प्रगति प्रतिवेदन
PROGRESS REPORT
2019-20

फसल सुधार
CROP IMPROVEMENT

अखिल भारतीय समन्वित गेहूँ एवं जौ अनुसंधान परियोजना
AICRP on Wheat and Barley

भा.कृ.अनु.प.–भारतीय गेहूँ एवं जौ अनुसंधान संस्थान, करनाल
ICAR-Indian Institute of Wheat and Barley Research, Karnal

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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.

Dated: 28 July, 2020

G.Singh
28/7/20

(Gyanendra Singh)
Principal Investigator
(Crop Improvement)

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Principal Investigator's Report
Research Highlights, 2019-20

The crop year 2019-20 has been one of the most epoch-making year during the last over 60 years of coordinated research activities in wheat. This year has witnessed an all-time highest production of 107.18 million tonnes (3rd AE, 2020) of wheat grains in an area of 30.55 mha. The productivity of 35.08q /ha this year is also one of the highest ever recorded in the country. During the reported year, the trial constitution and dispatch of the advance varietal trials was performed by zonal coordinating units. The constitution and dispatch of advance varietal trials for North Eastern Plains Zone, Peninsular Zone and special trials was 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 2019-20 in Crop Improvement programme of the All-India Coordinated Research Project on Wheat & Barley is presented hereunder.

Development and release of new wheat varieties for different zones

Central releases

During the year 2019, the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops in its 83rd meeting recommended the release and notification [99(E), dated 06.01.2020] of 8 bread wheat varieties, namely HI 1621, HD 3271, DBW 222, PBW 771, HI 1628, DBW 252, HD 3249 and GW 1346; and four durum wheat varieties namely UAS 466, DDW 47, HI8802 and HI 8805 for different production conditions in various zones (Table 1). The Sub-Committee also recommended the extension of areas of cultivation of HD 3086 and DBW 187 to NEPZ and NWPZ, respectively.

Wheat varieties released by CVRC during 2019-20

SN	Variety name and parentage	Developed by	Production condition	Grain yield (q/ha)	
				Avg	Pot.
	NWPZ/NEPZ				
1	**HI 1621 (Pusa Wheat 1621)** (*W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1*)	IARI, RS, Indore	VLS, IR	NW:37.0 NE:28.3	NW:46.1 NE:40.7
2	**HD 3271(Pusa Wheat 3271)** (*CHIRIYA 7/ HD2824*)	IARI, New Delhi	VLS, IR	NW:36.6 NE:28.1	NW:45.5 NE:37.2
	NWPZ				
3	**DBW 222 (Karan Narendra)** (*KACHU/SAUAL/8/ATTILA*2/PBW65/6/PVN//CAR422/ANA/5/BOW//CROW// BUC/PVN/3/ YR/4/ TRAP#1/7/ ATTILA/ 2*PASTOR*)	IIWBR, Karnal	TS, IR	61.3	82.1
4	**PBW 771** (*BW 9246/2*DBW17*)	PAU, Ludhiana	LS, IR	50.3	62.3
5	**HI 1628 (Pusa Wheat 1628)** (*FRET2*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/PFAU/WEAVER//BRAMBLING*)	IARI, RS Indore	TS, RIR	50.4	65.1
	NEPZ				
6	**DBW 252 (Karan Shriya)** (*PFAU/MILAN/5/CHEN/AEGILOPS SQUARROSA (TAUS) //BCN/3/ VEE#7/BOW/4/PASTOR*)	IIWBR, Karnal	TS, RIR	37.0	55.6
7	**HD 3249 (Pusa Wheat 3249)** (*PBW343*2/KUKUNA//SRTU/3/PBW343*2KHV/AKI)*	IARI, New Delhi	TS, IR	48.7	65.7
	CZ				
8	**UAS 466 (D)** (*Amruth/Bijaga Yellow//AKDW 2997-16*)	UAS, Dharwad	TS, RIR	38.8	62.5
9	**DDW 47 (D)** (*PBW34/RAJ1555//PDW314*)	IIWBR, Karnal	TS, RIR	37.3	74.1
	PZ				
10	**HI 8802 (Pusa Wheat 8802) (D)** (*HI8627/HI8653*)	IARI, RS, Indore	TS, RIR	29.1	36.0
11	**HI 8805 (Pusa Wheat 8805) (D)** (*IWP 5070 / HI 8638// HI 8663*)	IARI, RS, Indore	TS, RIR	30.4	35.4
12	**Gujarat Wheat 1346 (D)** (*GW 1236/ AR-06-3*)	AAU, Anand	TS, RIR	28.5	40.4

(D: Durum wheat)

State released varieties

Three wheat varieties namely AAIW-13, WH 1184 and Him Palam Gehun 2 were recommended for notification by the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops for different production conditions prevailing in the named states.

Wheat varieties released by SVRC during 2019

Name of the variety and parentage	Developed by	State	Prod. cond.	Grain yield (q ha^{-1})		Notification number
				Avg	Pot.	
AAI-W13 (SHUATS-W13) *(ESW23 x MRD x ESW 23)*	SHUATS, Prayagraj	UP	TS,IR	34.8	52.1	3220(E), dated 05-09-2019
WH 1184 *(HD 2850/ WH1147)*	CCSHAU, Hisar	Haryana	TS,IR	61.3	65.7	3220(E), dated 05-09-2019
Him Palam Gehun 2 (HPW 368) *(NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR)*	CSKHPKV, Palampur	HP	TS, IR/RF (low and mid hills of HP)	RF:26.0 IR: 50.9	RF:38.7; IR: 58.6	99(E), dated 06.01.2020

Registration of genetic stocks

During the year 2019, fourteen genetic stocks of wheat were registered by the Plant Germplasm Registration Committee for different traits. 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.

Genetic stocks registered during 2019

Name	INGR	Developed by	Trait (s)
BH 1146	INGR19042	IIWBR, Karnal	Tolerance to water logging, resistance to spot blotch
RWP 2014-18	INGR19043		Early maturing with bold grains
DCMS1A&1B	INGR19047		CMS (A) line in PBW 343 background (CMS source1A)
DCMS2A&2B	INGR19048		CMS (A) line in PBW 343 background (CMS source10A)
DCMS4A&4B	INGR19049		CMS (A) line in PBW 343 background (CMS source12A)
DCMS5A&5B	INGR19050		CMS (A) line in PBW 343 background (CMS source13A)
DCMS6A&6B	INGR19051		CMS (A) line in PBW 343 background (CMS source17A)
QLD 112	INGR19052		Soft grain genotype
QLD 102	INGR19053		High sedimentation value
IIWBR Phy-1	INGR19054		High phytase and low phytic acid
IC 427824	INGR04080		High zinc content
IC 529962	INGR19044	NBPGR, New Delhi	Highly resistant to spot blotch.
IC 529684	INGR19045		Highly resistant to spot blotch.
IC 290150	INGR19046		Resistant to rusts and spot blotch

Registration of varieties with the PPVFRA

Registration proposal of four wheat varieties namely DBW 187, DBW 222, DBW 252 and DDW 47 (D) were submitted to the PPV&FRA, New Delhi for seeking protection under PPV&FRA, 2001 in extant category. The PPVFRA registered two wheat varieties namely DBW 168 and DBW 173 vide registration number 109 of 2019 and 110 of 2019 during the year.

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 80 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	Voluntary including ICAR
NWPZ	5	18
NEPZ	8	14
CZ	8	20
PZ	4	16
NHZ	4	12
Total	**29**	**80**

During the crop season 2019-20, a total of 18 series of trials comprising AVTs, NIVTs, IVTs and Special trials were laid out in different zones under major production conditions *viz.* timely sown irrigated, late sown irrigated and timely sown rainfed/ restricted irrigation. This year altogether 340 test entries were evaluated along with a total of 88 check varieties in different trials. In all, 406 trial sets were supplied to 109 centres out of which 398 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 and North Eastern Plains Zone. It was 98.2% in North Western Plains Zone and 97.6% in Peninsular Zone, while it was 95.7% in Central Zone. The overall conduction of trials during the crop season was 98.0 percent.

Breakup of yield trials during 2019-20

Zone	Proposed	Not Conducted	Conducted	Reported	Not Reported
NHZ	36	0	36	35	LSM (1)
NWPZ	112	2	110	99	LSM (7), RMT (2), LS (1), TF (1)
NEPZ	80	0	80	65	LSM (7), RMT (6), ES (1), TF (1)
CZ	93	4	89	78	LSM (4), LS (4) RMT (2), HCV&LSM (1)
PZ	85	2	83	60	LSM (12), RMT (7), TF (1), LSM& LS (2), LSM &VLS (1)
Total	**406**	**8**	**398**	**337**	**61 (RMT - 17)**

Rate of success in trial conduction and reporting during 2019-20

Zone	Conduction (%)	Reporting (%)
NHZ	100	97.2
NWPZ	98.2	90.0
NEPZ	100	81.2
CZ	95.7	87.6
PZ	97.6	72.3
Total	**98.0**	**84.7**

During this year, from amongst the 398 trials conducted, the data of 337 trials were found qualifying for reporting based on set norms for disease resistance and yield performance. As many as 61 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 17 trials by the monitoring teams in various zones. The rest of the unreported trials were not considered for reporting due to late sowing (5), trial failure (3), early sown (1), high coefficient of variation & LSM (1), Low site mean and late sown (2) and low site mean and very late sown (1). The overall reporting of conducted trials during this crop season was 84.7%. The reporting of data was highest in NHZ (97.2%) followed by NWPZ (90.0%). The reporting of data in other zones was 87.6% in CZ, 81.2% in NEPZ and 72.3% in PZ.

Varieties under the final year evaluation in AVTs

During the year under report, there were 11 varieties in the final year of yield evaluation in various AVTs and SPL trials of the different zones. The proposal for identification of these varieties would be placed for consideration by the Varietal Identification Committee during the Annual Wheat Worker's Meet.

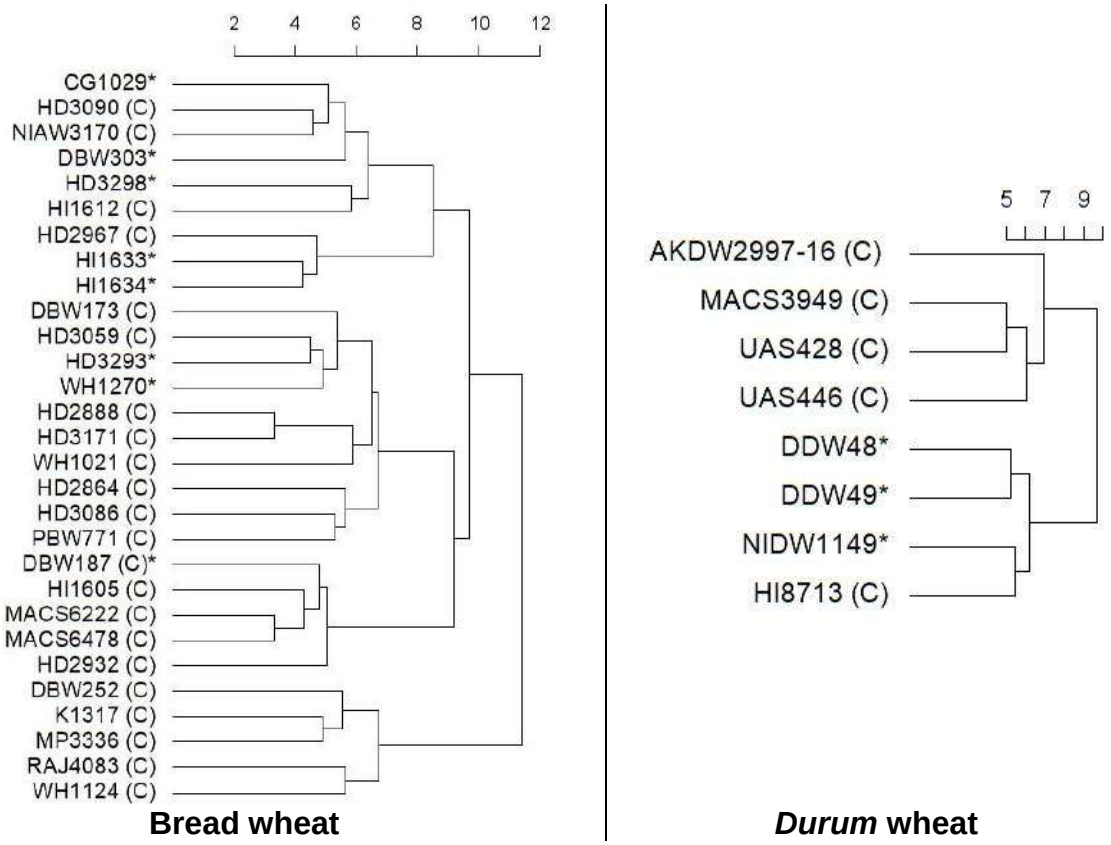
Varieties evaluated in final year of AVTs during 2019-20

Zone	Trial	Entries
NWPZ	AVT-IR-LS-TAS	HD3298
NEPZ	AVT-RI-TS-TAS	HD3293
CZ	AVT-IR-LS-TAD	CG1029, HI1634
PZ	AVT-IR-TS-TAD	DDW48(d), DDW49(d)
	AVT-IR-LS-TAS	HI1633
	AVT-RI-TS-TAD	NIDW1149(d)
NWPZ	SPL-HYPT-IR-TS-TAS	DBW187, DBW303, WH1270

Marker assisted gene profiling in AVT final year varieties

Screening of advanced varietal trial entries and checks using molecular markers generate a vast amount of information. In an effort to utilize some of the available molecular markers, Molecular Biology Program at ICAR-IIWBR screened the final year (2019-20) AVT test entries and checks using various STS/ AS-PCR markers linked to the gene(s) of Waxiness (*WxB1*), abiotic (drought) stress related (*DREB*), vivipary (*Vp1B3*), leaf rust resistance (*Lr*), Photoperiod response (*PD1*) and vernalization (*Vrn*). The dendrogram constructed using these STS and more than 40 SSR markers depicted the genetic relationships among genotypes. Two separate clusters one for durum wheat varieties and the other for bread wheat was constructed. It is evident from the similarity clusters that among the bread wheat HI1633 and HI1634 are quite close to each other. Similarly, CG1029, DBW303 and HD3298 are falling in the same broader group. As far as durum wheat is concerned, all the three test entries *viz*., DDW48, DDW49 and NIDW1149 were found in the same group, distinct from the group consisting of checks.

Dendrogram using SSR and STS markers showing diversity among final year AVT entries and check varieties



The allele distribution by using STS /AS-PCR markers is shown in the table below.

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

SN	Genotype	*WxB1*		*DREB*	*Vp1B3*		*Lr10*	*Lr34*		*Ppd-D1*		*VrnA 1bR2*
		425	690	700	569	652	300	150	230	228	414	1068
1	HI 1634	+	+	+	-	+	-	+	-	+	-	-
2	DBW 303	+	+	+	-	+	-	-	+	+	-	-
3	DDW 49	+	+	+	+	-	-	-	-	+	-	+
4	DDW 48	+	+	+	-	-	-	-	-	+	-	+
5	CG 1029	+	+	+	+	-	-	-	+	+	-	-
6	HI 1633	+	+	+	+	-	-	-	-	+	-	-
7	HD 3293	+	+	+	-	+	-	-	+	+	-	+
8	HD 3298	+	+	+	-	+	+	-	+	+	-	-
9	WH 1270	+	+	-	+	-	-	-	+	+	-	-
10	NIDW 1149	+	+	+	+	-	-	-	-	-	-	+
11	HD 2967	+	+	-	+	-	-	+	-	+	-	-
12	HI 8713	+	+	+	+	-	-	-	-	-	-	+
13	HD 3086	+	+	+	+	-	+	-	+	+	-	-
14	DBW 187	+	+	+	+	-	+	-	+	+	-	-
15	MACS 6478	+	+	+	+	-	+	-	+	+	-	+
16	MACS 6222	+	+	+	+	-	+	-	+	+	-	+
17	HD 2932	+	+	+	+	-	-	-	+	+	-	-
18	RAJ 4083	+	+	+	+	-	-	-	-	-	-	+
19	WH 1021	+	+	+	-	-	-	-	+	+	-	-
20	HI 1612	+	+	+	-	-	-	-	+	+	-	-
21	MP 3336	+	+	+	+	-	-	-	-	+	-	+
22	HD 3059	+	+	+	-	+	-	-	+	+	-	+
23	K 1317	+	+	+	+	-	-	-	-	+	-	+
24	WH 1124	+	+	+	+	-	-	-	-	-	-	-
25	HD 2888	+	+	+	-	+	+	-	+	+	-	-
26	HD 3171	+	+	+	-	+	+	-	+	+	-	-
27	UAS 446	+	+	+	+	-	+	-	+	+	-	-
28	MACS 3949	+	+	+	+	-	-	-	+	+	-	-
29	HI 1605	+	+	+	+	-	+	-	+	+	-	+
30	UAS 428	-	+	+	-	+	-	-	+	+	-	+
31	HD 2864	+	+	+	+	-	-	-	+	+	-	+
32	DBW 252	+	+	+	+	-	-	-	-	+	-	+
33	PBW 771	+	+	+	+	-	-	-	+	+	-	+
34	AKDW 2997-16	+	+	+	+	-	+	+	-	+	-	-
35	NIAW 3170	+	+	+	+	-	-	-	+	+	-	-
36	HD 3090	+	+	+	-	+	-	-	+	+	-	+
37	DBW 173	+	+	+	-	+	+	-	+	+	-	+

'+' denotes presence and '–' indicates absence of amplification

Screening of test entries and checks against wheat blast

A set of 350 wheat lines (test entries and checks) were screened against wheat blast in Bangladesh during 2019-20. Based on the disease score across two dates of sowings, 138 resistant genotypes were shortlisted and are presented in the table below:

Wheat Blast reaction	Number of genotypes	Name
00	72	DBW303, DBW306, DBW308, DBW313, DBW316, DBW317, DBW318, DBW320, DBW325, DBW327, DBW328, DBW329, DBW332, DBW333, HD3293, HD3334, HD3349, HD3360, HD3363, HD3368, HD3369, HD3377, HI1653, HI1654, HS677, HS680, HS681, HUW838, JKW261, JKW270, JKW275, JKW278, K1903, MACS4087, MACS6774, MP1358, MP3526, MP3529, MP3535, NIAW3889, NW7094, NWS2176, NWS2180, PBW826, PBW841, PBW848, RAJ4548, UP3057, UP3058, UP3059, UP3061, UP3063, UP3065, VL3022, VL3023, VL2041, WH1252, WH1274, WH1276, WH1281, DBW88(C), DBW173(C), DBW 187(C), DBW222(C), HD2967(C), HD3043(C), HD3171(C), HD3249(C), HI1605(C), WH1105(C), BARI Gom 33
Upto 10	66	AKDW2997-16(C), BRW3869, BRW3877, CG1029, CG1034, DBW296, DBW311, DBW315, DBW319, DBW331, GW1355, GW1356, HD3331, HD3348, HD3351, HD3354, HD3359, HD3361, HD3366, HD3367, HI1637, HI8823(d), HPW470, HS675, HUW839, K1907, K1910, MP1361, MP3523, MPO1357(d), NIAW3851, NIAW3855, NIAW3882, NIAW3895, NW7088, NW7096, PBW804, PBW831, PBW834, PBW838, RAJ4546, RAJ4551, RAJ4552, Raj4554, SKW 356, TAW155, UAS3011, UAS3014, UP3054, UP3055, UP3056, UP3060, UP3062, UP3064, VL3024, WH1264, WH1270, WH1271, WH1277, WH1283, WH1284, DBW110(C), DDW47(d)(C), HD3059(C), HI8627(d)(C), HI8805(C)

Promising varieties in Advanced Varietal Trials

A total of 60 genotypes were evaluated in different AVTs and 8 genotypes being superior in yield performance and disease resistance have been promoted to final year of testing in respective AVTs. Besides, 38 entries were evaluated in Special Trials (HYPT & HYT) along with 8 checks, and five entries were found promising for promotion in NWPZ.

Most promising varieties in AVTs and Special trials

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation
NHZ	-	-	-
NWPZ	-	JKW261	DBW296, HUW838
NEPZ	-	-	-
CZ	GW513, HI1636	-	HI8823(d)
PZ	-	MACS6752	MP1358
Special trials			
SPL-HYPT	DBW327, DBW328, DBW332, DBW333, WH1252		

Promising varieties in NIVTs and IVTs

Among the total 242 new entries evaluated for their performance in NIVTs/IVTs, as many as 63 entries were found promising on the basis of high yielding ability and disease resistance. Out of these 63 promising entries, 52 were of bread wheat and 11 of durum wheat. Seventeen entries were observed to be promising for timely sown irrigated condition, 13 for late sown irrigated condition and 31 for restricted irrigation condition. In all, 17 entries were promising in NWPZ, 18 in NEPZ, 12 in CZ and 16 in PZ under different production conditions at the zonal level.

Most promising entries in NIVTs and IVTs

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation
NWPZ	PBW826, HD3354, WH1283 HD3349#, RAJ4548#, DBW313#	PBW834	DBW321, HD3368, HD3369, HI1653, HI1654, PBW838, PBW848, K1910, NW7096, UP3062

NEPZ	PBW826#	DBW316, DBW317, DBW318#, PBW833, PBW834, PBW835, HD3360, UP3060,	DBW321, DBW322, HD3368#, HD3369#, HI1653, HI1654#, WH1281, PBW848#, UP3062
CZ	HI1650, GW523, MP3535, MACS6768	-	HI8830(d) HI1655, DDW55(d), DBW326, UAS475(d), GW528, NIAW3851, CG1036
PZ	HI8826(d), HI8827(d), HI8828(d), NIDW1345(d), NIDW1348(d), MACS4100(d), MACS4106(d), DDW53(d) WHD965(d)	MACS6774, HI1651, DBW320, NWS2180#	MACS6753, MACS6755, UAS3014, DBW325

#: resistant to wheat blast

Zonal monitoring of coordinated trials and nurseries

During this year multidisciplinary teams of scientists were constituted to monitor the trials at conducting centres in the five zones. Monitoring of coordinated trials and nurseries was carried out during February to April, 2020 for examining the conduction of trials and performance of test genotypes in each of the five wheat growing zones. In NHZ, virtual monitoring was carried out in the month of May. The total number of centres monitored was 63 out of the 109 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 17 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.

Programme of zonal monitoring (2019-20)

Zone	Team	Duration	Centres monitored
PZ	Team I	04-07, February	Pune, Mahabaleshwar, Karad, K Digraj, Kolhapur, Nippani, Kalloli, Arbhavi, Ugar, Mudhol, Bagalkot, Dharwad
	Team II	10-14, February	Nashik, Niphad, Savalivihir, Pravarnagar, Parbhani, Washim, Akola
CZ	Team I	18-21, February	Udaipur, SK Nagar, Vijapur, Anand, Arnej, Dhandhuka, Amreli, Sanosara and Junagadh
	Team II	26-29, February	Raipur, Bilaspur, Jabalpur, Sagar, Powarkheda and Indore
NEPZ	Team I	12-17, March	Ranchi, Sabour, IARI-Pusa, RPCAU-Pusa, Varanasi, Ayodhya, Deegh, Kanpur and Araul
	Team II	1-7, March	Kalyani, Burdwan, Manikchak, Majhian, Coochbehar, Shillongani, Biswanath Chariali
NWPZ	Team I	15-18, March	Jammu, Gurdaspur, Ludhiana, Bhatinda, Hisar, Durgapura and Delhi
NHZ	Team I	24 May (Virtual)	Ranichauri, Majhera, Almora, Shimla, Bajaura and Malan

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
NWPZ	Jammu	AVT-IR-LS, NIVT-3A
NEPZ	Ayodhya	AVT-RI-TS, NIVT-5A
	Majhian (Malda)	AVT-RI-TAS
	Biswanath Chariali	AVT-RI-TAS
	Ranchi	NIVT-1A
	IARI PUSA	NIVT-5A
CZ	Sagar	AVT-RI-TS
	Jabalpur	NIVT-5B
PZ	Karad	AVT-IR-TS, AVT-RI-TS, SPL-DIC
	Kalloli	AVT-IR-LS
	Nippani	AVT-RI-TS
	Dharwad	NIVT-2, NIVT3B

The monitoring teams observed variation, segregation for different traits in the test genotypes. From among the entries recommended by different monitoring teams, the common entries (21) in various trials which have been dropped from further testing are given below.

Entries Dropped from further testing

Trial	Common entries based on report from two teams
NIVT 1A	Nil
NIVT 1B	N-217 (UP3056)
NIVT 2	N-324 (UP3058), N-316 (UAS3011), N-330 (CG1034), N-334 (MP3526), N-335 (MP1371), N-322 (HD3359)
NIVT 3A	N-413 (HD3364), N-429 (NW8000)
NIVT 3B	N-503 (MP3527), N-506 (CG1035), N-511 (RVW4309)
NIVT 4	N-601 (PWU5)(a), N-605 (UAS473), N-620 (PBND4812)
NIVT 5A	N-705 (BRW3863), N-719(PBW839)
NIVT 5B	N-808 (HD3372), N-817 (HI8831), N-818 (MP3523), N-824 (AKAW5088)

Seed Production

During 2019-20, a total indent of 15700.59 q breeder seed of 144 wheat varieties was received from DAC&FW, New Delhi for production and supply to fifteen states, six public sector agencies and NSAI. The highest indented varieties included HD 2967 (2467.25), HD 3086 (1731.70q), PBW 723 (1148.80q), WH 1105 (583.00q) RAJ 4238 (560.80q), PBW 725 (439.40q) and WB 2 (358.80q).

Top indented varieties in breeder seed chain during 2019-20

Name of Variety	Notification Year	Breeder Seed (q)	
		DAC Indent	Production
HD 2967	2011& 2014	2467.25	3380.00
HD 3086 (Pusa Gautami)	2014 & 2020	1731.70	1741.00
PBW 723 (Unnat PBW 343)	2017	1148.80	1150.00
WH 1105	2013	583.00	717.00
Raj 4238	2016	560.80	750.00
PBW 725	2016	439.40	500.00
WB 2	2017	358.80	501.00
HI 8759 (Pusa Tejas)	2017	356.40	550.00
HD 2851 (Pusa Vishesh)	2005	354.10	355.00
GW 366	2007	335.20	558.40

Breeder Seed Production: Total production of breeder seed of 134 varieties including 14 newly released varieties during the season was 19639.46q, so there was a surplus production of 4216.27q over the allocated quantity (15423.19) of breeder seed. IARI- RS, Indore reported highest breeder seed production (2570.50q) followed by PAU, Ludhiana (2464.60) IARI, New Delhi (1769.20q), IIWBR, Karnal (1617.00q) and IARI-RS, Karnal (1600.70q) among the 33 BSP Centres. The highest quantity of breeder seed was reported for HD 2967 (3380q) followed by HD 3086 (1741q), PBW 723 (1150q), Raj 4238 (750q) and WH 1105 (717q).

Nucleus Seed Production: Against an allocation of 605.40q nucleus seed of 134 wheat varieties, 1128.27q nucleus seed was produced by different BSP Centres with the surplus of 522.87q against allocation. IARI Indore produced maximum quantity (259.0 q) of nucleus seed followed by JNKVV Jabalpur (212.92q) PAU Ludhiana (111.15 q), IIWBR, Karnal (77.0q) and IARI New Delhi (75.44q). The maximum nucleus seed was reported to be produced for MP (JW) 3382 (95.0q) followed by HD 2967 (81.35 q), JW 3288 (63.77) and HD 3086 (48.45q).

Test stock multiplication: NSC has reported to produce 614.0q test stock multiplication of 13 newly identified wheat varieties mainly DBW 222 (86.0q), PBW 771 (83.0q), HI 1621(76.0q), WH 1148 (68.0q) NIAW 3170 (59.0q), HD 3271 (35.0q) etc.

Evaluation of National and International Nurseries/Trials

National Nurseries: During the crop season 2019-20, seven nurseries and a segregating stock nursery 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 Nurseries		
National Genetic Stock Nursery (NGSN)	90+3	32
Short Duration Screening Nursery (SDSN)	24+6	20
Quality Component and Wheat Biofortification Nursery (QCWBN)	45+7	11
Elite International Germplasm Nursery (EIGN)	68+4	27
National Durum Screening Nursery (NDSN)	41+3	13
Drought Tolerance Screening Nursery (DTSN)	20+5	15
Salinity-alkalinity Tolerance Screening Nursery (SATSN)	28+2	12
Segregating Stock Nursery (SSN)	155 F_2 & F_3	19

National Genetic Stock Nursery (NGSN): The NGSN comprising 90 lines including *T. aestivum* (69), *T. durum* (12), *T. dicoccum* (4) and Triticale (5) was provided to 32 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 22 locations, it was found that 18.8% genotypes in the NGSN were either directly used for selection or utilized in hybridization as parents.

Promising lines identified for yield component traits in NGSN during 2019-20

Traits	Criteria	Promising Entries
Days to heading	<77	DWAP 1108 (72), DWAP 1531 (73), GW 499, Raj 4083, TL 3013 (74), Raj 3765, Raj 4079, RAJ 3077, TL 3011, TL 3015, VL 3013(75), DM 6, WAPD 1505, FLW 22, TL 3012, HI 1621(76)
Days to maturity	<125	DWAP 1108, FLW22(122), Raj 4083(123), Raj 4079, DWAP 1531, Raj 3765, DM 6, Raj 3077, WAPD 1505, DM 7, Raj 4238, FLW 10, WAPD 1508 (124)
1000-gr weight (g)	>41	HI8751(49), HI 8802, DWAP 1108(48), MPO 1336, TL 3012, GW 499(47), HI 8805(d), GW 1339(46), AKAW 4927, HI 1609, HI 1620(45), WAPD1 508(44), PBW 777(43), TL 3011, WH 1232, DWAP 1531, MP 1338 (42)
Grain yield (q/ha)	>56.0	DBW 187(61.0), HI 1609(60.3), GW 1339(59.0), HI 1621(58.8), DBW 107(57.1), HD 3237(56.8), HI 8802(56.5), DBW 221(56.4), DBW 252(56.3), DBW 110, CG 1018 (56.2)

Genotypes showing resistance to diseases in NGSN under field conditions

Disease	Promising entry
Black and brown rusts	DBW 173, DDK 1051(dic.)
Yellow rust	PBW 760, HI 8802(d), TL 3011(t)
Brown rust	FLW 22, HI 8708(d), HI 8751(d), WAPD 1505, WAPD 1508, WAPD 1524, GW499, DBW 251, HI 1612, HD3271, UAS462(d)
Black rust	AKAW 4901, DBW 93, HI 8805(d), DDK 1052(dic.), DDK 1053(dic.), WAPD 1519, DWAP1531, MACS5049 (dic.)

d- T. durum, dic- T. dicoccum, t- Triticale

Short Duration Screening Nursery: The 33rd Short Duration Screening Nursery consisted of 30 entries including checks and was planted at 20 locations. Early maturing genotypes tolerant to high temperature during grain filling period under late sown conditions were identified. On the basis of two year of evaluation five entries DWAP1822, GW-2017-845, LBP-2017-2,

AKAW5104, and GW 2017-841-5 were found promising in different zones on the basis of early heading, maturity and grain yield and would be evaluated in the ensuing season. During first year of evaluation under SDSN nine entries viz., WSM138, M2-285, RWP 2019-32, RWP 2019-38, RWP 2019-40, RWP 2019-41, RWP 2019-42, DWAP1925 and DWAP 1926 have been found better than the checks in different zones and would be tested again during crop season 2020-21.

Quality Component and Wheat Biofortification Nursery (QCWBN): QCBWN comprising 45 test entries and 7 checks was planted at 11 centres to identify new genetic resource for quality improvement. Out of 45 tested entries two entries viz., IND549 (Zn=52.8, Fe=41.0 ppm) in Central Zone and BWL8875 (Zn= 39.3 ppm and Fe=42.3 ppm) in North Western Plains Zone showed better performance for Zn and Fe content along with high grain yield.

Elite International Germplasm Nurseries: The elite international germplasm nursery comprising 68 entries and four checks was supplied to 27 centres. Promising entries were identified for grain yield/plot and disease resistance. A total of 233 selections were made by the different cooperating centres in EIGN during this year.

Promising entries in EIGN

Zone	Entry name	Best check
Across the zone (27 locations)	None	DBW 187 (627 g)
NWPZ (5 locations) (>715 g)	26th SAWYT 304 (758g), 10th HLBSN 40 (747 g), 10th HLBSN 37 (745g), 36th SAWSN 3129 (740g), 36th SAWSN 3261 (723g)	DBW 187 (714 g)
NEPZ (8 locations) (>577 g)	None	DBW 187 (577 g)
CZ (8 locations) (>760g)	26th HRWYT 212 (802g), 26th SAWYT 309 (769 g), 51st IBWSN 1093 (767g)	DBW 187 (758)
PZ (4 locations) (>520g)	29th HRWSN 2054 (562 g), 36thSAWSN3063 (557g), 36th SAWSN3261 (556g), 29th HRWSN 2040 (551 g), 26th SAWYT 308 (547g), 29th HRWSN 2012 (538g), 51st IBWSN 1239 (533g), 17th HTWYT 10 (527g)	HI 1544 (519)
NHZ (2 locations) (>645 g)	36thSAWSN 3129 (740g), 29th HRWSN 2054 (675 g), 26th HRWYT 237 (650 g), 26th HRWYT 206 (646g)	DBW 187 (645 g)

National Durum Screening Nursery: Set of 6th National Durum Screening Nursery (NDSN) comprised 41 selected lines (13 from 50th IDYN, 14 from 50th IDSN and 14 contributed by Vijapur) was shared with 13 centres for the identification of promising entries for yield components and disease resistance. The feedback reports indicated that the nursery is very useful in getting desired material and for making selections.

Trait-wise superior entries from NDSN

Trait	Entry name
Grain yield/plot (g)	50th IDSN 7013(794), 50th IDYN 706(756), 50th IDYN 721(750), 50th IDSN 7077(746), 50th IDYN 719(744), 50th IDSN 7135(730), 50th IDYN 741(728)
Days to heading	50th IDSN 7034(74), GW (D)2019-971(74), GW (D)2019-977(74), GW (D)2019-980(73), GW (D)2019-979(73), GW (D)2019-982(73), GW (D)2019-975(71), GW (D)2019-981(71)
Grains per spike	50th IDSN 7100(65), 50th IDYN 721(64), 50th IDYN 718(63), 50th IDYN 722(62),50th IDYN 740(62), 50th IDYN 719(61)
1000 grains weight (g)	GW (D)2019-971(58.3),GW (D)2019-972(54.2),GW (D)2019-982(51.5)

Drought Tolerance Screening Nursery: The 32nd Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 5 checks (C306, MP3288, DBW110, K1317 and NI5439) was conducted at 15 centres to identify drought tolerant genotypes that can be used as a source to develop drought tolerant varieties. Entries namely DBW296 (0.53), QST1910 (0.65), TAW-186 (0.68), DT-RIL-110 (0.74) and WYCYT-2018-20 (0.80) were found promising for drought tolerance.

Salinity and Alkalinity Tolerance Screening Nursery: Out of 28 test entries contributed by the five cooperating centres, eight entries were found to be promising on the basis of mean yield along with resistance to all the three rusts (stem, leaf and yellow rust). These 8 entries viz., RWP2019-25, RWP2019-24, DWAP1924, DWAP1923, SANSR-7, K1805, NEPZ18-25 and LBP18-23 might be considered for testing in Special trial on Salinity-Alkalinity Trial to be conducted during 2020-21.

Segregating Stock Nursery: Sets of 23rd Segregating Stock Nursery (SSN) comprising 155 segregating populations (F_2/F_3) of were shared with 19 wheat breeding centres to select superior plants/material as per the breeding objectives and cultural conditions. The utilization report indicated that the nursery could achieve 44.62 percent utilization across the centres. Almost all the segregating populations were utilized by one or the other centre and total of 6305 plants were selected.

International Nurseries and Trials

The ICAR-Indian Institute of Wheat and Barley Research, Karnal being a nodal centre for exchange of germplasm, annually procures wheat lines from CIMMYT and ICARDA in the form of International trials and nurseries to further enrich the ongoing breeding programmes at various centres in the country. During the crop season 2019-20, CIMMYT supplied germplasm in different nurseries/trials comprising 1377 lines (1170 bread wheat and 207 lines of durum wheat). Similarly, ICARDA supplied a total 651 lines (545 bread wheat and 106 lines of durum wheat) in form of different nurseries/trials which were evaluated at various wheat breeding centres. One set of each nursery/trial was planted at Karnal for evaluation to facilitate in-situ selections and also disease screening particularly stripe rust. The best performing lines from these nurseries are utilized to constitute the Elite International Germplasm Nursery (EIGN) comprising bread wheat and National Durum Screening Nursery (NDSN) comprising durum wheat. EIGN and NDSN are supplied to cooperating centres for evaluation and utilization in wheat improvement. The promising genotypes identified from these nurseries are given below.

Promising lines (higher grain yield & rust resistance) from in CIMMYT trials

Trial	Zone	Entries with higher grain (q/ha) yield with disease resistant
Bread wheat		
40th ESWYT	NHZ	102 (42), 110 (42), 131 (40), 145 (41); **Shalimar wheat 2 (33)**
	CZ	116 (68), 136 (67), 145 (67), 146 (67); **HI 1544 (64)**
	PZ	107 (38), 109 (39), 115 (37), 145 (39); **NIAW 1994 (29)**
27th HRWYT	NWPZ	237 (45), 241 (56), 244 (48); **DBW 187 (39)**
	NEPZ	216 (39), 222 (39), 235 (39), 246 (41); **Sonalika (23)**
27th SAWYT	CZ	309 (57), 333 (58); **JW 3382 (56)**
	PZ	310 (38), 316 (36), 322 (36), 332 (40); **NIAW 1994 (31)**
7th WYCYT	NHZ	9 (44), 15 (42), 28 (47); **Shalimar wheat 2 (30)**
	NWPZ	16 (70), 32 (64), 21 (61); **HD 3226 (60)**
	PZ	5 (46), 10 (44), 12 (43), 29 (43); **UAS 304 (35)**
9th SATYN	NWPZ	9416 (61); **DBW 187 (53)**
	PZ	9410 (38), 9422 (40), 9426 (39), 9430 (37); **UAS 304 (33)**
51th IDYN	NWPZ	725 (72), 728 (72), 733 (77), 750 (75); **PDW 291 (69)**
	PZ	710 (47), 719 (47); **MACS 3949 (38)**

Multi-location Heat Tolerance trial (MLHT): In order to identify the heat tolerant lines among AVT genotypes; two sets of trials (MLHT-1 for NWPZ and NEPZ; and MLHT2 for CZ and PZ entries) were evaluated under timely sown (TS) and late sown (LS) conditions during the crop season 2019-20. The pooled analysis of MLHT-1, revealed that the HSI values ranged from 0.62 to 1.34 and the genotypes HD 3293 (0.62), DBW 187 (0.82), WH 1270 (0.84), RWP 2018-31 (0.93), RWP 2018-32 (0.94), HD 3298 (1.03) and DBW 303 (1.03) were found to be relatively tolerant to thermal regimes. Whereas, in MLHT-2, the HSI values ranged from 0.47 to 1.48 and the genotypes HI 1633 (0.57), HI 1634 (0.68), NIAW 3170 (d) (0.81), NIDW 1149 (d) (0.86), and DDW 49 (1.02) were found comparatively tolerant.

Issues for discussion during the workshop

1. Re-visiting trial sites for improving quality of conduction
2. Contribution of MABB/Biofortified entries with valid passport data only.
3. Preparing guidelines for zonal monitoring of the yield trials and nurseries
4. Scenario for receiving and dispatching the seeds under COVID 19 situation
5. Strengthening the artificial screening of leaf rust in NEPZ
6. Uniformity in recording and reporting of disease data under natural conditions
7. Following recommended templets and double-checking data/ proposals for efficiency
8. Contributions in national nurseries including SSN by major centres
9. Improving ratio of indigenous material in contributions.

Break-up of Coordinated Wheat Varietal Trials

Proposed(PR), Conducted(CD) and Reported(RT) 2019-20

SN	Trial Series	NHZ			NWPZ			NEPZ			CZ			PZ			ALL ZONE		
		PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT
1	AVT-IR-TS-TAS	4	4	4	22	21	20	20	20	17							46	45	41
2	AVT-IR-TS-TAD										22	20	18	16	16	10	38	36	28
3	AVT-IR-LS-TAS				22	21	18				18	17	16	16	16	13	56	54	47
4	AVT-RF-TS-TAS	11	11	11													11	11	11
5	AVT-RI-TS-TAS/TAD				15	15	13	19	19	15	16	15	13	12	11	8	62	60	49
6	AVT-RI-LS-TAS	12	12	11													12	12	11
7	IVT-RF-TS-TAS	9	9	9													9	9	9
8	NIVT-1A-IR-TS				10	10	9	11	11	9							21	21	18
9	NIVT-1B-IR-TS				10	10	9	11	11	8							21	21	17
10	NIVT-2-IR-TS										10	10	9	7	7	4	17	17	13
11	NIVT-3A-IR-LS				10	10	9	10	10	9							20	20	18
12	NIVT-3B-IR-LS										9	9	9	8	8	7	17	17	16
13	NIVT-4-IR-TS										7	7	6	6	6	4	13	13	10
14	NIVT-5A-RI-TS				9	9	9	9	9	7							18	18	16
15	NIVT-5B-RI-TS-TDM										11	11	7	9	8	5	20	19	12
16	SPL-DIC-IR-TS													11	11	9	11	11	9
17	SPL-HYPT-IR-TS				7	7	6										7	7	6
18	SPL-CI-HYT-IR-ES				7	7	6										7	7	6
TOTAL		36	36	35	112	110	99	80	80	65	93	89	78	85	83	60	406	398	337
% of CD Trial/PR Trial		100.00			98.21			100.00			95.70			97.65			98.03		
% of RT Trial/CD Trial		97.22			90.00			81.25			87.64			72.29			84.67		
Trials Rejected by Monitoring Team		0			2			6			2			7			17		

Abbreviations used in the report

Yield	
Rk	Rank
G	Group (First non-significant)
S.E. (M)	Standard error of the means
C.D.	Critical difference
C.V.	Coefficient of 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 or D)	Durum
*	Final year test entry
#	Entry resistant to wheat blast disease
B	Biofortfied entry
AVT	Advanced Varietal Trial
NIVT	National Initial Varietal Trial
IVT	Initial Varietal Trial
IR	Irrigated
RF	Rainfed
RI	Restricted irrigation
TS	Timely sown
LS	Late sown
ES	Early sown
Q	Entry good in quality traits
M	Entry derived through Marker Assisted Backcross Breeding
TAS	*Triticum aestivum*
TAD	*Triticum aestivum + T. durum*
TDM	*Triticum durum*
DIC or Dic	*Triticum dicoccum*
Zones	
NHZ	Northern Hills Zone
NWPZ	North Western Plains Zone
NEPZ	North Eastern Plains Zone
CZ	Central Zone
PZ	Peninsular Zone
NAT ZONE	National Zone – Trial conducted in two or more zones
Reasons for not reporting the data	
DNR	Data not reported
HCV	High coefficient of variation
LCV	Low coefficient of variation
LS	Late sowing
LSM	Low site mean
RMT	Rejected by monitoring team
TF	Trial failed
UY	Unrealistic yield

Parentage Details

Parentage of Wheat Genotypes, 2019-20

Contributing Centres

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

Parentage, 2019-20

SHUATS, Prayagraj (UP)

1.	AAI-W22	ESW16/GIANT-3
2.	AAI-W29	MRD/HP1008

PDKV, Akola (Maharashtra)

1.	AKAW5080	HW1081/MACS2496//AKAW-4287-5-4-7
2.	AKAW5088	DSS-06-966-5(Sel/SSN2006-07)
3.	AKAW5099	Sel-NHP-4

BCKV, Kalyani (WB)

1.	BCW5	C306/HD2967

Bihar Agricultural University, Sabour, Bhagalpur (Bihar)

1.	BRW3863	HUW237/CHIRYA7
2.	BRW3869	VHW4579/K0307
3.	BRW3877	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/WBLL4//OAX93.24.35

IGKVV, TCB College of Agriculture, Bilaspur (Chhattisgarh)

1.	CG1029	HW2004/PHS725
2.	CG1034	HI1544/WR1743
3.	CG1035	HD2932/WR1873
4.	CG1036	HW2004/PHS832
5.	CG1037	HI1544/HS485

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.	DBW281	PBW175/OVATA//*2PBW175
3.	DBW290	QUAIU#1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/6/BECARD(35THESWYT140)
4.	DBW291	EC609395/PBW639
5.	DBW296	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/MASSIV/PPR47.89C(23SAWYT321)
6.	DBW299	WAXWING*2/KRONSTAD F2004*2//BECARD
7.	DBW303	WBLL1*2/BRAMBLING/4/BABAX/LR42//BABAX*2/3/SHAMA*2/5/PBW343*2/KUKUNA*2//FRTL/PIFED
8.	DBW306	TACUPETOF2001*2/BRAMBLING//BLOUK#1 (46IBWSN1067)
9.	DBW307	MUNAL*2/CHONTE (22ND SAWYT 334)
10.	DBW308	HD3108/HD2967
11.	DBW309	LOK62/21SAWSN159 (PBW65/2*PASTOR)
12.	DBW310	WH542/DBW16
13.	DBW311	HD2985/CBW38//CBW38
14.	DBW312	HUW234/WH147
15.	DBW313	REH/HARE/2*/BCN/3/CROC/AE.SQ(213)//PGO/4/HUITES/5/PBW585//PBW509/PBW581
16.	DBW314	DBW87/DBW16
17.	DBW315	HD2967*2/KHARCHIA65
18.	DBW316	DBW18/DBW66
19.	DBW317	K307/NEPAL05
20.	DBW318	DBW42/DBW90
21.	DBW319	DUCULA/5/GOV/AZ//MUS/3/DODO/4/BOW/6/THELIN//2*ATTILA*2/PASTOR
22.	DBW320	KRL236/DBW16
23.	DBW321	DBW39/DL788-2
24.	DBW322	CIMMYT165/PBW585
25.	DBW323	TILHI/SOKOLL/4/2*ATTILA*2/PBW65/PIHA/3/ATTILA/2*PASTOR
26.	DBW324	DBW87/MP1250
27.	DBW325	CHIPAK
28.	DBW326	CROC_1AE.SQ(205)//BORL95/3/PRL/SARA//TSI/…
29.	DBW327	NELOKI//SOKOLL/EXCALIBUR
30.	DBW328	NADI//TRCH/HUIRIVIS#1/3/NADI

31.	DBW329	NGL/FRANCOLIN#1//FRNCLN/ROLF07
32.	DBW330	CHWWINK#1/3/MILAN/S87230
33.	DBW331	MUTUS/AKURI//SUP152/BAJ#1
34.	DBW332	MUTUS/ROLF07//MUCUY
35.	DBW333	BORL14*2//MUNAL#1/FRANCOLIN
36.	DBW334	PF.4354//LD/ALD/4/2*BR12*2/3/JUP//PAR214*6/F86631/5/NL750/6/BOW//BUC/BUL/3/WEAVER/4/STAR
37.	DBW335	DBW17/KRL1-4
38.	DBW336	NADI*2/3/MUTUS/AKURI #1//MUTUS
39.	DBW337	NADI*2/3/MUTUS/AKURI #1//MUTUS
40.	DBW338	BORL14/CHIPAK
41.	DBW339	NADI*2/6/BECARD #1/5/KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ
42.	DBW340	LONG-REACH-CATALINA/2*MUCUY
43.	DBW341	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/GLADIUS(23RDSAWYT326)

Durum		
44.	DDW48(d)	HI8498/PDW233//PDW291
45.	DDW49(d)	PDW314/PDW233
46.	DDW53	HI8737/HI8498
47.	DDW54	GDW1255/PDW233
48.	DDW55(d)	PDW274/PDW314//HI8498

SDAU, Vijapur (Gujarat)

1.	GW513	PBW559/WR1873
2.	GW521	LBPY2005-6/DL788-2
3.	GW522	GW157/PCE2555//FLW3/3/PHR1009
4.	GW525	HXL7573/2*BAU//WBLL1/3/GW411
5.	GW528	AGA/4*YR70//CMH79A.955/3/SERI82/4/CPAN1905/J405/5/HD2808
Durum		
6.	GW1354	UPD25/GW1104//RAJ6566
7.	GW1355	GW1087/IWP5061//RAJ6566
8.	GW1356	GW1166/GW1245

JAU, Junagadh (Gujarat)

1.	GW519	GW394/PBW519//AKAW4627
2.	GW523	23ESWYT-19PED.CHEN/AE.SQ(TAUS)//BUC/KAUZPEWTI-1
3.	GW527	VL826/KAUZ/3/KAUZ/4/HD2882

Indian Agricultural Research Institute, New Delhi

1.	HD3293	HD2967/DBW46
2.	HD3298	CL1449/PBW343//CL882/HD2009
3.	HD3331	31STESWYT-135/3/HD2329/WR544//PBW343/NW3041
4.	HD3332	PFAU/SERI.1B
5.	HD3334	DBW50/WR2502
6.	HD3348	MERCATO/VORB
7.	HD3349	HD2932/HD3086
8.	HD3350	HD3078/HD2781
9.	HD3351	31ST ESWYT-147/3/HW5028// HD2932/DW1309
10.	HD3352	PBW343/DBW17//HD2687
11.	HD3353	HD3043/HI1500
12.	HD3354	QUAIU#1/3/T.DICOCCONPI94625/AE.SQ(372)//3*PASTOR/4/QUAIU#2/5/VALI/6/BECARD/QUAIU#1
13.	HD3355	VL849/NPBGR39//HD2967
14.	HD3356	NIAW34/PHW12//43RDIBWSN1187
15.	HD3357	VL907/HD2967
16.	HD3359	MP3288/K0911
17.	HD3360	HD3086/HI1500
18.	HD3361	CNO79//PF70354/MUS/3/PASTOR/4/BAV92*2/5/HAR311
19.	HD3362	DANPHE#1*2/3/T.DICOCCONPI94625/AE.SQ(372)//SHA4/CHIL/4/SHAKTI/5/VALI

20.	HD3363	DL689/WR196//HW4022/DW1221
21.	HD3364	CSW02/HD2932(YR15)
22.	HD3365	HD3065/HD3086
23.	HD3366	PBW343/HD2947//IC296762
24.	HD3367	MP3288/K0911
25.	HD3368	HD2932/HD3086
26.	HD3369	HD3070/HD3078
27.	HD3371	CL1705/HD2687
28.	HD3372	KINDE*2/4/T.DICOCCOMPI94625/AE.SQ(372)//TUI/CLMS/3/2*PASTOR/5/WAXBI/6/BAJ #1/AKURI
29.	HD3373	CL2595/K9451//CL882/HD2009
30.	HD3374	HD2947//WH1037//HD2687
31.	HD3375	HD3078/HD3086
32.	HD3376	NIAW34/PHW12//43RDIBWSN1187
33.	HD3377	CROC_1/AE.SQ(210)//PBW343*2/KUKUNA/3/PBW343*2/KUKUNA/4/VALI/5/MANKU
34.	HD3378	ICSISASBMNP-4-158
35.	HD3379	CL1705/HD2687

IARI Regional Station, Indore (M.P.)

1.	HI1633	GW322/PBW498
2.	HI1634	GW322/PBW498
3.	HI1636	DL788-2/HW4032
4.	HI1637	GW366/K9465
5.	HI1641	HI1544/RAJ3777
6.	HI1642	CAPAN4068/MACS2496
7.	HI1646	DANPHE/3/PBW343*2/KUKUNA//PBW343*2/KUKUNA
8.	HI1647	HI1479/GW326
9.	HI1648	HI1544/HW3026
10.	HI1649	FRANCOLIN/HI1563//IND351
11.	HI1650	Giant-3/HI1395
12.	HI1651	HI1544/HW2640
13.	HI1652	BOW/BUC//BUL/3/CLRP6/HW3034
14.	HI1653	NADI/COPIO//NADI
15.	HI1654	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/PANDION//FILIN/2*PASTOR/3/BERKUT
16.	HI1655	MACS2496/HI1531
Durum		
17.	HI8825	HI8715/HI8691
18.	HI8826	HI8713/HI8663
19.	HI8827	HI8627/HI8691
20.	HI8828	HI8682/WH896
21.	HI8829	HI8663/HD4672
22.	HI8818	HI8682/WH896
23.	HI8823	HI8709/HD4676
24.	HI8830	HI8713/HI8663
25.	HI8831	HI8681/HI8691//HI8627

IARI Regional Station, Shimla (H.P.)

1.	HS668	VL906/FLW13
2.	HS675	HS240*2FLW20//HS240*2/FLW13
3.	HS676	VL907/DL460
4.	HS677	ID8900994W/VEE/3/CHEN/AES/HD2932
5.	HS678	VL907/HD2997
6.	HS679	VL907/DL640
7.	HS680	VL616/HD2733
8.	HS681	HEINESVII/HPW251//HS507

Banaras Hindu University, Varanasi (U.P.)

1.	HUW838	WBLL1*2/BRAMBLING/4/BABAX/LR42//BABAX*2/3/SHAMA*2/5/PBW343*2/KUKUNA*2//FRTL/PIFED

2.	HUW839	QUAIU#1/3/T.DICOCCONPI94625/AE.SQ(372)//3*PASTOR/4/QUAIU#2/5/VILLAJUAREZF2009/3/T.DICOCCONPI94625/AE.SQ(372)//3*PASTOR/4/WBLL1*2/BRAMBLING
3.	HUW840	KINDE/4/CMH75A.66//H567.71/5*PVN/3/SERI
4.	HUW841	PBW343*2/KUKUNA//PBW343*2/KUKUNA/3/
5.	HUW842	DANPHE #1*2/3/*T.DICOCCON* PI94625/AE.SQ(372)//SHA4/CHIL/4/ SHAKTI/5/VALI
6.	HUW843	FRANCOLIN/HUW206

CSKHPKV, Malan (H.P.)

1.	HPW469	HPW89/VL867
2.	HPW470	NAC/TH.AC//3*MIRLO/BUC/4PASTOR
3.	HPW471	HPW236/VL900
4.	HPW472	HPW155/HD29
5.	HPW473	HPW155/PBW486
6.	HPW474	S308/HD29P2

SKUAST, Jammu (J & K)

1.	JAUW672	SERI.18*2/3/KAUZ*2/BOW//KAUZ/4/CROC
2.	JAUW683	PBW175/DBSYT421

BAU, Ranchi (Jharkhand)

1.	JKW261	ISENGRAIN/KBIRD//MUNAL#1
2.	JKW270	ROLF07/4/WBLL/1/KUKUNA//TACUPETOF2001/3/UP2338*2/VIVITSI/5/SAUAL/MUTUS
3.	JKW275	TUKURU//BAV92/RAYON/6/NG8201/KAUZ/4/SHA7
4.	JKW277	PASTOR//HXL7573/2*BAU/3/SOKOLL/WBLL1/4
5.	JKW278	SHA7//PRL/VEE#6/3/FASAN/4/HAAS8446/2*FASAN/5/CBRD/KAUZ/6/MILAN/AMSEL/7/FRET2*2/KUKUNA/8/TRAP#1/BOW/3/VEE/PJN//2*TUI/4/BAV92/RAYON/5/KACHU#1/9/COPIO

CSAUAT, Kanpur (U.P.)

1.	K1901	K9107/PBW343
2.	K1903	HD2285/K9162
3.	K1904	K0307/K8434
4.	K1905	HD2329/PBW373
5.	K1907	K9107/K9006
6.	K1908	PBW550/K0307
7.	K1910	K1006/PBW373

CSSRI, Karnal (Haryana)

1.	KRL1803	VILLAJUAREZF2009/3/T.DICOCCONPI94625/AE.SQ(372)//3*PASTOR/4/WBLL1*2/BRAMBLING/5/BAJ #1/AKURI
2.	KRL1808	KRS9383/KRL283
3.	KRL1810	KRS9383/KRL283

Lokbharti, Sanosara (Gujarat)

1.	LOK77	HW3064/HW2006/CPAN4078/HW2002/SS/C306/S331/LOK1/HW888

Agharkar Research Institute, Pune (Maharashtra)

1.	MACS6747	MACS6222/HD2956
2.	MACS6749	MACS6221/Raj4037
3.	MACS6752	PBW553/RAJ4083
4.	MACS6753	MACS6221//RAJ4037*2
5.	MACS6755	MACS2496/RAJ4037//DBW35
6.	MACS6764	MACS6222/VL892//PBW589
7.	MACS6765	GW322/RAJ4120
8.	MACS6768	MACS6221*2//Raj4037
9.	MACS6769	RAJ4083/NIAW917
10.	MACS6774	WBLL1/KUKUNA//TACUPETO F2001/3/BAJ#1*2/4/KINGBIRD#1
	Durum	
11.	MACS4087	MACS3125/NG-87(DHTON-23/BIJAGAYELLOW)//DWR1005
12.	MACS4100	CBC509CHILE/6/ECO/CMH76A.722//BIT/3/ALTAR84/4/AJAIA_2/5/KJOVE_1/7/AJAIA_12/F3LOCAL(SEL.ETHIO.135.85)//PLATA_13/8/SOOTY_9/RASCON_37//WODUCK/CHAM_3

13.	MACS4106	MACS2846/DDW01//HI8662
	Dicoccum	
14.	MACS5054	DDK1029/HW1098
15.	MACS5055	NP200/MACS2981//HW1095

JNKVV, Powarkheda (M.P.)

1.	MP1358	KACHU*2/MUNAL#1/K1215
2.	MP1361	CHEN/AE.SQ(TAUS)//BCN/3/BAV92/4/BERKUT/5/BAVIS/JWS140
3.	MP1367	HI1450/HI1544
4.	MP1368	MP1142/GW273
5.	MP1369	GW475/BL908
6.	MP1370	VL895/PHSO621
7.	MP1371	MP3171/DL803-3
8.	MP1372	MP4010/MP1142
	Durum	
9.	MPO1357	PDW02/TERTER//GW1133
10.	MPO1373	SOOTY_9/RASCON_37//STORLOM/8/RISSA/GAN//POHO_1/3/PLATA_3//CREX/ALLA*2/7/EUDO//CHEN_1/TEZ/3/TANTLO_1/5/CHEN/ALTAR84/3/HUI//POC//BUB/RUFO/F/FNFOOT/6/MOJO/KITTI/11/SOOTY_9/RASCON_37//WODUCK/CHAM_3/10/PLATA10/6/MQUE/4/USDA573//QFN/AA_7/3/ALBA_D/5/AVO/HU
11.	MPO1374	RD179/GW1133
12.	MPO1375	GW1189/GW1220

JNKVV, Jabalpur (M.P.)

1.	MP3523	MP3046/RAJ3777
2.	MP3526	PFAU/MILAN/3/SKAUZ/KS94
3.	MP3527	MP3325/WAS515
4.	MP3529	35IBWSN159/DBW17
5.	MP3535	BABAX/LR42//BABAX/3/ER2000/8/BOW/VEE/5/ND/VG9144//KAL/BB/3/YACO/4/CHIL/6/CASKOR/3/CROC_1/AE.SQ(224)//OPATA/7/PASTOR//MILAN/KAUZ/3/BAV92

NDUA&T, Ayodhya (U.P.)

1.	NW7079	FRETZ/TUKURU//FRETZ/2/3/MUNIA/CHTO//AMSEL/4/FRETZ2/TUKURU//FRET2
2.	NW7088	FRANCOLIN#1*2//ND643/2*WBLL1
3.	NW7092	SERI.1B*2/3/KAUZ*2/BOW//KAUZ/5/CNO79//PF70354/MUS/3/PASTOR/4/BAV92/6/ND643/2*WBLL1
4.	NW7093	DOY1/AE.SQUARROSA(447)/3/2*KA/NAC//TRCH
5.	NW7094	WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1/4/KBIRD
6.	NW7096	SHA7//PRL/VEE#6/3/FASAN/4/HAAS8446/2*FASAN/5/CBRD/KAUZ/6/MILAN/AMSEL/7/FRET2*2/KUKUNA/8/2*WHEAR/SOKOLL
7.	NW8000	HUW234+LR34/PRINIA//KIRITATI*2/3/KINGBIRD#1

MPKV, Niphad (Maharashtra)

1.	NIAW3851	BAVIS*2/NAVJ07
2.	NIAW3855	TRCH*2//WHEAR/SOKOLL
3.	NIAW3882	PAURAQ/KINGBIRD#1/6/FRET2/KUKUNA//FRET2/3/PARUS/5/FRET2*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ
4.	NIAW3889	TRCH/SRTU//KACHU*2/3/KINGBIRD #1
5.	NIAW3895	ATTILA*2/HUITES//FINSI/3/ATTILA*2/PBW65/4/TRCH/SRTU//KACHU
6.	NIAW3898	KIRITATI//2*PRL/2*PASTOR/3/HUHWA1
	durum	
7.	NIDW1149	NIDW295/NIDW15
8.	NIDW1345	DDW-06/AKDW-4021
9.	NIDW1348	NIDW295/DDW06

Nuzivedu Seeds (Private)

1.	NWS2176	KACHU//WBLL1*2/BRAMBLING
2.	NWS2180	NS732/HER/3/PRL/SARA//TSI/VEE#5/4/FRET2/5/WHEAR/SOKOLL

VNMKV, Parbhani (Maharashtra)

1.	PBND4812	PBND4264-10KR-F5

PAU, Ludhiana (Punjab)

1.	PBW803	BWL0762/PBW621//HD3086
2.	PBW804	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/HUW234+LR34/PRINIA//PBW343*2/KUKUNA/3/ROLF07
3.	PBW811	BECARD/2*FRNCLN
4.	PBW812	BWL0762/PBW621//HD3086
5.	PBW813	KRICHAUFF/4/2*BW9250*3//YR10/6*AVOCET/3/BW 9250*3//YR15/6*AVOCET
6.	PBW826	WBLL1*2/KKTS//PASTOR/KUKUNA/3/KINGBIRD #1// INQALAB 91*2/ TUKURU/5/KAUZ//ALTAR 84/AOS/3/ MILAN/KAUZ/4/SAUAL
7.	PBW827	PBW677/PBW703
8.	PBW828	HD3122/HD3121
9.	PBW829	YR5/6*AVOCET//2*DBW 17
10.	PBW830	ACIENDA/2*PBW683
11.	PBW831	PULSAR/2*PBW683
12.	PBW832	BWL2752/BWL3549//BWL2763/BWL1800
13.	PBW833	BWL0762/PBW621//HD3086
14.	PBW834	GLADIUS/5/2*W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1
15.	PBW835	BWL2760/BWL1879//BWL2752/BWL1797
16.	PBW836	BWL0773/5/SIRKKU/PRINIA/4/CLC89//ESDA/KAUZ/3/BJY/COC/6/BWL2760
17.	PBW837	WL711-AE.TRIUNCIALISIL/4*PBW550/4/WL711-AE.OVATA/CS(S)//WL711NN /3/4*PBW550
18.	PBW838	BECARD #1/4/SOKOLL/3/PASTOR// HXL7573/2*BAU
19.	PBW839	BWL0783/BWL0059
20.	PBW840	WL711-AE.TRIUNCIALISIL/4*PBW550/4/WL711-AE.OVATA/CS(S)//WL711NN/ 3/4*PBW550
21.	PBW841	PBW621//HD2967/BWL3558
22.	PBW843	CHIANTI/WH1105//PBW698
23.	PBW844	T.DICOCCUMP194625/AE.SQ.372//TUICLMS/3/2*PASTOR/4/PBW629
24.	PBW845	PBW343//YR15/6*AVOCET/3/3*PBW343/4/HD2733/LR37//2*HD2733-VER67
25.	PBW846	PRL/2*PASTOR/6/WBLL1*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/KACHU
26.	PBW848	CROC_1AE.SQ(224)//OPATA/3/PASTOR/4/2*SOKOLL/3/PASTOR//HXL7573/2*BAU
	Durum	
27.	PDW360	UC1113/PDW291

MPUAT, Udaipur (Rajasthan)

1.	PWU5	HI8692/HI8663//HI8633

SKNAU, Durgapura, Jaipur (Rajasthan)

1.	RAJ4541	RWP2008-31/Raj4188
2.	RAJ4546	SHATABDI/NAC/PBW636
3.	RAJ4547	TUJAR
4.	RAJ4548	GLADIUS/5/2*W15.92/4/ PASTOR//HXL 7573 /2*BAU/3/WBLL1
5.	RAJ4549	PBW373/HD3058
6.	RAJ4550	VL898/PBW631
7.	RAJ4551	HD2964/WH1105
8.	RAJ4552	VEE7KAUZ/PFAU/MILAN/3/MILAN/PASTOR
9.	RAJ4553	PBW65/2*PASTOR
10.	Raj4554	SHATABDI/NAC/PBW636

RVSKVV Gwalior (MP)

1.	RVW4301	MACS6222/GW173
2.	RVW4304	PBW703/HW2046
3.	RVW4309	DBW18/Gladius

SKUAST, Srinagar (J & K)

1.	SKW356	SEL-VL968

BARC, Mumbai (Maharashtra)

1.	TAW155	MUTUS/AKURI#1//MUTUS

UAS, Dharwad (Karnataka)

1.	UAS3008	HI977/PBW343/DBW14
2.	UAS3011	UAS305/UAS315
3.	UAS3012	CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA//FRET2/6/MILAN/KAUZ//PRINIA/3/BAV92
4.	UAS3013	KIRITATI/WBLL1//FRANCOLIN #1
5.	UAS3014	UAS316/(MUTUS//ND643/2*WBLL1)
6.	UAS3015	B.YELLOW/(YAZI_1 /AKAKI_4//SOMAT_3/3/AUK/GUIL//GREEN/5/2*NETTA_4/DUKEM_12//RASCON_19/3/SORA/2*PLATA_12/4/GREEN_18/FOCHA_1 //AIRON_1)
Durum		
7.	UAS472	BIJAGAYELLOW/(YAZI_1/AKAKI_4//SOMAT_3/3/AUK/GUIL//GREEN/5)
8.	UAS473	BICHENA/AKAKI_7/4/LIS_8/FILLO_6/3/FUUT//HORA/JOR/5/YAZI_1/AKAKI_4//SOMAT_3/3/AUK/GUIL//GREEN/6/RASCON_33/TISOMA_2/3/CANELO_8//SORA/2*PLATA_12/4/SOMAT_4/INTER_8)/B.YELLOW
9.	UAS474	DUKEM_1//PATKA_7/YAZI_1/3/PATKA_7/YAZI_1/4/TARRO_1/2*YUAN_1//AJAIA_13/YAZI/5/PATKA_4/PLATA_16)/A-9-30-1/UAS404
DICOCCUM		
10	DDK1058	HW1092/DDK1009//DDK1022
11	DDK1059	DDK1009/DDK1013/DDK1015

GBPUAT, Pantnagar (Uttarakhand)

1.	UP3033	NIAW1544/UP2763
2.	UP3051	PBW658/PBW670
3.	UP3052	WH1142/UP2748
4.	UP3053	PBW658/PBW670
5.	UP3054	NELOKI//SOKOLL/EXCALIBUR
6.	UP3055	PBW658/PBW670
7.	UP3056	QLD28/HW2019//DBW102
8.	UP3057	TACUPETOF2001/BRAMBLING/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR*2/6/TRCH/SRTU//KACHU
9.	UP3058	QLD28/DPW621-50//WH1138
10.	UP3059	ATTILA/3*BCN//BAV92/3/TILHI/5/BAV92/3/PRL/SARA//TSI/VEE#5/4/CROC_1/AE.SQUARROSA(224)//2*OPATA//DBW 102
11.	UP3060	D67.2/PARANA66.270//AE.SQ(320)/3/CUNNINGHAM/4/PASTOR/SLVS/5/SUNCO/2*PASTOR// EXCALIBUR/6/MTRWA92.161/PRINIA/5/SERI*3//RL6010/4*YR/3/
12.	UP3061	PASTOR/4/BAV92
13.	UP3062	QLD28/PBW621
14.	UP3063	QLD28/DPW621-50
15.	UP3064	RAJ3765/HD3121
16.	UP3065	VHW6281P-2
17.	UP3066	PBW65/(2*PASTOR/WBLL1*2/BRAMBLING/5/WBLL1*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP)
18.	UP3067	PBW343*2/KHAVAKI/FRNCLN*2/TECUE#1
19.	UP3068	MUTUS*2/KIRITATI//UP2763
20.	UP3069	VHW6278P-9

VPKAS (ICAR), Almora (Uttarakhand)

1.	VL2036	SW89.5277/BORL95//SKAUZ/3/PRL/2*PASTOR/4/HEILO/5/WHEAR/SOKOLL
2.	VL2039	RL6043/4*NAC//PASTOR/3/BABAX/VL892
3.	VL2040	17thDSBWYT-99(SERI.1B//KAUZ/HEVO/3/AMAD/4/PYN/BAU//MILAN/5/ OPATA/RAYON//KAUZ)
4.	VL2041	NESSER/SAULSKU32/MACS6240//HS507
5.	VL2042	TX71A983.4/TX69D4812//PYN/3/VPM/MOS83.11.4-8//PEW/HSB3177 (Yr15+Yr24)/6*Avocet//2*BAXTER/FLW13
6.	VL3022	SW89-3218//AGRI/NAC/HS507//QLD 39
7.	VL3023	PHS822/ISFRA
8.	VL3024	ZANDER33/VL907//QLD40

CCSHAU, Hisar (Haryana)

1	WH1252	SOKOLL/WBLL1/4/D67.2/PARANA66.270//AE.SQ(320)/3/CUNNINGHAM
2	WH1264	P12256/P12332//WH1142
3	WH1270	SHA7//PRL/VEE#6/3/FASAN/4/HAAS8446/2*FASAN/5/CBRD/KAUZ/6/MILAN/AMSEL/7/FRET2*2/KUKUNA/8/2*WHEAR/SOKOLL
4	WH1271	MILAN/S87230//BAV92*2/3/AKURI
5	WH1272	P12968/WH1130//P12892/3/UP2338
6	WH1273	WH711/LASSIK
7	WH1274	BAJ#1/SUP152
8	WH1275	FRET2/KIRITATI/5/NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR*2/6/PVN
9	WH1276	P13428/P13471
10	WH1277	SOKOLL/WBLL1/4/D67.2/PARANA 66.270//AE.SQ(320)/3/CUNNINGHAM
11	WH1278	SHORTENEDSR26TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD
12	WH1279	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/GLADIUS
13	WH1280	PBW65/2*PASTOR
14	WH1281	TACUPETOF2001/BRAMLING/5/NAC/TH.AC//3*PVN/3/MIRLO
15	WH1283	P13352/PBW343//WH711/3/PBW550
16	WH1284	MILAN/S87230//BAV92*2/3/AKURI
17	WH1285	PBW343/P12273//P12238/3/PBW343
18	WH1286	W15.92/4/PASTOR//HXL7573/2*BAV/3/WBLLI/5/.
19	WH1287	WH1142/WH1105//WH542

Durum		
20	WHD964(d)	D86135/ACO89//PORRON_4/3/SNITAN/10/PLATA_10/6/MQUE/4/USDA573//QFN/AA_7/3/ALBAD/5/AVO/HUI/7/PLATA_13/8/THKNEE_11/9/CHEN/ALTAR84/3/HUI/POC//BUB/RUFO/4/FNFOOT/11/CANELO_8//SORA/2*PLATA_12/12/TADIZ/9/USDA595/3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV_1/6/ARDENTE/7/H
21	WHD965(d)	GUAYACAN/N/A/2*SNITAN/3/SOMAT_3/GREEN_22

Checks

SN	Variety	Parentage
1.	DBW39	ATTILA/HUI
2.	DBW88	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
3.	DBW107	TUKURU/INQLAB 91
4.	DBW110	KIRITATI/4/2*SERI1B*2/3/KAUZ*2/BOW//KAUZ
5.	DBW173	KAUZ/AA//KAUZ//PBW602
6.	DBW187	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
7.	DBW222	KACHU/SAUAL/8/ATTILA*2/PBW65/6/PVN//CAR422/ANA/5/BOW/CROW//BUC/PVN/3/YR/4/TRAP#1/7/ATTILA/2*PASTOR
8.	DBW252	PFAU/MILAN/5/CHEN/AE.SQ(TAUS)//BCN/3/VEE#7/BOW/4/PASTOR
9.	GW322	PBW173/GW196
10.	HD2733	ATTILA/3/TUI/CARC//CHEN/CHTO/4/ATTILA
11.	HD2864	DL509-2/DL377-8
12.	HD2888	C306/T.SPHAEROCOCCUM//HW2004
13.	HD2932	KAUZ/STAR//HD2643
14.	HD2967	ALD/CUC//URES/HD2160M/HD2278
15.	HD3043	PJN/BOW//OPATA*2/3CROC_1/AE.SQ(224)//OPATA
16.	HD3059	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
17.	HD3086	DBW14/HD2733//HUW468
18.	HD3090	SFW/VAISHALI//UP2425
19.	HD3171	PBW343/HD2879
20.	HD3249	PBW343*2/KUKUNA//SRTU/3/PBW343*2/KHVAKI
21.	HI1544	HINDI62/BOBWHITE/CPAN2099
22.	HI1563	MACS 2496*2/MC 10
23.	HI1605	BOW/VEE/5/ND/VG9144//KAL//BB/3/YACO/4/CHIL/6/CASKOR/3/CROC_1/AE.SQ(224)//OPATA/7/PASTOR//MILAN/KAUZ/3/BAV92
24.	HI1612	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
25.	HI1628	FRET2*2/4/SNI/TRAP#1/3/KAUZ*2/TRAP//KAUZ/5/PFAU/WEAVER//BRAMBLING
26.	HPW349	NAC/TH.AC//3*MIRLO/BUC/4/2*PASTOR

27.	HS490	HS364/HPW114//HS240//HS346
28.	HS507	KAUZ/MYNA/VUL//BUC/FLK/4/MILAN
29.	HS562	OASIS/SKUAZ//4*BCN/3/2*PASTOR
30.	K1006	PBW343/HP1731
31.	K1317	K0307/K9162
32.	MACS6222	HD2189*2/MACS2496
33.	MACS6478	CS/TH.SC//3*VN/3/MIRLO/BUC/4/MILAN/5/TILHI
34.	MP3288	DOVE/BUC/DL788-2
35.	MP3336	HD 2402/GW 173
36.	NIAW3170	SKOLL/ROLF07
37.	PBW550	WH 594/RAJ 3856//W 485
38.	PBW644	PBW175/HD2643
39.	PBW771	BWL9246/2*DBW17
40.	RAJ4083	PBW 343/UP 2442//WR 258/UP 2425
41.	VL892	WH542/PBW226
42.	VL907	DYBR1982-83842ABVD50/VW9365//PBW343
43.	WH1021	NYOT95/SONAK
44.	WH1080	PRL/*2PASTOR
45.	WH1105	MILAN/S87230//BABAX
46.	WH1124	MUNIA/CHTO//AMSEL
47.	WH1142	OEN/AE.SQ.(TAUS)/FCT/3/2*WEAVER

Durum		
48.	AKDW2997-16(d)	CPAN6140/RAJ1555
49.	DDW47(d)	PBW34/RAJ1555//PDW314
50.	HI8627(d)	HD4672/PDW233
51.	HI8713(d)	HD4672/PDW233
52.	HI8737(d)	HI8177/HI8158//HI8498
53.	HI8805(d)	IWP5070/HI8638//HI8663
54.	MACS3949(d)	STOT//ALTAR84/ALD/3/THB/CEP7780//2*MUSK_4
55.	UAS428(d)	GREEN-14/YAN-10/AUK/UAS402
56.	UAS446(d)	DWR185/DWR2006//UAS419
57.	UAS466(d)	AMRUTH//BIJAGA YELLOW/AKDW299-16
Dicocum		
58.	DDK1029	DDK1012/HW1093//276-15
59.	HW1098	NILGIRI LOCAL (MUTAGEN TREATED-25KR)

Entries with common pedigree during 2019-20

1.	DBW303	WBLL1*2/BRAMBLING/4/BABAX/LR42//BABAX*2/3/SHAMA*2/5/PBW343*2/KUKUNA*2//FRTL/PIFED
2.	HUW838	
3.	DBW327	NELOKI//SOKOLL/EXCALIBUR
4.	UP3054	
5.	DBW341	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/GLADIUS
6.	WH1279	
7.	DBW88	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
8.	HD3059	
9.	HI1612	
10.	HD3349	HD2932/HD3086
11.	HD3368	
12.	HD3356	NIAW34/PHW12//43rdIBWSN1187
13.	HD3376	
14.	HD3357	VL907/HD2967
15.	HS678	
16.	HD3359	MP3288/K0911
17.	HD3367	
18.	HD3362	DANPHE#1*2/3/T.DICOCCOMPI94625/AE.SQ(372)//SHA4/CHIL/4/SHAKTI / 5/VALI
19.	HUW842	
20.	HD3371	CL1705/HD2687
21.	HD3379	
22.	HI1633	GW322/PBW498
23.	HI1634	
24.	HI8627(d)	HD4672/PDW233
25.	HI8713(d)	
26.	HI8810	HI8713/HI8663
27.	HI8830(d)	
28.	HI8812	HI8682/WH896
29.	HI8818(d)	
30.	HS676	VL907/DL460
31.	HS679	
32.	KRL1808	KRS9383/KRL283
33.	KRL1810	
34.	NW7096	SHA7//PRL/VEE#6/3/FASAN/4/HAAS8446/2*FASAN/5/CBRD/KAUZ/6/MILAN/AMSEL/7/FRET2*2/KUKUNA/8/2*WHEAR/SOKOLL
35.	WH1270	
36.	PBW803	BWL0762/PBW621//HD3086
37.	PBW812	
38.	PBW833	
39.	PBW837	WL711-AE.TRIUNCIALISIL/4*PBW550/4/WL711-AE.OVATA/CS(S)//WL711NN/3/4*PBW550
40.	PBW840	
41.	PBW834	GLADIUS/5/2*W15.92/4/ PASTOR//HXL7573/2*BAU/3/WBLL1
42.	RAJ4548	
43.	RAJ4546	SHATABDI/NAC/PBW636
44.	RAJ4554	
45.	RAJ4553	PBW65/2*PASTOR
46.	WH1280	
47.	UP3051	PBW658/PBW670
48.	UP3053	
49.	UP3055	
50.	WH1252	SOKOLL/WBLL1/4/D67.2/PARANA 66.270// AE.SQ(320)/3/CUNNINGHAM
51.	WH1277	
52.	WH1271	MILAN/S87230//BAV92*2/3/AKURI
53.	WH1284	

