28.6	5	1
21	CG1047	N825	34.4	5	1	23.9	14	0
22	DBW110(C)	N805	34.7	4	1	28.1	8	1
23	HI1605(C)	N820	35.1	3	1	28.4	6	1
24	HI8627(d)(C)	N819	20.1	19	0	29.8	2	1
25	UAS446(d)(C)	N821	20.5	18	0	17.8	24	0
G.M.			26.1			24.7		
S.E.(M)			4.078			1.582		
C.D. (10%)			9.9			3.8		
C.V.			22.1			9.0		
D.O.S.(dd.mm.yy)			05.11.22			05.11.22		

Trials not reported (05)=
CZ: Jabalpur (RMT), SK Nagar (LSM, HCV)
PZ: Akola (RMT),Nippani (RMT),Niphad (LSM)

2209-NIVT-6-ES-IR-NWPZ/CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ					
			M.P.					
			Indore			Powarkheda		
			Yield	RK	G	Yield	RK	G
1	GW553	N902	49.5	19	0	43.1	29	0
2	DBW433	N903	47.7	26	0	55.3	1	1
3	GW557	N904	50.7	12	0	44.1	26	0
4	DBW440	N905	53.2	8	0	54.4	7	1
5	DBW434	N906	53.6	7	0	42.2	31	0
6	PBW903	N907	48.8	21	0	41.3	32	0
7	DBW435	N908	46.0	27	0	51.6	10	1
8	MP1399	N910	48.8	22	0	44.1	26	0
9	WH1320	N911	47.8	25	0	48.8	15	1
10	PBW904	N912	45.3	31	0	46.9	18	0
11	HD3464	N913	32.3	36	0	45.0	23	0
12	DBW436	N914	50.0	16	0	47.8	17	0
13	HI1690	N915	51.1	11	0	50.6	11	1
14	RAJ4583	N916	56.0	5	1	44.1	26	0
15	DBW438	N917	44.1	32	0	48.8	15	1
16	BRW3922	N918	47.9	24	0	55.3	1	1
17	HI1691	N919	61.9	2	1	50.6	11	1
18	MP3572	N920	63.3	1	1	53.4	9	1
19	PBW905	N921	50.5	13	0	43.1	29	0
20	HD3461	N922	45.8	28	0	45.0	23	0
21	CG1049	N923	48.3	23	0	55.3	1	1
22	DBW439	N925	52.8	10	0	34.7	35	0
23	DBW437	N926	55.2	6	0	45.0	23	0
24	HD3462	N927	43.5	33	0	55.3	1	1
25	JWS1333	N928	34.7	35	0	50.6	11	1
26	PBW929	N930	50.4	14	0	46.9	18	0
27	HD3463	N931	49.6	18	0	50.6	11	1
28	DBW445	N932	58.6	4	1	46.9	18	0
29	PBW906	N933	60.0	3	1	54.4	7	1
30	WH1321	N934	45.6	30	0	45.9	22	0
31	PBW907	N935	49.8	17	0	55.3	1	1
32	UP3130	N936	45.7	29	0	46.9	18	0
33	DBW187(C)	N901	52.9	9	0	36.6	34	0
34	GW322(C)	N909	50.1	15	0	55.3	1	1
35	DBW303(C)	N924	40.2	34	0	31.9	36	0
36	DBW327(C)	N929	49.3	20	0	41.3	32	0
G.M.			49.5			47.4		
S.E.(M)			3.130			2.805		
C.D. (10%)			7.5			6.7		
C.V.			8.9			8.4		
D.O.S.(dd.mm.yy)			10.11.22			03.11.22		

Trials not reported(06)=
NWPZ:Sriganganagar(RMT), Bulandshahr (RMT)
CZ: Bilaspur (RMT), Jabalpur (RMT),
Indore (LSM), Powarkheda (LSM)

2211-IVT-RF-TS-TAS-NHZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	UTK					
			Almora			Gaja		
			Yield	Rk	G	Yield	Rk	G
1	HPW489	NHIVT202	13.3	16	0	13.7	17	0
2	VL3032	NHIVT203	13.4	14	0	19.1	4	1
3	VL2051	NHIVT204	16.0	7	0	18.4	5	1
4	VL2053	NHIVT205	11.3	21	0	13.4	18	0
5	HS697	NHIVT206	13.4	15	0	15.6	9	0
6	UP3131	NHIVT207	12.4	18	0	15.6	8	0
7	HPW492	NHIVT209	14.6	9	0	14.2	15	0
8	HS699	NHIVT210	11.0	22	0	14.8	13	0
9	HD3466	NHIVT211	10.9	23	0	12.7	20	0
10	VL3031	NHIVT212	15.1	8	0	13.7	16	0
11	SKW368	NHIVT213	16.1	6	0	14.6	14	0
12	VL2052	NHIVT214	20.6	1	1	15.4	11	0
13	HS696	NHIVT215	17.7	4	0	12.3	22	0
14	HPW491	NHIVT216	11.4	19	0	14.8	12	0
15	VL2054	NHIVT217	13.8	13	0	17.2	7	0
16	SKUAW102	NHIVT218	5.2	26	0	20.4	1	1
17	HS695	NHIVT219	13.1	17	0	10.7	25	0
18	UP3134	NHIVT220	18.3	3	0	17.6	6	1
19	SKUAW101	NHIVT221	8.4	25	0	9.7	26	0
20	HPW493	NHIVT222	14.5	10	0	12.4	21	0
21	HPW494	NHIVT223	20.2	2	1	20.0	2	1
22	HS698	NHIVT225	10.6	24	0	10.9	24	0
23	HPW490	NHIVT226	14.3	11	0	12.8	19	0
24	HS562(C)	NHIVT201	11.4	20	0	19.4	3	1
25	VL892(C)	NHIVT208	14.1	12	0	15.6	9	0
26	HS507(C)	NHIVT224	16.7	5	0	11.7	23	0
G.M.			13.8			14.9		
S.E.(M)			0.973			1.271		
C.D. (10%)			2.3			3.0		
C.V.			14.1			14.8		
D.O.S.(dd.mm.yy)			18.10.22			10.11.22		

Trials not reported (03) = Almora (LSM), Gaja (LS,LSM), Imphal (Faulty Design)

2212-AVT-RF-TS-TAS-NHZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	UTK						Manipur		
			Almora			Gaja			Imphal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL3028	NHRF103	19.0	7	0	14.7	2	1	14.0	4	0
2	HPW484	NHRF104	25.5	3	1	12.6	5	0	12.9	5	0
3	HS691	NHRF106	22.2	5	0	10.8	7	0	17.5	1	1
4	HS692	NHRF108	18.4	8	0	12.5	6	0	16.6	2	1
5	VL907(C)	NHRF101	21.7	6	0	16.2	1	1	9.6	9	0
6	HPW349(C)	NHRF105	22.9	4	0	6.1	9	0	12.5	6	0
7	VL892(C)	NHRF107	14.1	9	0	9.5	8	0	11.6	8	0
8	HS562(C)	NHRF109	25.7	2	1	14.1	4	0	14.7	3	0
9	VL2041(I)(C)	NHRF102	26.7	1	1	14.3	3	0	11.9	7	0
G.M.			21.8			12.3			13.5		
S.E.(M)			1.022			0.761			1.156		
C.D. (10%)			2.4			1.8			2.8		
C.V.			11.5			15.1			19.2		
D.O.S.(dd.mm.yy)			18.10.22			17.10.22			31.10.22		

Trials not reported (03) = Almora (LSM), Gaja (LSM), Imphal (LSM)

2221-AVT-IR-TS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P			UTK		
			Nagina			Dehradun		
			Yield	Rk	G	Yield	Rk	G
1	HD3386*	NWTS113	46.7	2	0	29.2	8	0
2	UP3102#	NWTS102	41.6	7	0	30.4	5	0
3	DBW386#	NWTS109	42.7	6	0	26.2	13	0
4	HD3470M	NWTS101	39.8	12	0	30.4	7	0
5	HD3471M	NWTS112	36.3	13	0	31.6	3	1
6	PBW887	NWTS106	41.4	9	0	27.9	11	0
7	HI1668	NWTS107	43.0	5	0	28.5	9	0
8	PBW889	NWTS111	40.9	11	0	28.0	10	0
9	HD2967(C)	NWTS103	45.3	4	0	33.6	1	1
10	DBW187(C)	NWTS104	41.4	8	0	30.4	6	0
11	HD3086(C)	NWTS105	46.7	3	0	27.8	12	0
12	DBW222(C)	NWTS110	49.0	1	1	31.6	4	1
13	PBW826(I)(C)	NWTS108	41.4	10	0	31.7	2	1
G.M.			42.8			29.8		
S.E.(M)			0.595			1.234		
C.D. (10%)			1.4			2.9		
C.V.			2.8			8.3		
D.O.S.(dd.mm.yy)			06.11.22			15.11.22		

Trials not reported (03) = Bawal (RMT), Nagina (LSM), Dehradun (LSM)

2222-AVT-IR-LS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P.			UTK		
			Nagina			Dehradun		
			Yield	Rk	G	Yield	Rk	G
1	K2108	NWLS202	30.6	3	0	31.2	1	1
2	PBW893	NWLS205	33.3	1	1	28.2	6	1
3	HD3428	NWLS206	24.9	6	0	31.1	2	1
4	DBW173(C)	NWLS201	32.3	2	1	29.4	3	1
5	HD3059(C)	NWLS203	29.5	4	0	25.2	7	0
6	JKW261(C)	NWLS204	24.4	7	0	29.0	4	1
7	PBW771(C)	NWLS207	26.6	5	0	28.4	5	1
G.M.			28.8			28.9		
S.E.(M)			0.496			1.611		
C.D. (10%)			1.2			4.0		
C.V.			3.4			11.1		
D.O.S.(dd.mm.yy)			15.12.22			15.12.22		

Trials not reported (02) = Nagina (LSM), Dehradun (LSM)

2223-AVT-RI-TS-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (03) = Bawal (RMT), Sriganganagar (RMT), Bulandshahr (RMT)

