प्रगति प्रतिवेदन
Progress Report
2017-18

अखिल भारतीय समन्वित गेहूँ एवं जौ अनुसंधान परियोजना

AICRP on Wheat and Barley

उन्नत तकनीकियों द्वारा किसानों की अधिक आय

Improved Technologies for Higher Income of Farmers

फसल सुधार

CROP IMPROVEMENT

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

ICAR – Indian Institute of Wheat and Barley Research, Karnal

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AICRP on Wheat & Barley

PROGRESS REPORT
2017-18

CROP IMPROVEMENT

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Technical support

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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.

Ravish Chatrath

(Ravish Chatrath)
Principal Investigator
(Crop Improvement)

Dated: 23rd July, 2018

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Crop Improvement Principal Investigator's Report

Research Highlights, 2017-18

The crop year 2017-18 has been once again a record breaking year as far as wheat production of India is concerned. This year the country has witnessed a record production of 98.61 mt (3rd AE, 2018) of wheat grains from an area of 29.72 mha. The productivity of 33.18 q/ha this year is also one of the highest ever recorded in the country.

During the year under report, the constitution and dispatch of the advance varietal trials was performed by zonal coordinating units and the special trials sets were prepared by the respective lead centres. The constitution and dispatch of advance varietal trials for North Eastern Plains Zone and Peninsular Zone were carried out at Karnal. All the work related to coding, constitution and dispatch of national initial varietal trials was done at Karnal. A summary of the work done and significant achievements made during the crop season 2017-18 in Crop Improvement discipline of the All-India Coordinated Research Project on Wheat & Barley is presented here within.

Development and release of new wheat varieties for different zones

Central released varieties

During the year 2017-18, the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops (CVRC) recommended the release of 7 varieties, i.e., 5 bread wheat varieties namely K1317, DBW168, DBW173, UAS375, Pusa1612 (HI1612) and 2 durum varieties MACS4028 and HI8777 for different zones/production condition of the country. All of these varieties except K1317 were identified during the 56th All India Wheat and Barley Research Workers meet held at BHU, Varanasi in August 2017.

Wheat varieties released by CVRC during 2017-18

SN	Variety name and parentage	Areas	Developed by	Prod. Cond.	Grain yield (q/ha)		Notification No.	Special feature
					Av.	Pot.		
Bread Wheat								
1	K 1317 (*K0307/ K9162*)	NEPZ	CSA UAT, KANPUR	Rainfed, Timely Sown	30.1	38.6	399(E) 24.01.2018	Resistant to brown rust & leaf blight. Good Chapati quality (Score:8.05)
2	DBW 168 *(SUNSU/ CHIBIA)*	PZ	ICAR-IIWBR, Karnal	Irrig., Timely sown	47.5	70.1	1379(E) 27.03.2018	Very good for chapati (8.15/10), biscuit quality, Soft grains (36), resistance to brown & black rust
3	DBW 173 *(KAUZ/AA//KAUZ/PBW602)*	NWPZ	ICAR-IIWBR, Karnal	Irrig., Late sown	47.2	57.0	1379(E) 27.03.2018	Tolerant to terminal Heat (HSI=0.98), Resistance to yellow & brown rust
4	UAS 375 (*UAS 320/GW 322// Lok 62*)	PZ	UAS, Dharwad	Rainfed, Timely sown	21.4	29.1	1379(E) 27.03.2018	Resistance to brown & black rust
5	Pusa Wheat 1612(HI1612) (*KAUZ//ALTAR 84/AOS/3/MILAN/KAUZ/4/HUITES*)	NEPZ	ICAR-IARI RS, Indore	Rest. irrigation, Timely sown	37.6	50.5	1379(E) 27.03.2018	32.4% and 52.4% yield gain at one and two irrigations, Resistance to yellow and brown rust

Durum Wheat								
6	MACS 4028 (d) *(MACS 2846/BHALEGAON3*2)*	PZ	ARI, Pune	Rainfed, timely sown	19.3	28.7	1379(E) 27.03.2018	Resistance against stem and leaf rust, early maturing (102 days), protein content (14.7%)
7	Pusa Wheat 8777 (HI 8777) (*B93/HD 4672//HI8627)* (d)	PZ	ICAR-IARI RS, Indore	Rainfed, timely sown	18.5	28.8	1379(E) 27.03.2018	Resistance to leaf rust, protein (14.3%), zinc (43.6 ppm) and iron (48.7 ppm) content

State released varieties

Seven wheat varieties namely Sabour Nirjal (BRW3723), HW5207 (CoW 3), Gujarat Junagadh Wheat463 (GJW463), KRL283, HUW669 (Malviya 669), Chhattisgarh Genhu-3 (CG1013) and UAS334 under different production conditions prevailing in the named states were recommended for notification by the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops.

Wheat varieties released by SVRC during 2017-18

SN	Variety name and parentage	Areas	Dev. by	Prod. Cond.	Grain yield (q/ha)		Notification No.	Special feature
					Av.	Pot.		
1	Sabour Nirjal (BRW3723) *(ACHYUT/ BL1887)*	Bihar	BAU, Sabour	Rainfed, Timely Sown	28.7	47.3	2805(E) 25.08.2017	Drought tolerance
2	HW5207 (CoW 3) *(HW3029//V763-2312(Yr15))*	Tamil nadu	IARI RS Wellington+ TNAU Coimbatore	Rest. irrigation, Timely sown	40.8	59.6	2805(E) 25.08.2017	Resistance to leaf and stem rust, carrying *LR24+SR24, Sr2, Yr15*
3	Gujarat Junagadh Wheat 463 (GJW 463) *(GW496/ KLP010)*	Gujarat	JAU, Junagadh	Irrigated, early sown conditions of Saurashtra and Irrigated, Timely sown conditions of rest of Gujarat	55.7 (ES), 50.9 (TS)	78.3 (ES), 67.5 (TS)	2805(E) 25.08.2017	Moderately resistance to brown and black rust
4	KRL283 *(CPAN 3004 /KHARCHIA 65//PBW 343*	Uttar Pradesh	ICAR-CSSRI, Karnal	Salt affected soils (Irrigated, Timely sown)	20.9	41.0	1379(E) 27.03.2018	Resistance to leaf blight, Karnal bunt and hill bunt
5	HUW669 (Malviya 669) *(ALTAR84/HUW206/MILAN)*	Uttar Pradesh	BHU, Varanasi	Rainfed/ Rest. Irrig.	24.1	43.0	1379(E) 27.03.2018	Resistance to all the three rusts and leaf blight
6	Chhattisgarh Genhu-3 (CG 1013) *(GW 322/KYZ 0285)*	Chhattisgarh	IGKVV RS, Bilaspur	Irrigate, Timely sown	33.4	49.3	1379(E) 27.03.2018	Resistance to leaf rust

7	UAS334 *(SITE/MO/4/NAC/TH. AC//3*PVN/3/ MIRLO/BUC)*	Karnataka	UAS, Dharwad	Irrigated, timely sown	49.1	59.5	1379(E) 27.03.2018	Zinc content (43.1 ppm), resistance to black and brown rust

Registration of new genetic stocks

During the year 2017-18, fourteen genetic stocks of wheat namely QBP 12-11, HI 8751, HI KK10 (NP4+*Lr13*), HI KK11 (NP4+*Lr18*), HI KK12(NP4+*Lr19*), HI KK13(NP4+*Lr26*), HI8765, HSRBW 2, HSRDW 2, LBPY11-2, FLW 31, FLW 32, FLW 33 and FLW 18 were found suitable for registration by the Plant Germplasm Registration Committee for traits like differential races leaf rust, disease resistance to rusts and Head scab, early maturing and soft grain. The genetic resources unit of the IIWBR, Karnal multiplies the seeds of these registered genetic stock and supplies to breeder across the country for use in wheat improvement (Table 3).

Genetic stocks registered during 2017-18

SN	Name	Registration number	National ID number	Developing centre	Trait
1	QBP 12-11	INGR 17033	IC0624127	IARI, New Delhi	Soft grain (Low hardness index)
2	HI 8751	INGR 17032	IC0623451	IARI RS, Indore	Resistant to all the three rusts(leaf, stem, stripe) karnal bunt, and flag smut
3	HI KK10 (NP4+*Lr13*)	INGR 17034	IC0624491		Wheat line carrying *Lr13* for gene differential
4	HI KK11 (NP4+*Lr19*)	INGR 17035	IC0624492		Wheat line carrying *Lr18* for gene differential
5	HI KK12 (NP4+*Lr19*)	INGR 17036	IC0624493		Wheat line carrying *Lr19* gene for gene differential
6	HI KK13 (NP4+*Lr26*)	INGR 17037	IC0624494		Wheat line carrying *Lr26* gene for gene differential
7	HI8765	INGR 17038	IC0624495		Resistant to all the three rusts(leaf, stem, stripe) karnal bunt, and flag smut
8	HSRBW 2	INGR 17030	IC0623528	ICAR-IIWBR, Karnal	Tolerant to Head scab
9	HSRDW 2	INGR 17031	IC0623529		Tolerant to Head scab
10	LBPY11-2	INGR 17039	IC0624496		Early maturing in warmer region
11	FLW 31	INGR 17040	IC0624500	ICAR-IIWBR Regional Station, Shimla	Resistant to black and brown rust
12	FLW 32	INGR 17041	IC0624501		Resistant to black rust
13	FLW 33	INGR 17042	IC0624502		Resistant to black and brown rusts
14	FLW 18	INGR 17070	IC0621835		Resistant to brown and black rust, Carrying *Lr39* in PBW343 background

Registration Plant Varieties with PPV&FRA

The PPV&FRA registered 14 wheat varieties HS507 (121 of 2017), HS490 (71 of 2018), HD 3118 (122 of 2017), NW5054 (204 of 2017), K1006 (205 of 2017), HI8713 (198 of 2017), MP3020 (245 of 2017), MP3336 (262 of 2017), MP3211(260 of 2017), MP3288 (261 of 2017), MP1203 (268 of 2017), MP1142(264 of 2017), CG5016 (265 of 2017), MPO1215 (76 of 2018)) during the year 2017-18.

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 with the cooperation of 29 funded and 94 voluntary centres spread across five wheat growing zones in the country.

Zone-wise funded and voluntary centres associated in conduction of coordinated trials

Zone	Funded centres	Voluntary centres, including ICAR centres
NWPZ	5	29
NEPZ	8	21
CZ	8	14
PZ	4	18
NHZ	4	12
Total	**29**	**94**

During the crop season 2017-18, a total of 24 series of trials comprising AVTs, NIVTs, IVTs and Special trials were laid out in the different zones under four major production conditions *viz.* timely sown irrigated, late sown irrigated, timely sown restricted irrigation and timely sown rainfed condition. This year altogether 315 test entries were evaluated along with a total of 57 check varieties in different trials.

In all, 373 trial sets were supplied to 123 centres out of which 361 trials were actually conducted. The non-conduction of the coordinated trials was mainly at voluntary centres. The percent conduction of trials was 100% in Northern Hills Zone. It was 99.1% in North Western Plains Zone and 98.4% in Peninsular Zone. In North Eastern Plains Zone trial conduction was 95.3%, while it was 91.5% in Central Zone. The overall conduction of trials during the crop season was 96.8%.

Breakup of yield trials during 2017-18

Zone	Proposed	Not Conducted	Conducted	Reported	Not Reported
NHZ	41	0	41	28	LSM (10), RMT (1), UY (2)
NWPZ	113	1	112	96	DNR (6), RMT (5), LSM (2), LS (2), UY (1)
NEPZ	85	4	81	61	LSM (7), RMT (7), LS (2), HCV (1), LSM&LS (2), LSM&HCV (1)
CZ	71	6	65	52	LSM (7), RMT (3), UY (2), HCV (1)
PZ	63	1	62	52	LSM (5), RMT (5)
Total	**373**	**12**	**361**	**289**	**72 (RMT - 21)**

Percent success in trial conduction and reporting during 2017-18

Zone	% conduction of proposed trials	% reporting of conducted trials
NHZ	100	68.3
NWPZ	99.1	85.7
NEPZ	95.3	75.3
CZ	91.5	80.0
PZ	98.4	83.9
Total	**96.8**	**80.0**

During this year, from amongst the 361 trials conducted, the data of 289 trials were found qualifying for reporting based on set norms for disease resistance and yield performance. As

many as 72 trials were not reported this year. Low site mean in 31 trials was the primary reason for non-reporting of trials, followed by rejection of 21 trials by the monitoring teams in various zones. The rest of the unreported trials were not considered for reporting due to data not reported (6), unrealistic yield (5), late sowing (4), high coefficient of variation (2), low site mean & late sowing (2) and low site mean & HCV (1).

The overall reporting of conducted trials during this crop season was 80.0%. The reporting of data was highest in NWPZ (85.7%) followed by PZ (83.9%). The reporting of data in other zones was CZ (80.0%), NEPZ (75.3%) and NHZ (68.3%).

Varieties in the final year evaluation in AVTs

During the year under report, there were 6 varieties in the final year of yield evaluation in various AVTs and SPL trials in the different zones. The proposal for identification of these varieties would be placed for consideration by the Varietal Identification Committee.

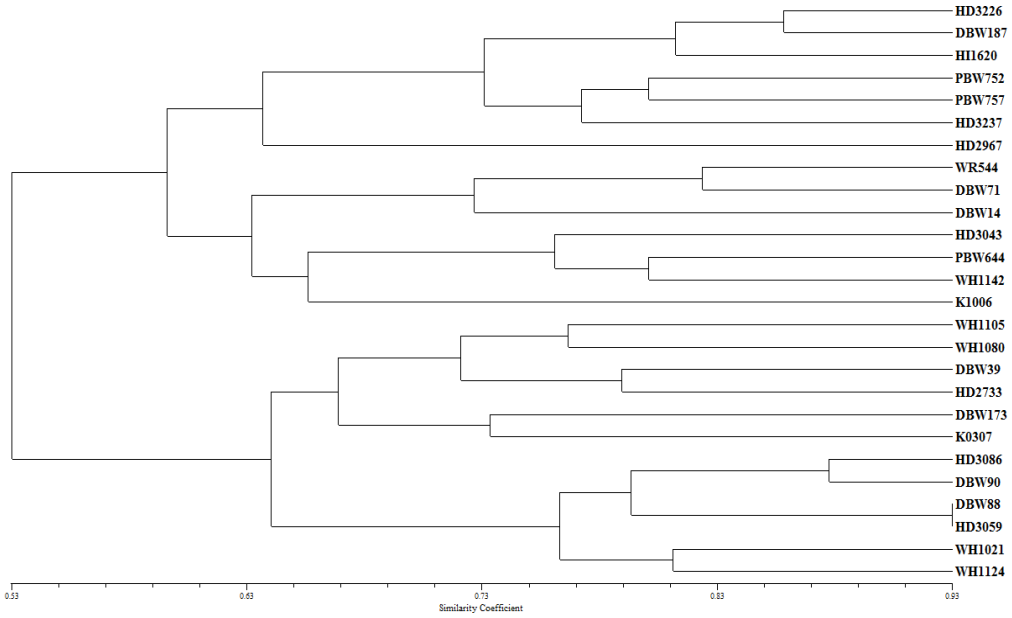
Varieties in final year of evaluation in AVTs during 2017-18

Trial	Final year entries
North Western Plains Zone	
AVT-IR-TS-TAS	HD3226
AVT-IR-LS-TAS	PBW752
AVT-RI-TS-TAS	HD3237, HI1620
North Eastern Plains Zone	
AVT-IR-TS-TAS	DBW187
NWPZ & NEPZ	
SPL-VLS-TAS	PBW757

Marker assisted gene profiling in AVT final year varieties

The final year AVT entries (2017-18) alongwith checks in different wheat trials were screened using various STS/AS-PCR markers linked to aluminium tolerance (*Almt*), dehydration responsive element (*DREB*), leaf rust resistance (*Lr*), photoperiodism (*Ppd-D1*), polyphenol activity (*PPO18*), vivipary (*Vp1B3*), vernalization (*Vrn*) and waxiness (*WxB1*). A similarity matrix based dendrogram was constructed using 87 marker alleles (SSR and STS / AS-PCR) which is presented in the dendrogram.

Dendrogram showing relative diversity in AVT entries based on molecular markers



With *Almt* marker, 4 alleles were observed with percentage frequency of 26.92, 38.46, 19.23 and 15.39 respectively for the aluminium tolerance gene. 73.08% varieties were found to be positive for *DREBI*. With *Lr10*, 9 entries found positive out of 26, likewise for *Lr34*, the number was 1 and 13 for 2 different alleles. In case of *Ppd-D1*, two alleles were observed, one allele was found to be present in 19 entries while the frequency of other allele was null. 50% genotypes respond positively with *PPO18*. 2 alleles were observed with *Vp1B3* marker and the percentage was 7.69% and 42.31% respectively. For vernalization gene, 8 and 12 individuals were found to be positive for *VrnA1a* and *VrnA1b* respectively. The percentage frequency for two different alleles was 80.77% and 57.69% in the case of *WxB1* marker.

Profile of the AVT final year entries and checks using STS/AS-PCR markers

Variety	Markers (size in bp)																
	Almt				*DREB*	*Lr10*	*Lr34*		*Ppd-D1*		*PPO18*	*Vp1B3*		*Vrn1-A1a*	*Vrn1-A1b*	*WxB1*	
	180	426	836	986			150	230	228	414		569	652			425	690
DBW14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+
DBW173	-	-	-	-	+	-	-	-	+	-	-	-	+	+	-	+	-
DBW187	-	+	-	-	-	+	-	+	+	-	+	-	-	-	-	+	+
DBW39	+	-	-	-	-	-	-	+	+	-	-	-	-	+	-	-	-
DBW71	-	-	-	-	+	-	-	-	-	-	-	-	+	-	+	+	+
DBW88	-	+	-	-	+	-	-	-	+	-	+	-	+	+	-	+	-
DBW90	-	-	-	-	-	-	-	-	+	-	+	-	-	+	+	+	-
HD2733	+	-	-	-	+	-	-	+	+	-	+	-	+	-	-	+	+
HD2967	-	+	-	-	+	-	+	+	+	-	-	-	-	-	-	+	+
HD3043	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
HD3059	-	+	+	+	+	+	-	+	+	-	+	-	+	+	-	+	-
HD3086	-	-	+	+	+	+	-	+	+	-	+	-	-	+	+	+	-
HD3226	-	+	-	-	+	+	-	+	-	-	-	-	+	-	+	+	+
HD3237	-	-	+	-	+	+	-	+	+	-	-	-	-	-	-	+	+
HI1620	-	+	-	-	+	+	-	-	+	-	+	-	-	-	-	+	+
K0307	-	+	-	-	+	-	-	-	+	-	+	-	+	-	+	+	+
K1006	-	-	-	-	+	-	-	-	+	-	-	+	-	-	+	-	+
PBW644	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	+
PBW752	-	+	-	-	+	+	-	+	+	-	+	-	-	-	-	+	+
PBW757	-	-	-	-	+	+	-	+	+	-	+	-	+	-	+	-	-
WH1021	-	+	+	+	+	-	-	-	+	-	+	-	+	-	-	+	-
WH1080	+	-	-	-	+	-	-	+	+	-	-	+	+	+	+	+	+
WH1105	+	-	-	-	+	-	-	+	+	-	+	-	-	+	+	+	+
WH1124	-	+	+	+	+	-	-	+	+	-	+	-	+	-	+	+	-
WH1142	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+
WR544	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	+	-

'+' denotes presence and '– ' indicates absence

Promising varieties in Advanced Varietal Trials

The criteria for promotion of varieties in AVTs was based on significant superiority of genotypes over the best zonal check of the trials and accordingly 76 genotypes were evaluated in different zones during this crop season. From among the varieties evaluated in AVTs, this year 15 genotypes were identified to be superior on the basis of their yield performance and response to the incidence of rusts. The entries, thus, found promising were two under irrigated timely sown, one under irrigated late sown condition and twelve entries were under restricted irrigation condition.

From among the 10 genotypes tested in 2 special trials conducted for specific requirements, in special trial for very late condition (January sown) two genotypes were found promising.

Most promising Varieties in AVTs and Special trials

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation
NHZ	-	-	-
NWPZ	DBW221, DBW222	PBW771	BRW3806, NIAW3170, HI1628
NEPZ	-	-	-
CZ	-	-	UAS 466 (d)
PZ	-	-	MACS6696, MACS6695, MACS4058 (d), NIAW3170, GW1346, HI 8802 (d), HI8805 (d)
Special trials			
SPL-VLS	HD 3271, HI 1621		

Promising varieties in NIVTs and IVTs

Among the total 215 new entries evaluated for their performance in 8 NIVTs, as many as 32 entries were found promising on the basis of high yielding ability and disease resistance. Out of these 32 promising entries, 17 were of bread wheat and 15 of durum wheat. 16 entries were observed to be promising for timely sown irrigated condition, 10 for late sown irrigated condition and 5 for restricted irrigation condition. In all, 2 entries were promising in NWPZ, 7 in NEPZ, 13 in CZ and 9 in PZ under different cultural conditions at the zonal level.

In the only IVT in NHZ, 14 new entries were tested under rainfed timely sown condition and only one entry was found to be promising.

Most promising entries in NIVTs and IVTs

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation	Timely sown, Rainfed
NWPZ	NW7049	-	PBW796	-
NEPZ	PBW781, RAJ4529, DBW257, WH1239, HD3277	-	HD3293, DBW273	-
CZ	GW1348 (d), DDW49 (d), DDW48(d), NIDW1158 (d), HI8811 (d), HI8812 (d)	HI1634, HI1633, UAS3002, CG1029, HI8807 (d), HI8808 (d)	DBW277	-
PZ	UAS 3001, DDW49 (d), DDW48(d), WHD963 (d)	HI8807 (d), GW509, HI1633, UAS3002	NIDW1149 (d)	-
NHZ	-	-	-	HS652

Zonal monitoring of coordinated trials and nurseries

During this year multidisciplinary teams of scientists were constituted to monitor almost all trial conducting centres in the five zones. Monitoring of coordinated trials and nurseries was carried out during February to April, 2018 for examining the conduction of trials and performance of test genotypes in each of the five wheat growing zones. The total number of centres monitored was 100 out of the 123 centres where trials were 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.

As many as 21 trials were rejected by the monitoring teams in different zones. The detailed report of the zonal monitoring teams has been appended in this Progress Report. The comments of the members of the zonal teams on the genetic purity of test genotypes would be taken into account for promotion, retention or dropping of a particular test entry during the group meeting at the ensuing workshop.

Itinerary of zonal monitoring

Zone	Duration	Centres monitored
PZ	Team I: 04-06 Feb	Dharwad, Bagalkot, Ugar khurd, Nippani, Kalloli, Arbhavi, Mudhol, Bailhongal, Kolhapur
	Team II: 12-14 & 21-22 Feb	Nashik, Niphad, Savalvihir, Pravarnagar and Akola
CZ	Team I: 12-15 Feb	SK Nagar, Vijapur, Anand, Arnej, Dhandhuka, Amreli and Junagadh
	Team II: 19-22 Feb	Udaipur, Banswara, Pratapgarh, Indore, Bhopal and Powarkheda
	Team III: 22-25 Feb.	Raipur, Bilaspur, Jabalpur, Sagar and Gwalior
NEPZ	Team I:7-12 March	Kalyani, Burdwan, Malda, Dinajpur, Coochbehar, Gosaigaon, Nogaon, Bishwanath
	Team II:6-10 March	Ranchi, Chianki, IARI-RS-Pusa, Sabour, Banka, Purnea
	Team III: 13-17 March	Kanpur, Araul, Deegh, Barabanki, Ghaghraghat, Faizabad, Basti, Gorakhpur, Ghazipur and Varanasi
NWPZ	Team I: 5-9 March	Bikaner, Jodhpur, Tabiji, Diggi, Durgapura, Dausa, Bharatpur, Alwar and Kotputli
	Team II: 14-17 March	Karnal, Delhi, Bawal, Hanumangarh, Rohtak, Sriganganagar, Bhatinda
	Team III: 15-18 March	Nagina, Kashipur, Rampur, Pantnagar, Bareilly, Ujhani, Bulandshahr and Modipuram
	Team IV: 21-23 March	Jammu, Gurdaspur, Kapurthala, Ludhiana, Balachaur, Faridkot and Rauni
NHZ	Team I: 23-26 April	Ranichauri, Majhera and Hawalbagh
	Team II: 9-13 April	Shimla, Berthin,Akrot, Una, Bara, Kangra, Malan, Palampur, Bajaura and Katrain

The monitoring teams recommended the rejection of the following 21 trials based on poor conduction, faulty layout, poor plant stand, sowing beyond the recommended dates etc.

Trials rejected by zonal monitoring teams

Zone	Centre	Trial
NHZ	Bara	IVT/AVT-RF-ES
NWPZ	Jodhpur	AVT-IR-TS
	Kotputli	AVT-IR-LS
	Rampur	AVT-IR-TS, AVT-IR-LS, SPL-VLS
NEPZ	IARI, RS Pusa	NIVT 3A
	Banka	AVT-IR-TS-TAS
	Faizabad	AVT-IR-TS, AVT-RI-TS
	Varanasi	NIVT-3A
	Ghazipur	AVT-IR-TS
	Barabanki	AVT-IR-TS
CZ	Anand	AVT-IR-TS-TAD, AVT-RI-TS-TAD
	Banswara	AVT-RI-TS
PZ	Nippani	AVT-RI-TS-TAD, NIVT-5B
	Akola	AVT-RI-TS-TAD, NIVT-2, NIVT-5B

The monitoring teams observed variation, segregation for different traits in the test genotypes. From among the entries recommended by different monitoring teams, the common varieties in various trials which have been dropped from further testing are given below;

Entries Dropped from further testing

Zone	Trial	Entries dropped
NWPZ	NIVT1A	WH 1240, WH 1237, HD 3276
	NIVT1B	HD 3282, K 1705
	NIVT3A	WH 1245
	NIVT-5A	K 1710, BRW 3823
NEPZ	NIVT-5A	BRW 3823
CZ	NIVT-2	MP 3493
	NIVT-3B	MP 3497
	NIVT-4	MPO 1355, MPO 1353
PZ	NIVT-4	MPO 1355

Seed Production

During 2017-18, total indent of 22012.79q breeder seed of 147 wheat varieties was received from DAC for production. The highest indented varieties were HD2967 (3043.84q), HD3086 (1327.60q), Raj 4238 (1119.50q), WH1105 (847.90q), Lok1 (810.37q), Raj4079 (716.00), GW322 (564.20q), PBW725 (557.20q), HI1544 (549.90q) and PBW723 (468.00q).

Top indented varieties in breeder seed chain during 2017-18

SN	Variety	Indent (q)	Production (q)
1.	HD 2967	3043.84	4235.75
2.	HD 3086	1327.60	1685.00
3.	RAJ 4238	1119.50	885.30
4.	WH 1105	847.90	882.80
5.	LOK 1	810.37	1050.00
6.	Raj 4079	716.00	655.00
7.	GW 322	564.20	1477.91
8.	PBW 725	557.20	692.00
9.	Purna (HI1544)	549.90	1035.00
10.	PBW 723	468.00	1018.35

Breeder Seed Production

Total allocation of 21039.62q breeder seed of 136 varieties was made for production at 33 centres in the country after excluding 11 varieties which were either >15 years old or not having nucleus seed. Total production of breeder seed during the year was 30236.16q. Thus there was a surplus production of 9196.54q over the allocated quantity (21039.62q) of breeder seed

JNKVV, Jabalpur produced highest quantity of breeder seed (3617.86q) followed by PAU, Ludhiana (3372.00q) and ARS, Kota (2738.80q). However, highest deficit breeder seed production of 1084.70q was observed at JNKVV, Jabalpur followed by RARI, SKNAU, Durgapura (294q). The highest quantity of breeder seed was produced for HD 2967 (4235.75q) followed by HD 3086 (1685.00q), GW 322 (1477.91q) and Lok 1 (1050.00q) varieties

Nucleus Seed Production

During the year 2017-18, total allocation of 853.50q nucleus seed of 141 varieties, was made for production. A total of 668.63q surplus quantity of nucleus seed was produced against the total allocation. JNKVV, Jabalpur produced maximum quantity (248.00q) of nucleus seed followed by IARI, Indore (208q) and PAU, Ludhiana (132.45q). Durgapur centre produced 43.15q less nucleus seed against the allocation of 78.0q. Maximum nucleus seed 106.09 q was produced for HD2967.

Test stock multiplication

NSC reported 168.0q seed test stock multiplication of 4 wheat varieties viz., HI 1612 (75.0q), HI 8777 (50.0q), DBW 168 (25.0q) and DBW 173 (18.0q) which were identified and released during 2017-18

Evaluation of National and International Nurseries/Trials

National Nurseries

During the crop season 2017-18, six nurseries and two segregating stock nurseries were constituted at IIWBR and supplied to different cooperating centres located across the various zones for evaluation and utilization as per their requirement.

Nurseries shared with co-operators

Nursery	Genotypes + Checks #	Cooperating centres #
National Genetic Stock Nursery (NGSN)	90+3	34
Short Duration Screening Nursery (SDSN)	44+6	25
Quality Component Screening Nursery (QCSN)	44+4	16
Elite International Germplasm Nursery (EIGN)	94+4	26
National Durum Screening Nursery (NDSN)	53+3	13
Drought Tolerance Screening Nursery (DTSN)	21+4	15
Segregating Stock Nursery (SSN)	93 F_2 & F_3	20
Spring x Winterwheat Segregating Stock Nursery (SWSSN)	101 F_2	7

The salient features observed in various national nurseries are given below:

1. National Genetic Stock Nursery (NGSN): The NGSN comprising 90 lines including *T. aestivum* (71), *T. durum* (14), *T. dicoccum* (3) and Triticale (2) was provided to 34 centres. This nursery serves the purpose of a suggested crossing block for utilization in breeding programmes. The entries were categorized as sources for disease resistance, new agronomic bases, elite lines, yield component lines and registered genetic stocks. Pooled analysis of data was done for identification of promising lines. On the basis of utilization report received from 31 locations, it was found that 16.4% genotypes in the NGSN were either directly used for selection or utilized in hybridization as parents.

2. Short Duration Screening Nursery: The Short Duration Screening Nursery consisted of 44 entries and planted at 25 locations. Early maturing genotypes tolerant to high temperature during grain filling period under late sown conditions were identified. The five genotypes viz., LBP2014-12 for NWPZ, DWAP1408 and GW2010-321 for NEPZ), GW 2012-475 for CZ and RWP2014-18 for NHZ were found superior to check during 3 years of testing in SDSN. Out of 12 genotypes evaluated in second year, five genotypes WS15-7, GW2015-668, RWP 2013-10, RWP2014-19 and RWP 2015-11 performed better than the best check in respective zones during second year testing in SDSN.

*3. Quality Component Screening Nursery***:** QCSN comprising 44 test entries and 4 checks was planted at 16 centres to identify new genetic resource for quality improvement.

Promising genotypes identified for individual quality parameters

Component	Genotypes	Range	Best Check
Protein content (%)	JWS855, GW2014-596, UP2994, QLD91, Local Collection 1c 01, QLD103	13.2-14.3	UP2672: 13.1
Sedimentation value (ml)	QLD100, QLD101, QLD102, HD3241, UP2996, HD3215	66-68.8	UP2672: 62.3
Grain hardness index (hard wheat)	TAW33, UP2997	92-102	-
Grain hardness index (soft wheat)	QLD84	18	HS490: 33
Hectoliter weight (Kg/hl)	GW2015-699(d), GW2016-793(d)	81.9-82.1	-
Grain appearance score (out of 10)	UP2997	6.6	C306: 6.5

Three years performance of newly identified promising genetic resources

Genotypes	2015-16	2016-17	2017-18	Average
Soft grain (grain hardness index)				
QLD84	19	18	18	18
HS490(C)	27	-	33	30
Grain protein content at 14% moisture				
GW2014-596	14.8	14.04	14.3	14.4
UP2672(C)	14.4	13.7	13.1	13.7

After completing three years testing in QCSN and two genotypes each were identified for the quality component traits viz., grain softness (QLD84) and grain protein content (GW2014-596).

4. Elite International Germplasm Nursery: The elite international germplasm nursery comprising 94 entries was supplied to 26 centres. Promising entries were identified for grain yield/plot and disease resistance. A total of 379 selections were made by the different cooperating centres in EIGN during this year.

Promising entries in EIGN

Trait	Entry name
Grain Yield per plot (>535g)	24th SAWYT 347 (582g), 37th ESWYT 107 (568g), 24th SAWYT 334 (559g), 34th SAWSN 3032 (558g), 34th SAWSN 3166 (558g), 18th KBSN 12 (556g), 27th HRWSN 2098 (552g), 24th SAWYT 305 (550g), 27th HRWSN 2095 (549g), 34th SAWSN 3148 (545g), 24th HRWYT 207 (542g), 37th ESWYT 119 (541g), 27th HRWSN 2107 (539g), 24th SAWYT 326 (538g), 34th SAWSN 3167 (538g), 15th HTWYT 21 (536g)
Yellow rust (Free)	24th HRWYT 231, 24th HRWYT 237, 24th HRWYT 238, 49th IBWSN 1145, 49th IBWSN 1153, 49th IBWSN 1161, 49th IBWSN 1287, 17th ESBWYT 29, 17th ESBWYT 32, 27th HRWSN 2114, 11th STEMRRSN 6026, 11th STEMRRSN 6060, 11th STEMRRSN 6165, 11th STEMRRSN 6166, 8th HLBSN 19, 37th ESWYT 122, 37th ESWYT 128, 24th SAWYT 346, 24th SAWYT 347, 24th SAWYT 348
Brown rust (0)	24th HRWYT 231, 24th HRWYT 237, 49th IBWSN 1082, 49th IBWSN 1161, 17th ESBWYT 48, 27th HRWSN 2008, 11th STEMRRSN 6110, 11th STEMRRSN 6117, 11th STEMRRSN 6165, 8th HLBSN 17, 24th SAWYT 311, 24th SAWYT 316, 24th SAWYT 334, 34th SAWSN 3003, 34th SAWSN 3016, 34th SAWSN 3073, 34th SAWSN 3148, 34th SAWSN 3264
Black rust (tMR or tS)	24th HRWYT 231, 24th HRWYT 238, 24th HRWYT 241, 49th IBWSN 1082, 49th IBWSN 1102, 49th IBWSN 1145, 49th IBWSN 1153, 49th IBWSN 1287, 17th ESBWYT 24, 17th ESBWYT 29, 17th ESBWYT 32, 17th ESBWYT 48, 27th HRWSN 2101, 11th STEMRRSN 6026, 11th STEMRRSN 6060, 11th STEMRRSN 6108, 11th STEMRRSN 6110, 11th STEMRRSN 6164, 11th STEMRRSN 6165, 11th STEMRRSN 6166, 34th SAWSN 3048, 34th SAWSN 3138
Leaf blight (≤ 35)	24HRWYT 231, 24HRWYT 238, 49IBWSN 1081, 37ESWYT 107, 34SAWSN 3048

5. National Durum Screening Nursery: 4th National Durum Screening Nursery (NDSN) comprised of 53 lines 10 lines selected each from 40th IDYT and 48th IDYN, 12 lines from 40th IDON, 14 lines from 48th IDSN and 7 lines contributed by Indore centre. The nursery was shared with 13 centres for the identification of promising entries for yield components and disease resistance. The feedback reports of NDSN indicated that the nursery is very useful and the wheat researchers across the country are getting desired material and making selections.

Trait-wise superior entries from NDSN

Trait	Entry name
Grain yield/plot (g)	48th IDSN 7056 (622g), 48th IDSN 7016 (606g), HI 8812 (601g)
Days to heading	HI 8810 (69 days), 40th IDON (69 days), 40th IDON 24 (70 days)
No. of tillers/m (no.)	HI 8810 (107)
Grains per spike	48th IDSN 7109 (61), 48th IDSN 7055 (58), 48th IDSN 7139 (58), 48th IDYN 716 (56), 48th IDSN 7145 (56), 48th IDSN 7121 (56), 48th IDYN 728 (55)
1000 grains weight (g)	40th IDYT 9 (51g), 48th IDYN 737 (51g)

6. Drought Tolerance Screening Nursery: The 30th Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 4 checks (C 306, MP 3288, DBW 110 and NI 5439) was conducted at 15 centres to identify wheat genotypes having tolerance to moisture stress. Drought tolerant genotypes were identified and are presented below; these genotypes can be used as a source in hybridization to develop drought tolerant varieties.

List of drought tolerant genotypes identified during 2017-18

Zone	Drought Tolerant genotypes (DSI Values)
PZ	MACS6695(0.31)
CZ	C306(C) (-0.06), DBW166 (0.28),
NWPZ	BRW3806 (0.43), DBW110(C) (0.22), GW477 (-0.06), MACS6695 (0.42), MP1331 (-0.23), NI5439(C) (0.11), NIAW3212 (0.40), RW5 (0.39), WH1235 (0.32)

Segregating Stock Nurseries

(i).Segregating Stock Nursery: The 93 segregating populations (F_2/F_3) of 21st Segregating Stock Nursery (SSN) was shared with 20 upcoming wheat breeding centres to enable them to evaluate and select superior plants as per the breeding objectives and cultural conditions. The utilization report indicated that the nursery could achieve 47.25% utilization across the centres. Almost all the segregating populations were utilized by one or the other centre and total of 4153 plants were selected.

Centre-wise utilization of segregating stocks in 21st SSN

S N	Centre	Plants selected	Crosses utilized	Utilization (%)	Selection criterion
1.	Malan	1837	73	74.5	Yield components, disease resistance and seed traits
2.	Khudwani	36	13	14.0	Yield components, disease res. early maturity and physiological traits
3.	Jammu	113	22	23.7	Disease resistance, morphological, physiological and seed traits
4.	Dhaulakuan	110	67	72.0	Yield components, disease resistance and morphological traits
5.	Faizabad	202	30	32.3	Yield components, dis. Res., morph, physiological and seed traits
6.	Sabour	401	92	98.9	Yield components, disease resistance and seed traits
7.	Kalyani	109	24	25.8	Yield components, disease resistance and morphological traits
8.	Varanasi	109	48	51.6	Yield components and disease resistance
9.	Ranchi	72	47	50.5	Yield components, disease resistance, earliness, morphological, physiological and seed traits
10.	Shillongini	26	13	14	Yield components, morphological, and seed traits
11.	Udaipur	92	36	38.7	Yield components and seed traits
12.	Jabalpur	225	9	9.7	Yield components
13.	Sagar	131	34	36.6	Yield components, disease resistance, morpho, physiological and seed traits
14.	Lokbharti	307	61	65.6	Yield components and physiological traits
15.	Gwalior	202	65	69.9	Yield components, morphological, physiological and seed traits
16.	Bilaspur	62	23	24.7	Yield components, morphological and seed traits
17.	Parbhani	119	90	96.8	Yield components, dis. res, morpho, physiological and seed traits
Total		**4153**	**-**	**47.25**	

(ii). Spring x Winter wheat Segregating Stock Nursery: The Spring x Winter wheat Segregating Stock Nursery (SWSSN) comprising 101 crosses (51 from VPKAS Almora and 50 crosses from

Karnal) from F_2 generation was shared with seven cooperating centres, namely Malan, Varanasi, Faizabad, Kanpur, Sabour, Vijapur and Gwalior. The maximum number of 2570 single plants was selected at Malan followed by Gwalior (683), Sabour (280) and Faizabad (169).

Utilization report from cooperating centres

Name of the center	Crosses Selected	Utilization %	Plants selected	Characteristics for which utilized
CSKHPKV, Malan	96	95	2570	Yield components under moisture stress at critical growth stages
BHU- Varanasi,	51	50.5	157	Yield components and leaf blight resistance
NDUAT-Faizabad	28	27.7	169	Yield components, leaf blight resistance and seed characteristics
BAU-Sabour	80	79.2	280	Yield components, leaf blight resistance and seed characteristics
CSAUAT Kanpur,	07	6.9	07	Yield components, morphological and seed characteristics
RVSKVV-Gwalior	78	77.2	683	Yield components morphological traits and physiological traits under terminal heat

International Nurseries and Trials

India has a strong collaboration with CIMMYT, Mexico and ICARDA, Morocco for supplying wheat germplasm. During the crop season 2017-18, CIMMYT, Mexico supplied germplasm in different nurseries/trials comprising 1476 lines (1302 bread wheat and 174 lines of durum wheat) Similarly, ICARDA, Morocco supplied a total 670 lines (550 bread wheat and 120 lines of durum wheat) in different nurseries/trials which were evaluated at various wheat breeding centres.

One set of each nursery/trial was planted at Karnal for evaluation and facilitate wheat breeders from different centres for exercising *in-situ* selection during the field day organized on 28th March, 2018 at Karnal. The best performing lines from these nurseries are utilized to constitute the Elite International Germplasm Nursery (EIGN) for bread wheat and National Durum Screening Nursery (NDSN) for supplying to cooperating centres for evaluation and utilization in wheat improvement. The promising genotypes identified from these nurseries are given below.

Promising lines having higher grain yield, rust resistance and 1000-gr. wt.

Trial	Zone	Entries higher in grain yield* with disease resistant	1000-grains Weight
Bread Wheat			
25th SAWYT	NEPZ	321 (77), 342 (76), 307 (70), 312 (65), 341 (65)	-
	PZ	308 (70), 319 (65), 327 (65)	-
38th ESWYT	NWPZ	150 (66), 145 (64), 135 (64), 104 (63), 116 (63)	-
5th WYCYT	NWPZ**	12 (58), 18 (57)	13 (52)
7th SATYN	NWPZ**	14 (60), 4 (58)	5 (51), 6 (51), 15 (50), 26 (50)
16th HTWYT	-	-	PZ:26 (47), 42 (47), 23 (46), 17 (45)
35th SAWSN	-	-	3106 (54), 3078 (49), 3008 (48), 3009 (48), 3266 (48)
28th HRWSN	-	-	2047 (47), 2120 (46), 2124 (45)
12th STEMRRSN	-	-	6026 (46)
9th HLBSN	-	-	NWPZ: 27 (45), 26 (45)
19th KBSN	-	-	NWPZ: 29 (45), 19 (42)
Durum Wheat			
48th IDSN	-	-	NWPZ: 7049 (50), 7055 (47)
49th IDYN	NWPZ	750 (63), 744 (58)	NWPZ: 749 (50), 733 (49), 723 (48) PZ: 749 (51), 713 (49), 719 (49)

Promising lines for grain yield in ICARDA trials/nurseries

Trial/Nursery	Location, yield (g)	Entries	Check yield (g/plot)	Rust response
Bread wheat				
18th ESBWYT	Karnal (>2000)	22, 31	HD 3086 (1493)	Yl (0-10S)
	Udaipur (>1250)	3, 16, 26, 27	RAJ 4120 (1150)	-
	Jabalpur (>1100)	10, 14, 17, 33, 47	GW 3336 (1073)	-
18th DSBWYT	Karnal (>1000)	49	DBW 88 (623)	Yl (10MR)
	Pune (>890)	8, 35	HD 2781 (845)	-
	Dharwad (>1150)	2, 3, 13, 32, 48	-	-
	Vijapur (>1680)	12, 27	GW 451 (1595)	-
18th SBWYT-HT	Karnal (>1500)	13, 36	WH 1105 (1194)	-
	Jabalpur (>1385)	2, 37	JWV 3336 (1336)	
	Niphad (>1500)	4, 32, 42, 49	NIAW 1994 (1184)	Yl (5MS-20MR)
18th DSBW-ON	Karnal (>680)	1, 110, 111, 127	DBW 88 (580)	-
	Hisar (>550)	42, 77, 136	WH 1124 (419)	-
	Kanpur (>350)	37, 57, 89, 101, 139, 195	K 1317 (218)	-
	Jabalpur (>770)	2, 6, 107, 112	GW 336 (428)	-
	Powarkheda (>600)	1, 55, 152	MP 3288 (375)	-
18th SBWON-HT	Karnal (>800)	77, 90, 151	WH 1105 (570)	-
	Hisar (>600)	77, 136	HW 1124 (419)	Yl (0)
	Indore (>800)	60, 77	HI 1544 (698)	-
	Vijapur (>680)	85, 86, 108, 148	GW 11 (488)	Yl (0-tMR)
Durum wheat				
41st IDYT	Indore (>2000)	4, 7, 8 ,9, 10	HI 8777 (1754)	-
	Pune (>1900)	4, 7, 15, 18, 21, 23	MACS 3949 (1732)	-
	Vijapur (>1690)	8, 10, 12	HI 8498 (1638)	Yl (tR-tMR)
41st IDON	Karnal (>890)	20, 77, 78, 92	HI 8737 (830)	(0-10MS)
	Vijapur (>690)	85, 96	HI 8498 (600)	(0-20MS)

Physiological studies on heat stress tolerance

The multilocation heat tolerance trial (MLHT) is conducted to identify heat tolerant genotypes among the AVT genotypes. Two trials MLHT-1 (new 16 AVT entries for CZ and PZ trial and 25 entries for NWPZ and NEPZ trial) and MLHT-2 (final year 16 AVT entries) were conducted at 15 locations during the crop season 2017-18.

MLHT-1

The pooled analysis of NWPZ and NEPZ revealed that the HSI values ranged from 0.29 to 1.43 and the genotypes DBW221 (0.5), PBW762 (0.66), DBW233 (0.74), DBW223 (0.79), RW 5 (0.82), BRW3792 (0.84), PBW769 (0.9), UP2981 (0.93), PBW771 (0.95), K1601 (0.96), WH1218 (1.03) and HD3249 (1.03) were found to be relatively less sensitive to thermal regimes. For CZ and PZ the HSI values ranged from -0.06 to 1.42 and the genotypes HI1625 (-0.061), MACS6709 (0.733), AKAW4924 (0.77), GW492 (0.82), RW5 (0.94) and DBW235 (0.99) were found to be relatively less sensitive to thermal regimes

MLHT-2

Pooled analysis of sixteen genotypes tested during two years (2016-17 and 2017-18) at eleven centres showed that The HSI values ranged from 0.78 to 1.2 and the genotypes HD3219 (0.98), PBW752 (0.99), HI 1617 (1.03), WH1202 (1.04) and DBW187 (1.04) were found to be relatively less sensitive to thermal regimes alongwith the check entries.

HSI of genotypes in MLHT-2 across locations (Pooled over years and locations)

Genotype	Grain Yield (g)		*R%	HSI	Checks	Grain Yield (g)		*R %	HSI
	TS	LS				TS	LS		
HD3219	1564.1	1138.8	27.2	0.98	DBW14 (C)	1385.5	1076.9	22.3	0.80
PBW752	1609.1	1166.8	27.5	0.99	DBW71 (C)	1548.2	1139.1	26.4	0.95
HI1617	1583.7	1131.3	28.6	1.03	HD2932 (C)	1481.5	1117.8	24.6	0.88
WH1202	1568.3	1115.8	28.9	1.04	RAJ3765 (C)	1453.9	1139.0	21.7	0.78
DBW187	1624.2	1153.0	29.0	1.04	WH730 (C)	1420.0	1099.6	22.6	0.81

*Reduction% in LS compared to TS

Break-up of Coordinated Wheat Varietal Trials, 2017-18
Proposed (PR), Conducted (CD) and Reported (RT)

SN	Trial series/Zones	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	4	4	3	28	28	25	25	23	13							57	55	41
2	AVT-IR-TS-TAD										16	14	12	16	16	13	32	30	25
3	AVT-IR-LS-TAS				24	24	20										24	24	20
4	AVT-RI-TS-TAS				17	16	13	18	16	12							35	32	25
5	AVT-RI-TS-TAD										17	16	12	11	11	8	28	27	20
6	AVT-RI-LS-TAS	11	11	7													11	11	7
7	AVT-RF-ES-TAS	7	7	5													7	7	5
8	AVT-RF-TS-TAS	11	11	7													11	11	7
9	IVT-RF-TS-TAS	8	8	6													8	8	6
10	NIVT-1A-IR-TS-TAS				10	10	9	9	9	8							19	19	17
11	NIVT-1B-IR-TS-TAS				8	8	7	10	10	9							18	18	16
12	NIVT-2-IR-TS-TAS										10	9	7	7	7	5	17	16	12
13	NIVT-3A-IR-LS-TAS				9	9	8	8	8	6							17	17	14
14	NIVT-3B-IR-LS-TAS										10	10	7	5	5	5	15	15	12
15	NIVT-4-IR-TS-TDM										6	5	5	6	6	6	12	11	11
16	NIVT-5A-RI-TS-TAS				9	9	7	8	8	7							17	17	14
17	NIVT-5B-RI-TS-TDM										12	11	9	6	6	4	18	17	13
18	SPL-DIC-IR-TS													12	11	11	12	11	11
19	SPL-VLS-TAS				8	8	7	7	7	6							15	15	13
TOTAL		**41**	**41**	**28**	**113**	**112**	**96**	**85**	**81**	**61**	**71**	**65**	**52**	**63**	**62**	**52**	**373**	**361**	**289**
% of CD Trial/PR Trial		100			99.1			95.3			91.5			98.4			96.8		
% of RT Trial/CD Trial		68.3			85.7			75.3			80.0			83.9			80.0		
Trials Rejected by Monitoring Team		1			5			7			3			5			21		

Abbreviations used in the Text

Yield	
Rk	Rank
G	Group (First non-significant)
S.E. (M)	Standard error of the means
C.D.	Critical difference
C.V.	Coefficient of variance
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/MRMS	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
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)
Thr.	Threshability; Ey = easy; M=medium; H = hard
Lod.	Lodging percentage
Grain characteristics	
Col.	Colour of the grain: A= amber; W= white; LR= light red; R= red
Tex	Texture; H= hard; SH= semi-hard; so= soft
TGW.R	1000-grains weight Range (g)
TGW.M	1000-grains weight Mean (g)

Other symbols	
C	Check variety
(I)	Identified variety
(d)	Durum
*	Final year test 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 from MABB
TAS	*Triticum aestivum*
TAD	*Triticum aestivum* + *T. durum*
TDM	*Triticum durum*
DIC	*Triticum dicoccum*
VLS	Very late sown trial

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	
LSM	Low site mean
UY	Unrealistic yield
LS	Late sowing
HCV	High coefficient of variation
LCV	Low coefficient of variation
RMT	Rejected by monitoring team
DNR	Data not reported

Parentage Details

Parentage of Wheat and Triticale Genotypes, 2017-18

Contributing Centres

SN	Centre	Symbols
1.	Akola, PDKV	AKAW, AKDW
2.	Bilaspur, IGKVV	CG
3.	Karnal, IIWBR	DBW, DDW, WB
4.	Vijapur, SDAU	GW
5.	Junagarh, JAU	GW
6.	New Delhi, IARI	HD
7.	Indore, IARI, RS	HI
8.	Pusa, IARI, RS	HP
9.	Shimla, IARI, RS	HS
10.	Wellington, IARI, RS	HW
11.	Varanasi, BHU	HUW
12.	Malan, CSKHPKV	HPW
13.	Kanpur, CSAUA&T	K
14.	Pune, ARI	MACS
15.	Powarkheda, JNKVV	MP, MPO
16.	Jabalpur, JNKVV	MP
17.	Sagar, JNKVV	JWS
18.	Faizabad, NDUA&T	NW
19.	Niphad, MPKV	NIAW, NIDW
20.	Ludhiana, PAU	PBW, PDW
21.	Durgapura, SKRAU	RAJ
22.	Sabour, BAU	BRW
23.	Kota, MPUA&T	RKD
24.	Dharwad, UAS	UAS, DDK
25.	Pantnagar, GBPUA&T	UP, UPD
26.	Almora, VPKAS	VL
27.	Hisar, CCSHAU	WH, WHD

Parentage, 2017-18

PDKV, Akola (Maharashtra)

1.	AKAW4924	DL-9-65-2/AKW1071-1-2
2.	AKAW 5078	AKAW-2344 X Raj-4000/AKAW-4103-2-2-1
3.	AKAW5023	NW/1012/DL788-2//DBW 14/3/AKAW 2978-12
4.	AKAW5077	AKAW-2344 X Raj-4000/AKAW-4103-10-1-10
5.	AKAW5082	AKAW-2344 X Raj-4000/AKAW-4103-2-1-5
	Durum	
6.	AKDW5079	AKDW-4153 X MACS-2846/AKDW-4274-4-4-6

Bihar Agricultural University, Sabour, Bhagalpur (Bihar)

1.	BRW3792	PF74354//LD/ALD/4/2*BR12*2/3/JUP//PAR214
2.	BRW3806	NI5439/MACS2496
3.	BRW3814	PBW65/2*PASTOR/3/KIRITATI//PBW65/2*SERI.1B
4.	BRW3823	DBW 14/ FLW 2

IGKVV, TCB College of Agriculture, Bilaspur (Chhattisgarh)

1.	CG1028	GW 366/RWP2006-33
2.	CG1029	HW 2004/PHS 725
3.	CG1030	KAMB1*2/BRAMBLING/SUJATA

Indian Institute of Wheat & Barley Research, Karnal (Haryana)

1.	DBW187	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
2.	DBW221	36IBWSN284/22ESWYT28
3.	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
4.	DBW223	PBW550/CBW38
5.	DBW233	CHIBIA//PRLII/CM65531/3/SKAUZ/BAV92/4/MUNAL#1
6.	DBW235	MELON//FILIN/MILAN/3/FILIN/4/TRCH/SRTU//KACHU
7.	DBW237	NAC/TH/AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
8.	DBW252	PFAU/MILAN/5/CHEN/AE.SQ(TAUS)//BCN/3/VEE#7/BOW/4/PASTOR
9.	DBW253	QUAIU/BECARD//BECARD
10.	DBW254	39th IBWSN 1079/WH 1046
11.	DBW255	CHWWINK#1/3/MILAN/S87230
12.	DBW256	HD 2009/DBW 39
13.	DBW257	HUW640/HD3055
14.	DBW258	YR15/6*AVOCET/YR24/6*AVOCET//2*RUBY/CBW 38
15.	DBW259	YR15/6*AVOCET/YR24/6*AVOCET//2*RUBY /ND 643*2/ WAXWING
16.	DBW260	HD 2967/PBW533//YR15/6*AVOCET/3/PBW533
17.	DBW261	CIMMYT 165/PBW 585
18.	DBW262	39TH IBWSN 1079/DBW 17

19.	DBW263	R 9701/MS Song/4/KAUZ/3/STAR*2/KAUZ//PH137
20.	DBW264	Raj4037/DBW 17
21.	DBW265	SR 39/DPW 621-50
22.	DBW266	PRL/2*PASTOR//PBW343*2/KUKUNA/3/ROLF07/4/BERKUT// PBW343*2/ KUKUNA
23.	DBW267	VEE/MJI//2*TUI/3/PASTOR/4/BERKUT/5/MUU
24.	DBW268	BAJ #1*2/KISKADEE#1
25.	DBW269	QUAIU #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/ BOW//KAUZ/ 6/BECARD
26.	DBW270	NP 846/ HUW 234
27.	DBW271	BL 1496/MILAN/3/CROC_1/Ae.sq (205)//KAUZ/4/ Raj 4037
28.	DBW272	PASTOR/3/ALTAR-84/AE.SQ(TR.TA)//OPATA-M-85
29.	DBW273	FRANCOLIN #1*2//ND 643/2* WBLLI
30.	DBW274	SR 39/DPW 621-50
31.	DBW275	EC479379/K 0711
32.	DBW276	AKAW 4006/F81513/MILAN
33.	DBW277	NI 5439/ MACS 2496
34.	DBW278	PHS714/UP2425
35.	DBW279	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/WBLL4//OAX93.24.35/WBLL1
36.	DBW280	BABAX/LR42//BABAX*2/3/PAVON 7S3, +LR47/4/ND643/2*WBLL1/5/ BABAX/LR42//BABAX*2/3/PAVON 7S3,+LR47
	Durum	
37.	DDW47	PBW34/RAJ1555//PDW314
38.	DDW48	HI8498/PDW233//PDW291
39.	DDW49	PDW314/PDW233

SDAU, Vijapur (Gujarat)

1.	GW491	HD2808/HI1516//PBW573
2.	GW492	RAJ4040/HD2808
3.	GW493	HW2045//HI1183/PCE2555
4.	GW505	RAJ 4040 / HD 2808
5.	GW506	GW 353 / DBW 31
6.	GW509	GW 388/MP 4010
7.	GW510	GW 503 // K 9107 / J 431/3 / RAJ 4037
8.	GW512	GW 394 / MP 1156
	Durum	
9.	GW1339	DDW04/4/MEMO/YAV//AVK/3/RD214
10.	GW1346	GW1236/AR06-3
11.	GW1348	ERP'S'.GEN(2).YEN(2).FEGI'S'/GW 1113// DBPY 2003-2
12.	GW1349	HI 8671 / HI 8498
13.	GW1350	GW1234/HI8699

JAU, Junagadh (Gujarat)

1.	GW495	LOK54/RAJ4083
2.	GW507	PHS 0621/HD 2864
3.	GW508	RAJ 3765/GW 366
4.	GW511	GW 366/HW 441//GW 172

Indian Agricultural Research Institute, New Delhi

1.	HD3226	GRACKLE/HD2894
2.	HD3237	HD3016/HD2967
3.	HD3249	PBW343*2/KUKUNA//SRTU/3/PBW343*2/KHVAKI
4.	HD3254	CL1705/HD2687
5.	HD3271	CHIRIYA7/HD2824
6.	HD3276	CL1705/HD2687
7.	HD3277	CHEN/AEG.SQUARROSA//BCN/3/BAV92/4/BERKUT
8.	HD3278	MILAN//PRL/2*PASTOR/4/CROC-1/AE.SQUARROSA//PGO/3/....
9.	HD3279	KBRL-22/WR544//DW1405
10.	HD3280	HD2998/DW1403//DBW50
11.	HD3281	PBW590/DBW50
12.	HD3282	CL2595/K9451//CL882/HD2009
13.	HD3283	HD2998/CL3021//HD2985
14.	HD3284	CL264/CL1633//CNO601
15.	HD3285	CHIBIA/4/PGO//CROC_1/AE.SQ UAROSA(224)/3/2*BORL95 /5/W EAVER/4NAC/TC.AC//3*PVN/3/ MIRLO/BUC
16.	HD3286	HD2824/CL1682//HD2946
17.	HD3287	BABAX/Lr42/BABAX/3/ER 2000/4/PAURAQUE#1
18.	HD3288	MELON//FILIN/MILAN/3/FILIN/5/CROC_1/AE.SQUARROSA(444)/3/T. DICOCCONPI94625/AE.SQUARRO SA(372)//3*PASTOR /4/ T.DICOCCO NPI94625/AE.SQUARROSA(372)//3 *PASTOR/6/ATTILA/3*BCN//BAV9
19.	HD3289	TRCH*2//ND643/2*WBLL1
20.	HD3290	WORRAKATTA/2*Pastor//MUU/3/ MUU
21.	HD3291	WHEAR/KRONSTAD F2004//CNO79
22.	HD3292	CL2595/K9451/CL882/HD2009
23.	HD3293	HD2967/DBW46
24.	HD3294	PASTOR//HXL7573/2*BAU/3/SOKO LL/WBLL1/4/HUW234 +LR34 / PRINI A//PBW343*2/KUKUNA/3/ROLF07/5 /WHEAR/SOKOLL
25.	HD3295	PBW 175/HD 2987
26.	HD3296	HI1500/DBW43
27.	HD3297	DBW17 / PBW550
28.	HD3298	CL1449/PBW343//CL882/HD2009
29.	HD3300	HD2998/HD3160//PDW621-50

IARI Regional Station, Indore (M.P.)

1.	HI1620	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
2.	HI1621	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1
3.	HI1624	GW322/PBW498
4.	HI1625	GAINT3/HW2045
5.	HI1628	FRET2*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/PFAU/WEAVER//BRAMBLING
6.	HI1629	HI-1531 / HI-1544
7.	HI1630	DL 765-1 //KVZ/CNO-67
8.	HI1631	HI-1544 / HI-1535
9.	HI1632	HD-2705 / NIAW-907
10.	HI1633	GW-322 / PBW-498
11.	HI1634	GW 322 / PBW 498
12.	HI1635	TUKURU//BAV92/RAYON/6/NG8201/KAUZ/4/SHA7//PRL/VEE#6/3/FASN/5/MILAN /KAUZ*2/7/KINGBIRD#1
	Durum	
13.	HI8800	HI8681/HI8663
14.	HI8802	HI8627/HI8653
15.	HI8805	IWP5070/HI8638//HI8663
16.	HI8807	HI 8695/ HI 8663// HI 8663
17.	HI8808	HI 8680 / HI 8663
18.	HI8809	HI 8681/ HI 8663
19.	HI8810	HD 4719/ HI 8663
20.	HI8811	HI 8627/ HI 8663//HI 8663
21.	HI8812	HI 8680/ HI 8663
22.	HI8813	MPO 1215/ HI 8498
23.	HI8814	HI 8627/ HI 8663
24.	HI8815	HI 8627/ HI 8663

IARI Regional Station, Pusa (Bihar)

1.	HP1968	NW-3069/RAJ-4101
2.	HP1969	CHEWINK#1/MUTUS
3.	HP1970	DBW-28/DBW-52

IARI Regional Station, Shimla (H.P.)

1.	HS634	PBW343*2/KUKUNA/5/CNO79//PF73054/MUS/3/PASTOR/4/BAV92
2.	HS649	HD2888/FRTL/AGRI/NAC//FLW3
3.	HS650	CHEN/AE.SQUARROSA(TAUS)//BCN/3/BAV92/4/BERKUT
4.	HS651	AKW2264/VL908
5.	HS652	HD2888/EC463658//VL906
6.	HS653	HD2888/FRTL/AGRI/NAC//FLW3
7.	HS660	PASTOR//HXL7573/2*BAU/3/SOKOLL/WBLL1
8.	HS661	HS295*2/FLW20//HS295*2/FLW13

9.	HS662	SERI.1B*2/3/KAUZ*2/BOW//KAUZ*2/5/CNO79//PF70353/MUS/3/ PASTOR/4/BAV92
10.	HS664	HS470/VL829
11.	HS665	HD2888/FRTL/AGRI/NAC//FLW3

IARI Regional Station, Wellington (Tamil Nadu)

1.	**Dicoccum** HW4110	HW 1098*2//NP 200/HI 8498

Banaras Hindu University, Varanasi (U.P.)

1.	HUW826	W15.92/4/PASTOR//HXL7573/28BAU/3/WBLL1*2/5/WHEAR/SOKOLL
2.	HUW827	CROC_1/AE.SQUARROSA (210)//INQALAB 91*2/KUKUNA/3/PBW343*2/KUKUNA
3.	HUW828	QUAIU #1/SOLALA//QUAIU #2
4.	HUW829	CROC_1/AE.SQUARROSA (205)//BORL95/3/PRL/SARA//TSI/VEE#5/4/FRET2/5/TRCH/SRTU//KACHU
5.	HUW830	FRET2/KIRITATI/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC./4/ 2*PASTOR*2/6/PVN
6.	HUW831	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/PARUS/PASTOR
7.	HUW832	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/WHEAR/SOKOLL

CSKHPKV, Malan (H.P.)

1.	HPW441	NAC/TH.AC//3*MIRLO/BUC/4/PASTOR
2.	HPW442	LONG291*2/PASTOR
3.	HPW450	PBW343/WH601
4.	HPW451	GIANT/HPW185
5.	HPW453	HPW155/HW4024-P5
6.	HPW454	WW1/HPW251
7.	HPW455	HPW155/HW4024-P1
8.	HPW459	HPW249/HPW211

CSAUAT, Kanpur (U.P.)

1.	K1601	K9107/DBW14
2.	K1701	K0307/K0402
3.	K1702	PBW343/HP1744
4.	K1703	K9107/PBW343
5.	K1704	PBW343/HP1631
6.	K1705	K9222/2K21
7.	K1707	K9533/HD2733
8.	K1708	K9107/PBW373
9.	K1710	HUW468/HD2402
10.	K1711	K68/K616

Agharkar Research Institute, Pune (Maharashtra)

1.	MACS6695	NI5439*2/HD2934
2.	MACS6696	NI5439/HD2934
3.	MACS6709	ROLF07/4/BOW/NKT//CBRD/3/CBRD/5/FRET2/TUKURU//FRET2
4.	MACS6719	MACS 2846 / UAS 410
5.	MACS6722	MACS 2496 / K0124
6.	MACS6726	TOB/ERA//TOB/CNO67/3/PLO/4/VEE#5/5/KAUZ/6/FRET2 /7/PASTOR//MILAN/KAUZ/3
7.	MACS6727	MACS 6240 // UP 2338 / ARKAN
8.	MACS6729	C 306 / UAS 295
9.	MACS6732	MACS 6222 / HW 2020 // HS 240
	Durum	
10.	MACS4058	MACS3125/AKDW2997-16//MACS3125
11.	MACS4059	MACS3603/HD4502
12.	MACS4075	MACS 2496 / Raj 4037 // DBW 35
13.	MACS4083	MACS 2846/ DDW 01 // DBP 01-1
14.	MACS4085	MACS 2846 // DHTON 23 / BIJAGA YELLOW
	Dicoccum	
15.	MACS5051	DDK 1009 / MACS 2971

JNKVV, Powarkheda (M.P.)

1.	MP1331	PBW343*2/KUKUNA//KITE
2.	MP1338	MILAN/KAUZ//DHARWAR DRY/3/BAV92/4/PAURAQ
3.	MP1345	BABAX/LR42//BABAX/3/ER2000/4/PAURAQUE#1
4.	MP1346	SOKOLL/ROLF07/GW190
5.	MP1348	NAC/TH.AC//3*PVN/3/MIRLO/BUC4/2*PASTOR/5/KACHU/6/KACHU/HW 234
6.	MP1349	34 IBWSN 336/PBW 502
7.	MP1350	HI 1531/GW 373
8.	MP1351	PHSO-622 X WH 1003
9.	MP1352	BAVIS#1//ND643/2*WBLLI
	Durum	
10.	MPO1336	GW1189/NIDW79
11.	MPO1343	HG822/HI8498
12.	MPO1347	GW1189/NIAW79
13.	MPO1353	ALTAR84/PBW291/MPO1106
14.	MPO1354	SWAHEN_2/KIRKI_8//PROZANA_1/4/ADAMAR_15// ALBIA_1/ALTAR84/3/ SNITAN/9/GUAYACANINIA/GUANAY/8/ GEDIZ/FGO//GTA/3/SRN_1/4/ TOTUS/5/ENTE/MEXI_2//HUI/4/YAV_1/3/LD357E/2*TO60//JO69/6/ SOMBRA_20/7/JUPAREC2001
15.	MPO1355	USDA595/3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV_1/6/ ARDENTE/7/HUI/YAV79/8/POD_9

JNKVV, Jabalpur (M.P.)

1.	MP3493	35IBWSN159 / DBW17 (35 IBWSN 159= CROC_1/ Ae. Squarrosa (205)//KAUZ/3/ATTILA)
2.	MP3495	15 KBSN 98/UP 2425
3.	MP3497	35 IBWSN162 / 20 SAWSN 81 (35 IBWSN162=CROC_1/Ae. Squarrosa (205)//KAUZ/3/MUNIA20 SAWSN 81= FASAN/2*TEPOCA/3/CHEN/ Ae. squarrosa (TAUS)//BCN)
4.	MP3503	23 ESWYT 18 / DBW 17
5.	MP3507	35 IBWSN 159 / 34 IBWSN 23 (35 IBWSN 159= CROC_1/Ae. Squarrosa (205)//KAUZ/3/ATTILAH021222 (34 IBWSN 23)= ALTAR84/AE.SQUARROSA(219)//SERI)

JNKVV, Sagar (M.P.)

1.	JWS154	WHLS 1934XLOK1

NDUA&T, Kumarganj, Faizabad (U.P.)

1.	NW7028	HUW 234+LR34/PRINIA//KIRITATI*2/3/KINGBIRD#1
2.	NW7030	PICAFLOR#1/5/FRET2/KUKUNA//FRET2/3/YANC/4/FRET2/KIRITATI
3.	NW7033	PRL/2*PASTOR/4/CHOIX/STAR/3/HEI/3*CNO79//2*SERI/5/WHEAR /SOKOLL
4.	NW7034	CROC_1/AE.SQUARROSA(205)//BORL95/3/PRL/SARA//TSI/VEE#5/ 4/FRET2/5/TRCH/SRTU//KACHU
5.	NW7037	PRL/2*PASTOR//WAXWING*2/KRONSTADF2004/4/PBW343*2/KUKUNA// KRONSTADF2004/3/PBW343*2/KUKUNA
6.	NW7041	SOKOLL/3/PASTOR//HXL7573/2*BAU14/WHEAR/SOKOLL
7.	NW7047	PRL/2*PASTOR//WAXWING*2/KRONSTADF2004/4/PBW343*2/KUKUNA// KRONSTADF2004/3/PBW343*2/KUKUNA
8.	NW7049	FRET2/KIRITATI/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR*2/6/ PVN

MPKV, Niphad (Maharashtra)

1.	NIAW3170	SKOLL/ROLF07
2.	NIAW3270	NIAW 917/NIAW 1415
3.	NIAW3354	FRET2*2/BRAMBLING//MESIA/3/BECARD
4.	NIAW3386	BECARD/QUAIU#1
5.	NIAW3390	BECARD/CHYAK
6.	NIAW3523	WBLLI *2/KURUKU//HEIIO
7.	NIAW3525	CS/TH.SC//3*PVN/3/MIRIO/BUC/ 4/URES/JUN//KAUZ/5/HUITES/6/ YANAC/7/CS/TH.S
	Durum	
8.	NIDW1149	NIDW 295 /NIDW 15
9.	NIDW1171	PLATA_10/61 MQUE/41USDA5731IQFN/AA_7/31ALBA-D/5/A VO/HUI…
10.	NIDW1158	NIDW 295 x NIDW 15

PAU, Ludhiana (Punjab)

1.	PBW752	PBW621/4/PBW343//YR10/6*AVOCET/3/3*PBW343/5/PBW621
2.	PBW757	PBW550/YR15/6*AVOCET/3/2*PBW550/4/PBW568+YR36/3*PBW550
3.	PBW762	YR5/6*AVOCET//2*PBW550
4.	PBW763	PBW621/3/YR10/6*AVOCET//4*PBW343/4/2*PBW621/5/PBW621/3/YR15/ 6*AVOCET//4*PBW343/4/2*PBW621
5.	PBW766	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
6.	PBW769	ATTILA/3*BCN/3/CROC_1/AE.SQUARROSA(224)//OPATA/4/CHIBIA// PRLII/CM65531/3/SKAUZ/BAV92/4/MUNAL#1
7.	PBW770	PBW585/4/BABAX//IRENA/KAUZ/3/HUITES
8.	PBW771	PBW550//YR15/6*AVOCET/3/2*PBW550
9.	PBW773	FRANCOLIN#1*2/KIRITATI
10	PBW777	T.DICOCCON PI94625/AE.SQUARROSA372//3*PASTOR/3/PBW554
11	PBW800	HD 2967/4/BW 9250*3// Yr10/6*Avocet/3/ BW 9250*3//Yr15/6*Avocet/5/ 2*HD 2967
12	PBW801	PBW621/3/Yr10/6*Avocet//4*PBW 343/4/ 2*PBW 621/5/PBW 621/3/Yr 15/6*Avocet// 4*PBW 343/4/2*PBW 621
13	PBW781	PBW621/4/BW9250*3//Yr10/6* Avocet/3/ BW9250*3//Yr15/6* Avocet/5/2*PBW 621
14	PBW782	PBW 621/BWL 0772
15	PBW783	HD 2967/4/BW 9250*3// Yr10/6*Avocet/3/ BW 9250*3//Yr15/6*Avocet/5/ 2*HD 2967
16	PBW784	BABAX/LR42//BABAX/3/ER2000/5/ATTILA/4/WEAVER/TSC//WEAVER /3/WEAVER/6/KA/NAC//TRCH
17	PBW785	WHEAR/VIVITSI//WHEAR/3/PANDORA
18	PBW786	PBW621/3/Yr10/6*Avocet//4*PBW 343/4/ 2*PBW 621/5/PBW 621/3/Yr 15/6*Avocet// 4*PBW 343/4/2*PBW 621
19	PBW787	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/MASSIV/PPR47.89C
20	PBW788	PASTOR//HXL7573/2*BAU/3/SOKOLL/ WBLL1/4/HUW234+LR34/PRINIA// PBW343*2/KUKUNA/3/ROLF07/5/ WHEAR/SOKOLL
21	PBW789	30ESWYT134/30ESWYT130[PFAU/MILAN/5/CHEN/AEGILOPS SQUARROSA(TAUS)//BCN/3/VEE#7/BOW/4/ PASTOR/7/CNDO/R143//ENTE/MEXI_2/3/ AEGILOPS SQUARROSA(TAUS)/4/WEAVER
22	PBW790	PBW 621/BWL 0772
23	PBW791	PASTOR//HXL7573/2*BAU/3/SOKOLL/ WBLL1/4/HUW234+LR34/PRINIA// PBW343*2/KUKUNA/3/ROLF07/5/ WHEAR/SOKOLL
24	PBW792	PBW550MUTANT/PBW550
25	PBW793	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1/6/VEE/MJI//2*TUI /3/2*PASTOR/4/BERKUT/5/PFAU/MILAN
26	PBW794	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/ WHEAR/ SOKOLL
27	PBW795	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/ GLADIUS
28	PBW796	W15.92/4/PASTOR//HXL7573/2*BAU/3/ WBLL1*2/5/WHEAR/SOKOLL
29	PBW797	PBW 621/BWL 0772
30	PBW798	BW 9246/2* DBW 17

31	PBW799	FRNCLN/NIINI #1//FRANCOLIN #1
	Durum	
32	PDW355	MAGH72/RUFO//ALG66/RU/3/ALTAR84/ALD/4/HUI/YAVI/D2672

SKNAU, Durgapura, Jaipur (Rajasthan)

1.	Raj 4527	HW 3083/ HW 5015 // DBW 17
2.	Raj 4528	(BJY/COC//PRL/BOW/3/SARA/THB//VEE/4/PIFED) / WR 1179
3.	Raj 4529	PHS 0624/WR 1136
4.	Raj 4530	(BJY/COC//PRL/BOW/3/SARA/THB//VEE/4/PIFED) / DBW 48
5.	Raj 4531	CROC_1/AE SQUARROSA (224)/ OPATA/ 3/BJY /COC//PRL/ BOW/4/BJY/ COC// PRL/BOW/WR1175
6.	Raj 4532	QT6581/4/PASTOR// SITE /MO/3 /CHEN/ AEGILOPS SQUARROSA (TAUS) //BCN / Raj 4170
7.	Raj 4533	HW 3083 / HW 5015 // WR 1128
8.	Raj 4534	QT6581/4/PASTOR// SITE /MO/3 /CHEN/ AEGILOPS SQUARROSA (TAUS) //BCN / Raj 4166
9.	Raj 4535	BJY/COC//PRL/BOW/3/SARA/THB//VEE/4/PIFED/WR 1159
10.	Raj 4536	(BJY/COC//PRL/BOW/3/SARA/THB//VEE/4/PIFED) / DBW 48

Agriculture University, Kota (Rajasthan)

	Durum	
1.	RKD331	PH896-21/5/HUBEi//SOOTY_9/RASCON_37/3/2*SOOTV_9 /RASCON_37/4/SOOTV_9/RASCON_37/6/1a.1d 5+1-06/3*MOJO//RCOL/4/ARMENT//SRN_3/NIGRIS_4/3/CANELO_9.1

UAS, Dharwad (Karnataka)

1.	UAS398	GW 322 / RAJ 4037 // UAS 259
2.	UAS399	UAS 219 / RAJ 4083 // GW 430
3.	UAS 3001	UAS 259 / GW 322 // HI 977
4.	UAS 3002	RAJ 4083 / DWR 195 // HI 977
5.	UAS 3003	UAS 347 / NI 5439 / C 306
	Durum	
6.	UAS465	STOT//ALTAR84/ALD*2/3/AUK/GUIL//GREEN
7.	UAS466	AMRUTH//BIJAGA YELLOW/AKDW299-16
8.	UAS468	UAS 405 / UAS 419 // UAS 415
9.	UAS469	MAALI/6/MUSK_1//ACO89/FNFOOT_2/4/MUSK_4/3/PLATA_3//CREX/ALL A/5/ OLUS*2/ ILBOR//PATKA_7/YAZI_1/10/ALTAR84//FD8419-126-1-2/RAZZAK/3/KRF-DW/ BALADI AHA M R A/9/ALTAR84/ 860 137// YAZI_1/ 4/LIS_8/FILLO_6/3/ FUUT// HORA/ JOR/8/ GEDIZ/FGO //GTA /3/SRN_1/4/TOTUS/5/ENTE/M/UAS419
10.	UAS470	JUPARE C 200* 2 / KHAPLI / 5 / PLATA6 / GREEN_17 // SNITAN / 4/YAZI_1 / AKAKI4// SOMAT_3 / 3 / AUK / GUIL // GREEN
	Dicoccum	
11.	DDK1054	DDK 1037 / DDK 1029 // DDK 1013

GBPUAT, Pantnagar (Uttarakhand)

1.	UP2981	CHYAK/PAURAQ
2.	UP3001	NW4057/HP1917
3.	UP3002	FRET2/TUKURU//FRET2/PBW605
4.	UP3003	PBW343+Gpc-B1/UP2382//PBW64
5.	UP3004	KISKADEE #1/5/KAUZ*2/MNV//KAUZ/3/MILAN/4/BAV92/6/WHEAR//2*PRL/2*PASTOR
6.	UP3005	MILAN/KAUZ//PRINIA/3/BAV92/4/BAVIS
7.	UP3006	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1/6/VEE/MJI//2*TUI/3/2*PASTOR/4/BERKUT/5/PFAU/MILAN
8.	UP3007	PRL/2*PASTOR//WAXWING*2/KRONSTAD F2004/4/PBW343*2/KUKUNA//KRONSTAD F2004/3/PBW343*2/KUKUNA
9.	UP3008	SOKOLL/3/PASTOR//HXL7573/2*BAU*2/4/PAURAQ
10.	UP3009	PBW629/RAJ3077//PBW530
11.	UP3010	CHIBIA//PRLII/CM65531/3/SKAUZ/BAV92*2/4/HUW234+LR34/PRINIA//PBW343*2/KUKUNA/3/ROLF07
12.	UP3011	BABAX/LR42//BABAX/3/ER2000/5/ATTILA/4/WEAVER/TSC//WEAVER/3/WEAVER/6/KA/NAC//TRCH
13.	UP3012	PREMIO/2*BAVIS
14.	UP3013	SOKOLL/3/PASTOR//HXL7573/2*BAU*2/4/EGA BONNIE ROCK
15.	UP3014	SOKOLL/WBLL1/4/D67.2/PARANA66.270//AE.SQUARROSA(320)/3/CUNNINGHAM
16.	UP3015	PRL/2*PASTOR/6/WBLL1*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/KACHU
17.	UP3016	BAJ#1*2/5/SW89.5277/BORL95//SKAUZ/3/PRL/2*PASTOR/4/HEILO
18.	UP3017	FRANCOLIN#1/BAJ#1
19.	UP3018	UP 2747/VW976

VPKAS (ICAR), Almora (Uttarakhand)

1.	VL1014	HI1531/KLEIBER/2*VL80CONXK-POLL//VL900
2.	VL1015	VLGEHUN738*3/FLW16/VLGEHUN73883/MORO
3.	VL1016	VLGEHUN738*3/FLW16/VLGEHUN73883/MORO
4.	VL2031	QLD36/ARI/NAC//ATILLA
5.	VL2032	MUNAL#1/FRANCOLIN#1//WAXWING*2/TUKURU
6.	VL2033	TUKURU//BAV92/RAYON/3/FRCLN
7.	VL2034	VLGEHUN738*3/FLW16/VLGEHUN73883/MORO
8.	VL3016	KA/NAC//TRCH/3/DANPHE
9.	VL3017	RWP2008-31/VL895
10.	VL3018	FRNCLN/NIINI#1//FRANCOLIN#1

CCSHAU, Hisar (Haryana)

1.	WH1218	KA/NAC//TRCH/3/VORB
2.	WH1235	METSO/ER2000/5/2*SERI*3//RL6010/4*YR/3/PASTOR/4/BAV92

3.	WH1237	SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD
4.	WH1238	TILHI/PASTOR
5.	WH1239	TAM200/PASTOR//TOBA97
6.	WH1240	WBLLI*2/VIVITSI
7.	WH1241	ELVIRA/5/CNDO/R143//ENTE/MEXI75/3/AE.SQ/4/2*OCI/6/VEE/PJN//KAUZ/3/PASTOR/7/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/8/ELVIRA/5/CNDO/R143//ENTE/MEXI75/3/AE.SQ/4/2*OCI/6/VEE/PJN//KAUZ/3/PASTOR
8.	WH1242	BAVIS/2*FRANCOLIN #1
9.	WH1243	92.001E7.32.5/SLVS/5/NS-732/HER/3/PRL/SARA//TSI/VEE#5/4/FRET2/6/SOKOLL/3/PASTOR//HXL7573/2*BAU
10.	WH1244	CNO79//PF70354/MUS/3/PASTOR/4/BAV92
11.	WH1245	FRNCLN/NINI#1//FRANCOLN#1
12.	WH1246	HD2830/WH147
13.	WH1247	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/SOKOLL/WBLL1
14.	WH1248	WAXWING*2/VIVITSL
15.	WH1250	WAXWING*2/TUKURU//2*FRNCLN
16.	WH1251	HD2830/WH147
	Durum	
17.	WHD963	BCRIS/BICUM/LLARETA INIA/3/DUKEM_12/2*RASCON_21/5/SOMAT_3/GREEN_22/4/GODRIN/GUTROS/DUKEM/3/THKNEE_11

Checks

Variety	Parentage
DBW14	RAJ3765/PBW343
DBW39	ATTILA/HUI
DBW71	PRINIA/UP2425
DBW88	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
DBW90	HUW468/WH730
DBW93	WHEAR/TUKURU//WHEAR
DBW107	TUKURU/INQALAB91
DBW110	KIRITATI/4/2*SERI1B*2/3/KAUZ*2/BOW//KAUZ
DBW168	SUNSU/CHIBIA
DBW173	KAUZ/AA//KAUZ//PBW602
DPW621-50	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
GW322	PBW173/GW196
HD2733	ATTILA/3/TUI/CARC//CHEN/CHTO/4/ATTILA
HD2864	DL509-2/DL377-8
HD2888	C306/*T.SPHAEROCOCCUM*//HW2004
HD2932	KAUZ/STAR//HD2643
HD2967	ALD/CUC//URES/HD2160M/HD2278
HD3043	PJN/BOW//OPATA*2/3CROC_1/*A.SQUARROSA*(224)//OPATA
HD3059	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
HD3086	DBW14/HD2733//HUW468
HD3171	PBW343/HD2879
HI1544	HINDI62/BOBWHITE/CPAN2099
HI1563	MACS2496*2/MC10
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
HI1612	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
HPW349	NAC/TH.AC//3*MIRLO/BUC/4/2*PASTOR
HS490	HS364/HPW114//HS240//HS346
HS507	KAUZ/MYNA/VUL//BUC/FLK/4/MILAN
HS562	OASIS/SKUAZ//4*BCN/3/2*PASTOR
K0307	K8321/UP2003
K1006	PBW343/HP1731
K1317	K0307/K9162
K8027	HD1696/2*K852
MACS6222	HD2189*2/MACS2496
MACS6478	CS/TH.SC//3*VN/3/MIRLO/BUC/4/MILAN/5/TILHI
MP3288	DOVE/BUC/DL788-2
PBW644	PBW175/HD2643

VL892	WH542/PBW226
VL907	DYBR1982-83842ABVD50/VW9365//PBW343
WH1021	NYOT95/SONAK
WH1080	PRL/*2PASTOR
WH1105	MILAN/S87230//BABAX
WH1124	MUNIA/CHTO//AMSEL
WH1142	OEN/*Ae.Sq.*(TAUS)/FCT/3/2*WEAVER
WR544	KALYANSONA/HD1999//HD2204/DW38
AKDW2997-16	CPAN6140/RAJ1555
HI8627	HD4672/PDW233
HI8713	HD 4672/PDW 233
HI8737	HI8177/HI8158//HI8498
MACS3949	STOT//ALTAR84/ALD/3/THB/CEP7780//2*MUSK_4
UAS428	GREEN-14/YAN-10/AUK/UAS402
UAS446	DWR185/DWR2006//UAS419
Dicoccum	
DDK1029	DDK1012/HW1093//276-15
HW1098	NILGIRI LOCAL (Mutagen treated-25Kr)

Common pedigree during 2017-18

Raj 4530 Raj 4536	(BJY/COC//PRL/BOW/3/SARA/THB//VEE/4/PIFED)/ DBW48
AKAW5077 AKAW5082 AKAW 5078	AKAW-2344 X Raj-4000/AKAW-4103
PBW784 UP3011	BABAX/LR42//BABAX/3/ER2000/5/ ATTILA/4/WEAVER/TSC//WEAVER/3/WEAVER/6/KA/NAC//TRCH
MP1345 HD3287	BABAX/LR42//BABAX/3/ER2000/4/PAURAQUE#1
HD3276 HD3254	CL1705/HD2687
HD3282 HD3292	CL2595/K9451//CL882/HD2009
NW7034 HUW829	CROC_1/AE.SQUARROSA (205)//BORL95/3/PRL/SARA//TSI/VEE#5/4/FRET2/5/TRCH/SRTU//KACHU
HUW830 NW7049	FRET2/KIRITATI/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC./4/ 2*PASTOR*2/6/PVN
PBW799 VL3018 WH1245	FRNCLN/NIINI #1//FRANCOLIN #1
MPO1347 MPO1336	GW1189/NIAW79
HI1633 HI1624	GW322/PBW498
PBW800 PBW783	HD 2967/4/BW 9250*3// Yr10/6*Avocet/3/ BW 9250*3//Yr15/6*Avocet/5/ 2*HD 2967
WH1246 WH1251	HD2830/WH147
HS649 HS653 HS665	HD2888/FRTL/AGRI/NAC//FLW3
HI8814 HI8815	HI 8627/ HI 8663
HPW455 HPW453	HPW155/HW4024
HI1612 DBW88 DPW621-50 HD3059	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
K1703 K1708	K9107/PBW373
HI1620 PBW766 DBW187 DBW237	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
NIDW1149 NIDW1158	NIDW 295/NIDW 15
HUW832 NW7041	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/WHEAR/SOKOLL
DBW265 DBW274	SR 39/DPW 621-50

HD3294 PBW788 PBW791	PASTOR//HXL7573/2*BAU/3/SOKO LL/WBLL1/4/HUW234 +LR34 / PRINIA//PBW343*2/KUKUNA/3/ROLF07/5 /WHEAR/SOKOLL
PBW782 PBW790 PBW797	PBW 621/BWL 0772
UP3007 NW7037 NW7047	PRL/2*PASTOR//WAXWING*2/KRONSTAD F2004/4/PBW343*2/ KUKUNA//KRONSTAD F2004/3/PBW343*2/KUKUNA
PBW793 UP3006	W15.92/4/PASTOR//HXL7573/2*BAU/3/ WBLL1/6/VEE/MJI//2*TUI/3/2*PASTOR/4/BERKUT/5/PFAU/MILAN
PBW801 PBW786 PBW763	PBW621/3/YR10/6*AVOCET//4*PBW343/4/2*PBW621/5/PBW621/3/YR15/ 6*AVOCET//4*PBW343/4/2*PBW621
VL1015 VL1016 VL2034	VLGEHUN738*3/FLW16/VLGEHUN73883/MORO