National Initial Varietal Trial

1901-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ																	
			Delhi			Punjab						Haryana						Uttarakhand		
			Delhi			Ludhiana			Gurdaspur			Hisar			IIWBR-Karnal			Pantnagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ4548	N-101	43.3	27	0	68.6	17	0	59.3	5	1	65.6	14	0	73.6	2	1	51.6	31	0
2	UP3052	N-102	48.5	19	0	67.2	20	0	51.6	13	0	52.0	34	0	46.1	32	0	58.7	17	0
3	HD3348	N-103	57.8	6	1	66.6	21	0	54.4	11	0	77.2	3	1	64.9	15	0	66.2	3	1
4	DBW334	N-104	50.1	15	0	64.6	23	0	54.8	10	0	56.4	30	0	60.7	22	0	55.1	27	0
5	UP3053	N-105	55.3	8	1	74.5	7	1	62.3	4	1	65.4	15	0	69.8	8	1	64.9	4	1
6	HUW 839	N-106	51.3	13	0	66.5	22	0	43.0	23	0	55.3	33	0	65.4	13	0	62.6	9	0
7	K1901	N-107	50.1	15	0	70.7	11	1	37.5	28	0	64.0	18	0	57.7	25	0	54.2	29	0
8	HD3352	N-108	61.0	1	1	78.0	1	1	37.5	29	0	68.6	11	0	64.1	16	0	59.8	14	0
9	KRL1810	N-109	59.9	3	1	63.9	24	0	49.4	18	0	48.1	35	0	61.0	21	0	52.3	30	0
10	DBW309	N-110	21.0	36	0	75.6	5	1	46.3	22	0	59.9	27	0	68.1	10	1	50.4	34	0
11	PBW828	N-111	48.2	20	0	54.8	29	0	66.1	1	1	63.1	20	0	66.5	11	0	56.7	21	0
12	HD3349	N-113	43.2	28	0	77.1	2	1	46.5	21	0	78.0	2	1	71.6	5	1	55.4	24	0
13	PBW841	N-114	45.0	25	0	72.0	9	1	39.3	26	0	77.0	5	1	55.7	26	0	63.9	7	1
14	PBW829	N-116	31.2	35	0	68.6	16	0	42.6	24	0	61.3	24	0	61.3	19	0	58.5	18	0
15	DBW308	N-117	54.6	9	1	61.6	26	0	46.8	20	0	64.6	17	0	68.5	9	1	67.8	2	1
16	AAI-W29	N-118	32.7	34	0	43.3	36	0	32.8	34	0	45.2	36	0	12.0	36	0	42.8	36	0
17	HD3353	N-119	41.9	31	0	67.7	19	0	55.5	9	0	61.3	23	0	40.0	35	0	55.2	26	0
18	DBW306	N-120	38.4	32	0	51.5	30	0	34.5	33	0	63.3	19	0	63.8	18	0	55.2	25	0
19	WH1284	N-121	49.5	18	0	76.6	4	1	37.2	31	0	61.1	25	0	61.2	20	0	58.0	19	0
20	UP3051	N-122	46.9	23	0	69.3	14	0	35.0	32	0	72.6	7	1	66.4	12	0	51.1	33	0
21	WH1272	N-123	51.6	12	0	69.0	15	0	59.1	6	0	62.4	21	0	40.1	34	0	60.0	12	0
22	HD3350	N-124	51.7	11	0	71.5	10	1	49.8	15	0	71.2	9	1	65.2	14	0	55.0	28	0
23	RAJ4547	N-126	50.1	17	0	46.8	33	0	52.3	12	0	60.1	26	0	41.3	33	0	59.0	16	0
24	UP3054	N-127	58.9	4	1	62.6	25	0	49.7	16	0	78.7	1	1	72.7	4	1	68.0	1	1
25	NW7079	N-128	44.1	26	0	48.3	32	0	63.3	3	1	59.7	28	0	49.3	30	0	60.6	10	0
26	PBW827	N-129	42.3	30	0	56.6	28	0	46.9	19	0	66.9	13	0	71.2	6	1	56.3	22	0
27	HD3351	N-130	58.3	5	1	75.5	6	1	49.7	17	0	61.9	22	0	48.1	31	0	63.2	8	0
28	PBW826	N-132	50.7	14	0	76.7	3	1	55.9	8	0	76.8	6	1	70.5	7	1	57.0	20	0
29	RAJ4546	N-133	47.4	21	0	68.4	18	0	40.5	25	0	57.0	29	0	63.9	17	0	43.0	35	0
30	WH1273	N-134	53.3	10	0	59.2	27	0	28.6	36	0	67.8	12	0	58.7	24	0	51.2	32	0
31	DBW307	N-135	43.1	29	0	72.9	8	1	38.4	27	0	56.3	31	0	51.6	28	0	59.9	13	0
32	WH1271	N-136	47.4	21	0	70.1	12	0	50.9	14	0	77.1	4	1	79.6	1	1	64.7	5	1
33	K1006 (C)	N-112	36.8	33	0	45.2	34	0	30.9	35	0	55.9	32	0	54.0	27	0	56.0	23	0
34	HD2967 (C)	N-115	55.7	7	1	45.1	35	0	37.4	30	0	69.7	10	0	51.2	29	0	60.6	11	0
35	HD3086 (C)	N-125	60.9	2	1	49.9	31	0	65.2	2	1	64.8	16	0	58.7	23	0	59.3	15	0
36	DBW187 (C)	N-131	45.4	24	0	69.7	13	0	57.2	7	0	71.8	8	1	73.3	3	1	63.9	6	1
G.M.			48.0			64.6			47.4			64.4			59.7			57.7		
S.E.(M)			2.951			3.273			2.912			3.423			5.413			1.746		
C.D. (10%)			7.0			7.8			7.0			8.2			12.9			4.2		
C.V.			8.7			7.2			8.7			7.5			12.8			4.3		
D.O.S.(dd.mm.yy)			13.11.19			08.11.19			14.11.19			01.11.19			01.11.19			07.11.19		

No. of Trials : Proposed = 21 Conducted = 21

Trials not reported (03) = Jammu (LSM), Shillongani (LSM), Ranchi (RMT)

1901-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ								
			Rajasthan			Uttar Pradesh						Uttar Pradesh								
			Durgapura			Bulandshah			Modipuram			Kanpur			Ayodhya			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ4548	N-101	73.5	3	0	56.2	9	0	55.4	17	0	61.8	24	0	49.1	30	0	53.2	10	0
2	UP3052	N-102	48.9	28	0	56.7	8	0	45.8	33	0	60.7	26	0	55.2	15	0	51.7	15	0
3	HD3348	N-103	48.9	27	0	45.5	29	0	50.0	24	0	64.4	17	1	48.6	33	0	54.8	5	1
4	DBW334	N-104	63.2	10	0	63.5	3	0	48.0	26	0	68.8	5	1	55.2	15	0	42.5	29	0
5	UP3053	N-105	45.3	33	0	47.6	19	0	47.8	27	0	70.0	4	1	60.4	6	1	52.6	13	0
6	HUW 839	N-106	58.5	16	0	62.5	4	0	52.2	22	0	65.5	13	1	49.9	29	0	45.3	25	0
7	K1901	N-107	72.2	5	0	47.7	17	0	46.9	30	0	67.6	10	1	50.0	28	0	39.1	34	0
8	HD3352	N-108	59.7	14	0	46.5	25	0	43.8	34	0	55.7	31	0	59.7	7	1	44.0	27	0
9	KRL1810	N-109	31.2	35	0	58.8	6	0	46.1	32	0	64.0	21	0	56.3	14	0	36.1	35	0
10	DBW309	N-110	53.2	23	0	60.7	5	0	52.3	21	0	57.1	30	0	50.2	27	0	50.4	17	0
11	PBW828	N-111	59.4	15	0	67.5	1	1	46.9	29	0	70.3	3	1	57.1	13	0	48.5	21	0
12	HD3349	N-113	64.1	9	0	46.6	23	0	62.8	2	1	67.9	9	1	59.0	8	1	49.2	20	0
13	PBW841	N-114	61.9	11	0	49.9	14	0	52.9	20	0	68.2	6	1	62.9	2	1	50.1	18	0
14	PBW829	N-116	47.8	29	0	41.5	34	0	58.5	6	0	63.9	22	0	54.2	17	0	40.0	33	0
15	DBW308	N-117	55.5	21	0	66.5	2	1	46.5	31	0	62.3	23	0	61.8	5	1	53.8	7	1
16	AAI-W29	N-118	28.8	36	0	47.4	20	0	37.9	36	0	48.7	36	0	47.6	35	0	33.2	36	0
17	HD3353	N-119	55.3	22	0	41.7	33	0	51.8	23	0	64.4	18	0	53.1	19	0	54.3	6	1
18	DBW306	N-120	73.4	4	0	41.3	36	0	57.1	10	0	68.0	8	1	50.9	26	0	56.2	2	1
19	WH1284	N-121	47.5	30	0	57.8	7	0	53.2	19	0	64.0	20	0	63.5	1	1	46.3	23	0
20	UP3051	N-122	56.2	19	0	47.2	21	0	60.6	4	1	64.9	16	1	62.8	3	1	54.9	4	1
21	WH1272	N-123	87.1	1	1	45.8	26	0	63.4	1	1	58.2	29	0	52.8	20	0	43.8	28	0
22	HD3350	N-124	51.1	26	0	54.1	10	0	56.3	13	0	65.1	15	1	51.4	25	0	41.6	31	0
23	RAJ4547	N-126	68.3	7	0	45.2	30	0	59.2	5	1	58.5	28	0	51.7	24	0	45.1	26	0
24	UP3054	N-127	61.3	12	0	45.8	27	0	62.5	3	1	67.0	12	1	57.6	11	0	55.1	3	1
25	NW7079	N-128	52.8	24	0	49.7	15	0	57.1	9	0	64.4	19	0	48.3	34	0	53.6	9	1
26	PBW827	N-129	70.7	6	0	41.3	35	0	56.1	14	0	72.0	1	1	51.9	22	0	52.9	12	0
27	HD3351	N-130	56.5	18	0	47.7	18	0	55.8	15	0	52.7	35	0	51.9	22	0	42.4	30	0
28	PBW826	N-132	84.0	2	1	41.8	32	0	55.8	15	0	70.5	2	1	59.0	8	1	52.0	14	0
29	RAJ4546	N-133	67.5	8	0	45.6	28	0	54.2	18	0	54.7	33	0	48.8	32	0	45.9	24	0
30	WH1273	N-134	47.4	31	0	47.0	22	0	57.2	8	0	61.4	25	0	62.8	3	1	40.8	32	0
31	DBW307	N-135	52.1	25	0	53.0	12	0	48.4	25	0	59.2	27	0	49.0	31	0	49.9	19	0
32	WH1271	N-136	57.3	17	0	46.5	24	0	56.6	12	0	68.2	7	1	52.1	21	0	46.6	22	0
33	K1006 (C)	N-112	38.4	34	0	53.5	11	0	57.0	11	0	53.3	34	0	54.2	17	0	53.6	8	1
34	HD2967 (C)	N-115	46.7	32	0	52.5	13	0	41.8	35	0	65.4	14	1	47.0	36	0	51.5	16	0
35	HD3086 (C)	N-125	59.8	13	0	48.2	16	0	47.2	28	0	55.7	32	0	57.3	12	0	56.6	1	1
36	DBW187 (C)	N-131	55.9	20	0	44.6	31	0	57.9	7	0	67.2	11	1	58.2	10	0	53.1	11	0
G.M.			57.3			50.4			52.9			63.1			54.5			48.4		
S.E.(M)			1.815			0.744			1.904			3.147			2.184			1.304		
C.D. (10%)			4.4			1.8			4.5			7.6			5.2			3.1		
C.V.			4.5			2.1			5.1			7.1			5.7			3.8		
D.O.S.(dd.mm.yy)			15.11.19			12.11.19			05.11.19			23.11.19			22.11.19			21.11.19		

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ																	
			Bihar									West Bengal								
			IARI-Pusa			RPCAU-Pusa			Sabour			Kalyani			Manikchak			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ4548	N-101	39.2	30	0	47.9	8	0	48.0	17	0	39.2	21	0	37.5	26	0	36.7	26	0
2	UP3052	N-102	47.6	8	0	46.5	16	0	36.2	29	0	47.2	4	1	42.8	15	0	40.7	22	0
3	HD3348	N-103	41.8	19	0	43.8	27	0	50.7	13	0	52.1	1	1	43.5	12	1	51.6	6	1
4	DBW334	N-104	50.1	5	0	47.2	11	0	39.9	24	0	45.5	9	1	37.0	28	0	32.8	32	0
5	UP3053	N-105	42.4	17	0	43.1	29	0	58.7	6	1	44.6	11	1	40.6	19	0	21.7	36	0
6	HUW 839	N-106	44.2	14	0	44.4	24	0	34.9	31	0	46.5	7	1	35.6	31	0	31.8	34	0
7	K1901	N-107	40.6	24	0	42.4	31	0	48.9	16	0	47.6	3	1	39.6	22	0	35.4	27	0
8	HD3352	N-108	44.0	15	0	44.4	23	0	39.5	25	0	45.0	10	1	36.3	29	0	42.7	14	0
9	KRL1810	N-109	38.5	31	0	46.9	15	0	24.4	35	0	38.9	23	0	30.2	35	0	33.5	31	0
10	DBW309	N-110	41.4	23	0	47.2	11	0	58.0	7	1	34.0	34	0	45.0	8	1	42.3	17	0
11	PBW828	N-111	47.2	10	0	50.0	5	0	51.8	10	0	38.8	24	0	38.7	24	0	47.0	10	0
12	HD3349	N-113	52.3	1	1	47.2	11	0	63.3	1	1	33.2	36	0	47.9	4	1	35.1	28	0
13	PBW841	N-114	51.7	3	1	47.8	10	0	34.5	32	0	38.2	27	0	44.6	9	1	41.1	21	0
14	PBW829	N-116	44.5	13	0	53.5	3	1	59.2	4	1	46.5	5	1	43.0	14	1	46.8	11	0
15	DBW308	N-117	34.5	34	0	48.6	7	0	43.1	22	0	40.1	19	0	42.1	17	0	53.5	2	1
16	AAI-W29	N-118	42.8	16	0	42.4	31	0	21.4	36	0	38.2	27	0	26.5	36	0	40.4	24	0
17	HD3353	N-119	33.1	35	0	45.8	20	0	41.5	23	0	37.9	30	0	33.1	33	0	34.2	30	0
18	DBW306	N-120	31.6	36	0	42.4	31	0	47.4	19	0	41.7	16	0	44.5	10	1	43.0	12	0
19	WH1284	N-121	41.6	21	0	44.4	24	0	38.3	27	0	42.2	14	0	45.3	7	1	50.3	7	1
20	UP3051	N-122	40.6	25	0	51.4	4	1	60.3	3	1	41.7	17	0	51.4	1	1	42.4	16	0
21	WH1272	N-123	48.3	6	0	43.1	29	0	51.1	12	0	33.7	35	0	36.3	30	0	32.0	33	0
22	HD3350	N-124	39.2	29	0	47.2	11	0	43.9	21	0	37.1	32	0	38.4	25	0	53.0	3	1
23	RAJ4547	N-126	46.4	11	0	41.0	34	0	37.5	28	0	38.6	25	0	39.3	23	0	34.6	29	0
24	UP3054	N-127	39.6	28	0	45.1	21	0	59.2	5	1	45.5	8	1	48.5	3	1	31.5	35	0
25	NW7079	N-128	50.4	4	0	39.6	36	0	47.7	18	0	39.3	20	0	40.3	20	0	41.2	20	0
26	PBW827	N-129	38.4	32	0	47.9	8	0	63.2	2	1	44.5	12	1	47.0	5	1	42.1	18	0
27	HD3351	N-130	47.3	9	0	49.3	6	0	33.5	33	0	38.2	27	0	34.5	32	0	52.9	4	1
28	PBW826	N-132	46.3	12	0	45.8	18	0	51.2	11	0	43.7	13	0	40.2	21	0	51.9	5	1
29	RAJ4546	N-133	35.5	33	0	44.4	24	0	53.2	9	0	40.3	18	0	44.1	11	1	38.2	25	0
30	WH1273	N-134	47.9	7	0	40.3	35	0	26.9	34	0	39.1	22	0	32.0	34	0	41.9	19	0
31	DBW307	N-135	40.2	26	0	55.6	2	1	50.0	14	0	37.4	31	0	47.0	6	1	42.9	13	0
32	WH1271	N-136	51.8	2	1	43.4	28	0	45.3	20	0	37.0	33	0	40.8	18	0	49.5	8	0
33	K1006 (C)	N-112	41.8	20	0	45.1	21	0	39.2	26	0	42.1	15	0	42.3	16	0	40.5	23	0
34	HD2967 (C)	N-115	41.6	22	0	46.5	16	0	35.6	30	0	38.3	26	0	37.3	27	0	55.2	1	1
35	HD3086 (C)	N-125	42.0	18	0	55.9	1	1	49.6	15	0	49.4	2	1	43.2	13	1	49.3	9	0
36	DBW187 (C)	N-131	39.6	27	0	45.8	18	0	54.9	8	0	46.5	5	1	50.0	2	1	42.5	15	0
G.M.			42.9			46.2			45.6			41.4			40.7			41.7		
S.E.(M)			0.782			1.984			2.993			3.185			3.575			2.191		
C.D. (10%)			1.9			4.7			7.2			7.6			8.5			5.3		
C.V.			2.6			6.1			9.3			10.9			12.4			7.4		
D.O.S.(dd.mm.yy)			18.11.19			20.11.19			15.11.19			19.11.19			20.11.19			18.11.19		

1901-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	RAJ4548	N-101	60.8	4	0	45.9	24	0	53.3	13	0
2	UP3052	N-102	52.8	29	0	47.6	17	0	50.2	28	0
3	HD3348	N-103	59.1	10	0	50.1	8	0	54.6	6	0
4	DBW334	N-104	57.4	17	0	46.6	21	0	52.0	18	0
5	UP3053	N-105	59.2	8	0	48.2	15	0	53.7	12	0
6	HUW 839	N-106	57.5	15	0	44.2	31	0	50.8	22	0
7	K1901	N-107	55.7	22	0	45.7	27	0	50.7	24	0
8	HD3352	N-108	57.7	13	0	45.7	26	0	51.7	19	0
9	KRL1810	N-109	52.3	31	0	41.0	35	0	46.6	35	0
10	DBW309	N-110	54.2	24	0	47.3	18	0	50.7	23	0
11	PBW828	N-111	58.8	11	0	49.9	9	0	54.4	7	0
12	HD3349	N-113	60.6	5	0	50.6	6	1	55.6	3	0
13	PBW841	N-114	57.5	14	0	48.8	12	0	53.2	14	0
14	PBW829	N-116	52.4	30	0	50.2	7	0	51.3	20	0
15	DBW308	N-117	59.2	9	0	48.9	11	0	54.0	10	0
16	AAI-W29	N-118	35.9	36	0	37.9	36	0	36.9	36	0
17	HD3353	N-119	52.3	33	0	44.2	32	0	48.2	32	0
18	DBW306	N-120	53.2	27	0	47.3	19	0	50.2	27	0
19	WH1284	N-121	55.8	21	0	48.4	13	0	52.1	16	0
20	UP3051	N-122	56.1	20	0	52.3	1	1	54.2	8	0
21	WH1272	N-123	59.9	7	0	44.4	30	0	52.1	17	0
22	HD3350	N-124	58.4	12	0	46.3	23	0	52.4	15	0
23	RAJ4547	N-126	53.6	26	0	43.6	34	0	48.6	31	0
24	UP3054	N-127	62.2	2	1	49.9	10	0	56.1	2	1
25	NW7079	N-128	53.9	25	0	47.2	20	0	50.5	25	0
26	PBW827	N-129	56.5	19	0	51.1	3	1	53.8	11	0
27	HD3351	N-130	57.4	16	0	44.8	29	0	51.1	21	0
28	PBW826	N-132	63.2	1	1	51.2	2	1	57.2	1	1
29	RAJ4546	N-133	54.2	23	0	45.0	28	0	49.6	29	0
30	WH1273	N-134	52.3	32	0	43.7	33	0	48.0	33	0
31	DBW307	N-135	52.8	28	0	47.9	16	0	50.4	26	0
32	WH1271	N-136	61.1	3	1	48.3	14	0	54.7	5	0
33	K1006 (C)	N-112	47.5	35	0	45.8	25	0	46.7	34	0
34	HD2967 (C)	N-115	51.2	34	0	46.5	22	0	48.8	30	0
35	HD3086 (C)	N-125	57.1	18	0	51.0	4	1	54.1	9	0
36	DBW187 (C)	N-131	60.0	6	0	50.9	5	1	55.4	4	0
G.M.			55.8			47.2			51.5		
S.E.(M)			0.990			0.843			0.650		
C.D. (10%)			2.3			2.0			1.5		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1A-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics									Grain Characteristics		
			Yl	ACl	Br	ACl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	RAJ4548	N-101	20S	8.6	10S	4.0	79-110	91	140-165	149	90-112	101	20	Ey	A	H	34-49	43
2	UP3052	N-102	80S	32.9	10S	2.2	97-112	104	146-168	154	92-114	105	20	Ey	A	SH	30-37	35
3	HD3348	N-103	20S	10.0	tS	0.2	98-113	106	144-165	156	85-127	105	15	Ey	A	SH	35-54	45
4	DBW334	N-104	60S	33.6	5S	1.2	89-112	102	144-165	154	85-113	103	20	Ey	A	SH	32-48	39
5	UP3053	N-105	40S	23.6	10S	2.0	95-116	104	144-168	154	85-118	105	25	Ey	A	SH	30-50	41
6	HUW 839	N-106	20S	9.0	0	0.0	86-115	104	142-165	153	84-123	105	15	Ey	A	SH	33-44	39
7	K1901	N-107	80S	27.7	5S	1.0	90-110	101	143-165	152	95-115	105	15	Ey	A	SH	34-46	42
8	HD3352	N-108	40S	12.9	10S	3.0	99-110	106	144-160	154	80-109	101	15	Ey	A	SH	33-47	41
9	KRL1810	N-109	40S	19.3	10S	3.0	99-115	108	145-165	155	85-121	107	20	Ey	A	H	30-50	43
10	DBW309	N-110	40S	23.6	5S	1.0	88-116	101	139-165	151	88-114	102	20	Ey	A	SH	31-53	41
11	PBW828	N-111	60S	25.7	5S	2.0	90-115	101	141-165	153	87-113	103	20	Ey	A	SH	34-46	42
12	HD3349	N-113	10S	3.7	0	0.0	89-115	99	140-165	150	90-115	105	20	Ey	A	H	34-46	41
13	PBW841	N-114	40S	9.6	0	0.0	100-112	106	145-169	155	78-112	101	20	Ey	A	SH	30-46	39
14	PBW829	N-116	10S	2.7	5S	1.0	100-112	106	145-162	152	90-106	99	20	Ey	A	SH	29-51	41
15	DBW308	N-117	20S	7.1	5S	1.0	99-112	105	143-161	154	85-114	101	25	Ey	A	H	35-47	43
16	AAI-W29	N-118	80S	60.0	40S	20.0	100-116	105	144-162	153	95-127	108	10	Ey	A	H	23-47	35
17	HD3353	N-119	60S	32.0	10S	2.0	91-112	104	142-162	153	75-117	103	25	Ey	A	SH	33-45	38
18	DBW306	N-120	20S	10.9	5S	1.2	93-112	102	144-161	153	92-112	105	20	Ey	A	SH	32-55	45
19	WH1284	N-121	60S	28.6	10MR	0.8	89-112	101	144-165	152	87-117	104	20	Ey	A	SH	34-47	39
20	UP3051	N-122	80S	34.0	20S	4.0	96-110	104	144-165	154	95-117	106	25	Ey	A	SH	35-51	41
21	WH1272	N-123	80S	20.0	10MS	1.6	95-116	106	143-165	152	90-113	102	15	Ey	A	H	28-48	39
22	HD3350	N-124	60S	22.1	10S	2.2	88-114	100	143-162	153	88-112	100	25	Ey	A	H	36-49	43
23	RAJ4547	N-126	60S	32.0	0	0.0	96-112	104	144-162	153	85-111	100	20	Ey	A	SH	27-42	37
24	UP3054	N-127	40S	13.4	5S	1.0	95-112	103	142-160	152	85-113	102	15	Ey	A	H	33-53	45
25	NW7079	N-128	60S	28.3	20S	5.0	93-112	103	143-162	151	90-119	105	15	Ey	A	H	34-41	38
26	PBW827	N-129	20S	2.9	0	0.0	94-114	105	141-165	152	94-117	104	10	Ey	A	SH	33-50	44
27	HD3351	N-130	60S	32.1	40S	9.0	95-110	103	144-160	153	88-120	105	10	Ey	A	SH	35-54	43
28	PBW826	N-132	60S	20.0	10S	2.0	89-116	99	142-165	151	80-117	99	15	Ey	A	SH	36-50	44
29	RAJ4546	N-133	60S	16.3	5MR	0.4	85-116	98	144-165	151	104-131	111	20	Ey	A	SH	40-50	45
30	WH1273	N-134	40S	11.4	5S	1.0	99-116	106	145-165	153	82-111	100	10	Ey	A	SH	25-46	37
31	DBW307	N-135	60S	26.3	5S	1.0	91-112	102	143-165	153	85-116	104	25	Ey	A	H	31-47	40
32	WH1271	N-136	20S	6.4	5S	1.8	99-116	105	145-165	155	80-112	101	10	Ey	A	SH	33-57	43
33	K1006 (C)	N-112	60S	34.3	5S	1.0	94-116	102	145-165	155	92-114	102	20	Ey	A	H	31-44	38
34	HD2967 (C)	N-115	40S	25.7	20S	4.0	102-119	109	145-165	157	88-115	102	15	Ey	A	SH	30-45	39
35	HD3086 (C)	N-125	60S	26.3	20S	7.0	94-112	101	143-162	152	70-113	99	15	Ey	A	SH	33-46	40
36	DBW187 (C)	N-131	10S	4.6	5S	1.0	91-114	101	143-162	153	75-115	101	30	Ey	A	SH	32-53	43

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

NIVT-1A-IR-TS-TAS, 2019-20
North Western Plains Zone
Individual Station Rust Data

S. No.	Variety	Code	Yellow Rust							Brown Rust				
			Jammu	Ludhiana	Hisar	Pantnagar	Delhi	Karnal	Gurdaspur	Jammu	Ludhiana	Hisar	Pantnagar	Delhi
1	RAJ4548	N-101	20S	10S	0	0	0	20S	10S	10S	0	0	0	10S
2	UP3052	N-102	40S	40S	20S	10S	0	80S	40S	0	0	0	tS	10S
3	HD3348	N-103	20S	10S	0	0	0	20S	20S	0	0	0	tMS	0
4	DBW334	N-104	60S	60S	0	5S	10S	60S	40S	0	0	5S	tS	0
5	UP3053	N-105	40S	40S	0	5S	0	40S	40S	0	0	0	0	10S
6	HUW 839	N-106	20S	20MS	5S	5MS	0	5MR	20MS	0	0	0	0	0
7	K1901	N-107	60S	10S	0	5MS	0	80S	40S	0	0	0	0	5S
8	HD3352	N-108	20S	10S	0	0	0	40S	20S	0	0	0	5S	10S
9	KRL1810	N-109	40S	10S	0	5S	0	40S	40S	0	0	10S	0	5S
10	DBW309	N-110	40S	40S	0	5S	0	40S	40S	0	0	0	5S	0
11	PBW828	N-111	60S	40S	0	0	0	60S	20S	0	0	5S	tMS	10MR
12	HD3349	N-113	10S	5MR	0	0	5S	10MR	5S	0	0	0	0	0
13	PBW841	N-114	0	5MR	0	0	5S	40S	20S	0	0	0	0	0
14	PBW829	N-116	10S	5MR	0	0	0	5MR	5S	0	0	0	0	5S
15	DBW308	N-117	10S	20S	0	0	0	10S	10S	0	0	0	0	5S
16	AAI-W29	N-118	80S	80S	40S	40S	20S	80S	80S	0	0	40S	20S	40S
17	HD3353	N-119	60S	40S	0	5MS	0	60S	60S	0	0	0	0	10S
18	DBW306	N-120	20S	20S	5S	tS	0	20S	10S	0	0	0	tMS	5S
19	WH1284	N-121	60S	60S	0	0	0	60S	20S	0	0	0	0	10MR
20	UP3051	N-122	60S	40S	5MS	5MS	10S	80S	40S	0	0	0	0	20S
21	WH1272	N-123	0	40S	0	0	0	60S	40S	0	0	0	0	10MS
22	HD3350	N-124	60S	40S	5S	tMS	0	40S	10S	0	0	0	tS	10S
23	RAJ4547	N-126	60S	60S	5MS	tMS	0	60S	40S	0	0	0	0	0
24	UP3054	N-127	10S	20S	0	5MS	0	40S	20S	0	5S	0	0	0
25	NW7079	N-128	60S	60S	5MS	5MS	0	60S	10S	0	0	0	5S	20S
26	PBW827	N-129	0	0	0	0	0	20S	tR	0	0	0	0	0
27	HD3351	N-130	60S	60S	0	5S	0	60S	40S	0	0	0	5S	40S
28	PBW826	N-132	20S	40S	5S	5S	0	60S	10S	0	0	0	0	10S
29	RAJ4546	N-133	60S	20S	5MR	5MS	0	10MS	20S	0	0	0	0	5MR
30	WH1273	N-134	10S	20S	0	0	0	40S	10S	0	0	0	0	5S
31	DBW307	N-135	60S	20S	0	5MS	0	60S	40S	0	0	0	0	5S
32	WH1271	N-136	5S	10S	0	5S	0	20S	5S	5MS	0	0	0	5S
33	K1006 (C)	N-112	40S	60S	10S	10S	0	60S	60S	0	0	0	0	5S
34	HD2967 (C)	N-115	20S	40S	20S	20S	0	40S	40S	0	0	0	0	20S
35	HD3086 (C)	N-125	60S	40S	5MS	5S	0	60S	20S	0	20S	0	10S	5S
36	DBW187 (C)	N-131	10S	10S	0	0	0	10S	5MR	0	0	0	0	5S

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1A-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics							Grain Characteristics				
			Yl	Br	ACl	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	RAJ4548	N-101	0	0	0.0	79(35)	54-83	71	108-128	120	84-101	93	15	Ey	A	SH	37-55	43
2	UP3052	N-102	0	30S	6.0	78(34)	69-90	82	114-133	126	89-108	100	25	Ey	A	SH	29-40	35
3	HD3348	N-103	0	20S	6.0	46(34)	74-91	84	115-136	127	92-106	100	10	Ey	A	SH	32-53	42
4	DBW334	N-104	0	40S	24.0	68(35)	71-89	80	111-131	126	89-101	96	10	Ey	A	SH	31-48	40
5	UP3053	N-105	0	20S	4.0	68(35)	72-89	81	112-131	125	93-106	99	20	Ey	A	SH	34-48	41
6	HUW 839	N-106	0	0	0.0	46(36)	76-90	84	117-135	127	86-110	103	5	Ey	A	SH	34-51	41
7	K1901	N-107	0	60S	16.0	68(46)	65-87	78	110-129	121	91-111	100	10	Ey	A	SO	34-48	40
8	HD3352	N-108	0	80S	40.0	79(34)	75-92	85	113-137	127	85-105	95	15	Ey	A	SH	34-44	39
9	KRL1810	N-109	0	10S	4.0	68(36)	79-95	91	127-136	131	96-113	106	15	Ey	A	SH	28-48	40
10	DBW309	N-110	0	30S	10.0	57(36)	64-87	77	105-134	124	86-102	94	10	Ey	A	SH	35-48	40
11	PBW828	N-111	0	20S	12.0	68(46)	69-85	78	113-131	124	91-120	103	10	Ey	A	SH	35-48	41
12	HD3349	N-113	0	30S	10.0	58(35)	63-83	74	106-127	121	96-108	100	20	Ey	A	SH	36-49	41
13	PBW841	N-114	0	0	0.0	46(34)	76-91	85	118-133	128	87-107	97	15	Ey	A	SH	35-47	39
14	PBW829	N-116	0	5MS	0.0	57(35)	77-91	85	117-133	127	89-103	95	20	Ey	A	SH	29-49	41
15	DBW308	N-117	0	5S	1.0	35(24)	79-92	85	120-136	129	89-108	98	15	Ey	A	SH	36-49	42
16	AAI-W29	N-118	20S	90S	58.0	68(25)	71-94	84	115-141	129	98-119	110	10	Ey	A	SH	33-47	41
17	HD3353	N-119	0	30S	8.0	69(35)	72-87	81	111-131	125	89-107	98	25	Ey	A	SH	35-53	43
18	DBW306	N-120	0	20S	4.0	68(35)	69-86	78	110-130	123	93-113	100	20	Ey	A	SH	36-54	46
19	WH1284	N-121	0	20S	6.0	57(35)	66-84	78	113-131	124	90-108	100	20	Ey	A	SH	32-44	39
20	UP3051	N-122	0	20S	5.0	68(35)	72-92	82	114-135	125	96-107	102	20	Ey	A	SH	30-48	41
21	WH1272	N-123	0	0	0.0	79(35)	77-92	84	118-130	126	88-101	95	15	Ey	A	SH	28-41	37
22	HD3350	N-124	0	20S	9.0	68(45)	64-86	75	106-133	122	91-106	99	20	Ey	A	H	36-49	41
23	RAJ4547	N-126	0	10S	4.0	68(35)	77-91	84	118-134	127	93-111	100	10	Ey	A	SH	27-46	38
24	UP3054	N-127	0	40S	9.0	57(35)	74-89	81	113-134	126	88-99	95	20	Ey	A	SH	37-51	44
25	NW7079	N-128	0	50S	30.0	57(35)	70-90	82	116-132	126	93-111	103	15	Ey	A	SH	32-44	39
26	PBW827	N-129	0	20S	4.0	68(35)	73-88	82	112-130	125	92-104	97	5	Ey	A	SH	35-52	41
27	HD3351	N-130	0	30S	7.0	68(45)	74-90	83	114-136	127	101-115	106	5	Ey	A	SH	36-55	43
28	PBW826	N-132	0	20S	6.0	68(35)	63-85	77	104-135	123	88-106	95	10	Ey	A	SH	36-56	46
29	RAJ4546	N-133	0	10S	4.0	68(35)	62-81	74	100-129	121	97-112	104	20	Ey	A	SH	36-54	45
30	WH1273	N-134	0	5S	2.0	57(34)	75-93	85	114-137	129	90-109	97	15	Ey	A	SH	33-50	39
31	DBW307	N-135	0	40S	24.0	68(35)	70-87	78	109-130	123	93-114	102	20	Ey	A	SH	29-44	40
32	WH1271	N-136	0	20S	4.0	57(34)	75-92	84	116-137	128	88-108	95	5	Ey	A	SH	34-45	42
33	K1006 (C)	N-112	0	60S	28.0	78(35)	64-88	77	107-133	123	90-106	97	25	Ey	A	H	35-47	41
34	HD2967 (C)	N-115	40S	10S	2.0	35(13)	65-99	91	115-142	132	94-107	100	15	Ey	A	SH	35-45	39
35	HD3086 (C)	N-125	0	40S	20.0	79(45)	69-85	77	111-131	123	89-103	98	15	Ey	A	H	33-52	39
36	DBW187 (C)	N-131	0	0	0.0	68(35)	69-85	78	110-131	123	97-107	101	20	Ey	A	SH	36-48	42

1. Ancillary data from Kanpur, Ayodhya, IARI-Pusa, RPCAU-Pusa, Varanasi, Kalyani, Ranchi, Sabour, Manikchak, Coochbehar and Shillongani.
2. Lodging data from Varanasi, Ayodhya, RPCAU-Pusa, Sabour, Kalyani, Coochbehar and Shillongani.
3. Leaf blight data from Kanpur, Ayodhya, Varanasi, Ranchi, Kalyani, Sabour, Coochbehar. Manikchak and Shillongani.
4. Yellow rust data from Kanpur center only; Brown rust data from Kanpur, Pusa, Sabour, Kalyani and Coochbehar.

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North Eastern Plains Zone
Individual Station Rust Data

SN	Variety	Code	Yellow Rust	Brown Rust				
			Kanpur	Kanpur	IARI-Pusa	Kalyani	Sabour	Coochbehar
1	RAJ4548	N-101	0	0	0	0	0	0
2	UP3052	N-102	0	0	0	0	30S	0
3	HD3348	N-103	0	0	5S	5S	20S	0
4	DBW334	N-104	0	20S	40S	40S	20S	0
5	UP3053	N-105	0	0	0	0	20S	0
6	HUW 839	N-106	0	0	0	0	0	0
7	K1901	N-107	0	20S	60S	0	0	0
8	HD3352	N-108	0	10S	60S	20S	80S	30S
9	KRL1810	N-109	0	0	10S	0	0	10S
10	DBW309	N-110	0	0	20S	0	30S	0
11	PBW828	N-111	0	20S	10S	10S	20S	0
37	HD3349	N-113	0	0	30S	0	20S	0
13	PBW841	N-114	0	0	0	0	0	0
14	PBW829	N-116	0	0	0	0	0	0
38	DBW308	N-117	0	0	5S	0	0	0
16	AAI-W29	N-118	20S	40S	80S	80S	90S	0
17	HD3353	N-119	0	5S	5S	0	30S	0
18	DBW306	N-120	0	0	0	0	20S	0
19	WH1284	N-121	0	0	10S	0	20S	0
20	UP3051	N-122	0	0	5S	0	20S	0
21	WH1272	N-123	0	0	0	0	0	0
22	HD3350	N-124	0	10S	5S	10S	20S	0
23	RAJ4547	N-126	0	10S	10S	0	0	0
24	UP3054	N-127	0	40S	5S	0	0	0
39	NW7079	N-128	0	40S	30S	0	30S	50S
26	PBW827	N-129	0	0	20S	0	0	0
27	HD3351	N-130	0	0	5S	0	30S	0
28	PBW826	N-132	0	0	20S	0	10S	0
29	RAJ4546	N-133	0	0	10S	0	10S	0
30	WH1273	N-134	0	0	0	0	10S	0
40	DBW307	N-135	0	40S	30S	0	20S	30S
32	WH1271	N-136	0	0	20S	0	0	0
33	K1006 (C)	N-112	0	10S	60S	20S	20S	30S
34	HD2967 (C)	N-115	40S	0	0	0	10S	0
35	HD3086 (C)	N-125	0	20S	40S	0	40S	0
36	DBW187 (C)	N-131	0	0	0	0	0	0

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Individual Station Leaf Blight Data

SN	Variety	Code	Ayodhya	Varanasi	Cooch Behar	Kalyani	Manikchak	Ranchi	IARI-Pusa	Sabour	Shillongani
1	RAJ4548	N-101	24	68	23	79	14	03	23	68	46
2	UP3052	N-102	25	35	34	35	12	02	24	78	24
3	HD3348	N-103	12	46	34	45	13	12	34	46	24
4	DBW334	N-104	23	68	34	58	14	13	35	57	46
5	UP3053	N-105	24	35	45	68	13	03	34	57	46
6	HUW 839	N-106	46	46	45	45	13	13	23	46	46
7	K1901	N-107	57	68	34	68	14	14	45	57	46
8	HD3352	N-108	12	57	34	25	13	02	34	79	12
9	KRL1810	N-109	23	57	34	35	12	13	25	68	24
10	DBW309	N-110	45	57	23	57	13	13	34	35	24
11	PBW828	N-111	36	68	34	68	12	23	35	46	46
12	HD3349	N-113	46	58	34	57	14	24	34	35	36
13	PBW841	N-114	35	36	23	45	13	13	23	46	36
14	PBW829	N-116	46	24	34	46	14	03	34	57	24
15	DBW308	N-117	24	35	34	24	12	23	23	35	12
16	AAI-W29	N-118	23	46	34	36	13	13	45	68	24
17	HD3353	N-119	12	46	34	69	00	13	34	68	46
18	DBW306	N-120	12	36	45	68	12	24	35	57	46
19	WH1284	N-121	23	57	34	45	14	24	23	46	36
20	UP3051	N-122	46	57	34	57	00	13	23	68	36
21	WH1272	N-123	24	68	34	46	12	13	35	79	46
22	HD3350	N-124	45	67	34	68	14	03	45	57	46
23	RAJ4547	N-126	25	57	23	37	14	14	46	68	24
24	UP3054	N-127	24	57	45	35	12	15	34	46	36
25	NW7079	N-128	35	57	34	46	12	13	25	46	24
26	PBW827	N-129	36	57	34	67	13	24	24	68	36
27	HD3351	N-130	45	68	34	68	14	13	34	57	46
28	PBW826	N-132	24	68	23	47	13	03	45	35	46
29	RAJ4546	N-133	46	24	23	68	13	02	34	57	25
30	WH1273	N-134	56	35	34	35	12	13	45	57	12
31	DBW307	N-135	24	46	34	57	14	24	34	68	24
32	WH1271	N-136	23	46	23	47	12	13	34	57	25
33	K1006 (C)	N-112	24	57	34	78	13	03	34	68	24
34	HD2967 (C)	N-115	24	01	12	12	13	23	23	35	12
35	HD3086 (C)	N-125	23	78	34	79	13	12	45	68	36
36	DBW187 (C)	N-131	23	57	34	68	13	03	34	46	36

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ																	
			Delhi			Punjab						Haryana						Uttarakhand		
			Delhi			Ludhiana			Gurdaspur			Hisar			IIWBR-Karnal			Pantnagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1274	N-201	62.9	2	1	69.9	18	1	56.3	15	0	69.6	9	1	74.8	3	1	48.4	29	0
2	JKW275	N-202	61.0	3	0	69.9	19	1	35.2	30	0	68.3	11	1	69.7	10	0	45.7	35	0
3	K1905	N-203	52.1	18	0	59.0	25	0	68.5	3	0	75.0	3	1	59.3	22	0	46.9	31	0
4	UP3055	N-204	55.7	10	0	72.7	7	1	72.5	2	0	74.6	5	1	71.7	7	0	62.6	13	0
5	NW7093	N-205	43.8	30	0	69.8	20	1	27.1	35	0	60.4	27	0	63.7	16	0	59.2	14	0
6	RAJ4549	N-206	41.6	33	0	51.5	30	0	52.6	19	0	59.9	29	0	38.1	35	0	49.6	26	0
7	K1903	N-207	36.1	36	0	71.9	10	1	65.8	5	0	56.8	31	0	68.3	11	0	52.3	22	0
8	PBW830	N-208	47.4	26	0	72.3	8	1	53.9	17	0	60.0	28	0	78.7	2	1	53.3	21	0
9	PBW831	N-209	51.9	19	0	75.1	2	1	50.1	21	0	69.8	8	1	74.3	4	1	48.6	28	0
10	NW7094	N-210	49.2	24	0	74.4	4	1	37.3	27	0	60.9	25	0	66.6	13	0	67.1	6	1
11	UP3057	N-211	53.0	13	0	70.9	14	1	44.9	23	0	76.8	2	1	65.5	14	0	63.2	12	0
12	WH1283	N-212	56.8	8	0	68.4	21	1	62.2	9	0	77.6	1	1	71.6	8	0	69.4	1	1
13	RAJ4550	N-213	51.3	20	0	75.0	3	1	56.8	14	0	64.2	18	0	48.1	29	0	51.0	24	0
14	DBW313	N-214	56.8	9	0	70.6	15	1	61.4	10	0	61.8	22	0	62.5	18	0	67.3	5	1
15	BRW3877	N-215	58.9	5	0	63.8	22	1	66.9	4	0	67.7	13	1	72.3	5	1	64.8	9	0
16	DBW312	N-216	52.8	15	0	60.5	24	0	36.9	29	0	64.8	17	0	63.1	17	0	65.2	7	0
17	UP3056	N-217	53.0	14	0	70.4	16	1	65.2	6	0	63.6	20	0	60.3	21	0	56.2	19	0
18	NW7088	N-218	52.8	16	0	73.5	6	1	31.6	31	0	57.3	30	0	61.0	19	0	49.1	27	0
19	HD3355	N-219	55.4	11	0	52.2	28	0	61.0	11	0	69.4	10	1	43.3	32	0	59.0	15	0
20	HUW841	N-220	57.9	6	0	50.1	31	0	27.2	34	0	46.1	35	0	47.1	31	0	49.9	25	0
21	K1904	N-221	40.4	34	0	75.3	1	1	39.9	26	0	60.8	26	0	57.9	24	0	56.6	18	0
22	HD3356	N-222	53.2	12	0	45.5	33	0	42.2	24	0	67.5	14	0	36.9	36	0	67.4	4	1
23	AAI-W22	N-223	38.2	35	0	47.4	32	0	26.9	36	0	68.0	12	1	39.0	34	0	46.8	32	0
24	HD3357	N-224	57.9	7	0	58.3	26	0	57.4	13	0	55.2	32	0	60.6	20	0	63.9	10	0
25	HUW840	N-225	42.2	32	0	42.6	36	0	58.1	12	0	45.7	36	0	54.3	26	0	47.3	30	0
26	KRL1803	N-227	49.4	23	0	72.1	9	1	53.6	18	0	62.8	21	0	64.7	15	0	52.2	23	0
27	KRL1808	N-228	52.1	17	0	45.2	35	0	51.4	20	0	61.1	24	0	49.2	28	0	45.4	36	0
28	JKW277	N-229	60.3	4	0	70.9	13	1	55.4	16	0	52.9	33	0	47.5	30	0	67.7	2	1
29	BRW3869	N-232	66.7	1	1	71.5	11	1	42.0	25	0	65.2	16	0	55.0	25	0	64.9	8	0
30	HD3354	N-233	44.2	28	0	73.7	5	1	79.0	1	1	73.4	7	1	82.3	1	1	58.4	17	0
31	DBW311	N-234	49.9	22	0	45.4	34	0	46.4	22	0	65.3	15	0	72.2	6	1	58.8	16	0
32	DBW310	N-236	44.3	27	0	53.9	27	0	37.1	28	0	63.8	19	0	50.7	27	0	46.7	33	0
33	HD2967 (C)	N-226	43.7	31	0	51.9	29	0	29.3	32	0	46.4	34	0	42.4	33	0	53.7	20	0
34	HD3086 (C)	N-230	47.5	25	0	71.3	12	1	63.7	7	0	74.6	4	1	67.5	12	0	67.4	3	1
35	DBW187 (C)	N-231	51.3	21	0	61.2	23	0	63.3	8	0	73.8	6	1	70.2	9	0	63.8	11	0
36	K1006 (C)	N-235	44.1	29	0	70.2	17	1	28.4	33	0	61.2	23	0	58.6	23	0	46.5	34	0
G.M.			51.0			63.8			50.2			64.0			60.3			56.6		
S.E.(M)			2.350			4.943			1.811			4.170			4.332			1.614		
C.D. (10%)			5.7			11.9			4.4			10.1			10.4			3.9		
C.V.			6.5			11.0			5.1			9.2			10.2			4.0		
D.O.S.(dd.mm.yy)			13.11.19			08.11.19			14.11.19			01.11.19			01.11.19			07.11.19		

No. of Trials : Proposed = 21 Conducted = 21

Trials not reported (04) = Jammu (LSM), Kalyani (LSM), Manikchak (LSM), Shillongani (LSM)

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ								
			Rajasthan			Uttar Pradesh						Uttar Pradesh								
			Durgapura			Bulandshahr			Modipuram			Kanpur			Ayodhya			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1274	N-201	65.4	6	0	51.9	17	0	52.5	13	0	65.5	10	1	62.2	3	1	34.2	35	0
2	JKW275	N-202	71.7	4	0	55.4	13	0	49.5	21	0	61.3	19	0	58.5	15	1	44.1	22	0
3	K1905	N-203	62.6	8	0	45.9	25	0	51.5	16	0	62.3	15	0	51.0	27	0	40.6	29	0
4	UP3055	N-204	59.5	12	0	45.5	26	0	47.4	27	0	65.3	11	1	62.0	5	1	58.8	1	1
5	NW7093	N-205	52.9	27	0	44.9	27	0	49.1	23	0	51.8	33	0	47.9	33	0	40.4	30	0
6	RAJ4549	N-206	42.5	34	0	44.1	30	0	50.7	18	0	52.2	32	0	47.9	33	0	40.8	28	0
7	K1903	N-207	51.7	28	0	56.4	11	0	51.9	14	0	56.1	29	0	61.1	9	1	35.6	33	0
8	PBW830	N-208	69.9	5	0	62.8	6	1	59.2	8	1	70.0	1	1	61.8	6	1	55.8	2	0
9	PBW831	N-209	71.8	3	0	64.9	1	1	60.3	6	1	58.9	24	0	60.1	11	1	53.0	8	0
10	NW7094	N-210	38.4	35	0	43.3	33	0	61.5	3	1	68.4	6	1	50.2	29	0	45.1	21	0
11	UP3057	N-211	65.1	7	0	61.9	7	1	45.1	31	0	62.1	16	0	50.9	28	0	45.8	19	0
12	WH1283	N-212	57.1	19	0	63.8	2	1	56.3	10	0	69.4	3	1	51.9	26	0	54.1	6	0
13	RAJ4550	N-213	60.0	11	0	48.9	20	0	53.3	12	0	49.6	35	0	52.6	25	0	41.3	26	0
14	DBW313	N-214	60.1	10	0	59.4	9	0	54.9	11	0	65.0	12	1	53.6	23	0	54.1	7	0
15	BRW3877	N-215	54.9	23	0	52.5	16	0	56.9	9	0	69.7	2	1	58.0	16	1	47.1	13	0
16	DBW312	N-216	61.6	9	0	63.6	3	1	47.2	28	0	58.6	26	0	61.3	8	1	54.4	5	0
17	UP3056	N-217	55.2	21	0	47.1	23	0	51.8	15	0	60.1	21	0	53.5	24	0	43.6	24	0
18	NW7088	N-218	50.7	30	0	45.9	24	0	43.3	32	0	59.4	22	0	46.5	36	0	36.8	32	0
19	HD3355	N-219	48.3	32	0	47.7	22	0	61.3	4	1	62.0	17	0	57.1	17	1	46.4	16	0
20	HUW841	N-220	58.1	16	0	43.6	32	0	49.2	22	0	41.0	36	0	56.8	18	1	51.0	10	0
21	K1904	N-221	76.3	1	1	43.9	31	0	63.0	1	1	59.0	23	0	58.7	14	1	43.7	23	0
22	HD3356	N-222	55.0	22	0	54.2	14	0	48.6	24	0	57.7	28	0	58.9	13	1	45.2	20	0
23	AAI-W22	N-223	55.8	20	0	48.3	21	0	41.2	34	0	55.4	30	0	62.3	1	1	48.9	12	0
24	HD3357	N-224	59.2	13	0	55.7	12	0	39.9	35	0	54.1	31	0	62.2	2	1	46.2	17	0
25	HUW840	N-225	50.2	31	0	43.1	35	0	50.3	20	0	50.7	34	0	55.9	19	0	32.4	36	0
26	KRL1803	N-227	58.2	15	0	63.1	5	1	60.8	5	1	62.4	14	0	55.2	20	0	54.5	4	0
27	KRL1808	N-228	57.4	18	0	53.1	15	0	41.3	33	0	61.6	18	0	49.5	32	0	35.5	34	0
28	JKW277	N-229	58.0	17	0	44.6	28	0	47.1	29	0	68.1	7	1	61.6	7	1	41.0	27	0
29	BRW3869	N-232	50.7	29	0	42.1	36	0	51.5	17	0	68.8	5	1	54.3	21	0	46.7	14	0
30	HD3354	N-233	72.6	2	1	44.2	29	0	59.5	7	1	60.8	20	0	59.4	12	1	46.6	15	0
31	DBW311	N-234	58.8	14	0	51.4	18	0	46.9	30	0	69.0	4	1	62.2	3	1	52.3	9	0
32	DBW310	N-236	37.8	36	0	60.6	8	0	48.2	25	0	65.5	9	1	49.8	31	0	42.4	25	0
33	HD2967 (C)	N-226	47.4	33	0	63.4	4	1	37.9	36	0	63.6	13	1	47.2	35	0	36.9	31	0
34	HD3086 (C)	N-230	53.6	24	0	58.3	10	0	47.9	26	0	58.1	27	0	60.9	10	1	50.8	11	0
35	DBW187 (C)	N-231	53.2	25	0	50.5	19	0	62.9	2	1	66.6	8	1	54.0	22	0	55.0	3	0
36	K1006 (C)	N-235	53.0	26	0	43.3	34	0	50.4	19	0	58.8	25	0	50.2	30	0	45.9	18	0
G.M.			57.1			51.9			51.4			60.8			55.8			45.8		
S.E.(M)			1.682			1.314			1.930			3.032			2.525			0.670		
C.D. (10%)			4.1			3.2			4.7			7.3			6.0			1.6		
C.V.			4.2			3.6			5.3			7.1			6.4			2.1		
D.O.S.(dd.mm.yy)			15.11.19			13.11.19			05.11.19			23.11.19			23.11.19			21.11.19		

1902-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ														
			Bihar									Jharkhand			W.B.		
			IARI-Pusa			Sabour			RPCAU-Pusa			Ranchi			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1274	N-201	36.2	31	0	62.0	3	1	47.6	20	0	69.7	9	1	37.7	28	0
2	JKW275	N-202	37.5	25	0	45.5	17	0	49.3	14	0	74.3	1	1	42.1	23	0
3	K1905	N-203	37.0	28	0	36.7	27	0	47.6	20	0	65.6	12	0	48.8	6	0
4	UP3055	N-204	46.4	3	1	43.2	23	0	57.5	2	1	70.3	7	1	46.8	11	0
5	NW7093	N-205	45.2	4	0	44.6	18	0	49.7	13	0	68.9	10	1	35.1	31	0
6	RAJ4549	N-206	36.7	30	0	30.5	33	0	46.4	27	0	53.0	34	0	38.9	26	0
7	K1903	N-207	35.6	33	0	51.6	8	0	51.4	7	0	64.0	16	0	35.4	30	0
8	PBW830	N-208	38.5	24	0	55.8	4	0	57.6	1	1	60.4	27	0	44.9	16	0
9	PBW831	N-209	42.7	11	0	49.1	9	0	50.3	11	0	73.3	3	1	31.1	33	0
10	NW7094	N-210	41.2	16	0	40.6	25	0	54.5	4	1	70.8	6	1	45.3	15	0
11	UP3057	N-211	41.2	15	0	47.2	14	0	51.4	7	0	63.0	20	0	49.2	5	0
12	WH1283	N-212	34.6	34	0	63.0	2	1	46.5	24	0	60.9	25	0	31.5	32	0
13	RAJ4550	N-213	42.8	10	0	24.9	35	0	43.8	33	0	63.1	18	0	40.9	24	0
14	DBW313	N-214	41.1	18	0	55.5	5	0	50.3	10	0	56.0	30	0	46.8	12	0
15	BRW3877	N-215	47.3	1	1	53.8	6	0	52.2	6	0	55.7	31	0	43.4	19	0
16	DBW312	N-216	44.0	6	0	35.9	29	0	46.5	24	0	59.6	29	0	47.5	9	0
17	UP3056	N-217	34.0	35	0	37.8	26	0	50.7	9	0	55.1	32	0	28.6	34	0
18	NW7088	N-218	39.8	22	0	31.8	32	0	44.1	32	0	67.4	11	1	48.4	8	0
19	HD3355	N-219	41.1	17	0	33.7	31	0	45.1	29	0	60.4	26	0	36.8	29	0
20	HUW841	N-220	42.8	9	0	44.3	20	0	46.9	23	0	61.9	22	0	46.8	13	0
21	K1904	N-221	33.2	36	0	47.9	13	0	46.4	27	0	54.1	33	0	38.7	27	0
22	HD3356	N-222	40.7	20	0	25.2	34	0	42.4	35	0	52.9	35	0	45.7	14	0
23	AAI-W22	N-223	37.4	26	0	35.9	28	0	57.2	3	1	63.1	19	0	48.4	7	0
24	HD3357	N-224	35.9	32	0	43.0	24	0	45.1	29	0	72.4	4	1	23.8	35	0
25	HUW840	N-225	40.6	21	0	35.2	30	0	42.4	35	0	40.2	36	0	44.5	18	0
26	KRL1803	N-227	43.7	7	0	48.0	12	0	46.5	24	0	64.7	14	0	43.0	21	0
27	KRL1808	N-228	41.4	13	0	21.4	36	0	43.1	34	0	61.7	23	0	22.3	36	0
28	JKW277	N-229	36.7	29	0	45.9	16	0	48.1	18	0	70.2	8	1	44.5	17	0
29	BRW3869	N-232	41.0	19	0	46.1	15	0	53.5	5	1	63.7	17	0	43.1	20	0
30	HD3354	N-233	37.4	27	0	43.3	22	0	49.3	14	0	64.4	15	0	42.6	22	0
31	DBW311	N-234	39.2	23	0	53.3	7	0	47.5	22	0	65.3	13	0	47.3	10	0
32	DBW310	N-236	41.3	14	0	49.1	10	0	47.9	19	0	62.6	21	0	40.2	25	0
33	HD2967 (C)	N-226	42.2	12	0	44.4	19	0	49.3	14	0	59.7	28	0	52.2	4	1
34	HD3086 (C)	N-230	44.6	5	0	48.5	11	0	49.0	17	0	61.6	24	0	54.6	2	1
35	DBW187 (C)	N-231	46.8	2	1	65.9	1	1	45.1	29	0	73.7	2	1	52.3	3	1
36	K1006 (C)	N-235	43.1	8	0	44.1	21	0	50.0	12	0	71.4	5	1	55.5	1	1
G.M.			40.3			44.0			48.7			63.2			42.4		
S.E.(M)			0.637			2.729			1.876			2.995			1.998		
C.D. (10%)			1.5			6.6			4.5			7.2			4.8		
C.V.			2.2			8.8			5.5			6.7			6.7		
D.O.S.(dd.mm.yy)			18.11.19			15.11.19			18.11.19			20.11.19			19.11.19		

1902-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1274	N-201	61.3	9	0	51.9	14	0	56.9	10	0
2	JKW275	N-202	58.5	13	0	51.6	15	0	55.2	13	0
3	K1905	N-203	57.9	15	0	48.7	25	0	53.6	19	0
4	UP3055	N-204	62.4	4	0	56.3	2	1	59.6	1	1
5	NW7093	N-205	52.3	26	0	47.9	26	0	50.2	27	0
6	RAJ4549	N-206	47.8	33	0	43.3	34	0	45.7	35	0
7	K1903	N-207	56.8	18	0	48.8	24	0	53.1	20	0
8	PBW830	N-208	62.0	6	0	55.6	3	1	59.0	3	1
9	PBW831	N-209	63.0	3	1	52.3	9	0	58.0	7	0
10	NW7094	N-210	55.4	23	0	52.0	13	0	53.8	18	0
11	UP3057	N-211	60.7	11	0	51.3	17	0	56.3	11	0
12	WH1283	N-212	64.8	2	1	51.5	16	0	58.5	4	1
13	RAJ4550	N-213	56.5	20	0	44.9	33	0	51.0	26	0
14	DBW313	N-214	61.6	7	0	52.8	7	0	57.5	9	0
15	BRW3877	N-215	62.1	5	0	53.4	6	0	58.0	6	0
16	DBW312	N-216	57.3	16	0	51.0	19	0	54.3	16	0
17	UP3056	N-217	58.1	14	0	45.4	32	0	52.1	23	0
18	NW7088	N-218	51.7	28	0	46.8	30	0	49.4	29	0
19	HD3355	N-219	55.3	24	0	47.8	27	0	51.8	24	0
20	HUW841	N-220	47.7	34	0	48.9	23	0	48.3	31	0
21	K1904	N-221	57.1	17	0	47.7	29	0	52.7	21	0
22	HD3356	N-222	52.3	27	0	46.1	31	0	49.4	30	0
23	AAI-W22	N-223	45.7	36	0	51.1	18	0	48.3	32	0
24	HD3357	N-224	56.4	21	0	47.8	28	0	52.4	22	0
25	HUW840	N-225	48.2	32	0	42.7	35	0	45.6	36	0
26	KRL1803	N-227	59.7	12	0	52.2	10	0	56.2	12	0
27	KRL1808	N-228	50.7	29	0	42.1	36	0	46.6	34	0
28	JKW277	N-229	56.1	22	0	52.0	12	0	54.1	17	0
29	BRW3869	N-232	56.6	19	0	52.2	11	0	54.5	15	0
30	HD3354	N-233	65.3	1	1	50.5	20	0	58.3	5	1
31	DBW311	N-234	55.0	25	0	54.5	4	0	54.8	14	0
32	DBW310	N-236	49.2	31	0	49.9	21	0	49.5	28	0
33	HD2967 (C)	N-226	46.2	35	0	49.4	22	0	47.7	33	0
34	HD3086 (C)	N-230	61.3	8	0	53.5	5	0	57.6	8	0
35	DBW187 (C)	N-231	61.1	10	0	57.4	1	1	59.4	2	1
36	K1006 (C)	N-235	50.6	30	0	52.4	8	0	51.5	25	0
G.M.			56.2			50.1			53.4		
S.E.(M)			0.996			0.794			0.646		
C.D. (10%)			2.3			1.8			1.5		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reactions				Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW. R	TGW.M
1	WH1274	N-201	20S	6.7	10S	2.5	93-112	101	132-163	150	88-112	101	10	Ey	A	H	41-51	44
2	JKW275	N-202	40S	12.9	10S	2.7	89-113	100	128-159	149	100-109	104	15	Ey	A	H	32-46	38
3	K1905	N-203	60S	30.0	20S	9.5	95-110	102	132-158	149	99-123	110	5	Ey	A	H	38-51	44
4	UP3055	N-204	20S	10.0	5S	1.3	99-115	106	136-161	151	85-113	102	10	Ey	A	H	32-43	39
5	NW7093	N-205	20S	6.0	10S	2.5	90-112	100	133-159	150	88-110	101	10	Ey	A	H	28-40	34
6	RAJ4549	N-206	80S	40.0	tMS	0.2	98-115	108	139-161	152	85-117	98	10	Ey	A	H	26-42	37
7	K1903	N-207	60S	15.7	5S	1.3	91-112	103	133-158	148	85-115	103	25	Ey	A	H	31-45	38
8	PBW830	N-208	20S	8.4	10S	2.7	93-112	101	134-161	150	82-113	96	5	Ey	A	H	39-51	44
9	PBW831	N-209	10S	3.4	5S	1.3	94-109	104	135-160	150	88-115	99	5	Ey	A	H	39-46	42
10	NW7094	N-210	20S	7.4	5S	1.3	96-112	105	137-165	152	93-116	104	15	Ey	A	H	32-44	40
11	UP3057	N-211	60S	25.9	10MR	1.0	95-110	105	140-163	153	85-117	108	10	Ey	A	H	35-40	38
12	WH1283	N-212	20S	4.3	5S	1.3	93-110	101	133-163	150	91-114	101	5	Ey	A	H	34-46	43
13	RAJ4550	N-213	60S	32.3	40S	15.0	86-110	99	127-158	148	90-112	99	15	Ey	A	SH	32-40	38
14	DBW313	N-214	20S	10.7	10S	2.7	99-115	106	135-161	150	90-118	100	10	Ey	A	H	39-50	42
15	BRW3877	N-215	20S	10.4	20S	5.5	96-108	103	129-160	149	95-118	108	20	Ey	A	H	36-53	44
16	DBW312	N-216	60S	34.3	5S	1.3	94-112	106	136-162	152	85-115	100	5	Ey	A	H	31-39	35
17	UP3056	N-217	40S	15.0	5S	1.3	95-110	104	133-163	151	100-118	108	15	Ey	A	H	34-43	39
18	NW7088	N-218	40S	19.9	40S	12.0	95-108	103	135-158	151	88-117	103	25	Ey	A	SH	33-43	38
19	HD3355	N-219	80S	35.7	10S	2.5	93-110	103	137-159	149	90-119	106	15	Ey	A	H	31-46	39
20	HUW841	N-220	60S	35.4	10S	3.8	93-110	102	132-163	150	90-117	102	20	Ey	A	H	33-42	38
21	K1904	N-221	60S	28.6	10MR	1.0	90-108	100	130-155	146	95-118	105	15	Ey	A	SH	40-46	43
22	HD3356	N-222	80S	50.0	20S	5.0	93-115	107	146-163	153	90-117	103	15	Ey	A	SH	30-40	36
23	AAI-W22	N-223	80S	45.7	60S	27.0	93-108	101	131-159	147	90-115	100	15	Ey	A	H	29-42	37
24	HD3357	N-224	60S	29.3	10S	3.8	94-110	101	132-155	148	93-110	102	10	Ey	A	H	38-47	41
25	HUW840	N-225	60S	32.1	5S	2.8	100-115	108	145-164	153	88-104	98	10	Ey	A	H	32-42	39
26	KRL1803	N-227	20S	11.4	0	0	93-108	100	132-163	150	95-115	103	15	Ey	A	H	33-44	41
27	KRL1808	N-228	60S	25.7	20S	5.0	97-114	107	145-163	154	90-117	107	15	Ey	A	H	36-49	42
28	JKW277	N-229	80S	37.1	20S	5.0	91-108	101	133-157	148	92-116	106	20	Ey	A	H	37-48	42
29	BRW3869	N-232	60S	31.6	10S	3.8	96-108	104	135-162	150	90-120	109	30	Ey	A	H	38-49	41
30	HD3354	N-233	40S	12.6	5MR	0.5	90-108	101	132-161	150	95-120	106	10	Ey	A	H	38-44	42
31	DBW311	N-234	40S	20.0	5S	3.8	90-107	100	132-159	148	95-110	102	25	Ey	A	H	38-43	40
32	DBW310	N-236	80S	35.1	5S	2.5	102-110	107	141-161	153	89-120	103	20	Ey	A	H	28-42	36
33	HD2967 (C)	N-226	60S	30.0	tMS	0.2	99-116	108	135-164	154	88-113	104	10	Ey	A	H	32-41	37
34	HD3086 (C)	N-230	60S	29.3	40S	12.5	90-108	99	127-157	147	82-118	101	15	Ey	A	H	34-45	40
35	DBW187 (C)	N-231	40S	18.6	5S	1.3	90-110	101	131-161	150	97-113	107	15	Ey	A	H	37-49	43
36	K1006 (C)	N-235	60S	35.4	15MS	5.5	91-108	101	132-159	148	90-115	103	25	Ey	A	H	32-43	37

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

NIVT-1B-IR-TS-TAS, 2019-20
North Western Plains Zone
Individual Station Rust Data

SN	Variety	Code	Yellow Rust							Brown Rust			
			Jammu	Ludhiana	Karnal	Delhi	Gurdaspur	Hisar	Pantnagar	Delhi	Gurdaspur	Hisar	Pantnagar
1	WH1274	N-201	20S	20S	5MR	0	5S	0	0	10S	0	0	0
2	JKW275	N-202	40S	20S	20MS	0	10S	5MS	0	10S	0	0	tMS
3	K1905	N-203	60S	60S	60S	0	20S	0	10S	0	20S	10S	10MS
4	UP3055	N-204	20S	20S	10S	10S	10S	0	0	0	0	5S	0
5	NW7093	N-205	10MS	20S	10MR	0	10S	0	0	10S	0	0	0
6	RAJ4549	N-206	60S	80S	80S	0	40S	10S	10S	0	0	0	tMS
7	K1903	N-207	20S	60S	20S	0	10S	0	0	5S	0	0	0
8	PBW830	N-208	5MS	10S	20S	0	20S	5S	0	10S	0	0	tMS
9	PBW831	N-209	5MR	10S	5MR	0	10S	0	0	5S	0	0	0
10	NW7094	N-210	10S	20S	5MR	0	20S	0	0	0	0	0	5S
11	UP3057	N-211	40S	60S	40S	0	40S	0	tS	10MR	0	0	0
12	WH1283	N-212	20S	5MR	10MR	0	5MS	0	0	5S	0	0	0
13	RAJ4550	N-213	60S	60S	60S	5S	40S	0	tS	0	0	20S	40S
14	DBW313	N-214	20S	20S	10S	5S	10S	5S	5S	0	0	10S	tMS
15	BRW3877	N-215	20S	20S	10MS	0	20S	0	5S	20S	0	5MR	0
16	DBW312	N-216	60S	60S	60S	0	40S	10S	10S	5S	0	0	0
17	UP3056	N-217	20S	40S	20S	0	20S	5S	0	5S	0	0	0
18	NW7088	N-218	20S	40S	40S	20S	10S	10MS	tS	40S	0	0	10MS
19	HD3355	N-219	60S	40S	80S	0	60S	10S	0	10S	0	0	0
20	HUW841	N-220	60S	60S	60S	0	60S	0	10MS	5S	0	10S	0
21	K1904	N-221	60S	40S	60S	0	40S	0	0	10MR	0	0	0
22	HD3356	N-222	60S	80S	80S	10S	60S	40S	20S	20S	0	0	0
23	AAI-W22	N-223	80S	80S	60S	0	60S	20S	20S	10MS	0	60S	40S
24	HD3357	N-224	60S	40S	60S	0	40S	0	5S	10S	0	0	5S
25	HUW840	N-225	60S	60S	60S	0	40S	0	5S	5S	0	5S	tS
26	KRL1803	N-227	20S	20S	20S	0	20S	0	0	0	0	0	0
27	KRL1808	N-228	40S	60S	40S	0	40S	0	0	20S	0	0	0
28	JKW277	N-229	60S	60S	80S	0	40S	10S	10S	0	0	0	20S
29	BRW3869	N-232	60S	40S	60S	0	60S	0	tS	10S	0	0	5S
30	HD3354	N-233	10MS	40S	20S	0	20S	0	0	5MR	0	0	0
31	DBW311	N-234	40S	40S	40S	0	20S	0	0	5S	tR	5S	5S
32	DBW310	N-236	60S	40S	80S	0	60S	5S	tS	5S	0	0	5S
33	HD2967 (C)	N-226	60S	40S	40S	0	40S	20S	10S	0	0	0	tMS
34	HD3086 (C)	N-230	20S	60S	60S	0	20S	40S	5S	40S	5S	0	5S
35	DBW187 (C)	N-231	40S	40S	20S	0	20S	5S	5S	5S	0	0	0
36	K1006 (C)	N-235	60S	60S	60S	0	60S	0	10MS	5S	0	5S	15MS

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-1B-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reactions			Agronomic Characteristics								Grain Characteristics			
			Br	ACI	LB HS (Av.)	Hd. R	Hd. M	Mat. R	Mat. M	Ht. R	Ht. M	Lod. M	Thr.	Col.	Tex.	TGW. R	TGW. M
1	WH1274	N-201	40S	9.0	68(35)	68-87	79	107-131	124	83-101	92	5	Ey	A	H	32-53	44
2	JKW275	N-202	5S	0.8	79(35)	66-88	78	105-130	124	88-103	97	0	Ey	A	SH	30-53	39
3	K1905	N-203	5S	1.7	68(35)	72-89	81	113-132	124	95-111	104	30	Ey	A	SH	34-54	44
4	UP3055	N-204	10S	1.7	57(35)	74-94	86	115-135	128	88-106	96	5	Ey	A	H	32-50	42
5	NW7093	N-205	0	0	68(35)	64-93	79	102-131	122	86-104	96	20	Ey	A	SH	32-44	37
6	RAJ4549	N-206	10S	1.7	68(34)	77-96	90	122-138	130	86-100	94	15	Ey	A	SH	31-48	40
7	K1903	N-207	5MS	0.7	68(35)	73-89	82	114-134	126	91-115	103	10	Ey	A	SH	34-51	40
8	PBW830	N-208	0	0	46(34)	65-87	78	105-131	122	83-105	91	5	Ey	A	SH	31-58	44
9	PBW831	N-209	5S	0.8	57(24)	74-92	85	114-138	127	85-103	94	5	Ey	A	H	26-53	40
10	NW7094	N-210	0	0	68(34)	74-91	85	115-135	127	83-116	101	0	Ey	A	H	30-49	40
11	UP3057	N-211	5S	0.8	57(24)	75-92	85	116-136	128	93-110	101	0	Ey	A	H	34-49	42
12	WH1283	N-212	5S	1.7	57(35)	67-87	78	107-130	123	82-103	91	5	Ey	A	SH	35-52	45
13	RAJ4550	N-213	30S	10.8	79(45)	64-87	77	106-129	121	84-102	92	5	Ey	A	SH	22-51	38
14	DBW313	N-214	20S	4.1	36(24)	76-91	85	118-133	128	87-100	94	5	Ey	A	H	36-53	44
15	BRW3877	N-215	5S	3.3	45(24)	71-90	83	113-138	127	90-114	103	25	Ey	A	SH	34-54	46
16	DBW312	N-216	10MS	2.2	57(34)	73-93	86	112-136	128	80-94	90	10	Ey	A	SH	34-43	38
17	UP3056	N-217	10S	2.3	68(35)	67-90	83	106-131	125	92-110	100	5	Ey	A	SH	26-47	39
18	NW7088	N-218	10S	2.5	57(34)	73-90	83	112-130	125	90-107	99	25	Ey	A	H	25-50	39
19	HD3355	N-219	20S	3.3	79(34)	73-90	84	114-133	126	90-110	102	20	Ey	A	H	27-52	41
20	HUW841	N-220	10S	2.3	46(24)	73-91	81	113-133	125	87-108	99	15	Ey	A	SH	32-50	40
21	K1904	N-221	5MS	0.7	79(45)	68-86	79	110-129	121	86-110	95	10	Ey	A	SH	24-52	41
22	HD3356	N-222	20S	4.2	46(34)	79-94	89	127-137	130	86-107	98	15	Ey	A	H	29-56	39
23	AAI-W22	N-223	80S	63.3	68(35)	69-89	81	111-136	126	90-103	98	5	Ey	A	SH	31-51	43
24	HD3357	N-224	40S	16.3	68(35)	66-89	80	115-132	124	85-104	96	15	Ey	A	H	32-56	42
25	HUW840	N-225	40S	14.2	45(24)	78-95	90	126-140	132	87-104	96	5	Ey	A	H	32-46	39
26	KRL1803	N-227	0	0	79(34)	72-85	79	113-132	123	83-107	98	5	Ey	A	H	35-53	43
27	KRL1808	N-228	10S	1.7	79(24)	82-95	91	126-137	131	97-113	105	20	Ey	A	SH	29-51	41
28	JKW277	N-229	20S	12.3	68(35)	72-89	82	115-132	124	92-111	101	5	Ey	A	H	31-58	45
29	BRW3869	N-232	40S	10.0	46(35)	73-89	83	117-135	127	93-111	104	25	Ey	A	SH	30-60	44
30	HD3354	N-233	0	0	68(34)	72-85	80	113-129	122	90-120	102	5	Ey	A	H	26-57	44
31	DBW311	N-234	40S	15.5	68(35)	66-85	79	105-132	123	85-102	96	5	Ey	A	SH	25-51	40
32	DBW310	N-236	80S	36.7	57(24)	83-95	92	127-138	132	91-113	102	15	Ey	A	H	30-44	39
33	HD2967 (C)	N-226	5S	0.8	46(24)	82-99	94	131-142	135	94-106	99	20	Ey	A	H	26-52	40
34	HD3086 (C)	N-230	40S	13.0	79(35)	67-88	77	106-131	123	85-102	96	5	Ey	A	H	27-47	40
35	DBW187 (C)	N-231	5S	1.7	57(35)	68-87	78	108-131	123	87-110	100	20	Ey	A	H	33-56	44
36	K1006 (C)	N-235	40S	26.7	68(35)	64-88	79	110-132	125	88-110	99	25	Ey	A	H	30-53	41

1. Ancillary data from Kanpur, Ayodhya, Varanasi, IARI-Pusa, RPCAU-Pusa, Sabour, Ranchi, Kalyani, Coochbehar, Manikchak and Shillongani.
2. Brown rust data from Kanpur, IARI-Pusa, Sabour, Kalyani, Coochbehar and Manikchak; 3. Leaf blight data from Ayodhya, IARI-Pusa, Sabour, Ranchi, Kalyani, Coochbehar, Manikchak and Shillongani; 4. Lodging data from Kanpur, Sabour, Kalyani, Coochbehar, Manikchak and Shillongani.