2231-AVT-IR-TS-TAS-NEPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P. Prayagraj			Jharkhand Dumka			W.Bengal Coochbehar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3388*	NETS106	30.7	4	1	20.8	4	1	32.1	2	1
2	HD3471[M]	NETS101	21.4	9	0	14.8	10	0	0.0	10	0
3	HD3470[M]	NETS103	32.6	2	1	18.8	8	0	26.1	7	0
4	DBW386[#]	NETS108	30.9	3	1	22.7	3	1	28.1	5	0
5	DBW187(C)	NETS104	35.9	1	1	20.5	5	1	21.4	9	0
6	HD3086(C)	NETS105	27.3	8	0	24.0	1	1	30.3	4	0
7	DBW222(C)	NETS107	27.6	6	0	20.5	6	1	31.8	3	1
8	HD2967(C)	NETS109	20.8	10	0	17.2	9	0	22.7	8	0
9	HD3249(C)	NETS110	27.6	6	0	22.9	2	1	27.6	6	0
10	PBW826(I)(C)	NETS102	30.2	5	1	20.3	7	1	32.7	1	1
	G.M.		28.5			20.2			28.1		
	S.E.(M)		3.442			2.099			0.945		
	C.D. (10%)		8.3			5.1			2.3		
	C.V.		24.2			20.7			6.7		
	D.O.S.(dd.mm.yy)		19.11.22			14.11.22			07.11.22		

Trials not reported (04) =Sabour (RMT), Prayagraj (LSM, LS), Dumka (LSM), Coochdehar (LSM)

2241 - AVT-IR-TS-TAD-CZ , 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat Dhandhuka			U.P. Jhansi		
			Yield	Rk	G	Yield	Rk	G
1	GW547*	CZTS103	31.1	9	0	63.2	8	0
2	NWS2194[#]*	CZTS104	34.8	5	0	62.2	9	0
3	HI1670[Q]	CZTS108	37.8	2	0	71.5	1	1
4	HI1669	CZTS101	36.3	4	0	71.2	2	1
5	UAS3020	CZTS107	37.7	3	0	67.0	6	1
6	GW513(C)	CZTS105	32.4	8	0	70.0	3	1
7	HI1636(C)	CZTS109	32.4	7	0	66.1	7	1
8	GW322(C)	CZTS110	42.6	1	1	56.8	10	0
9	HI1650(I)(C)	CZTS102	34.5	6	0	68.2	5	1
10	MACS6768(I)(C)	CZTS106	30.7	10	0	68.6	4	1
	G.M.		35.0			66.5		
	S.E.(M)		0.475			3.298		
	C.D. (10%)		1.1			7.9		
	C.V.		2.7			9.9		
	D.O.S. (dd.mm.yy)		04.11.22			24.11.22		

Trials not reported (03) = Jabalpur (RMT), Dhandhuka (LSM), Jhansi (LS)

2242 - AVT-IR-LS-TAD-CZ , 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat SK Nagar		
			Yield	Rk	G
1	MP3557[#]	CZLS207	25.6	8	0
2	HI1674	CZLS204	41.5	1	1
3	HI1673	CZLS205	27.7	7	0
4	HI1675	CZLS206	20.9	10	0
5	AKAW5104	CZLS208	29.6	5	0
6	CG1029 (C)	CZLS201	31.9	2	0
7	MP4010 (C)	CZLS202	21.3	9	0
8	HD2932 (C)	CZLS203	31.2	3	0
9	HI1634 (C)	CZLS209	28.5	6	0
10	Filler	CZLS210	31.0	4	0
	G.M.		28.9		
	S.E.(M)		2.3		
	C.D. (10%)		5.507		
	C.V.		15.8		
	D.O.S. (dd.mm.yy)		08.12.22		

Trials not reported (03) = Jabalpur (RMT), Raipur (RMT), S.K.Nagar (LSM, HCV)

2233-AVT-RI-TS-TAS-NEPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Jharkhand Dumka		
			Yield	Rk	G
1	DBW398	NERI306	19.6	4	0
2	HI1612(C)	NERI301	22.7	2	1
3	HD3171(C)	NERI302	23.6	1	1
4	K1317(C)	NERI303	17.0	6	0
5	HD3293(C)	NERI304	19.3	5	0
6	DBW252(C)	NERI305	21.7	3	1
G.M.			20.7		
S.E.(M)			1.440		
C.D. (10%)			3.6		
C.V.			13.9		
D.O.S.(dd.mm.yy)			14.11.22		

Trials not reported (01) = Dumka LS)

2243- AVT-RI-TS-TAD-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (02) = Jabalpur (RMT), Raipur (RMT)

2251 - AVT-IR-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra Karad Yield	Rk	G
1	MP1378*	PZTS112	56.1	6	1
2	PBW891#	PZTS101	48.5	18	0
3	HD3469[B]	PZTS104	49.7	17	0
4	DBW444[B]	PZTS106	42.0	23	0
5	DBW443[B]	PZTS123	53.6	8	0
6	NIAW4153	PZTS12	54.4	7	1
7	AKAW5100	PZTS105	43.0	22	0
8	UAS3020	PZTS107	56.8	4	1
9	HI8841(d)	PZTS108	60.4	2	1
10	WH1306	PZTS109	51.2	14	0
11	MACS6809	PZTS110	50.0	16	0
12	AKAW5314	PZTS114	50.2	15	0
13	NIAW4183	PZTS115	47.7	20	0
14	PWU15	PZTS117	40.3	24	0
15	UAS3021	PZTS119	57.0	3	1
16	MP1386	PZTS120	52.6	12	0
17	NWS2222	PZTS121	52.5	13	0
18	MACS6811	PZTS122	56.5	5	1
19	GW322(C)	PZTS103	52.8	11	0
20	DBW187(C)	PZTS116	48.4	19	0
21	MACS6222(C)	PZTS118	44.8	21	0
22	MACS3949(d)(C)	PZTS113	53.5	9	0
23	HI8826(d)(I)(C)	PZTS124	60.7	1	1
24	MACS4100(d)(I)(C)	PZTS111	53.3	10	0
	G.M.		51.5		
	S.E.(M)		2.506		
	C.D. (10%)		7.1		
	C.V.		9.7		
	D.O.S.(dd.mm.yy)		23.11.22		

Trials not reported (02)=Akola (RMT),Karad (LS)

2252 - AVT-IR-LS-TAS-PZ, 2022-23
LOCATIONWISE MEAN YIELD

SN	Variety	Code	Karnataka Nippani Yield	Rk	G
1	MP3556[#]	PZLS218	36.8	18	0
2	PBW897[Q]	PZLS219	36.7	19	0
3	MP1388	PZLS201	31.3	24	0
4	GW538	PZLS203	48.6	8	1
5	DBW395	PZLS205	47.6	9	1
6	MACS6805	PZLS206	46.9	11	1
7	HI1672	PZLS207	51.1	4	1
8	HI1674	PZLS208	37.2	17	0
9	UAS3023	PZLS209	46.3	14	1
10	AKAW5104	PZLS210	36.3	21	0
11	LOK79	PZLS211	36.3	21	0
12	HI1675	PZLS212	36.7	19	0
13	MP3557	PZLS215	39.4	16	0
14	NIAW4120	PZLS216	49.0	6	1
15	GW542	PZLS217	57.1	1	1
16	WH1310	PZLS220	46.9	11	1
17	HI1673	PZLS221	46.7	13	1
18	MACS6814	PZLS222	36.1	23	0
19	NIAW4114	PZLS224	48.8	7	1
20	DBW394	PZLS225	49.6	5	1
21	HD3090(C)	PZLS202	45.9	15	1
22	HD2932(C)	PZLS204	53.8	2	1
23	RAJ4083(C)	PZLS213	51.7	3	1
24	HI1633(C)	PZLS223	47.6	9	1
	G.M.		44.3		
	S.E.(M)		5.745		
	C.D. (10%)		16.2		
	C.V.		25.9		
	D.O.S.(dd.mm.yy)		15.12.22		

Trials not reported (03) = Akola (RMT), Ugar-Khurd (RMT), Nippani (HCV)

2253-AVT-RI-TS-TAD-PZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra Pune Yield	Rk	G	Parbhani Yield	Rk	G
1	NIAW4028[#]*	PZRI302	24.3	9	0	31.6	1	1
2	DBW359*	PZRI306	27.9	4	1	27.0	3	0
3	HI1665*	PZRI307	29.7	2	1	25.0	5	0
4	UAS478(d)*	PZRI305	26.2	8	0	19.2	9	0
5	HI8840(d)*	PZRI312	27.0	6	0	16.6	12	0
6	DBW397[Q]	PZRI303	29.0	3	1	27.2	2	0
7	UAS481(d)	PZRI304	23.6	10	0	18.8	10	0
8	DDW61(d)	PZRI308	19.8	12	0	22.2	7	0
9	NIAW3170(C)	PZRI301	30.0	1	1	22.5	6	0
10	HI1605 (C)	PZRI310	26.6	7	0	25.3	4	0
11	NIDW1149(d)(C)	PZRI309	27.9	5	1	21.4	8	0
12	UAS446(d)(C)	PZRI311	20.5	11	0	18.4	11	0
G.M.			26.0			22.9		
S.E.(M)			1.048			1.061		
C.D. (10%)			2.5			2.5		
C.V.			8.0			9.3		
D.O.S.(dd.mm.yy)			05.11.22			05.11.22		

Trials not reported (03) = Akola (RMT), Pune (LSM), Parbhani (LSM)

2261-SPL-HYPT-IR-ES-TAS-NWPZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (01) = Sriganganagar (RMT)

2262-SPL-HYPT-IR-ES-TAS-CZ, 2022-23
LOCATIONWISE MEAN YIELD (q/ha)

Trials not reported (02)= Bilaspur (RMT), JNKVV-Jabalpur (RMT)

Appendix - II

Zonal Monitoring Reports

Zonal Monitoring Report 2022-23

Zone: NHZ - Team - I

Period of visit: 17.04.2023 to 20.04.2023

Name of team members:	Centres Visited:
Drs. Chuni Lal, DP Walia, Vijay Rana and Ravindra Kumar	Shimla, Bajaura and Malan

Summary of Breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark*
Shimla	AVT-RF-TS, IVT-RF-TS	All trials conducted.	Very Good & Satisfactory
Bajaura	AVT-RF-TS, IVT-RF-TS	All trials conducted.	Very Good & Satisfactory
Malan	AVT-RF-TS, IVT-RF-TS	All trials conducted.	Very Good & Satisfactory

***Trials as very good, good, average and poor based on conduction*

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
AVT-RF-TS	NHRF 106, NHRF 108, NHRF 102	Observations are based on appearance of the genotype and plant stand etc.
IVT-RF-TS	NHIVT 211, NHIVT 213, NHIVT 204, NHIVT 226, 224	