National Initial Varietal Trials

1791-NIVT-1A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ											
			Delhi			Punjab						Haryana					
			Delhi			Gurdaspur			Ludhiana			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH 1240	N-101	61.2	7	0	63.4	8	0	63.4	16	0	57.1	10	0	64.4	1	1
2	PBW 782	N-102	59.9	10	0	56.4	21	0	60.0	30	0	62.1	4	0	61.1	6	1
3	RAJ 4528	N-103	56.6	18	0	64.6	5	0	59.7	31	0	48.4	30	0	51.5	21	0
4	PBW 783	N-104	49.5	30	0	63.2	9	0	69.2	4	1	54.2	20	0	49.9	27	0
5	UP 3002	N-105	49.0	32	0	41.7	36	0	59.3	32	0	55.6	14	0	40.6	35	0
6	HD 3279	N-106	51.4	24	0	60.4	15	0	57.5	34	0	44.8	33	0	55.3	14	1
7	UP 3003	N-107	54.3	19	0	52.7	29	0	60.0	29	0	51.6	26	0	47.9	29	0
8	K 1701	N-108	59.3	11	0	44.8	35	0	64.1	15	1	49.7	28	0	34.9	36	0
9	UP 3004	N-109	60.1	9	0	54.0	26	0	60.5	27	0	39.0	36	0	51.4	22	0
10	DBW 257	N-110	49.3	31	0	50.1	32	0	61.4	24	0	58.8	8	0	57.5	9	1
11	RAJ 4527	N-111	59.0	13	0	56.5	20	0	51.3	36	0	39.4	35	0	47.8	30	0
12	WH 1239	N-112	50.3	28	0	54.9	24	0	60.8	26	0	56.0	13	0	50.7	24	0
13	PBW 781	N-114	47.5	35	0	59.9	16	0	70.1	1	1	52.9	23	0	50.3	25	0
14	HUW 826	N-115	63.9	4	1	67.2	4	1	65.2	13	1	64.4	3	1	53.2	18	0
15	DBW 253	N-116	63.9	3	1	52.9	28	0	62.8	17	0	67.2	2	1	50.1	26	0
16	RAJ 4529	N-117	56.7	17	0	50.2	31	0	68.7	5	1	52.6	24	0	49.1	28	0
17	PBW 784	N-118	49.0	33	0	54.6	25	0	66.8	9	1	61.1	5	0	55.7	13	1
18	HD 3280	N-119	50.9	26	0	62.5	12	0	67.5	7	1	54.3	19	0	63.3	2	1
19	HD 3281	N-121	51.4	25	0	64.2	7	0	58.8	33	0	41.7	34	0	42.6	34	0
20	K 1702	N-122	62.2	6	0	68.2	3	1	61.6	22	0	50.3	27	0	62.4	3	1
21	DBW 254	N-123	58.5	14	0	48.4	33	0	61.2	25	0	48.2	31	0	56.1	12	1
22	HD 3277	N-124	46.2	36	0	62.7	11	0	62.4	18	0	55.2	15	0	54.0	16	1
23	DBW 255	N-125	64.1	2	1	62.2	13	0	70.1	2	1	59.2	7	0	59.4	7	1
24	HD 3278	N-126	48.6	34	0	62.8	10	0	64.7	14	1	54.9	17	0	61.5	5	1
25	WH 1237	N-127	63.8	5	1	70.7	2	1	68.1	6	1	54.9	16	0	54.2	15	1
26	NW 7041	N-128	69.7	1	1	60.9	14	0	61.8	19	0	56.2	12	0	53.2	19	0
27	DBW 256	N-129	53.6	20	0	55.5	23	0	69.4	3	1	52.5	25	0	62.2	4	1
28	WH 1238	N-131	58.2	16	0	57.9	18	0	61.7	21	0	48.7	29	0	57.4	10	1
29	UP 3001	N-132	52.6	22	0	59.4	17	0	61.8	20	0	53.8	21	0	51.4	23	0
30	NW 7037	N-133	60.8	8	0	57.8	19	0	55.6	35	0	54.3	18	0	52.4	20	0
31	PBW 785	N-134	49.8	29	0	56.1	22	0	67.3	8	1	58.6	9	0	56.8	11	1
32	HD 3276	N-136	58.4	15	0	53.8	27	0	61.5	23	0	60.7	6	0	53.3	17	0
33	DBW 88 (C)	N-113	53.6	21	0	73.9	1	1	65.4	12	1	56.3	11	0	47.3	31	0
34	HD 3086 (C)	N-120	59.2	12	0	64.6	5	0	66.8	10	1	69.1	1	1	58.6	8	1
35	K 1006 (C)	N-130	50.4	27	0	47.4	34	0	60.0	28	0	47.9	32	0	45.7	32	0
36	HD 2967 (C)	N-135	52.2	23	0	52.2	30	0	65.6	11	1	53.6	22	0	44.1	33	0
Mean			55.7			58.0			63.1			54.0			53.0		
S.E.M			2.5			3.8			2.6			2.8			4.6		
C.D. (10%)			6.0			9.0			6.2			6.8			11.1		
C.V.			6.4			9.2			5.8			7.3			12.3		
D.O.S. (d.m.y)			14.11.2017			14.11.17			08.11.2017			06.11.2017			12.11.2017		

Trials proposed = 19
Trials not reported (2) = Modipuram (DNR), Varanasi (LSM)

1791-NIVT-1A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ											
			J&K			Uttrakhand			Rajasthan			UP		
			Jammu			Pantnagar			Durgapura			Bulandshahr		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH 1240	N-101	72.9	6	1	60.4	8	1	46.9	24	0	57.3	4	1
2	PBW 782	N-102	68.8	11	0	54.2	20	0	45.8	30	0	52.1	11	0
3	RAJ 4528	N-103	55.2	27	0	54.0	21	0	45.8	30	0	43.8	24	0
4	PBW 783	N-104	52.3	33	0	48.9	31	0	49.0	16	0	49.0	16	0
5	UP 3002	N-105	60.4	21	0	46.0	32	0	43.8	34	0	39.6	32	0
6	HD 3279	N-106	63.5	18	0	58.4	14	0	51.0	11	0	52.1	11	0
7	UP 3003	N-107	69.9	10	1	51.0	26	0	53.1	8	0	36.5	36	0
8	K 1701	N-108	57.3	24	0	40.5	36	0	49.0	16	0	46.9	19	0
9	UP 3004	N-109	53.6	30	0	56.8	17	0	41.7	35	0	46.9	19	0
10	DBW 257	N-110	53.6	30	0	50.9	27	0	47.9	22	0	55.2	7	0
11	RAJ 4527	N-111	55.2	27	0	43.4	34	0	49.0	16	0	58.3	3	1
12	WH 1239	N-112	55.2	27	0	63.8	4	1	60.4	2	1	43.8	24	0
13	PBW 781	N-114	72.9	6	1	50.3	30	0	47.4	23	0	56.3	6	0
14	HUW 826	N-115	53.1	32	0	59.1	10	0	56.3	4	0	54.2	9	0
15	DBW 253	N-116	57.3	24	0	62.5	6	1	48.4	20	0	46.9	19	0
16	RAJ 4529	N-117	50.5	35	0	59.4	9	1	49.5	14	0	43.8	24	0
17	PBW 784	N-118	80.7	2	1	50.8	28	0	50.5	12	0	39.6	32	0
18	HD 3280	N-119	66.1	14	0	57.6	16	0	55.7	6	0	44.8	23	0
19	HD 3281	N-121	72.4	9	1	54.3	18	0	46.9	24	0	55.2	7	0
20	K 1702	N-122	72.9	6	1	58.8	12	0	52.1	9	0	39.0	35	0
21	DBW 254	N-123	81.8	1	1	58.5	13	0	55.2	7	0	39.6	32	0
22	HD 3277	N-124	80.2	3	1	45.9	33	0	46.9	24	0	46.9	19	0
23	DBW 255	N-125	67.7	12	0	64.1	3	1	59.4	3	1	47.9	18	0
24	HD 3278	N-126	64.1	16	0	61.1	7	1	46.9	24	0	41.7	29	0
25	WH 1237	N-127	66.7	13	0	64.3	2	1	48.4	20	0	59.4	2	1
26	NW 7041	N-128	43.2	36	0	51.8	24	0	50.5	12	0	57.3	4	1
27	DBW 256	N-129	75.0	5	1	51.8	25	0	41.7	35	0	50.0	14	0
28	WH 1238	N-131	55.4	26	0	65.3	1	1	49.5	14	0	54.2	9	0
29	UP 3001	N-132	51.3	34	0	50.3	29	0	44.3	33	0	40.3	31	0
30	NW 7037	N-133	60.9	20	0	58.2	15	0	46.4	28	0	42.7	28	0
31	PBW 785	N-134	77.1	4	1	54.2	19	0	49.0	16	0	43.8	24	0
32	HD 3276	N-136	60.1	22	0	58.9	11	0	52.1	9	0	41.7	29	0
33	DBW 88 (C)	N-113	66.1	14	0	40.9	35	0	61.5	1	1	62.5	1	1
34	HD 3086 (C)	N-120	58.8	23	0	63.1	5	1	56.3	4	0	52.1	11	0
35	K 1006 (C)	N-130	63.8	17	0	53.3	23	0	44.8	32	0	50.0	14	0
36	HD 2967 (C)	N-135	63.5	18	0	53.7	22	0	46.4	28	0	49.0	16	0
Mean			63.3			54.9			49.7			48.3		
S.E.M			5.2			2.5			1.9			2.2		
C.D. (10%)			12.4			6.1			4.5			5.3		
C.V.			11.6			6.6			5.4			6.5		
D.O.S. (d.m.y)			10.11.2017			14.11.2017			11.11.2017			14.11.2017		

1791-NIVT-1A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NEPZ											
			West Bengal									Jharkhand		
			Coochbehar			Kalyani			Manichak			Ranchi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH 1240	N-101	39.4	13	0	41.8	15	0	33.1	19	0	49.3	7	0
2	PBW 782	N-102	42.1	7	1	39.6	18	0	29.1	27	0	43.1	25	0
3	RAJ 4528	N-103	38.1	14	0	42.4	14	0	31.9	21	0	46.6	14	0
4	PBW 783	N-104	41.5	10	1	34.2	31	0	23.5	34	0	51.0	4	1
5	UP 3002	N-105	40.8	12	0	34.2	30	0	22.6	35	0	44.7	21	0
6	HD 3279	N-106	30.0	26	0	35.9	28	0	39.2	13	0	49.2	8	0
7	UP 3003	N-107	36.2	18	0	45.9	6	0	51.9	2	0	46.5	15	0
8	K 1701	N-108	36.3	17	0	33.9	32	0	25.8	31	0	41.1	31	0
9	UP 3004	N-109	43.6	6	1	39.1	20	0	41.3	10	0	43.4	24	0
10	DBW 257	N-110	44.4	5	1	48.2	3	0	27.3	29	0	56.7	1	1
11	RAJ 4527	N-111	25.6	33	0	29.4	36	0	15.9	36	0	36.9	34	0
12	WH 1239	N-112	29.5	28	0	51.4	1	1	47.5	5	0	50.3	6	1
13	PBW 781	N-114	47.8	2	1	37.9	25	0	69.9	1	1	42.8	26	0
14	HUW 826	N-115	28.0	32	0	47.1	5	0	40.9	11	0	34.6	35	0
15	DBW 253	N-116	37.2	16	0	38.9	22	0	28.9	28	0	47.6	10	0
16	RAJ 4529	N-117	32.5	24	0	44.2	11	0	36.9	14	0	47.9	9	0
17	PBW 784	N-118	24.3	34	0	39.0	21	0	32.8	20	0	46.4	16	0
18	HD 3280	N-119	29.6	27	0	47.8	4	0	29.1	26	0	46.3	17	0
19	HD 3281	N-121	37.4	15	0	39.4	19	0	39.6	12	0	40.5	32	0
20	K 1702	N-122	32.5	23	0	32.1	34	0	33.8	18	0	42.1	29	0
21	DBW 254	N-123	36.1	19	0	33.1	33	0	30.4	23	0	44.7	20	0
22	HD 3277	N-124	21.4	36	0	50.0	2	1	44.4	7	0	52.4	3	1
23	DBW 255	N-125	44.7	4	1	45.2	9	0	34.7	16	0	39.5	33	0
24	HD 3278	N-126	29.0	30	0	38.8	23	0	48.6	4	0	55.5	2	1
25	WH 1237	N-127	41.6	9	1	34.9	29	0	41.6	9	0	42.6	27	0
26	NW 7041	N-128	21.6	35	0	36.7	27	0	25.1	33	0	45.1	19	0
27	DBW 256	N-129	41.9	8	1	37.8	26	0	50.1	3	0	46.7	12	0
28	WH 1238	N-131	33.2	22	0	40.2	17	0	29.5	24	0	44.4	22	0
29	UP 3001	N-132	29.1	29	0	38.4	24	0	34.1	17	0	42.6	28	0
30	NW 7037	N-133	34.0	21	0	44.9	10	0	29.3	25	0	43.9	23	0
31	PBW 785	N-134	45.2	3	1	43.8	13	0	25.5	32	0	47.4	11	0
32	HD 3276	N-136	29.0	31	0	41.2	16	0	42.4	8	0	45.5	18	0
33	DBW 88 (C)	N-113	31.9	25	0	45.8	8	0	44.8	6	0	42.0	30	0
34	HD 3086 (C)	N-120	41.5	11	1	44.1	12	0	26.3	30	0	46.7	12	0
35	K 1006 (C)	N-130	35.2	20	0	45.8	7	0	36.2	15	0	33.4	36	0
36	HD 2967 (C)	N-135	49.7	1	1	31.1	35	0	31.0	22	0	50.4	5	1
Mean			35.6			40.4			35.4			45.3		
S.E.M			3.4			1.0			3.4			2.9		
C.D. (10%)			8.3			2.4			8.2			7.0		
C.V.			13.6			3.5			13.6			9.1		
D.O.S. (d.m.y)			17.11.2017			17.11.17			22.11.2017			21.11.2017		

1791-NIVT-1A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NEPZ											
			Uttar Pradesh						Bihar					
			Faizabad			Kanpur			IARI Pusa			Sabour		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH 1240	N-101	49.4	9	1	49.0	19	0	60.3	6	0	32.0	36	0
2	PBW 782	N-102	48.8	11	1	56.8	3	1	47.4	30	0	41.0	19	0
3	RAJ 4528	N-103	45.7	31	0	48.4	21	0	51.4	23	0	43.4	14	0
4	PBW 783	N-104	47.1	18	0	46.6	25	0	57.9	10	0	33.2	35	0
5	UP 3002	N-105	46.5	22	0	56.3	4	1	53.9	16	0	33.9	33	0
6	HD 3279	N-106	46.1	29	0	45.3	28	0	51.0	25	0	44.4	10	0
7	UP 3003	N-107	51.8	2	1	46.1	26	0	52.0	20	0	35.3	30	0
8	K 1701	N-108	48.9	10	1	49.7	17	0	51.7	22	0	45.9	7	0
9	UP 3004	N-109	47.5	16	1	42.4	32	0	57.8	11	0	36.8	26	0
10	DBW 257	N-110	44.4	34	0	54.9	7	1	61.9	3	1	42.6	15	0
11	RAJ 4527	N-111	46.6	21	0	49.0	19	0	40.8	36	0	35.9	28	0
12	WH 1239	N-112	43.2	35	0	54.7	8	1	65.8	1	1	33.8	34	0
13	PBW 781	N-114	46.4	23	0	42.7	31	0	63.0	2	1	41.1	18	0
14	HUW 826	N-115	50.1	7	1	42.2	33	0	48.2	29	0	50.4	2	1
15	DBW 253	N-116	52.8	1	1	50.5	14	0	46.2	34	0	38.3	23	0
16	RAJ 4529	N-117	51.8	3	1	60.2	1	1	60.3	6	0	46.9	4	1
17	PBW 784	N-118	47.2	17	0	53.1	10	0	56.1	13	0	41.6	17	0
18	HD 3280	N-119	45.1	32	0	47.4	22	0	55.6	14	0	41.8	16	0
19	HD 3281	N-121	48.6	12	1	41.1	34	0	46.0	35	0	35.0	31	0
20	K 1702	N-122	46.0	30	0	47.1	24	0	50.3	26	0	46.6	6	1
21	DBW 254	N-123	46.1	27	0	50.3	16	0	61.6	5	1	37.5	24	0
22	HD 3277	N-124	47.7	15	1	54.4	9	0	58.1	9	0	44.8	9	0
23	DBW 255	N-125	46.2	26	0	49.7	17	0	51.4	23	0	40.8	20	0
24	HD 3278	N-126	47.0	19	0	56.0	6	1	48.3	28	0	40.7	21	0
25	WH 1237	N-127	50.2	6	1	52.6	12	0	54.0	15	0	44.3	11	0
26	NW 7041	N-128	46.3	24	0	39.3	36	0	47.3	31	0	50.9	1	1
27	DBW 256	N-129	45.0	33	0	45.3	28	0	51.9	21	0	44.2	12	0
28	WH 1238	N-131	46.3	25	0	59.1	2	1	50.3	26	0	34.0	32	0
29	UP 3001	N-132	51.8	4	1	52.9	11	0	52.7	18	0	37.3	25	0
30	NW 7037	N-133	48.1	14	1	47.4	22	0	52.1	19	0	36.0	27	0
31	PBW 785	N-134	49.5	8	1	46.1	26	0	53.4	17	0	49.7	3	1
32	HD 3276	N-136	41.5	36	0	45.1	30	0	59.2	8	0	46.7	5	1
33	DBW 88 (C)	N-113	46.1	28	0	56.3	4	1	46.3	33	0	43.4	13	0
34	HD 3086 (C)	N-120	50.4	5	1	52.3	13	0	46.5	32	0	39.5	22	0
35	K 1006 (C)	N-130	48.3	13	1	40.1	35	0	57.2	12	0	44.9	8	0
36	HD 2967 (C)	N-135	46.9	20	0	50.5	14	0	61.9	3	1	35.4	29	0
Mean			47.5			49.5			53.6			40.8		
S.E.M			2.3			2.3			1.8			2.1		
C.D. (10%)			5.5			5.6			4.4			5.0		
C.V.			6.8			6.7			4.8			7.2		
D.O.S. (d.m.y)			25.11.2017			24.11.2017			18.11.2017			15.11.2017		

NIVT-1A-IR-TS-TAS, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH 1240	N-101	60.8	4	1	44.3	13	0	53.0	3	1
2	PBW 782	N-102	57.8	9	0	43.5	18	0	51.1	13	0
3	RAJ 4528	N-103	53.3	29	0	43.5	17	0	48.7	26	0
4	PBW 783	N-104	53.9	25	0	41.9	30	0	48.2	28	0
5	UP 3002	N-105	48.4	36	0	41.6	32	0	45.2	35	0
6	HD 3279	N-106	54.9	22	0	42.6	22	0	49.1	25	0
7	UP 3003	N-107	53.0	30	0	45.7	6	0	49.6	23	0
8	K 1701	N-108	49.6	35	0	41.6	31	0	45.9	34	0
9	UP 3004	N-109	51.5	32	0	44.0	15	0	48.0	30	0
10	DBW 257	N-110	53.9	26	0	47.5	3	1	50.9	15	0
11	RAJ 4527	N-111	51.1	34	0	35.0	36	0	43.5	36	0
12	WH 1239	N-112	55.1	21	0	47.0	4	1	51.3	11	0
13	PBW 781	N-114	56.4	16	0	48.9	1	1	52.9	4	1
14	HUW 826	N-115	59.6	5	1	42.7	21	0	51.7	7	0
15	DBW 253	N-116	56.9	11	0	42.5	25	0	50.1	18	0
16	RAJ 4529	N-117	53.4	27	0	47.6	2	1	50.7	16	0
17	PBW 784	N-118	56.5	13	0	42.6	24	0	50.0	20	0
18	HD 3280	N-119	58.1	8	0	42.8	20	0	50.9	14	0
19	HD 3281	N-121	54.2	24	0	41.0	34	0	48.0	31	0
20	K 1702	N-122	58.6	7	0	41.3	33	0	50.5	17	0
21	DBW 254	N-123	56.4	15	0	42.5	26	0	49.8	21	0
22	HD 3277	N-124	55.6	19	0	46.7	5	0	51.4	9	0
23	DBW 255	N-125	61.6	1	1	44.0	14	0	53.3	2	1
24	HD 3278	N-126	56.2	17	0	45.5	7	0	51.2	12	0
25	WH 1237	N-127	61.2	2	1	45.2	9	0	53.7	1	1
26	NW 7041	N-128	56.1	18	0	39.0	35	0	48.1	29	0
27	DBW 256	N-129	56.8	12	0	45.4	8	0	51.4	8	0
28	WH 1238	N-131	56.5	14	0	42.1	28	0	49.7	22	0
29	UP 3001	N-132	51.7	31	0	42.4	27	0	47.3	33	0
30	NW 7037	N-133	54.3	23	0	42.0	29	0	48.5	27	0
31	PBW 785	N-134	57.0	10	0	45.1	10	0	51.4	10	0
32	HD 3276	N-136	55.6	20	0	43.8	16	0	50.1	19	0
33	DBW 88 (C)	N-113	58.6	6	0	44.6	12	0	52.0	6	1
34	HD 3086 (C)	N-120	60.9	3	1	43.4	19	0	52.7	5	1
35	K 1006 (C)	N-130	51.5	33	0	42.6	23	0	47.3	32	0
36	HD 2967 (C)	N-135	53.4	28	0	44.6	11	0	49.3	24	0
Mean			55.6			43.5			49.9		
S.E.M.			1.1			0.9			0.7		
C.D. (10%)			2.6			2.1			1.7		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1A-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions			Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH 1240	N101	5S	1.5	5S	84-110	100	125-157	143	100-119	109	15	Ey	A	SH-H	28-45	39
2	PBW 782	N102	0	0.0	0	94-115	102	128-160	146	98-111	104	5	Ey	A	SH-H	25-44	39
3	RAJ 4528	N103	10S	5.0	10S	80-118	98	120-158	144	83-121	109	10	Ey	A	SH-H	29-48	39
4	PBW 783	N104	10S	1.4	5S	90-120	102	130-160	145	75-109	97	5	Ey	A	SH-H	28-44	37
5	UP 3002	N105	10S	1.4	0	88-113	102	129-157	144	82-111	101	15	Ey	A	SH-H	30-48	41
6	HD 3279	N106	10S	2.2	0	81-110	98	122-157	142	85-113	102	5	Ey	A	SH-H	31-44	39
7	UP 3003	N107	tR	0.03	0	80-110	95	128-158	144	100-111	107	10	Ey	A	SH-H	35-48	42
8	K 1701	N108	60S	22.1	10S	78-118	96	122-160	142	78-100	90	5	Ey	A	SH-H	32-44	38
9	UP 3004	N109	tR	0.03	0	94-118	105	133-162	147	88-115	105	10	Ey	A	SH-H	32-45	39
10	DBW 257	N110	5S	1.4	5S	89-120	103	128-162	145	94-110	104	10	Ey	A	SH-H	29-44	38
11	RAJ 4527	N111	20S	7.1	0	78-115	97	126-160	143	83-102	94	15	Ey	A	SH-H	30-43	37
12	WH 1239	N112	5S	1.4	tR	80-110	97	125-160	143	93-120	106	15	Ey	A	SH-H	30-43	37
13	PBW 781	N114	10S	2.1	0	86-110	102	129-158	146	90-109	103	10	Ey	A	SH-H	32-43	37
14	HUW 826	N115	5S	1.3	tR	80-112	97	122-162	143	90-114	103	0	Ey	A	SH-H	36-48	42
15	DBW 253	N116	10S	5.0	5S	79-105	94	120-157	142	96-113	103	0	Ey	A	SH-H	29-45	37
16	RAJ 4529	N117	10S	1.7	10S	79-118	98	122-162	144	88-129	114	30	Ey	A	SH-H	34-47	40
17	PBW 784	N118	10S	2.0	0	81-112	97	126-162	144	82-112	104	10	Ey	A	SH-H	29-47	40
18	HD 3280	N119	30S	9.3	0	81-112	98	125-162	144	90-117	103	10	Ey	A	SH-H	32-47	41
19	HD 3281	N121	10S	2.3	0	93-112	102	128-160	144	92-110	103	20	Ey	A	SH-H	28-43	37
20	K 1702	N122	10S	2.8	0	81-115	96	119-165	142	93-119	107	0	Ey	A	SH-H	38-50	43
21	DBW 254	N123	10MS	2.8	0	85-112	100	124-162	144	75-106	96	10	Ey	A	SH-H	29-40	36
22	HD 3277	N124	10S	3.6	0	85-115	100	125-162	144	101-121	111	15	Ey	A	SH-H	33-48	43
23	DBW 255	N125	20S	2.9	5S	79-117	96	119-162	143	95-111	104	5	Ey	A	SH-H	36-46	42
24	HD 3278	N126	5S	0.7	0	88-118	103	126-165	146	98-116	108	10	Ey	A	SH-H	32-48	40
25	WH 1237	N127	10S	1.4	0	81-118	97	123-165	144	80-109	98	5	Ey	A	SH-H	36-49	42
26	NW 7041	N128	5S	0.7	0	83-115	100	120-162	143	96-120	108	5	Ey	A	SH-H	33-50	42
27	DBW 256	N129	5S	0.7	5S	88-118	102	126-165	145	90-116	105	5	Ey	A	SH-H	30-41	36
28	WH 1238	N131	10S	2.9	0	76-110	97	121-160	142	96-121	105	20	Ey	A	SH-H	35-47	41
29	UP 3001	N132	5S	0.9	0	95-113	104	130-160	147	97-111	105	20	Ey	A	SH-H	29-45	39
30	NW 7037	N133	10S	4.1	tR	79-115	95	119-162	142	100-118	109	15	Ey	A	SH-H	33-49	41
31	PBW 785	N134	10S	2.1	5S	85-118	101	120-165	144	89-115	106	15	Ey	A	SH-H	36-50	43
32	HD 3276	N136	10S	2.7	0	88-113	102	130-160	145	100-111	107	5	Ey	A	SH-H	28-41	36
33	DBW 88 (C)	N113	40S	17.2	tR	83-112	98	123-160	144	96-111	103	40	Ey	A	SH-H	35-42	40
34	HD 3086 (C)	N120	5S	0.7	5S	79-110	93	121-160	142	88-110	100	10	Ey	A	SH-H	34-45	41
35	K 1006 (C)	N130	40S	15.9	tR	81-110	97	123-158	144	77-110	98	20	Ey	A	SH-H	28-39	35
36	HD 2967 (C)	N135	40S	20.9	0	88-112	102	133-162	147	85-109	101	5	Ey	A	SH-H	32-41	37

1. Ancillary data from Bulandshahr, Delhi, Durgapura, Gurdaspur, Hisar, Chatha, Karnal, Ludhiana and Pantnagar.
2. Yellow rust data from Delhi, Gurdaspur, Hisar, Chatha, Karnal, Ludhiana and Pantnagar; Brown rust data from Gurdaspur Chatha and Pantnagar.

NIVT-1A-TS-TAS, 2017-18
North Western Plain Zone
Individual Station Rust Data

SN	Variety	Code	Gurdaspur		Hisar	Delhi	Karnal	Jammu		Ludhiana	Pantnagar	
			Br	Yl	Yl	Yl	Yl	Br	Yl	Yl	Br	Yl
1	WH 1240	N101	5S	0	0	0	0	5S	5S	5S	10S	tMS
2	PBW 782	N102	0	0	0	0	0	0	0	0	0	0
3	RAJ 4528	N103	10S	0	10S	0	10S	0	10S	5S	0	0
4	PBW 783	N104	5S	0	0	0	10S	0	0	0	0	0
5	UP 3002	N105	0	0	0	0	0	0	0	10S	0	0
6	HD 3279	N106	0	0	5S	10MR	10S	0	0	0	0	0
7	UP 3003	N107	0	0	0	0	0	0	0	tR	0	0
8	K 1701	N108	10S	5S	40S	0	40S	0	60S	10S	0	0
9	UP 3004	N109	0	0	0	0	0	0	0	tR	0	0
10	DBW 257	N110	5S	0	0	0	0	0	5S	5S	10s	0
11	RAJ 4527	N111	0	0	10S	0	10S	0	0	10S	0	20S
12	WH 1239	N112	tR	0	0	0	5S	0	tR	5S	0	0
13	PBW 781	N114	0	0	0	0	0	0	10S	5S	0	0
14	HUW 826	N115	tR	0	0	0	5MS	0	0	5S	0	0
15	DBW 253	N116	5S	0	5MS	0	10MS	0	5S	10S	0	10MS
16	RAJ 4529	N117	10S	0	0	0	10	0	0	00	0	5MR
17	PBW 784	N118	0	0	0	10MR	0	0	0	10S	0	0
18	HD 3280	N119	0	0	10S	0	20S	0	0	5S	0	30S
19	HD 3281	N121	0	tR	10S	0	0	0	0	5S	0	tMS
20	K 1702	N122	0	0	0	0	0	0	10S	10S	0	0
21	DBW 254	N123	0	0	0	tMS	10MS	0	5S	5S	0	tMS
22	HD 3277	N124	0	0	10S	0	5S	0	10S	tR	0	0
23	DBW 255	N125	5S	0	0	0	20S	0	tR	0	0	0
24	HD 3278	N126	0	0	0	0	5S	0	0	tR	0	0
25	WH 1237	N127	0	0	0	0	0	0	10S	0	0	0
26	NW 7041	N128	0	0	0	0	0	0	0	5S	0	0
27	DBW 256	N129	5S	0	0	0	0	0	0	5S	tS	0
28	WH 1238	N131	0	0	0	0	0	0	10S	10S	0	0
29	UP 3001	N132	0	0	0	0	0	0	0	5S	0	tS
30	NW 7037	N133	tR	0	5MS	0	5S	0	10S	10S	0	0
31	PBW 785	N134	5S	0	5MS	tMS	0	0	0	10S	0	0
32	HD 3276	N136	0	0	5MS	0	5S	0	0	10S	0	0
33	DBW 88 (C)	N113	tR	tR	10S	0	40S	0	20S	10S	0	40S
34	HD 3086 (C)	N120	5S	0	0	0	0	0	0	5S	0	0
35	K 1006 (C)	N130	tR	tR	40S	5MR	40S	0	0	5S	0	30MS
36	HD 2967 (C)	N135	0	5S	30S	5S	40S	0	40S	10S	0	20MS

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1A-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
			Br	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH 1240	N-101	tR	57 (25)	74-95	86	114-137	123	96-160	110	Ey	A	SH-H	34-43	37
2	PBW 782	N-102	0	36 (25)	80-94	88	118-140	128	88-102	96	Ey	A	SH-H	31-44	36
3	RAJ 4528	N-103	tR	35 (24)	71-88	81	115-136	125	90-115	99	Ey	A	SH-H	36-55	43
4	PBW 783	N-104	0	68 (25)	79-99	88	117-141	129	90-98	93	Ey	A	SH-H	30-38	35
5	UP 3002	N-105	0	57 (36)	76-95	88	116-140	128	81-102	94	Ey	A	SH-H	36-47	41
6	HD 3279	N-106	0	57 (25)	77-89	83	114-136	124	81-98	91	Ey	A	SH-H	31-43	37
7	UP 3003	N-107	0	68 (35)	64-87	75	114-137	125	86-102	97	Ey	A	SH-H	36-49	41
8	K 1701	N-108	tR	68 (35)	60-92	75	112-139	123	73-91	81	Ey	A	SH-H	30-47	37
9	UP 3004	N-109	0	24 (13)	82-98	90	117-140	128	91-106	97	Ey	A	SH-H	26-41	35
10	DBW 257	N-110	tR	37 (25)	78-98	87	114-138	125	88-102	98	Ey	A	SH-H	29-41	36
11	RAJ 4527	N-111	0	57 (46)	66-88	78	110-136	123	73-93	84	Ey	A	SH-H	31-48	36
12	WH 1239	N-112	0	68 (35)	76-88	82	116-139	125	90-111	102	Ey	A	SH-H	34-46	39
13	PBW 781	N-114	0	68 (25)	84-98	89	120-140	131	90-105	98	Ey	A	SH-H	32-39	35
14	HUW 826	N-115	0	46 (25)	69-85	78	108-133	121	81-103	96	Ey	A	SH-H	24-53	39
15	DBW 253	N-116	0	68 (35)	75-86	81	115-132	122	91-110	99	Ey	A	SH-H	35-48	40
16	RAJ 4529	N-117	5S	36 (24)	72-87	80	115-136	124	87-112	102	Ey	A	SH-H	36-53	42
17	PBW 784	N-118	0	46 (35)	67-86	77	112-135	121	85-103	94	Ey	A	SH-H	33-48	39
18	HD 3280	N-119	0	36 (24)	72-91	82	116-134	126	86-98	93	Ey	A	SH-H	34-43	39
19	HD 3281	N-121	0	68 (35)	80-96	86	116-140	128	88-99	93	Ey	A	SH-H	30-42	36
20	K 1702	N-122	5S	68 (46)	72-85	80	110-129	121	89-110	100	Ey	A	SH-H	29-55	39
21	DBW 254	N-123	0	68 (35)	74-88	82	108-134	122	78-104	89	Ey	A	SH-H	28-41	35
22	HD 3277	N-124	0	35 (25)	78-96	84	112-138	125	96-114	103	Ey	A	SH-H	35-46	41
23	DBW 255	N-125	0	35 (23)	78-87	81	116-133	125	86-106	97	Ey	A	SH-H	21-56	40
24	HD 3278	N-126	0	25 (14)	82-96	88	116-135	127	93-108	99	Ey	A	SH-H	30-42	38
25	WH 1237	N-127	0	68 (36)	75-89	83	112-134	123	85-99	91	Ey	A	SH-H	34-46	40
26	NW 7041	N-128	0	36 (24)	74-89	82	114-135	123	93-112	103	Ey	A	SH-H	36-49	41
27	DBW 256	N-129	0	24 (24)	72-90	85	115-137	126	90-107	96	Ey	A	SH-H	29-40	35
28	WH 1238	N-131	0	68 (35)	72-91	81	114-138	123	75-101	94	Ey	A	SH-H	34-49	40
29	UP 3001	N-132	0	46 (25)	74-99	88	117-141	129	85-108	97	Ey	A	SH-H	36-42	39
30	NW 7037	N-133	tR	68 (35)	69-90	80	112-134	123	85-112	101	Ey	A	SH-H	35-56	43
31	PBW 785	N-134	0	46 (24)	77-89	83	114-138	125	88-106	98	Ey	A	SH-H	36-49	42
32	HD 3276	N-136	tR	26 (14)	80-98	89	116-141	128	77-101	94	Ey	A	SH-H	31-44	37
33	DBW 88 (C)	N-113	0	46 (25)	73-91	82	114-140	127	86-103	94	Ey	A	SH-H	32-46	38
34	HD 3086 (C)	N-120	0	57 (35)	70-87	78	110-133	121	86-97	91	Ey	A	SH-H	31-46	38
35	K 1006 (C)	N-130	0	68 (35)	69-88	79	115-137	124	88-107	98	Ey	A	SH-H	29-43	37
36	HD 2967 (C)	N-135	tR	46 (24)	75-97	89	121-140	132	90-102	97	Ey	A	SH-H	31-42	36

1. Ancillary data from Faizabad, Coochbehar, Pusa, Kalyani, Kanpur, Manikchak, Ranchi, Sabour and Varanasi.
2. Leaf blight data from Faizabad, Coochbehar, Kalyani, Manikchak and Sabour.
3. Brown rust data from Sabour.

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North Eastern Plains Zone
Individual Station Leaf Blight Data

SN	Variety	Code	Coochbehar	Kalyani	Manikchak	Sabour	Faizabad
1	WH 1240	N-101	13	00	35	57	23
2	PBW 782	N-102	23	00	25	36	24
3	RAJ 4528	N-103	12	00	24	35	35
4	PBW 783	N-104	12	00	14	68	36
5	UP 3002	N-105	24	00	46	57	35
6	HD 3279	N-106	23	00	25	57	24
7	UP 3003	N-107	23	13	15	68	24
8	K 1701	N-108	23	46	14	68	36
9	UP 3004	N-109	12	00	13	24	45
10	DBW 257	N-110	12	00	25	37	46
11	RAJ 4527	N-111	34	57	25	46	24
12	WH 1239	N-112	23	00	24	68	24
13	PBW 781	N-114	12	00	26	68	12
14	HUW 826	N-115	23	00	26	46	12
15	DBW 253	N-116	23	13	25	68	36
16	RAJ 4529	N-117	23	13	36	35	45
17	PBW 784	N-118	23	23	46	46	35
18	HD 3280	N-119	23	00	36	34	36
19	HD 3281	N-121	12	00	36	68	24
20	K 1702	N-122	23	67	26	68	12
21	DBW 254	N-123	12	13	25	68	46
22	HD 3277	N-124	24	00	35	35	24
23	DBW 255	N-125	12	12	24	35	36
24	HD 3278	N-126	12	00	25	25	35
25	WH 1237	N-127	23	00	36	68	24
26	NW 7041	N-128	12	13	25	36	46
27	DBW 256	N-129	24	13	14	24	35
28	WH 1238	N-131	23	24	14	68	35
29	UP 3001	N-132	12	00	36	46	25
30	NW 7037	N-133	23	00	24	68	34
31	PBW 785	N-134	12	00	46	35	12
32	HD 3276	N-136	12	00	26	25	36
33	DBW 88 (C)	N-113	12	00	36	46	23
34	HD 3086 (C)	N-120	23	13	36	57	24
35	K 1006 (C)	N-130	23	35	25	68	24
36	HD 2967 (C)	N-135	12	00	46	24	24

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Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ											
			Delhi			Punjab					Haryana			
			Delhi			Gurdaspur			Ludhiana			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW 787	N-201	56.1	11	0	58.8	18	0	66.1	13	1	56.7	15	0	57.8	4	1
2	HD 3286	N-202	59.4	4	1	61.6	11	0	61.7	25	0	56.8	14	0	65.4	1	1
3	PBW 786	N-203	43.5	26	0	60.4	14	0	61.8	23	0	55.9	18	0	59.5	3	1
4	HD 3285	N-204	54.2	15	0	63.3	8	0	66.3	12	1	60.9	4	0	39.3	31	0
5	DBW 259	N-205	51.1	18	0	48.0	31	0	64.4	18	1	54.6	21	0	35.5	33	0
6	K 1703	N-206	63.1	1	1	56.2	20	0	65.9	15	1	52.0	24	0	45.7	25	0
7	PBW 788	N-207	57.4	6	0	67.9	5	0	69.2	6	1	58.7	9	0	53.7	11	0
8	K 1704	N-209	37.0	33	0	50.1	29	0	68.3	9	1	48.3	28	0	30.6	35	0
9	UP 3005	N-210	40.4	29	0	60.1	17	0	64.7	17	1	60.9	4	0	42.6	28	0
10	HD 3282	N-211	56.0	12	0	52.7	24	0	66.6	11	1	44.4	32	0	52.5	13	0
11	WH 1243	N-212	46.7	24	0	42.5	33	0	71.4	1	1	51.4	25	0	51.5	15	0
12	NW 7028	N-213	35.1	36	0	56.8	19	0	54.9	34	0	57.1	13	0	49.8	20	0
13	HUW 828	N-214	53.6	16	0	74.8	2	1	69.5	5	1	54.0	22	0	42.0	29	0
14	HUW 827	N-215	41.3	27	0	45.9	32	0	57.1	31	0	34.8	35	0	42.6	27	0
15	DBW 258	N-216	46.8	23	0	51.7	26	0	69.2	7	1	55.0	19	0	49.0	22	0
16	UP 3006	N-218	48.9	20	0	67.2	6	0	68.7	8	1	60.2	7	0	56.6	7	1
17	UP 3007	N-219	58.4	5	0	68.3	4	0	59.6	29	0	60.9	6	0	52.1	14	0
18	BRW 3814	N-220	56.8	8	0	51.7	25	0	62.7	21	0	58.2	11	0	50.6	18	0
19	DBW 260	N-221	56.4	9	0	50.0	30	0	69.9	4	1	46.4	30	0	56.6	8	1
20	WH 1242	N-222	35.2	35	0	61.4	12	0	71.4	2	1	56.3	16	0	44.5	26	0
21	K 1705	N-223	47.6	22	0	39.7	36	0	58.6	30	0	32.8	36	0	37.7	32	0
22	HUW 829	N-224	46.5	25	0	53.5	23	0	59.9	28	0	58.8	8	0	50.8	17	0
23	WH 1241	N-226	56.1	10	0	51.2	27	0	55.6	32	0	57.6	12	0	46.2	24	0
24	DBW 261	N-227	60.3	3	1	64.9	7	0	70.7	3	1	69.6	2	1	57.7	6	1
25	HD 3283	N-228	62.7	2	1	61.9	9	0	64.4	19	1	49.8	26	0	64.0	2	1
26	HD 3284	N-229	55.4	13	0	55.1	22	0	55.0	33	0	56.3	16	0	51.2	16	0
27	NW 7047	N-230	54.3	14	0	60.2	16	0	60.2	27	0	46.9	29	0	49.9	19	0
28	RAJ 4531	N-231	38.5	32	0	55.7	21	0	45.4	36	0	43.7	34	0	35.0	34	0
29	DBW 262	N-232	40.6	28	0	60.3	15	0	65.1	16	1	58.6	10	0	53.8	10	0
30	RAJ 4536	N-233	36.9	34	0	42.3	34	0	48.7	35	0	53.6	23	0	25.1	36	0
31	RAJ 4530	N-235	51.5	17	0	61.7	10	0	62.1	22	0	45.8	31	0	49.6	21	0
32	NW 7049	N-236	40.3	30	0	77.9	1	1	68.0	10	1	73.2	1	1	56.1	9	1
33	K 1006 (C)	N-208	40.3	31	0	50.2	28	0	60.8	26	0	48.5	27	0	41.6	30	0
34	HD 2967 (C)	N-217	48.9	21	0	40.5	35	0	66.1	14	1	44.2	33	0	52.5	12	0
35	HD 3086 (C)	N-225	49.0	19	0	73.3	3	1	61.8	24	0	62.4	3	0	57.8	5	1
36	DBW 88 (C)	N-234	57.1	7	0	60.8	13	0	62.8	20	1	54.9	20	0	47.0	23	0
Mean			49.5			57.2			63.2			53.9			48.7		
S.E.M			1.7			3.5			3.6			2.9			4.6		
C.D. (10%)			4.1			8.5			8.6			7.0			11.0		
C.V.			4.9			8.7			8.0			7.7			13.3		
D.O.S. (d.m.y)			14.11.17			14.11.17			8.11.2017			06.11.2017			12.11.2017		

Trials proposed = 18
Trials not reported (2) = Modipuram (DNR), Shillongani (LSM)

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Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ						NEPZ								
			Uttrakhand			Rajasthan			UP								
			Pantnagar			Durgapura			Faizabad			Varanasi			Kanpur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW 787	N-201	51.5	26	0	56.8	5	0	45.1	31	0	41.1	23	0	56.8	12	1
2	HD 3286	N-202	62.1	8	0	57.8	4	0	47.0	20	1	41.4	20	0	50.8	29	0
3	PBW 786	N-203	57.6	11	0	44.2	29	0	48.6	13	1	47.5	6	1	57.6	9	1
4	HD 3285	N-204	57.4	13	0	42.2	33	0	49.2	9	1	34.0	33	0	47.7	31	0
5	DBW 259	N-205	55.6	15	0	49.0	16	0	45.0	32	0	41.1	22	0	39.3	36	0
6	K 1703	N-206	43.8	34	0	49.4	15	0	50.5	5	1	45.2	11	1	52.6	22	0
7	PBW 788	N-207	50.4	27	0	59.4	2	1	46.6	21	1	42.2	19	0	55.5	15	0
8	K 1704	N-209	54.1	19	0	58.8	3	1	46.6	21	1	51.4	1	1	51.3	27	0
9	UP 3005	N-210	49.9	28	0	48.9	18	0	49.2	9	1	38.3	28	0	52.3	24	0
10	HD 3282	N-211	74.3	1	1	49.0	16	0	46.5	24	1	47.6	5	1	57.3	11	1
11	WH 1243	N-212	53.1	22	0	45.4	26	0	48.1	15	1	43.3	15	1	51.8	25	0
12	NW 7028	N-213	63.0	6	0	55.7	7	0	48.1	15	1	43.0	17	1	58.9	4	1
13	HUW 828	N-214	53.2	20	0	55.8	6	0	50.8	3	1	45.5	9	1	55.5	15	0
14	HUW 827	N-215	42.4	35	0	38.6	35	0	49.8	7	1	35.1	31	0	47.4	32	0
15	DBW 258	N-216	52.7	23	0	42.7	32	0	46.6	21	1	42.8	18	1	58.9	4	1
16	UP 3006	N-218	63.9	5	0	44.3	28	0	49.7	8	1	39.5	26	0	61.5	2	1
17	UP 3007	N-219	54.6	17	0	55.3	8	0	47.2	19	1	48.0	4	1	58.1	7	1
18	BRW 3814	N-220	58.0	10	0	53.1	13	0	51.0	2	1	40.6	25	0	51.0	28	0
19	DBW 260	N-221	59.7	9	0	47.0	23	0	44.9	33	0	34.9	32	0	54.4	17	0
20	WH 1242	N-222	62.2	7	0	47.9	21	0	45.3	30	0	48.0	3	1	41.7	33	0
21	K 1705	N-223	38.3	36	0	41.0	34	0	44.8	34	0	29.3	35	0	41.7	33	0
22	HUW 829	N-224	65.1	3	0	60.8	1	1	45.8	27	0	23.9	36	0	57.6	9	1
23	WH 1241	N-226	49.4	29	0	43.7	30	0	50.8	3	1	38.9	27	0	56.5	13	1
24	DBW 261	N-227	55.9	14	0	43.1	31	0	49.0	12	1	46.9	8	1	52.6	22	0
25	HD 3283	N-228	57.5	12	0	45.8	24	0	46.1	25	1	44.3	12	1	58.6	6	1
26	HD 3284	N-229	65.1	2	0	44.9	27	0	45.8	27	0	37.4	30	0	53.1	20	0
27	NW 7047	N-230	44.4	33	0	52.7	14	0	51.2	1	1	45.4	10	1	62.0	1	1
28	RAJ 4531	N-231	46.6	31	0	48.5	20	0	44.4	35	0	43.0	16	1	56.5	13	1
29	DBW 262	N-232	53.2	21	0	45.4	25	0	40.3	36	0	37.6	29	0	60.7	3	1
30	RAJ 4536	N-233	44.9	32	0	48.6	19	0	46.0	26	1	41.3	21	0	53.4	19	0
31	RAJ 4530	N-235	54.5	18	0	47.0	22	0	45.5	29	0	31.4	34	0	54.2	18	0
32	NW 7049	N-236	64.9	4	0	54.7	9	0	50.1	6	1	43.3	14	1	58.1	7	1
33	K 1006 (C)	N-208	55.6	16	0	53.2	12	0	48.3	14	1	47.5	7	1	49.5	30	0
34	HD 2967 (C)	N-217	52.1	25	0	38.0	36	0	47.9	17	1	40.9	24	0	51.6	26	0
35	HD 3086 (C)	N-225	52.4	24	0	54.1	10	0	49.1	11	1	51.0	2	1	53.1	20	0
36	DBW 88 (C)	N-234	47.5	30	0	53.2	11	0	47.8	18	1	44.3	13	1	41.7	33	0
Mean			54.6			49.3			47.5			41.6			53.4		
S.E.M			2.8			1.0			2.2			3.8			2.3		
C.D. (10%)			6.7			2.3			5.3			9.1			5.5		
C.V.			7.2			2.8			6.6			12.8			6.1		
D.O.S. (d.m.y)			14.11.2017			11.11.2017			25.11.2017			18.11.2017			24.11.2017		

1792-NIVT-1B-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NEPZ																	
			West Bengal									Jharkhand			Bihar					
			Burdwan			Coochbehar			Kalyani			Ranchi			Sabour			IARI Pusa		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW 787	N-201	42.5	25	0	29.8	29	0	37.7	18	0	45.9	18	0	42.2	18	0	43.5	20	0
2	HD 3286	N-202	37.6	34	0	31.9	27	0	32.3	33	0	49.5	8	0	47.7	8	0	50.8	8	0
3	PBW 786	N-203	43.8	23	0	37.5	10	0	37.9	17	0	52.1	6	1	42.4	16	0	45.8	16	0
4	HD 3285	N-204	43.1	24	0	38.6	7	0	31.4	35	0	45.1	23	0	35.8	30	0	43.1	23	0
5	DBW 259	N-205	45.7	20	0	39.3	5	0	37.7	19	0	45.2	21	0	30.8	35	0	54.0	3	1
6	K 1703	N-206	46.9	15	0	38.7	6	0	33.5	30	0	40.6	34	0	37.7	26	0	39.4	31	0
7	PBW 788	N-207	39.9	30	0	32.4	24	0	42.3	8	0	45.2	22	0	51.1	2	1	45.1	17	0
8	K 1704	N-209	54.2	5	0	38.2	8	0	41.4	10	0	43.0	31	0	54.1	1	1	43.8	19	0
9	UP 3005	N-210	40.3	28	0	26.4	35	0	35.9	25	0	48.4	11	0	32.0	33	0	40.6	28	0
10	HD 3282	N-211	46.0	19	0	32.2	25	0	49.9	1	1	45.4	19	0	45.5	11	0	42.7	24	0
11	WH 1243	N-212	40.6	27	0	27.2	33	0	35.0	27	0	56.9	1	1	42.4	16	0	43.4	21	0
12	NW 7028	N-213	46.2	18	0	25.9	36	0	38.0	16	0	44.5	26	0	39.7	21	0	38.9	33	0
13	HUW 828	N-214	48.5	12	0	32.1	26	0	36.2	23	0	42.1	32	0	40.0	20	0	39.6	30	0
14	HUW 827	N-215	42.2	26	0	33.6	21	0	36.5	22	0	41.7	33	0	39.0	24	0	38.3	34	0
15	DBW 258	N-216	44.6	22	0	29.0	32	0	47.5	3	1	44.3	28	0	44.5	13	0	46.9	13	0
16	UP 3006	N-218	47.7	14	0	34.4	15	0	42.1	9	0	47.2	12	0	48.8	6	1	39.2	32	0
17	UP 3007	N-219	48.1	13	0	27.0	34	0	30.8	36	0	49.3	10	0	46.7	9	0	41.9	26	0
18	BRW 3814	N-220	39.5	31	0	36.8	12	0	33.7	28	0	39.1	35	0	37.7	26	0	37.4	35	0
19	DBW 260	N-221	51.0	8	0	33.7	20	0	39.9	11	0	53.4	5	1	44.7	12	0	56.8	1	1
20	WH 1242	N-222	54.9	4	0	35.3	13	0	47.4	4	0	52.0	7	1	50.3	4	1	51.3	7	0
21	K 1705	N-223	46.5	17	0	41.7	3	0	32.7	31	0	44.0	29	0	43.6	15	0	49.7	9	0
22	HUW 829	N-224	50.1	10	0	29.8	30	0	42.7	7	0	44.4	27	0	36.8	28	0	47.2	12	0
23	WH 1241	N-226	40.1	29	0	32.6	22	0	33.7	29	0	47.2	13	0	41.4	19	0	47.9	10	0
24	DBW 261	N-227	46.8	16	0	46.8	1	1	38.9	14	0	44.8	24	0	45.8	10	0	44.7	18	0
25	HD 3283	N-228	51.2	7	0	32.6	23	0	44.8	6	0	55.6	2	1	47.8	7	0	35.4	36	0
26	HD 3284	N-229	44.9	21	0	29.4	31	0	35.9	24	0	46.5	16	0	35.8	30	0	45.9	15	0
27	NW 7047	N-230	34.7	35	0	34.1	18	0	32.4	32	0	45.4	20	0	44.1	14	0	46.1	14	0
28	RAJ 4531	N-231	39.0	32	0	33.7	19	0	45.9	5	0	49.4	9	0	33.1	32	0	56.3	2	1
29	DBW 262	N-232	59.5	3	1	35.1	14	0	32.3	34	0	46.0	17	0	38.3	25	0	47.4	11	0
30	RAJ 4536	N-233	24.7	36	0	37.0	11	0	38.5	15	0	33.8	36	0	30.9	34	0	52.1	5	0
31	RAJ 4530	N-235	59.7	2	1	41.1	4	0	39.6	12	0	44.6	25	0	30.4	36	0	39.9	29	0
32	NW 7049	N-236	49.3	11	0	34.2	17	0	36.9	21	0	43.9	30	0	50.4	3	1	43.4	21	0
33	K 1006 (C)	N-208	50.3	9	0	34.3	16	0	49.6	2	1	46.8	15	0	36.4	29	0	51.9	6	0
34	HD 2967 (C)	N-217	38.4	33	0	46.2	2	1	35.8	26	0	53.5	4	1	39.2	22	0	42.2	25	0
35	HD 3086 (C)	N-225	51.5	6	0	37.8	9	0	39.1	13	0	54.8	3	1	49.6	5	1	53.5	4	1
36	DBW 88 (C)	N-234	63.0	1	1	31.2	28	0	37.0	20	0	47.0	14	0	39.2	22	0	41.0	27	0
Mean			45.9			34.4			38.4			46.6			41.6			45.2		
S.E.M			1.8			1.7			1.0			2.6			2.4			1.4		
C.D. (10%)			4.4			4.1			2.5			6.3			5.7			3.4		
C.V.			5.7			6.9			3.8			7.9			8.2			4.5		
D.O.S. (d.m.y)			15.11.2017			16.11.2017			19.11.2017			23.11.2017			15.11.2017			18.11.2017		

NIVT-1B-IR-TS-TAS, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PBW 787	N-201	57.7	9	0	42.7	26	0	49.3	14	0
2	HD 3286	N-202	60.7	2	1	43.2	22	0	50.9	7	0
3	PBW 786	N-203	54.7	17	0	45.9	8	0	49.8	12	0
4	HD 3285	N-204	54.8	15	0	40.9	32	0	47.0	27	0
5	DBW 259	N-205	51.2	29	0	42.0	29	0	46.0	31	0
6	K 1703	N-206	53.7	21	0	42.8	25	0	47.6	22	0
7	PBW 788	N-207	59.5	4	1	44.5	14	0	51.1	6	0
8	K 1704	N-209	49.6	31	0	47.1	3	1	48.2	19	0
9	UP 3005	N-210	52.5	25	0	40.4	35	0	45.7	32	0
10	HD 3282	N-211	56.5	12	0	45.9	9	0	50.5	8	0
11	WH 1243	N-212	51.7	27	0	43.2	23	0	46.9	28	0
12	NW 7028	N-213	53.2	22	0	42.6	27	0	47.2	26	0
13	HUW 828	N-214	57.6	10	0	43.4	20	0	49.6	13	0
14	HUW 827	N-215	43.2	34	0	40.4	34	0	41.6	35	0
15	DBW 258	N-216	52.4	26	0	45.0	12	0	48.3	18	0
16	UP 3006	N-218	58.5	6	0	45.6	10	0	51.2	5	0
17	UP 3007	N-219	58.5	7	0	44.1	16	0	50.4	9	0
18	BRW 3814	N-220	55.9	13	0	40.8	33	0	47.4	24	0
19	DBW 260	N-221	55.1	14	0	46.0	7	0	50.0	11	0
20	WH 1242	N-222	54.1	19	0	47.3	2	1	50.3	10	0
21	K 1705	N-223	42.3	36	0	41.5	31	0	41.9	34	0
22	HUW 829	N-224	56.5	11	0	42.0	28	0	48.3	17	0
23	WH 1241	N-226	51.4	28	0	43.2	21	0	46.8	29	0
24	DBW 261	N-227	60.3	3	1	46.3	5	0	52.4	3	1
25	HD 3283	N-228	58.0	8	0	46.3	4	0	51.4	4	0
26	HD 3284	N-229	54.7	18	0	41.6	30	0	47.4	25	0
27	NW 7047	N-230	52.6	24	0	43.9	18	0	47.7	21	0
28	RAJ 4531	N-231	44.8	33	0	44.6	13	0	44.7	33	0
29	DBW 262	N-232	53.9	20	0	44.1	15	0	48.4	16	0
30	RAJ 4536	N-233	42.9	35	0	39.7	36	0	41.1	36	0
31	RAJ 4530	N-235	53.2	23	0	42.9	24	0	47.4	23	0
32	NW 7049	N-236	62.2	1	1	45.5	11	0	52.8	2	1
33	K 1006 (C)	N-208	50.0	30	0	46.1	6	0	47.8	20	0
34	HD 2967 (C)	N-217	48.9	32	0	44.0	17	0	46.1	30	0
35	HD 3086 (C)	N-225	58.7	5	0	48.8	1	1	53.1	1	1
36	DBW 88 (C)	N-234	54.8	16	0	43.6	19	0	48.5	15	0
Mean			53.8			43.8			48.2		
S.E.M			1.2			0.8			0.7		
C.D. (10%)			2.7			1.8			1.5		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2017-18**

S. N.	Variety	Code	Rust	Leaf Blight	Agronomic Characteristics							Grain Characteristics			
			Br	HS (Av)	Hd. R	Hd. M	Mat. R	Mat. M	Ht. R	Ht. M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	PBW 787	N-201	10S	36(24)	72-89	79	113-132	121	87-97	94	Ey	A	SH	29-49	38
2	HD 3286	N-202	0	57(24)	70-85	78	113-133	120	85-108	97	Ey	A	SH	26-48	39
3	PBW 786	N-203	0	57(34)	76-97	86	116-137	124	87-119	98	Ey	A	H	28-41	37
4	HD 3285	N-204	0	36(24)	80-95	87	115-137	125	83-117	96	Ey	A	SH	27-49	39
5	DBW 259	N-205	0	45(13)	78-91	85	114-137	126	83-122	97	Ey	A	H	21-39	34
6	K 1703	N-206	20S	34(13)	69-94	82	98-135	121	78-109	97	Ey	A	H	29-55	42
7	PBW 788	N-207	tR	35(13)	63-86	77	96-133	119	87-117	94	Ey	A	H	26-51	41
8	K 1704	N-209	tR	36(24)	68-85	75	98-131	119	81-117	95	Ey	A	SH	30-47	39
9	UP 3005	N-210	0	57(23)	68-88	76	98-132	119	85-103	97	Ey	A	H	25-51	41
10	HD 3282	N-211	tR	68(23)	77-96	83	115-136	123	91-117	99	Ey	A	H	25-48	39
11	WH 1243	N-212	tR	34(13)	78-98	88	116-137	125	78-96	91	Ey	A	SH	24-45	36
12	NW 7028	N-213	tR	46(24)	71-84	77	111-132	121	79-98	91	Ey	A	H	24-50	38
13	HUW 828	N-214	0	46(13)	71-87	79	113-135	123	84-119	98	Ey	A	H	27-50	41
14	HUW 827	N-215	5S	68(23)	66-86	77	96-137	120	93-119	104	Ey	A	H	27-47	40
15	DBW 258	N-216	0	46(23)	78-97	82	113-136	122	86-117	94	Ey	A	SO	24-47	36
16	UP 3006	N-218	0	46(23)	72-90	82	113-135	123	91-117	100	Ey	A	SH	30-49	41
17	UP 3007	N-219	0	46(23)	72-87	79	113-134	121	85-117	100	Ey	A	SH	24-55	40
18	BRW 3814	N-220	10S	36(13)	72-94	84	113-140	126	87-120	99	Ey	A	SH	28-49	41
19	DBW 260	N-221	0	45(12)	72-96	84	113-136	123	89-108	100	Ey	A	SH	25-45	37
20	WH 1242	N-222	tR	46(24)	65-84	75	96-134	119	87-115	97	Ey	A	SH	24-53	40
21	K 1705	N-223	20S	46(24)	71-95	81	112-134	123	94-112	103	Ey	A	SH	23-43	35
22	HUW 829	N-224	tR	46(24)	66-84	76	96-133	119	85-102	93	Ey	A	SH	26-51	38
23	WH 1241	N-226	tR	35(13)	69-96	81	100-136	121	85-119	97	Ey	A	SH	27-54	39
24	DBW 261	N-227	tR	34(13)	74-90	82	115-136	124	78-119	97	Ey	A	SH	26-50	40
25	HD 3283	N-228	0	25(12)	72-91	83	112-133	122	88-118	100	Ey	A	SH	25-45	36
26	HD 3284	N-229	0	36(13)	72-91	84	112-137	124	87-120	98	Ey	A	SH	23-41	35
27	NW 7047	N-230	tR	35(13)	70-84	78	110-136	121	90-115	100	Ey	A	SH	30-53	41
28	RAJ 4531	N-231	0	46(35)	61-84	73	96-132	118	76-111	92	Ey	A	H	22-44	34
29	DBW 262	N-232	0	46(24)	71-96	83	110-133	123	76-118	92	Ey	A	SH	22-54	35
30	RAJ 4536	N-233	0	68(24)	65-87	74	96-134	118	82-117	96	Ey	A	SH	25-46	36
31	RAJ 4530	N-235	0	68(23)	69-87	79	100-135	120	84-117	98	Ey	A	SH	24-44	36
32	NW 7049	N-236	10S	35(13)	69-85	77	110-136	123	89-99	95	Ey	A	SH	29-57	42
33	K 1006 (C)	N-208	tR	68(24)	67-93	79	96-135	121	85-118	97	Ey	A	SH	26-47	38
34	HD 2967 (C)	N-217	tR	35(12)	82-94	89	119-141	130	89-126	99	Ey	A	SH	21-42	36
35	HD 3086 (C)	N-225	20S	46(23)	69-88	79	100-132	120	79-117	96	Ey	A	H	26-44	38
36	DBW 88 (C)	N-234	tR	57(24)	70-90	80	110-136	122	84-109	97	Ey	A	H	25-44	37

1. Ancillary and Leaf blight data from Coochbehar,Faizabad, Sabour, Shillongani and Kalyani, Br. rust data reported from Sobour and Shillongani centre.

NIVT-1B-IR-TS-TAS, 2017-18
North Eastern Plains Zone
Individual Station Leaf Blight Data

S.N.	Variety	Code	Coochbehar	Faizabad	Sabour	Shillongani	Kalyani
1	PBW 787	N-201	23	23	24	36	13
2	HD 3286	N-202	12	24	57	24	00
3	PBW 786	N-203	12	35	57	46	00
4	HD 3285	N-204	24	34	36	24	13
5	DBW 259	N-205	12	45	03	12	12
6	K 1703	N-206	23	25	34	24	00
7	PBW 788	N-207	23	24	35	12	12
8	K 1704	N-209	23	36	35	12	24
9	UP 3005	N-210	24	12	57	24	00
10	HD 3282	N-211	12	12	68	24	00
11	WH 1243	N-212	24	34	23	24	00
12	NW 7028	N-213	23	36	46	12	35
13	HUW 828	N-214	12	12	46	12	12
14	HUW 827	N-215	23	12	68	01	12
15	DBW 258	N-216	12	45	46	01	13
16	UP 3006	N-218	23	25	23	46	00
17	UP 3007	N-219	34	24	46	12	00
18	BRW 3814	N-220	12	12	23	36	12
19	DBW 260	N-221	12	45	02	12	00
20	WH 1242	N-222	12	36	46	24	24
21	K 1705	N-223	12	35	46	36	00
22	HUW 829	N-224	12	45	46	12	24
23	WH 1241	N-226	23	12	34	01	35
24	DBW 261	N-227	23	24	34	01	12
25	HD 3283	N-228	12	25	24	12	00
26	HD 3284	N-229	12	26	36	12	12
27	NW 7047	N-230	12	12	35	12	23
28	RAJ 4531	N-231	24	35	46	24	25
29	DBW 262	N-232	34	45	46	12	13
30	RAJ 4536	N-233	23	24	68	12	24
31	RAJ 4530	N-235	12	25	68	12	00
32	NW 7049	N-236	12	12	35	12	14
33	K 1006 (C)	N-208	12	24	68	24	12
34	HD 2967 (C)	N-217	34	12	02	35	00
35	HD 3086 (C)	N-225	12	12	46	24	23
36	DBW 88 (C)	N-234	12	23	57	14	23

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	Hd. R	Hd. M	Mat. R	Mat. M	Ht. R	Ht. M	Thr.	Lod%	Col.	Tex.	TGW.R	TGW.M
1	PBW 787	N-201	TMS	0.17	0	63-108	95	126-157	144	80-107	98	Ey	27	A	H	34-46	41
2	HD 3286	N-202	20MS	5.83	0	70-106	95	127-155	145	87-114	105	Ey	17	A	H	37-45	42
3	PBW 786	N-203	10S	3.33	0	82-108	100	130-155	145	98-112	105	Ey	7	A	H	35-45	39
4	HD 3285	N-204	10S	2.63	0	80-110	101	128-155	146	95-109	103	Ey	13	A	H	29-43	38
5	DBW 259	N-205	5S	0.83	20S	80-109	100	129-155	145	89-106	100	Ey	13	A	H	29-36	32
6	K 1703	N-206	40S	22.33	0	70-106	95	127-157	143	99-115	107	Ey	32	A	H	29-45	39
7	PBW 788	N-207	5S	0.83	0	64-109	93	129-155	143	95-112	100	Ey	4	A	H	38-46	42
8	K 1704	N-209	60S	20.00	5S	60-99	88	130-157	142	80-115	101	Ey	69	A	H	34-41	37
9	UP 3005	N-210	5S	0.83	0	64-106	93	128-153	143	99-113	105	Ey	5	A	H	32-44	38
10	HD 3282	N-211	0	0.00	0	72-109	98	127-155	145	100-116	108	Ey	22	A	H	34-47	40
11	WH 1243	N-212	5S	0.83	5S	77-112	100	130-155	145	97-112	104	Ey	29	A	H	31-42	39
12	NW 7028	N-213	10S	3.33	0	63-100	88	128-153	141	95-114	101	Ey	36	A	H	33-43	38
13	HUW 828	N-214	60MS	19.53	0	73-103	94	127-157	144	99-118	106	Ey	33	A	H	33-45	40
14	HUW 827	N-215	40MS	12.00	10S	70-156	100	103-152	136	107-122	114	Ey	44	A	H	35-46	43
15	DBW 258	N-216	5S	0.83	0	69-107	96	130-155	145	100-109	104	Ey	37	A	H	30-39	34
16	UP 3006	N-218	10S	1.83	0	68-106	94	126-157	144	99-110	105	Ey	3	A	H	30-47	40
17	UP 3007	N-219	10S	3.5	0	63-107	93	127-152	142	98-115	106	Ey	7	A	H	43-53	46
18	BRW 3814	N-220	20S	9.0	tS	64-108	95	128-157	145	94-116	106	Ey	31	A	H	38-48	44
19	DBW 260	N-221	0	0.00	0	76-112	100	126-158	146	102-120	108	Ey	30	A	H	30-47	38
20	WH 1242	N-222	10S	3.37	0	62-100	88	125-152	140	96-112	102	Ey	50	A	H	35-43	40
21	K 1705	N-223	60S	36.67	0	74-107	96	130-157	144	100-125	111	Ey	38	A	H	30-40	34
22	HUW 829	N-224	5S	0.83	0	60-105	90	127-154	143	93-111	101	Ey	7	A	H	35-44	39
23	WH 1241	N-226	5S	0.83	0	70-110	98	128-157	144	90-112	99	Ey	14	A	H	31-43	38
24	DBW 261	N-227	30MS	12.17	0	78-106	98	131-153	145	93-106	101	Ey	10	A	H	30-42	38
25	HD 3283	N-228	20S	4.03	0	74-107	97	129-155	143	98-115	107	Ey	13	A	H	34-40	37
26	HD 3284	N-229	10S	3.33	0	79-110	100	129-155	144	95-110	103	Ey	25	A	H	31-43	36
27	NW 7047	N-230	10S	2.50	0	66-102	92	125-154	141	93-114	104	Ey	13	A	H	40-48	44
28	RAJ 4531	N-231	5S	1.00	0	67-100	89	126-153	141	90-109	98	Ey	10	A	H	29-37	32
29	DBW 262	N-232	5S	1.53	0	75-111	100	128-157	145	95-105	101	Ey	26	A	H	29-44	37
30	RAJ 4536	N-233	10S	2.50	0	60-102	89	125-156	142	90-124	106	Ey	60	A	H	33-44	36
31	RAJ 4530	N-235	10S	1.70	0	69-105	92	127-155	142	92-118	105	Ey	30	A	H	36-44	39
32	NW 7049	N-236	10S	4.17	0	68-105	93	126-154	143	98-116	104	Ey	17	A	H	41-47	45
33	K 1006 (C)	N-208	40S	16.50	tR	68-107	96	126-156	144	96-111	102	Ey	30	A	H	32-37	35
34	HD 2967 (C)	N-217	40S	23.67	0	84-111	101	133-154	146	98-111	105	Ey	14	A	H	30-42	38
35	HD 3086 (C)	N-225	10S	3.33	5S	67-102	91	127-154	142	96-114	101	Ey	30	A	H	29-41	36
36	DBW 88 (C)	N-234	60S	19.83	0	70-108	96	126-155	145	96-116	104	Ey	28	A	H	31-41	36

1. Ancillary and Yellow Rust data from Gurdaspur, Pantnagar, Karnal, New Delhi, Hisar and Ludhiana, Brown rust data reported from Gurdaspur and Pantnagar only.

NIVT-1B-IR-TS-TAS, 2017-18
North Western Plains Zone
(Individual Station Rust Data)

SN	Variety	Code	Gurdaspur		Pantnagar		Karnal	Delhi	Ludhiana	Hisar
			YI	Br	YI	Br	YI	YI	YI	YI
1	PBW 787	N-201	0	0	0	0	0	tMS	tR	0
2	HD 3286	N-202	0	0	20MS	0	5S	0	10S	5MS
3	PBW 786	N-203	0	0	0	0	0	0	10S	10S
4	HD 3285	N-204	0	0	tMS	0	10S	0	5S	0
5	DBW 259	N-205	0	5S	0	20S	0	0	5S	0
6	K 1703	N-206	5S	0	40S	0	40S	10MR	5S	40S
7	PBW 788	N-207	0	0	0	0	0	0	5S	0
8	K 1704	N-209	10S	5S	60S	0	40S	0	10S	0
9	UP 3005	N-210	0	0	0	0	0	0	0	5S
10	HD 3282	N-211	0	0	0	0	0	0	0	0
11	WH 1243	N-212	0	5S	0	0	0	0	5S	0
12	NW 7028	N-213	0	0	0	tS	10S	0	10S	0
13	HUW 828	N-214	tR	0	60MS	0	40S	10MR	5S	20S
14	HUW 827	N-215	0	10S	40MS	0	10S	0	10S	20S
15	DBW 258	N-216	0	0	0	0	0	0	5S	0
16	UP 3006	N-218	tR	0	tMS	0	10S	0	0	0
17	UP 3007	N-219	0	0	tMS	0	10S	0	10S	0
18	BRW 3814	N-220	0	0	10S	tS	20S	0	20S	5MS
19	DBW 260	N-221	0	0	0	0	0	0	0	0
20	WH 1242	N-222	tR	0	10S	0	0	0	10S	0
21	K 1705	N-223	20S	0	60S	0	60S	20S	40S	20S
22	HUW 829	N-224	0	0	0	0	0	0	5S	0
23	WH 1241	N-226	0	0	0	0	0	0	5S	0
24	DBW 261	N-227	0	0	30MS	0	20S	10MR	5S	20S
25	HD 3283	N-228	0	0	20S	0	0	0	tR	5MS
26	HD 3284	N-229	0	0	0	0	5S	0	5S	10S
27	NW 7047	N-230	0	0	0	0	0	0	5S	10S
28	RAJ 4531	N-231	0	0	tS	0	0	0	5S	0
29	DBW 262	N-232	0	0	5MS	0	0	0	tR	5S
30	RAJ 4536	N-233	0	0	0	0	0	0	10S	5S
31	RAJ 4530	N-235	tR	0	0	0	0	0	10S	0
32	NW 7049	N-236	0	0	10S	0	10S	0	5S	0
33	K 1006 (C)	N-208	5S	tR	20S	0	40S	10MR	10S	20S
34	HD 2967 (C)	N-217	20S	0	40MS	0	40S	10S	20S	20S
35	HD 3086 (C)	N-225	0	5S	0	tS	0	0	10S	10S
36	DBW 88 (C)	N-234	5S	0	60S	0	40S	10MR	10S	0

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Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ											
			Gujarat						MP					
			Junagadh			Vijapur			Sagar			Indore		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW 3390	N-301	42.8	20	0	45.1	26	0	59.6	11	0	42.1	28	0
2	GW 508	N-303	39.1	28	0	45.7	25	0	57.2	17	0	50.1	11	0
3	HP 1968	N-304	36.6	30	0	39.2	33	0	53.2	23	0	42.9	25	0
4	PBW 789	N-305	39.5	27	0	42.6	29	0	50.7	28	0	36.0	35	0
5	MACS 6727	N-306	43.3	18	0	53.5	6	1	63.1	10	0	52.3	3	0
6	GW 505	N-307	46.3	9	0	56.0	2	1	57.7	16	0	46.3	19	0
7	MACS 6729	N-310	35.0	31	0	58.2	1	1	56.7	18	0	62.0	1	1
8	WH 1244	N-311	41.6	24	0	44.1	28	0	71.9	4	0	44.7	23	0
9	CG 1028	N-313	43.6	17	0	46.7	21	0	50.6	29	0	43.7	24	0
10	MP 1350	N-314	42.0	23	0	54.8	4	1	83.2	1	1	40.6	30	0
11	GW 506	N-315	40.6	26	0	49.5	10	0	64.3	9	0	42.4	26	0
12	AKAW 5077	N-316	48.2	7	1	47.3	20	0	72.1	3	0	47.2	18	0
13	DBW 263	N-317	53.3	2	1	38.9	34	0	54.6	21	0	41.1	29	0
14	RAJ 4532	N-318	30.4	35	0	41.9	30	0	44.4	35	0	38.3	32	0
15	HI 1632	N-319	42.7	21	0	49.4	11	0	67.9	8	0	52.3	4	0
16	UAS 398	N-320	45.6	14	0	46.4	22	0	59.0	14	0	45.4	21	0
17	MP 1348	N-321	30.4	36	0	25.6	36	0	44.2	36	0	35.5	36	0
18	MP 1349	N-322	53.5	1	1	48.3	16	0	52.7	25	0	51.5	8	0
19	AKAW 5078	N-323	46.3	10	0	53.3	8	1	70.4	5	0	50.2	10	0
20	MACS 6722	N-324	34.9	32	0	45.9	23	0	50.9	27	0	52.1	5	0
21	NIAW 3270	N-325	45.7	13	0	48.1	18	0	54.7	20	0	45.8	20	0
22	UP 3008	N-326	33.0	34	0	35.6	35	0	45.4	34	0	37.6	34	0
23	HI 1631	N-327	45.1	15	0	55.7	3	1	78.2	2	0	50.0	12	0
24	UAS 3001	N-328	52.4	4	1	50.3	9	0	51.4	26	0	47.8	16	0
25	DBW 264	N-329	45.8	12	0	48.4	15	0	59.5	12	0	47.4	17	0
26	MP 3493	N-330	44.1	16	0	54.4	5	1	47.5	33	0	40.5	31	0
27	GW 507	N-331	42.1	22	0	53.4	7	1	59.2	13	0	52.0	6	0
28	UAS 399	N-332	41.6	25	0	44.6	27	0	53.1	24	0	37.8	33	0
29	HI 1629	N-333	33.4	33	0	47.4	19	0	69.4	6	0	51.4	9	0
30	HI 1630	N-334	43.0	19	0	45.8	24	0	56.3	19	0	53.0	2	0
31	JW 5154	N-335	46.0	11	0	40.4	32	0	49.3	31	0	42.3	27	0
32	MP 3495	N-336	38.4	29	0	41.1	31	0	47.6	32	0	47.8	15	0
33	GW 322 (C)	N-302	52.1	5	1	48.3	17	0	68.4	7	0	51.5	7	0
34	MACS 6222 (C)	N-308	52.4	3	1	49.0	13	0	53.3	22	0	47.9	14	0
35	MACS 6478 (C)	N-309	51.3	6	1	49.3	12	0	49.7	30	0	45.1	22	0
36	HI 1544 (C)	N-312	46.6	8	0	48.4	14	0	58.5	15	0	48.0	13	0
Mean			43.0			47.0			57.9			46.2		
S.E.M			2.6			3.3			1.6			2.2		
C.D. (10%)			6.1			8.0			3.7			5.3		
C.V.			8.4			10.0			3.8			6.8		
D.O.S. (d.m.y)			12.11.2017			16.11.2017			10.11.2017			18.11.2017		

Trials proposed = 17
Trials not conducted (1) = Kota
Trials not reported (4) = Gwalior (UY), Udaipur (LSM), Nippani (LSM), Akola (RMT)

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Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ								
			MP						Chhattisgarh		
			Jabalpur			Powarkheda			Bilaspur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW 3390	N-301	51.8	30	0	48.0	25	0	40.8	21	0
2	GW 508	N-303	71.0	7	1	50.8	20	0	54.6	5	1
3	HP 1968	N-304	64.3	17	0	56.1	8	1	39.0	24	0
4	PBW 789	N-305	69.9	9	0	55.7	10	1	42.7	17	0
5	MACS 6727	N-306	75.0	4	1	55.3	11	1	46.7	12	0
6	GW 505	N-307	57.2	24	0	44.5	31	0	49.1	10	0
7	MACS 6729	N-310	51.4	31	0	47.7	26	0	52.9	7	1
8	WH 1244	N-311	70.8	8	1	49.8	21	0	40.2	22	0
9	CG 1028	N-313	61.2	21	0	59.4	6	1	55.0	4	1
10	MP 1350	N-314	49.3	32	0	51.5	16	0	45.5	14	0
11	GW 506	N-315	54.8	26	0	48.4	24	0	40.1	23	0
12	AKAW 5077	N-316	69.1	11	0	63.6	1	1	35.0	29	0
13	DBW 263	N-317	38.1	36	0	53.3	13	0	42.4	18	0
14	RAJ 4532	N-318	52.1	28	0	59.6	5	1	19.1	36	0
15	HI 1632	N-319	74.4	6	1	60.8	4	1	40.9	20	0
16	UAS 398	N-320	75.0	5	1	49.4	22	0	43.9	15	0
17	MP 1348	N-321	63.6	19	0	42.3	35	0	31.6	33	0
18	MP 1349	N-322	53.6	27	0	51.6	15	0	51.9	9	1
19	AKAW 5078	N-323	68.4	13	0	44.6	30	0	43.8	16	0
20	MACS 6722	N-324	58.8	23	0	58.0	7	1	56.3	1	1
21	NIAW 3270	N-325	44.9	34	0	52.1	14	0	47.7	11	0
22	UP 3008	N-326	39.8	35	0	42.3	34	0	38.0	25	0
23	HI 1631	N-327	64.4	16	0	54.7	12	1	30.0	34	0
24	UAS 3001	N-328	48.6	33	0	51.4	17	0	45.8	13	0
25	DBW 264	N-329	67.6	14	0	45.3	29	0	35.7	28	0
26	MP 3493	N-330	75.5	1	1	44.4	32	0	29.1	35	0
27	GW 507	N-331	69.8	10	0	49.2	23	0	38.0	25	0
28	UAS 399	N-332	55.9	25	0	41.4	36	0	31.8	32	0
29	HI 1629	N-333	66.8	15	0	50.9	19	0	53.5	6	1
30	HI 1630	N-334	63.4	20	0	55.7	9	1	35.8	27	0
31	JW 5154	N-335	60.4	22	0	51.4	18	0	52.3	8	1
32	MP 3495	N-336	52.1	29	0	46.3	28	0	33.5	30	0
33	GW 322 (C)	N-302	63.8	18	0	46.8	27	0	55.6	3	1
34	MACS 6222 (C)	N-308	75.3	3	1	43.3	33	0	42.2	19	0
35	MACS 6478 (C)	N-309	68.9	12	0	61.4	3	1	56.0	2	1
36	HI 1544 (C)	N-312	75.4	2	1	61.9	2	1	32.4	31	0
Mean			61.7			51.4			42.5		
S.E.M			2.0			4.0			3.0		
C.D. (10%)			4.9			9.6			7.1		
C.V.			4.6			10.9			9.9		
D.O.S. (d.m.y)			16.11.2017			15.11.2017			10.11.17		

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Location wise Mean Yield (q/ha)

SN	Variety	Code	PZ													
			Maharashtra									Karnataka				
			Parbhani			Pune			Niphad			Dharwad			Ugar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW 3390	N-301	50.9	8	0	49.3	30	0	54.9	20	0	41.7	15	0	37.3	22	0
2	GW 508	N-303	27.8	36	0	55.3	27	0	60.2	9	1	33.8	30	0	27.8	34	0
3	HP 1968	N-304	50.6	10	0	58.4	17	0	48.4	31	0	47.8	5	1	42.7	9	1
4	PBW 789	N-305	43.7	25	0	49.3	29	0	46.2	32	0	24.7	36	0	47.5	2	1
5	MACS 6727	N-306	49.3	13	0	65.5	2	1	56.8	15	0	25.3	34	0	35.8	27	0
6	GW 505	N-307	49.1	15	0	58.5	15	0	56.5	17	0	37.6	24	0	32.2	30	0
7	MACS 6729	N-310	44.6	24	0	62.1	8	0	66.3	2	1	49.8	3	1	39.6	15	1
8	WH 1244	N-311	52.4	5	0	40.9	34	0	45.4	34	0	40.0	17	0	38.3	20	0
9	CG 1028	N-313	47.3	18	0	63.7	4	1	59.3	11	1	39.1	19	0	44.0	5	1
10	MP 1350	N-314	49.2	14	0	59.0	14	0	53.4	25	0	51.3	1	1	38.6	18	0
11	GW 506	N-315	52.1	6	0	55.4	26	0	60.8	8	1	38.0	22	0	36.0	26	0
12	AKAW 5077	N-316	40.7	28	0	61.3	10	0	62.1	6	1	39.0	20	0	38.5	19	0
13	DBW 263	N-317	46.0	21	0	47.1	32	0	49.9	29	0	25.9	33	0	37.3	23	0
14	RAJ 4532	N-318	42.2	27	0	45.0	33	0	50.8	28	0	28.2	32	0	25.0	35	0
15	HI 1632	N-319	37.5	30	0	69.5	1	1	63.8	5	1	46.9	6	1	45.5	3	1
16	UAS 398	N-320	48.0	17	0	60.1	12	0	52.3	27	0	45.5	8	0	43.5	7	1
17	MP 1348	N-321	32.3	35	0	30.5	36	0	36.2	36	0	24.8	35	0	33.8	29	0
18	MP 1349	N-322	50.7	9	0	57.5	20	0	64.1	4	1	41.7	14	0	42.9	8	1
19	AKAW 5078	N-323	50.2	12	0	61.8	9	0	55.0	19	0	36.7	26	0	39.3	16	0
20	MACS 6722	N-324	49.1	16	0	55.9	24	0	55.9	18	0	35.6	28	0	44.0	6	1
21	NIAW 3270	N-325	47.2	19	0	56.9	23	0	52.8	26	0	38.6	21	0	36.4	25	0
22	UP 3008	N-326	45.6	22	0	38.3	35	0	39.7	35	0	34.2	29	0	34.7	28	0
23	HI 1631	N-327	37.2	31	0	62.8	6	1	64.2	3	1	42.3	12	0	36.8	24	0
24	UAS 3001	N-328	62.2	1	1	64.2	3	1	66.7	1	1	51.2	2	1	41.0	13	1
25	DBW 264	N-329	39.2	29	0	62.3	7	1	54.7	21	0	30.9	31	0	45.0	4	1
26	MP 3493	N-330	32.9	34	0	55.5	25	0	57.1	14	1	42.2	13	0	29.3	33	0
27	GW 507	N-331	46.4	20	0	58.4	16	0	58.7	13	1	42.8	11	0	40.9	14	1
28	UAS 399	N-332	50.4	11	0	60.0	13	0	48.8	30	0	46.0	7	1	42.0	10	1
29	HI 1629	N-333	55.4	3	0	56.9	22	0	56.5	16	0	39.9	18	0	41.9	11	1
30	HI 1630	N-334	36.0	32	0	57.4	21	0	59.4	10	1	37.9	23	0	22.8	36	0
31	JW 5154	N-335	51.9	7	0	55.2	28	0	54.6	22	0	36.6	27	0	41.2	12	1
32	MP 3495	N-336	34.9	33	0	48.3	31	0	54.3	24	0	40.4	16	0	31.5	32	0
33	GW 322 (C)	N-302	53.6	4	0	60.8	11	0	45.9	33	0	43.9	10	0	38.8	17	0
34	MACS 6222 (C)	N-308	59.9	2	1	58.3	18	0	58.8	12	1	48.3	4	1	37.4	21	0
35	MACS 6478 (C)	N-309	44.9	23	0	63.3	5	1	54.6	23	0	37.4	25	0	47.5	1	1
36	HI 1544 (C)	N-312	43.6	26	0	58.0	19	0	61.1	7	1	45.0	9	0	31.9	31	0
Mean			46.0			56.2			55.2			39.2			38.0		
S.E.M			2.5			3.1			4.0			2.3			3.4		
C.D. (10%)			7.2			7.4			11.6			6.8			9.7		
C.V.			7.7			7.8			10.2			8.4			12.5		
D.O.S. (d.m.y)			06.11.2017			18.11.2017			14.11.2017			12.11.2017			08.11.2017		

1793-NIVT-2-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW 3390	N-301	47.2	30	0	46.8	22	0	47.0	28	0
2	GW 508	N-303	52.6	10	0	41.0	33	0	47.8	25	0
3	HP 1968	N-304	47.3	29	0	49.6	10	0	48.3	24	0
4	PBW 789	N-305	48.2	27	0	42.3	30	0	45.7	31	0
5	MACS 6727	N-306	55.6	1	1	46.5	24	0	51.8	9	0
6	GW 505	N-307	51.0	19	0	46.8	23	0	49.3	19	0
7	MACS 6729	N-310	52.0	13	0	52.5	4	0	52.2	5	0
8	WH 1244	N-311	51.9	16	0	43.4	27	0	48.3	23	0
9	CG 1028	N-313	51.5	18	0	50.7	6	0	51.1	15	0
10	MP 1350	N-314	52.4	11	0	50.3	7	0	51.5	13	0
11	GW 506	N-315	48.6	25	0	48.5	17	0	48.5	20	0
12	AKAW 5077	N-316	54.7	4	1	48.3	18	0	52.0	7	0
13	DBW 263	N-317	46.0	31	0	41.3	32	0	44.0	32	0
14	RAJ 4532	N-318	40.8	34	0	38.2	35	0	39.8	34	0
15	HI 1632	N-319	55.5	2	1	52.6	2	0	54.3	1	1
16	UAS 398	N-320	52.1	12	0	49.9	9	0	51.2	14	0
17	MP 1348	N-321	39.0	35	0	31.5	36	0	35.9	36	0
18	MP 1349	N-322	51.9	17	0	51.4	5	0	51.7	11	0
19	AKAW 5078	N-323	53.9	7	1	48.6	16	0	51.7	12	0
20	MACS 6722	N-324	51.0	20	0	48.1	19	0	49.8	18	0
21	NIAW 3270	N-325	48.4	26	0	46.4	26	0	47.6	26	0
22	UP 3008	N-326	38.8	36	0	38.5	34	0	38.7	35	0
23	HI 1631	N-327	54.0	6	1	48.7	14	0	51.8	10	0
24	UAS 3001	N-328	49.7	23	0	57.1	1	1	52.7	2	1
25	DBW 264	N-329	50.0	22	0	46.4	25	0	48.5	22	0
26	MP 3493	N-330	47.9	28	0	43.4	28	0	46.0	30	0
27	GW 507	N-331	52.0	14	0	49.4	13	0	50.9	16	0
28	UAS 399	N-332	43.7	33	0	49.4	12	0	46.1	29	0
29	HI 1629	N-333	53.3	8	1	50.1	8	0	52.0	8	0
30	HI 1630	N-334	50.4	21	0	42.7	29	0	47.2	27	0
31	JW 5154	N-335	48.9	24	0	47.9	20	0	48.5	21	0
32	MP 3495	N-336	43.9	32	0	41.9	31	0	43.0	33	0
33	GW 322 (C)	N-302	55.2	3	1	48.6	15	0	52.5	3	1
34	MACS 6222 (C)	N-308	51.9	15	0	52.5	3	0	52.2	6	0
35	MACS 6478 (C)	N-309	54.5	5	1	49.5	11	0	52.4	4	1
36	HI 1544 (C)	N-312	53.0	9	0	47.9	21	0	50.9	17	0
Mean			50.0			46.9			48.7		
S.E.M			1.0			1.4			0.8		
C.D. (10%)			2.5			3.3			2.0		

Summary of Disease Data and Agronomic Characteristics

Central Zone **NIVT 2-IR-TS-TAS, 2017-18**

SN	Variety	Code	Disease reaction		Agronomic Characteristics						Grain Characteristics					
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	NIAW 3390	N-301	tR	tMR	56-81	70	99-138	119	86-113	97	5	Ey-M	A	SH	34-51	42
2	GW 508	N-303	0	tMR	47-66	56	96-132	113	76-100	89	0	M	A	SH	41-52	47
3	HP 1968	N-304	tR	5S	61-82	72	105-142	120	81-112	91	0	M	A	SH	42-63	49
4	PBW 789	N-305	0	5S	58-79	69	105-139	121	87-105	94	0	M	A	SH	36-48	40
5	MACS 6727	N-306	0	tR	55-74	65	96-130	113	84-104	93	0	M	A	SH-H	39-45	42
6	GW 505	N-307	0	0	50-69	59	98-129	114	69-81	73	0	M	A	SH	34-49	41
7	MACS 6729	N-310	tR	tR	52-70	61	96-128	114	82-105	93	0	M	A	SH	39-50	44
8	WH 1244	N-311	0	5MR	61-81	73	106-142	121	93-115	100	15	M	A	SH	29-52	37
9	CG 1028	N-313	5MR	0	53-88	67	100-141	119	82-109	93	0	M	A	SH-H	39-50	44
10	MP 1350	N-314	0	tMR	56-78	67	97-135	114	83-113	101	0	Ey	A	SH	40-54	46
11	GW 506	N-315	0	0	50-76	64	98-138	116	81-95	88	0	Ey-M	A	SH	40-48	45
12	AKAW 5077	N-316	5MS	0	50-79	62	99-130	113	85-111	96	20	M	R	So-SH	37-45	41
13	DBW 263	N-317	0	tR	60-82	73	103-138	119	82-103	91	0	M	A	SH	32-44	38
14	RAJ 4532	N-318	0	tMR	43-61	54	92-118	108	67-99	83	0	M	A	SH	38-51	44
15	HI 1632	N-319	tR	tR	48-68	58	96-135	115	82-107	97	0	Ey	A	SH	40-55	48
16	UAS 398	N-320	0	5S	57-84	70	100-138	117	91-111	100	0	M	R	SH	35-57	44
17	MP 1348	N-321	0	5S	68-82	76	107-142	122	116-145	126	10	M	A	SH	37-54	43
18	MP 1349	N-322	0	5S	58-88	71	101-144	119	87-105	97	10	Ey-M	A	SH	33-49	38
19	AKAW 5078	N-323	0	tR	48-74	62	95-130	114	74-104	92	10	M	A	SH	40-49	44
20	MACS 6722	N-324	0	tR	53-76	62	97-128	114	78-103	91	0	M	A	SH	40-49	44
21	NIAW 3270	N-325	0	tR	54-82	66	98-132	114	76-95	86	0	M	A	SH	36-46	40
22	UP 3008	N-326	0	tR	63-90	77	108-145	125	84-112	98	20	M	A	SH	30-47	38
23	HI 1631	N-327	0	tR	46-63	56	97-130	113	75-100	88	0	M	A	SH	41-53	47
24	UAS 3001	N-328	tR	0	55-81	67	99-134	117	84-112	99	0	M	A	SH	45-53	48
25	DBW 264	N-329	tS	tR	58-83	70	100-138	119	87-116	98	15	M	A	SH	38-50	41
26	MP 3493	N-330	5MR	tMS	48-68	59	93-134	114	80-95	86	0	M	A	SH	42-46	43
27	GW 507	N-331	0	tR	50-73	62	97-133	115	67-109	91	0	M	A	SH	36-52	43
28	UAS 399	N-332	tR	10MR	56-88	71	100-144	119	90-108	99	25	E	A	SH	31-48	38
29	HI 1629	N-333	0	tR	56-75	65	102-136	118	86-112	98	0	Ey-M	A	SH	37-56	45
30	HI 1630	N-334	0	tR	43-63	55	96-128	111	74-101	88	0	M	A	SH	48-58	52
31	JW 5154	N-335	tR	tR	51-79	63	98-136	117	81-108	94	0	M	A	SH	41-50	44
32	MP 3495	N-336	tR	tR	52-81	65	97-141	117	81-107	95	5	Ey-M	A	SH-H	35-44	39
33	GW 322 (C)	N-302	0	tMS	56-76	66	98-137	114	82-104	89	0	Ey-M	A	SH	38-48	42
34	MACS 6222 (C)	N-308	0	tMR	54-79	66	99-133	116	75-98	90	0	M	A	SH	36-52	45
35	MACS 6478 (C)	N-309	0	10MR	56-81	70	99-133	116	74-102	85	0	M	A	SH	41-56	45
36	HI 1544 (C)	N-312	0	0	50-68	59	97-128	112	76-101	88	0	M	A	SH-H	39-51	44

1. Ancillary data from Bilaspur, Indore, Jabalpur, Powarkheda, Sagar, Junagadh and Vijapur centres.
2. Lodging from Jabalpur, Powarkheda and Junagadh centres.
3. Black and brown rust reactions from Powarkheda and Vijapur centres.