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North Eastern Plains Zone
Individual Station Brown Rust and Leaf Blight Data

SN	Variety	Code	Brown Rust						Leaf Blight							
			Kanpur	IARI-Pusa	Sabour	Kalyani	Cooch behar	Manick chak	Ayodhya	IARI-Pusa	Sabour	Ranchi	Kalyani	Cooch behar	Manik chak	Shillongani
1	WH1274	N-201	10MR	5S	5S	0	40S	0	25	24	68	12	57	45	12	46
2	JKW275	N-202	0	5S	0	0	0	0	24	45	79	13	57	35	13	35
3	K1905	N-203	0	5S	5S	0	0	0	12	35	68	24	57	34	12	46
4	UP3055	N-204	0	10S	0	0	0	0	23	24	46	13	57	34	13	46
5	NW7093	N-205	0	0	0	0	0	0	46	23	68	03	45	34	12	36
6	RAJ4549	N-206	0	10S	0	0	0	0	23	45	68	02	45	45	12	13
7	K1903	N-207	0	0	0	0	5MS	0	24	45	68	13	46	34	13	25
8	PBW830	N-208	0	0	0	0	0	0	25	34	46	12	35	45	13	24
9	PBW831	N-209	0	0	5S	0	0	0	24	34	57	02	35	34	00	36
10	NW7094	N-210	0	0	0	0	0	0	12	35	68	13	35	23	13	36
11	UP3057	N-211	0	5S	0	0	0	0	12	35	57	24	24	34	13	24
12	WH1283	N-212	0	5S	0	0	0	5S	24	34	57	23	57	45	12	35
13	RAJ4550	N-213	20S	30S	5S	0	0	10S	23	45	79	13	67	34	13	46
14	DBW313	N-214	0	20S	5S	0	0	0	36	34	35	03	24	34	14	12
15	BRW3877	N-215	10S	5S	0	0	0	5S	45	23	35	12	25	34	13	35
16	DBW312	N-216	0	5S	0	0	10MS	0	35	23	57	13	45	34	12	12
17	UP3056	N-217	0	10S	0	0	5MS	0	24	35	68	03	57	45	00	24
18	NW7088	N-218	0	10S	5S	0	0	0	12	34	35	03	57	34	13	46
19	HD3355	N-219	0	20S	0	0	0	0	12	34	79	12	46	45	00	46
20	HUW841	N-220	0	10S	0	0	5MS	0	12	23	46	13	35	34	12	35
21	K1904	N-221	0	0	0	0	5MS	0	24	46	79	12	57	45	12	46
22	HD3356	N-222	0	20S	0	0	0	5S	46	45	46	13	35	34	12	12
23	AAI-W22	N-223	80S	80S	80S	40S	80S	20S	23	45	68	24	56	23	13	36
24	HD3357	N-224	40S	40S	5S	0	10MS	5S	23	34	68	23	57	45	13	36
25	HUW840	N-225	0	30S	5S	10S	40S	0	24	45	35	13	35	23	13	14
26	KRL1803	N-227	0	0	0	0	0	0	12	34	79	02	57	45	00	36
27	KRL1808	N-228	0	10S	0	0	0	0	12	34	79	12	25	34	13	14
28	JKW277	N-229	20S	20S	20S	10S	5MS	0	23	46	68	13	45	45	13	46
29	BRW3869	N-232	40S	5S	5S	5S	0	5S	46	23	35	24	35	34	14	46
30	HD3354	N-233	0	0	0	0	0	0	12	34	68	23	45	45	13	24
31	DBW311	N-234	40S	30S	5S	10S	10MS	0	24	35	68	24	46	34	12	46
32	DBW310	N-236	40S	20S	80S	10S	60S	10S	23	23	57	14	13	34	12	12
33	HD2967 (C)	N-226	0	5S	0	0	0	0	36	12	46	03	13	12	12	24
34	HD3086 (C)	N-230	40S	10S	5S	10S	10MS	5S	24	46	79	03	57	34	00	35
35	DBW187 (C)	N-231	0	5S	5S	0	0	0	12	35	35	13	57	34	14	46
36	K1006 (C)	N-235	30S	10S	40S	40S	40S	0	36	34	35	15	68	34	14	36

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LOCATIONWISE MEAN YIELD (q/ha)

SN	VARIETY	Code	CZ														
			Madhya Pradesh												Chhattisgarh		
			Indore			Powarkheda			Gwalior			Jabalpur			Bilaspur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW521	N-301	58.4	3	1	66.9	11	1	77.8	21	0	62.3	20	0	41.8	27	0
2	MP3535	N-302	44.9	28	0	71.4	3	1	86.1	6	0	70.1	8	1	56.1	3	1
3	RVW4301	N-304	48.8	17	0	60.4	30	0	74.3	28	0	51.4	35	0	31.9	36	0
4	UAS3012	N-305	51.7	8	0	58.2	33	0	80.6	16	0	73.3	2	1	43.4	23	0
5	NWS2176	N-306	46.8	24	0	61.1	28	0	81.3	13	0	58.7	27	0	34.6	35	0
6	RVW4304	N-307	56.5	6	0	67.8	9	1	87.5	4	1	73.9	1	1	37.3	32	0
7	DBW314	N-309	50.5	13	0	72.3	2	1	79.9	17	0	65.5	13	0	37.7	30	0
8	HI1650	N-310	62.8	1	1	65.4	15	0	66.4	35	0	65.3	14	0	52.4	10	1
9	HD3376	N-311	40.6	34	0	64.7	17	0	77.8	21	0	63.6	17	0	35.6	33	0
10	HI1648	N-313	51.3	10	0	60.4	29	0	83.9	11	0	70.9	7	1	44.5	22	0
11	WH1275	N-314	41.6	32	0	64.4	18	0	97.0	1	1	65.0	15	0	47.3	18	0
12	MACS3735	N-315	60.4	2	1	56.7	35	0	68.8	33	0	72.9	3	1	53.3	8	1
13	UAS3011	N-316	47.3	22	0	66.7	14	1	77.1	23	0	49.9	36	0	51.5	12	0
14	GW522	N-317	47.2	23	0	70.4	6	1	71.9	31	0	71.6	6	1	52.1	11	1
15	NIAW3889	N-318	50.7	12	0	67.1	10	1	86.1	6	0	53.7	31	0	43.4	23	0
16	HI1649	N-319	50.3	14	0	58.4	32	0	72.6	29	0	55.2	29	0	37.4	31	0
17	NIAW3882	N-320	42.2	31	0	62.5	25	0	86.8	5	1	61.7	22	0	42.6	26	0
18	AKAW5099	N-321	49.9	15	0	63.8	20	0	79.2	19	0	54.7	30	0	49.4	16	0
19	HD3359	N-322	46.1	25	0	65.0	16	0	76.4	24	0	72.4	4	1	45.4	20	0
20	MP1369	N-323	58.2	4	1	72.9	1	1	72.2	30	0	69.0	10	1	56.3	2	1
21	UP3058	N-324	39.2	35	0	56.9	34	0	63.1	36	0	57.4	28	0	39.9	29	0
22	HI1647	N-325	49.7	16	0	70.9	5	1	70.7	32	0	69.7	9	1	45.8	19	0
23	MACS6764	N-326	52.9	7	0	62.3	26	0	79.7	18	0	51.9	34	0	40.9	28	0
24	PBW832	N-327	48.2	19	0	61.8	27	0	76.4	24	0	61.3	23	0	43.2	25	0
25	GW523	N-328	47.8	20	0	66.8	13	1	92.1	3	1	69.0	11	1	51.5	12	0
26	MP1370	N-329	48.6	18	0	63.6	21	0	79.2	19	0	59.7	25	0	54.8	5	1
27	CG1034	N-330	46.1	26	0	64.1	19	0	75.7	26	0	61.9	21	0	56.7	1	1
28	MACS6768	N-331	51.3	9	0	68.9	8	1	92.4	2	1	62.7	18	0	53.9	6	1
29	RAJ4551	N-332	47.5	21	0	59.5	31	0	66.7	34	0	52.1	33	0	35.1	34	0
30	DBW315	N-333	43.5	29	0	62.7	23	0	84.5	9	0	59.5	26	0	48.1	17	0
31	MP3526	N-334	50.9	11	0	62.6	24	0	75.0	27	0	71.9	5	1	56.0	4	1
32	MP1371	N-335	43.0	30	0	69.3	7	1	80.6	14	0	62.6	19	0	53.6	7	1
33	MACS6478 (C)	N-303	29.1	36	0	62.9	22	0	84.0	10	0	53.7	32	0	53.1	9	1
34	HI1544 (C)	N-308	57.5	5	1	66.9	12	1	80.6	14	0	60.2	24	0	44.6	21	0
35	GW322 (C)	N-312	45.0	27	0	53.9	36	0	83.3	12	0	63.9	16	0	49.6	15	0
36	MACS6222 (C)	N-336	41.6	33	0	71.0	4	1	86.1	6	0	66.3	12	0	50.9	14	0
G.M.			48.6			64.5			79.3			62.9			46.4		
S.E.(M)			2.379			2.640			4.388			2.932			1.946		
C.D. (10%)			5.7			6.4			10.5			7.1			4.6		
C.V.			6.9			5.8			7.8			6.6			5.9		
D.O.S.(DD.MM.YY)			18.11.19			16.11.19			14.11.19			14.11.19			11.11.19		

No. of Trials : Proposed =17 Conducted =17

Trials not reported (04) = Dharwad (RMT), Sagar (LS), Akola (LSM), Parbhani (LSM)

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LOCATIONWISE MEAN YIELD (q/ha)

SN	VARIETY	Code	CZ												PZ		
			Gujarat						Rajasthan						Maharashtra		
			Junagarh			Vijapur			Kota			Udaipur			Niphad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW521	N-301	56.9	21	0	50.3	22	0	65.6	7	1	59.8	18	0	49.5	15	1
2	MP3535	N-302	56.7	22	0	54.4	14	1	59.8	15	1	65.3	5	1	52.4	8	1
3	RVW4301	N-304	51.8	29	0	46.6	31	0	56.9	26	0	47.2	31	0	35.1	33	0
4	UAS3012	N-305	60.2	10	0	53.1	15	0	59.6	17	1	50.1	27	0	50.9	12	1
5	NWS2176	N-306	64.3	4	1	61.3	3	1	53.2	34	0	64.1	10	1	53.6	5	1
6	RVW4304	N-307	61.9	8	1	46.6	30	0	56.4	27	0	63.8	11	1	56.6	2	1
7	DBW314	N-309	57.2	19	0	52.9	16	0	58.2	23	0	57.6	21	0	55.2	3	1
8	HI1650	N-310	62.3	6	1	58.4	6	1	67.6	5	1	64.4	8	1	44.2	23	0
9	HD3376	N-311	49.4	31	0	52.4	19	0	60.4	12	1	62.1	15	1	30.4	35	0
10	HI1648	N-313	59.9	11	0	52.2	20	0	56.0	29	0	44.0	34	0	52.5	7	1
11	WH1275	N-314	59.2	13	0	40.8	35	0	65.8	6	1	64.4	9	1	26.3	36	0
12	MACS3735	N-315	48.0	33	0	49.9	24	0	68.1	3	1	49.5	28	0	46.9	21	0
13	UAS3011	N-316	58.7	16	0	52.7	18	0	62.5	8	1	71.6	1	1	54.4	4	1
14	GW522	N-317	48.6	32	0	44.7	33	0	58.2	24	0	31.2	36	0	43.8	24	0
15	NIAW3889	N-318	52.8	28	0	49.6	25	0	57.0	25	0	52.6	25	0	48.5	17	1
16	HI1649	N-319	58.9	15	0	61.1	5	1	58.2	22	0	64.7	7	1	50.1	13	1
17	NIAW3882	N-320	57.2	18	0	55.3	11	1	59.7	16	1	44.1	33	0	47.2	19	0
18	AKAW5099	N-321	54.3	27	0	54.7	12	1	60.4	13	1	68.2	4	1	38.4	29	0
19	HD3359	N-322	61.8	9	1	50.0	23	0	53.6	33	0	62.8	12	1	37.9	30	0
20	MP1369	N-323	58.3	17	0	44.8	32	0	51.6	35	0	47.6	30	0	37.2	31	0
21	UP3058	N-324	47.8	34	0	49.0	26	0	41.1	36	0	42.8	35	0	30.4	34	0
22	HI1647	N-325	67.8	1	1	56.2	10	1	69.5	2	1	46.4	32	0	47.5	18	0
23	MACS6764	N-326	55.8	24	0	48.1	27	0	55.2	30	0	54.2	24	0	42.2	27	0
24	PBW832	N-327	59.8	12	0	54.7	13	1	59.6	17	1	62.3	14	1	52.6	6	1
25	GW523	N-328	59.1	14	0	58.2	7	1	62.2	9	1	69.5	2	1	42.6	26	0
26	MP1370	N-329	43.1	36	0	37.1	36	0	60.9	11	1	56.1	23	0	44.9	22	0
27	CG1034	N-330	65.0	3	1	61.3	4	1	71.8	1	1	62.8	13	1	51.7	9	1
28	MACS6768	N-331	57.0	20	0	56.3	9	1	58.8	19	0	59.0	20	0	51.2	10	1
29	RAJ4551	N-332	56.0	23	0	43.2	34	0	54.8	32	0	48.1	29	0	35.7	32	0
30	DBW315	N-333	50.5	30	0	52.9	17	0	58.6	20	0	62.1	16	1	49.5	14	1
31	MP3526	N-334	55.1	25	0	61.6	2	1	55.1	31	0	52.0	26	0	47.0	20	0
32	MP1371	N-335	62.0	7	1	57.9	8	1	67.7	4	1	68.3	3	1	48.8	16	1
33	MACS6478 (C)	N-303	54.6	26	0	51.7	21	0	61.8	10	1	56.3	22	0	42.7	25	0
34	HI1544 (C)	N-308	46.6	35	0	48.0	28	0	58.6	21	0	60.1	17	0	56.7	1	1
35	GW322 (C)	N-312	66.7	2	1	47.7	29	0	60.1	14	1	59.2	19	0	41.8	28	0
36	MACS6222 (C)	N-336	63.0	5	1	63.1	1	1	56.1	28	0	65.3	6	1	51.1	11	1
G.M.			56.9			52.2			59.5			57.2			45.8		
S.E.(M)			3.020			4.010			5.408			4.594			3.456		
C.D. (10%)			7.3			9.7			12.9			11.0			8.3		
C.V.			7.5			10.9			12.9			11.4			10.7		
D.O.S.(DD.MM.YY)			13.11.19			13.11.19			19.11.19			11.11.19			28.11.19		

1903-NIVT-2-IR-TS-TAS-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ								
			Maharashtra			Karnataka					
			Pune			UgarKhurd			Nippani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW521	N-301	56.4	15	0	49.1	6	1	30.6	35	0
2	MP3535	N-302	64.8	3	1	43.1	18	0	34.0	29	0
3	RVW4301	N-304	40.5	35	0	34.9	35	0	31.0	34	0
4	UAS3012	N-305	59.0	11	0	41.2	26	0	45.0	14	1
5	NWS2176	N-306	56.6	14	0	41.7	23	0	36.0	25	0
6	RVW4304	N-307	56.1	18	0	41.6	24	0	42.5	17	1
7	DBW314	N-309	59.9	10	0	42.1	20	0	46.9	8	1
8	HI1650	N-310	55.9	19	0	42.0	21	0	46.9	8	1
9	HD3376	N-311	35.1	36	0	31.9	36	0	35.6	26	0
10	HI1648	N-313	61.9	7	1	46.5	10	1	56.7	1	1
11	WH1275	N-314	43.6	33	0	43.5	17	0	43.1	16	1
12	MACS3735	N-315	47.9	30	0	37.5	31	0	35.0	27	0
13	UAS3011	N-316	67.1	1	1	50.8	5	1	50.4	4	1
14	GW522	N-317	48.9	29	0	41.9	22	0	33.3	30	0
15	NIAW3889	N-318	61.7	8	1	46.5	9	1	33.1	31	0
16	HI1649	N-319	65.3	2	1	51.7	4	1	46.0	12	1
17	NIAW3882	N-320	53.5	24	0	44.1	15	0	51.7	3	1
18	AKAW5099	N-321	51.5	26	0	38.3	29	0	32.9	32	0
19	HD3359	N-322	40.9	34	0	35.2	33	0	49.5	5	1
20	MP1369	N-323	49.9	28	0	46.2	11	1	47.9	6	1
21	UP3058	N-324	47.0	31	0	36.9	32	0	40.6	20	1
22	HI1647	N-325	63.2	4	1	44.2	14	0	37.9	23	0
23	MACS6764	N-326	58.8	12	0	41.2	25	0	55.4	2	1
24	PBW832	N-327	54.9	20	0	45.1	12	1	31.7	33	0
25	GW523	N-328	58.2	13	0	40.4	27	0	36.7	24	0
26	MP1370	N-329	45.8	32	0	37.6	30	0	34.6	28	0
27	CG1034	N-330	60.8	9	0	47.1	7	1	46.7	10	1
28	MACS6768	N-331	56.1	17	0	39.6	28	0	47.7	7	1
29	RAJ4551	N-332	50.4	27	0	44.4	13	0	39.8	22	0
30	DBW315	N-333	53.7	23	0	53.5	1	1	29.8	36	0
31	MP3526	N-334	62.3	6	1	35.2	34	0	41.9	18	1
32	MP1371	N-335	56.2	16	0	46.8	8	1	40.6	20	1
33	MACS6478 (C)	N-303	54.5	21	0	52.0	3	1	41.0	19	1
34	HI1544 (C)	N-308	53.1	25	0	43.7	16	0	46.7	10	1
35	GW322 (C)	N-312	54.2	22	0	43.1	19	0	44.4	15	1
36	MACS6222 (C)	N-336	62.7	5	1	52.7	2	1	45.4	13	1
G.M.			54.7			43.1			41.4		
S.E.(M)			2.580			3.522			6.846		
C.D. (10%)			6.2			8.5			16.4		
C.V.			6.7			11.5			23.4		
D.O.S.(dd.mm.yy)			20.11.19			20.11.19			19.11.19		

1903-NIVT-2-IR-TS-TAS-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW521	N-301	60.0	12	0	46.4	22	0	55.8	16	0
2	MP3535	N-302	62.8	4	1	48.6	13	0	58.4	4	1
3	RVW4301	N-304	52.1	34	0	35.4	35	0	47.0	35	0
4	UAS3012	N-305	58.9	18	0	49.0	11	0	55.9	15	0
5	NWS2176	N-306	58.4	22	0	47.0	19	0	54.9	18	0
6	RVW4304	N-307	61.3	8	1	49.2	9	0	57.6	9	1
7	DBW314	N-309	59.1	16	0	51.0	6	1	56.6	12	0
8	HI1650	N-310	62.8	5	1	47.3	18	0	58.0	8	1
9	HD3376	N-311	56.3	30	0	33.3	36	0	49.2	33	0
10	HI1648	N-313	58.1	23	0	54.4	2	1	57.0	10	0
11	WH1275	N-314	60.6	10	0	39.1	33	0	54.0	25	0
12	MACS3735	N-315	58.6	20	0	41.8	29	0	53.4	30	0
13	UAS3011	N-316	59.8	13	0	55.7	1	1	58.5	3	1
14	GW522	N-317	55.1	33	0	42.0	28	0	51.1	32	0
15	NIAW3889	N-318	57.0	27	0	47.5	17	0	54.1	24	0
16	HI1649	N-319	57.4	26	0	53.3	3	1	56.2	13	0
17	NIAW3882	N-320	56.9	28	0	49.1	10	0	54.5	23	0
18	AKAW5099	N-321	59.4	14	0	40.3	32	0	53.5	29	0
19	HD3359	N-322	59.3	15	0	40.9	30	0	53.6	28	0
20	MP1369	N-323	59.0	17	0	45.3	25	0	54.8	20	0
21	UP3058	N-324	48.6	36	0	38.7	34	0	45.5	36	0
22	HI1647	N-325	60.7	9	0	48.2	14	0	56.9	11	0
23	MACS6764	N-326	55.7	32	0	49.4	8	0	53.7	26	0
24	PBW832	N-327	58.6	21	0	46.1	23	0	54.7	21	0
25	GW523	N-328	64.0	1	1	44.5	26	0	58.0	7	1
26	MP1370	N-329	55.9	31	0	40.7	31	0	51.2	31	0
27	CG1034	N-330	62.8	2	1	51.6	5	1	59.3	2	1
28	MACS6768	N-331	62.2	7	1	48.6	12	0	58.1	6	1
29	RAJ4551	N-332	51.4	35	0	42.6	27	0	48.7	34	0
30	DBW315	N-333	58.0	25	0	46.6	20	0	54.5	22	0
31	MP3526	N-334	60.0	11	0	46.6	21	0	55.9	14	0
32	MP1371	N-335	62.8	3	1	48.1	15	0	58.3	5	1
33	MACS6478 (C)	N-303	56.4	29	0	47.5	16	0	53.7	27	0
34	HI1544 (C)	N-308	58.1	24	0	50.1	7	0	55.6	17	0
35	GW322 (C)	N-312	58.8	19	0	45.9	24	0	54.8	19	0
36	MACS6222 (C)	N-336	62.6	6	1	53.0	4	1	59.6	1	1
G.M.			58.6			46.2			54.8		
S.E.(M)			1.216			2.206			1.082		
C.D. (10%)			2.8			5.2			2.5		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-2-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics								Grain Characteristics			
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW521	N-301	0	0	53-85	65	98-136	117	71-115	91	0	Ey	A	SH	35-53	44
2	MP3535	N-302	tMR	20S	56-82	69	107-139	119	70-114	92	5	Ey	A	So	36-47	41
3	RVW4301	N-304	0	tR	50-81	60	97-135	116	72-110	89	20	H	A	SH	36-50	43
4	UAS3012	N-305	tR	tR	65-94	77	109-141	125	83-108	96	20	Ey	A	H	38-50	45
5	NWS2176	N-306	0	20S	56-82	69	104-132	119	75-105	89	10	Ey	A	SH	39-50	44
6	RVW4304	N-307	tR	20MS	55-84	70	102-133	120	73-110	94	10	H	A	SH	38-50	45
7	DBW314	N-309	tR	10R	64-94	75	108-140	123	78-114	95	0	Ey	A	H	37-47	42
8	HI1650	N-310	0	10R	54-83	68	100-136	117	72-112	92	0	Ey	A	SH	42-54	47
9	HD3376	N-311	tMR	10MR	67-98	78	112-143	125	84-114	99	0	Ey	A	So	33-52	42
10	HI1648	N-313	tR	10R	53-85	67	100-133	116	81-114	96	5	Ey	A	SH	41-53	46
11	WH1275	N-314	tR	60S	58-86	71	106-132	119	83-110	96	0	Ey	A	SH	35-45	41
12	MACS3735	N-315	tR	5R	49-87	67	98-133	116	64-103	85	15	Ey	A	So	34-49	44
13	UAS3011	N-316	tR	20S	63-90	74	114-138	124	87-110	98	15	Ey	A	SH	35-50	42
14	GW522	N-317	0	0	53-83	64	103-131	116	64-101	83	10	Ey	A	SH	39-54	47
15	NIAW3889	N-318	tR	20S	63-85	73	109-135	121	75-114	94	20	Ey	A	H	34-50	42
16	HI1649	N-319	tR	40S	55-85	69	106-134	119	82-112	99	15	Ey	A	SH	39-48	44
17	NIAW3882	N-320	tR	10MS	60-84	71	107-132	120	79-110	95	20	Ey	A	SH	36-47	42
18	AKAW5099	N-321	0	40S	55-82	64	97-132	116	68-108	89	10	Ey	A	So	36-53	45
19	HD3359	N-322	tMS	40S	61-83	71	109-136	121	73-109	93	15	Ey	A	So	37-49	43
20	MP1369	N-323	0	20S	52-81	64	96-134	115	81-111	94	5	H	A	SH	40-52	45
21	UP3058	N-324	tMS	20S	61-88	73	107-135	123	91-125	107	10	Ey	A	SH	39-46	42
22	HI1647	N-325	tMR	40S	63-85	72	109-134	122	84-114	98	5	Ey	A	So	34-46	41
23	MACS6764	N-326	0	tR	49-79	65	97-129	115	68-109	93	10	H	A	So	43-52	47
24	PBW832	N-327	tMR	40S	55-80	65	101-130	116	82-110	97	5	Ey	A	SH	36-48	43
25	GW523	N-328	tMR	40S	60-81	69	105-134	119	68-107	93	10	Ey	A	SH	38-48	43
26	MP1370	N-329	tR	10R	53-82	64	96-133	116	66-108	88	5	Ey	A	SH	42-52	46
27	CG1034	N-330	0	5R	64-91	74	109-138	123	86-111	98	5	Ey	A	H	39-54	47
28	MACS6768	N-331	0	tR	56-81	64	101-131	115	70-108	89	15	Ey	A	H	39-49	43
29	RAJ4551	N-332	tR	40S	57-83	69	106-135	119	70-103	86	20	Ey	A	SH	35-47	43
30	DBW315	N-333	tMS	60S	65-99	78	111-142	125	86-110	98	0	H	A	SH	32-47	40
31	MP3526	N-334	tR	20S	66-92	76	110-137	123	84-116	101	10	Ey	A	So	33-48	40
32	MP1371	N-335	tR	5R	56-85	70	107-135	120	81-105	92	0	Ey	A	SH	40-52	45
33	MACS6478 (C)	N-303	tR	80S	64-94	75	110-139	123	80-111	92	15	Ey	A	SH	34-48	42
34	HI1544 (C)	N-308	0	0	52-80	65	106-134	117	67-104	90	10	Ey	A	SH	40-52	45
35	GW322 (C)	N-312	tMR	60S	60-84	71	107-135	120	81-115	94	0	Ey	A	So	35-50	43
36	MACS6222 (C)	N-336	tMS	10R	56-88	71	106-136	121	74-110	93	5	Ey	A	SH	39-48	44

1. Ancillary data from Udaipur, Junagarh, Gwalior, Jabalpur, Vijapur, Bilaspur, Sagar, Powarkheda, Indore and Kota.
2. Brown rust data from Junagadh and Vijapur; Black rust data from Powarkheda and Vijapur.
3. Data on lodging from Udaipur, Gwalior, Vijapur, Jabalpur and Powarkheda.

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-2-IR-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction		Agronomic Characteristics								Grain Characteristics			
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	GW521	N-301	0	5MS	51-61	54	97-111	103	65-86	79	20	Ey	A	SH	42-47	44
2	MP3535	N-302	0	5MS	54-66	59	98-112	104	82-95	87	0	Ey	A	SH	39-43	41
3	RVW4301	N-304	0	tMS	48-53	51	98-110	103	61-81	71	20	Ey	A	SH	33-42	37
4	UAS3012	N-305	0	0	64-78	69	100-118	110	70-97	84	10	Ey	A	H	41-48	45
5	NWS2176	N-306	tMS	0	58-63	61	98-113	106	66-89	77	10	Ey	A	H	39-47	43
6	RVW4304	N-307	5MS	0	58-65	62	96-114	107	72-96	83	0	Ey	A	SH	38-45	42
7	DBW314	N-309	0	0	62-72	67	100-120	110	74-95	87	5	Ey	A	SH	38-44	41
8	HI1650	N-310	0	tMS	51-61	56	98-111	103	66-92	81	0	Ey	A	SH	41-51	45
9	HD3376	N-311	5MS	0	64-77	70	101-115	111	70-98	83	10	Ey	A	H	35-55	44
10	HI1648	N-313	0	tMS	51-62	57	95-111	103	70-102	87	0	Ey	A	SH	44-49	46
11	WH1275	N-314	5MS	10MS	58-66	61	100-111	105	68-87	78	0	Ey	A	SH	34-43	39
12	MACS3735	N-315	0	10MS	53-62	57	94-110	102	61-86	73	10	Ey	A	SH	36-46	40
13	UAS3011	N-316	0	10MS	61-73	66	101-115	108	73-99	89	15	Ey	A	SH	37-46	41
14	GW522	N-317	0	0	50-58	53	95-113	102	60-76	71	15	Ey	A	SH	43-49	45
15	NIAW3889	N-318	0	tMS	51-71	60	100-117	107	67-99	88	10	Ey	A	SH	37-45	42
16	HI1649	N-319	5MS	10S	54-64	59	98-111	104	72-100	87	15	Ey	A	SH	37-64	48
17	NIAW3882	N-320	0	0	59-64	61	98-118	107	68-95	84	15	Ey	A	SH	36-46	41
18	AKAW5099	N-321	0	tMS	49-57	52	97-110	101	66-83	77	0	Ey	A	SH	46-52	48
19	HD3359	N-322	0	0	58-75	65	98-118	107	68-92	80	0	Ey	A	SH	38-47	43
20	MP1369	N-323	5MS	10S	48-58	53	96-111	103	66-88	80	20	Ey	A	SH	42-48	44
21	UP3058	N-324	0	tMS	61-69	65	98-119	109	77-102	93	0	Ey	A	SH	38-43	40
22	HI1647	N-325	0	tMS	63-67	65	101-117	109	78-104	92	5	Ey	A	SH	36-50	43
23	MACS6764	N-326	0	0	50-57	53	96-111	103	70-89	82	5	Ey	A	SH	42-49	45
24	PBW832	N-327	0	10MS	53-57	55	101-110	105	71-87	80	25	Ey	A	SH	39-45	42
25	GW523	N-328	5MS	5MS	57-64	60	99-112	105	67-87	79	5	Ey	A	SH	37-46	41
26	MP1370	N-329	0	5S	49-58	53	98-111	102	60-82	71	15	Ey	A	SH	36-47	42
27	CG1034	N-330	0	0	60-68	64	101-114	108	83-98	91	15	Ey	A	SH	43-54	48
28	MACS6768	N-331	0	0	50-58	53	97-112	102	75-84	73	15	Ey	A	SH	38-45	41
29	RAJ4551	N-332	5MS	0	58-66	61	99-113	105	74-84	79	0	Ey	A	H	39-45	42
30	DBW315	N-333	0	0	64-68	66	101-116	110	71-97	81	0	Ey	A	SH	36-46	40
31	MP3526	N-334	5MS	0	63-73	67	99-118	110	74-105	92	10	Ey	A	SH	36-43	39
32	MP1371	N-335	0	0	59-65	61	98-119	107	74-96	85	0	Ey	A	H	44-46	45
33	MACS6478 (C)	N-303	5MS	0	59-72	65	100-115	109	66-88	80	5	Ey	A	SH	38-48	43
34	HI1544 (C)	N-308	0	0	52-61	55	100-110	103	63-96	81	0	Ey	A	SH	41-47	43
35	GW322 (C)	N-312	0	5MS	58-67	62	97-112	105	69-92	84	0	Ey	A	H	33-43	38
36	MACS6222 (C)	N-336	0	0	58-66	62	101-117	108	71-95	84	0	Ey	A	SH	37-45	41

1. Ancillary data from Parbhani, Pune, Ugar-Khurd, Akola, Niphad and Nippani.
2. Brown and black rust data from Nippani and Ugar-Khurd.
3. Data on lodging from Parbhani and Pune.

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ																	
			Delhi			Punjab						Haryana						Uttarakhand		
			Delhi			Ludhiana			Gurdaspur			Karnal			Hisar			Pantnagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K1907	N-401	56.4	14	1	51.4	18	0	42.9	13	0	33.0	32	0	51.6	15	0	50.6	11	0
2	HD3361	N-402	46.1	34	0	47.1	26	0	45.1	10	0	53.5	7	1	49.9	23	0	41.4	23	0
3	DBW335	N-403	55.6	16	1	43.2	33	0	41.3	17	0	46.8	18	0	50.5	19	0	43.8	21	0
4	HD3362	N-404	53.1	23	1	57.4	6	1	38.1	25	0	51.8	13	1	50.2	21	0	44.0	20	0
5	WH1278	N-405	62.4	2	1	59.1	2	1	55.4	2	1	51.8	14	1	61.8	1	1	38.5	33	0
6	UP3065	N-407	60.7	4	1	47.2	25	0	40.8	19	0	56.7	4	1	50.8	17	0	48.6	13	0
7	NW7092	N-408	48.5	31	0	38.1	36	0	27.6	36	0	22.4	35	0	48.1	27	0	40.3	30	0
8	HD3363	N-409	49.9	26	0	52.7	14	1	33.9	29	0	57.4	2	1	50.4	20	0	44.2	19	0
9	PBW836	N-410	53.6	22	1	59.1	3	1	42.6	15	0	35.5	29	0	46.3	30	0	51.3	10	0
10	DBW317	N-411	48.4	32	0	43.6	32	0	33.3	30	0	53.1	8	1	56.1	9	1	41.4	22	0
11	K1908	N-412	59.7	6	1	58.1	5	1	40.1	20	0	38.6	25	0	59.1	3	1	54.8	4	0
12	HD3364	N-413	58.6	9	1	58.7	4	1	39.5	24	0	34.7	31	0	47.6	28	0	41.2	24	0
13	PBW834	N-414	61.8	3	1	54.8	9	1	53.6	4	1	60.4	1	1	61.7	2	1	44.2	18	0
14	HUW842	N-415	48.6	29	0	52.4	15	0	35.2	27	0	52.2	12	1	40.6	35	0	39.9	31	0
15	UP3059	N-416	48.6	30	0	49.4	23	0	32.2	31	0	36.0	28	0	54.3	12	0	59.5	1	1
16	RAJ4552	N-417	56.0	15	1	51.7	16	0	41.0	18	0	55.5	5	1	51.7	14	0	48.0	15	0
17	HD3360	N-418	57.6	13	1	44.8	29	0	43.5	12	0	40.8	24	0	57.7	7	1	41.2	25	0
18	UP3061	N-419	54.7	20	1	50.4	21	0	30.5	33	0	37.0	26	0	46.8	29	0	41.1	26	0
19	HD3365	N-420	53.0	24	1	44.3	30	0	42.8	14	0	35.2	30	0	50.9	16	0	38.1	34	0
20	WH1276	N-421	59.7	5	1	51.5	17	0	50.4	5	0	53.0	9	1	55.6	11	1	37.8	35	0
21	RAJ4554	N-422	45.6	35	0	44.9	28	0	42.0	16	0	19.2	36	0	39.8	36	0	40.6	29	0
22	UP3060	N-423	59.3	7	1	53.0	13	1	55.1	3	1	52.6	10	1	49.9	23	0	51.3	9	0
23	PBW833	N-425	54.0	21	1	53.2	12	1	39.7	23	0	44.6	22	0	52.2	13	0	52.6	7	0
24	DBW316	N-426	58.1	11	1	53.5	11	1	39.8	21	0	54.8	6	1	58.8	4	1	39.8	32	0
25	NW8000	N-429	47.7	33	0	38.5	35	0	31.5	32	0	47.8	17	0	50.2	22	0	36.9	36	0
26	PBW835	N-430	51.7	25	0	48.0	24	0	48.2	7	0	49.4	16	0	46.0	31	0	58.1	3	1
27	RAJ4553	N-431	55.5	17	1	50.6	19	0	29.4	34	0	26.7	34	0	42.3	34	0	40.8	27	0
28	JKW278	N-432	54.8	19	1	50.3	22	0	37.4	26	0	46.3	19	0	48.5	26	0	48.4	14	0
29	WH1277	N-433	55.1	18	1	39.6	34	0	34.8	28	0	36.4	27	0	58.8	4	1	49.0	12	0
30	DBW318	N-434	59.1	8	1	57.0	7	1	43.8	11	0	57.3	3	1	57.9	6	1	47.0	16	0
31	DBW319	N-435	49.0	28	0	50.4	20	0	50.2	6	0	46.2	20	0	49.8	25	0	52.9	6	0
32	JKW270	N-436	62.5	1	1	53.8	10	1	47.9	8	0	50.2	15	0	55.9	10	1	58.5	2	1
33	DBW173 (C)	N-406	43.3	36	0	59.2	1	1	59.8	1	1	52.4	11	1	56.3	8	1	53.9	5	0
34	HI1563 (C)	N-424	49.6	27	0	44.1	31	0	28.1	35	0	32.2	33	0	43.8	32	0	40.7	28	0
35	HD3059 (C)	N-427	58.2	10	1	55.4	8	1	45.8	9	0	45.0	21	0	50.5	18	0	44.4	17	0
36	DBW107 (C)	N-428	57.7	12	1	45.9	27	0	39.8	21	0	42.0	23	0	43.6	33	0	52.3	8	0
G.M.			54.3			50.4			41.2			44.7			51.3			46.0		
S.E.(M)			4.161			2.836			3.722			3.841			3.077			1.593		
C.D. (10%)			10.1			6.8			8.9			9.2			7.4			3.8		
C.V.			10.8			8.0			12.8			12.2			8.5			4.9		
D.O.S.(DD.MM.YY)			20.12.19			10.12.19			21.12.19			25.12.19			10.12.19			24.12.19		

No. of Trials : Proposed = 20 Conducted = 20

Trials not reported (02) = Jammu (RMT), Shillongani (ES)

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ								
			Rajasthan			Uttar Pradesh						Uttar Pradesh								
			Durgapura			Bulandshahr			Modipuram			Kanpur			Ayodhya			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K1907	N-401	44.8	13	0	41.1	36	0	46.4	23	0	45.3	19	0	35.5	36	0	46.7	27	0
2	HD3361	N-402	34.0	35	0	44.9	27	0	43.1	29	0	37.2	31	0	40.1	26	0	38.8	34	0
3	DBW335	N-403	49.4	4	0	51.2	13	0	46.3	24	0	44.6	21	0	45.7	11	1	59.3	1	1
4	HD3362	N-404	41.7	21	0	49.2	21	0	51.0	16	0	48.4	12	0	47.6	5	1	55.7	5	0
5	WH1278	N-405	43.2	18	0	50.1	16	0	54.9	10	0	43.0	23	0	41.1	23	0	48.8	25	0
6	UP3065	N-407	41.7	21	0	50.4	14	0	46.8	22	0	51.1	10	1	46.1	10	1	46.6	28	0
7	NW7092	N-408	43.2	18	0	50.3	15	0	34.8	36	0	30.9	35	0	42.8	18	0	34.1	35	0
8	HD3363	N-409	38.6	29	0	57.6	6	0	47.4	19	0	52.7	7	1	38.2	33	0	53.5	13	0
9	PBW836	N-410	34.0	35	0	59.7	3	1	45.3	28	0	42.2	25	0	36.5	35	0	54.0	10	0
10	DBW317	N-411	38.6	29	0	47.0	25	0	39.8	33	0	46.3	18	0	48.4	3	1	58.3	3	1
11	K1908	N-412	44.8	13	0	47.8	24	0	45.7	27	0	54.0	3	1	41.3	22	0	52.9	15	0
12	HD3364	N-413	41.7	21	0	43.0	32	0	54.2	11	0	48.6	11	0	38.8	30	0	40.9	33	0
13	PBW834	N-414	45.5	12	0	58.7	4	1	61.9	1	1	55.2	2	1	47.8	4	1	54.9	6	0
14	HUW842	N-415	58.6	1	1	61.2	1	1	56.1	8	0	34.5	32	0	39.0	29	0	49.3	23	0
15	UP3059	N-416	38.6	29	0	49.4	19	0	51.5	15	0	40.5	29	0	41.7	21	0	42.1	31	0
16	RAJ4552	N-417	47.8	6	0	57.0	7	0	47.3	21	0	46.5	16	0	37.8	34	0	53.0	14	0
17	HD3360	N-418	41.7	21	0	55.3	8	0	35.9	35	0	51.5	9	1	47.3	6	1	49.2	24	0
18	UP3061	N-419	50.9	3	1	41.6	34	0	42.9	30	0	46.7	15	0	38.6	32	0	31.8	36	0
19	HD3365	N-420	49.4	4	0	48.1	23	0	38.8	34	0	48.2	13	0	45.1	12	1	52.7	16	0
20	WH1276	N-421	47.8	6	0	49.0	22	0	56.4	7	0	45.3	19	0	45.1	12	1	49.9	19	0
21	RAJ4554	N-422	35.5	34	0	44.6	28	0	45.9	26	0	34.5	32	0	46.7	7	1	43.3	30	0
22	UP3060	N-423	55.6	2	1	58.3	5	1	53.5	12	0	56.1	1	1	46.5	8	1	53.7	11	0
23	PBW833	N-425	41.7	21	0	43.5	31	0	56.5	6	0	41.9	27	0	44.8	14	0	56.0	4	0
24	DBW316	N-426	47.8	6	0	53.5	10	0	49.9	17	0	47.5	14	0	43.6	16	0	54.5	8	0
25	NW8000	N-429	46.3	9	0	43.6	30	0	42.8	31	0	44.2	22	0	38.6	31	0	49.4	21	0
26	PBW835	N-430	41.7	21	0	50.0	17	0	51.7	14	0	53.8	5	1	49.8	1	1	54.0	9	0
27	RAJ4553	N-431	40.1	27	0	45.6	26	0	51.9	13	0	34.3	34	0	43.6	17	0	45.0	29	0
28	JKW278	N-432	44.8	13	0	41.5	35	0	40.0	32	0	42.2	25	0	40.3	25	0	41.6	32	0
29	WH1277	N-433	44.8	17	0	52.4	12	0	55.6	9	0	29.5	36	0	41.9	20	0	49.7	20	0
30	DBW318	N-434	46.3	9	0	52.5	11	0	59.0	3	1	41.9	27	0	39.9	27	0	53.7	12	0
31	DBW319	N-435	44.8	13	0	44.1	29	0	47.3	20	0	46.5	17	0	48.6	2	1	59.0	2	1
32	JKW270	N-436	43.2	18	0	42.6	33	0	58.3	5	1	38.2	30	0	39.5	28	0	54.8	7	0
33	DBW173 (C)	N-406	46.3	9	0	49.3	20	0	60.3	2	1	42.8	24	0	46.3	9	1	52.3	17	0
34	HI1563 (C)	N-424	38.6	29	0	53.9	9	0	47.9	18	0	54.0	3	1	42.4	19	0	48.1	26	0
35	HD3059 (C)	N-427	37.0	33	0	49.5	18	0	58.4	4	1	52.3	8	1	44.8	14	0	50.7	18	0
36	DBW107 (C)	N-428	40.1	27	0	60.8	2	1	46.0	25	0	53.2	6	1	41.1	23	0	49.3	22	0
G.M.			43.6			50.0			49.2			45.2			42.9			49.7		
S.E.(M)			3.505			1.460			1.727			2.265			2.055			0.983		
C.D. (10%)			8.4			3.5			4.1			5.4			4.9			2.3		
C.V.			11.4			4.1			5.0			7.1			6.8			2.8		
D.O.S.(DD.MM.YY)			12.12.19			10.12.19			24.12.19			24.12.19			20.12.19			20.12.19		

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ																	
			Bihar									Jharkhand			West Bengal					
			Sabour			IARI-Pusa			RPCAU-Pusa			Ranchi			Kalyani			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K1907	N-401	42.3	15	0	37.6	2	0	30.4	26	0	66.4	8	1	41.2	12	0	41.0	14	0
2	HD3361	N-402	31.2	29	0	30.0	28	0	27.3	33	0	61.7	16	0	38.3	23	0	18.2	36	0
3	DBW335	N-403	48.8	10	0	32.9	11	0	32.6	18	0	46.1	34	0	36.7	33	0	43.8	6	0
4	HD3362	N-404	33.7	27	0	30.9	21	0	29.2	31	0	66.6	6	1	44.5	6	0	36.2	24	0
5	WH1278	N-405	41.6	16	0	38.8	1	1	27.3	34	0	60.1	17	0	41.0	14	0	43.6	7	0
6	UP3065	N-407	35.1	25	0	36.6	5	0	32.4	19	0	53.1	31	0	37.6	28	0	40.9	15	0
7	NW7092	N-408	19.9	35	0	30.8	23	0	30.1	28	0	45.9	35	0	39.1	20	0	42.1	10	0
8	HD3363	N-409	35.1	24	0	32.7	13	0	31.9	21	0	52.8	32	0	34.0	35	0	36.4	22	0
9	PBW836	N-410	38.6	20	0	29.1	30	0	29.6	29	0	51.1	33	0	41.2	12	0	45.5	3	1
10	DBW317	N-411	57.1	1	1	31.2	19	0	25.2	36	0	70.9	1	1	51.5	1	1	34.5	29	0
11	K1908	N-412	49.1	9	0	29.0	31	0	35.3	10	0	54.3	28	0	42.1	11	0	35.7	25	0
12	HD3364	N-413	28.3	31	0	32.1	18	0	31.4	23	0	64.0	12	1	39.1	20	0	33.7	30	0
13	PBW834	N-414	51.3	6	1	27.7	32	0	34.9	11	0	69.7	2	1	44.7	5	0	34.5	28	0
14	HUW842	N-415	24.9	34	0	35.1	7	0	35.4	9	0	56.3	25	0	38.6	22	0	27.8	33	0
15	UP3059	N-416	32.7	28	0	36.0	6	0	33.1	16	0	60.1	17	0	39.6	18	0	24.1	35	0
16	RAJ4552	N-417	42.5	14	0	26.0	36	0	35.4	8	0	65.3	10	1	37.3	30	0	44.9	4	1
17	HD3360	N-418	50.4	8	0	32.5	14	0	39.9	5	1	65.8	9	1	40.8	15	0	47.6	1	1
18	UP3061	N-419	14.6	36	0	37.3	3	0	39.4	6	1	58.5	20	0	39.6	18	0	35.0	27	0
19	HD3365	N-420	40.5	18	0	30.6	24	0	37.0	7	0	62.7	15	1	40.6	16	0	42.1	11	0
20	WH1276	N-421	43.7	12	0	32.4	15	0	30.2	27	0	63.9	13	1	38.3	24	0	26.0	34	0
21	RAJ4554	N-422	41.5	17	0	36.7	4	0	32.4	20	0	56.5	23	0	37.4	29	0	39.9	17	0
22	UP3060	N-423	43.3	13	0	31.0	20	0	42.8	4	1	66.5	7	1	42.3	10	0	40.5	16	0
23	PBW833	N-425	55.8	3	1	32.8	12	0	34.7	12	0	55.3	27	0	45.7	4	0	46.2	2	1
24	DBW316	N-426	52.7	5	1	30.8	22	0	43.0	3	1	68.0	4	1	35.7	34	0	43.1	8	0
25	NW8000	N-429	34.7	26	0	34.1	9	0	27.3	35	0	55.7	26	0	46.0	2	0	28.7	32	0
26	PBW835	N-430	48.1	11	0	29.6	29	0	44.0	1	1	56.5	24	0	43.2	8	0	32.9	31	0
27	RAJ4553	N-431	25.2	33	0	26.1	35	0	33.3	15	0	64.8	11	1	37.0	32	0	42.2	9	0
28	JKW278	N-432	29.4	30	0	32.2	16	0	28.9	32	0	59.9	19	0	37.3	30	0	41.9	12	0
29	WH1277	N-433	26.2	32	0	27.3	33	0	30.8	24	0	53.3	30	0	30.5	36	0	41.9	13	0
30	DBW318	N-434	54.7	4	1	34.2	8	0	31.9	22	0	67.6	5	1	42.6	9	0	36.3	23	0
31	DBW319	N-435	56.1	2	1	27.3	34	0	34.5	13	0	69.5	3	1	38.0	25	0	43.9	5	0
32	JKW270	N-436	38.5	21	0	33.2	10	0	33.0	17	0	58.4	21	0	37.9	26	0	38.2	20	0
33	DBW173 (C)	N-406	35.3	22	0	30.3	26	0	29.4	30	0	45.0	36	0	37.7	27	0	35.4	26	0
34	HI1563 (C)	N-424	35.2	23	0	30.4	25	0	33.9	14	0	63.3	14	1	45.8	3	0	39.0	18	0
35	HD3059 (C)	N-427	39.2	19	0	32.1	17	0	43.2	2	1	53.7	29	0	40.4	17	0	37.2	21	0
36	DBW107 (C)	N-428	50.7	7	1	30.2	27	0	30.5	25	0	57.2	22	0	43.7	7	0	38.3	19	0
G.M.			39.7			31.9			33.4			59.6			40.2			37.8		
S.E.(M)			2.765			0.478			2.003			3.423			2.033			1.225		
C.D. (10%)			6.7			1.2			4.8			8.3			4.9			3.0		
C.V.			9.9			2.1			8.5			8.1			7.2			4.6		
D.O.S.(DD.MM.YY)			20.12.19			19.12.19			19.12.19			21.12.19			19.12.19			15.12.19		

1904-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	K1907	N-401	46.5	26	0	42.9	18	0	44.7	21	0
2	HD3361	N-402	45.0	28	0	35.9	35	0	40.4	34	0
3	DBW335	N-403	47.6	20	0	43.4	16	0	45.5	20	0
4	HD3362	N-404	48.5	16	0	43.7	14	0	46.1	16	0
5	WH1278	N-405	53.0	5	0	42.8	19	0	47.9	5	0
6	UP3065	N-407	49.3	14	0	42.2	20	0	45.7	18	0
7	NW7092	N-408	39.3	36	0	35.1	36	0	37.2	36	0
8	HD3363	N-409	48.0	18	0	40.8	25	0	44.4	23	0
9	PBW836	N-410	47.5	21	0	40.9	24	0	44.2	24	0
10	DBW317	N-411	44.6	29	0	47.0	3	1	45.8	17	0
11	K1908	N-412	49.8	10	0	43.7	12	0	46.8	12	0
12	HD3364	N-413	46.6	24	0	39.7	27	0	43.1	26	0
13	PBW834	N-414	55.9	1	1	46.7	5	1	51.3	1	1
14	HUW842	N-415	49.4	11	0	37.9	33	0	43.7	25	0
15	UP3059	N-416	46.6	23	0	38.9	31	0	42.7	28	0
16	RAJ4552	N-417	50.7	8	0	43.2	17	0	46.9	9	0
17	HD3360	N-418	46.5	25	0	47.2	1	1	46.9	11	0
18	UP3061	N-419	44.0	31	0	37.9	32	0	41.0	32	0
19	HD3365	N-420	44.5	30	0	44.4	10	0	44.5	22	0
20	WH1276	N-421	51.2	7	0	41.6	21	0	46.4	14	0
21	RAJ4554	N-422	39.8	35	0	41.0	23	0	40.4	35	0
22	UP3060	N-423	54.3	2	1	47.0	4	1	50.6	2	1
23	PBW833	N-425	48.7	15	0	45.9	7	1	47.3	8	0
24	DBW316	N-426	50.7	9	0	46.5	6	1	48.6	4	0
25	NW8000	N-429	42.8	32	0	39.9	26	0	41.3	31	0
26	PBW835	N-430	49.4	12	0	45.8	8	1	47.6	7	0
27	RAJ4553	N-431	42.6	33	0	39.1	30	0	40.8	33	0
28	JKW278	N-432	45.8	27	0	39.3	29	0	42.5	29	0
29	WH1277	N-433	47.4	22	0	36.8	34	0	42.1	30	0
30	DBW318	N-434	53.3	4	0	44.8	9	0	49.0	3	0
31	DBW319	N-435	48.3	17	0	47.1	2	1	47.7	6	0
32	JKW270	N-436	52.6	6	0	41.3	22	0	46.9	10	0
33	DBW173 (C)	N-406	53.4	3	0	39.4	28	0	46.4	15	0
34	HI1563 (C)	N-424	42.1	34	0	43.6	15	0	42.8	27	0
35	HD3059 (C)	N-427	49.4	13	0	43.7	13	0	46.6	13	0
36	DBW107 (C)	N-428	47.6	19	0	43.8	11	0	45.7	19	0
G.M.			47.8			42.2			45.0		
S.E.(M)			1.014			0.699			0.616		
C.D. (10%)			2.4			1.6			1.4		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-3A-IR-LS-TAS, 2019-20**

SN	Variety	Code	Disease Reactions				Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	K1907	N-401	60S	20.8	20S	3	71-88	82	114-134	122	75-110	93	35	Ey	A	H	24-42	35
2	HD3361	N-402	20S	9.2	10S	6	78-92	86	115-134	125	83-110	99	0	Ey	A	SH	32-46	40
3	DBW335	N-403	20S	10.0	5S	2	74-97	85	115-135	125	85-107	95	15	Ey	A	H	34-44	40
4	HD3362	N-404	40S	11.7	20S	2	77-90	83	115-135	124	88-105	96	0	Ey	A	H	28-47	38
5	WH1278	N-405	5S	1.2	0	2	76-90	84	114-136	123	74-103	92	20	Ey	A	H	38-49	43
6	UP3065	N-407	10S	5.3	tMR	4	79-100	87	115-138	125	80-99	90	5	Ey	A	H	31-49	39
7	NW7092	N-408	60S	28.3	60S	4	77-95	85	114-134	123	90-115	101	15	Ey	A	H	27-40	35
8	HD3363	N-409	20S	7.5	10S	3	78-91	85	114-135	126	97-112	104	10	Ey	A	SH	34-42	38
9	PBW836	N-410	40S	13.3	0	4	74-91	84	114-134	123	80-97	89	20	Ey	A	H	30-44	39
10	DBW317	N-411	20S	6.7	20S	4	78-89	84	114-135	124	90-105	98	20	Ey	A	SH	31-49	43
11	K1908	N-412	60S	19.7	10S	3	78-90	84	115-132	124	80-99	93	15	Ey	A	H	38-51	45
12	HD3364	N-413	20S	6.0	0	5	76-102	87	118-140	128	92-107	97	20	Ey	A	H	29-43	36
13	PBW834	N-414	5S	4.0	0	6	72-89	81	114-135	124	90-106	99	5	Ey	A	SH	28-47	41
14	HUW842	N-415	40S	13.5	10S	4	76-90	83	112-134	123	77-104	94	5	Ey	A	H	32-46	40
15	UP3059	N-416	20S	5.8	40S	2	80-99	88	113-137	126	85-110	97	25	Ey	A	H	32-44	38
16	RAJ4552	N-417	40S	11.7	40S	5	76-99	85	114-135	124	80-102	92	0	Ey	A	H	35-46	41
17	HD3360	N-418	60S	24.2	40S	3	78-97	85	114-133	123	85-104	95	5	Ey	A	SH	30-40	37
18	UP3061	N-419	40S	10.8	20S	3	80-104	90	116-138	126	86-110	96	30	Ey	A	SH	27-39	34
19	HD3365	N-420	40S	20.8	10S	2	76-88	83	113-134	124	85-110	96	10	Ey	A	SH	27-44	38
20	WH1276	N-421	20S	4.8	0	3	78-100	87	114-135	125	85-112	101	15	Ey	A	H	38-45	42
21	RAJ4554	N-422	40S	16.7	20S	2	79-95	87	116-135	125	75-106	94	20	Ey	A	H	24-43	35
22	UP3060	N-423	40S	11.2	20S	2	78-102	87	114-136	125	88-105	100	10	Ey	A	H	39-49	44
23	PBW833	N-425	40S	14.2	5S	4	78-90	85	116-135	125	80-107	93	10	Ey	A	H	30-42	37
24	DBW316	N-426	10S	2.5	5mS	3	74-92	85	114-137	125	75-103	92	15	Ey	A	SH	36-49	42
25	NW8000	N-429	60S	22.5	10S	3	74-92	84	114-136	125	77-105	92	15	Ey	A	H	30-41	37
26	PBW835	N-430	20S	4.5	0	5	76-92	85	116-135	125	75-102	94	10	Ey	A	H	34-44	38
27	RAJ4553	N-431	60S	31.7	20S	4	77-91	84	114-135	124	79-101	91	15	Ey	A	H	26-42	36
28	JKW278	N-432	40S	10.0	10S	4	77-92	84	114-134	124	96-110	101	15	Ey	A	H	25-42	36
29	WH1277	N-433	40S	11.7	tMR	3	79-102	88	115-134	125	88-105	95	20	Ey	A	SH	28-39	35
30	DBW318	N-434	10S	3.3	20S	3	77-98	86	115-137	125	85-100	92	5	Ey	A	H	39-46	42
31	DBW319	N-435	60S	31.7	20S	4	78-91	84	114-135	124	95-111	105	20	Ey	A	H	34-46	40
32	JKW270	N-436	20S	11.0	10S	6	75-91	84	115-138	125	88-108	99	30	Ey	A	H	37-48	42
33	DBW173 (C)	N-406	20S	7.7	5S	4	77-93	86	115-135	126	94-110	99	10	Ey	A	H	32-46	39
34	HI1563 (C)	N-424	80S	39.2	0	4	71-89	82	114-133	125	82-105	95	10	Ey	A	H	27-42	36
35	HD3059 (C)	N-427	40S	17.5	5S	6	77-102	87	117-137	126	85-106	97	10	Ey	A	H	29-44	38
36	DBW107 (C)	N-428	60S	27.2	10S	4	75-90	83	114-135	123	75-104	89	0	Ey	A	H	32-46	39

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

NIVT-3A-IR-LS-TAS, 2019-20
North Western Plains Zone
Individual Station Yellow Rust Data

SN	Variety	Code	Pantnagar	Hisar	Ludhiana	Gurdaspur	Delhi	Karnal
1	K1907	N-401	5S	5S	60S	10S	5S	40S
2	HD3361	N-402	0	0	20S	10S	5S	20S
3	DBW335	N-403	0	0	20S	20S	0	20S
4	HD3362	N-404	0	0	40S	20S	0	10S
5	WH1278	N-405	0	0	0	5MR	0	5S
6	UP3065	N-407	5S	10S	5MR	10S	0	5S
7	NW7092	N-408	10S	10S	60S	10S	20S	60S
8	HD3363	N-409	0	0	20S	5S	0	20S
9	PBW836	N-410	0	0	20S	40S	0	20S
10	DBW317	N-411	0	0	20S	10S	0	10S
11	K1908	N-412	0	0	40S	10S	10MS	60S
12	HD3364	N-413	tS	5S	5S	5S	0	20S
13	PBW834	N-414	tS	5S	10MS	5S	0	5S
14	HUW842	N-415	tS	0	40S	20S	0	20S
15	UP3059	N-416	0	0	20S	10S	0	5S
16	RAJ4552	N-417	0	0	40S	10S	0	20S
17	HD3360	N-418	5S	10S	60S	20S	10S	40S
18	UP3061	N-419	0	0	40S	5S	0	20S
19	HD3365	N-420	10S	10S	40S	20S	5S	40S
20	WH1276	N-421	0	5MR	20S	5MR	0	5S
21	RAJ4554	N-422	5S	10S	40S	5S	0	40S
22	UP3060	N-423	0	0	20S	5MR	5S	40S
23	PBW833	N-425	0	0	40S	20S	5S	20S
24	DBW316	N-426	0	0	10S	tR	0	5S
25	NW8000	N-429	5S	5S	60S	20S	5S	40S
26	PBW835	N-430	0	0	5MR	5S	0	20S
27	RAJ4553	N-431	5S	5S	60S	40S	20S	60S
28	JKW278	N-432	0	0	40S	10S	0	10S
29	WH1277	N-433	5S	5S	40S	tR	0	20S
30	DBW318	N-434	0	0	10S	0	10S	0
31	DBW319	N-435	10S	10S	60S	60S	10S	40S
32	JKW270	N-436	tS	5S	20S	20S	0	20S
33	DBW173 (C)	N-406	5MS	5MR	20S	10S	0	10S
34	HI1563 (C)	N-424	10S	10S	80S	60S	15S	60S
35	HD3059 (C)	N-427	5S	10S	40S	10S	0	40S
36	DBW107 (C)	N-428	5S	10S	40S	40S	10MS	60S

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-3A-IR-LS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								Grain Characteristics			
			Br	ACI	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	K1907	N-401	20S	5.0	68(24)	64-74	69	101-125	110	87-99	91	5	Ey	A	SH	32-46	38
2	HD3361	N-402	20S	12.5	68(24)	62-79	73	102-126	111	90-102	96	20	Ey	A	SH	30-46	37
3	DBW335	N-403	30S	14.5	35(23)	57-76	69	101-131	113	80-97	90	0	Ey	A	SH	36-45	40
4	HD3362	N-404	20S	6.0	68(36)	64-78	72	103-118	110	80-100	92	0	Ey	A	H	35-47	41
5	WH1278	N-405	10S	2.5	46(24)	60-77	72	101-125	111	83-96	90	0	Ey	A	SH	25-48	39
6	UP3065	N-407	0	0.0	57(23)	62-79	73	101-131	112	80-93	86	0	Ey	A	SH	32-48	41
7	NW7092	N-408	20S	7.5	68(35)	61-80	72	98-126	110	85-102	94	5	Ey	A	SH	32-44	39
8	HD3363	N-409	20S	10.0	35(24)	70-78	73	103-116	111	93-107	100	10	Ey	A	SH	34-42	37
9	PBW836	N-410	40S	12.5	57(34)	62-74	68	101-130	110	82-95	87	0	Ey	A	H	31-47	38
10	DBW317	N-411	30S	14.5	35(24)	70-77	72	102-125	112	88-109	98	0	Ey	A	SH	33-48	41
11	K1908	N-412	20S	5.0	68(35)	64-75	71	103-124	111	86-103	94	0	Ey	A	SH	29-53	42
12	HD3364	N-413	10S	5.0	68(35)	63-78	70	100-125	112	82-101	93	10	Ey	A	SH	30-45	37
13	PBW834	N-414	10S	3.75	57(24)	57-72	66	101-124	111	82-104	93	5	Ey	A	SH	35-47	41
14	HUW842	N-415	20S	5.0	68(34)	64-76	71	103-129	111	78-97	89	0	Ey	A	H	34-51	41
15	UP3059	N-416	0	0.0	46(23)	64-81	76	103-129	113	86-103	94	5	Ey	A	SH	32-46	39
16	RAJ4552	N-417	30S	17.5	45(24)	64-75	69	101-118	109	77-98	89	0	Ey	A	SH	32-47	40
17	HD3360	N-418	40S	17.0	35(23)	64-75	71	102-124	111	80-101	90	0	Ey	A	SH	36-45	40
18	UP3061	N-419	40S	15.0	68(24)	65-81	76	105-131	114	80-99	90	30	Ey	A	SH	30-52	39
19	HD3365	N-420	30S	12.5	68(35)	60-73	69	99-130	110	84-100	94	0	Ey	A	SH	32-44	39
20	WH1276	N-421	40S	13.8	46(23)	67-78	73	104-122	112	91-102	97	0	Ey	A	SH	34-44	39
21	RAJ4554	N-422	20S	11.3	46(23)	60-79	73	101-119	112	81-102	93	0	Ey	A	SH	32-44	38
22	UP3060	N-423	20S	7.5	57(23)	63-79	72	103-119	111	80-101	92	0	Ey	A	SH	32-51	41
23	PBW833	N-425	30S	12.5	24(13)	64-80	74	103-124	112	82-101	91	0	Ey	A	H	33-47	38
24	DBW316	N-426	0	0.0	45(24)	60-78	71	100-131	112	73-98	88	5	Ey	A	SH	34-53	40
25	NW8000	N-429	20S	5.0	35(23)	62-77	70	101-128	112	84-95	90	0	Ey	A	SH	33-51	40
26	PBW835	N-430	40S*	10.0	68(34)	62-74	70	105-131	113	82-102	91	0	Ey	A	H	34-48	39
27	RAJ4553	N-431	20S	6.0	68(35)	64-79	72	104-119	110	82-99	92	15	Ey	A	SH	32-40	36
28	JKW278	N-432	20S	10.0	57(34)	60-75	70	99-115	108	84-95	90	0	Ey	A	H	32-48	39
29	WH1277	N-433	40S*	10.0	68(24)	62-78	73	101-116	110	81-100	92	25	Ey	A	SH	30-40	36
30	DBW318	N-434	40S*	10.0	57(24)	62-77	70	102-118	110	83-94	89	0	Ey	A	SH	35-45	39
31	DBW319	N-435	5S	1.25	35(23)	64-80	71	101-119	111	88-106	97	5	Ey	A	SH	35-48	41
32	JKW270	N-436	20S	6.25	57(34)	66-76	71	102-131	112	82-102	94	0	Ey	A	SH	30-48	39
33	DBW173 (C)	N-406	10S	2.5	68(24)	62-79	73	102-130	113	83-105	94	0	Ey	A	H	32-48	39
34	HI1563 (C)	N-424	10S	5.0	79(35)	58-73	66	101-119	111	80-99	91	0	Ey	A	SH	34-47	39
35	HD3059 (C)	N-427	10S	3.75	46(34)	68-78	73	102-125	113	78-100	90	0	Ey	A	SH	33-48	40
36	DBW107 (C)	N-428	60S	22.0	46(24)	66-73	69	102-126	111	70-93	86	0	Ey	A	SH	34-52	39

1. Ancillary data from Kanpur, Ayodhya, Varanasi, Pusa, RPCAU Pusa, Ranchi, Sabour, Kalyani, Shillongani and Coochbehar

2. Leaf blight data from Shillongani, Coochbehar, Ayodhya, Ranchi, Sabour, Kalyani; and Brown rust data from Kanpur, Sabour, Ranchi and Coochbehar

NIVT-3A-IR-LS-TAS, 2019-20
North Eastern Plains Zone
Individual Station Disease Data

SN	Variety	Code	Leaf Blight							Brown Rust			
			Shillongani	Kalyani	Ayodhya	Coochbehar	Ranchi	Sabour		Kanpur	Sabour	Ranchi	Coochbehar
1	K1907	N-401	12	13	12	34	03	68		20S	0	0	0
2	HD3361	N-402	12	12	25	23	02	68		20S	20S	10S	0
3	DBW335	N-403	12	23	24	23	12	35		20S	30S	0	10MS
4	HD3362	N-404	13	13	36	34	13	68		10MR	20S	0	0
5	WH1278	N-405	02	24	45	23	03	46		10S	0	0	0
6	UP3065	N-407	01	12	24	23	13	57		0	0	0	0
7	NW7092	N-408	24	24	25	34	14	68		0	20S	10S	0
8	HD3363	N-409	25	23	23	34	13	35		20S	20S	0	0
9	PBW836	N-410	13	02	36	45	23	57		40S	0	10S	0
10	DBW317	N-411	13	13	35	23	13	35		20S	30S	0	10MS
11	K1908	N-412	12	24	46	45	14	68		20S	0	0	0
12	HD3364	N-413	24	13	56	45	03	68		10S	0	10S	0
13	PBW834	N-414	13	23	23	45	02	57		10S	0	5S	0
14	HUW842	N-415	12	24	24	23	24	68		0	0	20S	0
15	UP3059	N-416	13	12	12	34	13	46		0	0	0	0
16	RAJ4552	N-417	12	13	24	45	14	35		20S	30S	20S	0
17	HD3360	N-418	24	02	23	34	02	35		40S	20S	0	10MS
18	UP3061	N-419	25	01	35	23	13	68		40S	20S	0	0
19	HD3365	N-420	25	12	36	34	23	68		20S	30S	0	0
20	WH1276	N-421	01	00	24	34	24	46		40S	0	15S	0
21	RAJ4554	N-422	01	00	12	34	14	46		20S	20S	5S	0
22	UP3060	N-423	01	00	12	34	25	57		20S	0	10S	0
23	PBW833	N-425	12	12	24	12	03	23		10S	30S	10S	0
24	DBW316	N-426	12	23	36	45	02	35		0	0	0	0
25	NW8000	N-429	12	00	23	34	13	35		0	20S	0	0
26	PBW835	N-430	35	00	22	34	23	68		40S	0	0	0
27	RAJ4553	N-431	36	12	12	45	24	68		10MR	20S	0	0
28	JKW278	N-432	12	23	12	45	23	57		20S	20S	0	0
29	WH1277	N-433	12	00	35	23	13	68		40S	0	0	0
30	DBW318	N-434	25	00	24	23	12	57		40S	0	0	0
31	DBW319	N-435	24	12	23	23	12	35		0	0	5S	0
32	JKW270	N-436	12	24	46	34	03	57		20S	0	5S	0
33	DBW173 (C)	N-406	25	13	23	12	13	68		0	0	10S	0
34	HI1563 (C)	N-424	24	13	23	45	13	79		10S	0	10S	0
35	HD3059 (C)	N-427	24	24	45	34	03	46		10S	0	5S	0
36	DBW107 (C)	N-428	12	12	46	34	03	34		60S	20S	0	10MS

1905-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ																	
			Madhya Pradesh												Chhattisgarh					
			Indore			Powarkheda			Gwalior			Jabalpur			Bilaspur			IGKV-Raipur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	LOK77	N-501	48.1	19	0	44.4	13	0	60.2	24	0	48.2	18	0	34.9	19	0	32.0	23	0
2	HD3366	N-502	53.7	10	0	53.7	3	1	71.4	13	1	44.7	24	0	34.6	20	0	30.0	25	0
3	MP3527	N-503	53.6	11	0	46.7	10	0	67.3	17	0	52.3	10	0	38.8	15	0	39.0	7	0
4	NIAW3895	N-504	56.9	3	0	38.1	23	0	74.2	10	1	49.4	15	0	34.0	22	0	38.0	12	0
5	MP1372	N-505	66.7	1	1	44.0	15	0	79.2	1	1	47.4	21	0	34.5	21	0	38.5	10	0
6	CG1035	N-506	45.6	23	0	43.6	17	0	63.3	22	0	47.3	22	0	42.5	8	1	40.5	4	0
7	HD3367	N-507	45.6	23	0	52.5	5	1	76.8	6	1	53.8	6	0	42.9	5	1	34.8	18	0
8	WH1279	N-508	47.1	22	0	43.5	18	0	75.8	7	1	56.9	2	1	44.2	2	1	41.2	3	0
9	HI1651	N-509	55.7	5	0	46.7	11	0	69.1	16	0	53.7	7	0	31.6	24	0	38.2	11	0
10	HI1652	N-510	55.2	8	0	45.1	12	0	79.1	2	1	59.2	1	1	37.1	16	0	32.9	22	0
11	RVW4309	N-511	51.5	12	0	38.7	22	0	62.1	23	0	48.0	20	0	40.7	12	1	41.2	2	0
12	NWS2180	N-512	49.9	16	0	51.1	6	0	70.0	15	0	44.5	25	0	39.7	14	1	35.8	16	0
13	MACS6774	N-513	48.1	20	0	52.5	4	1	74.5	9	1	56.3	3	1	42.9	6	1	33.3	21	0
14	UAS3013	N-515	49.6	17	0	40.7	19	0	65.4	20	0	49.9	14	0	40.5	13	1	43.1	1	1
15	AKAW5080	N-516	51.4	13	0	55.9	1	1	59.4	25	0	50.0	13	0	28.6	25	0	36.3	15	0
16	DBW320	N-517	50.8	15	0	48.5	9	0	64.8	21	0	54.2	4	0	43.0	4	1	31.6	24	0
17	CG1037	N-518	47.7	21	0	37.8	24	0	78.6	3	1	49.0	17	0	43.3	3	1	35.5	17	0
18	GW527	N-519	56.1	4	0	44.2	14	0	71.0	14	1	52.9	9	0	44.4	1	1	36.8	14	0
19	MACS6769	N-520	51.3	14	0	34.7	25	0	75.6	8	1	52.9	8	0	35.8	17	0	36.9	13	0
20	GW525	N-522	54.6	9	0	54.2	2	1	78.5	4	1	54.1	5	0	40.9	11	1	39.2	5	0
21	NIAW3898	N-523	55.5	7	0	43.8	16	0	72.8	12	1	49.2	16	0	41.9	10	1	34.6	19	0
22	MP3529	N-524	43.5	25	0	40.5	20	0	66.7	18	0	48.0	19	0	35.8	18	0	34.2	20	0
23	PBW837	N-525	48.5	18	0	39.1	21	0	66.7	18	0	46.5	23	0	42.6	7	1	38.6	8	0
24	HD2932 (C)	N-514	55.7	6	0	50.9	7	0	78.4	5	1	51.9	11	0	33.7	23	0	38.5	9	0
25	HD2864 (C)	N-521	59.0	2	0	49.6	8	0	73.1	11	1	51.3	12	0	42.5	9	1	39.1	6	0
G.M.			52.1			45.6			71.0			50.9			38.9			36.8		
S.E.(M)			2.942			1.890			5.405			1.926			2.051			0.649		
C.D. (10%)			7.3			4.6			13.1			4.7			5.1			1.6		
C.V.			8.0			5.9			10.8			5.4			7.5			2.5		
D.O.S.(dd.mm.yy)			07.12.19			09.12.19			07.12.19			10.12.19			08.12.19			07.12.19		

No. of Trials : Proposed = 17 Conducted = 17

Trials not reported (01) = Dharwad (RMT)

1905-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ						PZ					
			Gujarat				Rajasthan		Karnataka		Maharashtra			
			Junagadh		Vijapur		Udaipur		Nippani		Niphad		Pune	
			Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG
1	LOK77	N-501	52.4	7 0	56.8	18 0	71.6	5 1	42.3	8 1	52.3	7 1	38.1	8 0
2	HD3366	N-502	51.0	10 0	55.3	21 0	63.5	16 0	31.9	22 0	55.6	2 1	35.8	14 0
3	MP3527	N-503	52.5	6 0	50.8	24 0	59.1	21 0	35.8	16 0	52.6	6 1	35.9	12 0
4	NIAW3895	N-504	50.4	13 0	56.5	20 0	76.0	1 1	35.8	17 0	42.8	19 0	31.5	24 0
5	MP1372	N-505	55.2	2 1	57.4	15 0	47.6	25 0	48.7	1 1	38.8	23 0	34.8	15 0
6	CG1035	N-506	52.8	4 0	70.3	1 1	66.5	13 0	37.0	12 0	40.1	20 0	44.2	1 1
7	HD3367	N-507	46.3	20 0	57.1	17 0	68.4	11 1	41.8	9 1	40.1	21 0	34.7	16 0
8	WH1279	N-508	50.0	15 0	58.1	13 0	69.9	10 1	39.1	10 0	36.3	25 0	36.0	10 0
9	HI1651	N-509	52.2	9 0	62.2	5 0	71.0	8 1	48.6	2 1	53.7	5 1	38.2	7 0
10	HI1652	N-510	53.1	3 1	62.1	6 0	53.6	24 0	35.4	18 0	46.0	15 1	36.0	11 0
11	RVW4309	N-511	51.0	11 0	57.1	16 0	62.4	17 0	47.2	4 1	36.9	24 0	42.7	2 1
12	NWS2180	N-512	46.0	23 0	66.0	4 1	64.1	14 0	46.1	5 1	51.1	9 1	36.2	9 0
13	MACS6774	N-513	48.6	18 0	52.8	22 0	59.1	22 0	36.7	13 0	55.7	1 1	29.1	25 0
14	UAS3013	N-515	49.9	16 0	57.4	14 0	66.7	12 0	28.7	25 0	47.5	14 1	42.1	3 1
15	AKAW5080	N-516	52.6	5 0	58.4	12 0	59.4	20 0	30.8	24 0	51.9	8 1	38.9	6 0
16	DBW320	N-517	46.2	21 0	61.7	7 0	71.3	7 1	43.3	7 1	48.3	13 1	41.4	4 1
17	CG1037	N-518	46.0	22 0	59.7	10 0	72.9	4 1	36.1	15 0	44.5	16 0	39.1	5 0
18	GW527	N-519	58.9	1 1	68.9	3 1	75.3	2 1	48.5	3 1	43.3	18 0	33.2	20 0
19	MACS6769	N-520	49.0	17 0	58.5	11 0	60.7	18 0	33.3	20 0	54.2	3 1	32.6	23 0
20	GW525	N-522	44.6	24 0	70.1	2 1	63.7	15 0	44.3	6 1	49.5	11 1	34.4	18 0
21	NIAW3898	N-523	47.9	19 0	51.5	23 0	59.0	23 0	31.3	23 0	53.8	4 1	35.9	13 0
22	MP3529	N-524	44.6	25 0	48.7	25 0	60.5	19 0	36.6	14 0	50.1	10 1	32.7	22 0
23	PBW837	N-525	52.3	8 0	56.6	19 0	71.5	6 1	35.2	19 0	49.0	12 1	34.6	17 0
24	HD2932 (C)	N-514	50.8	12 0	60.9	8 0	73.7	3 1	38.6	11 0	39.2	22 0	33.6	19 0
25	HD2864 (C)	N-521	50.2	14 0	60.7	9 0	70.6	9 1	33.1	21 0	44.2	17 0	32.8	21 0
G.M.			50.2		59.0		65.5		38.6		47.1		36.2	
S.E.(M)			2.445		2.405		3.712		3.792		4.223		2.042	
C.D. (10%)			6.0		5.9		9.2		9.4		10.4		5.0	
C.V.			6.9		5.8		8.0		13.9		12.7		8.0	
D.O.S.(dd.mm.yy)			08.12.19		06.12.19		06.12.19		09.12.19		09.12.19		11.12.19	

1905-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ											
			Maharashtra											
			Parbhani			Akola			Karad			Kolhapur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	LOK77	N-501	29.6	6	1	18.1	25	0	28.8	20	0	35.2	7	0
2	HD3366	N-502	23.9	17	0	35.8	3	1	35.2	10	0	21.7	21	0
3	MP3527	N-503	31.3	4	1	35.5	4	1	38.3	4	1	33.1	10	0
4	NIAW3895	N-504	28.9	7	1	33.0	6	1	37.2	5	1	18.5	24	0
5	MP1372	N-505	30.3	5	1	28.7	15	0	25.5	22	0	29.2	14	0
6	CG1035	N-506	24.1	16	0	29.2	14	0	40.5	2	1	22.3	20	0
7	HD3367	N-507	21.4	22	0	21.1	24	0	25.0	24	0	23.3	19	0
8	WH1279	N-508	19.9	24	0	22.3	22	0	33.6	12	0	26.3	16	0
9	HI1651	N-509	31.5	3	1	27.7	16	0	30.9	17	0	42.5	2	1
10	HI1652	N-510	24.3	15	0	32.8	7	1	25.4	23	0	30.5	12	0
11	RVW4309	N-511	22.0	21	0	23.0	21	0	35.4	9	0	25.8	17	0
12	NWS2180	N-512	27.4	9	0	33.5	5	1	32.6	15	0	19.4	23	0
13	MACS6774	N-513	32.1	2	1	30.4	11	0	39.8	3	1	35.9	6	0
14	UAS3013	N-515	22.3	19	0	27.5	17	0	36.5	6	1	46.5	1	1
15	AKAW5080	N-516	24.8	13	0	32.2	9	1	32.9	14	0	34.9	8	0
16	DBW320	N-517	33.4	1	1	32.4	8	1	30.2	19	0	37.9	4	0
17	CG1037	N-518	27.4	8	0	23.6	20	0	31.7	16	0	21.3	22	0
18	GW527	N-519	26.3	12	0	36.7	1	1	36.0	8	1	24.5	18	0
19	MACS6769	N-520	22.1	20	0	29.6	13	0	36.1	7	1	26.8	15	0
20	GW525	N-522	19.3	25	0	24.3	19	0	34.0	11	0	36.8	5	0
21	NIAW3898	N-523	20.7	23	0	31.4	10	1	41.7	1	1	32.3	11	0
22	MP3529	N-524	22.7	18	0	21.9	23	0	26.9	21	0	29.5	13	0
23	PBW837	N-525	27.3	10	0	26.0	18	0	30.4	18	0	33.3	9	0
24	HD2932 (C)	N-514	26.5	11	0	30.2	12	0	33.5	13	0	38.7	3	0
25	HD2864 (C)	N-521	24.3	14	0	36.7	1	1	24.7	25	0	17.6	25	0
G.M.			25.7			29.0			32.9			29.8		
S.E.(M)			2.154			2.541			2.458			2.745		
C.D. (10%)			5.3			6.1			6.1			6.8		
C.V.			11.8			12.4			10.6			13.0		
D.O.S.(dd.mm.yy)			05.12.19			06.12.19			09.12.19			09.12.19		

1905-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	LOK77	N-501	49.8	24	0	34.9	10	0	43.3	21	0
2	HD3366	N-502	50.9	19	0	34.3	13	0	43.6	19	0
3	MP3527	N-503	51.1	18	0	37.5	3	1	45.2	7	0
4	NIAW3895	N-504	52.6	9	0	32.5	20	0	43.8	15	0
5	MP1372	N-505	52.3	12	0	33.7	15	0	44.2	13	0
6	CG1035	N-506	52.5	10	0	33.9	14	0	44.4	10	0
7	HD3367	N-507	53.1	7	0	29.6	25	0	42.8	24	0
8	WH1279	N-508	54.1	5	0	30.5	23	0	43.8	16	0
9	HI1651	N-509	53.4	6	0	39.0	1	1	47.1	2	1
10	HI1652	N-510	53.1	8	0	32.9	19	0	44.2	12	0
11	RVW4309	N-511	50.3	22	0	33.3	18	0	42.9	23	0
12	NWS2180	N-512	51.9	15	0	35.2	9	0	44.6	9	0
13	MACS6774	N-513	52.0	14	0	37.1	4	1	45.5	6	0
14	UAS3013	N-515	51.5	16	0	35.9	5	0	44.6	8	0
15	AKAW5080	N-516	50.2	23	0	35.2	8	0	43.7	17	0
16	DBW320	N-517	52.5	11	0	38.1	2	1	46.2	4	1
17	CG1037	N-518	52.3	13	0	32.0	21	0	43.4	20	0
18	GW527	N-519	56.5	1	1	35.5	6	0	47.3	1	1
19	MACS6769	N-520	50.6	21	0	33.5	17	0	43.1	22	0
20	GW525	N-522	55.5	2	1	34.7	11	0	46.4	3	1
21	NIAW3898	N-523	50.7	20	0	35.3	7	0	44.0	14	0
22	MP3529	N-524	47.0	25	0	31.5	22	0	40.2	25	0
23	PBW837	N-525	51.4	17	0	33.7	16	0	43.7	18	0
24	HD2932 (C)	N-514	55.0	4	1	34.3	12	0	45.9	5	1
25	HD2864 (C)	N-521	55.1	3	1	30.5	24	0	44.3	11	0
G.M.			52.2			34.2			44.3		
S.E.(M)			0.964			1.116			0.730		
C.D. (10%)			2.2			2.6			1.7		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-3B-IR-LS-TAS, 2019-20**

SN	Variety	Code	Rust Reaction		Agronomic Characteristics								Grain Characteristics			
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	LOK77	N-501	tR	tR	59-89	72	96-131	116	75-101	86	10	Ey	A	SH	34-43	39
2	HD3366	N-502	5MR	5S	60-85	70	97-129	114	76-101	89	10	Ey	A	SH	36-45	40
3	MP3527	N-503	tMR	20S	51-77	62	95-123	109	82-106	97	10	Ey	A	SH	39-52	43
4	NIAW3895	N-504	0	tMS	51-78	63	87-124	108	84-103	94	10	Ey	A	SH	40-52	44
5	MP1372	N-505	10MR	tR	50-82	62	92-126	108	71-101	87	10	Ey	A	SH	39-50	44
6	CG1035	N-506	5MR	20S	61-87	71	98-129	114	76-103	93	10	Ey	A	SH	38-48	42
7	HD3367	N-507	tMR	tS	59-82	70	97-125	114	73-100	88	10	Ey	A	SH	36-49	41
8	WH1279	N-508	0	tR	54-86	69	97-128	115	79-106	93	10	Ey	A	SH	39-51	44
9	HI1651	N-509	0	tR	53-81	65	95-123	110	70-102	88	10	Ey	A	SH	35-47	41
10	HI1652	N-510	5MS	tR	50-75	62	90-115	106	68-96	80	10	Ey	A	SH	35-44	39
11	RVW4309	N-511	tR	10S	60-81	69	99-121	113	73-101	88	10	Ey	A	SH	34-45	38
12	NWS2180	N-512	tR	tMS	60-86	72	95-125	115	72-101	89	10	Ey	A	SH	32-48	39
13	MACS6774	N-513	40S	20S	59-81	69	93-122	112	75-100	90	10	Ey	A	SH	34-45	40
14	UAS3013	N-515	tR	20S	63-88	74	98-130	118	85-110	98	20	Ey	A	SH	35-51	40
15	AKAW5080	N-516	tMR	10MR	51-77	62	92-122	108	73-108	94	10	Ey	A	SH	31-43	37
16	DBW320	N-517	tR	tR	53-82	66	94-123	111	73-96	90	10	Ey	A	SH	37-50	45
17	CG1037	N-518	0	tMS	60-81	70	97-122	114	82-108	97	10	Ey	A	SH	33-48	40
18	GW527	N-519	0	tR	47-78	63	87-120	108	67-87	77	10	Ey	A	SH	38-51	46
19	MACS6769	N-520	0	tR	57-82	69	96-122	113	71-94	85	10	Ey	A	SH	35-50	40
20	GW525	N-522	0	0	56-86	69	94-126	112	81-110	99	10	Ey	A	SH	39-57	46
21	NIAW3898	N-523	0	tR	51-78	62	92-123	108	82-99	91	10	Ey	A	SH	35-50	41
22	MP3529	N-524	tR	tR	55-82	67	95-124	112	78-96	85	10	Ey	A	SH	34-44	39
23	PBW837	N-525	tR	tMS	52-81	64	94-121	109	81-105	94	10	Ey	A	SH	34-47	41
24	HD2932 (C)	N-514	0	20MR	56-83	69	94-123	112	75-97	88	15	Ey	A	SH	35-47	40
25	HD2864 (C)	N-521	0	tR	50-81	64	95-121	109	71-95	83	10	Ey	A	SH	37-45	41

1. Ancillary data from Bilaspur, Gwalior, Indore, Jabalpur, Junagadh, Powarkheda, Raipur, Udaipur and Vijapur.
2. Black rust data from Powarkheda and Vijapur; brown rust data from Junagadh and Vijapur.
3. Lodging data from Gwalior, Junagadh, Powarkheda and Vijapur.