Entries recommended for purification:

Trial	Entry	Remark
AVT-RF-TS	-	Variation in plant height and glume colour were observed and it was presumed that these entries can be purified by roughing off these few plants. Hence recommended for purification.
IVT-RF-TS	NHIVT 206, NHIVT 208, NHIVT211	

Entries recommended to be dropped from further testing: Nil

Entries exhibiting higher diseases incidence / insect infestation:
AVT-TS-RF: NHRF 101 (40S), NHRF 105 (40S), NHRF 109 (40S) for yellow rust
IVT-TS-RF: NHIVT 207 (60S), NHIVT 218 (60S), NHIVT 220 (60S), NHIVT 221 (60S), NHIVT 217 (40S) for yellow rust

Report on Agronomical Trials:

Centre	Trial	Trials Not Conducted / Rejected	Remark
Shimla	SPL -5	Successfully Conducted	Treatment effects were visible among treatments
Bajaura	SPL-1	Conducted successfully	Treatment effects were visible among treatments
	SPL-3	Conducted successfully	Treatments effects were seen. However, effects of nano urea treatments were not apparent
Malan	SPL-1	Conducted successfully	Treatment effects were visible among treatments
	SPL-3	Conducted successfully	Treatments effects were seen. However, effects of nano urea treatments were not apparent

Report on Pathological Nurseries:

Centre	Nursery	Remark
Bajaura	IPPSN, PPSN	Nurseries were conducted satisfactorily at both locations. Yellow rust data was recorded on advanced wheat lines. Yellow rust severity in infectors ranged from 60S to 80S. However, severity on some tested entries was 80S.
	HBSN	Conducted successfully, stage expression of symptoms awaited
Malan	IPPSN, PPSN	Nurseries were conducted satisfactorily at both locations. Yellow rust data was recorded on advanced wheat lines. Yellow rust severity in infectors ranged from 40S to 60S. However, severity on some tested entries was 80S.
	PMSN	Successfully conducted with epiphytotic conditions and data recorded

Special comments, if any (2-3 bullet points only):

- Some of the entries showed early maturity due to sowing of late sown and timely sown entries in the month of October simultaneously. It was unanimous view of the Zonal Monitoring Team that both the trials may be conducted separately for judging the full potential of the genotypes.
- The conditions for expression of yellow rust and powdery mildew were found very much congenial for screening at Bajaura and Malan centres of NHZ.

Signature(s):

Sd/- **Sd/-** **Sd/-** **Sd/-**
(Dharam Pal) **(Vijay Rana)** **(Ravindra Kumar)** **(Chuni Lal)**

Team-II

Period	Team	Centres visited
18-21st April 2023	Drs CN Mishra, Jogendra Singh and Pramod Prasad	Dehradun (NWPZ), Gaza, Almora, Majhera,Pantnagar

Breeding trials allocated & monitored:

Centre	Trial	Remark
Dehradun	AVT-IR-TS-TAS and AVT-IR-LS-TAS,	**Good**
Gaza	AVT-RF-TS and IVT- RF -TS	**Good, except Rep 4 of IVT RF**
Almora	AVT-RF-TS and IVT- RF -TS	**Good**
Majhera	AVT-RF-TS and IVT- RF -TS	**Excellent**

Trials not conducted/rejected by monitoring team: All trials were conducted

Trials Rejected

Centre	Trial	Remark
Gaza	IVT- RF –TS Replication 4	**Rejected Due to poor Plant Population**

Entries showing promising performance in breeding trials:

Trial	Entry
IVT- RF -TS	NHIVT201, NHIVT214

Entries recommended for purification

Trial	Entry	Remarks
AVT-RF-TS	NHRF-101, NHRF-107	Mixture/ off types /variation in plant height
IVT- RF -TS	NHIVT-202, NHIVT-204, NHIVT-206, NHIVT-206,	

Entries recommended to be dropped from further testing: NIL

Entries showing high disease incidence in breeding trials

Trial	Entry	Gaza	Almora	Majhera
AVT-RF-TS	**NHRF-104**	YI-40S	YI-5S	-
	NHRF-105	-	-	Br-20S

	NHRF-109	Yl-5S	Br-5S	Yl-10S; Br-10S
IVT- RF -TS	**NHIVT-216**	Br-5S	Br-10S	Br-10S
	NHIVT-220	Yl-30S	Yl-5S	
SPL ASN	**NHIVT-223**	Yl-10S	Yl-5S; Br10S	Yl10MS

Report on Pathological Nurseries:

Centre	Nursery	Remarks
Almora	IPPSN, PPSN	The conduction of all pathological nurseries, including WDMN and SAARC-WDMN, allocated to VPKAS was satisfactory. Excellent epiphytotic conditions were maintained for screening of stripe and leaf rust resistance in IPPSN and PPSN entries. The stripe rust severity was more than 30S in several entries of IPPSN and PPSN.

Special comments, if any

1. Since wheat and barley trials phonological stages are different separate monitoring teams should be constituted for each crop.
2. The team also visited the breeding programmes at VPKAS Almora and GBPUAT Pantnagar.
3. Pathological nurseries may also be allotted to Gaza center.

CN Mishra (ICAR-IIWBR, Karnal) | Jogendra Singh (ICAR-IIWBR, Karnal) | Pramod Prasad (IIWBR RS-Shimla)

Zone: North Western Plains Zone

Team-I

Period of visit: February 2-5 March, 2023

Name of Team Members	Centres Visited
Dr Hanif Khan, Sr. Scientist, ICAR-IIWBR Karnal Dr Santosh Bishnoi, Scientist, ICAR-IIWBR, RS Hisar Dr P.S. Shekhawat, Associate Prof. Plant Pathology, RARI Durgapura Dr Bhagat Singh, Agronomist, CCS-HAU, Hisar (Did Not Join the Monitoring)	ARS Sriganganagar (SKRAU, Bikaner), RARI Durgapura (SKNAU, Jobner), CCS HAU regional Station Bawal, IARI, New Delhi

Summary of breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Trials Rejected by Monitoring Team	Reason/Remark*
Sriganganagar	NIVT-1A, NIVT-1B, NIVT-3A, NIVT 5A, NIVT 6, AVT-IR-TS, AVT- RI-TS & SPL–HYPT	NIVT-1A, NIVT-1B, NIVT-5A, NIVT-6, AVT- RI-TS & SPL-HYPT	Rejected due to low plant populations and date of sowing (15/11/2022) after the prescribe date. NIVT-5A and AVR-RI-TS rejected due to 2 irrigations
Durgapura	NIVT-1A, NIVT-1B, NIVT-3A, NIVT 5A, NIVT 6, AVT-IR-TS, AVT- RI-TS & SPL–HYPT	-	All trials were very good.
Bawal	AVT-RI-TS & AVT-IR-TS	AVT-RI-TS & AVT-IR-TS	Rejected due to low plant population and severe bird damage.
IARI, New Delhi	NIVT-1A, NIVT-1B, NIVT-3A, NIVT 5A, NIVT 6, AVT-IR-TS, AVT- RI-TS & SPL–HYPT	-	All the trials were conducted very well.

***Evaluate trials as very good, good, average and poor based on conduction*

Entries showing promising performance in breeding trials across the centres:

Trial	Entry
NIVT-1A	N119, N128 & N129
NIVT-1B	N201, N204, N207, N213, N214, N217, N221, N222 & N227
NIVT-3A	N403, N406, N411, N418, N422, N433 & N435
NIVT-5A	N702, N707, N711 & N724
NIVT-6	N905, N907, N924, N925& N934
AVT-IR-TS-NW	NWTS102, NWTS104, NWTS106, NWTS110 & NWTS112
AVT-RI-TS-NW	NWRI301 & NWRI309
AVT-IR-LS-NW	NWLS207
SPL–HYPT-NW	HYPT101 & HYPT106

Entries recommended for purification:

Trial	Entry	Remark
NIVT-1A	N105, N106, N109, N112, N114, N122, N123, N126, N134, N135 & N136	Off types/ segregants were found and need to be purified.
NIVT-1B	N203, N210, N216, N218, N228, N230, N231, N233 & N236	
NIVT-3A	N419	
NIVT-5A	N701, N703, N722, N723 &N725	
NIVT-6	N911, N916, N920, N822, N925, N926, N927 & N929	
AVT-IR-TS-NW	NWTS101, NWTS105, NWTS108, WTS109, NWTS110, NWTS111 & NWTS113	
AVT-RI-TS-NW	NWRI302, NWRI303, NWRI304, NWRI306, NWRI309, NWRI310 & NWRI311	
AVT-IR-LS-NW	-	
SPL–HYPT-NW	HYPT105 & HYPT107	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-5A	N716	High variation in maturity and spike colour.

Entries exhibiting higher diseases incidence /insect infestation:

Centre	Trial	Entry	Remark
Sriganganagar	NIVT 6	N904	Yellow rust 40S
Durgapura	NIVT 3A	N432	Yellow rust 40S
Durgapura	AVT-IR-TS	NWTS103	Yellow rust 40S
Delhi			

Report on Agronomical Trials:

Trials name	ARS, Sriganganagar	RARI, Durgappura	IARI, New Delhi
IR-TS-DOS-TAS	Very good	Very good	Very good
RIR-LS-TAS	Very good	Very good	Good
SPL-1	-	Very good	-
SPL-2	-	Very good	Good

Pathological Observations

Epiphytotic creation for yellow and brown rust on infector lines around IPPSN and PPSN and other pathological nurseries was excellent at Durgapura and New Delhi Centres.

High rust incidence (40S & >40S) in **PPSN** entries at Durgapura was as under.