NIVT 2-IR-TS-TAS, 2017-18
Central Zone
Individual Station Rust Data

SN	Variety	Code	Powarkheda		Vijapur	
			Br	Bl	Br	Bl
1	NIAW 3390	N-301	0	0	tR	tMR
2	GW 508	N-303	0	0	0	tMR
3	HP 1968	N-304	tR	0	0	5S
4	PBW 789	N-305	0	0	0	5S
5	MACS 6727	N-306	0	0	0	tR
6	GW 505	N-307	0	0	0	0
7	MACS 6729	N-310	0	0	tR	tR
8	WH 1244	N-311	0	0	0	5MR
9	CG 1028	N-313	5MR	0	tR	0
10	MP 1350	N-314	0	0	0	tMR
11	GW 506	N-315	0	0	0	0
12	AKAW 5077	N-316	5MS	0	0	0
13	DBW 263	N-317	0	0	0	tR
14	RAJ 4532	N-318	0	0	0	tMR
15	HI 1632	N-319	tR	0	0	tR
16	UAS 398	N-320	0	0	0	5S
17	MP 1348	N-321	0	0	0	5S
18	MP 1349	N-322	0	0	0	5S
19	AKAW 5078	N-323	0	0	0	tR
20	MACS 6722	N-324	0	0	0	tR
21	NIAW 3270	N-325	0	0	0	tR
22	UP 3008	N-326	0	0	0	tR
23	HI 1631	N-327	0	0	0	tR
24	UAS 3001	N-328	0	0	tR	0
25	DBW 264	N-329	tS	0	0	tR
26	MP 3493	N-330	5MR	tR	tR	tMS
27	GW 507	N-331	0	0	0	tR
28	UAS 399	N-332	0	0	tR	10MR
29	HI 1629	N-333	0	0	0	tR
30	HI 1630	N-334	0	0	0	tR
31	JW 5154	N-335	0	0	tR	tR
32	MP 3495	N-336	0	0	tR	tR
33	GW 322 (C)	N-302	0	0	0	tMS
34	MACS 6222 (C)	N-308	0	0	0	tMR
35	MACS 6478 (C)	N-309	0	0	0	10MR
36	HI 1544 (C)	N-312	0	0	0	0

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **NIVT 2-IR-TS-TAS, 2017-18**

SN	Variety	Code	Disease reaction		Agronomic Characteristics						Grain Characteristics					
			LB	BP	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	NIAW 3390	N-301	35	1	62-75	69	109-123	116	86-99	91	0	Ey	A	SH	33-43	39
2	GW 508	N-303	00	6	44-62	56	106-110	108	62-85	76	0	Ey-M	A	SH-H	39-50	43
3	HP 1968	N-304	00	6	67-78	72	107-122	116	76-98	87	0	Ey	A	SH-H	44-53	48
4	PBW 789	N-305	00	2	67-73	71	108-125	117	82-106	89	0	Ey	A	SH	35-43	39
5	MACS 6727	N-306	00	3	61-67	65	105-114	110	79-96	84	0	Ey	A	So-SH	33-44	38
6	GW 505	N-307	00	5	53-61	58	104-113	109	62-74	68	0	Ey	A	SH	36-43	39
7	MACS 6729	N-310	00	5	57-64	61	105-112	108	76-90	83	0	Ey	A	SH	36-55	44
8	WH 1244	N-311	00	1	67-80	74	108-123	116	82-104	90	5	Ey	A	SH	29-42	35
9	CG 1028	N-313	00	5	55-66	63	107-121	112	73-96	83	0	Ey	A	SH-H	40-48	42
10	MP 1350	N-314	00	8	61-74	66	110-119	114	65-103	82	0	Ey	A	SH-H	39-48	44
11	GW 506	N-315	00	2	55-67	61	108-114	111	64-88	73	0	Ey	A	SH	40-50	44
12	AKAW 5077	N-316	00	2	53-64	60	104-113	109	72-95	84	0	Ey	R	SH-H	36-47	41
13	DBW 263	N-317	00	3	70-80	74	106-128	116	73-96	83	0	Ey-M	A	SH-H	30-43	37
14	RAJ 4532	N-318	35	4	43-57	52	101-109	106	66-79	71	0	Ey	A	SH	37-47	40
15	HI 1632	N-319	00	5	44-60	56	108-113	110	77-95	84	0	Ey	A	SH-H	40-49	44
16	UAS 398	N-320	00	2	63-70	67	109-116	113	78-106	90	0	Ey	A	SH-H	37-47	41
17	MP 1348	N-321	00	0	71-82	76	110-129	119	110-144	121	5	Ey	A	SH	37-46	41
18	MP 1349	N-322	00	2	58-74	68	108-119	115	81-101	87	0	Ey	A	SH	33-40	36
19	AKAW 5078	N-323	25	3	53-62	59	105-112	109	76-95	86	0	Ey	R	SH-H	36-49	43
20	MACS 6722	N-324	00	25	58-66	62	106-114	110	73-94	81	0	M	A	SH	39-46	41
21	NIAW 3270	N-325	00	1	61-68	65	105-115	111	76-92	82	0	Ey	A	SH	36-41	39
22	UP 3008	N-326	00	1	66-89	75	107-125	117	80-99	90	15	Ey	A	SH	31-42	37
23	HI 1631	N-327	25	2	44-57	53	104-110	106	66-84	75	0	Ey	A	SH	42-53	44
24	UAS 3001	N-328	00	2	61-68	64	106-117	112	89-108	99	0	Ey	A	SH	43-48	46
25	DBW 264	N-329	00	2	66-78	70	108-118	113	73-106	89	0	Ey	A	SH-H	31-38	35
26	MP 3493	N-330	00	1	51-59	56	105-114	109	71-87	76	0	Ey	A	SH	39-45	42
27	GW 507	N-331	35	4	56-66	60	104-114	109	75-95	85	0	Ey	A	SH	39-43	42
28	UAS 399	N-332	00	0	64-74	69	108-119	115	89-105	96	0	Ey	A	SH	34-43	39
29	HI 1629	N-333	00	6	60-67	64	107-121	114	79-109	89	0	Ey	A	SH	39-46	41
30	HI 1630	N-334	35	4	43-65	56	105-107	106	68-88	77	0	Ey	A	SH-H	42-55	48
31	JW 5154	N-335	00	3	58-68	64	106-121	113	73-94	83	0	Ey	A	SH	39-43	41
32	MP 3495	N-336	00	8	54-66	62	105-114	109	74-99	87	0	Ey	A	SH	34-40	38
33	GW 322 (C)	N-302	00	0	62-69	66	108-117	112	71-98	82	0	Ey	A	SH	34-41	37
34	MACS 6222 (C)	N-308	00	3	60-68	63	108-116	112	71-88	80	0	Ey	A	SH-H	40-47	43
35	MACS 6478 (C)	N-309	00	0	66-69	68	107-119	112	72-95	83	0	Ey	A	SH-H	37-50	42
36	HI 1544 (C)	N-312	00	5	51-61	58	105-112	108	68-88	78	0	Ey	A	SH	39-46	42

1. Ancillary data from Dharwad, Ugar, Niphad, Parbhani and Pune centres; 2. No rust reaction was reported by any centre in the zone.
3. Lodging, leaf blight and black point data from Pune centre only.

1794-NIVT-3A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ											
			Delhi			Punjab					Haryana			
			Delhi			Gurdaspur			Ludhiana			Hisar			Karnal		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ 4535	N-401	43.3	22	0	38.9	36	0	49.0	22	0	44.1	20	0	21.9	35	0
2	WH 1247	N-402	43.6	20	0	56.9	3	1	54.7	13	1	38.7	33	0	53.4	7	0
3	WH 1248	N-405	40.0	29	0	47.5	22	0	46.8	27	0	47.3	8	1	57.1	3	1
4	HD 3290	N-406	49.7	5	1	46.2	28	0	58.0	4	1	46.4	15	0	52.4	12	0
5	NW 7033	N-407	38.5	32	0	45.1	32	0	48.5	23	0	44.1	21	0	51.0	16	0
6	PBW 793	N-408	50.8	3	1	53.0	9	1	58.8	2	1	51.2	3	1	54.6	6	1
7	HD 3291	N-409	46.3	8	1	49.5	19	0	58.1	3	1	43.8	23	0	47.6	23	0
8	PBW 792	N-410	44.0	17	0	46.7	25	0	55.4	11	1	43.0	25	0	51.3	14	0
9	K 1707	N-411	41.8	24	0	46.3	26	0	56.8	7	1	44.2	19	0	53.2	8	0
10	DBW 267	N-412	43.6	19	0	59.4	1	1	59.1	1	1	46.8	12	0	55.7	4	1
11	UP 3010	N-414	45.3	11	1	55.3	4	1	50.3	21	0	42.0	27	0	62.4	1	1
12	PBW 790	N-413	47.1	7	1	48.8	20	0	51.6	18	0	45.4	18	0	51.0	15	0
13	HP 1969	N-415	24.3	36	0	52.9	10	1	42.2	35	0	35.2	36	0	21.5	36	0
14	UP 3011	N-416	43.4	21	0	55.0	6	1	48.3	24	0	48.1	6	1	48.8	19	0
15	HUW 830	N-417	41.4	27	0	55.3	4	1	53.9	14	1	46.9	10	0	46.4	27	0
16	PBW 791	N-418	42.7	23	0	54.4	7	1	56.0	10	1	38.7	32	0	60.3	2	1
17	HD 3288	N-421	50.9	2	1	46.9	24	0	56.2	9	1	42.4	26	0	55.4	5	1
18	DBW 269	N-420	45.3	12	1	50.5	16	1	48.2	25	0	41.6	28	0	47.3	24	0
19	K 1708	N-422	41.7	25	0	49.8	17	0	46.2	29	0	41.3	29	0	48.1	21	0
20	PBW 799	N-423	43.7	18	0	45.9	29	0	51.5	19	0	47.9	7	1	53.2	9	0
21	DBW 265	N-425	44.3	16	0	43.9	33	0	46.6	28	0	39.9	31	0	52.8	11	0
22	DBW 266	N-426	50.2	4	1	46.3	26	0	53.6	16	1	44.0	22	0	53.1	10	0
23	RAJ 4534	N-427	37.1	33	0	49.8	18	0	44.3	32	0	40.5	30	0	36.9	33	0
24	WH 1245	N-428	46.3	9	1	52.3	12	1	53.7	15	1	46.8	13	0	44.3	29	0
25	NW 7034	N-429	48.3	6	1	50.8	15	1	43.9	33	0	47.0	9	0	42.4	31	0
26	WH 1246	N-430	40.6	28	0	42.8	34	0	45.5	30	0	51.1	4	1	50.7	17	0
27	DBW 268	N-431	45.0	14	1	41.3	35	0	42.2	34	0	45.6	17	0	43.6	30	0
28	HD 3289	N-432	45.1	13	1	52.7	11	1	55.0	12	1	46.4	14	0	47.9	22	0
29	HD 3287	N-433	51.9	1	1	45.9	30	0	56.9	6	1	43.5	24	0	48.5	20	0
30	HUW 831	N-434	45.7	10	1	47.5	23	0	56.7	8	1	52.3	2	1	46.8	25	0
31	RAJ 4533	N-435	35.9	34	0	45.6	31	0	47.2	26	0	36.9	35	0	50.3	18	0
32	UP 3009	N-436	39.6	30	0	47.7	21	0	41.7	36	0	37.4	34	0	44.9	28	0
33	HI 1563 (C)	N-403	44.9	15	1	51.9	14	1	45.1	31	0	52.6	1	1	22.3	34	0
34	DBW 90 (C)	N-404	41.7	26	0	57.5	2	1	57.9	5	1	48.5	5	1	51.6	13	0
35	DBW 107 (C)	N-419	33.4	35	0	52.1	13	1	51.4	20	0	46.9	11	0	46.5	26	0
36	HD 3059 (C)	N-424	39.6	31	0	54.2	8	1	52.3	17	1	46.2	16	0	42.1	32	0
Mean			43.2			49.6			51.2			44.6			47.7		
S.E.M			3.1			3.9			2.9			2.3			3.7		
C.D. (10%)			7.6			9.2			6.9			5.5			8.9		
C.V.			10.2			11.0			8.0			7.2			11.1		
D.O.S. (d.m.y)			19.12.2017			20.12.17			10.12.2017			14.12.2017			10.12.2017		

Trials proposed & conducted = 17

Trials not reported (3) = IARI-Pusa (RMT), Varanasi (RMT), Modipuram (DNR)

1794-NIVT-3A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ									NEPZ		
			J&K			Uttrakhand			Rajasthan			Bihar		
			Jammu			Pantnagar			Durgapura			Sabour		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ 4535	N-401	27.9	30	0	32.8	35	0	35.3	34	0	31.3	31	0
2	WH 1247	N-402	25.7	35	0	53.8	7	1	45.7	8	0	41.7	14	1
3	WH 1248	N-405	37.8	6	0	48.2	19	0	42.8	18	0	45.8	2	1
4	HD 3290	N-406	35.6	10	0	53.0	8	1	43.4	15	0	43.7	5	1
5	NW 7033	N-407	27.7	32	0	52.7	9	1	45.7	7	0	34.4	26	0
6	PBW 793	N-408	31.1	23	0	34.9	34	0	45.7	8	0	38.6	17	0
7	HD 3291	N-409	31.9	18	0	47.7	21	0	39.9	25	0	26.3	35	0
8	PBW 792	N-410	29.8	26	0	42.0	32	0	45.7	8	0	38.0	20	0
9	K 1707	N-411	31.1	22	0	42.9	29	0	41.1	22	0	31.0	32	0
10	DBW 267	N-412	29.3	28	0	55.9	2	1	41.7	21	0	46.6	1	1
11	UP 3010	N-414	36.6	9	0	55.6	4	1	43.4	15	0	42.0	11	1
12	PBW 790	N-413	37.7	7	0	54.8	5	1	48.0	3	1	43.4	6	1
13	HP 1969	N-415	29.7	27	0	35.8	33	0	35.9	33	0	31.0	33	0
14	UP 3011	N-416	31.3	21	0	49.9	15	0	44.0	13	0	33.9	27	0
15	HUW 830	N-417	24.3	36	0	56.8	1	1	42.2	20	0	32.6	29	0
16	PBW 791	N-418	30.9	24	0	51.4	13	0	48.0	3	1	42.8	9	1
17	HD 3288	N-421	35.3	12	0	49.3	16	0	44.0	13	0	44.3	4	1
18	DBW 269	N-420	26.8	34	0	52.5	10	1	37.6	31	0	41.9	12	1
19	K 1708	N-422	30.5	25	0	52.4	11	1	51.5	1	1	30.9	34	0
20	PBW 799	N-423	38.4	5	0	54.3	6	1	46.3	5	0	37.8	21	0
21	DBW 265	N-425	31.3	20	0	44.6	27	0	40.5	24	0	35.8	24	0
22	DBW 266	N-426	44.3	2	1	48.3	18	0	42.8	18	0	39.8	15	0
23	RAJ 4534	N-427	37.6	8	0	45.3	26	0	39.4	27	0	38.1	19	0
24	WH 1245	N-428	39.8	3	0	42.6	30	0	44.6	12	0	35.2	25	0
25	NW 7034	N-429	31.8	19	0	46.1	23	0	46.3	5	0	26.0	36	0
26	WH 1246	N-430	27.8	31	0	51.7	12	0	38.2	29	0	36.0	23	0
27	DBW 268	N-431	33.1	15	0	45.8	24	0	34.7	35	0	31.4	30	0
28	HD 3289	N-432	47.7	1	1	49.2	17	0	39.9	25	0	38.5	18	0
29	HD 3287	N-433	27.7	33	0	44.1	28	0	38.2	29	0	36.7	22	0
30	HUW 831	N-434	33.0	16	0	55.7	3	1	39.4	27	0	33.4	28	0
31	RAJ 4533	N-435	33.3	14	0	42.4	31	0	34.1	36	0	43.2	7	1
32	UP 3009	N-436	39.5	4	0	45.7	25	0	41.1	22	0	43.1	8	1
33	HI 1563 (C)	N-403	32.0	17	0	24.9	36	0	37.0	32	0	39.8	15	0
34	DBW 90 (C)	N-404	35.0	13	0	47.7	20	0	42.8	17	0	42.5	10	1
35	DBW 107 (C)	N-419	29.0	29	0	50.9	14	0	49.2	2	1	45.5	3	1
36	HD 3059 (C)	N-424	35.4	11	0	47.5	22	0	45.7	8	0	41.8	13	1
Mean			33.0			47.5			42.3			37.9		
S.E.M			1.8			2.1			1.7			2.2		
C.D. (10%)			4.3			5.1			4.1			5.4		
C.V.			7.7			6.3			5.7			8.4		

1794-NIVT-3A-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NEPZ													
			Jharkhand			West Bengal						Uttar Pradesh				
			Ranchi			Coochbehar			Kalyani			Faizabad			Kanpur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ 4535	N-401	29.1	29	0	40.6	10	0	52.6	1	1	43.9	16	1	47.2	9	1
2	WH 1247	N-402	29.4	27	0	43.5	5	1	35.9	28	0	38.5	34	0	42.5	16	0
3	WH 1248	N-405	32.2	18	0	31.8	28	0	40.7	15	0	47.0	5	1	38.8	24	0
4	HD 3290	N-406	34.7	6	1	46.8	4	1	35.3	32	0	46.5	8	1	39.9	21	0
5	NW 7033	N-407	30.4	22	0	29.1	34	0	35.8	29	0	40.6	27	0	48.3	5	1
6	PBW 793	N-408	33.6	11	1	38.6	14	0	36.4	25	0	47.6	2	1	30.4	34	0
7	HD 3291	N-409	30.1	25	0	34.7	20	0	38.5	22	0	41.7	21	0	40.2	20	0
8	PBW 792	N-410	37.1	4	1	29.8	32	0	38.2	24	0	40.8	26	0	35.0	31	0
9	K 1707	N-411	32.7	15	0	47.6	3	1	36.3	27	0	44.4	14	1	38.5	25	0
10	DBW 267	N-412	37.2	3	1	49.7	2	1	39.6	20	0	43.6	17	0	46.9	10	1
11	UP 3010	N-414	37.5	2	1	32.8	26	0	42.3	12	0	39.7	30	0	43.4	15	0
12	PBW 790	N-413	28.8	31	0	41.3	9	1	47.7	5	0	43.6	18	0	39.4	23	0
13	HP 1969	N-415	26.6	33	0	28.7	35	0	30.6	36	0	45.9	10	1	39.9	21	0
14	UP 3011	N-416	26.3	34	0	39.8	12	0	34.8	33	0	37.1	36	0	37.0	28	0
15	HUW 830	N-417	30.3	24	0	33.3	25	0	36.3	26	0	46.8	7	1	51.8	1	1
16	PBW 791	N-418	31.7	19	0	36.7	17	0	41.4	13	0	41.9	20	0	42.5	16	0
17	HD 3288	N-421	34.2	8	1	35.6	18	0	50.1	2	0	38.3	35	0	38.2	27	0
18	DBW 269	N-420	30.4	21	0	49.8	1	1	38.4	23	0	45.4	12	1	47.5	8	1
19	K 1708	N-422	33.2	14	1	35.2	19	0	39.9	17	0	46.9	6	1	46.9	10	1
20	PBW 799	N-423	28.9	30	0	42.0	6	1	40.2	16	0	40.6	28	0	40.5	19	0
21	DBW 265	N-425	31.2	20	0	31.5	29	0	34.4	34	0	40.4	29	0	48.0	6	1
22	DBW 266	N-426	30.1	26	0	40.1	11	0	41.2	14	0	47.3	4	1	46.9	10	1
23	RAJ 4534	N-427	21.7	36	0	32.6	27	0	39.4	21	0	41.2	25	0	30.7	33	0
24	WH 1245	N-428	38.4	1	1	33.7	23	0	49.1	3	0	48.4	1	1	48.6	4	1
25	NW 7034	N-429	33.2	13	1	29.8	31	0	39.7	18	0	39.3	31	0	30.4	34	0
26	WH 1246	N-430	36.6	5	1	41.4	8	1	44.9	10	0	39.2	32	0	48.0	6	1
27	DBW 268	N-431	33.8	10	1	31.0	30	0	35.7	31	0	47.3	3	1	42.5	16	0
28	HD 3289	N-432	27.8	32	0	33.8	22	0	44.8	11	0	45.1	13	1	49.5	3	1
29	HD 3287	N-433	32.5	16	0	39.4	13	0	46.5	8	0	41.7	22	0	37.0	28	0
30	HUW 831	N-434	34.1	9	1	34.3	21	0	39.7	19	0	41.5	23	0	29.8	36	0
31	RAJ 4533	N-435	30.3	23	0	29.4	33	0	47.4	7	0	42.2	19	0	31.0	32	0
32	UP 3009	N-436	23.5	35	0	41.4	7	1	35.8	30	0	39.1	33	0	35.6	30	0
33	HI 1563 (C)	N-403	34.3	7	1	33.6	24	0	47.9	4	0	44.2	15	1	38.5	25	0
34	DBW 90 (C)	N-404	29.2	28	0	38.2	16	0	45.9	9	0	45.4	11	1	46.0	14	0
35	DBW 107 (C)	N-419	32.4	17	0	38.2	15	0	47.7	6	0	41.4	24	0	49.5	2	1
36	HD 3059 (C)	N-424	33.4	12	1	22.5	36	0	34.4	35	0	46.3	9	1	46.6	13	1
Mean			31.6			36.6			40.7			43.1			41.5		
S.E.M			2.3			3.6			0.9			1.9			2.4		
C.D. (10%)			5.5			8.7			2.1			4.6			5.8		
C.V.			10.1			14.0			3.1			6.2			8.2		
D.O.S. (d.m.y)			18.12.2017			15.12.2017			20.12.17			20-12-2017			15.12.2017		

1794-NIVT-3A-IR-TS-TAS, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ 4535	N-401	36.6	35	0	40.8	9	0	38.4	34	0
2	WH 1247	N-402	46.6	13	0	38.6	19	0	43.1	14	0
3	WH 1248	N-405	45.9	16	0	39.4	16	0	43.1	15	0
4	HD 3290	N-406	48.1	3	1	41.2	6	0	45.1	2	0
5	NW 7033	N-407	44.2	26	0	36.4	29	0	40.9	27	0
6	PBW 793	N-408	47.5	11	1	37.5	23	0	43.2	13	0
7	HD 3291	N-409	45.6	18	0	35.3	32	0	41.2	26	0
8	PBW 792	N-410	44.7	22	0	36.5	28	0	41.2	25	0
9	K 1707	N-411	44.7	23	0	38.4	21	0	42.0	23	0
10	DBW 267	N-412	48.9	1	1	44.0	1	1	46.8	1	1
11	UP 3010	N-414	48.9	2	1	39.6	14	0	44.9	5	0
12	PBW 790	N-413	48.1	4	1	40.7	10	0	44.9	4	0
13	HP 1969	N-415	34.7	36	0	33.8	35	0	34.3	36	0
14	UP 3011	N-416	46.1	15	0	34.8	33	0	41.3	24	0
15	HUW 830	N-417	45.9	17	0	38.5	20	0	42.7	17	0
16	PBW 791	N-418	47.8	8	1	39.5	15	0	44.3	10	0
17	HD 3288	N-421	47.5	10	1	40.1	11	0	44.4	9	0
18	DBW 269	N-420	43.7	27	0	42.2	4	1	43.1	16	0
19	K 1708	N-422	45.2	20	0	38.8	18	0	42.5	19	0
20	PBW 799	N-423	47.6	9	1	38.3	22	0	43.7	12	0
21	DBW 265	N-425	43.0	29	0	36.9	27	0	40.4	28	0
22	DBW 266	N-426	47.8	7	1	40.9	8	0	44.9	6	0
23	RAJ 4534	N-427	41.4	32	0	33.9	34	0	38.2	35	0
24	WH 1245	N-428	46.3	14	0	42.2	3	1	44.5	7	0
25	NW 7034	N-429	44.6	25	0	33.1	36	0	39.7	30	0
26	WH 1246	N-430	43.6	28	0	41.0	7	0	42.5	18	0
27	DBW 268	N-431	41.4	31	0	37.0	26	0	39.5	31	0
28	HD 3289	N-432	48.0	5	1	39.9	12	0	44.5	8	0
29	HD 3287	N-433	44.6	24	0	39.0	17	0	42.2	20	0
30	HUW 831	N-434	47.1	12	1	35.5	31	0	42.1	21	0
31	RAJ 4533	N-435	40.7	33	0	37.2	25	0	39.2	32	0
32	UP 3009	N-436	42.2	30	0	36.4	30	0	39.7	29	0
33	HI 1563 (C)	N-403	38.8	34	0	39.7	13	0	39.2	33	0
34	DBW 90 (C)	N-404	47.8	6	1	41.2	5	0	45.0	3	0
35	DBW 107 (C)	N-419	44.9	21	0	42.4	2	1	43.9	11	0
36	HD 3059 (C)	N-424	45.4	19	0	37.5	24	0	42.0	22	0
Mean			44.9			38.6			42.2		
S.E.M			1.0			1.0			0.7		
C.D. (10%)			2.3			2.2			1.6		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-3A-IR-LS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions					Agronomic Characteristics							Grain Characteristics			
			YI	ACI	Br	PM	BP	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	RAJ 4535	N-401	10S	3.8	5S	5	0.8	76-93	87	114-132	125	79-99	92	Ey	A	SH	34-50	43
2	WH 1247	N-402	10MS	1.0	TR	0	0.2	82-91	87	115-129	123	85-110	99	Ey	A	SH-H	26-43	37
3	WH 1248	N-405	20S	2.5	5S	0	0	74-85	80	113-130	120	86-102	94	Ey	A	SH	29-41	35
4	HD 3290	N-406	5S	0.6	0	0	0	78-94	87	114-132	124	88-116	104	Ey	A	H	33-40	36
5	NW 7033	N-407	10S	3.1	tR	0	0.4	76-90	82	112-129	121	90-108	98	Ey	A	SH-H	34-43	38
6	PBW 793	N-408	0	0.0	0	0	0	78-90	84	115-129	122	88-108	98	Ey	A	H	30-44	36
7	HD 3291	N-409	10S	1.3	0	0	0	79-91	86	115-132	123	89-109	100	Ey	A	H	33-42	38
8	PBW 792	N-410	5MR	0.3	5S	2	0	65-88	79	113-130	120	79-105	93	Ey	A	SH	29-42	36
9	K 1707	N-411	40S	11.8	0	1	0.2	82-90	87	117-130	124	89-113	100	Ey	A	SH-H	37-45	40
10	DBW 267	N-412	0	0.0	5S	0	0	80-92	87	116-132	123	86-109	98	Ey	A	H	33-43	39
11	UP 3010	N-413	0	0.0	tR	0	0.2	79-94	86	114-130	123	97-107	102	Ey	A	H	27-43	38
12	PBW 790	N-414	10S	2.5	tR	3	0	80-87	84	117-129	122	78-98	90	Ey	A	H	27-42	37
13	HP 1969	N-415	80S	37.5	5S	0	0	76-89	84	114-132	123	84-100	94	Ey	A	SH-H	30-44	37
14	UP 3011	N-416	5S	0.7	0	0	0	78-91	85	115-132	122	85-110	98	Ey	A	H	28-43	35
15	HUW 830	N-417	10S	1.9	tR	2	0.2	80-89	85	116-129	124	92-107	100	Ey	A	H	31-47	41
16	PBW 791	N-418	10S	2.4	0	0	0.2	78-92	85	115-128	121	82-103	95	Ey	A	H	28-44	39
17	HD 3288	N-420	20S	5.0	tR	1	0	67-95	81	113-129	122	85-106	96	Ey	A	H	34-38	37
18	DBW 269	N-421	0	0.0	5S	0	0.8	77-97	85	113-128	122	84-107	97	Ey	A	SH-H	26-43	36
19	K 1708	N-422	10S	2.5	5S	0	0.2	78-89	83	115-125	120	87-104	94	Ey	A	H	30-44	38
20	PBW 799	N-423	5S	0.8	tR	0	0	75-88	82	112-130	122	80-99	91	Ey	A	SH-H	29-42	35
21	DBW 265	N-425	0	0.0	0	0	0.2	81-91	86	117-130	124	85-105	97	Ey	A	H	37-43	40
22	DBW 266	N-426	5S	0.6	0	0	0	76-90	85	114-128	122	94-112	102	Ey	A	SH	29-44	37
23	RAJ 4534	N-427	tR	0.0	0	0	0	74-88	81	112-130	122	81-127	102	Ey	A	H	35-44	38
24	WH 1245	N-428	5S	2.0	tR	0	0	76-88	82	114-127	121	80-100	91	Ey	A	H	32-39	35
25	NW 7034	N-429	40S	5.5	tR	2	0	75-91	83	113-128	121	90-100	96	Ey	A	SH-H	30-41	35
26	WH 1246	N-430	0	0.0	0	0	0.2	82-94	88	114-130	123	85-109	98	Ey	A	SH-H	26-37	33
27	DBW 268	N-431	10S	5.3	10S	0	0	78-95	83	114-130	121	81-98	89	Ey	A	SH-H	27-44	36
28	HD 3289	N-432	60S	13.1	tR	0	0.2	79-92	86	116-130	122	90-112	100	Ey	A	SH-H	29-42	37
29	HD 3287	N-433	tR	0.0	tR	1	0.4	79-88	84	116-128	122	96-109	103	Ey	A	H	30-44	37
30	HUW 831	N-434	tR	0.0	0	0	0.4	80-92	87	118-130	124	83-109	99	Ey	A	H	30-41	38
31	RAJ 4533	N-435	5S	0.6	5S	0	0	67-90	83	114-128	121	86-104	97	Ey	A	SH-H	33-45	38
32	UP 3009	N-436	5S	1.8	0	5	0	78-92	83	116-128	122	88-108	98	Ey	A	H	31-39	35
33	HI 1563 (C)	N-403	80S	37.5	0	0	0.4	70-90	79	112-127	121	80-110	95	Ey	A	H	29-43	36
34	DBW 90 (C)	N-404	10S	1.3	20S	2	0.4	78-86	82	115-130	123	82-105	93	Ey	A	SH-H	32-38	35
35	DBW 107 (C)	N-419	5S	1.3	0	2	0	74-94	80	113-128	121	80-95	89	Ey	A	SH	36-43	39
36	HD 3059 (C)	N-424	60S	20.1	tR	0	0.2	79-92	85	116-128	123	80-100	94	Ey	A	SH-H	30-42	37

1. Ancillary data from Ludhiana, Gurdaspur, Hisar, Karnal, Durgahapura, Jammu and Pantnagar.
2. Brown rust data from Gurdaspur; Yellow rust data from Delhi, Hisar, Gurdaspur, Karnal, Jammu, Ludhiana, Pantnagar, Durgapura.
3. Powdery Mildew data from Karnal and Black point data from Gurdaspur.

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North Western Plain Zone
Individual Station Yellow Rust Data

SN	Variety	Code	Gurdaspur	Hisar	Delhi	Karnal	Jammu	Ludhiana	Pantnagar	Durga pura
1	RAJ 4535	N-401	0	0	0	5S	10S	5S	0	10S
2	WH 1247	N-402	0	0	0	10MS	0	0	0	0
3	WH 1248	N-405	0	0	0	0	20S	tR	0	0
4	HD 3290	N-406	0	0	0	5S	0	0	0	0
5	NW 7033	N-407	0	0	0	10S	10S	5S	0	0
6	PBW 793	N-408	0	0	0	0	0	0	0	0
7	HD 3291	N-409	0	0	0	10S	0	tR	0	0
8	PBW 792	N-410	0	0	5MR	0	0	tR	0	0
9	K 1707	N-411	tR	0	5MS	20S	20S	5S	5S	40S
10	DBW 267	N-412	0	0	0	0	0	0	0	0
11	UP 3010	N-413	0	0	0	0	0	0	0	0
12	PBW 790	N-414	0	0	0	10S	0	5S	5S	0
13	HP 1969	N-415	0	20S	60S	40S	20S	20S	80S	60S
14	UP 3011	N-416	tR	0	0	0	0	5S	0	0
15	HUW 830	N-417	0	0	0	10S	5S	0	0	0
16	PBW 791	N-418	0	0	5MS	10S	tR	5S	0	0
17	HD 3288	N-420	0	0	0	10S	5S	5S	0	20S
18	DBW 269	N-421	0	0	0	0	0	0	0	0
19	K 1708	N-422	0	0	0	10S	10S	tR	0	0
20	PBW 799	N-423	0	0	5S	0	0	tS	0	0
21	DBW 265	N-425	0	0	0	0	0	0	0	0
22	DBW 266	N-426	0	0	0	5S	0	0	0	0
23	RAJ 4534	N-427	tR	0	0	0	0	0	0	0
24	WH 1245	N-428	tR	0	tMS	10S	0	5S	0	0
25	NW 7034	N-429	0	0	0	5MS	0	0	0	40S
26	WH 1246	N-430	0	0	0	0	0	0	0	0
27	DBW 268	N-431	0	10S	5MS	10MS	0	10S	0	10S
28	HD 3289	N-432	0	0	0	20S	20S	5S	0	60S
29	HD 3287	N-433	0	0	0	0	0	tR	0	0
30	HUW 831	N-434	0	0	0	0	tR	0	0	0
31	RAJ 4533	N-435	0	0	0	0	0	5S	0	0
32	UP 3009	N-436	0	0	5MS	5S	0	0	0	5S
33	HI 1563 (C)	N-403	tR	40S	20S	40S	20S	20S	80S	80S
34	DBW 90 (C)	N-404	0	0	0	0	10S	0	0	0
35	DBW 107 (C)	N-419	0	0	0	5S	5S	0	0	0
36	HD 3059 (C)	N-424	0	10S	20S	40S	10S	5S	20MS	60S

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-3A-IR-LS-TAS, 2017-18**

SN	Variety	Code	Blight Reaction	Agronomic Characteristics							Grain Characteristics			
			LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	RAJ 4535	N-401	38(25)	70-89	76	101-120	111	64-96	81	Ey	A	H	35-51	43
2	WH 1247	N-402	45(24)	68-83	74	100-121	108	78-95	90	Ey	A	SH	35-44	38
3	WH 1248	N-405	45(34)	60-83	68	96-115	105	77-102	88	Ey	A	SH	30-41	38
4	HD 3290	N-406	23(12)	65-82	74	97-117	107	88-114	99	Ey	A	SH-H	28-38	35
5	NW 7033	N-407	58(46)	60-81	70	96-111	102	74-98	86	Ey	A	SH	30-44	37
6	PBW 793	N-408	35(35)	62-83	72	98-110	103	80-98	89	Ey	A	SH-H	28-43	36
7	HD 3291	N-409	59(46)	66-90	77	98-116	105	75-105	90	Ey	A	H	28-41	36
8	PBW 792	N-410	48(36)	60-82	69	98-115	105	69-95	84	Ey	A	SH	32-40	36
9	K 1707	N-411	45(23)	69-87	75	100-117	106	83-107	97	Ey	A	H	32-44	37
10	DBW 267	N-412	34(23)	70-87	76	97-117	107	76-105	94	Ey	A	SH	32-43	37
11	UP 3010	N-413	45(34)	66-83	73	98-112	103	81-102	93	Ey	A	SH_H	30-45	38
12	PBW 790	N-414	34(24)	68-83	73	95-119	105	67-94	83	Ey	A	SH	28-40	36
13	HP 1969	N-415	46(34)	65-82	73	96-113	105	70-100	89	Ey	A	SH-H	28-39	36
14	UP 3011	N-416	56(46)	67-85	73	98-114	106	74-101	89	Ey	A	H	28-38	32
15	HUW 830	N-417	34(23)	66-85	73	100-117	107	76-101	90	Ey	A	SH	30-48	42
16	PBW 791	N-418	34(34)	65-85	73	100-115	106	73-93	86	Ey	A	H	32-41	37
17	HD 3288	N-420	45(35)	61-81	69	98-113	104	71-98	86	Ey	A	SH-H	30-38	35
18	DBW 269	N-421	34(23)	65-82	72	98-115	106	81-99	90	Ey	A	SH	28-40	35
19	K 1708	N-422	56(35)	64-81	71	96-121	106	75-97	88	Ey	A	SH	30-44	37
20	PBW 799	N-423	45(35)	65-83	72	96-116	105	66-91	81	Ey	A	SH	26-38	33
21	DBW 265	N-425	45(34)	66-86	74	96-117	106	78-111	93	Ey	A	SH-H	28-44	38
22	DBW 266	N-426	36(34)	70-80	74	98-113	106	76-104	95	Ey	A	SH	26-38	35
23	RAJ 4534	N-427	59(46)	64-80	70	96-114	105	84-103	94	Ey	A	SH	32-42	38
24	WH 1245	N-428	36(35)	65-82	72	97-110	102	77-96	86	Ey	A	SH	31-40	35
25	NW 7034	N-429	45(35)	63-81	70	94-113	103	74-95	87	Ey	A	SH	28-41	34
26	WH 1246	N-430	45(24)	68-88	75	98-123	107	76-103	91	Ey	A	SH_H	25-37	32
27	DBW 268	N-431	45(36)	65-82	72	97-115	103	76-101	90	Ey	A	SH	30-42	36
28	HD 3289	N-432	56(34)	69-86	76	98-118	104	82-104	93	Ey	A	SH	30-86	45
29	HD 3287	N-433	45(34)	66-83	73	98-118	106	78-115	97	Ey	A	SH	30-42	36
30	HUW 831	N-434	35(24)	67-85	75	100-115	106	81-96	90	Ey	A	SH	28-39	35
31	RAJ 4533	N-435	46(35)	63-82	71	97-116	104	73-100	91	Ey	A	SH	30-43	37
32	UP 3009	N-436	35(35)	64-83	71	97-114	105	73-103	89	Ey	A	SH	30-39	33
33	HI 1563 (C)	N-403	59(46)	58-79	67	98-114	105	76-96	88	Ey	A	SH	28-42	36
34	DBW 90 (C)	N-404	58(46)	66-82	72	98-117	103	74-97	88	Ey	A	SH	28-39	35
35	DBW 107 (C)	N-419	56(35)	59-81	68	96-114	104	73-92	84	Ey	A	H	32-42	37
36	HD 3059 (C)	N-424	36(24)	63-84	73	98-116	106	70-98	86	Ey	A	SH	32-39	36

1. Ancillary data from Faizabad, Kanpur, Pusa, Ranchi, Sabour, Kalyani and Coochbehar.
2. Leaf blight data from Faizabad, Ranchi and Coochbehar.

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North Eastern Plains Zone
Individual Station Leaf Blight Data

SN	Variety	Code	Faizabad	Coochbehar	Ranchi
1	RAJ 4535	N-401	12	34	38
2	WH 1247	N-402	24	45	13
3	WH 1248	N-405	12	45	36
4	HD 3290	N-406	12	23	02
5	NW 7033	N-407	35	45	58
6	PBW 793	N-408	35	34	35
7	HD 3291	N-409	24	56	59
8	PBW 792	N-410	24	45	48
9	K 1707	N-411	12	45	13
10	DBW 267	N-412	12	34	12
11	UP 3010	N-413	24	45	24
12	PBW 790	N-414	24	34	25
13	HP 1969	N-415	12	46	35
14	UP 3011	N-416	35	56	47
15	HUW 830	N-417	12	34	24
16	PBW 791	N-418	24	34	13
17	HD 3288	N-420	35	45	35
18	DBW 269	N-421	12	34	13
19	K 1708	N-422	24	56	35
20	PBW 799	N-423	24	45	25
21	DBW 265	N-425	24	45	24
22	DBW 266	N-426	12	34	36
23	RAJ 4534	N-427	35	45	59
24	WH 1245	N-428	24	35	36
25	NW 7034	N-429	12	46	37
26	WH 1246	N-430	12	45	25
27	DBW 268	N-431	35	45	37
28	HD 3289	N-432	24	56	12
29	HD 3287	N-433	12	45	36
30	HUW 831	N-434	35	34	02
31	RAJ 4533	N-435	46	45	25
32	UP 3009	N-436	35	34	35
33	HI 1563 (C)	N-403	12	56	59
34	DBW 90 (C)	N-404	24	45	58
35	DBW 107 (C)	N-419	12	56	46
36	HD 3059 (C)	N-424	12	34	36

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Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ											
			Chattisgarh						MP					
			Bilaspur			Raipur			Indore			Jabalpur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 510	N-501	29.9	22	0	34.1	24	0	55.8	5	0	45.9	16	0
2	NIAW 3523	N-502	34.6	16	0	45.0	7	0	54.4	9	0	71.0	1	1
3	MP 3503	N-503	28.9	23	0	33.5	25	0	49.5	18	0	49.0	13	0
4	GW 511	N-504	35.2	15	0	41.2	14	0	55.4	6	0	60.6	4	0
5	MACS 6732	N-505	32.0	21	0	43.5	9	0	53.1	10	0	31.0	25	0
6	PBW 794	N-506	33.6	17	0	46.4	4	1	50.8	17	0	33.7	24	0
7	MP 1352	N-507	36.7	12	0	34.2	23	0	47.8	23	0	59.7	5	0
8	HI 1633	N-508	45.4	1	1	36.7	20	0	62.4	2	1	57.7	6	0
9	NIAW 3354	N-509	38.1	5	0	43.5	8	0	46.9	24	0	40.1	21	0
10	MP 3497	N-510	35.5	14	0	45.3	6	0	51.1	16	0	45.4	17	0
11	UAS 3002	N-511	37.6	8	0	41.5	13	0	54.6	8	0	60.9	3	0
12	MP 1351	N-512	38.0	6	0	36.7	21	0	53.1	10	0	48.2	15	0
13	GW 509	N-513	36.1	13	0	39.9	15	0	48.1	22	0	35.5	23	0
14	AKAW 5023	N-514	28.8	24	0	41.9	12	0	52.8	13	0	52.5	8	0
15	HI 1634	N-516	38.4	3	0	45.4	5	0	62.9	1	1	62.1	2	0
16	DBW 270	N-517	25.7	25	0	38.9	17	0	48.9	20	0	43.6	18	0
17	HI 8807	N-519	33.3	18	0	48.0	2	1	52.5	14	0	53.1	7	0
18	MACS 6726	N-520	32.8	19	0	42.0	11	0	52.4	15	0	42.9	19	0
19	HI 8808	N-521	37.1	9	0	48.3	1	1	57.1	4	0	51.9	9	0
20	DBW 271	N-522	38.2	4	0	35.6	22	0	45.6	25	0	51.2	10	0
21	NIAW 3525	N-523	37.8	7	0	39.7	16	0	54.6	7	0	41.9	20	0
22	HD 3300	N-524	37.1	10	0	38.4	18	0	49.0	19	0	48.9	14	0
23	CG 1029	N-525	44.3	2	1	46.6	3	1	60.0	3	1	49.0	12	0
24	HD 2932 (C)	N-515	36.8	11	0	37.6	19	0	53.1	10	0	39.3	22	0
25	HD 2864 (C)	N-518	32.2	20	0	42.2	10	0	48.6	21	0	50.6	11	0
Mean			35.4			41.1			52.8			49.0		
S.E.M			1.7			1.0			1.7			2.7		
C.D. (10%)			4.1			2.6			4.2			6.6		
C.V.			6.7			3.6			4.6			7.9		
D.O.S. (d.m.y)			12.12.17			06.12.2017			07.12.17			10.12.2017		

Trials proposed & conducted = 15

Trials not reported (3) = Junagadh (LSM), Gwalior (UY), Powarkheda (HCV)

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Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ								
			Rajasthan						Gujarat		
			Udaipur			Kota			Vijapur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 510	N-501	27.0	21	0	55.3	7	1	39.8	1	1
2	NIAW 3523	N-502	32.7	10	0	46.4	21	0	27.9	20	0
3	MP 3503	N-503	26.3	22	0	51.4	15	0	30.7	9	0
4	GW 511	N-504	27.0	20	0	48.1	19	0	30.3	13	0
5	MACS 6732	N-505	28.3	17	0	53.4	11	1	25.5	23	0
6	PBW 794	N-506	33.0	9	0	53.2	12	1	25.3	24	0
7	MP 1352	N-507	31.0	13	0	38.5	25	0	26.3	22	0
8	HI 1633	N-508	37.9	5	0	57.2	2	1	29.2	16	0
9	NIAW 3354	N-509	24.9	24	0	47.1	20	0	30.6	10	0
10	MP 3497	N-510	32.6	11	0	45.7	22	0	28.8	18	0
11	UAS 3002	N-511	39.0	2	1	55.7	5	1	33.3	5	0
12	MP 1351	N-512	25.8	23	0	56.8	3	1	20.2	25	0
13	GW 509	N-513	38.7	3	1	55.2	8	1	31.8	7	0
14	AKAW 5023	N-514	30.9	14	0	49.8	18	0	35.8	2	1
15	HI 1634	N-516	35.7	6	0	57.9	1	1	34.2	4	0
16	DBW 270	N-517	30.0	15	0	45.0	23	0	29.2	17	0
17	HI 8807	N-519	38.1	4	0	52.8	13	1	30.4	11	0
18	MACS 6726	N-520	45.4	1	1	50.0	17	0	30.8	8	0
19	HI 8808	N-521	27.7	18	0	56.7	4	1	27.2	21	0
20	DBW 271	N-522	29.9	16	0	44.6	24	0	29.3	15	0
21	NIAW 3525	N-523	34.0	8	0	52.4	14	1	32.7	6	0
22	HD 3300	N-524	32.3	12	0	50.9	16	0	28.4	19	0
23	CG 1029	N-525	24.6	25	0	55.6	6	1	30.3	12	0
24	HD 2932 (C)	N-515	34.1	7	0	54.1	10	1	35.1	3	1
25	HD 2864 (C)	N-518	27.5	19	0	54.3	9	1	29.7	14	0
Mean			31.8			51.5			30.1		
S.E.M			2.7			2.6			2.0		
C.D. (10%)			6.8			6.3			5.0		
C.V.			12.2			7.1			9.4		
D.O.S. (d.m.y)			11.12.2017			10.12.2017			08.12.2017		

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Location wise Mean Yield (q/ha)

SN	Variety	Code	PZ													
			Karnataka			Maharashtra										
			Dharwad			Akola			Pune			Niphad			Parbhani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 510	N-501	26.9	21	0	35.7	10	0	45.1	18	0	50.7	9	1	42.9	1	1
2	NIAW 3523	N-502	27.0	19	0	37.3	9	0	45.4	17	0	46.6	19	0	39.7	6	1
3	MP 3503	N-503	26.0	22	0	32.2	14	0	40.3	24	0	49.5	12	1	29.8	24	0
4	GW 511	N-504	33.3	5	0	33.6	12	0	50.3	10	1	51.7	7	1	35.1	18	1
5	MACS 6732	N-505	27.2	18	0	40.2	5	1	50.8	8	1	47.5	18	0	38.9	9	1
6	PBW 794	N-506	29.0	14	0	32.0	15	0	46.0	16	0	38.8	23	0	40.9	4	1
7	MP 1352	N-507	28.1	15	0	42.9	2	1	42.8	21	0	41.1	22	0	35.3	17	1
8	HI 1633	N-508	31.3	10	0	39.1	7	1	51.5	7	1	52.7	5	1	36.7	16	1
9	NIAW 3354	N-509	27.7	16	0	39.3	6	1	35.6	25	0	49.7	11	1	40.0	5	1
10	MP 3497	N-510	27.3	17	0	34.0	11	0	44.0	19	0	49.4	13	1	34.7	20	1
11	UAS 3002	N-511	35.5	3	1	37.4	8	0	49.0	12	0	55.0	2	1	33.3	22	0
12	MP 1351	N-512	30.2	12	0	32.5	13	0	46.4	14	0	49.2	15	1	29.5	25	0
13	GW 509	N-513	34.6	4	0	30.9	19	0	53.7	2	1	54.9	3	1	38.7	10	1
14	AKAW 5023	N-514	31.2	11	0	21.7	24	0	46.1	15	0	52.2	6	1	37.8	12	1
15	HI 1634	N-516	33.1	6	0	23.2	22	0	50.5	9	1	53.3	4	1	36.9	15	1
16	DBW 270	N-517	40.8	1	1	31.6	18	0	41.1	23	0	51.6	8	1	41.0	3	1
17	HI 8807	N-519	35.7	2	1	43.7	1	1	55.3	1	1	49.4	14	1	37.1	14	1
18	MACS 6726	N-520	26.9	20	0	41.5	3	1	41.3	22	0	48.5	17	1	34.9	19	1
19	HI 8808	N-521	31.4	9	0	20.9	25	0	53.7	3	1	50.2	10	1	34.6	21	1
20	DBW 271	N-522	25.9	23	0	24.7	21	0	50.2	11	0	30.6	25	0	37.5	13	1
21	NIAW 3525	N-523	29.7	13	0	31.6	16	0	46.9	13	0	44.3	21	0	33.3	23	0
22	HD 3300	N-524	24.2	24	0	31.6	17	0	43.2	20	0	35.1	24	0	39.6	7	1
23	CG 1029	N-525	32.2	8	0	29.9	20	0	52.0	6	1	46.3	20	0	41.4	2	1
24	HD 2932 (C)	N-515	22.5	25	0	21.9	23	0	53.6	4	1	56.3	1	1	39.1	8	1
25	HD 2864 (C)	N-518	33.0	7	0	40.6	4	1	52.4	5	1	48.7	16	1	38.6	11	1
Mean			30.0			33.2			47.5			48.1			37.1		
S.E.M			2.3			2.4			2.0			3.4			3.4		
C.D. (10%)			6.8			7.2			5.0			10.1			10.0		
C.V.			10.8			10.3			6.0			9.9			13.1		
D.O.S. (d.m.y)			10.12.2017			02.12.2017			09.12.2017			02.12.2017			07.12.2017		

NIVT-3B-IR-LS-TAS, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 510	N-501	41.1	13	0	40.2	10	0	40.7	12	0
2	NIAW 3523	N-502	44.6	4	0	39.2	12	0	42.3	6	0
3	MP 3503	N-503	38.5	23	0	35.6	23	0	37.2	24	0
4	GW 511	N-504	42.5	8	0	40.8	8	0	41.8	7	0
5	MACS 6732	N-505	38.1	24	0	40.9	7	0	39.3	17	0
6	PBW 794	N-506	39.5	19	0	37.3	21	0	38.6	22	0
7	MP 1352	N-507	39.2	21	0	38.0	17	0	38.7	20	0
8	HI 1633	N-508	46.6	2	1	42.3	4	1	44.8	1	1
9	NIAW 3354	N-509	38.8	22	0	38.5	15	0	38.6	21	0
10	MP 3497	N-510	40.6	17	0	37.9	18	0	39.5	16	0
11	UAS 3002	N-511	46.1	3	0	42.1	5	1	44.4	3	1
12	MP 1351	N-512	39.8	18	0	37.6	20	0	38.9	19	0
13	GW 509	N-513	40.8	14	0	42.6	3	1	41.5	9	0
14	AKAW 5023	N-514	41.8	11	0	37.8	19	0	40.1	14	0
15	HI 1634	N-516	48.1	1	1	39.4	11	0	44.5	2	1
16	DBW 270	N-517	37.3	25	0	41.2	6	0	38.9	18	0
17	HI 8807	N-519	44.0	6	0	44.2	1	1	44.1	4	1
18	MACS 6726	N-520	42.3	9	0	38.6	14	0	40.8	11	0
19	HI 8808	N-521	43.7	7	0	38.2	16	0	41.4	10	0
20	DBW 271	N-522	39.2	20	0	33.8	25	0	36.9	25	0
21	NIAW 3525	N-523	41.9	10	0	37.2	22	0	39.9	15	0
22	HD 3300	N-524	40.7	16	0	34.7	24	0	38.2	23	0
23	CG 1029	N-525	44.4	5	0	40.4	9	0	42.7	5	0
24	HD 2932 (C)	N-515	41.4	12	0	38.7	13	0	40.3	13	0
25	HD 2864 (C)	N-518	40.7	15	0	42.7	2	1	41.5	8	0
Mean			41.7			39.2			40.6		
S.E.M			0.8			1.2			0.7		
C.D. (10%)			1.9			2.9			1.6		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-3B-IR-LS-TAS, 2017-18**

SN	Variety	Code	Rust Reaction		Agronomic Characteristics							Grain Characteristics			
			Bl	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 510	N-501	tR	0	46-80	65	85-121	108	69-105	88	Ey-M	A	SH	38-51	44
2	NIAW 3523	N-502	tMS	0	49-75	64	87-121	108	67-103	86	Ey	A	SH	27-46	38
3	MP 3503	N-503	tMR	0	42-74	61	83-120	106	62-100	80	Ey-M	A	SH-H	31-46	39
4	GW 511	N-504	0	5MR	40-72	60	81-121	105	73-116	91	Ey-M	A	SH	37-59	47
5	MACS 6732	N-505	0	0	48-80	66	85-121	108	63-92	78	Ey	A	SH-H	27-39	33
6	PBW 794	N-506	0	0	50-78	67	83-121	108	71-119	92	Ey-M	A	SH	31-53	41
7	MP 1352	N-507	tMS	tR	44-77	65	84-122	108	70-119	92	Ey	A	SH	32-44	40
8	HI 1633	N-508	tR	0	47-80	66	83-122	109	63-100	85	Ey	A	SH	31-46	37
9	NIAW 3354	N-509	tMS	0	50-77	68	88-124	109	72-102	88	Ey-M	A	SH	31-45	37
10	MP 3497	N-510	tMR	tR	51-78	67	90-121	110	78-121	96	Ey-M	A	SH-H	32-53	38
11	UAS 3002	N-511	tMR	tR	51-79	68	89-122	111	67-112	93	Ey-M	A	SH	32-46	40
12	MP 1351	N-512	tR	tR	52-78	67	90-121	109	70-131	94	Ey-M	A	SH-H	40-56	47
13	GW 509	N-513	tR	0	43-78	63	86-120	108	67-97	81	Ey-M	A	SH-H	42-53	48
14	AKAW 5023	N-514	tMS	0	44-74	63	83-120	106	65-99	83	Ey	A	SH	34-42	39
15	HI 1634	N-516	tR	0	48-79	68	84-120	108	60-101	82	Ey	A	SH	32-45	39
16	DBW 270	N-517	tMS	0	54-83	72	91-124	111	74-110	90	Ey-M	A	SH	25-43	34
17	HI 8807	N-519	tR	tR	54-80	67	93-122	110	64-99	83	Ey	A	SH-H	32-51	43
18	MACS 6726	N-520	tMR	0	50-79	69	89-123	111	79-118	95	Ey-M	A	SH	32-47	39
19	HI 8808	N-521	tMS	0	55-80	68	92-121	110	65-101	83	Ey	A	SH-H	34-52	43
20	DBW 271	N-522	tMR	tR	50-78	69	86-121	109	72-98	85	Ey	A	SH	26-42	33
21	NIAW 3525	N-523	0	0	47-74	65	87-121	108	69-108	90	Ey	A	SH	29-43	36
22	HD 3300	N-524	tMR	0	51-80	69	90-122	110	69-101	87	Ey	A	SH	27-41	34
23	CG 1029	N-525	tR	tR	47-79	65	85-122	109	70-104	91	Ey	A	SH	32-56	46
24	HD 2932 (C)	N-515	tMR	0	50-78	68	89-121	109	65-105	86	Ey	A	SH	32-42	37
25	HD 2864 (C)	N-518	0	0	44-76	63	84-121	106	67-97	86	Ey-M	A	SH	28-43	36

1. Ancillary data from Raipur, Bilaspur, Indore, Jabalpur, Junagadh, Powarkheda, Gwalior, Kota, Udaipur and Vijapur.
2. Black Rust data from Vijapur and Brown rust data from Vijapur and Powarkheda.

NIVT-3B-IR-LS-TAS, 2017-18
Central Zone
Individual Station Rust Data

SN	Variety	Code	Black Rust	Brown Rust	
			Vijapur	Vijapur	Powarkheda
1	GW 510	N-501	tR	0	0
2	NIAW 3523	N-502	tMS	0	0
3	MP 3503	N-503	tMR	0	0
4	GW 511	N-504	0	0	5MR
5	MACS 6732	N-505	0	0	0
6	PBW 794	N-506	0	0	0
7	MP 1352	N-507	tMS	tR	0
8	HI 1633	N-508	tR	0	0
9	NIAW 3354	N-509	tMS	0	0
10	MP 3497	N-510	tMR	tR	tR
11	UAS 3002	N-511	tMR	tR	0
12	MP 1351	N-512	tR	tR	0
13	GW 509	N-513	tR	0	0
14	AKAW 5023	N-514	tMS	0	0
15	HI 1634	N-516	tR	0	0
16	DBW 270	N-517	tMS	0	0
17	HI 8807	N-519	tR	tR	0
18	MACS 6726	N-520	tMR	0	0
19	HI 8808	N-521	tMS	0	0
20	DBW 271	N-522	tMR	tR	0
21	NIAW 3525	N-523	0	0	0
22	HD 3300	N-524	tMR	0	0
23	CG 1029	N-525	tR	tR	0
24	HD 2932 (C)	N-515	tMR	0	0
25	HD 2864 (C)	N-518	0	0	0

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-3B-IR-LS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions		Agronomic Characteristics								Grain Characteristics			
			Leaf Blight	Black Point	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 510	N-501	00	0	52-61	56	91-102	97	56-93	76	10	Ey	A	SH	38-56	44
2	NIAW 3523	N-502	00	4	52-64	57	93-105	100	65-93	79	50	Ey	A	SH	33-50	38
3	MP 3503	N-503	00	3	48-55	51	90-103	95	54-82	67	0	M	A	SH-H	36-39	37
4	GW 511	N-504	00	6	47-54	50	92-101	96	58-105	82	35	Ey	A	H	41-50	47
5	MACS 6732	N-505	00	1	55-62	58	92-107	98	63-84	71	0	Ey-M	A	SH	31-47	37
6	PBW 794	N-506	00	1	56-65	60	92-105	99	63-99	78	0	Ey	A	SH-H	37-48	41
7	MP 1352	N-507	00	3	50-61	54	92-110	99	58-106	81	5	Ey	A	SH-H	35-43	40
8	HI 1633	N-508	00	4	51-63	56	94-103	99	55-92	75	0	Ey	A	SH	35-54	40
9	NIAW 3354	N-509	00	2	53-70	61	91-109	101	63-97	76	5	Ey	A	SH-H	34-43	38
10	MP 3497	N-510	00	1	55-65	61	93-114	103	71-101	86	0	Ey	A	SH-H	33-42	37
11	UAS 3002	N-511	00	4	52-69	60	93-109	101	67-107	87	30	Ey	A	SH-H	34-45	39
12	MP 1351	N-512	00	5	60-65	62	97-115	105	55-106	80	5	Ey-M	A	H	35-53	44
13	GW 509	N-513	57	14	47-54	51	91-107	100	67-88	73	0	Ey	A	SH	46-51	48
14	AKAW 5023	N-514	00	2	47-57	52	90-106	97	62-95	77	5	Ey-M	A	SH-H	35-52	42
15	HI 1634	N-516	00	2	52-62	56	93-105	99	60-92	72	0	Ey	A	SH-H	33-43	38
16	DBW 270	N-517	00	6	60-79	67	96-110	104	69-98	82	0	Ey	A	SH-H	30-49	37
17	HI 8807	N-519	00	2	60-69	63	96-115	104	60-97	80	15	M	A	H	36-47	42
18	MACS 6726	N-520	00	4	56-65	61	92-109	101	54-105	81	5	Ey	A	SH-H	32-42	36
19	HI 8808	N-521	00	5	58-70	62	91-117	102	62-89	75	0	Ey	A	H	33-45	39
20	DBW 271	N-522	00	2	56-69	61	94-105	100	51-89	75	0	Ey	A	SH-H	30-37	33
21	NIAW 3525	N-523	00	0	53-60	56	95-104	99	69-100	81	10	Ey	A	SH-H	33-49	39
22	HD 3300	N-524	00	0	59-72	64	96-109	104	63-93	77	0	Ey	A	SH-H	28-42	35
23	CG 1029	N-525	00	6	50-61	57	92-114	102	62-98	77	40	Ey	A	H	33-52	45
24	HD 2932 (C)	N-515	00	4	57-63	60	90-106	100	64-93	78	0	Ey	A	H	29-43	37
25	HD 2864 (C)	N-518	00	1	50-57	52	90-101	97	68-89	73	0	Ey	A	SH-H	34-55	40

1. Ancillary data from Akola, Dharwad, Parbhani, Niphad and Pune.
2. Lodging data from Pune centre; Leaf blight and black point data from Pune.

1795-NIVT-4-IR-TS-TDM, 2017-18
Locationwise Mean Yield (q/ha)

SN	Variety	Code	CZ													
			MP						Gujarat							
			Indore			Powarkheda			Junagadh			S K Nagar			Vijapur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DDW 48	N-601	52.9	13	0	48.5	21	0	58.8	1	1	47.2	8	1	60.1	2	1
2	HI 8813	N-602	48.0	19	0	60.9	6	1	48.5	10	0	43.4	15	0	49.4	15	0
3	MACS 4085	N-604	56.2	6	1	52.8	13	0	56.0	2	1	39.9	18	0	51.9	11	0
4	MPO 1355	N-605	43.4	22	0	44.8	25	0	46.3	15	0	51.2	3	1	47.1	21	0
5	HI 8812	N-606	55.4	8	0	57.7	7	1	49.7	8	0	47.6	7	1	52.5	10	0
6	HI 8811	N-607	59.7	1	1	63.4	2	1	47.8	11	0	43.5	14	0	48.9	18	0
7	HI 8810	N-608	56.0	7	1	52.4	14	0	46.6	13	0	38.4	21	0	48.6	20	0
8	AKDW 5079	N-609	47.0	20	0	52.3	15	0	43.8	20	0	39.8	19	0	42.3	23	0
9	HI 8809	N-610	53.0	12	0	54.2	9	0	45.4	18	0	43.9	13	0	54.6	7	0
10	WHD 963	N-611	53.8	11	0	50.4	17	0	36.8	25	0	55.2	1	1	53.6	8	0
11	RKD 331	N-612	51.2	15	0	51.3	16	0	48.8	9	0	46.1	9	1	51.8	12	0
12	MACS 4083	N-613	56.4	5	1	53.2	11	0	51.3	5	0	48.4	5	1	59.2	3	1
13	GW 1348	N-614	59.3	2	1	63.7	1	1	49.7	7	0	45.1	11	0	64.8	1	1
14	NIDW 1171	N-615	46.8	21	0	52.8	12	0	52.5	3	1	41.9	16	0	55.1	6	0
15	UAS 468	N-616	41.3	25	0	49.3	19	0	42.4	22	0	36.8	23	0	40.6	24	0
16	MPO 1353	N-617	43.4	22	0	48.6	20	0	46.3	14	0	45.3	10	0	46.4	22	0
17	MPO 1354	N-618	42.0	24	0	56.0	8	1	42.7	21	0	38.1	22	0	37.3	25	0
18	UAS 469	N-619	50.8	17	0	46.7	24	0	46.0	16	0	49.3	4	1	48.9	17	0
19	PDW 355	N-620	50.9	16	0	50.0	18	0	47.7	12	0	33.2	25	0	48.9	16	0
20	DDW 49	N-622	55.4	9	0	62.1	4	1	50.3	6	0	55.1	2	1	53.2	9	0
21	NIDW 1158	N-623	58.8	3	1	61.5	5	1	39.0	23	0	47.8	6	1	57.6	4	1
22	GW 1349	N-625	50.8	18	0	47.6	23	0	45.9	17	0	41.1	17	0	50.9	14	0
23	HI 8737 (C)	N-603	52.8	14	0	63.1	3	1	37.1	24	0	34.2	24	0	56.7	5	1
24	HI 8713 (C)	N-621	57.4	4	1	47.9	22	0	44.2	19	0	44.1	12	0	48.7	19	0
25	MACS 3949 (C)	N-624	54.5	10	0	53.8	10	0	52.5	3	1	38.5	20	0	51.5	13	0
Mean			51.9			53.8			47.0			43.8			51.2		
S.E.M			1.7			3.7			3.0			3.9			3.9		
C.D. (10%)			4.2			9.0			7.3			9.7			9.6		
C.V.			4.8			9.6			9.0			12.7			10.7		
D.O.S. (d.m.y)			18.11.2017			15.11.2017			12.11.2017			18.11.2017			16.11.2017		

Trials proposed = 12
Trials not conducted (1) = Kota

1795-NIVT-4-IR-TS-TDM, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	PZ																	
			Maharashtra			Maharashtra			Maharashtra			Karnataka			Karnataka			Karnataka		
			Akola			Niphad			Pune			Dharwad			Nippani			Ugar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DDW 48	N-601	47.3	2	1	61.2	4	1	67.7	3	1	41.8	9	1	44.2	4	1	37.1	16	0
2	HI 8813	N-602	36.6	20	0	45.6	20	0	60.6	17	0	32.6	23	0	43.6	6	1	34.9	21	0
3	MACS 4085	N-604	17.2	25	0	64.7	1	1	50.8	24	0	42.8	6	1	46.7	1	1	36.7	17	0
4	MPO 1355	N-605	47.7	1	1	50.5	16	0	55.2	20	0	39.8	12	1	45.6	2	1	47.7	1	1
5	HI 8812	N-606	39.3	14	0	55.0	12	0	57.2	18	0	38.3	15	0	29.5	24	0	40.4	9	0
6	HI 8811	N-607	42.9	8	0	55.5	11	1	63.4	8	0	36.9	18	0	35.3	20	0	37.3	15	0
7	HI 8810	N-608	29.9	23	0	61.1	5	1	51.9	22	0	33.0	22	0	31.1	23	0	33.0	24	0
8	AKDW 5079	N-609	40.6	13	0	44.8	22	0	43.4	25	0	42.5	8	1	43.0	7	1	46.4	2	1
9	HI 8809	N-610	43.8	6	1	57.4	9	1	63.8	7	0	39.3	13	1	40.3	13	1	39.0	11	0
10	WHD 963	N-611	44.5	5	1	53.4	13	0	70.5	1	1	43.4	5	1	42.2	9	1	37.9	12	0
11	RKD 331	N-612	45.7	4	1	42.6	24	0	61.4	13	0	40.9	11	1	42.9	8	1	42.0	5	1
12	MACS 4083	N-613	32.8	22	0	63.8	2	1	60.9	15	0	42.6	7	1	40.3	12	1	41.4	7	0
13	GW 1348	N-614	25.9	24	0	47.9	19	0	61.4	14	0	44.7	3	1	44.3	3	1	33.6	23	0
14	NIDW 1171	N-615	37.8	18	0	51.8	15	0	61.7	12	0	44.8	2	1	35.4	19	0	31.6	25	0
15	UAS 468	N-616	45.8	3	1	42.4	25	0	55.3	19	0	34.2	21	0	38.1	15	1	40.9	8	0
16	MPO 1353	N-617	40.7	11	0	55.9	10	1	53.7	21	0	37.3	17	0	32.7	22	0	36.5	18	0
17	MPO 1354	N-618	39.0	15	0	43.9	23	0	51.9	22	0	43.8	4	1	27.3	25	0	40.3	10	0
18	UAS 469	N-619	43.2	7	1	45.1	21	0	67.2	5	1	38.9	14	1	41.4	10	1	41.8	6	1
19	PDW 355	N-620	38.8	16	0	49.0	18	0	62.0	9	0	31.0	25	0	37.5	17	1	42.9	3	1
20	DDW 49	N-622	42.4	10	0	62.2	3	1	66.9	6	1	45.0	1	1	41.0	11	1	42.7	4	1
21	NIDW 1158	N-623	40.7	12	0	58.3	7	1	60.7	16	0	36.6	20	0	37.3	18	1	35.3	20	0
22	GW 1349	N-625	38.8	17	0	52.8	14	0	61.8	11	0	31.6	24	0	33.9	21	0	37.7	14	0
23	HI 8737 (C)	N-603	37.8	19	0	49.5	17	0	67.3	4	1	36.9	19	0	38.2	14	1	37.8	13	0
24	HI 8713 (C)	N-621	34.5	21	0	59.0	6	1	69.5	2	1	41.5	10	1	44.0	5	1	34.8	22	0
25	MACS 3949 (C)	N-624	42.6	9	0	57.5	8	1	61.9	10	0	37.3	16	0	37.9	16	1	35.5	19	0
Mean			39.1			53.2			60.3			39.1			38.9			38.6		
S.E.M			1.9			4.2			2.6			2.9			3.8			3.0		
C.D. (10%)			5.7			12.1			6.3			8.3			9.4			8.6		
C.V.			6.9			11.0			6.1			10.3			13.9			10.8		
D.O.S. (d.m.y)			13.11.2017			14.11.2017			13.11.2017			10.11.2017			13.11.2017			08.11.2017		

NIVT-4-IR-TS-TDM, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DDW 48	N-601	53.5	4	1	49.9	2	1	51.5	2	1
2	HI 8813	N-602	50.0	11	0	42.3	23	0	45.8	18	0
3	MACS 4085	N-604	51.4	8	0	43.2	18	0	46.9	15	0
4	MPO 1355	N-605	46.5	20	0	47.8	4	1	47.2	13	0
5	HI 8812	N-606	52.6	7	0	43.3	17	0	47.5	12	0
6	HI 8811	N-607	52.6	6	0	45.2	11	0	48.6	7	0
7	HI 8810	N-608	48.4	17	0	40.0	25	0	43.8	23	0
8	AKDW 5079	N-609	45.1	23	0	43.5	16	0	44.2	22	0
9	HI 8809	N-610	50.2	9	0	47.3	5	1	48.6	6	0
10	WHD 963	N-611	50.0	12	0	48.7	3	1	49.3	4	0
11	RKD 331	N-612	49.8	13	0	45.9	9	0	47.7	10	0
12	MACS 4083	N-613	53.7	3	1	47.0	7	0	50.0	3	0
13	GW 1348	N-614	56.5	1	1	43.0	19	0	49.1	5	0
14	NIDW 1171	N-615	49.8	14	0	43.8	14	0	46.6	16	0
15	UAS 468	N-616	42.1	25	0	42.8	21	0	42.5	24	0
16	MPO 1353	N-617	46.0	22	0	42.8	20	0	44.2	21	0
17	MPO 1354	N-618	43.2	24	0	41.0	24	0	42.0	25	0
18	UAS 469	N-619	48.4	18	0	46.3	8	0	47.2	14	0
19	PDW 355	N-620	46.1	21	0	43.5	15	0	44.7	20	0
20	DDW 49	N-622	55.2	2	1	50.0	1	1	52.4	1	1
21	NIDW 1158	N-623	52.9	5	0	44.8	12	0	48.5	8	0
22	GW 1349	N-625	47.3	19	0	42.8	22	0	44.8	19	0
23	HI 8737 (C)	N-603	48.8	15	0	44.6	13	0	46.5	17	0
24	HI 8713 (C)	N-621	48.5	16	0	47.2	6	1	47.8	9	0
25	MACS 3949 (C)	N-624	50.2	10	0	45.5	10	0	47.6	11	0
Mean			49.6			44.9			47.0		
S.E.M			1.5			1.3			1.0		
C.D. (10%)			3.5			3.0			2.3		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-4-IR-TS-TDM, 2017-18**

SN	Variety	Code	Rust Reactions			Agronomic Characteristics								Grain Characteristics			
			Br	ACI	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod. %	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DDW 48	N-601	0	0	tMR	59-70	66	103-122	113	62-94	82	10	M	A	SH-H	41-53	46
2	HI 8813	N-602	tMR	0.1	5MS	57-65	61	104-125	112	65-84	78	10	M	A	SH-H	46-60	54
3	MACS 4085	N-604	tR	0.1	tMR	55-65	60	100-120	112	61-89	79	25	M	A	H	44-56	50
4	MPO 1355	N-605	0	0	tMR	57-70	64	99-122	113	80-105	93	20	M	A	SH-H	38-43	40
5	HI 8812	N-606	0	0	tR	57-66	62	101-125	112	61-80	74	0	M	A	H	45-59	52
6	HI 8811	N-607	0	0	tR	56-64	61	102-126	113	66-89	78	25	M	A	H	50-58	53
7	HI 8810	N-608	tR	0.1	tMR	52-62	58	98-120	111	63-95	80	10	M	A	H	39-43	42
8	AKDW 5079	N-609	5MR	0.7	tR	58-68	63	102-125	113	67-93	83	5	Ey	A	H	52-64	56
9	HI 8809	N-610	0	0	0	55-65	61	101-122	111	64-87	77	5	M	A	H	44-54	49
10	WHD 963	N-611	0	0	tR	58-70	65	104-124	115	72-93	84	20	M	A	H	32-46	38
11	RKD 331	N-612	0	0	tMS	59-67	64	106-124	113	65-88	80	10	M	A	H	31-50	43
12	MACS 4083	N-613	0	0	20MS	50-63	56	97-121	109	63-93	80	10	M	A	H	43-54	48
13	GW 1348	N-614	0	0	tR	51-63	57	101-124	110	68-90	81	0	M	A	H	48-54	52
14	NIDW 1171	N-615	0	0	0	60-69	65	105-123	112	79-102	92	10	M	A	H	48-61	57
15	UAS 468	N-616	0	0	tR	59-71	65	101-126	115	65-96	86	10	Ey-M	A	H	44-55	48
16	MPO 1353	N-617	0	0	0	54-66	61	102-119	111	75-107	91	0	M	A	SH-H	38-42	40
17	MPO 1354	N-618	0	0	5R	50-61	55	96-118	109	81-118	96	0	Ey-M	A	SH-H	47-57	51
18	UAS 469	N-619	0	0	tMR	57-73	66	104-126	116	73-92	85	5	M	A	H	40-51	46
19	PDW 355	N-620	tS	0.3	tR	67-73	70	107-125	117	73-100	90	10	M	A	H	44-59	51
20	DDW 49	N-622	0	0	5MS	60-68	64	104-127	115	75-98	89	5	M	A	H	38-47	43
21	NIDW 1158	N-623	0	0	5R	53-63	59	95-121	109	68-89	79	5	M	A	H	49-56	53
22	GW 1349	N-625	0	0	tR	56-64	60	104-125	113	60-85	73	0	M	A	H	54-70	59
23	HI 8737 (C)	N-603	0	0	0	57-65	61	102-125	112	63-90	78	10	M	A	H	52-58	54
24	HI 8713 (C)	N-621	0	0	tR	61-73	66	105-126	116	73-95	85	20	M	A	H	34-52	46
25	MACS 3949 (C)	N-624	0	0	0	64-69	66	106-126	115	64-87	80	0	M	A	H	47-55	51

1. Ancillary data from Indore, Junagadh, Powarkheda, SK Nagar and Vijapur centres.
2. Black rust data from Junagadh and Vijapur; while brown rust from Junagadh, Powarkheda and Vijapur centres.
3. Lodging was reported from Junagadh,Powarkheda, SK Nagar and Vijapur centres.

NIVT-4-IR-TS-TDM, 2017-18
Central Zone
Individual Station Rust Data

SN	Variety	Code	Black Rust		Brown Rust		
			Junagadh	Vijapur	Junagadh	Powarkheda	Vijapur
1.	DDW 48	N-601	0	tMR	0	0	0
2.	HI 8813	N-602	0	5MS	0	0	tMR
3.	MACS 4085	N-604	0	tMR	0	tR	0
4.	MPO 1355	N-605	0	tMR	0	0	0
5.	HI 8812	N-606	0	tR	0	0	0
6.	HI 8811	N-607	0	tR	0	0	0
7.	HI 8810	N-608	0	tMR	0	0	tR
8.	AKDW 5079	N-609	0	tR	0	5MR	0
9.	HI 8809	N-610	0	0	0	0	0
10.	WHD 963	N-611	0	tR	0	0	0
11.	RKD 331	N-612	0	tMS	0	0	0
12.	MACS 4083	N-613	0	20MS	0	0	0
13.	GW 1348	N-614	0	tR	0	0	0
14.	NIDW 1171	N-615	0	0	0	0	0
15.	UAS 468	N-616	0	tR	0	0	0
16.	MPO 1353	N-617	0	0	0	0	0
17.	MPO 1354	N-618	0	5R	0	0	0
18.	UAS 469	N-619	0	tMR	0	0	0
19.	PDW 355	N-620	tR	0	tS	0	0
20.	DDW 49	N-622	0	5MS	0	0	0
21.	NIDW 1158	N-623	0	5R	0	0	0
22.	GW 1349	N-625	0	tR	0	0	0
23.	HI 8737 (C)	N-603	0	0	0	0	0
24.	HI 8713 (C)	N-621	0	tR	0	0	0
25.	MACS 3949 (C)	N-624	0	0	0	0	0

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-4-IR-TS-TDM, 2017-18**

SN	Variety	Code	Black Point	Agronomic Characteristics								Grain Characteristics			
				Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.%	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	DDW 48	N-601	2	66-72	69	107-120	111	71-91	83	0	M	A	H	41-55	46
2.	HI 8813	N-602	4	61-66	63	105-116	108	73-84	77	0	M	A	H	49-54	51
3.	MACS 4085	N-604	6	61-74	68	103-112	110	69-91	83	50	M	A	H	46-57	51
4.	MPO 1355	N-605	2	60-66	64	105-123	111	87-96	92	0	Ey	A	SH-H	36-48	42
5.	HI 8812	N-606	7	65-71	67	100-115	109	73-83	77	0	M	A	H	49-59	52
6.	HI 8811	N-607	4	62-66	64	104-115	108	73-85	77	0	Ey-M	A	H	51-53	51
7.	HI 8810	N-608	2	57-71	64	104-111	107	74-87	82	60	M	A	H	34-47	40
8.	AKDW 5079	N-609	4	60-66	63	104-114	108	74-94	85	0	Ey-M	A	H	51-55	53
9.	HI 8809	N-610	5	61-65	63	100-116	107	69-84	74	20	M	A	H	46-48	47
10.	WHD 963	N-611	5	67-77	70	105-118	111	75-96	83	0	M	A	H	38-45	41
11.	RKD 331	N-612	3	66-73	71	106-120	113	69-92	84	0	Ey-M	A	H	40-46	43
12.	MACS 4083	N-613	5	55-61	58	104-110	107	68-85	75	0	Ey-M	A	H	46-57	49
13.	GW 1348	N-614	4	55-64	59	104-115	109	71-84	78	30	M	A	H	46-54	51
14.	NIDW 1171	N-615	4	64-72	68	101-114	110	75-97	86	0	M	A	H	49-54	51
15.	UAS 468	N-616	3	60-72	66	106-115	110	84-95	89	0	M	A	H	42-62	49
16.	MPO 1353	N-617	5	52-67	60	105-111	108	82-89	86	0	Ey	A	SH-H	39-62	45
17.	MPO 1354	N-618	15	56-63	59	104-110	106	85-101	90	0	Ey	A	SH-H	49-58	53
18.	UAS 469	N-619	2	64-71	67	106-112	109	81-95	85	20	EY-M	A	H	40-48	45
19.	PDW 355	N-620	2	71-77	73	108-123	113	83-101	89	30	Ey-M	A	H	43-48	45
20.	DDW 49	N-622	8	67-73	70	106-117	111	80-96	89	20	Ey-M	A	H	42-46	44
21.	NIDW 1158	N-623	4	59-64	62	104-110	107	74-84	78	60	M	A	H	44-48	46
22.	GW 1349	N-625	5	64-68	65	102-120	111	64-86	73	0	Ey-M	A	H	53-59	56
23.	HI 8737 (C)	N-603	3	61-66	64	104-115	108	69-85	75	0	M	A	H	42-53	47
24.	HI 8713 (C)	N-621	6	69-73	71	106-117	112	77-95	85	30	M	A	H	43-52	46
25.	MACS 3949 (C)	N-624	2	67-72	71	105-118	112	74-89	79	0	Ey-M	A	H	47-51	48

1. Ancillary data from Akola, Dharwad, Niphad, Nippani, Ugar Khurd and Pune centres.
2. No rust incidence was reported from any centre.
3. Lodging and black point data reported from Pune centre only.