NIVT-3B-IR-LS-TAS, 2019-20
Central Zone
Individual Station Rust Data

SN	Variety	Code	Brown Rust			Black Rust	
			Junagadh	Vijapur		Powarkheda	Vijapur
1	LOK77	N-501	0	0		0	tR
2	HD3366	N-502	tR	0		0	5S
3	MP3527	N-503	5MR	tR		20S	10S
4	NIAW3895	N-504	tMR	tR		0	tMS
5	MP1372	N-505	0	0		0	tR
6	CG1035	N-506	10MR	tMS		20S	10MS
7	HD3367	N-507	5MR	0		0	tS
8	WH1279	N-508	tMR	0		0	tR
9	HI1651	N-509	0	0		0	tR
10	HI1652	N-510	0	0		0	tR
11	RVW4309	N-511	5MS	tMS		0	10S
12	NWS2180	N-512	0	tR		0	tMS
13	MACS6774	N-513	0	tR		20S	10MR
26	UAS3013	N-515	0	0		20S	5S
15	AKAW5080	N-516	0	tR		0	10MR
16	DBW320	N-517	tMR	0		0	tR
17	CG1037	N-518	0	tR		0	tMS
18	GW527	N-519	0	0		0	tR
19	MACS6769	N-520	0	0		0	tR
20	GW525	N-522	0	0		0	0
27	NIAW3898	N-523	0	0		0	tR
22	MP3529	N-524	0	0		0	tMS
23	PBW837	N-525	0	tR		0	tR
24	HD2932 (C)	N-514	40S	tR		0	20MR
25	HD2864 (C)	N-521	0	0		0	tR

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-3B-IR-LS-TAS, 2019-20**

SN	Variety	Code	Disease Reactions		Agronomic Characteristics								Grain Characteristics			
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	LOK77	N-501	0	0	46-64	54	90-114	101	52-95	74	15	Ey	A	SH	39-43	41
2	HD3366	N-502	10S	10S	45-64	54	90-113	103	62-90	79	0	Ey	A	SH	33-45	39
3	MP3527	N-503	30S	10S	45-56	48	83-113	101	66-103	83	25	Ey	A	SH	41-47	44
4	NIAW3895	N-504	0	10MS	46-58	53	88-111	100	70-101	84	0	Ey	A	SH	35-49	44
5	MP1372	N-505	0	0	40-59	47	78-112	97	66-96	76	25	Ey	A	SH	42-49	45
6	CG1035	N-506	60S	10S	46-67	57	90-111	103	70-95	85	0	Ey	A	SH	34-44	39
7	HD3367	N-507	0	0	47-67	58	91-115	104	65-94	75	0	Ey	A	SH	37-45	39
8	WH1279	N-508	0	10MS	47-67	58	90-113	104	68-99	80	0	Ey	A	SH	37-49	42
9	HI1651	N-509	0	0	46-62	52	84-114	98	60-97	75	10	Ey	A	SH	42-48	44
10	HI1652	N-510	0	0	44-60	49	84-114	97	58-83	70	0	Ey	A	SH	36-44	40
11	RVW4309	N-511	30S	20S	46-62	53	86-115	101	59-100	76	10	Ey	A	SH	35-47	39
12	NWS2180	N-512	0	10MS	47-68	57	90-113	101	66-94	77	0	Ey	A	SH	38-41	40
13	MACS6774	N-513	10S	10S	46-64	55	90-114	101	65-94	79	10	Ey	A	SH	36-43	40
14	UAS3013	N-515	0	10MS	46-69	59	91-115	101	71-103	90	0	Ey	A	SH	40-47	44
15	AKAW5080	N-516	0	0	42-61	50	85-111	98	69-103	84	0	Ey	A	SH	37-45	40
16	DBW320	N-517	0	20S	46-62	51	85-113	99	66-94	79	0	Ey	A	SH	44-50	47
17	CG1037	N-518	0	20S	48-66	58	89-111	100	66-103	84	0	Ey	A	SH	34-43	37
18	GW527	N-519	0	0	45-60	50	84-113	99	57-87	69	0	Ey	A	SH	44-49	46
19	MACS6769	N-520	0	0	46-68	57	90-114	101	60-87	75	0	Ey	A	SH	38-44	41
20	GW525	N-522	0	0	49-63	53	90-114	100	68-106	86	15	Ey	A	SH	45-49	47
21	NIAW3898	N-523	10S	10S	45-58	50	85-114	99	66-99	82	0	Ey	A	SH	35-46	42
22	MP3529	N-524	10MS	10S	47-62	52	86-113	100	55-88	75	10	Ey	A	SH	39-41	40
23	PBW837	N-525	0	30S	48-62	52	85-113	99	67-98	81	15	Ey	A	SH	37-43	41
24	HD2932 (C)	N-514	40S	20S	46-62	54	87-114	100	67-100	79	15	Ey	A	SH	34-45	37
25	HD2864 (C)	N-521	0	0	41-58	48	81-113	97	57-91	73	0	Ey	A	SH	39-43	40

1. Ancillary data from Dharwad, Karad, Kolhapur, Niphad, Nippani, Parbhani, Pune and Akola.
2. Lodging data from Niphad, Parbhani and Akola.
3. Rust data from Dharwad and Nippani.

NIVT-3B-IR-LS-TAS, 2019-20
Peninsular Zone
Individual Station Rust Data

SN	Variety	Code	Brown Rust			Black Rust	
			Dharwad	Nippani		Dharwad	Nippani
1	LOK77	N-501	0	0		0	0
2	HD3366	N-502	10S	0		10S	0
3	MP3527	N-503	30S	0		10S	0
4	NIAW3895	N-504	0	0		10MS	0
5	MP1372	N-505	0	0		0	0
6	CG1035	N-506	60S	0		10S	tMS
7	HD3367	N-507	0	0		0	0
8	WH1279	N-508	0	0		10MS	0
9	HI1651	N-509	0	0		0	0
10	HI1652	N-510	0	0		0	0
11	RVW4309	N-511	30S	5MS		20S	5MS
12	NWS2180	N-512	0	0		10MS	0
13	MACS6774	N-513	10S	0		10S	0
26	UAS3013	N-515	0	0		10MS	0
15	AKAW5080	N-516	0	0		0	0
16	DBW320	N-517	0	0		20S	0
17	CG1037	N-518	0	0		20S	0
18	GW527	N-519	0	0		0	0
19	MACS6769	N-520	0	0		0	0
20	GW525	N-522	0	0		0	0
27	NIAW3898	N-523	10S	0		10S	0
22	MP3529	N-524	10MS	0		10S	0
23	PBW837	N-525	0	0		30S	0
24	HD2932 (C)	N-514	40S	0		20S	tMS
25	HD2864 (C)	N-521	0	0		0	0

1906-NIVT-4-IR-TS-TDM-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ											
			Madhya Pradesh				Gujarat				Rajasthan			
			Indore			Powarkheda			Junagarh		Vijapur		Kota		Udaipur	
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PWU5	N-601	52.8	11	1	68.4	5	0	43.0	25	0	64.4	4	1	69.2	7	1	70.4	5	1
2	HI8826	N-603	58.6	2	1	64.4	8	0	61.6	1	1	67.5	1	1	78.4	1	1	33.0	24	0
3	MACS4106	N-604	59.2	1	1	60.4	12	0	57.5	7	1	59.2	11	0	71.7	5	1	32.3	25	0
4	UAS473	N-605	50.9	15	0	50.2	23	0	53.6	13	0	55.4	15	0	51.7	19	0	69.3	7	0
5	HI8828	N-606	50.1	18	0	59.6	15	0	50.4	19	0	59.4	10	0	57.1	13	0	59.2	21	0
6	MPO1375	N-607	49.1	19	0	70.8	4	1	49.0	21	0	60.3	9	1	51.2	20	0	41.9	23	0
7	MACS4100	N-608	53.7	10	1	72.6	1	1	58.5	6	1	57.2	12	0	58.7	11	0	68.5	9	0
8	WHD965	N-609	50.8	16	0	55.4	21	0	53.1	15	0	52.0	21	0	53.8	16	0	65.8	13	0
9	NIDW1348	N-610	45.9	24	0	60.3	13	0	53.2	14	0	53.1	20	0	46.2	24	0	73.3	2	1
10	DDW53	N-611	47.2	21	0	61.1	11	0	58.8	5	1	57.0	13	0	73.9	3	1	67.3	10	0
11	HI8829	N-612	46.3	23	0	57.5	18	0	48.9	22	0	54.0	18	0	56.3	14	0	62.3	20	0
12	PDW360	N-613	47.0	22	0	59.9	14	0	45.4	23	0	53.3	19	0	55.2	15	0	72.9	4	1
13	HI8825	N-614	54.3	8	1	59.4	16	0	57.2	8	1	62.7	7	1	60.9	10	0	67.0	11	0
14	HI8827	N-615	54.4	6	1	41.5	25	0	49.6	20	0	61.4	8	1	49.2	22	0	68.5	8	0
15	DDW54	N-617	52.3	13	1	56.7	19	0	59.6	3	1	50.4	24	0	58.3	12	0	64.7	17	0
16	UAS474	N-619	54.6	4	1	46.5	24	0	55.4	11	1	54.9	16	0	46.6	23	0	65.8	12	0
17	PBND4812	N-620	48.4	20	0	71.0	3	1	61.1	2	1	51.7	23	0	53.2	18	0	51.6	22	0
18	GW1355	N-621	50.7	17	0	64.2	9	0	51.0	18	0	66.2	3	1	45.2	25	0	65.7	14	0
19	GW1354	N-622	44.5	25	0	59.2	17	0	52.3	16	0	54.1	17	0	49.5	21	0	73.1	3	1
20	NIDW1345	N-623	57.1	3	1	66.0	7	0	55.6	10	1	66.6	2	1	71.4	6	1	65.0	16	0
21	MPO1374	N-624	52.1	14	1	71.4	2	1	45.0	24	0	40.4	25	0	53.2	17	0	69.4	6	0
22	MPO1373	N-625	52.8	12	1	53.4	22	0	59.3	4	1	63.5	6	1	61.6	9	0	74.2	1	1
23	HI8713 (C)	N-602	54.5	5	1	56.5	20	0	54.3	12	0	56.2	14	0	77.0	2	1	65.5	15	0
24	HI8737 (C)	N-616	53.9	9	1	66.1	6	0	51.4	17	0	51.9	22	0	63.5	8	0	62.6	19	0
25	MACS3949 (C)	N-618	54.4	7	1	64.2	9	0	56.6	9	1	64.1	5	1	72.1	4	1	64.5	18	0
G.M.			51.8			60.7			53.7			57.5			59.4			63.0		
S.E.(M)			3.221			1.443			2.709			2.950			5.021			3.790		
C.D. (10%)			8.0			3.5			6.7			7.3			12.2			9.2		
C.V.			8.8			3.4			7.1			7.3			12.0			8.5		
D.O.S.(dd.mm.yy)			18.11.19			17.11.19			13.11.19			13.11.19			19.11.19			11.11.19		

No. of Trials : Proposed = 13 Conducted = 13

Trials not reported (03) = Akola (TF), SK Nagar (LSM), Niphad (LSM, VLS)

1906-NIVT-4-IR-TS-TDM-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	PZ											
			Karnataka											
			Dharwad			Pune			Nippani			Ugar-Khurd		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PWU5	N-601	42.5	14	0	47.8	13	0	33.7	23	0	39.4	19	0
2	HI8826	N-603	53.1	1	1	61.6	1	1	45.1	11	0	43.7	11	0
3	MACS4106	N-604	41.4	17	0	46.5	15	0	37.5	18	0	50.2	2	1
4	UAS473	N-605	41.1	18	0	47.3	14	0	40.2	15	0	47.1	5	0
5	HI8828	N-606	48.7	3	1	48.1	11	0	38.9	17	0	39.6	18	0
6	MPO1375	N-607	38.2	22	0	43.9	18	0	30.0	25	0	36.0	25	0
7	MACS4100	N-608	44.7	11	1	53.8	4	0	43.3	14	0	39.0	20	0
8	WHD965	N-609	46.1	9	1	48.8	10	0	50.7	4	1	44.4	10	0
9	NIDW1348	N-610	42.1	15	0	49.1	9	0	49.7	5	1	38.2	21	0
10	DDW53	N-611	51.2	2	1	52.1	6	0	53.7	2	1	40.4	17	0
11	HI8829	N-612	30.2	25	0	40.0	24	0	36.5	21	0	49.8	4	1
12	PDW360	N-613	48.3	4	1	44.5	16	0	52.3	3	1	43.6	12	0
13	HI8825	N-614	38.3	21	0	42.1	22	0	33.9	22	0	49.9	3	1
14	HI8827	N-615	45.8	10	1	52.6	5	0	39.3	16	0	51.5	1	1
15	DDW54	N-617	46.5	7	1	43.7	19	0	36.5	20	0	44.5	9	0
16	UAS474	N-619	36.9	23	0	43.5	20	0	43.6	13	0	46.8	6	0
17	PBND4812	N-620	38.4	20	0	49.8	8	0	45.6	10	0	36.5	22	0
18	GW1355	N-621	42.5	13	0	37.1	25	0	48.1	8	1	41.6	14	0
19	GW1354	N-622	32.0	24	0	47.9	12	0	44.1	12	0	40.8	15	0
20	NIDW1345	N-623	46.9	5	1	53.9	3	0	46.9	9	0	36.0	24	0
21	MPO1374	N-624	46.4	8	1	41.0	23	0	37.3	19	0	45.4	7	0
22	MPO1373	N-625	46.7	6	1	53.9	2	0	56.0	1	1	40.5	16	0
23	HI8713 (C)	N-602	40.9	19	0	51.3	7	0	49.2	7	1	42.8	13	0
24	HI8737 (C)	N-616	42.0	16	0	42.6	21	0	49.2	6	1	45.3	8	0
25	MACS3949 (C)	N-618	44.3	12	1	44.3	17	0	33.3	24	0	36.3	23	0
G.M.			43.0			47.5			43.0			42.8		
S.E.(M)			4.073			1.770			3.694			3.574		
C.D. (10%)			10.1			4.4			9.1			8.6		
C.V.			13.4			5.3			12.2			11.8		
D.O.S.(dd.mm.yy)			18.11.19			19.11.19			19.11.19			20.11.19		

1906-NIVT-4-IR-TS-TDM-NAT-ZONE, 2019-20

ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	PWU5	N-601	61.4	4	1	40.8	22	0	53.2	8	0
2	HI8826	N-603	60.6	8	1	50.9	1	1	56.7	1	1
3	MACS4106	N-604	56.7	13	0	43.9	13	0	51.6	13	0
4	UAS473	N-605	55.2	20	0	43.9	12	0	50.7	20	0
5	HI8828	N-606	56.0	15	0	43.8	14	0	51.1	18	0
6	MPO1375	N-607	53.7	25	0	37.0	25	0	47.0	25	0
7	MACS4100	N-608	61.5	3	1	45.2	9	0	55.0	5	1
8	WHD965	N-609	55.2	21	0	47.5	4	1	52.1	12	0
9	NIDW1348	N-610	55.3	18	0	44.8	11	0	51.1	17	0
10	DDW53	N-611	60.9	5	1	49.4	2	1	56.3	3	1
11	HI8829	N-612	54.2	22	0	39.1	24	0	48.2	24	0
12	PDW360	N-613	55.6	16	0	47.1	6	1	52.2	11	0
13	HI8825	N-614	60.3	9	0	41.1	21	0	52.6	10	0
14	HI8827	N-615	54.1	23	0	47.3	5	1	51.4	14	0
15	DDW54	N-617	57.0	12	0	42.8	15	0	51.3	15	0
16	UAS474	N-619	54.0	24	0	42.7	16	0	49.5	23	0
17	PBND4812	N-620	56.2	14	0	42.6	17	0	50.7	19	0
18	GW1355	N-621	57.2	11	0	42.3	19	0	51.3	16	0
19	GW1354	N-622	55.5	17	0	41.2	20	0	49.8	22	0
20	NIDW1345	N-623	63.6	1	1	45.9	8	0	56.5	2	1
21	MPO1374	N-624	55.2	19	0	42.5	18	0	50.1	21	0
22	MPO1373	N-625	60.8	6	1	49.3	3	1	56.2	4	1
23	HI8713 (C)	N-602	60.7	7	1	46.1	7	0	54.8	6	1
24	HI8737 (C)	N-616	58.2	10	0	44.8	10	0	52.8	9	0
25	MACS3949 (C)	N-618	62.6	2	1	39.6	23	0	53.4	7	0
G.M.			57.7			44.1			52.2		
S.E.(M)			1.375			1.698			1.069		
C.D. (10%)			3.2			4.0			2.5		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: NIVT-4-IR-TS-TDM, 2019-20**

SN	Variety	Code	Disease reaction		Agronomic Characteristics							Grain Characteristics				
			Br (HS)	Bl (HS)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	PWU5	N-601	tR	40S	53-81	66	108-137	119	78-101	92	0	M	A	H	42-49	45
2	HI8826	N-603	tMR	5R	65-91	76	116-140	126	78-102	94	0	M	A	H	42-53	49
3	MACS4106	N-604	0	tR	58-84	70	110-135	122	69-102	89	0	M	A	SH	43-60	50
4	UAS473	N-605	tR	tMS	69-85	75	116-130	124	73-134	93	20	H	A	H	39-51	46
5	HI8828	N-606	tR	tR	67-83	75	111-131	123	75-100	90	20	M	A	H	38-57	48
6	MPO1375	N-607	0	20S	65-91	73	110-138	124	77-98	89	10	M	A	H	44-57	49
7	MACS4100	N-608	tR	5R	59-78	66	106-134	120	69-100	85	5	M	A	H	42-50	46
8	WHD965	N-609	0	tR	63-79	71	109-135	122	71-105	91	0	M	A	H	44-58	51
9	NIDW1348	N-610	tR	5R	61-78	70	110-134	121	74-110	92	5	M	A	H	47-60	54
10	DDW53	N-611	tR	20S	68-82	74	115-133	123	73-102	91	0	M	A	H	40-55	48
11	HI8829	N-612	0	5R	68-86	78	113-139	124	77-104	94	15	H	A	H	44-57	50
12	PDW360	N-613	tR	20MS	72-86	80	118-142	126	69-104	89	0	M	A	H	41-53	47
13	HI8825	N-614	0	tR	59-80	68	109-130	121	66-100	86	10	M	A	H	43-54	50
14	HI8827	N-615	0	5R	62-91	75	114-139	124	70-98	87	5	M	A	H	41-56	47
15	DDW54	N-617	tR	20S	67-84	76	117-133	124	67-101	89	0	H	A	H	33-50	44
16	UAS474	N-619	tR	5R	65-82	71	112-135	123	66-101	86	5	M	A	H	41-48	45
17	PBND4812	N-620	0	tR	66-81	73	110-132	122	78-118	100	0	M	A	H	46-60	52
18	GW1355	N-621	0	20S	61-81	70	112-135	122	65-98	84	0	M	A	SH	46-58	49
19	GW1354	N-622	0	tR	63-81	72	110-134	122	67-100	82	0	M	A	H	41-60	54
20	NIDW1345	N-623	0	5R	65-79	71	108-134	120	71-103	91	20	M	A	H	41-52	45
21	MPO1374	N-624	tR	10MS	55-81	65	107-133	120	60-99	83	30	H	A	H	42-59	51
22	MPO1373	N-625	tR	60S	63-84	75	114-132	122	79-102	94	20	H	A	SH	37-49	44
23	HI8713 (C)	N-602	tR	10MS	72-84	77	119-136	125	76-105	94	20	M	A	H	42-51	45
24	HI8737 (C)	N-616	tMR	10MS	65-84	72	114-136	124	70-99	87	5	H	A	H	47-58	52
25	MACS3949 (C)	N-618	20S	5R	68-84	76	114-138	124	73-102	90	5	M	A	H	42-52	48

1. Ancillary data from Indore, Junagadh, SK Nagar, Udaipur, Vijapur, Kota and Powarkheda centers.
2. Brown rust data from Junagadh, Vijapur and Black rust reported from Vijapur, Powarkheda centres only.

NIVT-4-IR-TS-TDM, 2019-20
Central Zone
Individual Station Rust Data

SN	Variety	Code	Brown rust		Black rust	
			Junagarh	Vijapur	Vijapur	Powarkheda
1	PWU5	N-601	0	tR	10MS	40S
2	HI8826	N-603	0	tMR	5R	0
3	MACS4106	N-604	0	0	tR	0
4	UAS473	N-605	0	tR	tMS	0
5	HI8828	N-606	0	tR	tR	0
6	MPO1375	N-607	0	0	5R	20S
7	MACS4100	N-608	0	tR	5R	0
8	WHD965	N-609	0	0	tR	0
9	NIDW1348	N-610	0	tR	5R	0
10	DDW53	N-611	0	tR	5MS	20S
11	HI8829	N-612	0	0	5R	0
12	PDW360	N-613	0	tR	20MS	10MS
13	HI8825	N-614	0	0	tR	0
14	HI8827	N-615	0	0	5R	0
15	DDW54	N-617	0	tR	5S	20S
16	UAS474	N-619	0	tR	5R	0
17	PBND4812	N-620	0	0	tR	0
18	GW1355	N-621	0	0	tR	20S
19	GW1354	N-622	0	0	tR	0
20	NIDW1345	N-623	0	0	5R	0
21	MPO1374	N-624	0	tR	5MR	10MS
22	MPO1373	N-625	0	tR	5R	60S
23	HI8713 (C)	N-602	0	tR	5R	10MS
24	HI8737 (C)	N-616	tMR	tMR	5MS	10MS
25	MACS3949 (C)	N-618	20S	tR	5R	0

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: NIVT-4-IR-TS-TDM, 2019-20**

SN	Variety	Code	Disease reaction			Agronomic Characteristics								Grain Characteristics			
			Br (HS)	Bl (HS)	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	PWU5	N-601	10S	0	0.0	51-66	57	98-121	106	71-85	80	0	M	A	H	36-43	40
2	HI8826	N-603	0	10MS	4.0	56-73	62	100-117	108	87-102	93	30	M	A	H	34-51	46
3	MACS4106	N-604	0	0	0.0	53-68	58	101-109	104	85-92	90	0	Ey	A	H	40-54	43
4	UAS473	N-605	5MS	5MS	1.6	54-68	60	101-113	107	86-112	105	0	M	A	H	39-48	45
5	HI8828	N-606	0	tMS	0.3	59-67	63	104-111	108	81-88	85	30	M	A	H	36-53	46
6	MPO1375	N-607	5MS	tMS	0.3	60-69	64	106-113	110	82-95	90	20	M	A	H	39-56	51
7	MACS4100	N-608	5MS	20S	11.7	52-70	58	100-109	104	76-91	83	40	Ey	A	H	37-46	44
8	WHD965	N-609	0	10S	3.6	61-68	64	103-116	111	86-95	89	15	M	A	SH	39-54	46
9	NIDW1348	N-610	5MR	5MS	1.6	65-75	71	107-123	114	88-96	91	5	Ey	A	H	41-56	45
10	DDW53	N-611	0	5S	3.3	58-71	63	108-112	110	84-87	86	30	M	A	H	36-51	45
11	HI8829	N-612	0	5S	1.9	62-76	68	110-118	115	87-100	93	40	M	A	H	38-48	41
12	PDW360	N-613	5MS	tMR	0.1	52-80	61	102-124	113	80-95	90	10	M	A	H	38-47	44
13	HI8825	N-614	0	10S	3.3	61-80	67	102-113	109	80-98	90	0	Ey	A	H	38-43	44
14	HI8827	N-615	0	5MS	1.3	61-67	64	107-112	110	85-88	87	5	M	A	H	37-44	41
15	DDW54	N-617	0	tMS	0.3	68-71	70	110-120	115	86-92	88	40	Ey	A	H	36-48	42
16	UAS474	N-619	0	5MS	1.3	54-66	58	101-111	105	84-88	86	10	M	A	H	32-43	35
17	PBND4812	N-620	0	tMS	0.3	55-77	62	102-108	105	101-114	106	0	Ey	A	H	46-55	50
18	GW1355	N-621	5MS	0	0.0	64-72	67	101-104	110	73-83	79	0	M	A	H	43-51	46
19	GW1354	N-622	5MS	5MS	1.6	61-66	63	104-112	109	77-89	83	0	M	A	SH	43-56	48
20	NIDW1345	N-623	5MS	5MS	1.6	61-67	64	104-117	113	94-96	95	5	M	A	H	33-46	41
21	MPO1374	N-624	10S	20S	15.0	53-69	64	99-119	111	70-88	81	5	M	A	H	40-53	50
22	MPO1373	N-625	0	10S	6.0	54-70	60	102-110	107	92-96	94	20	Ey	A	H	34-44	38
23	HI8713 (C)	N-602	0	tMS	0.1	58-70	64	110-118	113	84-91	87	10	M	A	SH	39-49	42
24	HI8737 (C)	N-616	0	0	0.0	63-68	66	103-115	111	77-88	83	0	M	A	H	41-52	44
25	MACS3949 (C)	N-618	0	tMS	0.3	65-71	69	108-121	116	73-95	86	0	M	A	H	41-51	44

1. Ancillary data from Pune, Dharwad, Niphad, Nippani and Ugar-khurd centers.
2. Incidence of Brown rust from Dharwad, Ugar-khurd; and Black rust from Dharwad, Nippani, Ugar-khurd centre only.
3. Lodging data from Pune centre only.

NIVT-4-IR-TS-TDM, 2019-20
Peninsular Zone
Individual Station Rust Data

SN	Variety	Code	Brown rust		Black rust		
			Dharwad	Ugar Khurd	Dharwad	Nippani	Ugar Khurd
1	PWU5	N-601	10S	5MS	0	0	0
2	HI8826	N-603	0	0	5MS	10MS	0
3	MACS4106	N-604	0	0	0	0	0
4	UAS473	N-605	5MS	0	5MS	0	tMS
5	HI8828	N-606	0	0	0	0	tMS
6	MPO1375	N-607	5MS	0	0	0	tMS
7	MACS4100	N-608	5MS	5MS	20S	5S	10S
8	WHD965	N-609	0	0	tMS	10S	0
9	NIDW1348	N-610	5MR	0	0	5MS	tMS
10	DDW53	N-611	0	0	5MR	5S	tMS
11	HI8829	N-612	0	0	0	5S	tMS
12	PDW360	N-613	5MS	0	tMR	0	0
13	HI8825	N-614	0	0	0	10S	0
14	HI8827	N-615	0	0	0	5MS	0
15	DDW54	N-617	0	0	0	0	tMS
16	UAS474	N-619	0	0	0	0	5MS
17	PBND4812	N-620	0	0	0	tMS	0
18	GW1355	N-621	0	5MS	0	0	0
19	GW1354	N-622	0	5MS	0	tMS	5MS
20	NIDW1345	N-623	5MS	0	5MS	tMS	0
21	MPO1374	N-624	10S	0	20S	5S	20S
22	MPO1373	N-625	0	0	10S	0	10MS
23	HI8713 (C)	N-602	0	0	0	tMS	0
24	HI8737 (C)	N-616	0	0	0	0	0
25	MACS3949 (C)	N-618	0	0	0	0	tMS

1907-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ											
			Delhi		J&K		Punjab						Haryana	
			Delhi		Jammu		Ludhiana		Balachaur		Gurdaspur		Hisar	
			Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG	Yield	RKG
1	WH1280	N-701	44.1	23 0	42.3	23 0	40.3	23 0	45.5	16 0	29.8	25 0	52.1	10 0
2	HD3368	N-702	66.5	3 1	56.3	7 0	49.8	18 0	61.6	3 1	55.0	3 1	44.4	19 0
3	HD3369	N-703	54.8	11 0	55.9	9 0	64.4	3 1	51.3	12 0	35.1	24 0	55.6	7 0
4	DBW321	N-704	64.0	6 1	54.6	10 0	59.9	9 1	55.9	8 0	35.4	22 0	51.4	11 0
5	BRW3863	N-705	49.4	17 0	42.7	21 0	49.7	19 0	38.6	21 0	41.8	14 0	52.8	9 0
6	WH1281	N-706	51.4	15 0	42.6	22 0	59.4	10 1	55.1	9 0	44.9	12 0	49.3	14 0
7	DBW324	N-707	56.0	8 0	33.3	25 0	38.9	24 0	37.6	22 0	35.8	20 0	48.6	15 0
8	UP3063	N-709	47.9	19 0	42.7	20 0	53.1	15 0	40.1	20 0	36.1	17 0	43.1	22 0
9	JAUW683	N-710	51.4	14 0	51.0	14 0	42.0	21 0	53.6	10 0	48.6	9 0	46.5	17 0
10	K1910	N-711	68.6	1 1	43.1	18 0	59.0	11 1	65.4	1 1	45.6	10 0	47.9	16 0
11	HI1654	N-713	46.9	21 0	42.9	19 0	58.7	12 1	58.6	6 1	52.1	5 1	63.2	1 1
12	NW7096	N-715	47.9	19 0	53.0	12 0	55.1	14 0	53.2	11 0	39.9	15 0	53.5	8 0
13	DBW323	N-716	51.4	15 0	59.0	4 0	52.3	16 0	43.4	17 0	35.8	20 0	43.8	20 0
14	HI1653	N-717	46.4	22 0	56.8	6 0	51.7	17 0	58.9	5 1	53.9	4 1	58.3	3 1
15	PBW848	N-718	52.4	13 0	54.5	11 0	60.6	7 1	62.8	2 1	42.9	13 0	39.6	24 0
16	PBW839	N-719	55.5	9 0	65.9	1 1	63.0	5 1	49.8	13 0	35.4	22 0	57.6	5 1
17	HUW843	N-720	30.0	25 0	59.5	3 1	38.1	25 0	37.0	23 0	49.5	8 0	36.8	25 0
18	PBW838	N-721	54.8	11 0	57.5	5 0	67.5	1 1	36.8	25 0	59.2	2 1	45.8	18 0
19	DBW322	N-722	64.4	5 1	49.5	16 0	63.8	4 1	36.9	24 0	39.6	16 0	60.4	2 1
20	BCW5	N-724	48.8	18 0	33.5	24 0	61.4	6 1	41.4	19 0	50.1	6 0	50.0	13 0
21	UP3062	N-725	65.5	4 1	56.2	8 0	58.0	13 1	59.4	4 1	36.0	18 0	43.8	20 0
22	HD3171 (C)	N-708	38.5	24 0	52.0	13 0	42.0	21 0	47.5	14 0	60.1	1 1	41.7	23 0
23	PBW644 (C)	N-712	67.1	2 1	44.4	17 0	49.6	20 0	45.8	15 0	49.7	7 0	51.4	12 0
24	K1317 (C)	N-714	57.5	7 0	60.6	2 1	64.7	2 1	58.5	7 1	45.2	11 0	58.3	3 1
25	WH1142 (C)	N-723	54.9	10 0	49.6	15 0	60.0	8 1	41.7	18 0	35.9	19 0	56.9	6 1
G.M.			53.4		50.4		54.5		49.5		43.7		50.1	
S.E.(M)			3.006		2.719		5.081		3.067		3.069		2.796	
C.D. (10%)			7.3		6.7		12.3		7.4		7.4		6.8	
C.V.			8.0		7.6		13.2		8.8		9.9		7.9	
D.O.S.(dd.mm.yy)			02.11.19		26.10.19		26.10.19		05.11.19		31.10.19		03.11.19	

No. of Trials : Proposed = 18 Conducted = 18

Trials not reported (02) = Ayodhya (RMT), IARI-Pusa(RMT)

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ									NEPZ								
			Haryana			Uttarakhand			Uttar Pradesh			Uttar Pradesh						Bihar		
			IIWBR			Pantnagar			Modipuram			Kanpur			Varanasi			RPCAU-Pusa		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1280	N-701	48.3	21	0	43.5	20	0	40.8	17	0	49.7	8	0	44.6	20	0	31.9	24	0
2	HD3368	N-702	72.7	2	1	53.3	4	1	59.8	3	0	44.8	16	0	58.2	5	0	43.1	14	0
3	HD3369	N-703	71.4	3	1	50.7	6	0	52.8	9	0	51.6	5	0	45.5	18	0	36.1	21	0
4	DBW321	N-704	68.0	7	0	53.2	5	1	36.7	21	0	59.0	2	1	50.1	13	0	58.3	1	1
5	BRW3863	N-705	47.2	22	0	44.8	17	0	39.1	18	0	49.1	10	0	51.1	11	0	38.9	17	0
6	WH1281	N-706	52.6	18	0	47.6	10	0	48.6	12	0	44.1	19	0	60.1	4	0	50.7	5	0
7	DBW324	N-707	47.0	23	0	49.8	8	0	51.3	11	0	43.2	22	0	37.9	24	0	41.0	15	0
8	UP3063	N-709	59.5	12	0	43.0	23	0	38.8	19	0	44.6	17	0	53.2	9	0	50.7	5	0
9	JAUW683	N-710	55.6	17	0	43.5	21	0	31.4	24	0	45.3	14	0	44.6	19	0	26.4	25	0
10	K1910	N-711	68.8	5	0	46.4	15	0	44.9	13	0	54.7	3	1	51.4	10	0	37.5	18	0
11	HI1654	N-713	78.2	1	1	54.3	2	1	54.9	6	0	46.5	13	0	57.2	7	0	43.8	13	0
12	NW7096	N-715	68.3	6	0	47.7	9	0	51.5	10	0	43.4	21	0	50.5	12	0	49.3	7	0
13	DBW323	N-716	56.3	16	0	46.6	14	0	64.8	1	1	43.9	20	0	56.2	8	0	56.9	2	1
14	HI1653	N-717	69.3	4	0	41.9	24	0	54.8	7	0	43.1	23	0	64.5	2	1	44.4	12	0
15	PBW848	N-718	64.7	9	0	54.0	3	1	57.9	4	0	52.3	4	0	41.9	22	0	44.4	11	0
16	PBW839	N-719	65.4	8	0	50.7	7	0	63.1	2	1	48.6	11	0	57.8	6	0	36.1	21	0
17	HUW843	N-720	43.3	25	0	39.7	25	0	32.1	23	0	37.2	25	0	61.2	3	0	36.3	20	0
18	PBW838	N-721	61.7	11	0	44.4	18	0	54.1	8	0	50.2	7	0	65.0	1	1	33.3	23	0
19	DBW322	N-722	58.6	13	0	45.0	16	0	38.1	20	0	59.4	1	1	31.7	25	0	52.1	4	0
20	BCW5	N-724	51.8	19	0	56.0	1	1	56.8	5	0	44.6	17	0	43.7	21	0	47.2	9	0
21	UP3062	N-725	58.0	15	0	47.3	12	0	44.3	14	0	49.3	9	0	46.1	17	0	47.9	8	0
22	HD3171 (C)	N-708	50.0	20	0	43.8	19	0	29.6	25	0	50.5	6	0	40.3	23	0	40.3	16	0
23	PBW644 (C)	N-712	58.4	14	0	43.4	22	0	36.7	22	0	47.0	12	0	47.1	16	0	54.9	3	0
24	K1317 (C)	N-714	64.7	10	0	47.2	13	0	43.2	15	0	45.0	15	0	49.9	14	0	45.1	10	0
25	WH1142 (C)	N-723	44.7	24	0	47.4	11	0	41.7	16	0	43.1	23	0	48.3	15	0	37.5	18	0
G.M.			59.4			47.4			46.7			47.6			50.3			43.4		
S.E.(M)			2.112			1.450			1.759			2.464			0.835			1.312		
C.D. (10%)			5.1			3.5			4.3			6.0			2.1			3.2		
C.V.			5.0			4.3			5.3			7.3			2.3			4.3		
D.O.S.(dd.mm.yy)			25.10.19			04.11.19			25.10.19			09.11.19			06.11.19			08.11.19		

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LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ											
			Bihar			Jharkhand			West Bengal					
			Sabour			Ranchi			Kalyani			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1280	N-701	18.6	25	0	61.4	14	0	35.0	7	0	21.9	21	0
2	HD3368	N-702	44.9	8	0	60.2	18	0	34.3	10	0	31.6	11	0
3	HD3369	N-703	51.6	2	1	62.3	13	0	38.0	2	1	28.7	16	0
4	DBW321	N-704	49.2	3	1	65.9	8	1	37.0	4	1	39.1	2	1
5	BRW3863	N-705	35.4	14	0	49.8	23	0	28.6	23	0	37.5	6	0
6	WH1281	N-706	35.0	16	0	65.2	10	1	37.9	3	1	30.8	12	0
7	DBW324	N-707	21.8	23	0	60.7	16	0	28.8	22	0	34.6	8	0
8	UP3063	N-709	46.1	6	0	65.0	11	0	34.5	9	0	5.8	25	0
9	JAUW683	N-710	29.8	21	0	39.9	25	0	28.4	24	0	8.0	24	0
10	K1910	N-711	25.4	22	0	59.4	21	0	29.0	19	0	37.7	5	0
11	HI1654	N-713	46.6	5	1	59.8	20	0	29.0	18	0	30.0	14	0
12	NW7096	N-715	35.2	15	0	60.8	15	0	29.2	17	0	21.6	22	0
13	DBW323	N-716	30.0	20	0	54.3	22	0	36.1	5	1	24.5	19	0
14	HI1653	N-717	36.5	12	0	68.0	5	1	35.1	6	1	38.0	4	0
15	PBW848	N-718	37.4	11	0	65.6	9	1	34.0	12	0	40.5	1	1
16	PBW839	N-719	37.6	10	0	69.7	3	1	32.7	14	0	31.8	10	0
17	HUW843	N-720	21.6	24	0	41.1	24	0	28.3	25	0	22.4	20	0
18	PBW838	N-721	32.0	19	0	71.9	1	1	28.9	20	0	29.8	15	0
19	DBW322	N-722	54.1	1	1	60.0	19	0	33.7	13	0	30.5	13	0
20	BCW5	N-724	33.5	17	0	64.6	12	0	32.2	15	0	26.7	18	0
21	UP3062	N-725	45.4	7	0	60.3	17	0	39.6	1	1	33.3	9	0
22	HD3171 (C)	N-708	43.0	9	0	70.7	2	1	34.1	11	0	16.2	23	0
23	PBW644 (C)	N-712	48.0	4	1	66.7	7	1	34.8	8	0	28.4	17	0
24	K1317 (C)	N-714	32.7	18	0	67.2	6	1	28.9	21	0	36.6	7	0
25	WH1142 (C)	N-723	35.5	13	0	68.8	4	1	29.4	16	0	38.7	3	1
G.M.			37.1			61.6			32.7			29.0		
S.E.(M)			3.059			2.727			1.828			0.963		
C.D. (10%)			7.6			6.6			4.5			2.4		
C.V.			11.7			6.3			7.9			4.7		
D.O.S.(dd.mm.yy)			09.11.19			07.11.19			09.11.19			01.11.19		

1907-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2019-20

ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1280	N-701	43.0	24	0	37.6	23	0	40.6	23	0
2	HD3368	N-702	57.7	1	1	45.3	7	0	52.3	2	1
3	HD3369	N-703	54.6	6	0	44.8	10	0	50.3	6	0
4	DBW321	N-704	53.2	10	0	51.2	1	1	52.4	1	1
5	BRW3863	N-705	45.1	20	0	41.5	20	0	43.5	21	0
6	WH1281	N-706	50.2	15	0	46.3	4	0	48.5	13	0
7	DBW324	N-707	44.3	23	0	38.3	22	0	41.6	22	0
8	UP3063	N-709	44.9	22	0	42.8	16	0	44.0	19	0
9	JAUW683	N-710	47.1	19	0	31.8	25	0	40.4	24	0
10	K1910	N-711	54.4	7	0	42.2	17	0	49.1	11	0
11	HI1654	N-713	56.7	2	1	44.7	11	0	51.4	3	1
12	NW7096	N-715	52.2	11	0	41.4	21	0	47.5	15	0
13	DBW323	N-716	50.4	14	0	43.1	14	0	47.2	16	0
14	HI1653	N-717	54.7	5	0	47.1	2	0	51.4	4	1
15	PBW848	N-718	54.4	8	0	45.2	8	0	50.3	7	0
16	PBW839	N-719	56.3	3	1	44.9	9	0	51.3	5	1
17	HUW843	N-720	40.7	25	0	35.4	24	0	38.4	25	0
18	PBW838	N-721	53.5	9	0	44.4	12	0	49.6	9	0
19	DBW322	N-722	50.7	13	0	45.9	6	0	48.6	12	0
20	BCW5	N-724	50.0	16	0	41.8	19	0	46.4	17	0
21	UP3062	N-725	52.1	12	0	46.0	5	0	49.4	10	0
22	HD3171 (C)	N-708	45.0	21	0	42.2	18	0	43.8	20	0
23	PBW644 (C)	N-712	49.6	17	0	46.7	3	0	48.3	14	0
24	K1317 (C)	N-714	55.6	4	1	43.6	13	0	50.3	8	0
25	WH1142 (C)	N-723	48.1	18	0	43.0	15	0	45.9	18	0
G.M.			50.6			43.1			47.3		
S.E.(M)			0.985			0.777			0.650		
C.D. (10%)			2.3			1.8			1.5		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: NIVT-5A-RI-TS-TAS, 2019-20**

SN	Variety	Code		Disease			Agronomic Characteristics								Grain Characteristics			
			Yl	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH1280	N-701	40S	18.4	20S	8.8	95-117	104	137-170	155	87-119	102	20	Ey	A	H	37-44	40
2	HD3368	N-702	20S	5.7	20S	6.3	85-108	97	135-168	154	80-115	101	10	Ey	A	H	38-49	44
3	HD3369	N-703	20MS	5.2	10S	3.8	93-110	101	139-168	156	88-117	103	10	Ey	A	SH	31-49	43
4	DBW321	N-704	20MS	5.3	20S	11.3	98-115	107	142-171	157	102-120	110	10	Ey	A	H	36-48	42
5	BRW3863	N-705	20MS	5.7	20S	8.8	95-112	105	135-171	157	97-117	110	30	Ey	A	H	39-45	41
6	WH1281	N-706	10S	4.7	30S	7.5	102-121	111	141-172	160	100-115	110	20	Ey	A	H	33-46	41
7	DBW324	N-707	60S	22.5	20S	5.0	99-115	108	137-172	158	99-122	113	15	Ey	A	H	34-46	40
8	UP3063	N-709	20S	4.8	10S	5.0	88-114	103	138-170	157	90-128	114	20	Ey	A	H	39-51	43
9	JAUW683	N-710	20S	7.5	20S	9.0	78-112	93	129-170	153	87-122	105	10	Ey	A	H	39-48	42
10	K1910	N-711	10S	4.0	5S	1.5	99-122	108	138-172	158	103-121	111	10	Ey	A	H	38-53	46
11	HI1654	N-713	10S	4.0	tS	0.3	98-116	107	139-172	157	92-115	108	15	Ey	A	H	35-47	44
12	NW7096	N-715	20S	9.3	20S	7.5	93-110	102	136-172	156	95-118	107	20	Ey	A	H	42-47	44
13	DBW323	N-716	40S	13.3	20S	7.5	99-116	106	139-171	157	85-117	106	20	Ey	A	H	32-48	43
14	HI1653	N-717	20S	5.7	5S	1.3	80-112	97	133-170	154	100-120	107	20	Ey	A	H	42-58	50
15	PBW848	N-718	10S	4.0	20S	5.0	94-115	104	136-170	156	85-113	103	10	Ey	A	H	30-46	40
16	PBW839	N-719	20MS	5.7	20S	11.0	96-122	109	137-172	157	90-110	103	5	Ey	A	H	37-47	44
17	HUW843	N-720	10MS	2.2	40S	12.7	75-108	91	129-168	152	89-113	99	10	Ey	A	SH	34-42	39
18	PBW838	N-721	20MS	6.0	20S	10.0	97-121	107	139-172	157	85-114	105	15	Ey	A	SH	35-57	42
19	DBW322	N-722	40S	13.3	20S	15.0	86-108	98	135-172	156	90-110	100	10	Ey	A	H	36-45	41
20	BCW5	N-724	60S	19.2	tS	0.3	95-122	106	138-172	156	90-116	107	15	Ey	A	H	33-46	42
21	UP3062	N-725	20S	6.3	20S	10.0	98-122	108	138-172	157	100-120	107	20	Ey	A	H	36-48	40
22	HD3171 (C)	N-708	10S	4.0	40S	22.5	79-110	94	132-170	154	97-120	107	30	Ey	A	SH	34-46	41
23	PBW644 (C)	N-712	40S	16.0	40S	17.5	90-118	104	135-172	157	90-119	106	20	Ey	A	H	39-47	43
24	K1317 (C)	N-714	10MS	3.7	10S	2.8	99-122	109	140-172	158	100-118	110	10	Ey	A	H	42-54	48
25	WH1142 (C)	N-723	60S	18.3	20S	7.5	95-121	105	134-172	156	92-111	102	15	Ey	A	H	30-41	36

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

NIVT-5A-RI-TS-TAS, 2019-20
North Western Plains Zone
Individual Station Rust Data

SN	Variety	Code	Yellow Rust							Brown Rust			
			Hisar	Gurdaspur	Karnal	Jammu	Ludhiana	Pantnagar		Hisar	Jammu	Ludhiana	Pantnagar
1	WH1280	N-701	10S	tR	40S	40S	20S	0		10S	0	20S	5S
2	HD3368	N-702	0	0	5MS	20S	10S	0		20S	0	0	5S
3	HD3369	N-703	0	0	20MS	5S	10S	0		tS	0	10S	5MS
4	DBW321	N-704	0	0	20MS	10S	5S	tS		20S	0	20S	5S
5	BRW3863	N-705	0	0	20MS	10MS	10S	0		10S	0	20S	5S
6	WH1281	N-706	0	0	10MS	10S	10S	0		30S	0	0	0
7	DBW324	N-707	0	5S	40S	60S	20S	10S		20S	0	0	0
8	UP3063	N-709	0	0	5MS	20S	5S	0		5S	0	10S	5S
9	JAUW683	N-710	0	5S	20MS	5MS	20S	0		10S	5S	20S	tS
10	K1910	N-711	0	5S	5MS	5S	10S	0		5S	0	0	tS
11	HI1654	N-713	0	0	5MS	10S	10S	0		tS	0	0	0
12	NW7096	N-715	20S	0	20MS	10S	10S	0		20S	10S	0	0
13	DBW323	N-716	0	0	40S	20S	20S	0		5S	0	20S	5S
14	HI1653	N-717	0	0	5MS	10S	20S	0		5S	0	0	0
15	PBW848	N-718	0	0	5MS	10S	10S	0		20S	0	0	0
16	PBW839	N-719	0	5S	20MS	10MS	5S	0		20S	0	20S	5MS
17	HUW843	N-720	0	0	10MS	5S	0	0		5S	5S	40S	tMS
18	PBW838	N-721	0	0	20MS	10S	10S	0		10S	0	20S	10S
19	DBW322	N-722	0	0	40S	20S	20S	0		20S	0	20S	20S
20	BCW5	N-724	0	5S	40S	60S	10S	0		tS	0	0	0
21	UP3062	N-725	0	0	10MS	20S	10S	0		5S	10S	20S	5S
22	HD3171 (C)	N-708	0	5S	5MS	0	10S	5S		20S	40S	20S	10S
23	PBW644 (C)	N-712	0	5S	40S	10S	40S	tMS		5S	20S	40S	5S
24	K1317 (C)	N-714	0	5S	5MS	10MS	5S	0		tS	0	10S	0
25	WH1142 (C)	N-723	0	0	40S	60S	10S	0		20S	0	5S	5S

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: NIVT-5A-RI-TS-TAS, 2019-20**

SN	Variety	Code			Disease Reactions	Agronomic Characteristics								Grain Characteristics			
			Br	ACI	LB (HS, Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH1280	N-701	20S	8.3	57 (24)	70-92	83	111-139	128	94-101	98	0	Ey	A	SH	35-48	40
2	HD3368	N-702	0	0.0	57 (35)	67-86	75	108-140	125	84-106	94	0	Ey	A	SH	34-54	43
3	HD3369	N-703	20S	10.0	46 (24)	74-92	81	114-139	126	89-105	99	0	Ey	A	SH	35-48	44
4	DBW321	N-704	30S	13.3	45 (23)	73-95	85	113-146	129	94-111	102	5	Ey	A	SH	35-48	41
5	BRW3863	N-705	0	0.0	46 (24)	77-94	84	118-142	129	86-124	107	10	Ey	A	H	34-51	42
6	WH1281	N-706	10S	3.3	46 (34)	74-95	86	115-144	130	102-110	106	0	M	A	H	36-52	41
7	DBW324	N-707	0	0.0	45 (23)	74-94	85	114-146	129	95-112	105	20	Ey	A	SH	34-48	41
8	UP3063	N-709	0	0.0	35 (23)	77-92	82	119-143	128	101-126	113	10	Ey	A	SH	35-51	41
9	JAUW683	N-710	0	0.0	68 (35)	68-81	73	110-146	123	83-106	97	10	Ey	A	SH	35-52	42
10	K1910	N-711	0	0.0	56 (34)	70-98	84	111-146	129	100-119	106	20	Ey	A	SH	36-52	46
11	HI1654	N-713	0	0.0	46 (24)	74-94	86	114-142	128	96-106	103	10	Ey	A	SH	36-48	41
12	NW7096	N-715	30S	10.0	57 (34)	59-90	79	101-140	125	97-107	102	10	Ey	A	H	36-44	41
13	DBW323	N-716	20S	6.7	57 (24)	61-95	82	102-136	125	93-108	98	10	Ey	A	SH	35-48	41
14	HI1653	N-717	0	0.0	35 (23)	74-89	78	111-139	125	97-112	107	5	M	A	SH	38-56	47
15	PBW848	N-718	0	0.0	56 (24)	74-92	81	114-141	126	89-106	99	10	Ey	A	SH	34-43	38
16	PBW839	N-719	0	0.0	34 (24)	65-97	85	106-141	127	90-107	100	0	Ey	A	SH	36-49	43
17	HUW843	N-720	0	0.0	68 (34)	65-91	75	110-140	123	76-99	92	15	Ey	A	SH	35-54	41
18	PBW838	N-721	20S	8.3	56 (23)	74-94	83	114-141	127	96-113	101	5	Ey	A	SH	35-45	40
19	DBW322	N-722	30S	13.3	57 (34)	73-90	77	114-139	124	80-114	94	0	M	A	SH	38-49	42
20	BCW5	N-724	0	0.0	56 (34)	70-92	82	111-140	127	93-111	100	10	Ey	A	SH	36-45	42
21	UP3062	N-725	20S	10	46 (24)	75-96	84	116-144	130	93-115	102	0	Ey	A	SH	35-44	39
22	HD3171 (C)	N-708	30S	10.0	46 (24)	66-81	73	110-145	125	91-107	98	10	Ey	A	SH	34-46	40
23	PBW644 (C)	N-712	20S	13.3	46 (34)	58-93	81	100-138	125	95-110	104	20	Ey	A	SH	34-50	41
24	K1317 (C)	N-714	5S	1.7	36 (34)	72-96	84	113-141	128	98-110	105	0	Ey	A	H	36-51	44
25	WH1142 (C)	N-723	20S	6.7	35 (23)	74-92	81	114-140	128	90-106	101	5	Ey	A	SH	34-40	37

1. Ancillary data from Coochbehar, Ranchi, RPCAU PUSA, Kalyani, Kanpur, Sabour and Varanasi centres.
2. Brown rust data reported from Sabour, Kalyani and Kanpur centres.
3. Leaf Blight data from Coochbehar, Sabour, Kalyani and Ranchi centres.
4. Lodging data reported from Sabour, Ranchi and RPCAU-PUSA centres.

NIVT-5A-RI-TS-TAS, 2019-20
North Eastern Plains Zone
Individual Station Brown Rust and Leaf Blight Data

SN	Variety	Code	Brown Rust			Leaf Blight			
			Sabour	Kalyani	Kanpur	Sabour	Coochbehar	Kalyani	Ranchi
1	WH1280	N-701	20S	5S	0	57	45	24	13
2	HD3368	N-702	0	0	0	57	56	57	03
3	HD3369	N-703	20S	10S	0	46	45	35	13
4	DBW321	N-704	30S	0	10S	23	45	35	14
5	BRW3863	N-705	0	0	0	46	34	25	03
6	WH1281	N-706	0	10S	0	35	34	46	12
7	DBW324	N-707	0	0	0	35	34	45	13
8	UP3063	N-709	0	0	0	23	34	35	13
9	JAUW683	N-710	0	0	0	68	56	57	14
10	K1910	N-711	0	0	0	34	56	45	03
11	HI1654	N-713	0	0	0	46	34	35	13
12	NW7096	N-715	30S	0	0	57	46	35	13
13	DBW323	N-716	20S	0	0	35	46	57	03
14	HI1653	N-717	0	0	0	34	35	24	13
15	PBW848	N-718	0	0	0	23	56	35	14
16	PBW839	N-719	0	0	0	34	34	23	15
17	HUW843	N-720	0	0	0	68	56	23	13
18	PBW838	N-721	20S	5S	0	23	45	56	13
19	DBW322	N-722	30S	10S	0	57	56	45	12
20	BCW5	N-724	0	0	0	35	56	45	24
21	UP3062	N-725	20S	5S	5S	35	46	45	13
22	HD3171 (C)	N-708	30S	0	0	34	46	24	24
23	PBW644 (C)	N-712	20S	20S	0	35	45	46	24
24	K1317 (C)	N-714	0	5S	0	36	34	35	12
25	WH1142 (C)	N-723	20S	0	0	35	34	24	13

1908-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ																	
			Madhya Pradesh						Chhattisgarh			Gujarat								
			Indore			Powarkheda			Bilaspur			Vijapur			Dhandhuka			Tanchha		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW326	N-801	38.5	11	0	40.1	2	1	44.5	4	1	41.7	4	1	41.0	3	0	25.8	12	0
2	GW528	N-802	36.5	15	0	31.8	17	0	44.2	5	1	43.1	2	1	37.8	6	0	31.5	3	1
3	MP1367	N-803	34.8	19	0	33.5	13	0	34.2	16	0	35.9	11	0	33.4	15	0	22.8	22	0
4	UAS475 (d)	N-805	40.6	9	0	28.6	21	0	39.7	12	0	26.2	22	0	31.9	21	0	25.0	16	0
5	DDW55 (d)	N-806	46.0	3	1	37.0	7	1	41.0	10	1	30.0	17	0	34.9	13	0	24.3	17	0
6	MACS6753	N-807	38.4	12	0	29.3	20	0	22.8	25	0	39.8	6	1	32.3	20	0	29.5	6	0
7	HD3372	N-808	46.0	4	1	34.1	11	0	34.2	17	0	37.9	8	1	32.8	18	0	24.0	18	0
8	HI8830(d)	N-811	46.9	2	1	40.6	1	1	42.4	9	1	28.1	19	0	37.6	7	0	27.5	9	0
9	HI1655	N-812	47.2	1	1	38.6	6	1	34.4	15	0	42.9	3	1	41.9	2	0	25.1	14	0
10	HD3371	N-813	36.2	17	0	34.6	9	0	27.0	22	0	27.9	20	0	37.4	8	0	29.0	7	0
11	GW1356 (d)	N-814	30.2	23	0	25.0	24	0	33.4	18	0	27.3	21	0	45.0	1	1	30.6	4	1
12	NIAW3855	N-815	34.6	20	0	33.9	12	0	44.7	3	1	34.1	13	0	35.4	11	0	25.1	15	0
13	HI8831 (d)	N-817	34.6	21	0	40.1	3	1	38.3	13	0	21.9	24	0	36.3	9	0	31.5	2	1
14	MP3523	N-818	33.7	22	0	33.1	15	0	26.4	23	0	34.0	15	0	32.6	19	0	22.9	21	0
15	NIAW3851	N-819	43.0	7	1	35.1	8	0	44.2	7	1	37.5	10	1	37.9	4	0	24.0	19	0
16	CG1036	N-820	40.8	8	0	29.7	19	0	30.8	21	0	44.1	1	1	35.4	11	0	30.1	5	0
17	UAS3014	N-821	38.0	13	0	30.7	18	0	43.7	8	1	40.7	5	1	31.9	21	0	20.9	25	0
18	MP1368	N-822	29.8	25	0	39.8	4	1	45.3	1	1	24.3	23	0	24.3	25	0	23.1	20	0
19	MACS6755	N-823	35.1	18	0	33.3	14	0	24.9	24	0	32.6	16	0	25.8	24	0	26.0	11	0
20	AKAW5088	N-824	36.2	16	0	23.9	25	0	41.0	11	1	35.5	12	0	30.5	23	0	22.6	23	0
21	DBW325	N-825	43.2	6	1	33.0	16	0	36.1	14	0	38.0	7	1	32.9	17	0	21.9	24	0
22	HI1605 (C)	N-809	45.4	5	1	34.4	10	0	44.2	6	1	37.7	9	1	35.6	10	0	28.3	8	0
23	DBW110 (C)	N-810	39.7	10	0	39.6	5	1	31.7	20	0	34.0	14	0	33.3	16	0	32.9	1	1
24	UAS446(d) (C)	N-804	37.6	14	0	26.0	23	0	45.2	2	1	29.7	18	0	37.9	4	0	25.4	13	0
25	HI8627(d) (C)	N-816	30.1	24	0	28.6	21	0	32.4	19	0	21.1	25	0	33.8	14	0	27.2	10	0
G.M.			38.5			33.4			37.1			33.8			34.8			26.3		
S.E.(M)			2.082			2.178			2.071			2.613			0.896			1.125		
C.D. (10%)			5.1			5.3			5.1			6.3			2.2			2.8		
C.V.			7.6			9.2			7.9			10.9			3.6			6.1		
D.O.S.(dd.mm.yy)			06.11.19			05.11.19			05.11.19			07.11.19			18.11.19			25.10.19		

No. of Trials : Proposed = 20 Conducted = 19

Trials not Conducted (01) = Kolhapur

Trials not reported (07) = Sagar (LS), Junagarh (LSM), Arnej (LSM), Niphad (LSM), Akola (LSM) Parbhani (LSM), Jabalpur (RMT)

1908-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ	PZ											
			Rajasthan	Karnataka									Maharashtra		
			Udaipur	Dharwad			Bagalkot			Nippani			Bailhongal			Pune		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW326	N-801	47.6	8	1	32.9	3	1	31.0	12	0	26.3	11	0	26.6	14	0	30.4	12	0
2	GW528	N-802	42.4	15	0	29.5	6	0	32.5	9	0	25.0	15	0	19.5	22	0	34.4	4	1
3	MP1367	N-803	36.2	23	0	20.9	24	0	27.8	20	0	35.0	1	1	21.6	19	0	25.0	22	0
4	UAS475(d)	N-805	45.5	10	1	27.2	9	0	27.9	19	0	23.8	18	0	28.5	12	0	25.8	21	0
5	DDW55(d)	N-806	40.4	20	0	33.7	1	1	32.8	8	1	26.7	9	0	24.2	17	0	29.2	16	0
6	MACS6753	N-807	45.0	11	1	33.5	2	1	37.7	3	1	26.9	8	0	32.0	5	1	30.5	11	0
7	HD3372	N-808	36.3	22	0	19.6	25	0	28.4	17	0	22.5	20	0	19.4	24	0	28.7	17	0
8	HI8830(d)	N-811	47.7	7	1	21.7	23	0	25.7	22	0	20.8	22	0	38.4	1	1	27.2	19	0
9	HI1655	N-812	48.9	4	1	29.9	5	0	30.4	13	0	19.8	25	0	27.9	13	0	34.6	3	1
10	HD3371	N-813	48.5	5	1	26.8	11	0	25.3	24	0	31.7	4	1	17.9	25	0	26.5	20	0
11	GW1356(d)	N-814	41.2	19	0	22.2	21	0	32.1	11	0	25.0	15	0	31.7	6	1	13.3	25	0
12	NIAW3855	N-815	49.6	3	1	22.6	19	0	33.3	6	1	30.7	5	1	32.1	3	1	32.3	7	1
13	HI8831(d)	N-817	39.3	21	0	23.3	18	0	26.8	21	0	20.6	24	0	26.2	16	0	24.5	23	0
14	MP3523	N-818	51.5	1	1	26.9	10	0	33.3	6	1	26.5	10	0	29.2	11	0	34.4	5	1
15	NIAW3851	N-819	46.1	9	1	25.4	14	0	33.8	5	1	22.1	21	0	26.5	15	0	31.1	10	1
16	CG1036	N-820	48.5	6	1	25.6	12	0	28.2	18	0	23.5	19	0	22.9	18	0	30.1	15	0
17	UAS3014	N-821	42.0	16	0	31.6	4	1	38.3	1	1	32.3	3	1	30.5	9	0	34.8	1	1
18	MP1368	N-822	43.4	12	1	21.8	22	0	29.4	15	0	26.3	11	0	20.6	21	0	28.2	18	0
19	MACS6755	N-823	41.8	17	0	25.6	13	0	37.5	4	1	32.7	2	1	30.7	8	0	32.3	6	1
20	AKAW5088	N-824	32.1	25	0	22.3	20	0	29.9	14	0	28.5	6	0	32.0	4	1	30.3	14	0
21	DBW325	N-825	49.6	2	1	28.8	7	0	38.3	1	1	24.0	17	0	33.7	2	1	31.8	8	1
22	HI1605 (C)	N-809	41.4	18	0	24.9	17	0	28.6	16	0	26.3	11	0	29.5	10	0	34.7	2	1
23	DBW110 (C)	N-810	34.2	24	0	24.9	16	0	32.3	10	0	20.8	22	0	20.7	20	0	31.8	9	1
24	UAS446(d) (C)	N-804	42.8	14	0	25.2	15	0	25.7	22	0	27.5	7	0	30.9	7	0	30.4	13	0
25	HI8627(d) (C)	N-816	42.9	13	1	27.2	8	0	18.0	25	0	26.0	14	0	19.4	23	0	23.1	24	0
G.M.			43.4			26.2			30.6			26.0			26.9			29.4		
S.E.(M)			3.494			2.333			2.677			2.010			2.999			1.679		
C.D. (10%)			8.6			5.6			6.5			4.9			7.3			4.1		
C.V.			11.4			12.6			12.4			10.9			15.8			8.1		
D.O.S.(dd.mm.yy)			05.11.19			13.11.19			19.11.19			14.11.19			18.11.19			13.11.19		

1908-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2019-20
ZONAL AND NATIONAL MEANS (q/ha)

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW326	N-801	39.9	1	1	29.4	7	0	35.5	1	1
2	GW528	N-802	38.2	5	1	28.2	12	0	34.0	7	1
3	MP1367	N-803	33.0	21	0	26.1	19	0	30.1	22	0
4	UAS475(d)	N-805	33.9	17	0	26.6	16	0	30.9	17	0
5	DDW55(d)	N-806	36.2	10	0	29.3	8	0	33.4	10	0
6	MACS6753	N-807	33.9	18	0	32.1	2	1	33.1	11	0
7	HD3372	N-808	35.0	13	0	23.7	24	0	30.3	20	0
8	HI8830(d)	N-811	38.7	3	1	26.8	15	0	33.7	9	0
9	HI1655	N-812	39.9	2	1	28.5	11	0	35.1	2	1
10	HD3371	N-813	34.4	16	0	25.6	20	0	30.7	18	0
11	GW1356(d)	N-814	33.2	20	0	24.8	22	0	29.7	23	0
12	NIAW3855	N-815	36.8	8	0	30.2	5	0	34.0	6	1
13	HI8831(d)	N-817	34.6	15	0	24.3	23	0	30.3	21	0
14	MP3523	N-818	33.5	19	0	30.0	6	0	32.0	13	0
15	NIAW3851	N-819	38.3	4	1	27.8	14	0	33.9	8	0
16	CG1036	N-820	37.1	7	0	26.1	18	0	32.5	12	0
17	UAS3014	N-821	35.4	11	0	33.5	1	1	34.6	3	1
18	MP1368	N-822	32.8	22	0	25.2	21	0	29.7	24	0
19	MACS6755	N-823	31.4	24	0	31.8	3	1	31.5	15	0
20	AKAW5088	N-824	31.7	23	0	28.6	10	0	30.4	19	0
21	DBW325	N-825	36.4	9	0	31.3	4	1	34.3	4	1
22	HI1605 (C)	N-809	38.1	6	1	28.8	9	0	34.3	5	1
23	DBW110 (C)	N-810	35.1	12	0	26.1	17	0	31.3	16	0
24	UAS446(d) (C)	N-804	34.9	14	0	27.9	13	0	32.0	14	0
25	HI8627(d) (C)	N-816	30.9	25	0	22.8	25	0	27.5	25	0
G.M.			35.3			27.8			32.2		
S.E.(M)			0.839			1.067			0.661		
C.D. (10%)			2.0			2.5			1.5		

Summary of Agronomic Characteristics

Central Zone **Trial: NIVT-5B-RI-TS-TDM, 2019-20**

SN	Variety	Code	Agronomic Characteristics									Grain Characteristics		
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.Mx	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW326	N-801	54-80	65	100-127	117	66-102	85	0	Ey	A	SH	40-61	47
2	GW528	N-802	50-74	60	89-127	115	69-95	83	0	Ey	A	SH	42-56	47
3	MP1367	N-803	44-78	56	85-125	113	51-92	79	0	Ey	A	SH	41-53	47
4	UAS475(d)	N-805	64-82	72	105-130	120	66-125	83	0	Ey	A	SH	32-48	42
5	DDW55(d)	N-806	57-75	63	100-125	116	67-97	83	0	Ey	A	SH	42-59	51
6	MACS6753	N-807	46-76	57	84-123	113	65-117	91	0	Ey	A	SH	40-59	47
7	HD3372	N-808	50-75	60	96-126	116	69-94	84	0	Ey	A	SH	36-56	48
8	HI8830(d)	N-811	63-79	69	109-130	119	68-104	84	0	Ey	A	SH	41-58	48
9	HI1655	N-812	53-78	63	99-130	120	71-106	91	0	Ey	A	SH	37-62	47
10	HD3371	N-813	58-86	72	102-134	119	67-110	87	0	Ey	A	SH	31-59	43
11	GW1356(d)	N-814	51-71	61	98-125	114	60-101	83	20	Ey	A	SH	36-64	50
12	NIAW3855	N-815	53-79	65	93-125	116	73-100	86	0	Ey	A	SH	43-60	48
13	HI8831(d)	N-817	62-78	69	109-130	119	59-103	80	20	Ey	A	H	37-60	48
14	MP3523	N-818	43-69	55	84-128	114	65-97	83	0	Ey	A	SH	41-63	48
15	NIAW3851	N-819	52-79	63	92-127	116	68-98	85	0	Ey	A	SH	44-57	49
16	CG1036	N-820	51-76	59	100-127	114	55-95	76	0	Ey	A	SH	41-62	49
17	UAS3014	N-821	50-80	67	97-130	117	68-105	89	10	Ey	A	SH	38-61	47
18	MP1368	N-822	40-89	59	82-127	112	56-104	80	0	Ey	A	SH	44-63	50
19	MACS6755	N-823	48-76	60	92-126	115	65-117	92	0	Ey	A	SH	39-63	50
20	AKAW5088	N-824	43-74	57	84-124	113	63-112	90	0	Ey	A	SH	41-61	48
21	DBW325	N-825	54-76	64	98-126	115	68-99	83	0	Ey	A	SH	38-55	46
22	UAS446(d)(C)	N-804	59-76	66	101-129	117	67-103	80	0	Ey	A	SH	34-48	43
23	HI1605 (C)	N-809	55-77	63	98-124	116	69-103	88	0	Ey	A	SH	37-58	45
24	DBW110 (C)	N-810	49-79	62	103-130	117	70-99	83	0	Ey	A	SH	36-53	44
25	HI8627(d) (C)	N-816	46-86	73	110-136	122	68-110	84	0	Ey	A	SH	34-58	45

1. Ancillary data from Arnej, Bilaspur, Dhandhuka, Indore, Jabalpur, Junagarh, Powarkheda, Sagar, Tanchha, Udaipur and Vijapur.
2. No rust incidence was reported in this trial from any centre.
3. Lodging data from Arnej, Bilaspur, Indore, Jabalpur, Junagarh, Sagar, Tanchha, Udaipur and Vijapur centre.

Summary of Agronomic Characteristics

Peninsular Zone **Trial: NIVT-5B-RI-TS-TDM, 2019-20**

SN	Variety	Code	Rust Reaction		Agronomic Characteristics							Grain Characteristics				
			Br	Bl	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.Mx	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW326	N-801	0	tMS	52-63	56	99-109	104	68-82	74	0	Ey	A	SH	36-46	41
2	GW528	N-802	0	0	47-60	53	98-115	103	67-88	73	0	Ey	A	SH	35-43	38
3	MP1367	N-803	5MR	0	44-55	50	96-110	100	48-81	60	0	Ey	A	SH	33-51	41
4	UAS475(d)	N-805	0	0	49-75	60	100-110	105	65-76	72	0	Ey	A	SH	29-38	33
5	DDW55(d)	N-806	5MR	5MR	52-62	56	100-110	104	65-71	68	0	Ey	A	SH	38-44	42
6	MACS6753	N-807	0	0	43-55	49	97-111	101	66-91	75	5	Ey	A	SH	34-47	39
7	HD3372	N-808	5MR	0	49-60	54	99-116	104	65-76	69	0	Ey	A	SH	37-41	39
8	HI8830(d)	N-811	0	0	52-71	60	100-113	106	70-81	74	0	Ey	A	SH	38-43	41
9	HI1655	N-812	0	0	49-65	55	94-110	102	64-86	73	0	Ey	A	SH	32-43	39
10	HD3371	N-813	0	0	53-74	62	100-116	109	66-76	72	10	Ey	A	SH	31-39	35
11	GW1356(d)	N-814	40S	10MS	50-66	58	100-110	106	61-77	67	20	Ey	A	SH	34-49	39
12	NIAW3855	N-815	5MR	0	48-66	56	98-111	105	68-85	73	0	Ey	A	SH	38-43	41
13	HI8831(d)	N-817	0	0	54-68	62	99-114	109	65-73	69	20	Ey	A	H	27-42	35
14	MP3523	N-818	tMR	0	43-55	49	96-109	100	60-79	67	0	Ey	A	SH	35-44	40
15	NIAW3851	N-819	5MR	0	53-64	57	97-110	104	65-74	70	0	Ey	A	SH	36-45	40
16	CG1036	N-820	0	0	48-58	53	98-113	103	55-71	61	0	Ey	A	SH	35-47	41
17	UAS3014	N-821	5MS	0	50-66	57	100-110	104	71-83	76	0	Ey	A	SH	36-42	39
18	MP1368	N-822	5MR	0	43-55	48	94-107	100	58-80	67	0	Ey	A	SH	36-46	42
19	MACS6755	N-823	0	0	48-60	53	99-112	103	74-95	79	20	Ey	A	SH	41-53	47
20	AKAW5088	N-824	10MS	0	43-53	48	95-106	99	63-99	76	0	Ey	A	SH	35-48	42
21	DBW325	N-825	0	0	50-65	55	100-114	104	62-74	67	0	Ey	A	SH	33-43	40
22	UAS446(d) (C)	N-804	0	0	48-65	56	101-113	104	66-77	71	0	Ey	A	SH	33-38	36
23	HI1605 (C)	N-809	5MR	5MR	51-64	57	99-114	105	71-81	75	0	Ey	A	SH	32-43	38
24	DBW110 (C)	N-810	5MR	0	49-62	54	97-116	103	68-76	71	0	Ey	A	SH	35-40	38
25	HI8627(d) (C)	N-816	0	0	53-74	67	101-116	111	71-83	78	30	Ey	A	SH	36-41	38

1. Ancillary data from Akola, Bagalkot, Bailhongal, Dharwad, Niphad, Nippani, Parbhani and Pune.
2. Lodging data from Parbhani and Pune.
3. Black rust & Leaf Blight data from Dharwad centre only, whereas, Brown rust data from Bailhongal & Dharwad only.