Name of nursery	Yellow Rust		Brown Rust	
	Rust Score	Entry number	Rust Score	Entry number
AVT	40S	37, 46, 48, 50, 56, 58, 63, 72, 73, 74, 91, 93, 105, 107, 119 &130	40S	43, 57 & 80
	60S	47, 53, 66, 77, 92, 98, 99, 106,109 & 115	60S	-
NIVT	40S	71, 74, 78, 79, 83, 84, 86, 89, 91, 92, 93, 97,99, 100, 101, 133,137,139, 142, 144, 149, 151, 153, 155, 156, 158, 161, 164, 165, 217, 218, 227, 228,	40S	-

		229, 231, 232, 236, 245, 262, 267, 270, 296 & 300.		
	60S	76, 90, 98, 102, 143, 154, 160, 226, 235, 244, 265, 268	60S	-
	80S	72, 88, 230 & 269	80S	-

Special comments, if any (2-3 bullet points only)

- Overall performance of special, early and timely sown trials was very good.
- The breeder & nucleus seed production program was also monitored at Durgapura center, which was satisfactory.
- The sick field developed for the screening of Cereal Cyst Nematode at Durgapura was excellent.
- The field selected for the conduction of trials at Bawal station was not good.
- At present, Sriganganagar station is not in capacity to conduct more than three trials, therefore, only three trails may be allotted for proper conduction.

Signatures

(Hanif Khan) **(S.K. Bishnoi)** **(P.S. Shekhawat)**

Team -2

Period of visit: 13.03.2023 to 16.03.2023

Name of team members:	**Centres Visited:**
Drs VS Sohu, PL Kashyap, Kiran Gaikwad and Satish Kumar	Jammu, Gurdaspur, BISA-Ludhiana, PAU-Ludhiana and Bathinda

Summary of Breeding trials allocated& monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark*
Jammu	NIVT3A, NIVT5A, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were conducted	Good
Gurdaspur	NIVT1A, NIVT1B, NIVT3A, NIVT5A, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were conducted nicely	Very Good
BISA-Ludhiana	NIVT6, SPL-HYPT	All trials were conducted nicely	Very Good
PAU-Ludhiana	NIVT1A, NIVT1B, NIVT3A, NIVT5A, NIVT6, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT	All trials were conducted nicely	Very Good
Bathinda	Barley Trials	All trials were conducted nicely	Very Good

Evaluate trials as very good, good, average and poor based on conduction

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
NIVT 1A	N108, N121, N123, N125, N129, N133	Excellent plant stand, Uniformity, Luxurious growth
NIVT 1B	N201, N209, 2012, N213, N214, N215, N224, N226, N230,N235	
NIVT 3A	N401, N405, N408, N418, N426	
NIVT 5A	N718, N719, N721, N722	
NIVT 6	N904, N905, N909, N912, N926, N935	
AVT-IR-TS	NWTS104, NWTS106, NWTS107, NWTS110	

AVT-IR-LS	NWLS205	
AVT-RI-TS	NWRI304, NWRI309, NWRI311	
SPL-HYPT	SPL-HYPT-104	

Entries recommended for purification:

Trial	Entry	Remark
NIVT 1A	N101, N102, N105, N109, N112, N122, N134	Two types of plants, off types, maturity difference in few plants, spike shape, plant height
NIVT 1B	N204, N216, N225, N228	
NIVT 3A	N415, N420	
NIVT 5A	N702, N708, N714, N720, N723	
NIVT 6	N908, N910, N914, N917, N918, N922, N927, N931, N933, N936	
AVT-IR-TS	NWTS102, NWTS105, NWTS107, NWTS113	
AVT-IR-LS	NWLS203, NWLS204	
AVT-RI-TS	NWRI310, NWRI312	
SPL-HYPT	SPL-HYPT-104, SPL-HYPT-105, SPL-HYPT-106	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 1A	N120	Segregating types, with more than one type of plants. Differences in flowering, height, maturity etc.
NIVT 1B	N211	
NIVT 3A	N423, N424	
NIVT 5A	N701, N716, N725	
NIVT 6	N928	

Entries exhibiting higher diseases incidence /insect infestation:
Low to medium incidence of yellow and brown rusts was observed on some entries in breeding trial across all the centres monitored

Report on Agronomical Trials:

Centre	Trial(s) allotted and conducted	Remark
Jammu	IR-TS-DOS-TAS, RIR-TS-TAS, SPL-1, SPL-2 & SPL-5	All the trials were conducted properly. Fourth replication of IR-TS-DOS-TAS trial was recommended for rejection due to less germination and poor plant stand in second (D2) date of sowing
Gurdaspur	IR-TS-DOS-TAS, RIR-TS-TAS, SPL-1, SPL-2, SPL-4 & SPL-5	All the trials were conducted properly and performance was very good.
Ludhiana	IR-TS-DOS-TAS, RIR-TS-TAS, SPL-1, SPL-2, SPL-4 & SPL-5	All the trials were conducted properly and performance was very good.

Report on Pathological Nurseries:

Centre	Nursery	Remark
Jammu	IPPSN, PPSN	The conduct of these nurseries was very good. The yellow rust infection was recorded up to 80S on infectors and in few entries. The brown rust infection was also recorded up to 60S.
Gurdaspur	IPPSN, PPSN	
Ludhiana	IPPSN, PPSN	

Special comments, if any (2-3 bullet points only)

--

Signatures

(VS Sohu) (PL Kashyap) (Kiran Gaikwad) (Satish Kumar)

Team -3

Period of visit: **20.03.2023 to 22.03.2023**

Name of team members:	Centres Visited:
Drs. BS Tyagi, SC Gill, OP Gangwar and Vikas Gupta	Karnal, Modipuram, Nagina, Pantnagar and Bulandshahr

Summary of Breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark *
Karnal	NIVT1A, NIVT1B, NIVT3A, NIVT5A, NIVT6, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT	All trials were Conducted nicely	Excellent
Modipuram	NIVT1A, NIVT3A, NIVT5A, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT	All trials were Conducted nicely	Very Good
Nagina	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were Conducted nicely, due to untimely rains, rainwater was standing in all the trials	Very Good
Pantnagar	NIVT1A, NIVT3A, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS,	All trials were Conducted nicely	Very Good
Bulandshahr	NIVT1B, NIVT5A, NIVT6, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	Trials NIVT5A, NIVT-6 and AVT-RI-TS were rejected.	Late planting (14.11.2022) and also faulty layout for NIVT-5A

***Evaluate trials as very good, good, average and poor based on conduction*

Entries showing promising performance in breeding trials across centres:

NIVT 1B	N213, N221, N228, N235
NIVT 3A	N405, N428, N430
NIVT 5A	N717, N720, N722
NIVT 6	N920, N935, N936
AVT-IR-TS	NWTS101, NWTS110
AVT-IR-LS	NWLS202, NWLS207
AVT-RI-TS	NWRI303, NWRI306
SPL-HYPT	SPL-HYPT-104, SPL-HYPT-105

Entries recommended for purification:

Trial	Entry	Remark
NIVT 1A	N106, N122, N135	Mixture / off types /variation in plant height
NIVT 1B	N211, N216, N225	
NIVT 3A	N403, N423, N424	
NIVT 5A	N702, N708, N714, N720	
NIVT 6	N914, N917, N927	
AVT-IR-TS	NWTS105, NWTS109, NWTS113	
AVT-IR-LS	NWLS204, NWLS206	
AVT-RI-TS	NWRI304, NWRI312	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 1A	N120	Segregating in entries, height and plant type variation
NIVT 1B	N208	
NIVT 3A	N423, N424	
NIVT 5A	N701, N716, N725	
NIVT 6	N918, N936	

Entries exhibiting higher diseases incidence /insect infestation:

Trial	Entry
NIVT 1A	N121 (Br-30S)
NIVT 1B	N213 and N236 (Br-40S)
NIVT 3A	N407(Yl-40S), N432 (Yl-60S)
NIVT 5A	N709, N717, N719 and N721 (Br-40S)
NIVT 6	N915(Yl-40S), N935 (Br-40S)
AVT-IR-TS	NWTS103 (Yl-40S), NWTS105 (Br-60S)
AVT-IR-LS	NWLS207 (Yl-40S)
AVT-RI-TS	NWRI308 (Br-30S)

Report on Agronomical Trials:

Centre	Trial(s) allotted and conducted	Remark
Karnal	IR-TS-DOS-TAS, RIR-TS-TAS, SPL-2 and SPL-3	All the trials were conducted nicely and performance was very good.
Pantnagar	IR-TS-DOS-TAS, RIR-TS-TAS, SPL-2, SPL-3 and SPL-4	

Report on Pathological Nurseries:

Centre	Nursery	Remark
Karnal	IPPSN, PPSN	The conduct of these nurseries was satisfactory. The yellow and brown rust infection was recorded up to 80S on infectors. The disease spread was satisfactory in the nurseries at both locations.
Pantnagar	PPSN	

Special comments, if any (2-3 bullet points only)

1. Lodging was reported in almost all trials at Modipuram, Nagina (except AVT-RI trial) and Bulandshahr due to untimely rains.

Signatures

(BS Tyagi) (SC Gill) (OP Gangwar) (Vikas Gupta)

Zone:North Eastern Plains Zone (NEPZ)

Team-I

Period	Team	Centres visited	
10-14th March, 2021	Drs CN Mishra, HR Saharan, PK Gupta and Dr Hari Krishna	Kanpur, Saini, Naini, Varanasi and Ayodhya	

Breeding trials allocated & monitored:

Centre	Trial	Remark
Kanpur	NIVT1A, NIVT1B, NIVT3A, NIVT 5A and AVT-IR-TS-TAS, AVT-RI-TS-TAS,	**Good except NIVT3A,**
Naini	NIVT1B, AVT-IRTS and AVT RI TS	**Good , Except Rep-1 of AVT-IR-TS**
Varanasi	NIVT1A, NIVT1B, NIVT3A, NIVT 5A and AVT-IR-TS-TAS, AVT-RI-TS-TAS,	**Good**
Ayodhya	NIVT1A, NIVT1B, NIVT3A, and AVT-IR-TS-TAS,	**Good**

Trials not conducted/rejected by monitoring team: All trials were conducted

Centre	Breeding Trial	Remark
Kanpur	NIVT3A	Rejected due to poor plant stand, and improper plot size.
Naini	AVT-IRTS	Replication 1 of the trial is rejected due to poor plant stand
Centre	**Agronomy Trial**	**Remark**
Ayodhya	SPL-3	Conducted under irrigated conditions

Entries showing promising performance in breeding trials:

Trial	Entry
AVT-IR-TS-TAS,	NE-TS-104 and 110
AVT-RI-TS-TAS	NE-RI-303
NIVT1A	N-126; N-128
NIVT1B	N-221; N-223
NIVT3A	N-409; N-410
NIVT5A	N-708; N-715

Entries recommended for purification

Trial	Entry	Remarks
NIVT-1A	N-113 and N-120,	Mixture/ off types /variation in plant height
NIVT-1B	N-202, N-203, N-212, N-216, N-227,	
NIVT-3A	N-415, N-420, N-422	
NIVT-5A	N-704, N-706, N-718, N-723 and N-724	
AVT-IR-TS	NETS103	
AVT-RI-TS	NERI304, NERI305	

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-1A	N-122 and N-135	Segregation for plant height / ear type/ maturity
NIVT-1B	N-211, N-218 and N-225	
NIVT-3A	N-403, N-423, N-424 and N-434	
NIVT-5A	N-701, N-716 and N-725	

Entries showing high disease incidence in breeding trials

Trial	Entry	Kanpur	Varanasi	Ayodhya	Naini
AVT-RI-TS	NERI302				40S
NIVT1A	N-112	40S			
NIVT1B	N-236	40S	40S	20S	20S
NIVT5A	N-702	40S	20S		
	N-717	60S	20S		
SPL ASN	SPL-ASN07			40S	

Report on Agronomical Trials:

1. All the allotted agronomic trials were conducted as per the work plan except SPL-3 at Ayodhya center (rejected) and the performance was satisfactory.