1798-NIVT-5A-RI-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ														
			Punjab									Delhi			Uttrakhand		
			Balachaur			Gurdaspur			Ludhiana			Delhi			Pantnagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	UP 3012	N-701	57.0	2	1	42.9	18	0	54.7	8	0	48.0	11	0	45.5	20	0
2	WH 1250	N-703	51.6	10	1	44.9	16	0	41.4	20	0	47.6	12	0	46.6	17	0
3	K 1710	N-704	57.9	1	1	49.2	11	1	46.6	15	0	42.2	20	0	50.3	8	1
4	DBW 274	N-705	52.6	9	1	36.2	24	0	38.4	22	0	44.8	17	0	49.3	13	0
5	HD 3295	N-706	38.8	21	0	50.0	7	1	56.7	5	1	59.4	2	1	38.4	25	0
6	HD 3294	N-707	41.4	20	0	50.0	8	1	58.3	4	1	58.1	3	1	42.8	24	0
7	HS 649	N-708	35.2	23	0	36.5	22	0	37.0	23	0	34.0	25	0	49.1	14	0
8	NW 7030	N-709	46.0	16	0	36.3	23	0	45.7	17	0	48.8	8	0	45.2	21	0
9	UP 3013	N-712	53.2	7	1	52.6	1	1	48.4	14	0	46.9	13	0	50.6	7	1
10	DBW 275	N-713	54.1	6	1	50.5	5	1	61.2	1	1	54.5	6	1	50.1	9	1
11	BRW 3823	N-714	54.2	5	1	39.9	21	0	46.3	16	0	41.9	21	0	50.0	10	1
12	PBW 795	N-715	50.0	12	0	46.4	14	0	61.1	2	1	56.3	5	1	43.0	23	0
13	DBW 273	N-716	49.8	13	0	41.0	20	0	54.4	9	0	46.0	16	0	51.0	6	1
14	HD 3292	N-717	53.1	8	1	41.5	19	0	51.3	11	0	44.5	18	0	51.5	4	1
15	UP 3018	N-719	47.5	15	0	48.7	12	1	51.7	10	0	48.7	9	0	45.9	18	0
16	HUW 832	N-720	54.5	4	1	46.9	13	0	55.2	7	0	44.2	19	0	52.8	3	1
17	PBW 796	N-721	50.8	11	0	49.7	9	1	58.9	3	1	63.0	1	1	49.7	12	1
18	K 1711	N-722	44.9	17	0	45.4	15	0	44.6	18	0	41.2	22	0	44.0	22	0
19	WH 1251	N-723	49.6	14	0	43.1	17	0	34.2	25	0	48.9	7	0	53.2	2	1
20	DBW 272	N-724	44.2	19	0	49.3	10	1	41.4	21	0	37.8	23	0	49.9	11	1
21	HD 3293	N-725	38.1	22	0	51.6	3	1	56.3	6	1	56.8	4	1	51.1	5	1
22	PBW 644 (C)	N-702	54.8	3	1	50.9	4	1	50.3	13	0	46.8	14	0	54.0	1	1
23	WH 1142 (C)	N-710	44.6	18	0	50.1	6	1	43.9	19	0	48.3	10	0	48.1	15	0
24	K 1317 (C)	N-711	33.4	24	0	52.4	2	1	50.4	12	0	46.4	15	0	45.6	19	0
25	HD 2888 (C)	N-718	29.4	25	0	26.2	25	0	37.0	24	0	34.3	24	0	47.6	16	0
Mean			47.5			45.3			49.0			47.6			48.2		
S.E.M			2.6			2.0			2.2			2.8			1.8		
C.D. (10%)			6.5			4.9			5.4			6.8			4.5		
C.V.			7.8			6.2			6.3			8.3			5.4		
D.O.S. (d.m.y)			05.11.2017			05.11.2017			3.11.2017			04.11.2017			28.10.2017		

Trials proposed & conducted = 17

Trials not reported (3) = Diggi (RMT), Jammu (UY), Kanpur (LS)

1798-NIVT-5A-RI-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NWPZ						NEPZ					
			Haryana						Uttar Pradesh					
			Hisar			Karnal			Faizabad			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	UP 3012	N-701	52.1	11	0	49.3	8	0	35.9	14	0	37.5	15	0
2	WH 1250	N-703	49.1	20	0	46.8	12	0	35.9	14	0	38.6	11	0
3	K 1710	N-704	49.6	18	0	50.2	7	0	38.9	8	1	40.7	7	0
4	DBW 274	N-705	48.5	21	0	39.9	21	0	33.3	21	0	37.5	16	0
5	HD 3295	N-706	54.9	5	1	50.8	6	0	38.4	10	1	46.3	1	1
6	HD 3294	N-707	47.3	22	0	47.0	11	0	36.3	13	0	43.3	3	1
7	HS 649	N-708	53.3	9	1	40.3	19	0	41.7	2	1	35.1	21	0
8	NW 7030	N-709	51.9	12	0	40.1	20	0	39.3	6	1	38.3	12	0
9	UP 3013	N-712	54.6	6	1	51.0	4	0	38.8	9	1	41.5	5	1
10	DBW 275	N-713	52.6	10	1	56.9	1	1	38.0	11	1	42.4	4	1
11	BRW 3823	N-714	47.0	23	0	38.6	23	0	35.2	17	0	30.3	25	0
12	PBW 795	N-715	49.3	19	0	56.3	2	1	34.0	20	0	40.6	8	0
13	DBW 273	N-716	50.7	15	0	45.9	13	0	32.3	23	0	40.2	9	0
14	HD 3292	N-717	57.6	2	1	39.1	22	0	40.1	4	1	35.8	20	0
15	UP 3018	N-719	49.6	17	0	45.4	14	0	42.8	1	1	37.4	17	0
16	HUW 832	N-720	50.2	16	0	47.9	10	0	30.7	25	0	36.5	19	0
17	PBW 796	N-721	51.8	14	0	52.0	3	0	37.5	12	1	36.8	18	0
18	K 1711	N-722	56.1	3	1	44.0	16	0	41.1	3	1	34.7	22	0
19	WH 1251	N-723	55.8	4	1	43.7	17	0	34.9	18	0	34.6	24	0
20	DBW 272	N-724	54.2	8	1	43.4	18	0	31.8	24	0	34.6	23	0
21	HD 3293	N-725	54.3	7	1	51.0	5	0	39.0	7	1	45.8	2	1
22	PBW 644 (C)	N-702	58.9	1	1	45.4	15	0	35.7	16	0	38.0	13	0
23	WH 1142 (C)	N-710	51.9	13	0	48.2	9	0	33.0	22	0	39.6	10	0
24	K 1317 (C)	N-711	42.9	24	0	38.3	24	0	34.8	19	0	41.4	6	1
25	HD 2888 (C)	N-718	22.9	25	0	30.3	25	0	39.8	5	1	37.5	14	0
Mean			50.7			45.7			36.8			38.6		
S.E.M			2.7			2.2			2.4			2.2		
C.D. (10%)			6.5			5.4			5.8			5.3		
C.V.			7.4			6.9			9.14			7.9		
D.O.S. (d.m.y)			03.11.2017			04.11.2017			10.11.2017			10.11.2017		

1798-NIVT-5A-RI-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	NEPZ														
			Bihar						West Bengal						Uttrakhand		
			IARI Pusa			Sabour			Coochbehar			Kalyani			Ranchi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	UP 3012	N-701	45.9	17	0	34.7	6	0	28.4	6	0	40.4	10	0	42.9	2	1
2	WH 1250	N-703	53.2	5	1	30.3	15	0	21.2	18	0	43.8	5	0	37.2	9	0
3	K 1710	N-704	53.0	6	0	34.4	7	0	40.2	1	1	34.4	19	0	30.6	17	0
4	DBW 274	N-705	47.1	14	0	30.3	16	0	21.4	16	0	37.4	16	0	37.8	8	0
5	HD 3295	N-706	41.7	21	0	34.1	8	0	23.1	12	0	40.6	9	0	30.2	20	0
6	HD 3294	N-707	38.7	23	0	37.9	2	0	18.1	21	0	35.9	17	0	24.5	23	0
7	HS 649	N-708	51.3	8	0	23.3	24	0	17.9	22	0	27.6	25	0	34.5	14	0
8	NW 7030	N-709	27.2	25	0	24.5	23	0	16.7	23	0	30.7	23	0	26.2	22	0
9	UP 3013	N-712	55.1	2	1	32.6	11	0	27.0	7	0	42.2	7	0	36.2	10	0
10	DBW 275	N-713	52.1	7	0	36.7	4	0	20.4	19	0	41.1	8	0	35.7	12	0
11	BRW 3823	N-714	46.1	16	0	21.8	25	0	24.3	10	0	32.8	22	0	28.7	21	0
12	PBW 795	N-715	45.5	18	0	36.3	5	0	39.6	2	1	34.4	19	0	42.3	3	1
13	DBW 273	N-716	54.2	4	1	36.9	3	0	26.0	9	0	51.6	1	1	40.8	7	1
14	HD 3292	N-717	50.3	9	0	34.1	8	0	22.0	14	0	45.5	4	0	35.7	11	0
15	UP 3018	N-719	49.6	11	0	29.3	18	0	23.5	11	0	30.7	23	0	42.0	4	1
16	HUW 832	N-720	49.9	10	0	33.6	10	0	21.4	15	0	34.4	19	0	41.9	6	1
17	PBW 796	N-721	34.7	24	0	26.7	21	0	16.0	25	0	43.8	5	0	24.3	24	0
18	K 1711	N-722	44.9	20	0	27.8	20	0	16.6	24	0	38.0	15	0	32.1	16	0
19	WH 1251	N-723	46.3	15	0	24.8	22	0	22.8	13	0	40.4	10	0	34.4	15	0
20	DBW 272	N-724	48.6	13	0	29.6	17	0	20.1	20	0	38.5	13	0	43.1	1	1
21	HD 3293	N-725	49.0	12	0	43.3	1	1	33.8	3	1	49.7	2	1	30.6	18	0
22	PBW 644 (C)	N-702	45.2	19	0	32.3	12	0	31.9	4	0	45.8	3	0	42.0	5	1
23	WH 1142 (C)	N-710	39.2	22	0	28.6	19	0	21.3	17	0	39.9	12	0	30.4	19	0
24	K 1317 (C)	N-711	54.3	3	1	31.4	13	0	30.6	5	0	38.5	13	0	35.1	13	0
25	HD 2888 (C)	N-718	58.2	1	1	30.9	14	0	26.7	8	0	35.9	17	0	23.8	25	0
Mean			47.3			31.5			24.4			39.0			34.5		
S.E.M			2.1			1.7			2.7			1.2			2.8		
C.D. (10%)			5.2			4.0			6.6			3.0			6.7		
C.V.			6.3			7.5			15.5			4.5			11.3		
D.O.S. (d.m.y)			10.11.2017			08.11.2017			07.11.2017			10.11.2017			07.11.2017		

1798-NIVT-5A-RI-TS-TAS, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	UP 3012	N-701	49.9	8	0	38.0	9	0	44.0	8	0
2	WH 1250	N-703	46.9	17	0	37.2	11	0	42.0	14	0
3	K 1710	N-704	49.4	10	0	38.9	5	0	44.1	7	0
4	DBW 274	N-705	44.2	22	0	35.0	17	0	39.6	21	0
5	HD 3295	N-706	49.9	9	0	36.4	13	0	43.1	9	0
6	HD 3294	N-707	49.3	11	0	33.5	20	0	41.4	15	0
7	HS 649	N-708	40.8	24	0	33.0	22	0	36.9	24	0
8	NW 7030	N-709	44.9	21	0	29.0	25	0	36.9	23	0
9	UP 3013	N-712	51.0	6	0	39.1	3	0	45.0	5	1
10	DBW 275	N-713	54.3	1	1	38.1	7	0	46.2	2	1
11	BRW 3823	N-714	45.4	20	0	31.3	24	0	38.4	22	0
12	PBW 795	N-715	51.8	3	0	39.0	4	0	45.4	3	1
13	DBW 273	N-716	48.4	12	0	40.3	2	1	44.3	6	0
14	HD 3292	N-717	48.4	13	0	37.6	10	0	43.0	10	0
15	UP 3018	N-719	48.2	14	0	36.5	12	0	42.3	13	0
16	HUW 832	N-720	50.3	7	0	35.5	15	0	42.9	11	0
17	PBW 796	N-721	53.7	2	1	31.4	23	0	42.5	12	0
18	K 1711	N-722	45.8	18	0	33.6	19	0	39.7	20	0
19	WH 1251	N-723	46.9	16	0	34.0	18	0	40.5	18	0
20	DBW 272	N-724	45.7	19	0	35.2	16	0	40.5	19	0
21	HD 3293	N-725	51.3	5	0	41.6	1	1	46.5	1	1
22	PBW 644 (C)	N-702	51.6	4	0	38.7	6	0	45.1	4	1
23	WH 1142 (C)	N-710	47.9	15	0	33.1	21	0	40.5	17	0
24	K 1317 (C)	N-711	44.2	23	0	38.0	8	0	41.1	16	0
25	HD 2888 (C)	N-718	32.5	25	0	36.1	14	0	34.3	25	0
Mean			47.7			36.0			41.9		
S.E.M			0.9			0.8			0.6		
C.D. (10%)			2.1			1.9			1.4		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-5A-RI-TS-TAS, 2017-18**

SN	Variety	Code	Disease			Agronomic Characteristics								Grain Characteristics			
			Br	Yl	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.%	Thr.	Col.	Tex.	TGW.R	TGW.M
1	UP 3012	N-701	0	10S	4.2	96-120	105	141-164	149	97-121	108	6	Ey	A	H	29-41	36
2	WH 1250	N-703	0	20S	6.7	94-120	106	136-165	151	96-116	106	14	Ey	A	H	28-40	34
3	K 1710	N-704	0	40S	7.5	93-120	101	135-165	149	95-115	104	0	Ey	A	H	35-44	40
4	DBW 274	N-705	0	10S	3.3	101-122	108	140-165	151	82-91	86	4	Ey	A	H	26-39	32
5	HD 3295	N-706	0	5S	1.7	95-122	103	135-165	148	94-113	103	2	Ey	A	H	31-48	41
6	HD 3294	N-707	0	30S	8.3	86-124	102	135-162	148	91-107	97	0	Ey	A	H	36-46	41
7	HS 649	N-708	0	20S	4.2	100-124	108	139-162	149	98-120	109	8	Ey	A	H	26-42	35
8	NW 7030	N-709	0	60S	11.7	91-118	99	134-162	147	95-120	104	4	Ey	A	H	31-46	40
9	UP 3013	N-712	0	60S	11.7	95-122	104	139-165	150	109-125	113	5	Ey	A	H	32-40	36
10	DBW 275	N-713	0	40S	13.5	91-122	99	137-164	148	94-126	107	4	Ey	A	H	39-45	43
11	BRW 3823	N-714	0	20S	4.2	95-122	104	136-165	149	90-115	103	2	Ey	A	H	30-38	34
12	PBW 795	N-715	0	40S	13.3	94-122	103	140-165	149	97-109	101	2	Ey	A	H	32-49	41
13	DBW 273	N-716	0	40S	10.0	92-125	104	138-168	149	87-113	101	14	Ey	A	H	29-41	35
14	HD 3292	N-717	0	20S	15.0	93-128	103	140-168	150	105-128	114	5	Ey	A	H	30-43	38
15	UP 3018	N-719	tR	60S	11.7	98-124	107	139-165	150	103-118	106	2	Ey	A	H	36-44	39
16	HUW 832	N-720	0	40S	6.7	95-125	104	135-165	148	105-119	109	2	Ey	A	H	38-48	44
17	PBW 796	N-721	0	60S	11.7	91-122	102	137-164	148	93-113	102	2	Ey	A	H	38-46	43
18	K 1711	N-722	0	10S	2.7	99-124	107	138-165	150	106-123	113	0	Ey	A	H	30-47	40
19	WH 1251	N-723	0	5S	1.7	98-123	105	139-165	150	94-127	108	2	Ey	A	H	29-41	35
20	DBW 272	N-724	0	40S	7.5	95-118	103	140-162	148	97-119	104	3	Ey	A	H	30-43	37
21	HD 3293	N-725	5S	10S	3.3	94-128	103	135-167	148	105-128	113	15	Ey	A	H	30-46	40
22	PBW 644 (C)	N-702	0	60S	13.4	95-126	104	135-167	149	102-130	109	27	Ey	A	H	33-45	39
23	WH 1142 (C)	N-710	5S	15S	5.0	97-122	106	138-165	150	100-112	105	0	Ey	A	H	28-41	35
24	K 1317 (C)	N-711	0	20S	5.0	92-125	104	135-165	150	94-114	105	2	Ey	A	H	31-51	42
25	HD 2888 (C)	N-718	0	40S	10.8	95-122	103	135-165	148	97-150	119	35	Ey	A	H	35-46	40

1. Ancillary data from Balachur, Delhi, Gurdaspur, Hisar, Jammu, Ludhiana, Karnal and Pantnagar centres.
2. Brown rust reported from Gurdaspur centre only.
3. Yellow rust data from Gurdaspur, Hisar, Jammu, Ludhiana, Karnal and Pantnagar centres.
4. Lodging data reported from Gurdaspur, Hisar, Jammu, Ludhiana and Karnal centres.

NIVT-5A-RI-TS-TAS, 2017-18
North Western Plains Zone
Individual Station Rust Data

SN	Variety	Code	Yellow Rust					
			Gurdaspur	Hisar	Jammu	Ludhiana	Karnal	Pantnagar
1	UP 3012	N-701	0	5S	10S	5S	0	5S
2	WH 1250	N-703	0	0	20S	10S	0	10S
3	K 1710	N-704	0	0	40S	5S	0	0
4	DBW 274	N-705	0	0	10S	10S	0	0
5	HD 3295	N-706	0	0	0	5S	5S	0
6	HD 3294	N-707	0	0	20S	0	0	30S
7	HS 649	N-708	0	0	20S	5S	0	0
8	NW 7030	N-709	0	0	60S	5S	5S	0
9	UP 3013	N-712	5S	5S	60S	0	0	0
10	DBW 275	N-713	5S	5S	40S	10S	20S	tS
11	BRW 3823	N-714	5S	0	0	20S	0	0
12	PBW 795	N-715	0	0	40S	0	0	40S
13	DBW 273	N-716	tR	0	40S	5S	5S	10S
14	HD 3292	N-717	10S	20S	20S	20S	20S	0
15	UP 3018	N-719	tR	0	0	5S	5S	60S
16	HUW 832	N-720	0	0	40S	0	0	0
17	PBW 796	N-721	0	0	60S	10S	0	0
18	K 1711	N-722	0	0	0	5S	10S	tS
19	WH 1251	N-723	0	0	0	5S	0	5S
20	DBW 272	N-724	0	0	40S	5S	0	0
21	HD 3293	N-725	0	5S	10S	0	0	0
22	PBW 644 (C)	N-702	tR	10S	60S	0	10S	0
23	WH 1142 (C)	N-710	0	0	0	10S	0	15S
24	K 1317 (C)	N-711	0	0	20S	5S	5S	0
25	HD 2888 (C)	N-718	5S	0	40S	20S	0	0

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-5A-RI-TS-TAS, 2017-18**

SN	Variety	Code	Disease	Agronomic Characteristics							Grain Characteristics			
			LB (HS, Avg.)	**Hd.R**	**Hd.M**	**Mat.R**	**Mat.M**	**Ht.R**	**Ht.M**	**Thr.**	**Col.**	**Tex.**	**TGW.R**	**TGW.M**
1	UP 3012	N-701	12 (11)	81-93	87	114-136	127	94-109	100	Ey	A	SH-H	28-38	35
2	WH 1250	N-703	24 (12)	74-96	87	118-142	129	87-107	96	Ey	A	SH-H	26-39	33
3	K 1710	N-704	23 (12)	72-85	79	113-131	125	81-112	93	Ey	A	SH	35-44	38
4	DBW 274	N-705	24 (12)	72-97	90	119-143	130	71-111	83	Ey	A	SH	27-33	32
5	HD 3295	N-706	24 (22)	78-92	83	114-133	124	76-117	91	Ey	A	SH	29-48	39
6	HD 3294	N-707	25 (12)	69-87	78	112-130	123	72-103	86	Ey	A	H	37-42	39
7	HS 649	N-708	13 (12)	80-97	90	116-144	130	85-110	96	Ey	A	H	31-42	35
8	NW 7030	N-709	23 (23)	68-85	78	115-134	125	80-101	90	Ey	A	SH-H	34-42	38
9	UP 3013	N-712	24 (12)	76-95	85	113-136	125	83-115	96	Ey	A	SH	30-43	36
10	DBW 275	N-713	35 (24)	68-89	78	112-129	123	77-98	88	Ey	A	H	32-44	39
11	BRW 3823	N-714	24 (12)	80-92	86	114-135	127	78-103	88	Ey	A	SH-H	28-38	33
12	PBW 795	N-715	57 (35)	74-84	79	113-131	124	78-96	86	Ey	A	SH-H	31-44	38
13	DBW 273	N-716	35 (23)	76-90	83	113-141	126	83-100	92	Ey	A	SH-H	26-38	32
14	HD 3292	N-717	24 (12)	75-91	81	114-140	128	90-118	97	Ey	A	SH-H	33-46	38
15	UP 3018	N-719	12 (11)	82-99	93	119-144	131	82-103	93	Ey	A	SH-H	34-41	37
16	HUW 832	N-720	35 (24)	72-87	80	112-129	123	84-108	95	Ey	A	SH-H	33-41	37
17	PBW 796	N-721	23 (13)	74-84	79	113-130	122	78-98	88	Ey	A	SH	34-42	39
18	K 1711	N-722	12 (11)	80-91	86	118-138	129	88-116	104	Ey	A	H	36-50	41
19	WH 1251	N-723	24 (12)	80-88	84	114-144	126	84-112	96	Ey	A	H	30-38	35
20	DBW 272	N-724	35 (23)	70-89	81	113-130	124	81-105	93	Ey	A	SH-H	33-39	36
21	HD 3293	N-725	12 (11)	76-88	80	115-142	128	91-113	98	Ey	A	H	36-45	40
22	PBW 644 (C)	N-702	24 (12)	77-85	81	112-132	124	78-110	92	Ey	A	H	35-41	37
23	WH 1142 (C)	N-710	34 (24)	74-90	82	115-139	126	78-101	88	Ey	A	H	28-37	31
24	K 1317 (C)	N-711	34 (23)	76-88	82	114-132	126	90-100	94	Ey-M	A	SH	38-41	40
25	HD 2888 (C)	N-718	23 (12)	71-94	84	115-149	130	90-131	116	Ey	A	H	37-42	39

1. Ancillary data from Coochbehar, Faizabad, Pusa, Kalyani, Kanpur, Sabour and Varansi centers.
2. Leaf Blight data from Coochbehar, Faizabad and Kalyani centres.

NIVT-5A-RI-TS-TAS, 2017-18
North Eastern Plains Zone
Individual Station Leaf Blight Data

SN	Variety	Code	Coochbehar	Faizabad	Kalyani
1	UP 3012	N-701	12	12	00
2	WH 1250	N-703	12	24	00
3	K 1710	N-704	23	12	00
4	DBW 274	N-705	23	24	00
5	HD 3295	N-706	23	12	24
6	HD 3294	N-707	12	25	00
7	HS 649	N-708	12	12	13
8	NW 7030	N-709	23	23	13
9	UP 3013	N-712	12	24	00
10	DBW 275	N-713	23	35	23
11	BRW 3823	N-714	12	24	00
12	PBW 795	N-715	23	35	57
13	DBW 273	N-716	23	35	00
14	HD 3292	N-717	12	24	00
15	UP 3018	N-719	12	12	00
16	HUW 832	N-720	23	35	13
17	PBW 796	N-721	23	12	13
18	K 1711	N-722	12	12	00
19	WH 1251	N-723	12	24	00
20	DBW 272	N-724	23	35	12
21	HD 3293	N-725	12	12	00
22	PBW 644 (C)	N-702	12	24	00
23	WH 1142 (C)	N-710	34	24	13
24	K 1317 (C)	N-711	34	12	13
25	HD 2888 (C)	N-718	23	12	00

1799-NIVT-5B-RI-TS-TAD, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ														
			Rajasthan			MP											
			Udaipur			Indore			Jabalpur			Powarkheda			Sagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 1350 (d)	N-801	28.5	13	0	40.7	13	0	30.0	20	0	23.5	25	0	35.0	19	0
2	NIDW 1149 (d)	N-803	32.7	4	0	41.0	12	0	32.4	15	0	43.8	5	1	37.7	15	0
3	MP 3507	N-804	31.7	6	0	37.1	22	0	28.9	23	0	43.6	6	1	32.7	21	0
4	HI 8815 (d)	N-805	26.9	17	0	47.7	3	1	32.1	17	0	38.8	14	0	33.8	20	0
5	UAS 470 (d)	N-806	22.0	24	0	34.7	25	0	34.6	11	0	26.8	24	0	38.0	14	0
6	HI 8814 (d)	N-807	27.0	15	0	45.0	7	1	42.3	6	1	38.3	15	0	37.0	17	0
7	DBW 280	N-808	32.0	5	0	45.4	5	1	31.6	18	0	32.6	21	0	49.0	1	1
8	DBW 276	N-809	26.7	18	0	44.4	8	1	30.4	19	0	40.4	10	1	43.3	5	0
9	MP 1346	N-810	28.2	14	0	42.0	10	0	45.9	2	1	42.7	7	1	36.0	18	0
10	GW 512	N-811	25.1	22	0	40.5	16	0	37.0	10	0	33.4	20	0	32.6	22	0
11	HD 3297	N-812	25.6	21	0	40.6	15	0	33.6	14	0	36.4	19	0	43.1	7	0
12	MP 1345	N-813	27.0	16	0	40.6	14	0	32.1	16	0	39.0	12	1	28.0	25	0
13	MPO 1347 (d)	N-815	28.8	12	0	34.7	24	0	34.1	12	0	45.0	4	1	30.2	24	0
14	MACS 4075 (d)	N-817	31.2	7	0	38.9	21	0	39.5	7	0	45.5	2	1	30.8	23	0
15	NIAW 3386	N-818	30.4	8	0	50.5	1	1	37.7	9	0	37.0	18	0	43.5	4	0
16	CG 1030	N-819	29.0	11	0	40.2	18	0	24.2	25	0	39.4	11	1	39.4	11	0
17	HD 3296	N-820	29.2	10	0	45.2	6	1	45.0	4	1	45.4	3	1	44.7	2	0
18	AKAW 5082	N-821	24.0	23	0	36.0	23	0	44.6	5	1	50.9	1	1	42.0	8	0
19	MACS 6719	N-822	40.9	2	1	41.5	11	0	29.3	22	0	28.5	23	0	38.6	12	0
20	DBW 277	N-823	42.3	1	1	39.6	20	0	45.2	3	1	37.1	17	0	37.0	16	0
21	HP 1970	N-825	35.2	3	0	39.8	19	0	37.9	8	0	41.6	8	1	38.3	13	0
22	DBW 110 (C)	N-802	29.2	9	0	47.2	4	1	33.9	13	0	38.9	13	0	39.7	10	0
23	HI 1605 (C)	N-814	26.5	20	0	48.9	2	1	25.1	24	0	41.4	9	1	43.1	6	0
24	UAS 466 (d) (C)	N-816	26.6	19	0	40.5	17	0	29.5	21	0	29.4	22	0	40.6	9	0
25	HI 8627 (d) (C)	N-824	19.7	25	0	43.6	9	0	46.1	1	1	38.1	16	0	44.4	3	0
Mean			29.1			41.9			35.3			38.3			38.3		
S.E.M			2.4			2.7			2.6			4.8			1.6		
C.D. (10%)			5.9			6.8			6.4			11.9			3.9		
C.V.			11.6			9.2			10.3			17.8			5.8		
D.O.S. (d.m.y)			05.11.2017			28.10.17			08.11.2017			06.11.2017			02.11.2017		

Trials proposed = 18
Trials not Conducted (1) = Kota
Trials not reported (4) = Junagadh (LSM), Arnej (LSM), Nippani (RMT), Akola (RMT)

1799-NIVT-5B-RI-TS-TAD, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	CZ											
			Chhattisgarh			Gujarat								
			Bilaspur			Dhandhuka			Tancha			Vijapur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 1350 (d)	N-801	35.2	7	1	44.3	1	1	37.9	1	1	20.5	22	0
2	NIDW 1149 (d)	N-803	24.9	21	0	30.2	19	0	24.3	22	0	22.0	20	0
3	MP 3507	N-804	25.7	18	0	24.5	23	0	27.3	18	0	26.0	12	0
4	HI 8815 (d)	N-805	31.6	14	0	37.0	8	0	26.9	19	0	18.0	25	0
5	UAS 470 (d)	N-806	33.5	10	0	24.8	22	0	28.4	17	0	20.2	23	0
6	HI 8814 (d)	N-807	23.0	23	0	31.9	15	0	31.1	13	0	22.9	19	0
7	DBW 280	N-808	20.2	25	0	29.5	20	0	29.3	15	0	29.2	9	1
8	DBW 276	N-809	32.7	12	0	40.8	2	0	21.9	25	0	24.1	15	0
9	MP 1346	N-810	37.0	5	1	30.9	17	0	33.1	8	0	30.9	6	1
10	GW 512	N-811	21.3	24	0	20.4	24	0	26.9	20	0	23.4	17	0
11	HD 3297	N-812	23.4	22	0	37.7	7	0	29.4	14	0	31.1	4	1
12	MP 1345	N-813	25.6	19	0	30.4	18	0	34.9	4	1	23.1	18	0
13	MPO 1347 (d)	N-815	29.7	16	0	31.6	16	0	29.3	16	0	26.2	11	0
14	MACS 4075 (d)	N-817	31.8	13	0	32.3	14	0	33.3	7	0	19.4	24	0
15	NIAW 3386	N-818	34.6	8	1	34.4	11	0	26.9	21	0	33.1	2	1
16	CG 1030	N-819	37.5	4	1	37.8	6	0	34.1	5	1	31.0	5	1
17	HD 3296	N-820	33.6	9	0	25.8	21	0	32.2	11	0	33.6	1	1
18	AKAW 5082	N-821	38.9	1	1	35.9	9	0	35.2	3	1	24.7	13	0
19	MACS 6719	N-822	29.3	17	0	32.9	13	0	22.2	24	0	23.4	16	0
20	DBW 277	N-823	38.0	3	1	33.9	12	0	31.5	12	0	29.7	7	1
21	HP 1970	N-825	38.6	2	1	38.7	5	0	37.1	2	1	29.2	8	1
22	DBW 110 (C)	N-802	37.0	5	1	40.1	3	0	24.3	23	0	26.7	10	0
23	HI 1605 (C)	N-814	25.3	20	0	35.4	10	0	32.5	10	0	31.1	3	1
24	UAS 466 (d) (C)	N-816	33.3	11	0	15.5	25	0	33.6	6	0	21.4	21	0
25	HI 8627 (d) (C)	N-824	31.5	15	0	39.2	4	0	32.5	9	0	24.3	14	0
Mean			30.9			32.6			30.2			25.8		
S.E.M			2.6			1.6			1.7			1.9		
C.D. (10%)			6.3			3.9			4.2			4.8		
C.V.			12.0			7.0			7.9			10.6		
D.O.S. (d.m.y)			05.11.2017			24.10.2017			03.11.2017			09.11.2017		

1799-NIVT-5B-RI-TS-TAD, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	PZ											
			Karnataka						Maharashtra					
			Bagalkot			Dharwad			Niphad			Pune		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 1350 (d)	N-801	37.2	8	1	26.9	8	1	30.3	18	1	27.5	24	0
2	NIDW 1149 (d)	N-803	28.2	17	0	30.0	2	1	35.5	1	1	31.8	16	0
3	MP 3507	N-804	27.3	20	0	23.9	16	0	30.6	16	1	33.2	12	0
4	HI 8815 (d)	N-805	30.6	16	0	26.6	10	1	32.3	7	1	32.3	14	0
5	UAS 470 (d)	N-806	35.3	11	0	21.5	22	0	24.4	25	0	28.1	23	0
6	HI 8814 (d)	N-807	27.4	19	0	28.6	4	1	34.7	5	1	31.4	17	0
7	DBW 280	N-808	27.0	21	0	18.7	25	0	31.7	12	1	33.2	11	0
8	DBW 276	N-809	43.6	2	1	26.2	11	1	27.2	22	0	35.7	6	0
9	MP 1346	N-810	38.1	7	1	27.6	6	1	25.6	24	0	33.9	10	0
10	GW 512	N-811	22.5	25	0	23.5	18	0	30.6	17	1	32.2	15	0
11	HD 3297	N-812	43.7	1	1	22.0	21	0	32.2	9	1	30.0	20	0
12	MP 1345	N-813	34.4	13	0	24.3	13	1	35.4	3	1	29.1	21	0
13	MPO 1347 (d)	N-815	28.1	18	0	23.9	15	0	31.0	14	1	26.4	25	0
14	MACS 4075 (d)	N-817	23.7	24	0	28.5	5	1	27.3	21	0	30.3	19	0
15	NIAW 3386	N-818	43.4	3	1	27.4	7	1	27.8	20	0	36.7	5	0
16	CG 1030	N-819	39.2	5	1	22.6	19	0	31.9	11	1	34.0	9	0
17	HD 3296	N-820	36.0	10	1	31.0	1	1	32.0	10	1	34.3	7	0
18	AKAW 5082	N-821	38.9	6	1	24.6	12	1	30.8	15	1	34.2	8	0
19	MACS 6719	N-822	24.5	23	0	29.9	3	1	35.5	2	1	36.8	4	0
20	DBW 277	N-823	34.6	12	0	24.1	14	0	33.0	6	1	37.1	2	1
21	HP 1970	N-825	31.7	15	0	23.6	17	0	26.8	23	0	32.9	13	0
22	DBW 110 (C)	N-802	36.6	9	1	26.8	9	1	30.1	19	0	42.4	1	1
23	HI 1605 (C)	N-814	41.9	4	1	22.2	20	0	35.3	4	1	37.0	3	1
24	UAS 466 (d) (C)	N-816	26.1	22	0	21.0	23	0	32.2	8	1	31.2	18	0
25	HI 8627 (d) (C)	N-824	33.3	14	0	19.5	24	0	31.4	13	1	28.6	22	0
Mean			33.3			25.0			31.0			32.8		
S.E.M			3.4			2.8			2.2			2.2		
C.D. (10%)			10.1			8.3			6.5			5.5		
C.V.			14.3			15.6			9.9			9.6		
D.O.S. (d.m.y)			03.11.2017			01.11.2017			01.11.2017			06.11.2017		

NIVT-5B-RI-TS-TAD, 2017-18
Zonal and National Mean Yield (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 1350 (d)	N-801	32.9	16	0	30.5	15	0	32.1	14	0
2	NIDW 1149 (d)	N-803	32.1	19	0	31.4	11	1	31.9	15	0
3	MP 3507	N-804	30.9	22	0	28.8	18	0	30.2	22	0
4	HI 8815 (d)	N-805	32.5	17	0	30.4	16	0	31.9	16	0
5	UAS 470 (d)	N-806	29.2	24	0	27.3	24	0	28.6	24	0
6	HI 8814 (d)	N-807	33.2	15	0	30.5	14	0	32.3	13	0
7	DBW 280	N-808	33.2	14	0	27.6	21	0	31.5	19	0
8	DBW 276	N-809	33.9	11	0	33.2	5	1	33.6	10	0
9	MP 1346	N-810	36.3	6	1	31.3	12	1	34.8	6	1
10	GW 512	N-811	29.0	25	0	27.2	25	0	28.4	25	0
11	HD 3297	N-812	33.4	13	0	32.0	8	1	33.0	12	0
12	MP 1345	N-813	31.2	21	0	30.8	13	0	31.1	20	0
13	MPO 1347 (d)	N-815	32.2	18	0	27.3	23	0	30.7	21	0
14	MACS 4075 (d)	N-817	33.6	12	0	27.4	22	0	31.7	18	0
15	NIAW 3386	N-818	36.4	5	1	33.8	3	1	35.6	2	1
16	CG 1030	N-819	34.7	9	0	31.9	9	1	33.9	9	0
17	HD 3296	N-820	37.2	2	1	33.3	4	1	36.0	1	1
18	AKAW 5082	N-821	36.9	4	1	32.1	7	1	35.4	4	1
19	MACS 6719	N-822	31.8	20	0	31.6	10	1	31.8	17	0
20	DBW 277	N-823	37.2	3	1	32.2	6	1	35.6	3	1
21	HP 1970	N-825	37.4	1	1	28.8	17	0	34.7	7	1
22	DBW 110 (C)	N-802	35.2	8	0	34.0	2	1	34.8	5	1
23	HI 1605 (C)	N-814	34.4	10	0	34.1	1	1	34.3	8	0
24	UAS 466 (d) (C)	N-816	30.0	23	0	27.6	20	0	29.3	23	0
25	HI 8627 (d) (C)	N-824	35.5	7	1	28.2	19	0	33.2	11	0
Mean			33.6			30.5			32.7		
S.E.M			0.9			1.3			0.7		
C.D. (10%)			2.0			3.1			1.7		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-5B-RI-TS-TAD, 2017-18**

SN	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 1350 (d)	N-801	52-74	65	93-128	116	67-112	93	20	Ey-M	A	H	39-60	50
2	NIDW 1149 (d)	N-803	52-71	60	93-126	112	55-89	75	20	Ey-M	A	H	38-69	51
3	MP 3507	N-804	56-85	67	96-129	117	58-108	83	0	Ey-M	A	H	31-41	37
4	HI 8815 (d)	N-805	58-79	68	98-130	117	52-103	70	0	Ey-M	A	H	37-56	48
5	UAS 470 (d)	N-806	59-78	70	99-128	117	69-105	84	5	Ey-M	A	SH-H	33-58	46
6	HI 8814 (d)	N-807	55-79	69	100-128	118	67-95	81	10	Ey-M	A	H	33-56	45
7	DBW 280	N-808	60-99	75	100-132	120	69-102	88	0	Ey-M	A	H	30-48	37
8	DBW 276	N-809	64-85	74	103-136	121	72-108	88	0	Ey-M	A	H	31-45	41
9	MP 1346	N-810	52-84	64	93-129	114	69-106	86	0	Ey-M	A	H	34-53	44
10	GW 512	N-811	47-63	54	91-126	109	50-106	73	0	Ey-M	A	H	38-49	43
11	HD 3297	N-812	57-85	72	100-136	118	65-110	85	5	Ey-M	A	H	29-50	38
12	MP 1345	N-813	60-80	70	96-127	118	62-99	77	5	Ey-M	A	H	31-55	41
13	MPO 1347 (d)	N-815	48-71	57	94-127	111	62-104	84	0	Ey-M	A	H	38-59	51
14	MACS 4075 (d)	N-817	47-71	58	93-126	112	68-130	93	20	Ey-M	A	H	39-58	50
15	NIAW 3386	N-818	51-77	62	93-129	113	67-107	87	0	Ey-M	A	H	36-50	44
16	CG 1030	N-819	57-87	70	97-127	118	75-108	93	0	Ey-M	A	SH-H	34-51	43
17	HD 3296	N-820	56-84	69	95-129	116	73-103	89	0	Ey-M	A	H	31-51	43
18	AKAW 5082	N-821	58-76	66	99-127	115	70-108	91	0	Ey-M	A	H	28-46	39
19	MACS 6719	N-822	48-72	58	95-126	112	68-114	95	5	Ey-M	A	H	38-56	47
20	DBW 277	N-823	54-85	67	96-128	116	67-100	85	0	Ey-M	A	H	34-49	41
21	HP 1970	N-825	55-85	68	96-128	116	67-104	88	5	Ey-M	A	H	30-47	38
22	DBW 110 (C)	N-802	53-77	64	94-127	113	66-112	86	0	Ey-M	A	H	38-53	46
23	HI 1605 (C)	N-814	53-87	65	93-126	112	72-106	89	0	Ey-M	A	SH-H	34-47	41
24	UAS 466 (d) (C)	N-816	54-77	68	99-128	116	63-105	82	0	Ey-M	A	H	31-52	40
25	HI 8627 (d) (C)	N-824	60-80	71	101-128	119	67-105	86	10	Ey-M	A	H	37-53	45

1. Ancillary data from Arnej, Bilaspur, Dhandhuaka, Indore, Jabalpur, Junagadh, Powarkheda, Sagar, Udaipur, Vijapur and Tancha.
2. No rust incidence was reported from any centre; Lodging data from Arnej, Indore and Powarkheda centres.

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-5B-RI-TS-TAD, 2017-18**

SN	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 1350 (d)	N-801	54-62	57	104-114	109	78-89	82	35	Ey-M	A	SH-H	41-56	50
2	NIDW 1149 (d)	N-803	43-54	49	98-114	105	69-78	72	5	Ey-M	A	H	47-52	50
3	MP 3507	N-804	61-64	63	107-117	111	58-75	66	0	Ey-M	A	SH-H	30-34	32
4	HI 8815 (d)	N-805	61-65	62	104-118	111	57-65	61	5	Ey-M	A	H	45-47	46
5	UAS 470 (d)	N-806	63-69	65	105-119	111	67-78	72	25	Ey-M	A	SH-H	37-44	41
6	HI 8814 (d)	N-807	62-65	63	106-116	111	71-79	75	0	Ey-M	A	H	40-45	43
7	DBW 280	N-808	51-73	62	101-113	108	68-84	75	0	Ey-M	A	H	28-35	32
8	DBW 276	N-809	62-73	69	110-122	114	71-86	76	0	Ey-M	A	H	38-39	39
9	MP 1346	N-810	49-59	55	102-115	106	69-85	75	5	Ey-M	A	SH-H	37-43	40
10	GW 512	N-811	51-71	61	104-115	110	50-63	56	0	Ey-M	A	H	36-45	41
11	HD 3297	N-812	59-74	66	105-120	111	67-78	72	0	Ey-M	A	H	31-36	34
12	MP 1345	N-813	48-67	58	103-115	107	64-76	70	0	Ey-M	A	H	25-40	36
13	MPO 1347 (d)	N-815	47-57	51	104-115	107	59-74	65	0	Ey-M	A	H	42-53	48
14	MACS 4075 (d)	N-817	53-61	57	102-112	108	80-87	83	0	Ey-M	A	H	46-50	48
15	NIAW 3386	N-818	51-58	54	102-114	107	68-78	72	0	Ey-M	A	H	33-40	37
16	CG 1030	N-819	52-68	60	104-115	108	65-86	74	0	Ey-M	A	SH-H	35-42	40
17	HD 3296	N-820	48-66	57	103-119	109	70-85	76	0	Ey-M	A	H	36-39	38
18	AKAW 5082	N-821	48-67	58	101-120	109	73-90	80	0	Ey-M	A	SH-H	30-33	32
19	MACS 6719	N-822	45-55	49	102-113	106	72-89	80	0	Ey-M	A	H	43-51	47
20	DBW 277	N-823	63-73	69	106-118	113	68-80	72	0	Ey-M	A	H	33-37	35
21	HP 1970	N-825	54-67	60	106-119	110	69-80	75	0	Ey-M	A	H	28-34	31
22	DBW 110 (C)	N-802	51-64	57	102-112	107	68-81	72	0	Ey-M	A	H	38-40	39
23	HI 1605 (C)	N-814	49-67	56	101-114	107	74-81	77	0	Ey-M	A	SH-H	35-38	37
24	UAS 466 (d) (C)	N-816	59-73	65	105-117	111	69-78	73	0	Ey-M	A	SH-H	36-40	38
25	HI 8627 (d) (C)	N-824	52-69	61	105-121	111	68-83	75	0	Ey-M	A	H	38-46	42

1. Ancillary data from Bagalkot, Dharwad, Niphad and Pune.; No rust incidence was reported from any centre.
2. Lodging data from Pune centre.

Northern Hills Zone

1714-AVT-RF-ES-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	HP									Uttarakhand			J&K		
			Malan			Shimla			Bajaura			Majhera			Khudwani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 666	NHESZ 1702	36.1	4	0	28.8	2	1	26.2	3	1	35.3	1	1	26.2	12	0
2	HS 665	NHESZ 1703	31.1	8	0	25.4	8	0	23.7	7	0	31.4	2	1	33.6	9	0
3	VL 1015	NHESZ 1704	24.4	11	0	26.1	6	0	24.9	5	0	23.3	12	0	34.9	7	0
4	HPW 450	NHESZ 1705	30.0	9	0	28.4	3	1	23.2	8	0	23.6	11	0	47.4	3	0
5	HS 664	NHESZ 1706	39.0	3	0	27.7	5	0	25.4	4	0	29.8	5	1	40.3	5	0
6	HPW 451	NHESZ 1707	33.1	6	0	25.1	9	0	21.0	12	0	28.8	8	0	50.4	2	0
7	VL 1016	NHESZ 1708	19.8	12	0	23.8	10	0	21.8	11	0	29.2	7	0	43.4	4	0
8	UP 3016	NHESZ 1709	26.5	10	0	22.2	12	0	22.3	9	0	30.8	3	1	32.8	10	0
9	VL 1014	NHESZ 1710	41.8	1	1	28.2	4	1	28.2	1	1	29.5	6	1	32.7	11	0
10	HS 542 (C)	NHESZ 1701	35.0	5	0	25.6	7	0	26.7	2	1	30.5	4	1	38.5	6	0
11	VL 829 (C)	NHESZ 1711	32.3	7	0	23.1	11	0	21.8	10	0	28.4	10	0	34.1	8	0
12	HPW 251 (C)	NHESZ 1712	41.1	2	1	29.8	1	1	24.5	6	0	28.8	9	0	54.8	1	1
Mean			32.5			26.2			24.1			29.1			39.1		
S.E.M			1.2			0.7			1.0			2.5			1.1		
C.D. (10%)			2.8			1.8			2.5			6.0			2.7		
C.V.			9.0			6.9			10.6			19.3			5.8		
D.O.S. (d.m.y)			10.10.2017			03.10.2017			10.10.2017			07.10.2017			09.10.2017		

Trials proposed & conducted = 7
Trials not reported (2) = Almora (LSM), Bara (RMT)

1714-AVT-RF-ES-TAS-NHZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	HP			Uttarakhand			J&K			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 666	NHESZ 1702	30.4	4	0	35.3	1	1	26.2	12	0	30.5	7	0
2	HS 665	NHESZ 1703	26.7	7	0	31.4	2	1	33.6	9	0	29.0	8	0
3	VL 1015	NHESZ 1704	25.1	10	0	23.3	12	0	34.9	7	0	26.7	12	0
4	HPW 450	NHESZ 1705	27.2	6	0	23.6	11	0	47.4	3	0	30.5	6	0
5	HS 664	NHESZ 1706	30.7	3	0	29.8	5	1	40.3	5	0	32.4	2	0
6	HPW 451	NHESZ 1707	26.4	8	0	28.8	8	0	50.4	2	0	31.7	4	0
7	VL 1016	NHESZ 1708	21.8	12	0	29.2	7	0	43.4	4	0	27.6	10	0
8	UP 3016	NHESZ 1709	23.6	11	0	30.8	3	1	32.8	10	0	26.9	11	0
9	VL 1014	NHESZ 1710	32.7	1	1	29.5	6	1	32.7	11	0	32.1	3	0
10	HS 542 (C)	NHESZ 1701	29.1	5	0	30.5	4	1	38.5	6	0	31.3	5	0
11	VL 829 (C)	NHESZ 1711	25.7	9	0	28.4	10	0	34.1	8	0	27.9	9	0
12	HPW 251 (C)	NHESZ 1712	31.8	2	1	28.8	9	0	54.8	1	1	35.8	1	1
G.M.			27.6			29.1			39.1			30.2		
S.E. (M)			0.6			2.5			1.1			0.7		
C.D. (10%)			1.4			6.0			2.7			1.5		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RF-ES-TAS, 2017-18**

SN	Variety	Code	Disease Reactions		Agronomic Characteristics							Grain Characteristics			
			Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS 666	NHESZ 1702	0	4	113-189	143	179-246	202	79-114	95	Ey-M	A	SH	43-58	50
2	HS 665	NHESZ 1703	0	0	114-191	147	183-241	203	78-111	93	Ey-M	A	SH	41-47	45
3	VL 1015	NHESZ 1704	tS	3	117-187	147	187-243	204	81-115	98	M	A	SH	41-46	43
4	HPW 450	NHESZ 1705	0	4	110-191	146	184-246	204	82-116	94	M	A	SH	42-56	46
5	HS 664	NHESZ 1706	5S	4	117-189	146	182-244	203	93-117	103	M	A	SH	42-57	48
6	HPW 451	NHESZ 1707	0	3	118-191	149	185-241	205	78-120	94	M	A	SH	38-50	43
7	VL 1016	NHESZ 1708	30S	3	115-186	144	183-240	201	70-118	94	M	A	SH	43-50	45
8	UP 3016	NHESZ 1709	0	3	114-183	143	183-239	201	76-112	97	M	A	SH	40-50	44
9	VL 1014	NHESZ 1710	20S	3	116-191	147	183-244	204	88-120	98	Ey-M	A	SH	37-45	42
10	HS 542 (C)	NHESZ 1701	10S	0	94-190	140	186-240	203	80-115	94	Ey-M	A	SH	44-52	49
11	VL 829 (C)	NHESZ 1711	0	4	117-187	147	186-242	205	87-118	101	M	A	SH	43-47	45
12	HPW 251 (C)	NHESZ 1712	0	3	92-190	140	188-240	203	77-116	90	M	A	SH	38-47	44

1. Ancillary data from Majhera, Bajaura, Malan, Shimla and Khudwani.
2. Brown rust and Powdery mildew data from Malan.

1715-AVT-RF-TS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	HP													Uttarakhand			J&K		
			Bajaura			Malan			Shimla			Berthin			Dhaulakuan			Majhera			Khudwani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 634	NHTSZ 1702	23.0	7	0	26.8	3	1	10.5	7	0	37.3	4	1	50.6	4	1	22.1	4	1	68.8	1	1
2	HPW 441	NHTSZ 1705	25.5	2	0	27.7	1	1	18.5	3	0	36.4	5	1	50.7	3	1	22.6	2	1	59.8	5	0
3	HPW 442	NHTSZ 1706	25.5	2	0	24.7	6	0	15.3	5	0	40.8	1	1	51.6	1	1	16.9	7	0	63.6	2	1
4	HPW 349 (C)	NHTSZ 1701	23.4	5	0	24.6	7	0	16.1	4	0	39.4	3	1	49.6	5	1	21.3	5	1	61.5	4	0
5	VL 907 (C)	NHTSZ 1703	25.3	4	0	27.3	2	1	22.3	1	1	35.4	6	0	48.5	7	1	18.4	6	0	49.9	7	0
6	HS 507 (C)	NHTSZ 1704	23.4	6	0	26.6	4	1	14.9	6	0	33.0	7	0	48.8	6	1	24.1	1	1	59.4	6	0
7	HS 562 (C)	NHTSZ 1707	29.0	1	1	25.8	5	1	19.3	2	0	39.6	2	1	51.0	2	1	22.3	3	1	61.7	3	0
G.M.			25.0			26.2			16.7			37.4			50.1			21.1			60.7		
S.E. (M)			1.1			1.2			0.6			2.2			1.4			1.5			2.5		
C.D. (10%)			2.6			2.9			1.5			5.3			3.3			3.7			6.2		
C.V.			8.5			11.4			8.9			14.4			6.7			17.7			8.4		
D.O.S.(d.m.y.)			28.10.2017			31.10.2017			30.10.2017			31.10.2017			25.10.2017			31.10.2017			16.10.2017		

Trials proposed & conducted = 11
Trials not reported (4) = Akrot (LSM), Almora (LSM), Ranichauri (LSM), Wadura (UY)

1715-AVT-RF-TS-TAS-NHZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	HP			Uttarakhand			J&K			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 634	NHTSZ 1702	29.7	6	0	22.1	4	1	68.8	1	1	34.2	3	1
2	HPW 441	NHTSZ 1705	31.8	2	1	22.6	2	1	59.8	5	0	34.5	2	1
3	HPW 442	NHTSZ 1706	31.6	4	1	16.9	7	0	63.6	2	1	34.1	4	0
4	HPW 349 (C)	NHTSZ 1701	30.6	5	0	21.3	5	1	61.5	4	0	33.7	5	0
5	VL 907 (C)	NHTSZ 1703	31.8	3	1	18.4	6	0	49.9	7	0	32.4	7	0
6	HS 507 (C)	NHTSZ 1704	29.4	7	0	24.1	1	1	59.4	6	0	32.9	6	0
7	HS 562 (C)	NHTSZ 1707	32.9	1	1	22.3	3	1	61.7	3	0	35.5	1	1
G.M.			31.1			21.1			60.7			33.9		
S.E. (M)			0.6			1.5			2.5			0.6		
C.D. (10%)			1.5			3.7			6.2			1.4		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RF-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
			Yl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS 634	NHTSZ 1702	10MR	5S	3	99-180	127	156-136	180	72-107	89	Ey-M	A	SH	38-45	41
2	HPW 441	NHTSZ 1705	5MR	0	4	107-184	134	159-233	184	81-108	91	Ey-M	A	SH	38-45	42
3	HPW 442	NHTSZ 1706	20MR	0	3	101-185	131	159-236	186	81-110	92	Ey-M	A	SH	39-45	42
4	HPW 349 (C)	NHTSZ 1701	5MR	0	4	99-182	127	154-230	180	77-108	88	Ey-M	A	SH	38-42	40
5	VL 907 (C)	NHTSZ 1703	5S	tS	3	101-179	128	157-229	180	77-107	90	Ey-M	A	SH	38-45	42
6	HS 507 (C)	NHTSZ 1704	10MR	10S	3	103-181	131	158-237	183	75-107	86	Ey-M	A	SH	36-46	40
7	HS 562 (C)	NHTSZ 1707	5MR	tS	4	103-194	132	156-237	183	78-111	89	Ey-M	A	SH	38-47	42

1. Ancillary data from Majhera, Bajaura, Malan, Shimla, Berthin, Dhaulakuan and Khudwani.
2. Yellow rust, Brown rust and Powdery mildew data from Malan.

1715-AVT-IR-TS-TAS-NHZ, 2017-18
Location wise and Zonal Mean Yield (q/ha)

SN	Variety	Code	HP						Uttarakhand			ZONAL		
			Malan			Bajaura			Almora					
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 634	NHTSZ 1702	51.3	4	0	39.0	3	0	45.0	7	0	45.1	6	0
2	HPW 441	NHTSZ 1705	54.3	2	1	39.4	2	0	53.4	2	1	49.0	2	1
3	HPW 442	NHTSZ 1706	51.3	5	0	36.8	5	0	50.5	4	0	46.2	5	0
4	HPW 349 (C)	NHTSZ 1701	47.5	7	0	36.5	7	0	47.2	6	0	43.7	7	0
5	VL 907 (C)	NHTSZ 1703	51.0	6	0	37.6	4	0	52.5	3	1	47.0	4	0
6	HS 507 (C)	NHTSZ 1704	56.0	1	1	36.7	6	0	49.1	5	0	47.3	3	0
7	HS 562 (C)	NHTSZ 1707	52.2	3	1	42.3	1	1	55.5	1	1	50.0	1	1
G.M.			52.0			38.3			50.4			46.9		
S.E. (M)			1.6			0.9			1.8			0.9		
C.D. (10%)			3.9			2.1			4.4			2.0		
C.V.			7.6			5.7			8.9					
D.O.S.(d.m.y.)			14.11.2017			14.11.2017			17.11.2017					

Trials proposed & conducted = 4
Trials not reported (1) = Shimla (LSM)

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-IR-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
			Yl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS 634	NHTSZ 1702	tR	10MS	0	120-130	124	161-182	172	95-109	101	M	A	SH	47-48	48
2	HPW 441	NHTSZ 1705	0	0	3	125-132	129	171-187	179	93-112	103	M	A	SH	45-46	45
3	HPW 442	NHTSZ 1706	tS	0	4	123-130	127	168-182	175	97-115	104	M	A	SH	44-45	45
4	HPW 349 (C)	NHTSZ 1701	0	0	4	120-131	125	165-183	173	90-109	99	M	A	SH	42-44	43
5	VL 907 (C)	NHTSZ 1703	10S	0	6	123-129	125	167-181	174	99-113	104	M	A	SH	44-46	45
6	HS 507 (C)	NHTSZ 1704	5S	0	3	122-131	126	166-183	174	91-108	99	M	A	SH	41-45	43
7	HS 562 (C)	NHTSZ 1707	0	0	3	123-134	129	171-186	178	93-108	101	M	A	SH	44-46	45

1. Ancillary data from Bajaura, Malan and Almora.
2. Yellow rust data from Malan and Bajaura; Brown rust and Powdery mildew data from Malan.

AVT-IR-TS-TAS, 2017-18
Individual station rust data

SN	Variety	Code	Yellow rust	
			Bajaura	Malan
1	HS 634	NHTSZ 1702	tR	0
2	HPW 441	NHTSZ 1705	0	0
3	HPW 442	NHTSZ 1706	0	tS
4	HPW 349 (C)	NHTSZ 1701	0	0
5	VL 907 (C)	NHTSZ 1703	10S	0
6	HS 507 (C)	NHTSZ 1704	5S	tS
7	HS 562 (C)	NHTSZ 1707	0	0

1713-AVT-RI-LS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Himachal Pradesh												Sikkim			Manipur			WB		
			Malan			Bajaura			Dhaulakuan			Una			Gangtok			Imphal			Kalimpong		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL 3017	NHLSZ 1701	26.2	4	0	30.0	4	0	38.8	2	1	32.4	2	1	26.1	2	1	20.7	6	0	18.9	8	0
2	UP 3017	NHLSZ 1702	23.2	6	0	22.9	9	0	32.4	7	0	26.5	6	0	17.0	8	0	16.5	10	0	16.8	10	0
3	VL 3016	NHLSZ 1703	26.5	2	0	26.3	8	0	36.7	4	0	28.9	4	0	24.4	3	1	17.4	9	0	22.1	4	0
4	HS 662	NHLSZ 1704	16.5	9	0	28.1	7	0	29.6	10	0	25.3	9	0	22.9	4	0	19.0	8	0	20.3	6	0
5	HS 661	NHLSZ 1707	13.3	10	0	28.6	5	0	30.9	8	0	22.6	10	0	22.2	5	0	22.3	4	0	23.0	3	0
6	HS 660	NHLSZ 1708	26.5	3	0	28.3	6	0	33.2	5	0	31.3	3	0	20.7	7	0	26.5	2	1	23.4	2	0
7	VL 3018	NHLSZ 1709	23.5	5	0	30.2	3	0	38.4	3	1	26.2	7	0	12.6	9	0	30.1	1	1	20.9	5	0
8	HPW 459	NHLSZ 1710	23.2	7	0	20.3	10	0	33.2	5	0	28.6	5	0	21.0	6	0	19.1	7	0	23.9	1	1
9	HS 490 (C)	NHLSZ 1705	29.0	1	1	33.3	1	1	29.9	9	0	25.6	8	0	26.4	1	1	26.5	3	1	19.3	7	0
10	VL 892 (C)	NHLSZ 1706	20.5	8	0	32.3	2	1	39.2	1	1	36.3	1	1	4.7	10	0	21.9	5	0	18.2	9	0
G.M.			22.8			28.0			34.2			28.4			19.8			22.0			20.7		
S.E. (M)			1.0			1.0			0.9			2.0			1.1			1.7			0.1		
C.D. (10%)			2.5			2.3			2.1			4.7			2.5			4.0			0.2		
C.V.			11.1			8.6			6.3			17.1			13.3			18.6			0.9		
D.O.S.(d.m.y.)			02.12.2017			04.12.2017			04.12.2017			14.12.2017			09.12.2017			01.12.2017			15.12.2017		

Trials proposed & conducted = 11

Trials not Reported (4) = Almora (LSM), Majhera (LSM), Shimla (LSM), Ranichauri (LSM)

1713-AVT-RI-LS-TAS-NHZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	HP			Sikkim			Manipur			WB			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL 3017	NHLSZ 1701	31.9	2	1	26.1	2	1	20.7	6	0	18.9	8	0	27.6	1	1
2	UP 3017	NHLSZ 1702	26.3	8	0	17.0	8	0	16.5	10	0	16.8	10	0	22.2	10	0
3	VL 3016	NHLSZ 1703	29.6	4	0	24.4	3	1	17.4	9	0	22.1	4	0	26.0	4	0
4	HS 662	NHLSZ 1704	24.9	9	0	22.9	4	0	19.0	8	0	20.3	6	0	23.1	9	0
5	HS 661	NHLSZ 1707	23.9	10	0	22.2	5	0	22.3	4	0	23.0	3	0	23.3	8	0
6	HS 660	NHLSZ 1708	29.8	3	0	20.7	7	0	26.5	2	1	23.4	2	0	27.1	3	1
7	VL 3018	NHLSZ 1709	29.6	5	0	12.6	9	0	30.1	1	1	20.9	5	0	26.0	5	0
8	HPW 459	NHLSZ 1710	26.3	7	0	21.0	6	0	19.1	7	0	23.9	1	1	24.2	7	0
9	HS 490 (C)	NHLSZ 1705	29.4	6	0	26.4	1	1	26.5	3	1	19.3	7	0	27.1	2	1
10	VL 892 (C)	NHLSZ 1706	32.1	1	1	4.7	10	0	21.9	5	0	18.2	9	0	24.7	6	0
G.M.			28.4			19.8			22.0			20.7			25.1		
S.E. (M)			0.6			1.1			1.7			0.1			0.5		
C.D. (10%)			1.5			2.5			4.0			0.2			1.1		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RI-LS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions				Agronomic Characteristics							Grain Characteristics			
			Yl	ACl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	VL 3017	NHLSZ 1701	tR	0.1	0	4	46-115	81	87-159	133	85-95	90	Ey	A	SH-H	28-61	43
2	UP 3017	NHLSZ 1702	30S	15.3	tS	3	57-119	90	101-161	138	80-96	88	Ey	A	SH-H	25-55	41
3	VL 3016	NHLSZ 1703	10S	2.5	5S	3	50-120	84	95-162	136	75-97	88	Ey	A	SH	26-57	44
4	HS 662	NHLSZ 1704	0	0.0	0	3	57-116	87	100-161	138	83-107	97	Ey	A	SH	30-54	43
5	HS 661	NHLSZ 1707	0	0.0	0	3	58-118	88	102-159	138	76-98	85	Ey	A	SH	23-53	39
6	HS 660	NHLSZ 1708	0	0.0	0	4	55-115	87	93-164	138	80-100	90	Ey	A	SH	23-50	39
7	VL 3018	NHLSZ 1709	0	0.0	0	3	49-116	83	93-159	136	66-97	80	Ey	A	SH	24-50	39
8	HPW 459	NHLSZ 1710	0	0.0	0	3	58-116	87	104-162	140	69-100	81	Ey	A	SH-H	31-48	41
9	HS 490 (C)	NHLSZ 1705	tR	0.1	tS	3	54-117	88	97-163	138	84-116	93	Ey	A	SO	37-63	45
10	VL 892 (C)	NHLSZ 1706	tR	0.1	tR	3	49-119	82	91-160	135	84-99	90	Ey	A	SH	25-54	39

1. Ancillary data from Bajaura, Dhaulakuan, Malan, Una, Kalimpong, Imphal and Gangtok.
2. Yellow rust data from Bajaura, Una, Dhaulakuan and Malan; Brown rust data from Malan and Una.
3. Powdery mildew data from Malan.

IVT/AVT-RI-LS-TAS, 2017-18
Individual station rust data

SN	Variety	Code	Yellow rust				Brown rust	
			Bajaura	Dhaulakuan	Malan	Una	Malan	Una
1	VL 3017	NHLSZ 1701	tR	0	0	0	0	0
2	UP 3017	NHLSZ 1702	30S	10S	5S	20MS	tS	tR
3	VL 3016	NHLSZ 1703	0	0	0	10S	5S	0
4	HS 662	NHLSZ 1704	0	0	0	0	0	0
5	HS 661	NHLSZ 1707	0	0	0	0	0	0
6	HS 660	NHLSZ 1708	0	0	0	0	0	0
7	VL 3018	NHLSZ 1709	0	0	0	0	0	0
8	HPW 459	NHLSZ 1710	0	0	0	0	0	0
9	HS 490 (C)	NHLSZ 1705	tR	0	0	0	tS	tR
10	VL 892 (C)	NHLSZ 1706	tR	0	0	0	0	tR

1716-IVT-RF-TS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand			HP											J&K		
			Almora			Malan			Shimla			Bajaura			Dhaulakuan			Khudwani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW 454	NHIVT 1701	21.1	13	0	27.4	3	1	18.8	12	0	24.9	11	0	34.8	16	0	37.1	11	0
2	VL 2034	NHIVT 1702	26.9	1	1	18.9	15	0	30.6	3	0	28.3	3	0	37.7	15	0	39.2	8	0
3	VL 2031	NHIVT 1703	22.0	8	0	19.1	14	0	31.9	2	0	28.2	4	0	37.9	14	0	33.2	15	0
4	HS 650	NHIVT 1704	21.8	9	0	22.7	12	0	22.2	8	0	27.9	7	0	41.1	7	1	34.4	13	0
5	VL 2033	NHIVT 1705	22.1	7	0	22.6	13	0	12.6	15	0	21.8	16	0	42.2	4	1	38.0	10	0
6	HPW 455	NHIVT 1706	17.8	16	0	24.1	10	0	24.8	6	0	27.9	6	0	44.0	2	1	44.5	5	0
7	HPW 453	NHIVT 1707	20.6	14	0	26.1	5	0	21.0	10	0	27.7	8	0	40.4	8	0	44.8	3	0
8	UP 3014	NHIVT 1708	26.8	2	1	24.1	9	0	21.3	9	0	25.6	10	0	38.2	13	0	38.3	9	0
9	HS 652	NHIVT 1709	19.1	15	0	30.2	1	1	34.9	1	1	28.2	5	0	44.6	1	1	53.5	1	1
10	DBW 279	NHIVT 1712	21.2	12	0	25.9	6	0	22.6	7	0	30.8	1	1	42.2	4	1	44.6	4	0
11	VL 2032	NHIVT 1713	21.6	10	0	25.4	8	0	16.9	13	0	23.3	15	0	40.2	9	0	36.2	12	0
12	HS 651	NHIVT 1714	22.9	5	1	16.0	16	0	16.0	14	0	25.7	9	0	41.7	6	1	32.7	16	0
13	HS 653	NHIVT 1715	26.2	3	1	26.7	4	0	25.5	5	0	24.6	13	0	40.0	11	0	46.9	2	0
14	UP 3015	NHIVT 1716	21.2	11	0	25.5	7	0	12.5	16	0	24.7	12	0	43.1	3	1	44.2	6	0
15	HS 507 (C)	NHIVT 1710	22.4	6	1	29.8	2	1	19.6	11	0	23.6	14	0	39.7	12	0	34.2	14	0
16	HS 562 (C)	NHIVT 1711	25.6	4	1	24.1	11	0	26.4	4	0	28.8	2	1	40.2	10	0	40.8	7	0
G.M.			22.4			24.3			22.3			26.4			40.5			40.2		
S.E. (M)			1.9			1.4			0.8			0.9			1.6			2.3		
C.D. (10%)			4.6			3.3			2.0			2.2			3.8			5.6		
C.V.			17.3			11.3			7.4			7.0			7.8			11.7		
D.O.S. (d.m.y.)			17.10.2017			30.10.2017			28.10.2017			27.10.2017			25.10.2017			23.10.2017		

Trials proposed & conducted = 8
Trials not Reported (2) = Wadura (UY), Ranichauri (LSM)

1716-IVT-RF-TS-TAS-NHZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand			HP			J&K			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW 454	NHIVT 1701	21.1	13	0	26.5	12	0	37.1	11	0	27.4	13	0
2	VL 2034	NHIVT 1702	26.9	1	1	28.9	7	0	39.2	8	0	30.3	6	0
3	VL 2031	NHIVT 1703	22.0	8	0	29.3	5	0	33.2	15	0	28.7	9	0
4	HS 650	NHIVT 1704	21.8	9	0	28.5	9	0	34.4	13	0	28.3	11	0
5	VL 2033	NHIVT 1705	22.1	7	0	24.8	16	0	38.0	10	0	26.6	15	0
6	HPW 455	NHIVT 1706	17.8	16	0	30.2	3	0	44.5	5	0	30.5	5	0
7	HPW 453	NHIVT 1707	20.6	14	0	28.8	8	0	44.8	3	0	30.1	7	0
8	UP 3014	NHIVT 1708	26.8	2	1	27.3	11	0	38.3	9	0	29.1	8	0
9	HS 652	NHIVT 1709	19.1	15	0	34.5	1	1	53.5	1	1	35.1	1	1
10	DBW 279	NHIVT 1712	21.2	12	0	30.4	2	0	44.6	4	0	31.2	3	0
11	VL 2032	NHIVT 1713	21.6	10	0	26.5	13	0	36.2	12	0	27.3	14	0
12	HS 651	NHIVT 1714	22.9	5	1	24.9	15	0	32.7	16	0	25.8	16	0
13	HS 653	NHIVT 1715	26.2	3	1	29.2	6	0	46.9	2	0	31.6	2	0
14	UP 3015	NHIVT 1716	21.2	11	0	26.4	14	0	44.2	6	0	28.5	10	0
15	HS 507 (C)	NHIVT 1710	22.4	6	1	28.2	10	0	34.2	14	0	28.2	12	0
16	HS 562 (C)	NHIVT 1711	25.6	4	1	29.9	4	0	40.8	7	0	31.0	4	0
G.M.			22.4			28.4			40.2			29.4		
S.E. (M)			1.9			0.6			2.3			0.7		
C.D. (10%)			4.6			1.4			5.6			1.5		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: IVT-RF-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
			Yl	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HPW 454	NHIVT 1701	5MR	0	3	89-176	135	166-233	195	78-113	93	Ey	A	SH	38-52	45
2	VL 2034	NHIVT 1702	10MR	tS	3	98-174	137	167-231	193	79-113	91	Ey	A	SH	39-48	44
3	VL 2031	NHIVT 1703	10MR	0	4	80-177	133	160-235	194	89-116	99	Ey	A	SH	39-51	45
4	HS 650	NHIVT 1704	5R	0	3	104-180	142	159-237	195	79-112	93	Ey	A	SH	38-46	43
5	VL 2033	NHIVT 1705	5R	0	3	88-175	131	157-232	190	73-109	87	Ey	A	SH	40-52	45
6	HPW 455	NHIVT 1706	10MR	0	1	94-174	136	158-231	192	76-109	87	Ey	A	SH	37-49	43
7	HPW 453	NHIVT 1707	5R	0	3	78-174	132	156-231	193	72-115	92	Ey	A	SH	38-51	45
8	UP 3014	NHIVT 1708	5S	0	5	103-176	140	161-233	194	86-112	96	Ey	A	SH	37-48	43
9	HS 652	NHIVT 1709	10MR	0	5	106-179	141	162-238	195	70-107	86	Ey	A	SH	35-40	38
10	DBW 279	NHIVT 1712	tR	0	3	96-179	138	156-239	194	86-113	95	Ey	A	SH	38-48	43
11	VL 2032	NHIVT 1713	5S	5S	3	90-173	133	161-230	191	71-102	84	Ey	A	SH	39-52	45
12	HS 651	NHIVT 1714	5R	0	3	99-174	136	160-231	192	80-117	96	Ey	A	SH	36-43	40
13	HS 653	NHIVT 1715	5MR	tMS	4	113-180	146	163-238	196	76-120	96	Ey	A	SH	29-41	34
14	UP 3015	NHIVT 1716	30R	0	7	101-176	137	163-234	193	75-103	84	Ey	A	SH	35-46	40
15	HS 507 (C)	NHIVT 1710	5R	tS	3	107-179	142	162-239	195	75-113	92	Ey	A	SH	36-46	40
16	HS 562 (C)	NHIVT 1711	5R	5S	3	103-178	142	159-237	196	81-111	91	Ey	A	SH	38-48	41

1. Ancillary data from Almora, Bajaura, Dhaulakuan, Malan, Shimla and Khudwani.
2. Yellow rust data from Bajaura and Khudwani; Brown rust data from Almora and Malan.
3. Powdery mildew data from Almora and Malan.

Northern Hills Zone
IVT-RF-TS-TAS, 2017-18
Individual Station Rust Data

SN	Variety	Code	Yellow rust		Brown rust	
			Bajaura	Khudwani	Almora	Malan
1	HPW 454	NHIVT 1701	0	5MR	0	0
2	VL 2034	NHIVT 1702	0	10MR	0	tS
3	VL 2031	NHIVT 1703	0	10MR	0	0
4	HS 650	NHIVT 1704	0	5R	0	0
5	VL 2033	NHIVT 1705	0	5R	0	0
6	HPW 455	NHIVT 1706	0	10MR	0	0
7	HPW 453	NHIVT 1707	0	5R	0	0
8	UP 3014	NHIVT 1708	5S	5R	0	0
9	HS 652	NHIVT 1709	0	10MR	0	0
10	DBW 279	NHIVT 1712	tR	R	0	0
11	VL 2032	NHIVT 1713	5S	10MR	0	5S
12	HS 651	NHIVT 1714	0	5R	0	0
13	HS 653	NHIVT 1715	tR	5MR	tMS	0
14	UP 3015	NHIVT 1716	10MS	30R	0	0
15	HS 507 (C)	NHIVT 1710	tR	5R	tMS	tS
16	HS 562 (C)	NHIVT 1711	0	5R	5S	0

North Western Plains Zone

1721-AVT-IR-TS-TAS-NWPZ 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Delhi			Punjab																
			Delhi			Faridkot			Gurdaspur			Bhatinda			Kapurthala			Ludhiana			Rauni		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UP 2981	NW-TS-101	57.0	9	0	64.3	10	0	51.3	8	0	62.1	6	1	62.6	11	0	64.6	9	0	67.9	5	1
2	DBW 221	NW-TS-102	63.6	3	0	65.1	8	0	57.4	3	1	55.9	14	0	61.7	12	0	71.7	1	1	65.0	8	0
3	DBW 222	NW-TS-104	69.7	1	1	70.5	2	1	57.4	2	1	64.6	3	1	66.5	5	1	71.4	3	1	62.3	12	0
4	BRW 3792	NW-TS-105	48.4	15	0	68.1	4	1	48.4	12	0	53.9	15	0	63.8	9	0	61.3	13	0	67.0	6	1
5	PBW 763	NW-TS-106	55.4	11	0	69.8	3	1	50.1	9	0	65.0	1	1	69.0	3	1	71.5	2	1	71.8	1	1
6	PBW 766	NW-TS-107	55.4	12	0	67.8	5	1	54.3	5	0	64.8	2	1	69.6	1	1	71.1	4	1	71.3	2	1
7	DBW 233	NW-TS-109	59.2	7	0	60.5	15	0	46.0	13	0	64.5	4	1	69.4	2	1	66.4	7	0	66.0	7	0
8	HD 3226^{Q}*	NW-TS-110	60.6	5	0	64.3	11	0	49.9	10	0	60.9	8	1	61.3	14	0	62.3	12	0	55.8	15	0
9	PBW 801^{M}	NW-TS-112	55.4	10	0	63.9	12	0	48.7	11	0	61.5	7	1	58.2	15	0	58.2	15	0	56.5	14	0
10	PBW 800^{M}	NW-TS-114	54.0	14	0	65.0	9	0	45.9	14	0	57.3	13	0	61.7	13	0	63.6	10	0	64.6	9	0
11	DPW 621-50(C)	NW-TS-103	54.5	13	0	71.6	1	1	52.6	6	0	62.6	5	1	63.3	10	0	66.3	8	0	64.5	10	0
12	HD 3086 (C)	NW-TS-108	58.4	8	0	66.5	6	1	56.1	4	1	58.3	11	0	66.2	6	1	66.7	6	0	71.0	3	1
13	HD 2967 (C)	NW-TS-111	61.5	4	0	60.8	14	0	45.0	15	0	60.3	9	1	64.5	7	1	62.7	11	0	69.2	4	1
14	DBW 88 (C)	NW-TS-113	63.8	2	0	63.3	13	0	51.4	7	0	60.3	10	1	67.6	4	1	67.1	5	0	63.5	11	0
15	WH 1105 (C)	NW-TS-115	59.4	6	0	65.1	7	0	58.8	1	1	58.2	12	0	64.2	8	1	60.9	14	0	60.4	13	0
G.M.			58.4			65.8			51.6			60.7			64.6			65.7			65.1		
S.E. (M)			2.3			2.3			1.4			2.2			2.3			1.9			2.4		
C.D. (10%)			5.6			5.6			3.3			5.3			5.6			4.5			5.8		
C.V.			8.0			7.1			5.4			7.4			7.2			5.8			7.4		
D.O.S. (d.m.y.)			14.11.2017			11.11.2017			14.11.17			14.11.2017			13.11.2017			8.11.2017			10.11.2017		

Trials proposed & conducted = 28
Trials not reported (3) = Modipuram (DNR), Rampur (RMT), Dhakrani (LS)

1721-AVT-IR-TS-TAS-NWPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Haryana												J&K			Uttrakhand		
			Hisar			Bawal			Karnal			Rohtak			Jammu			Pantnagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UP 2981	NW-TS-101	63.1	4	0	52.3	9	0	51.7	6	0	68.8	2	1	63.7	1	1	59.3	4	0
2	DBW 221	NW-TS-102	64.3	3	0	54.9	2	1	56.3	3	1	63.1	9	0	58.8	3	0	56.2	9	0
3	DBW 222	NW-TS-104	67.8	1	1	52.6	8	0	62.5	1	1	67.6	4	1	60.3	2	1	58.9	5	0
4	BRW 3792	NW-TS-105	59.1	8	0	49.5	11	0	48.3	11	0	52.5	15	0	47.3	12	0	54.8	11	0
5	PBW 763	NW-TS-106	55.5	13	0	54.5	5	1	50.9	8	0	67.2	6	1	50.2	8	0	60.1	2	0
6	PBW 766	NW-TS-107	59.6	7	0	48.6	13	0	47.1	12	0	67.4	5	1	51.7	5	0	65.5	1	1
7	DBW 233	NW-TS-109	50.2	15	0	47.7	14	0	52.7	4	0	60.4	12	0	50.6	7	0	57.7	6	0
8	HD 3226^{Q}*	NW-TS-110	62.9	5	0	58.3	1	1	49.9	9	0	72.9	1	1	53.3	4	0	60.0	3	0
9	PBW 801^{M}	NW-TS-112	58.5	9	0	53.3	7	1	51.0	7	0	62.5	10	0	44.7	15	0	54.2	12	0
10	PBW 800^{M}	NW-TS-114	55.9	12	0	54.7	3	1	52.3	5	0	61.7	11	0	44.9	14	0	56.9	7	0
11	DPW 621-50 (C)	NW-TS-103	58.2	10	0	47.7	15	0	41.8	15	0	64.3	8	0	47.1	13	0	48.2	14	0
12	HD 3086 (C)	NW-TS-108	65.3	2	1	53.8	6	1	45.8	13	0	60.0	13	0	51.0	6	0	55.6	10	0
13	HD 2967 (C)	NW-TS-111	50.8	14	0	49.5	11	0	49.1	10	0	58.9	14	0	49.6	10	0	51.4	13	0
14	DBW 88 (C)	NW-TS-113	58.1	11	0	51.4	10	0	44.3	14	0	68.4	3	1	49.6	9	0	47.7	15	0
15	WH 1105 (C)	NW-TS-115	59.8	6	0	54.7	3	1	56.4	2	1	65.5	7	0	48.1	11	0	56.4	8	0
G.M.			59.3			52.2			50.7			64.1			51.4			56.2		
S.E. (M)			1.4			2.2			2.7			2.7			1.6			1.0		
C.D. (10%)			3.3			5.3			6.4			6.5			3.9			2.3		
C.V.			4.8			8.5			10.7			8.6			6.3			3.5		
D.O.S. (d.m.y.)			07.11.2017			09.11.2017			12.11.2018			10.11.2017			09.11.2017			14.11.2017		

1721-AVT-IR-TS-TAS-NWPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttrakhand			Uttar Pradesh									Rajasthan					
			Kashipur			Bulandshahr			Bareilly			Nagina			Sriganganagar			Tabiji		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UP 2981	NW-TS-101	59.6	12	0	45.2	15	0	39.0	15	0	47.7	14	0	69.2	1	1	48.2	9	0
2	DBW 221	NW-TS-102	70.8	2	0	52.5	6	0	52.5	2	1	55.3	10	0	66.6	5	1	52.3	2	0
3	DBW 222	NW-TS-104	74.0	1	1	55.8	1	1	51.0	3	0	61.4	5	0	63.6	10	0	41.9	14	0
4	BRW 3792	NW-TS-105	61.5	9	0	54.8	3	1	50.3	4	0	54.5	11	0	58.1	14	0	47.0	10	0
5	PBW 763	NW-TS-106	62.5	6	0	52.7	5	0	41.7	11	0	61.0	6	0	66.8	3	1	50.7	4	0
6	PBW 766	NW-TS-107	52.9	15	0	47.3	13	0	41.0	13	0	64.2	2	1	68.5	2	1	51.8	3	0
7	DBW 233	NW-TS-109	70.0	4	0	49.4	10	0	41.8	10	0	53.6	12	0	64.9	7	1	49.4	7	0
8	HD 3226^{Q}*	NW-TS-110	61.0	10	0	49.4	11	0	42.1	9	0	61.7	4	0	64.8	8	1	53.5	1	1
9	PBW 801^{M}	NW-TS-112	62.1	8	0	51.7	8	0	47.5	7	0	64.5	1	1	66.6	4	1	44.3	11	0
10	PBW 800^{M}	NW-TS-114	59.8	11	0	55.2	2	1	48.6	6	0	59.9	7	0	59.8	12	0	42.5	12	0
11	DPW 621-50 (C)	NW-TS-103	70.2	3	0	54.6	4	0	40.4	14	0	56.1	9	0	54.4	15	0	50.6	5	0
12	HD 3086 (C)	NW-TS-108	63.3	5	0	49.0	12	0	41.5	12	0	56.9	8	0	60.6	11	0	42.1	13	0
13	HD 2967 (C)	NW-TS-111	62.3	7	0	52.4	7	0	53.8	1	1	53.3	13	0	64.3	9	0	48.8	8	0
14	DBW 88 (C)	NW-TS-113	56.3	13	0	46.3	14	0	45.4	8	0	62.7	3	0	65.4	6	1	39.6	15	0
15	WH 1105 (C)	NW-TS-115	54.4	14	0	51.0	9	0	49.9	5	0	44.3	15	0	59.2	13	0	50.1	6	0
G.M.			62.7			51.1			45.8			57.1			63.5			47.5		
S.E. (M)			0.3			0.5			0.6			0.4			1.9			0.5		
C.D. (10%)			0.8			1.1			1.3			1.0			4.6			1.1		
C.V.			1.0			1.8			2.5			1.5			6.1			1.9		
D.O.S. (d.m.y.)			14.11.17			14.11.2017			13.11.2017			14.11.2017			15.11.2017			15.11.2017		

1721-AVT-IR-TS-TAS-NWPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Rajasthan																	
			Kotputli			Hanumangarh			Jodhpur			Alwar			Bikaner			Durgapura		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UP 2981	NW-TS-101	47.8	8	0	59.2	5	0	53.5	1	1	44.4	4	1	43.3	11	0	43.5	10	0
2	DBW 221	NW-TS-102	53.4	2	1	44.7	12	0	41.3	12	0	46.8	1	1	47.9	3	1	48.4	2	1
3	DBW 222	NW-TS-104	39.9	15	0	44.5	13	0	50.5	4	0	39.6	14	0	48.2	2	1	48.4	2	1
4	BRW 3792	NW-TS-105	42.5	12	0	43.9	15	0	40.1	13	0	39.9	12	0	36.7	15	0	36.3	15	0
5	PBW 763	NW-TS-106	49.0	5	0	59.8	4	0	52.6	2	1	43.5	6	1	41.1	13	0	40.6	13	0
6	PBW 766	NW-TS-107	48.0	6	0	69.6	2	1	51.9	3	1	42.8	9	1	42.1	12	0	41.9	12	0
7	DBW 233	NW-TS-109	45.7	9	0	45.5	10	0	46.8	8	0	43.0	8	1	46.0	5	0	46.0	5	0
8	HD 3226^{Q}*	NW-TS-110	55.8	1	1	46.8	7	0	46.3	9	0	44.0	5	1	48.8	1	1	49.0	1	1
9	PBW 801^{M}	NW-TS-112	50.3	3	0	44.2	14	0	44.2	11	0	45.3	3	1	45.0	7	0	45.4	7	0
10	PBW 800^{M}	NW-TS-114	44.1	11	0	47.1	6	0	48.4	6	0	41.8	11	0	43.5	10	0	43.3	11	0
11	DPW 621-50 (C)	NW-TS-103	42.0	14	0	61.4	3	0	48.1	7	0	39.1	15	0	46.0	5	0	46.0	5	0
12	HD 3086 (C)	NW-TS-108	48.0	7	0	70.1	1	1	50.4	5	0	45.5	2	1	47.8	4	1	48.3	4	1
13	HD 2967 (C)	NW-TS-111	50.1	4	0	45.1	11	0	38.1	15	0	43.1	7	1	39.5	14	0	38.3	14	0
14	DBW 88 (C)	NW-TS-113	45.5	10	0	45.8	8	0	38.3	14	0	42.2	10	0	45.0	7	0	44.4	9	0
15	WH 1105 (C)	NW-TS-115	42.4	13	0	45.7	9	0	45.5	10	0	39.9	13	0	43.8	9	0	44.8	8	0
G.M.			47.0			51.6			46.4			42.7			44.3			44.3		
S.E. (M)			1.5			1.6			1.2			1.8			0.7			0.7		
C.D. (10%)			3.5			3.8			2.8			4.4			1.7			1.8		
C.V.			6.2			6.3			5.1			8.6			3.2			3.3		
D.O.S. (d.m.y.)			13.11.2017			15.11.2017			04.11.2018			7.11.2017			10.11.2017			11.11.2017		

1721-AVT-IR-TS-TAS-NWPZ 2017-18
State and Zonal Yield (q/ha)

SN	Variety	Code	STATES																			Zonal		
			Delhi			Punjab			Haryana			J&K			UP			Uttrakhand			Rajasthan					
			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	UP 2981	NW-TS-101	57.0	9	0	62.1	8	0	58.9	5	0	63.7	1	1	44.0	15	0	59.5	6	0	51.1	3	1	55.6	7	0
2	DBW 221	NW-TS-102	63.6	3	0	62.8	6	0	59.6	3	0	58.8	3	0	53.4	4	0	63.5	3	0	50.2	6	0	57.1	2	0
3	DBW 222	NW-TS-104	69.7	1	1	65.5	3	1	62.6	1	1	60.3	2	1	56.1	1	1	66.4	1	1	47.1	10	0	58.0	1	1
4	BRW 3792	NW-TS-105	48.4	15	0	60.4	12	0	52.3	14	0	47.3	12	0	53.2	5	0	58.1	12	0	43.1	15	0	51.5	15	0
5	PBW 763	NW-TS-106	55.4	11	0	66.2	2	1	57.0	6	0	50.2	8	0	51.8	7	0	61.3	4	0	50.5	5	0	56.5	4	0
6	PBW 766	NW-TS-107	55.4	12	0	66.5	1	1	55.7	10	0	51.7	5	0	50.8	10	0	59.2	8	0	52.1	1	1	56.6	3	0
7	DBW 233	NW-TS-109	59.2	7	0	62.1	9	0	52.8	13	0	50.6	7	0	48.2	14	0	63.8	2	0	48.4	8	0	54.1	8	0
8	HD 3226^{Q}*	NW-TS-110	60.6	5	0	59.1	14	0	61.0	2	1	53.3	4	0	51.1	9	0	60.5	5	0	51.1	4	1	55.8	6	0
9	PBW 801^{M}	NW-TS-112	55.4	10	0	57.8	15	0	56.3	7	0	44.7	15	0	54.5	3	0	58.1	11	0	48.2	9	0	53.5	11	0
10	PBW 800^{M}	NW-TS-114	54.0	14	0	59.7	13	0	56.1	9	0	44.9	14	0	54.6	2	0	58.3	10	0	46.3	12	0	53.3	13	0
11	DPW 621-50 (C)	NW-TS-103	54.5	13	0	63.5	5	0	53.0	12	0	47.1	13	0	50.3	11	0	59.2	9	0	48.5	7	0	54.1	9	0
12	HD 3086 (C)	NW-TS-108	58.4	8	0	64.1	4	0	56.2	8	0	51.0	6	0	49.1	12	0	59.5	7	0	51.6	2	1	55.9	5	0
13	HD 2967 (C)	NW-TS-111	61.5	4	0	60.4	11	0	52.1	15	0	49.6	10	0	53.2	6	0	56.9	13	0	45.9	13	0	52.9	14	0
14	DBW 88 (C)	NW-TS-113	63.8	2	0	62.2	7	0	55.6	11	0	49.6	9	0	51.4	8	0	52.0	15	0	45.8	14	0	53.3	12	0
15	WH 1105 (C)	NW-TS-115	59.4	6	0	61.3	10	0	59.1	4	0	48.1	11	0	48.4	13	0	55.4	14	0	46.4	11	0	53.6	10	0
G.M.			58.4			62.2			56.6			51.4			51.3			59.5			48.4			54.8		
S.E. (M)			2.3			0.9			1.2			1.6			0.3			0.5			0.5			0.3		
C.D. (10%)			5.6			2.0			2.7			3.9			0.7			1.2			1.1			0.8		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-IR-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics							Grain Characteristics			
			Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	UP 2981	NW-TS-101	5S	3.3	0	0.0	74-115	95	119-158	141	87-150	101	Ey	A	H	30-48	39
2	DBW 221	NW-TS-102	tS	0.4	10S	3.2	70-110	91	120-155	139	82-115	96	Ey	A	H	31-49	38
3	DBW 222	NW-TS-104	tS	0.3	5S	1.9	72-112	92	126-156	140	85-112	98	Ey	A	H	33-49	41
4	BRW 3792	NW-TS-105	tS	0.3	5S	1.8	71-110	90	123-158	140	76-110	95	Ey	A	H	28-47	38
5	PBW 763	NW-TS-106	tS	0.3	0	0.0	70-115	95	121-158	141	86-115	99	Ey	A	H	29-48	40
6	PBW 766	NW-TS-107	0	0.0	10MS	2.9	66-110	93	118-157	139	87-120	101	Ey	A	H	31-49	41
7	DBW 233	NW-TS-109	tS	0.3	10S	2.6	76-110	92	124-153	139	84-115	98	Ey	A	H	35-46	40
8	HD 3226^{Q}*	NW-TS-110	0	0.0	10S	1.7	78-112	97	116-157	142	87-116	106	Ey	A	H	34-50	40
9	PBW 801^{M}	NW-TS-112	5S	1.7	10S	1.1	69-115	94	122-156	141	82-113	97	Ey	A	H	30-51	39
10	PBW 800^{M}	NW-TS-114	tS	0.3	0	0.0	80-115	97	117-157	142	75-112	99	Ey	A	H	30-46	38
11	DPW 621-50(C)	NW-TS-103	tS	0.3	40S	12.8	72-109	95	112-156	140	86-110	99	Ey	A	H	27-51	38
12	HD 3086 (C)	NW-TS-108	tS	0.3	20S	3.4	68-108	90	123-153	139	82-115	98	Ey	A	H	33-49	40
13	HD 2967 (C)	NW-TS-111	10S	5.0	60S	23.3	64-113	96	119-159	143	89-113	101	Ey	A	H	30-46	38
14	DBW 88 (C)	NW-TS-113	0	0.0	60S	17.8	72-112	95	115-152	141	81-111	98	Ey	A	H	31-48	39
15	WH 1105 (C)	NW-TS-115	5S	2.0	40S	10.0	73-110	94	118-154	140	82-107	95	Ey	A	H	29-47	38

1. Ancillary data from Bulandshahar, Delhi, Dhakrani, Nagina , Jammu, Pantnagar, Faridkot, Gurdaspur, Kashipur, Ludhiana, Hisar, Karnal, Rohtak, Alwar, Bikaner, Jodhpur, Kotputli, Sriganganagar, Hanumangarh and Tabiji.
2. Yellow rust data from Delhi, Jammu, Pantnagar, Gurdaspur, Ludhiana, Hisar, Karnal, Rohtak and Durgapura; Brown rust data from Delhi, Gurdaspur and Rohtak.