NIVT-5B-RI-TS-TDM, 2019-20
Individual Station Disease Data

SN	Variety	Code	Black rust	Brown Rust		Leaf Blight
			Dharwad	Bailhongal	Dharwad	Dharwad
1	DBW326	N-801	tMS	0	0	0
2	GW528	N-802	0	0	0	0
3	MP1367	N-803	0	0	5MR	0
4	UAS475(d)	N-805	0	0	0	0
5	DDW55(d)	N-806	5MR	0	5MR	0
6	MACS6753	N-807	0	0	0	0
7	HD3372	N-808	0	0	5MR	0
8	HI8830(d)	N-811	0	0	0	0
9	HI1655	N-812	0	0	0	0
10	HD3371	N-813	0	0	0	0
11	GW1356(d)	N-814	10MS	10S	40S	0
12	NIAW3855	N-815	0	0	5MR	0
13	HI8831(d)	N-817	0	0	0	12
14	MP3523	N-818	0	0	tMR	0
15	NIAW3851	N-819	0	0	5MR	0
16	CG1036	N-820	0	0	0	0
17	UAS3014	N-821	0	0	5MS	0
18	MP1368	N-822	0	0	5MR	0
19	MACS6755	N-823	0	0	0	0
20	AKAW5088	N-824	0	0	10MS	0
21	DBW325	N-825	0	0	0	0
22	UAS446(d) (C)	N-804	0	0	0	0
23	HI1605 (C)	N-809	5MR	0	5MR	0
24	DBW110 (C)	N-810	0	0	5MR	0
25	HI8627(d) (C)	N-816	0	0	0	0

Northern Hills Zone

1911-IVT-RF-TS-TAS-NHZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	HIMACHAL PRADESH												J&K		
			Dhaulakuan			Shimla			Malan			Bajaura			Wadura		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	SKW356	NHIVT 1902	26.1	15	0	22.8	15	0	22.3	8	0	19.0	13	0	35.8	3	0
2	VL2042	NHIVT 1903	41.1	1	1	35.0	3	0	24.3	4	0	19.6	11	0	29.3	11	0
3	HPW471	NHIVT 1904	39.7	2	1	42.6	1	1	22.1	9	0	20.4	9	0	27.9	13	0
4	HS675	NHIVT 1905	36.6	3	0	33.4	4	0	32.2	2	0	22.0	5	0	33.0	6	0
5	HPW472	NHIVT 1906	33.0	5	0	25.5	12	0	22.8	7	0	21.0	7	0	25.8	16	0
6	VL2039	NHIVT 1907	25.2	16	0	19.9	16	0	16.2	16	0	22.6	4	1	31.8	9	0
7	HS677	NHIVT 1908	27.2	13	0	25.2	14	0	16.9	15	0	21.7	6	0	29.2	12	0
8	HS676	NHIVT 1909	27.2	12	0	28.8	9	0	23.2	6	0	20.4	9	0	32.3	8	0
9	UP3064	NHIVT 1910	29.5	9	0	28.8	8	0	18.7	12	0	19.6	11	0	32.9	7	0
10	HS678	NHIVT 1911	29.0	11	0	25.5	12	0	17.8	13	0	22.8	3	1	38.8	1	1
11	HPW470	NHIVT 1913	31.3	6	0	41.4	2	1	23.6	5	0	23.4	2	1	34.6	4	0
12	HPW469	NHIVT 1914	29.9	8	0	31.8	7	0	21.9	10	0	18.9	14	0	26.5	15	0
13	VL2041	NHIVT 1915	29.9	7	0	33.2	6	0	27.3	3	0	24.8	1	1	27.1	14	0
14	VL2040	NHIVT 1916	29.5	9	0	28.5	10	0	17.6	14	0	17.3	15	0	30.8	10	0
15	HS507 (C)	NHIVT 1901	26.3	14	0	25.9	11	0	38.3	1	1	17.2	16	0	36.0	2	0
16	HS562 (C)	NHIVT 1912	35.3	4	0	33.3	5	0	19.0	11	0	20.8	8	0	34.6	5	0
G.M.			31.1			30.1			22.8			20.7			31.7		
S.E.(M)			1.307			1.186			1.479			1.149			1.159		
C.D. (10%)			3.1			2.8			3.5			2.7			2.8		
C.V.			8.4			7.9			13.0			11.1			7.3		
D.O.S.(dd.mm.yy)			30.10.19			15.10.19			25.10.19			23.10.19			22.10.19		

No. of Trials : Proposed = 09 **Conducted and reported = 09**

1911-IVT-RF-TS-TAS-NHZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	J&K			UTK						Meghalaya		
			Khudwani			Almora			Ranichauri			Umiam		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	SKW356	NHIVT 1902	39.7	3	1	30.4	10	0	10.6	16	0	33.0	5	0
2	VL2042	NHIVT 1903	32.7	11	0	16.3	15	0	17.0	10	0	26.6	12	0
3	HPW471	NHIVT 1904	30.6	15	0	31.3	8	0	20.9	5	0	32.4	6	0
4	HS675	NHIVT 1905	37.3	8	0	23.5	13	0	23.0	2	1	30.5	9	0
5	HPW472	NHIVT 1906	37.8	6	0	16.7	14	0	15.1	13	0	26.0	13	0
6	VL2039	NHIVT 1907	38.5	5	1	15.2	16	0	11.1	15	0	22.2	16	0
7	HS677	NHIVT 1908	35.6	9	0	25.1	12	0	15.4	12	0	36.8	2	1
8	HS676	NHIVT 1909	32.3	12	0	30.3	11	0	17.9	9	0	29.2	10	0
9	UP3064	NHIVT 1910	29.9	16	0	31.7	7	0	19.0	7	0	31.1	7	0
10	HS678	NHIVT 1911	39.0	4	1	30.7	9	0	20.7	6	0	23.5	15	0
11	HPW470	NHIVT 1913	31.2	14	0	35.4	5	0	21.5	4	0	24.7	14	0
12	HPW469	NHIVT 1914	31.3	13	0	32.4	6	0	16.7	11	0	39.3	1	1
13	VL2041	NHIVT 1915	40.1	2	1	40.4	1	1	22.8	3	1	35.5	3	1
14	VL2040	NHIVT 1916	37.7	7	0	36.6	2	0	18.0	8	0	31.1	7	0
15	HS507 (C)	NHIVT 1901	42.7	1	1	35.4	4	0	14.6	14	0	34.3	4	0
16	HS562 (C)	NHIVT 1912	34.5	10	0	35.5	3	0	25.0	1	1	27.3	11	0
G.M.			35.7			29.2			18.1			30.2		
S.E.(M)			1.927			1.309			1.166			1.814		
C.D. (10%)			4.6			3.1			2.8			4.3		
C.V.			10.8			9.0			12.9			12.0		
D.O.S.(dd.mm.yy)			30.10.19			17.10.19			31.10.19			30.10.19		

1911-IVT-RF-TS-TAS-NHZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	H.P.			J&K			UTK			Meghalaya			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	SKW356	NHIVT 1902	22.5	15	0	37.8	3	1	20.5	12	0	33.0	5	0	26.6	13	0
2	VL2042	NHIVT 1903	30.0	3	1	31.0	14	0	16.6	14	0	26.6	12	0	26.9	10	0
3	HPW471	NHIVT 1904	31.2	1	1	29.2	15	0	26.1	5	0	32.4	6	0	29.8	4	0
4	HS675	NHIVT 1905	31.1	2	1	35.2	4	0	23.3	11	0	30.5	9	0	30.2	2	1
5	HPW472	NHIVT 1906	25.6	9	0	31.8	12	0	15.9	15	0	26.0	13	0	24.8	15	0
6	VL2039	NHIVT 1907	21.0	16	0	35.2	5	0	13.2	16	0	22.2	16	0	22.5	16	0
7	HS677	NHIVT 1908	22.8	14	0	32.4	10	0	20.2	13	0	36.8	2	1	25.9	14	0
8	HS676	NHIVT 1909	24.9	10	0	32.3	11	0	24.1	10	0	29.2	10	0	26.8	11	0
9	UP3064	NHIVT 1910	24.1	11	0	31.4	13	0	25.3	7	0	31.1	7	0	26.8	12	0
10	HS678	NHIVT 1911	23.8	12	0	38.9	2	1	25.7	6	0	23.5	15	0	27.5	8	0
11	HPW470	NHIVT 1913	29.9	4	1	32.9	9	0	28.4	3	0	24.7	14	0	29.7	5	0
12	HPW469	NHIVT 1914	25.6	8	0	28.9	16	0	24.6	9	0	39.3	1	1	27.6	7	0
13	VL2041	NHIVT 1915	28.8	5	0	33.6	8	0	31.6	1	1	35.5	3	1	31.2	1	1
14	VL2040	NHIVT 1916	23.2	13	0	34.3	7	0	27.3	4	0	31.1	7	0	27.5	9	0
15	HS507 (C)	NHIVT 1901	26.9	7	0	39.4	1	1	25.0	8	0	34.3	4	0	30.1	3	0
16	HS562 (C)	NHIVT 1912	27.1	6	0	34.5	6	0	30.2	2	1	27.3	11	0	29.5	6	0
G.M.			26.2			33.7			23.6			30.2			27.7		
S.E.(M)			0.643			1.125			0.876			1.814			0.472		
C.D. (10%)			1.5			2.6			2.1			4.3			1.1		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: IVT-RF-TS-TAS-NHZ, 2019-20**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								Grain Characteristics			
			YI	ACI	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	SKW356	NHIVT-1902	60S	30.0	3	91-134	113	148-202	182	80-100	95	15	M	A	SH	34-55	43
2	VL2042	NHIVT-1903	80S	31.5	3	76-154	119	142-207	181	73-108	97	60	M	A	SH	30-61	39
3	HPW471	NHIVT-1904	80S	32.8	3	66-154	118	144-208	182	71-111	98	40	M	A	SH	35-53	43
4	HS675	NHIVT-1905	5S	2.4	5	100-156	133	150-205	186	85-124	105	40	M	A	SH	30-50	36
5	HPW472	NHIVT-1906	40S	11.7	5	66-138	109	140-198	180	71-104	91	60	M	A	H	33-56	42
6	VL2039	NHIVT-1907	100S	32.3	3	90-134	100	146-201	178	83-101	91	40	M	A	SH	34-49	38
7	HS677	NHIVT-1908	10S	4.5	3	94-152	129	148-207	185	83-109	97	50	M	A	SH	34-57	45
8	HS676	NHIVT-1909	60S	18.0	5	78-151	119	149-205	182	79-111	98	5	M	A	SH	35-60	44
9	UP3064	NHIVT-1910	100S	39.0	5	85-151	124	148-205	182	71-96	87	10	M	A	SH	32-61	42
10	HS678	NHIVT-1911	10S	5.2	5	65-150	114	139-204	181	72-104	92	0	M	A	SH	31-45	37
11	HPW470	NHIVT-1913	40S	29.5	3	88-154	127	148-208	184	76-114	95	15	M	A	SH	33-52	40
12	HPW469	NHIVT-1914	80S	44.2	3	79-151	120	144-206	183	79-117	100	50	M	A	SH	33-66	44
13	VL2041	NHIVT-1915	10S	5.7	3	103-159	132	149-216	187	88-124	104	20	M	A	SH	33-56	43
14	VL2040	NHIVT-1916	80S	45.8	3	79-140	114	147-200	179	71-124	96	20	M	A	SH	31-57	41
15	HS507 (C)	NHIVT-1901	30MS	8.8	3	95-154	129	153-207	186	83-110	97	30	M	A	SH	33-55	44
16	HS562 (C)	NHIVT-1912	80S	36.7	1	86-154	125	150-207	185	82-111	93	10	M	A	SH	30-53	41

1. Ancillary data from Almora, Bajaura, Dhaulakuan, Khudwani, Malan, Shimla, Umiam and Wadura.
2. Yellow rust data from Bajaura, Dhaulakuan, Khudwani, Malan, Shimla and Wadura.
3. Powdery mildew data from Almora and Malan
4. Lodging data from Almora only

IVT-RF-TS-TAS-NHZ, 2019-20
Individual Station Yellow Rust Data

SN	Variety	Code	Bajaura	Dhaulakuan	Khudwani	Malan	Shimla	Wadura
1	SKW356	NHIVT-1902	15S	20S	40S	40S	5S	60S
2	VL2042	NHIVT-1903	20S	5S	80S	80S	0	10MR
3	HPW471	NHIVT-1904	20S	20S	80S	40S	5S	40MS
4	HS675	NHIVT-1905	0	5S	R	5S	0	10 MR
5	HPW472	NHIVT-1906	0	5S	5R	40S	0	30MS
6	VL2039	NHIVT-1907	20S	10S	100S	60S	0	10MR
7	HS677	NHIVT-1908	0	5S	10MR	10S	0	20MR
8	HS676	NHIVT-1909	15S	5S	60S	20S	5MS	10MR
9	UP3064	NHIVT-1910	15S	5S	100S	40S	5MS	70S
10	HS678	NHIVT-1911	5MS	5S	20MR	10S	0	10MR
11	HPW470	NHIVT-1913	15S	10S	40MS	40S	0	80S
12	HPW469	NHIVT-1914	40S	20S	80S	60S	5S	60S
13	VL2041	NHIVT-1915	10S	10S	5R	5S	5MS	10MR
14	VL2040	NHIVT-1916	30S	5S	80S	80S	0	80S
15	HS507 (C)	NHIVT-1901	10S	5S	10MR	5S	5S	30MS
16	HS562 (C)	NHIVT-1912	15S	5S	80S	80S	10MS	40MS

1912-AVT-IR-TS-TAS-NHZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.									UTK		
			Bajaura			Shimla			Malan			Almora		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS668	NHTSZ 1904	21.6	6	0	48.8	2	1	39.2	6	0	51.4	3	1
2	VL2036	NHTSZ 1906	35.0	1	1	47.0	3	1	48.9	2	1	53.9	1	1
3	HS507 (C)	NHTSZ 1901	32.4	3	1	40.2	6	0	51.9	1	1	51.8	2	1
4	HS562 (C)	NHTSZ 1902	31.0	4	0	44.8	4	0	48.5	3	1	51.4	3	1
5	HPW349 (C)	NHTSZ 1903	27.7	5	0	49.1	1	1	45.8	5	0	49.0	5	0
6	VL907 (C)	NHTSZ 1905	34.5	2	1	42.6	5	0	47.5	4	0	42.3	6	0
G.M.			30.4			45.4			47.0			50.0		
S.E.(M)			1.225			1.199			1.737			1.657		
C.D. (10%)			3.0			2.9			4.2			4.0		
C.V.			9.9			6.5			9.1			8.1		
D.O.S.(dd.mm.yy)			09.11.19			09.11.19			10.11.19			16.11.19		

No. of Trials: Proposed = 4 Conducted = 4

1912-AVT-IR-TS-TAS-NHZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	H.P.			UTK			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS668	NHTSZ 1904	36.6	6	0	51.4	3	1	40.3	6	0
2	VL2036	NHTSZ 1906	43.6	1	1	53.9	1	1	46.2	1	1
3	HS507 (C)	NHTSZ 1901	41.5	3	0	51.8	2	1	44.1	2	0
4	HS562 (C)	NHTSZ 1902	41.4	4	0	51.4	3	1	43.9	3	0
5	HPW349 (C)	NHTSZ 1903	40.9	5	0	49.0	5	0	42.9	4	0
6	VL907 (C)	NHTSZ 1905	41.6	2	0	42.3	6	0	41.7	5	0
G.M.			40.9			50.0			43.2		
S.E.(M)			0.814			1.657			0.738		
C.D. (10%)			1.9			4.0			1.7		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-IR-TS-TAS-NHZ, 2019-20**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics							Grain Characteristics				
			Br	Yl	ACl	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS668	NHTSZ-1904	0	60S	51.0	3	127-154	138	169-202	186	90-113	102	0	Ey	A	SH	38-43	41
2	VL2036	NHTSZ-1906	0	40S	22.5	3	123-154	136	171-202	186	101-117	107	10	Ey	A	SH	45-50	48
3	HS507(C)	NHTSZ-1901	0	30S	21.5	3	127-155	138	172-206	188	92-112	101	30	Ey	A	SH	36-43	39
4	HS562(C)	NHTSZ-1902	10S	40S	32.5	3	129-154	139	174-204	188	98-108	103	0	Ey	A	SH	39-45	42
5	HPW349(C)	NHTSZ-1903	tR	40S	26.3	1	124-154	136	171-200	186	94-112	102	40	Ey	A	SH	38-42	40
6	VL907(C)	NHTSZ-1905	0	40S	30.0	5	126-154	137	170-202	187	100-114	105	0	Ey	A	SH	39-45	41

1. Ancillary data from Almora, Bajaura, Malan and Shimla.
2. Yellow rust data from Almora, Bajaura, Malan and Shimla.
3. Brown rust data from Almora and Malan; 4. Lodging and PM data from Almora.

Individual Station Rust Data

SN	Variety	Code	Yellow rust				Brown rust	
			Almora	Bajaura	Malan	Shimla	Almora	Malan
1	HS668	NHTSZ-1904	60S	60S	60S	30MS	0	0
2	VL2036	NHTSZ-1906	10S	30S	40S	10S	0	0
3	HS507(C)	NHTSZ-1901	20S	30S	20S	20MS	0	0
4	HS562(C)	NHTSZ-1902	40S	40S	40S	10S	0	10S
5	HPW349(C)	NHTSZ-1903	20S	40S	40S	5S	tR	0
6	VL907(C)	NHTSZ-1905	40S	30S	40S	10S	0	0

1913-AVT-RF-TS-TAS-NHZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.																	
			Bajaura			Shimla			Berthin			Malan			Dhaulakuan			Akrot		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS668	NHTSZ 1904	14.1	6	0	38.3	4	0	21.3	6	0	19.1	5	0	35.7	4	0	32.9	4	0
2	VL2036	NHTSZ 1906	24.2	1	1	38.1	5	0	40.1	2	1	24.2	3	0	37.1	2	1	28.6	6	0
3	HS507 (C)	NHTSZ 1901	21.5	2	0	26.5	6	0	40.9	1	1	29.9	1	1	35.7	4	0	33.3	2	1
4	HS562 (C)	NHTSZ 1902	18.3	4	0	45.6	1	1	39.0	3	1	17.6	6	0	36.3	3	1	34.8	1	1
5	HPW349(C)	NHTSZ 1903	17.6	5	0	38.8	3	0	33.3	5	0	22.1	4	0	39.0	1	1	32.9	3	1
6	VL907 (C)	NHTSZ 1905	18.9	3	0	42.5	2	0	35.5	4	0	24.7	2	0	33.0	6	0	32.6	5	0
G.M.			19.1			38.3			35.0			22.9			36.1			32.5		
S.E.(M)			0.709			1.175			1.865			1.064			1.154			0.772		
C.D. (10%)			1.7			2.8			4.5			2.6			2.8			1.9		
C.V.			9.1			7.5			13.0			11.4			7.8			5.8		
D.O.S.(dd.mm.yy)			23.10.19			15.10.19			26.10.19			26.10.19			30.10.19			24.10.19		

No. of Trials : Proposed = 11 Conducted = 11

1913-AVT-RF-TS-TAS-NHZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	J&K						UTK								
			Khudwani			Wadura			Almora			Majhera			Ranichauri		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS668	NHTSZ 1904	31.1	6	0	30.1	6	0	35.8	6	0	52.4	4	1	17.2	6	0
2	VL2036	NHTSZ 1906	42.0	2	1	37.8	1	1	46.2	1	1	46.8	5	0	21.0	5	0
3	HS507 (C)	NHTSZ 1901	37.8	3	0	33.9	3	0	40.9	3	0	52.6	3	1	29.5	3	0
4	HS562 (C)	NHTSZ 1902	35.8	4	0	31.4	5	0	41.8	2	0	56.0	1	1	30.1	2	0
5	HPW349 (C)	NHTSZ 1903	45.0	1	1	37.0	2	1	38.5	5	0	52.8	2	1	34.1	1	1
6	VL907 (C)	NHTSZ 1905	34.2	5	0	31.6	4	0	40.4	4	0	39.7	6	0	28.7	4	0
G.M.			37.6			33.6			40.6			50.0			26.8		
S.E.(M)			1.496			1.098			1.510			2.701			1.361		
C.D. (10%)			3.6			2.7			3.6			6.5			3.3		
C.V.			9.7			8.0			9.1			13.2			12.4		
D.O.S.(dd.mm.yy)			16.10.19			22.10.19			16.10.19			23.10.19			30.10.19		

1913-AVT-RF-TS-TAS-NHZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	H.P.			J&K			UTK			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS668	NHTSZ 1904	26.9	6	0	30.6	6	0	35.1	6	0	29.8	6	0
2	VL2036	NHTSZ 1906	32.0	1	1	39.9	2	1	38.0	4	0	35.1	3	1
3	HS507 (C)	NHTSZ 1901	31.3	3	1	35.9	3	0	41.0	3	1	34.8	4	1
4	HS562 (C)	NHTSZ 1902	31.9	2	1	33.6	4	0	42.6	1	1	35.1	2	1
5	HPW349 (C)	NHTSZ 1903	30.6	5	0	41.0	1	1	41.8	2	1	35.6	1	1
6	VL907 (C)	NHTSZ 1905	31.2	4	1	32.9	5	0	36.3	5	0	32.9	5	0
G.M.			30.7			35.6			39.1			33.9		
S.E.(M)			0.484			0.928			1.127			0.439		
C.D. (10%)			1.1			2.2			2.7			1.0		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RF-TS-TAS-NHZ, 2019-20**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics								Grain Characteristics			
			YI	ACI	LB	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS668	NHTSZ-1904	80S	43.3	12	3	88-198	132	161-239	195	89-108	98	20	Ey	A	SH	35-49	40
2	VL2036	NHTSZ-1906	80S	27.2	11	5	88-198	130	165-241	196	81-115	98	10	Ey	A	SH	38-57	45
3	HS507 (C)	NHTSZ-1901	40S	11.3	01	5	93-199	138	169-239	200	88-114	99	10	Ey	A	SH	37-50	42
4	HS562 (C)	NHTSZ-1902	60S	36.2	01	3	90-199	137	166-242	198	85-113	98	10	Ey	A	SH	35-51	42
5	HPW349 (C)	NHTSZ-1903	60S	27.3	22	3	92-198	133	164-239	195	83-111	96	20	Ey	A	SH	37-50	42
6	VL907 (C)	NHTSZ-1905	50S	21.8	11	5	90-198	133	170-242	198	91-115	101	10	Ey	A	SH	40-51	44

1. Ancillary data from Almora, Bajaura, Berthin, Dhaulakuan, Khudwani, Majhera, Malan, Ranichauri, Shimla, Akrot and Wadura.
2. Yellow rust data from Bajaura, Dhaulakuan, Khudwani, Malan, Shimla and Wadura.
3. Lodging data from Almora, Khudwani, Berthin.
4. LB and PM data from Almora only.

Individual Station Yellow Rust Data

SN	Variety	Code	Yellow rust					
			Bajaura	Dhaulakuan	Khudwani	Malan	Shimla	Wadura
1	HS668	NHTSZ-1904	30S	20S	80S	60S	10S	60S
2	VL2036	NHTSZ-1906	30S	0	80S	40S	5S	20MR
3	HS507 (C)	NHTSZ-1901	40S	0	10MR	10S	10S	10MR
4	HS562 (C)	NHTSZ-1902	60S	20S	40MS	40S	5S	60S
5	HPW349 (C)	NHTSZ-1903	40S	20S	60S	40S	0	10MR
6	VL907 (C)	NHTSZ-1905	30S	5S	50S	40S	5MS	10MR

1914-AVT-RI-LS-TAS-NHZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.									UTK								
			Bajaura			Dhaulakuan			Shimla			Malan			Almora			Majhera			Ranichauri		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS681	NHLSZ 1901	41.5	6	0	33.3	5	0	22.6	11	0	31.5	5	0	37.7	8	0	25.8	2	1	16.6	10	0
2	VL3022	NHLSZ 1902	42.4	5	0	29.8	7	0	27.7	6	0	36.3	2	1	39.2	4	1	20.7	4	0	17.5	9	0
3	HS680	NHLSZ 1903	44.2	4	1	34.5	3	0	30.5	2	1	38.8	1	1	43.3	1	1	27.3	1	1	18.4	8	0
4	VL3023	NHLSZ 1904	46.4	3	1	33.2	6	0	27.7	5	0	27.2	9	0	40.1	3	1	19.0	10	0	21.0	3	0
5	HPW474	NHLSZ 1905	30.6	11	0	26.0	10	0	26.1	8	0	24.3	11	0	37.8	7	0	19.6	8	0	27.5	1	1
6	UP3069	NHLSZ 1906	37.5	8	0	25.9	11	0	25.3	10	0	28.3	8	0	35.1	10	0	20.1	7	0	19.1	5	0
7	HPW473	NHLSZ 1907	37.5	9	0	34.5	3	0	28.7	3	0	33.8	4	0	37.9	5	0	20.5	5	0	14.2	11	0
8	VL3024	NHLSZ 1909	46.5	2	1	28.0	9	0	25.5	9	0	29.0	7	0	37.9	5	0	17.2	11	0	21.4	2	0
9	HS679	NHLSZ 1911	41.1	7	0	28.3	8	0	27.5	7	0	27.2	10	0	35.6	9	0	19.6	8	0	19.0	6	0
10	VL892(C)	NHLSZ 1908	34.6	10	0	37.2	1	1	28.6	4	0	29.7	6	0	41.5	2	1	24.3	3	1	19.4	4	0
11	HS490(C)	NHLSZ 1910	47.9	1	1	34.8	2	0	33.0	1	1	35.5	3	1	33.6	11	0	20.3	6	0	18.7	7	0
G.M.			40.9			31.4			27.6			31.1			38.2			21.3			19.3		
S.E.(M)			2.087			0.953			1.049			1.604			1.757			1.432			1.445		
C.D. (10%)			4.9			2.3			2.5			3.8			4.2			3.4			3.4		
C.V.			9.9			5.1			7.4			10.6			9.0			13.1			13.4		
D.O.S.(dd.mm.yy)			06.12.19			05.12.19			05.12.19			06.12.19			12.12.19			10.12.19			05.12.19		

No. of Trials : Proposed = 12 Conducted = 12

Trials not Reported (01) = Una (LSM)

1914-AVT-RI-LS-TAS-NHZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Sikkim			Manipur			Meghalaya			W.B.		
			Gangtok			CAU-Imphal			Umiam			Kalimpong		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS681	NHLSZ 1901	20.3	7	0	45.2	3	1	18.2	7	1	24.6	7	0
2	VL3022	NHLSZ 1902	21.4	4	1	45.0	4	1	19.9	2	1	25.0	6	0
3	HS680	NHLSZ 1903	17.2	10	0	34.4	10	0	16.9	9	1	20.6	10	0
4	VL3023	NHLSZ 1904	25.1	1	1	43.1	6	1	19.5	4	1	24.5	8	0
5	HPW474	NHLSZ 1905	20.9	5	1	46.0	2	1	14.4	10	0	20.3	11	0
6	UP3069	NHLSZ 1906	25.1	1	1	42.1	7	0	19.5	4	1	25.9	3	0
7	HPW473	NHLSZ 1907	15.4	11	0	39.4	8	0	13.5	11	0	27.0	1	1
8	VL3024	NHLSZ 1909	19.4	8	0	36.8	9	0	21.2	1	1	25.6	5	0
9	HS679	NHLSZ 1911	18.5	9	0	43.5	5	1	17.8	8	1	26.4	2	0
10	VL892(C)	NHLSZ 1908	24.7	3	1	29.2	11	0	19.9	2	1	24.1	9	0
11	HS490(C)	NHLSZ 1910	20.7	6	0	50.4	1	1	18.6	6	1	25.7	4	0
G.M.			20.8			41.4			18.1			24.5		
S.E.(M)			1.847			3.469			2.071			0.210		
C.D. (10%)			4.4			8.2			4.9			0.5		
C.V.			17.3			18.4			22.7			1.9		
D.O.S.(dd.mm.yy)			12.12.19			21.11.19			03.12.19			15.12.19		

1914-AVT-RI-LS-TAS-NHZ, 2019-20

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	H.P.			UTK			Sikkim			Manipur			Meghalaya			W.B.			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS681	NHLSZ 1901	32.2	8	0	26.7	4	0	20.3	7	0	45.2	3	1	18.2	7	1	24.6	7	0	28.8	5	0
2	VL3022	NHLSZ 1902	34.1	3	0	25.8	6	0	21.4	4	1	45.0	4	1	19.9	2	1	25.0	6	0	29.5	4	0
3	HS680	NHLSZ 1903	37.0	2	1	29.7	1	1	17.2	10	0	34.4	10	0	16.9	9	1	20.6	10	0	29.6	3	1
4	VL3023	NHLSZ 1904	33.6	4	0	26.7	5	0	25.1	1	1	43.1	6	1	19.5	4	1	24.5	8	0	29.7	2	1
5	HPW474	NHLSZ 1905	26.8	11	0	28.3	3	1	20.9	5	1	46.0	2	1	14.4	10	0	20.3	11	0	26.7	11	0
6	UP3069	NHLSZ 1906	29.2	10	0	24.7	9	0	25.1	1	1	42.1	7	0	19.5	4	1	25.9	3	0	27.6	9	0
7	HPW473	NHLSZ 1907	33.6	5	0	24.2	10	0	15.4	11	0	39.4	8	0	13.5	11	0	27.0	1	1	27.5	10	0
8	VL3024	NHLSZ 1909	32.3	7	0	25.5	7	0	19.4	8	0	36.8	9	0	21.2	1	1	25.6	5	0	28.0	7	0
9	HS679	NHLSZ 1911	31.0	9	0	24.8	8	0	18.5	9	0	43.5	5	1	17.8	8	1	26.4	2	0	27.7	8	0
10	VL892(C)	NHLSZ 1908	32.5	6	0	28.4	2	1	24.7	3	1	29.2	11	0	19.9	2	1	24.1	9	0	28.5	6	0
11	HS490(C)	NHLSZ 1910	37.8	1	1	24.2	11	0	20.7	6	0	50.4	1	1	18.6	6	1	25.7	4	0	30.8	1	1
G.M.			32.7			26.3			20.8			41.4			18.1			24.5			28.6		
S.E.(M)			0.747			0.896			1.847			3.469			2.071			0.210			0.545		
C.D. (10%)			1.7			2.1			4.4			8.2			4.9			0.5			1.3		

Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone **Trial: AVT-RI-LS-TAS-NHZ, 2019-20**

SN	Variety	Code	Disease Reaction				Agronomic Characteristics							Grain Characteristics				
			Br	YI	ACI	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS681	NHLSZ-1901	0	30S	9.8	3	95-142	112	125-187	151	65-99	88	10	M	A	H	43-51	49
2	VL3022	NHLSZ-1902	0	15S	9.0	1	87-137	107	126-182	151	72-110	94	5	Ey	A	SH	39-51	45
3	HS680	NHLSZ-1903	0	30S	9.0	3	87-139	109	124-185	149	74-105	93	10	M	A	SH	36-50	47
4	VL3023	NHLSZ-1904	20S	40S	15.0	3	82-141	106	125-185	150	77-109	90	5	Ey	A	SH	37-47	47
5	HPW474	NHLSZ-1905	0	60S	23.0	1	87-141	109	126-183	149	70-114	88	15	M	A	SH	38-49	46
6	UP3069	NHLSZ-1906	0	40S	12.8	1	86-147	109	128-184	152	72-116	89	10	M	A	SH	35-58	46
7	HPW473	NHLSZ-1907	tS	40S	23.0	1	84-142	109	124-188	151	73-105	94	10	M	A	SH	39-43	44
8	VL3024	NHLSZ-1909	0	0	0.0	1	87-140	109	126-184	150	67-120	82	10	Ey	A	SH	36-46	42
9	HS679	NHLSZ-1911	0	40S	12.8	3	86-141	110	128-188	150	65-115	89	15	Ey	A	SH	36-46	43
10	VL892 (C)	NHLSZ-1908	0	40S	17.6	3	82-142	107	124-185	150	66-114	89	5	Ey	A	SH	33-41	39
11	HS490 (C)	NHLSZ-1910	0	30S	12.8	1	88-145	111	125-189	150	74-106	93	15	Ey	A	SH	39-48	48

1. Ancillary data from Almora, Bajaura, CAU Imphal, Dhaulakuan, Majhera, Malan, Ranichauri, Shimla, Kalimpong and Umiam.
2. Yellow rust data from Almora, Bajaura, Dhaulakuan, Malan and Shimla; 3. Brown rust data from Almora and Malan
4. Lodging data from Gangtok only.

Individual Station Disease Data

SN	Variety	Code	Yellow Rust					Brown Rust	
			Almora	Bajaura	Dhaulakuan	Malan	Shimla	Almora	Malan
1	HS681	NHLSZ-1901	5S	30S	0	10S	5MS	0	0
2	VL3022	NHLSZ-1902	10S	15S	5S	5S	10S	0	0
3	HS680	NHLSZ-1903	5S	30S	0	5S	5S	0	0
4	VL3023	NHLSZ-1904	10S	15S	0	40S	10S	0	20S
5	HPW474	NHLSZ-1905	5S	60S	0	40S	10S	0	0
6	UP3069	NHLSZ-1906	0	20S	0	40S	5MS	0	0
7	HPW473	NHLSZ-1907	10S	40S	20S	40S	5S	tS	0
8	VL3024	NHLSZ-1909	0	0	0	0	0	0	0
9	HS679	NHLSZ-1911	5S	15S	0	40S	5MS	0	0
10	VL892 (C)	NHLSZ-1908	10S	40S	10S	20S	10MS	0	0
11	HS490 (C)	NHLSZ-1910	5S	20S	5S	30S	5MS	0	0

North Western Plains Zone

1921-AVT-IR-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi	J&K	Haryana				Punjab			
			Delhi	Jammu	Hisar	Rohtak	IIWBR, Karnal	Shikohpur	Ludhiana	Bathinda	Gurdaspur	Kapurthala
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	PBW840[M]	NW-TS-107	56.1 3 1	58.0 3 1	62.0 5 1	60.8 6 0	69.8 4 1	56.1 4 0	67.5 3 1	64.8 2 1	53.2 2 1	67.9 1 1
2	PBW803	NW-TS-108	38.2 9 0	52.4 6 0	57.2 7 0	63.7 4 0	64.4 6 0	57.2 3 1	68.3 2 1	64.3 5 1	46.9 5 0	66.5 2 1
3	DBW88 (C)	NW-TS-101	58.9 2 1	52.1 8 0	56.1 8 0	65.5 2 0	69.6 5 1	59.7 1 1	59.8 7 0	60.8 7 1	41.7 6 0	60.1 8 0
4	HD2967 (C)	NW-TS-103	44.9 7 0	50.5 9 0	54.8 9 0	56.8 8 0	42.4 9 0	54.9 6 0	50.2 8 0	63.3 6 1	31.7 9 0	61.3 7 0
5	WH1105 (C)	NW-TS-104	46.2 6 0	56.6 5 0	62.4 3 1	58.3 7 0	74.5 1 1	54.7 7 0	62.1 6 0	51.6 9 0	54.6 1 1	61.9 6 0
6	HD3086 (C)	NW-TS-106	51.4 5 0	57.3 4 0	62.4 4 1	64.4 3 0	63.5 7 0	54.6 8 0	69.1 1 1	64.6 3 1	49.4 3 0	65.7 3 1
7	PBW550 (C)	NW-TS-109	52.9 4 0	52.3 7 0	61.1 6 0	69.6 1 1	58.9 8 0	52.8 9 0	46.5 9 0	59.5 8 0	40.1 8 0	58.0 9 0
8	DBW187(I) (C)	NW-TS-102	41.6 8 0	62.3 1 1	67.5 1 1	61.1 5 0	72.7 2 1	55.3 5 0	66.9 4 1	64.6 3 1	41.7 7 0	64.7 4 1
9	DBW222(I) (C)	NW-TS-105	60.6 1 1	58.5 2 1	65.1 2 1	54.0 9 0	71.6 3 1	59.5 2 1	62.4 5 0	65.0 1 1	48.7 4 0	64.4 5 1
G.M.			50.1	55.6	61.0	61.6	65.3	56.1	61.4	62.1	45.3	63.4
S.E.(M)			2.707	2.000	2.393	1.664	2.150	1.503	2.239	2.032	1.453	1.908
C.D. (10%)			6.5	4.8	5.8	4.0	5.2	3.6	5.4	4.9	3.5	4.6
C.V.			10.8	7.2	7.9	5.4	6.6	5.4	7.3	6.5	6.4	6.0
D.O.S.(dd.mm.yy)			13.11.19	02.11.19	01.11.19	12.11.19	01.11.19	15.11.19	08.11.19	14.11.19	14.11.19	15.11.19

No. of Trials : Proposed = 22 Conducted = 21
Trial not conducted (01) = Alwar Trials not reported (01) = Ujhani (LSM)

1921-AVT-IR-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Punjab		Rajasthan			Uttar Pradesh			Uttarakhand	
			Rauni	Faridkot	Durgapura	Tabiji	Sriganganagar	Nagina	Bulandshahr	Modipuram	Kashipur	Pantnagar
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	PBW840[M]	NW-TS-107	65.6 4 1	63.8 1 1	72.9 1 1	41.5 9 0	58.9 7 0	59.1 6 0	60.8 6 0	57.7 5 0	59.8 9 0	62.8 5 0
2	PBW803	NW-TS-108	65.7 3 1	63.7 2 1	71.6 2 1	51.0 4 0	62.1 4 0	63.9 1 1	54.5 8 0	52.9 9 0	71.1 1 1	55.5 7 0
3	DBW88 (C)	NW-TS-101	56.7 8 0	59.3 5 1	49.5 8 0	49.3 5 0	66.0 1 1	57.5 8 0	58.6 7 0	56.5 6 0	67.1 6 0	66.3 3 0
4	HD2967 (C)	NW-TS-103	45.6 9 0	54.0 9 0	47.2 9 0	58.4 3 1	60.1 5 0	44.9 9 0	64.3 2 1	53.7 8 0	69.8 4 0	68.4 2 1
5	WH1105 (C)	NW-TS-104	61.5 5 0	56.6 7 0	65.7 4 0	47.5 7 0	58.4 8 0	60.3 5 0	64.7 1 1	61.1 2 1	60.6 8 0	60.5 6 0
6	HD3086 (C)	NW-TS-106	67.4 1 1	62.6 3 1	68.9 3 0	42.5 8 0	57.7 9 0	59.0 7 0	63.9 4 1	56.1 7 0	70.6 3 1	55.4 8 0
7	PBW550 (C)	NW-TS-109	58.7 7 0	55.1 8 0	60.4 6 0	48.0 6 0	59.5 6 0	62.8 4 1	63.1 5 0	60.8 3 1	68.0 5 0	51.6 9 0
8	DBW187(I) (C)	NW-TS-102	65.9 2 1	61.4 4 1	53.1 7 0	59.3 2 1	63.5 2 0	63.7 2 1	54.2 9 0	61.4 1 1	71.0 2 1	65.1 4 0
9	DBW222(I) (C)	NW-TS-105	59.1 6 0	57.8 6 0	61.0 5 0	60.0 1 1	63.0 3 0	63.6 3 1	64.2 3 1	60.7 4 1	64.1 7 0	68.5 1 1
G.M.			60.7	59.4	61.2	50.8	61.0	59.4	60.9	57.9	66.9	61.5
S.E.(M)			2.071	2.276	0.674	1.641	0.666	0.822	0.574	0.611	0.476	0.457
C.D. (10%)			5.0	5.5	1.6	4.0	1.6	2.0	1.4	1.5	1.2	1.1
C.V.			6.8	7.7	2.2	6.5	2.2	2.8	1.9	2.1	1.4	1.5
D.O.S.(dd.mm.yy)			10.11.19	14.11.19	15.11.19	14.11.19	15.11.19	15.11.19	13.11.19	06.11.19	13.11.19	07.11.19

1921-AVT-IR-TS-TAS-NWPZ, 2019-20

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi			J&K			Haryana			Punjab			Rajasthan			U.P.			UTK			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW840[M]	NW-TS-107	56.1	3	1	58.0	3	1	62.2	5	1	63.8	1	1	57.8	4	0	59.2	6	0	61.3	7	0	61.0	2	1
2	PBW803	NW-TS-108	38.2	9	0	52.4	6	0	60.6	7	0	62.6	3	1	61.6	1	1	57.1	8	0	63.3	5	0	59.6	5	0
3	DBW88 (C)	NW-TS-101	58.9	2	1	52.1	8	0	62.7	2	1	56.4	7	0	54.9	9	0	57.5	7	0	66.7	3	0	58.6	7	0
4	HD2967 (C)	NW-TS-103	44.9	7	0	50.5	9	0	52.2	9	0	51.0	9	0	55.2	8	0	54.3	9	0	69.1	1	1	53.9	9	0
5	WH1105 (C)	NW-TS-104	46.2	6	0	56.6	5	0	62.5	4	1	58.0	6	0	57.2	5	0	62.0	3	1	60.5	8	0	59.0	6	0
6	HD3086 (C)	NW-TS-106	51.4	5	0	57.3	4	0	61.2	6	0	63.1	2	1	56.4	6	0	59.7	5	0	63.0	6	0	60.3	4	0
7	PBW550 (C)	NW-TS-109	52.9	4	0	52.3	7	0	60.6	8	0	53.0	8	0	56.0	7	0	62.2	2	1	59.8	9	0	57.0	8	0
8	DBW187(I) (C)	NW-TS-102	41.6	8	0	62.3	1	1	64.2	1	1	60.9	4	0	58.6	3	0	59.8	4	0	68.0	2	0	60.9	3	1
9	DBW222(I) (C)	NW-TS-105	60.6	1	1	58.5	2	1	62.5	3	1	59.6	5	0	61.3	2	1	62.8	1	1	66.3	4	0	61.6	1	1
G.M.			50.1			55.6			61.0			58.7			57.7			59.4			64.2			59.1		
S.E.(M)			2.707			2.000			0.980			0.823			0.632			0.391			0.330			0.376		
C.D. (10%)			6.5			4.8			2.3			1.9			1.5			0.9			0.8			0.9		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone — **Trial: AVT-IR-TS-TAS-NWPZ, 2019-20**

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	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	PBW840[M]	NW-TS-107	10S	2.0	60S	25.1	69-110	93	94-162	144	75-123	93	10	Ey	A	H	36-47	41
2	PBW803	NW-TS-108	0	0.0	60S	20.3	67-112	97	109-164	145	86-128	99	10	Ey	A	SH	34-50	42
3	DBW88 (C)	NW-TS-101	10S	4.0	60S	19.4	71-118	102	106-167	148	89-137	103	10	Ey	A	H	33-50	42
4	HD2967 (C)	NW-TS-103	20S	4.0	60S	30.0	69-122	108	107-167	150	82-125	103	15	Ey	A	SH	32-50	40
5	WH1105 (C)	NW-TS-104	0	0.0	40S	12.5	70-114	100	105-162	146	84-136	100	5	Ey	A	SH	29-47	39
6	HD3086 (C)	NW-TS-106	20S	8.0	60S	20.6	63-112	97	108-162	146	85-128	100	10	Ey	A	H	35-48	41
7	PBW550 (C)	NW-TS-109	5S	1.0	80S	35.6	65-110	93	95-162	144	76-123	91	10	Ey	A	H	25-45	40
8	DBW187(I)(C)	NW-TS-102	5S	1.0	20S	6.3	68-118	98	111-165	146	90-129	103	20	Ey	A	SH	40-49	45
9	DBW222(I)(C)	NW-TS-105	0	0.0	40S	12.9	66-112	100	112-162	147	94-135	107	10	Ey	A	SH	32-46	41

1. Ancillary data from Bhatinda, Bulandshahr, Delhi, Durgapura, Faridkot, Gurdaspur, Hisar, Jammu, Karnal, Kashipur, Ludhiana, Modipuram, Nagina, Pantnagar, Rohtak, Shikohpur, Sriganganagar and Tabiji.
2. Lodging data from Bhatinda, Bulandshahr, Durgapura, Gurdaspur, Hisar, Karnal, Ludhiana and Shikohpur.
3. Yellow rust data from Delhi, Durgapura, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar.
4. Brown rust data from Delhi, Hisar, Jammu, Ludhiana and Pantnagar.

Individual Station Rust Data

SN	Variety	Code	Yellow rust								Brown rust				
			Durgapura	Gurdaspur	Ludhiana	Karnal	Pantnagar	Delhi	Hisar	Jammu	Ludhiana	Pantnagar	Delhi	Hisar	Jammu
1	PBW840[M]	NW-TS-107	20S	60S	60S	40S	tS	0	0	20S	0	0	10S	0	0
2	PBW803	NW-TS-108	5MR	10S	60S	40S	10S	0	20S	20S	0	0	0	0	0
3	DBW88 (C)	NW-TS-101	60S	20S	40S	20S	5S	0	0	10S	0	0	10S	0	10S
4	HD2967 (C)	NW-TS-103	40S	40S	60S	40S	10S	0	10S	40S	0	0	20S	0	0
5	WH1105 (C)	NW-TS-104	40S	10S	20S	5S	0	5S	0	20S	0	0	0	0	0
6	HD3086 (C)	NW-TS-106	5S	20S	40S	60S	0	0	0	40S	20S	5S	5S	10S	0
7	PBW550 (C)	NW-TS-109	20S	60S	80S	60S	5S	0	0	60S	0	0	5S	0	0
8	DBW187(I)(C)	NW-TS-102	0	20S	10S	10S	0	0	0	10S	0	0	0	5S	0
9	DBW222(I)(C)	NW-TS-105	10MS	10S	40S	20S	5S	0	0	20S	0	0	0	0	0

1922-AVT-IR-LS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi			Haryana												Punjab											
			Delhi			Hisar			IIWBR, Karnal			Rohtak			Shikohpur			Ludhiana			Kapurthala			Gurdaspur			Bathinda			Faridkot		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3298*	NW-LS-215	55.3	1	1	44.3	14	0	42.2	14	0	46.1	15	0	58.5	1	1	44.9	15	0	45.4	16	0	45.4	7	0	46.3	15	0	51.3	14	0
2	HD3331#WB	NW-LS-214	49.5	8	0	44.9	13	0	55.0	4	0	44.0	16	0	55.6	3	0	49.9	13	0	55.2	2	1	45.3	8	0	49.7	9	1	51.1	15	0
3	HD3334	NW-LS-201	46.8	11	0	45.9	8	0	55.9	3	0	53.0	8	0	54.7	5	0	57.4	7	1	46.5	14	0	39.1	11	0	48.1	11	0	56.9	3	1
4	HD3332	NW-LS-203	48.8	9	0	45.8	9	0	42.3	13	0	50.2	10	0	42.8	14	0	59.3	1	1	46.6	13	0	32.4	16	0	49.0	10	1	55.3	7	1
5	PBW811	NW-LS-206	47.0	10	0	49.5	6	0	46.5	11	0	52.5	9	0	56.0	2	1	58.6	4	1	51.5	5	1	35.3	13	0	50.2	7	1	56.2	4	1
6	DBW291	NW-LS-207	45.2	13	0	43.8	15	0	52.1	8	0	50.2	10	0	49.6	8	0	56.1	8	1	48.7	8	0	46.5	3	0	53.0	2	1	53.0	12	0
7	WH1264	NW-LS-208	51.9	4	1	56.9	1	1	49.4	10	0	59.8	1	1	47.5	9	0	58.3	5	1	55.4	1	1	40.7	9	0	46.4	14	0	53.0	11	0
8	PBW812	NW-LS-209	52.1	3	1	51.1	3	0	52.3	7	0	58.6	2	1	44.4	11	0	55.8	9	1	47.5	11	0	46.3	4	0	53.9	1	1	55.8	6	1
9	JKW261	NW-LS-210	51.2	5	0	45.2	11	0	64.0	1	1	50.0	12	0	41.5	15	0	48.6	14	0	49.3	7	0	56.1	1	1	52.6	3	1	54.8	9	1
10	DBW290	NW-LS-211	43.0	15	0	51.1	4	0	53.0	6	0	54.0	4	0	41.1	16	0	53.9	10	0	49.6	6	0	38.1	12	0	47.9	12	0	57.2	2	1
11	PBW813	NW-LS-213	50.7	6	0	44.9	12	0	44.9	12	0	58.3	3	1	38.3	17	0	59.0	2	1	55.1	3	1	46.3	5	0	52.5	4	1	57.3	1	1
12	UP3033	NW-LS-217	49.7	7	0	43.6	16	0	39.1	16	0	43.6	17	0	53.5	7	0	52.6	11	0	48.1	10	0	46.0	6	0	47.5	13	0	54.9	8	1
13	HD3059 (C)	NW-LS-202	46.0	12	0	50.2	5	0	53.6	5	0	49.8	13	0	43.2	12	0	51.6	12	0	48.6	9	0	34.2	14	0	52.0	5	1	53.4	10	0
14	DBW173 (C)	NW-LS-204	45.2	14	0	45.5	10	0	57.8	2	0	49.2	14	0	43.1	13	0	58.7	3	1	46.1	15	0	52.8	2	1	50.3	6	1	48.8	16	0
15	WH1021 (C)	NW-LS-205	26.7	17	0	42.2	17	0	26.6	17	0	53.6	7	0	55.0	4	0	34.0	17	0	40.9	17	0	23.1	17	0	46.1	16	0	46.5	17	0
16	WH1124 (C)	NW-LS-216	40.1	16	0	55.1	2	1	39.8	15	0	54.0	4	0	54.4	6	0	43.9	16	0	47.1	12	0	32.7	15	0	44.7	17	0	52.6	13	0
17	PBW771(I)(C)	NW-LS-212	52.3	2	1	47.1	7	0	50.3	9	0	53.6	6	0	46.0	10	0	58.2	6	1	54.6	4	1	40.1	10	0	50.1	8	1	56.1	5	1
G.M.			47.2			47.5			48.5			51.8			48.5			53.0			49.2			41.2			49.4			53.8		
S.E.(M)			1.694			1.741			1.550			1.209			1.170			1.800			2.322			1.998			2.286			1.599		
C.D. (10%)			4.0			4.1			3.7			2.9			2.8			4.3			5.5			4.7			5.4			3.8		
C.V.			7.2			7.3			6.4			4.7			4.8			6.8			9.4			9.7			9.2			5.9		
D.O.S.(dd.mm.yy)			20.12.19			10.12.19			25.12.19			23.12.19			20.12.19			10.12.19			24.12.19			21.12.19			17.12.19			20.12.19		

No. of Trials: Proposed = 22 Conducted = 21
Trial not conducted (01) = Alwar
Trials not reported (03) = Jammu (RMT), Tabiji (LSM), KVK-Rampur (LS)

1922-AVT-IR-LS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Rajasthan						Uttar Pradesh												Uttarakhand					
			Durgapura			Sriganganagar			Bulandshahr			Ujhani			Modipuram			Nagina			Kashipur			Pantnagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3298*	NW-LS-215	42.8	11	0	49.5	4	0	37.0	17	0	35.8	13	0	45.4	8	0	51.0	3	0	59.6	9	0	51.7	2	0
2	HD3331#WB	NW-LS-214	49.8	3	0	48.7	5	0	42.7	10	0	40.9	3	0	35.1	16	0	39.1	15	0	61.2	5	0	43.2	11	0
3	HD3334	NW-LS-201	39.2	14	0	42.9	13	0	47.2	7	0	38.9	10	0	45.5	6	0	40.1	12	0	59.1	12	0	51.2	3	0
4	HD3332	NW-LS-203	39.2	14	0	37.9	16	0	43.0	9	0	33.6	15	0	42.8	12	0	37.2	16	0	56.5	15	0	38.5	15	0
5	PBW811	NW-LS-206	46.5	5	0	51.1	1	1	37.8	16	0	45.6	1	1	43.5	11	0	42.1	9	0	59.2	11	0	51.1	4	0
6	DBW291	NW-LS-207	48.8	4	0	43.1	12	0	38.7	13	0	36.9	12	0	41.2	14	0	48.4	6	0	62.6	4	0	41.8	13	0
7	WH1264	NW-LS-208	42.1	12	0	43.8	11	0	47.0	8	0	35.0	14	0	46.2	3	0	39.6	14	0	60.6	6	0	49.9	5	0
8	PBW812	NW-LS-209	44.9	7	0	44.6	10	0	50.8	3	0	38.9	11	0	51.8	1	1	52.3	2	0	62.7	3	0	43.2	9	0
9	JKW261	NW-LS-210	52.1	2	1	45.5	9	0	49.0	5	0	40.0	6	0	46.1	4	0	48.2	7	0	66.6	1	1	37.2	16	0
10	DBW290	NW-LS-211	46.1	6	0	46.3	8	0	47.2	6	0	39.4	9	0	45.5	7	0	59.2	1	1	59.3	10	0	43.2	10	0
11	PBW813	NW-LS-213	43.0	9	0	47.9	6	0	49.7	4	0	39.6	8	0	45.2	9	0	47.7	8	0	60.5	7	0	49.6	6	0
12	UP3033	NW-LS-217	43.6	8	0	50.9	2	1	38.5	14	0	33.6	16	0	42.7	13	0	42.0	10	0	57.3	13	0	43.0	12	0
13	HD3059 (C)	NW-LS-202	36.3	16	0	39.6	14	0	40.7	11	0	40.3	5	0	45.0	10	0	39.9	13	0	65.9	2	0	43.5	8	0
14	DBW173 (C)	NW-LS-204	41.3	13	0	36.9	17	0	51.2	2	0	41.8	2	0	46.0	5	0	50.7	4	0	59.9	8	0	57.6	1	1
15	WH1021 (C)	NW-LS-205	30.1	17	0	39.1	15	0	40.2	12	0	27.7	17	0	35.9	15	0	33.8	17	0	54.6	17	0	45.3	7	0
16	WH1124 (C)	NW-LS-216	43.0	9	0	50.6	3	1	38.4	15	0	40.5	4	0	35.1	17	0	41.4	11	0	57.3	14	0	37.0	17	0
17	PBW771(I)(C)	NW-LS-212	53.2	1	1	46.8	7	0	53.9	1	1	39.9	7	0	48.6	2	0	48.5	5	0	54.7	16	0	40.2	14	0
G.M.			43.6			45.0			44.3			38.1			43.6			44.8			59.9			45.1		
S.E.(M)			0.974			0.625			1.038			1.603			0.919			0.849			0.265			0.701		
C.D. (10%)			2.3			1.5			2.5			3.8			2.2			2.0			0.6			1.7		
C.V.			4.5			2.8			4.7			8.4			4.2			3.8			0.9			3.1		
D.O.S.(dd.mm.yy)			11.12.19			21.12.19			24.12.19			12.12.19			23.12.19			13.12.19			20.12.19			23.12.19		

1922-AVT-IR-LS-TAS-NWPZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi			Haryana			Punjab			Rajasthan			Uttar Pradesh			Uttarakhand			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3298*	NW-LS-215	55.3	1	1	47.8	13	0	46.6	15	0	46.2	8	0	42.3	8	0	55.6	2	0	47.4	12	0
2	HD3331#WB	NW-LS-214	49.5	8	0	49.9	7	0	50.3	9	0	49.2	2	1	39.4	13	0	52.2	10	0	47.8	10	0
3	HD3334	NW-LS-201	46.8	11	0	52.4	2	1	49.6	11	0	41.0	13	0	42.9	7	0	55.1	5	0	48.3	9	0
4	HD3332	NW-LS-203	48.8	9	0	45.3	15	0	48.5	13	0	38.5	15	0	39.1	15	0	47.5	16	0	44.5	16	0
5	PBW811	NW-LS-206	47.0	10	0	51.1	4	0	50.4	8	0	48.8	3	1	42.3	9	0	55.2	4	0	48.9	7	0
6	DBW291	NW-LS-207	45.2	13	0	48.9	11	0	51.5	5	0	45.9	9	0	41.3	12	0	52.2	9	0	47.8	11	0
7	WH1264	NW-LS-208	51.9	4	1	53.4	1	1	50.8	7	0	42.9	12	0	42.0	10	0	55.2	3	0	49.1	5	0
8	PBW812	NW-LS-209	52.1	3	1	51.6	3	0	51.9	3	0	44.8	11	0	48.4	1	1	52.9	8	0	50.4	1	1
9	JKW261	NW-LS-210	51.2	5	0	50.2	6	0	52.3	2	1	48.8	4	1	45.9	5	0	51.9	11	0	49.9	2	1
10	DBW290	NW-LS-211	43.0	15	0	49.8	8	0	49.3	12	0	46.2	7	0	47.8	2	1	51.2	12	0	48.6	8	0
11	PBW813	NW-LS-213	50.7	6	0	46.6	14	0	54.0	1	1	45.5	10	0	45.5	6	0	55.0	6	0	49.5	4	0
12	UP3033	NW-LS-217	49.7	7	0	45.0	16	0	49.8	10	0	47.3	5	0	39.2	14	0	50.1	13	0	46.1	14	0
13	HD3059 (C)	NW-LS-202	46.0	12	0	49.2	10	0	48.0	14	0	37.9	16	0	41.5	11	0	54.7	7	0	46.3	13	0
14	DBW173 (C)	NW-LS-204	45.2	14	0	48.9	12	0	51.3	6	0	39.1	14	0	47.4	4	1	58.8	1	1	49.1	6	0
15	WH1021 (C)	NW-LS-205	26.7	17	0	44.3	17	0	38.1	17	0	34.6	17	0	34.4	17	0	50.0	14	0	39.0	17	0
16	WH1124 (C)	NW-LS-216	40.1	16	0	50.8	5	0	44.2	16	0	46.8	6	0	38.8	16	0	47.2	17	0	44.9	15	0
17	PBW771(I)(C)	NW-LS-212	52.3	2	1	49.2	9	0	51.8	4	0	50.0	1	1	47.7	3	1	47.5	15	0	49.7	3	1
G.M.			47.2			49.1			49.3			44.3			42.7			52.5			47.5		
S.E.(M)			1.694			0.719			0.904			0.578			0.571			0.375			0.345		
C.D. (10%)			4.0			1.7			2.1			1.4			1.3			0.9			0.8		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-IR-LS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								Grain Characteristics			
			Br	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod. M.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD3298*	NW-LS-215	5S	60S	13.8	77-102	84	113-144	122	86-131	98	35	Ey	A	SH	32-46	39
2	HD3331#WB	NW-LS-214	20S	10S	4.6	79-104	88	113-144	124	92-126	104	5	Ey	A	SH	29-46	38
3	HD3334	NW-LS-201	5S	20S	8.1	73-92	83	110-144	122	85-106	96	10	Ey	A	SH	34-47	40
4	HD3332	NW-LS-203	10S	60S	15.6	70-100	81	105-142	119	76-116	92	0	Ey	A	SH	31-50	43
5	PBW811	NW-LS-206	20S	60S	16.6	72-100	82	109-144	120	83-126	94	10	Ey	A	SH	24-44	36
6	DBW291	NW-LS-207	tMS	20S	4.8	73-100	82	110-143	122	89-126	104	15	Ey	A	SH	35-46	40
7	WH1264	NW-LS-208	0	60S	17.5	75-100	83	107-142	122	88-125	100	10	Ey	A	SH	29-45	40
8	PBW812	NW-LS-209	10S	60S	21.3	74-101	82	113-142	122	80-128	94	5	Ey	A	SH	36-44	40
9	JKW261	NW-LS-210	5S	40S	8.1	74-97	85	114-143	123	80-127	96	5	Ey	A	SH	34-49	39
10	DBW290	NW-LS-211	0	40S	19.5	77-101	85	114-145	123	88-126	100	0	Ey	A	SH	35-51	42
11	PBW813	NW-LS-213	0	5S	1.2	75-96	83	111-143	121	78-126	92	5	Ey	A	SH	30-46	37
12	UP3033	NW-LS-217	0	40S	17.5	76-104	85	114-143	123	78-128	96	15	Ey	A	SH	30-42	37
13	HD3059 (C)	NW-LS-202	5S	40S	15.6	76-96	85	110-143	123	84-120	94	5	Ey	A	SH	31-44	36
14	DBW173 (C)	NW-LS-204	0	40S	9.5	78-98	85	111-144	123	85-108	98	10	Ey	A	SH	28-42	38
15	WH1021 (C)	NW-LS-205	10S	80S	38.8	77-103	85	112-144	122	82-131	95	10	Ey	A	SH	26-39	35
16	WH1124 (C)	NW-LS-216	40S	60S	25.0	74-101	83	112-142	123	79-126	92	5	Ey	A	SH	30-46	39
17	PBW771(I)(C)	NW-LS-212	0	40S	10.4	78-93	84	112-142	121	75-131	88	0	Ey	A	SH	34-45	39

1. Ancillary data from Bhatinda, Bulandshahr, Delhi, Durgapura, Faridkot, Gurdaspur, Hisar, Karnal, Kashipur, Ludhiana, Modipuram, Nagina, Pantnagar, Rampur, Rohtak, Shikohpur, Sriganganagar and Tabiji.
2. Lodging data from Bulandshahr, Delhi, Gurdaspur, Hisar Karnal and Shikohpur.
3. Yellow rust data from Delhi, Durgapura, Gurdaspur, Hisar, Karnal, Ludhiana, Pantnagar and Shikohpur.
4. Brown rust data from Pantnagar.

Trial: AVT-IR-LS-TAS-NWPZ, 2019-20
Individual Station Rust Data

SN	Variety	Code	Yellow rust							
			Pantnagar	Gurdaspur	Ludhiana	Delhi	Shikohpur	Hisar	Karnal	Durgapura
1	HD3298*	NW-LS-215	10S	10S	20S	10S	0	0	60S	0
2	HD3331#WB	NW-LS-214	10S	5MR	10S	0	0	5S	10S	0
3	HD3334	NW-LS-201	0	20S	20S	5S	0	0	20S	0
4	HD3332	NW-LS-203	0	10S	40S	10S	0	0	60S	5S
5	PBW811	NW-LS-206	0	5S	60S	10MS	0	0	60S	0
6	DBW291	NW-LS-207	0	20MS	20S	0	0	0	5MR	0
7	WH1264	NW-LS-208	tS	10S	40S	5S	0	5MS	60S	20S
8	PBW812	NW-LS-209	10S	10S	60S	10S	0	10S	60S	10S
9	JKW261	NW-LS-210	0	10S	40S	5S	0	0	10S	0
10	DBW290	NW-LS-211	10MS	20S	60S	10S	0	10S	40S	10MS
11	PBW813	NW-LS-213	0	tR	5MS	0	0	0	5S	0
12	UP3033	NW-LS-217	5S	40S	40S	0	0	5S	40S	10S
13	HD3059 (C)	NW-LS-202	5S	20S	40S	5S	0	10S	40S	5S
14	DBW173 (C)	NW-LS-204	tS	20S	40S	0	0	0	10S	5S
15	WH1021 (C)	NW-LS-205	10S	60S	80S	40S	20S	40S	60S	0
16	WH1124 (C)	NW-LS-216	10S	20S	60S	20S	10S	20S	60S	0
17	PBW771(I)(C)	NW-LS-212	tS	10S	20S	5MR	0	0	40S	10S

1923-AVT-RI-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Delhi			J&K			Haryana						Punjab											
			Delhi			Jammu			Hisar			IIWBR, Karnal			Ludhiana			Gurdaspur			Kapurthala			Balachaur		
			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	HUW838#WB	NW-RI-301	58.1	3	1	64.4	1	1	48.3	8	0	65.4	1	1	61.9	3	1	47.9	3	0	55.6	3	1	60.3	1	1
2	DBW296	NW-RI-304	61.5	1	1	51.2	4	0	51.0	6	0	64.4	2	1	65.3	1	1	56.4	1	1	51.1	8	0	56.8	2	0
3	JAUW672	NW-RI-307	48.9	8	0	57.8	2	0	56.1	2	1	64.1	3	1	50.3	5	0	41.9	5	0	55.0	5	1	56.3	3	0
4	HD3043 (C)	NW-RI-302	54.5	5	0	50.9	5	0	51.6	5	0	48.5	7	0	36.4	9	0	36.9	7	0	58.8	1	1	40.4	9	0
5	PBW644 (C)	NW-RI-303	55.1	4	0	53.1	3	0	48.3	8	0	56.3	6	0	39.8	8	0	38.9	6	0	55.8	2	1	45.9	5	0
6	WH1080 (C)	NW-RI-306	53.9	6	0	37.2	9	0	57.5	1	1	44.2	9	0	43.3	6	0	54.7	2	1	52.9	6	0	43.0	7	0
7	WH1142 (C)	NW-RI-308	52.8	7	0	41.0	8	0	55.3	3	1	46.2	8	0	42.2	7	0	36.8	8	0	55.2	4	1	40.6	8	0
8	HI1628(I)(C)	NW-RI-305	47.8	9	0	48.6	6	0	52.4	4	0	59.7	5	0	62.2	2	1	43.7	4	0	51.6	7	0	45.9	6	0
9	NIAW3170(I)(C)	NW-RI-309	61.4	2	1	45.4	7	0	50.5	7	0	60.9	4	0	57.3	4	0	36.5	9	0	47.3	9	0	51.9	4	0
G.M.			54.9			50.0			52.3			56.6			51.0			43.7			53.7			49.0		
S.E.(M)			2.017			2.261			1.992			0.978			2.337			1.695			1.710			1.370		
C.D. (10%)			4.9			5.5			4.8			2.4			5.7			4.1			4.1			3.3		
C.V.			7.3			9.1			7.6			3.5			9.2			7.7			6.4			5.6		
D.O.S.(dd.mm.yy)			02.11.19			25.10.19			03.11.19			25.10.19			26.10.19			31.10.19			05.11.19			05.11.19		

No. of Trials : Proposed = 15 Conducted = 15

Trials not reported (02) = KVK-Rampur (TF), Bharatpur (LSM)

1923-AVT-RI-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Uttar Pradesh									Uttarakhand			Rajasthan		
			Bulandshahr			Nagina			Modipuram			Pantnagar			Sriganganagar		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HUW838#WB	NW-RI-301	39.7	9	0	61.5	2	1	56.4	1	1	64.1	1	1	77.7	5	0
2	DBW296	NW-RI-304	45.7	5	0	62.4	1	1	55.0	2	1	61.2	4	0	79.4	4	1
3	JAUW672	NW-RI-307	44.2	7	0	59.5	4	0	47.8	6	0	45.3	9	0	81.6	2	1
4	HD3043 (C)	NW-RI-302	46.9	4	0	53.7	9	0	41.2	9	0	62.0	3	0	71.4	7	0
5	PBW644 (C)	NW-RI-303	53.5	2	1	54.7	7	0	43.6	8	0	49.6	8	0	50.4	8	0
6	WH1080 (C)	NW-RI-306	49.7	3	0	58.4	6	0	45.6	7	0	62.2	2	0	73.5	6	0
7	WH1142 (C)	NW-RI-308	56.9	1	1	59.1	5	0	49.3	5	0	54.7	7	0	79.6	3	1
8	HI1628(I)(C)	NW-RI-305	44.4	6	0	54.4	8	0	51.9	3	0	54.8	6	0	47.5	9	0
9	NIAW3170(I)(C)	NW-RI-309	42.7	8	0	60.8	3	1	51.6	4	0	58.8	5	0	82.3	1	1
G.M.			47.1			58.3			49.1			57.0			71.5		
S.E.(M)			1.530			0.797			0.670			0.493			1.269		
C.D. (10%)			3.7			1.9			1.6			1.2			3.1		
C.V.			6.5			2.7			2.7			1.7			3.6		
D.O.S.(dd.mm.yy)			05.11.19			05.11.19			25.10.19			04.11.19			05.11.19		

1923-AVT-RI-TS-TAS-NWPZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Delhi			J&K			Haryana			Punjab			Uttar Pradesh			Uttarakhand			Rajasthan			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HUW838#WB	NW-RI-301	58.1	3	1	64.4	1	1	56.9	3	0	56.4	2	1	52.5	3	0	64.1	1	1	77.7	5	0	58.6	2	1
2	DBW296	NW-RI-304	61.5	1	1	51.2	4	0	57.7	2	1	57.4	1	1	54.4	2	1	61.2	4	0	79.4	4	1	58.6	1	1
3	JAUW672	NW-RI-307	48.9	8	0	57.8	2	0	60.1	1	1	50.9	3	0	50.5	7	0	45.3	9	0	81.6	2	1	54.5	3	0
4	HD3043 (C)	NW-RI-302	54.5	5	0	50.9	5	0	50.0	9	0	43.1	9	0	47.2	9	0	62.0	3	0	71.4	7	0	50.2	8	0
5	PBW644 (C)	NW-RI-303	55.1	4	0	53.1	3	0	52.3	6	0	45.1	7	0	50.6	6	0	49.6	8	0	50.4	8	0	49.6	9	0
6	WH1080 (C)	NW-RI-306	53.9	6	0	37.2	9	0	50.9	7	0	48.5	5	0	51.2	5	0	62.2	2	0	73.5	6	0	52.0	5	0
7	WH1142 (C)	NW-RI-308	52.8	7	0	41.0	8	0	50.7	8	0	43.7	8	0	55.1	1	1	54.7	7	0	79.6	3	1	51.5	6	0
8	HI1628(I)(C)	NW-RI-305	47.8	9	0	48.6	6	0	56.0	4	0	50.8	4	0	50.2	8	0	54.8	6	0	47.5	9	0	51.1	7	0
9	NIAW3170(I)(C)	NW-RI-309	61.4	2	1	45.4	7	0	55.7	5	0	48.3	6	0	51.7	4	0	58.8	5	0	82.3	1	1	54.4	4	0
G.M.			54.9			50.0			54.5			49.4			51.5			57.0			71.5			53.4		
S.E.(M)			2.017			2.261			1.109			0.906			0.617			0.493			1.269			0.439		
C.D. (10%)			4.9			5.5			2.6			2.1			1.5			1.2			3.1			1.0		

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: AVT-RI-TS-TAS, 2019-20**

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	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HUW838#WB	NW-RI-301	0	0.0	10MS	2.4	91-112	99	134-168	150	76-116	101	30	Ey	A	H	35-45	41
2	DBW296	NW-RI-304	40S	11.7	40S	11.8	93-116	103	138-170	151	80-120	102	35	Ey	A	SH	37-52	44
3	JAUW672	NW-RI-307	40S	14.3	40S	18.3	90-115	101	134-172	150	71-114	96	30	Ey	A	SH	31-45	40
4	HD3043 (C)	NW-RI-302	80S	39.2	20S	8.9	97-120	106	136-172	152	74-126	104	35	Ey	A	SH	31-43	37
5	PBW644 (C)	NW-RI-303	60S	18.3	40S	18.3	92-120	103	137-172	151	78-116	104	45	Ey	A	SH	32-47	41
6	WH1080 (C)	NW-RI-306	60S	16.7	40S	16.7	90-115	102	138-170	151	65-115	97	30	Ey	A	SH	34-47	40
7	WH1142 (C)	NW-RI-308	60S	16.7	60S	33.5	92-122	103	138-172	152	75-119	99	40	Ey	A	SH	33-45	38
8	HI1628(I)(C)	NW-RI-305	20S	3.3	60S	24.3	83-116	98	135-170	150	73-122	106	30	Ey	A	SH	27-48	41
9	NIAW3170(I)(C)	NW-RI-309	10S	1.7	60S	20.8	86-116	99	136-169	150	72-122	105	30	Ey	A	SH	38-51	44

1. Ancillary data from Balachaur, Bharatpur, Bulandshahr, Delhi, Gurdaspur, Hisar, Jammu, Karnal, Ludhiana, Modipuram, Nagina, Pantnagar and Sriganganagar; Lodging data reported from Bulandshahr, Gurdaspur, Hisar, Karnal, Ludhiana and Pantnagar.
2. Yellow rust data from Balachaur, Gurdaspur Jammu, Karnal, Ludhiana and Pantnagar.
3. Brown rust data from Gurdaspur, Hisar, Jammu, Karnal, Ludhiana and Pantnagar.

Individual Station Rust Data

SN	Variety	Code	Yellow rust						Brown rust					
			Gurdaspur	Ludhiana	Karnal	Jammu	Pantnagar	Balachaur	Gurdaspur	Ludhiana	Karnal	Jammu	Pantnagar	Hisar
1	HUW838#WB	NW-RI-301	0	5MR	10MS	0	5MS	tR	0	0	0	0	0	0
2	DBW296	NW-RI-304	0	0	20MS	40S	5S	10S	0	40S	0	20S	10S	0
3	JAUW672	NW-RI-307	5S	20S	40MS	10MS	5S	40S	5S	40S	0	20MS	5S	20S
4	HD3043 (C)	NW-RI-302	5S	20S	10MS	20S	0	tR	5S	80S	20S	60S	30S	40S
5	PBW644 (C)	NW-RI-303	5S	20S	40S	40S	0	5S	10S	60S	0	0	20S	20S
6	WH1080 (C)	NW-RI-306	0	10S	40S	40S	0	10S	tR	60S	0	20S	10S	10S
7	WH1142 (C)	NW-RI-308	0	20S	60S	60S	tS	60S	5S	60S	0	10S	20S	5S
8	HI1628(I)(C)	NW-RI-305	0	10S	20MS	60S	0	60S	0	20S	0	0	0	0
9	NIAW3170(I)(C)	NW-RI-309	5S	60S	40S	20S	0	0	0	10S	0	0	0	0

North Eastern Plains Zone

1931-AVT-IR-TS-TAS-NEPZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Uttar Pradesh												Bihar		
			Kanpur			Ayodhya			Varanasi			Araul			Gorakhpur			IARI Pusa		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW804	NE-IR-101	65.9	1	1	51.2	4	0	45.0	4	0	56.8	2	1	48.8	6	0	36.1	5	0
2	DBW187 (C)	NE-IR-102	60.2	2	0	45.6	6	0	51.0	1	1	45.5	6	0	49.7	5	0	38.2	4	0
3	K1006 (C)	NE-IR-103	54.1	4	0	52.9	3	0	49.5	2	1	51.8	3	0	54.8	3	1	33.2	6	0
4	DBW39 (C)	NE-IR-104	49.5	5	0	55.8	1	1	45.5	3	0	48.5	4	0	60.3	1	1	38.2	3	0
5	HD2733 (C)	NE-IR-106	48.4	6	0	50.9	5	0	43.2	5	0	46.1	5	0	49.8	4	0	40.2	1	1
6	HD3249(I)(C)	NE-IR-105	58.5	3	0	54.3	2	0	39.9	6	0	58.2	1	1	58.4	2	1	39.6	2	0
G.M.			56.1			51.8			45.7			51.2			53.6			37.6		
S.E.(M)			1.136			0.534			1.262			1.206			4.145			0.088		
C.D. (10%)			2.8			1.3			3.1			3.0			10.3			0.2		
C.V.			4.1			2.1			5.5			4.7			15.5			0.5		
D.O.S.(dd.mm.yy)			23.11.19			24.11.19			15.11.19			25.11.14			23.11.19			16.11.19		

No. of Trials : Proposed = 20 Conducted = 20

Trials not reported (03) = Allahabad (LSM), Majhian (LSM), Bishwanath (LSM)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Bihar												Jharkhand					
			Sabour			Purnea			Banka			RPCAU-Pusa			Ranchi			Chianki		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW804	NE-IR-101	46.6	3	1	31.7	3	0	41.6	6	0	54.0	1	1	60.6	6	0	40.9	6	0
2	DBW187 (C)	NE-IR-102	49.3	1	1	30.7	5	0	61.9	1	1	41.0	5	0	68.2	2	1	44.9	3	0
3	K1006 (C)	NE-IR-103	41.0	5	0	45.0	2	1	55.1	2	0	46.9	4	0	62.7	5	0	55.6	2	1
4	DBW39 (C)	NE-IR-104	42.0	4	0	29.3	6	0	48.1	4	0	37.3	6	0	64.4	4	0	44.2	4	0
5	HD2733 (C)	NE-IR-106	39.2	6	0	45.9	1	1	45.9	5	0	49.1	3	0	66.1	3	0	43.3	5	0
6	HD3249(I)(C)	NE-IR-105	47.4	2	1	31.0	4	0	55.0	3	0	51.2	2	0	70.7	1	1	59.1	1	1
G.M.			44.3			35.6			51.2			46.6			65.5			48.0		
S.E.(M)			2.235			2.103			1.850			0.621			1.557			1.483		
C.D. (10%)			5.5			5.2			4.6			1.5			3.9			3.7		
C.V.			10.1			11.8			7.2			2.7			4.8			6.2		
D.O.S.(dd.mm.yy)			15.11.19			16.11.19			24.11.19			19.11.19			21.11.19			15.11.19		

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Jharkhand			West Bengal									Assam		
			Dumka			Coochbehar			Kalyani			Burdwan			Shillongani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW804	NE-IR-101	49.3	6	0	29.4	6	0	40.5	5	0	43.9	4	1	32.5	6	0
2	DBW187 (C)	NE-IR-102	57.9	3	1	41.6	1	1	47.2	1	1	46.3	3	1	35.6	4	0
3	K1006 (C)	NE-IR-103	62.2	1	1	41.5	2	1	39.8	6	0	39.1	5	0	39.1	2	0
4	DBW39 (C)	NE-IR-104	60.2	2	1	37.3	3	1	43.9	3	0	32.5	6	0	37.1	3	0
5	HD2733 (C)	NE-IR-106	53.9	5	0	35.0	5	0	43.0	4	0	49.1	1	1	32.7	5	0
6	HD3249(I)(C)	NE-IR-105	57.3	4	1	35.4	4	0	44.1	2	0	48.7	2	1	44.1	1	1
G.M.			56.8			36.7			43.1			43.3			36.8		
S.E.(M)			2.664			1.950			0.946			3.234			1.180		
C.D. (10%)			6.6			4.8			2.3			8.0			2.9		
C.V.			9.4			10.6			4.4			14.9			6.4		
D.O.S.(dd.mm.yy)			16.11.19			15.11.19			18.11.19			18.11.19			08.11.19		

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Uttar Pradesh			Bihar			Jharkhand			West Bengal			Assam			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW804	NE-IR-101	53.5	2	1	42.0	5	0	50.2	6	0	37.9	5	0	32.5	6	0	45.6	5	0
2	DBW187 (C)	NE-IR-102	50.4	5	0	44.2	3	1	57.0	3	0	45.0	1	1	35.6	4	0	47.9	3	0
3	K1006 (C)	NE-IR-103	52.6	3	1	44.2	2	1	60.2	2	1	40.1	4	0	39.1	2	0	48.5	2	0
4	DBW39 (C)	NE-IR-104	51.9	4	1	39.0	6	0	56.3	4	0	37.9	6	0	37.1	3	0	45.5	6	0
5	HD2733 (C)	NE-IR-106	47.7	6	0	44.1	4	1	54.4	5	0	42.4	3	1	32.7	5	0	46.0	4	0
6	HD3249(I)(C)	NE-IR-105	53.8	1	1	44.8	1	1	62.3	1	1	42.7	2	1	44.1	1	1	50.2	1	1
G.M.			51.7			43.0			56.7			41.0			36.8			47.3		
S.E.(M)			0.934			0.728			1.141			1.298			1.180			0.468		
C.D. (10%)			2.2			1.7			2.7			3.1			2.9			1.1		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: AVT-IR-TS-TAS-NEPZ, 2019-20**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics								Grain Characteristics			
			Br	ACI	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.M	Col.	Tex.	TGW.R	TGW.M
1	PBW804	NE-IR-101	0	0.0	46(35)	66-90	81	114-135	125	79-108	95	Ey	20	A	SH	38-51	44
2	DBW187 (C)	NE-IR-102	10S	2.5	45(24)	68-88	79	110-131	123	79-113	97	Ey	20	A	SH	36-57	45
3	K1006 (C)	NE-IR-103	50S	27.5	67(35)	63-89	78	112-131	123	78-111	95	Ey	25	A	SH	34-47	42
4	DBW39 (C)	NE-IR-104	20S	5.0	35(23)	70-93	83	116-135	126	76-116	102	Ey	20	A	SH	35-51	41
5	HD2733 (C)	NE-IR-106	20S	13.8	57(35)	75-93	86	118-140	129	72-101	88	Ey	15	A	SH	36-55	46
6	HD3249(I)(C)	NE-IR-105	10S	2.5	57(35)	68-89	78	112-135	125	78-117	97	Ey	20	A	SH	36-56	46

1. The ancillary data from Araul, Prayagraj, Banka, Varanasi, Bishwanath, Chianki, Coochbehar, Dumka, Ayodhya, Kalyani, Kanpur, Majhian, Purnea, Ranchi, RPCAU-Pusa, IARI-Pusa, Sabour and Shillongani.
2. Brown rust reported from Kanpur, Banka, Sabour and Shillongani.
3. Leaf blight data reported from Banka, Bishwanath, Coochbehar, Ayodhya, Kalyani, Ranchi, RPCAU-Pusa, Sabour and Shillongani.
4. Lodging data from Chianki, Dumka, Purnea, Ranchi, RPCAU-Pusa, Sabour and Shillongani.