Report on Pathological Nurseries:

Centre	Nursery	Remarks
Kanpur	IPPSN, PPSN	Nursery was conducted well and brown rust development was observed in few entries (AVT13, 36, 43, 56, 57, 130) and infectors
Varanasi	IPPSN, LBSN	Nursery was conducted well and heavy incidence of blight was observed in infector rows
Ayodhya	IPPSN. PPSN and LBSN	Nursery was conducted well rust and foliar blight development was observed in few entries and checks

Special comments, if any

1. Since wheat and barley trials phonological stages are different separate monitoring teams should be constituted for each crop.
2. The team also visited the breeding programmes at different centers.
3. In agronomical trials the choice of varieties should be in consultation with the breeding group.
4. Since Ayodhya center is conducting all pathological nurseries for brown rust and blight in wheat and barley the priority of the center may be finalized.

			Hari Krishna
CN Mishra	HR Saharan	PK Gupta	
(ICAR-IIWBR, Karnal)	(PAU Ludhiana)	(CSAUAT Kanpur)	(ICAR-IARI New Delhi)

Team-II

Period	Team	Centres visited
4th to 6th March, 2023	Drs AK Sharma, Lokendra Kumar, CS Azad and Deepak Barnwal	Ranchi and Sabour

Breeding trials allocated & monitored:

Centre	Trial	Remark
Ranchi	NIVT1A, NIVT1B, NIVT3A, NIVT 5A and AVT-IR-TS-TAS, AVT-RI-TS-TAS,	Good
Sabour	NIVT1A, NIVT1B, NIVT3A, NIVT 5A and AVT-IR-TS-TAS, AVT-RI-TS-TAS	Good, except NIVT1A, NIVT 1B, AVT-IR-TS-TAS

Trials not conducted/rejected by monitoring team:
All trials were conducted

Centre	Breeding Trial	Remark
Sabour	NIVT1A, NIVT 1B, AVT-IR-TS-TAS	Rejected due to poor plant stand and improper field selection

Entries showing promising performance in breeding trials:

Trial	Entry
AVT-IR-TS-TAS,	NE-TS-104 and 105
AVT-RI-TS-TAS	NE-RI-301
NIVT1A	N 110, N 121, N-126; N-128
NIVT1B	N-221; N-223
NIVT3A	N-409; N-410
NIVT5A	N-708;N-715

Entries recommended for purification

Trial	Entry	Remarks
NIVT-1A	N-106 and N-128,	Mixture/ off types /variation in plant height
NIVT-1B	N-202, N-212, N-216, N-227,	
NIVT-3A	N-420, N-424	
NIVT-5A	N-716, N-718	
AVT-IR-TS	NETS106	
AVT-RI-TS	NERI303	

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-1A	N-122	Segregation for plant height / ear type/ maturity
NIVT-1B	N-211 and N-225	
NIVT-3A	N-414 and N-431	

Report on Agronomical Trials:

1. All the allotted agronomic trials were conducted as per the work plan

Report on Pathological Nurseries:
At Sabour Centre incidence of leaf bight up to 79 was reported in infectors

Centre	Nursery	Remarks
Sabour	IPPSN,	Nursery was conducted well and brown rust development was observed in few entries

Special comments, if any

1. The team also visited the Crossing Block, and other breeding programmes at both the centres.
2. In agronomical trials the choice of varieties should be in consultation with the breeding group.
3. The Ranchi Centre is also evaluating entries of private seed companies was

AK Sharma ICAR-IIWBR, Karnal	Lokendra Kumar ICAR-IIWBR, Karnal	CS Azad BAU Sabour	Deepak Barnwal BAU Sabour

Central Zone

Team I

Period of visit: **13 Feb to 16 Feb 2023**

Name of team members:	Centres Visited:
Dr. Umesh R. Kamble, Dr. Prem Lal Kashyap, Dr. J.M. Patel, Dr. A.G. Pansuriya, Dr. Dinesh Pandey, Dr. Jogendra Singh	SK Nagar, Vijapur, Anand, Dhandhuka, Sanosara and Junagadh

Summary of Breeding trials allocated& monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark*
SK Nagar	NIVT-2, 3B, 4, 5B, AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS	Nil	Trial conduction: good Lodging of crop is observed in NIVT-2 (301, 302, 303, 307, 308, 309, 311, 312, 314, 317, 319, 321, 323, 326, 328, 334), NIVT-4 (622), AVT-IR-TS (101, 108, 109)
Vijapur	NIVT-2, 3B, 4, 5B, 6, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT DHTT, 40th AWSN, 3rdIYPTE, NGSN, 43nd ESWYT, 21st HTWYT, 30th SAWYT, 55th IBWSN, 54th IDYN, 46th IDY	Nil	Trial conduction: Very Good
Anand	AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS	Nil	Trial conduction: Good
Dhandhuka	NIVT-4, AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS	Nil	Trial conduction: Good Plant stand
Sanosara	NIVT-3B, AVT-IR-LS-TAS, 26th SSN, NGSN	NIVT-5B	Trial conduction: Very Good
Junagadh	IVT-2,3B,4,5B,6, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-HYPT, DHTT, NGSN, 26th SSN, 21st HTWYT, 40th SAWSN, DHTSN	Nil	Trial conduction: Very Good

Evaluate trials as very good, good, average and poor based on conduction

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
NIVT 2	N307, N326, N333, N336	Good plant type, Uniformity, and more tillers
NIVT 3B	N 512 and N514	Good plant type, Uniformity, good ear-head, and more tillers
NIVT-4	N602, N 618, 620	Good plant type
NIVT-5B	N 801, N804, N825	Good plant type
NIVT-6	N 908, N903, N 932	Long ear-head, and ideal plant type
AVT-IR-TS	CZTS 107	Early, Uniformity, and good crop stand
AVT-IR-LS	CZLS 208	Good plant type
AVT-RI-TA	CZRI 308 and 306	Long ear-head, and ideal plant type
SPL-HYPT	HYT-204	Good plant type

Entries recommended for purification:

Trial	Entry	Remark
NIVT 2	N302, 324,334	Needs purification due to ear-head and height variation, In NIVT-4, off-types of *aestivum* were observed.
NIVT-3B	N502	
NIVT-4	N623	
NIVT-5B	N802	
NIVT-6	N922, 927 and 928	
AVT-IR-TS	TS 102	
AVT-RI-TS	CZ LS 202	
AVT-RI-TS	N303	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-5B	N815	Ear-head variation, segregation >50% was observed hence recommended to drop from further testing.
NIVT-6B	N913	

Report on Agronomical Trials:

Centre	Trial	Remark
Vijapur	IR-TS-DOS-TAD, SPL-IR-ES-HYPT-SPL-2, SPL-3, SPL-4 and SPL-5	All trials are conducted as per given technical program and found to be managed excellently.
Junagardh	IR-TS-DOS-TAD, SPL-2, and SPL-5	All trials are conducted as per given technical program and found to be managed excellently.
Dhandhuka	SPL-3	Rejected*

*At Dhanduka, due to less plant population under R1, R2 and R3, trial is rejected.

Report on Pathological Nurseries:

Centre	Nursery	Remark
Vijapur	IPPSN, PPSN	Leaf rust and stem rust disease was observed with sufficient inoculum pressure. The inoculum pressure was optimum on infector rows.
Junagadh	PPSN	Leaf rust and stem rust disease was observed with sufficient inoculum pressure. The inoculum pressure was optimum on infector rows.

Report on other nurseries:

Centre	Nursery	Remark
Vijapur	40th SAWSN, 3rd IYPTE, NGSN, 43nd ESWYT, 21st HTWYT, 30th SAWYT, 55th IBWSN, 54th IDYN, and 46th IDYN	All nurseries were well maintained and data is being recorded as per technical program.
Junagadh	DHTT, NGSN, 26th SSN, 21st HTWYT, 40th SAWSN, DHTSN	

Trait specific crosses attempted:

Centre	Number of crosses attempted	Priority traits
Vijapur	Bread wheat: 450 Durum wheat: 268	Bread wheat: sedimentation value. Fe and Zn Durum wheat: β-carotene, protein
Junagadh	Bread wheat: 207 Durum wheat: 63	Bread wheat: heat and drought tolerance; Earliness Durum wheat: black and brown rust resistance, grain quality
Dhandhuka	Durum wheat: 54	Yield and rust resistance
Sanosara	Bread wheat: 80	Drought and earliness

Special comments, if any (2-3 bullet points only)

1. Looking at the sandy soil conditions at SDAU, SK Nagar, sprinkler irrigation under timely irrigated conditions is not suitable as heavy lodging is observed in given trial.
2. Irrigated timely sown trial at Dhandhuka is not feasible due to insufficient irrigation facility

Signature(s)

Dr. Umesh R. Kamble	Dr. Prem Lal Kashyap	Dr. J.M. Patel
Dr. A.G. Pansuriya	Dr. Jogendra Singh	Dr. Dinesh Pandey

Team-II

Period of visit: **14th to 17th February 2023**

Name of team members	Centres Visited
Drs. Vishnu Kumar, RP Meena, Abhay Dashora, Prakasha TL, AP Agrawal andNeeraj Kumar	Raipur, Bilaspur, JNKVV-Jabalpur, BISA-Jabalpur, Sagar, Powarkheda and Indore