Individual Station Rust Data

SN	Variety	Code	Delhi		Ludhiana	Gurdaspur		Rohtak		Pantnagar	Hisar	Jammu	Karnal	Durgapura
			Br	Yl	Yl	Br	Yl	Br	Yl	Yl	Yl	Yl	Yl	Yl
1	UP 2981	NW-TS-101	0	0	0	5S	0	5S	0	0	0	0	0	0
2	DBW 221	NW-TS-102	0	0	10S	tR	0	tS	10S	tS	0	5MS	5MS	0
3	DBW 222	NW-TS-104	0	0	0	0	0	tS	5S	tS	5S	5MR	5MS	0
4	BRW 3792	NW-TS-105	0	0	0	0	0	tS	5S	tS	5S	0	5S	0
5	PBW 763	NW-TS-106	0	0	0	0	0	tS	0	0	0	0	0	0
6	PBW 766	NW-TS-107	0	0	5S	0	0	0	5S	tS	5S	5MR	10MS	0
7	DBW 233	NW-TS-109	0	0	10S	0	0	tS	5S	tS	0	5MR	5S	0
8	HD 3226^{Q*}	NW-TS-110	0	0	10S	0	0	0	5S	0	0	0	0	0
9	PBW 801^{M}	NW-TS-112	0	0	0	0	0	5S	10S	0	0	tR	0	0
10	PBW 800^{M}	NW-TS-114	0	0	0	0	0	tS	0	0	0	0	0	0
11	DPW 621-50 (C)	NW-TS-103	0	0	5S	0	0	tS	10S	20S	0	40S	40S	0
12	HD 3086 (C)	NW-TS-108	0	0	10S	0	tR	tS	0	0	0	20S	0	0
13	HD 2967 (C)	NW-TS-111	10S	10S	10S	0	10S	5S	15S	20S	40S	60S	40S	5S
14	DBW 88 (C)	NW-TS-113	0	0	20S	0	0	0	10S	40S	10S	60S	20S	0
15	WH 1105 (C)	NW-TS-115	0	0	0	5S	0	tS	10S	20S	0	40S	20S	0

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Location wise Mean Yield (q/ha)

SN	Variety	Code	Delhi			J&K			Punjab												
			Delhi			Jammu			Faridkot			Gurdaspur			Bhatinda			Kapurthala			Ludhiana		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW 771	NW-LS-201	54.1	1	1	37.2	4	1	50.3	8	0	45.2	7	0	54.6	1	1	55.6	2	1	55.0	5	1
2	PBW 752*	NW-LS-206	44.4	7	0	36.5	6	0	58.9	2	1	56.1	1	1	50.2	3	0	54.1	3	1	56.7	4	1
3	PBW 773	NW-LS-208	45.8	6	0	35.6	7	0	54.7	4	1	45.0	8	0	47.2	6	0	56.4	1	1	58.0	2	1
4	DBW 237	NW-LS-209	48.1	2	0	39.4	3	1	59.4	1	1	48.7	4	0	49.9	4	0	53.2	5	1	57.6	3	1
5	WH 1124 (C)	NW-LS-202	45.9	4	0	35.3	8	0	50.8	7	0	47.0	6	0	46.9	7	0	53.1	6	1	53.5	7	0
6	DBW 90 (C)	NW-LS-203	37.4	8	0	36.7	5	1	58.4	3	1	47.0	5	0	44.7	8	0	45.7	8	0	52.7	8	0
7	HD 3059 (C)	NW-LS-204	45.8	5	0	39.9	2	1	52.4	6	0	49.3	3	0	49.9	5	0	54.1	3	1	58.9	1	1
8	WH 1021 (C)	NW-LS-205	35.5	9	0	33.5	9	0	49.2	9	0	37.4	9	0	41.4	9	0	45.6	9	0	46.6	9	0
9	DBW 173 (I) (C)	NW-LS-207	47.7	3	0	40.3	1	1	53.2	5	0	51.2	2	0	52.4	2	1	49.1	7	0	53.7	6	0
G.M.			45.0			37.1			54.1			47.4			48.6			51.9			54.7		
S.E. (M)			1.9			1.6			2.1			1.4			1.7			1.9			1.9		
C.D. (10%)			4.6			3.8			5.0			3.4			4.0			4.7			4.5		
C.V.			8.4			8.5			7.7			5.9			6.8			7.4			6.8		
D.O.S. (d.m.y.)			19.12.2017			20.12.2017			21.12.2017			20.12.17			19.12.2017			19.12.2017			10.12.2017		

Trials proposed & conducted = 24
Trials not reported (4) = Modipuram (DNR), Kotputli (RMT), Rampur (RMT), Bareilly (LSM)

1723-AVT-IR-LS-TAS-NWPZ 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Haryana									Uttar Pradesh									Uttrakhand		
			Karnal			Rohtak			Hisar			Nagina			Bulandshahr			Ujhani			Kashipur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW 771	NW-LS-201	50.5	6	0	53.6	2	1	53.0	1	1	62.2	2	1	52.3	2	0	39.8	1	1	59.7	1	1
2	PBW 752*	NW-LS-206	59.7	1	1	50.2	5	1	49.3	5	0	63.3	1	1	49.8	4	0	36.9	3	0	54.2	4	0
3	PBW 773	NW-LS-208	48.9	7	0	49.6	7	0	49.4	4	0	53.8	6	0	45.4	9	0	39.6	2	1	50.5	7	0
4	DBW 237	NW-LS-209	52.7	4	0	51.8	3	1	47.0	6	0	56.3	5	0	49.8	5	0	34.9	5	0	47.7	9	0
5	WH 1124 (C)	NW-LS-202	52.9	3	0	54.7	1	1	50.0	3	1	51.3	7	0	49.3	7	0	34.7	6	0	56.9	2	0
6	DBW 90 (C)	NW-LS-203	50.8	5	0	46.9	8	0	50.4	2	1	50.0	8	0	46.3	8	0	34.2	7	0	50.5	7	0
7	HD 3059 (C)	NW-LS-204	47.2	8	0	50.0	6	1	45.0	7	0	57.6	3	0	56.3	1	1	36.2	4	0	55.8	3	0
8	WH 1021 (C)	NW-LS-205	41.1	9	0	44.8	9	0	42.5	8	0	45.6	9	0	52.1	3	0	29.3	9	0	51.4	6	0
9	DBW 173 (I) (C)	NW-LS-207	53.1	2	0	50.9	4	1	41.9	9	0	57.5	4	0	49.8	5	0	31.3	8	0	52.3	5	0
G.M.			50.8			50.3			47.6			55.3			50.1			35.2			53.2		
S.E. (M)			1.5			2.1			1.3			0.5			0.3			1.0			0.3		
C.D. (10%)			3.7			5.0			3.1			1.3			0.8			2.4			0.6		
C.V.			6.0			8.2			5.3			1.9			1.4			5.7			1.0		
D.O.S. (d.m.y.)			10.12.2017			14.12.2017			14.12.2017			10.12.2017			13.12.2017			14.12.2017			14.12.2017		

1723-AVT-IR-LS-TAS-NWPZ 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttrakhand			Rajasthan														
			Pantnagar			Sriganganagar			Tabiji			Alwar			Durgapura			Hanumangarh		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW 771	NW-LS-201	51.0	3	1	53.5	2	1	34.7	7	0	40.2	2	1	43.5	4	0	55.9	1	1
2	PBW 752*	NW-LS-206	52.0	1	1	55.9	1	1	37.6	5	0	41.3	1	1	44.9	2	0	47.2	5	0
3	PBW 773	NW-LS-208	51.4	2	1	49.4	3	0	43.3	1	1	34.3	8	0	52.5	1	1	50.6	2	0
4	DBW 237	NW-LS-209	49.1	4	0	49.1	4	0	37.0	6	0	38.9	3	1	34.3	9	0	44.1	7	0
5	WH 1124 (C)	NW-LS-202	46.3	5	0	42.8	7	0	38.7	4	0	38.9	3	1	43.1	5	0	40.2	8	0
6	DBW 90 (C)	NW-LS-203	44.6	6	0	40.5	9	0	33.6	8	0	37.8	7	0	44.0	3	0	48.2	4	0
7	HD 3059 (C)	NW-LS-204	40.4	8	0	47.5	5	0	42.4	2	1	38.1	6	0	38.4	7	0	49.3	3	0
8	WH 1021 (C)	NW-LS-205	37.6	9	0	41.4	8	0	32.6	9	0	32.2	9	0	34.7	8	0	39.5	9	0
9	DBW 173 (I) (C)	NW-LS-207	43.1	7	0	47.3	6	0	39.0	3	0	38.3	5	1	42.1	6	0	47.1	6	0
G.M.			46.2			47.5			37.7			37.8			41.9			46.9		
S.E. (M)			0.7			2.4			0.7			1.3			1.6			1.1		
C.D. (10%)			1.7			5.9			1.7			3.1			3.8			2.7		
C.V.			3.1			10.3			3.6			6.7			7.4			4.8		
D.O.S. (d.m.y.)			19.12.2017			17.12.2017			15.12.2017			12.12.2017			10.12.2017			10.12.2017		

1723-AVT-IR-LS-TAS-NWPZ 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	STATES																		Zonal		
			UP			Delhi			Rajasthan			Haryana			Uttrakhand			J&K			Punjab					
			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	PBW 771	NW-LS-201	51.4	1	1	54.1	1	1	45.6	2	1	52.4	3	1	55.4	1	1	37.2	4	1	52.1	5	0	50.1	1	1
2	PBW 752*	NW-LS-206	50.0	3	0	44.4	7	0	45.4	3	1	53.0	1	1	53.1	2	0	36.5	6	0	55.2	1	1	49.9	2	1
3	PBW 773	NW-LS-208	46.3	5	0	45.8	6	0	46.0	1	1	49.3	6	0	50.9	4	0	35.6	7	0	52.2	4	0	48.1	3	0
4	DBW 237	NW-LS-209	47.0	4	0	48.1	2	0	40.7	8	0	50.5	4	0	48.4	5	0	39.4	3	1	53.7	2	1	47.4	5	0
5	WH 1124 (C)	NW-LS-202	45.1	7	0	45.9	4	0	40.7	7	0	52.5	2	1	51.6	3	0	35.3	8	0	50.3	7	0	46.6	7	0
6	DBW 90 (C)	NW-LS-203	43.5	8	0	37.4	8	0	40.8	6	0	49.4	5	0	47.6	8	0	36.7	5	1	49.7	8	0	45.0	8	0
7	HD 3059 (C)	NW-LS-204	50.0	2	0	45.8	5	0	43.1	4	0	47.4	8	0	48.1	6	0	39.9	2	1	52.9	3	0	47.7	4	0
8	WH 1021 (C)	NW-LS-205	42.3	9	0	35.5	9	0	36.1	9	0	42.8	9	0	44.5	9	0	33.5	9	0	44.0	9	0	40.7	9	0
9	DBW 173 (I) (C)	NW-LS-207	46.2	6	0	47.7	3	0	42.8	5	0	48.6	7	0	47.7	7	0	40.3	1	1	51.9	6	0	47.1	6	0
G.M.			46.9			45.0			42.4			49.5			49.7			37.1			51.3			47.0		
S.E. (M)			0.4			1.9			0.7			1.0			0.4			1.6			0.8			0.3		
C.D. (10%)			0.9			4.6			1.6			2.2			0.9			3.8			1.9			0.8		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-IR-LS-TAS, 2017-18**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics							Grain Characteristics			
			Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	PBW 771	NW-LS-201	0	0.0	10S	3.1	68-94	81	106-135	120	65-94	86	Ey	A	H	29-43	36
2	PBW 752*	NW-LS-206	5S	1.7	10S	2.2	69-95	83	113-134	122	77-100	91	Ey	A	H	28-45	38
3	PBW 773	NW-LS-208	5S	2.0	30MS	4.9	68-97	79	107-136	119	80-103	91	Ey	A	H	28-39	34
4	DBW 237	NW-LS-209	tR	0.1	40S	7.4	70-98	82	105-134	121	85-108	97	Ey	A	H	29-45	37
5	WH 1124 (C)	NW-LS-202	5S	3.7	5S	0.6	70-96	82	106-133	120	74-100	90	Ey	A	H	29-44	35
6	DBW 90 (C)	NW-LS-203	10S	3.7	10S	2.8	72-95	82	109-135	121	78-104	91	Ey	A	H	27-42	34
7	HD 3059 (C)	NW-LS-204	5S	2.0	60S	18.0	72-97	84	109-137	122	74-104	91	Ey	A	H	28-42	35
8	WH 1021 (C)	NW-LS-205	5S	3.3	60S	28.3	70-96	83	106-133	120	78-106	92	Ey	A	H	28-43	35
9	DBW 173 (I) (C)	NW-LS-207	tS	0.4	20S	11.3	68-94	84	105-138	121	86-105	95	Ey	A	H	28-42	36

1. Ancillary data from Alwar, Bhathinda, Bareilly,Delhi, Pantnagar, Jammu, Ludhiana, Faridkot, Gurdaspur, Hisar, Karnal, Durgapura, Sriganganagar, Hanumangarh, Nagina, Bulandshahar and Kashipur.
2. Yellow rust data from Delhi, Pantnagar, Durgapura, Jammu, Ludhiana, Gurdaspur, Hisar, Rohtak and Karnal; Brown rust data from Gurdaspur, Pantnagar, Rohtak.

Individual Station Rust Data

SN	Variety	Code	Gurdaspur		Ludhiana	Delhi	Pantnagar		Durgapura	Hisar	Jammu	Karnal	Rohtak	
			Br	YI	YI	YI	Br	YI	YI	YI	YI	YI	Br	YI
1	PBW 771	NW-LS-201	0	0	5S	0	0	10MS	0	0	10S	0	0	5S
2	PBW 752*	NW-LS-206	0	5S	0	0	0	0	0	0	10S	0	0	5S
3	PBW 773	NW-LS-208	0	5S	tR	0	0	30MS	0	0	10S	5S	tS	0
4	DBW 237	NW-LS-209	0	tR	5S	0	0	40S	0	0	0	10S	0	10S
5	WH 1124 (C)	NW-LS-202	0	5S	0	0	tS	0	0	0	0	0	5S	0
6	DBW 90 (C)	NW-LS-203	0	10S	0	0	0	0	0	0	10S	0	tS	5S
7	HD 3059 (C)	NW-LS-204	0	5S	10S	20MS	0	tMS	60S	0	20S	40S	tS	10S
8	WH 1021 (C)	NW-LS-205	tR	5S	40S	40S	0	20S	60S	30S	10S	20S	5S	30S
9	DBW 173 (I) (C)	NW-LS-207	0	tR	10S	5MR	0	20S	20S	10S	10S	20S	tS	10S

1725-AVT-RI-TS-TAS-NWPZ 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	UP			Delhi			Rajasthan									Haryana					
			Bulandshahr			Delhi			Diggi			Bharatpur			Sriganganagar			Hisar			Uchani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	BRW 3806	NW-RI-302	45.8	8	0	50.1	2	1	40.4	7	0	31.7	6	0	54.3	10	0	52.2	4	1	51.7	1	1
2	HD 3237*	NW-RI-304	47.1	4	0	52.6	1	1	45.2	4	0	36.3	5	0	63.1	2	1	44.9	9	0	46.7	6	0
3	HI 1620*	NW-RI-305	50.7	1	1	45.5	6	0	53.8	1	1	41.1	2	1	61.8	3	1	54.4	2	1	51.6	2	1
4	DBW 252	NW-RI-308	47.5	2	0	49.1	4	1	46.0	3	0	27.1	10	0	54.8	8	0	47.8	7	0	48.9	5	1
5	HI 1628	NW-RI-309	45.8	9	0	48.7	5	1	53.8	1	1	41.5	1	1	65.1	1	1	49.7	6	0	44.2	9	0
6	NIAW 3170	NW-RI-310	47.1	3	0	49.7	3	1	42.1	5	0	37.0	4	0	58.8	4	0	57.4	1	1	51.2	3	1
7	WH 1142 (C)	NW-RI-301	46.7	5	0	43.1	10	0	41.7	6	0	31.4	7	0	57.8	6	0	50.9	5	0	44.6	8	0
8	WH 1080 (C)	NW-RI-303	46.5	6	0	44.3	8	0	30.8	10	0	37.4	3	0	57.1	7	0	43.8	10	0	41.7	10	0
9	PBW 644 (C)	NW-RI-306	42.3	10	0	43.6	9	0	33.3	9	0	29.9	9	0	58.3	5	0	53.1	3	1	49.0	4	1
10	HD 3043 (C)	NW-RI-307	46.4	7	0	44.8	7	0	34.6	8	0	30.1	8	0	54.4	9	0	45.3	8	0	46.4	7	0
G.M.			46.6			47.1			42.2			34.3			58.6			50.0			47.6		
S.E. (M)			0.2			1.7			0.8			1.1			2.1			2.2			1.4		
C.D. (10%)			0.5			4.0			2.0			2.6			5.0			5.2			3.4		
C.V.			0.8			7.1			4.0			6.2			7.0			8.7			5.9		
D.O.S. (d.m.y.)			5.11.2017			4.11.2017			5.11.2017			4.11.2017			05.11.2017			03.11.2017			05.11.2017		

Trials proposed = 17
Trials not conducted (1) = Dausa
Trials not reported (3) = Modipuram (DNR), Hanumangarh (LSM), Bawal (LS)

1725-AVT-RI-TS-TAS-NWPZ 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttrakhand			J&K			Punjab											
			Pantnagar			Jammu			Kapurthala			Ludhiana			Gurdaspur			Balachaur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	BRW 3806	NW-RI-302	46.7	3	0	49.2	6	0	56.2	2	1	56.3	2	1	44.9	2	1	50.4	2	1
2	HD 3237*	NW-RI-304	46.2	5	0	47.7	7	0	46.1	8	0	51.7	3	0	47.1	1	1	47.5	3	0
3	HI 1620*	NW-RI-305	43.9	8	0	52.1	3	0	52.5	3	1	49.5	5	0	44.6	3	0	45.0	4	0
4	DBW 252	NW-RI-308	51.3	1	1	55.0	2	1	52.4	4	1	49.1	6	0	40.8	6	0	38.6	8	0
5	HI 1628	NW-RI-309	42.8	9	0	49.8	5	0	51.2	5	0	44.6	8	0	40.1	7	0	40.6	7	0
6	NIAW 3170	NW-RI-310	45.0	7	0	46.9	8	0	43.5	9	0	57.0	1	1	42.1	5	0	52.2	1	1
7	WH 1142 (C)	NW-RI-301	45.8	6	0	58.5	1	1	47.0	7	0	42.6	9	0	42.2	4	0	38.5	9	0
8	WH 1080 (C)	NW-RI-303	46.5	4	0	44.7	9	0	56.9	1	1	50.7	4	0	37.6	9	0	45.0	5	0
9	PBW 644 (C)	NW-RI-306	48.8	2	0	51.1	4	0	48.3	6	0	47.0	7	0	39.5	8	0	37.4	10	0
10	HD 3043 (C)	NW-RI-307	42.2	10	0	39.6	10	0	39.6	10	0	42.1	10	0	33.6	10	0	42.5	6	0
G.M.			45.9			49.5			49.4			49.0			41.3			43.8		
S.E. (M)			0.9			1.5			1.9			1.7			1.0			1.3		
C.D. (10%)			2.1			3.7			4.6			4.0			2.5			3.2		
C.V.			3.8			6.2			7.7			6.8			4.9			6.0		
D.O.S. (d.m.y.)			28.10.2017			26.10.2017			04.11.2017			3.11.2017			5.11.17			05.11.2017		

1725-AVT-RI-TS-TAS-NWPZ 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	STATES																			Zonal		
			UP			Delhi			Rajasthan			Haryana			Uttrakhand			J&K			Punjab					
			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	BRW 3806	NW-RI-302	45.8	8	0	50.1	2	1	42.1	7	0	52.0	3	1	46.7	3	0	49.2	6	0	52.0	1	1	48.5	2	0
2	HD 3237*	NW-RI-304	47.1	4	0	52.6	1	1	48.2	3	0	45.8	9	0	46.2	5	0	47.7	7	0	48.1	3	0	47.9	4	0
3	HI 1620*	NW-RI-305	50.7	1	1	45.5	6	0	52.2	2	1	53.0	2	1	43.9	8	0	52.1	3	0	47.9	4	0	49.7	1	1
4	DBW 252	NW-RI-308	47.5	2	0	49.1	4	1	42.7	6	0	48.3	5	0	51.3	1	1	55.0	2	1	45.2	6	0	46.8	6	0
5	HI 1628	NW-RI-309	45.8	9	0	48.7	5	1	53.4	1	1	47.0	7	0	42.8	9	0	49.8	5	0	44.1	7	0	47.5	5	0
6	NIAW 3170	NW-RI-310	47.1	3	0	49.7	3	1	46.0	4	0	54.3	1	1	45.0	7	0	46.9	8	0	48.7	2	0	48.5	3	0
7	WH 1142 (C)	NW-RI-301	46.7	5	0	43.1	10	0	43.6	5	0	47.8	6	0	45.8	6	0	58.5	1	1	42.6	9	0	45.5	7	0
8	WH 1080 (C)	NW-RI-303	46.5	6	0	44.3	8	0	41.8	8	0	42.8	10	0	46.5	4	0	44.7	9	0	47.5	5	0	44.8	8	0
9	PBW 644 (C)	NW-RI-306	42.3	10	0	43.6	9	0	40.5	9	0	51.0	4	0	48.8	2	0	51.1	4	0	43.0	8	0	44.7	9	0
10	HD 3043 (C)	NW-RI-307	46.4	7	0	44.8	7	0	39.7	10	0	45.8	8	0	42.2	10	0	39.6	10	0	39.4	10	0	41.7	10	0
G.M.			46.6			47.1			45.0			48.8			45.9			49.5			45.9			46.5		
S.E. (M)			0.2			1.7			0.8			1.3			0.9			1.5			0.8			0.4		
C.D. (10%)			0.5			4.0			1.9			3.1			2.1			3.7			1.8			0.9		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-RI-TS-TAS, 2017-18**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics							Grain Characteristics			
			Br	Yl	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	BRW 3806	NW-RI-302	0	20S	7.0	86-122	99	129-166	144	75-126	106	Ey	A	SH-H	33-49	42
2	HD 3237*	NW-RI-304	10S	20S	7.0	84-118	98	125-162	143	76-129	106	Ey	A	H	35-54	43
3	HI 1620*	NW-RI-305	0	10S	4.0	87-120	99	127-165	144	76-120	102	Ey	A	H	33-56	42
4	DBW 252	NW-RI-308	0	40S	10.8	85-120	100	126-165	145	76-126	105	Ey	A	SH-H	33-47	39
5	HI 1628	NW-RI-309	0	20S	6.0	80-122	97	110-165	140	80-129	107	Ey	A	H	33-47	41
6	NIAW 3170	NW-RI-310	0	40S	9.0	87-122	99	128-165	143	80-125	106	Ey	A	H	34-50	42
7	WH 1142 (C)	NW-RI-301	tR	5S	1.0	90-122	104	129-166-	146	71-117	99	Ey	A	H	27-45	35
8	WH 1080 (C)	NW-RI-303	0	20S	6.0	87-187	101	129-166	145	73-118	98	Ey	A	H	31-47	39
9	PBW 644 (C)	NW-RI-306	0	40S	9.0	83-120	101	129-165	144	79-123	105	Ey	A	H	32-50	38
10	HD 3043 (C)	NW-RI-307	5S	10S	4.8	90-125	105	132-165	147	80-121	103	Ey	A	H	27-50	35

1. Ancillary data from Delhi, Jammu, Bulandshahar, Balachaur, Pantnagar, Ludhiana, Gurdaspur, Hisar, Uchani, Bharatpur, Diggi, and Sriganganagar.
2. Yellow rust data from Pantnagar, Jammu, Ludhiana, Gurdaspur and Hisar; Brown rust data from Gurdaspur.

Individual Station Rust Data

SN	Variety	Code	Gurdaspur		Ludhiana	Jammu	Pantnagar	Hisar
			Br	Yl	Yl	Yl	Yl	Yl
1	BRW 3806	NW-RI-302	0	5S	0	0	20S	10S
2	HD 3237*	NW-RI-304	10S	0	10S	0	20S	5S
3	HI 1620*	NW-RI-305	0	0	0	0	10S	10S
4	DBW 252	NW-RI-308	0	0	0	5MS	40S	10S
5	HI 1628	NW-RI-309	0	0	0	0	20S	10S
6	NIAW 3170	NW-RI-310	0	tR	0	0	40S	5S
7	WH 1142 (C)	NW-RI-301	tR	0	tR	0	tR	5S
8	WH 1080 (C)	NW-RI-303	0	0	0	0	20S	10S
9	PBW 644 (C)	NW-RI-306	0	0	0	0	40S	5S
10	HD 3043 (C)	NW-RI-307	5S	tR	5S	5MS	10S	5S

North Eastern Plains Zone

1731-AVT-IR-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	West Bengal									Bihar								
			Kalyani			Burdwan			Manikchak			IARI Pusa			Purnea			Sabour		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW 233	NE-IR -101	40.4	7	0	30.5	15	0	36.0	13	0	47.0	12	0	55.8	9	0	39.3	10	0
2	HD 3249	NE-IR -102	44.1	1	1	44.1	7	0	39.0	5	1	43.8	14	0	59.4	4	1	48.2	1	1
3	HD 3254	NE-IR -103	40.2	8	0	40.0	10	0	38.5	7	0	52.6	1	1	54.2	11	0	38.6	12	0
4	DBW 221	NE-IR -106	42.0	3	0	43.3	8	0	41.1	4	1	50.6	5	0	50.6	15	0	45.0	4	0
5	K 1601	NE-IR -107	41.2	5	0	36.4	12	0	43.3	2	1	49.1	8	0	54.1	12	0	37.6	14	0
6	PBW 769	NE-IR -108	39.7	11	0	40.0	11	0	36.9	11	0	49.2	7	0	53.6	13	0	38.1	13	0
7	DBW 187*	NE-IR -112	39.5	14	0	46.2	5	0	43.3	1	1	51.0	4	1	58.7	6	1	43.0	8	0
8	DBW 223	NE-IR -113	39.5	13	0	44.9	6	0	37.9	8	0	52.0	3	1	58.7	5	1	43.8	7	0
9	PBW 762	NE-IR -114	40.5	6	0	35.9	13	0	34.1	14	0	48.9	9	0	59.7	3	1	44.7	6	0
10	WH 1218	NE-IR -115	39.4	15	0	46.7	4	0	34.0	15	0	48.2	10	0	60.0	1	1	39.1	11	0
11	K 1006 (C)	NE-IR -104	41.5	4	0	41.4	9	0	37.8	9	0	46.3	13	0	57.1	7	0	47.4	2	1
12	HD 2733 (C)	NE-IR -105	42.6	2	0	48.4	3	1	37.5	10	0	49.5	6	0	56.0	8	0	45.6	3	0
13	DBW 39 (C)	NE-IR -109	39.9	10	0	52.0	1	1	36.7	12	0	47.1	11	0	52.5	14	0	44.8	5	0
14	HD 2967 (C)	NE-IR -110	40.0	9	0	33.7	14	0	38.9	6	1	52.0	2	1	59.8	2	1	36.9	15	0
15	K 0307 (C)	NE-IR -111	39.6	12	0	50.8	2	1	42.1	3	1	43.4	15	0	55.2	10	0	41.5	9	0
G.M.			40.7			42.3			38.5			48.7			56.4			42.2		
S.E. (M)			0.4			1.7			2.0			0.7			1.2			1.0		
C.D. (10%)			0.8			4.1			4.7			1.6			2.9			2.3		
C.V.			1.7			8.2			10.2			2.8			4.3			4.5		
D.O.S.(d.m.y.)			20.11.2017			15.11.2017			21.11.2017			18.11.2017			17.11.2017			15.11.2017		

Trials proposed = 25

Trials not conducted (2) = Baharaich, Bikramganj

Trials not reported (10) = Faizabad (RMT), Ghazipur (RMT), Barabanki (RMT), Banka (RMT), Majhian (LSM), Coochbehar (LSM), Biswanath (LSM), Chianki (LSM), Dhubri (LSM, HCV), Shillongani (LSM)

1731-AVT-IR-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Jharkhand						Uttar Pradesh													
			Ranchi			Dumka			Basti			Varanasi			Gorakhpur			Araul			Kanpur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW 233	NE-IR -101	48.7	8	0	63.1	6	1	47.6	5	0	39.2	8	0	46.8	3	1	50.6	8	0	48.5	7	0
2	HD 3249	NE-IR -102	53.9	4	1	65.7	1	1	46.4	6	0	47.7	1	1	44.8	6	0	48.3	9	0	42.6	14	0
3	HD 3254	NE-IR -103	41.2	14	0	63.9	4	1	42.5	11	0	39.0	10	0	43.7	9	0	51.9	5	0	53.7	3	0
4	DBW 221	NE-IR -106	40.8	15	0	62.5	8	1	50.0	3	0	35.6	14	0	43.0	10	0	42.7	15	0	54.8	2	1
5	K 1601	NE-IR -107	47.0	10	0	55.6	11	0	44.1	10	0	39.7	6	0	44.0	8	0	51.0	7	0	57.3	1	1
6	PBW 769	NE-IR -108	55.4	2	1	51.9	13	0	60.1	1	1	36.5	13	0	46.1	5	0	56.9	1	1	53.5	4	0
7	DBW 187*	NE-IR -112	54.5	3	1	64.7	3	1	41.7	12	0	47.1	2	1	44.5	7	0	55.4	3	1	45.8	11	0
8	DBW 223	NE-IR -113	49.1	7	0	62.8	7	1	45.8	7	0	39.0	10	0	39.6	14	0	47.2	11	0	47.2	8	0
9	PBW 762	NE-IR -114	47.3	9	0	62.1	9	1	39.0	15	0	40.0	5	0	47.8	2	1	55.6	2	1	46.1	10	0
10	WH 1218	NE-IR -115	41.5	13	0	65.6	2	1	48.6	4	0	39.3	7	0	39.6	14	0	47.9	10	0	47.0	9	0
11	K 1006 (C)	NE-IR -104	45.2	12	0	60.2	10	0	45.5	8	0	39.1	9	0	41.8	12	0	46.0	13	0	43.8	13	0
12	HD 2733 (C)	NE-IR -105	55.8	1	1	45.2	14	0	40.6	14	0	40.2	4	0	46.3	4	1	43.5	14	0	40.1	15	0
13	DBW 39 (C)	NE-IR -109	52.3	5	1	53.5	12	0	50.9	2	0	40.6	3	0	41.4	13	0	53.8	4	0	53.1	6	0
14	HD 2967 (C)	NE-IR -110	49.6	6	0	40.6	15	0	40.9	13	0	37.7	12	0	47.9	1	1	51.7	6	0	53.5	5	0
15	K 0307 (C)	NE-IR -111	45.9	11	0	63.4	5	1	44.7	9	0	34.5	15	0	42.0	11	0	46.9	12	0	44.7	12	0
G.M.			48.5			58.7			45.9			39.7			44.0			50.0			48.8		
S.E. (M)			2.2			1.9			1.0			2.1			0.7			1.1			1.1		
C.D. (10%)			5.3			4.6			2.3			5.1			1.7			2.6			2.6		
C.V.			9.1			6.5			4.3			10.8			3.3			3.7			3.8		
D.O.S.(d.m.y.)			17.11.2017			22.11.2017			25.11.2017			25.11.2017			23.11.2017			25.11.2017			24.11.2017		

1731-AVT-IR-TS-TAS-NEPZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Uttar Pradesh			Bihar			West Bengal			Jharkhand			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW 233	NE-IR -101	46.5	5	0	47.4	12	0	35.6	15	0	55.9	4	0	45.6	12	0
2	HD 3249	NE-IR -102	46.0	8	0	50.5	4	1	42.4	5	1	59.8	1	1	48.3	2	1
3	HD 3254	NE-IR -103	46.2	7	0	48.5	10	0	39.6	11	0	52.5	11	0	46.2	9	0
4	DBW 221	NE-IR -106	45.2	10	0	48.7	9	0	42.1	6	0	51.6	12	0	46.3	6	0
5	K 1601	NE-IR -107	47.2	3	0	46.9	14	0	40.3	8	0	51.3	13	0	46.2	8	0
6	PBW 769	NE-IR -108	50.6	1	1	47.0	13	0	38.8	12	0	53.7	7	0	47.5	4	0
7	DBW 187*	NE-IR -112	46.9	4	0	50.9	3	1	43.0	2	1	59.6	2	1	48.9	1	1
8	DBW 223	NE-IR -113	43.7	12	0	51.5	1	1	40.8	7	0	56.0	3	0	46.7	5	0
9	PBW 762	NE-IR -114	45.7	9	0	51.1	2	1	36.8	14	0	54.7	5	0	46.3	7	0
10	WH 1218	NE-IR -115	44.5	11	0	49.1	8	0	40.0	10	0	53.5	8	0	45.9	10	0
11	K 1006 (C)	NE-IR -104	43.2	13	0	50.2	6	1	40.3	9	0	52.7	10	0	45.6	13	0
12	HD 2733 (C)	NE-IR -105	42.1	15	0	50.4	5	1	42.9	3	1	50.5	14	0	45.5	14	0
13	DBW 39 (C)	NE-IR -109	47.9	2	0	48.2	11	0	42.9	4	1	52.9	9	0	47.6	3	0
14	HD 2967 (C)	NE-IR -110	46.3	6	0	49.6	7	0	37.5	13	0	45.1	15	0	44.9	15	0
15	K 0307 (C)	NE-IR -111	42.5	14	0	46.7	15	0	44.2	1	1	54.6	6	0	45.7	11	0
G.M.			45.7			49.1			40.5			53.6			46.5		
S.E. (M)			0.6			0.6			0.9			1.5			0.4		
C.D. (10%)			1.4			1.3			2.1			3.4			0.9		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: AVT-IR-TS-TAS; 2017-18**

SN	Variety	Code	Disease Data		Agronomic Characteristics								Grain Characteristics			
			Br	LB (HS, Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW 233	NE-IR-101	10S	36 (23)	63-85	77	110-138	124	74-100	88	15	Ey	A	H	35-54	43
2	HD 3249	NE-IR-102	0	35 (24)	60-86	76	106-140	123	82-105	94	5	Ey	A	H	34-53	44
3	HD 3254	NE-IR-103	tR	36 (23)	65-90	81	111-140	126	80-101	93	10	Ey	A	SH	33-59	41
4	DBW 221	NE-IR-106	tR	46 (25)	63-83	76	106-136	122	67-97	85	0	Ey	A	SH	33-43	38
5	K 1601	NE-IR-107	0	24 (03)	62-87	79	107-133	124	84-107	93	0	Ey	A	H	35-50	41
6	PBW 769	NE-IR-108	0	35 (23)	62-87	79	113-136	124	82-105	93	0	Ey	A	H	32-47	39
7	DBW 187*	NE-IR-112	0	35 (24)	63-84	76	110-140	123	89-105	95	20	Ey	A	SH	28-54	43
8	DBW 223	NE-IR-113	0	34 (22)	65-90	81	110-139	128	84-102	92	10	Ey	A	H	36-51	43
9	PBW 762	NE-IR-114	5S	46 (24)	60-84	76	109-140	124	61-102	83	0	Ey	A	H	30-51	42
10	WH 1218	NE-IR-115	0	46 (24)	60-85	75	96-140	122	82-105	95	15	Ey	A	SH	30-52	44
11	K 1006 (C)	NE-IR-104	0	46 (34)	60-87	78	106-140	125	84-105	93	10	Ey	A	H	33-47	39
12	HD 2733 (C)	NE-IR--105	0	46 (23)	63-93	83	115-140	127	72-98	86	0	Ey	A	H	34-52	43
13	DBW 39 (C)	NE-IR-109	0	35 (23)	65-89	82	107-136	126	88-111	100	0	Ey	A	H	30-46	41
14	HD 2967 (C)	NE-IR-110	0	68 (35)	63-97	86	118-140	132	80-106	95	0	Ey	A	H	33-43	38
15	K 0307 (C)	NE-IR-111	tR	46 (13)	60-89	78	96-137	122	88-107	98	0	Ey	A	H	34-46	41

1. Ancillary data from Araul, Dhubri, Basti, Burdwan, Chianki, Coochbehar, Dumka, Pusa, Manikchak, Kanpur, Purnea, Ranchi, Sabour, Shillongani, Varanasi, Gorakhpur, Majhian, Kalyani centres.
2. Brown rust data from Sabour and Shillongani centres.
3. Leaf Blight data from Burdwan, Coochbehar, Manikchak, Sabour and Shillongani centres.
4. Lodging data from Shillongani, Dumka and Gorakhpur Centres.

Individual Station Leaf Blight Data
AVT-IR-TS-TAS- NEPZ; 2017-18

SN	Variety	Code	Individual Station Leaf Blight Data				
			Coochbehar	Manikchak	Sabour	Shillongani	Kalyani
1	DBW 233	NE-IR-101	12	35	34	36	00
2	HD 3249	NE-IR-102	34	14	35	24	25
3	HD 3254	NE-IR-103	23	36	24	24	00
4	DBW 221	NE-IR-106	14	46	35	24	25
5	K 1601	NE-IR-107	13	03	24	12	13
6	PBW 769	NE-IR-108	23	35	24	24	00
7	DBW 187*	NE-IR-112	24	14	35	24	25
8	DBW 223	NE-IR-113	34	32	34	12	00
9	PBW 762	NE-IR-114	34	26	46	12	24
10	WH 1218	NE-IR-115	14	26	46	12	13
11	K 1006 (C)	NE-IR-104	12	35	46	24	35
12	HD 2733 (C)	NE-IR--105	24	13	46	12	00
13	DBW 39 (C)	NE-IR-109	12	34	35	12	00
14	HD 2967 (C)	NE-IR-110	25	46	68	24	00
15	K 0307 (C)	NE-IR-111	12	03	46	11	13

1734-AVT-RI-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	West Bengal									Bihar								
			Burdwan			Kalyani			Coochbehar			Purnea			Sabour			IARI Pusa		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH 1235	NE-RI -303	27.2	8	0	38.2	4	0	17.3	9	0	31.4	3	1	33.7	5	0	34.5	9	0
2	BRW 3806	NE-RI -304	18.4	9	0	39.5	1	1	17.9	8	0	27.2	6	0	32.9	6	0	38.9	6	0
3	DBW 252	NE-RI -306	33.1	4	1	38.5	3	0	24.0	1	1	29.3	4	0	35.5	3	1	40.6	5	0
4	HI 1628	NE-RI -309	28.9	7	0	35.9	9	0	22.2	2	1	32.9	1	1	29.3	7	0	38.6	7	0
5	HD 2888 (C)	NE-RI -301	34.8	2	1	37.6	5	0	20.5	4	1	18.6	9	0	36.4	2	1	36.8	8	0
6	HI 1612 (I) (C)	NE-RI -302	30.0	6	0	36.7	8	0	20.9	3	1	28.2	5	0	37.4	1	1	45.5	3	0
7	K 1317 (C)	NE-RI -305	33.7	3	1	37.1	6	0	19.8	5	1	18.8	8	0	29.1	8	0	46.0	2	0
8	K 8027 (C)	NE-RI -307	32.2	5	1	36.8	7	0	18.8	7	0	21.4	7	0	28.7	9	0	44.2	4	0
9	HD 3171 (C)	NE-RI -308	34.9	1	1	39.0	2	1	19.7	6	0	32.6	2	1	34.7	4	1	47.6	1	1
G.M.			30.4			37.7			20.1			26.7			33.1			41.4		
S.E. (M)			1.7			0.3			1.7			0.9			1.3			0.6		
C.D. (10%)			4.2			0.8			4.1			2.1			3.1			1.4		
C.V.			11.5			1.7			17.0			6.4			7.7			2.8		
D.O.S.(d.m.y.)			10.11.2017			09.11.17			06.11.2017			02.11.2017			08.11.2017			10.11.2017		

Trials proposed = 18
Trial not conducted (2) = Tissuhi, Shillongani
Trials not reported (4) = Faizabad (RMT), Biswanath (LSM, LS), Gossaingaon (LSM, LS), Manikchak (LS)

1734-AVT-RI-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttar Pradesh												Jharkhand					
			Kanpur			Ghaghraghat			Deegh			Varanasi			Chianki			Ranchi		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH 1235	NE-RI -303	47.8	1	1	40.1	6	0	41.7	4	0	35.6	1	1	28.8	9	0	32.1	7	0
2	BRW 3806	NE-RI -304	42.3	7	0	45.2	2	1	38.6	5	0	31.9	2	0	34.6	5	0	32.2	6	0
3	DBW 252	NE-RI -306	43.1	5	0	38.9	8	0	43.5	2	0	31.0	4	0	40.6	2	1	36.1	4	0
4	HI 1628	NE-RI -309	42.7	6	0	39.5	7	0	36.6	7	0	28.5	7	0	35.4	4	0	38.5	2	1
5	HD 2888 (C)	NE-RI -301	32.6	8	0	42.3	5	1	29.9	9	0	31.3	3	0	30.3	8	0	26.0	9	0
6	HI 1612 (I) (C)	NE-RI -302	45.6	4	0	48.4	1	1	45.5	1	1	28.5	7	0	36.3	3	0	35.3	5	0
7	K 1317 (C)	NE-RI -305	47.0	2	1	42.7	4	1	37.9	6	0	27.9	9	0	34.5	6	0	41.3	1	1
8	K 8027 (C)	NE-RI -307	32.4	9	0	38.5	9	0	32.3	8	0	29.0	5	0	41.1	1	1	31.3	8	0
9	HD 3171 (C)	NE-RI -308	46.0	3	1	43.8	3	1	43.3	3	0	29.0	5	0	31.7	7	0	38.5	3	1
G.M.			42.2			42.2			38.8			30.3			34.8			34.6		
S.E. (M)			0.9			3.0			0.7			0.7			1.2			1.5		
C.D. (10%)			2.1			7.2			1.7			1.8			3.0			3.7		
C.V.			4.1			14.1			3.7			4.9			7.0			8.8		
D.O.S.(d.m.y.)			10.11.2017			07.11.2017			09.11.2017			10.11.2017			03.11.2017			08.11.2017		

1734-AVT-RI-TS-TAS-NEPZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Uttar Pradesh			Bihar			West Bengal			Jharkhand			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH 1235	NE-RI -303	41.3	2	1	33.2	5	0	27.6	8	0	30.5	8	0	34.0	6	0
2	BRW 3806	NE-RI -304	39.5	4	0	33.0	6	0	25.3	9	0	33.4	7	0	33.3	7	0
3	DBW 252	NE-RI -306	39.1	5	0	35.1	3	0	31.8	1	1	38.3	1	1	36.2	3	1
4	HI 1628	NE-RI -309	36.8	7	0	33.6	4	0	29.0	7	0	37.0	3	1	34.1	5	0
5	HD 2888 (C)	NE-RI -301	34.0	8	0	30.6	9	0	31.0	3	1	28.1	9	0	31.4	9	0
6	HI 1612 (I) (C)	NE-RI -302	42.0	1	1	37.0	2	1	29.2	6	0	35.8	5	0	36.5	2	1
7	K 1317 (C)	NE-RI -305	38.9	6	0	31.3	8	0	30.2	4	1	37.9	2	1	34.7	4	0
8	K 8027 (C)	NE-RI -307	33.0	9	0	31.4	7	0	29.2	5	0	36.2	4	1	32.2	8	0
9	HD 3171 (C)	NE-RI -308	40.5	3	1	38.3	1	1	31.2	2	1	35.1	6	0	36.7	1	1
G.M.			38.4			33.7			29.4			34.7			34.4		
S.E. (M)			0.8			0.5			0.8			1.0			0.4		
C.D. (10%)			1.9			1.3			1.9			2.3			0.9		

North Eastern Plains Zone

Summary of Disease Data and Agronomic Characteristics **Trial: AVT-RI-TS-TAS; 2017-18**

SN	Variety	Code	Disease Data		Agronomic Characteristics								Grain Characteristics			
			Br	LB (HS, Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod %	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH 1235	NE-RI-303	0	34 (23)	48-94	76	110-144	124	79-109	95	0	Ey	A	SH	28-53	41
2	BRW 3806	NE-RI-304	10S	46 (24)	52-96	80	110-144	126	92-111	101	0	Ey	A	H	27-53	42
3	DBW 252	NE-RI-306	0	23 (02)	65-95	82	113-148	125	82-110	97	0	Ey	A	SH	31-52	40
4	HI 1628	NE-RI-309	0	35 (23)	51-94	77	100-145	125	74-120	97	0	Ey	A	H	33-56	42
5	HD 2888 (C)	NE-RI-301	0	24 (02)	48-98	82	109-147	127	95-141	114	30	Ey	A	H	29-50	41
6	HI 1612 (I) (C)	NE-RI-302	0	24 (12)	53-99	84	114-141	127	85-108	94	0	Ey	A	H	26-52	38
7	K 1317 (C)	NE-RI-305	0	34 (23)	54-99	83	111-146	126	78-107	96	0	Ey	A	H	35-57	44
8	K 8027 (C)	NE-RI-307	5S	24 (23)	47-93	75	110-152	125	95-133	117	35	Ey	A	H	35-55	43
9	HD 3171 (C)	NE-RI-308	0	46 (35)	47-96	73	96-150	122	81-107	96	0	Ey	A	H	34-52	42

1. Ancillary data from Burdwan, Chianki, Faizabad, Ghaghraghat, Gossaingaon, Pusa, Kalyani, Kanpur, Manikchak, Deegh, Purnea, Ranchi, Sabour and Varanasi centres.
2. Brown rust data from Sabour centre only.
3. Leaf Blight data from Faizabad, Kalyani, Manikchak and Sabour centres.
4. Lodging data from Kalyani, Kanpur, Deegh, Purnea Centres.

Individual Station Leaf Blight Data
AVT-RI-TS-TAS-NEPZ, 2017-18

SN	Variety	Code	Individual Station Leaf Blight Data			
			Faizabad	Kalyani	Manikchak	Sabour
1	WH 1235	NE-RI-303	23	00	25	34
2	BRW 3806	NE-RI-304	35	13	12	46
3	DBW 252	NE-RI-306	12	00	14	23
4	HI 1628	NE-RI-309	35	00	14	35
5	HD 2888 (C)	NE-RI-301	24	00	12	13
6	HI 1612 (I) (C)	NE-RI-302	12	00	24	23
7	K 1317 (C)	NE-RI-305	34	00	26	23
8	K 8027 (C)	NE-RI-307	24	24	12	24
9	HD 3171 (C)	NE-RI-308	46	25	25	46

Central Zone

1751-AVT-IR-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Madhya Pradesh													Gujarat		
			Gwalior			Bhopal			Indore			Jabalpur			Powarkheda			Vijapur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1339 (d)	CZ-TS-101	68.1	7	1	46.4	6	0	55.1	1	1	56.6	7	0	54.3	7	0	54.4	3	1
2	AKAW 4924	CZ-TS-102	68.6	6	1	45.3	7	0	45.1	8	0	59.7	4	1	54.9	6	0	46.8	8	0
3	GW 495	CZ-TS-107	67.5	8	1	47.4	5	0	52.3	3	1	59.3	5	1	58.8	2	0	55.2	2	1
4	UAS 465 (d)	CZ-TS-108	71.0	2	1	47.7	4	1	47.9	7	0	57.3	6	0	54.3	7	0	46.9	7	0
5	MPO 1343 (d)	CZ-TS-109	58.9	9	0	43.4	9	0	50.1	6	0	60.3	3	1	63.5	1	1	53.6	4	1
6	GW 322 (C)	CZ-TS-103	72.9	1	1	52.3	1	1	43.9	9	0	55.8	9	0	57.6	3	0	48.3	6	0
7	HI 8713 (d) (C)	CZ-TS-104	70.5	3	1	51.6	2	1	52.3	2	1	60.4	2	1	51.4	9	0	43.6	9	0
8	HI 8737 (d) (C)	CZ-TS-105	68.7	5	1	43.6	8	0	51.9	4	0	60.6	1	1	56.0	5	0	50.8	5	1
9	HI 1544 (C)	CZ-TS-106	70.0	4	1	48.4	3	1	50.9	5	0	56.4	8	0	56.7	4	0	55.6	1	1
G.M.			68.4			47.3			50.0			58.5			56.4			50.6		
S.E. (M)			3.2			2.0			1.2			0.6			1.3			2.0		
C.D. (10%)			7.7			4.7			2.9			1.5			3.2			4.9		
C.V.			9.3			8.2			4.9			2.2			4.7			8.1		
D.O.S. (d.m.y.)			12.11.2017			11.11.2017			18.11.2017			16.11.2017			15.11.2017			16.11.2017		

Trials proposed = 16
Trials not conducted (2) = Rewa, Kota
Trials not reported (2) = Anand (RMT), Sagar (LSM)

1751-AVT-IR-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Gujarat									Rajasthan						Chhattisgarh		
			SK Nagar			Junagadh			Amreli			Banswara			Udaipur			Bilaspur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1339 (d)	CZ-TS-101	40.2	3	0	46.6	4	1	43.0	3	1	56.6	9	0	37.7	8	0	47.5	2	1
2	AKAW 4924	CZ-TS-102	31.8	9	0	46.3	5	1	37.5	6	0	69.6	4	1	37.6	9	0	46.4	5	1
3	GW 495	CZ-TS-107	40.2	4	0	45.0	6	0	43.8	2	1	71.0	3	1	38.8	5	0	47.9	1	1
4	UAS 465 (d)	CZ-TS-108	39.9	5	0	41.6	9	0	40.3	5	0	59.2	8	0	39.4	4	0	41.5	7	0
5	MPO 1343 (d)	CZ-TS-109	35.6	8	0	42.4	8	0	37.3	7	0	63.6	7	0	43.1	3	1	41.1	8	0
6	GW 322 (C)	CZ-TS-103	54.0	1	1	48.9	1	1	43.0	3	1	64.7	6	1	44.4	1	1	45.0	6	1
7	HI 8713 (d) (C)	CZ-TS-104	38.9	6	0	46.6	3	1	33.5	9	0	74.6	1	1	38.1	6	0	46.5	4	1
8	HI 8737 (d) (C)	CZ-TS-105	41.2	2	0	43.6	7	0	37.3	7	0	69.0	5	1	38.0	7	0	40.2	9	0
9	HI 1544 (C)	CZ-TS-106	36.7	7	0	48.1	2	1	45.3	1	1	71.8	2	1	43.8	2	1	47.3	3	1
G.M.			39.8			45.5			40.1			66.7			40.1			44.8		
S.E. (M)			1.7			1.4			1.8			4.1			1.6			1.5		
C.D. (10%)			4.1			3.3			4.3			9.9			3.9			3.7		
C.V.			8.6			6.1			8.8			12.3			8.1			6.9		
D.O.S. (d.m.y.)			18.11.2017			12.11.2017			20.11.2017			10.11.2017			14.11.2017			20.11.2017		

1751-AVT-IR-TS-TAD-CZ, 2017-18
Sate and Zonal Mean Yield (q/ha)

SN	Variety	Code	MP			Gujarat			Rajasthan			Chhattisgarh			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1339 (d)	CZ-TS-101	56.1	6	1	46.0	4	0	47.1	9	0	47.5	2	1	50.5	5	0
2	AKAW 4924	CZ-TS-102	54.7	9	0	40.6	9	0	53.6	5	1	46.4	5	1	49.1	8	0
3	GW 495	CZ-TS-107	57.0	2	1	46.1	3	0	54.9	3	1	47.9	1	1	52.3	3	1
4	UAS 465 (d)	CZ-TS-108	55.6	7	1	42.2	7	0	49.3	8	0	41.5	7	0	48.9	9	0
5	MPO 1343 (d)	CZ-TS-109	55.2	8	0	42.2	6	0	53.4	7	1	41.1	8	0	49.4	7	0
6	GW 322 (C)	CZ-TS-103	56.5	3	1	48.6	1	1	54.6	4	1	45.0	6	1	52.6	1	1
7	HI 8713 (d) (C)	CZ-TS-104	57.2	1	1	40.7	8	0	56.3	2	1	46.5	4	1	50.7	4	0
8	HI 8737 (d) (C)	CZ-TS-105	56.2	5	1	43.2	5	0	53.5	6	1	40.2	9	0	50.1	6	0
9	HI 1544 (C)	CZ-TS-106	56.5	4	1	46.4	2	0	57.8	1	1	47.3	3	1	52.6	2	1
G.M.			56.1			44.0			53.4			44.8			50.7		
S.E. (M)			0.8			0.9			2.2			1.5			0.6		
C.D. (10%)			2.0			2.0			5.2			3.7			1.4		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial- AVT-IR-TS-TAD-CZ, 2017-18**

S.N.	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 1339 (d)	CZ-TS-101	51-77	63	95-132	114	58-95	82	10	Ey	A	H	38-58	49
2	AKAW 4924	CZ-TS-102	52-85	67	98-136	119	68-111	92	0	Ey	A	H	30-52	42
3	GW 495	CZ-TS-107	51-79	65	98-132	115	68-101	86	10	Ey	A	SH-H	28-48	42
4	UAS 465 (d)	CZ-TS-108	57-82	70	98-134	119	60-100	84	5	Ey	A	SH-H	23-40	37
5	MPO 1343 (d)	CZ-TS-109	58-86	69	100-132	117	62-94	80	5	Ey	A	H	34-58	49
6	GW 322 (C)	CZ-TS-103	57-82	70	109-132	118	59-101	88	5	Ey	A	SH-H	29-45	38
7	HI 8713 (d) (C)	CZ-TS-104	63-88	73	106-137	120	64-103	87	15	Ey	A	H	21-55	42
8	HI 8737 (d) (C)	CZ-TS-105	58-83	68	95-129	118	64-100	83	10	Ey	A	H	34-59	51
9	HI 1544 (C)	CZ-TS-106	50-81	65	78-131	113	70-103	88	10	Ey	A	SH-H	34-48	43

1. Ancillary data from Amreli, Sagar, Banswara, Bilaspur, Dhandhuka, Gwalior, Indore, Bhopal, Jabalpur, Junagadh, Powarkheda, Pratapgarh, Sanosara, Udaipur and Vijapur centres.
2. Lodging data form Gwalior, Jabalpur, Powarkheda and S.K.Nagar Centres.

1754-AVT-RI-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Madhya Pradesh																	
			Gwalior			Indore			Bhopal			Jabalpur			Powarkheda			Sagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW 47 (d)	CZ-RI-302	74.1	1	1	39.4	7	0	35.3	6	0	41.7	1	1	39.9	6	0	35.0	5	1
2	MP 1331	CZ-RI-303	63.7	2	0	42.7	6	0	39.9	2	1	36.2	3	0	44.0	1	1	33.8	7	0
3	UAS 466 (d)	CZ-RI-306	62.4	4	0	48.1	2	1	39.2	3	1	36.3	2	0	40.4	3	0	35.1	4	1
4	NIAW 3170	CZ-RI-307	60.0	6	0	50.7	1	1	41.0	1	1	30.2	6	0	40.8	2	0	37.1	1	1
5	DBW 110 (C)	CZ-RI-301	56.5	7	0	45.3	4	0	34.8	7	0	33.2	4	0	40.1	5	0	36.4	2	1
6	MP 3288 (C)	CZ-RI-304	62.7	3	0	45.5	3	0	37.8	4	1	30.2	5	0	39.0	7	0	35.9	3	1
7	HI 8627 (d) (C)	CZ-RI-305	62.0	5	0	44.4	5	0	36.2	5	1	29.6	7	0	40.4	3	0	34.9	6	0
G.M.			63.1			45.1			37.7			33.9			40.7			35.4		
S.E. (M)			2.7			1.1			2.1			1.6			1.2			0.9		
C.D. (10%)			6.7			2.8			5.2			3.8			3.0			2.2		
C.V.			8.6			5.1			11.2			9.2			6.1			5.1		
D.O.S. (d.m.y.)			10.11.2017			27.10.2017			05.11.17			08.11.2017			06.11.2017			13.11.2017		

Trials proposed = 17; Trials not conducted (1) = Rewa
Trials not reported (4) = Anand (RMT), Banswara (RMT), Amreli (LSM), Junagadh (LSM)

1754-AVT-RI-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Gujarat									Rajasthan						Chhattisgarh		
			Sanosara			Vijapur			Dhandhuka			Udaipur			Pratapgarh			Bilaspur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW 47 (d)	CZ-RI-302	30.3	4	0	26.6	5	0	27.2	7	0	29.5	6	0	32.9	7	0	23.7	7	0
2	MP 1331	CZ-RI-303	30.5	3	0	31.4	4	1	30.4	6	0	33.1	3	0	35.8	5	0	28.7	5	0
3	UAS 466 (d)	CZ-RI-306	29.3	7	0	24.6	7	0	34.5	3	0	32.5	5	0	41.9	1	1	31.7	3	0
4	NIAW 3170	CZ-RI-307	30.0	6	0	33.7	2	1	32.4	5	0	35.9	2	1	34.8	6	0	33.5	2	1
5	DBW 110 (C)	CZ-RI-301	34.5	1	1	33.0	3	1	39.5	1	1	32.7	4	0	39.0	3	1	31.1	4	0
6	MP 3288 (C)	CZ-RI-304	33.3	2	1	33.9	1	1	36.4	2	0	37.1	1	1	40.6	2	1	37.3	1	1
7	HI 8627 (d) (C)	CZ-RI-305	30.3	4	0	26.6	6	0	33.1	4	0	27.8	7	0	36.9	4	0	26.1	6	0
G.M.			31.1			30.0			33.4			32.7			37.4			30.3		
S.E. (M)			1.3			1.8			1.1			1.2			1.4			2.1		
C.D. (10%)			3.2			4.3			2.6			2.9			3.4			5.1		
C.V.			8.3			11.8			6.5			7.3			7.4			13.7		
D.O.S. (d.m.y.)			09.11.2017			09.11.2017			26.10.2017			05.11.2017			09.11.2017			05.11.2017		

1754-AVT-RI-TS-TAD-CZ, 2017-18
Sate and Zonal Mean Yield (q/ha)

SN	Variety	Code	MP			Gujarat			Rajasthan			Chhattisgarh			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW 47 (d)	CZ-RI-302	44.2	1	1	28.0	7	0	31.2	7	0	23.7	7	0	36.3	6	0
2	MP 1331	CZ-RI-303	43.4	3	1	30.8	4	0	34.4	5	0	28.7	5	0	37.5	5	0
3	UAS 466 (d)	CZ-RI-306	43.6	2	1	29.4	6	0	37.2	2	1	31.7	3	0	38.0	4	0
4	NIAW 3170	CZ-RI-307	43.3	4	1	32.0	3	0	35.3	4	0	33.5	2	1	38.3	2	1
5	DBW 110 (C)	CZ-RI-301	41.1	7	0	35.7	1	1	35.8	3	0	31.1	4	0	38.0	3	0
6	MP 3288 (C)	CZ-RI-304	41.9	5	0	34.5	2	1	38.9	1	1	37.3	1	1	39.1	1	1
7	HI 8627 (d) (C)	CZ-RI-305	41.2	6	0	30.0	5	0	32.3	6	0	26.1	6	0	35.7	7	0
G.M.			42.7			31.5			35.0			30.3			37.6		
S.E. (M)			0.7			0.8			0.9			2.1			0.5		
C.D. (10%)			1.7			1.9			2.2			5.1			1.1		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-RI-TS-TAD-CZ, 2017-18**

S.N.	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DDW 47 (d)	CZ-RI-302	60-88	72	97-135	118	69-99	83	0	Ey	A	SH	23-49	36
2	MP 1331	CZ-RI-303	56-88	70	96-139	116	65-108	88	0	Ey	A	H	23-50	36
3	UAS 466 (d)	CZ-RI-306	57-88	71	97-137	119	68-95	81	0	Ey	A	SH	30-55	41
4	NIAW 3170	CZ-RI-307	52-81	66	92-132	115	70-109	91	5	Ey	A	SH	24-53	40
5	DBW 110 (C)	CZ-RI-301	53-87	68	94-133	115	72-101	86	10	Ey	A	H	26-51	38
6	MP 3288 (C)	CZ-RI-304	53-85	68	93-136	116	66-98	84	0	Ey	A	H	27-53	37
7	HI 8627 (d) (C)	CZ-RI-305	55-87	71	98-138	119	67-102	86	10	Ey	A	H	30-58	41

1. Ancillary data from Amreli, Sagar, Banswara, Bilaspur, Dhandhuka, Gwalior, Indore, Bhopal, Jabalpur, Junagadh, Powarkheda, Pratapgarh, Sanosara, Udaipur and Vijapur centres.
2. Lodging data form Banswara and Gwalior.

Peninsular Zone

1761-AVT-IR-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Karnataka															
			Arbhavi			Dharwad			Kalloli			Mudhol			Nippani			Ugar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	AKAW 4924	PZ-TS-101	35.7	16	0	38.5	10	1	44.0	15	0	36.0	14	0	38.6	12	0	41.2	6	0
2	GW 491	PZ-TS-102	36.8	14	0	39.0	8	1	53.5	4	1	37.1	13	0	40.7	4	0	38.0	10	0
3	GW 493	PZ-TS-103	37.3	13	0	38.9	9	1	47.9	13	0	40.6	7	0	39.5	7	0	40.8	7	0
4	DBW 235	PZ-TS-104	43.6	7	0	39.9	3	1	50.3	11	0	42.3	5	1	47.8	1	1	43.2	3	1
5	HI 1624	PZ-TS-105	39.0	9	0	39.0	7	1	43.6	16	0	38.1	11	0	32.5	16	0	37.0	13	0
6	GW 495	PZ-TS-108	35.9	15	0	39.1	6	1	45.9	14	0	35.6	15	0	36.5	13	0	33.2	17	0
7	MP 1338	PZ-TS-109	38.1	11	0	37.9	11	1	50.5	10	0	40.0	8	0	40.0	5	0	42.0	5	0
8	HI 8800 (d)	PZ-TS-111	46.5	3	0	37.4	13	1	51.2	8	0	40.6	6	0	39.7	6	0	36.2	15	0
9	MACS 6709	PZ-TS-113	45.9	4	0	37.2	14	1	56.5	2	1	47.1	1	1	40.8	3	0	47.0	2	1
10	HI 1625	PZ-TS-114	30.4	17	0	36.3	15	1	39.9	17	0	35.2	17	0	25.9	17	0	36.4	14	0
11	PBW 770	PZ-TS-116	38.8	10	0	41.0	1	1	48.3	12	0	37.9	12	0	33.1	15	0	34.1	16	0
12	GW 492	PZ-TS-117	37.7	12	0	36.0	16	1	53.3	5	1	38.8	10	0	38.8	11	0	40.4	9	0
13	MACS 6222 (C)	PZ-TS-106	45.3	5	0	40.3	2	1	55.2	3	1	42.7	4	1	39.4	8	0	40.6	8	0
14	DBW 168 (I) (C)	PZ-TS-107	42.3	8	0	39.4	5	1	52.5	7	1	35.6	15	0	39.4	8	0	43.0	4	1
15	MACS 3949 (d) (C)	PZ-TS-110	53.7	2	1	39.8	4	1	56.6	1	1	39.5	9	0	34.8	14	0	37.8	11	0
16	MACS 6478 (C)	PZ-TS-112	44.4	6	0	37.4	12	1	53.3	6	1	44.4	2	1	42.3	2	1	48.0	1	1
17	UAS 428 (d) (C)	PZ-TS-115	54.6	1	1	29.9	17	0	51.0	9	0	44.4	2	1	38.9	10	0	37.8	12	0
G.M.			41.5			38.1			50.2			39.8			38.1			39.8		
S.E. (M)			2.6			2.1			2.2			2.6			2.7			2.4		
C.D. (10%)			6.1			5.0			5.3			6.2			6.3			5.6		
C.V.			12.4			11.1			8.9			13.1			14.0			11.9		
D.O.S. (d.m.y.)			15.11.2017			10.11.2017			10.11.2017			15.11.2017			13.11.2017			08.11.2017		

Trials proposed & conducted = 16

Trials not reported (3) = Mandya (LSM), Akola (LSM), Pravaranagar (LSM)

1761-AVT-IR-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Maharashtra																	
			Mahabaleshwar			Nasik			Niphad			Parbhani			Pune			Karad			Kolhapur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	AKAW 4924	PZ-TS-101	43.6	12	0	39.9	17	0	54.4	5	0	52.7	13	0	59.2	13	0	53.8	8	1	38.3	14	0
2	GW 491	PZ-TS-102	53.4	2	1	45.4	9	0	66.9	1	1	54.2	11	0	63.3	4	0	57.5	2	1	51.4	5	0
3	GW 493	PZ-TS-103	48.3	8	1	52.9	2	1	53.2	7	0	52.4	14	0	55.4	15	0	51.3	12	1	44.2	13	0
4	DBW 235	PZ-TS-104	50.7	4	1	43.2	12	0	49.3	11	0	62.2	4	0	63.6	3	0	56.8	3	1	53.5	4	0
5	HI 1624	PZ-TS-105	48.7	7	1	49.1	5	0	58.5	3	0	51.6	16	0	65.3	2	1	45.9	17	0	48.7	8	0
6	GW 495	PZ-TS-108	42.6	14	0	43.6	11	0	46.9	13	0	51.7	15	0	61.6	6	0	49.5	15	0	58.3	3	1
7	MP 1338	PZ-TS-109	41.1	16	0	47.6	6	0	49.4	10	0	55.5	10	0	56.5	14	0	53.1	9	1	34.7	16	0
8	HI 8800 (d)	PZ-TS-111	44.3	11	0	53.8	1	1	44.5	15	0	62.8	3	0	67.8	1	1	55.0	6	1	65.7	1	1
9	MACS 6709	PZ-TS-113	55.6	1	1	45.7	8	0	45.8	14	0	58.5	6	0	60.9	7	0	54.2	7	1	50.5	7	0
10	HI 1625	PZ-TS-114	47.8	9	0	40.6	14	0	58.0	4	0	43.6	17	0	51.8	17	0	47.3	16	0	33.5	17	0
11	PBW 770	PZ-TS-116	49.3	5	1	40.3	15	0	42.1	16	0	56.5	8	0	59.2	12	0	50.1	13	1	50.8	6	0
12	GW 492	PZ-TS-117	52.5	3	1	43.1	13	0	66.2	2	1	56.1	9	0	54.7	16	0	51.4	11	1	38.0	15	0
13	MACS 6222 (C)	PZ-TS-106	43.2	13	0	49.1	4	0	52.8	8	0	57.6	7	0	60.5	10	0	52.9	10	1	46.8	11	0
14	DBW 168 (l) (C)	PZ-TS-107	42.1	15	0	51.3	3	1	53.3	6	0	62.9	2	0	62.4	5	0	55.2	5	1	45.7	12	0
15	MACS 3949 (d) (C)	PZ-TS-110	47.7	10	0	45.3	10	0	48.2	12	0	60.1	5	0	60.8	9	0	49.8	14	1	62.1	2	1
16	MACS 6478 (C)	PZ-TS-112	48.9	6	1	40.2	16	0	50.1	9	0	69.9	1	1	60.8	8	0	55.5	4	1	47.6	10	0
17	UAS 428 (d) (C)	PZ-TS-115	36.2	17	0	46.4	7	0	37.3	17	0	54.2	12	0	59.3	11	0	58.1	1	1	47.8	9	0
G.M.			46.8			45.7			51.6			56.6			60.2			52.8			48.1		
S.E. (M)			3.2			1.6			2.6			1.5			1.6			3.5			3.5		
C.D. (10%)			7.6			3.7			6.2			3.5			3.7			8.3			8.2		
C.V.			13.7			6.9			10.1			5.2			5.2			13.2			14.4		
D.O.S. (d.m.y.)			15.11.2017			13.11.2017			14.11.2017			5.11.2017			13.11.2017			14.11.2017			13.11.2017		

1761-AVT-IR-TS-TAD-PZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Karnataka			Maharashtra			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	AKAW 4924	PZ-TS-101	39.0	13	0	48.8	14	0	44.3	16	0
2	GW 491	PZ-TS-102	40.8	11	0	56.0	2	1	49.0	5	1
3	GW 493	PZ-TS-103	40.9	10	0	51.1	11	0	46.4	10	0
4	DBW 235	PZ-TS-104	44.5	3	1	54.2	3	1	49.7	1	1
5	HI 1624	PZ-TS-105	38.2	15	0	52.5	8	0	45.9	11	0
6	GW 495	PZ-TS-108	37.7	16	0	50.6	12	0	44.6	15	0
7	MP 1338	PZ-TS-109	41.4	9	0	48.3	16	0	45.1	13	0
8	HI 8800 (d)	PZ-TS-111	41.9	8	0	56.3	1	1	49.7	3	1
9	MACS 6709	PZ-TS-113	45.7	1	1	53.0	7	0	49.7	2	1
10	HI 1625	PZ-TS-114	34.0	17	0	46.1	17	0	40.5	17	0
11	PBW 770	PZ-TS-116	38.9	14	0	49.8	13	0	44.7	14	0
12	GW 492	PZ-TS-117	40.8	12	0	51.7	10	0	46.7	9	0
13	MACS 6222 (C)	PZ-TS-106	43.9	4	1	51.9	9	0	48.2	7	1
14	DBW 168 (l) (C)	PZ-TS-107	42.0	7	0	53.3	6	0	48.1	8	1
15	MACS 3949 (d) (C)	PZ-TS-110	43.7	5	1	53.4	4	0	48.9	6	1
16	MACS 6478 (C)	PZ-TS-112	45.0	2	1	53.3	5	0	49.5	4	1
17	UAS 428 (d) (C)	PZ-TS-115	42.7	6	0	48.5	15	0	45.8	12	0
G.M.			41.2			51.7			46.9		
S.E. (M)			1.0			1.0			0.7		
C.D. (10%)			2.3			2.3			1.6		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-IR-TS-TAD-PZ, 2017-18**

SN	Variety	Code	Agronomic Characteristics						Grain Characteristics					
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	AKAW 4924	PZ-TS-101	50-66	58	96-120	109	79-98	87	0	Ey	A	SH	40-48	44
2	GW 491	PZ-TS-102	48-65	56	93-109	104	72-90	79	0	Ey	A	SH	34-46	41
3	GW 493	PZ-TS-103	51-64	57	98-111	105	73-93	79	0	Ey	A	SH	40-49	45
4	DBW 235	PZ-TS-104	51-70	58	99-121	108	73-93	85	0	Ey	A	SH	38-49	43
5	HI 1624	PZ-TS-105	50-68	56	98-113	105	69-88	75	0	Ey	A	SH	38-50	44
6	GW 495	PZ-TS-108	50-63	59	96-111	107	70-95	78	0	Ey	A	SH-H	36-49	44
7	MP 1338	PZ-TS-109	53-65	60	99-120	107	72-88	80	0	Ey	A	SH	36-50	43
8	HI 8800 (d)	PZ-TS-111	56-67	62	102-120	110	73-86	79	15	M	A	SH	44-51	47
9	MACS 6709	PZ-TS-113	57-71	65	103-122	110	76-98	83	0	Ey	A	SH	41-48	43
10	HI 1625	PZ-TS-114	44-62	53	95-113	106	69-90	78	0	Ey	A	SH	40-54	44
11	PBW 770	PZ-TS-116	50-69	56	95-111	106	69-88	77	0	Ey	A	SH	39-49	44
12	GW 492	PZ-TS-117	51-70	56	98-112	106	60-74	67	0	Ey	A	SH	39-52	43
13	MACS 6222 (C)	PZ-TS-106	50-71	58	98-119	108	71-90	79	0	Ey	A	SH	36-46	41
14	DBW 168 (I) (C)	PZ-TS-107	61-74	65	100-122	109	71-94	82	0	Ey	A	SH	31-50	44
15	MACS 3949 (d) (C)	PZ-TS-110	63-75	70	108-124	113	78-93	85	10	M	A	SH	40-64	49
16	MACS 6478 (C)	PZ-TS-112	56-73	66	101-124	111	76-92	82	0	Ey	A	SH	40-48	43
17	UAS 428 (d) (C)	PZ-TS-115	61-73	68	104-123	110	74-98	86	5	M	A	SH	39-54	45

1. Ancillary data from Arbhavi, Dharwad, Kalloli, Mudhol, Nippani, Ugar, Mahabaleshwar, Nashik, Niphad, Parbhani, Pune, Karad and Kolhapur centres
2. Lodging data from Pune centre only.

1763-AVT-RI-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Maharashtra													
			Niphad			Parbhani			Pune			Savalivihir			Nasik		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1346 (d)	PZ-RI-301	39.1	2	1	30.1	8	0	27.0	6	0	19.3	13	0	26.9	11	0
2	MPO 1336 (d)	PZ-RI-304	24.3	13	0	28.3	13	0	20.0	13	0	22.1	9	0	27.7	9	0
3	HI 8805 (d)	PZ-RI-306	35.3	7	1	32.5	7	0	26.3	7	0	24.7	5	0	31.6	3	1
4	MACS 4058 (d)	PZ-RI-307	37.1	5	1	34.8	6	0	31.0	1	1	23.0	7	0	30.4	4	0
5	MACS 6696	PZ-RI-308	39.3	1	1	39.7	1	1	30.2	3	1	26.7	4	1	30.0	6	0
6	MACS 4059 (d)	PZ-RI-309	31.6	9	0	28.7	11	0	24.5	9	0	19.8	11	0	29.8	7	0
7	NIAW 3170	PZ-RI-310	37.8	4	1	38.2	2	1	28.8	4	1	27.9	2	1	32.5	2	1
8	MACS 6695	PZ-RI-312	38.1	3	1	35.4	5	0	30.8	2	1	28.6	1	1	30.2	5	0
9	HI 8802 (d)	PZ-RI-313	36.0	6	1	29.9	9	0	24.5	10	0	21.1	10	0	28.5	8	0
10	HI 1605 (C)	PZ-RI-302	34.2	8	1	35.7	4	0	27.0	5	0	23.7	6	0	33.4	1	1
11	AKDW 2997-16 (d) (C)	PZ-RI-303	30.1	12	0	28.6	12	0	23.4	11	0	19.4	12	0	24.3	13	0
12	UAS 446 (d) (C)	PZ-RI-305	30.5	11	0	29.1	10	0	23.3	12	0	22.2	8	0	26.9	10	0
13	DBW 93 (C)	PZ-RI-311	31.4	10	0	36.9	3	1	24.8	8	0	26.9	3	1	25.6	12	0
G.M.			34.2			32.9			26.3			23.5			29.1		
S.E. (M)			2.1			1.1			1.4			1.2			0.9		
C.D. (10%)			6.2			3.1			3.5			2.8			2.2		
C.V.			12.5			6.6			11.0			10.1			6.3		
D.O.S. (d.m.y.)			1.11.2017			04.11.2017			11.6.2017			06.11.2017			07.11.2017		

Trials proposed & conducted = 11

Trials not reported (3) = Akola (RMT), Nippani (RMT), Karjat (LSM)

1763-AVT-RI-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Karnataka								
			Dharward			Bailhongal			Bagalkot		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1346 (d)	PZ-TS-101	21.9	12	0	27.4	1	1	31.1	6	0
2	MPO 1336 (d)	PZ-TS-104	25.8	5	1	23.8	6	1	26.1	12	0
3	HI 8805 (d)	PZ-TS-106	23.4	8	0	24.9	5	1	31.3	5	0
4	MACS 4058 (d)	PZ-TS-107	27.3	2	1	22.1	10	0	28.5	10	0
5	MACS 6696	PZ-TS-108	26.9	3	1	22.6	7	0	37.4	2	1
6	MACS 4059 (d)	PZ-TS-109	22.6	10	0	21.0	11	0	24.2	13	0
7	NIAW 3170	PZ-TS-110	24.5	7	1	20.9	12	0	38.5	1	1
8	MACS 6695	PZ-TS-112	29.2	1	1	25.2	4	1	34.0	4	1
9	HI 8802 (d)	PZ-TS-113	26.3	4	1	26.8	2	1	28.9	9	0
10	HI 1605 (C)	PZ-TS-102	24.6	6	1	22.1	9	0	27.1	11	0
11	AKDW 2997-16 (d) (C)	PZ-TS-103	22.8	9	0	22.5	8	0	34.6	3	1
12	UAS 446 (d) (C)	PZ-TS-105	20.3	13	0	25.4	3	1	29.8	7	0
13	DBW 93 (C)	PZ-TS-111	22.3	11	0	20.9	12	0	29.3	8	0
G.M.			24.4			23.5			30.8		
S.E. (M)			1.7			1.8			2.3		
C.D. (10%)			4.9			4.3			5.4		
C.V.			14.0			15.3			14.7		
D.O.S. (d.m.y.)			01.11.2017			10.11.2017			03.11.2017		

1763-AVT-RI-TS-TAD-PZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Karnataka			Maharashtra			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	GW 1346 (d)	PZ-RI-301	26.8	5	0	28.5	8	0	27.8	7	0
2	MPO 1336 (d)	PZ-RI-304	25.3	9	0	24.5	13	0	24.8	13	0
3	HI 8805 (d)	PZ-RI-306	26.5	7	0	30.1	6	0	28.7	5	0
4	MACS 4058 (d)	PZ-RI-307	26.0	8	0	31.3	4	0	29.3	4	0
5	MACS 6696	PZ-RI-308	29.0	2	1	33.2	1	1	31.6	1	1
6	MACS 4059 (d)	PZ-RI-309	22.6	13	0	26.9	10	0	25.3	12	0
7	NIAW 3170	PZ-RI-310	28.0	3	1	33.0	2	1	31.1	3	1
8	MACS 6695	PZ-RI-312	29.5	1	1	32.6	3	1	31.4	2	1
9	HI 8802 (d)	PZ-RI-313	27.3	4	1	28.0	9	0	27.7	8	0
10	HI 1605 (C)	PZ-RI-302	24.6	11	0	30.8	5	0	28.5	6	0
11	AKDW 2997-16 (d) (C)	PZ-RI-303	26.6	6	0	25.2	12	0	25.7	11	0
12	UAS 446 (d) (C)	PZ-RI-305	25.1	10	0	26.4	11	0	25.9	10	0
13	DBW 93 (C)	PZ-RI-311	24.2	12	0	29.1	7	0	27.3	9	0
G.M.			26.3			29.2			28.1		
S.E. (M)			1.1			0.6			0.6		
C.D. (10%)			2.6			1.5			1.3		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-RI-TS-TAD-PZ, 2017-18**

SN	Variety	Code	Agronomic Characteristics						Grain Characteristics					
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW 1346 (d)	PZ-RI-301	56-66	61	103-118	108	76-86	80	10	M	A	SH-H	32-48	38
2	MPO 1336 (d)	PZ-RI-304	51-65	56	103-120	109	73-89	80	0	M	A	H	35-49	46
3	HI 8805 (d)	PZ-RI-306	52-63	59	103-111	106	80-94	87	5	M	A	H	38-49	43
4	MACS 4058 (d)	PZ-RI-307	46-53	50	101-110	103	79-105	91	10	M	A	H	41-52	46
5	MACS 6696	PZ-RI-308	43-52	48	98-104	101	65-92	74	0	Ey	A	SH	38-41	39
6	MACS 4059 (d)	PZ-RI-309	44-53	50	101-109	105	67-95	83	5	Ey-M	A	H	41-54	46
7	NIAW 3170	PZ-RI-310	48-57	53	99-108	104	65-85	75	5	Ey	A	SO-SH	36-47	41
8	MACS 6695	PZ-RI-312	44-54	49	99-105	102	63-77	69	0	Ey	A	SH-H	35-42	38
9	HI 8802 (d)	PZ-RI-313	58-66	62	102-113	109	83-99	93	0	M	A	H	38-52	46
10	HI 1605 (C)	PZ-RI-302	53-62	58	101-110	106	72-86	78	0	Ey	A	SH	27-38	34
11	AKDW 2997-16 (d) (C)	PZ-RI-303	56-64	61	102-110	107	59-86	70	5	Ey-M	A	SH-H	31-42	38
12	UAS 446 (d) (C)	PZ-RI-305	50-71	62	102-115	109	69-92	79	0	M	A	H	32-48	38
13	DBW 93 (C)	PZ-RI-311	54-66	60	101-115	108	58-97	70	0	Ey	A	SH	26-45	35

1. Ancillary data from Bailhongal, Dharwad, Nasik, Niphad, Parbhani, Pune and Savilivihir centres
2. Lodging from Parbhani and Pune centres

Special Trials

SPL-DIC-IR-TS-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Karnataka																	
			Arbhavi			Dharwad			Kalloli			Mandya			Mudhol			Ugar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS 5051	DIC-103	45.3	4	0	33.5	6	0	42.6	6	0	32.3	3	0	44.6	1	1	38.3	4	1
2	HW 4101	DIC-104	46.0	3	1	40.9	2	1	57.6	1	1	30.3	4	0	37.7	6	0	40.9	2	1
3	DDK 1054	DIC-105	44.0	5	0	38.5	3	1	55.7	2	1	34.9	2	1	39.6	4	1	35.9	6	0
4	DDK 1029 (C)	DIC-101	51.9	1	1	36.2	4	0	48.3	5	0	27.8	6	0	38.3	5	1	39.6	3	1
5	MACS 6222 (ae.) (C)	DIC-102	36.0	6	0	44.5	1	1	53.0	4	0	29.9	5	0	41.7	2	1	38.1	5	1
6	HW 1098 (C)	DIC-106	47.7	2	1	35.9	5	0	53.1	3	0	35.2	1	1	40.2	3	1	42.3	1	1
G.M.			45.2			38.2			51.7			31.7			40.3			39.2		
S.E. (M)			2.6			2.7			1.5			0.9			2.5			1.8		
C.D. (10%)			6.6			6.6			3.7			2.3			6.3			4.4		
C.V.			11.7			14.0			5.8			5.9			12.5			9.0		
D.O.S. (d.m.y.)			15.11.2017			12.11.2017			10.11.2017			09.11.2017			15.11.2017			08.11.2017		

Trials proposed = 12; Trials not conducted (1) = Mahabaleshwar

Location wise Mean Yield (q/ha)

SN	Variety	Code	Maharashtra												Tamil Nadu		
			Kolhapur			Karad			Pune			K. Digraj			Wellington		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS 5051	DIC-103	39.1	6	0	59.2	3	1	38.9	6	0	57.7	3	1	45.2	3	1
2	HW 4101	DIC-104	49.6	3	0	52.7	5	0	51.6	2	0	53.0	5	0	46.6	2	1
3	DDK 1054	DIC-105	48.0	4	0	59.6	2	1	49.9	3	0	58.3	2	1	47.1	1	1
4	DDK 1029 (C)	DIC-101	56.8	2	1	63.5	1	1	47.1	5	0	61.0	1	1	45.1	4	1
5	MACS 6222 (ae.) (C)	DIC-102	43.8	5	0	49.9	6	0	60.6	1	1	49.7	6	0	44.3	5	1
6	HW 1098 (C)	DIC-106	58.7	1	1	54.3	4	0	49.5	4	0	56.8	4	1	38.3	6	0
G.M.			49.3			56.5			49.6			56.1			44.4		
S.E. (M)			2.9			2.5			2.7			2.1			2.3		
C.D. (10%)			7.1			6.1			6.7			5.2			5.7		
C.V.			11.6			8.7			10.9			7.4			10.3		
D.O.S. (d.m.y.)			10.11.2017			14.11.2017			13.11.2017			16.11.2017			14.11.2017		

SPL-DIC-IR-TS-PZ, 2017-18
State and Zonal Mean Yield (q/ha)

SN	Variety	Code	Karnataka			Maharashtra			Tamil Nadu			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS 5051	DIC-103	39.4	6	0	48.7	6	0	45.2	3	1	43.3	6	0
2	HW 4101	DIC-104	42.2	2	1	51.7	4	0	46.6	2	1	46.1	4	1
3	DDK 1054	DIC-105	41.4	3	1	54.0	3	0	47.1	1	1	46.5	3	1
4	DDK 1029 (C)	DIC-101	40.4	5	0	57.1	1	1	45.1	4	1	46.9	1	1
5	MACS 6222 (ae.) (C)	DIC-102	40.5	4	1	51.0	5	0	44.3	5	1	44.7	5	0
6	HW 1098 (C)	DIC-106	42.4	1	1	54.8	2	1	38.3	6	0	46.5	2	1
G.M.			41.1			52.9			44.4			45.7		
S.E. (M)			0.9			1.3			2.3			0.7		
C.D. (10%)			2.0			3.0			5.7			1.6		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: SPL-DIC-IR-TS, 2017-18**

SN	Variety	Code	Disease Reaction	Agronomic Characteristics								Grain Characteristics				
			PM	Hd.R	Hd.M	Mat.R	Mat. M	Ht. R	Ht. M	Lod.	Thr.	Col	Tex.	TGW. R	TGW.M	BP
1	MACS 5051	DIC- 103	8	65-79	74	101-114	110	54-100	87	20	M-H	R	SH	32-45	41	0
2	HW 4101	DIC- 104	9	42-80	72	104-116	112	50-89	77	10	M-H	R	SH	38-43	40	0
3	DDK 1054	DIC-105	8	63-79	73	103-115	111	49-85	76	15	H	R	SH	37-46	41	0
4	DDK 1029 (C)	DIC- 101	8	65-79	74	103-116	111	50-92	79	25	M-H	R	SH-H	38-40	39	0
5	MACS 6222 (ae.) (C)	DIC- 102	6	52-80	64	98-112	107	48-102	78	0	Ey	A	SH-H	40-44	43	2
6	HW 1098 (C)	DIC- 106	8	64-80	74	100-116	111	49-90	78	20	M-H	R	SH	39-45	42	0

1. Ancillary data reported from Arbhavi, Dharwad, Kalloli, Wellington, Kolhapur, K Digraj, Ugar Khurd, Pune, Mandya, Mudhol and Karad centres.
2. Powdery mildew data reported from Wellington centre.
3. Lodging and Black point data reported from Pune centre only.