Individual Station Brown Rust Data

SN	Variety	Code	Banka	Kanpur	Sabour	Shillongani
1	PBW804	NE-IR-101	0	0	0	0
2	DBW187 (C)	NE-IR-102	0	10S	0	0
3	K1006 (C)	NE-IR-103	10S	20S	30S	50S
4	DBW39 (C)	NE-IR-104	0	0	0	20S
5	HD2733 (C)	NE-IR-106	5S	20S	20S	10S
6	HD3249(I)(C)	NE-IR-105	0	10S	0	0

Individual Station Leaf Blight Data

SN	Variety	Code	Banka	Bishwanath	Coochbehar	Ayodhya	Kalyani	Ranchi	RPCAU-Pusa	Sabour	Shillongani
1	PBW804	NE-IR-101	46	25	45	35	46	03	25	46	46
2	DBW187 (C)	NE-IR-102	35	03	45	12	35	13	12	35	04
3	K1006 (C)	NE-IR-103	57	02	45	12	67	24	35	57	46
4	DBW39 (C)	NE-IR-104	35	35	23	23	02	12	22	35	24
5	HD2733 (C)	NE-IR-106	57	35	34	12	24	24	16	57	24
6	HD3249(I)(C)	NE-IR-105	57	25	45	36	46	13	32	57	46

1933-AVT-RI-TS-TAS-NEPZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Uttar Pradesh									Bihar								
			Varanasi			Kanpur			Ghaghraghat			IARI-Pusa			Sabour			Purnea		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3293*	NE-RI-303	48.3	3	0	40.4	4	0	30.8	6	0	28.2	4	0	37.8	1	1	42.2	2	1
2	HD3171 (C)	NE-RI-301	33.0	6	0	51.6	2	1	31.8	4	1	20.1	6	0	30.7	2	0	26.9	5	0
3	HD2888 (C)	NE-RI-302	45.3	4	0	28.1	5	0	32.3	3	1	28.9	3	0	18.1	6	0	30.9	3	0
4	K1317 (C)	NE-RI-304	58.2	1	1	49.9	3	0	31.8	4	1	29.7	2	0	20.6	5	0	30.6	4	0
5	HI1612 (C)	NE-RI-305	57.4	2	1	52.8	1	1	34.9	1	1	31.1	1	1	29.3	3	0	42.5	1	1
6	DBW252(I)(C)	NE-RI-306	45.2	5	0	24.8	6	0	34.1	2	1	26.9	5	0	22.0	4	0	24.9	6	0
G.M.			47.9			41.3			32.6			27.5			26.4			33.0		
S.E.(M)			0.746			0.939			1.339			0.186			1.423			2.416		
C.D. (10%)			1.9			2.3			3.3			0.5			3.5			6.0		
C.V.			3.1			4.6			8.2			1.4			10.8			14.6		
D.O.S.(dd.mm.yy)			06.11.19			09.11.19			10.11.19			30.10.19			09.11.19			28.10.19		

No. of Trials : Proposed = 19 Conducted = 19

Trials not reported (04) = Ayodhya (RMT), Majhian (RMT), Bishwanath (RMT), Deegh (TF)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Bihar			West Bengal									Jharkhand					
			RPCAU-Pusa			Kalyani			Burdwan			Coochbehar			Ranchi			Chianki		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3293*	NE-RI-303	30.7	6	0	31.7	6	0	30.9	5	1	33.9	3	1	60.4	4	0	35.6	4	1
2	HD3171 (C)	NE-RI-301	30.7	5	0	36.7	1	1	30.4	6	1	24.2	6	0	62.7	3	1	36.9	3	1
3	HD2888 (C)	NE-RI-302	32.5	3	0	36.6	2	1	33.4	4	1	26.9	5	0	44.1	5	0	40.5	1	1
4	K1317 (C)	NE-RI-304	39.1	1	1	34.3	4	0	34.8	2	1	36.7	2	1	65.8	1	1	38.8	2	1
5	HI1612 (C)	NE-RI-305	39.1	1	1	35.8	3	1	34.5	3	1	37.6	1	1	63.2	2	1	35.2	5	1
6	DBW252(I)(C)	NE-RI-306	31.9	4	0	32.9	5	0	35.2	1	1	29.5	4	0	42.4	6	0	28.1	6	0
G.M.			34.0			34.7			33.2			31.5			56.4			35.9		
S.E.(M)			0.847			0.786			2.053			1.772			2.160			2.408		
C.D. (10%)			2.1			1.9			5.1			4.4			5.4			6.0		
C.V.			5.0			4.5			12.4			11.3			7.7			13.4		
D.O.S.(dd.mm.yy)			08.11.19			08.11.19			15.11.19			04.11.19			10.11.19			10.11.19		

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Jharkhand						Assam		
			Gumla			Dumka			Shillongani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3293*	NE-RI-303	43.1	3	1	30.1	5	0	39.3	2	1
2	HD3171 (C)	NE-RI-301	43.8	2	1	34.4	2	1	27.7	4	0
3	HD2888 (C)	NE-RI-302	28.1	5	0	31.5	4	0	26.5	6	0
4	K1317 (C)	NE-RI-304	50.0	1	1	36.4	1	1	30.7	3	0
5	HI1612 (C)	NE-RI-305	34.4	4	0	33.2	3	1	42.1	1	1
6	DBW252(I)(C)	NE-RI-306	27.1	6	0	28.5	6	0	27.0	5	0
G.M.			37.7			32.3			32.2		
S.E.(M)			2.985			1.656			1.476		
C.D. (10%)			7.4			4.1			3.7		
C.V.			15.8			10.2			9.2		
D.O.S.(dd.mm.yy)			09.11.19			07.11.19			05.11.19		

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Uttar Pradesh			Bihar			West Bengal			Jharkhand			Assam			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3293*	NE-RI-303	39.8	3	0	34.7	2	1	32.1	5	0	42.3	3	0	39.3	2	1	37.6	3	0
2	HD3171 (C)	NE-RI-301	38.8	4	0	27.1	5	0	30.4	6	0	44.4	2	0	27.7	4	0	34.8	4	0
3	HD2888 (C)	NE-RI-302	35.2	5	0	27.6	4	0	32.3	4	0	36.1	5	0	26.5	6	0	32.3	5	0
4	K1317 (C)	NE-RI-304	46.6	2	0	30.0	3	0	35.3	2	1	47.7	1	1	30.7	3	0	39.2	2	0
5	HI1612 (C)	NE-RI-305	48.4	1	1	35.5	1	1	35.9	1	1	41.5	4	0	42.1	1	1	40.2	1	1
6	DBW252(I)(C)	NE-RI-306	34.7	6	0	26.5	6	0	32.5	3	0	31.5	6	0	27.0	5	0	30.7	6	0
G.M.			40.6			30.2			33.1			40.6			32.2			35.8		
S.E.(M)			0.599			0.734			0.941			1.176			1.476			0.443		
C.D. (10%)			1.4			1.7			2.2			2.8			3.7			1.0		

Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone **Trial: AVT-RI-TS-TAS, 2019-20**

SN	Variety	Code	Disease Reaction			Agronomic Characteristics							Grain Characteristics				
			Br	ACI	HS(Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD3293*	NE-RI-303	0	0.0	56(24)	70-88	80	107-147	128	76-124	99	15	Ey	A	SH	34-55	46
2	HD3171 (C)	NE-RI-301	30S	13.3	67(34)	64-89	74	105-145	124	81-107	96	20	Ey	A	SH	34-60	46
3	HD2888 (C)	NE-RI-302	0	0.0	35(23)	68-99	84	113-150	130	87-144	116	35	Ey	A	SH	31-50	41
4	K1317 (C)	NE-RI-304	20S	6.7	57(46)	72-91	81	109-147	128	84-117	98	20	Ey	A	SH	35-56	47
5	HI1612 (C)	NE-RI-305	0	0.0	45(23)	68-98	86	115-153	132	81-110	98	15	Ey	A	H	32-51	43
6	DBW252(I)(C)	NE-RI-306	0	0.0	57(24)	67-99	84	117-149	131	79-135	111	35	Ey	A	SH	34-50	41

1. Ancillary data from Varanasi, Chianki, Dumka, Ghaghraghat, Gumla, IARI-Pusa, Kalyani, Kanpur, Purnea, Ranchi, RPCAU-Pusa, Sabour and Shillongani.
2. Brown rust data from Kanpur, Sabour and Shillongani.
3. Leaf blight data from Ranchi, RPCAU-Pusa, Sabour, Shillongani and Coochbehar.

Individual Station Brown rust and Leaf blight data

SN	Variety	Code	Brown Rust			Leaf Blight				
			Kanpur	Sabour	Shillongani	Ranchi	RPCAU-Pusa	Sabour	Shillongani	Coochbehar
1	HD3293*	NE-RI-303	0	0	0	03	23	23	24	56
2	HD3171 (C)	NE-RI-301	10S	30S	20S	13	00	35	36	67
3	HD2888 (C)	NE-RI-302	0	0	0	14	00	35	12	34
4	K1317 (C)	NE-RI-304	0	20S	0	24	35	57	46	56
5	HI1612 (C)	NE-RI-305	0	0	0	13	00	23	24	45
6	DBW252(I)(C)	NE-RI-306	0	0	0	13	13	57	24	34

Central Zone

1941-AVT-IR-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat														Madhya Pradesh		
			Anand			Amreli			Junagadh			SK Nagar			Vijapur			Gwalior		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3377[B]	CZ-TS-105	62.8	7	0	56.2	8	0	54.6	8	0	54.5	6	0	65.6	8	0	72.8	4	1
2	RAJ4541[B]	CZ-TS-107	65.9	6	1	53.6	9	0	51.6	10	0	51.0	8	0	68.0	6	0	69.7	8	1
3	TAW155	CZ-TS-101	54.4	10	0	57.1	7	0	53.3	9	0	51.1	7	0	63.0	10	0	75.3	1	1
4	HI1636	CZ-TS-102	67.6	3	1	62.4	3	1	56.6	5	0	57.2	3	0	73.5	2	1	67.8	9	0
5	MP1361	CZ-TS-103	59.8	8	0	69.4	1	1	59.3	2	1	54.6	4	0	72.9	3	1	65.8	10	0
6	MACS6747	CZ-TS-104	67.6	2	1	58.8	5	0	57.0	4	0	47.0	10	0	66.0	7	0	74.4	2	1
7	HI1637	CZ-TS-106	66.9	5	1	60.2	4	0	55.7	7	0	54.6	5	0	70.8	4	1	72.5	5	1
8	GW513	CZ-TS-108	69.8	1	1	68.8	2	1	63.2	1	1	61.7	1	1	74.5	1	1	73.6	3	1
9	GW322 (C)	CZ-TS-109	59.0	9	0	58.3	6	0	58.1	3	0	57.5	2	0	64.5	9	0	71.2	6	1
10	HI1544 (C)	CZ-TS-110	67.5	4	1	50.6	10	0	56.4	6	0	49.7	9	0	69.9	5	0	70.1	7	1
G.M.			64.1			59.5			56.6			53.9			68.9			71.3		
S.E.(M)			2.560			3.120			1.759			1.397			1.785			2.779		
C.D. (10%)			6.2			7.5			4.2			3.4			4.3			6.7		
C.V.			8.0			10.5			6.2			5.2			5.2			7.8		
D.O.S.(dd.mm.yy)			19.11.19			18.11.19			13.11.19			12.11.19			13.11.19			15.11.19		

No. of Trials : Proposed = 22 Conducted = 20
Trials not Conducted (02) = Banswara, Ratlam
Trials not reported (02) = Sagar (LS), Shahdol (HCV, LSM)

1941-AVT-IR-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Madhya Pradesh																	
			Indore			Jabalpur			Powarkheda			Bhopal			KVK-Ujjain			Morena		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3377[B]	CZ-TS-105	44.6	8	0	56.0	1	1	61.8	10	0	45.7	8	0	47.5	9	0	47.2	7	0
2	RAJ4541[B]	CZ-TS-107	57.4	1	1	49.6	4	0	65.4	7	0	55.7	1	1	47.6	8	0	60.9	1	1
3	TAW155	CZ-TS-101	38.2	10	0	48.3	6	0	64.0	8	0	51.1	5	1	45.1	10	0	44.9	9	0
4	HI1636	CZ-TS-102	52.8	4	1	48.3	7	0	74.0	1	1	52.4	3	1	60.2	3	0	45.5	8	0
5	MP1361	CZ-TS-103	47.9	6	0	49.9	3	0	73.8	2	1	45.6	9	0	51.6	7	0	51.7	4	0
6	MACS6747	CZ-TS-104	48.6	5	0	47.9	8	0	67.8	5	0	37.8	10	0	59.7	4	0	48.1	5	0
7	HI1637	CZ-TS-106	54.0	3	1	47.1	9	0	69.7	3	0	52.5	2	1	55.2	6	0	56.8	3	1
8	GW513	CZ-TS-108	45.9	7	0	50.6	2	0	69.1	4	0	47.1	7	0	61.8	2	0	48.1	6	0
9	GW322 (C)	CZ-TS-109	38.6	9	0	42.8	10	0	62.0	9	0	50.6	6	1	67.3	1	1	42.6	10	0
10	HI1544 (C)	CZ-TS-110	54.4	2	1	49.4	5	0	66.4	6	0	51.7	4	1	58.9	5	0	59.0	2	1
G.M.			48.2			49.0			67.4			49.0			55.5			50.5		
S.E.(M)			1.994			0.775			0.824			2.268			1.130			2.079		
C.D. (10%)			4.8			1.9			2.0			5.5			2.7			5.0		
C.V.			8.3			3.2			2.4			9.3			4.1			8.2		
D.O.S.(dd.mm.yy)			18.11.19			14.11.19			16.11.19			15.11.19			16.11.19			25.11.19		

1941-AVT-IR-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Madhya Pradesh			Rajasthan									Chhattisgarh					
			Tikamgarh			Kota			Udaipur			Mandor			Bilaspur			Raipur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3377[B]	CZ-TS-105	50.6	10	0	52.4	9	0	64.2	8	0	59.0	8	0	43.1	7	0	32.3	10	0
2	RAJ4541[B]	CZ-TS-107	63.3	9	0	58.6	5	1	63.1	9	0	57.9	10	0	38.7	9	0	37.8	9	0
3	TAW155	CZ-TS-101	70.0	7	0	56.4	7	1	67.1	4	1	58.3	9	0	57.8	3	1	47.7	3	1
4	HI1636	CZ-TS-102	78.8	4	1	51.6	10	0	72.3	1	1	66.9	2	1	47.7	6	0	48.1	2	1
5	MP1361	CZ-TS-103	80.1	2	1	59.0	3	1	66.8	5	1	59.8	7	0	59.5	2	1	48.6	1	1
6	MACS6747	CZ-TS-104	79.9	3	1	55.2	8	1	66.0	7	0	66.8	3	1	40.8	8	0	44.0	5	0
7	HI1637	CZ-TS-106	71.6	6	0	59.9	2	1	66.7	6	1	62.4	6	0	37.1	10	0	39.4	7	0
8	GW513	CZ-TS-108	77.4	5	0	61.0	1	1	71.1	2	1	66.7	4	1	59.8	1	1	45.1	4	0
9	GW322 (C)	CZ-TS-109	80.4	1	1	57.1	6	1	58.6	10	0	68.4	1	1	56.5	4	1	40.0	6	0
10	HI1544 (C)	CZ-TS-110	69.5	8	0	58.7	4	1	68.5	3	1	63.1	5	0	56.5	4	1	38.2	8	0
G.M.			72.2			57.0			66.5			62.9			49.7			42.1		
S.E.(M)			1.148			3.072			2.530			2.108			2.325			0.507		
C.D. (10%)			2.8			7.4			6.1			5.1			5.6			1.2		
C.V.			3.2			10.8			7.6			6.7			9.4			2.4		
D.O.S.(dd.mm.yy)			13.11.19			19.11.19			11.11.19			20.11.19			11.11.19			17.11.19		

1941-AVT-IR-TS-TAD-CZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			Madhya Pradesh			Rajasthan			Chhattisgarh			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3377[B]	CZ-TS-105	58.7	8	0	53.3	10	0	58.5	10	0	37.7	10	0	53.9	10	0
2	RAJ4541[B]	CZ-TS-107	58.0	9	0	58.7	5	1	59.9	9	0	38.2	9	0	56.4	8	0
3	TAW155	CZ-TS-101	55.8	10	0	54.6	9	0	60.6	8	0	52.8	2	1	55.7	9	0
4	HI1636	CZ-TS-102	63.5	2	0	60.0	1	1	63.6	2	1	47.9	5	0	60.2	2	0
5	MP1361	CZ-TS-103	63.2	3	0	58.3	6	0	61.9	6	0	54.1	1	1	59.8	3	0
6	MACS6747	CZ-TS-104	59.3	6	0	58.0	7	0	62.7	5	0	42.4	7	0	57.4	6	0
7	HI1637	CZ-TS-106	61.6	4	0	59.9	2	1	63.0	4	1	38.3	8	0	58.5	5	0
8	GW513	CZ-TS-108	67.6	1	1	59.2	4	1	66.3	1	1	52.4	3	1	62.0	1	1
9	GW322 (C)	CZ-TS-109	59.5	5	0	56.9	8	0	61.3	7	0	48.3	4	0	57.4	7	0
10	HI1544 (C)	CZ-TS-110	58.8	7	0	59.9	3	1	63.4	3	1	47.3	6	0	58.8	4	0
G.M.			60.6			57.9			62.1			45.9			58.0		
S.E.(M)			0.990			0.625			1.501			1.190			0.483		
C.D. (10%)			2.3			1.5			3.5			2.8			1.1		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-IR-TS-TAD-CZ, 2019-2020**

SN	Variety	Code	Disease		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	HD3377[B]	CZ-TS-105	0	0	52-101	72	104-139	120	69-106	94	5	M	A	SH	35-51	45
2	RAJ4541[B]	CZ-TS-107	0	tR	52-92	68	102-136	117	68-106	91	25	M	A	SH	37-55	46
3	TAW155	CZ-TS-101	tR	tMS	59-92	75	111-138	123	69-104	94	30	M	A	SH	29-57	44
4	HI1636	CZ-TS-102	0	0	49-89	66	102-141	116	72-106	94	10	Ey	A	SH	43-60	52
5	MP1361	CZ-TS-103	tMR	10R	57-95	73	106-140	121	79-111	98	40	M	A	SO	36-58	49
6	MACS6747	CZ-TS-104	0	tR	49-98	67	101-137	116	80-115	97	25	Ey	A	SH	41-59	50
7	HI1637	CZ-TS-106	0	0	49-88	65	99-137	115	67-99	87	15	M	A	SH	41-56	48
8	GW513	CZ-TS-108	0	0	52-95	68	103-138	117	74-108	96	30	M	A	SH	36-58	49
9	GW322 (C)	CZ-TS-109	5MR	5MS	52-95	71	107-140	120	73-104	92	50	M	A	SO	29-51	42
10	HI1544 (C)	CZ-TS-110	0	tR	52-98	68	102-141	117	62-102	90	20	M	A	SH	37-55	46

1. Ancillary data from Anand, Amreli, Bilaspur, Bhopal, Indore, Jabalpur, Junagadh, Mandor, Powarkheda, Raipur, Sagar, Shahdol, SK Nagar, Tikamgarh, Ujjain, Udaipur and Vijapur.
2. Black rust data from Vijapur and Brown rust from Junagadh & Vijapur.
3. Lodging data from Anand, Mandor, Shahdol and Udaipur.

Individual Station Rust Data

SN	Variety	Code	Brown Rust		Black Rust
			Junagadh	Vijapur	Vijapur
1	HD3377[B]	CZ-TS-105	0	0	0
2	RAJ4541[B]	CZ-TS-107	0	0	tR
3	TAW155	CZ-TS-101	0	tR	tMS
4	HI1636	CZ-TS-102	0	0	0
5	MP1361	CZ-TS-103	tR	tMR	10R
6	MACS6747	CZ-TS-104	0	0	tR
7	HI1637	CZ-TS-106	0	0	0
8	GW513	CZ-TS-108	0	0	0
9	GW322 (C)	CZ-TS-109	5MR	0	5MS
10	HI1544 (C)	CZ-TS-110	0	0	tR

1942-AVT-IR-LS-TAS-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat																	
			Anand			Bardoli			Junagardh			S.K.Nagar			Vijapur			Sanosara		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	CG1029*	CZ-LS-205	77.0	1	1	35.1	2	1	56.5	1	1	51.9	1	1	64.5	1	1	62.7	1	1
2	HI1634*Q	CZ-LS-201	68.1	4	1	34.2	4	1	53.8	2	1	41.7	5	0	64.0	2	1	61.0	4	1
3	HD2932 (C)	CZ-LS-202	73.9	2	1	35.2	1	1	51.8	3	1	45.1	3	0	59.8	4	0	57.3	5	0
4	MP3336 (C)	CZ-LS-203	66.9	5	0	35.1	3	1	47.5	5	0	44.3	4	0	54.7	5	0	61.9	2	1
5	HD2864 (C)	CZ-LS-204	70.7	3	1	34.0	5	1	49.1	4	0	49.4	2	1	59.9	3	0	61.1	3	1
G.M.			71.3			34.7			51.7			46.5			60.6			60.8		
S.E.(M)			3.109			0.670			1.824			1.790			0.968			0.968		
C.D. (10%)			9.6			2.1			5.6			5.5			3.0			3.0		
C.V.			8.7			3.9			7.1			7.7			3.2			3.2		
D.O.S.(dd.mm.yy)			09.12.19			14.12.19			08.12.19			11.12.19			06.12.19			10.12.19		

No. of Trials : Proposed =18 Conducted = 17
Trials not Conducted (01) : Banswara
Trials not reported (01) = Sagar (LS)

1942-AVT-IR-LS-TAS-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Madhya Pradesh												Rajasthan					
			Gwalior			Jabalpur			Powarkheda			Indore			Udaipur			Mandor		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	CG1029*	CZ-LS-205	68.5	4	1	39.4	3	0	52.0	1	1	54.6	4	0	67.9	3	1	60.9	5	0
2	HI1634*Q	CZ-LS-201	70.6	3	1	36.3	4	0	51.5	2	1	62.6	1	1	66.2	4	1	61.4	4	0
3	HD2932 (C)	CZ-LS-202	71.6	2	1	40.9	1	1	49.0	4	1	55.3	3	0	54.2	5	0	65.7	3	1
4	MP3336 (C)	CZ-LS-203	71.7	1	1	34.2	5	0	46.3	5	0	57.0	2	1	72.7	1	1	69.0	1	1
5	HD2864 (C)	CZ-LS-204	66.8	5	1	40.8	2	1	49.8	3	1	52.8	5	0	70.3	2	1	67.1	2	1
G.M.			69.9			38.4			49.7			56.4			66.3			64.8		
S.E.(M)			3.816			0.472			1.277			1.829			2.500			1.691		
C.D. (10%)			11.8			1.5			3.9			5.6			7.7			5.2		
C.V.			10.9			2.5			5.1			6.5			7.5			5.2		
D.O.S.(dd.mm.yy)			07.12.19			10.12.19			10.12.19			07.12.19			06.12.19			05.12.19		

1942-AVT-IR-LS-TAS-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Chhattisgarh								
			Bilaspur			Jagdalpur			Ambikapur			Raipur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	CG1029*	CZ-LS-205	45.5	1	1	32.6	5	0	45.9	1	1	56.3	1	1
2	HI1634*Q	CZ-LS-201	40.0	3	1	38.5	3	1	41.6	4	1	53.9	3	0
3	HD2932 (C)	CZ-LS-202	42.0	2	1	41.0	2	1	43.1	2	1	49.3	4	0
4	MP3336 (C)	CZ-LS-203	32.3	5	0	37.6	4	1	40.8	5	0	47.2	5	0
5	HD2864 (C)	CZ-LS-204	38.8	4	0	44.1	1	1	41.8	3	1	55.7	2	1
G.M.			39.7			38.8			42.6			52.5		
S.E.(M)			1.826			3.358			1.570			0.611		
C.D. (10%)			5.6			10.3			4.8			1.9		
C.V.			9.2			17.3			7.4			2.3		
D.O.S.(dd.mm.yy)			08.12.19			12.12.19			04.12.19			07.12.19		

1942-AVT-IR-LS-TAS-CZ, 2019-20
STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			Madhya Pradesh			Rajasthan			Chhattisgarh			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	CG1029*	CZ-LS-205	57.9	1	1	53.6	3	1	64.4	3	0	45.1	2	1	54.5	1	1
2	HI1634*Q	CZ-LS-201	53.8	4	0	55.3	1	1	63.8	4	0	43.5	4	1	52.8	3	0
3	HD2932 (C)	CZ-LS-202	53.9	3	0	54.2	2	1	60.0	5	0	43.8	3	1	52.2	4	0
4	MP3336 (C)	CZ-LS-203	51.7	5	0	52.3	5	0	70.8	1	1	39.5	5	0	51.2	5	0
5	HD2864 (C)	CZ-LS-204	54.0	2	0	52.6	4	0	68.7	2	1	45.1	1	1	53.3	2	0
G.M.			54.3			53.6			65.6			43.4			52.8		
S.E.(M)			0.717			1.111			1.509			1.044			0.503		
C.D. (10%)			1.7			2.6			3.7			2.5			1.2		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-IR-LS-TAS-CZ, 2019-2020**

SN	Variety	Code	Rust Reactions		Agronomic Characteristics								Grain Characteristics			
			Bl	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	CG1029*	CZ-LS-205	10MR	tR	50-81	63	88-128	110	63-101	90	30	M	A	SH	39-57	47
2	HI1634*[Q]	CZ-LS-201	tR	0	52-81	63	90-127	107	62-99	85	10	M	A	SH	33-47	40
3	HD2932(C)	CZ-LS-202	tMS	20S	51-81	65	89-129	110	60-103	87	0	M	A	SH	35-50	41
4	MP3336(C)	CZ-LS-203	10MR	tR	47-76	60	90-125	108	66-97	80	0	M	A	SH	36-47	41
5	HD2864(C)	CZ-LS-204	10R	0	47-81	61	89-127	109	64-97	84	0	Ey	A	SH	34-46	40

1. Ancillary data from Anand, Ambikapur, Bilaspur, Bardoli, Indore, Junagadh, Jabalpur, Jagdalpur, Mandor, Powarkheda, Raipur, Sagar, S K Nagar, Sanosara, Udaipur & Vijapur.
2. Black rust reported from Vijapur and Brown rust reported from Junagadh & Vijapur.
3. Lodging data from Jabalpur and Powarkheda.

Individual Station Rust Data

SN	Variety	Code	Brown Rust		Black Rust
			Junagadh	Vijapur	Vijapur
1	CG1029*	CZ-LS-205	0	tR	10MR
2	HI1634*[Q]	CZ-LS-201	0	0	tR
3	HD2932 (C)	CZ-LS-202	20S	tR	tMS
4	MP3336 (C)	CZ-LS-203	tR	tR	10MR
5	HD2864 (C)	CZ-LS-204	0	0	10R

1943-AVT-RI-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat									Madhya Pradesh								
			Vijapur			Dhandhuka			Amreli			Sanosara			Indore			Jabalpur			Bhopal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MPO1357(d)	CZ-RI-301	34.9	4	0	30.6	4	0	45.1	2	1	35.9	8	0	38.8	1	1	51.8	5	0	47.4	2	1
2	UAS472(d)	CZ-RI-304	28.7	8	0	34.9	2	1	44.8	5	1	39.8	4	0	37.2	2	1	50.3	8	0	51.0	1	1
3	HI8823(d)	CZ-RI-307	38.5	3	0	36.0	1	1	44.9	3	1	41.9	3	0	37.0	3	1	54.8	2	0	40.8	8	0
4	DBW110 (C)	CZ-RI-305	43.2	1	1	25.2	8	0	45.9	1	1	44.5	2	1	34.8	7	0	58.7	1	1	42.0	7	0
5	MP3288 (C)	CZ-RI-306	43.1	2	1	29.0	7	0	40.1	8	0	45.5	1	1	37.0	4	1	52.2	3	0	44.1	5	0
6	HI8627(d) (C)	CZ-RI-302	30.2	7	0	30.7	3	0	42.1	7	1	37.7	7	0	32.6	8	0	51.6	6	0	43.7	6	0
7	UAS466(d)(I)(C)	CZ-RI-303	32.2	5	0	29.7	5	0	43.5	6	1	37.9	6	0	34.9	6	0	52.2	4	0	45.4	3	0
8	DDW47(d)(I)(C)	CZ-RI-308	31.4	6	0	29.3	6	0	44.8	4	1	38.3	5	0	35.6	5	0	51.5	7	0	45.2	4	0
G.M.			35.3			30.7			43.9			40.2			36.0			52.9			44.9		
S.E.(M)			1.685			0.709			2.272			1.297			1.262			0.968			2.191		
C.D. (10%)			4.1			1.7			5.5			3.2			3.1			2.4			5.3		
C.V.			9.6			4.6			10.3			6.5			7.0			3.7			9.8		
D.O.S.(dd.mm.yy)			07.11.19			18.11.19			25.10.19			08.11.19			06.11.19			08.11.19			10.11.19		

No. of Trials : Proposed = 16 Conducted = 15

Trials not Conducted (01): Banswara

Trial not reported (02) = Sagar (RMT), Junagadh (LSM)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Madhya Pradesh						Rajasthan						Chhattisgarh					
			Powarkheda			Gwalior			Pratapgarh			Udaipur			Bilaspur			IGKV Ambikapur		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MPO1357(d)	CZ-RI-301	33.5	7	0	51.5	7	0	33.5	5	0	45.8	3	1	37.3	7	0	25.7	8	0
2	UAS472(d)	CZ-RI-304	39.9	2	1	59.7	5	1	35.8	3	1	46.3	1	1	44.5	2	1	27.1	7	0
3	HI8823(d)	CZ-RI-307	38.8	5	1	65.6	1	1	38.5	1	1	44.7	4	1	46.3	1	1	27.8	6	0
4	DBW110 (C)	CZ-RI-305	35.8	6	0	62.1	2	1	32.3	6	0	37.5	8	0	34.8	8	0	45.0	1	1
5	MP3288 (C)	CZ-RI-306	39.7	3	1	57.2	6	1	34.0	4	0	41.1	7	0	40.9	6	0	38.6	2	0
6	HI8627(d) (C)	CZ-RI-302	40.0	1	1	61.7	4	1	36.8	2	1	44.7	6	1	44.0	3	1	29.9	5	0
7	UAS466(d)(I)(C)	CZ-RI-303	30.3	8	0	61.9	3	1	31.5	7	0	46.2	2	1	41.3	5	0	31.7	4	0
8	DDW47(d)(I)(C)	CZ-RI-308	38.8	4	1	51.4	8	0	30.3	8	0	44.7	5	1	42.3	4	1	37.5	3	0
G.M.			37.1			58.9			34.1			43.9			41.4			32.9		
S.E.(M)			0.818			3.804			1.569			2.115			1.695			1.925		
C.D. (10%)			2.0			9.3			3.8			5.1			4.1			4.7		
C.V.			4.4			12.9			9.2			9.6			8.2			11.7		
D.O.S.(dd.mm.yy)			05.11.19			10.11.19			10.11.19			05.11.19			05.11.19			04.11.19		

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Gujarat			Madhya Pradesh			Rajasthan			Chhattisgarh			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MPO1357(d)	CZ-RI-301	36.6	5	0	44.6	7	0	39.7	4	1	31.5	8	0	39.4	8	0
2	UAS472(d)	CZ-RI-304	37.0	4	0	47.6	1	1	41.0	2	1	35.8	7	0	41.5	4	1
3	HI8823(d)	CZ-RI-307	40.3	1	1	47.4	2	1	41.6	1	1	37.0	4	1	42.7	1	1
4	DBW110 (C)	CZ-RI-305	39.7	2	1	46.7	3	1	34.9	8	0	39.9	2	1	41.7	3	1
5	MP3288 (C)	CZ-RI-306	39.4	3	1	46.0	4	1	37.6	6	0	39.7	3	1	41.7	2	1
6	HI8627(d) (C)	CZ-RI-302	35.1	8	0	45.9	5	1	40.7	3	1	36.9	5	1	40.4	5	0
7	UAS466(d)(I)(C)	CZ-RI-303	35.8	7	0	44.9	6	0	38.8	5	1	36.5	6	0	39.9	7	0
8	DDW47(d)(I)(C)	CZ-RI-308	36.0	6	0	44.5	8	0	37.5	7	0	39.9	1	1	40.1	6	0
G.M.			37.5			45.9			39.0			37.2			40.9		
S.E.(M)			0.798			0.948			1.317			1.283			0.523		
C.D. (10%)			1.9			2.2			3.1			3.1			1.2		

Summary of Disease Data and Agronomic Characteristics

Central Zone **Trial: AVT-RI-TS-TAD-CZ, 2019-2020**

SN	Variety	Code	Agronomic Characteristics							Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	MPO1357 (d)	CZ-RI-301	70-97	75	104-137	122	65-100	84	Ey	A	H	33-56	46
2	UAS472 (d)	CZ-RI-304	69-99	76	107-136	121	60-96	86	Ey	A	SH	32-59	46
3	HI 8823 (d)	CZ-RI-307	71-98	76	105-137	122	63-98	83	M	A	SH	38-57	47
4	DBW110 (C)	CZ-RI-305	56-99	70	100-138	118	64-100	86	Ey	A	SH	33-52	46
5	MP3288 (C)	CZ-RI-306	50-98	68	100-137	116	66-103	89	Ey	A	SH	34-48	42
6	HI8627(d) (C)	CZ-RI-302	72-99	77	107-138	124	64-102	89	M	A	H	32-58	46
7	UAS466(d)(I)(C)	CZ-RI-303	59-99	73	105-138	121	64-98	82	M	A	SH	28-52	42
8	DDW47(d)(I)(C)	CZ-RI-308	57-105	73	106-137	120	68-98	87	M	A	H	33-50	42

1. Ancillary data from Ambikapur, Amreli, Bilaspur, Bhopal, Dhandhuka, Gwalior, Indore, Jabalpur, Junagadh, Powarkheda, Pratapgarh, Sanosara Udaipur and Vijapur.
2. No disease incidence reported

Peninsular Zone

1951-AVT-IR-TS-TAD-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra										Karnataka		
			Niphad			Pravaranagar			Pune			Nashik			Dharwad		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW48(d)*Q	PZ-TS-102	39.7	5	0	48.6	1	1	52.4	6	0	45.2	5	1	41.1	6	0
2	DDW49(d)*Q	PZ-TS-107	33.5	8	0	41.6	4	0	55.3	3	0	46.0	4	1	35.3	7	0
3	WHD964 (d)	PZ-TS-101	45.9	1	1	41.7	3	0	55.9	2	1	49.4	1	1	44.4	4	1
4	HI8818 (d)	PZ-TS-105	42.4	2	1	38.8	8	0	48.3	8	0	38.5	7	0	41.9	5	1
5	MACS6222 (C)	PZ-TS-103	42.4	3	1	39.3	7	0	58.3	1	1	37.4	8	0	44.7	3	1
6	GW322 (C)	PZ-TS-108	35.8	7	0	43.8	2	0	54.3	4	0	48.4	2	1	29.3	8	0
7	MACS3949(d)(C)	PZ-TS-104	40.2	4	1	39.3	6	0	49.5	7	0	47.8	3	1	45.8	2	1
8	UAS428(d)(C)	PZ-TS-106	39.4	6	0	40.3	5	0	53.8	5	0	40.4	6	0	48.0	1	1
G.M.			39.9			41.7			53.5			44.1			41.3		
S.E.(M)			2.353			1.268			1.198			1.972			2.588		
C.D. (10%)			5.7			3.1			2.9			4.8			6.3		
C.V.			11.8			6.1			4.5			8.9			12.5		
D.O.S.(dd.mm.yy)			28.11.19			12.11.19			18.11.19			17.11.19			18.11.19		

No. of Trials : Proposed = 16 Conducted = 16

Trial not reported (06) = Akola (LSM, LS), Karad (RMT), Parbhani (LSM, LS), Kolhapur (LSM) Mandya (LSM), Hyderabad (LSM)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka															
			Arbhavi			Kalloli			Nippani			Ugar-Khurd			Mudhol			
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	
1	DDW48(d)*Q	PZ-TS-102	44.9	2	1	43.3	2	0	39.1	7	0	44.1	1	1	41.3	4	1	
2	DDW49(d)*Q	PZ-TS-107	37.5	6	0	41.4	4	0	38.3	8	0	40.0	7	1	41.3	3	1	
3	WHD964 (d)	PZ-TS-101	44.0	3	1	50.6	1	1	42.7	2	1	43.3	3	1	42.3	2	1	
4	HI8818 (d)	PZ-TS-105	42.6	5	0	35.0	7	0	40.1	5	1	38.7	8	0	37.7	8	0	
5	MACS6222 (C)	PZ-TS-103	37.5	7	0	35.9	6	0	41.1	4	1	41.0	5	1	37.9	7	0	
6	GW322 (C)	PZ-TS-108	37.1	8	0	40.8	5	0	42.3	3	1	41.4	4	1	39.8	5	1	
7	MACS3949(d)(C)	PZ-TS-104	47.9	1	1	42.9	3	0	39.3	6	1	43.4	2	1	39.6	6	1	
8	UAS428(d)(C)	PZ-TS-106	43.5	4	1	33.0	8	0	44.2	1	1	40.4	6	1	43.8	1	1	
G.M.			41.9			40.4			40.9			41.5			40.5			
S.E.(M)			2.164			1.833			2.061			2.086			1.750			
C.D. (10%)			5.3			4.5			5.0			5.1			4.3			
C.V.			10.3			9.1			10.1			10.1			8.7			
D.O.S.(dd.mm.yy)			18.11.19			18.11.19			19.11.19			20.11.19			19.11.20			

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Maharashtra			Karnataka			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW48(d)*Q	PZ-TS-102	46.5	2	1	42.3	3	0	44.0	2	0
2	DDW49(d)*Q	PZ-TS-107	44.1	6	0	39.0	7	0	41.0	7	0
3	WHD964 (d)	PZ-TS-101	48.2	1	1	44.5	1	1	46.0	1	1
4	HI8818 (d)	PZ-TS-105	42.0	8	0	39.3	6	0	40.4	8	0
5	MACS6222 (C)	PZ-TS-103	44.3	4	0	39.7	5	0	41.5	5	0
6	GW322 (C)	PZ-TS-108	45.6	3	0	38.5	8	0	41.3	6	0
7	MACS3949(d)(C)	PZ-TS-104	44.2	5	0	43.1	2	1	43.6	3	0
8	UAS428(d)(C)	PZ-TS-106	43.5	7	0	42.1	4	0	42.7	4	0
G.M.			44.8			41.1			42.6		
S.E.(M)			0.883			0.856			0.624		
C.D. (10%)			2.1			2.0			1.5		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-IR-TS-TAD-PZ, 2019-20**

SN	Variety	Code	Disease reaction					Agronomic Characteristics								Grain Characteristics			
			Br	ACI	BI	ACI	LB	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DDW48(d)^{Q*}	PZ-TS-102	0	0.0	20S	16.3	24	62-76	67	103-121	111	78-96	83	30	M	A	H	38-55	47
2	DDW49(d)^{Q*}	PZ-TS-107	10MS	2.7	80S	42.5	34	62-76	67	101-122	109	85-97	92	30	M	A	H	33-45	37
3	WHD964(d)	PZ-TS-101	5MS	1.3	20S	11.0	34	63-73	66	100-119	110	79-97	91	40	Ey	A	SH	35-53	42
4	HI8818 (d)	PZ-TS-105	0	0.0	5MS	2.2	46	60-74	65	102-118	108	79-95	87	40	M	A	H	42-53	47
5	MACS6222 (C)	PZ-TS-103	10MS	2.7	5MS	1.0	34	54-68	59	87-113	103	79-93	86	10	Ey	A	H	42-48	46
6	GW322(C)	PZ-TS-108	20S	10.7	20S	9.3	24	58-76	64	100-115	107	76-97	82	20	Ey	A	SH	33-57	38
7	MACS3949(d)(C)	PZ-TS-104	5MS	2.0	10S	5.3	34	63-75	68	102-121	111	78-95	88	40	M	A	H	41-50	47
8	UAS428(d)(C)	PZ-TS-106	5MS	1.3	10S	6.0	34	60-72	65	101-117	108	80-98	91	30	M	A	H	40-51	44

1. Ancillary data from Arbhavi, Dharwad, Kalloli, Mudhol, Nippani, Ugar, Nashik, Niphad, Pune and Pravaranagar centres
2. Brown rust data from Arbhavi, Dharwad, Mudhol and black rust data from Mudhol, Kalloli, Nippani and Ugar centres.
3. Leaf blight data from Arbhavi centre only; 4. Lodging data from Pune centre only.

Individual Station Rust Data

SN.	Variety	Code	Brown rust			Black rust			
			Arbhavi	Dharwad	Mudhol	Kalloli	Mudhol	Nippani	Ugar
1	DDW48(d)^{Q*}	PZ-TS-102	0	0	0	20S	20S	5S	20S
2	DDW49(d)^{Q*}	PZ-TS-107	0	10MS	0	60S	80S	10S	20S
3	WHD964(d)	PZ-TS-101	0	5MS	0	20S	10S	5MS	10S
4	HI8818(d)	PZ-TS-105	0	0	0	tMS	5MS	0	5MS
5	MACS6222(C)	PZ-TS-103	0	10MS	0	0	0	0	5MS
6	GW322(C)	PZ-TS-108	5MS	20S	10MS	5S	10MS	20S	5MS
7	MACS3949(d)(C)	PZ-TS-104	0	5MR	5MS	5MS	10S	5MR	5S
8	UAS428(d)(C)	PZ-TS-106	0	5MS	0	5MS	10S	0	10S

1952-AVT-IR-LS-TAS-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra													
			Niphad			Pravaranagar			Pune			Akola			Parbhani		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1633*	PZ-LS-210	48.7	5	1	38.1	3	0	44.4	6	1	36.9	8	0	31.8	6	0
2	GW519	PZ-LS-201	47.3	7	0	38.1	4	0	44.1	8	1	41.0	3	1	30.0	8	0
3	HI1646	PZ-LS-202	45.5	9	0	34.0	6	0	42.5	9	0	36.6	10	0	36.4	2	1
4	UAS3008	PZ-LS-205	46.8	8	0	31.7	10	0	45.8	4	1	42.1	2	1	27.0	11	0
5	MACS6749	PZ-LS-206	48.4	6	1	31.3	11	0	45.8	5	1	38.6	5	0	32.1	4	0
6	HI1641	PZ-LS-208	55.4	2	1	32.8	8	0	45.9	3	1	42.4	1	1	30.9	7	0
7	HI1642	PZ-LS-209	52.5	4	1	33.0	7	0	41.6	11	0	36.4	11	0	28.9	10	0
8	MACS6752	PZ-LS-211	53.5	3	1	46.6	1	1	46.2	2	1	37.9	6	0	32.3	3	0
9	HD3090 (C)	PZ-LS-203	56.1	1	1	31.8	9	0	46.8	1	1	40.6	4	1	37.3	1	1
10	RAJ4083 (C)	PZ-LS-204	42.7	10	0	36.1	5	0	42.5	10	0	36.6	9	0	29.6	9	0
11	HD2932 (C)	PZ-LS-207	37.8	11	0	42.8	2	1	44.4	7	1	37.5	7	0	32.0	5	0
G.M.			48.6			36.0			44.5			38.8			31.7		
S.E.(M)			3.459			2.595			1.584			1.517			0.772		
C.D. (10%)			8.3			6.2			3.8			3.6			1.9		
C.V.			14.2			14.4			7.1			7.8			4.9		
D.O.S.(dd.mm.yy)			09.12.19			14.12.19			11.12.19			04.12.19			06.12.19		

No. of Trials : Proposed = 16 Conducted = 16
Trials not Reported (03) : Mandya (LSM), Hyderabad (LSM), Kalloli (RMT)

1952-AVT-IR-LS-TAS-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra									Karnataka					
			Nashik			Karad			Kolhapur			Dharwad			Arbhavi		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1633*	PZ-LS-210	38.3	5	1	50.7	4	1	27.8	8	1	33.7	5	1	30.8	7	0
2	GW519	PZ-LS-201	36.5	8	1	49.5	6	1	19.1	11	0	36.2	2	1	31.3	6	0
3	HI1646	PZ-LS-202	38.0	6	1	50.6	5	1	29.4	4	1	36.2	1	1	32.5	5	0
4	UAS3008	PZ-LS-205	34.9	10	0	46.6	10	0	33.4	1	1	32.0	8	0	22.9	11	0
5	MACS6749	PZ-LS-206	36.5	9	1	54.2	1	1	28.4	7	1	32.5	7	1	29.2	9	0
6	HI1641	PZ-LS-208	37.3	7	1	51.4	2	1	30.9	2	1	34.9	3	1	34.3	4	0
7	HI1642	PZ-LS-209	34.6	11	0	47.6	9	0	29.2	5	1	34.8	4	1	40.0	1	1
8	MACS6752	PZ-LS-211	39.9	4	1	50.7	3	1	28.6	6	1	32.9	6	1	35.3	2	1
9	HD3090 (C)	PZ-LS-203	40.9	2	1	48.0	8	0	27.6	9	0	27.2	9	0	26.4	10	0
10	RAJ4083 (C)	PZ-LS-204	41.2	1	1	43.2	11	0	30.1	3	1	25.2	10	0	29.6	8	0
11	HD2932 (C)	PZ-LS-207	40.7	3	1	49.0	7	1	25.0	10	0	21.7	11	0	34.6	3	0
G.M.			38.1			49.2			28.1			31.6			31.5		
S.E.(M)			2.253			2.316			2.369			1.706			2.052		
C.D. (10%)			5.4			5.6			5.7			4.1			4.9		
C.V.			11.8			9.4			16.8			10.8			13.0		
D.O.S.(dd.mm.yy)			02.12.19			07.12.19			09.12.19			07.12.19			05.12.19		

1952-AVT-IR-LS-TAS-PZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka								
			Mudhol			Nippani			Ugar-Khurd		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1633*	PZ-LS-210	30.3	7	0	45.0	2	1	31.8	7	1
2	GW519	PZ-LS-201	32.0	4	0	43.9	3	1	31.9	6	1
3	HI1646	PZ-LS-202	28.8	9	0	42.3	5	1	29.1	9	0
4	UAS3008	PZ-LS-205	31.1	6	0	38.9	10	0	32.9	4	1
5	MACS6749	PZ-LS-206	38.7	1	1	41.0	8	1	26.5	11	0
6	HI1641	PZ-LS-208	31.6	5	0	43.7	4	1	28.8	10	0
7	HI1642	PZ-LS-209	24.9	11	0	46.5	1	1	29.4	8	0
8	MACS6752	PZ-LS-211	26.8	10	0	41.3	7	1	34.3	2	1
9	HD3090 (C)	PZ-LS-203	36.0	2	1	39.7	9	0	35.3	1	1
10	RAJ4083 (C)	PZ-LS-204	29.9	8	0	32.9	11	0	32.7	5	1
11	HD2932 (C)	PZ-LS-207	32.4	3	0	41.5	6	1	33.7	3	1
G.M.			31.1			41.5			31.5		
S.E.(M)			1.885			2.456			2.348		
C.D. (10%)			4.5			5.9			5.6		
C.V.			12.1			11.8			14.9		
D.O.S.(dd.mm.yy)			06.12.19			09.12.19			10.12.19		

1952-AVT-IR-LS-TAS-PZ, 2019-20

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Maharashtra			Karnataka			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1633*	PZ-LS-210	39.6	4	0	34.3	4	1	37.6	4	1
2	GW519	PZ-LS-201	38.2	9	0	35.1	2	1	37.0	7	0
3	HI1646	PZ-LS-202	39.1	6	0	33.8	6	1	37.1	6	0
4	UAS3008	PZ-LS-205	38.5	8	0	31.6	10	0	35.9	10	0
5	MACS6749	PZ-LS-206	39.4	5	0	33.6	7	1	37.2	5	0
6	HI1641	PZ-LS-208	40.9	3	1	34.7	3	1	38.5	2	1
7	HI1642	PZ-LS-209	38.0	10	0	35.1	1	1	36.9	8	0
8	MACS6752	PZ-LS-211	42.0	1	1	34.1	5	1	38.9	1	1
9	HD3090 (C)	PZ-LS-203	41.1	2	1	32.9	8	1	38.0	3	1
10	RAJ4083 (C)	PZ-LS-204	37.8	11	0	30.1	11	0	34.8	11	0
11	HD2932 (C)	PZ-LS-207	38.6	7	0	32.8	9	0	36.4	9	0
G.M.			39.4			33.5			37.1		
S.E.(M)			0.792			0.943			0.608		
C.D. (10%)			1.8			2.2			1.4		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-IR-LS-TAS-PZ, 2019-20**

SN	Variety	Code	Disease reaction					Agronomic Characteristics							Grain Characteristics			
			Br	Bl	ACI	LB	BP	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HI1633*	PZ-LS-210	0	5MS	1.0	34	3	43-60	51	81-102	97	62-90	80	Ey	A	SH	39-45	42
2	GW519	PZ-LS-201	0	0	0.0	24	3	46-64	53	86-106	98	66-94	77	Ey	A	SH	39-49	45
3	HI1646	PZ-LS-202	10S	10S	4.5	24	0	50-63	55	89-107	100	72-102	85	Ey	A	SH	33-41	37
4	UAS3008	PZ-LS-205	10S	10S	7.0	24	6	47-61	53	87-105	97	67-102	83	Ey	A	H	37-47	43
5	MACS6749	PZ-LS-206	5MS	tMS	0.4	24	3	46-61	53	85-103	98	70-99	86	Ey	A	H	40-47	44
6	HI1641	PZ-LS-208	0	0	0.0	34	2	42-62	51	82-101	95	69-103	85	Ey	A	SH	41-46	42
7	HI1642	PZ-LS-209	5MS	0	0.0	01	2	45-64	53	86-107	99	68-93	82	M	A	H	38-53	47
8	MACS6752	PZ-LS-211	0	0	0.0	12	6	45-62	52	85-105	98	65-101	79	Ey	A	SH	38-47	41
9	HD3090 (C)	PZ-LS-203	0	0	0.0	24	6	49-69	56	88-109	102	75-104	88	Ey	A	H	34-42	39
10	RAJ4083(C)	PZ-LS-204	10MS	10S	4.5	24	1	40-63	51	79-103	96	62-93	75	Ey	A	SH	39-51	44
11	HD2932(C)	PZ-LS-207	40S	20S	7.2	24	3	47-63	54	85-106	99	69-97	82	Ey	A	SH	35-44	39

1. Ancillary data from Arbhavi, Dharwad, Mudhol, Nippani, Ugar, Nashik, Niphad, Parbhani, Pune, Kolhapur, Pravaranagar, Akola and Karad centres.
2. Brown rust data from Arbhavi, Mudhol.
3. Black rust data from Arbhavi, Dharwad, Mudhol and Ugar centres.
4. Leaf blight data from Arbhavi centre and Black point data from Pune.

Individual Station Disease Data

SN.	Variety	Code	Brown rust		Black rust			
			Arbhavi	Mudhol	Arbhavi	Dharwad	Mudhol	Ugar
1	HI1633*	PZ-LS-210	0	0	0	5MS	0	0
2	GW519	PZ-LS-201	0	0	0	0	0	0
3	HI1646	PZ-LS-202	0	10S	5MS	10S	5MS	0
4	UAS3008	PZ-LS-205	10S	5MS	10S	10S	10MS	0
5	MACS6749	PZ-LS-206	0	5MS	0	tMS	tMS	0
6	HI1641	PZ-LS-208	0	0	0	0	0	0
7	HI1642	PZ-LS-209	0	5MS	0	0	0	0
8	MACS6752	PZ-LS-211	0	0	0	0	0	0
9	HD3090 (C)	PZ-LS-203	0	0	0	0	0	0
10	RAJ4083(C)	PZ-LS-204	0	10MS	0	10S	5MS	5MS
11	HD2932(C)	PZ-LS-207	0	40S	tMS	20S	5MS	5MS

1953-AVT-RI-TS-TAD-PZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra													
			Niphad			Pune			Parbhani			Nashik			Savalivihir		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIDW1149(d)*	PZ-RI-301	25.6	3	1	30.9	2	1	20.3	8	0	25.5	2	1	21.4	7	0
2	MPO1357(d)^{Q}	PZ-RI-309	24.2	5	0	30.1	3	1	20.5	6	0	22.5	5	0	21.4	6	0
3	MACS4087(d)	PZ-RI-304	27.5	1	1	29.2	4	1	22.1	2	0	22.9	3	0	17.9	9	0
4	MP1358	PZ-RI-305	24.0	6	0	32.4	1	1	24.0	1	1	22.7	4	0	26.4	1	1
5	UAS472(d)	PZ-RI-308	23.9	7	0	23.6	9	0	19.5	9	0	17.8	10	0	17.1	10	0
6	UAS446(d) (C)	PZ-RI-302	20.2	10	0	21.2	10	0	20.4	7	0	21.5	7	0	23.9	4	1
7	HI1605 (C)	PZ-RI-303	21.5	8	0	24.0	8	0	21.8	3	0	27.4	1	1	26.2	2	1
8	AKDW2997-16(d)(C)	PZ-RI-306	21.4	9	0	26.4	6	0	21.6	4	0	21.2	8	0	18.6	8	0
9	NIAW3170(I)(C)	PZ-RI-310	24.2	4	0	26.9	5	0	20.9	5	0	19.4	9	0	25.4	3	1
10	HI8805(d)(I)(C)	PZ-RI-307	25.9	2	1	24.2	7	0	18.7	10	0	22.1	6	0	22.0	5	0
G.M.			23.8			26.9			21.0			22.3			22.0		
S.E.(M)			1.162			1.533			0.724			1.380			1.272		
C.D. (10%)			2.8			3.7			1.7			3.3			3.1		
C.V.			9.7			11.4			6.9			12.4			11.6		
D.O.S.(dd.mm.yy)			23.11.19			13.11.19			19.11.19			16.11.19			10.11.19		

No. of Trials : Proposed = 12 Conducted = 11

Trials not conducted (01) = Baramati

Trials not reported (03) = Karad (RMT), Nippani (RMT), Karjat (LSM)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka								
			Dharwad			Bailahongal			Bagalkot		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIDW1149(d)*	PZ-RI-301	22.0	10	0	33.0	1	1	29.3	5	1
2	MPO1357(d)^{Q}	PZ-RI-309	25.6	6	0	23.8	10	0	23.6	10	0
3	MACS4087(d)	PZ-RI-304	29.9	1	1	28.7	4	0	31.0	3	1
4	MP1358	PZ-RI-305	28.6	3	1	30.3	3	1	32.8	1	1
5	UAS472(d)	PZ-RI-308	24.8	8	0	24.7	9	0	25.2	9	0
6	UAS446(d) (C)	PZ-RI-302	26.2	5	1	26.9	6	0	27.1	8	0
7	HI1605 (C)	PZ-RI-303	25.1	7	0	30.4	2	1	31.8	2	1
8	AKDW2997-16(d)(C)	PZ-RI-306	26.8	4	1	26.3	7	0	28.4	7	1
9	NIAW3170(I)(C)	PZ-RI-310	28.7	2	1	27.0	5	0	28.8	6	1
10	HI8805(d)(I)(C)	PZ-RI-307	23.9	9	0	26.0	8	0	30.9	4	1
G.M.			26.2			27.7			28.9		
S.E.(M)			1.596			1.633			1.980		
C.D. (10%)			3.8			3.9			4.8		
C.V.			12.2			11.8			13.7		
D.O.S.(dd.mm.yy)			13.11.19			18.11.19			19.11.19		

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Maharashtra			Karnataka			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	NIDW1149(d)*	PZ-RI-301	24.7	2	1	28.1	5	0	26.0	4	0
2	MPO1357(d)^{Q}	PZ-RI-309	23.7	5	0	24.3	10	0	23.9	7	0
3	MACS4087(d)	PZ-RI-304	23.9	4	0	29.8	2	1	26.1	2	0
4	MP1358	PZ-RI-305	25.9	1	1	30.6	1	1	27.6	1	1
5	UAS472(d)	PZ-RI-308	20.4	10	0	24.9	9	0	22.1	10	0
6	UAS446(d) (C)	PZ-RI-302	21.4	9	0	26.7	8	0	23.4	9	0
7	HI1605 (C)	PZ-RI-303	24.2	3	0	29.1	3	1	26.0	3	0
8	AKDW2997-16(d)(C)	PZ-RI-306	21.8	8	0	27.2	6	0	23.8	8	0
9	NIAW3170(I)(C)	PZ-RI-310	23.4	6	0	28.2	4	0	25.2	5	0
10	HI8805(d)(I)(C)	PZ-RI-307	22.6	7	0	26.9	7	0	24.2	6	0
G.M.			23.2			27.6			24.9		
S.E.(M)			0.557			1.007			0.514		
C.D. (10%)			1.3			2.4			1.2		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: AVT-RI-TS-TAD-PZ, 2019-20**

SN	Variety	Code	Disease reaction	Agronomic Characteristics								Grain Characteristics			
			Brown rust	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	NIDW 1149(d)	PZ-RI-301	0	50-62	54	98-108	103	51-84	65	15	M	A	H	38-49	46
2	MACS 4087(d)	PZ-RI-304	0	51-68	58	100-111	105	65-97	85	0	Ey	A	H	41-44	42
3	MP 1358	PZ-RI-305	5MR	52-68	58	102-113	107	65-81	74	0	M	A	SH	36-43	40
4	UAS 472(d)	PZ-RI-308	0	50-72	61	103-114	108	64-77	70	0	Ey	A	SH	33-44	40
5	MPO 1357(d)	PZ-RI-309	0	52-73	63	101-115	108	66-82	73	5	M	A	H	33-42	39
6	UAS446(d) (C)	PZ-RI-302	0	51-67	57	99-110	104	64-79	72	0	M	A	SH	34-38	36
7	HI 1605 (C)	PZ-RI-303	5MR	50-65	56	97-112	104	61-82	72	5	Ey	A	SH	32-41	36
8	AKDW 2997-16(d) (C)	PZ-RI-306	0	52-68	58	101-108	105	64-73	68	0	M	A	SH	33-43	38
9	NIAW3170(I)(C)	PZ-RI-310	5MR	50-64	54	96-115	102	59-82	69	0	M	A	SH	36-43	40
10	HI8805(d)(I)(C)	PZ-RI-307	0	49-67	58	101-110	106	65-94	80	15	M	A	H	40-45	43

1. Ancillary data from Nashik, Niphad, Parbhani, Pune, Savilivihir, Bailhongal, Dharwad and Bagalkot centres
2. Brown rust data from Dharwad centre only.
3. Lodging data from Pune and Savilivihir centres.

Special Trials

1962-SPL-DIC-IR-TS-ALL ZONES, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra									Karnataka					
			Pune			Kolhapur			K-Digraj			Dharwad			Arbhavi		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS5055	DIC-101	58.9	5	0	41.6	3	0	54.0	4	1	36.9	1	1	34.0	3	1
2	MACS5054	DIC-104	66.0	1	1	50.5	1	1	55.1	2	1	31.5	5	0	31.9	4	0
3	DDK1058	DIC-105	56.8	6	0	37.4	6	0	54.5	3	1	32.9	3	0	37.5	1	1
4	DDK1059	DIC-107	60.9	3	0	40.8	4	0	51.8	6	1	32.6	4	0	25.7	7	0
5	DDK1029 (C)	DIC-103	60.2	4	0	39.0	5	0	54.0	5	1	29.8	7	0	27.8	5	0
6	HW1098 (C)	DIC-106	62.0	2	1	45.6	2	1	56.0	1	1	30.2	6	0	34.2	2	1
7	MACS6222 (a)(C)	DIC-102	56.4	7	0	30.3	7	0	24.2	7	0	36.4	2	1	27.3	6	0
G.M.			60.2			40.7			49.9			32.9			31.2		
S.E.(M)			1.724			3.012			4.292			1.351			1.805		
C.D. (10%)			4.2			7.4			10.5			3.3			4.4		
C.V.			5.7			14.8			17.2			8.2			11.6		
D.O.S.(dd.mm.yy)			19.11.19			15.11.19			11.11.19			5.11.19			18.11.19		

No. of Trials : Proposed = 11 Conducted = 11

Trials not reported (02) = Karad (RMT), Mandya (LSM)

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka									Tamil Nadu		
			Ugar-Khurd			Kalloi			Mudhol			Wellington		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS5055	DIC-101	32.5	4	1	33.5	2	0	32.0	6	0	29.7	6	1
2	MACS5054	DIC-104	35.2	1	1	30.4	3	0	34.2	2	1	31.7	2	1
3	DDK1058	DIC-105	30.9	6	1	39.6	1	1	39.1	1	1	29.8	4	1
4	DDK1059	DIC-107	31.0	5	1	27.9	7	0	33.8	3	1	31.8	1	1
5	DDK1029 (C)	DIC-103	33.0	3	1	29.1	6	0	32.1	5	0	30.0	3	1
6	HW1098 (C)	DIC-106	33.4	2	1	30.0	4	0	33.5	4	1	29.7	5	1
7	MACS6222 (a)(C)	DIC-102	23.2	7	0	29.2	5	0	29.4	7	0	22.4	7	0
G.M.			31.3			31.4			33.4			29.3		
S.E.(M)			1.905			1.413			2.420			1.168		
C.D. (10%)			4.7			3.5			5.9			2.9		
C.V.			12.2			9.0			14.5			8.0		
D.O.S.(dd.mm.yy)			20.11.19			18.11.19			19.11.20			15.11.19		

STATE AND ZONAL MEANS (q/ha)

SN	Variety	Code	Maharashtra			Karnataka			Tamil Nadu			ZONAL		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	MACS5055	DIC-101	51.5	3	0	33.8	2	0	29.7	6	1	39.2	4	1
2	MACS5054	DIC-104	57.2	1	1	32.6	3	0	31.7	2	1	40.7	1	1
3	DDK1058	DIC-105	49.5	6	0	36.0	1	1	29.8	4	1	39.8	2	1
4	DDK1059	DIC-107	51.2	4	0	30.2	6	0	31.8	1	1	37.4	5	0
5	DDK1029 (C)	DIC-103	51.1	5	0	30.4	5	0	30.0	3	1	37.2	6	0
6	HW1098 (C)	DIC-106	54.5	2	1	32.3	4	0	29.7	5	1	39.4	3	1
7	MACS6222 (a)(C)	DIC-102	36.9	7	0	29.1	7	0	22.4	7	0	31.0	7	0
G.M.			50.3			32.1			29.3			37.8		
S.E.(M)			1.840			0.814			1.168			0.773		
C.D. (10%)			4.4			1.9			2.9			1.8		

Summary of Disease Data and Agronomic Characteristics

Peninsular Zone **Trial: SPL-IR-TS-DIC-All- PZ, 2019-20**

SN	Variety	Code	Disease reaction					Agronomic Characteristics								Grain Characteristics			
			Br.HS	ACI	Bl.HS	ACI	LB.av	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	MACS5055	DIC 101	0	0	10MS	2.2	23	52-82	68	100-119	108	72-92	84	40	H	R	SH	40-92	54
2	MACS5054	DIC 104	tMS	0.28	10MS	2.0	34	54-79	69	101-121	109	66-90	74	40	H	R	SH	36-98	55
3	DDK1058	DIC 105	0	0	tMS	0.4	23	60-82	73	105-122	113	67-92	76	20	H	R	SH	35-80	48
4	DDK1059	DIC 107	5MS	1.3	5S	1.3	35	61-82	72	102-121	112	66-90	76	25	H	R	SH	41-92	53
5	DDK1029 (C)	DIC 103	0	0	10MS	3.0	34	57-82	72	104-119	112	68-82	77	40	H	R	SH	38-89	51
6	HW1098 (C)	DIC 106	0	0	tMS	0.2	22	57-81	72	101-122	112	65-89	75	20	H	R	SH	38-93	53
7	MACS6222 (aest) (C)	DIC 102	5MS	1.33	20MR-MS	7.0	13	37-75	60	88-118	103	65-94	83	5	Ey	A	SH	33-85	48

1. Ancillary data from Arabhavi, Dharwad, Karad, Kolhapur, Mandya, Mudhol, Pune, Ugar Khurd, Wellington, Kalloli and K-Digraj.
2. Rust data reported from Arabhavi, Dharwad, Mudhol, Pune, Ugar Khurd, Wellington and Kalloli.

Individual station disease data

SN	Variety	Code	Brown Rust			Black rust				Leaf blight				
			Dharwad	Mudhol	Wellington	Arabhavi	Mudhol	Wellington	Kalloli	Arabhavi	Dharwad	Mudhol	Ugar Khurd	Kalloli
1	MACS5055	DIC 101	0	0	0	tMS	10MS	0	0	46	00	00	12	24
2	MACS5054	DIC 104	0	tMS	0	0	10MS	0	0	46	01	01	01	46
3	DDK1058	DIC 105	0	0	0	0	tMS	0	tMS	34	02	01	01	34
4	DDK1059	DIC 107	5MS	0	0	0	5S	0	0	56	02	00	01	36
5	DDK1029 (C)	DIC 103	0	0	0	5MS	10MS	0	0	46	12	12	01	34
6	HW1098 (C)	DIC 106	0	0	0	0	tMS	0	0	46	01	01	01	12
7	MACS6222 (aest) (C)	DIC 102	0	0	5MS	0	0	20MR/MS	5MS	36	12	01	00	01

1964-SPL-HYPT-IR-ES-TAS-NWPZ, 2019-20
LOCATIONWISE AND ZONAL MEAN YIELD (q/ha)

SN	Variety	Code	Delhi	Haryana		Punjab		Uttrakhand	ZONAL
			Delhi	Hisar	Karnal	Ludhiana	Ladowal (BISA)	Pantnagar	
			Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	DBW303*	HYPT-104	78.5 3 1	75.9 3 0	91.3 1 1	88.6 1 1	85.0 2 1	73.5 4 0	82.1 1 1
2	DBW187*	HYPT-106	68.4 13 0	65.5 12 0	87.7 4 1	71.9 11 0	86.5 1 1	54.6 14 0	72.4 10 0
3	WH1270*	HYPT-110	71.3 11 0	65.8 11 0	84.2 5 1	83.1 2 1	72.9 12 0	61.7 8 0	73.2 9 0
4	DBW327	HYPT-101	79.1 1 1	72.4 5 0	87.7 3 1	77.5 9 1	80.6 6 0	79.9 1 1	79.6 4 0
5	DBW332	HYPT-103	76.3 6 1	77.6 2 1	82.5 9 1	81.8 5 1	80.3 7 0	79.6 2 1	79.7 3 1
6	DBW329	HYPT-107	77.2 5 1	74.8 4 0	83.8 7 1	72.7 10 0	82.5 4 1	61.7 9 0	75.4 6 0
7	WH1252	HYPT-108	74.5 7 1	68.9 7 0	84.1 6 1	82.8 4 1	79.6 8 0	67.2 6 0	76.2 5 0
8	HD3378	HYPT-109	78.8 2 1	64.5 13 0	65.9 13 0	78.1 8 1	73.4 11 0	67.6 5 0	71.4 12 0
9	DBW333	HYPT-111	78.2 4 1	82.0 1 1	88.1 2 1	71.2 12 0	80.7 5 1	77.8 3 0	79.7 2 1
10	DBW330	HYPT-112	73.7 9 1	66.3 10 0	83.3 8 1	78.8 7 1	79.2 10 0	61.2 10 0	73.7 8 0
11	DBW328	HYPT-113	70.2 12 0	72.2 6 0	81.8 10 0	82.9 3 1	83.7 3 1	56.7 12 0	74.6 7 0
12	DBW331	HYPT-114	72.0 10 0	67.1 9 0	74.2 12 0	80.1 6 1	79.4 9 0	58.0 11 0	71.8 11 0
13	HD3086(C)	HYPT-102	74.0 8 1	67.5 8 0	75.7 11 0	66.5 13 0	70.9 13 0	64.1 7 0	69.8 13 0
14	HD2967 (C)	HYPT-105	62.9 14 0	58.5 14 0	52.4 14 0	66.3 14 0	55.9 14 0	56.1 13 0	58.7 14 0
G.M.			73.9	69.9	80.2	77.3	77.9	65.7	74.2
S.E.(M)			2.411	1.825	3.234	4.272	2.039	0.548	1.084
C.D. (10%)			6.9	5.2	9.3	12.2	5.8	1.6	2.5
C.V.			6.5	5.2	8.1	11.1	5.2	1.7	
D.O.S. (dd.mm.yy)			25.10.19	30.10.19	25.10.19	22.10.19	21.10.19	04.11.19	

No. of Trials : Proposed = 07 Conducted = 07

Trials not reported (01) = Gurdaspur (LSM)

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: SPL-HYPT-ES-TAS, 2019-20**

SN	Variety	Code	Disease Reaction					Agronomic Characteristics								Grain Characteristics			
			Br	Yl	ACI	PM	LB	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW303*	HYPT-104	0	10S	2	0	00	92-114	101	149-176	157	75-118	99	15	Ey	A	SH	37-42	40
2	DBW187*	HYPT-106	0	10S	2	5	00	95-116	102	152-177	159	91-119	102	25	Ey	A	SH	39-51	45
3	WH1270 *	HYPT-110	0	10S	3.3	0	00	92-107	97	145-177	156	95-113	102	20	Ey	A	H	38-49	44
4	DBW327	HYPT-101	0	5S	1.3	0	00	91-105	98	146-177	156	93-118	101	10	Ey	A	H	37-54	47
5	DBW332	HYPT-103	0	10S	1.8	0	00	91-118	102	146-179	159	70-113	98	15	Ey	A	H	35-50	43
6	DBW329	HYPT-107	0	20S	3.7	0	00	93-112	102	147-177	157	83-105	97	20	Ey	A	SH	38-45	42
7	WH1252	HYPT-108	0	5S	0.8	0	00	92-118	101	147-178	157	86-116	99	20	Ey	A	H	44-49	45
8	HD3378	HYPT-109	0	25S	12.8	0	00	104-122	113	150-181	161	102-115	110	25	Ey	A	SH	35-47	40
9	DBW333	HYPT-111	0	5MR	0.3	0	00	79-101	89	144-176	154	80-110	94	15	Ey	A	H	41-49	45
10	DBW330	HYPT-112	0	10S	6.8	0	00	97-114	103	151-176	158	94-117	104	15	Ey	A	SH	42-52	45
10	DBW328	HYPT-113	5S	10S	1.7	7	00	93-107	101	147-181	158	88-112	101	20	Ey	A	H	42-53	47
12	DBW331	HYPT-114	10S	15S	2.83	0	13	97-118	107	147-178	159	96-112	104	30	Ey	A	SH	36-42	39
13	HD3086 (C)	HYPT-102	0	10S	5.3	0	00	92-106	98	148-176	156	90-112	99	15	Ey	A	SH	37-44	41
14	HD2967 (C)	HYPT-105	20S	40S	21.2	0	00	108-133	120	157-177	165	90-116	107	35	Ey	A	H	34-48	39

1. Ancillary data from BISA-Ladowal, Hisar, Delhi, Gurdaspur, Ludhiana, Pantnagar and Karnal.
2. Brown rust data from Hisar and Pantnagar; 3. Yellow rust data from BISA-Ladowal, Hisar, Delhi, Ludhiana, Pantnagar and Karnal.
4. Powdery mildew data from Karnal only; 5. Leaf blight data from Pantnagar only.

Individual Station Rust Data

	Variety	Code	Yellow rust						Brown rust	
			Ludhiana	Pantnagar	Hisar	Delhi	Karnal	Ladowal	Pantnagar	Hisar
1	DBW303*	HYPT-104	0	0	0	0	5MR	10S	0	0
2	DBW187*	HYPT-106	0	0	0	0	5MR	10S	0	0
3	WH1270 *	HYPT-110	0	0	5MR	0	10MS	10S	0	0
4	DBW327	HYPT-101	5S	tMS	0	0	5MR	0	0	0
5	DBW332	HYPT-103	0	0	0	0	tMS	10S	0	0
6	DBW329	HYPT-107	0	0	0	0	5MR	20S	0	0
7	WH1252	HYPT-108	0	0	0	0	0	5S	0	0
8	HD3378	HYPT-109	0	0	20S	0	40MS	25S	0	0
9	DBW333	HYPT-111	0	0	0	0	5MR	0	0	0
10	DBW330	HYPT-112	5S	0	5S	5S	20MS	10S	0	0
10	DBW328	HYPT-113	0	0	0	0	tR	10S	0	5S
12	DBW331	HYPT-114	0	0	0	0	5MR	15S	0	10S
13	HD3086 (C)	HYPT-102	10S	tMS	0	0	20MS	5S	0	0
14	HD2967 (C)	HYPT-105	5S	0	40S	10S	40MS	40S	20S	0

1965-SPL-CI-HYT-IR-ES-TAS-NWPZ, 2019-20
LOCATIONWISE AND ZONAL MEAN YIELD (q/ha)

SN	Variety	Code	Delhi	Haryana			Punjab			ZONAL
			Delhi	Hisar	Karnal	Ludhiana	Gurdaspur	Ladowal (BISA)	
			Yld RK G	Yld RK G	Yld RK G	Yld RK G	Yld RK G	Yld RK G	Yld RK G
1	DBW340	HYT1	80.2 4 1	81.7 4 0	73.6 12 0	77.6 18 0	84.6 9 0	86.8 8 0	80.8 7 0
2	HD3374	HYT2	59.6 22 0	56.9 21 0	44.6 24 0	66.7 23 0	82.9 11 0	60.2 24 0	61.8 24 0
3	DBW341	HYT3	76.2 6 1	59.6 15 0	75.9 10 0	83.5 10 1	104.8 3 0	84.0 12 0	80.7 8 0
4	DBW338	HYT4	72.2 11 0	57.9 18 0	71.2 18 0	89.2 4 1	84.4 10 0	86.4 9 0	76.9 13 0
5	PBW846	HYT5	74.2 8 0	98.8 2 1	76.0 9 0	84.0 9 1	70.9 15 0	90.3 6 1	82.3 5 0
6	WH1285	HYT6	63.5 21 0	58.7 16 0	49.4 23 0	75.0 19 0	69.7 16 0	69.9 22 0	64.4 23 0
7	HD3375	HYT7	70.4 13 0	65.3 11 0	72.3 16 0	88.9 5 1	72.6 14 0	79.3 17 0	74.8 14 0
8	HD3373	HYT8	85.5 2 1	57.9 18 0	88.5 1 1	83.3 11 1	103.1 4 0	89.0 7 1	84.6 3 0
9	DBW337	HYT9	65.3 19 0	90.6 3 0	75.3 11 0	78.8 16 0	65.5 20 0	97.8 1 1	78.9 9 0
10	PBW847	HYT10	69.2 14 0	99.1 1 1	72.9 14 0	90.0 2 1	107.4 2 1	95.5 3 1	89.0 1 1
11	UP3066	HYT12	59.5 23 0	58.7 16 0	77.8 8 0	64.8 24 0	59.6 22 0	79.9 16 0	66.7 20 0
12	UP3068	HYT13	67.8 16 0	65.3 11 0	83.5 3 1	89.8 3 1	72.7 13 0	83.0 14 0	77.0 12 0
13	PBW844	HYT14	79.1 5 1	65.3 10 0	82.5 4 1	90.8 1 1	88.8 7 0	94.8 4 1	83.6 4 0
14	DBW339	HYT15	74.4 7 0	69.1 9 0	73.3 13 0	87.5 6 1	92.3 5 0	92.3 5 1	81.5 6 0
15	DBW299	HYT16	66.7 18 0	77.8 6 0	72.6 15 0	82.8 12 1	41.4 25 0	85.8 10 0	71.2 18 0
16	DBW336	HYT18	72.6 10 0	71.3 7 0	80.4 5 1	78.5 17 0	81.2 12 0	85.2 11 0	78.2 10 0
17	WH1287	HYT20	67.1 17 0	55.5 22 0	71.7 17 0	79.5 15 0	88.3 8 0	75.5 19 0	72.9 15 0
18	WH1286	HYT21	64.1 20 0	63.6 14 0	79.6 6 0	70.8 21 0	110.8 1 1	80.0 15 0	78.2 11 0
19	PBW843	HYT22	72.8 9 0	44.7 25 0	87.4 2 1	87.4 7 1	64.5 21 0	74.8 20 0	71.9 16 0
20	HD3379	HYT23	84.3 3 1	57.2 20 0	51.1 22 0	69.5 22 0	65.9 18 0	64.5 23 0	65.4 21 0
21	DBW281	HYT24	71.1 12 0	64.0 13 0	66.8 19 0	74.3 20 0	67.8 17 0	83.3 13 0	71.2 17 0
22	UP3067	HYT25	56.1 24 0	47.4 23 0	64.1 21 0	81.9 13 1	65.9 19 0	71.9 21 0	64.6 22 0
23	DBW187(C)	HYT11	86.5 1 1	79.2 5 0	79.4 7 0	87.2 8 1	90.2 6 0	95.9 2 1	86.4 2 1
24	HD3086 (C)	HYT17	69.0 15 0	70.7 8 0	65.8 20 0	81.8 14 0	58.7 23 0	78.0 18 0	70.7 19 0
25	HD2967 (C)	HYT19	55.4 25 0	46.4 24 0	36.4 25 0	62.3 25 0	43.5 24 0	58.3 25 0	50.4 25 0
G.M.			70.5	66.5	70.9	80.2	77.5	81.7	74.6
S.E.(M)			4.351	2.964	3.650	5.586	2.928	3.993	1.639
C.D. (10%)			10.7	7.2	8.8	13.5	7.1	9.9	3.8
C.V.			8.7	6.3	7.3	9.8	5.3	6.9	
D.O.S.(dd.mm.yy)			25.10.19	30.10.19	25.10.19	22.10.19	24.10.19	21.10.19	

No. of Trials: Proposed = 07 Conducted = 07

Trials not reported (01) = Pantnagar (LSM)

Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone **Trial: SPL-CI-HYT-IR-ES, 2019-20**

SN	Variety	Code	Disease Reaction					Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	ACI	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW340	HYT-1	20S	5.1	10S	3.7	0	104-119	113	150-179	164	82-112	101	15	Ey	A	H	40-47	43
2	HD3374	HYT-2	20S	7.3	40S	15.0	0	109-133	122	157-178	166	87-119	108	20	Ey	A	H	32-47	38
3	DBW341	HYT-3	10S	5.6	20S	7.5	6	94-115	105	153-176	161	80-108	99	25	Ey	A	H	37-52	46
4	DBW338	HYT-4	5S	1.1	10S	2.5	0	99-121	109	151-180	160	95-111	104	15	Ey	A	H	32-58	43
5	PBW846	HYT-5	25S	4.6	5S	1.3	4	97-117	107	150-180	161	81-111	99	10	Ey	A	SH	35-49	43
6	WH1285	HYT-6	30S	11.4	5S	1.2	0	106-129	115	150-180	162	80-107	101	40	Ey	A	H	31-45	37
7	HD3375	HYT-7	40S	9.4	20S	9.0	0	96-116	102	148-178	159	85-113	99	10	Ey	A	H	35-51	42
8	HD3373	HYT-8	25S	7.6	20S	7.5	0	106-129	115	152-181	163	87-110	105	25	Ey	A	H	31-45	39
9	DBW337	HYT-9	20S	4.6	tS	0.2	4	102-116	107	152-178	160	93-117	103	5	Ey	A	H	35-50	41
10	PBW847	HYT-10	10S	2.9	5S	1.2	0	90-104	98	148-176	158	87-112	100	20	Ey	A	H	30-47	38
10	UP3066	HYT-12	20S	10.4	40S	11.5	0	97-117	108	151-176	158	86-115	100	15	Ey	A	H	34-46	40
12	UP3068	HYT-13	10S	1.5	10S	5.0	0	93-119	103	150-179	159	90-110	99	10	Ey	A	H	35-44	38
13	PBW844	HYT-14	20MS	3.7	20S	5.2	0	95-114	104	146-178	158	87-115	98	35	Ey	A	H	37-47	43
14	DBW339	HYT-15	5S	1.2	0	0.0	5	100-117	108	150-178	161	100-116	108	15	Ey	A	H	35-47	41
15	DBW299	HYT-16	0	0.0	5S	3.7	0	97-123	107	151-178	158	102-118	107	15	Ey	A	H	36-50	45
16	DBW336	HYT-18	25S	5.7	5S	2.5	5	95-116	104	149-177	159	90-115	99	10	Ey	A	H	26-48	39
17	WH1287	HYT-20	5MS	0.9	20S	6.0	0	104-119	113	152-179	161	90-119	103	15	Ey	A	H	34-43	39
18	WH1286	HYT-21	20S	8.0	5S	1.2	0	99-122	112	151-178	161	92-113	101	20	Ey	A	H	41-49	45
19	PBW843	HYT-22	0	0.0	10S	2.5	4	114-132	122	156-178	166	86-112	102	30	Ey	A	H	38-49	45
20	HD3379	HYT-23	20S	13.7	5S	1.2	0	113-131	122	153-180	163	75-117	103	20	Ey	A	H	28-47	37
21	DBW281	HYT-24	20S	5.0	40S	11.5	0	90-114	99	147-177	157	73-107	92	15	Ey	A	H	32-43	38
22	UP3067	HYT-25	20MS	3.0	40S	12.7	0	95-116	103	151-176	159	75-110	97	35	Ey	A	H	32-45	40
23	DBW187 (C)	HYT-11	10S	1.7	10S	3.7	0	94-116	102	150-179	159	83-110	98	15	Ey	A	H	39-49	44
24	HD3086 (C)	HYT-17	20S	7.9	40S	15.2	0	94-132	104	147-176	157	86-109	95	5	Ey	A	H	32-43	38
25	HD2967 (C)	HYT-19	40S	23.7	20S	5.0	0	115-133	124	158-178	166	88-113	104	40	Ey	A	H	29-42	35

1. Ancillary data from BISA-Ladowal, Delhi, Ludhiana, Gurdaspur, Hisar, Karnal and Pantnagar.
2. Lodging data from BISA-Ladowal, Delhi, Ludhiana, Hisar, Karnal and Pantnagar.
3. Yellow rust data from BISA-Ladowal, Delhi, Ludhiana, Gurdaspur, Hisar, Karnal and Pantnagar.
4. Brown rust data from Hisar, Delhi, Ludhiana and Pantnagar.
5. Powdery mildew data from Karnal centre only

SPL-CI-HYT-IR-ES, 2019-20
Individual Station Rust Data

SN	Variety	Code	Yellow rust							Brown rust			
			Ludhiana	Pantnagar	Hisar	Delhi	Gurdaspur	Karnal	Ladowal	Ludhiana	Pantnagar	Hisar	Delhi
1	DBW340	HYT-1	0	0	0	0	0	20MS	20S	10S	0	5S	0
2	HD3374	HYT-2	0	5S	0	0	10S	20MS	20S	40S	5S	5S	10S
3	DBW341	HYT-3	5S	5S	10S	5S	0	5MS	10S	20S	0	10S	0
4	DBW338	HYT-4	0	tS	0	0	5MR	0	5S	0	0	10S	0
5	PBW846	HYT-5	0	5S	0	0	5MR	0	25S	tR	0	5S	0
6	WH1285	HYT-6	10S	5S	0	5S	10S	20S	30S	0	0	5S	0
7	HD3375	HYT-7	40S	0	0	0	0	20MS	10S	20S	tS	10S	5S
8	HD3373	HYT-8	10S	0	0	0	10S	10MS	25S	20S	0	10S	0
9	DBW337	HYT-9	5MR	0	0	0	20S	0	10S	0	0	tS	0
10	PBW847	HYT-10	0	0	0	0	10S	0	10S	0	0	5S	0
10	UP3066	HYT-12	10S	5S	0	0	20S	20MS	20S	40S	tS	5S	0
12	UP3068	HYT-13	0	0	0	0	0	tR	10S	10S	0	10S	0
13	PBW844	HYT-14	0	0	0	0	5S	20MS	5S	20S	0	tS	0
14	DBW339	HYT-15	5MR	tMS	0	0	0	tMS	5S	0	0	0	0
15	DBW299	HYT-16	0	0	0	0	0	0	0	5S	5S	5S	0
16	DBW336	HYT-18	0	5S	0	0	10S	0	25S	0	5S	5S	0
17	WH1287	HYT-20	0	0	0	0	5MR	5MS	0	0	5MS	20S	0
18	WH1286	HYT-21	10S	0	0	0	5S	20MS	20S	0	0	5S	0
19	PBW843	HYT-22	0	0	0	0	0	0	0	10S	0	0	0
20	HD3379	HYT-23	20S	10S	0	5S	20S	20MS	15S	0	0	5S	0
21	DBW281	HYT-24	0	10S	0	0	5S	20S	0	40S	tS	5S	0
22	UP3067	HYT-25	0	0	0	0	5S	20MS	0	40S	tS	10S	0
23	DBW187 (C)	HYT-11	0	0	0	0	10S	5MR	0	5S	0	10S	0
24	HD3086 (C)	HYT-17	0	5S	0	0	10S	20S	20S	40S	tS	20S	0
25	HD2967 (C)	HYT-19	40S	10S	20S	0	40S	20MS	40S	0	0	20S	0

Breeder Seed Production

Seed Production and Test Stock Multiplication, 2019-20

During 2019-20, a total indent of 15700.59 q breeder seed of 144 wheat varieties was received from DAC&FW, New Delhi for supply to fifteen states, six public sector agencies (NSC, IFFDC, Kribhco, NFL, Hindustan Insecticide Ltd. and NAFED) and National Seed Association of India (NSAI). Among the indenting agencies, NSAI has maximum indent of 3341.8q for private seed companies followed by states of Uttar Pradesh (2965q), Madhya Pradesh (2495q), Rajasthan (1142q) and Bihar (1060q). Among public sector agencies, NSC (841q) placed maximum breeder seed indent followed by IFFDC (205.20q), Kribhco (131.60q) and NFL (109q).