Summary of breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark*
Raipur	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	AVT-RI-TS and AVT-IR-LS were rejected	AVT-IR-LS was rejected due to poor plant stand and AVT-RI-TS was rejecteddue to extra irrigations applied
Bilaspur	NIVT-2, NIVT-3B, NIVT-5B, NIVT-6, AVT-IR-TS,AVT-IR-LS, AVT-RI-TS,SPL-HYPT, NGSN	NIVT-6, SPL-HYPT and NGSN wererejected	NIVT-6 and SPL-HYPT were rejected due to excessive rat damage.NGSN was having poor plant stand
JNKVV-Jabalpur	NIVT-2, NIVT-3B, NIVT-5B, NIVT-6, AVT-IR-TS,AVT-IR-LS, AVT-RI-TS,SPL-HYPT, NGSN	NIVT-2, NIVT-3B, NIVT-5B, NIVT-6, AVT-IR-TS, AVT-IR- LS, AVT-RI-TS, SPL-HYPT were all rejected	Very poor plant population nearly in allthe trials
BISA-Jabalpur	NIVT-6, SPL-HYPT	All conducted	Very good
Sagar	NIVT-2, NIVT-5B, AVT-RI-TS, AVT-IR-TS	All conducted	Very good

Powarkheda	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, NIVT-6, AVT-IR-TS, AVT-IR-LS,AVT-RI-TS, SPL-HYPT,NGSN	All conducted	Very good
IARI-Indore	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, NIVT-6, AVT-IR-TS, AVT-IR-LS,AVT-RI-TS, SPL-HYPT,NGSN	All conducted	Very good

***Evaluate trials as very good, good, average and poor based on conduction*

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
NIVT-2	N304, N305, N321, N322, N327	Based on morphological appearance, plant height, spike characters, maturity group and biotic stresses tolerance
NIVT-3B	N506, N514, N519	
NIVT-4	N601, N602, N606, N607, N611, N614, N617, N620, N625	
NIVT-5B	N805, N812, N817, N819, N823	
NIVT-6	N905, N909, N920, N924	
AVT-IR-TS-TAS	CZTS105, CZTS110	
AVT-RI-TS-TAS	CZRI301, CZRI306, CZRI308	
AVT-IR-LS-TAS	CZLS208	
SPL-HYPT	SPL-HYT201, 202, 204, 205	

Entries recommended for purification:

Trial	Entry	Remarks
NIVT-2	N303, 306, 307, 309, 310, 311, 324, 332,333	Off-typeplants for plant height, maturity group and spike variation
NIVT-3B	N501, 502,	Off-type plants for plant height and spike colour variation
NIVT-4	N603, N615, N619	Off-type plants of T. aestivum, plant height and awn colour
NIVT-5B	N804, 811, 818,	Off-type plants for plant height and maturity
NIVT-6	N907, 912, 922, 929, 931, 933	Off-type plants for waxy and non- waxy characters and for plant height
AVT-IR-TS-TAS	CZTS-102, CZTS106	Off-type plants for plant height
AVT-RI-TS-TAS	CZRI-304, 305	Off-type plants for plant height
AVT-IR-LS-TAS	CZLS-202, 205	Off-type plants for plant height
SPL-HYPT	SPL-HYT-203, 204	Off-type plants for plant height

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N302, 308, 315, 331, 334, 335	Plant height and ear head variation
NIVT-4	N610, N623	Spike colour and plant heightvariations
NIVT-5B	802, 815	Variations for spike colour and plant height
NIVT-6	N913, 927, 928	Spike colour, spike waxiness andplant height variations
AVT-RI-TS-TAS	CZRI-303, 307	Spike waxiness, maturity and plant height variations
AVT-IR-LS-TAS	CZLS-204, 207	Variation for spike characters

Report on Agronomical Trials:

Centre	Trial	Remark
Bilaspur	IR-TS-DOS-TAD	Trial conduction was good
	RIR-TS-TAD	Trial conduction was good
	SPL-1	**Rejected:** Similar kind of weed flora and weed infestation in all treatments of all replication, very poor plant population in T12 of rep 2, high weed population in weed free treatment.

	SPL-2	**Rejected**: No visual difference in graded levels of N application along with Nano urea, high weed infestation.
Jabalpur	IR-TS-DOS-TAD	**Rejected**: Very high weed infestation in all treatmentsof all replications, less plant population.
	RIR-TS-TAD	Trial conduction was good
	SPL-IR-ES-HYPT	Trial conduction was good
Jabalpur	SPL-1	**Rejected**: No adequate plant population in all treatments.
	SPL-2	**Rejected**: No adequate plant population, weed infestation in all treatments
BISA-Jabalpur	SPL-IR-ES-HYPT	Trial conduction was very good
Powarkheda	IR-TS-DOS-TAD	Trial conduction was good
	RIR-TS-TAD	**Rejected**: Irrigation water reached through seepage from adjoining channel in zero irrigation treatments in all replications, heavy weed infestation, no gap between plots
	SPL-IR-ES-HYPT	**Rejected**: Heavy weed infestation, poor plant population, no gap between plots.
	SPL-1	Trial conduction was good
	SPL-2	**Rejected**: No visual effect of graded fertilizer treatments including nano urea, crop without N lookshealthier than crop with N application
Indore	IR-TS-DOS-TAD	Trial conduction was very good
	RIR-TS-TAD	Trial conduction was very good
	SPL-1	Trial conduction was very good
	SPL-2	Trial conduction was very good
	SPL-3	Trial conduction was very good
	SPL-5	Trial conduction was very good

Report on Pathological Nurseries:

Centre	Nursery	Remarks
Powarkheda	IPPSN, PPSN	Leaf rust severity was 40S-60S in infector rows and stem rust was 20S-40S. The inoculum pressure wasoptimum on infector rows and disease spread was satisfactory in the nurseries.
Indore	IPPSN, PPSN,	

Special comments, if any (2-3 bullet points only)

- Financial issues were raised by Sagar centre
- At least one row gap between two test entries may be adopted.
- The leaf and stem rust infector mixture of Indore centre was more effective than the infector supplied from ICAR-IIWBR.

Signature(s)

(Vishnu Kumar) 01/03/2023

(AP Agrawal) 14/03/23

(RP Meena) 01/03/2023

(Abhay Dashora) 14/3/2023

(Prakash TL) 03/03/2023

(Neeraj Kumar) 03/03/2023

Peninsular Zone

Team -1

Period of visit: 07.02.2023 to 10.02.2023

Name of team members:	Centres Visited:
Drs Satish Kumar, DA Gadekar, VK Vikas, Pramod Prasad, GM Hegde and KD Lamani	Dharwad, Bagalkot, Kalloli, Ugar-Khurd, Nippani and Karad

Summary of Breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Trials Not Conducted / Rejected	Reason/Remark*
Dharwad	NIVT 2, NIVT 3B, NIVT 4, NIVT 5B, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were Conducted nicely	Satisfactory
Bagalkot	NIVT 3B, NIVT 4, AVT-IR-LS, AVT-RI-TS	All trials were Conducted nicely	Satisfactory
Kalloli	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were Conducted nicely	Satisfactory
Ugar-Khurd	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were Conducted	IR-LS trial was having poor plant stand and hence rejected
Nippani	NIVT 2, NIVT 3B, NIVT 4, NIVT 5B, AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	All trials were Conducted	NIVT 3B was affected by shade and hence rejected. NIVT 5B had poor germination and plant stand, hence rejected.
Karad	AVT-IR-TS, AVT-IR-LS	All trials were Conducted nicely	Satisfactory

***Evaluate trials as very good, good, average and poor based on conduction*

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
NIVT 2	N307, N327	Excellent plant stand, Uniformity, Luxurious growth
NIVT 3B	N509, N512	
NIVT 4	N602, N603, N607, N617	
NIVT 5B	N801, N808, N811, N 812, N820	
AVT-IR-TS	PZTS104, 112, 120	
AVT-IR-LS	PZLS204, 211, 222	
AVT-RI-TS	PZRI302, 303, 309	

Entries recommended for purification:

Trial	Entry	Remark
NIVT 2	N316, 324, 326, 334, 335	Two types of plants, off types, maturity different in few plants, spike shape
NIVT 3B	N507, 516, 521	
NIVT 4	N623	
NIVT 5B	N813, 815, 825	
AVT-IR-TS	PZTS113, 117	
AVT-IR-LS	PZLS208	
AVT-RI-TS	PZRI304, 310, 311	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 2	N302, 311, 329, 333	Segregating types, with more than one type of plants. Differences in flowering, height, maturity etc.
NIVT 5B	N803, 822	
AVT-IR-TS	PZTS106, 116	
AVT-IR-LS	PZLS214	

Entries exhibiting higher diseases incidence /insect infestation: No incidence of rusts reported on any breeding trial across all the centres monitored. Low to medium incidence of FHB was reported in Kalloli.

Report on Agronomical Trials:

Centre	Trial	Remark
Dharwad	IR-TS-DOS-TAD	All the trials were conducted properly and performance was satisfactory.
	RIR-TS-TAD	
	SPL -2	

Report on Pathological Nurseries:

Centre	Nursery	Remark
Dharwad	IPPSN & PPSN	The conduct of these trials was satisfactory. The Leaf rust infection was recorded up to 80S on infectors, while on the test entries it was up to 10S. The stem rust infection was just initiated and recorded up to TMS on infectors. At ARS, Kallolli up to 10 *per cent* FHB incidence was observed in few entries.