SPL-VLS-TAS-NWPZ/NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttrakhand			Punjab			Haryana						Delhi			UP					
			Pantnagar			Ludhiana			Karnal			Hisar			Delhi			B'shahar			Nagina		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD 3271	VLS-102	37.7	2	1	39.8	3	1	43.5	3	1	28.4	8	0	36.3	6	0	37.0	10	0	28.3	10	0
2	PBW 797	VLS-104	35.8	6	0	41.7	1	1	45.0	2	1	30.1	5	0	42.0	1	1	44.0	2	0	36.5	4	0
3	PBW 757*	VLS-105	39.0	1	1	39.1	4	1	35.2	8	0	28.9	7	0	38.1	3	1	40.0	8	0	31.2	8	0
4	DBW 278	VLS-106	37.3	3	1	37.4	5	0	38.9	6	0	27.5	10	0	29.7	9	0	43.8	4	0	37.1	3	0
5	HI 1621	VLS-107	36.4	4	0	41.0	2	1	46.1	1	1	30.6	2	0	37.5	4	1	40.0	8	0	33.8	7	0
6	PBW 777	VLS-109	36.3	5	0	35.9	7	0	35.0	9	0	28.0	9	0	31.8	8	0	44.0	2	0	35.5	5	0
7	HD 3298	VLS-110	34.0	7	0	34.6	9	0	39.1	5	0	30.5	3	0	41.2	2	1	47.4	1	1	39.1	1	1
8	WR 544 (C)	VLS-101	27.9	10	0	31.2	10	0	31.7	10	0	30.4	4	0	23.4	10	0	40.0	7	0	34.0	6	0
9	DBW 71 (C)	VLS-103	33.6	8	0	37.4	6	0	39.2	4	0	33.8	1	1	35.1	7	0	42.8	5	0	28.4	9	0
10	DBW 14 (C)	VLS-108	32.1	9	0	35.5	8	0	38.6	7	0	29.1	6	0	37.5	5	1	40.5	6	0	37.6	2	0
G.M.			35.0			37.4			39.2			29.7			35.3			42.0			34.2		
S.E. (M)			0.9			1.6			1.2			1.0			2.1			0.3			0.4		
C.D. (10%)			2.2			3.9			2.8			2.4			5.0			0.7			1.0		
C.V.			5.3			8.7			6.0			6.7			11.7			1.5			2.4		
D.O.S. (d.m.y)			11.01.2018			01.01.2018			01.01.2018			12.01.2018			04.01.2018			03.01.2018			12.01.2018		

Trials proposed & conducted = 15; Trials not reported (2) = KVK-Rampur (RMT), Faizabad (HCV)

SPL-VLS-TAS-NWPZ/NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	West Bengal			Uttar Pradesh									Bihar					
			Coochbehar			Varanasi			Kanpur			Barabanki			Sabour			IARI Pusa		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD 3271	VLS-102	25.8	3	1	19.3	7	0	29.5	4	0	28.0	8	0	29.2	2	1	37.2	1	1
2	PBW 797	VLS-104	27.6	1	1	32.1	1	1	35.1	1	1	30.2	5	0	29.2	3	1	33.3	4	0
3	PBW 757	VLS-105	22.5	8	0	16.3	10	0	25.2	7	0	36.2	2	1	17.9	10	0	33.6	3	0
4	DBW 278	VLS-106	25.6	4	1	17.2	9	0	31.3	2	0	31.5	4	0	31.6	1	1	33.9	2	0
5	HI 1621	VLS-107	26.3	2	1	31.0	2	1	25.6	6	0	35.6	3	1	19.8	9	0	25.7	10	0
6	PBW 777	VLS-109	23.1	7	0	20.7	6	0	30.8	3	0	28.4	7	0	21.8	7	0	29.9	9	0
7	HD 3298	VLS-110	23.2	6	0	18.6	8	0	22.0	9	0	36.7	1	1	20.4	8	0	30.4	8	0
8	WR 544 (C)	VLS-101	16.2	10	0	23.2	4	0	20.1	10	0	24.2	9	0	26.3	5	0	31.6	6	0
9	DBW 71 (C)	VLS-103	24.6	5	0	21.6	5	0	28.2	5	0	20.8	10	0	26.7	4	0	32.5	5	0
10	DBW 14 (C)	VLS-108	20.4	9	0	23.7	3	0	24.0	8	0	30.1	6	0	22.0	6	0	31.5	7	0
G.M.			23.5			22.4			27.2			30.2			24.5			32.0		
S.E.(M)			1.1			1.3			0.6			0.5			1.4			0.7		
C.D. (10%)			2.5			3.2			1.5			1.3			3.3			1.6		
C.V.			8.9			11.9			4.4			3.5			11.3			4.2		
D.O.S. (d.m.y)			08.01.2018			11.01.2018			03.01.2018			01.01.2018			02.01.2018			05.01.2018		

Zonal and National Mean Yield (q/ha)

SN	Variety	Code	NWPZ			NEPZ			National		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD 3271	VLS-102	35.9	6	0	28.2	3	0	32.3	4	0
2	PBW 797	VLS-104	39.3	1	1	31.3	1	1	35.6	1	1
3	PBW 757*	VLS-105	35.9	5	0	25.3	7	0	31.0	7	0
4	DBW 278	VLS-106	36.0	4	0	28.5	2	0	32.5	3	0
5	HI 1621	VLS-107	37.9	3	0	27.4	4	0	33.1	2	0
6	PBW 777	VLS-109	35.2	9	0	25.8	6	0	30.9	9	0
7	HD 3298	VLS-110	38.0	2	0	25.2	9	0	32.1	5	0
8	WR 544 (C)	VLS-101	31.2	10	0	23.6	10	0	27.7	10	0
9	DBW 71 (C)	VLS-103	35.7	8	0	25.8	5	0	31.1	6	0
10	DBW 14 (C)	VLS-108	35.8	7	0	25.3	8	0	31.0	8	0
G.M.			36.1			26.6			31.7		
S.E.(M)			0.5			0.4			0.3		
C.D. (10%)			1.1			0.9			0.7		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: SPL-VLS-TAS-NWPZ/NEPZ, 2017-18**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
			YI	ACI	Hd. R	Hd. M	Mat. R	Mat. M	Ht. R	Ht. M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD 3271	VLS - 102	5S	2.0	65-72	69	98-109	102	75-101	92	Ey	A	H	31-37	34
2	PBW 797	VLS - 104	10S	4.2	65-74	70	97-108	102	70-96	87	Ey	A	H	31-36	34
3	PBW 757	VLS - 105	tR	0.04	58-70	65	95-106	101	61-85	82	Ey	A	H	27-35	33
4	DBW 278	VLS - 106	20S	9.2	57-75	67	93-107	100	71-102	94	Ey	A	H	35-41	38
5	HI 1621	VLS - 107	20S	6.0	55-70	65	93-108	100	65-91	86	Ey	A	H	29-33	32
6	PBW 777	VLS - 109	0	0.0	55-75	67	96-106	100	64-87	84	Ey	A	H	27-34	31
7	HD 3298	VLS - 110	0	0.0	65-73	70	95-109	101	70-96	88	Ey	A	H	29-37	32
8	WR 544 (C)	VLS - 101	60S	34.0	57-67	62	87-105	99	65-98	89	Ey	A	H	32-38	36
9	DBW 71 (C)	VLS - 103	5S	1.0	57-70	58	95-108	101	67-87	81	Ey	A	H	31-32	33
10	DBW 14 (C)	VLS - 108	20S	8.0	60-71	65	90-107	100	59-89	80	Ey	A	H	34-44	38

1. Yellow Rust data from Ludhiana, Pantnagar, Karnal, New Delhi and Hisar

North Western Plains Zone
Individual Station Rust Data

SN	Variety	Code	Ludhiana	Pantnagar	Karnal	New Delhi	Hisar
1	HD 3271	VLS - 102	5S	0	5S	0	0
2	PBW 797	VLS - 104	10S	tMS	10S	0	0
3	PBW 757	VLS - 105	tR	0	0	0	0
4	DBW 278	VLS - 106	20S	tMS	20S	5S	0
5	HI 1621	VLS - 107	5S	20S	5S	0	0
6	PBW 777	VLS - 109	0	0	0	0	0
7	HD 3298	VLS - 110	0	0	0	0	0
8	WR 544 (C)	VLS - 101	60S	0	40S	40S	30S
9	DBW 71 (C)	VLS - 103	5S	0	0	0	0
10	DBW 14 (C)	VLS - 108	20S	0	20S	tMR	0

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: SPL-VLS-TAS-NWPZ/NEPZ, 2017-18**

SN	Variety	Code	Brown rust	LB HS (Av)	Agronomic Characteristics							Grain Characteristics			
					Hd. R	Hd. M	Mat. R	Mat. M	Ht. R	Ht. M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD 3271	VLS - 102	5S	35(34)	59-67	63	90-105	98	75-101	87	Ey	A	SH	28-40	32
2	PBW 797	VLS - 104	0	35(24)	58-68	63	92-105	98	70-96	79	Ey	A	SH	28-35	32
3	PBW 757	VLS - 105	0	36(24)	52-62	58	82-104	93	61-85	74	Ey	A	H	28-39	34
4	DBW 278	VLS - 106	0	24(23)	54-64	59	83-105	94	71-102	86	Ey	A	H	28-43	37
5	HI 1621	VLS - 107	20S	24(13)	52-64	59	82-106	94	65-91	81	Ey	A	SH	28-38	32
6	PBW 777	VLS - 109	0	36(24)	54-65	60	83-106	96	64-87	76	Ey	A	SH	31-39	34
7	HD 3298	VLS - 110	0	13(12)	57-66	63	90-106	98	70-96	80	Ey	A	SH	30-42	33
8	WR 544 (C)	VLS - 101	0	25(23)	48-59	53	77-103	91	65-98	80	Ey	A	H	24-39	33
9	DBW 71 (C)	VLS - 103	tR	24(23)	53-63	60	87-103	96	67-87	79	Ey	A	H	24-40	32
10	DBW 14 (C)	VLS - 108	tR	34(23)	50-62	57	80-105	93	59-89	72	Ey	A	SH	24-43	34

1. Leaf blight data from Sabour, Coochbehar and Faizabad.
2. Brown rust data reported from Sabour centre only.

North Eastern Plains Zone
Individual Station Leaf Blight Data

SN	Variety	Code	Sabour	Coochbehar	Faizabad
			LB	LB	LB
1	HD 3271	VLS - 102	02	34	35
2	PBW 797	VLS - 104	25	23	35
3	PBW 757	VLS - 105	36	23	24
4	DBW 278	VLS - 106	03	23	24
5	HI 1621	VLS - 107	14	24	12
6	PBW 777	VLS - 109	36	23	24
7	HD 3298	VLS - 110	13	12	12
8	WR 544 (C)	VLS - 101	25	23	12
9	DBW 71 (C)	VLS - 103	24	12	24
10	DBW 14 (C)	VLS - 108	24	34	12

Seed Production

Breeder & Nucleus Seed Production and Test Stock Multiplication 2017-18

A total indent of 22012.79q breeder seed of 147 wheat varieties from fourteen states, five public sector agencies (Hindustan Insecticide Ltd., Kribhco, IFFDC, NFL and NSC) and two private agencies viz., National Seed Association of India (NSAI) and Soybean Processing Association all together was communicated by DAC for production during 2017-18. The maximum breeder seed indent was placed by NSAI (5662.25q) followed by MP (4540q) and UP (2945q) states. NSC placed maximum breeder seed indent of 2100q followed by Kribhco (362.80q) among public sector agencies. The highest indented varieties were HD 2967 (3043.84q), HD 3086 (1327.60q), Raj 4238 (1119.50q), WH 1105 (847.90q), Lok 1 (810.37q), Raj 4079 (716q).

Breeder Seed Production:

- Total allocation of 21039.62q breeder seed of 136 varieties was made for production at 33 centres in the county after excluding 11 varieties which were either >15 years old or not having nucleus seed.
- Due to insufficient nucleus seed availability, partial breeder seed production of HI 1563 (Pusa Prachi) and Raj 4238 was accepted.
- Total production of breeder seed during the year was 30236.16q. Thus there was a surplus production of 9196.54q over the allocated quantity (21039.62q) of breeder seed.
- JNKVV, Jabalpur produced highest quantity of breeder seed (3617.86q) followed by PAU, Ludhiana (3372.00q) and ARS, Kota (2738.80q).
- The highest quantity of breeder seed was produced in HD 2967 (4235.75q) followed by HD 3086 (1685.00q), GW 322 (1477.91q) and Lok 1 (1050.00q) varieties.
- Breeder seed production of two varieties, MP(JW) 3336 (225q) and JWS 17 (5q) at JNKVV, Jabalpur; Raj 4229 (23q) at RARI, Durgapura, MP(JW) 4010 (10q) at RVSKVV, Gwalior and HDR 77 (9.38q) at IARI, New Delhi was not taken up.

Table 1: Breeder seed indent & production of top ten varieties during 2017-18

S. No.	Variety	Indent (q)	Production (q)
1.	HD 2967	3043.84	4235.75
2.	HD 3086	1327.60	1685.00
3.	RAJ 4238	1119.50	885.30
4.	WH 1105	847.90	882.80
5.	LOK 1	810.37	1050.00
6.	Raj 4079	716.00	655.00
7.	GW 322	564.20	1477.91
8.	PBW 725	557.20	692.00
9.	Purna (HI 1544)	549.90	1035.00
10.	PBW 723	468.00	1018.35

- Breeder seed production of varieties HD 2967 and WH1080 allocated for production at SKUA&T Jammu was not taken up due to non availability of nucleus seed.
- There was an overall breeder seed production deficit in 34 allocated varieties.
- Highest deficit breeder seed production of 1084.70q for ten varieties was observed at JNKVV, Jabalpur followed by RARI, SKNAU, Durgapura (294q).
- Maximum over all deficient breeder seed production of 353.70q was observed at against and allocation of 1955.50q breeder seed production.
- Center wise breeder seed production deficit is given in table below;

Table 2: Centre - wise deficient breeder seed production during 2017-18

Center	Variety	DAC Indent (q)	Indent Allocation (q)	Production (q)	Deficit (q)
JNKVV, Jabalpur	MP(JW) 3336	225.00	225.00	0.00	-225.00
	MP(JW) 1201	190.00	190.00	7.48	-182.52
	MP(JW) 1202	230.00	230.00	54.40	-175.60
	MPO(JW) 1215	180.00	180.00	8.42	-171.58
	MP(JW) 3173	70.00	70.00	37.49	-32.51
	JW 3020	45.00	45.00	27.36	-17.64
	MPO(JW) 1106 (Sudha)	10.00	10.00	0.85	-9.15
	MP(JW) 1142 (Shehli)	15.00	15.00	7.02	-7.98
	JWS 17	5.00	5.00	0.00	-5.00
	MPO 1255	10.00	10.00	3.28	-6.72
Total					**-1084.70**
RARI, Durgapura	Raj 4079	716.00	716.00	465.00	-251.00
	Raj 4128	20.00	20.00	0.00	-20.00
	Raj 4229	23.00	23.00	0.00	-23.00
Total					**-294.00**
PAU, Ludhiana	PBW 343	304.86	242.28	60.00	**-182.28**
IARI, New Delhi	HD 3043	91.80	91.80	75.60	-16.20
	HD 2864 (Urja)	25.00	25.00	13.20	-11.80
	HDR 77	9.38	9.38	0.00	-9.38
	HD 3090	12.20	12.20	6.00	-6.20
	HD 3171	73.00	73.00	30.00	-43.00
Total					**-154.98**
NDUA&T, Faizabad	NW 4018	50.00	50.00	7.86	-42.14
	PBW 373	160.26	50.00	8.20	-41.80
Total					**-83.94**
IARI, Pusa	HI 1563 (Pusa Prachi)	262.00	100.00	47.25	**-52.75**
RAU, Dholi	HI 1563 (Pusa Prachi)	262.00	62.00	56.35	**-15.65**
UAS, Dharwad	UAS 428	20.00	20.00	6.00	-14.00
	UAS 304	24.00	24.00	16.00	-8.00
Total					**-22.00**
PDKV, Akola	WSM 1472(PDKV Washim)	35.00	35.00	21.60	**-13.40**
RVSKVV, Gwalior	MP(JW) 4010	10.00	10.00	0.00	**-10.00**
IGKVV, Raipur	CG 1015 (Chhattisgarh Gehon 4)	20.00	20.00	13.00	**-7.00**
MPKV, Niphad	NIAW 1415 (Netravati)	39.50	39.50	36.00	-3.50
	NIAW 917 (Tapovan)	8.00	8.00	5.50	-2.50
Total					**-6.00**
IARI, Indore	HI 1500 (Amrita)	10.00	10.00	4.50	**-5.50**

Nucleus Seed Production:

- Total allocation of 853.50q nucleus seed of 141 varieties, including 5 new varieties identified in 2018 was made for production during 2017-18.
- Total 1519.13q nucleus seed of 144 varieties was reported by all the centres except SVBUA&T, Meerut and SKUAST, Jammu
- A total of 668.63q surplus quantity of nucleus seed was produced against the total allocation.
- JNKVV, Jabalpur produced maximum quantity (248.00q) of nucleus seed followed by IARI, Indore (208q) and PAU, Ludhiana (132.45q)
- Durgapur centre produced -43.15q less nucleus seed against the allocation of 78.0q.
- Maximum nucleus seed 106.09 q (HD 2967) was produced during 2017-18.

Test stock multiplication

- NSC reported 168.0q seed test stock multiplication of 4 wheat varieties viz., HI 1612 (75.0q), HI 8777 (50.0q), DBW 168 (25.0q) and DBW 173 (18.0q) which were identified and released during 2017-18

Centre-wise Breeder Seed Production Report, *Rabi* 2017-18
Year of Indent: 2017-18 (for use during 2018-19)

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
1. ARS, Kota							
1. C 306	128.50	60.00	223.10	163.10	2.50	13.75	11.25
2. DBW 110	359.40	0.00	0.00	0.00	0.00	1.00	1.00
3. HI 1544 (Purna)	549.90	345.00	440.00	95.00	15.00	16.50	1.50
4. HI 8498 (Malav Shakti)	75.50	75.50	150.00	74.50	3.00	8.25	5.25
5. HI 8713 (Pusa Mangal)	288.00	188.00	200.00	12.00	7.50	8.25	0.75
6. HI 8737 (Pusa Anmol)	254.00	154.00	50.00	-104.00	6.00	3.85	-2.15
7. Raj 1482	205.40	0.00	119.35	119.35	0.00	5.50	5.50
8. Raj 3077	270.40	207.00	250.00	43.00	9.00	11.00	2.00
9. Raj 3765	185.60	127.00	200.00	73.00	5.00	10.45	5.45
10. Raj 4037	231.30	0.00	400.00	400.00	0.00	0.00	0.00
11. Raj 4079	716.00	0.00	190.00	190.00	0.00	10.45	10.45
12. Raj 4120	179.80	109.80	149.05	39.25	4.50	12.10	7.60
13. Raj 4238	1119.50	0.00	367.30	367.30	0.00	8.25	8.25
Total		**1266.30**	**2738.80**	**1472.50**	**52.50**	**109.35**	**56.85**
2. ARI, Pune							
1. MACS 2496	0.00	0.00	0.00	0.00	0.00	0.50	0.50
2. MACS 3949	50.00	50.00	51.00	1.00	2.00	1.30	-0.70
3. MACS 4028	0.00	0.00	0.00	0.00	1.00	0.20	-0.80
4. MACS 6222	74.00	74.00	110.00	36.00	3.00	3.30	0.30
5. MACS 6478	38.00	38.00	65.00	27.00	1.50	1.50	0.00
Total		**162.00**	**226.00**	**64.00**	**7.50**	**6.80**	**-0.70**
3. BAU,Sabour							
1. BRW 3708 (Sabour Samriddhi)	20.00	20.00	25.00	5.00	1.00	5.00	4.00
2. DBW 107	231.60	20.00	0.00	-20.00	1.00	0.00	-1.00
Total		**40.00**	**25.00**	**-15.00**	**2.00**	**5.00**	**3.00**
4. BHU, Varanasi							
1. DBW 107	231.60	0.00	12.00	12.00	0.00	0.00	0.00
2. HUW 234	30.93	30.93	70.00	39.07	1.50	2.00	0.50
3. HUW 468	8.80	0.00	0.00	0.00	0.00	0.50	0.50
4. HUW 510	0.00	0.00	0.00	0.00	0.00	0.50	0.50
Total		**30.93**	**82.00**	**51.07**	**1.50**	**3.00**	**1.50**
5. BISA, Jabalpur							
1. DBW 110	359.40	180.00	148.00	-32.00	7.00	0.00	-7.00
2. GW 322	564.20	84.13	108.00	23.87	3.50	6.50	3.00
Total		**264.13**	**256.00**	**-8.13**	**10.50**	**6.50**	**-4.00**
6. BISA, Ludhiana							
1. DPW 621-50	271.60	20.00	27.00	7.00	1.00	2.80	1.80
2. HD 2967	3043.84	559.60	800.00	240.40	25.00	15.00	-10.00
3. HD 3086 (Pusa Gautami)	1327.60	0.00	0.00	0.00	0.00	5.90	5.90
4. WB 2	37.00	30.00	105.00	75.00	1.50	0.00	-1.50
Total		**609.60**	**932.00**	**322.40**	**27.50**	**23.70**	**-3.80**
7. BISA, Samastipur							
1. DBW 107	231.60	40.00	0.00	-40.00	1.50	0.00	-1.50
2. HD 2967	3043.84	300.00	600.00	300.00	10.00	12.00	2.00
Total		**340.00**	**600.00**	**260.00**	**11.50**	**12.00**	**0.50**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
8. CCS HAU, Hisar							
1. C 306	128.50	68.50	75.60	7.10	2.50	7.50	5.00
2. WH 283	29.20	29.20	57.00	27.80	1.00	4.00	3.00
3. WH 711	97.40	97.40	120.00	22.60	4.00	10.80	6.80
4. WHD 943	40.00	40.00	42.00	2.00	1.50	5.20	3.70
5. WH 1021	16.00	16.00	28.80	12.80	0.75	1.50	0.75
6. WH 1025	65.00	65.00	91.80	26.80	2.50	4.00	1.50
7. WH 1080	65.00	10.00	0.00	-10.00	0.50	4.00	3.50
8. WH 1105	847.90	847.90	882.80	34.90	35.00	38.00	3.00
9. WH 1124	102.80	102.80	157.50	54.70	4.00	9.50	5.50
10. WH 1142	63.20	63.20	78.50	15.30	2.50	8.00	5.50
Total		**1340.00**	**1534.00**	**194.00**	**54.25**	**92.50**	**38.25**
9. CSAUAT, Kanpur							
1. DBW 107	231.60	0.00	100.00	100.00	0.00	8.00	8.00
2. DBW 39	156.40	56.40	71.00	14.60	2.50	3.00	0.50
3. K 0307 (Shatabdi)	16.38	16.38	38.00	21.62	0.75	3.30	2.55
4. K 0402 (Mahi)	55.00	55.00	75.00	20.00	2.50	5.50	3.00
5. K 1006	58.00	58.00	77.00	19.00	2.50	4.95	2.45
6. K 1317	0.00	0.00	0.00	0.00	0.00	3.00	3.00
7. K 7903 (Halana)	12.00	12.00	25.00	13.00	0.50	6.00	5.50
8. K 9107 (Deva)	18.04	18.04	19.00	0.96	0.75	1.00	0.25
9. K 9423 (Unnat Halna)	19.80	19.80	25.00	5.20	0.75	0.00	-0.75
10. PBW 343	304.86	39.38	125.00	85.62	1.50	6.00	4.50
Total		**275.00**	**555.00**	**280.00**	**11.75**	**40.75**	**29.00**
10. CSSRI, Karnal							
1. KRL 213	28.20	28.20	30.00	1.80	1.00	3.00	2.00
2. KRL 210	23.60	23.60	25.00	1.40	1.00	3.00	2.00
Total		**51.80**	**55.00**	**3.20**	**2.00**	**6.00**	**4.00**
11. DSR, Mau							
1. HD 2967	3079.94	20.00	20.00	0.00	1.00	0.00	-1.00
Total		**20.00**	**20.00**	**0.00**	**1.00**	**0.00**	**-1.00**
12. GBPUAT, Pantnagar							
1. CBW 38	72.40	22.40	65.00	42.60	1.00	0.80	-0.20
2. DPW 621-50	271.60	51.60	60.00	8.40	2.00	0.80	-1.20
3. HD 2894 (Pusa Wheat 109)	6.00	6.00	20.00	14.00	0.50	0.80	0.30
4. PBW 154	235.79	235.79	260.00	24.21	10.00	4.00	-6.00
5. PBW 226	80.52	80.52	90.00	9.48	3.50	4.00	0.50
6. PBW 343	304.86	23.20	50.00	26.80	1.00	0.80	-0.20
7. PBW 373	160.26	88.26	90.00	1.74	3.50	0.80	-2.70
8. PBW 502	193.36	37.00	50.00	13.00	1.50	3.50	2.00
9. PBW 550	216.50	61.00	65.00	4.00	2.50	3.00	0.50
10. UP 262	24.51	24.51	40.00	15.49	1.00	0.80	-0.20
11. UP 2338	19.20	19.20	30.00	10.80	0.75	0.80	0.05
12. UP 2572	10.80	10.80	25.00	14.20	0.50	3.00	2.50
13. UP 2628	61.00	61.00	70.00	9.00	2.50	1.20	-1.30
Total		**721.28**	**915.00**	**193.72**	**30.25**	**24.30**	**-5.95**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
13. HPKVV, Palampur							
1. HPW 249	30.00	30.00	31.00	1.00	1.50	2.00	0.50
2. HPW 349	65.00	65.00	179.50	114.50	2.50	3.50	1.00
3. HPW 360	40.00	40.00	40.00	0.00	1.50	1.60	0.10
4. WH 1080	65.00	40.00	44.50	4.50	1.50	2.00	0.50
Total		**175.00**	**295.00**	**120.00**	**7.00**	**9.10**	**2.10**
14. IARI, Indore							
1. HD 2932 (Pusa Wheat 111)	111.20	0.00	190.50	190.50	0.00	0.00	0.00
2. HD 2987	11.00	11.00	21.00	10.00	0.50	15.00	14.50
3. HD 4728	32.00	32.00	32.00	0.00	1.50	10.00	8.50
4. HI 1500 (Amrita)	10.00	10.00	4.50	-5.50	0.50	6.50	6.00
5. HI 1531 (Harshita)	45.00	45.00	143.00	98.00	2.00	37.00	35.00
6. HI 1544 (Purna)	549.90	204.90	595.00	390.10	8.00	43.50	35.50
7. HI 1563 (Pusa Prachi)	262.00	0.00	0.00	0.00	0.00	17.00	17.00
8. HI 1605	25.00	25.00	80.50	55.50	1.00	4.50	3.50
9. HI 1612	0.00	0.00	0.00	0.00	1.00	0.00	-1.00
10. HI 8663 (Pusa)	88.00	88.00	140.00	52.00	3.50	20.00	16.50
11. HI 8713 (Pusa Mangal)	288.00	100.00	160.00	60.00	4.00	15.00	11.00
12. HI 8737 (Pusa Anmol)	254.00	100.00	287.50	187.50	4.00	35.00	31.00
13. HI 8759	252.00	252.00	386.00	134.00	10.00	5.00	-5.00
14. HI 8777	0.00	0.00	0.00	0.00	1.00	0.00	-1.00
Total		**867.90**	**2040.00**	**1172.10**	**37.00**	**208.50**	**171.50**
15. IARI, Karnal/Shimla							
1. HD 2851 (Pusa Vishesh)	137.40	137.40	145.00	7.60	5.50	0.00	-5.50
2. HD 2932 (Pusa Wheat 111)	111.20	111.20	0.00	-111.20	4.50	16.50	12.00
3. HD 2967	3043.84	660.00	700.00	40.00	30.00	13.44	-16.56
4. HD 3086 (Pusa Gautami)	1327.60	336.60	410.00	73.40	15.00	3.65	-11.35
5. HS 507 (Pusa Suketi)	38.00	38.00	38.00	0.00	1.50	4.57	3.07
6. HS 542 (Pusa Kiran)	39.00	39.00	40.00	1.00	1.50	2.90	1.40
7. HS 562	9.00	9.00	15.00	6.00	0.50	3.30	2.80
8. WR 544 (Pusa Gold)	16.98	7.60	10.00	2.40	0.50	0.00	-0.50
Total		**1338.80**	**1358.00**	**19.20**	**59.00**	**44.36**	**-14.64**
16. SPU, IARI, New Delhi							
1. HD 2864 (Urja)	25.00	25.00	13.20	-11.80	1.00	2.50	1.50
2. HD 2967	3043.84	343.99	350.00	6.01	15.00	21.60	6.60
3. HD 3043	91.80	91.80	75.60	-16.20	3.50	9.00	5.50
4. HD 3059 (Pusa Pachhati)	106.60	106.60	110.00	3.40	4.50	14.00	9.50
5. HD 3086 (Pusa Gautami)	1327.60	991.00	990.00	-1.00	35.00	37.50	2.50
6. HD 3090	12.20	12.20	6.00	-6.20	0.50	1.50	1.00
7. HD 3118 (Pusa Vatsala)	119.18	74.38	0.00	-74.38	3.00	5.50	2.50
8. HD 3171	0.00	73.00	0.00	-73.00	3.00	2.00	-1.00
9. HD 4728	32.00	0.00	0.00	0.00	0.00	1.50	1.50
10. HDR 77	9.38	9.38	0.00	-9.38	0.50	0.30	-0.20
Total		**1727.35**	**1544.80**	**-182.55**	**66.00**	**95.40**	**29.40**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
17. IARI, Pusa							
1. HD 2733 (VSM)	92.69	50.00	210.00	160.00	2.00	2.00	0.00
2. HD 2967	3043.84	150.00	413.40	263.40	6.00	6.00	0.00
3. HD 2985 (Pusa Basant)	103.40	103.40	245.40	142.00	4.00	4.00	0.00
4. HD 3118 (Pusa Vatsala)	119.18	44.80	178.40	133.60	2.00	7.50	5.50
5. HD 3171	73.00	0.00	30.00	30.00	0.00	2.00	2.00
6. HI 1563 (Pusa Prachi)	262.00	100.00	47.25	-52.75	4.00	5.00	1.00
Total		**448.20**	**1124.45**	**676.25**	**18.00**	**26.50**	**8.50**
18. IGKVV, Raipur							
1. CG 1013 (Chhattisgarh Genoh 3)	2018	0.00	0.00	0.00	0.00	1.00	1.00
2. CG 1015 (Chhattisgarh Genoh 4)	20.00	20.00	13.00	-7.00	1.00	1.50	0.50
3. CG 5016 (Ratan)	180.00	180.00	334.40	154.40	7.00	14.00	7.00
4. DBW 110	359.40	155.00	281.20	126.20	6.50	4.80	-1.70
5. GW 366	406.00	50.00	70.00	20.00	2.00	6.00	4.00
6. HI 617 (Sujata)	30.00	30.00	44.00	14.00	1.50	6.00	4.50
7. JW 3336	0.00	0.00	0.00	0.00	0.00	4.80	4.80
8. MP(JW) 1203	265.00	40.00	88.40	48.40	1.50	3.60	2.10
Total		**475.00**	**831.00**	**356.00**	**19.50**	**41.70**	**22.20**
19. IIWBR, Karnal							
1. CBW 38	72.40	50.00	83.50	33.50	2.00	4.00	2.00
2. DBW 14	0.00	0.00	0.00	0.00	0.00	1.20	1.20
3. DBW 16	0.00	0.00	0.00	0.00	0.00	4.00	4.00
4. DBW 17	178.45	6.00	102.04	96.04	0.50	4.00	3.50
5. DBW 39	156.40		46.50	46.50	0.00	3.00	3.00
6. DBW 71	45.00	25.00	40.00	15.00	1.00	4.00	3.00
7. DBW 88	226.60	30.00	152.00	122.00	1.50	4.75	3.25
8. DBW 90	109.40	59.40	80.00	20.60	2.50	3.00	0.50
9. DBW 107	231.60	171.60	61.00	-110.60	7.00	6.75	-0.25
10. DBW 110	359.40	24.40	67.50	43.10	1.00	6.50	5.50
11. DBW 168	0.00	0.00	0.00	0.00	1.00	2.30	1.30
12. DBW 173	0.00	0.00	0.00	0.00	1.00	3.50	2.50
13. DPW 621-50	271.60	0.00	11.50	11.50	0.00	0.00	0.00
14. HD 2967	3043.84	310.00	592.35	282.35	10.00	8.50	-1.50
15. HD 3086 (Pusa Gautami)	1327.60	0.00	285.00	285.00	0.00	7.35	7.35
16. PBW 723	468.00	0.00	18.35	18.35	0.00	1.25	1.25
17. WB 2	37.00	7.00	500.30	493.30	0.50	11.20	10.70
Total		**683.40**	**2040.04**	**1356.64**	**28.00**	**75.30**	**47.30**
20. JNKVV, Jabalpur							
1. DBW 110	359.40	0.00	0.00	0.00	0.00	3.00	3.00
2. GW 273	65.95	65.95	279.93	213.98	2.50	15.00	12.50
3. GW 322	564.20	69.00	1052.91	983.91	3.00	40.00	37.00
4. GW 366	406.00	102.00	256.05	154.05	4.00	15.00	11.00
5. JSW 17	5.00	5.00	0.00	-5.00	0.50	1.00	0.50
6. JW 3020	45.00	45.00	27.36	-17.64	2.00	3.00	1.00
7. JW 3288	345.50	345.50	806.41	460.91	15.00	50.00	35.00
8. MP(JW) 1142 (Shenil)	15.00	15.00	7.02	-7.98	0.75	2.00	1.25
9. MP(JW) 1201	190.00	190.00	7.48	-182.52	7.50	4.00	-3.50
10. MP(JW) 1202	230.00	230.00	54.40	-175.60	10.00	5.00	-5.00

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
11. MP(JW) 1203	265.00	150.00	95.20	-54.80	6.00	6.00	0.00
12. MP(JW) 3173	70.00	70.00	37.49	-32.51	3.00	5.00	2.00
13. MP(JW) 3211	330.00	330.00	584.72	254.72	15.00	40.00	25.00
14. MP(JW) 3336	225.00	225.00	0.00	-225.00	9.00	30.00	21.00
15. MP(JW) 3382	70.00	70.00	396.34	326.34	3.00	20.00	17.00
16. MPO 1255	10.00	10.00	3.28	-6.72	0.50	4.00	3.50
17. MPO(JW) 1106 (Sudha)	10.00	10.00	0.85	-9.15	0.50	1.00	0.50
18. MPO(JW) 1215	180.00	180.00	8.42	-171.58	7.00	4.00	-3.00
Total		**2112.45**	**3617.86**	**1505.41**	**89.25**	**248.00**	**158.75**
21. Lokbharti, Sanosara							
1. Lok 1	810.37	810.37	1050.00	239.63	15.00	35.00	20.00
Total		**810.37**	**1050.00**	**239.63**	**15.00**	**35.00**	**20.00**
22. MPKV, Niphad							
1. NIAW 301 (Trimbak)	14.00	14.00	25.00	11.00	0.50	8.83	8.33
2. NIAW 917 (Tapovan)	8.00	8.00	5.50	-2.50	0.50	4.07	3.57
3. NIAW 1415 (Netravati)	39.50	39.50	36.00	-3.50	1.50	7.39	5.89
4. NIAW 1994 (Phule Samadhan)	20.00	20.00	255.00	235.00	1.00	11.51	10.51
Total		**81.50**	**321.50**	**240.00**	**3.50**	**31.80**	**28.30**
23. NDUA&T, Faizabad							
1. DBW 17	178.45	31.25	0.00	-31.25	1.50	0.50	-1.00
2. DBW 107	231.60	0.00	10.00	10.00	0.00	1.00	1.00
3. HD 2967	3043.84	0.00	0.00	0.00	0.00	1.25	1.25
4. NW 4018	50.00	50.00	7.86	-42.14	2.00	1.50	-0.50
5. NW 5054	8.00	8.00	26.52	18.52	0.50	0.00	-0.50
6. PBW 373	160.26	50.00	8.20	-41.80	2.00		-2.00
7. PBW 550	216.50	0.00	0.00	0.00	0.00	2.25	2.25
Total		**139.25**	**52.58**	**-86.67**	**6.00**	**6.50**	**0.50**
24. PAU, Ludhiana							
1. DBW 17	178.45	89.20	90.00	0.80	3.50		-3.50
2. DPW 621-50	271.60	100.00	165.00	65.00	4.00	8.50	4.50
3. HD 2967	3043.84	73.00	180.00	107.00	3.00	4.50	1.50
4. HPBW 01	75.00	75.00	100.00	25.00	3.00	8.00	5.00
5. PBW 343	304.86	242.28	60.00	-182.28	10.00	10.50	0.50
6. PBW 373	160.26	22.00	22.00	0.00	1.00	1.00	0.00
7. PBW 443	47.60	47.60	48.00	0.40	2.00	2.00	0.00
8. PBW 502	193.36	156.36	200.00	43.64	6.50	7.00	0.50
9. PBW 550	216.50	155.50	310.00	154.50	6.50	8.70	2.20
10. PBW 590	45.80	45.80	65.00	19.20	2.00	4.00	2.00
11. PBW 644	94.00	94.00	110.00	16.00	4.00	6.00	2.00
12. PBW 658	27.20	27.20	28.00	0.80	1.00	1.00	0.00
13. PBW 660	41.40	41.40	42.00	0.60	1.50	2.75	1.25
14. PBW 677	237.00	237.00	260.00	23.00	10.00	15.50	5.50
15. PBW 723	468.00	468.00	1000.00	532.00	20.00	24.50	4.50
16. PBW 725	557.20	557.20	692.00	134.80	25.00	28.50	3.50
Total		**2431.54**	**3372.00**	940.46	**103.00**	**132.45**	**29.45**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
25. PDKV, Akola							
1. AKAW 4210-6 (PDKV Sardar)	1.00	1.00	10.00	9.00	0.50	2.72	2.22
2. AKAW 4627	17.80	17.80	61.48	43.68	0.75	0.39	-0.36
3. WSM 1472(PDKV Washim)	35.00	35.00	21.60	-13.40	1.50	0.54	-0.96
Total		**53.80**	**93.08**	39.28	**2.75**	**3.65**	**0.90**
26. RARI, SKNAU, Durgapura							
1. Raj 1482	205.40	205.40	105.00	-100.40	8.00	1.45	-6.55
2. Raj 3077	270.40	63.40	90.00	26.60	2.50	2.50	0.00
3. Raj 3765	185.60	58.60	48.00	-10.60	2.50	2.25	-0.25
4. Raj 4037	231.30	231.30	97.00	-134.30	10.00	2.30	-7.70
5. Raj 4079	716.00	716.00	465.00	-251.00	30.00	11.20	-18.80
6. Raj 4083	0.00	0.00	0.00	0.00	0.00	1.20	1.20
7. Raj 4120	179.80	70.00	217.00	147.00	3.00	4.90	1.90
8. Raj 4128	20.00	20.00	0.00	-20.00	1.00	0.00	-1.00
9. Raj 4229	23.00	23.00	0.00	-23.00	1.00	0.00	-1.00
10. Raj 4238	1119.50	506.00	518.00	12.00	20.00	7.05	-12.95
11. Raj 6560	0.00	0.00	0.00	0.00	0.00	2.00	2.00
Total		**1893.70**	**1540.00**	**-353.70**	**78.00**	**34.85**	**-43.15**
27. SKUA&T Jammu							
1. HD 2967	3043.84	100.00	0.00	-100.00	4.00	0.00	-4.00
2. WH 1080	65.00	15.00	0.00	-15.00	0.75	0.00	-0.75
Total		**115.00**	**0.00**	**-115.00**	**4.75**	**0.00**	**-4.75**
28. SVPUA&T, Meerut							
1. DBW 17	178.45	52.00	48.12	-3.88	2.00	0.00	-2.00
2. DBW 71	45.00	20.00	0.00	-20.00	1.00	0.00	-1.00
3. DBW 88	226.60	196.60	137.44	-59.16	7.50	0.00	-7.50
4. DBW 90	109.40	50.00	30.10	-19.90	2.00	0.00	-2.00
5. DPW 621-50	271.60	100.00	83.04	-16.96	4.00	0.00	-4.00
Total		**418.60**	**298.70**	**-119.90**	**16.50**	**0.00**	**-16.50**
29. RAU, Dholi, Muzaffarpur							
1. DBW 39	156.40	100.00	173.00	73.00	4.00	30.05	26.05
2. DBW 107	231.60	0.00	55.00	55.00	0.00	5.50	5.50
3. HD 2733 (VSM)	92.69	42.69	206.00	163.31	1.50	11.00	9.50
4. HD 2967	3043.84	547.25	600.00	52.75	20.00	23.80	3.80
5. HI 1563 (Pusa Prachi)	262.00	62.00	56.35	-5.65	2.50	2.00	-0.50
6. WR 544 (Pusa Gold)	16.98	9.38	0.00	-9.38	0.50	0.00	-0.50
Total		**761.32**	**1090.35**	**329.03**	**28.50**	**72.35**	**43.85**
30. RVSKVV, Gwalior							
1. GW 366	406.00	50.00	270.00	220.00	2.00	19.50	17.50
2. MP(JW) 1203	265.00	75.00	151.00	76.00	3.00	3.00	0.00
3. MP(JW) 4010	10.00	10.00	0.00	-10.00	0.50	2.50	2.00
4. MP(RVW) 4106	202.00	202.00	278.00	76.00	8.00	23.10	15.10
Total		**337.00**	**699.00**	**362.00**	**13.50**	**48.10**	**34.60**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus (+)/ Deficit(-)
31. SDAU, Vijapur							
1. GW 173	49.00	49.00	68.00	19.00	2.00	13.00	11.00
2. GW 322	564.20	442.00	317.00	-125.00	20.00	7.20	-12.80
3. GW 451	10.00	10.00	32.00	22.00	0.50	9.20	8.70
4. GW 496	230.40	230.40	250.00	19.60	10.00	33.75	23.75
Total		**731.40**	**667.00**	**-64.40**	**32.50**	**63.15**	**30.65**
32. JAU, Junagarh							
1. GW 366	406.00	204.00	118.00	-86.00	8.00	5.00	-3.00
Total		**204.00**	**118.00**	**-86.00**	**8.00**	**5.00**	**-3.00**
32. UAS, Dharwad							
1. DWR 162	12.00	12.00	32.00	20.00	0.50	1.24	0.74
2. UAS 304	24.00	24.00	16.00	-8.00	1.00	1.26	0.26
3. UAS 428	20.00	20.00	6.00	-14.00	1.00	1.22	0.22
4. UAS 375	0.00	0.00	0.00	0.00	1.00	0.50	-0.50
Total		**56.00**	**54.00**	**-2.00**	**3.50**	**4.22**	**0.72**
33. VPKAS, Almora							
1. VL 892	25.00	25.00	35.00	10.00	1.00	1.60	0.60
2. VL 907	27.00	27.00	39.00	12.00	1.00	2.20	1.20
3. VL 953	25.00	25.00	36.00	11.00	1.00	1.50	0.50
4. VL 829	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Total		**77.00**	**110.00**	**33.00**	**3.00**	**6.30**	**3.30**
Grand Total	**22012.79**	**21039.62**	**30236.16**	**9196.54**	**853.50**	**1519.13**	**668.63**

Variety wise Breeder Seed Production Report of *Rabi* 2017-18

Year of Indent: 2017-18 (for use during 2018-19)

Variety	Notification Year	Breeder seed (q)			Nucleus seed (q)		
		DAC Indent	Production	Surplus(+)/ Deficit (-)	BNS-I target	Actual Production	Surplus (+) /Deficit(-)
1. AKAW 4210-6 (PDKV Sardar)	2016	1.00	10.00	9.00	0.50	2.72	2.22
2. AKAW 4627	2012	17.80	61.48	43.68	0.75	0.39	-0.36
3. BRW 3708 (Sabour Samriddhi)	2017	20.00	25.00	5.00	1.00	5.00	4.00
4. C 306	1969	128.50	298.70	170.20	5.00	21.25	16.25
5. CBW 38	2009	72.40	148.50	76.10	3.00	4.80	1.80
6. CG 1013 (Chhattisgarh Gehon 3)	2018				0.00	1.00	1.00
7. CG 1015 (Chhattisgarh Gehon 4)	2017	20.00	13.00	-7.00	1.00	1.50	0.50
8. CG 5016 (Ratan)	2009	180.00	334.40	154.40	7.00	14.00	7.00
9. DBW 107	2015	231.60	238.00	6.40	9.50	21.25	11.75
10. DBW 110	2015	359.40	496.70	137.30	14.50	14.30	-0.20
11. DBW 14	2002				0.00	1.20	1.20
12. DBW 16	2006				0.00	4.00	4.00
13. DBW 168	2018				1.00	2.30	1.30
14. DBW 17	2007	178.45	240.16	61.71	7.50	4.50	-3.00
15. DBW 173	2018				1.00	3.50	2.50
16. DBW 39	2010	156.40	290.50	134.10	6.50	36.05	29.55
17. DBW 71	2013	45.00	40.00	-5.00	2.00	4.00	2.00
18. DBW 88	2014	226.60	289.44	62.84	9.00	4.75	-4.25
19. DBW 90	2014	109.40	110.10	0.70	4.50	3.00	-1.50
20. DPW 621-50	2011	271.60	346.54	74.94	11.00	12.10	1.10
21. DWR 162	1993	12.00	32.00	20.00	0.50	1.24	0.74
22. GW 173	1993	49.00	68.00	19.00	2.00	13.00	11.00
23. GW 273	1998	65.95	279.93	213.98	2.50	15.00	12.50
24. GW 322	2002	564.20	1477.91	882.78	26.50	53.70	27.20
25. GW 366	2007	406.00	714.05	308.05	16.00	45.50	29.50
26. GW 451	2016	10.00	32.00	22.00	0.50	9.20	8.70
27. GW 496	1990	230.40	250.00	19.60	10.00	33.75	23.75
28. HD 3171	2017	73.00	30.00	30.00	3.00	4.00	2.00
29. HD 2189	1980	113.50	0.00	-113.50	0.00	0.00	0.00
30. HD 2733 (VSM)	2001	92.69	416.00	323.31	3.50	13.00	9.50
31. HD 2851 (Pusa Vishesh)	2005	137.40	145.00	7.60	5.50	0.00	-5.50
32. HD 2864 (Urja)	2005	25.00	13.20	-11.80	1.00	2.50	1.50
33. HD 2894 (Pusa Wheat 109)	2008	6.00	20.00	14.00	0.50	0.80	0.30
34. HD 2932 (Pusa Wheat 111)	2008	111.20	190.50	79.30	4.50	16.50	12.00
35. HD 2967	2014	3043.84	4235.75	1191.91	123.00	106.09	-16.91
36. HD 2985 (Pusa Basant)	2011	103.40	245.40	142.00	4.00	4.00	0.00
37. HD 2987	2011	11.00	21.00	10.00	0.50	15.00	14.50
38. HD 3043	2012	91.80	75.60	-16.20	3.50	9.00	5.50
39. HD 3059 (Pusa Pachhati)	2013	106.60	110.00	3.40	4.50	14.00	9.50
40. HD 3086 (Pusa Gautami)	2014	1327.60	1685.00	357.40	50.00	54.40	4.40
41. HD 3090	2014	12.20	6.00	-6.20	0.50	1.50	1.00
42. HD 3118 (Pusa Vatsala)	2016	119.18	178.40	59.22	5.00	13.00	8.00
43. HD 4728	2016	32.00	32.00	0.00	1.50	11.50	10.00
44. HDR 77	1990	9.38	0.00	-9.38	0.50	0.30	-0.20
45. HI 1418	2000	22.00	0.00	-22.00	0.00	0.00	0.00
46. HI 1500 (Amrita)	2003	10.00	4.50	-5.50	0.50	6.50	6.00
47. HI 1531 (Harshita)	2006	45.00	143.00	98.00	2.00	37.00	35.00
48. HI 1544 (Purna)	2008	549.90	1035.00	485.10	23.00	60.00	37.00
49. HI 1563 (Pusa Prachi)	2011	262.00	103.60	-158.40	6.50	24.00	17.50
50. HI 1605	2017	25.00	80.50	55.50	1.00	4.50	3.50
51. HI 1612	2018				1.00	0.00	-1.00
52. HI 617 (Sujata)	1982	30.00	44.00	14.00	1.50	6.00	4.50
53. HI 8498 (Malav Shakti)	1999	75.50	150.00	74.50	3.00	8.25	5.25
54. HI 8663 (Posan)	2008	88.00	140.00	52.00	3.50	20.00	16.50
55. HI 8713 (Pusa Mangal)	2013	288.00	360.00	72.00	11.50	23.25	11.75
56. HI 8737 (Pusa Anmol)	2015	254.00	337.50	83.50	10.00	38.85	28.85
57. HI 8759	2017	252.00	386.00	134.00	10.00	5.00	-5.00

Variety	Notification Year	Breeder seed (q)			Nucleus seed (q)		
		DAC Indent	Production	Surplus(+)/ Deficit (-)	BNS-I target	Actual Production	Surplus (+) /Deficit(-)
58. HI 8777	2018				1.00	0.00	-1.00
59. HPBW 01	2017	75.00	100.00	25.00	3.00	8.00	5.00
60. HPW 249	2010	30.00	31.00	1.00	1.50	2.00	0.50
61. HPW 349	2013	65.00	179.50	114.50	2.50	3.50	1.00
62. HPW 360	2016	40.00	40.00	0.00	1.50	1.60	0.10
63. HS 507 (Pusa Suketi)	2011	38.00	38.00	0.00	1.50	4.57	3.07
64. HS 542 (Pusa Kiran)	2015	39.00	40.00	1.00	1.50	2.90	1.40
65. HS 562	2016	9.00	15.00	6.00	0.50	3.30	2.80
66. HUW 234	1986	30.93	70.00	39.07	1.50	2.00	0.50
67. HUW 468	1999	8.80	0.00	-8.80	0.00	0.50	0.50
68. HUW 510					0.00	0.50	0.50
69. JWS 17	1997	5.00	0.00	-5.00	0.50	1.00	0.50
70. JW 3020	2005	45.00	27.36	-17.64	2.00	3.00	1.00
71. JW 3288	2012	345.50	806.41	460.91	15.00	50.00	35.00
72. JW 3336	2013				0.00	4.80	4.80
73. K 0307 (Shatabdi)	2007	16.38	38.00	21.62	0.75	3.30	2.55
74. K 0402 (Mahi)	2013	55.00	75.00	20.00	2.50	5.50	3.00
75. K 1006	2014	58.00	77.00	19.00	2.50	4.95	2.45
76. K 1317	2017				0.00	3.00	3.00
77. K 7903 (Halana)	2001	12.00	25.00	13.00	0.50	6.00	5.50
78. K 9107 (Deva)	1996	18.04	19.00	0.96	0.75	1.00	0.25
79. K 9423 (Unnat Halna)	2005	19.80	25.00	5.20	0.75	0.00	-0.75
80. KRL 210	2012	23.60	25.00	1.40	1.00	3.00	2.00
81. KRL 213	2012	28.20	30.00	1.80	1.00	3.00	2.00
82. Lok 1	1982	810.37	1050.00	239.63	15.00	35.00	20.00
83. MACS 2496	1991				0.00	0.50	0.50
84. MACS 3949	2017	50.00	51.00	1.00	2.00	1.30	-0.70
85. MACS 4028	2018				1.00	0.20	-0.80
86. MACS 6222	2010	74.00	110.00	36.00	3.00	3.30	0.30
87. MACS 6478	2014	38.00	65.00	27.00	1.50	1.50	0.00
88. MP(JW) 1142 (Snehil)	2007	15.00	7.02	-7.98	0.75	2.00	1.25
89. MP(JW) 1201	2011	190.00	7.48	-182.52	7.50	4.00	-3.50
90. MP(JW) 1202	2010	230.00	54.40	-175.60	10.00	5.00	-5.00
91. MP(JW) 1203	2009	265.00	334.60	69.60	10.50	12.60	2.10
92. MP(JW) 3173	2009	70.00	37.49	-32.51	3.00	5.00	2.00
93. MP(JW) 3211	2010	330.00	584.72	254.72	15.00	40.00	25.00
94. MP(JW) 3336	2013	225.00	0.00	-225.00	9.00	30.00	21.00
95. MP(JW) 3382	2015	70.00	396.34	326.34	3.00	20.00	17.00
96. MP(JW) 4010	2003	10.00	0.00	-10.00	0.50	2.50	2.00
97. MP(RVW) 4106	2012	202.00	278.00	76.00	8.00	23.10	15.10
98. MPO 1255	2016	10.00	3.28	-6.72	0.50	4.00	3.50
99. MPO(JW) 1106 (Sudha)	2003	10.00	0.85	-9.15	0.50	1.00	0.50
100.MPO(JW) 1215	2010	180.00	8.42	-171.58	7.00	4.00	-3.00
101.NIAW 1415 (Netravati)	2011	39.50	36.00	-3.50	1.50	7.39	5.89
102.NIAW 1994 (Phule Samadhan)	2016	20.00	255.00	235.00	1.00	11.51	10.51
103.NIAW 301 (Trimbak)	2002	14.00	25.00	11.00	0.50	8.83	8.33
104.NIAW 917 (Tapovan)	2006	8.00	5.50	-2.50	0.50	4.07	3.57
105.NW 4018	2014	50.00	7.86	-42.14	2.00	1.50	-0.50
106.NW 5054	2014	8.00	26.52	18.52	0.50	0.00	-0.50
107.PBW 154	1988	235.79	260.00	24.21	10.00	4.00	-6.00
108.PBW 226	1989	80.52	90.00	9.48	3.50	4.00	0.50
109.PBW 314		1.00	0.00	-1.00	0.00	0.00	0.00
110.PBW 343	1996	304.86	235.00	-69.86	12.50	17.30	4.80
111.PBW 373	1997	160.26	120.20	-40.06	6.50	1.80	-4.70
112.PBW 443	2000	47.60	48.00	0.40	2.00	2.00	0.00
113.PBW 502	2004	193.36	250.00	56.64	8.00	10.50	2.50
114.PBW 509	2006	1.40	0.00	-1.40	0.00	0.00	0.00
115.PBW 533	2006	7.00	0.00	-7.00	0.00	0.00	0.00
116.PBW 550	2008	216.50	375.00	158.50	9.00	13.95	4.95
117.PBW 596	2009	1.40	0.00	-1.40	0.00	0.00	0.00

Variety	Notification Year	Breeder seed (q)			Nucleus seed (q)		
		DAC Indent	Production	Surplus(+)/ Deficit (-)	BNS-I target	Actual Production	Surplus (+) /Deficit(-)
118.PBW 590	2009	45.80	65.00	19.20	2.00	4.00	2.00
119.PBW 644	2012	94.00	110.00	16.00	4.00	6.00	2.00
120.PBW 658	2015	27.20	28.00	0.80	1.00	1.00	0.00
121.PBW 660	2013	41.40	42.00	0.60	1.50	2.75	1.25
122.PBW 677	2015	237.00	260.00	23.00	10.00	15.50	5.50
123.PBW 723	2017	468.00	1018.35	550.35	20.00	25.75	5.75
124.PBW 725	2015	557.20	692.00	134.80	25.00	28.50	3.50
125.Raj 1482	1983	205.40	224.35	18.95	8.00	6.95	-1.05
126.Raj 3077	1989	270.40	340.00	69.60	11.50	13.50	2.00
127.Raj 3765	1996	185.60	248.00	62.40	7.50	12.70	5.20
128.RAJ 3777	2003	5.00	0.00	-5.00	0.00	0.00	0.00
129.Raj 4037	2004	231.30	497.00	265.70	10.00	2.30	-7.70
130.Raj 4079	2011	716.00	655.00	-61.00	30.00	21.65	-8.35
131.Raj 4083	2007				0.00	1.20	1.20
132.Raj 4120	2009	179.80	366.05	186.25	7.50	17.00	9.50
133.Raj 4128		20.00	0.00	-20.00	1.00	0.00	-1.00
134.Raj 4229	2013	23.00	0.00	-23.00	1.00	0.00	-1.00
135.Raj 4238	2013	1119.50	885.30	-234.20	20.00	15.30	-4.70
136.SHIATA- W6 (AAI-W6)	2014	10.00	0.00	-10.00	0.00	0.00	0.00
137.Raj 6560					0.00	2.00	2.00
138.UAS 304	2013	24.00	16.00	-8.00	1.00	1.26	0.26
139.UAS 375	2018				1.00	0.50	-0.50
140.UAS 428	2012	20.00	6.00	-14.00	1.00	1.22	0.22
141.UP 2338	1995	19.20	30.00	10.80	0.75	0.80	0.05
142.UP 2526	2007	0.80	0.00	-0.80	0.00	0.00	0.00
143.UP 2572	2007	10.80	25.00	14.20	0.50	3.00	2.50
144.UP 2565	2006	0.40	0.00	-0.40	0.00	0.00	0.00
145.UP 262	1978	24.51	40.00	15.49	1.00	0.80	-0.20
146.UP 2628	2010	61.00	70.00	9.00	2.50	1.20	-1.30
147.VL 829	2003				0.00	1.00	1.00
148.VL 892	2008	25.00	35.00	10.00	1.00	1.60	0.60
149.VL 907	2010	27.00	39.00	12.00	1.00	2.20	1.20
150.VL 953	2016	25.00	36.00	11.00	1.00	1.50	0.50
151.WB 2	2017	37.00	605.30	568.30	2.00	11.20	9.20
152.WH 1021	2008	16.00	28.80	12.80	0.75	1.50	0.75
153.WH 1025	2010	65.00	91.80	26.80	2.50	4.00	1.50
154.WH 1080	2011	65.00	44.50	-20.50	2.75	6.00	3.25
155.WH 1105	2013	847.90	882.80	34.90	35.00	38.00	3.00
156.WH 1124	2014	102.80	157.50	54.70	4.00	9.50	5.50
157.WH 1142	2015	63.20	78.50	15.30	2.50	8.00	5.50
158.WH 147	1978	144.30	0.00	-144.30	0.00	0.00	0.00
159.WH 283	1985	29.20	57.00	27.80	1.00	4.00	3.00
160.WH 711	2002	97.40	120.00	22.60	4.00	10.80	6.80
161.WHD 943	2011	40.00	42.00	2.00	1.50	5.20	3.70
162.WR 544 (Pusa Gold)	2005	16.98	10.00	-6.98	1.00	0.00	-1.00
163.WSM 1472(PDKV Washim)	2012	35.00	21.60	-13.40	1.50	0.54	-0.96
Total		**22012.79**	**30236.00**	**8223.37**	**853.50**	**1519.13**	**668.63**

Wheat Physiology

Physiological investigations on thermal stress tolerance in wheat

Multi-location Heat Tolerance trial (MLHT) was conducted to identify the temperature stress tolerant lines from AVT genotypes under testing in different trials under TS and LS conditions.Two trials MLHT-1 (new 16 AVT entries for CZ and PZ trial and 25 entries for NWPZ and NEPZ trial) and MLHT-2 (final year 16 AVT entries) were conducted during the crop season 2017-18. Both the trials were proposed and conducted at 15 locations across different zones. Trial data is not reported from Dharwad as the plot size was not as per recommended and there was no yield difference between timely and late sown conditions at Indore and Ranchi locations.

Sowing was done under timely (November) and late sown (December) conditions with at least 21 days difference between the sowing dates to expose the crop to optimum and high temperature environments, respectively. The two trials were sown in 4 x 4 and 5 x 5 lattice square design for 16 and 25 entries with two replications. The source of seed for this experiment was common for all the locations and recommended agronomic practices for respective trials were followed to raise a good crop. Observations on weather, growth and yield parameters were recorded at all the locations in the prescribed format. Physiological parameters *viz.* canopy temperature (CT), chlorophyll content index (CCI) and chlorophyll fluorescence (CFL) were recorded at 15 DAA and 21 DAA at Pune, Junagadh, Hisar, Pantnagar, Ludhiana, Kanpur, Karnal and Malda

Magnitude of heat stress: The mean minimum and maximum temperatures before and after heading were estimated by taking into consideration the minimum days to heading and maximum days to maturity at respective locations. Heat degree days (HDD) or growing degree days (GDD) were computed with 5.5^0C as base temperature for spring wheat genotypes.

- Compared to previous crop season minimum temperature across centres were lower by 1.3^0C and 1.1^0C under TS and LS conditions, respectively during vegetative phase. During reproductive phase, minimum temperature was higher by 0.8^0C and 1.7^0C under TS and LS conditions, respectively.
- Maximum temperature, compared to previous crop season during vegetative phase across centres were lower by 1.8^0C & 0.4^0C under TS and LS conditions, respectively. However the maximum temperature was higher by 1.7^0C & 2.3^0C under TS and LS conditions respectively during reproductive phase.
- The temperature during grain filling period was $>30^0$C only in CZ&PZ centres. but in most of the centres of NWPZ and NEPZ the average maximum temperature during grain filling has remained $<30^0$C
- The CZ and PZ received on an average of 7-8 sunshine hours thoroughout the crop season. NWPZ received an average of 6 and 7.2 sunshine hours during vegetative and grainfilling period, respectively. NEPZ received 5.6 and 7hrs sunshine during vegetative and grainfilling period, respectively.
- Compared to previous crop season, the mean HDD across centres decreased by 113 and 41 degree days under TS and LS conditions, respectively during vegetative phase and it has been increased by 149 and 86 degree days under TS and LS conditions, respectively during reproductive phase.
- The rainfall received in all the centres were very minimum during crop season. Karnal and Ludhiana received relatively high rainfall during vegetative phase and Malda during reproductive phase.
- The congenial temperature during vegetative period, relatively lower temperature ($<30^0$C) during grain filling in major wheat growing zones (NWPZ & NEPZ) of India has contributed for higher production this year.
- The centrewise minimum and maximum temperature regimes during vegetative and grainfilling period are mentioned in table 1:

Table 1: The mean minimum and maximum temperature and HDD during vegetative and reproductive phase under TS & LS conditions

Location	Vegetative phase						Reproductive phase					
	Min. temp.		Max. temp.		HDD		Min. temp.		Max. temp.		HDD	
	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS
PZ												
Pune	13.0	11.3	29.6	29.8	853	809	11.8	14.4	31.0	33.3	939	898
Niphad	11.5	10.9	28.5	28.2	739	732	11.4	12.0	31.3	32.0	1076	943
Parbhani	11.5	9.7	30.3	30.2	969	810	12.9	15.9	32.6	34.8	984	1071
CZ												
Junagadh	15.6	13.2	30.3	30.1	855	806	14.0	17.2	30.7	34.3	909	810
NWPZ												
Ludhiana	7.7	7.5	20.9	20.3	765	663	13.5	15.6	28.1	30.6	1071	844
Karnal	6.7	7.5	20.4	21.1	654	618	12.9	15.2	28.7	31.8	764	756
Hisar	6.6	6.1	22.4	21.8	747	667	10.5	13.7	28.1	31.8	883	689
Pantnagar	7.6	7.4	20.7	21.2	651	599	10.6	14.2	28.2	32.0	817	754
Durgapura	9.7	8.7	25.4	25.0	868	828	11.4	16.9	28.6	33.3	818	803
NEPZ												
Kanpur	8.1	8.2	23.2	23.2	742	720	12.2	16.9	28.7	34.0	883	894
Faizabad	7.1	7.1	22.0	21.0	633	602	11.0	14.0	30.0	33.0	804	781
Ranchi	5.9	6.2	24.1	24.8	740	709	12.2	14.0	29.1	31.0	666	793
Malda	12.6	10.9	23.4	28.2	872	732	16.8	12.0	30.2	32.0	1080	942

Identification of heat tolerant genotypes

MLHT1

- Data from all 4 centres (Pune, Niphad, Parbhani and Junagadh) was used for pooled analysis across centres in CZ&PZ trial.
- The HSI values ranged from -0.06 to 1.42 and the genotypes HI 1625 (-0.061), MACS 6709 (0.733), AKAW 4924 (0.77), GW 492 (0.82), RW 5 (0.94) and DBW 235 (0.99) were found to be relatively less sensitive to thermal regimes alongwith the check entries (Table 2a).
- Data from all 9 centres (Ludhiana, Karnal, Hisar, Pantnagar, Durgapura, Kanpur, Faizabad, Ranchi and Malda) was used for pooled analysis across centres in NWPZ & NEPZ trial.The HSI values ranged from 0.29 to 1.43 and the genotypes DBW 221 (0.5), PBW 762 (0.66), DBW 233 (0.74), DBW 223 (0.79), RW 5 (0.82), BRW 3792 (0.84), PBW 769 (0.9), UP 2981 (0.93), PBW 771 (0.95), K 1601 (0.96), WH 1218 (1.03) and HD 3249 (1.03) were found to be relatively less sensitive to thermal regimes alongwith the check entries (Table 2b).
- Location wise HSI of genotypes is given in Annexure Ia & Ib.

Table 2a: HSI of genotypes in CZ&PZ, MLHT-1 across locations

Genotype	Grain Yield (g)		*R%	HSI
	TS	LS		
HI1625	1083.7	1093.7	-0.9	-0.06
MACS6709	1312.9	1168.3	11.0	0.73
AKAW 4924	1169.3	1033.5	11.6	0.77
GW 492	1279.9	1123.1	12.3	0.82
RW5	1226.7	1052.9	14.2	0.94
DBW235	1266.8	1076.7	15.0	1.00
RWP2017-21	1279.6	1085.3	15.2	1.01
HI1624	1311.3	1099.2	16.2	1.08
GW493	1266.5	1049.5	17.1	1.14
PBW770	1319.9	1085.1	17.8	1.18
GW491	1322.5	1084.7	18.0	1.20
GW495	1341.4	1094.6	18.4	1.22
MP1338	1321.1	1052.5	20.3	1.35
Checks				
HD2932 (C)	1312.7	1138.6	13.3	0.88
WH730 (C)	1236.0	1026.5	17.0	1.13
DBW150 (C)	1238.9	975.2	21.3	1.42

***Reduction% in grain yield under LS compared to TS**

Table 2b: HSI of genotypes in NWPZ&NEPZ MLHT-1 across locations

Genotype	Grain Yield (g)		*R%	HSI
	TS	LS		
DBW221	1161.7	1067.8	8.1	0.50
PBW762	1383.8	1235.3	10.7	0.66
DBW233	1433.2	1260.5	12.1	0.74
DBW223	1487.4	1295.7	12.9	0.79
RW5	1225.8	1060.9	13.5	0.82
BRW3792	1227.8	1059.5	13.7	0.84
PBW769	1370.0	1169.5	14.6	0.90
UP2981	1353.5	1147.3	15.2	0.93
PBW771	1398.5	1180.7	15.6	0.96
K1601	1314.2	1108.9	15.6	0.96
WH1218	1298.2	1079.8	16.8	1.03
HD3249	1432.1	1190.8	16.9	1.03
DBW222	1491.1	1233.2	17.3	1.06
HI1621	1518.3	1251.5	17.6	1.08
PBW766	1525.1	1248.2	18.2	1.11
DBW237	1394.1	1136.0	18.5	1.13
HD3254	1407.5	1146.8	18.5	1.14
PBW763	1377.9	1116.3	19.0	1.16
RWP 2017-21	1283.0	1036.7	19.2	1.18
PBW773	1533.6	1176.1	23.3	1.43
Checks				
DBW14 (C)	1126.2	1073.4	4.7	0.29
DBW71 (C)	1456.2	1158.7	20.4	1.25
DBW150 (C)	1399.8	1099.5	21.5	1.32
RAJ3765 (C)	1346.8	1098.0	18.5	1.13
WH730 (C)	1440.8	1147.3	20.4	1.25

***Reduction% in grain yield under LS compared to TS**

Table 3: HSI of genotypes in MLHT-2 across locations (Pooled over years and locations)

Genotype	Grain Yield (g)		*R%	HSI
	TS	LS		
HD3219	1564.1	1138.8	27.2	0.98
PBW752	1609.1	1166.8	27.5	0.99
HI1617	1583.7	1131.3	28.6	1.03
WH1202	1568.3	1115.8	28.9	1.04
DBW187	1624.2	1153.0	29.0	1.04
HD3226	1629.4	1144.4	29.8	1.07
PBW750	1645.9	1150.8	30.1	1.08
DBW196	1511.2	1047.9	30.7	1.10
HP1963	1579.5	1094.9	30.7	1.10
DBW189	1612.3	1113.8	30.9	1.11
UP2942	1564.1	1042.9	33.3	1.20
Checks				
DBW14 (C)	1385.5	1076.9	22.3	0.80
DBW71 (C)	1548.2	1139.1	26.4	0.95
HD2932 (C)	1481.5	1117.8	24.6	0.88
RAJ3765 (C)	1453.9	1139.0	21.7	0.78
WH730 (C)	1420.0	1099.6	22.6	0.81

***Reduction% in LS compared to TS**

MLHT2

- This trial evaluated the entries tested under 2016-17 & 2017-18. 16 genotypes tested during both the years at eleven common centres (Pune, Niphad, Parbhani, Junagadh, Durgapura, Hisar, Ludhiana, Pantnagar, Faizabad, Kanpur and Malda) were used for pooled analysis.
- The HSI values ranged from 0.78 to 1.2 and the genotypes HD3219 (0.98), PBW752 (0.99), HI 1617 (1.03), WH1202 (1.04) and DBW187 (1.04) were found to be relatively less sensitive to thermal regimes alongwith the check entries (Table 3).
- The HSI for each of the genotype in each of the study centres are reported in (Annexure II)

Correlation of HSI with different traits

The pooled analysis of the data over locations and over years indicated reduction in most of the measured traits under LS condition. The instrument measured traits like CCI, CT and CFL values at TS and LS conditions are mentioned in Annexure III. In order to identify the trait association with lower HSI, the Pearson correlation was estimated for all measured traits over 2 years and across locations under LS condition (Table 4).

The lower HSI showed positive correlation with productive tillers (PT), grain yield (GY),Thousand grain weight (TGW), grain filling duration (GFD), grain weight per spike (GWS), CCI1 and CCI2 but was significant only with grain number per spike (GNS) at 5% level of significance under LS condition. HSI showed negative correlation with CT and CFL at 15 & 21 DAA but was not significant.

Table 4: The pearson correlation of different traits with HSI under LS condition.

Pearson Correlation Co-efficients												
Traits	PT	GY	TGW	GNS	GWS	GFD	CCI1*	CCI2*	CT1	CT2	CFL1	CFL2
HSI (R^2)	0.523	0.495	0.174	**0.908**	0.069	0.443	0.701	0.690	-0.376	-0.249	-0.01	-0.09
P<0.05	0.183	0.211	0.679	**0.001**	0.870	0.271	0.052	0.057	0.358	0.552	0.996	0.736

***1&2 in table indicates measurements at 15DAA and 21DAA**

Annexure Ia: The location wise HSI of genotypes in CZ & PZ, MLHT-1

Genotype	Pune	Niphad	Parbhani	Junagadh
AKAW 4924	2.07	1.07	-1.06	1.07
DBW 235	1.62	0.99	0.95	0.85
GW 491	2.33	1.01	1.04	0.86
GW 492	-0.22	0.95	1.09	0.98
GW 493	-0.64	1.09	2.63	0.99
GW 495	1.43	0.89	0.89	1.08
HI1624	-0.29	1.06	1.31	1.25
HI1625	2.01	0.99	-1.59	0.45
MACS 6709	-0.71	0.99	0.00	1.21
MP1338	0.51	1.01	1.39	1.19
PBW 770	2.37	0.85	1.24	0.93
RW 5	1.06	1.05	1.22	0.89
RWP 2017-21	1.51	0.85	0.99	0.86
DBW150 (C)	0.22	1.19	1.82	1.25
HD2932 (C)	0.81	1.05	1.13	1.03
WH730 (C)	1.64	0.94	1.75	0.94

Annexure Ib: The location wise HSI of genotypes in NWPZ & NEPZ, MLHT-1

Genotype	Ludhiana	Karnal	Hisar	Pantnagar	Durgapura	Kanpur	Faizabad	Ranchi	Malda
BRW3792	0.92	0.40	1.06	1.56	1.69	0.84	0.67	2.68	0.48
DBW221	0.22	7.48	1.02	0.67	0.48	1.05	0.68	0.98	-1.35
DBW222	0.90	0.09	0.99	1.05	1.97	1.10	1.17	1.47	1.05
DBW223	0.63	-0.16	0.84	0.58	1.39	0.53	1.30	0.88	0.67
DBW233	0.47	2.15	1.44	0.69	1.18	0.45	0.49	0.43	0.74
DBW237	1.35	0.05	1.01	1.34	-1.80	1.69	0.64	1.20	1.22
HD3249	1.10	3.05	0.91	0.94	1.03	1.52	0.82	0.58	0.67
HD3254	1.02	1.80	1.42	1.48	-1.20	0.75	1.02	0.16	1.10
HI1621	0.64	0.17	0.92	0.23	1.46	1.48	0.80	0.57	0.97
K1601	1.20	-0.57	1.19	1.97	1.33	-0.04	0.70	0.98	0.53
PBW762	0.39	-0.68	0.90	0.60	1.68	0.18	1.04	1.19	0.84
PBW763	1.30	4.16	0.78	-0.29	3.04	1.37	1.54	1.79	1.84
PBW766	0.75	1.14	0.91	1.25	0.00	1.38	1.57	0.74	0.75
PBW769	0.70	-1.09	0.95	1.43	-0.34	0.88	0.80	0.94	0.86
PBW771	1.75	0.29	0.93	0.51	-1.42	1.08	1.16	2.90	0.97
PBW773	0.89	-1.18	0.75	0.89	2.99	1.31	1.39	1.09	2.57
RW5	0.72	4.81	1.13	1.09	0.32	1.18	1.29	2.68	0.09
RWP 2017-21	1.59	-0.45	0.98	1.17	0.51	1.02	0.87	1.19	1.54
UP2981	0.44	-1.98	0.81	0.77	0.78	0.46	0.82	0.92	2.86
WH1218	1.64	3.57	1.19	-0.32	2.91	0.88	0.44	0.57	0.27
DBW14 (C)	0.77	6.64	1.19	0.27	-2.20	0.27	1.04	0.90	0.24
DBW71 (C)	1.57	2.28	0.80	2.32	-3.24	1.40	1.50	0.57	0.78
DBW150 (C)	1.40	1.11	0.92	1.23	2.12	1.31	1.06	0.62	1.58
RAJ3765 (C)	1.33	1.91	1.03	0.31	3.37	0.97	0.52	0.47	0.24
WH730 (C)	1.27	-0.30	0.91	2.31	1.82	0.74	1.15	1.24	1.87

Annexure II: The location wise HSI of genotypes in MLHT-2
(Pooled over years centre wise)

Genotype	Pune	Niphad	Parbhani	Junagadh	Ludhiana	Hisar	Pantnagar	Durgapura	Kanpur	Faizabad	Malda
DBW187	0.99	0.86	1.21	0.80	1.13	1.11	1.40	1.67	1.07	0.86	1.03
DBW189	1.07	1.09	1.48	1.01	1.10	1.07	0.68	0.41	1.36	0.99	0.85
DBW196	0.68	0.95	1.07	0.99	1.21	0.98	1.13	1.40	1.37	0.93	1.50
HD3219	0.57	1.06	0.92	0.90	0.78	1.04	1.28	1.00	0.88	1.17	1.13
HD3226	0.52	0.95	0.69	1.12	1.02	1.14	0.79	1.32	1.42	1.22	1.08
HI1617	0.93	1.11	0.79	1.15	0.85	1.11	1.12	0.63	0.89	1.06	0.99
HP1963	0.92	1.13	1.11	1.08	1.22	1.08	0.83	1.59	1.30	0.72	1.40
PBW750	1.01	0.97	0.29	1.03	1.39	1.09	0.97	1.68	1.17	1.13	0.91
PBW752	1.27	1.03	0.80	1.07	1.26	0.93	0.86	-0.20	1.04	0.96	1.22
UP2942	1.20	0.91	1.64	0.98	1.80	1.32	1.30	2.31	1.46	0.80	1.03
WH1202	1.24	1.00	1.53	1.00	1.22	1.02	0.84	1.14	0.46	1.29	1.56
DBW14 (C)	0.71	0.98	0.87	1.03	0.57	0.67	0.89	0.38	0.25	1.13	0.75
DBW71 (C)	1.53	1.11	0.71	1.04	0.72	0.96	0.91	-1.78	1.10	1.00	0.32
HD2932 (C)	0.96	0.97	0.79	1.18	0.54	0.71	1.30	2.00	0.44	0.94	0.95
RAJ 3765 (C)	0.90	1.08	0.92	0.51	0.61	0.75	0.70	0.63	0.67	1.10	0.58
WH 730 (C)	1.35	0.81	1.09	1.00	0.08	0.69	0.87	1.09	0.69	0.66	0.38

Annexure III: CCI, CFL and CT measured at different growth stages in MLHT-2
(Pooled over locations and years)

Genotype	CCI				CFL				CT			
	15 DAA		21 DAA		15 DAA		21 DAA		15 DAA		21 DAA	
	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS
DBW187	44.0	45.8	41.3	42.2	0.717	0.719	0.702	0.686	23.1	26.4	25.8	28.5
DBW189	45.1	46.0	43.4	43.7	0.723	0.705	0.718	0.690	22.9	26.4	25.4	27.1
DBW196	46.1	44.2	43.7	44.0	0.677	0.664	0.693	0.675	23.0	26.4	25.3	28.0
HD 3219	44.2	44.4	41.7	42.4	0.714	0.712	0.718	0.708	23.7	26.8	26.3	28.3
HD 3226	44.8	45.2	42.8	43.6	0.734	0.705	0.714	0.702	23.3	26.2	25.8	27.4
HI1617	44.4	45.1	42.3	44.4	0.732	0.696	0.707	0.690	23.3	27.1	26.5	28.7
HP1963	45.4	45.6	42.2	42.1	0.714	0.709	0.732	0.694	23.2	26.9	25.9	28.3
PBW 750	44.9	45.1	42.1	44.3	0.724	0.716	0.713	0.702	23.3	26.4	26.3	28.1
PBW 752	45.8	45.9	41.0	43.4	0.739	0.711	0.700	0.681	23.5	27.1	25.8	27.9
UP 2942	44.9	45.9	42.1	43.7	0.718	0.694	0.696	0.689	23.1	26.6	25.5	27.6
WH1202	45.1	46.0	41.6	43.0	0.740	0.695	0.702	0.666	23.5	26.8	27.0	28.3
DBW14 (C)	42.4	44.7	39.9	43.0	0.725	0.699	0.705	0.689	23.3	26.7	26.5	28.9
DBW 71 (C)	44.6	45.9	41.7	43.1	0.724	0.703	0.718	0.698	23.2	27.1	30.3	28.0
HD2932 (C)	42.5	45.4	38.4	42.9	0.733	0.685	0.729	0.707	23.1	26.3	25.5	27.5
RAJ3765 (C)	40.5	41.7	38.2	41.2	0.730	0.704	0.716	0.706	23.1	26.7	26.1	28.5
WH730 (C)	43.6	43.1	40.6	42.3	0.736	0.703	0.690	0.677	23.3	26.8	26.3	27.9

Germplasm Nurseries

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 90 lines including *T. aestivum* (71), *T. durum* (14), *T. dicoccum* (3) and Triticale (2) was provided to 34 centres. The bread wheat entries were categorized as agronomic bases, disease resistant, genetic stocks, yield component and elite lines. Durum entries were categorized as new agronomic bases, disease resistant lines and genetic stock whereas *T. dicoccum* and Triticale entries were grouped as disease resistant. The nursery was conducted in augmented design with two bread wheat checks Sonalika and HD2967 alongwith durum check HI 8713 which were accommodated once in a block of 30 entries. An infector row was also included for observing disease incidence. Based on performances of genotypes for various yield component traits in respective target environments, these were utilized by the cooperators for wheat improvement programme.

Utilization of genotypes

The utilization report indicated that 31 centres utilised the NGSN entries except Pantnagar, Dhaulakuan and Ranchi. It indicated 16.4% utilization and all the entries were utilized by either of the centres for different purposes. Bread wheat entries were utilised by 31 centres whereas durum entries were utilised by 15 centres. *Dicoccum* and triticale entries were utilised by 8 and 4 centres, respectively. The utilisation (%) was highest for bread wheat (18.8%) followed by dicoccum (14.0%), triticale (8.1%) and durum wheat (7.1%) entries. HUW695, GW2013-491, KRL386, DBW17, GW451, HD3086, K1315, KBRL82-2, HI1612, K1314, PHSL11, DWAP1541, GW2014-544, HI1609, HI1610 and DBW129 were the most utilized entries. Maximum utilization was done by Powarkheda (48) followed by Udaipur (33), Sagar (30), Burdwan (28), Malan (24), Pune (23) and Durgapura (20) centres.

Utilization of genotypes in NGSN during 2017-18

Category	Entries	Utilization	
		Frequency	%
T. aestivum			
Agronomic bases	32	175	17.6
Disease resistance	7	54	24.9
Genetic stocks	9	51	18.3
Yield component lines	11	70	20.5
Elite lines	12	63	16.9
Sub total	71	413	18.8
T. durum			
Agronomic bases	9	18	6.5
Disease resistance	4	10	8.1
Genetic stock	1	3	9.7
Sub total	14	31	7.1
T. dicoccum			
Disease resistance	3	13	14.0
Triticale			
Disease resistance	2	5	8.1
Total	**91**	**442**	**16.4**

Short Duration Screening Nursery

The 31st Short Duration Screening Nursery (SDSN) was planted during 2nd fortnight of December 2018 to identify early maturing genotypes along with high yield and tolerance to high temperature during grain filling period under late sown conditions. The nursery consisting of 44 genotypes contributed by various centres and six checks (Sonalika, DBW71, DBW14, WR544, HD2932 and NIAW34) was supplied to 25 locations in all the six zones across the country in augmented design. Each entry was sown in a plot size of two row of 2.5 m length spaced 18 cm apart.

Data were reported by 23 centres (Dhaulakuan, Hisar, Karnal, Pantnagar, Kanpur, Coochbehar, Faizabad, Ranchi, Kalyani, Varanasi, Sabour, Shillongani, Indore, Powarkheda, Bilaspur, Jabalpur, Lokbharti, Niphad, Pune, Dharwad, Malan, Bajaura, Khudwani). Data from Jammu and Patna centres were not received. The data were recorded for germination percentage, tillering capacity, days to heading, days to maturity, grain number per spike, 1000-grains weight (g) and yield per plot (g). The data was pooled for each zone on various traits in order to identify promising lines. Performance of promising high yielding, early maturing genotypes for different zones are presented here.

Identification of short duration entries

Based on the pooled analysis mean yield and for earliness, the promising genotypes showing better performance over the best check were identified for each zone. Eleven genotypes viz. AKAW4842, DWAP1408, GW2010-321, GW2012-475, GW2014-619, GW2014-624, LBP2014-12, RAJ4358, RWP2011-15, RWP2014-18 and RWP2014-19 were evaluated for third year and out of these, five promising lines were identified as early maturing and high yielding for different zones. The five superior entries are LBP2014-12 for NWPZ (Table 1), DWAP1408 and GW2010-321 for NEPZ (Table 2), GW 2012-475 for CZ (Table 3) and RWP2014-18 for NHZ (Table 4). These five genotypes can be further used in wheat breeding programs to develop varieties with high yield with short maturity duration.

Table 1: Performance of promising genotypes of SDSN identified for earliness and yield in NWPZ during three years of evaluation (2015-16, 2016-17 and 2017-18)

Trait	Year	Genotype	Checks		
		LBP2014-12	Sonalika	DBW71	WR544
Mean Yield (g/plot)	2015-16	517	367	429	418
	2016-17	407	332	489	442
	2017-18	595	396	561	481
	Average	506	365	493	447
Heading days	2015-16	84	76	78	72
	2016-17	82	79	81	78
	2017-18	86	79	81	77
	Average	84	78	80	76
Maturity days	2015-16	120	119	120	119
	2016-17	119	119	120	119
	2017-18	123	120	122	120
	Average	121	119	121	119
Grains/spike	2015-16	37	40	45	49
	2016-17	49	42	53	48
	2017-18	52	44	51	40
	Average	46	42	50	45
1000 gr. wt.	2015-16	39	39	40	39
	2016-17	35	37	39	38
	2017-18	41	39	40	38
	Average	38	38	40	38

Table 2: Performance of promising genotypes of SDSN identified for earliness and yield in NEPZ during three years of evaluation (2015-16, 2016-17 and 2017-18)

Trait	Year	Genotype		Checks		
		DWAP1408	GW2010-321	Sonalika	DBW14	WR544
Mean Yield (g/plot)	2015-16	306	290	215	254	247
	2016-17	501	531	434	455	504
	2017-18	462	541	393	368	422
	Average	423	454	347	359	391
Heading days	2015-16	69	67	66	66	63
	2016-17	70	69	66	65	63
	2017-18	74	70	67	70	66
	Average	71	69	66	67	64
Maturity days	2015-16	108	104	102	105	104
	2016-17	109	108	105	105	104
	2017-18	116	112	108	109	107
	Average	111	108	105	106	105
Grains/spike	2015-16	57	51	43	47	44
	2016-17	43	53	42	41	42
	2017-18	41	40	40	42	44
	Average	47	48	42	43	43
1000 gr. wt.	2015-16	35	35	37	38	37
	2016-17	38	37	41	38	40
	2017-18	36	36	38	37	38
	Average	36	36	39	38	38

Table 3: Performance of promising genotypes of SDSN identified for earliness and yield in CZ during three years of evaluation (2015-16, 2016-17 and 2017-18)

Trait	Year	Genotype	Checks		
		GW 2012-475	Sonalika	HD2932	WR544
Mean Yield (g/plot)	2015-16	486	442	406	436
	2016-17	465	485	520	465
	2017-18	518	461	517	488
	Average	490	463	481	463
Heading days	2015-16	61	59	62	55
	2016-17	59	60	62	58
	2017-18	61	58	62	60
	Average	60	59	62	58
Maturity days	2015-16	109	110	109	105
	2016-17	109	112	112	107
	2017-18	113	112	114	111
	Average	110	111	112	108
Grains/spike	2015-16	44	34	40	35
	2016-17	39	42	45	44
	2017-18	52	43	49	49
	Average	45	40	45	43
1000 gr. wt.	2015-16	43	44	42	41
	2016-17	44	46	43	43
	2017-18	40	42	38	38
	Average	42	44	41	41

Table 4: Performance of promising genotypes of SDSN identified for earliness and yield in NHZ during three years of evaluation (2015-16, 2016-17 and 2017-18)

Trait	Year	Genotype	Checks	
		RWP2014-18	Sonalika	WR544
Mean Yield (g/plot)	2015-16	500	219	331
	2016-17	222	214	165
	2017-18	268	249	217
	Average	330	227	238
Heading days	2015-16	105	108	107
	2016-17	102	96	94
	2017-18	122	117	117
	Average	110	107	106
Maturity days	2015-16	140	145	144
	2016-17	149	148	143
	2017-18	167	170	169
	Average	152	154	152
Grains/spike	2015-16	-	-	-
	2016-17	46	39	44
	2017-18	45	34	43
	Average	46	37	44
1000 gr. wt.	2015-16	-	-	-
	2016-17	53	48	46
	2017-18	46	43	40
	Average	50	46	43

Twelve genotypes (CNM15-2, GW2015-667, GW2015-668, GW2015-670, NIAW2844, RAJ4482, RAJ4486, RWP2013-9, RWP2013-10, RWP2015-11, WS2015-1 and WS15-7) were evaluated for second year. Table 5 gives the performance of five genotypes showing superiority over checks in the respective zone across two years of testing hence, will be considered for third year testing.

Table 5: Performance of genotypes of SDSN in two years of evaluation

S. N.	Genotype	Mean yield (g/plot)		Heading days		Maturity days		Grains/spike		1000 gr. Wt.	
		2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18	2016-17	2017-18
NEPZ (Sabour, Kanpur, Ranchi, Faizabad, Coochbehar, Shillongoni, Kalyani and Varanasi)											
1.	WS15-7	562	427	71	74	108	111	47	39	37	33
2.	Sonalika (C)	434	393	66	67	105	108	41	40	41	38
3.	DBW14 (C)	455	368	65	70	105	109	42	42	38	37
4.	WR544 (C)	504	422	63	66	104	107	43	44	40	38
CZ (Jabalpur, Indore, Powarkheda, Bhavnagar and Bilaspur)											
1.	GW 2015-668	600	530	60	62	110	111	40	51	44	38
2.	RWP2013-10	593	535	64	62	113	112	41	52	43	38
3.	RWP2014-19	584	524	64	59	111	112	43	44	42	40
4.	Sonalika (C)	485	461	60	58	112	112	42	43	46	42
5.	HD2932 (C)	520	517	62	62	112	114	45	49	43	38
6.	WR544 (C)	465	506	58	57	107	108	44	50	43	39
PZ (Niphad, Pune and Dharwad)											
1.	RWP2015-11	366	536	66	66	106	112	50	50	34	35
2.	Sonalika (C)	274	423	57	53	101	100	45	39	38	39
3.	HD2932 (C)	337	495	60	59	104	106	44	48	37	36
4.	WR544 (C)	318	414	53	51	101	100	47	42	38	39

During 2017-18, 5, 8, 12, 7 and 2 promising early maturing genotypes with high yield were identified for NWPZ, NEPZ, CZ, PZ and NHZ respectively (Table 6).

Table 6: Promising early maturing high yielding genotypes in different zones (2017-18)

SN	Genotype	Yield		Heading		Maturity		Grains/spike		1000 gr. Wt.	
		Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean
NWPZ (Karnal, Dhaulakuan, Hisar and Pantnagar)											
1.	RWP2013-10	358-936	597	79-94	84	115-140	123	52-70	60	36-50	41
2.	RWP2014-18	450-780	568	80-99	87	115-141	124	53-80	61	31-37	34
3.	RWP2015-11	429-1094	657	75-86	80	115-143	125	45-64	57	36-38	37
4.	RWP2017-09	371-924	623	82-104	90	117-141	125	38-60	49	34-41	37
5.	RWP2016-29	436-843	689	78-99	85	114-140	122	41-61	48	37-41	39
Checks											
1	Sonalika (C)	210-506	396	74-86	79	113-135	120	31-60	44	34-49	39
2	DBW71 (C)	449-666	561	76-88	81	115-138	122	46-56	51	37-43	40
3	WR544 (C)	394-541	481	72-84	77	112-135	120	42-56	49	36-40	38
NEPZ (Sabour, Kanpur, Ranchi, Faizabad, Coochbehar, Shillongoni, Kalyani and Varanasi)											
1.	GW 2012-475	200-1480	511	55-84	71	88-126	110	19-53	41	32-46	39
2.	GW 2015-668	125-1200	467	59-83	71	98-129	111	15-65	44	28-44	37
3.	RWP2014-19	125-880	439	60-82	71	99-126	112	21-65	39	30-36	34
4.	RAJ4515	170-1280	485	53-84	69	101-116	110	17-65	45	29-40	35
5.	RAJ4516	200-1240	472	60-85	71	97-121	111	17-55	39	30-43	37
6.	AKAW5017	175-800	451	54-83	68	94-126	109	19-60	44	29-39	35
7.	GW2016-750	150-1040	474	56-80	69	95-127	110	15-65	42	34-42	38
8.	GW2016-752	200-1000	484	57-75	66	96-124	109	19-62	38	31-47	39
Checks											
1.	Sonalika (C)	150-870	393	54-80	67	95-121	108	19-52	40	31-47	38
2.	DBW14 (C)	125-810	368	57-80	70	96-123	109	18-64	42	32-41	37
3.	WR544 (C)	150-840	422	54-75	66	94-120	107	20-60	44	32-42	38
CZ (Jabalpur, Indore, Powarkheda, Lokbharati and Bilaspur)											
1.	GW2015-670	170-744	530	51-78	62	94-122	110	34-61	51	36-46	41
2.	RWP2015-11	190-641	519	55-72	62	101-125	114	38-83	52	30-40	36
3.	RWP2017-10	100-884	560	53-75	64	98-125	114	29-55	44	33-48	40
4.	RAJ4513	310-750	560	53-77	63	95-122	111	41-61	51	33-46	37
5.	HI1618	40-912	590	53-65	60	98-123	112	36-58	48	33-43	39
6.	RAJ4515	60-884	595	52-73	62	93-125	111	37-62	53	32-42	38
7.	RAJ4516	60-844	556	52-68	62	100-125	113	35-55	46	35-42	38
8.	GW2016-750	171-687	521	52-69	59	93-124	110	34-59	47	37-43	39
9.	GW2016-751	120-839	518	52-72	60	92-121	109	29-63	47	39-48	44
10.	GW2016-754	170-895	571	51-69	60	102-119	112	37-49	42	42-51	47
11.	GW2016-755	20-744	529	50-73	61	102-120	112	32-55	42	45-51	48
12.	GW2016-756	260-843	538	51-70	59	96-120	110	42-59	52	37-51	43
Checks											
1.	Sonalika (C)	123-635	461	51-64	58	98-121	112	37-51	43	34-46	42
2.	HD2932 (C)	100-717	517	54-69	62	101-122	114	39-55	49	32-41	38
3.	WR544 (C)	148-699	506	49-69	57	93-121	108	43-57	50	36-42	39
PZ (Niphad, Pune and Dharwad)											
1.	GW2015-668	79-1279	627	57-60	58	96-108	102	39-69	53	32-39	35
2.	RWP2011-15	85-1016	536	63-71	66	98-124	112	40-63	50	32-38	35
3.	RWP2014-19	195-950	525	52-56	54	91-113	103	42-57	49	36-39	38
4.	RWP2017-10	181-910	536	63-66	64	99-113	105	28-57	42	34-40	37
5.	RAJ4513	108-1060	531	60-65	62	98-116	108	52-63	56	33-38	36
6.	HI1618	106-1189	598	54-61	58	91-120	107	39-63	48	33-39	35
7.	GW2016-756	167-937	541	52-56	54	94-108	102	45-57	52	35-40	38
Checks											
1.	Sonalika (C)	110-754	423	53-55	53	92-105	100	32-50	39	35-44	39
2.	HD2932 (C)	105-790	495	57-60	59	99-109	106	45-52	48	31-41	36
3.	WR544 (C)	123-741	414	48-54	51	88-108	100	39-48	42	35-40	39
NHZ(Bajoura, Khudwani and Malan)											
1.	DWAP1408	180-360	270	97-166	125	146-212	175	39-64	48	36-46	41
2.	RWP2017-10	180-362	264	96-161	122	143-220	174	39-59	48	39-52	44
Checks											
1	Sonalika (C)	140-355	249	86-160	117	143-215	170	30-41	34	37-51	43
2.	WR544 (C)	120-377	217	86-157	117	138-215	169	36-50	43	38-42	40

Drought Tolerance Screening Nursery

The 30th Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 4 checks (C306, MP3288, DBW110 and NI5439) was conducted at 15 centres to identify wheat genotypes having tolerance to moisture stress. The nursery was sown in 5x5 lattice design both under drought and irrigated conditions on the same date with plot size of 3 rows of 3.0 meter length spaced 23cm apart. Except pre-sowing irrigation no irrigation was given under drought treatment, while recommended numbers of irrigations were provided to irrigated treatment. The data from Sagar, Jabalpur, Parbhani and Dharwad was not accepted due to improper conduction and Akola due to pig damage and poor crop stand.