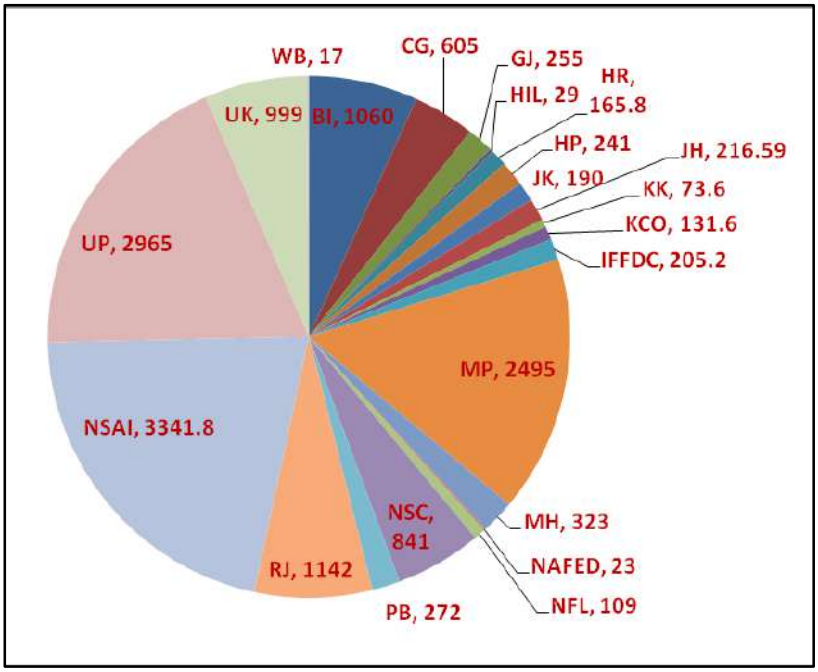

Fig 1. Breeder Seed Indents (q) by different agencies

Breeder Seed Production

Total allocation of 15423.19q was made during 2019-20 which included DAC&FW indent of 15362.19q for 120 varieties and 61.0q breeder seed of 14 newly released wheat varieties (Notified in the year 2020) for production at 33 BSP centres in the country. The indent of 338.4q breeder seed of 19 old varieties including Sujata (HI617), Amar (HW2004), GW273, PBW502, PBW343, PBW154, PBW373, PBW750, K9423 (Unnat Halna), etc. was not accepted by the BSP centres due to insufficient nucleus seed availability.

The total breeder seed production was 19639.46q during the season with surplus production of 4216.27q. Among the centres, IARI-RS, Indore produced maximum quantity 2570.5q of breeder seed followed by PAU, Ludhiana (2464.6) IARI, New Delhi (1769.2q), IIWBR, Karnal (1617.0q) and IARI-RS, Karnal (1600.7q). The highest quantity of breeder seed was produced for HD 2967 (3380.00q) followed HD3086 (1741.0q) and PBW723 (1150.0q). Seed production of most of the varieties was done by the respective developing centres but few varieties namely HD 3226, HD 3237, WB2, HD 2967, HD 3086, HPW 349, WH 1080 and WH 1105 were produced by other centres also in accordance to allocations. The BISA at Ludhiana, Pusa and Jabalpur, and SKUAS&T-J, Jammu and SVPUA&T, Modipuram were associated as supporting centres in breeder and nucleus seed production programme.

Table 1. Top ten indented wheat varieties and their breeder seed production 2019-20

SN	Name of the Variety	Year of Notification	Breeder seed (quantity in q)	
			DAC Indent/ Allocation	Production (BSP IV)
1	HD 2967	2011	2467.25	3380.00
2	HD 3086 (Pusa Gautami)	2014	1731.70	1741.00
3	PBW 723(Unnat PBW 343)	2017	1148.80	1150.00
4	WH 1105	2013	583.00	717.00
5	Raj 4238	2016	560.80	750.00
6	PBW 725	2016	439.40	500.00
7	WB 2	2017	358.80	501.00
8	HI 8759 (Pusa Tejas)	2017	356.40	550.00
9	HD 2851 (Pusa Vishesh)	2005	354.10	355.00
10	GW 366	2007	335.20	558.40

There was deficit seed production of 35 varieties and among them 19 varieties had deficit of more than 10.0q. The major varieties with deficient seed production were HI1563 (-177.92q), MP4106 (-177.0q) MP (JW)3336 (-155.0q), MP (JW) 1201 (-100.0q), MP(JW)1202(-80.0q) and MPO(JW) 1215 (-70.0q).

Table 2. Major varieties with deficit breeder seed production during 2019-20

SN	Variety	Year of Notification	BSP Centre	Breeder seed (quantity in q)		
				Allocation	Production	Deficit
1	HI 1563	2011	IARI-RS, Pusa	256.20	78.28	-177.92
2	MP 4106	2012	RVSKVV, Gwalior	204.00	27.00	-177.00
3	MP(JW) 3336	2013	JNKVV, Jabalpur	155.00	0.00	-155.00
4	MP (JW) 1201	2011	JNKVV, Jabalpur	100.00	0.00	-100.00
5	MP(JW)1202	2010	JNKVV, Jabalpur	80.00	0.00	-80.00
6	MPO(JW) 1215	2010	JNKVV, Jabalpur	70.00	0.00	-70.00
7	DBW 17	2007	SVPUA&T, Meerut	98.90	44.90	-54.00
8	WH 1124	2014	CCS-HAU, Hisar	182.60	137.40	-45.20
9	CG 5016	2009	IGKVV, Raipur	135.00	91.60	-43.40
10	HI 1500	2003	MAF (AU), Kota	50.00	8.80	-41.20

Nucleus Seed Production

Against an allocation of 605.40q nucleus seed of 134 wheat varieties, 1128.27q nucleus seed was produced by 33 Centres with the surplus of 522.87q. IARI-RS, Indore produced highest quantity (259.0 q) of nucleus seed followed by JNKVV-Jabalpur (212.92), PAU-Ludhiana (111.15 q), IIWBR, Karnal (77.0q) and IARI-New Delhi (75.44 q), SDAU, Vijapur (65.21q) and RARI, Durgapura (53.2q). The maximum nucleus seed of wheat variety MP(JW) 3382 (95.0q) was produced followed by HD 2967 (81.35 q), JW 3288 (63.77) and HD 3086 (48.45 q). The deficit seed production of 36 varieties was also reported among which six varieties had deficit of more than 5.0q. The major varieties with deficient seed production were HD2851 (-14.0q), HD2967 (-12.65q), HD3086 (-11.5q), Raj4238 (-10.6q), MP(JW)3336 (-6.5q) and CG5016 (-5.08q).

New Varieties in Seed Chain

The seed production trend was analyzed to know the share of new varieties in breeder and nucleus seed production, wherein similar trend of percent share of new varieties in breeder as well as nucleus seed production was observed. A total of 76 varieties released within last 5 years were placed in seed chain with approximately 70% of allocation and production. In total, more than 85% (111 out of 134) varieties were released during last 10 years. In the seed chain, only 8 older varieties namely; HI 1500 (2003), GW 322 (2002), Raj 3765 (1996), DWR 162 (1993), GW 496 (1990), Raj 3077 (1989), Lok 1 (1982) and C 306 (1969) are still existing with approx. 5% share need to be replaced on priority.

Table 3. Seed Production trend of new varieties during 2019-20

Years of Notification	Number of Varieties	Breeder seed (q)		Nucleus seed (q)	
		Allocation (%)	Production (%)	Allocation (%)	Production (%)
< 5 yrs	76	10625.9 (68.9%)	13676.1 (69.6%)	413.8 (68.3%)	673.8 (59.7%)
5-10 Yr	35	2768.0 (17.9%)	2967.0 (15.1%)	109.9 (18.3%)	269.1 (23.8%)
10-15 yr	15	1410.5 (9.1%)	2115.8 (10.8%)	56.3 (9.3%)	123.9 (11.0%)
>15 yrs	8	618.8 (4.0%)	880.5 (4.5%)	25.5 (4.2%)	61.5 (5.4%)
Total	**134**	**15423.2**	**19639.5**	**605.4**	**1128.3**

Test Stock Multiplication

NSC has reported 614.0q test stock multiplication of 13 newly identified wheat varieties mainly DBW222(86.0q), PBW771 (83.0q), HI1621(76.0), WH1148(68.0q), NIAW3170(59.0q), HD3271 (35.0q), etc. The test stock of GW 1346 (d) and UAS 466 (d) could not be multiplied due to non-supply of basic seed to NSC.

Table 4. Variety wise breeder and nucleus seed production of wheat during 2019-20

SN	Name of the Variety	Year of Notification	Name of the seed producing Centre	Breeder Seed (quantity in quintals)				Nucleus seed (quantity in quintals)		
				DAC Indent	Allocation	Production BSP IV	Surplus/ Deficit ±	Allocation	Production BNS IV	Surplus/ Deficit ±
1	AKAW 4627	2012	PDKV, Akola	7.00	7.00	155.00	148.00	0.25	0.40	0.15
2	AKAW 4210-6 (PDKV Sardar)	2016		8.00	8.00	160.00	152.00	0.50	10.00	9.50
3	BRW 3708 (Sabour Samriddhi)	2017	BAU, Sabour	110.00	110.00	121.00	11.00	4.50	2.50	-2.00
4	BRW 3723 (Sabour Nirjal)	2017		50.00	50.00	114.00	64.00	2.00	1.50	-0.50
5	BRW 934 (Sabour Shreshtha)	2017		60.00	60.00	102.00	42.00	2.50	1.20	-1.30
6	C 306	1969	JNKVV, Jabalpur	50.80	50.80	37.74	-13.06	2.00	2.00	0.00
7	CG 1013 (Chattisgarh Gehun 3)	2018	IGKVV, Raipur	20.00	20.00	17.40	-2.60	1.00	0.45	-0.55
8	CG 1015 (Chattisgarh Gehun 4)	2018		30.00	30.00	32.00	2.00	1.25	0.45	-0.80
9	CG 5016 (Ratan)	2009		135.00	135.00	91.60	-43.40	5.50	0.42	-5.08
10	DBW 17	2007	SVPUA&T, Meerut	98.90	98.90	44.90	-54.00	4.00	0.00	-4.00
11	DBW 71	2013		23.80	23.80	55.74	31.94	1.00	0.00	-1.00
12	DBW 88	2014		53.20	53.20	68.25	15.05	2.00	0.00	-2.00
13	DBW 90	2014		71.40	71.40	61.06	-10.34	3.00	0.00	-3.00
14	DBW 107	2015	BISA, Samastipur	49.00	49.00	50.00	1.00	2.00	2.03	0.03
15	DBW 110	2015	BISA, Jabalpur	76.00	76.00	144.00	68.00	3.00	8.85	5.85
16	DBW 168	2017	UAS, Dharwad	13.00	13.00	10.00	-3.00	0.50	0.00	-0.50
17	DBW 173	2018	ICAR-IIWBR, Karnal	263.40	263.40	275.00	11.60	10.00	8.00	-2.00
18	DBW 187 (Karan Vandana)	2019		154.80	154.80	200.00	45.20	6.00	17.00	11.00
19	DBW 222 (Kara Narendra)	2020		0.00	10.00	50.00	40.00	1.00	19.00	18.00
20	DBW 252 (Karan Shriya)	2020		0.00	10.00	20.00	10.00	1.00	2.00	1.00

21	DPW 621-50 (PBW621/DBW50)	2011	PAU, Ludhiana	5.80	5.80	5.80	0.00	0.25	0.50	0.25
22	DDW 47 (d)	2020	ICAR-IIWBR, Karnal	0.00	10.00	50.00	40.00	1.00	1.00	0.00
23	DWR 162	1993	UAS, Dharwad	10.00	10.00	15.00	5.00	0.50	1.60	1.10
24	GDW 1255 (d)	2013	SDAU, Vijapur	2.00	2.00	2.00	0.00	0.10	0.16	0.06
25	GW 11	2013		3.20	3.20	3.25	0.05	0.10	0.07	-0.03
26	GW 322	2002		180.00	180.00	217.60	37.60	7.50	6.08	-1.42
27	GW 451	2016		300.20	300.20	462.40	162.20	12.00	39.00	27.00
28	GW 463	2017		7.00	7.00	0.00	-7.00	0.25	0.00	-0.25
29	GW 496	1990		98.00	98.00	106.40	8.40	4.00	19.90	15.90
30	GW 1346	2020		0.00	1.00	0.00	-1.00	1.00	0.00	-1.00
31	GW 366	2007	JAU, Junagarh	335.20	335.20	558.40	223.20	13.00	13.00	0.00
32	HD 2851 (Pusa Vishesh)	2005	IARI-RS, Karnal	354.10	354.10	355.00	0.90	14.00	0.00	-14.00
33	HD 2894	2008	GBPUAT, Pantnagar	11.40	11.40	25.00	13.60	0.50	1.00	0.50
34	HD 2932	2008	IARI-RS Indore	19.80	19.80	70.00	50.20	1.00	20.00	19.00
35	HD 2967	2014	IARI, New Delhi	2467.25	2467.25	3380.00	912.75	94.00	81.35	-12.65
36	HD 2985 (Pusa Basant)	2011	IARI-RS, Pusa	54.00	54.00	32.94	-21.06	2.00	6.42	4.42
37	HD 2987 (Pusa Bahar)	2011	IARI-RS, Indore	20.80	20.80	50.00	29.20	1.00	27.00	26.00
38	HD 3043	2012	IARI, New Delhi	61.20	61.20	61.20	0.00	2.50	1.50	-1.00
39	HD 3059 (Pusa Pachheti)	2013		95.40	95.40	95.00	-0.40	4.00	2.50	-1.50
40	HD 3086(Pusa Gautami)	2014		1731.70	1731.70	1741.00	9.30	60.00	48.50	-11.50
41	HD 3090 (Pusa Amulya)	2014	IARI-RS, Pusa, Samastipur	10.40	10.40	0.00	-10.40	0.50	0.00	-0.50
42	HD 3117	2016		10.80	10.80	7.00	-3.80	0.50	5.60	5.10
43	HD 3118 (Pusa Vatsala)	2015		42.70	42.70	30.85	-11.85	1.50	4.49	2.99
44	HD 3171	2017		91.29	91.29	116.20	24.91	3.50	5.60	2.10
45	HD 3226 (Pusa Yashasvi)	2019	IARI, New Delhi	286.00	286.00	288.00	2.00	11.50	9.20	-2.30
46	HD 3237 (Pusa Wheat 3237)	2019		76.40	76.40	75.00	-1.40	3.00	8.50	5.50
47	HD 3249	2020		0.00	8.00	5.00	-3.00	1.00	2.49	1.49
48	HD 3271	2020		0.00	5.00	5.00	0.00	1.00	0.00	-1.00
49	HD 4728 (Pusa Malwi) (d)	2016	IARI, RS Indore	16.00	16.00	0.00	-16.00	0.50	6.00	5.50

50	HDCSW 18	2016	IARI, New Delhi	84.00	84.00	60.00	-24.00	3.50	3.90	0.40
51	HI 1500 (Amrita)	2003	MAF (AU), Kota	50.00	50.00	8.80	-41.20	2.00	2.00	0.00
52	HI 1531 (Harshita)	2006	IARI-RS, Indore	17.40	17.40	45.00	27.60	0.50	20.00	19.50
53	HI 1544 (Purna)	2008		323.20	323.20	604.00	280.80	13.00	35.00	22.00
54	HI 1563 (Pusa Prachi)	2011	IARI-RS, Pusa	256.20	256.20	78.28	-177.92	10.00	5.38	-4.62
55	HI 1605	2017	IARI-RS, Indore	11.00	11.00	123.50	112.50	0.50	28.00	27.50
56	HI 1612	2018		6.00	6.00	4.00	-2.00	0.50	10.00	9.50
57	HI 1620	2019	IARI-RS, Karnal	12.60	12.60	20.00	7.40	0.50	0.00	-0.50
58	HI 1621	2020	IARI-RS, Indore	0.00	1.00	18.00	17.00	1.00	1.00	0.00
59	HI 1628	2020		0.00	1.00	18.00	17.00	1.00	1.00	0.00
60	HI 8663 (Poshan) (d)	2008		29.40	29.40	189.00	159.60	1.25	17.50	16.25
61	HI 8713 (Pusa Mangal) (d)	2013		202.00	202.00	375.00	173.00	8.00	25.00	17.00
62	HI 8737 (Pusa Anmol) (d)	2015		179.20	179.20	363.00	183.80	7.00	24.00	17.00
63	HI 8759 (Pusa Tejas) (d)	2017		356.40	356.40	550.00	193.60	14.00	27.50	13.50
64	HI 8777 (d)	2016		8.00	8.00	125.00	117.00	0.50	15.00	14.50
65	HI 8802(d)	2020		0.00	1.00	18.00	17.00	1.00	1.00	0.00
66	HI 8805(d)	2020		0.00	1.00	18.00	17.00	1.00	1.00	0.00
67	HPW 349	2013	HPKVV, Palampur	80.00	80.00	80.00	0.00	3.00	6.00	3.00
68	HPW 360	2016		17.00	17.00	20.00	3.00	0.50	6.00	5.50
69	HPW 368	2016		6.00	6.00	15.00	9.00	0.25	2.00	1.75
70	HS 507 (Pusa Suketi)	2011	IARI-RS, Karnal	10.00	10.00	12.10	2.10	0.50	3.20	2.70
71	HS 542 (Pusa Kiran)	2015		17.00	17.00	20.60	3.60	0.50	1.00	0.50
72	HS 562	2018		45.00	45.00	45.00	0.00	2.00	5.00	3.00
73	HUW 669 (Malviya 669)	2018	BHU, Varanasi	4.20	4.20	40.00	35.80	0.25	0.30	0.05
74	K 1006	2014	CSAUA&T, Kanpur	134.15	134.15	97.00	-37.15	5.50	2.50	-3.00
75	K 1317	2018		110.00	110.00	277.00	167.00	4.50	3.00	-1.50
76	KRL 210	2012	CSSRI, Karnal	9.60	9.60	10.00	0.40	0.50	1.00	0.50
77	KRL 283	2018		16.00	16.00	16.00	0.00	0.50	1.00	0.50
78	Lok 1	1982	Lokbharti, Sanosara	220.00	220.00	380.00	160.00	9.00	18.00	9.00
79	MACS 4028 (d)	2018	ARI, Pune	10.00	10.00	11.00	1.00	0.50	0.40	-0.10

80	MACS 4058 (d)*	2020		0.00	10.00	11.00	1.00	1.00	1.00	0.00
81	MACS 6222	2010		60.00	60.00	55.00	-5.00	2.50	3.50	1.00
82	MACS 6478	2014		10.80	10.80	66.00	55.20	0.50	2.50	2.00
83	MP (JW) 1201	2011	JNKVV, Jabalpur	100.00	100.00	0.00	-100.00	4.00	5.93	1.93
84	MP (JW) 1203	2009		11.00	11.00	25.00	14.00	0.50	10.20	9.70
85	MP(JW) 3211	2010		100.00	100.00	231.68	131.68	4.00	31.09	27.09
86	MP (JW) 3288	2012		200.00	200.00	386.12	186.12	8.00	63.77	55.77
87	MP(JW) 3336	2013		155.00	155.00	0.00	-155.00	6.50	0.00	-6.50
88	MP(JW) 3382	2016		14.80	14.80	29.35	14.55	0.50	95.00	94.50
89	MP(JW)1202	2010		80.00	80.00	0.00	-80.00	3.00	4.93	1.93
90	MPO(JW) 1215 (d)	2010		70.00	70.00	0.00	-70.00	3.00	0.00	-3.00
91	MP 4106 (Rajvijay Wheat 4106)	2012	RVSKVV, Gwalior	204.00	204.00	27.00	-177.00	8.00	8.00	0.00
92	NW (Narendra Wheat) 5054	2014	NDUA&T, Ayodhya	5.00	5.00	14.40	9.40	0.25	0.30	0.05
93	NIAW 1415 (Netravati)	2011	MPKV, Niphad	12.00	12.00	6.00	-6.00	0.50	6.40	5.90
94	NIAW 1994 (Phule Samadhan)	2016		26.00	26.00	37.00	11.00	1.00	8.98	7.98
95	NIAW 3170*	2020		0.00	1.00	0.00	-1.00	1.00	0.50	-0.50
96	PBW 1 ZN (HPBW1)	2017	PAU, Ludhiana	169.20	169.20	170.00	0.80	7.00	9.00	2.00
97	PBW 509	2006		1.00	1.00	6.00	5.00	0.10	0.80	0.70
98	PBW 533	2006		2.00	2.00	2.00	0.00	0.10	1.00	0.90
99	PBW 550	2008		124.10	124.10	105.00	-19.10	5.00	5.00	0.00
100	PBW 590	2009		13.60	13.60	20.00	6.40	0.50	0.80	0.30
101	PBW 644	2012		1.00	1.00	1.00	0.00	0.10	0.70	0.60
102	PBW 658	2015		16.80	16.80	16.80	0.00	0.50	1.20	0.70
103	PBW 660	2016		11.00	11.00	11.00	0.00	0.50	7.75	7.25
104	PBW 677	2016		148.80	148.80	190.00	41.20	6.00	7.50	1.50
105	PBW 723 (Unnat PBW 343)	2017		1148.80	1148.80	1150.00	1.20	40.00	43.75	3.75
106	PBW 725	2016		439.40	439.40	500.00	60.60	17.00	20.00	3.00
107	PBW 752	2019		63.40	63.40	66.00	2.60	2.50	2.75	0.25
108	PBW 757	2019		37.80	37.80	40.00	2.20	1.50	1.65	0.15

109	PBW 761 (Unnat PBW 550)	2019		178.40	178.40	180.00	1.60	7.00	7.50	0.50
110	PBW 771*	2020		0.00	1.00	1.00	0.00	1.00	1.25	0.25
111	Raj 3077	1989	RARI-SKNAU, Durgapura	5.00	5.00	60.00	55.00	0.25	5.90	5.65
112	Raj 3765	1996		5.00	5.00	55.00	50.00	0.25	6.00	5.75
113	Raj 4037	2004		90.00	90.00	86.50	-3.50	3.50	5.20	1.70
114	Raj 4079	2011		125.80	125.80	240.00	114.20	5.00	12.45	7.45
115	Raj 4083	2007		1.60	1.60	25.00	23.40	0.10	4.70	4.60
116	Raj 4120	2009		18.80	18.80	27.00	8.20	1.00	8.85	7.85
117	Raj 4238	2016		560.80	560.80	750.00	189.20	20.00	9.40	-10.60
118	Raj 6560 (d)	2005		0.40	0.40	0.00	-0.40	0.10	0.70	0.60
119	UAS 304	2013	UAS, Dharwad	20.20	20.20	23.00	2.80	1.00	1.75	0.75
120	UAS 347	2015		5.00	5.00	6.50	1.50	0.25	0.50	0.25
121	UAS 375	2018		10.00	10.00	15.00	5.00	0.50	0.50	0.00
122	UAS 415 (d)	2009		2.80	2.80	3.00	0.20	0.10	1.25	1.15
123	UAS 428 (d)	2012		6.00	6.00	7.00	1.00	0.25	1.70	1.45
124	UAS 466 (d)*	2020		0.00	1.00	0.00	-1.00	1.00	0.00	-1.00
125	UP 2784	2016	GBPUAT, Pantnagar	4.00	4.00	57.70	53.70	0.25	1.60	1.35
126	VL 953	2016	VPKAS, Almora	29.00	29.00	43.00	14.00	1.25	1.50	0.25
127	VL 967	2016		25.00	25.00	25.50	0.50	1.00	1.10	0.10
128	WB 2	2017	ICAR-IIWBR, Karnal	358.80	358.80	501.00	142.20	14.25	11.03	-3.22
129	WH 1025	2010	CCS-HAU, Hisar	10.00	10.00	22.20	12.20	0.50	1.20	0.70
130	WH 1080	2011		28.80	28.80	68.10	39.30	1.25	3.00	1.75
131	WH 1105	2013		583.00	583.00	717.00	134.00	21.50	24.00	2.50
132	WH 1124	2014		182.60	182.60	137.40	-45.20	7.50	13.00	5.50
133	WH 1142	2014		104.40	104.40	213.20	108.80	4.00	6.25	2.25
134	WR 544 (Pusa Gold)	2005	RPCAU, Pusa	2.00	2.00	0.00	-2.00	0.10	0.00	-0.10
			Total	**15362.19**	**15423.19**	**19639.46**	**4216.27**	**605.40**	**1128.27**	**522.87**

Table 5. Surplus /Deficit breeder and Nucleus seed production during 2019-20 at 33 BSP Centres

SN	Name of the Centre	BREEDER SEED			NUCLEUS SEED		
		Allocation	Production BSP IV	Surplus/ Deficit ±	Allocation	Production BNS IV	Surplus/ Deficit ±
Surplus Breeder Seed Production (+)							
1	IARI-RS Indore	1193.20	2570.50	1377.30	51.75	259.00	207.25
2	BISA Ludhiana	578.80	1065.00	486.20	24.00	16.28	-7.72
3	RARI, SKNAU, Durgapura	807.40	1243.50	436.10	30.20	53.20	23.00
4	BISA, Samastipur (Bihar)	149.00	466.00	317.00	6.00	11.53	5.53
5	RPCAU, Samastipur (Bihar)	52.00	366.00	314.00	2.10	5.50	3.40
6	PDKV, Akola	15.00	315.00	300.00	0.75	10.40	9.65
7	CCS HAU Hisar	863.80	1120.90	257.10	33.00	47.45	14.45
8	ICAR-IIWBR Karnal	1393.20	1617.00	223.80	54.00	77.00	23.00
9	JAU Junagarh	335.20	558.40	223.20	13.00	13.00	0.00
10	SDAU Vijapur	591.40	791.65	200.25	24.95	65.21	40.26
11	Lokbharti Sanosara (Gujrat)	220.00	380.00	160.00	9.00	18.00	9.00
12	CSAUA&T Kanpur	244.15	374.00	129.85	10.00	5.50	-4.50
13	BAU Sabour	220.00	337.00	117.00	9.00	5.20	-3.80
14	PAU Ludhiana	2362.10	2464.60	102.50	89.05	111.15	22.10
15	BISA Jabalpur	76.00	144.00	68.00	3.00	8.85	5.85
16	GBPUAT Pantnagar	15.40	82.70	67.30	0.75	2.60	1.85
17	ARI Pune	90.80	143.00	52.20	4.50	7.40	2.90
18	BHU Varanasi	4.20	40.00	35.80	0.25	0.30	0.05
19	IARI RS Karnal	1580.40	1600.70	20.30	62.00	33.70	-28.30
20	HPKVV Palampur	63.00	80.00	17.00	2.25	14.00	11.75
21	VPKAS Almora	54.00	68.50	14.50	2.25	2.60	0.35
22	UAS Dharwad	68.00	79.50	11.50	4.10	7.30	3.20
23	NDUA&T Kumarganj	5.00	14.40	9.40	0.25	0.30	0.05
24	MPKV Niphad	39.00	43.00	4.00	2.50	15.88	13.38
25	CSSRI Karnal	25.60	26.00	0.40	1.00	2.00	1.00
Deficit Breeder Seed Production (-)							
26	IARI RS Pusa, Samastipur	1029.54	688.27	-341.27	38.00	35.24	-2.76
27	RVSKVV Gwalior	204.00	27.00	-177.00	8.00	8.00	0.00
28	JNKVV Jabalpur	781.60	709.89	-71.71	31.50	212.92	181.42
29	IGKVV Raipur	185.00	141.00	-44.00	7.75	1.32	-6.43
30	MAF (AU) Kota	50.00	8.80	-41.20	2.00	2.00	0.00
31	IARI New Delhi	1789.10	1769.20	-19.90	65.00	75.44	10.44
32	SVPUA&T Meerut (UP)	247.30	229.95	-17.35	10.00	0.00	-10.00
33	SKUA&T Jammu	90.00	74.00	-16.00	3.50	0.00	-3.50
	Total	**15423.19**	**19639.46**	**4216.27**	**605.4**	**1128.27**	**522.87**

Wheat Physiology

Physiological Investigations on Heat Stress Tolerance in Wheat

Multi-location Heat Tolerance trial (MLHT) was conducted to identify the temperature stress tolerant lines among AVT genotypes evaluated under timely sown (TS) and late sown (LS) conditions. Two trials MLHT1 (16 entries for NWPZ and NEPZ) and MLHT2 (16 entries for CZ and PZ) were conducted during the crop season 2019-20 at 8 locations each. Sowing was done under TS (November) and LS (December) conditions with at least 21 days difference between the sowing dates to expose the crop to optimum and high temperature environments, respectively. These trials were sown in 4 x 4 lattice square design for 16 entries with two replications. Observations on weather, growth and yield parameters were also recorded at all the locations. Physiological parameters *viz.,* NDVI *(*Normalized difference vegetation Index*),* canopy temperature (CT), chlorophyll content index (CCI) and chlorophyll fluorescence (CFL) were recorded at 15 and 21 days after anthesis (DAA) at Pune, Junagadh, Niphad, Vijapur, Hisar, Ludhiana, Kanpur, Karnal and Sabour. The data from Dharwad was not included in the MLHT2 analysis due to trial rejection by zonal monitoring team whereas Udaipur data was not included in pooled analysis due to very low yield reduction under late sown conditions.

Magnitude of heat stress:

- Compared to previous crop season minimum temperature across centres was higher by 2.3^0C and 2.2^0C under TS and LS conditions, respectively during vegetative phase. During reproductive phase, minimum temperature was also higher by 0.7^0C and 0.2^0C under TS and LS conditions, respectively.
- Maximum temperature, compared to previous crop season was lower by 0.6^0C and 1.0^0C under TS and LS conditions, respectively during vegetative phase and during reproductive phase it was lower by 2.6^0C & 3^0C in TS and LS conditions respectively.
- During 2019-20, relatively cooler temperature across the centres during grain filling period might have influenced the yield under both TS and LS conditions.

Heat Sensitivity Index (HSI) was the main criteria for adjudging the genotypic performance and was calculated using the formula HSI=(1-YD/Yi)/(1-XD/Xi) Where, YD and Yi are the grain yield for each genotype under heat stress and control conditions respectively. XD and Xi are the mean grain yield of all th genotypes under heat stress and control conditions respectively. HSI<0.5 is considered as highly heat tolerant, HSI 0.5-1 as moderately heat tolerant and HSI >1.0 as heat susceptable genotypes.

Table 1. List of wheat genotypes identified as heat stress tolerant (HSI<1.0) in MLHT1&2 trials during 2019-20

Trial	Zone	Genotypes
MLHT1	**NWPZ&NEPZ**	HD3293 (0.62), DBW187 (0.82), WH1270 (0.84), DBW3030 (1)
MLHT2	**CZ&PZ**	HI1633 (0.57), HI1634 (0.68), NIAW3170(d) (0.81), NIDW1149(d) (0.86), DDW49 (1)

Values in the paranthesis indicates Heat Sensitivity Index(HSI)

Correlation of grain yield with different traits under late sown conditions

The pooled analysis of the data over locations indicated reduction in most of the measured traits under LS condition. The correlation of traits with grain yield under late sown conditions in both CZ & PZ and NWPZ & NEPZ trials indicated positive correlation of grain yield with biomass, harvest index, days to maturity, grain filling duration, grain weight per spike and thousand grain weight whereas it was negatively correlated with canopy temperature and days to maturity .

Table 2. HSI of MLHT1 genotypes in NWPZ&NEPZ locations and pooled across locations during 2019-20

Genotype	Location wise HSI								Pooled			
	NWPZ				NEPZ				HSI	Grain yield		% Reduction over TS
	Durgapura	Hisar	Karnal	Ludhiana	Kanpur	Pusa	Ranchi	Sabour		TS	LS	
HD3293	0.71	0.87	0.81	1.13	-1.01	0.85	0.69	0.70	0.62	2001.8	1693.7	15.4
DBW187	0.28	0.62	0.95	1.43	1.26	0.87	4.28	0.69	0.82	2176.5	1735.6	20.3
WH1270	0.45	0.97	-0.04	1.65	1.02	0.96	0.36	0.94	0.84	2258.5	1788.1	20.8
RWP-2018-32	0.57	1.06	1.48	1.44	0.53	1.09	-8.19	0.99	0.94	2088.5	1602.3	23.3
RWP-2018-31	0.84	0.76	1.68	-1.54	1.27	1.10	3.20	1.02	0.93	1902.1	1462.1	23.1
HD3298	1.30	0.93	0.82	0.96	1.08	0.14	5.76	1.13	1.03	2126.8	1584.9	25.5
DBW303	1.72	1.12	0.32	0.70	0.80	1.64	-0.72	1.01	1.03	2256.7	1682.6	25.4
RWP-2018-28	1.33	1.29	0.98	1.41	0.87	0.30	-1.81	1.11	1.14	2137.0	1533.6	28.2
RWP-2018-26	1.02	1.13	1.02	1.84	1.69	1.37	-1.30	1.10	1.24	2137.8	1481.5	30.7
RWP-2018-27	1.70	0.99	2.00	1.95	1.52	1.50	0.90	1.00	1.34	1982.4	1322.7	33.3
RAJ3765(C)	0.60	0.93	0.26	-1.74	1.31	1.75	0.21	0.95	0.79	1891.8	1519.6	19.7
DBW150(C)	1.26	0.91	0.39	-0.72	0.98	0.54	4.45	0.98	0.82	2001.7	1595.9	20.3
WH730(C)	0.17	1.06	0.84	1.08	0.31	1.00	2.04	1.04	0.91	1870.1	1447.4	22.6
HD2967(C)	0.36	0.82	1.80	0.96	1.61	0.68	1.17	1.04	1.04	1929.8	1430.3	25.9
HD2932(C)	1.36	1.30	1.92	0.94	0.51	0.87	1.25	1.07	1.19	2115.9	1489.8	29.6
HD3086(C)	1.66	1.02	0.69	2.58	1.53	0.72	1.25	1.13	1.26	2258.1	1554.9	31.1

Table 3. HSI of MLHT2 genotypes in CZ&PZ locations and pooled across locations during 2019-20

Genotype	Location wise HSI							Pooled			
	CZ				PZ				Grain yield		% Reduction over TS
	Indore	Junagadh	Udaipur	Vijapur	Niphad	Parbhani	Pune	HSI	TS	LS	
HI1633	1.11	0.53	-0.23	0.71	1.45	-4.49	0.23	0.57	1405.0	1242.7	11.6
HI1634	1.03	0.31	-0.05	0.65	1.20	-3.50	2.27	0.68	1326.9	1143.5	13.8
CG1029	0.54	0.74	-0.62	0.85	0.23	3.35	3.75	1.05	1513.1	1190.4	21.3
RWP-2018-29	1.04	1.77	0.27	1.09	1.27	-0.31	-5.83	1.23	1231.3	924.2	24.9
NIAW3170(d)	1.17	0.36	-0.20	0.64	1.25	0.02	-1.37	0.81	1317.6	1101.7	16.4
NIDW1149(d)	1.24	1.10	0.04	0.74	1.34	-0.12	1.23	0.86	1350.9	1115.1	17.5
DDW49(d)	0.00	0.65	-0.08	1.51	0.08	1.08	3.10	1.02	1228.3	974.2	20.7
DDW48(d)	0.59	0.61	-0.25	0.99	1.63	6.29	3.80	1.37	1459.8	1055.6	27.7
RAJ3765(C)	0.62	1.03	0.02	0.81	0.39	-3.51	-1.60	0.47	1173.7	1062.3	9.5
HD2932(C)	1.27	1.16	0.08	1.26	0.09	3.15	2.61	1.19	1472.7	1119.1	24.0
DBW71(C)	1.61	0.76	0.14	1.05	-0.14	1.40	-0.20	1.26	1436.4	1070.2	25.5
WH730(C)	0.62	1.56	0.03	1.09	1.68	1.19	1.46	1.32	1264.2	927.5	26.6
HI1605(C)	1.19	1.61	0.05	1.01	1.10	4.16	-0.23	1.48	1411.4	987.6	30.0
AKDW2997-16(d)(C)	0.93	1.39	0.16	0.71	1.76	0.61	4.87	0.90	1410.1	1153.7	18.2
HI8713(d)(C)	1.32	1.09	0.19	1.53	1.25	1.50	0.34	1.02	1441.6	1144.9	20.6
HI8805(d)(C)	1.40	1.13	-0.03	1.25	0.87	0.93	-1.52	0.66	1343.3	1164.7	13.3

Table 4. Grain yield(g/plot) of 16 genotypes under timely and late sown conditions and reduction (%) at different locations in MLHT1

Genotype	NWPZ												NEPZ											
	Durgapura			Hisar			Karnal			Ludhiana			Kanpur			Pusa			Ranchi			Sabour		
	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R
DBW187	2525	2400	5.0	3000	2280	24.0	3005	2470	17.8	1988	1581.5	20.4	2285	1572.5	31.2	1875	1550	17.3	1537	1350	12.2	1197	681	43.1
DBW303	2575	1800	30.1	3550	2000	43.7	2967	2789.5	6.0	1881	1691.5	10.1	2370	1902.5	19.7	2000	1350	32.5	1421	1450	-2.0	1290	477.5	63.0
HD3293	2400	2100	12.5	3050	2015	33.9	2741	2325	15.2	2052	1719.5	16.2	1647.5	2060	-25.0	1475	1225	16.9	1479	1450	2.0	1170	655	44.0
HD3298	3075	2375	22.8	3050	1945	36.2	2490.5	2106	15.4	2238	1932	13.7	2392.5	1752.5	26.8	1060	1030	2.8	1375	1150	16.4	1334	388.5	70.9
RWP-2018-26	2250	1850	17.8	3450	1930	44.1	2793.5	2255.5	19.3	2225	1640.5	26.3	2420	1405	41.9	1340	975	27.2	1350	1400	-3.7	1274	396	68.9
RWP-2018-27	2600	1825	29.8	2900	1780	38.6	2496	1556.5	37.6	1889	1364	27.8	2042.5	1275	37.6	1550	1090	29.7	1334	1300	2.5	1048	391	62.7
RWP-2018-28	2150	1650	23.3	3850	1915	50.3	2998.5	2448.5	18.3	2039	1628.5	20.1	2172.5	1702.5	21.6	1250	1175	6.0	1260	1325	-5.2	1376	424	69.2
RWP-2018-31	1875	1600	14.7	2650	1860	29.8	2374.5	1624.5	31.6	1747	2132	-22.0	1972.5	1352.5	31.4	1400	1095	21.8	1595	1450	9.1	1603	583	63.6
RWP-2018-32	2000	1800	10.0	3050	1790	41.3	2945.5	2128	27.8	2456	1951.5	20.5	2090	1815	13.2	1850	1450	21.6	1176	1450	-23.3	1141	433.5	62.0
WH1270	2550	2350	7.8	2950	1830	38.0	2752	2770.5	-0.7	2469	1888	23.5	2845	2127.5	25.2	1450	1175	19.0	1566	1550	1.0	1487	614	58.7
WH730(C)	1700	1650	2.9	2950	1725	41.5	2029.5	1707	15.9	1558	1318	15.4	1950	1802.5	7.6	1975	1585	19.7	1380	1300	5.8	1419	491.5	65.4
DBW150(C)	2050	1600	22.0	2900	1870	35.5	2513.5	2329	7.3	1703	1877.5	-10.3	2282.5	1727.5	24.3	1775	1585	10.7	1431	1250	12.6	1359	528.5	61.1
HD2932(C)	2100	1600	23.8	3300	1620	50.9	2814	1799.5	36.1	1972	1708.5	13.4	1987.5	1737.5	12.6	1600	1325	17.2	1711	1650	3.6	1443	478	66.9
HD2967(C)	1600	1500	6.3	2750	1865	32.2	2667	1765.5	33.8	1647	1422	13.7	2125	1277.5	39.9	2050	1775	13.4	1500	1450	3.3	1099	387	64.8
HD3086(C)	2750	1950	29.1	3050	1835	39.9	2560.5	2226.5	13.0	2429	1533	36.9	2525	1567.5	37.9	1400	1200	14.3	1711	1650	3.6	1640	478	70.9
RAJ3765(C)	2400	2150	10.4	2425	1544	36.3	2079.5	1979.5	4.8	1472	1837.5	-24.8	2230	1505	32.5	2050	1337.5	34.8	1358	1350	0.6	1120	453.5	59.5

Table 5. Grain yield(g/plot) of 16 genotypes under timely and late sown conditions and reduction (%) at different locations in MLHT2

Genotype	PZ									CZ											
	Niphad			Parbhani			Pune			Indore			Junagadh			Udaipur			Vijapur		
	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R	TS	LS	%R
CG1029	726.1	686.2	5.5	963.0	802.0	16.7	1759.0	1398.0	20.5	2486.0	2005.0	19.3	1194.5	1056.0	11.6	1330.0	1805.0	-35.7	1950.0	1195.0	38.7
HI1633	918.6	605.1	34.1	861.0	1053.5	-22.4	1525.0	1506.0	1.2	2139.0	1296.0	39.4	1261.5	1157.5	8.2	1442.5	1630.0	-13.0	1725.0	1165.0	32.5
HI1634	778.1	557.9	28.3	742.0	871.5	-17.5	1312.0	1149.0	12.4	2186.5	1387.3	36.6	1128.0	1073.5	4.8	1880.0	1932.5	-2.8	1815.0	1280.0	29.5
RWP-2018-29	834.3	585.2	29.9	1052.5	1069.0	-1.6	1211.0	1597.0	-31.9	1604.5	1008.7	37.1	1283.5	929.0	27.6	1790.0	1510.0	15.6	1920.0	967.5	49.6
DDW48(d)	759.1	468.1	38.3	1183.0	812.0	31.4	1860.0	1474.0	20.8	1923.5	1519.5	21.0	1108.5	1002.5	9.6	1670.0	1910.0	-14.4	1925.0	1057.5	45.1
DDW49(d)	751.3	736.5	2.0	795.5	752.5	5.4	1492.0	1239.0	17.0	1657.0	1656.5	0.0	1071.5	963.0	10.1	1765.0	1845.0	-4.5	1602.5	497.5	69.0
NIDW1149(d)	855.1	585.6	31.5	758.0	762.5	-0.6	1721.0	1605.0	6.7	1938.5	1085.7	44.0	1283.0	1063.5	17.1	1902.5	1860.0	2.2	1550.0	1027.5	33.7
WH730(C)	890.1	537.3	39.6	808.5	760.5	5.9	1532.0	1410.0	8.0	1512.5	1181.3	21.9	1082.0	818.5	24.4	1815.0	1787.5	1.5	1562.5	785.0	49.8
AKDW2997-16(d)(C)	796.6	467.1	41.4	792.0	768.0	3.0	1540.0	1130.0	26.6	1739.5	1163.7	33.1	1224.5	960.0	21.6	1662.5	1512.5	9.0	1492.5	1010.0	32.3
DBW71(C)	661.5	683.6	-3.3	930.5	865.5	7.0	1629.0	1647.0	-1.1	2109.0	898.0	57.4	1235.0	1089.0	11.8	1870.0	1720.0	8.0	1895.5	982.5	48.2
HD2932(C)	780.6	763.5	2.2	1025.5	864.5	15.7	1526.0	1308.0	14.3	2003.0	1096.3	45.3	1310.5	1073.5	18.1	1762.5	1677.5	4.8	1972.5	840.0	57.4
HI1605(C)	951.2	705.2	25.9	959.0	760.0	20.8	1407.0	1425.0	-1.3	2116.5	1220.0	42.4	1300.0	974.5	25.0	1807.5	1760.0	2.6	2102.5	1130.0	46.3
HI8713(d)(C)	785.6	553.4	29.6	855.0	791.0	7.5	1493.0	1465.0	1.9	2192.5	1166.3	46.8	1182.5	981.5	17.0	1842.5	1637.5	11.1	1960.0	587.5	70.0
HI8805(d)(C)	883.3	701.3	20.6	808.0	770.5	4.6	1545.0	1673.0	-8.3	2126.5	1069.3	49.7	1277.0	1052.5	17.6	1815.0	1847.5	-1.8	2010.0	860.0	57.2
NIAW3170(d)(C)	785.5	554.5	29.4	858.0	857.0	0.1	1353.0	1454.0	-7.5	1994.0	1166.7	41.5	1134.5	1070.5	5.6	1615.0	1802.5	-11.6	1935.0	1367.5	29.3
RAJ3765(C)	698.9	634.9	9.2	735.0	863.5	-17.5	1212.0	1318.0	-8.7	1686.0	1316.7	21.9	1095.5	919.0	16.1	1390.0	1372.5	1.3	1615.0	1015.0	37.2

Evaluation of National and International Germplasm

International Nurseries and Trials

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

Nurseries/ trials received during 2019-20

From CIMMYT, sets of eight trials and seven nurseries comprising a total of 1377 lines (1170 bread wheat and 207 lines of durum wheat) and 651 lines (545 bread wheat and 106 lines of durum wheat) from ICARDA were evaluated at various wheat breeding centres (Table 1 & 2). Trials were not considered for reporting from Delhi centre. Duly filled-in data booklets were received from all the indented centres except New Delhi and Gwalior centre.

Table 1. International germplasm shared with centres during 2019-20

SN	Trial/Nursery	Entries	Rep	Set	Co-operating centres
Bread wheat					
1.	40th ESWYT	50	2	12	Delhi#*, Karnal, Ludhiana, Hisar, Indore, Pantnagar, Jabalpur, Gwalior*, Powarkheda, Niphad, Dharwad, SKAUST- Srinagar
2.	27th HRWYT	50	2	2	Karnal, Shillongani
3.	18th HTWYT	50	2	19	Delhi#*, Karnal, Ludhiana, Pantnagar, Durgapura, Hisar, Varanasi, Ayodhya, Indore, Jabalpur, Vijapur, Powarkheda, Junagadh, Bilaspur, Pune, Niphad, Dharwad, Coochbehar, Wellington,
4.	27th SAWYT	50	2	16	Delhi#*, Karnal, Ludhiana, Hisar, Durgapura, Pantnagar, Ayodhya, Varanasi, Ranchi, Bilaspur, Indore, Jabalpur, Powarkheda, Vijapur, Niphad, Dharwad
5.	7th WYCYT	35	2	5	Karnal, Pantnagar, Ludhiana, SKAUST- Srinagar, Dharwad
6.	9th SATYN	30	2	3	Karnal, Ludhiana, Dharwad
7.	2nd CWEN	50	2	2	Ludhiana, Dharwad
8.	52th IBWSN	284	-	16	Delhi#*, Karnal, Hisar, Ludhiana, Durgapura, Palampur, Indore, Pantnagar, Ayodhya, Varanasi, IARI (Pusa), Gwalior*, Coochbehar, Jammu, Wellington, SKAUST- Srinagar
9.	30th HRWSN	80	-	3	Karnal, Wellington, Shillongani
10.	37th SAWSN	283	-	16	Delhi#*, Karnal, Hisar, Ludhiana, Durgapura, Ayodhya, Ranchi, Sabour, Jabalpur, Powarkheda, Junagadh, Bilaspur, Niphad, Pune, Dharwad, SKAUST- Srinagar
11.	14th STEMRRSN	164	-	3	Karnal, Mahabaleshwar, Wellington
12.	11th HLBSN	52	-	5	Karnal, Ayodhya, Varanasi, Sabour, Coochbehar
13.	21st KBSN	32	-	3	Karnal, Hisar, Ludhiana
Durum wheat					
14.	51st IDYN	50	2	7	Karnal, Ludhiana, Niphad, Pune, Indore, Vijapur, Dharwad
15.	51st IDSN	159	-	5	Karnal, Ludhiana, Pune, Indore, Niphad

Rep=Replications; *#trial vitiated*; **data was not supplied by the centre*

Table 2. International germplasm received from ICARDA, Morocco during 2019-20

SN	Trial /Nursery	Entries #	Rep #	Set #	Cooperating centres
Bread wheat					
1.	20th ESBWYT	50	2	3	Karnal, Udaipur, Jabalpur
2.	20th DSBWYT	50	2	3	Karnal, Pune, Vijapur
3.	20th SBWYT-HT	50	2	3	Karnal, Jabalpur, Niphad
4.	20th DSBW-ON	200	-	3	Karnal, Kanpur, Powarkheda
5.	20th SBWON-HT	200	-	3	Karnal, Indore, Vijapur
Durum wheat					
6.	43rd IDYT	24	2	3	Karnal, Indore, Pune
7.	43rd IDON	84	-	3	Karnal, Vijapur, Dharwad

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 (Table 3&4).

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

Trial	Zone	Entries with higher grain (q/ha) yield with disease resistant	Disease score
Bread wheat			
40th ESWYT	NHZ	102 (42), 110 (42), 131 (40), 145 (41); **Shalimar wheat 2 (33)**	-
	CZ	116 (68), 136 (67), 145 (67), 146 (67); **HI 1544 (64)**	-
	PZ	107 (38), 109 (39), 115 (37), 145 (39); **NIAW 1994 (29)**	Sr (tMS- 5MS), Lr (0-5MS)
27th HRWYT	NWPZ	237 (45), 241 (56), 244 (48); **DBW 187 (39)**	Yr (0-tS)
	NEPZ	216 (39), 222 (39), 235 (39), 246 (41); **Sonalika (23)**	LB (23-35)
	CZ	11 (56), 19 (58), 31 (55), 32 (61); **HD 2932 (63)**	-
	PZ	6 (53), 13 (50), 15 (50), 40 (49); **MACS 6478 (53)**	-
27th SAWYT	CZ	309 (57), 325 (56), 328 (56), 333 (58); **JW 3382 (56)**	-
	PZ	310 (38), 316 (36), 322 (36), 332 (40); **NIAW 1994 (31)**	Sr (5MS-10MS), Lr (0)
7th WYCYT	NHZ	9 (44), 15 (42), 28 (47); **Shalimar wheat 2 (30)**	-
	NWPZ	16 (70), 32 (64), 21 (61); **HD 3226 (60)**	Yr (0-10MR), Lr (0-20S)
	PZ	5 (46), 10 (44), 12 (43), 29 (43); **UAS 304 (35)**	Sr (0), Lr (0-10MS)
9th SATYN	NWPZ	9416 (61); **DBW 187 (53)**	Yr (5MR), Lr (0)
	PZ	9410 (38), 9422 (40), 9426 (39), 9430 (37); **UAS 304 (33)**	Sr (0-10S), Lr (0-5MS)
Durum wheat			
51th IDYN	NWPZ	725 (72), 728 (72), 733 (77), 750 (75); **PDW 291 (69)**	-
	PZ	710 (47), 719 (47); **MACS 3949 (38)**	Sr (5S-20S)

Table 4. Promising lines for grain yield from ICARDA trials/nurseries during 2019-20

Trial/Nursery	Location, yield (g/plot)	Entries	Check yield (g/plot)	Rust
Bread wheat				
20th ESBWYT	Udaipur (>6400)	4, 15, 22, 24, 25, 35	RAJ 4079 (6323)	-
	Jabalpur (>5800)	7, 19, 35, 41, 47, 48, 49	JW 3382 (5455)	-
20th DSBWYT	Pune (>900)	3, 7, 12, 19	MACS 6222 (954)	Yr (0-5S)
	Vijapur (>5700)	12, 19, 21, 42	GW 11 (5683)	Yr (0-0MR)
20th SBWYT-HT	Jabalpur (>600)	19, 36	JW 3382 (646)	-
	Niphad (>500)	21, 32, 41	NIAW 1994 (392)	-
20th DSBW-ON	Karnal (>230)	48, 60, 112, 143, 144	DBW 187 (183)	-
	Kanpur (>725)	14, 56, 75	K 1317 (570)	-
	Powarkheda (>9300)	15, 35, 48	Check (4375)	-
20th SBWON-HT	Karnal (>250)	8, 21, 87, 117, 152	DBW 187 (133)	Yr (5S-20MS)
	Indore (>700)	30, 69, 121, 128, 142, 188	HD 2932 (674)	-
	Vijapur (>8000)	128, 129, 133, 136, 183, 194	GW 11 (6800)	-
Durum wheat				
43rd IDYT	Karnal (>600)	5, 6, 12	PDW 291 (333)	(0-tR)
	Indore (>2200)	7, 14, 17, 20	HI 8737 (2172)	-
43rd IDON	Vijapur (>5300)	20, 22, 61, 63, 77, 81	HI 8737 (2500)	-

Similarly from ICARDA trials & nurseries various promising entries were identified (Table 5). Promising lines identified from various trials/nurseries for yield *per se*, 1000-grain weight and possessing disease resistance (rusts and other diseases) will be included in Elite

International Germplasm Screening Nursery (EIGN) that would be constituted for the ensuing wheat season 2020-21 for further evaluation and making site specific selections by the co-operators. One set of each of CIMMYT nursery/ trial that were planted at IIWBR, Karnal for comprehensive evaluation, seed multiplication also facilitated *in-situ* selection by large number of wheat breeders/pathologists. The indented seed in limited quantity will be supplied as per their requirement before the ensuing crop season for utilization by respective indentor.

Table 5. Promising lines identified for 1000-grain weight (value in parenthesis) and disease resistance in different nurseries

Trial/Nursery	Zone	1000-grain weight (g)	Disease reaction
Bread wheat			
52nd IBWSN	NHZ	1003 (59), 1018 (59), 1023 (59), 1055 (59), 1134 (59), 1180 (59), 1181 (59), 1182 (59), 1185 (59), 1022 (58), 1024 (58), 1031 (58), 1078 (58), 1133 (58); **Shalimar wheat 2 (46)**	-
	NWPZ	1135 (48), 1133 (47), 1134 (47); **WH 1105 (42)**	Yr (0-10MS)
	NEPZ	1133 (49), 1129 (48), 1131 (48); **K 0307(42)**	-
	CZ	1070 (52), 1059 (51), 1072 (50), 1168 (50), 1174 (50); **HI 1544 (46)**	Lr (0-5S), Sr (40MS)
30th HRWSN	NWPZ	2039 (48), 2034 (46), 2062 (45); **DBW 187 (41)**	Yr (5mR -20MS)
	NEPZ	2010 (47), 2005 (45), 2007 (45); **Sonalika (39)**	LB (14 to 45)
	PZ	2041 (53), 2032 (52), 2033 (52), 2037 (51), 2074 (51); **Check (28)**	Lr (0-5R), Sr (5MS- 20S)
37th SAWSN	NWPZ	3230 (51), 3018 (49), 3035 (49), 3038 (49), 3128 (48), 3144 (48), 3185 (48), 3190 (48), 3226 (48); **HD 3086 (39)**	Yr (0-20MR), Lr (0-10S)
	NEPZ	3047 (44), 4144 (44), 3242 (44); **HD 2967 (40)**	**-**
	CZ	3073 (48), 3115 (48), 3071 (47), 3122 (47); **JW 3382 (47)**	Lr (0)
	PZ	3102 (47), 3053 (46), 3112 (46); **NIAW 917 (44)**	Lr (0), Sr (0)
14th STEMRRSN	NWPZ	6004 (48), 6039 (47), 6051 (46), 6059 (46), 6121 (46); **DBW 187 (38)**	Yr (0-10MR)
	PZ	6036 (54), 6151 (54), 6136 (51), 6141 (51); **Check (23)**	Lr (0-10MS), Sr (0-5MS)
11th HLBSN	NWPZ	26 (50); **DBW 187 (37)**	Yr (10S)
	NEPZ	47 (40); **HI 2733 (38)**	Yr (5S), LB (35)
21st KBSN	NWPZ	Entries superior for KB; 9, 12, 23	KB (0-0.67)
Durum wheat			
51st IDSN	NWPZ	7067 (55), 7069 (51), 7085 (51), 7086 (51); **PDW 291 (40)**	Yr (0)
	PZ	7024 (46), 7019 (45), 7035 (45), 7049 (45), 7053 (45), 7063 (45); **MACS 3949 (43)**	Lr (0), Sr (tS-10S)

Evaluation and Utilization of Elite International Germplasm Nurseries

The Elite International Germplasm Nursery (EIGN) was constituted by selecting promising entries from International nurseries and trials of bread wheat evaluated during 2018-19. These lines exhibited either superior yield performance or resistant disease reactions at various locations during evaluation in 2018-19. This year, EIGN consisted of 68 genotypes and four checks (DBW 187, HD 2967, WR 544 and HI 1544) and shared with 27 centres. The 68 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 (627g) was recorded by check DBW 187 followed by 36th SAWSN 3261 (601g), 17th HTWYT 48 (587g), 6th WYCYT 6 (585g) and 36th SAWSN 3129 (584 g). The entry 36th SAWSN 3261 performed well in NWPZ and PZ, whereas entry name 17th HTWYT 10 performed well in NEPZ and PZ. Similarly, entry name 36th SAWSN 3129 performed well in NWPZ and NHZ (Table 1).

Table 1. Promising entries for grain yield (plot yield in g) in various zones and across the zone

Zone	Entry name	Best check
Across the zone (27 locations) (>575g)	None of the entries were superior to check, however entries 36th SAWSN 3261 (601g), 17th HTWYT 48 (587g), 6th WYCYT 6 (585g), 36th SAWSN 3129 (584 g), 51st IBWSN 1292(576 g) were promising.	DBW 187 (627 g)
NWPZ (5 locations) (>715 g)	26th SAWYT 304 (758g), 10th HLBSN 40 (747 g), 10th HLBSN 37 (745g), 36th SAWSN 3129 (740g), 36th SAWSN 3261 (723g)	DBW 187 (714 g)
NEPZ (8 locations) (>525 g)	17th HTWYT 48 (542g), 17th HTWYT 10 (533g), 17th HTWYT 7 (528g)	DBW 187 (577 g)
CZ (8 locations) (>760g)	26th HRWYT 212 (802g), 26th SAWYT 309 (769 g), 51st IBWSN 1093 (767g)	DBW187 (758g)
PZ (4 locations) (>520g)	29th HRWSN 2054 (562 g), 36thSAWSN3063 (557g), 36thSAWSN3261 (556g), 29th HRWSN 2040 (551 g), 26th SAWYT 308 (547g), 29th HRWSN 2012 (538g), 51st IBWSN 1239 (533g), 17th HTWYT 10 (527g)	HI 1544 (519g)
NHZ (2 locations) (>645 g)	36thSAWSN 3129 (740g), 29th HRWSN 2054 (675 g), 26th HRWYT 237 (650 g), 26th HRWYT 206 (646g),	DBW 187 (645 g)

Value in parenthesis indicate plot yield in gram

Disease resistance: Response of lines against yellow rust (Karnal, Malan, Hisar, Jammu and Almora), brown rust (Vijapur, Pantnagar, Junagadh, Kanpur and Dharwad) and leaf blight (Ayodhya, Sabour, Kalyani, Shillongani and Pusa) was also recorded under field conditions (Table 2).

Lines showing resistance to diseases in EIGN

Disease	Entry name
Yellow rust (ACI≤ 20)	51st IBWSN 1239, 51st IBWSN 1292, 26th HRWYT 237, 36th SAWSN 3129, 36th SAWSN 3286
Brown rust (ACI≤ 5)	6th WYCYT 6, 26th HRWYT 212, 26th HRWYT 242, 10th HLBSN 37, 26th SAWYT 322, 26th SAWYT 342
Leaf blight (≤34)	51st IBWSN 1292, 3rd STEMRRSN 6098, 26th HRWYT 215, 10th HLBSN 3

Entry 51st IBWSN1292 was found to be one of the promising entry for yield as well as having resistance against yellow rust and leaf blight. Entry 36th SAWSN 3129 was also good yielder across the zones and having resistance against yellow rust. Entry 6th WYCYT 6 was found to be good yielder and having resistance to brown rust.

The entries 26th HRWYT 215, 26th SAWYT 317, 8th SATYN 9411 and 20th KBSN 7 (Table 3) showed comparatively higher thousand grains weight (>44g/1000 grains) than the best check variety DBW 187 (44.74g). Similarly, entry 17th HTWYT 30, 26th HRWYT 212, and 26th HRWYT 223 were having comparatively short plant height.

Table 2. Trait-wise promising entries from EIGN 2018-19

Entry number in Nursery	Original entry name	Range	Mean
Plant height (cm)			
4	17th HTWYT 30	43-107	89
36	26th HRWYT 212	40-110	89
40	26th HRWYT 223	68-105	89
	HI 1544 (C)	56-116	90
1000 grains weight (g)			
36	26th HRWYT 215	34-58	45.5
58	26th SAWYT 317	35-56	45.3
63	8th SATYN 9411	34.5-59.3	44.85
50	20th KBSN 7	35-53.5	44.8
	DBW 187 (C)	32-51.6	44.74

Note: None of the entry was found earlier in heading than check WR 544 (72 days)

The feedback report of EIGN indicates that breeders across the country selected the genotypes from this nursery for various purposes. A total of 233 selections were made by the cooperating centres during 2019-2020 (Table 4). The entry 36th SAWSN 3002 was selected by 8 centres, while entry name 51st IBWSN 1117 and 51st IBWSN 1127 were selected by 7 Centres.

Table 3. Centre-wise selections made from EIGN

Centre	Selections #	Traits selected
Almora	16	Further evaluation
Malan	15	Disease resistance and agronomic attributes
Dharwad	8	Hybridization
Niphad	10	Germplasm enrichment
Bilaspur	9	Yield traits
Jabalpur	16	Further evaluation
Junagadh	19	Earliness and other yield attributing traits
Powarkheda	8	Hybridization
Udaipur	8	Hybridization
Vijapur	12	Yield traits, hybridization
Ayodhya	24	Hybridization, germplasm enrichment
Kalyani	10	Further evaluation
Kanpur	7	Further evaluation
Sabour	17	1000-grains weight, yield attributing traits
Shillogani	14	Yield
Durgapura	11	Hybridization
Hisar	17	Earliness and other yield attributing traits
Jammu	5	Further evaluation
Pantnagar	7	Hybridization
Total	**233**	

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 their wheat improvement programmes. The NGSN comprising 90 lines including *T. aestivum* (69), *T. durum* (12), *T. dicoccum* (4) and Triticale (5) was provided to 32 centres across different zones. The bread wheat and durum wheat entries were categorized as agronomic bases, disease resistant, genetic stocks and elite lines. Triticale entries were categorized disease resistant and elite lines whereas *T. dicoccum* entries were grouped as disease resistant. The nursery was conducted in an 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. The data were recorded on grain yield per plot and yield component traits, namely, days to heading, days to maturity, plant height (cm), tillers/m, grain number/spike, 1000-grains weight (g) and spike length (cm). The data received from all 32 locations were pooled for analyzing data on various traits and mean values (Annexure-i) were considered for identification of promising genotypes (table).

Table 1. Superior germplasm lines for yield and component traits in NGSN during 2019-20

Traits	Range	Mean	Criteria	Promising Entries	Best check
Days to heading	72-90	81	<77	DWAP 1108 (72), DWAP 1531 (73), GW 499, Raj 4083, TL 3013 (74), Raj 3765, Raj 4079, RAJ 3077, TL 3011, TL 3015, VL 3013(75), DM 6, WAPD 1505, FLW 22, TL 3012, HI1621(76)	Sonalika (82)
Days to maturity	122-13	127	<125	DWAP 1108, FLW22(122), Raj 4083(123), Raj 4079, DWAP 1531, Raj 3765, DM 6, Raj 3077, WAPD 1505, DM 7, Raj 4238, FLW 10, WAPD 1508 (124)	Sonalika (128)
Pl height (cm)	59-114	92	<75	DM7(59), DM6 (63), WAPD1508, WAPD1516(64), WAPD1519 (65), WAPD1524(67), WAPD1505(72)	Sonalika (88)
Tillers /m	71-115	95	≥105	DDK 1052(115), AKAW 3717(108), WH 1127, DBW 93, Raj 4238(107), WH730 (106), WAPD 1505, TL 3015, PBW 760(105)	HD 2967 (101)
Grains /spike	45-60	53	>57	HD 3237(60), DBW252, AKAW4901(59), DBW 179, HD 3118, PBW 780, DWAP1531(58)	HI 8713 (57)
1000-gr weight (g)	32-49	41	>41	HI8751(49), HI 8802, DWAP 1108(48), MPO 1336, TL 3012, GW 499(47), HI 8805(d), GW 1339(46), AKAW 4927, HI 1609, HI 1620(45), WAPD1 508(44), PBW 777(43), TL 3011, WH 1232, DWAP 1531, MP 1338 (42)	HI 8713 (41)
Spike length (cm)	7-12	10	≥10	AKAW4901(12), AKAW4927, DWAP1531, HI1619, DWAP1108, CG1018, HI1628, WH730, HS 645, HS644 (11), WAPD1524, WAPD1516, DWAP 1530 (10)	HD 2967 (10)
Grain yield (q/ha)	36-61	50.7	>56	DBW 187(61.0), HI 1609(60.3), GW 1339(59.0), HI 1621(58.8), DBW 107(57.1), HD 3237(56.8), HI 8802 (56.5), DBW 221 (56.4), DBW 252 (56.3), DBW 110, CG 1018 (56.2)	HD 2967 (51.1)

Performance of entries for yield component traits

Pooled mean values from all 32 centres indicated that DBW 187 was the highest yielding genotype followed by HI 1609 and GW 1339. Trait-wise analysis of data indicated promising performance of DWAP 1531, FLW 16, HD 3237, MP 1338, Raj 4079, WAPD 1505 and WAPD 1508 for multiple yield component traits which can be further utilized in wheat improvement programmes (table).

Table 2. Promising entries for multiple traits in NGSN

Genotype	Heading	Maturity	Pl.Ht.(cm)	Tillers/m	Gr.No. /spike	1000-gr. Wt. (g)	Spike length (cm)
DWAP 1531	73	124	96	82	58	42	11
FLW 16	79	127	83	104	51	43	9
HD 3237	78	125	100	89	60	42	11
MP 1338	78	125	87	89	55	42	10
RAJ 4079	75	124	85	104	46	41	9
WAPD 1505	76	124	72	105	50	41	10
WAPD 1508	79	125	64	91	51	44	10
HD 2967(C)	85	130	95	101	55	39	10
Sonalika(C)	84	128	88	92	53	36	9
HI 8713(d)(C)	87	130	92	88	57	41	9

Response of genotypes was recorded at multi-locations under natural conditions against rust diseases. Based on highest reactions and ACI, genotypes exhibiting resistant response were identified (table).

Table 3. Resistant genotypes to rust diseases under natural condition during 2019-20

All three rusts	TL 3012(t)
Yellow and brown rusts	TL 3013 (t), TL 3015 (t)
Black and brown rusts	DBW 173, DDK 1051 (dic.)
Yellow rust	PBW 760, HI 8802 (d), TL 3011 (t)
Brown rust	FLW 22, HI 8708 (d), HI 8751 (d), WAPD 1505, WAPD 1508, WAPD 1524, GW499, DBW 251, HI 1612, HD3271, UAS462 (d)
Black rust	AKAW 4901, DBW 93, HI 8805 (d), DDK 1052 (dic.), DDK 1053 (dic.), WAPD 1519, DWAP 1531, MACS 5049 (dic.)

d- T. durum, dic- T. dicoccum, t- Triticale

Utilization of genotypes

The utilization report indicated that 22 centres out of 32 utilised the NGSN entries except Sagar, Gwalior, Ranchi, Varanasi, Coochbehar, Kanpur, Bilaspur, Vijapur, Jabalpur and Wellington. The overall utilisation was 18.8% (Table 4) and all the entries except HPW 439 were utilized by either of the centres for different purposes. Bread wheat entries were utilised by 22 centres whereas durum entries were utilised by 12 centres. Dicoccum and triticale entries were utilised by 3 and 5 centres, respectively. The utilisation (%) was highest for bread wheat (20.7%) followed by triticale (13.6%), durum wheat (12.9%) and dicoccum (10.2%) entries. HS 627, PBW 777, DBW 173, HS 611, PBW 760, HS 645, FLW 16, AKAW 4901, DBW 110, DBW 187, PBW 778, DBW 179 and VL 3013 were the most utilized entries. Maximum utilization was done by Ludhiana (39) followed by Malan, Ayodhya, Junagadh (29 each), Durgapura (27), CSSRI, Karnal (24), Pune (22) Powarkheda and Udaipur (21 each) centres.

Table 4. Utilization of genotypes in NGSN during 2019-20

Category	**Entries**	**Utilization**	
		Frequency	**%**
T. aestivum			
Agronomic bases	27	118	19.9
Disease resistance	18	109	27.5
Genetic stocks	12	46	17.4
Elite lines	12	41	15.5
Sub total	*69*	*314*	*20.7*
T. durum			
Agronomic bases	6	15	11.4
Disease resistance	1	3	13.6
Genetic stock	3	5	7.6
Elite genotype	2	11	25.0
Sub total	*12*	*34*	*12.9*
Triticale			
Disease resistance	3	8	12.1
Elite genotypes	2	7	15.9
Sub total	5	15	13.6
T. dicoccum			
Disease resistance	4	9	10.2
Total	***90***	***372***	***18.8***

Table 5. Pooled mean values for yield and component traits in NGSN from 32 locations during 2019-20

Genotypes	Heading (days)	Maturity (Days)	Pl Ht. (cm)	Tillers/ meter	Grains/ spike	1000-gr. Wt. (g)	Sp length (cm)	Gr Yield (q/ha)
AKAW 4901	82	129	92	102	59	39	12	57
AKAW 4927	78	127	90	71	56	45	11	40
CG 1018	78	126	97	104	52	38	11	56
DBW 71	79	126	93	88	50	40	10	56
DBW 93	82	128	84	107	52	37	9	50
DBW 107	78	126	92	102	52	41	10	57
DBW 110	82	129	93	97	54	41	10	56
DBW 173	81	128	94	90	52	41	9	56
DBW 187	80	128	98	103	55	43	11	61
DBW 222	82	128	95	88	52	40	10	53
DBW 252	81	128	100	97	59	42	10	56
HD 3043	85	129	101	92	57	37	10	56
HD 3086	80	126	93	101	50	38	10	52
HD 3118	79	126	98	93	58	40	11	50
HD 3171	77	125	97	90	56	41	10	54
HD 3237	78	125	100	89	60	42	11	57
HD 3271	83	128	97	93	55	42	9	53
HI 1609	80	127	97	102	51	45	10	60
HI 8777	82	128	87	89	47	45	8	51
HI 1620	79	126	94	90	56	45	10	54
HI 1621	76	125	94	101	54	42	10	59
HI 1628	79	126	98	91	55	42	11	56
HI 8737(d)	82	129	88	81	48	46	8	51
HI 8802(d)	83	129	114	88	56	48	8	57
HI 8805(d)	82	128	104	85	52	46	8	48
K 1317	84	129	101	95	50	45	10	55
MACS 4058(d)	77	126	111	82	47	46	8	48
MP 1203	86	128	91	99	54	38	9	50
RAJ 3077	75	124	92	104	48	38	10	53
RAJ 3765	75	124	90	100	48	40	9	51
RAJ 4083	74	123	84	104	50	39	9	48
UAS 375	81	127	93	97	54	37	10	56
UAS 466(d)	85	129	88	98	54	39	8	53
HS 611	84	128	93	89	50	42	9	48
HS 627	81	127	98	95	57	40	10	57
HS 645	90	132	104	88	53	36	11	40
PBW 760	83	128	92	105	51	40	8	56
PBW 777	78	125	90	89	54	43	10	53
PBW 778	87	129	89	86	53	43	10	49
TL 3011(t)	75	127	94	85	53	42	9	51
TL3013(t)	74	125	99	93	54	40	9	50
TL 3014(t)	77	127	96	91	53	41	9	52
UAS 462(d)	86	131	89	94	51	42	8	51
VL 3014	82	129	93	88	52	40	10	49
DBW 251	84	128	91	94	57	37	10	53
HI 1612	85	128	96	102	54	39	10	55
HI 1619	85	129	99	97	56	43	11	54

HPW 439	87	131	95	92	54	38	10	43
KRL 370	80	126	91	87	56	41	10	53
PBW 780	86	130	89	93	58	39	10	50
DBW 179	84	128	99	89	58	40	10	56
HS 644	82	128	93	94	57	38	11	43
HS 646	87	131	96	92	57	40	10	50
VL 3013	75	125	90	104	53	41	9	48
WHC 1232	80	125	92	92	55	42	10	52
DDK 1051(dic.)	87	130	87	104	49	42	9	45
DDK 1052(dic.)	86	130	87	115	45	38	9	50
DDK 1053(dic.)	86	128	92	99	49	41	9	40
MACS 5049 (dic.)	89	131	93	100	49	39	9	42
AKAW 3717	85	130	103	108	50	36	9	45
DBW 129	83	129	104	100	54	40	11	53
DBW 150	82	129	93	92	56	36	10	41
DBW 246	82	128	88	97	55	40	10	54
DM 6	76	124	63	92	55	32	9	37
DM 7	78	124	59	85	52	34	9	37
DWAP 1108	72	122	94	82	49	48	11	45
FLW 10	78	124	88	97	53	37	9	49
FLW 22	76	122	87	95	57	36	10	47
FLW 16	79	127	83	104	51	43	9	47
HI 8708(d)	82	128	100	93	52	46	8	52
HI 8751(d)	82	127	102	91	49	49	7	48
HI 8765(d)	82	128	95	103	51	43	7	49
WH 730	78	125	98	106	52	40	11	47
WH 1127	87	129	95	107	54	42	10	56
WAPD 1505	76	124	72	105	50	41	10	48
WAPD 1508	79	125	64	91	51	44	10	49
WAPD 1516	87	130	64	91	54	37	10	43
WAPD 1519	87	131	65	97	55	37	10	46
WAPD 1524	87	131	67	94	55	39	10	45
DBW 221	78	125	82	100	56	37	9	56
DWAP 1530	85	129	93	102	53	37	10	51
DWAP 1531	73	124	96	82	58	42	11	42
GW 499	74	125	85	92	47	47	9	48
GW 1339(d)	77	125	82	99	50	46	8	59
MP 1338	78	125	87	89	55	42	10	53
MPO 1336(d)	81	127	102	81	54	47	7	52
RAJ 4079	75	124	85	104	46	41	9	51
RAJ 4238	77	124	84	107	46	39	9	49
TL 3012(t)	76	125	105	92	52	47	10	55
TL 3015 (t)	75	126	99	105	52	43	9	55
Sonalika (C)	84	128	88	92	53	36	9	46
HD 2967 (C)	85	130	95	101	55	39	10	51
HI 8713(d) (C)	87	130	92	88	57	41	9	50

National Durum Screening Nursery

The 6thNational Durum Screening Nursery (NDSN) comprising 41 lines including 13 lines selected from 50th IDYN, 14 lines from 50th IDSN and 14 lines contributed by Vijapur 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 an augmented design with two rows' plot of 2.5m length. Data sheets were received from all the centres.