Special comments, if any (2-3 bullet points only)

(Satish Kumar) (D A Gadekar) (V K Vikas)

(Pramod Prasad) (G M Hegde) (K D Lamani)

Team - II

Period of visit: **14th to16th February 2023**

Name of team members	Centres Visited
Drs. Charan Singh, RS Chhokar, Yashavantha KJ, Sudhir Navathe, MA Sushir	Pune, Nashik, Niphad, Dhule, Akola, Parbhani

Summary of breeding trials allocated & monitored:

Centre	Trial(s) Allotted	Not Conducted /Rejected	Reason/ Remark*
Pune	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS,AVT-RI-TS-TAD	All conducted	Trail conduction was very good
Nashik	AVT-IR-TS-TAD, AVT-IR-LS-TAS,AVT-RI-TS-TAD	All conducted	Very good
Niphad	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS,AVT-RI-TS-TAD	All conducted	Very good
Dhule	NIVT-2, NIVT-3B, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS	All conducted	Very good
Akola	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS,AVT-RI-TS-TAD	All conducted Rejected: NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS, AVT-RI-TS-TAD	Rejected due to poor crop stand and heavy weed infestation
Parbhani	NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, AVT-IR-TS-TAD, AVT-IR-LS-TAS,AVT-RI-TS-TAD	All conducted	Very good

Evaluate trials as very good, good, average and poor based on conduction

Entries showing promising performance in breeding trials across centres:

Trial	Entry	Remarks
NIVT-2	N302, N307, N314, N322, N328, N332, N336	Based on morphological appearance, plant height, spike characters, maturity group and biotic stresses tolerance
NIVT-3B	N505, N507, N514, N519, N524, N525	
NIVT-4	N606, N609, N612, N615, N620, N622	
NIVT-5B	N801, N806, N812, N816, N825	

AVT-IR-TS-TAD	PZTS102, PZTS103, PZTS108, PZTS109, PZTS119, PZTS123	
AVT-RI-TS-TAD	PZRI305, PZRI306, PZRI307, PZRI310	
AVT-IR-LS-TAS	PZLS201, PZLS203, PZLS204, PZLS208, PZLS210, PZLS211, PZLS212, PZLS222	

Entries recommended for purification:

Trial	Entry	Remarks
NIVT-2	N315, N318, N324, N335	Off-type plants for plant height
NIVT-3B	N516, N517, N520, N521	Off-type plants for plant height
NIVT-5B	N810, N815	Off-type plants for plant height and maturity
AVT-IR-TS-TAD	PZTS105, PZTS106, PZTS117	Off-type plants for plant height

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N331	Plant height and ear head variation
NIVT-5B	N802, N822	Plant height and ear head variation
AVT-IR-LS-TAS	PZLS214	No germination

Entries exhibiting higher diseases incidence/ insect infestation:

Centre	Entry	Remarks
Niphad (AVT-IR-TS-TAD)	PZTS111(SR 40S, LR40S), PZTS120 (SR 20S, LR40S)	Leaf rust & stem rust (40S) was recorded

Report on Agronomical Trials:

Centre	Trial	Remarks
Niphad	IR-TS-DOS-TAD, RIR-TS-TAD SPL-2	All trials were conducted. Trial conduction was very good
Akola	IR-TS-DOS-TAD, RIR-TS-TAD SPL2	RIR-TS-TAD was rejected due to poor stand in no irrigation treatments, SPL 2 was not conducted
ARI, Pune	IR-TS-DOS-TAD, RIR-TS-TAD SPL-1, SPL-2, SPL-5	All trials were conducted. Trial conduction was very good

Report on Pathological Nurseries:

Centre	ry	Remarks
Pune	IPPSN, PPSN	In infector rows LR-40-60S & SR-20-40S was observed. All other plant protection trials/ nurseries were conducted systematically.
Niphad	IPPSN, PPSN	In infector rows LR-60-80S & SR-40-60S was observed. All other plant protection trials/ nurseries were conducted systematically.

Special comments, if any (2-3 bullet points only)

- Very late flowering entries can be avoided at NIVT 3B (N513, N518), and AVT-IR-LS-TAS (PZLS220).
- More emphasis should be given for improvements in trial conduction at Akola center including training of scientific staff.
- *T. dicoccum* trials should be reinstated as the demand for the dicoccum wheat is increasing among farmers and stakeholders.
- Budget allocation for seed drill for precision sowing (Bhopal seed drill) can be provided to different centers.
- No disease incidence was recorded in farmer's field.

Signature(s)

(Charan Singh) (R S Chhokar) (Yashavantha KJ) (Sudhir Navathe) (MA Sushir)

Appendix - III

1. Recording of agro-morphological data
2. Sowing time schedule of coordinated trials

Guidelines for Recording Agro-morphological Characteristics in Coordinated Trials

SN	Characteristics	Method of recording
1.	Days to heading	It is calculated as days taken from sowing to emergence of 75% of ears (spikes) in a plot. Observation on off-type plant(s) should not be considered.
2.	Days to maturity	Total days taken from sowing to maturity when all the plants in the plot show natural senescence and the grains become hard and fit for harvesting.
3.	Plant height	Measured at the time of maturity in centimeters from the ground level upto the terminal spikelet, excluding the awns. Care should be taken to record the measurement from the most commonly representative plants in the plot.
4.	Lodging	It is visually determined in plots per replication and recorded in percentage when plants are bent at more than 30° angle.
5.	1000-grains weight	Bulk harvest of grains from a test entry should be utilized to draw sample(s) for counting grains (500 or 1000 in number) and their weight is recorded in grams using electronic balance. Grain counter may be used, wherever available, for increasing efficiency and precision.
6.	Grain yield per plot	The gross plot grain yield (g plot^{-1}) from all trials (NIVT/IVT/AVT/SPL) should be recorded using electronic balance.

Sowing Time Schedule of Coordinated Yield Trials

Trial Series	NHZ	NWPZ/ NEPZ	CZ/ PZ
AVTS/NIVTs/IVTs			
IR-TS-TAS: AVT/IVT	Nov. 1-15	-	-
RF-TS-TAS: AVT/IVT	Oct. 15-31	-	-
IR-TS-TAS: AVT/NIVT-1A/NIVT-1B	-	Nov. 1-15	-
IR-LS-TAS: AVT/NIVT-3A	-	Dec. 05-15	-
RI-TS-TAS: AVT/NIVT-5A	-	Oct.25-Nov.5	-
IR-TS-TAD: AVT/NIVT-2/NIVT-4	-	-	Nov. 05-15
IR-LS-TAS: AVT/NIVT-3B			Dec. 5-15
RI-TS-TAD: AVT/NIVT-5B	-	-	Oct. 25 - Nov.05
Special Trials			
SPL-SAL/ALK	-	**NWPZ** Nov. 1-15	-
SPL-HYPT- IR-ES-TAS NIVT-6-ES-IR	-	**NWPZ** Oct. 25-Nov.5	**CZ** Nov. 1-10

Appendix - IV

Norms with respect to site mean and coefficient of variation for acceptance/ rejection of coordinated yield trials

Norms w.r.t site mean for conduction of coordinated yield trials

1. The name and parental details of NIVT/IVT and Special trial entries once submitted and finalized in the workshop will not be changed.
2. The test sites of all trials and entries including the checks finalized in the workshop should not be changed.
3. Date of sowing and agronomic practices should be strictly adhered to as given in the planting details supplied with the layout plan of different trials.
4. Seed rate and plot size should not be changed.
5. All rows of the trial entries should be harvested for reporting the gross plot yield.

Norms with respect to site mean and coefficient of variation (CV) for acceptance or rejection of coordinated yield trials

Minimum limit of site mean (Yield in q/ha)

Zone/Trial	Timely sown irrigated condition	Late sown irrigated condition	Timely sown restricted/ rainfed irrigated condition
NHZ	35	-	20
NWPZ	50	40	35
NEPZ	45	35	30
CZ	45	35	30
PZ	45	35	30
Salinity/ Alkalinity	25	-	-
NIVT-6/ HYPT-IR-ES NWPZ & CZ	NWPZ- 65 CZ- 55	-	-

Note:

1. Trial site means for the states of West Bengal and Assam will be 05q/ha less than the zonal mean under all production conditions.
2. Maximum and minimum CV values for trial reporting will be decided by the competent authority.

Appendix-V

Criteria for promotion/retention of varieties under test in Coordinated Wheat Varietal Trials

Criteria for Promotion/Retention of Genotypes in the Coordinated Wheat Varietal Trials

The varieties qualifying for promotion/retention, besides being high yielding as compared to the best check varieties (including latest identified variety), should possess adequate degree of resistance to rusts and other diseases of regional importance and good nutritional and processing qualities. The following criteria are followed to achieve these objectives.

(I) Yield

Varieties which are significantly superior at 10% level of statistical significance to best performing check of the trial in AVT and best zonal check in NIVT/IVT will be considered for promotion/retention.

(II) Resistance to diseases

(A) Rusts

Varieties qualifying from yield point of view must have adequate degree of resistance to rusts under both natural as well as artificial conditions of infection. The average coefficient of infection (ACI) for each of the rusts of importance in the particular zones should be considered in respect of varieties qualifying in yield criteria. Important rusts in each zone are as follows:

NHZ & NWPZ : Yellow and Brown
NEPZ : Brown
CZ & PZ : Brown and Black

When data of rusts from centres is not sufficient to calculate ACI, the intensity of susceptibility to rusts should be considered.

Varieties having reaction marked with an asterisk should be given benefit of doubt for susceptibility to that particular rust and thus should be considered suitable for promotion/retention.

(i) Under natural conditions of rust infection (In coordinated varietal trials) and under artificial conditions of rust infection (in plant pathological screening nurseries)

a) ACI upto 20.0
b) If ACI could not be worked out, maximum susceptibility should not be more than 60S.
c) Varieties with higher susceptibility but marked with asterisk should be given benefit of doubt and therefore not to be rejected on this account.
d) For NEPZ, susceptibility to yellow rust is limited to 60S under natural condition and/ or ACI 20.0 in PPSN

Disease Criteria for Promotion/Retention of Varieties

Varieties qualifying for yield	Reaction to rusts of importance in the zone			
	ACI value available	ACI not available		Varieties having higher readings but marked with asterisk
	Natural / PPSN /IPPSN	Natural	PPSN	Natural conditions/ PPSN
Varieties significantly superior in yield to the best check	Upto 20.0	Upto 60S	May be ignored	To be retained/ promoted
Varieties at par in yield to the best check	Upto 15.0			

(B). Other diseases

Due weightage should be given to other diseases of regional importance such as *leaf blight for NEPZ and Karnal bunt for NWPZ* and varieties with extreme susceptibility shall be avoided from advancement/retention. Varieties at par in yield but showing resistance to wheat blast disease would be promoted/retained.

(III) Quality

Varieties qualifying for yield and disease resistance criteria should have at least 10% protein on dry matter basis. Any such variety having less than 10% protein should not be retained/promoted. Varieties having at par yield to the best check and possess defined quality traits (as per benchmarks recommended by PI-Quality) shall be considered for promotion/ retention.