Weather conditions during the year

- In current crop season rainfall occurred during vegetative phase at Karnal (68.4 mm), Pune (29.2), Hisar (10.9 mm) and Niphad (4.6mm). But during reproductive phase rainfall was recorded only at Karnal centre (26 mm) however, other centres received a negligible amount (Junagadh- 9.9 mm, Kanpur & Ranchi- 4.2mm) or no rainfall, so water stress was evident in rainfed treatment.
- In PZ & CZ the nights were cooler and day temperature was >20^{0}C all through the crop season. The minimum temperature of 6.5^{0}C was found in Niphad and a maximum temperature of 39.5^{0}C at Bardoli.
- In NWPZ, higher temperature was noticed from sowing upto 3rd week of December. Cooler temperature prevailed from last week of December upto 2nd week of January in vegetative phase and in last week of February during reproductive phase. The maximum temperature was reported from last week of March to 1st week of April.
- In NEPZ cooler condition prevailed during 2nd week of January during vegetative phase and in 4th week of January to 1st week of February during reproductive phase. Higher temperatures were observed during 3rd week of March in reproductive phase. The maximum temperature of 36^{0}C was recorded at Kanpur (Annexure I)

Impact of drought stress on different crop growth stages and yield parameters

- Sowing to heading: Almost all the centres experienced high temperature (>100C minimum temp.) during sowing, but the difference between drought and irrigated treatments was not much significant.
- Heading to physiological maturity: No significant rainfall was recorded (except Karnal with 13.2mm) and variations in minimum and maximum temperature range recorded were very high during grain filling. GW477 showed mean maximum thousand grain weight across the centres.

The lowest mean grain yield (297 g) for drought was recorded at Pune while for irrigated condition at Bardoli (626 g). The mean thousand grain weight across the locations ranged from 35.7 to 48.5 g. The lowest mean thousand grain weight (35.7 g) was recorded at Bardoli for drought condition where as under irrigated condition Karnal has the lowest mean thousand grain weight of 38.9g. The highest mean thousand grain weight of 48.5 g was recorded at Hisar (Annexure II). The mean maximum number of grains per spike was recorded in Kanpur both for irrigated (70) and drought (63) conditions, while the minimum (30 and 33) was reported in Bardoli for both the conditions. Same trend was reported for grain weight per spike for both irrigated and drought treatments.

WH1235, GW477 identified during 2015-16 were recorded with DSI value less than five at three locations. List of other genotypes identified as drought tolerant during 2017-18 is given in annexure III.

Annexure I: Temperature and rainfall recorded at different centres

S.N	Location		Vegetative Phase			Reproductive phase		
			Min. temp (^{0}C)	Max. temp (^{0}C)	Rain fall (mm)	Min. temp (^{0}C)	Max. temp (^{0}C)	Rain fall (mm)
PZ								
1	Pune	Mean	18.5	29.4	29.2	12.7	31.9	0
		Range	8.04-18.5	28.6-31.0		9.64-17.7	29.7-35.8	
2	Niphad	Mean	11.6	28.7	4.6	10.4	30.4	0
		Range	6.5-19.0	20.6-31.8		6.0-15.0	26.0-34.4	
CZ								
3	Indore	Mean	10.7	27.8	0	11.4	30.7	0
		Range	7.0-19.5	22.0-31		5.0-18.0	24.0-37.0	
4	Junagadh	Mean	16.1	30.3	2.4	18.1	28.9	9.9
		Range	9.9-20.9	20.8-35.0		8.5-19.4	26.5-34.5	
5	Vijapur	Mean	14.2	28.4	3.5	14.5	31.7	0
		Range	9.0-20.7	20.3-32.1		9.9-19.3	26.1-37.1	
6	Bardoli	Mean	15.7	31.7	0	17.3	34.3	0
		Range	10.0-22.0	27.5-39.5		1.0-31.0	27.0-39.5	
NEPZ								
7	Kanpur	Mean	8.08	23.4	1.2	11.7	28.1	4.2
		Range	3.0-15.0	15.0-29.8		4.1-20.0	17.8-36	
8	Ranchi	Mean	6.4	24.2	2	12.1	29.0	4.2
		Range	0.0-17.4	17.4-28.4		6.3-18.4	24.4-33.5	
NWPZ								
9	Hisar	Mean	6.9	22.7	10.9	10.8	28.4	1.2
		Range	1.0-15.6	2.2-30.8		1.7-19.0	20.6-36.4	
10	Karnal	Mean	6.8	20.8	68.4	13.8	29.6	13.2
		Range	2.2-12.0	10-26.0		8.0-19.4	23.5-36.0	

Annexure II: Mean and range for traits recorded at different centres

S N	Location	Condition		Ger (%)	Days to heading	Days to maturity	Productive tiller/2 m	Grain yield /plot (g)	Test wt (g)	Grain Number/Spike	Grain Weight/Spike
1	Bardoli	Drought	Mean	85.2	61	90	56	322	35.7	30	1.5
			Range	57.5-95	55-69	86-99	33-75	265-365	33-39	26-35	1.2-1.9
		Irrigated	Mean	96	61	89	71	626	39.7	33	1.8
			Range	86-98	57-70	84-99	55-97	500-850	36-48	30-38	1.6-2.2
2	Hisar	Drought	Mean	90	96	142	65	1155	43.5	61	2.7
			Range	82-95	89-105	137-148	42-88	775-1497	34.9-50.3	48-71	2.1-3.4
		Irrigated	Mean	95	103	150	80	1492	48.5	83	3.2
			Range	88-98	98-110	147-154	57-112	1057-1895	36.15-54.8	73-92	2.5-4.1
3	Indore	Drought	Mean	-	66	113	55	562	40.5	38	1.5
			Range	-	60-74	107-121	38-73	279-710	35.4-48	30-46	1.2-1.9
		Irrigated	Mean	-	71	116	76	742	40.5	43	1.8
			Range	-	67-79	112-124	49-123	503-859	28.6-48	35-52	1.6-2.2
4	Junagadh	Drought	Mean	89	51	89	55	492	38	37	1.4
			Range	85-91	44-56	87-96	43-70	388-619	32-48.3	27-46	0.9-1.7
		Irrigated	Mean	88	55	96	85	909	42.06	44	1.9
			Range	85-90	52--59	90-103	62-118	638-1110	35.6-50	34-53	1.4-2.3
5	Kanpur	Drought	Mean	83.6	74	126	157	544	43.3	63	3.0
			Range	80-85	70-80	120-130	120-218	275-800	33.4-51.7	47-79	2.2-3.6
		Irrigated	Mean	88	79	131	205	1196	43	70	3.2
			Range	85-90	76-82	129-136	125-269	875-1625	39.5-49.3	52-84	2.3-4.2
6	Karnal	Drought	Mean	90	92	139	167	790	39.3	60	2.0
			Range	82-95	85-96	133-143	157-177	308-992	32.5-44.7	47-68	3.2-2.6
		Irrigated	Mean	85	94	144	138	769	38.9	67	2.4
			Range	75-95	88-98	140-147	70-158	392-1039	21.0-48.9	48-84	3.1-4.0
7	Pune	Drought	Mean	80.7	63	101	55	297	38.6	42	1.6
			Range	77-87	57-70	95-112	37-72	135-486	31.5-49	32-51	1.3-2.4
		Irrigated	Mean	83	66	112	77	890	42.1	49	2.1
			Range	80-87	60-72	107-121	63-88	727-1042	37-49	39-62	1.7-2.8
8	Niphad	Drought	Mean	91	64	104	128	867	40	54	3.0
			Range	84-95	59-74	93-118	76-168	400-1150	34.5-46.9	42-64	2.3-3.7
		Irrigated	Mean	88	64	112	119	1003	41.3	54	3.2
			Range	79-94	60-74	99-123	70-161	500-1450	36.4-48.4	42-63	2.4-3.6
9	Ranchi	Drought	Mean	-	89	124	73	938	45.3	51	2.6
			Range	-	86-95	122-129	60-99	624-1375	42.0-50.6	36-64	1.6-3.4
		Irrigated	Mean	-	90	124	95	1307	45.4	58	2.8
			Range	-	82-94	120-128	69-109	1047-1650	41.1-51.8	45-74	1.8-3.5
10	Vijapur	Drought	Mean	90.2	64	109	52.2	571	37	48	1.8
			Range	88-92	57-75	100-120	38-77	221-797	27.8-46	34-62	1.3-2.2
		Irrigated	Mean	90	69	118	85	929	39.4	56	2.1
			Range	88-92	62-80	114-124	58-123	402-1333	28.6-50	39-77	1.7-3.0

Annexure III: List of drought tolerant genotypes identified during 2017-18

Location	Genotypes (DSI values)
Niphad	BRW3806 (0.41), DBW93 (-0.69), GW477 (-0.65), HI1620 (-0.12), HI1628 (0.06), NIAW3212 (0.29),WH1235 (0.0)
Indore	C 306 (C)(0.11), NIAW3212 (0.46)
Vijapur	BRW3806 (0.34), DBW252 (-0.13), GW477 (-0.11), HD3237 (0.15), K1317(C) (0.19), MACS6696 (0.28), NIAW3170 (0.15), NIAW3212 (-0.58), RW5 (-0.34)
Ranchi	DBW93 (0.43), WH1235 (0.11)
Kanpur	HI1628 (0.50)
Hisar	DBW110(C) (0.39), WH1235 (0.38)
Karnal	BRW 3806 (-0.23), C306(C) (-0.41), DBW110(C) (-0.24), DBW136 (-0.45), DBW166 (-1.13), DBW252 (-0.58), GW477 (-3.35), HI1620 (0.22), HI1628 (0.08), K1317(C) (-0.03), M516 (-0.62), MACS6695(0.07), NIAW3212 (-0.11), RIL-S1-38 (-2.57), RW5 (-1.58), WH1235 (0.14)
Zone	**All centres of the zone**
PZ	MACS6695(0.31)
CZ	C306(C) (-0.06), DBW166 (0.28),
NWPZ	BRW3806 (0.43), DBW110(C) (0.22), GW477 (-0.06), MACS6695 (0.42), MP1331 (-0.23), NI5439(C) (0.11), NIAW3212 (0.40), RW5 (0.39), WH1235 (0.32)
Across Zones	None

Salinity-Alkalinity Tolerance Screening Nursery

With the objective of identifying suitable wheat lines which can perform better under saline / alkaline soils the Salinity/Alkalinity Tolerance Screening Nursery (SATSN) was constituted. During the crop season 2017-18, the nursery was proposed at 11 locations in 4 states *viz.,* Haryana (CSSRI, Karnal & Nain Farm CCSHAU, Hisar), Punjab (Muktasar PAU, Ludhiana), Rajasthan (CAZRI Pali) Gujarat (CSSRI, Bharuch and CAZRI, Bhuj) UP (CSSRI Lucknow, Dalipnagar, KVK Pratapgarh and Faizabad). The soil status at different centres is presented in Table 1. Both Saline as well as sodic soils were there at various centres giving good opportunity for screening the wheat germplasm for identification of genotypes tolerant to these conditions.

Table1: Soil status of cooperating centres during 2017-18

S.No.	Location	Nature of salt stress	pH	$EC_{iw\ (dSm^{-1})}$
1	CSSRI, Karnal	Sodic	9.2-9.8	-
2	CSSRI,Nain Farm Karnal	Saline	8.3-8.4	-
3	CSSRI, Lucknow.	Sodic	9.0-9.5	-
4	Dalipnagar	Sodic	8.5-8.9	-
5	Faizabad	Sodic	8.5-8.9	-
6	CAZRI, Pali,Marwar	Saline	8.3-8.4	>4.6
7	CSSRI, Bhruch	Saline	8.0-8.2	8.2

The nursery comprised of 24 entries received from various wheat breeding centres. These were evaluated along with four checks viz., Kharchia 65, KRL 19, KRL 210 and KRL 213 in Augmented Block Design having 4 blocks. Each block comprised of 10 plots (6 entries & 4 checks). Each plot had 5 rows of 3 m length spaced 20 cm apart.

The trial data was not received from CAZRI, Bhuj center while data from CCSHAU Hisar and KVK Pratapgarh could not be included due to low effect of stress (high yield). Data from rest of the 8 locations was used for pooled analysis.

Out of 24 entries, 6 entries viz., NW 7060, NW 7062, RWP 2017-30, WH 1223, WH 1228 and WS 1702 were found promising on the basis of mean yield. Out of these RWP 2017-30 was highest yielder but susceptible to Black and Brown rust from Southern isolates. However, entries WH 1223 and NW 7060, NW 7062 and WH 1228 were moderately resistant in IPPSN screening (Table 2). These can be considered for further testing in Salinity/Alkalinity trial to be conducted during 2018-19. The yield and IPPSN data of the promising genotypes is presented in Table 2. KRL 210 was the best check followed by Kharchia 65 and KRL19.

Table 2: Pooled yield and rust reactions of promising test entries in SATSN 2017-18

S.No.	Entry	Yield	**Bl** (ACI)	**Br (S) (**ACI)	**Br (N)**(ACI)	**Yl** (ACI)
1	RWP 2017-30	796	40S (22.3)	80 S (32.0)	10MS (5.7)	40S (11.0)
2	WH 1223	790	20MS (5.2)	20MS (7.6)	5S (1.7)	40MS (7.7)
3	NW 7060	763	40S (14.5)	10MS (2.2)	5MR (1.7)	40MS (10.0)
4	NW 7062	755	20MR (2.0)	5MR (0.8)	TMS (0.3)	40S (20.0)
5	WS 1702	754	40S (14.3)	30S (7.0)	5S (1.7)	60S (27.7)
6	WH 1228	739	40S (11.4)	40S (16.3)	20S (6.7)	20S (9.7)
Checks						
1	KRL 19	647				
2	KRL 213	617				
3	Kharchia 65	658				
4	KRL 210	716				

International Nurseries and Trials

The Indian Institute of Wheat and Barley Research, Karnal procured wheat germplasm from CIMMYT, Mexico and ICARDA, Morocco in the form of international trials and nurseries to enrich the ongoing breeding programmes in our country. These trials and nurseries were evaluated at various locations spread across the country. The details of the evaluation of international trials/ nurseries are described below.

Nurseries/ trials received during 2017-18

- From CIMMYT, Mexico, set of seven trials (6 bread wheat and 1 durum wheat) and nine nurseries comprising 1476 lines (1302 bread wheat and 174 lines of durum wheat) and 670 lines (550 bread wheat and 120 lines of durum wheat) from ICARDA, Morocco were evaluated at various wheat breeding centres (Table 1 & 2).

Table 1: International germplasm received from CIMMYT, Mexico and shared with cooperating centers during 2017-18

SN	Trial/Nursery	Entries #	Reps. #	Set #	Co-operating centres
Bread wheat					
1	25th SAWYT	50	2	15	Delhi**,** Karnal, Durgapura, Pantnagar, Kanpur, Bilaspur, Indore, Powarkheda, Vijapur, Kota*, Akola*, Pune, Niphad, Dharwad, Coochbehar
2	38th ESWYT	50	2	3	Delhi, Karnal, Ludhiana
3	25th HRWYT	50	2	1	Karnal
4	16th HTWYT	50	2	8	Karnal, Pune, Indore, Jabalpur, Vijapur, Powarkheda, Junagadh, Dharwad
5	5th WYCYT	30	2	2	Karnal, Pantnagar
6	7th SATYN	27	2	2	Karnal, Pantnagar
7	28th HRWSN	157	-	1	Karnal
8	50th IBWSN	283	-	8	Delhi, Karnal, Hisar, Ludhiana, Durgapura, Pantnagar, Varanasi, Powarkheda
9	35th SAWSN	277	-	11	Delhi, Karnal, Hisar, Ludhiana, Pantnagar, Ranchi, Sabour, Jabalpur, Vijapur, Junagadh, Niphad
10	12th STEMRRSN	136	-	3	Karnal, Mahabaleshwar, Wellington
11	9th HLBSN	52	-	6	Karnal, IARI (Pusa), Coochbehar, Faizabad, Varanasi, Sabour
12	19th KBSN	38	-	5	Delhi, Karnal, Hisar, Ludhiana, Pantnagar
13	19th FHBSN	50		2	Delhi, Karnal
14	27th ISEPTON	52	-	1	Coochbehar
Durum wheat					
11	49th IDYN	50	2	8	Karnal, Hisar, Indore, Kota*, Vijapur, Pune, Dharwad, Niphad
12	49th IDSN	124	-	3	Karnal, Indore, Powarkheda

*Trial was not conducted

Based on yield *per se* and field screening for multiple diseases under different agro-climatic conditions, promising lines were identified for various zones as well as across the zones/ country (Table 3).

Table 2: International germplasm received from ICARDA, Morocco during 2017-18

SN	Trial /Nursery	Entries #	Rep #	Set #	Cooperating centres
Bread wheat					
1	18th ESBWYT	50	2	4	Karnal, Udaipur, Jabalpur, Akola*
2	18th DSBWYT	50	2	5	Karnal, Pune, Vijapur, Dharwad, Akola*
3	18th SBWYT-HT	50	2	3	Karnal, Jabalpur, Niphad
4	18th DSBW-ON	200	-	5	Karnal, Kanpur, Jabalpur, Akola* Powarkheda
5	18th SBWON-HT	200	-	4	Karnal, Hisar, Indore, Vijapur
Durum wheat					
6	41st IDYT	24	2	4	Karnal, Indore, Pune, Vijapur
7	41st IDON	96	-	4	Karnal, Indore, Vijapur, Dharwad

*Trail/nursery was not conducted

Table 3: Promising lines identified for higher grain yield and rusts' resistance (<5S) in various trials and nurseries

Trial	Zone	Entries higher in grain yield* with disease resistant	Rust score	Best check yield (q/ha)
Bread wheat				
25th SAWYT	NEPZ	321 (77), 342 (76), 307 (70), 312 (65), 341 (65)	-	K 0307 (44)
	PZ	308 (70), 319 (65), 327 (65)	-	MACS 6222 (64)
38th ESWYT	NWPZ	150 (66), 145 (64), 135 (64), 104 (63), 116 (63)	YI (0-5S)	HD 2967 (62)
5th WYCYT	NWPZ**	12 (58), 18 (57)	YI (0-5S)	HD 3086 (55)
7th SATYN	NWPZ**	14 (60), 4 (58)	YI (0-10S)	HD 3086 (52)
Durum wheat				
49th IDYN	NWPZ	750 (63), 744 (58)	-	HI 8737 (55)

** Grain yield (q/ha) given in parenthesis; **data considered for one location only (Pantnagar)*

The promising lines from CIMMYT trials/ nurseries that exhibited higher grain weight coupled with disease resistance, were identified for various zones as well as for across the zones of the country (Table- 4 & 5).

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

Trial / Nursery	Zone	TKW (g)	Rust score	Best check
Bread wheat				
16th HTWYT	PZ	26 (47), 42 (47), 23 (46), 17 (45)	-	MACS 6222 (42)
5th WYCYT	NWPZ**	13 (52)	YI (0)	HD 3086 (40)
7th SATYN	NWPZ**	5 (51), 6 (51), 15 (50), 26 (50)	YI (0-5S)	HD 3086 (40)
	Across the zone	1231 (58), 1079 (56)	YI (0-10S)	-
	NEPZ	1079 (49), 1055 (49), 1011 (48), 1215 (48)	-	HUW 234 (41)
	CZ	1122 (56), 1145 (56), 1231 (56), 1072 (55), 1161 (55)	-	MP 3382 (45)
35th SAWSN	Across the zone	3106 (54), 3078 (49), 3008 (48), 3009 (48), 3266 (48)	YI (0-20S)	-
	NWPZ	3106 (49), 3009 (44), 3078 (44)	YI (0-20S)	PBW 725 (42)
	CZ	3061 (51), 3079 (51), 3083 (51), 3106 (51), 3237 (51), 3261 (51)	YI (0-10MS)	GW 366 (50)
	PZ	3106 (58), 3078 (54), 3196 (52)	YI (0)	NIAW 917 (44)
28th HRWSN	NWPZ	2047 (47), 2120 (46), 2124 (45)	YI (0-10S)	DBW 88 (34)
12thSTEMRRSN	Across the zone	6026 (46)	YI (20MR)	-
	NWPZ	6026 (50), 6022 (46), 6023 (46), 6024 (46), 6033 (46)	YI (10-20MR)	HD 2967 (38)

	PZ	6043 (51), 6044 (51), 6053 (51), 6006 (50), 6031 (50), 6032 (50), 6035 (50), 6045 (50)	Br (0-10S)	-
9th HLBSN	NWPZ	27 (45), 26 (45)	Yl (10S), LB (02-23)	HD 2967 (37)
19th KBSN	NWPZ	29 (45), 19 (42)	Yl (tS-10S)	HD 3086 (38)
Durum wheat				
48th IDYN	NWPZ	749 (50), 733 (49), 723 (48)	Yl (0-5S)	WHD 943 (50)
	PZ	749 (51), 713 (49), 719 (49)	-	MACS 3125 (41)
48th IDSN	NWPZ	7049 (50), 7055 (47)	Yl (0-tS), Br (0)	HI 8737 (43)
	CZ	7049 (48), 7055 (46)	(10MR-20MS)	MPO 1215 (44)

*** Data considered for one location only (Pantnagar)*

Similarly from ICARDA trials & nurseries various promising entries were identified (Table 5).

Table 5: Promising lines for grain yield from ICARDA trials/nurseries during 2017-18

Trial/Nursery	Location, yield (g/plot)	Entries	Check yield (g/plot)	Rust response
Bread wheat				
18th ESBWYT	Karnal (>2000)	22, 31	HD3086 (1493)	Yl (0-10S)
	Udaipur (>1250)	3, 16, 26, 27	RAJ4120 (1150)	-
	Jabalpur (>1100)	10, 14, 17, 33, 47	GW3336 (1073)	-
18th DSBWYT	Karnal (>1000)	49	DBW88 (623)	Yl (10MR)
	Pune (>890)	8, 35	HD2781 (845)	-
	Dharwad (>1150)	2, 3, 13, 32, 48	-	-
	Vijapur (>1680)	12, 27	GW451 (1595)	-
18th SBWYT-HT	Karnal (>1500)	13, 36	WH1105 (1194)	-
	Jabalpur (>1385)	2, 37	JWV3336 (1336)	
	Niphad (>1500)	4, 32, 42, 49	NIAW1994 (1184)	Yl (5MS-20MR)
18th DSBW-ON	Karnal (>680)	1, 110, 111, 127	DBW88 (580)	-
	Hisar (>550)	42, 77, 136	WH1124 (419)	-
	Kanpur (>350)	37, 57, 89, 101, 139, 195	K1317 (218)	-
	Jabalpur (>770)	2, 6, 107, 112	GW336 (428)	-
	Powarkheda (>600)	1, 55, 152	MP3288 (375)	-
18th SBWON-HT	Karnal (>800)	77, 90, 151	WH1105 (570)	-
	Hisar (>600)	77, 136	HW1124 (419)	Yl (0)
	Indore (>800)	60, 77	HI1544 (698)	-
	Vijapur (>680)	85, 86, 108, 148	GW11 (488)	Yl (0-tMR)
Durum wheat				
41st IDYT	Indore (>2000)	4, 7, 8 ,9, 10	HI 8777 (1754)	-
	Pune (>1900)	4, 7, 15, 18, 21, 23	MACS3949 (1732)	-
	Vijapur (>1690)	8, 10, 12	HI 8498 (1638)	Yl (tR-tMR)
41st IDON	Karnal (>890)	20, 77, 78, 92	HI 8737 (830)	(0-10MS)
	Vijapur (>690)	85, 96	HI 8498 (600)	(0-20MS)

Promising lines identified from various trials/nurseries for yield *per se*, grain weight and possessing resistance to rust will be included in Elite International Germplasm Screening Nursery (EIGN) that would be constituted during the forth-coming wheat season for further evaluation and selection by the co-operators.

One set of each of CIMMYT nursery/ trial was planted at IIWBR, Karnal for multiplication to facilitate large number of wheat breeders/pathologist of the country for exercising *in-situ* selection as per their requirement. A wheat field day was organized on March 28th, 2018 at Karnal, wherein wheat breeders/pathologist from various co-operating centres participated. Later on seeds of the selected material were provided to them.

National Durum Screening Nursery

The 4th National Durum Screening Nursery (NDSN) comprising 53 lines including 10 lines selected each from 40th IDYT and 48th IDYN, 12 lines from 40th IDON, 14 lines from 48th IDSN and 7 lines contributed by Indore centre. These lines along with three check varieties (HI 8498, PDW 291 and HI 8737) were shared with 13 centres of the NWPZ, PZ and CZ. The NDSN was evaluated in augmented design with two rows plot of 2.5m length. Data were received from all the centres.

Yield and Yield contributing traits: Promising entries for grain yield per plot, earliness, tillers /m., grains per spike and 1000 grains weight were identified zone wise as well as on mean basis across the zone and are presented in Table 1.

Table 1: Promising entries identified for yield and yield attributes in NDSN

Zones	Entry name	Best Check
	Grain yield/plot (g)	
National(>600g)	48th IDSN 7056 (622g), 48th IDSN 7016 (606g), HI 8812 (601g)	PDW291 (618g)
NWPZ (≥ 800 g)	None of the entry superior to check	PDW291 (838g)
CZ (≥ 500g)	48th IDYN 722 (559g), 48th IDSN 7056 (549g), 48th IDSN 7055 (541g), 48th IDYN 728 (517g), 40th IDYT 18 (516g), HI 8809 (510g)	HI8737 (491g)
PZ (≥ 830g)	48th IDSN 7043 (923g), 40th IDON 49(877g), 48th IDSN 7056 (838g)	PDW291 (839g)
	Days to heading	
National (≤ 70 days)	HI 8810 (69 days), 40th IDON (69 days), 40th IDON 24 (70 days)	PDW291 (72 days)
NWPZ (≤90 days)	40th IDON 84 (88 days), HI 8810 (89 days), 48th IDYN 722 (90 days)	PDW291 (92 days)
CZ (≤65 days)	40th IDON 84 (62 days), HI 8810 (63 days), 40th IDYT 12 (65 days), 48th IDYN 734 (64 days), 40th IDON 47 (64 days)	HI8498 (68 days)
PZ (≤60 days)	40th IDON 84 (57 days), 40th IDON 85 (58 days),40th IDON 24 (59 days), 40th IDON 64 (60 days)	PDW291 (63 days)
	No. of tillers/m (no.)	
National (≥105)	HI 8810 (107)	PDW291 (107)
NWPZ (≥105)	40th IDYT 18 (110), 48th IDYN 728 (106)	PDW291 (98)
CZ (≥100)	HI 8812 (101)	PDW291 (102)
PZ (≥125)	HI 8810 (127), 48th IDYN 716 (126), 48th IDYN 716 (126)	HI8737 (124)
	Grains per spike	
Across the zones (≥ 55)	48th IDSN 7109 (61), 48th IDSN 7055 (58), 48th IDSN 7139 (58), 48th IDYN 716 (56), 48th IDSN 7145 (56), 48th IDSN 7121 (56), 48th IDYN 728 (55)	HI8498 (49)
NWPZ (≥ 60)	48th IDYN 716 (64), 48th IDYN 732 (62), 48th IDSN 7042 (62) 48th IDSN 7055 (61), 48th IDSN 7056 (60), 48th IDSN 7109 (60)	HI8498 (50)
CZ(≥ 55)	48th IDSN 7109 (66), 48th IDSN 7055 (61), 48th IDSN 7139 (59), 48th IDYN 728 (58), 40th IDYT 7 (56), 48th IDSN 7145 (56), 40th IDON 20 (55)	HI8498 (48)
PZ (≥ 55)	48th IDSN 7121(58), 48th IDSN 7145(57), 40th IDON 47 (57), 48th IDYN 732 (56), 40th IDON 44 (56), 48th IDSN 7109 (56), 48th IDSN 7139 (55)	HI8498 (53)
	1000 grains weight (g)	
National (≥ 51 g)	40th IDYT 9 (51g), 48th IDYN 737 (51g)	HI8498 (51g)
NWPZ (≥ 52)	40th IDON 84 (57g), 48th IDYN 737 (55g), 40th IDYT 9 (55g), 48th IDYN 746 (52g), 40th IDON 47 (52g), HI 8813 (52g)	PDW291 (52g)
CZ (≥ 52)	None of the entry superior to check HI 8498 (52g)	HI8498 (52g)
PZ(≥ 53)	40th IDYT 9 (55g), 48th IDYN 737 (54g)	HI8498 (53g)

Value of trait in particular genotype is given in parenthesis

Disease Response: Disease response of lines against brown rust and black rust was also recorded under field condition at Vijapur, Indore, Pune and Dharwad. The promising genotypes showing resistances under field condition in these locations are listed in Table 2.

Table 2: Entries showing resistance to Diseases in NDSN

Disease	Entry name
Brown rust (Free)	40th IDYT 13, 40th IDON 2, 40th IDON 9, 48th IDSN 7105
Black rust (10MR or less)	40th IDYT 7, 40th IDYT 12, 40th IDYT 13, 40th IDYT 19, 40th IDYT 20, 48th IDYN 746, 40th IDON 24, 40th IDON 44, 40th IDON 48, 48th IDSN 7002

Utilization report: The feedback reports of NDSN indicate that the nursery is very useful and the wheat researchers across the country are getting desired material and making selections. Pune centre utilized the highest number of entries with 49% for yield, earliness and high tillers per meter traits. The Vijapur and Junagadh were the other centre with more than 30% utilization as in Table 3.

Table 3: Centre-wise selections from NDSN

Centre	No. of selections	% Utilization	Traits Selected/Utilization
Udaipur	11	21	Earliness, Tillers/m, TGW
Pune	26	49	Yield, Gr./Spike, Tillers/m, TGW
Akola	6	11	Tillers/m, TGW, Pl. height
Junagadh	16	30	Tillers/m, TGW, Gr./Spike, Earliness
Hisar	13	25	Yield, Tillers/m
Powarkheda	6	11	Hybridization
Vijapur	19	36	Hybridization
Dharwad	6	11	Yield, Spike length, Tillers/m, TGW
Niphad	4	8	Selection for further use

Quality Component Screening Nursery

The Quality Component Screening Nursery (QCSN) comprising 48 genotypes including four check varieties (HS490, NIAW1415, C306, UP2672) and one durum genetic stock (DDW42) were shared with 16 centres of the NWPZ, NEPZ, CZ and PZ. The QCSN was evaluated in augmented design with four rows plot of 3.0m length. Data received from all the centres except Varanasi. The Detailed report of QCSN is given in the progress report of wheat quality 2017-18.

Yield and yield attributes: Promising entries with superior performance over best check variety for yield and yield attributes are given below.

Promising entries with superior performance over best check variety for yield and yield attributes.

Trait	Zones	Genotypes	Best Check
No. of tillers/m (no.)	Across zones (≥105)	Local collection 1c 01, JWS825, UP2994, JWS819, JWS809	HS490 (97)
	NWPZ (≥146)	Local collection 1c 01, JWS825	C306 (142)
	NEPZ (≥80)	UP2994, Local collection 1c 01, GW2016-740, TAW33	UP2672 (79)
	CZ (≥101)	JWS809, JWS825, Local collection 1c 01, UP2995, GW2016-735	UP2672 (92)
	PZ (≥130)	JWS819, JWS855, Local collection 1c 01, UP2994	HS490 (97)
TGW (gm)	Across zones (≥45)	GW2014-596, UP2997, QLD95, QLD106, GW2016-794(d), ,	HS490 & UP2672 (41)
	NWPZ (≥ 45)	QLD95, GW2014-596, UP2997, GW2016-794(d), QLD106, QLD100, JWS819	HS490 (42)
	NEPZ (≥ 45)	UP2997, QLD106, QLD98, QLD95, GW2016-794(d), JWS150	UP2672 (40)
	CZ (≥ 45)	GW2014-596, GW2016-794(d), JWS150, GW2015-691(d), UP 2997, GW2016-793(d), QLD100	HS490 (42)
	PZ(≥ 45)	JWS855, QLD89, GW2014-596, JWS809, QLD91, AKAW4924	NIAW1415 (42)
Plot yield (gm/m^2)	Across zones (≥500)	UP2927, QLD94, QLD89, QLD93, GW2016-741	NIAW1415 (449)
	NWPZ (≥ 550)	QLD94, QLD93, JWS809, JWS825, UP2927,HD3241, QLD105, UP2958, QLD102, QLD103, UP2997	UP2672 (467)
	NEPZ (≥ 563)	QLD94, QLD101	NIAW1415 (440)
	CZ(≥ 534)	QLD89	NIAW1415 (443)
	PZ (≥ 552)	UP2927, GW2016-740, JWS819, JWS855	NIAW1415 (483)

Utilization report: The feedback reports of QCSN indicate that the nursery is very useful and the wheat researchers across the country are making selections from the germplasm provided in this nursery. Pune centre utilized the highest number of entries with 42% for tillers/m, TGW, earliness and yield traits.

Centre-wise selections from QCSN

Centre	No. of Selections	% Utilization	Traits Selected/Utilization
Vijapur	10	21	Hybridization
Sabour	11	23	Yield, Tillers/m, TGW
Powarkheda	10	21	Hybridization
Niphad	11	23	Hybridization
Ludhiana	10	21	Hybridization
Karnal	3	6	Hybridization
Junagadh	10	10	Tillers/m, TGW, Earliness, Chapati Quality
Pune	20	42	Tillers/m, TGW, Earliness, Yield

Quality analysis: JWS855 and GW2014-596 were recorded highest grain protein content with 14.3%. HD3215 (68.8) recorded highest sedimentation value followed by UP2996 (68.7), QLD102 (67.4), HD3241 (67.4), QLD101 (66.8) and QLD100 (66.0). QLD84 was the softest genotype with grain hardness index of 18.

Most promising genotypes identified in QCSN 2017-18 for individual quality parameters

Component	Genotypes	Range	Best Check
Protein content (%)	JWS855, GW2014-596, UP2994, QLD91, Local Collection 1c 01, QLD103	13.2-14.3	UP2672 (13.1)
Sedimentation value (ml)	QLD100, QLD101, QLD102, HD3241, UP2996, HD3215	66-68.8	UP2672 (62.3)
Grain hardness index (hard wheat)	TAW33, UP2997	92-102	-
Grain hardness index (soft wheat)	QLD84	18	HS490 (33)
Hectoliter weight (Kg/hl)	GW2015-699(d), GW2016-793(d)	81.9-82.1	-
Grain appearance score (out of 10)	UP2997	6.6	C306 (6.5)

Novel genetic resources: QLD84 and GW2014-596 were evaluated in QCSN for three consecutive years (2015-16, 2016-17 and 2017-18). QLD84 was found to be superior with 18 grain hardness index over the years and locations to all the testing genotypes and soft grain check variety HS490 (30: grain hardness index). GW2014-596 found to be superior with 14.4% protein content over the years and locations to the check variety UP2672 (13.7%). Thus, QLD84 and GW2014-596 would be potential sources to be utilized in future breeding programs to develop bread wheat varieties suitable for better biscuit making and high grain protein content, respectively.

Three years performance of newly identified promising genetic resources

Genotypes	2015-16	2016-17	2017-18	Average
Soft grain (grain hardness index)				
QLD84	19	18	18	18
HS490(C)	27	-	33	30
Grain protein content at 14% moisture				
GW2014-596	14.8	14.04	14.3	14.4
UP2672(C)	14.4	13.7	13.1	13.7

Elite International Germplasm Nurseries

The Elite International Germplasm Nursery (EIGN) was constituted by selection of promising entries from International nurseries and trials of bread wheat evaluated during 2016-17. The EIGN consist of 94 genotypes and four checks (HD 3086, Sonalika, WR 544 and GW 366 and shared with 26 centres. These lines were selected based on the superior yield performance and resistant disease reactions during previous year's evaluation conducted at various locations. The 94 genotypes were evaluated in augmented design with two rows plot of 2.5m length and spacing 30cm. Data was received from all the centres and pooled data were analysed to find out the promising genotypes for each zone vis-à-vis across the zone.

Grain yield per plot (g): Regarding yield *per se,* the highest yield per plot (582g) was recorded in entry name 24th SAWYT 347 followed by 37th ESWYT 107 (568g), 24th SAWYT 334 (559g), 34th SAWSN 3032 (558g) and 34th SAWSN 3166 (558g). Entry 34th SAWSN 3166 performed well in both NEPZ and CZ, whereas entry name 18th KBSN 12 performed well in NEPZ, PZ and NHZ (Table 1).

Table 1: Promising entries for grain yield in various zones and across the zone

Zone	Entry	Best check
Across the zone (26 locations) (>535g)	24th SAWYT 347 (582g), 37th ESWYT 107 (568g), 24th SAWYT 334 (559g), 34th SAWSN 3032 (558g), 34th SAWSN 3166 (558g), 18th KBSN 12 (556g), 27th HRWSN 2098 (552g), 24th SAWYT 305 (550g), 27th HRWSN 2095 (549g), 34th SAWSN 3148 (545g), 24th HRWYT 207 (542g), 37th ESWYT 119 (541g), 27th HRWSN 2107 (539g), 24th SAWYT 326 (538g), 34th SAWSN 3167 (538g), 15th HTWYT 21 (536g)	HD 3086 (593g)
NWPZ (5 locations) (>650g)	15th HTWYT 21 (669g), 11th STEMRRSN 6166 (667g), 24th HRWYT 207 (662g), 49th IBWSN 1081 (657g)	HD 3086 (651g)
NEPZ (8 locations) (>525 g)	34th SAWSN 3032(588g), 34th SAWSN 3166 (562g), 18th KBSN 12 (554g), 34th SAWSN 3048 (553g), 37th ESWYT 107 (538g), 34th SAWSN 3167 (534g), 24th SAWYT 347 (531g), 24th SAWYT 311 (527g), 17th DSBWYT 23 (525g)	HD 3086 (506g)
CZ (8 locations) (>565g)	37th ESWYT 107 (621g), 27th HRWSN 2095 (603g), 24th SAWYT 347 (594g), 37th ESWYT 119 (572g), 34th SAWSN 3166 (571g), 37th ESWYT 111 (569g), 34th SAWSN 3148 (568g)	GW 366 (565g)
PZ (5 locations) (>650g)	24th SAWYT 326 (762g), 24th SAWYT 334 (756g), 24th SAWYT 347 (709g), 18th KBSN 12 (708g), 34th SAWSN 3148 (697g), 24th SAWYT 335 (677g), 11th STEMRRSN 6117 (667g), 34th SAWSN 3167 (664g)	GW 366 (589g)
NHZ (2 locations) (>525g)	37th ESWYT 119 (608g), 27th HRWSN 2107 (558g), 18th KBSN 102 (555g), 18th KBSN 12 (548g), 8th HLBSN 19 (528g)	HD 3086 (489g)

Value in parenthesis indicate plot yield in gram

Disease resistance: Response of lines against yellow rust (Almora, Malan, Hisar, Jammu and Karnal), black rust (Vijapur and Niphad), brown rust (Vijapur, Niphad and Dharwad) and leaf blight (Faizabad, Sabour, Kalyani, Shillongani and Coochbehar) was also recorded under field conditions.

- Entry name 24th SAWYT 347 was found to be highest yielder across the zones as well as having resistance against yellow rust. Entry name 24th SAWYT 334 and 34th SAWSN 3148 were found to be higher yielding and having resistance to brown rust. Similarly, 37th ESWYT 107 was found higher yielding and having resistance to leaf blight.
- 24thHRWYT 231 and 11thSTEMRRSN 6165 were found to be having resistance against all the three rusts (Table 2).

Table 2: Lines showing resistance to diseases in EIGN

Disease	Entry
Yellow rust (Free)	24th HRWYT 231, 24th HRWYT 237, 24th HRWYT 238, 49th IBWSN 1145, 49th IBWSN 1153, 49th IBWSN 1161, 49th IBWSN 1287, 17th ESBWYT 29, 17th ESBWYT 32, 27th HRWSN 2114, 11th STEMRRSN 6026, 11th STEMRRSN 6060, 11th STEMRRSN 6165, 11th STEMRRSN 6166, 8th HLBSN 19, 37th ESWYT 122, 37th ESWYT 128, 24th SAWYT 346, 24th SAWYT 347, 24th SAWYT 348
Brown rust (0)	24th HRWYT 231, 24th HRWYT 237, 49th IBWSN 1082, 49th IBWSN 1161, 17th ESBWYT 48, 27th HRWSN 2008, 11th STEMRRSN 6110, 11th STEMRRSN 6117, 11th STEMRRSN 6165, 8th HLBSN 17, 24th SAWYT 311, 24th SAWYT 316, 24th SAWYT 334, 34th SAWSN 3003, 34th SAWSN 3016, 34th SAWSN 3073, 34th SAWSN 3148, 34th SAWSN 3264
Black rust (tMR or tS)	24th HRWYT 231, 24th HRWYT 238, 24th HRWYT 241, 49th IBWSN 1082, 49th IBWSN 1102, 49th IBWSN 1145, 49th IBWSN 1153, 49th IBWSN 1287, 17th ESBWYT 24, 17th ESBWYT 29, 17th ESBWYT 32, 17th ESBWYT 48, 27th HRWSN 2101, 11th STEMRRSN 6026, 11th STEMRRSN 6060, 11th STEMRRSN 6108, 11th STEMRRSN 6110, 11th STEMRRSN 6164, 11th STEMRRSN 6165, 11th STEMRRSN 6166, 34th SAWSN 3048, 34th SAWSN 3138
Leaf blight (≤ 35)	24th HRWYT 231, 24thHRWYT 238, 49thIBWSN 1081, 37th ESWYT 107, 34thSAWSN 3048

It was found that the entry like 11th STEMRRSN 6110, 15th HTWYT 36 and 34th SAWSN 3148 (Table 3) showed comparatively higher thousand grains weight (>45g/1000 grains) as compared to the best check variety GW 366 (45g). Similarly entry 17th DSBWYT 23 and 17th SBWON 11 were having comparatively short plant height.

Table 3: Trait-wise promising entries from EIGN 2017-18

Entry number in Nursery	Entry	Range	Mean
Heading (days): None of the line was found early to check GW 366			
Plant height (cm)			
48	17th DSBWYT 23	65-101	85
49	17th SBWON 11	59-100	80
	GW 366 (Check)	64-110	85
1000 grains weight (g)			
31	11th STEMRRSN 6109	32-57	45
32	11th STEMRRSN 6110	26-59	46
65	15th HTWYT 36	36-59	46
90	34th SAWSN 3148	34-58	46
	GW 366 (Check)	24-64	45

The feedback report of EIGN indicates that breeders across the country selected the genotypes from this nursery for various purposes. A total of 379 selections were made by the cooperating centres during 2017-18 (Table 4).The entry 8th HLBSN41 was selected by 9 centres followed by 11th STEMRRSN 6109 (8 Centres) and 24th HRWYT 2107 (7 centres).

Table 4: Centre-wise selections made from EIGN

Centre	Selections #	Traits selected
Faizabad	26	Hybridization, germplasm enrichment
Sabour	23	1000-grains weight, yield attributing traits
Powarkheda	13	Further evaluation
Malan	19	Earliness, 1000 grains weight
Junagarh	11	Earliness, higher tillers, 1000 grains weight, spike length
Kalyani	35	Further evaluation
Vijapur	10	Yield traits, hybridization
Bilaspur	24	Direct introduction
Lok Bharti	17	Hybridization
Durgapura	34	Hybridization
Akola	3	Tillers/m and grains/spike
Pune	27	Earliness, 1000 grains weight and yield attributing traits
Udaipur	23	Hybridization
Almora	36	Further evaluation
Gwalior	21	Further evaluation
Jabalpur	17	Hybridization
Dharwad	7	Hybridization
Shillongani	3	Yield attributing traits
Hisar	9	Tillers/m
Pantnagar	14	Hybridization
Niphad	7	Hybridization
Total	**379**	

Spring x Winter Wheat Segregating Stock Nursery

High variability for traits of economic importance along with resistance/tolerance against various biotic and abiotic stresses has been reported in the winter wheats. Utilizing the diversity present in winter wheat gene pool for enhancing the productivity of spring wheat along with incorporating resistance to various biotic and abiotic stresses is a novel approach. During the crop season 2017-18 the material generated in the programme was provided to seven centres in three major wheat growing zones (NHZ, NEPZ and CZ) of the country for selection under different biotic and abiotic stresses and diverse agro-ecological conditions. The collaborating centres under the programme were CSKHPKV Malan, BHU- Varanasi, NDUAT-Faizabad, CSA Kanpur, BAU Sabour, SDAU- Vijapur and RVSKVV Gwalior.

Sharing of segregating material

The Spring x Winter wheat Segregating Stock Nursery (SWSSN) comprising 101 crosses (51 from VPKAS Almora and 50 crosses from Karnal) from F_2 generation was shared with seven cooperating centres, namely Malan, Varanasi, Faizabad, Kanpur, Sabour, Vijapur and Gwalior. The segregating material was subjected to natural biotic and abiotic stresses at different centres located in major wheat zones. Heavy infestation of black and brown rust at Vijapur centre resulted in no selection of the plants. At Malan centre, there was occurrence of yellow rust moisture stress at critical growth stages, terminal heat and leaf blight at Varanasi centre; leaf blight and sodicity at Faizabad, terminal heat and early and late heat at Gwalior centre was observed.

The utilization report from cooperating centres showed that the percent utilization of the spring x winter crosses, the maximum utilization was observed at Malan (95%) followed by Sabour (79.2%) and Gwalior (77.2%) (Table1).

Table 1: Utilization report from cooperating centres

Name of the center	Crosses Selected	Utilization %	Plants selected	Characteristics for which utilized
CSKHPKV, Malan	96	95	2570	Yield components under moisture stress at critical growth stages
BHU- Varanasi,	51	50.5	157	Yield components and leaf blight resistance
NDUAT-Faizabad	28	27.7	169	Yield components, leaf blight resistance and seed characteristics
BAU-Sabour	80	79.2	280	Yield components, leaf blight resistance and seed characteristics
CSA Kanpur,	07	6.9	07	Yield components, morphological and seed characteristics
RVSKVV-Gwalior	78	77.2	683	Yield components morphological traits and physiological traits under terminal heat

Promising cross-combinations

From supplied 101 crosses a total of 3866 single plants were selected on the basis of yield components, disease resistance, morphological and grain characteristics. None of the cross combination remained unutilized. The maximum number of 2570 single plants was selected at Malan followed by Gwalior (683), Sabour (280) and Faizabad (169) as shown in Table-1.

The single plants selected are similar in heading and maturity, disease resistance with higher yield *per se* to the popular varieties of the zone.

During the season maximum 81 plants were selected across the zone in cross WH 1094/ HSB 2527(YR 15-YR 24/6* AVOCET//2*HAPPHIRE)// VW 1473 followed by VW 20161/ BUC/PVN//MILAN/3/TX 96V2447/YR 15//VW 1476 (72 plants), VW 20161 /DORADE 5//KS 52117/MLT// VW 1476 (69 plants). The promising cross combinations that were utilized by most of the co-operators are being presented in Table 2. The utilization of SWSSN at the cooperating

centres was very encouraging and it reflected the usefulness of winter wheats in spring wheat improvement.

Table 2: Promising Cross Combinations of SWSSN 2017-18

SN	Cross#	Pedigree	Total Plant Selected
1	VHW-6575	WH 1094/ HSB 2527(YR 15-YR 24/6* AVOCET//2*HAPPHIRE)// VW 1473	81
2	VHW-6581	VW 20161/ BUC/PVN//MILAN/3/TX 96V2447/YR 15//VW 1476	72
3	VHW-6580	VW 20161 /DORADE 5//KS 52117/MLT// VW 1476	69
4	WSK-17-24	TURKEY 97-98 (29)/Lok1//DBW88	56
5	VHW-6645	NW3087/ ID 800994.W/VEE//PYN/BAU/3/PYN/BAU	53
6	WSK-17-49	K-14-11/WS2014-09//CBW38	53
7	VHW-6604	HPW 338/PBW 640//38th IBWSN 208 (WW 27)	52
8	VHW-6609	EC 721452/DL 1063//VW 1473	52
9	VHW-6610	VW 20168/F 105-1//ATAY/GALVEZ 87	52
10	VHW-6641	PHS1102/ KARPL//CTK/VEE/3/F1502W9.01/4/STEPHENS	51
11	WSK-17-25	TURKEY 97-98 (29)/Lok1//WH1124	51
12	WSK-17-50	15IWWYT-IR-9803/DBW90//DBW153/3/DBW140	51
13	VHW-6590	VL 3002//VW 1125/ BUC/PVN//MILAN/3/TX 96V2447/YR 15	50
14	WSK-17-47	K-14-11/DBW184//WH1105	50
15	VHW-6586	VW 0913/HS 576//38th IBWSN 208 (WW 27)	49
16	VHW-6600	HUW 626/EGAGREGORY(PELASRT 12*BATAVIA)//VL 3002	48

Segregating Stock Nursery

21st Segregating Stock Nursery (SSN) is constituted with the objective to share promising segregating material with upcoming wheat breeding centres in AICW&BIP to enable them to evaluate and select superior plants as per the breeding objectives and cultural conditions prevailing under agro-climatic conditions in different zones.

- During 2017-18 the 21st SSN was constituted with 93 segregating populations (F_2/F_3) that including material from rice-wheat programme (37), warmer area programme (25), leaf blight programme (21) and durum wheat programme (10) of IIWBR, Karnal (Table1).
- The nursery was supplied to 20 wheat breeding centres namely Jammu, Coochbehar, Faizabad, Ranchi, Sabour, Shillongani, Kalyani, Varanasi, Bilaspur, Gwalior, Lokbharti, Sagar, Udaipur, Kota, Jabalpur, Dhaulakuan, Malan, Khudwani, Parbhani, and Akola. Data from three centres namely Kota, Akola and Coochbehar was not received.
- Entries contributed by rice wheat programme were utilized with maximum frequency (294) and maximum percentage of plant (40.7%) followed by warmer area programme.
- All supplied 93 entries were utilized by one or other centre. The utilization report indicated that the nursery could achieve 47.25% utilization across the centres (Table 2). The maximum utilization percentage of crosses was reported by Sabour (98.9%) followed by Parbhani (96.8%) and Malan (74.5%).
- The data for number of plants selected from SSN lines showed that maximum selection of plants was done by Malan (1837) followed by Sabour(401), Bhavnagar (307), Jabalpur (225), Gwalior (202) and Faizabad (202).
- Selections in the segregating populations were made for different traits. Selections criteria was applied most frequently for yield components (698) followed by disease resistance (511), seed traits (381), morphological traits (370), physiological traits (339).

Table 1: Utilization pattern of segregating populations in 21ST SSN

Programme	Segregating Populations	Frequency of Utilization	Plants Selected
Rice-Wheat	37	294	1692 (40.7%)
Warmer area	25	206	1054 (25.4%)
Leaf Blight	21	156	904 (21.7%)
Durum	10	91	503 (12.1%)
Total	**93**	**747**	**4153**

Table 2: Centre-wise utilization of segregating stocks in 21st SSN

S. No.	Centre	Plants selected	Crosses utilized	Utilization (%)	Selection criterion
NHZ					
1.	Malan	1837	73	74.5	Yield components, disease resistance and seed traits
2.	Khudwani	36	13	14.0	Yield components, disease res. early maturity and physiological traits
NWPZ					
3.	Jammu	113	22	23.7	Disease resistance, morphological, physiological and seed traits
4.	Dhaulakuan	110	67	72.0	Yield components, disease resistance and morphological traits
NEPZ					
5.	Faizabad	202	30	32.3	Yield components, dis. Res., morph, physiological and seed traits
6.	Sabour	401	92	98.9	Yield components, disease resistance and seed traits
7.	Kalyani	109	24	25.8	Yield components, disease resistance and morphological traits
8.	Varanasi	109	48	51.6	Yield components and disease resistance

9.	Ranchi	72	47	50.5	Yield components, disease resistance, earliness, morphological, physiological and seed traits
10.	Shillongini	26	13	14	Yield components, morphological, and seed traits
CZ					
11.	Udaipur	92	36	38.7	Yield components and seed traits
12.	Jabalpur	225	9	9.7	Yield components
13.	Sagar	131	34	36.6	Yield components, dis. res, morpho, physiological and seed traits
14.	Lokbharti	307	61	65.6	Yield components and physiological traits
15.	Gwalior	202	65	69.9	Yield components, morphological, physiological and seed traits
16.	Bilaspur	62	23	24.7	Yield components, morphological and seed traits
PZ					
17.	Parbhani	119	90	96.8	Yield components, dis. res, morpho, physiological and seed traits
Total		**4153**	**--**	**47.25**	

Wheat Biofortification Nursery

Dietary deficiency of essential micronutrients such as zinc (Zn) and iron (Fe) affects more than two billion people worldwide, mostly pregnant women and children below the age of five who suffer from severe acute malnutrition. In countries with a high incidence of micronutrient deficiencies, cereal-based foods represent the largest proportion of the daily diet. Biofortification through cultivar selection and breeding is an important approach to both adequacy and quality of the human diet. In this context the 4th wheat Biofortification nursery was constituted during 2017-18 under irrigated timely sown conditions to entries having high grain zinc along with high yield. The nursery consisted of 30 test entries and six check varieties namely HD 3086, WB 2, HPBW 1, K 0307, GW 322 and MACS 6222. The nursery was proposed for conduction at 25 centres; seven in NWPZ (Jammu, Durgapura, Hisar, New Delhi, Ludhiana, Pantnagar, Karnal), six in NEPZ (Kanpur, Faizabad, Varanasi, IARI, Pusa, Kalyani, Sabour, Ranchi), six in central zone (Vijapur, Indore, Junagadh, Jabalpur, Powarkheda, Kota) and six in Peninsular zone (Akola, Niphad, Pune, Dharwad, Parbhani, K'Digraj). The nursery was planted in four blocks repeating checks in each block. The entries were sown in a plot size of six rows of 4m with a row to row spacing of 20cm. The nursery was not conducted at Kota while data was not received from Jabalpur. Grain samples for micronutrient estimation were not received from Jammu and Pantnagar.

NWPZ: The yield data from Jammu, Durgapura, Hisar, Delhi, Ludhiana, Pantnagar and Karnal was considered. The mean grain yield of the entries varied from 39.9 q/ha (IC 427824) to 65.1 q/ha (QBP 17-08). The highest yielding genotype was QBP 17-08 (65.1 q/ha) followed by BWL 6889 (64.3 q/ha), BWL 6888 (62.2 q/ha), IND 506 (61.8 q/ha), QBP 17-11 (61.7 q/ha), QBP 17-07 (61.6q/ha) and WH 1202(60.7 q/ha) and all these genotypes together formed the first non significant group. The mean grain Zinc ranged from 32.3 mg/kg (WH 1202) to 51.0 mg/kg (IC427824). The average grain zinc content of the check WB 2 was 39.3mg/kg followed by HPBW 01 (33.7 mg/kg) and HD 3086 (32.3 mg/kg). One entry IC427824 was in the first non significant group and this entry is awnless.

NEPZ: The yield data from Kanpur, Faizabad, Varanasi, IARI, Pusa, Kalyani, Sabour and Ranchi centres was considered. The mean grain yield of the entries varied from 26.6 q/ha (IC 427824) to 43.5 q/ha (QBP 17-11). The highest yielding genotype was QBP 17-11 (43.5 q/ha) followed by HUBW 02 (41.6 q/ha), BWL 6894 (40.6 q/ha), QBP17-08 (40.6 q/ha), BWL 6893 (40.3 q/ha), BWL 6889 (40.2 q/ha), BWL 6891 (40.2 q/ha), QBP 17-09 (40.1 q/ha) and HUWB 04 (40.0 q/ha), HUBW 05 (39.9 q/ha), RWP 2017-22 (39.6 q/ha), HUBW 01(38.9 q/ha) and QBP 17-06 (38.7 q/ha), together formed the first non-significant group. The mean grain zinc ranged from 28.8 mg/kg (WH 1202) to 48.5 mg/kg (IC427824). The average grain zinc content of the check K 0307 was 35.3 mg/kg. One entry IC427824 was in the first non significant group and this entry is awn less.

CZ: The yield data from Vijapur, Indore, Junagadh and Powarkheda centres was considered. The mean grain yield of the entries varied from 25.2 q/ha (RWP 2017-25) to 60.2 q/ha (BWL6889) The highest yielding genotype was BWL 6889 (60.2 q/ha) followed by WH 1228 (58.9 q/ha), QBP 17-10 (56.7 q/ha), HUBW 05 (55.7 q/ha), HUWB 04 (55.1 q/ha), QBP 17-09 (54.9 q/ha), RWP 2017-22 (53.6 q/ha), BWL 6888 (52.6 q/ha), BWL 6891 (52.2 q/ha), HUBW 03 (52.0 q/ha), HUBW 01 (51.9 q/ha) and formed the first non significant group. The mean grain zinc ranged from 36.6 mg/kg (WH 1228) to 66.4 mg/kg (IC427824). The average grain zinc content of the CZ check GW 322 was 37.2 mg/kg. Entry IC427824 was in the first non significant group.

PZ: The yield data from Akola, Niphad, Pune, Dharwad, Parbhani and K'Digraj centres was considered. The mean grain yield of the entries varied from 34.1q/ha (HTW 63) to 69.5q/ha (BWL6894). The highest yielding genotype was BWL 6894 (69.5 q/ha) followed by IND 506 (57.1 q/ha) and together these two formed the first non significant group. The mean grain zinc ranged from 52.1 mg/kg (IC427824) to 34.2 mg/kg (WH 1228). The average grain zinc content of

the PZ check variety MACS 6222 was 37.5 mg/kg. Two entries IC427824 and HTW 63 formed the first non significant group for grain zinc content.

National Level: At national level, eight entries viz., BWL 6894 (54.0 q/ha), BWL 6889 (53.3 q/ha), QBP 17-08 (52.6 q/ha), QBP 17-11 (52.5 q/ha), RWP 2017-22 (51.8 q/ha), WH 1228 (51.3 q/ha), QBP 17-07 (51.2 q/ha) and HUWB 04 (51.2 q/ha) formed the first non significant group for grain yield. Only one entry IC 427824 (53.5 mg/kg) formed the first non significant group for grain zinc content.

Table 1 Zonal and national yield of the entries in wheat biofortification nursery

SN	Genotype	NWPZ	Rk	G	NEPZ	Rk	G	CZ	Rk	G	PZ	Rk	G	National	Rk	G
1	QBP 17-11	61.7	5	1	43.5	1	1	48.4	16	0	54.8	8	0	52.5	4	1
2	BWL 6893	59.4	10	0	40.3	5	1	42.6	21	0	50.7	14	0	48.8	13	0
3	QBP 17-14	57.2	16	0	38.1	15	0	50.1	12	0	50.5	15	0	48.8	14	0
4	BWL 6894	57.3	15	0	40.6	3	1	48.3	17	0	69.5	1	1	54.0	1	1
5	DWAP 1722	50.8	24	0	34.7	25	0	29.1	29	0	43.1	26	0	40.5	27	0
6	BWL 6889	64.3	2	1	40.2	6	1	60.2	1	1	51.3	11	0	53.3	2	1
7	QBP 17-08	65.1	1	1	40.6	4	1	46.3	20	0	56.1	4	0	52.6	3	1
8	HUBW 03	46.0	28	0	38.3	14	0	52.0	10	1	44.8	21	0	44.5	24	0
9	BWL 6891	53.9	21	0	40.2	7	1	52.2	9	1	43.3	25	0	47.0	20	0
10	QBP 17-07	61.6	6	1	38.0	17	0	49.8	13	0	55.6	5	0	51.2	7	1
11	QBP 17-06	53.4	22	0	38.7	13	1	41.1	24	0	47.0	20	0	45.5	23	0
12	IC427824	39.9	30	0	26.6	30	0	38.6	28	0	43.8	23	0	36.8	29	0
13	WH 1228H	58.0	14	0	35.9	23	0	58.9	2	1	56.4	3	0	51.3	6	1
14	QBP 17-13	59.5	9	0	38.0	16	0	39.2	25	0	51.2	12	0	47.8	16	0
15	HUBW 02	49.5	26	0	41.6	2	1	41.9	23	0	53.4	9	0	46.9	21	0
16	HTW 63	42.9	29	0	31.2	29	0	39.1	26	0	34.1	30	0	36.6	30	0
17	HUBW 01	59.2	12	0	38.9	12	1	51.9	11	1	47.2	19	0	49.1	11	0
18	BWL 6895	55.7	18	0	35.3	24	0	47.0	19	0	48.5	17	0	46.5	22	0
19	RWP2017-25	51.4	23	0	36.1	21	0	25.2	30	0	37.0	29	0	39.0	28	0
20	QBP 17-10	57.2	17	0	32.9	26	0	56.7	3	1	51.2	13	0	48.5	15	0
21	IND 506	61.8	4	1	36.5	20	0	42.2	22	0	57.1	2	1	50.0	9	0
22	BWL 6888	62.2	3	1	32.7	27	0	52.6	8	1	49.6	16	0	48.8	12	0
23	HUWB 04	59.2	11	0	40.0	9	1	55.1	5	1	52.4	10	0	51.2	8	1
24	HUBW 05	50.3	25	0	39.9	10	1	55.7	4	1	48.1	18	0	47.6	18	0
25	BWL 6890	55.6	19	0	32.3	28	0	49.0	15	0	39.8	28	0	43.8	25	0
26	QBP 17-09	54.8	20	0	40.1	8	1	54.9	6	1	43.5	24	0	47.7	17	0
27	BWL 6896	48.8	27	0	37.6	18	0	38.6	27	0	40.5	27	0	41.8	26	0
28	RWP2017-22	60.4	8	0	39.6	11	1	53.6	7	1	54.8	7	0	51.8	5	1
29	QBP 17-12	58.1	13	0	36.7	19	0	47.3	18	0	54.8	6	0	49.3	10	0
30	WH 1202	60.7	7	1	35.9	22	0	49.1	14	0	44.6	22	0	47.5	19	0
CD at 10%		**4.4**			**4.8**			**8.5**			**12.6**			**3.9**		

Table 2 Zonal and national grain zinc content of the entries in wheat biofortification nursery

SN	Genotype	NWPZ	Rk	G	NEPZ	Rk	G	CZ	Rk	G	PZ	Rk	G	National	Rk	G
1	QBP 17-11	36.3	13	0	35.6	10	0	44.4	12	0	41.0	16	0	39.0	12	0
2	BWL 6893	34.1	24	0	36.3	8	0	42.2	21	0	44.3	5	0	39.2	10	0
3	QBP 17-14	39.4	5	0	32.9	23	0	39.8	28	0	38.8	23	0	37.5	24	0
4	BWL 6894	35.4	16	0	35.5	11	0	44.9	8	0	43.9	6	0	39.7	9	0
5	DWAP 1722	36.4	11	0	33.1	22	0	52.0	2	0	42.8	8	0	40.2	6	0
6	BWL 6889	34.7	22	0	34.2	19	0	42.9	17	0	36.6	27	0	36.6	26	0
7	QBP 17-08	33.3	28	0	31.7	27	0	43.1	16	0	36.5	28	0	35.6	27	0
8	HUBW 03	34.3	23	0	35.9	9	0	44.9	9	0	40.7	17	0	38.6	14	0
9	BWL 6891	35.0	19	0	37.9	5	0	46.4	6	0	41.6	14	0	39.9	7	0
10	QBP 17-07	33.9	25	0	32.3	26	0	38.8	29	0	35.1	29	0	34.7	29	0
11	QBP 17-06	35.0	18	0	37.5	6	0	42.5	19	0	39.9	20	0	38.5	15	0
12	IC427824	51.0	1	1	48.5	1	1	66.4	1	1	52.1	1	1	53.5	1	1
13	WH 1228H	33.2	29	0	30.9	29	0	36.6	30	0	34.2	30	0	33.5	30	0
14	QBP 17-13	36.9	9	0	34.7	15	0	43.3	15	0	41.7	13	0	38.9	13	0
15	HUBW 02	39.8	4	0	33.9	21	0	45.6	7	0	44.3	4	0	40.5	4	0
16	HTW 63	42.2	2	0	39.1	3	0	47.0	4	0	48.0	2	1	43.9	2	0
17	HUBW 01	35.6	15	0	40.3	2	0	40.2	26	0	42.5	10	0	39.8	8	0
18	BWL 6895	38.3	6	0	39.0	4	0	48.1	3	0	43.2	7	0	41.8	3	0
19	RWP 2017-25	33.8	26	0	32.6	25	0	46.5	5	0	44.8	3	0	39.0	11	0
20	QBP 17-10	37.2	8	0	34.4	17	0	44.5	11	0	38.1	26	0	38.1	19	0
21	IND 506	36.2	14	0	34.2	18	0	39.9	27	0	41.2	15	0	37.8	21	0
22	BWL 6888	36.6	10	0	34.7	14	0	42.8	18	0	39.6	21	0	38.1	18	0
23	HUWB 04	34.8	20	0	36.3	7	0	41.8	22	0	40.4	18	0	38.2	17	0
24	HUBW 05	33.7	27	0	35.1	13	0	43.4	14	0	42.6	9	0	38.5	16	0
25	BWL 6890	36.3	12	0	34.2	20	0	40.8	25	0	39.6	22	0	37.5	23	0
26	QBP 17-09	37.9	7	0	34.6	16	0	41.2	24	0	38.4	25	0	37.7	22	0
27	BWL 6896	41.9	3	0	35.4	12	0	43.5	13	0	42.1	11	0	40.4	5	0
28	RWP 2017-22	34.7	21	0	32.8	24	0	41.3	23	0	40.1	19	0	37.0	25	0
29	QBP 17-12	35.1	17	0	31.7	28	0	44.7	10	0	42.0	12	0	37.9	20	0
30	WH 1202	32.3	30	0	28.8	30	0	42.5	20	0	38.4	24	0	35.0	28	0
CD at 10%		**4.5**			**4.2**			**4.9**			**4.3**			**3.1**		

Appendix-I

Trials Not Reported

1791-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2017-18

Location wise Mean Yield (q/ha)

SN	Variety	Code	UP		
			Varanasi		
			Yield	RK	G
1	WH 1240	N-101	30.3	34	0
2	PBW 782	N-102	40.3	6	0
3	RAJ 4528	N-103	32.0	27	0
4	PBW 783	N-104	29.4	35	0
5	UP 3002	N-105	45.0	2	1
6	HD 3279	N-106	32.8	25	0
7	UP 3003	N-107	30.8	33	0
8	K 1701	N-108	36.4	10	0
9	UP 3004	N-109	29.0	36	0
10	DBW 257	N-110	33.8	20	0
11	RAJ 4527	N-111	31.6	31	0
12	WH 1239	N-112	31.7	30	0
13	PBW 781	N-114	35.9	11	0
14	HUW 826	N-115	31.1	32	0
15	DBW 253	N-116	34.8	16	0
16	RAJ 4529	N-117	35.5	14	0
17	PBW 784	N-118	32.9	23	0
18	HD 3280	N-119	34.7	17	0
19	HD 3281	N-121	31.8	29	0
20	K 1702	N-122	35.5	15	0
21	DBW 254	N-123	34.0	19	0
22	HD 3277	N-124	46.7	1	1
23	DBW 255	N-125	37.1	8	0
24	HD 3278	N-126	37.6	7	0
25	WH 1237	N-127	32.1	26	0
26	NW 7041	N-128	32.0	28	0
27	DBW 256	N-129	32.8	24	0
28	WH 1238	N-131	34.3	18	0
29	UP 3001	N-132	36.6	9	0
30	NW 7037	N-133	43.3	4	1
31	PBW 785	N-134	43.8	3	1
32	HD 3276	N-136	33.3	22	0
33	DBW 88 (C)	N-113	35.9	12	0
34	HD 3086 (C)	N-120	40.7	5	0
35	K 1006 (C)	N-130	33.6	21	0
36	HD 2967 (C)	N-135	35.8	13	0
G.M.			35.1		
S.E. (M)			1.7		
C.D. (10%)			4.1		
C.V.			6.9		
D.O.S.(d.m.y.)			17.11.2017		

Trials proposed & conducted = 19
Trials not reported (2) = Modipuram (DNR), Varanasi (LSM)

1792-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2017-18

Location wise Mean Yield (q/ha)

SN	Variety	Code	Assam		
			Shillongani		
			Yield	RK	G
1	PBW 787	N-201	22.6	14	0
2	HD 3286	N-202	26.8	12	0
3	PBW 786	N-203	27.3	11	0
4	HD 3285	N-204	15.6	29	0
5	DBW 259	N-205	18.9	18	0
6	K 1703	N-206	18.3	21	0
7	PBW 788	N-207	18.4	19	0
8	K 1704	N-209	34.6	6	0
9	UP 3005	N-210	18.1	22	0
10	HD 3282	N-211	31.8	8	0
11	WH 1243	N-212	21.7	15	0
12	NW 7028	N-213	18.0	23	0
13	HUW 828	N-214	16.4	27	0
14	HUW 827	N-215	29.4	10	0
15	DBW 258	N-216	37.2	4	0
16	UP 3006	N-218	16.6	26	0
17	UP 3007	N-219	18.3	20	0
18	BRW 3814	N-220	4.2	36	0
19	DBW 260	N-221	30.4	9	0
20	WH 1242	N-222	24.9	13	0
21	K 1705	N-223	12.8	32	0
22	HUW 829	N-224	21.1	16	0
23	WH 1241	N-226	10.8	33	0
24	DBW 261	N-227	43.0	2	1
25	HD 3283	N-228	16.6	25	0
26	HD 3284	N-229	17.1	24	0
27	NW 7047	N-230	19.7	17	0
28	RAJ 4531	N-231	16.2	28	0
29	DBW 262	N-232	14.4	30	0
30	RAJ 4536	N-233	10.4	34	0
31	RAJ 4530	N-235	13.4	31	0
32	NW 7049	N-236	35.8	5	0
33	K 1006 (C)	N-208	42.3	3	1
34	HD 2967 (C)	N-217	9.0	35	0
35	HD 3086 (C)	N-225	44.5	1	1
36	DBW 88 (C)	N-234	32.2	7	0
G.M.			22.5		
S.E. (M)			2.2		
C.D. (10%)			5.4		
C.V.			14.0		
D.O.S.(d.m.y.)			24.11.2017		

Trials proposed & conducted = 18
Trials not reported (2) = Modipuram (DNR), Shillongani (LSM)

1793-NIVT-2-IR-TS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	MP			Rajasthan			Karnataka		
			Gwalior			Udaipur			Nippani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	NIAW 3390	N-301	77.7	21	0	40.0	10	0	35.6	25	0
2	GW 508	N-303	86.4	7	1	39.3	14	0	42.5	10	1
3	HP 1968	N-304	73.9	25	0	37.9	20	0	44.4	6	1
4	PBW 789	N-305	78.2	20	0	28.2	34	0	27.3	31	0
5	MACS 6727	N-306	85.8	9	0	40.5	8	0	26.0	33	0
6	GW 505	N-307	84.2	11	0	39.7	11	0	44.2	7	1
7	MACS 6729	N-310	89.3	6	1	44.2	3	0	26.9	32	0
8	WH 1244	N-311	82.2	16	0	27.6	35	0	44.8	4	1
9	CG 1028	N-313	82.7	13	0	38.8	15	0	41.7	13	0
10	MP 1350	N-314	68.7	30	0	39.5	13	0	34.9	26	0
11	GW 506	N-315	86.3	8	0	36.9	23	0	36.9	22	0
12	AKAW 5077	N-316	79.1	19	0	37.7	22	0	37.7	20	0
13	DBW 263	N-317	59.0	35	0	38.4	18	0	36.3	24	0
14	RAJ 4532	N-318	61.4	33	0	42.4	5	0	42.5	10	1
15	HI 1632	N-319	91.5	3	1	42.5	4	0	44.6	5	1
16	UAS 398	N-320	84.6	10	0	36.0	26	0	24.2	35	0
17	MP 1348	N-321	50.2	36	0	24.1	36	0	38.1	19	0
18	MP 1349	N-322	71.9	27	0	34.8	30	0	40.0	17	0
19	AKAW 5078	N-323	93.3	2	1	36.7	24	0	42.5	10	1
20	MACS 6722	N-324	75.8	22	0	40.5	8	0	40.2	16	0
21	NIAW 3270	N-325	79.1	18	0	39.7	11	0	39.2	18	0
22	UP 3008	N-326	74.6	24	0	31.5	33	0	24.2	34	0
23	HI 1631	N-327	79.7	17	0	40.9	7	0	34.2	27	0
24	UAS 3001	N-328	82.2	15	0	36.4	25	0	21.9	36	0
25	DBW 264	N-329	72.8	26	0	35.3	28	0	50.2	1	1
26	MP 3493	N-330	68.3	31	0	37.8	21	0	46.1	2	1
27	GW 507	N-331	75.4	23	0	38.6	17	0	43.6	9	1
28	UAS 399	N-332	60.6	34	0	36.0	26	0	36.5	23	0
29	HI 1629	N-333	83.0	12	0	38.3	19	0	40.6	15	0
30	HI 1630	N-334	90.2	4	1	45.7	2	0	31.7	29	0
31	JW 5154	N-335	70.8	28	0	35.2	29	0	30.8	30	0
32	MP 3495	N-336	62.8	32	0	32.0	32	0	44.2	7	1
33	GW 322 (C)	N-302	82.3	14	0	33.8	31	0	37.3	21	0
34	MACS 6222 (C)	N-308	98.4	1	1	41.7	6	0	41.5	14	0
35	MACS 6478 (C)	N-309	89.9	5	1	38.8	16	0	32.9	28	0
36	HI 1544 (C)	N-312	70.3	29	0	59.0	1	1	45.4	3	1
G.M.			77.9			38.0			37.5		
S.E. (M)			5.0			2.2			3.2		
C.D. (10%)			12.1			5.3			7.7		
C.V.			9.1			8.3			12.2		
D.O.S.(d.m.y.)			12.11.17			14.11.2017			13.11.2017		

Trials proposed = 17
Trials not conducted (1) = Kota
Trials not reported (4) = Gwalior (UY), Udaipur (LSM), Nippani (LSM), Akola (RMT)

1794-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2017-18

Location wise Mean Yield (q/ha)

SN	Variety	Code	MP			Gujarat			MP		
			Gwalior			Junagadh			Powarkheda		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW 510	N-501	74.2	9	1	28.0	4	1	37.0	15	0
2	NIAW 3523	N-502	71.1	15	0	28.1	3	1	44.0	6	0
3	MP 3503	N-503	79.8	5	1	27.4	6	1	53.2	2	1
4	GW 511	N-504	71.7	12	0	29.0	1	1	27.8	24	0
5	MACS 6732	N-505	73.2	11	1	28.3	2	1	41.1	10	0
6	PBW 794	N-506	64.7	18	0	20.1	24	0	34.7	16	0
7	MP 1352	N-507	54.4	24	0	26.5	7	1	29.5	22	0
8	HI 1633	N-508	74.2	10	1	23.8	15	0	52.1	3	1
9	NIAW 3354	N-509	71.3	13	0	27.6	5	1	33.6	18	0
10	MP 3497	N-510	57.1	23	0	24.3	14	0	31.8	20	0
11	UAS 3002	N-511	68.3	16	0	19.6	25	0	46.3	5	1
12	MP 1351	N-512	76.3	8	1	22.5	18	0	42.2	8	0
13	GW 509	N-513	82.9	2	1	26.4	8	1	49.2	4	1
14	AKAW 5023	N-514	78.9	6	1	25.4	11	1	33.6	18	0
15	HI 1634	N-516	81.6	3	1	22.2	19	0	41.1	10	0
16	DBW 270	N-517	68.0	17	0	22.7	16	0	20.8	25	0
17	HI 8807	N-519	71.1	14	0	25.2	12	1	30.7	21	0
18	MACS 6726	N-520	58.3	22	0	24.9	13	0	41.1	10	0
19	HI 8808	N-521	81.3	4	1	21.2	21	0	34.1	17	0
20	DBW 271	N-522	63.9	19	0	21.1	22	0	37.3	14	0
21	NIAW 3525	N-523	61.9	21	0	22.6	17	0	29.2	23	0
22	HD 3300	N-524	53.6	25	0	20.8	23	0	39.9	13	0
23	CG 1029	N-525	62.8	20	0	26.0	9	1	42.2	8	0
24	HD 2932 (C)	N-515	78.3	7	1	25.8	10	1	42.8	7	0
25	HD 2864 (C)	N-518	86.2	1	1	22.1	20	0	56.7	1	1
G.M.			70.6			24.5			38.9		
S.E. (M)			5.7			1.6			4.9		
C.D. (10%)			13.7			3.9			11.7		
C.V.			11.3			9.0			17.7		
D.O.S.(d.m.y.)			06.12.2017			13.12.2017			06.12.2017		

Trials proposed & conducted = 15

Trials not reported (3) = Gwalior (UY), Junagadh (LSM), Powarkheda (HCV)

1798-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2017-18

Location wise Mean Yield (q/ha)

SN	Variety	Code	J&K			UP		
			Jammu			Kanpur		
			Yield	RK	G	Yield	RK	G
1	UP 3012	N-701	70.8	7	1	47.7	4	1
2	WH 1250	N-703	72.4	6	1	40.3	13	0
3	K 1710	N-704	62.5	17	0	33.2	24	0
4	DBW 274	N-705	55.4	22	0	41.6	10	0
5	HD 3295	N-706	68.0	11	1	34.5	20	0
6	HD 3294	N-707	64.3	14	0	46.8	5	1
7	HS 649	N-708	66.5	12	1	41.6	12	0
8	NW 7030	N-709	55.4	22	0	46.6	6	1
9	UP 3013	N-712	63.0	15	0	48.5	3	1
10	DBW 275	N-713	60.5	19	0	42.7	9	0
11	BRW 3823	N-714	58.3	21	0	34.1	22	0
12	PBW 795	N-715	74.2	4	1	41.6	11	0
13	DBW 273	N-716	77.5	1	1	33.9	23	0
14	HD 3292	N-717	29.8	25	0	45.6	7	1
15	UP 3018	N-719	68.6	10	1	36.3	17	0
16	HUW 832	N-720	76.5	2	1	30.2	25	0
17	PBW 796	N-721	58.9	20	0	49.0	2	1
18	K 1711	N-722	62.0	18	0	36.6	16	0
19	WH 1251	N-723	75.8	3	1	35.4	19	0
20	DBW 272	N-724	69.2	8	1	35.9	18	0
21	HD 3293	N-725	73.1	5	1	49.2	1	1
22	PBW 644 (C)	N-702	68.9	9	1	43.2	8	0
23	WH 1142 (C)	N-710	62.9	16	0	36.7	15	0
24	K 1317 (C)	N-711	64.5	13	0	39.6	14	0
25	HD 2888 (C)	N-718	48.4	24	0	34.1	21	0
G.M.			64.3			40.2		
S.E. (M)			5.2			2.1		
C.D. (10%)			12.6			5.2		
C.V.			11.4			7.4		
D.O.S.(d.m.y.)			25.10.2017			14.11.2017		

Trials proposed & conducted = 17

Trials not reported (3) = Diggi (RMT), Jammu (UY), Kanpur (LS)

1799-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2017-18

Location wise Mean Yield (q/ha)

SN	Variety	Code	Gujarat					
			Arnej			Junagadh		
			Yield	RK	G	Yield	RK	G
1	GW 1350 (d)	N-801	27.5	1	1	11.7	24	0
2	NIDW 1149 (d)	N-803	17.9	9	0	15.2	18	0
3	MP 3507	N-804	18.3	8	0	18.0	10	0
4	HI 8815 (d)	N-805	22.0	3	0	15.7	17	0
5	UAS 470 (d)	N-806	11.6	23	0	15.8	16	0
6	HI 8814 (d)	N-807	13.6	16	0	13.3	21	0
7	DBW 280	N-808	8.6	25	0	17.9	11	0
8	DBW 276	N-809	13.4	17	0	19.4	9	0
9	MP 1346	N-810	16.1	13	0	17.6	13	0
10	GW 512	N-811	15.6	14	0	13.5	19	0
11	HD 3297	N-812	14.8	15	0	16.8	15	0
12	MP 1345	N-813	11.3	24	0	11.6	25	0
13	MPO 1347 (d)	N-815	19.4	4	0	13.1	23	0
14	MACS 4075 (d)	N-817	13.4	19	0	20.2	6	1
15	NIAW 3386	N-818	17.9	10	0	24.4	1	1
16	CG 1030	N-819	19.3	5	0	22.9	2	1
17	HD 3296	N-820	17.8	11	0	19.5	8	0
18	AKAW 5082	N-821	19.0	6	0	20.6	5	1
19	MACS 6719	N-822	17.1	12	0	17.6	12	0
20	DBW 277	N-823	12.2	22	0	21.2	4	1
21	HP 1970	N-825	13.4	17	0	20.2	7	1
22	DBW 110 (C)	N-802	19.0	6	0	17.4	14	0
23	HI 1605 (C)	N-814	22.2	2	0	21.2	3	1
24	UAS 466 (d) (C)	N-816	12.7	21	0	13.5	20	0
25	HI 8627 (d) (C)	N-824	12.8	20	0	13.2	22	0
G.M.			16.3			17.3		
S.E. (M)			1.2			2.0		
C.D. (10%)			2.9			5.0		
C.V.			10.3			16.5		
D.O.S.(d.m.y.)			02.11.2017			07.11.2017		

Trials proposed = 18

Trials not conducted (1) = Kota

Trials not reported (4) = Junagadh (LSM), Arnej (LSM), Nippani (RMT), Akola (RMT)

1713-AVT-RI-LS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand									HP		
			Almora			Majhera			Ranichauri			Shimla		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	VL 3017	NHLSZ 1701	10.0	9	0	9.9	4	0	7.2	9	0	8.1	9	0
2	UP 3017	NHLSZ 1702	10.3	8	0	8.2	8	0	7.7	8	0	8.5	8	0
3	VL 3016	NHLSZ 1703	11.6	2	1	9.5	6	0	8.3	5	0	7.2	10	0
4	HS 662	NHLSZ 1704	8.8	10	0	9.3	7	0	7.2	9	0	23.0	1	1
5	HS 661	NHLSZ 1707	10.9	5	1	10.6	3	1	10.5	1	1	14.7	3	0
6	HS 660	NHLSZ 1708	10.8	6	1	11.0	2	1	7.8	7	0	9.4	7	0
7	VL 3018	NHLSZ 1709	11.7	1	1	7.1	10	0	7.9	6	0	10.3	5	0
8	HPW 459	NHLSZ 1710	11.1	3	1	9.7	5	0	9.2	4	1	9.9	6	0
9	HS 490 (C)	NHLSZ 1705	10.9	4	1	11.8	1	1	9.8	3	1	21.7	2	1
10	VL 892 (C)	NHLSZ 1706	10.7	7	1	7.3	9	0	9.8	2	1	14.5	4	0
G.M.			10.7			9.4			8.5			12.7		
S.E. (M)			0.6			0.8			0.6			0.6		
C.D. (10%)			1.3			1.8			1.4			1.4		
C.V.			12.9			20.3			17.3			11.5		
D.O.S. (d.m.y)			11.12.2017			13.12.2017			01.12.2017			07.12.2017		

Trials proposed & Conducted= 11
Trials not Reported (4) = Almora (LSM), Majhera (LSM), Shimla (LSM), Ranichauri (LSM)

1714-AVT-RF-ES-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand		
			Almora		
			Yield	Rk	G
1	HS 666	NHESZ 1702	2.8	8	0
2	HS 665	NHESZ 1703	2.1	10	0
3	VL 1015	NHESZ 1704	1.9	12	0
4	HPW 450	NHESZ 1705	4.9	2	0
5	HS 664	NHESZ 1706	3.8	5	0
6	HPW 451	NHESZ 1707	2.1	9	0
7	VL 1016	NHESZ 1708	1.9	11	0
8	UP 3016	NHESZ 1709	3.5	6	0
9	VL 1014	NHESZ 1710	4.6	3	0
10	HS 542 (C)	NHESZ 1701	5.7	1	1
11	VL 829 (C)	NHESZ 1711	3.3	7	0
12	HPW 251 (C)	NHESZ 1712	4.6	4	0
G.M.			3.4		
S.E. (M)			0.2		
C.D. (10%)			0.6		
C.V.			16.9		
D.O.S.(d.m.y.)			09.10.2017		

Trials proposed & conducted = 7
Trial not reported (2) = Bara-KVK (RMT), Almora (LSM)

1715-AVT-IR-TS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	HP		
			Shimla		
			Yield	Rk	G
1	HS 634	NHTSZ 1702	15.9	7	0
2	HPW 441	NHTSZ 1705	33.4	3	1
3	HPW 442	NHTSZ 1706	25.0	6	0
4	HPW 349 (C)	NHTSZ 1701	26.2	5	0
5	VL 907 (C)	NHTSZ 1703	33.6	2	1
6	HS 507 (C)	NHTSZ 1704	32.7	4	1
7	HS 562 (C)	NHTSZ 1707	34.8	1	1
G.M.			28.8		
S.E.(M)			0.9		
C.D. (10%)			2.2		
C.V.			7.6		
D.O.S. (d.m.y)			10.11.2017		

Trials proposed & conducted = 4
Trials not Reported (1) = Shimla (LSM)

1715-AVT-RF-TS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand						HP			J&K		
			Almora			Ranichauri			Akrot			Wadura		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 634	NHTSZ 1702	6.7	5	0	8.6	7	0	15.0	1	1	62.7	6	0
2	HPW 441	NHTSZ 1705	9.1	1	1	9.7	4	0	11.3	7	0	105.4	1	1
3	HPW 442	NHTSZ 1706	7.1	4	0	9.0	6	0	13.0	4	1	72.2	5	0
4	HPW 349 (C)	NHTSZ 1701	6.6	7	0	9.7	5	0	12.9	5	1	80.6	4	0
5	VL 907 (C)	NHTSZ 1703	9.1	2	1	11.6	3	0	14.6	2	1	88.5	2	0
6	HS 507 (C)	NHTSZ 1704	6.7	6	0	13.2	2	1	13.1	3	1	55.7	7	0
7	HS 562 (C)	NHTSZ 1707	8.1	3	1	13.2	1	1	12.3	6	0	88.1	3	0
G.M.			7.6			10.7			13.2			79.0		
S.E. (M)			0.6			0.4			0.9			6.4		
C.D. (10%)			1.3			1.1			2.2			15.3		
C.V.			17.9			10.2			13.8			19.8		
D.O.S. (d.m.y)			16.10.2017			30.10.2017			23.10.2017			02.11.2017		

Trials proposed & Conducted= 11
Trials not Reported (4) = Almora (LSM), Akrot (LSM), Ranichauri (LSM), Wadura (UY)

1716-IVT-RF-TS-TAS-NHZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand			J&K		
			Ranichauri			Wadura		
			Yield	Rk	G	Yield	Rk	G
1	HPW 454	NHIVT 1701	10.0	14	0	68.4	7	0
2	VL 2034	NHIVT 1702	13.0	3	1	69.1	6	0
3	VL 2031	NHIVT 1703	12.2	5	1	69.2	5	0
4	HS 650	NHIVT 1704	10.5	12	0	64.58	12	0
5	VL 2033	NHIVT 1705	9.6	16	0	64.1	13	0
6	HPW 455	NHIVT 1706	12.0	6	1	132.4	2	0
7	HPW 453	NHIVT 1707	10.8	11	0	149.5	1	1
8	UP 3014	NHIVT 1708	11.3	9	0	67.9	8	0
9	HS 652	NHIVT 1709	14.8	1	1	72.1	4	0
10	DBW 279	NHIVT 1712	10.2	13	0	65.0	11	0
11	VL 2032	NHIVT 1713	12.5	4	1	58.8	14	0
12	HS 651	NHIVT 1714	9.8	15	0	73.9	3	0
13	HS 653	NHIVT 1715	11.7	7	0	52.7	16	0
14	UP 3015	NHIVT 1716	11.5	8	0	58.5	15	0
15	HS 507 (C)	NHIVT 1710	11.1	10	0	66.8	9	0
16	HS 562 (C)	NHIVT 1711	14.1	2	1	65.1	10	0
G.M.			11.6			74.9		
S.E. (M)			1.2			4.3		
C.D. (10%)			2.8			10.1		
C.V.			20.5			11.4		
D.O.S.(d.m.y.)			27.10.2017			02.11.2017		

Trials proposed & conducted = 8
Trials not Reported (2) = Ranichauri (LSM), Wadura (UY)

1721-AVT-IR-TS-TAS-NWPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Uttrakhnad		
			Dhakrani		
			Yield	Rk	G
1	UP 2981	NW-TS-101	44.5	12	0
2	DBW 221	NW-TS-102	53.7	2	0
3	DBW 222	NW-TS-104	42.1	14	0
4	BRW 3792	NW-TS-105	50.1	5	0
5	PBW 763	NW-TS-106	48.2	7	0
6	PBW 766	NW-TS-107	49.2	6	0
7	DBW 233	NW-TS-109	41.6	15	0
8	HD 3226	NW-TS-110	51.3	3	0
9	PBW 801	NW-TS-112	46.5	11	0
10	PBW 800	NW-TS-114	44.0	13	0
11	DPW 621-50 (C)	NW-TS-103	47.0	9	0
12	HD 3086 (C)	NW-TS-108	47.4	8	0
13	HD 2967 (C)	NW-TS-111	58.0	1	1
14	DBW 88 (C)	NW-TS-113	50.5	4	0
15	WH 1105 (C)	NW-TS-115	46.8	10	0
G.M.			48.1		
S.E. (M)			1.5		
C.D. (10%)			3.5		
C.V.			6.2		
D.O.S.(d.m.y.)			20.11.2017		

Trials proposed & conducted = 28
Trials not reported (3) = Rampur (RMT), Modipuram (DNR), Dhakrani (LS)

1723-NWPZ-AVT-IR-LS-TAS, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	UP		
			Bareilly		
			Yield	Rk	G
1	PBW 771	NW-LS-201	32.5	6	0
2	PBW 752*	NW-LS-206	23.1	9	0
3	PBW 773	NW-LS-208	41.7	2	0
4	DBW 237	NW-LS-209	29.6	8	0
5	WH 1124 (C)	NW-LS-202	38.4	3	0
6	DBW 90 (C)	NW-LS-203	29.7	7	0
7	HD 3059 (C)	NW-LS-204	42.9	1	1
8	WH 1021 (C)	NW-LS-205	34.3	4	0
9	DBW 173 (I) (C)	NW-LS-207	33.3	5	0
G.M.			33.9		
S.E. (M)			0.5		
C.D. (10%)			1.1		
C.V.			2.8		
D.O.S.(d.m.y.)			22.12.2017		

Trials proposed & conducted = 24
Trials not reported (4) = Rampur (RMT), Kotputli (RMT), Modipuram (DNR), Bareilly (LSM)

1725-AVT-RI-TS-TAS-NWPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Haryana			Rajasthan		
			Bawal			Hanumangarh		
			Yield	Rk	G	Yield	Rk	G
1	BRW 3806	NW-RI-302	52.3	1	1	4.2	6	1
2	HD 3237*	NW-RI-304	50.5	2	1	4.9	5	1
3	HI 1620*	NW-RI-305	44.9	6	0	5.5	2	1
4	DBW 252	NW-RI-308	42.5	9	0	3.0	10	0
5	HI 1628	NW-RI-309	49.7	3	1	4.0	7	1
6	NIAW 3170	NW-RI-310	44.1	7	0	3.9	8	1
7	WH 1142 (C)	NW-RI-301	49.5	4	1	5.2	3	1
8	WH 1080 (C)	NW-RI-303	42.9	8	0	5.6	1	1
9	PBW 644 (C)	NW-RI-306	39.6	10	0	3.3	9	0
10	HD 3043 (C)	NW-RI-307	45.8	5	0	5.1	4	1
G.M.			46.2			4.5		
S.E. (M)			2.3			0.9		
C.D. (10%)			5.7			2.2		
C.V.			10.2			40.1		
D.O.S.(d.m.y.)			14.11.2017			5.11.2017		

Trials Proposed = 17
Not conducted (1) = Dausa
Trial not reported (3) = Modipuram (DNR), Hanumangarh (LSM), Bawal (LS)

1731-AVT-IR-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	West Bengal						Jharkhand			Assam								
			Coochbehar			Majhian			Chianki			Biswanath			Dhubri			Shillongani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW 233	NE-IR-101	25.5	15	0	24.1	15	0	35.7	5	0	14.2	5	0	14.3	3	1	21.5	11	0
2	HD 3249	NE-IR-102	32.5	5	0	31.1	5	0	40.5	2	1	14.0	6	0	6.8	11	0	22.9	9	0
3	HD 3254	NE-IR-103	28.5	12	0	27.0	12	0	36.3	4	0	10.5	13	0	7.1	10	0	12.0	14	0
4	DBW 221	NE-IR-106	26.9	13	0	26.7	13	0	29.3	15	0	16.4	4	0	8.9	9	0	27.9	5	0
5	K 1601	NE-IR-107	31.4	8	0	30.7	6	0	34.0	8	0	10.1	14	0	11.9	7	1	24.3	7	0
6	PBW 769	NE-IR-108	30.3	9	0	28.1	9	0	34.0	9	0	12.8	11	0	9.2	8	0	29.0	3	0
7	DBW 187	NE-IR-112	29.1	11	0	27.1	11	0	42.1	1	1	11.8	12	0	13.8	5	1	10.1	15	0
8	DBW 223	NE-IR-113	29.6	10	0	28.2	8	0	31.2	14	0	14.0	7	0	13.8	4	1	20.9	12	0
9	PBW 762	NE-IR-114	26.5	14	0	26.3	14	0	35.3	6	0	13.4	9	0	6.1	13	0	22.9	10	0
10	WH 1218	NE-IR-115	31.9	6	0	29.6	7	0	31.4	13	0	13.6	8	0	6.6	12	0	20.0	13	0
11	K 1006 (C)	NE-IR-104	41.1	1	1	38.7	2	1	31.8	11	0	19.8	1	1	15.9	1	1	28.2	4	0
12	HD 2733 (C)	NE-IR-105	33.2	4	0	31.8	4	0	33.6	10	0	19.5	2	1	5.6	14	0	23.0	8	0
13	DBW 39 (C)	NE-IR-109	31.5	7	0	27.7	10	0	34.6	7	0	18.8	3	0	12.1	6	1	29.9	2	0
14	HD 2967 (C)	NE-IR-110	39.9	2	1	39.2	1	1	31.5	12	0	9.6	15	0	3.5	15	0	25.1	6	0
15	K 0307 (C)	NE-IR-111	34.7	3	0	34.8	3	0	37.8	3	0	12.8	10	0	14.9	2	1	37.5	1	1
G.M.			31.5			30.1			34.6			14.1			10.0			23.7		
S.E. (M)			1.5			1.0			1.3			0.4			2.2			1.1		
C.D. (10%)			3.5			2.4			3.1			1.0			5.2			2.7		
C.V.			9.3			6.8			7.5			5.8			37.2			9.4		
D.O.S. (d.m.y)			15.11.2017			28.11.2017			16.11.2018			18.11.2017			20.11.2017			25.11.2017		

Trials proposed = 25
Trials not conducted (2) = Baharaich, Bikramganj
Trials not reported (10) = Faizabad (RMT), Ghazipur (RMT), Barabanki (RMT), Banka (RMT), Majhian (LSM), Coochbehar (LSM), Biswanath (LSM), Chianki (LSM), Dhubri (LSM, HCV), Shillongani (LSM)

1734-AVT-RI-TS-TAS-NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety		West Bengal			Assam					
		Code	Manikchak			Gossaigaon			Biswanath		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	WH 1235	NE-RI-303	18.5	8	0	12.9	7	0	12.3	4	0
2	BRW 3806	NE-RI-304	18.9	7	0	11.8	9	0	7.9	8	0
3	DBW 252	NE-RI-306	24.1	2	0	13.3	6	0	12.7	3	0
4	HI 1628	NE-RI-309	17.5	9	0	25.4	1	1	10.5	5	0
5	HD 2888 (C)	NE-RI-301	29.3	1	1	12.4	8	0	10.2	6	0
6	HI 1612 (I) (C)	NE-RI-302	23.1	4	0	13.4	5	0	14.0	2	0
7	K 1317 (C)	NE-RI-305	20.4	5	0	17.4	4	0	18.1	1	1
8	K 8027 (C)	NE-RI-307	19.7	6	0	21.9	3	1	9.7	7	0
9	HD 3171 (C)	NE-RI-308	23.1	3	0	23.8	2	1	7.5	9	0
G.M.			21.6			16.9			11.4		
S.E. (M)			1.4			1.6			0.2		
C.D. (10%)			3.5			3.9			0.6		
C.V.			13.4			19.3			4.3		
D.O.S. (d.m.y)			16.11.2017			18. 11. 2017			22.11.2017		

Trials proposed = 18
Trial not conducted (2) = Tissuhi, Shillongani
Trials not reported (4) = Faizabad (RMT), Biswanath (LSM, LS), Gossaigaon (LSM, LS), Manikchak (LS)

1751-AVT-IR-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	MP		
			Sagar		
			Yield	Rk	G
1	GW 1339 (d)	CZ-TS-101	34.3	6	0
2	AKAW 4924	CZ-TS-102	30.5	9	0
3	GW 495	CZ-TS-107	35.9	4	0
4	UAS 465 (d)	CZ-TS-108	36.6	3	0
5	MPO 1343 (d)	CZ-TS-109	34.3	6	0
6	GW 322 (C)	CZ-TS-103	36.8	2	0
7	HI 8713 (d) (C)	CZ-TS-104	41.5	1	1
8	HI 8737 (d) (C)	CZ-TS-105	33.0	8	0
9	HI 1544 (C)	CZ-TS-106	34.9	5	0
G.M.			35.3		
S.E. (M)			0.6		
C.D. (10%)			1.5		
C.V.			3.6		
D.O.S. (d.m.y)			13.11.2017		

Trials proposed = 16
Trials not conducted (2) = Rewa, Kota
Trial not reported (2) = Anand (RMT), Sagar (LSM)

1754-AVT-RI-TS-TAD-CZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Gujarat					
			Amreli			Junagadh		
			Yield	Rk	G	Yield	Rk	G
1	DDW 47 (d)	CZ-RI-302	10.4	7	0	15.6	5	0
2	MP 1331	CZ-RI-303	16.6	3	0	22.5	2	1
3	UAS 466 (d)	CZ-RI-306	13.9	6	0	14.0	6	0
4	NIAW 3170	CZ-RI-307	15.3	4	0	22.2	3	1
5	DBW 110 (C)	CZ-RI-301	18.0	2	1	21.8	4	1
6	MP 3288 (C)	CZ-RI-304	19.8	1	1	22.7	1	1
7	HI 8627 (d) (C)	CZ-RI-305	14.3	5	0	13.2	7	0
G.M.			15.5			18.9		
S.E. (M)			1.1			1.1		
C.D. (10%)			2.7			2.8		
C.V.			14.1			12.1		
D.O.S. (d.m.y)			11.1.2017			7.11.2017		

Trials proposed = 17
Trials not conducted (1) = Rewa
Trial not reported (4) = Anand (RMT), Banswara (RMT), Amreli (LSM), Junagadh (LSM)

1761-AVT-IR-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Karnataka			Maharashtra					
			Mandya			Akola			Pravarnagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	AKAW 4924	PZ-TS-101	26.8	12	0	35.6	8	0	33.7	12	0
2	GW 491	PZ-TS-102	26.0	13	0	34.3	11	0	34.8	10	0
3	GW 493	PZ-TS-103	28.4	9	0	33.4	13	0	30.6	14	0
4	DBW 235	PZ-TS-104	27.5	11	0	35.5	10	0	35.7	8	0
5	HI 1624	PZ-TS-105	16.1	17	0	21.2	17	0	29.8	15	0
6	GW 495	PZ-TS-108	24.0	14	0	38.9	5	1	21.6	17	0
7	MP 1338	PZ-TS-109	29.6	8	0	32.1	14	0	34.4	11	0
8	HI 8800 (d)	PZ-TS-111	21.0	16	0	29.7	16	0	37.0	7	0
9	MACS 6709	PZ-TS-113	34.4	3	0	42.5	2	1	43.8	3	1
10	HI 1625	PZ-TS-114	30.0	7	0	37.7	7	0	24.0	16	0
11	PBW 770	PZ-TS-116	21.6	15	0	39.8	4	1	46.5	1	1
12	GW 492	PZ-TS-117	38.1	1	1	33.7	12	0	38.2	6	0
13	MACS 6222 (C)	PZ-TS-106	30.4	6	0	38.8	6	1	33.3	13	0
14	DBW 168 (l) (C)	PZ-TS-107	27.5	10	0	40.7	3	1	35.1	9	0
15	MACS 3949 (d) (C)	PZ-TS-110	37.6	2	1	30.8	15	0	42.0	4	0
16	MACS 6478 (C)	PZ-TS-112	33.9	4	0	43.2	1	1	40.8	5	0
17	UAS 428 (d) (C)	PZ-TS-115	31.2	5	0	35.5	9	0	46.3	2	1
G.M.			28.5			35.5			35.8		
S.E. (M)			0.9			2.2			1.3		
C.D. (10%)			2.2			5.1			3.0		
C.V.			6.5			12.2			7.0		
D.O.S. (d.m.y)			09.11.2017			10.11.2017			15.11.2017		

Trials proposed & conducted = 16
Trial not reported (3) = Mandya (LSM), Akola (LSM), Pravaranagar (LSM)

1764-AVT-RI-TS-TAD-PZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	Maharashtra		
			Karjat		
			Yield	Rk	G
1	GW 1346 (d)	PZ-RI-301	12.03	1	1
2	MPO 1336 (d)	PZ-RI-304	7.52	12	0
3	HI 8805 (d)	PZ-RI-306	7.15	13	0
4	MACS 4058 (d)	PZ-RI-307	9.09	5	0
5	MACS 6696	PZ-RI-308	8.84	6	0
6	MACS 4059 (d)	PZ-RI-309	8.16	9	0
7	NIAW 3170	PZ-RI-310	10.75	2	0
8	MACS 6695	PZ-RI-312	8.80	7	0
9	HI 8802 (d)	PZ-RI-313	8.14	10	0
10	HI 1605 (C)	PZ-RI-302	9.97	4	0
11	AKDW 2997-16 (d) (C)	PZ-RI-303	8.64	8	0
12	UAS 446 (d) (C)	PZ-RI-305	8.06	11	0
13	DBW 93 (C)	PZ-RI-311	10.09	3	0
G.M.			9.02		
S.E. (M)			0.15		
C.D. (10%)			0.43		
C.V.			3.31		
D.O.S. (dd.mm.yyyy)			11.11.2017		

Trials proposed & conducted = 11
Trials not reported (3) = Akola (RMT), Nippani (RMT), Karjat (LSM)

SPL-VLS-TAS-NWPZ/NEPZ, 2017-18
Location wise Mean Yield (q/ha)

SN	Variety	Code	UP		
			Faizabad		
			Yield	Rk	G
1	HD 3271	VLS-102	19.2	10	0
2	PBW 797	VLS-104	19.8	9	0
3	PBW 757	VLS-105	20.8	6	0
4	DBW 278	VLS-106	22.5	3	1
5	HI 1621	VLS-107	20.4	7	0
6	PBW 777	VLS-109	22.4	4	1
7	HD 3298	VLS-110	20.2	8	0
8	WR 544 (C)	VLS-101	21.9	5	1
9	DBW 71 (C)	VLS-103	28.3	1	1
10	DBW 14 (C)	VLS-108	24.1	2	1
G.M.			22.0		
S.E. (M)			2.9		
C.D. (10%)			6.9		
C.V.			26.3		
D.O.S. (d.m.y.)			12.01.2018		

Trials proposed & conducted = 15
Trials not reported (2) = Rampur (RMT), Faizabad (HCV

Appendix-II

Zonal Monitoring Report

Zonal Monitoring Report, 2017-18
Northern Hills Zone

Team-I
Period of visit: 23-26th April 2018
Name of team members:

Name	Centre
Dr Chunni Lal, Dr P L Kashyap	ICAR-IIWBR, Karnal
Dr Lakshmi Kant, Dr K K Mishra	ICAR-VPKAS, Almora
Dr Gurudev Singh	CSK HPKV, HAREC Bajaura

Centres visited: Ranichauri, Majhera, Hawalbagh

Breeding trials allocated & monitored:

Centre		Trial	Remark
Ranichauri	Wheat	AVT-TS-RF	Good
		IVT-TS-RF	Very Good
		IVT/AVT-LS-RI	Good
	Barley	AVT-TS-RF Grain	Very Good
Majehra	Wheat	IVT/AVT-ES-RF	Very Good
		AVT-TS-RF	Very Good
		IVT/AVT-LS-RI	Good
	Barley	AVT-TS-RF Grain	Very Good
		AVT-TS-RF Dual	Very Good
Hawalbagh	Wheat	IVT/AVT-ES-RF	Good
		IVT-TS-RF	Very Good
		IVT/AVT-LS-RI	Good
		AVT-TS-RF	Good
		AVT-TS-IR	Very Good
	Barley	AVT-TS-RF Grain	Failed due to erratic germination owing to drought like conditions
		AVT-TS-RF Dual	Very Good

Trials not conducted/rejected by monitoring team: Nil

Entries recommended for purification

Trial	Entry	Remarks
Wheat		
AVT-TS-RF	NHTSZ 1703, NHTSZ 1706	Few tall plants
IVT-TS-RF	NHIVT 1702, NHIVT1706, NHIVT1713	Few tall plants
IVT/AVT-LS-RI	NHLSZ 1702	Few tall plants
Barley		
AVT-TS-RF- Dual	NHDBZ 10	Few tall plants
	NHDBZ 11	Few erect plants

Entries exhibiting higher diseases/insect infestation:

Entry	Disease response
NHIVT 1707	-PM 7 at Ranichauri
NHIVT 1702	-PM 5 at Ranichauri
NHIVT 1708	-PM 5 at Ranichauri
NHIVT 1716	-PM 5 at Ranichauri
NHLSZ 1703	-PM 5 at Ranichauri

Report on Agronomical Trials:

Wheat

Trial	Centre	Remark
SPL-1- Evaluation of herbicides--- in wheat	**Hawalbagh**	Conducted properly but moderate weed infestation in weedy check.
SPL-2-Management of lodging----- nutrient expert		Conducted properly, treatment effects were visible but no lodging was observed.
SPL-10-Validation of Nutrient Expert in wheat		Conducted properly, treatment effects were visible

Barley

Trial	Centre	Remark
Enhancing barley productivity through use of bio-fertilizers SPL4	Almora	Not Conducted due Land shortage

Report on Pathological Nurseries: Hawalbagh

Nursery	Remark
Wheat	
LSSN	Conducted properly and disease pressure was very good.
PMSN	Conducted properly and disease pressure was good.
MDSN	Conducted properly but disease pressure was less for rust and blight but was good for powdery mildew.
EPPSN	Conducted properly but disease pressure was less.
SAARC	Conducted properly but disease pressure was moderate.
HBSN	Conducted properly but disease pressure was less.
Barley	
NBDSN	Conducted properly but disease pressure was moderate.
EBDSN	Conducted properly but disease pressure was moderate.
IBDSN	Conducted properly but disease pressure was moderate.

Special comments, if any

1. Conduct of all trials at Ranichauri was very good. The crop is still in milking stage, data may be expected by the end of June.
2. Due to no rains in general disease pressure was very less.
3. The Voluntary centers like Ranichauri and Majhera doing very good job may be invited for workshop to make them more aware about the coordinated system and trial conduction.

Signature of the monitoring team

-Sd-	-Sd-	-Sd-	-Sd-	-Sd-
Chuni Lal	PL Kashyap	Gurudev Singh	K K Mishra	Lakshmi Kant

Zonal Monitoring Report, 2017-18
Northern Hills Zone

Team-II
Period of visit: 09-13th April 2018
Name of team members:

Dr. Dharam Pal, ICAR-IARI Regional Station, Tutikandi Centre, Shimla
Dr (Mrs) Vijay Rana, CSK-HPKV, RWRC, Malan, HP
Dr. Lokendra Kumar, ICAR-IIWBR, Karnal
Dr. Sudheer Kumar, ICAR-IIWBR, Karnal
Dr. Dibakar Mahanta, ICAR-VPKAS, Almora

Centres visited: ICAR-IARI Shimla, RSS Berthin, RSS Akrot, KVK Una, KVK Bara SAREC Kangra, RWRC Malan, CSK-HPKV Palampur, HAREC, Bajaura, HAREC-RSS, Katrain

Breeding trials allocated & monitored:

Centre	Trial	Remarks
Shimla	IVT/AVT-RF-ES, IVT-RF-TS, AVT-RF-TS, AVT-IR-TS, IVT/AVT-RI-LS	Very Good
Berthin	AVT-RF-TS	Very Good
Una	1VT/AVT-RI-LS	Very Good
Akrot	AVT-RF-TS	Good**
Bara	IVT/AVT-RF-ES	Rejected
Malan	IVT/AVT-RF-ES, IVT-RF-TS, AVT-RF-TS, AVT-IR-TS, IVT/AVT-RI-LS	Very Good
Bajaura	IVT/AVT-RF-ES, IVT-RF-TS, AVT-RF-TS, AVT-IR-TS, 1VT/AVT-RI-LS	Very Good

*Evaluated trials as very good, good and average based on conduction
** Observed 50% damage in Replication IV & V due to rabbits. Hence, data of remaining four replications may be considered for analysis.

Trials not conducted / rejected by monitoring team:

Centre	Crop	Trial	Remark
B a r a	Wheat	IVT/AVT-RF-ES	Damaged by Blue Bull (Neel Gai), hence rejected.

Entries showing promising performance in breeding trials:

Trial	Entry	Remarks
IVT/AVT-RF-ES	NHESZ-1706, NHESZ-1705	Good plant type, high tillering, uniformity & rust resistance
IVT-RF-TS	NHIVT-1704, NHIVT-1708, NHIVT-1710, NHIVT-1716	Good plant type, high tillering, uniformity
AVT-RF-TS	NHTSZ-1705, -1702, -1707	Good plant type, high tillering, uniformity
AVT-ER-TS	NHTSZ-1705, NHTSZ-1702, NHTSZ-1706	Good plant type, high tillering, uniformity
IVT/AVT-RI-LS	NHLSZ-1704, NHLSZ-1705	Good plant type, high tillering, uniformity

Entries recommended for purification:

Trial	Entry	Remarks
IVTIAVT-RF-ES	NHESZ-1707, NHESZ-1709	Few off types for plant height and glume colour height, glume colour
IVT-RF-TS	NHIVT-1705	Few off types were observed for plant height
IVT/AVT-RI-LS	NHLSZ-1710	Few off types for waxy ears

Entries recommended to be dropped from further testing: Nil
Entries exhibiting higher diseases incidence / insect infestation:

Trial	Entry	Remarks
IVT/AVT-RF-ES	NHESZ-1712	Yellow Rust-40S
	NHESZ-1710	Brown Rust-30S
	NHESZ-1708	Brown Rust-30S

IVT/AVT-RI-LS	NHLSZ-1702	Brown Rust-20S Yellow Rust-30S

Report on Agronomical Trials:

Centre	Trial	Remark
Malan	SPL1, SPL2, SPL3, SPL9, SPL10	Nicely conducted and responses were visible except SPL1 due to presence of weeds in weed free treatment.
Bajaura	SPL1, SPL 2, SPL3 SPL9, SPL10	Nicely conducted and treatment effects were visible.

Report on Pathological Nurseries:

Centre	Nursery	Remark
Bajaura	PPSN	PPSN was nicely conducted. Infector was planted as border rows as well as after every twenty entries. Yellow rust infection on infector was satisfactory ranged from 40S to 80S. The data recorded at Centre was verified and rectified wherever required. Loose smut was noticed on entry No NHLSZ-1710,
Malan	PPSN	PPSN was nicely conducted. Infector was planted as border rows as well as after every ten entries. Yellow rust infection on infector was satisfactory ranged from 40S to 80S. The data recorded at Centre was verified and rectified wherever required. Brown rust (5S) was noticed on entry No.NWLS-209.

Special comments, if any –

Signature of the monitoring team members

-Sd-	-Sd-	-Sd-	-Sd-	-Sd-
Dharam pal	Vijay Rana	Lokendra Kumar	Sudheer Kumar	Dibakar Mahanta

Zonal Monitoring Report, 2017-18
North Western Plains Zone

Team-I

Period of visit: 5-9th March 2018

Name of team members:
1. Dr Hoshiyar Singh, Pr. Scientist, RARI, Durgapura
2. Dr HR Saharan, Pr. Scientist PAU, Ludhiana
3. Dr Kiran Gaikwad, Scientist, ICAR-IARI
4. Dr OP Gangwar Scientist, ICAR-IIWBR, Karnal
5. Dr K Venkatesh Scientist, ICAR-IIWBR, Karnal

Centres visited:
Bikaner, Jodhpur, Tabiji, Diggi, Durgapura, Dausa, Bharatpur, Alwar and Kotputli

Breeding trials allocated & monitored:

Centre	Trial	Remark
Bikaner	AVT-IR-TS	Satisfactorily conducted
Jodhpur	AVT-IR-TS	Rejected due to wrong layout
Tabiji	AVT-IR-TS and AVT-IR-LS	Satisfactorily conducted
Diggi	AVT-RI-TS and NIVT-5A	AVT-RI was satisfactorily conducted but NIVT-5A was given extra irrigation hence rejected
Durgapura	AVT-IR-TS, AVT-IR-LS, NIVT-1A, NIVT-1B, NIVT-3A	Satisfactorily conducted
	IPPSN, PPSN, EPPSN, MDSN, LSSN, FSSN, SAARC	
Dausa	AVT-RI-TS	
Bharatpur	AVT-RI-TS	
Alwar	AVT-IR-TS, AVT-IR-LS	
Kotputli	AVT-IR-TS, AVT-IR-LS	AVT-IR-TS was satisfactory and RI trial was rejected due to poor crop stand

Trials rejected by monitoring team:

Centre	Trial	Remark
Jodhpur	AVT-IR-TS	Rejected due to wrong layout
Kotputli	AVT-IR-LS	Rejected due to patchy crop stand

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS	NW-TS-105, NW-TS-113	Plant height and maturity variations observed at all locations
AVT-RI-TS	NW-RI-307	Variation for ear type and waxiness was observed at all locations
NIVT-1A	N-107, N-126, N-136	Segregation for maturity duration, plant height and off-types were observed
NIVT-1B	N-209, N-223, N-224	Plant height and maturity variations were observed
NIVT-3A	N-401, N-428	Variation for plant height
	N-429, N-432	Segregation for rust infection
NIVT-5A	N-702, 724	Variation for maturity duration and waxiness

Entries found promising:

Trial	Entry
AVT-IR-TS	NW-TS-108, NW-TS-110, NW-TS-115
AVT-IR-LS	NW-LS-201, NW-LS-208
AVT-RI-TS	NW-RI-305, NW-RI-308, NW-RI-310
NIVT-1A	N-105, N-134
NIVT-1B	N-232
NIVT-3A	N-406, N-412, N-433
NIVT-5A	N-715, N-717, N-722

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-127	Variation for plant height, maturity and ear type
NIVT-5A	N-710, N-714	

Entries exhibiting higher diseases incidence / insect infestation:
Heavy stripe rust incidence was observed at only Durgapura centre

Trial	Entry
AVT-IR-LS	NW-LS-205 (60S)
NIVT-3A	N-403 (80S), N-415 (60S),

Report on Agronomical Trials:

Centre	Trial	Remark
Durgapura	Varieties x DOS (IR-LS)	Satisfactory conducted

Report on Pathological Nurseries:

Centre	Nursery	Remark
Durgapura	PPSN, IPPSN, LBSN, DSN, EPPSN, MDSN, CCN, ESN, MPSN, Wheat Nematology	Satisfactory conduction of nurseries. Stripe rust severity (upto 100S) was observed on infectors included in the nursery.

Report on Physiology Trials:

Centre	Trial	Remark
Durgapura	MLHT-1, MLHT-2	Satisfactory

Special comments, if any

1. There is need planting border rows of local variety as a barrier for protection of trials from animal damage
2. No disease incidence was observed in farmers field

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-	-sd-
Hoshiyar Singh	HR Saharan	Kiran Gaikwad	OP Gangwar	K Venkatesh

Zonal Monitoring Report, 2017-18
North Western Plains Zone

Team-II
Period of visit: 14-17th March, 2018

Name of team members:

Dr. BS Tyagi, Principal Scientist, IIWBR, Karnal	Dr. SC Gill, IIWBR, Karnal
Dr. SS Dhanda, Wheat Breeder, HAU Hisar	Dr. RK Sharma, IARI Delhi
Dr. GS Mavi, Breeder, PAU, Ludhiana	Dr. Pradeep Shekhawat, Durgapura

Dr SS Dhanda and Dr RK Sharma could not move with the team due to some or the other reasons.

Centres visited:

ICAR-IIWBR Karnal	IARI New Delhi
Regional Center HAU, Bawal	RAU, Hanumangarh
Regional Center HAU, Rohtak	RAU, Sriganganagar
Regional Center PAU, Bhatinda	

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Karnal	AVT-IR-TS-TAS; AVT-IR-LS-TAS; NIVT-1A; NIVT-1B; NIVT 3A; NIVT-5A; SPL-VLS-TAS-NWPZ	Very good, Lodging in some genotypes
Hisar	AVT-IR-TS-TAS; AVT-IR-LS-TAS; AVT-RI-TS-TAS; NIVT-1A; NIVT-1B; NIVT 3A; NIVT-5A; SPL-VLS-TAS-NWPZ	Very good except some lodging in irrigated trials
Delhi	AVT-IR-TS-TAS; AVT-IR-LS-TAS; AVT-RI-TS-TAS; NIVT-1A; NIVT-1B; NIVT 3A; NIVT-5A SPL-VLS-TAS-NWPZ	Very good, lodging in many entries
Bawal	AVT-IR-TS-TAS; AVT-IR-LS-TAS	Very good
Rohtak	AVT-IR-TS-TAS; AVT-IR-LS-TAS	
Bhatinda	AVT-IR-TS-TAS; AVT-IR-LS-TAS	
Hanumangarh	AVT-IR-TS-TAS; AVT-IR-LS-TAS; AVT-RI-TS-TAS	Damage of wild animals in few entries
Sriganganagar	AVT-IR-TS-TAS; AVT-IR-LS-TAS; AVT-RI-TS-TAS	Very good

Evaluated trials as very good, good and average based on conduction

At IARI center, in AVTs which is a 12 rows plot, after 6 rows the gap was more (about 50 cms) in all the entries and replications. But because the gap was common to all entries therefore trial is not rejected.
At Bawal, in AVT-RI-TS-TAS trial, three irrigations were given and thus it has to been seen.
At Hanumangarh, the R3 of AVT-IR-TS-TAS was damaged while R1 of AVT-RI-TS-TAS was damaged by animals. Thus it is suggested not include the data of these replications.

Entries showing promising performance in breeding trials: Based on maturity, stand, tillering and disease.

Centre	Trial	Entry
Karnal	AVT-IR-TS-TAS	NW-TS-101, 106, 109,
	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 208
	NIVT-1A	N-104, 106, 111, 135
	NIVT-1B	N-202, 205, 207, 212, 216, 217, 226, 229
	NIVT 3A	N-403, 404, 419, 423
	NIVT-5A	N-712, 713, 719, 724
	SPL-VLS-TAS-NWPZ	VLS-103, 105,109
Hisar	AVT-IR-TS-TAS	NW-TS-101, 102, 106, 107, 109

	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 208
	AVT-RI-TS-TAS	NW-RI-301, 303, 305
	NIVT-1A	N-106, 120
	NIVT-1B	N-202, 203, 212, 216, 217, 227
	NIVT 3A	N-401, 414, 422, 426
	NIVT-5A	N-705, 712, 719, 724
	SPL-VLS-TAS-NWPZ	VLS-109
Delhi	AVT-IR-TS-TAS	NW-TS-109, 111
	AVT-IR-LS-TAS	NW-LS-201, 202, 208
	AVT-RI-TS-TAS	NW-RI-301, 304, 305
	NIVT-1A	N-106, 111, 126
	NIVT-1B	N-202, 212, 216, 224
	NIVT 3A	N-403, 404, 410, 419
	NIVT-5A	N-703, 724, 725
	SPL-VLS-TAS-NWPZ	VLS-105, 109
Bawal	AVT-IR-TS-TAS	NW-TS-102, 107, 109
	AVT-RI-TS-TAS	NW-RI-301, 304, 306
Rohtak	AVT-IR-TS-TAS	NW-TS-101, 106
	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 208
Bhatinda	AVT-IR-TS-TAS	NW-TS-101, 102, 103
	AVT-IR-LS-TAS	NW-LS- 202, 203, 208
Hanumangarh	AVT-IR-TS-TAS	NW-TS-101, 102, 109, 114
	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 209
	AVT-RI-TS-TAS	NW-RI-301, 305
Sriganganagar	AVT-IR-TS-TAS	NW-TS-102, 106
	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 209
	AVT-RI-TS-TAS	NW-RI-301, 303

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAS	NW-TS-104, 105, 108, 110	High mixture, segregation
AVT-IR-LS-TAS	NW-LS-205, 206	Height/ maturity variation
AVT-RI-TS-TAS	NW-RI-302, 310	Height/ maturity variation
NIVT-1A	N-108, 114, 121, 129	Height/ maturity variation
NIVT-1B	N-201, 204, 208, 218, 220, 230	Height/ maturity variation
NIVT-3A	N-402, 406, 427, 428	Height/ maturity variation
NIVT-5A	N-701, 707, 715, 717, 721, 722	Ear shape/ maturity variation

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-101, 105, 116, 136	Maturity/ height, plant type segregation
NIVT-1B	N-206, 211, 214, 223	Height/ear shape/ maturity variation
NIVT-3A	N-428	Mixture/ ear shape/ maturity variation
NIVT-5A	N-704, 714	Very mixture / segregation for height/ maturity

Report on Agronomical Trials:

Centre	Trial	Remark
Karnal	IR-TAS-DOS, RIR-TS-TAS, SPL-1, SPL-2, SPL-5, SPL-6, SPL-9 and SPL-10	All the trials were conducted properly and were in excellent condition
Delhi	IR-TAS-DOS and RIR-TS-TAS	Trials were conducted properly
Hisar	IR-TAS-DOS, RIR-TS-TAS, SPL-1, SPL-2, SPL-6, SPL-9 and SPL-10	All the trials were conducted properly and were in excellent condition
Sriganganagar	IR-TAS-DOS and RIR-TS-TAS	All the trials were in excellent condition

Report on Pathological Nurseries:

Centre	Nursery	Remark
Karnal, Delhi, Hisar	Good yellow rust at Karnal. At Delhi good disease in infectors.	Each row need to be tagged

Special comments, if any

- Sowing by machine is necessary for better results.
- Too many entries were showing asynchrony class.
- Mixtures were noted in some entries.
- These stations can't be visited in the stipulated time.

Signature of the monitoring team members

-Sd-	-Sd-	-Sd-	-Sd-
B. S. Tyagi	SC Gill	GS Mavi	Pradeep Shekhawat

Zonal Monitoring Report, 2017-18
North Western Plains Zone

Team-III

Period of visit: 15-18th March, 2018
Name of team members:

Name	Centre
Dr. VS Sohu	PAU, Ludhiana
Dr. DP Singh	ICAR-IIWBR, Karnal
Dr. RS Chhokar	ICAR-IIWBR, Karnal
Dr. Gopalareddy K	ICAR-IIWBR, Karnal

Centres visited: Nagina, Kashipur, Rampur, Pantnagar, Bareilly, Ujhani, Bulandshahr, Modipuram

Breeding trials allocated & monitored:

Location	Trial	Observations
Nagina	AVT-IR-TS-TAS	Trial conduct was very good
	AVT-IR-LS-TAS	Trial conduct was good
	SPL-VLS-TAS	Trial conduct was good
Kashipur	AVT-IR-TS-TAS	Trial conduct was good, but weedy
	AVT-IR-LS-TAS	Trial conduct was good, but weedy
Rampur	AVT-IR-TS-TAS	Trial 'conduct was poor
	AVT-IR-LS-TAS	Trial conduct was poor
	SPL-VLS	Trial conduct was poor
Pantnagar	AVT-IR-TS-TAS	Trial conduct was very good
	AVT-IR-LS-TAS	Trial conduct was very good
	AVT-RI-TS-TAS	Trial conduct was very good
	NIVT-1A	Trial conduct was very good
	NIVT-1 B	Trial conduct was very good
	NIVT-3A	Trial conduct was very good
	NIVT-5A	Trial conduct was very good
	SPL-VLS-TAS	Trial conduct was very good
Bareilly	AVT-IR-TS-TAS	Trial conduct was very good
	AVT-IR-LS-TAS	Trial conduct was good
Ujhani	AVT-IR-LS-TAS	Trial conduct was good
Bulandshahr	AVT-IR-TS-TAS	Trial conduct was very good
	AVT-IR-LS-TAS	Trial conduct was very good
	AVT-RI-TS-TAS	Trial conduct was very good
	NIVT-1A	Trial conduct was very good
	SPL-VLS	Trial conduct was very good
Modipuram	AVT-IR-TS-TAS	Trial conduct was very good
	AVT-IR-LS-TAS	Trial conduct was very good
	AVT-RI-TS-TAS	Trial conduct was very good
	N1VT-1A	Trial conduct was very good
	NIVT-1 B	Trial conduct was very good
	N IVT-3A	Trial conduct was very good

Trials not conducted / rejected by monitoring team:

Location	**Trial**	**Remarks (reason for rejection)**
Rampur	AVT-IR-TS-TAS	Faulty experimental layout
	AVT-IR-LS-TAS	10 row plots, poor germination in some plots
	SPL-VLS	Inadequate plot size and poor germination

Entries showing promising performance in breeding trials:

Trials	Entries
AVT-IR-TS-TAS	NW-TS-101, -103, -106, -107, -109, -112
AVT-IR-LS-TAS	NW-LS-203, -206, -208
AVT-RI-TS-TAS	NW-RI-301, -305
NIVT-1A	N-104, -110, -111, -123, -129, -135
NIVT-1B	N-201, -203, -207, -221, -225, -226, -229
NIVT-3A	N- 420, -423, -424, -435
NIVT-5A	N-708, -710, -723, -724

Entries recommended for purification:

Trial	Entry
AVT-IR-TS-TAS	NW-TS-108, -110, -113
AVT-IR-LS-TAS	NW-LS-205, -209
AVT-RI-TS-TAS	NW-R1-302
NIVT-1A	N-105, -107, -126, -131, 136
NIVT-1B	N-206, -220, -223, -233
NIVT-3A	N- 431
NIVT-5A	N-702, -706, -715, -717

Entries recommended to be dropped from further testing

Trial	Entry
N IVT-3A	N-428
NIVT-5A	N-704, -714

Entries exhibiting higher disease/insect infestation:

In general, the stripe rust development in varietal trials was very good and that of leaf rust was very low at major wheat breeding centres visited.

Trial	***Entries with stripe rust *10S***	***Entries with leaf rust 10S***
AVT-IR-TS-TAS	NW-TS-111, -113	
AVT-IR-LS-TAS	NW-LS-205, -207	
NIVT-1A	N-108, -113, -130	
NIVT-1B	N-202, -206, -209, -214, -215, -217, -223, -227, -228, -234	N-205
NIVT-3A	N-403, -415	

Report on Agronomical Trials:

All the Agronomic trials allotted to Pantnagar centre were conducted and found in good condition.

Centre	Trial	Remarks
Pantnagar	IR-TAS-DOS, RIR-TS-TAS, SPL -1, 2, 4, 6, 9 and 10	All the trials were well conducted and having good plant stand. In timely sown conditions, the performance of first date (Nov. 8, 2017) was better and among varieties visually NW-DOS-406 was looking better. In restricted irrigation trials, the response to irrigation was up to 3 irrigations and NW-RIR-501 seemed to perform better under no irrigation.

Report on Pathological nurseries

Centre	Trial	Remarks
Pantnagar	All allotted nurseries	Very good incidence of rust under artificially innoculated condition

Report on Physiology Trials MLHT-1 & 2

Centre	Trial	Remarks
Pantnagar	MLHT-1 & 2	Trial conducted properly

Special comments, if any

The advanced varietal trials (AVTs) should, depending on number of test entries, preferably be planted in at least two tiers per replication such that the replication or block is as compact as possible. Evaluation of entries in a single tier may vitiate results due to soil heterogeneity.

Leaf rust development was low at all centres.

Overall performance was good at farmers field and crop lodging was negligible.

Signature of the monitoring team members

-Sd-	-Sd-	-Sd-	-Sd-
V.S.Sohu	D.P.Singh	RS Chhokar	Gopalareddy K

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Team-IV
Period of visit: 21-23rd March, 2018

Name of team members:

Dr. RK Sharma, Principal Scientist, ICAR-IARI, New Delhi
Dr. Vipin C Dhayani, Assoc. Prof., GBPUA&T Pantnagar
Dr. Vaibhav Singh, Scientist, ICAR-IARI, New Delhi
Dr Satish Kumar, Scientist, ICAR-IIWBR, Karnal

Centres visited: Jammu, Gurdaspur, Kapurthala, Ludhiana, Balachaur, Faridkot and Rauni

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Jammu	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, NIVT-1A, NIVT-3A, NIVT-5A	Very good except NIVT 3A which has poor plant stand
Ludhiana	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A, SPL-VLS	Very good
Gurdaspur	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A	Very good except some lodging in irrigated trials
Kapurthala	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS	Very good
Rauni	AVT-IR-TS	Very good
Faridkot	AVT-IR-TS, AVT-IR-LS	Very good
Balachaur	AVT-RI-TS, NIVT-5A	Very good

Evaluated trials as very good, good and average based on conduction

Trials not conducted / rejected by monitoring team: Nil

Entries showing promising performance in breeding trials: Based on maturity, stand, tillering and disease reactions.

Centre	Trial	Entry
Jammu	AVT-IR-TS-TAS	NW-TS-101, 107, 111
	AVT-IR-LS-TAS	NW-LS-204, 208
	AVT-RI-TS	NW-RI-301, 303, 305, 308
	NIVT-1A	N-102, 112, 123
	NIVT 3A	N-405, 408, 428, 431, 436
	NIVT-5A	N-701, 705, 707
Gurdaspur	AVT-IR-TS-TAS	NW-TS-101, 112
	AVT-IR-LS-TAS	NW-LS-201, 208
	AVT-RI-TS-TAS	NW-RI-301, 303, 305
	NIVT-1A	N- 102, 106, 114, 120, 125, 133
	NIVT-1B	N-205, 207, 209, 219, 231
	NIVT 3A	N-401, 414, 422, 426
	NIVT-5A	N-705, 712, 719, 724
Kapurthala	AVT-IR-TS-TAS	NW-TS- 101, 108, 113
	AVT-IR-LS-TAS	NW-LS-201, 204, 206
	AVT-RI-TS-TAS	NW-RI-301, 303, 304, 305
Ludhiana	AVT-IR-TS-TAS	NW-TS-101, 103, 112, 114
	AVT-IR-LS-TAS	NW-LS-201, 202, 203, 208

	AVT-RI-TS-TAS	NW-RI-301, 305
	NIVT-1A	N-102, 106, 120
	NIVT-1B	N-201, 209, 212, 216, 222
	NIVT 3A	N-404, 405, 412, 413, 426, 434
	NIVT-5A	N-703, 707, 716, 719
	SPL-VLS-TAS-NWPZ	VLS-105, 110
Faridkot	AVT-IR-TS-TAS	NW-TS-102, 111, 115
	AVT-IR-LS-TAS	NW-LS-204, 208
Balachaur	AVT-RI-TS-TAS	NW-RI-301, 303, 309
	NIVT-5A	N-703, 725
Rauni	AVT-IR-TS-TAS	NW-TS-101, 111

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAS	NW-TS-104, 107, 108, 115	High mixture, segregation
AVT-IR-LS-TAS	NW-LS-204, 205	Height/ maturity variation
AVT-RI-TS-TAS;	NW-RI-302, 308, 310	Height/ maturity variation
NIVT-1A	N-108, 113, 123, 125, 133	Height/ maturity variation
NIVT-1B	N-201, 204, 208, 218, 220, 230	Height/ maturity variation
NIVT-3A	N-402, 403, 409, 424, 435	Height/ maturity variation
NIVT-5A	N-701, 715	Ear shape/ maturity variation

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-101, 127, 136	Maturity/ height, plant type segregation
NIVT-1B	N-211, 223, 231	Height/ear shape/ maturity variation
NIVT-5A	N-704, 717	Very mixture / segregation for height/ maturity

Report on Agronomical Trials:

Centre	Trial	Remark
Jammu	IR-TAS-DOS, RIR-TS-TAS, SPL-1, SPL-2, SPL-5, SPL-6, SPL-9 and SPL-10	Nicely conducted
Gurdaspur	IR-TAS-DOS and RIR-TS-TAS	Trials were conducted properly
Ludhiana	IR-TAS-DOS, RIR-TS-TAS, SPL-1, SPL-2, SPL-6, SPL-9 and SPL-10	All the trials were conducted properly and were in excellent condition

Report on Pathological Nurseries:
There was good development of diseases on the allotted pathological nurseries at Ludhiana, Gurdaspur and Jammu

Special comments, if any --

Signature of the monitoring team members

-Sd-	-Sd-	-Sd-	-Sd-
RK Sharma	VC Dhyani	Vaibhav Singh	Satish Kumar

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Team-I
Period of visit: 7-12th March, 2018
Name of team members:

Dr. Gyanendra Singh, Principal Scientist, IIWBR, Karnal
Dr. Amit Kr. Sharma, Senior Scientist, IIWBR, Karnal
Dr. Dhiman Mukherjee, Agronomist, BCKV Kalyani (WB)
Dr. Saikat Das, Scientist (Plant Breeding) UBKV, Coochbehar

Centres visited: BCKV, Kalyani, FCRS, Burdwan, RRSS, Malda, RRS, Majhian Dakshin Dinajpur, UBKV, Coochbehar, RARS (AAU), Gosaigaon, RARS (AAU), Nogaon, BNCA(AAU), Bishwanath

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Kalyani	AVT-IR-TS-TAS; AVT-RI-TS-TAS; NIVT-1A; NIVT-1B; NIVT-3A; NIVT-5A-RI	Satisfactory
Burdwan	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1B	Satisfactory
Manikchak, Malda	AVT-IR-TS-TAS; AVT-RI-TS-TAS; NIVT-1A	Satisfactory
Majhian	AVT-IR-TS-TAS	Satisfactory
Coochbehar	AVT-IR-TS-TAS; AVT-RI-TS-TAS; NIVT-1A; NIVT-1B;NIVT-3A; NIVT-5A-RI; SPL-VLS	Satisfactory
Gosaigaon	AVT-RI-TS-TAS	Satisfactory
Nagaon	AVT-IR-TS-TAS, NIVT-1B	Satisfactory
Bishwanath	AVT-IR-TS-TAS, AVT-RI-TS-TAS	Satisfactory

*****Evaluated trials as very good, good and average based on conduction.

Trials rejected by monitoring team: NIL

Entries showing promising performance in breeding trials:

Centre	Trial	Entry
Kalyani	AVT-IR-TS-TAS	NE-IR- 105, 111, 112, 114
	AVT-RI-TS-TAS	NE-RI-305, 306
	NIVT-1A-IR-TS-TAS	N-103, 106, 120, 124, 125, 134
	NIVT-1B	N- 225, 235
	NIVT-3A	N -403, 404, 414, 422
	NIVT-5A-RI-TS	N-706, 723
Burdwan	AVT-IR-TS-TAS	NE-IR-103, 112, 113
	AVT-RI-TS-TAS	NE-RI-305
	NIVT-1B	N 205, 225, 234, 235
Malda	AVT-IR-TS-TAS	NE-IR-101, 102, 106, 112, 113
	AVT-RI-TS-TAS	NE-RI-305, 306
	NIVT-1A	N 109, 112, 126
Coochbehar	AVT-IR-TS-TAS	NE-IR-101, 104, 112
	AVT-RI-TS-TAS	NE-RI-305
	NIVT-1A	N-102, 103, 125, 134
	NIVT-1B	N- 208, 221, 225, 232
	NIVT-3A	N -403, 418, 430
	NIVT-5A-RI-TS	N-702, 703, 710, 716, 722, 723
	SPL-VLS-TS	VLS 102, 106
Nogaon	AVT-IR-TS-TAS	NE-IR-105, 113
	NIVT-1B	N 224

Gosaigaon	AVT-RI-TS-TAS	NE-IR-305, 306, 309
Bishwanath Chariali	AVT-IR-TS-TAS	NE-IR-112
	AVT-RI-TS-TAS	NE-RI-305

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR	NE-IR-102,105, 107	Height variation
AVT-RI	NE-RI- 309	Height & maturity variation
NIVT-1A	N-107, 114, N-131, 136	NS* for maturity
NIVT-1B	N-204, N-206, N-220 N 217	NS for Height/ maturity
NIVT-3A	N-402, N-420, N-428	Height/ maturity variation
NIVT-5A	N-707, 717, 725	Spike/ maturity variation
SPL-VLS	VLS 102	Variation for height & spike colour

*NS- Non Synchronous

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-107, N131	Mixture / segregating ear shape, height
NIVT-1B	N 223, 233	Maturity/ height/ plant type segregation
NIVT-5A	N -714	Segregation for plant height / ear shape/ maturity

Entries exhibiting higher diseases incidence / insect infestation:

Centre	Entry	Remark
Burdwan	Stem borer (NE-IR 110)	20%
	NIVT 1B: N228, N230	Brown Rust 10 MR
Kalyani	NIVT 1B: N228	HLB 35
Shillongani	NE-IR-115, NE-IR-111	10 MS (Yellow Rust)
Coochbehar	NIVT 1A: N 114, 134	>35S Spot blotch
	NIVT 1B: N 223, N 229	>20-40S Spot blotch

Report on Agronomical Trials:

Centre	Trial	Remark
Kalyani	Varieties (8) x DOS (3)	Satisfactory
Burdwan	Varieties x DOS	6 out of 8 varieties were harvested on 6.3.2018 (weed infestation)
Coochbehar	Varieties x DOS	Very good
Shillongani	Varieties x DOS	Bird damage observed

Report on Pathological Nurseries:

Centre	Nursery	Remark
Kalyani	LBSN, IPPSN	Conducted at Jalangi (Hot spot for WBLD)
Coochbehar	LBSN, IPPSN, PPSN	Satisfactory
Shillongani	LBSN	Satisfactory

Report on Physiology Trials MLHT-1 & 2:

Centre	MLHT-2	Remark
Malda	MLHT-II DOS 23.11.2017 MLHT-II DOS 22.12.2017	Satisfactory

Special comments, if any;

1. AVT-RI-TS-TAS allotted to RARS Shillongani was not conducted
2. The appearance and expression of AVT-RI trial at Gossaigaon was very good and clear-cut symptoms of head blight were appeared. This location may be used for germplasm screening against head blight.
3. The agronomy trial on date of sowing was constituted and dispatched with coded number however at some centres they have decoded the entries themselves which is incorrect, all such centres must follow coded layout and submit data accordingly.
4. AVT-RI at Burdwan showed symptoms of field variation due to soil fertility, moisture, etc.
5. At Coochbehar most of the trial had poor plant stand (50-70%) and lots of weed population thus expected to have low site mean.
6. AVT-RI at Gosaigaon and BNC, Biswanath Chariali was having only 10 rows.
7. At Gosaigaon AVT-RI trial was planted in a rack manner thereby having deviation from normal layout plan.
8. At Shillongani centre incidence of yellow rust was recorded with low to moderate severity.
9. It was informed that for smooth conduct of trials at voluntary centre, timely release of contingency is needed.
10. Rat damage in some of the entries at Coochbehar, Kalyani and Shillongani is a point of concern.
11. BVKC Kalyani had planted LBSN IPPSN-at Host Spot (Jalangi) along with material for trap nursery.
12. At Kalyani centre boron deficiency symptoms appeared in 3 trials.

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-
Dhiman Mukherjee	Amit Sharma	Saikat Das	Gyanendra Singh

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Team – II
Period of visit: 06-10th March 2018
Name of team members:

Dr. S.V. Singh, CSAUA&T, Kanpur
Dr. S. P. Singh, NDUA&T, Faizabad
Dr. Naiyer Ali, RAU, Jharkhand
Dr. R. P. Meena, ICAR-IIWBR, Karnal
Dr. Charan Singh, ICAR-IIWBR, Karnal

Centres visited: Ranchi, Chianki, IARI-RS-Pusa, Sabour, Banka, Purnea

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Ranchi	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT1A, NIVT1B, NIVT3A, NIVT5A,	Very good.
Chianki	AVT-IR-TS-TAS, AVT-RI-TS-TAS,	Good
Pusa	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT 1A, NIVT 1B, NIVT 3A, NIVT 5A, SPL-VLS	Trial conduction was good. NIVT 3A was not as per proper layout plan.
Sabour	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT 1A, NIVT 1B, NIVT 3A, NIVT 5A, SPL-VLS	Very good.
Banka	AVT-IR-TS-TAS	Trial was sown late.
Purnea	AVT-IR-TS-TAS, AVT-RI-TS-TAS	Very good.

Trials not conducted/rejected by monitoring team:

Centre	Trial	Remarks
Pusa	NIVT 3A	Rejected, trial was not sown as per proper layout plan
Banka	AVT-IR-TS-TAS	Rejected, trial was sown late (9/12/2017)

Entries showing promising performance in breeding trials:

Centre	Trial	Entry
Ranchi	AVT-IR-TS-TAS	NE-IR-104, NE-IR-109, NE-IR-110
	AVT-RI-TS-TAS	NE-RI-302, NE-RI-303, NE-RI-305
	NIVT 1A	N-102, N-119, N-126, N-129
	NIVT 1B	N-205, N-222, N-232
	NIVT 3A	N-402, N-426, N-428
	NIVT 5A	N-701, N-712, N-713, N-715, N-719, N-720, N-724
Chianki	AVT-IR-TS-TAS	NE-IR-104, NE-IR-109, NE-IR-112
	AVT-RI-TS-TAS	NE-RI-306, NE-RI-307
Pusa	AVT-IR-TS-TAS	NE-IR-101, NE-IR-104, NE-IR-112
	AVT-RI-TS-TAS	NE-RI-302, NE-RI-304, NE-RI-309
	NIVT 1A	N-110, N-125, N-128, N-130, N-133
	NIVT 1B	N-203, N-221, N-236
	NIVT 5A	N-708, N-724
	SPL-VLS	VLS-101, VLS-107, VLS-108
Sabour	AVT-IR-TS-TAS	NE-IR-101, NE-IR-114
	AVT-RI-TS-TAS	NE-RI-302, NE-RI-304
	NIVT 1A	N-102, N-109, N-110, N-128, N-134
	NIVT 1B	N-202, N-216, N-221, N-227
	NIVT 3A	N-403, N-405, N-423, N-434
	NIVT 5A	N-711, N-713, N-715, N-720, N-725
	SPL-VLS	VLS-101, VLS-107, VLS-108
Purnea	AVT-IR-TS-TAS	NE-IR-101, NE-IR-104, NE-IR-112, NE-IR-113
	AVT-RI-TS-TAS	NE-RI-301, NE-RI-302

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAS	NE-IR-107	Few plants showing height & maturity variation.
NIVT 1A	N-111	Few off type plants showing variation in plant height.
NIVT 1B	N-211, N-217, N-220, N-223, N-224, N-233	Few plants showing variation in plant height and maturity.
NIVT 3A	N-415, N-433, N-435	Few off type plants showing variation in plant height.

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 1B	N-220	Segregation for plant height and maturity
NIVT 5A	N-714	Segregating for plant height and maturity

Entries exhibiting higher diseases incidence /insect infestation:

- Moderate to severe incidence of leaf blight was recorded in few entries at Pusa and Sabour centers.
- Brown rust incidence was observed in few entries of NIVT 1B and SPL-VLS-TAS breeding trials at Sabour center.

Report on Agronomical Trials:

Centre	Trial	Remark
Ranchi	IR-TAS-DOS	Nicely conducted trial, NE-DOS-404 performing well in 2nd date of sowing. NE-DOS-401 and NE-DOS-407 seems to be very early.
Pusa	IR-TAS-DOS	Trial conduction was good. There was entry name instead of code, hence the monitoring team informed to PI, RM about the issue.
Pusa	IR-TAS-DOS	Trial conduction was good. There was entry name instead of code, hence the monitoring team informed to PI, RM about the issue.
Sabour	IR-TAS-DOS	Trial rejected due to very less plant population in main plot treatment D1 in all three replications.

Report on Pathological/Entomological Nurseries:

Centre	Nursery	Remark
Ranchi	LBSN	Nursery was conducted well and foliar blight development was not observed except in infector.
Pusa	IPPSN, PPSN	Nurseries were conducted well and entries were not tagged.
Sabour	IPPSN, LBSN, TPSN, MDSN	All nurseries have been conducted well and initiation of foliar blight was observed. Brown rust incidence was noted in wheat disease monitoring nursery in Agra local, WL 711 and Lal Bahadur. Range of infection was tS to 20S.

Report on Physiological Trials/Nurseries

1. MLHT I, MLHT II and DTSN were nicely conducted at Ranchi center.

Special comments, if any

1. Rat damage was observed in few entries of AVT-IR-TS-TAS and AVT-RI-TS-TAS trials at Chianki and Ranchi centers.
2. AVT-IR-TS-TAS and AVT-RI-TS-TAS trials conduction were excellent at Purnea center.
3. At IARI, Pusa center, there was no pathologist to record disease observations in pathological experiments.

Signature of the monitoring team members:

-sd-	-sd-	-sd-	-sd-	-sd-
SV Singh	SP Singh	Naiyer Ali	RP Meena	Charan Singh

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Team – III
Period of visit: 13-17March, 2018.
Name of team members:
1. Dr. Vinod Singh, Breeder, NDUAT Faizabad
2. Dr. Md. Mizanul Haque, Agronomist, BAU, Sabour, Baghalpur
3. Dr. MK Pandey, Pathologist, CSAUAT Kanpur
4. Dr. Vikas Gupta, Scientist, ICAR-IIWBR Karnal

Centres visited: Kanpur, Araul, Deegh, Barabanki, Ghaghraghat, Faizabad, Basti, Gorakhpur, Ghazipur and Varanasi

Trials allocated & monitored: Breeding

Trials	Centres	Remarks
AVT-IR-TS-TAS	Kanpur	Good
	Araul	Good (Replication 1 was rejected-uneven plant population)
	Barabanki	Rejected
	Faizabad	Rejected
	Basti	Very good
	Gorakhpur	Very good
	Ghazipur	Rejected
	Varanasi	Good, but trial was stressed due to withholding irrigations
AVT-RI-TS-TAS	Kanpur	Good
	Deegh	Very Good
	Ghaghraghat	Very Good
	Faizabad	Rejected
	Varanasi	Very Good
NIVT-1A	Kanpur	Very good
	Faizabad	Good
	Varanasi	Good
NIVT -1B	Kanpur	Very good
	Faizabad	Good
	Varanasi	Good
NIVT-3A	Kanpur	Good
	Faizabad	Good
	Varanasi	Rejected
NIVT-5A	Kanpur	Very Good
	Faizabad	Good
	Varanasi	Good
SPL-VLS	Kanpur	Good
	Barabanki	Good
	Faizabad	Good
	Varanasi	Very Good

Trials not conducted: NA
Trials rejected by the monitoring team:

Centre	Trial	Remark
Faizabad	AVT-IR-TS	Rejected- Heavy infestation of weeds and poor management
	AVT-RI-TS	
Varanasi	NIVT-3A	Rejected- less than 50% crop stand in almost all the entries
Ghazipur	AVT-IR-TS	Rejected due to late sowing (5.12.2017)
Barabanki	AVT-IR-TS	Rejected due to late sowing (5.12.2017)

Report on Physiology Trials:

Centre	Trials	Remark
Kanpur	MLHT-1 & DTSN	Good

Entries showing promising performance in breeding trials:

Trial	Entry	Remarks
AVT-IR-TS	NE-IR-102, 106,113	Good stand, optimum maturity & uniform
AVT-RI-TS	NE-RI-302	Good stand, optimum maturity & uniform
NIVT-1A	N-102, 109,110,128	Good stand, optimum maturity & uniform
NIVT-1B	N-203, 226, 231, 232	Good stand, optimum maturity & uniform
NIVT-3A	N-3A-402, 414, 415, 423, 424, 425	Good stand, optimum maturity & uniform
NIVT-5A	N-5A-701, -708, -716, -720	Good stand, optimum maturity & uniform
SPL-VLS	VLS-101, 104. 107	Good stand, optimum maturity & uniform

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS	NE-IR-105, 107	Offtypes were present, variation in plant type
NIVT-1A	N-1A-107, 112, 128	-do-
NIVT-1B	N-1B-201, -204, -206	-do-
NIVT-5A	N-5A-717	-do-

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-3A	N-3A-428	Two tier crop
NIVT-5A	N-5A-714	-do-

Entries exhibiting higher diseases incidence / insect infestation:

Trial	Entry	Remark
NE-IR-TS	102, 106,115	Showing LB score more than 46
NIVT-3A	N-3A-426	Loose smut infestation in few plants

Report on Agronomical Trials:

Centre	Trial	Remark
Kanpur, Faizabad, Varanasi	Varieties x Nitrogen Level	Properly conducted
Kanpur, Varanasi	Varieties x DOS (WB)	Properly conducted

Report on Pathological Nurseries:

Centre	Nursery	Remark
Kanpur	PPSN (Leaf)	Leaf rust infection was at initial stage in infector rows. None of the entries were showing infection.
Faizabad	LBSN	Excellent development of leaf blight was observed in the lines
Varanasi	LBSN	Excellent development of leaf blight was observed in the lines

Special comments, if any:

1. No incidence of rust was observed in the farmers' field.
2. At Kanpur centre PPSN was planted in a wide spacing which may result in less rust infestation in the PPSN.
3. At Varanasi centre Leaf blight development was in initial stages at the time of monitoring.
4. At Varanasi centre, most of the trials were showing forced maturity which may be due to withholding of irrigations.

Signature of the monitoring team members:

-sd-	-sd-	-sd-	-sd-
Vinod Singh	Md. Mizanul Haque	MK Pandey	Vikas Gupta

Zonal Monitoring Report
Central Zone

Team – I
Period of visit: 12-15th Feb., 2018
Name of team members:
1. Dr. A.G. Pansuriya, Senior Scientist, JAU, Junagadh
2. Shri A. S. Patel Jr. Scientist, SDAU, Vijapur
3. Dr. K. Venkatesh, Scientist, ICAR-IIWBR Karnal
4. Dr. I. B. Kapadiya, Jr. Scientist, JAU, Junagadh

Centres visited: SK Nagar, Vijapur, Anand, Arnej, Dhandhuka, Amreli and Junagadh

Trials allocated & monitored:

Trials	Centres	Remarks
AVT-IR-TS-TAD	S K Nagar Vijapur Amreli Junagadh	Properly conducted
	Anand	Rejected due to improper lay out & termite damage
AVT-RI-TS-TAD	Vijapur Dhadhuka Amreli Junagadh	Properly conducted
	Anand	Rejected due to improper lay out & termite damage
NIVT-2	Vijapur	Properly conducted
	Junagadh	
NIVT-3B	Vijapur	Properly conducted
	Junagadh	
NIVT-4	SK Nagar	Properly conducted
	Vijapur	
	Junagadh	
NIVT-5B-RI	Vijapur	Properly conducted
	Arnej	
	Dhadhuka	
	Junagadh	

Trials not conducted / rejected by monitoring team:
All the allotted trials were conducted by the respective centers.

Trials	Centres	Remarks
AVT-IR-TS-TAD	Anand	Rejected due to improper lay out & termite damage
AVT-RI-TS-TAD	Anand	Rejected due to improper lay out & termite damage

Report on Physiology Trials:

Trial	Centre	Remarks
DTSN	Vijapur	Properly conducted
DTSN, MLHT-1 &2	Junagadh	

Entries showing promising performance in breeding trials:

Trial	Entry
AVT-IR-TS-TAD	CZ-TS- 101, CZ-TS- 103, CZ-TS- 106
AVT-RI-TS-TAD	CZ-TS- 301, CZ-TS- 302, CZ-TS- 307
NIVT-2	N-2-306, 310, 312, 315, 327
NIVT-3B	N-3B-501, 505, 513, 519
NIVT-4	N-4-601, 602, 613, 622
NIVT-5B-RI	N-5B-802, 811, 814, 823

Entries recommended for purification:

Trial	Entry	Remarks
AVT-IR	CZ-TS- 109	Segregation for glabrous and pubescence. Variation for maturity
AVT-RI	CZ-TS- 303	Variation for maturity
NIVT-2	N-2-302, 317, 320, 328, 330, 335	Segregation for ear type, plant height, waxiness
NIVT-3B	N-3B-520	Variation for maturity
NIVT-4	N-4-612, 620, 624	Variation for height, waxiness, awn colour
	N-4-605, 617, 618	*T. aestivum* entries
NIVT-5B-RI	N-5B-815, 817, 821	Variation for maturity, awn colour

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N-2-304, 305, 316	Indeterminate, ear type, waxiness and maturity
NIVT-4	N-4-605, 617, 618	*T. aestivum* entries with segregation for height and maturity

Entries exhibiting higher diseases incidence / insect infestation:
There was no natural incidence of rust in all the trials

Report on Agronomical Trials: All the agronomical trials allotted at Junagadh and Vijapur were properly conducted.

Report on Pathological Nurseries:

Centre	Nursery	Remark
Vijapur	PPSN	Excellent development of leaf and stem rust was observed in the nursery. More than 40S infection was found in entries viz., NWTS-102, NE-IR-106, PZRI-303, VLS-107 and N-202
Junagadh	PPSN	Good establishment of leaf and stem rust infection was observed in infector rows but there was minimum spared of infection to test entries.

Special comments, if any:

1. No incidence of rust was observed in the farmers' field.
2. Training needs to be imparted on conduct of trials and data recording with particular reference to voluntary centres.
3. Breeding programme for durum wheat at large scale is underway at Junagadh centre and the centre requested to give quota for durum entries in NIVT-4.

Signature of the monitoring team members:

-sd-	-sd-	-sd-	-sd-
AG Pansuriya	AS Patel	K Venkatesh	IB Kapadiya

Zonal Monitoring Report 2017-18
Central Zone

Team – II
Period of visit: 19-22th February, 2018
Name of team members:

Dr JM Patel, WRS Vijapur
Dr KC Sharma, ICAR-IARI, RS Indore
Dr PL Kashyap, ICAR-IIWBR, Karnal
Dr Vikas Gupta, ICAR-IIWBR, Karnal

Centers visited: Udaipur, Banswara, Pratapgarh, Indore, Bhopal Powarkheda

Breeding trials allocated & monitored:

Centre	Trial	Remarks*
Udaipur	AVT-IR-TS, AVT-RI-TS, NIVT-2, NIVT-3B, NIVT-5B	Trial conduction was good. There was some bird damage in the entry NIVT-5B-811. In AVT-RI-TS, plant stand was less in most of the entries. Heading was initiated in only few entries in NIVT-3B trial. At Udaipur centre, population stand was less in NIVT-5B entry 801 and 822.
Banswara	AVT-IR-TS, AVT-RI-TS	The AVT-IR-TS conduct was good. The AVT-RI-TS was was rejected due to late planting.
Pratapgarh	AVT-RI-TS	Trial properly conducted.
Indore	AVT-IR-TS, AVT-RI-TS, NIVT-2, NIVT-3B, NIVT-4, NIVT-5B	Trial conduction was very good and the crop stand in all the trials was excellent. The expression of the genotypes was excellent.
Bhopal	AVT-IR-TS, AVT-RI-TS	Trial conduct was good and the expression of genotypes in AVT-RI was as good as in AVT-IR-TS. This may be due to the effect of rain received at heading stage.
Powarkheda	AVT-IR-TS, AVT-RI-TS, NIVT-2, NIVT-3B, NIVT-4, NIVT-5B	The trial conduct was excellent. However, lodging was observed in some of the entries.

***Evaluated trials as very good, good and average based on conduction

Trials not conducted / rejected by monitoring team:

1. The AVT-RI-TS trial was rejected at Banswara due to the late sowing of the trial.

Entries showing promising performance in breeding trials

Trial	Entry	Trial	Entry
AVT-IR-TS	CZ-TS-101, 103,106	NIVT 3B	N-501,513,519
AVT-RI-TS-TAD	CZ-RI-301, 302	NIVT-4	N-601,602,612,613
NIVT-2	N-2-306, 313, 323	N-5B	N-804,811,814,823,824

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS	CZ-TS-102, 107	There was some mixture/ variation for height/spike characters.
AVT-RI-TS	CZ-RI-307	Few off types plants, variation for plant height and earhead
NIVT-2	N -306, 313, 323	Variation was observed for plant height and off-types were also observed. N-321 entry was very tall and not a right candidate genotype for high fertility conditions. N-2-326 was very late in heading

NIVT 3B	N-515, 520	Asynchronous in flowering admixture was observed. N-517 entry was very late and found not suitable for late sown condition.
NIVT-4	N-612, N-624	Height variation was observed. Three entries namely, N-617, N-618 and N-605 were *T. aestivum*.

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-2	N-330	Mixture of waxy and non-waxy plants, differences in spike shape and heading
NIVT 3B	N-510	Three tier crop stand
NIVT-4	N-605 and N-617	Mixture of genotypes (30%), Height variation

Entries exhibiting higher diseases incidence / insect infestation: Nil

Report on Agronomical Trials:

S.N.	Trial	Co-operating centers		
		Udaipur	Indore	Powerkhera
1	SPL-1	Nicely conducted	Nicely conducted	-
2	SPL-2	Nicely conducted	Nicely conducted	Nicely conducted
3	SPL-9	Nicely conducted	Nicely conducted	Conducted but D1 (5th November), date of sowing delayed and planting was done on 25th November. Similarly D2 was planted one week later. D3 and D4 dates of sowing were planted as per technical programme.
4	SPL-10	Nicely conducted	-	-

Report on Pathological/Entomological Nurseries:
PPSN, IPPSN was monitored at Indore and Powerkhera centres. Sufficient disease pressure/ epiphytotic was created at Indore centre. However, the disease pressure was low at Powerkhera centre. EPPSN and MDSN at Indore centre were monitored.

Report on Physiological Trials/Nurseries
MLHT I, MLHT II and DTSN was nicely conducted at Indore centre.

Special comments, if any

1. NIVT-3B trial entries were in booting stage on 19.02.18 at Udaipur centre. Scientists requested that this trial may be dropped from Udaipur centre as there is no area under late sown wheat conditions nearby.
2. At Udaipur centre, the field leveling was not proper and therefore they were suggested to level the field with least gradient.
3. At Pratapgarh centre, irrigation management was not proper. Hence, they were advised to take care of and provide timely and proper irrigation to the crop.
4. For better trial conductance, it is suggested that newly associated scientist (At Udaipur and Pratapgarh centre's) must be acquainted with proper training related to conductance of ACRIP trials.

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-
JM Patel	KC Sharma	PL Kashyap	Vikas Gupta

Zonal Monitoring Report 2017-18
Central Zone

Team – III
Period of visit: 22-25th Feb. 2018
Name of team members:

Dr. S V Sai Prasad, ICAR-IARI RS, Indore
Dr. Lokendra Kumar, ICAR-IIWBR, Karnal
Dr. Satish Kumar, ICAR-IIWBR, Karnal
Dr. Dinesh Pandey, IGKVV, Bilaspur
Dr. K K Mishra, JNKVV, ZARS Powarkheda (joined at Jabalpur)

Centres visited: Raipur, Bilaspur, Jabalpur, Sagar, Gwalior

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Raipur	NIVT3B	Trial conduction was very good across all the centres
Bilaspur	AVT-RI-TS, AVT-IR-TS, NIVT2, NIVT3B, NIVT 5B	
Jabalpur	AVT-RI-TS, AVT-IR-TS, NIVT 2, NIVT 3B, NIVT 5B	
Sagar	AVT-RI-TS, AVT-IR-TS, NIVT 2, NIVT 5B	
Gwalior	AVT-RI-TS, AVT-IR-TS, NIVT 2, NIVT 5B	

*****Evaluated trials as very good, good and average based on conduction

Trials not conducted / rejected by monitoring team: None

Entries showing promising performance in breeding trials

Trial	Entry
AVT-RI-TS	CZ-RI-307, CZ-RI-304
AVT-IR-TS	CZ-TS-103, CZ-TS-107
NIVT 2	N-302, N-309, N-312, N-316, N-324, N-333
NIVT 3B	N-501, N-514, N-519, N-521, N-524
NIVT 5B	N-802, N-805, N-814, N-815, N-823

Entries recommended for purification:

Trial	Entry	Remark
AVT-RI-TS	CZ-RI-303	Few plants showing height variation
AVT-IR-TS	CZ-TS-102	Few plants showing height variation
NIVT 2	N-306, N-315, N-319, N-326, N-328, N-332, N-335	Few off types plants showing variation in plant height
NIVT 3B	N-502	Few off types plants showing variation in plant height
NIVT 5B	N-808	Few off types plants showing variation in plant height and heading

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 2	N-321, N-330	Segregating for height, maturity and ear type
NIVT 3B	N-510	Segregating for plant height and maturity
NIVT 5B	N-817, N-821	Segregating for height, maturity and ear color

Entries exhibiting higher diseases incidence / insect infestation:
There was no natural incidence of black and brown rust in the breeding trials across all the centres.

Report on Agronomical Trials:

Centre	Trial	Remark
Bilaspur	Evaluation of herbicides (SPL 1)	Nicely conducted trial
	Yield maximization (SPL 2)	Nicely conducted trial
	Date of sowing (SPL 9)	Nicely conducted trial
Jabalpur	Yield maximization (SPL 2)	Both the trials were rejected, due to not following technical program
	Date of sowing (SPL 9)	
Gwalior	Yield maximization (SPL 2)	Nicely conducted trial
	Date of sowing (SPL 9)	Nicely conducted trial

Report on Pathological/Entomological Nurseries: Nil

Report on Physiological Trials/Nurseries
DTSN was nicely conducted at Jabalpur. At Sagar centre, DTSN proposed for drought condition was conducted under irrigation condition. .

Special comments, if any
No incidence of black or brown rust was observed on wheat crop in the farmers' fields.

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-	-sd-
SV Sai Prasad	Lokendra Kumar	KK Mishra	Dinesh Pandey	Satish Kumar

Zonal Monitoring Report, 2017-18
Peninsular Zone

Team-I
Period of visit: 04-06 Feb.2018
Name of team members:

Dr. SK Singh, Pr. Scientist (PI Breeding), ICAR-IIWBR, Karnal
Dr. SS Dodake, Wheat Specialist, MPKV, Niphad
Dr. Suma Biradar, Scientist (Plant Breeding), UAS, Dharwad
Dr. VSG Baviskar, Jr Agronomist, ARI, Pune
Dr. PL Kashyap, Scientist (PI Pathology), ICAR-IIWBR, Karnal

Centres visited: Dharwad, Bagalkot, Ugar Khurd, Nippani, Kalloli, Arbhavi, Mudhol and Bailhongal centres of Karnataka and Kolhapur centre of Maharashtra state

Breeding trials allocated & monitored:

Centre	Trials	Remark
Dharwad	AVT-IR-TS-TAD, AVT-RI-TS-TAD, NIVT-2, NIVT-3B, NIVT-4, NIVT-5B, Spl-Dicoccum	Satisfactorily conducted.
Bagalkot	AVT-RI-TS-TAD, NIVT-5B	
Mudhol	AVT-IR-TS-TAD, Spl-Dicoccum	
Kalloli	AVT-IR-TS-TAD, Spl-Dicoccum	
Arbhavi	AVT-IR-TS-TAD, Spl-Dicoccum	
Ugar -Khurd	AVT-IR-TS-TAD, NIVT-2, NIVT-4, Spl-Dicoccum	
Nippani	AVT-IR-TS-TAD, AVT-RI-TS-TAD, NIVT-2, NIVT-4, NIVT 5B	
Bailhongal	AVT-IR-TS-TAD	
Kolhapur	AVT-IR-TS-TAD, Spl-Dicoccum	

Trials not conducted / rejected by monitoring team:

Centre	Trial	Remark
Nippani	AVT-RI-TS-TAD, NIVT-5B	Both the trials under restricted irrigation condition were rejected as it seemed that the trial was sown in December month and was not fit in time frame of crop stage. Also these received more than the recommended irrigations.

Entries recommended for purification

Entries	Entry	Remark
AVT-IR-TS-	PZ-TS-101, PZ-TS-103 PZ-TS-104, PZ-TS-110, PZ-TS-	Off-types
AVT-TS-RI-	PZ-RI-312	
NIVT 2	N-321, N-329, N-334	
NIVT 4	N-624	
NIVT-5B	N-5B-821	
Spl-Dicoccum	Dic-101	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
AVT-IR-TS-TAD	PZ-TS-114	Variation for plant height, maturity and ear type
NIVT 4	N-605, N-617, N-618	Bread wheat genotypes in durum wheat trial

Entries exhibiting higher diseases incidence / insect infestation: Brown rust was observed at Kalloli, Arabhavi, Nippani, Bailhongal, Dharwad in some entries but black rust was not observed anywhere at the centres monitored. Entries showing rust infection were as under

Trial	Entry (Highest score)
AVT-TS-IR-TAD	PZ-TS-09 (20S), PZ-TS-12 (20S), PZ-TS-13 (5MS)
AVT-TS-RI-TAD	PZ-R1-302 (5MS), PZ-R1-308 (20S), PZ-RI-311(5MS), PZ-R1-312 (10S)
NIVT-2	N-327 (20MS)
NIVT-3B	N-515 (20S)

Report on Agronomical Trials:

Centre	Trial	Remark
Dharwad	Spl-1: Evaluation of herbicides for control of broadleaved weeds in wheat.	Excellent conduction
	Spl-2: Management of lodging and yield maximization in wheat	
	Spl-7: Yield maximization in dicoccum wheat through various planting options and seed rates	
	Sp1-8: Yield maximization in dicoccum wheat through various planting options and seed	
	Sp1-10:Validation of nutrient expert in wheat	
Ugar Khurd	Spl-2: Management of lodging and yield maximization in wheat	Very good trial

Report on Pathological Nurseries:

Centre	Nursery	Remark
Dharwad	PPSN, IPPSN, LBSN, EPPSN, MDSN	Satisfactory conduction of nurseries and very good disease creation. The additional local infectors planted around have brown rust severity higher than the infectors included in the nurseries even upto 80S level.

Report on Physiology Trials:

Centre	Trial	Remark
Dharwad	DTSN, MLHT-1, MLHT-2	Satisfactory

Special comments, if any

1. Bread wheat contributing centres in NIVT 4 should get barred of quota.
2. Brown rust was observed in some farmer's field who have planted very old and local cultivars. The concerned farmers were advised to replace the seed with latest cultivars.

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-	-sd-
PL Kashyap	VSG Baviskar	SS Dodake	Suma Biradar	SK Singh

Zonal Monitoring Report 2017-18
Peninsular Zone

Team-II
Period of visit: 12-14th & 21-22nd February, 2018
Name of team members:

Dr. Gyanendra Singh, Principal Scientist (Breeding), IIWBR, Karnal
Dr. Sudheer Kumar, Principal Scientist (Pathology), IIWBR, Karnal
Dr. AB Gosavi, Soil Scientist , ARS, Niphad
Dr. BS Tyagi, Principal Scientist, IIWBR – joined at Akola centre

Centres visited: Nashik, Niphad, Savalvihir, Pravarnagar, Akola

Breeding trials allocated & monitored:

Centre	Trial	Remark*
Nashik	AVT-IR-TS-TAD, AVT-RI-TS-TAD	Satisfactory
Niphad	AVT-IR-TS-TAD, AVT-RI-TS-TAD; NIVT-2; NIVT-3B; NIVT-4; NIVT-5B	Satisfactory
Savalvihir	AVT-RI-TS-TAD	Satisfactory
Pravarnagar	AVT-IR-TS-TAS	Satisfactory
Akola	AVT-IR-TS-TAD, NIVT-3B; NIVT-4	Satisfactory
	AVT-RI-TS-TAD; NIVT-2, NIVT-5B	Vitiated

*****Evaluated trials as very good, good and average based on conduction.

Trials rejected by monitoring team: Nil

Centre	Trial	Remark*
Akola	AVT-RI-TS-TAD, NIVT-2 and NIVT-5B	Trials vitiated (severe bird/ animal damage)

Entries showing promising performance in breeding trials:

Centre	Trial	Entry
Nashik	AVT-IR-TS-TAD	PZ-TS-02, PZ-TS-08, PZ-TS-17
	AVT-RI-TS-TAD	PZ-RI-310
Niphad	AVT-IR-TS-TAD	PZ-TS-02, PZ-TS-05, PZ-TS-08, PZ-TS-17
	AVT-RI-TS-TAD	PZ-RI-310, PZ-RI-311
	NIVT-2	N-303, N-306, N-312, N-313, N-324, N-327
	NIVT-3B	N-501, N-505, N-513, N-518, N-522
	NIVT-4	N-601, N-602, N-603, N-625
	NIVT-5B	N-804, N-807, N-804, N-822, N-823
Savalvihir	AVT-RI-TS-TAD	PZ-RI-306, PZ-RI-310
Pravarnagar	AVT-IR-TS-TAS	PZ-TS-02, PZ-TS-08, PZ-TS-11, PZ-TS-17
Akola	AVT-IR-TS-TAD	PZ-TS-02, PZ-TS-08, PZ-TS-11, PZ-TS-17
	NIVT-3B	N-501, N-502, N-513, N-518
	NIVT-4	N-601, N-602, N-603, N-609, N-610, N-616,

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAD	PZ-IR-10, PZ-IR-13, PZ-IR-14, PZ-IR-16	Variation for height/ spike/ maturity, off-types
AVT-RI-TS-TAD	PZ-RI-301, PZ-RI-307, PZ-RI-313	Height/ maturity variation
NIVT-2	N-305, N-335	Off-types / Variation
NIVT-3B	N-503, N-510, N-511, N-512, N-523	Height/ maturity variation
NIVT-4	N-617, N-618, N-624, N-625	Height/ maturity variation
NIVT-5B	N-5B-801, N-5B-821, N-5B-824	Spike/ maturity variation

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
AVT-IR-TS-TAD	PZ-TS-04	Mixture / segregating ear shape, height
AVT-RI-TS-TAD	Nil	Maturity/ height/ plant type segregation
NIVT-2	N-320, N-321	Height/ear shape/ maturity variation
NIVT-4	N-605	High mixture / segregation for height

Entries exhibiting higher diseases incidence / insect infestation: NIL

Centre	Entry	Remark
Niphad	Some entries had low reaction for leaf rust	tS / tR
	Stem borer incidence seen	~ About 01%
Pravarnagar	Loose smut incidence observed	-
Akola	Animal (pigs) damage in AVT-RI	05 entries completely damaged – trial vitiated
	Birds damage in NIVT-2 & NIVT-5B	Severe- trials vitiated

Report on Agronomical Trials:

Centre	Trial	Remark
Niphad	04 SPL Trials	Satisfactory but in "SPL-8" no observation on NDVI was taken and thus incomplete

Report on Pathological Nurseries:

Centre	Nursery	Remark
Niphad	IPPSN/PPSN	Good disease development

Report on Physiology Trials MLHT-1 & 2:

Centre	Trials	Remark
Niphad	DTSN, MLHT 1 & 2	Satisfactory

Special comments, if any;

i. Pravarnagar has best expression of genotypes and also high yield potential.
ii. For proper expression of genotypes, machine sowing need to be adopted in the zone.

Signature of the monitoring team members

-sd-	-sd-	-sd-	-sd-
AB Gosavi	Sudheer Kumar	BS Tyagi	Gyanenedra Singh

Appendix-III

Recording of data on various characteristics and date of sowing

Guidelines for Recording of Agronomic 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.	Threshability	It is recorded either Easy (Ey), Medium (M) or Hard (H). In easy threshability grains are easily separated when earheads are crushed between the palms. Medium-hard threshability is similar to well-known variety Sonalika. Hard threshability is commonly observed in synthetic wheats and some dicoccum varieties.
6.	Grain colour	This trait is recorded in three categories i.e., Amber (A), White (W) or Red (R). Most of the test entries bear amber coloured grains, few might be white (associated with soft grain texture) and rarely red (except in case of Dicoccum and Triticale).
7.	Grain texture	Grain texture is recorded in three categories i.e., Hard (H), Semi-hard (SH) or Soft (So). Hard grains make a typical sound when crushed between the teeth. A hard grain is vitreous and shining, while a soft grain has dull appearance. Semi-hard category is in-between hard and soft grains. Maximum varieties or test entries usually belong to semi-hard class.
8.	1000-grains weight	Bulk harvest of grains from a test entry should be utilized to draw sample(s) for counting grains (250, 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.
9.	Grain yield per plot	Two border rows (one row from each side) of the gross plot should be removed to record the grain yield from the remaining rows which comprise the net plot (4 rows in case of NIVT/IVT and 10 rows in case of AVT). The net plot grain yield should be recorded in grams using electronic balance.

Sowing time of yield trials in different zones

Trial Series	NHZ	NWPZ	NEPZ	CZ	PZ
AVT-IR-TS-TAS	Nov. 1-15	Nov. 1-15	Nov. 15-25	-	-
AVT-IR-TS-TAD	-	-	-	Nov. 10-20	Nov. 5-15
AVT-IR-TS/LS-TAS	-	-	-	-	-
AVT-IR-LS-TAS		Dec. 10-25	Dec. 15-25	Dec. 5-15	Dec. 1-10
AVT-RF-TS-TAS	Oct. 15-31	-	Oct. 25-Nov.10	-	-
AVT-RF-TS-TAD	-	-	-	-	Oct. 15-31
AVT-RI-TS-TAS/TAD	-	Oct.25-Nov.5	Oct.25-Nov.10	Oct. 25 - Nov.10	Oct. 25 - Nov.10
AVT-RF-ES-TAS	Oct. 1-10	-	-	-	-
AVT-RI-LS-TAS	Dec. 1-15	-	-	-	-
NIVT-1A-IR-TS-TAS	-	Nov. 1-15	Nov. 15-25	-	-
NIVT-1B-IR-TS-TAS	-	Nov. 1-15	Nov. 15-25	-	-
NIVT-2-IR-TS-TAS	-	-	-	Nov. 10-20	Nov. 10-20
NIVT-3A-IR-LS-TAS	-	Dec. 10-25	Dec. 15-25	-	-
NIVT-3B-IR-LS-TAS	-	-	-	Dec. 5-15	Dec. 1-10
NIVT-4-IR-TS-TDM	-	-	-	Nov. 10-20	Nov. 5-15
NIVT-5A-RI-TS-TAS	-	Oct.25-Nov. 5	Oct.25-Nov.10	Oct. 25-Nov. 10	Nov.1-10
NIVT-5B-RI-TS-TDM	-	-	-	Oct. 25-Nov. 10	Oct. 25 - Nov.10
IVT-RF-TS-TAS	Oct. 15-31	-	-	-	-
IVT-IR-TS-TAS	Nov. 1-15	-	-	-	-
IVT-RI-TS/LS-TAS	-	-	-	-	-
SPL-IR-TS-Dicoccum	-	-	-	-	Nov. 1-15
SPL-VLS-IR-TAS	-	Jan. 1-15	Jan. 1-15	-	-

Appendix-IV

Norms for conduction of yield trials

Norms for conduction of 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 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. Plot border rows of the trial entries should be excluded during harvesting for reporting the net 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 irrigated condition	Timely sown rainfed condition
NHZ	30	20	-	15 (Also for early sown rainfed)
NWPZ	45	35 VLS = 25	30	-
NEPZ	40	30 VLS = 20	25	-
CZ	40	30	25	-
PZ	40	30	25	15
Salinity/ Alkalinity	20	-	-	-
Dicoccum	30	-	-	-

Maximum limit of coefficient of variation (CV)

Production condition	Maximum limit
Irrigated condition (Timely or late sown)	15%
Restricted irrigated condition	20%
Rainfed condition (Timely sown)	25%
Salt affected condition	25%

Appendix-V

Criteria for promotion/retention of varieties under test in coordinated wheat varietal trials

Criteria for Promotion/Retention of Varieties 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)

a) ACI upto 15.0

b) Maximum, susceptibility should be considered if ACI could not be worked out. It should not be more than 40S.

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 40S under natural condition and/ or ACI 25.0 in PPSN.

(ii) Under artificial conditions of rust infection (in plant pathological screening nurseries).

a) ACI not more than 20.0 for varieties meant for irrigated condition and not more than 25.0 for varieties meant for rainfed condition.
b) If ACI is not worked out, maximum susceptibility should not exceed 30S both in case of varieties meant for irrigated and rainfed conditions.
c) Benefit of doubt to be given to varieties with higher degree of susceptibility but marked with an asterisk.

(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.

(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.

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 conditions	PPSN	Natural conditions	PPSN	Natural conditions	PPSN
Varieties significantly superior in yield to the best check	Upto 15.0	Upto 20.0 for irrigated varieties & upto 25.0 for rainfed varieties	Upto 40S	May be ignored	To be retained/ promoted	To be retained/ promoted

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Agrisearch with a human touch

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