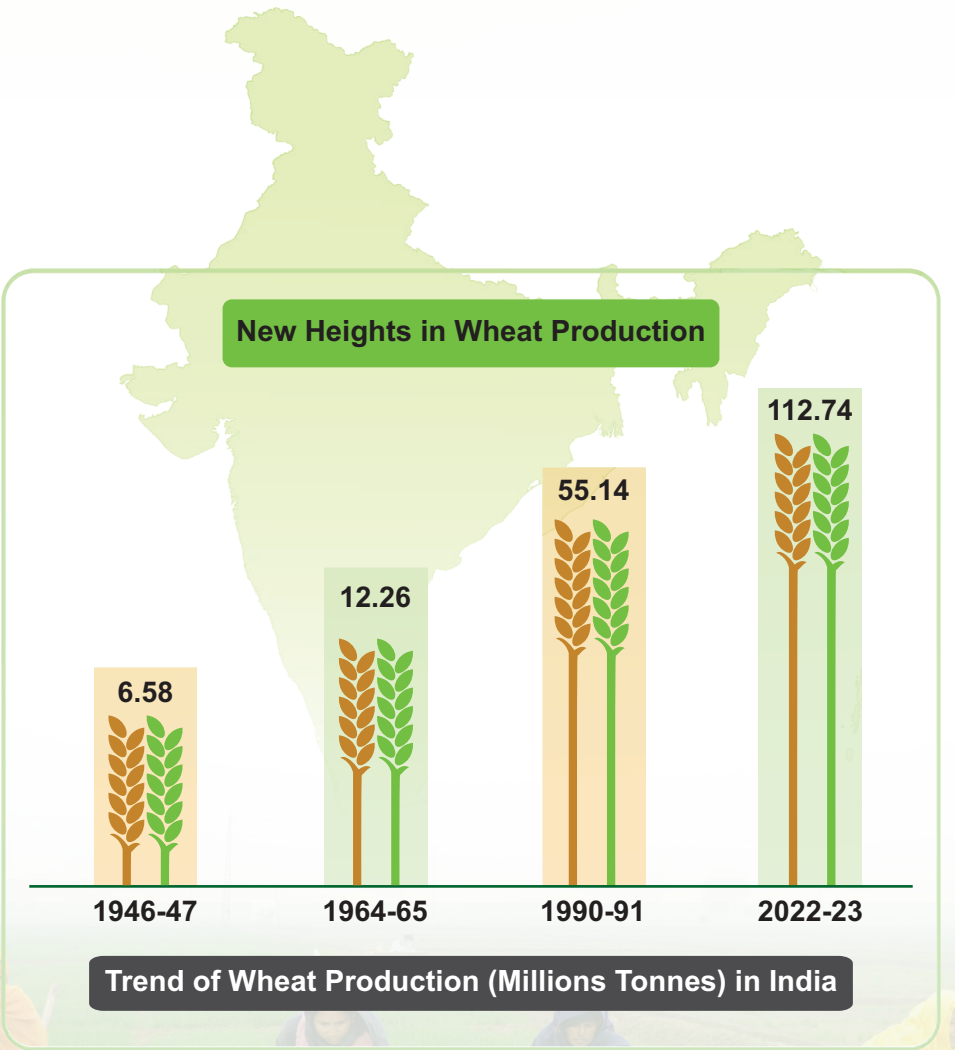
Appendix-VI
Molecular Profile of Durum Genotypes

Marker	Alleles	Genotypes							
		DDW48(d)(C)	HI8826(d)*	MACS4100(d)*	NIDW1149(d)(C)	DDW47(d)(C)	DDW55(d)Q*	HI8823(d)(l)(C)	HI8830(d)*
GWM219	A	+	+	+	+	+	+	+	+
	B	-	-	-	-	-	-	-	-
GWM312	A	-	+	-	-	-	-	-	+
	B	+	-	+	+	+	+	+	-
GWM484	A	+	+	-	+	-	-	-	-
	B	-	-	-	-	+	+	-	-
GWM374	A	-	-	-	-	-	-	-	-
	B	-	-	-	+	+	+	+	+
	C	+	+	+	-	-	-	-	-
GWM44	A	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+
	C	-	-	-	-	+	-	+	+
	D	-	-	-	-	-	-	-	-
GWM190	A	-	-	-	+	-	-	+	+
	B	+	+	+	-	+	+	-	-
GWM265	A	-	-	-	-	+	-	-	+
	B	+	+	-	-	+	+	-	+
WMC227	A	+	+	+	+	+	+	+	+
WMC225	A	+	+	+	+	+	+	+	+
WMC233	A	+	+	-	-	+	+	+	+
	B	+	+	-	-	+	+	+	+
WMC153	A	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+
	C	-	-	-	-	-	-	-	-
GWM149	A	+	+	+	+	+	+	+	+
	B	-	-	-	-	-	-	-	-
GWM160	A	+	-	+	+	+	+	+	-
	B	-	+	-	-	-	-	+	+
GWM428	A	-	-	-	-	+	+	+	-
	B	+	+	+	+	-	-	-	+
GWM165	A	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+
WMC242	A	+	+	+	+	-	+	+	+
	B	+	+	+	+	-	-	+	+

GWM493	**A**	-	-	-	-	-	-	-	-
	B	-	-	-	-	+	+	+	+
	C	+	+	+	+	-	-	-	-
GWM111	**A**	-	+	-	+	+	+	+	+
	B	+	-	+	+	-	+	-	-
	C	+	+	+	-	+	+	-	-
	D	+	-	+	+	-	-	-	-
GWM46	**A**	-	-	-	-	-	-	-	-
	B	+	+	+	+	+	+	+	+
GWM186	**A**	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+
WMC265	**A**	-	-	-	-	+	+	-	+
	B	+	+	+	+	-	-	+	-
GWM273	**A**	-	-	-	-	+	+	+	+
	B	+	+	+	+	-	-	-	-
GWM437	**A**	-	-	-	-	-	-	-	-
	B	+	-	+	+	+	+	+	+
	C	-	+	-	-	-	-	+	-
WMC160	**A**	-	-	-	-	-	-	-	-
	B	-	+	-	-	-	-	+	+
	C	+	-	+	+	+	+	-	-
		+	+	+	+	+	+	+	+
WMC232	**A**	-	+	-	-	-	-	-	+
	B	+	-	+	+	+	+	+	-
WMC245	**A**	+	+	+	+	+	+	+	+
	B	+	+	-	-	+	+	+	+
WMC261	**A**	+	-	+	+	+	+	-	-
	B	+	+	+	+	+	+	+	+
GWM2	**A**	-	-	-	+	-	-	-	-
	B	+	+	+	-	+	+	+	+
	C	-	-	-	-	-	-	-	-
	D	+	+	+	-	+	+	-	+
	E	-	-	-	-	-	-	-	-
WMC455	**A**	+	+	+	+	+	+	+	+
	B	-	+	+	-	+	+	+	+
GWM458	**A**	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+

GWM408	**A**	-	+	-	-	-	-	-	+
	B	-	-	-	-	-	+	-	-
	C	+	-	+	-	+	-	+	-
WMC200	**A**	+	+	+	+	+	+	+	+
	B	+	+	-	+	+	-	+	+
GWM194	**A**	-	-	-	-	-	-	-	-
	B	-	-	-	-	+	-	-	-
WMC274	**A**	+	+	+	+	+	+	+	+
	B	-	-	-	-	-	-	-	-
GWM337	**A**	-	-	-	-	+	-	-	-
	B	+	+	+	+	-	+	+	+
WMC340	**A**	+	+	+	+	+	+	+	+
	B	-	-	-	-	+	-	-	-
GWM389	**A**	-	+	-	+	+	-	-	-
	B	-	-	+	-	-	+	+	+
WMC617	**A**	-	-	-	-	-	+	+	-
	B	+	+	+	-	-	-	-	+
	C	-	-	-	+	-	+	-	+
	D	+	+	+	+	-	-	+	-
WMC54	**A**	+	+	+	+	+	+	+	+
	B	-	-	-	-	-	-	-	-
GWM325	**A**	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-
GWM5	**A**	+	+	+	+	+	+	+	+
	B	+	+	+	+	+	+	+	+
	C	+	+	+	+	+	+	+	+
WxB1	**425**	+	+	+	+	-	+	+	+
	690	+	+	+	+	+	+	+	+
DREB	**700**	+	+	+	+	+	+	+	+
Vp1B3	**569**	+	+	+	+	+	+	+	+
	652	-	-	-	-	-	-	-	-
Lr10	**300**	-	-	-	-	-	-	+	-
Lr34	**150**	-	-	-	-	-	-	-	-
	230	+	+	-	-	-	-	+	-
Ppd-D1	**228**	-	-	-	-	+	-	+	-
	414	-	-	-	-	-	-	-	-

VrnA1A	**965**	+	+	+	+	-	+	-	+
VrnA1bR2	**1068**	-	-	-	+	-	-	+	-
DuPW004	**250**	+	+	+	+	+	+	+	+
	350	-	-	-	-	+	-	-	-
Almt	**426**	+	+	+	-	+	-	+	+
	706	+	-	-	-	-	-	-	-
	836	+	+	+	-	-	-	-	-
WxB1	**425**	+	+	+	+	-	+	+	+
	690	+	+	+	+	+	+	+	+
DREB	**700**	+	+	+	+	+	+	+	+
Vp1B3	**569**	+	+	+	+	+	+	+	+
	652	-	-	-	-	-	-	-	-
Lr10	**300**	-	-	-	-	-	-	+	-
Lr34	**150**	-	-	-	-	-	-	-	-
	230	+	+	-	-	-	-	+	-
Ppd-D1	**228**	-	-	-	-	+	-	+	-
	414	-	-	-	-	-	-	-	-
VrnA1A	**965**	+	+	+	+	-	+	-	+
VrnA1bR2	**1068**	-	-	-	+	-	-	+	-
DuPW004	**250**	+	+	+	+	+	+	+	+
	350	-	-	-	-	+	-	-	-
Almt	**426**	+	+	+	-	+	-	+	+
	706	+	-	-	-	-	-	-	-
	836	+	+	+	-	-	-	-	-



62वीं अखिल भारतीय गेहूँ एवं जौ अनुसंधान कार्यकर्ता गोष्ठी

महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय, उदयपुर, राजस्थान

(अगस्त 28-30, 2023)

62nd All India Wheat and Barley Research Worker's Meet-2023

Maharana Pratap University of Agriculture and Technology (MPUAT),Udaipur, Rajasthan

(August 28-30, 2023)