Yield and Yield Contributing Traits: Promising entries for grain yield per plot, days to heading, plant height, tillers per 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.

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

Zones	Entry name	Best Check
Grain yield/plot (g)		
National (>715g)	50th IDSN 7013(794), 50th IDYN 706(756), 50th IDYN 721(750), 50th IDSN 7077(746), 50th IDYN 719(744), 50th IDSN 7135(730), 50th IDYN 741(728)	HI 8737 (715g)
NWPZ (>870 g)	50th IDSN 7113(998), 50th IDYN 722(954), 50th IDYN 721(933), 50th IDYN 706(931), 50th IDSN 7013(928), 50th IDSN 7037(892), 50th IDSN 7135(892), 50th IDSN 7049(871)	PDW 291 (823g)
CZ (> 780g)	50th IDSN 7013(806), 50th IDSN 7040(803), 50th IDYN 721(797), 50th IDSN 7135(789), 50th IDSN 7077(789), 50th IDYN 706(784), 50th IDYN 735(782), 50th IDYN 737(782)	PDW 291 (604g)
PZ (> 560g)	50th IDYN 721 (597), 50th IDYN 729 (587), 50th IDSN 7013 (579), 50th IDYN 719 (577), 50th IDYN 735 (573), 50th IDYN 706 (564), GW (D)2019-969 (560)	PDW 291 (547g)
Days to heading		
National (<75 days)	50th IDSN 7034(74), GW (D)2019-971(74), GW (D)2019-977(74), GW (D)2019-980(73), GW (D)2019-979(73), GW (D)2019-982(73), GW (D)2019-975(71), GW (D)2019-981(71)	HI 8737 (75 days)
NWPZ (<106 days)	GW (D) 2019-974 (105)	HI 8737 (110 days)
CZ (<67days)	GW (D) 2019-977(66), GW (D) 2019-982(66), GW (D) 2019-981(66), GW (D) 2019-975(63)	HI 8737 (70 days)
PZ (<59 days)	50th IDSN 7135(58),GW (D)2019-979(58), GW (D)2019-981(57), 50th IDSN 7034(57)	HI 8737 (59 days)
Plant height (cm)		
National (<84 cm)	GW (D) 2019-975 (83), 50th IDYN 706 (83), GW (D) 2019-981(81), GW (D) 2019-982 (81)	PDW 291 (84 cm)
NWPZ (<90 cm)	GW (D) 2019-982 (89), GW (D) 2019-981 (85)	PDW 291 (90 cm)
PZ (<76 cm)	GW (D) 2019-982 (74), 50th IDYN 706 (72)	HI 8737(76 cm)
No. of tillers/m (no.)		
NWPZ (>120)	50th IDSN 7034(137), 50th IDYN 735(135), 50th IDYN 722(127), 50th IDYN 712(123), 50th IDYN 706(121)	PDW 291 (119)
Grains per spike (no.)		
Across the zones (>60)	50th IDSN 7100(65), 50th IDYN 721(64), 50th IDYN 718(63), 50th IDYN 722(62),50th IDYN 740(62), 50th IDYN 719(61)	HI 8737 (53)
NWPZ > 60)	50th IDSN 7078(62), 50th IDYN 712(61)	HI 8498 (48)
CZ(> 60)	50th IDYN 721(64), 50th IDYN 722(64), 50th IDYN 719 (63), GW (D) 2019-973(63), 50th IDYN 718(61)	HI 8737 (48)
PZ (> 75)	50th IDSN 7100 (81), 50th IDYN 718 (80), 50th IDYN 744 (76)	HI 8737 (63)
1000 grains weight (g)		
National (> 50)	GW (D)2019-971(58.3),GW (D)2019-972(54.2),GW (D)2019-982(51.5)	HI 8498 (50g)
CZ (>60)	GW (D)2019-971(65.9), GW (D)2019-972(62.4)	HI 8498 (51g)
PZ (>50)	GW (D)2019-971(53.6), GW (D)2019-981(51.9), GW (D)2019-969(51.4)	HI 8498 (49 g)

Value of particular genotype is given in parenthesis

Disease Response: Disease response of lines against black rust was also recorded under field condition at Indore and Vijapur. 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 (TMR or less)	50th IDYN 719,50th IDYN 737,50th IDYN 741,50th IDYN 744,50th IDSN 7037, 50th IDSN 7135, 50th IDSN 7177, GW (D)2019-974,GW (D)2019-981
Black rust (5MR or less)	GW (D) 2019-969, GW (D)2019-971, GW (D)2019-976, GW (D) 2019-978

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. Vijapur centre utilized the highest number of entries for further utilization in the programme. The Indore, Udaipur and Niphad were the other centres with more than 9 Selections (Table 3). Entry number 50th IDSN 7013 and GW (D)2019-971 was selected by 5 centers, while entry numbers 50th IDYN 706, GW (D)2019-972, GW (D)2019-975 and GW (D)2019-981were selected by 4 centers.

Table 3. Centre-wise selections from NDSN

Centre	No. of selections	Traits Selected/Utilization
Udaipur	10	Hybridization and yield traits
Akola	4	Hybridization
Junagadh	6	Hybridization
Powarkheda	8	Hybridization
Vijapur	17	Selection for further use
Dharwad	7	Hybridization
Niphad	10	Germplasm enrichment
Indore	11	Hybridization

Segregating Stock Nursery (SSN)

The 23rd Segregating Stock Nursery (SSN) comprised 155 segregating populations (F_2/F_3), that were contributed by rice-wheat programme, warmer area programme, leaf blight programme, durum wheat programme, physiology programme of ICAR-IIWBR, Karnal and winter x spring programme in collaboration with ICAR-VPKAS, Almora during 2019-20. The main objective of SSN is to share promising combinations of segregating material to indented wheat breeding centres under All Indian Coordinated Research Project of Wheat and Barley. This nursery provides an opportunity for multilocation evaluation of diverse segregating combinations and making site specific selection for further advancement of selected progenies in prevailing agro-climatic conditions of the location.

During 2019-20, this nursery was supplied to 19 centers (Dhaulakuan, Khudwani, Malan in NHZ; Coochbehar, Ayodhya, Kalyani, Ranchi, Sabour, Shillongani, Varanasi in NEPZ; Bilaspur, Gwalior, Jabalpur, Kota, Sagar, Sanosara, Udaipur in CZ; and Akola & Parbhani in PZ) for evaluation and utilization purposes.
The feedback/ utilization report indicated that all the 155 entries were utilized by one or other centre for various traits (yield components, disease resistance, phenological) and a total 6305 plants were selected across locations. The utilization report indicated that the nursery could achieve an overall utilization of 46.77% across centres (Table 1).

Table 1: Utilization pattern of segregating populations in 23rd SSN

Programme	Number of combinations	Frequency of Utilization	Utilization (%)	# Plants Selected /
Rice-Wheat	27	230	47.4	1114 (17.7%)
Warmer Area	25	228	50. 7	1140 (18.1%)
Winter x Spring	52	410	42.7	2084 (33.1%)
Leaf Blight	25	211	46.9	943 (14.9%)
Durum Breeding	10	72	40.0	308 (4.9%)
Physiology	16	136	47.2	566 (8.9%)
Total	**155**	**1305**	**46.8**	**6305**

The maximum number of plant selection was carried out at Sabour centre (817) followed by Malan (661), Gwalior (653) and Coochbehar (574) centers (table). Maximum utilization percentage of crosses was reported by Sanosara (90.97%) followed by Coochbehar (85.06%), Gwalior (78.06%) and Bilaspur (74.19%) for yield attributes, followed by morphological & physiological characters, disease resistance and grain characters.

Table 2. Centre-wise utilization of segregating stocks in 23rd SSN

SN	Centre	No. of Plants Selected	Crosses Utilized	Utilization (%)	Selection Criteria
NHZ					
1	Malan	661	31	20.0	Lodging resistance
2	Dhaulakuan	46	25	16.1	Yield and disease resistance.
3	Khudwani	50	10	6.5	Early maturity, tillering and rust resistance,
NEPZ					
4	Shillongani	92	60	38.7	Early maturity, lodging resistance, medium height and long ear-head
5	Coochbehar	574	132	85.2	Yield, disease resistance and Morphological characters.
6	Kalyani	541	155	100.0	Yield and disease resistance.
7	Ayodhya	373	30	19.4	Yield, disease resistance, grain, Morphological and physiological characters.
8	Varanasi	371	109	70.3	Yield characters.
9	Sabour	817	153	98.7	Yield, disease resistance, morphological and physiological characters.
10	Ranchi	70	51	32.9	Yield, grain quality and physiological characters.
CZ					
11	Udaipur	35	14	9.0	Yield, grain ear head characters.
12	Sanosara	454	141	91.0	Yield, grain, morphological and physiological characters.
13	Jabalpur	541	27	17.40	Yield, disease resistance and physiological characters.
14	Sagar	150	30	19.3	Yield, disease resistance, grain, morphological and physiological characters.
15	Gwalior	653	121	78.0	Yield, disease resistance, morphological and physiological characters.
16	Kota	44	13	8.4	Yield and disease resistance.
17	Bilaspur	443	115	74.2	Yield, disease resistance, grain, morphological and physiological characters.
PZ					
18	Akola	35	7	4.5	Yield, morphological and physiological characters.
19	Parbhani	121	90	58.1	Yield, disease resistance, grain, morphological and physiological characters.
Total		**6305**		**44.6**	

Drought Tolerance Screening Nursery (DTSN)

The 32nd Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 5 checks (C306, MP3288, DBW110, K1317 and NI5439) was shared and conducted at 15 centres to identify wheat genotypes for drought tolerance. The nursery was sown in 5x5 simple lattice design (5 blocks X 5 plots) both under drought and irrigated conditions on the same date with plot size of 2 rows of 2.0 m length spaced 23 cm apart. For drought condition, one pre-sowing irrigation was given, while recommended irrigations were provided under irrigation treatment. Data from most of the centres was received but after looking at location-wise analysis, data from Pune, Parbhani, Vijapur, Sagar, Jabalpur and Ranchi centres was excluded from compilation.

Impact of drought stress

During crop season (2019-2020) varying amount of rainfall during vegetative as well as reproductive phases was received across centres that showed significant impact on grain setting and yield. Impact of drought stress was adjudged by taking into account Drought Sensitivity Index (DSI) calculated based on genotypes performance for grain yield under drought stress and irrigated conditions respectively. In order to analyse the impact of drought across the locations and pooled mean of genotypes was used to calculate DSI and percent yield reduction under drought condition over irrigated condition.

Genotypes with DSI less than 1 are considered as relatively drought tolerant. List of promising genotypes possessing DSI less than one were identified as drought tolerant are presented below (table).

Table 1. Drought tolerant wheat genotypes (DSI<1.0) identified from DTSN (2019-20).

SN	Genotype	DSI	% Yield Reduction	SN	Genotype	DSI	% Yield Reduction
1	DBW296	0.526	13.18	8	RWP-2019-31	0.851	21.32
2	QST1910	0.648	16.25	9	WYCYT-2018-13	0.931	23.34
3	TAW-186	0.682	17.08	10	TAW-185	0.935	23.43
4	DT-RIL-110	0.745	18.68	11	K1317 (C)	0.954	23.90
5	WYCYT-2018-20	0.795	19.91	12	DBW110 (C)	0.812	20.36
6	DT-RIL-1	0.834	20.90	13	C306 (C)	0.833	20.88
7	DBW74	0.839	21.01				

The results indicated that out of total 20 test entries, ten genotypes recorded less than one DSI (pooled basis) and also had lower percent reduction in yield and thus have shown promise to use as donor(s) for improving drought tolerance in wheat. The location-wise and pooled DSI along with mean grain yield (across locations) and percent reduction are also given (table) for making genotypic comparisons and further confirmation of results.

Table 2. Location-wise and pooled DSI, yield performance (DR&IR) and yield reduction in wheat genotypes under DTSN during 2019-2020

Genotypes	Drought Sensitivity Index (DSI)						Pooled			
	Dharwad	Bardoli	Indore	Junagadh	Kanpur	Hisar	DSI	Yield under drought	Yield under irrigated	%Yield Reduction
DBW296	0.73	0.84	-1.01	0.53	0.36	0.75	0.53	484.25	557.75	13.18
QST1910	-3.08	0.84	0.92	0.71	-0.32	1.26	0.65	504.17	602.00	16.25
TAW-186	-1.54	0.98	1.05	1.11	-1.96	0.79	0.68	460.75	555.67	17.08
DT-RIL-110	-0.10	-0.15	-1.44	0.86	2.27	0.95	0.75	430.92	529.92	18.68
WYCYT-2018-20	2.61	1.07	-1.02	1.19	-1.41	0.77	0.79	474.58	592.58	19.91
DT-RIL-1	1.07	0.92	0.43	0.72	0.66	0.98	0.83	443.67	560.92	20.90
DBW74	-0.07	0.11	0.67	0.44	3.75	0.78	0.84	456.42	577.83	21.01
RWP-2019-31	-2.58	1.15	0.82	0.48	3.76	0.84	0.85	505.75	642.83	21.32
WYCYT-2018-13	0.78	0.37	0.92	1.29	0.80	0.67	0.93	456.92	596.00	23.34
TAW-185	1.38	0.65	2.50	0.84	-1.96	1.25	0.94	538.83	703.75	23.43
RWP-2019-29	-0.92	1.23	0.95	1.40	1.05	0.92	1.01	437.58	585.33	25.24
HI1653	0.48	1.33	-2.20	1.27	1.05	1.63	1.08	441.75	605.08	26.99
QST1911	1.74	1.10	0.87	0.99	2.19	0.81	1.08	425.83	583.33	27.00
NIAW3624	1.74	0.83	2.51	1.02	0.28	0.99	1.14	477.67	667.75	28.47
HI1654	1.92	1.85	1.38	1.01	0.17	1.11	1.15	413.25	581.08	28.88
NIAW3643	-1.19	1.43	2.98	1.12	1.35	1.17	1.17	431.92	611.58	29.38
RWP-2019-30	1.29	1.00	0.93	1.25	1.21	1.04	1.18	488.25	693.17	29.56
DBW299	1.92	1.04	1.97	0.90	2.41	1.02	1.24	401.33	582.67	31.12
HI1655	1.65	1.11	3.18	1.13	1.83	0.84	1.32	381.92	569.83	32.98
RWP-2019-28	2.72	0.90	0.90	1.20	0.96	1.24	1.36	379.00	574.67	34.05
DBW110 (C)	**2.55**	**0.78**	**0.39**	**0.88**	**-0.37**	**0.82**	**0.81**	**469.42**	**589.42**	**20.36**
C306 (C)	**1.75**	**1.51**	**0.16**	**1.02**	**-1.74**	**0.61**	**0.83**	**397.58**	**502.50**	**20.88**
K1317 (C)	**0.98**	**0.71**	**1.52**	**0.83**	**2.22**	**0.75**	**0.95**	**509.50**	**669.50**	**23.90**
MP3288 (C)	**1.53**	**1.62**	**1.51**	**0.95**	**1.22**	**1.48**	**1.36**	**373.58**	**565.75**	**33.97**
NI5439 (C)	**2.41**	**1.21**	**1.36**	**1.25**	**2.07**	**1.36**	**1.44**	**385.42**	**604.00**	**36.19**

Table 3. Grain yield (g/plot) of wheat genotypes under drought & irrigated conditions and reduction (%) at different locations in DTSN (2019-20)

Genotype	Dharwad			Bardoli			Indore			Junagadh			Kanpur			Hisar		
	DR	IR	% R	DR	IR	% R	DR	IR	% R	DR	IR	% R	DR	IR	% R	DR	IR	% R
DBW296	220	263	16.3	320	420	23.8	636.5	572.5	-11.2	369	478.5	22.9	670	697.5	3.9	690	915	24.6
DBW299	127	222	42.7	310	440	29.6	420	537.5	21.9	318.5	521.5	38.9	532.5	725	26.6	700	1050	33.3
DBW74	307	302	-1.6	300	310	3.2	527.5	570	7.5	361.5	447.5	19.2	467.5	797.5	41.4	775	1040	25.5
DT-RIL-1	145.5	191	23.8	340	460	26.1	561	589	4.8	250.5	365.5	31.5	635	685	7.3	730	1075	32.1
DT-RIL-110	188	184	-2.1	240	230	-4.4	596	514	-16.0	336.5	536.5	37.3	525	700	25.0	700	1015	31.0
HI1653	174	195	10.7	230	370	37.8	662.5	532.5	-24.4	216.5	483	55.2	862.5	975	11.5	505	1075	53.0
HI1654	199.5	348	42.6	190	400	52.5	443	523.5	15.4	274.5	487.5	43.7	772.5	787.5	1.9	600	940	36.2
HI1655	263	416	36.7	240	350	31.4	486	752	35.4	257.5	506	49.1	355	445	20.2	690	950	27.4
NIAW3624	271.5	442.5	38.6	260	340	23.5	619.5	859.5	27.9	342.5	617	44.5	627.5	647.5	3.1	745	1100	32.3
NIAW3643	407	322	-26.4	220	370	40.5	435.5	651.5	33.2	331.5	643.5	48.5	572.5	672.5	14.9	625	1010	38.1
QST1910	383.5	227.5	-68.5	320	420	23.8	604.5	673	10.2	337	486.5	30.7	730	705	-3.6	650	1100	40.9
QST1911	133	217	38.7	220	320	31.3	712.5	788.5	9.6	432	757	42.9	487.5	642.5	24.1	570	775	26.5
RWP-2019-28	171.5	435	60.5	320	430	25.6	564	626.5	10.0	271	566.5	52.2	357.5	400	10.6	590	990	40.4
RWP-2019-29	317.5	263.5	-20.4	260	400	35.0	621	694	10.5	232	594.5	61.0	495	560	11.6	700	1000	30.0
RWP-2019-30	245.5	344	28.6	330	460	28.3	601	670.5	10.4	360.5	787	54.2	582.5	672.5	13.4	810	1225	33.9
RWP-2019-31	350.5	222.5	-57.5	330	490	32.7	733.5	807	9.1	373	472.5	21.1	447.5	765	41.5	800	1100	27.3
TAW-185	150.5	217.5	30.8	400	490	18.4	653.5	904.5	27.8	419	658	36.3	885	727.5	-21.7	725	1225	40.8
TAW-186	248.5	185	-34.3	260	360	27.8	653	739.5	11.7	315.5	612	48.5	562.5	462.5	-21.6	725	975	25.6
WYCYT-2018-13	300.5	364	17.4	340	380	10.5	498.5	555	10.2	312.5	714.5	56.3	490	537.5	8.8	800	1025	22.0
WYCYT-2018-20	142.5	341	58.2	300	430	30.2	712	639.5	-11.3	280.5	580	51.6	687.5	595	-15.6	725	970	25.3
C306 (C)	179	293	38.9	240	420	42.9	696.5	709	1.8	235	420.5	44.1	295	247.5	-19.2	740	925	20.0
DBW110 (C)	142.5	330	56.8	280	360	22.2	646	675.5	4.4	260.5	421	38.1	697.5	670	-4.1	790	1080	26.9
K1317 (C)	321.5	411.5	21.8	320	400	20.0	715	860.5	16.9	388	607.5	36.1	492.5	652.5	24.5	820	1085	24.4
MP3288 (C)	211.5	321	34.1	200	370	46.0	557	669	16.7	278	472	41.1	465	537.5	13.5	530	1025	48.3
NI5439(C)	157	339.5	53.7	230	350	34.3	635.5	749	15.2	292.5	640.5	54.3	497.5	645	22.9	500	900	44.4

Where; DR and IR indicate drought and irrigated condition respectively, while %R is percent reduction under drought condition.

Short Duration Screening Nursery (SDSN)

With an objective to identify early heading and maturing genotypes (short duration) along with high yield and tolerance to high temperature during grain filling period under late sown conditions, 33rd Short Duration Screening Nursery (SDSN) was constituted at ICAR-IIWBR Karnal and conducted at 20 cooperating centres (Karnal, Pantnagar, Hisar, Ranchi, Coochbehar, Shillongani, Kalyani, Ayodhya, Sabour, Jabalpur, Sanosara, Bilaspur, Powarkheda, Indore, Pune, Dharwad, Niphad, Khudwani, Malan and Bajaura) in the country. The nursery comprised of 30 genotypes (contributed by various co-operators) along with six checks (DBW 14, DBW 71, HD 2932, NIAW 34, Sonalika and WR 544) of shorter duration. Each entry was sown in a plot size of two rows of 2.5 m length spaced 18 cm apart. Data was recorded for germination percentage, tillering capacity, days to heading, days to maturity, grain number/ spike, 1000 grains weight (TGW) (g) and yield/plot (g). The data was pooled for each zone for all the traits to identify promising lines.

On the basis of two year of evaluation five entries DWAP1822, GW-2017-845, LBP-2017-2, AKAW5104, and GW 2017-841-5 (Table) have been found promising in different zones on the basis of early heading, maturity and grain yield and would be evaluated in the ensuing season. During first year of evaluation (2019-20 crop season) under SDSN nine entries namely; WSM138, M2-285, RWP 2019-32, RWP 2019-38, RWP 2019-40, RWP 2019-41, RWP 2019-42, DWAP1925 and DWAP1926 (Table) have been found better than the checks in different zones and would be tested again during crop season 2020-21.

Table 1. Performance of genotypes of SDSN based on two years of multi locational evaluation (2018-19 and 2019-20)

	Genotype	Grain Yield (g plot^{-1})		Heading Days		Maturity Days		Grains Spike^{-1}		TGW(g)	
Year		18-19	19-20	18-19	19-20	18-19	19-20	18-19	19-20	18-19	19-20
North Western Plains Zone											
1	DWAP1822	587	702	84	83	118	117	36	52	37	39
	DBW71(C)	483	608	80	82	118	113	32	47	39	36
	WR544(C)	383	476	77	86	116	116	36	47	34	31
North Eastern Plains Zone											
1	GW-2017-845	413	373	68	64	104	108	49	42	41	39
2	LBP-2017-2	373	325	67	67	107	109	47	44	36	36
	Sonalika (C)	247	303	67	69	106	111	43	46	38	39
	DBW14(C)	288	296	67	64	106	112	41	42	39	40
Central Zone											
1	GW-2017-845	572	585	59	59	113	109	41	48	44	42
2	AKAW5104	552	578	62	61	113	112	46	49	44	40
	Sonalika (C)	385	562	60	64	113	112	39	46	44	39
	WR544 (C)	438	505	56	63	110	112	44	46	43	39
Peninsular Zone											
1	GW 2017-841	368	541	55	53	87	93	35	66	39	43
2	GW 2017-845	326	505	50	52	84	92	30	68	40	43
	WR544 (C)	310	327	49	64	86	103	41	75	39	38
	HD2932(C)	310	471	56	64	89	101	42	76	37	40
Northern Hills Zone											
1	LBP 2017-2	329	307	125	117	170	179	51	41	36	37
	Sonalika (C)	279	221	129	118	174	181	41	36	36	29
	WR 544 (C)	262	232	127	117	163	181	44	40	34	34

Table 2. Promising early maturing and high yielding genotypes in different zones (2019-20)

SN	Genotype	Heading Days	Maturity Days	Grains Spike^{-1}	TGW(g)	Grain Yield (g plot^{-1})
NEPZ (Ranchi, Coochbehar, Shillongani, Kalyani, Ayodhya, Sabour)						
1	WSM-138	71	112	48	38	385
2	RWP 2019-41	71	112	38	38	370
Checks	DBW 71 (C)	71	111	43	38	362
	Sonalika (C)	69	111	46	39	303
PZ (Pune, Niphad, Dharwad)						
1	RWP 2019-32	54	93	75	43	619
2	RWP 2019-38	63	101	73	41	520
3	RWP 2019-41	60	101	74	38	499
4	DWAP-1926	53	94	63	46	490
5	M2-285	60	103	72	37	481
6	WSM-138	56	95	68	43	479
7	DWAP-1925	60	101	76	39	479
8	RWP 2019-42	63	102	67	40	477
Checks	Sonalika (C)	54	96	71	42	431
	HD2932(C)	64	101	76	40	471
NHZ (Khudwani, Malan and Bajaura)						
1	DWAP-1925	117	183	50	35	384
2	DWAP-1926	118	183	46	38	356
3	RWP 2019-40	119	185	51	38	350
4	RWP 2019-41	117	184	48	39	344
5	RWP 2019-32	119	180	42	37	311
Checks	Sonalika (C)	118	181	36	29	221
	WR 544 (C)	117	181	40	34	232
	DBW 14 (C)	119	182	41	37	305

Quality Component and Wheat Biofortification Nursery (QCWBN)

The QCWBN 2019-20 comprising 45 genotypes & seven check varieties (UP2672, MACS6222, DBW187, WB2, HD3086, GW322 and HS490) laid out in augmented block design was conducted at 11 locations. Seed samples for quality analysis were not received from Pantnagar, Niphad, & Varanasi. Dharwad was rejected by monitoring team. Therefore, Pantnagar, Niphad, Varanasi and Dharwad centres data was not included for data analysis and report writing.

North Western Plains Zone

None of the test entries found to be significantly superior to the best zonal check DBW187 (61.4q/ha) with respect to yield. For iron, BWL-8875 (42.3ppm) was ranked first followed by IND-549 (41.6ppm) and QBP-18-15 (41.4ppm) and were significantly superior to best check WB2 (38.3ppm). For zinc, GW-A-2019-957 (51.2ppm) was ranked first followed by QBI-19-09 (50.9ppm), QBP-18-15 (50.8ppm), GW-2018-936 (d) (48.8ppm), AR-15-15 (48.2ppm), UASDW 30561 (47.0ppm), QBI-19-14 (45.5ppm), GW-2018-934 (d) (45.2ppm) and were significantly superior to best check UP2672 (40.9ppm).

North Eastern Plains Zone

None of the test entries found to be significantly superior to the best zonal check DBW187 (34.5q/ha) with respect to yield. For iron, IND-549 (44.6ppm) was ranked first & was significantly superior to best check WB2 (38.3ppm). For zinc, 8thHPYT431 (49.1ppm) was ranked first followed by GW-2018-958 (43.6ppm), MP 3522 (41.7ppm), QBI-19-10 (41.6ppm), KA-1935 (41.6ppm), QBI-19-15 (41.5ppm), BWL-7827 (41.1ppm), GW-2018-934 (d) (40.3ppm), AR-15-15 (39.8ppm), HD3304 (39.4ppm) & were significantly superior to best check WB2 (33.1ppm).

Central Zone

GW2017-825 (74.1q/ha) was the top yielder followed by IND-549 (73.3q/ha), GW-2018-958 (69.4q/ha), KA-1935 (68.7q/ha), BWL-8884(66.7q/ha), MP3533 (65.9q/ha), GW-A-2019-957 (64.4q/ha), MP3522 (64.2q/ha), KA-1916 (64.0q/ha), 2ndHPYT429 (63.8q/ha), QBI-19-14 (63.6q/ha), BWL-8875 (62.9q/ha), BWL-5429 (62.6q/ha), BWL-8881 (62.6q/ha), HD3304 (62.4q/ha), QBI-19-11 (62.2q/ha), NIAW-3889 (62.0q/ha), GW-2018-934 (60.1q/ha), QBI-19-09 (59.8q/ha), GW-2018-936 (59.6q/ha), QBP-18-15 (59.5q/ha), QBI-19-10 (58.7 q/ha) & were significantly superior to best check GW322 (50.8q/ha). None of the test entries found to be significantly superior to the best check MACS6222 (38.6ppm) with respect to grain iron. For grain zinc, BWL-7829 (54.1ppm) was the top entry followed by IND-549 (52.8ppm) and QBP-18-14 (52.2ppm) and were significantly superior to the best check UP2672 (48.2ppm).

Utilization Report

Researchers at various centres have been selected QCWBN 2019-20 genotypes for different agro-morphological traits. Genotypes for high tillering (GW-A-2019-957, GW-2018-936 (d), HD3304), grain yield (IND-549, QBI-19-22, BWL- 8875, BWL- 8878), tiller, grain yield and medium height (KA-1916), agronomic base (KA-1917), earliness (GW-A-2019-958, QBI-19 -14, GW2017-825, NIAW-3889), grain yield and tillering capacity (IND-551, QBP-18-14, QBP-18-15, 2nd HPYT429, QBI-19 -11, MP 3522, 8th HPYT431, QBI-19 -09), thousand Kernel Weight (KA-1935), rust resistant (BWL-7827), crossing programme (QLD-116, KA1821, QLD-112).

Combined superiority for yield, iron and zinc

BWL- 8875 (70.5q/ha) was numerically superior to the best zonal check DBW 187 (61.4q/ha) for yield and also significantly superior to the best check WB2 (38.3 ppm) for grain iron in NWPZ. IND-549 (73.3 q/ha) was significantly superior to the best zonal check GW 322 (50.8q/ha) for yield and also significantly superior to the best check UP 2672 (48.2 ppm) for grain zinc in CZ. These two entries showed promise for nutritional factors (Fe/Zn) along with yield superiority over checks.

Table 1. QCWBN 2019-20 zonal and national yield

SN	Genotype	NWPZ	Rk	G	NEPZ	Rk	G	CZ	Rk	G	National	Rk	G
1	GW-A-2019-957	41.6	42	0	28.3	18	1	64.4	7	0	46.2	36	0
2	IND-549	54.7	19	0	34.7	11	1	73.3	2	1	57.2	6	1
3	BST-2019-01	27.3	45	0	17.3	32	0	40.0	42	0	29.5	44	0
4	KA-1916	51.6	25	0	33.4	14	1	64.0	9	0	52.5	16	0
5	KA-1917	44.9	39	0	26.3	23	1	56.1	28	0	45.4	39	0
6	BWL- 8880	51.1	26	0	32.2	17	1	51.5	35	0	48.5	27	0
7	UASDW 30561	47.2	34	0	10.0	44	0	55.1	32	0	44.2	42	0
8	BWL- 7829	48.0	32	0	23.8	27	0	53.4	33	0	46.1	37	0
9	QBI-19 - 22	47.2	35	0	26.3	23	1	56.2	26	0	46.8	34	0
10	BWL- 8875	70.5	1	1	41.2	3	1	62.9	12	0	64.1	1	1
11	BWL- 8878	70.2	2	1	34.4	12	1	57.3	23	0	61.4	2	1
12	QLD112	50.7	28	0	37.6	5	1	49.5	37	0	48.5	28	0
13	GW-A-2019-958	53.1	24	0	27.0	19	1	69.4	3	1	54.0	13	0
14	IND-551	69.4	3	1	12.6	39	0	37.2	44	0	52.1	18	0
15	BWL- 8884	58.1	11	0	23.2	28	0	66.7	5	0	55.6	7	0
16	QBI-19 - 14	40.8	43	0	21.1	30	0	63.6	11	0	44.5	40	0
17	BST-2019-02	46.1	37	0	16.5	33	0	43.2	41	0	41.1	43	0
18	QBP-18-14	67.2	5	1	22.6	29	0	57.0	25	0	57.9	5	1
19	QBP-18-15	55.9	17	0	36.2	9	1	59.5	21	0	54.1	12	0
20	BNSR-4	50.0	29	0	32.9	15	1	48.6	38	0	47.2	33	0
21	QBI-19 - 08	55.9	16	0	37.3	6	1	51.9	34	0	52.1	17	0
22	MP3533	41.9	41	0	45.2	1	1	65.9	6	0	49.2	26	0
23	BWL- 8879	58.7	10	0	37.1	7	1	55.8	29	0	54.8	10	0
24	GW2017-825	48.5	31	0	10.4	43	0	74.6	1	1	50.5	22	0
25	KA-1935	42.8	40	0	11.0	41	0	68.7	4	1	45.7	38	0
26	2nd HPYT429	68.8	4	1	20.0	31	0	63.8	10	0	60.4	3	1
27	QBI-19 - 11	54.6	20	0	34.3	13	1	62.2	16	0	53.9	15	0
28	GW-2018-936 (d)	45.6	38	0	36.1	10	1	59.6	20	0	48.2	30	0
29	HD3304	54.3	21	0	37.7	4	1	62.4	15	0	54.3	11	0
30	MP3520	56.9	15	0	36.3	8	1	44.2	40	0	50.4	23	0
31	GW-2018-934 (d)	47.5	33	0	13.4	36	0	60.1	18	0	46.3	35	0
32	BWL5429	54.0	22	0	9.6	45	0	62.6	13	0	50.1	24	0
33	QBI-19 - 10	57.5	14	0	13.6	35	0	58.7	22	0	51.6	19	0
34	AR-15-15	34.1	44	0	10.7	42	0	27.1	45	0	28.7	45	0
35	8th HPYT443	62.8	7	1	25.7	25	1	55.4	30	0	55.4	8	0
36	BWL-8035	53.8	23	0	26.5	22	1	48.4	39	0	48.4	29	0
37	NIAW-3889	63.1	6	1	43.0	2	1	62.0	17	0	59.9	4	1
38	BWL- 8881	49.9	30	0	25.1	26	0	62.6	14	0	50.0	25	0
39	MP3522	50.8	27	0	26.5	21	1	64.2	8	0	51.2	20	0
40	QBI-19 - 15	46.5	36	0	13.0	37	0	55.1	31	0	44.2	41	0
41	BWL- 7827	55.4	18	0	13.0	37	0	50.8	36	0	48.0	31	0
42	8th HPYT431	57.8	12	0	11.9	40	0	57.1	24	0	51.0	21	0
43	QLD-116	60.6	8	1	32.8	16	1	56.2	27	0	55.4	9	0
44	KA1821	60.4	9	1	15.3	34	0	38.3	43	0	47.7	32	0
45	QBI-19 - 09	57.7	13	0	26.9	20	1	59.8	19	0	53.9	14	0
46	**UP2672(C)**	**48.4**			**17.6**			**51.0**			**44.7**		
47	**MACS6222(C)**	**51.3**			**26.1**			**67.9**			**52.5**		
48	**DBW187(C)**	**61.4**			**34.5**			**60.2**			**57.2**		
49	**WB2(C)**	**54.8**			**30.0**			**63.1**			**53.6**		
50	**HD3086(C)**	**60.9**			**28.6**			**49.1**			**52.9**		
51	**GW322(C)**	**53.1**			**28.6**			**50.8**			**48.9**		
52	**HS490(C)**	**43.5**			**25.1**			**48.6**			**42.3**		
CD at 10%		**11.0**			**19.6**			**6.9**			**7.6**		

NWPZ: Grain yield data from Delhi, Karnal, Hisar and Ludhiana centers; NEPZ: Grain yield data from Kanpur centre only; CZ: Grain yield data from Vijapur and Indore centres only.

Table 2. QCWBN 2019-20 zonal and national grain iron concentration

SN	Genotype	NWPZ	Rk	G	NEPZ	Rk	G	CZ	Rk	G	National	Rk	G
1	GW-A-2019-957	37.7	15	0	36.7	20	0	37.0	18	0	37.4	14	0
2	IND-549	41.6	2	1	44.6	1	1	41.0	1	1	41.9	1	1
3	BST-2019-01	32.0	45	0	32.8	35	0	37.1	16	0	33.5	42	0
4	KA-1916	37.7	16	0	35.8	23	0	37.5	14	0	37.4	15	0
5	KA-1917	38.9	8	0	36.9	18	0	36.5	22	0	38.0	9	0
6	BWL- 8880	37.1	23	0	39.8	4	1	36.9	20	0	37.4	13	0
7	UASDW 30561	38.9	8	0	33.7	34	0	36.0	27	0	37.3	16	0
8	BWL- 7829	37.3	17	0	35.9	22	0	34.8	33	0	36.4	25	0
9	QBI-19 - 22	34.0	40	0	31.7	43	0	32.4	44	0	33.2	44	0
10	BWL- 8875	42.3	1	1	32.6	37	0	35.7	29	0	39.0	5	0
11	BWL- 8878	37.1	22	0	32.1	39	0	37.6	12	0	36.6	24	0
12	QLD112	36.6	27	0	32.1	39	0	39.5	4	1	36.8	22	0
13	GW-A-2019-958	35.2	34	0	32.5	38	0	37.6	12	0	35.5	32	0
14	IND-551	35.9	33	0	27.6	45	0	36.5	23	0	34.9	36	0
15	BWL- 8884	36.6	28	0	34.8	30	0	35.8	28	0	36.1	28	0
16	QBI-19 - 14	34.0	39	0	32.0	41	0	35.2	30	0	34.1	40	0
17	BST-2019-02	32.6	42	0	34.1	33	0	36.1	26	0	33.8	41	0
18	QBP-18-14	34.6	37	0	38.2	11	0	36.1	25	0	35.5	32	0
19	QBP-18-15	41.4	3	1	39.4	7	1	40.5	3	1	40.9	2	1
20	BNSR-4	39.1	7	0	36.9	18	0	38.3	10	1	38.6	7	0
21	QBI-19 - 08	36.7	25	0	31.9	42	0	35.1	31	0	35.6	31	0
22	MP3533	40.4	5	1	37.0	17	0	40.6	2	1	40.0	3	1
23	BWL- 8879	38.4	10	0	38.5	10	0	36.3	24	0	37.8	11	0
24	GW2017-825	38.1	13	0	35.8	23	0	38.5	8	1	37.9	10	0
25	KA-1935	37.3	20	0	35.5	25	0	37.4	15	0	37.0	18	0
26	2nd HPYT429	36.3	31	0	37.9	13	0	37.8	11	1	36.9	19	0
27	QBI-19 - 11	37.3	19	0	34.9	29	0	39.0	5	1	37.4	12	0
28	GW-2018-936 (d)	38.2	12	0	35.4	26	0	34.6	34	0	36.8	23	0
29	HD3304	36.8	24	0	39.4	6	1	36.8	21	0	37.2	17	0
30	MP3520	34.1	38	0	37.4	14	0	32.9	42	0	34.2	39	0
31	GW-2018-934 (d)	36.6	26	0	37.0	16	0	34.5	36	0	36.1	29	0
32	BWL5429	36.0	32	0	35.9	21	0	33.8	41	0	35.3	34	0
33	QBI-19 - 10	38.4	11	0	34.8	31	0	35.0	32	0	36.9	20	0
34	AR-15-15	37.2	21	0	34.8	31	0	31.7	45	0	35.3	35	0
35	8th HPYT443	40.4	4	1	32.7	36	0	38.4	9	1	38.7	6	0
36	BWL-8035	37.3	18	0	39.9	3	1	34.4	37	0	36.9	21	0
37	NIAW-3889	34.9	35	0	35.1	27	0	34.2	39	0	34.7	37	0
38	BWL- 8881	36.5	29	0	38.7	9	0	34.6	35	0	36.3	27	0
39	MP3522	33.5	41	0	40.7	2	1	34.0	40	0	34.7	38	0
40	QBI-19 - 15	32.2	43	0	31.4	44	0	32.8	43	0	32.3	45	0
41	BWL- 7827	36.3	30	0	34.9	28	0	36.9	19	0	36.3	26	0
42	8th HPYT431	34.8	36	0	38.2	11	0	37.1	17	0	35.9	30	0
43	QLD-116	37.9	14	0	39.0	8	1	38.8	7	1	38.3	8	0
44	KA1821	32.1	44	0	37.1	15	0	34.4	38	0	33.5	43	0
45	QBI-19 - 09	40.1	6	1	39.4	5	1	38.9	6	1	39.7	4	0
46	**UP2672(C)**	**36.3**			**34.2**			**35.1**			**35.6**		
47	**MACS6222(C)**	**36.5**			**34.8**			**38.6**			**36.8**		
48	**DBW187(C)**	**36.5**			**35.5**			**35.1**			**36.0**		
49	**WB2(C)**	**38.3**			**38.3**			**36.7**			**37.8**		
50	**HD3086(C)**	**37.3**			**37.4**			**35.7**			**36.8**		
51	**GW322(C)**	**34.7**			**36.3**			**32.8**			**34.3**		
52	**HS490(C)**	**34.4**			**34.3**			**32.5**			**33.8**		
CD at 10%		**2.8**			**5.6**			**3.3**			**2.1**		

NWPZ: Grain iron data from Delhi, Karnal, Hisar and Ludhiana centers; NEPZ: Grain iron data from Kanpur centre only; CZ: Grain iron data from Vijapur and Indore centres only.

Table 3. QCWBN 2019-20 zonal and national grain zinc concentration

SN	Genotype	NWPZ	Rk	G	NEPZ	Rk	G	CZ	Rk	G	National	Rk	G
1	GW-A-2019-957	51.2	1	1	28.2	43	0	48.1	23	0	47	5	1
2	IND-549	42.0	21	0	35.7	18	0	52.8	2	1	44.2	16	0
3	BST-2019-01	38.4	34	0	35.0	20	0	46.8	31	0	40.3	30	0
4	KA-1916	41.7	22	0	36.8	16	0	48.7	19	0	43	22	0
5	KA-1917	44.0	12	0	34.2	23	0	51.6	4	1	44.7	13	0
6	BWL- 8880	42.3	20	0	33.4	26	0	50.7	10	1	43.4	21	0
7	UASDW 30561	47.0	6	1	33.2	29	0	48.0	24	0	45.3	8	0
8	BWL- 7829	43.4	16	0	34.0	24	0	54.1	1	1	45.1	9	0
9	QBI-19 - 22	42.4	19	0	27.5	44	0	44.5	36	0	40.9	29	0
10	BWL- 8875	39.3	30	0	31.1	37	0	42.0	42	0	38.9	39	0
11	BWL- 8878	44.9	9	0	37.5	13	0	48.6	21	0	44.9	11	0
12	QLD112	39.9	28	0	37.5	13	0	41.6	43	0	40	31	0
13	GW-A-2019-958	40.9	26	0	43.6	2	1	49.6	16	0	43.8	19	0
14	IND-551	37.0	39	0	34.5	22	0	48.8	18	0	40	32	0
15	BWL- 8884	39.8	29	0	31.9	34	0	43.6	39	0	39.8	34	0
16	QBI-19 - 14	45.5	7	0	31.9	34	0	46.9	29	0	43.9	18	0
17	BST-2019-02	37.2	38	0	28.9	42	0	46.9	30	0	38.8	41	0
18	QBP-18-14	42.7	18	0	38.7	11	0	52.2	3	1	44.9	12	0
19	QBP-18-15	50.8	3	1	36.1	17	0	50.2	13	0	48.5	2	1
20	BNSR-4	44.6	10	0	33.0	32	0	50.8	9	1	44.7	14	0
21	QBI-19 - 08	38.0	36	0	30.8	38	0	46.2	33	0	39.3	37	0
22	MP3533	40.2	27	0	33.4	27	0	49.3	17	0	41.8	24	0
23	BWL- 8879	38.4	33	0	33.3	28	0	46.4	32	0	39.9	33	0
24	GW2017-825	41.1	24	0	26.6	45	0	50.4	12	0	41.7	26	0
25	KA-1935	41.4	23	0	41.6	5	0	44.1	38	0	42.2	23	0
26	2nd HPYT429	37.5	37	0	31.7	36	0	47.2	27	0	39.4	35	0
27	QBI-19 - 11	43.6	15	0	30.0	39	0	51.1	7	1	43.8	20	0
28	GW-2018-936 (d)	48.8	4	1	37.6	12	0	48.7	20	0	47.1	4	1
29	HD3304	43.8	13	0	39.4	10	0	47.8	25	0	44.3	15	0
30	MP3520	34.1	43	0	34.6	21	0	41.0	45	0	36.2	43	0
31	GW-2018-934 (d)	45.2	8	0	40.3	8	0	50.0	14	0	45.9	6	0
32	BWL5429	38.9	31	0	37.1	15	0	47.0	28	0	41	28	0
33	QBI-19 - 10	42.8	17	0	41.6	4	0	51.1	6	1	45	10	0
34	AR-15-15	48.2	5	1	39.8	9	0	49.7	15	0	47.4	3	1
35	8th HPYT443	41.0	25	0	29.3	40	0	47.8	25	0	41.3	27	0
36	BWL-8035	43.8	14	0	32.2	33	0	50.7	11	1	44.1	17	0
37	NIAW-3889	34.8	42	0	33.0	31	0	43.5	40	0	37	42	0
38	BWL- 8881	38.5	32	0	33.1	30	0	44.2	37	0	39.3	36	0
39	MP3522	31.7	44	0	41.7	3	0	41.1	44	0	35.8	44	0
40	QBI-19 - 15	34.9	41	0	41.5	6	0	45.3	35	0	38.8	40	0
41	BWL- 7827	44.1	11	0	41.1	7	0	50.8	8	1	45.6	7	0
42	8th HPYT431	36.7	40	0	49.1	1	1	48.1	22	0	41.7	25	0
43	QLD-116	38.2	35	0	29.3	41	0	45.6	34	0	39	38	0
44	KA1821	31.2	45	0	35.6	19	0	43.1	41	0	35.2	45	0
45	QBI-19 - 09	50.9	2	1	34.0	25	0	51.4	5	1	48.6	1	1
46	**UP2672(C)**	**40.9**			**32.3**			**48.2**			**41.7**		
47	**MACS6222(C)**	**39.6**			**32.3**			**44.9**			**40.1**		
48	**DBW187(C)**	**33.7**			**26.4**			**40.0**			**34.4**		
49	**WB2(C)**	**37.8**			**33.1**			**44.4**			**39.0**		
50	**HD3086(C)**	**35.3**			**29.6**			**42.0**			**36.4**		
51	**GW322(C)**	**38.2**			**31.9**			**45.9**			**39.5**		
52	**HS490(C)**	**37.6**			**31.3**			**43.1**			**38.3**		
CD at 10%		**4.3**			**5.7**			**3.7**			**2.4**		

NWPZ: Grain zinc data from Delhi, Karnal, Hisar and Ludhiana centers; NEPZ: Grain zinc data from Kanpur centre only; CZ: Grain zinc data from Vijapur and Indore centres only.

Table 4. QCWBN 2019-20 rust data

SN	Genotype	NWPZ		CZ	
		Yr (HS)	Br (HS)	Bl (HS)	Br (HS)
1	GW-A-2019-957	10S	30S	20R	tMR
2	IND-549	20S	10S	20RMR	5MS
3	BST-2019-01	10S	5S	20RMR	10RMR
4	KA-1916	30S	20S	40MSS	tMS
5	KA-1917	10S	20S	100S	40S
6	BWL- 8880	20S	10S	20MS	5S
7	UASDW 30561	10S	10S	10R	10R
8	BWL- 7829	10S	20S	20MR	tR
9	QBI-19 - 22	5S	10S	10S	tR
10	BWL- 8875	5S	10S	40MRMS	-
11	BWL- 8878	-	5S	10S	5MS
12	QLD112	10S	5S	30MSS	5S
13	GW-A-2019-958	20S	10S	20R	tR
14	IND-551	-	5S	20X	tR
15	BWL- 8884	20S	10S	10MR	5MS
16	QBI-19 - 14	5S	10S	30X	tR
17	BST-2019-02	5S	20S	20MS	tMR
18	QBP-18-14	5S	5S	30S	5S
19	QBP-18-15	5S	10S	40MSS	5S
20	BNSR-4	10S	10S	60S	5S
21	QBI-19 - 08	-	5S	40S	tMS
22	MP3533	10S	10S	10R	tR
23	BWL- 8879	-	5S	40S	5MS
24	GW2017-825	5S	10S	20MR	-
25	KA-1935	-	5S	10MR	tMR
26	2nd HPYT429	-	5S	20MS	5MS
27	QBI-19 - 11	10S	5S	10S	tS
28	GW-2018-936 (d)	20S	10S	10MRMS	-
29	HD3304	-	5S	20S	5MS
30	MP3520	10S	10S	40S	5S
31	GW-2018-934 (d)	-	5S	TR	-
32	BWL5429	10S	-	40RMR	-
33	QBI-19 - 10	tS	tS	20MRMS	tR
34	AR-15-15	5S	5S	100S	30S
35	8th HPYT443	10S	-	60S	5S
36	BWL-8035	-	tS	40S	tS
37	NIAW-3889	5S	-	30RMR	-
38	BWL- 8881	5S	-	20R	tMR
39	MP3522	5S	-	40S	tR
40	QBI-19 - 15	5S	5S	40S	-
41	BWL- 7827	tS	-	40S	-
42	8th HPYT431	5S	5S	30MRMS	tMR
43	QLD-116	-	5S	5MR	-
44	KA1821	tS	-	60S	5MS
45	QBI-19 - 09	tS	-	5R	-
46	UP2672(C)	10S	10S	40S	40S
47	MACS6222(C)	20S	10S	30MR	5S
48	DBW187(C)	10S	10S	40S	10MS
49	WB2(C)	20S	20S	30X	5S
50	HD3086(C)	30S	10S	80S	5S
51	GW322(C)	10S	10S	40S	tS
52	HS490(C)	5S	10S	60S	10MR

Table 5. QCWBN 2019-20 Individual Station Rust Data

SN	Genotype	Yellow Rust (NWPZ)		Brown Rust (NWPZ)		Black Rust (CZ)		Brown Rust (CZ)	
		Hisar	Ludhiana	Hisar	Ludhiana	Vijapur	Indore	Vijapur	Indore
1	GW-A-2019-957	10S	5S	30S	-	5R	20R	tMR	-
2	IND-549	20S	-	10S	-	10R	20RMR	tR	5MS
3	BST-2019-01	10S	-	5S	-	5MR	20RMR	tR	10RMR
4	KA-1916	30S	5S	20S	-	5S	40MSS	tMS	-
5	KA-1917	10S	-	20S	10S	80S	100S	tMR	40S
6	BWL- 8880	20S	-	10S	-	20MS	30RMR	5MS	5S
7	UASDW 30561	10S	-	10S	-	10R	10R	10R	-
8	BWL- 7829	10S	-	20S	-	20MR	20R	tR	-
9	QBI-19 - 22	5S	5S	10S	5S	10S	20RMR	tR	-
10	BWL- 8875	5S	5S	10S	-	10R	40MRMS	-	-
11	BWL- 8878	-	-	5S	-	10S	30MRMS	tR	5MS
12	QLD112	10S	-	5S	-	20S	30MSS	tR	5S
13	GW-A-2019-958	20S	5S	10S	5S	5R	20R	tR	-
14	IND-551	-	-	5S	-	10S	20X	tR	-
15	BWL- 8884	20S	-	10S	-	10MR	10R	tR	5MS
16	QBI-19 - 14	5S	5S	10S	-	5S	30X	tR	-
17	BST-2019-02	-	5S	5S	20S	20MS	40RMR	tMR	-
18	QBP-18-14	5S	-	5S	-	20S	30S	5S	-
19	QBP-18-15	-	5S	10S	5S	20S	40MSS	tMR	5S
20	BNSR-4	10S	-	10S	5S	20S	60S	tR	5S
21	QBI-19 - 08	-	-	5S	-	10S	40S	tMS	-
22	MP3533	10S	-	10S	5S	10R	20RMR	tR	-
23	BWL- 8879	-	-	5S	-	20S	40S	tMR	5MS
24	GW2017-825	-	5S	10S	5S	5R	20RMR	-	
25	KA-1935	-	-	5S	-	10MR	1 RMR	tMR	
26	2nd HPYT429	-	-	5S	5S	20MS	30MRMS	tR	5 S
27	QBI-19 - 11	10S	5S	5S	5S	10S	10X	tMS	tS
28	GW-2018-936 (d)	20S	-	10S	-	-	10MRMS	0	-
29	HD3304	-	-	5S	-	10S	20S	tMR	5MS
30	MP3520	10S	-	10S	-	40S	40S	tR	5S
31	GW-2018-934 (d)	-	-	5S	-	tR	-	-	-
32	BWL5429	10S	-	-	-	10R	40RMR	-	-
33	QBI-19 - 10	tS	-	tS	-	5R	20MRMS	tR	-
34	AR-15-15	5S	-	5S	-	20S	100S	tMR	30S
35	8th HPYT443	10S	-	-	-	10S	60S	tMS	5S
36	BWL-8035	-	-	tS	-	40MR	40X	tR	tS
37	NIAW-3889	5S	-	-	-	5R	30RMR	-	-
38	BWL- 8881	5S	-	-	-	10R	20R	tMR	-
39	MP3522	5S	-	-	-	10MR	40S	tR	-
40	QBI-19 - 15	5S	-	-	5S	tS	40S	-	-
41	BWL- 7827	tS	-	-	-	tS	40S	-	-
42	8th HPYT431	5S	-	5S	-	10MR	30MRMS	tMR	-
43	QLD-116	-	-	5S	-	-	5MR	-	-
44	KA1821	tS	-	-	-	20S	60S	5MS	tS
45	QBI-19 - 09	tS	-	-	-	TMR	5R	-	-
46	UP2672(C)	10S	5S	10S	5S	20S	40S	tMS	40S
47	MACS6222(C)	20S	-	10S	-	10MR	30RMR	5R	5S
48	DBW187(C)	10S	5S	10S	5S	40MS	40S	10MS	tS
49	WB2(C)	20S	10S	20S	10S	20MR	30X	tMR	5S
50	HD3086(C)	30S	-	10S	5S	40S	80S	tMR	5S
51	GW322(C)	10S	5S	10S	10S	40S	40S	tMR	tS
52	HS490(C)	5S	-	10S	-	20MS	60S	10MR	tS

Salinity-Alkalinity Tolerance Screening Nursery 2019-20

In India Salinity is one of the major edaphic problem that hinders the wheat productivity significantly in India. About 6.73 million hectares of the cropped land is affected due salinity and sodicity stresses. Major salt affected areas fall in the plains of UP (1.3 mha), Gujarat (1.2 mha), West Bengal (0.85 mha), Rajasthan (0.73 mha), Punjab (0.7 mha) and Haryana (0.53 mha). A major portion of these salt affected soils is cultivated by small and marginal farmers with limited resources. Therefore, development of varieties with high yield having salt tolerance and rust resistance would significantly enhance the productivity of wheat in such areas.

With an aim to identify suitable wheat lines that can perform better under saline and alkaline soils the Salinity-Alkalinity Tolerance Screening Nursery for crop season 2019-20 was constituted at ICAR-Indian Institute of Wheat and Barley Research Karnal. This nursery was proposed at 12 locations in 6 states *viz*., Haryana (CSSRI-Karnal, CSSRI Nain, IIWBR-Hisar,), Uttar Pradesh (Ayodhya, Dalipnagar, Lucknow, Pratapgarh, Amethi), Gujarat (CSSRI-Bharuch) Rajasthan (Pali), Punjab (Muktsar) and Karnataka (Ugar).

The nursery comprising 28 test entries obtained from five wheat breeding centres of the country was evaluated along with two checks viz., KRL19 and KRL210 in an augmented block design having 2 blocks with plots of 5m length having 3 rows spaced 20cm apart. Each block comprised 16 treatments (14 test entries + two checks) interspersed within each block). The data from all locations was considered for reporting

Out of 28 test entries contributed by the five cooperating centres, eight entries were found to be promising on the basis of mean grain yield along with desired levels of resistance to all the three rusts (stem, leaf and yellow rust) as evident from results of IPPSN 2019-20. These 8 entries viz., RWP2019-25, RWP2019-24, DWAP1924, DWAP1923, SANSR-7, K1805, NEPZ18-25 and LBP18-23 are promoted for further testing in Special trial on Salinity-Alkalinity Trial during 2020-21.

Promising entries of Salinity Alkalinity Tolerance Screening Nursery-2019-20

Entry	Yield (g/plot)	Stem Rust		Leaf Rust (South)		Leaf Rust (North)		Yellow Rust	
		ACI	HS	ACI	HS	ACI	HS	ACI	HS
RWP-2019-25	1133	4.1	20MS	0.4	5MR	1.0	5MS	3.1	10S
RWP-2019-24	1105	3.8	10S	0.1	tMR	4.8	10S	7.5	20S
DWAP-1924	1095	13.0	40S	0.9	5S	0.0	0	16.4	40S
DWAP-1923	1085	3.5	20MS	3.4	20MS	3.0	10S	6.7	10S
SANSR-7	1055	6.0	20S	1.8	10S	16.0	40S	20.0	40S
K-1805	1040	4.3	10S	8.4	30S	4.2	10S	14.8	40S
NEPZ-18-25	1040	4.9	20S	0.1	tR	3.2	10S	14.3	40S
LBP-18-23	1036	8.0	20S	18.0	40S	9.0	20S	18.4	60S
CD	39.6								
KRL210 (C)	996	33.0	60S	16.0	40S	6.0	10S	28.8	80S
KRL 19 (C)	936	17.3	40S	32.0	80S	9.0	20S	45.0	80S

Appendix - I

Trials not reported

1901-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ			NEPZ		
			J&K			Assam		
			Jammu			Shillongani		
			Yield	RK	G	Yield	RK	G
1	RAJ4548	N-101	42.0	16	0	15.5	28	0
2	UP3052	N-102	34.4	29	0	13.8	35	0
3	HD3348	N-103	41.0	18	0	38.3	1	1
4	DBW334	N-104	38.2	21	0	14.6	31	0
5	UP3053	N-105	58.3	4	0	20.4	20	0
6	HUW 839	N-106	47.2	12	0	24.9	14	0
7	K1901	N-107	33.7	32	0	14.8	30	0
8	HD3352	N-108	64.9	1	1	27.5	10	0
9	KRL1810	N-109	42.7	14	0	13.5	36	0
10	DBW309	N-110	34.0	31	0	32.5	3	0
11	PBW828	N-111	37.2	23	0	23.1	17	0
12	HD3349	N-113	36.8	24	0	24.9	13	0
13	PBW841	N-114	55.2	9	0	30.4	9	0
14	PBW829	N-116	55.9	8	0	25.0	12	0
15	DBW308	N-117	31.6	35	0	31.9	6	0
16	AAI-W29	N-118	29.5	36	0	23.6	16	0
17	HD3353	N-119	45.5	13	0	14.2	33	0
18	DBW306	N-120	34.4	28	0	19.6	21	0
19	WH1284	N-121	36.1	26	0	31.2	8	0
20	UP3051	N-122	35.1	27	0	21.3	19	0
21	WH1272	N-123	48.3	11	0	14.3	32	0
22	HD3350	N-124	38.9	20	0	17.0	25	0
23	RAJ4547	N-126	33.7	32	0	19.5	23	0
24	UP3054	N-127	33.3	34	0	33.5	2	0
25	NW7079	N-128	34.0	30	0	18.6	24	0
26	PBW827	N-129	58.7	3	0	24.5	15	0
27	HD3351	N-130	56.3	6	0	21.6	18	0
28	PBW826	N-132	59.0	2	0	31.6	7	0
29	RAJ4546	N-133	36.5	25	0	32.5	4	0
30	WH1273	N-134	42.0	17	0	15.7	27	0
31	DBW307	N-135	42.7	14	0	15.3	29	0
32	WH1271	N-136	39.6	19	0	26.0	11	0
33	K1006 (C)	N-112	53.8	10	0	32.4	5	0
34	HD2967 (C)	N-115	56.3	7	0	13.9	34	0
35	HD3086 (C)	N-125	37.8	22	0	19.6	21	0
36	DBW187 (C)	N-131	56.6	5	0	16.6	26	0
G.M.			43.4			22.6		
S.E.(M)			2.122			1.694		
C.D. (10%)			5.1			4.0		
C.V.			6.9			10.6		
D.O.S.(dd.mm.yy)			13.11.19			15.11.19		

Trials not reported (02) = Jammu (LSM), Shillongani (LSM)

1902-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NWPZ			NEPZ								
			J&K			W.B.						Assam		
			Jammu			Kalyani			Manikchak			Shillongani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1274	N-201	53.7	5	0	35.5	26	0	37.7	13	0	20.6	19	0
2	JKW275	N-202	43.9	19	0	39.4	16	0	34.5	18	0	14.3	31	0
3	K1905	N-203	49.3	9	0	35.7	25	0	38.1	12	0	21.6	17	0
4	UP3055	N-204	51.0	6	0	37.0	21	0	42.3	5	0	22.0	15	0
5	NW7093	N-205	42.3	21	0	34.2	30	0	31.3	26	0	10.6	35	0
6	RAJ4549	N-206	31.8	29	0	34.2	31	0	31.2	28	0	17.5	26	0
7	K1903	N-207	31.7	30	0	43.3	6	1	37.7	13	0	28.8	7	0
8	PBW830	N-208	30.8	32	0	42.2	8	1	35.1	17	0	22.4	14	0
9	PBW831	N-209	58.6	2	1	39.5	14	0	29.6	29	0	36.6	1	1
10	NW7094	N-210	37.6	25	0	42.3	7	1	31.9	25	0	17.4	27	0
11	UP3057	N-211	50.0	8	0	33.2	33	0	33.3	22	0	22.0	15	0
12	WH1283	N-212	33.0	27	0	38.8	18	0	37.1	16	0	18.2	24	0
13	RAJ4550	N-213	30.9	31	0	31.6	36	0	24.5	36	0	18.3	23	0
14	DBW313	N-214	48.8	12	0	41.1	10	0	49.2	1	1	25.7	10	0
15	BRW3877	N-215	36.8	26	0	47.8	1	1	44.2	4	0	29.4	6	0
16	DBW312	N-216	29.1	35	0	44.6	3	1	45.1	2	1	31.2	3	0
17	UP3056	N-217	47.0	14	0	34.1	32	0	28.2	33	0	19.3	20	0
18	NW7088	N-218	50.8	7	0	34.7	28	0	28.9	31	0	12.9	33	0
19	HD3355	N-219	40.7	23	0	32.3	35	0	29.6	30	0	16.8	28	0
20	HUW841	N-220	45.9	16	0	44.5	4	1	31.2	27	0	15.4	30	0
21	K1904	N-221	37.7	24	0	37.2	20	0	26.7	34	0	17.5	25	0
22	HD3356	N-222	47.8	13	0	33.1	34	0	33.1	23	0	13.7	32	0
23	AAI-W22	N-223	44.7	17	0	34.8	27	0	26.0	35	0	16.3	29	0
24	HD3357	N-224	29.2	34	0	36.2	24	0	34.2	20	0	30.2	5	0
25	HUW840	N-225	30.5	33	0	34.4	29	0	39.3	10	0	18.4	22	0
26	KRL1803	N-227	59.3	1	1	42.1	9	1	40.4	8	0	19.1	21	0
27	KRL1808	N-228	43.6	20	0	41.1	11	0	34.3	19	0	9.9	36	0
28	JKW277	N-229	32.0	28	0	39.2	17	0	39.5	9	0	23.5	13	0
29	BRW3869	N-232	56.7	3	1	36.8	23	0	44.3	3	0	30.8	4	0
30	HD3354	N-233	46.0	15	0	40.5	12	0	33.3	21	0	27.4	9	0
31	DBW311	N-234	49.1	10	0	40.1	13	0	39.1	11	0	21.2	18	0
32	DBW310	N-236	27.3	36	0	36.9	22	0	28.3	32	0	34.3	2	1
33	HD2967 (C)	N-226	44.5	18	0	39.4	15	0	37.5	15	0	12.8	34	0
34	HD3086 (C)	N-230	42.1	22	0	38.1	19	0	32.0	24	0	25.6	11	0
35	DBW187 (C)	N-231	56.5	4	1	45.6	2	1	40.6	7	0	27.8	8	0
36	K1006 (C)	N-235	48.9	11	0	44.3	5	1	41.4	6	0	25.4	12	0
G.M.			42.8			38.5			35.3			21.5		
S.E.(M)			2.067			2.670			1.943			1.287		
C.D. (10%)			5.0			6.5			4.6			3.1		
C.V.			6.8			9.8			7.8			8.5		
D.O.S.(dd.mm.yy)			14.11.19			20.11.19			21.11.19			16.11.19		

Trials not reported (04) = Jammu (LSM), Kalyani (LSM), Manikchak (LSM), Shillongani (LSM)

1903-NIVT-2-IR-TS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ			PZ					
			MP			Maharashtra					
			Sagar			Akola			Parbhani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	GW521	N-301	53.2	10	0	41.9	4	1	28.8	14	0
2	MP3535	N-302	46.8	27	0	37.4	11	1	27.8	20	0
3	RVW4301	N-304	53.9	8	0	24.7	34	0	17.2	36	0
4	UAS3012	N-305	58.4	3	1	37.1	12	1	31.7	7	1
5	NWS2176	N-306	45.8	33	0	34.9	17	0	25.1	28	0
6	RVW4304	N-307	55.0	7	0	28.8	31	0	34.4	3	1
7	DBW314	N-309	52.5	14	0	34.1	21	0	37.9	1	1
8	HI1650	N-310	56.5	5	0	33.6	23	0	28.4	15	0
9	HD3376	N-311	49.2	18	0	24.5	35	0	25.6	26	0
10	HI1648	N-313	53.0	12	0	30.7	26	0	26.6	23	0
11	WH1275	N-314	48.1	21	0	29.4	29	0	26.3	24	0
12	MACS3735	N-315	55.1	6	0	34.4	20	0	31.1	9	1
13	UAS3011	N-316	51.4	16	0	36.2	13	0	30.9	11	0
14	GW522	N-317	46.0	32	0	29.6	28	0	22.6	31	0
15	NIAW3889	N-318	42.3	35	0	42.6	3	1	25.2	27	0
16	HI1649	N-319	53.6	9	0	38.4	9	1	21.0	32	0
17	NIAW3882	N-320	45.1	34	0	34.8	18	0	33.5	6	1
18	AKAW5099	N-321	47.0	25	0	40.3	6	1	33.9	5	1
19	HD3359	N-322	50.4	17	0	31.2	25	0	17.3	35	0
20	MP1369	N-323	59.1	1	1	40.0	7	1	28.0	18	0
21	UP3058	N-324	47.5	24	0	28.9	30	0	28.1	16	0
22	HI1647	N-325	48.5	20	0	41.4	5	1	35.7	2	1
23	MACS6764	N-326	47.8	23	0	35.9	14	0	24.4	30	0
24	PBW832	N-327	46.1	31	0	22.1	36	0	24.9	29	0
25	GW523	N-328	52.7	13	0	33.6	22	0	27.9	19	0
26	MP1370	N-329	57.3	4	1	24.9	33	0	18.6	33	0
27	CG1034	N-330	51.4	15	0	34.5	19	0	31.7	8	1
28	MACS6768	N-331	48.1	22	0	45.2	1	1	33.9	4	1
29	RAJ4551	N-332	41.8	36	0	35.1	16	0	26.0	25	0
30	DBW315	N-333	46.3	30	0	35.7	15	0	28.1	17	0
31	MP3526	N-334	46.7	28	0	32.0	24	0	27.4	21	0
32	MP1371	N-335	49.1	19	0	30.0	27	0	30.9	10	0
33	MACS6478 (C)	N-303	46.6	29	0	43.5	2	1	30.8	12	0
34	HI1544 (C)	N-308	46.9	26	0	39.0	8	1	17.4	34	0
35	GW322 (C)	N-312	53.1	11	0	28.7	32	0	28.9	13	0
36	MACS6222 (C)	N-336	58.9	2	1	38.2	10	1	26.9	22	0
G.M.			50.3			34.3			27.6		
S.E.(M)			1.051			3.508			2.872		
C.D. (10%)			2.5			8.5			6.9		
C.V.			3.0			14.5			14.7		
D.O.S.(dd.mm.yy)			07.12.19			21.11.19			17.11.19		

Trials not reported (03) = Sagar (LS), Akola (LSM), Parbhani (LSM)

1904-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	NEPZ		
			Assam		
			Shillongani		
			Yield	RK	G
1	K1907	N-401	31.6	15	0
2	HD3361	N-402	32.2	14	0
3	DBW335	N-403	19.1	36	0
4	HD3362	N-404	33.7	11	0
5	WH1278	N-405	46.4	1	1
6	UP3065	N-407	45.9	2	1
7	NW7092	N-408	26.4	24	0
8	HD3363	N-409	29.3	20	0
9	PBW836	N-410	20.2	34	0
10	DBW317	N-411	37.1	7	0
11	K1908	N-412	32.9	13	0
12	HD3364	N-413	23.4	31	0
13	PBW834	N-414	19.8	35	0
14	HUW842	N-415	39.7	6	0
15	UP3059	N-416	41.1	4	0
16	RAJ4552	N-417	22.8	32	0
17	HD3360	N-418	30.4	18	0
18	UP3061	N-419	25.0	28	0
19	HD3365	N-420	39.7	5	0
20	WH1276	N-421	25.2	27	0
21	RAJ4554	N-422	26.8	23	0
22	UP3060	N-423	29.0	21	0
23	PBW833	N-425	45.0	3	1
24	DBW316	N-426	34.3	10	0
25	NW8000	N-429	31.0	16	0
26	PBW835	N-430	33.0	12	0
27	RAJ4553	N-431	29.4	19	0
28	JKW278	N-432	25.9	25	0
29	WH1277	N-433	23.6	30	0
30	DBW318	N-434	25.8	26	0
31	DBW319	N-435	28.7	22	0
32	JKW270	N-436	31.0	17	0
33	DBW173 (C)	N-406	34.7	9	0
34	HI1563 (C)	N-424	20.9	33	0
35	HD3059 (C)	N-427	24.3	29	0
36	DBW107 (C)	N-428	35.4	8	0
G.M.			30.6		
S.E.(M)			2.086		
C.D. (10%)			5.0		
C.V.			9.6		
D.O.S.(dd.mm.yy)			21.11.19		

Trials not reported (01) = Shillongani (ES)

1906-NIVT-4-IR-TS-TDM-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ			PZ		
			Gujarat			Karnataka		
			SK Nagar			Niphad		
			Yield	RK	G	Yield	RK	G
1	PWU5	N-601	38.9	11	1	20.0	25	0
2	HI8826	N-603	41.3	4	1	34.4	15	0
3	MACS4106	N-604	40.1	7	1	36.9	9	0
4	UAS473	N-605	43.4	1	1	35.1	13	0
5	HI8828	N-606	36.5	13	0	38.4	7	1
6	MPO1375	N-607	40.0	8	1	33.3	18	0
7	MACS4100	N-608	27.5	25	0	41.9	4	1
8	WHD965	N-609	39.4	10	1	30.0	22	0
9	NIDW1348	N-610	35.3	17	0	32.3	20	0
10	DDW53	N-611	35.9	15	0	43.0	3	1
11	HI8829	N-612	34.8	18	0	38.8	6	1
12	PDW360	N-613	30.8	22	0	36.7	10	0
13	HI8825	N-614	32.7	19	0	27.5	24	0
14	HI8827	N-615	35.8	16	0	40.0	5	1
15	DDW54	N-617	31.9	21	0	33.5	17	0
16	UAS474	N-619	36.1	14	0	33.6	16	0
17	PBND4812	N-620	29.2	23	0	35.8	11	0
18	GW1355	N-621	41.7	3	1	27.7	23	0
19	GW1354	N-622	41.2	5	1	34.5	14	0
20	NIDW1345	N-623	42.0	2	1	38.2	8	1
21	MPO1374	N-624	27.9	24	0	32.4	19	0
22	MPO1373	N-625	37.1	12	0	45.8	2	1
23	HI8713 (C)	N-602	39.5	9	1	47.5	1	1
24	HI8737 (C)	N-616	32.3	20	0	35.6	12	0
25	MACS3949(C)	N-618	40.2	6	1	30.2	21	0
G.M.			36.5			35.3		
S.E.(M)			2.429			3.919		
C.D. (10%)			6.0			9.5		
C.V.			9.4			15.7		
D.O.S.(dd.mm.yy)			12.11.19			28.11.19		

Trials not reported (02) = SK Nagar (LSM),
Niphad (LSM,VLS)

1908-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	CZ									PZ					
			MP			Gujarat						Karnataka			Maharashtra		
			Sagar			Junagarh			Arnej			Niphad			Akola			Parbhani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW326	N-801	39.1	13	0	22.3	11	0	29.2	1	1	16.5	23	0	21.8	2	1	26.6	2	1
2	GW528	N-802	39.6	10	0	23.5	9	1	20.1	15	0	28.6	3	1	18.0	10	1	24.0	15	0
3	MP1367	N-803	41.7	7	0	18.1	20	0	19.6	16	0	19.3	17	0	20.2	6	1	22.8	18	0
4	UAS475(d)	N-805	43.8	4	1	17.6	22	0	16.5	22	0	17.7	22	0	14.4	19	0	25.0	10	0
5	DDW55(d)	N-806	33.9	23	0	22.2	12	0	16.0	24	0	24.7	7	0	8.9	25	0	26.3	4	1
6	MACS6753	N-807	37.5	19	0	24.4	6	1	25.0	9	0	25.7	6	0	18.5	9	1	25.7	8	1
7	HD3372	N-808	43.8	4	1	21.6	14	0	19.2	17	0	18.8	19	0	14.9	17	0	23.2	17	0
8	HI8830(d)	N-811	38.5	14	0	19.3	19	0	21.2	13	0	30.9	1	1	14.6	18	0	18.9	24	0
9	HI1655	N-812	40.1	8	0	26.7	2	1	25.3	7	0	18.7	20	0	21.9	1	1	24.0	14	0
10	HD3371	N-813	35.4	22	0	20.3	16	0	19.0	18	0	24.3	8	0	16.4	12	0	24.6	12	0
11	GW1356(d)	N-814	21.9	25	0	17.8	21	0	28.0	2	1	13.3	25	0	9.8	24	0	19.6	23	0
12	NIAW3855	N-815	39.6	10	0	24.1	8	1	27.1	4	1	24.0	9	0	20.0	7	1	25.5	9	1
13	HI8831(d)	N-817	38.0	17	0	16.8	24	0	18.8	19	0	21.5	12	0	15.0	16	0	20.8	21	0
14	MP3523	N-818	46.9	1	1	22.3	10	0	24.3	10	0	20.1	15	0	15.8	13	0	24.9	11	0
15	NIAW3851	N-819	46.4	2	1	25.4	3	1	27.3	3	1	23.6	10	0	16.9	11	1	26.0	7	1
16	CG1036	N-820	39.6	10	0	20.7	15	0	25.3	8	0	16.1	24	0	15.4	15	0	23.2	16	0
17	UAS3014	N-821	43.2	6	0	21.9	13	0	18.5	20	0	29.8	2	1	20.5	4	1	26.4	3	1
18	MP1368	N-822	36.5	21	0	20.0	17	0	18.0	21	0	27.5	5	1	15.8	14	0	21.6	20	0
19	MACS6755	N-823	38.5	14	0	25.2	4	1	20.7	14	0	27.6	4	1	19.7	8	1	31.1	1	1
20	AKAW5088	N-824	38.5	14	0	19.5	18	0	27.1	5	1	19.2	18	0	20.4	5	1	19.7	22	0
21	DBW325	N-825	38.0	17	0	24.3	7	1	24.1	11	0	22.9	11	0	13.0	22	0	21.8	19	0
22	HI1605 (C)	N-809	44.8	3	1	24.6	5	1	25.4	6	0	18.3	21	0	20.6	3	1	26.1	6	1
23	DBW110 (C)	N-810	33.3	24	0	27.6	1	1	21.8	12	0	19.3	16	0	13.8	21	0	26.2	5	1
24	UAS446(d)(C)	N-804	40.1	8	0	17.3	23	0	16.4	23	0	20.8	13	0	13.9	20	0	24.4	13	0
25	HI8627(d) (C)	N-816	37.5	19	0	13.6	25	0	14.7	25	0	20.2	14	0	11.9	23	0	15.8	25	0
G.M.			39.0			21.5			21.9			22.0			16.5			23.8		
S.E.(M)			1.264			1.698			1.631			1.884			2.584			2.219		
C.D. (10%)			3.1			4.2			3.9			4.7			6.3			5.4		
C.V.			4.6			11.2			10.5			12.1			22.2			13.2		
D.O.S.(dd.mm.yy)			08.12.19			03.11.19			15.11.19			23.11.19			23.11.19			17.11.19		

Trials not reported (06) = Sagar (LS), Junagarh (LSM), Arnej (LSM), Niphad (LSM), Akola (LSM), Parbhani (LSM)

1914-AVT-RI-LS-TAS-NHZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	H.P.		
			Una		
			Yield	Rk	G
1	HS681	NHLSZ 1901	15.4	8	0
2	VL3022	NHLSZ 1902	17.1	5	0
3	HS680	NHLSZ 1903	19.7	2	1
4	VL3023	NHLSZ 1904	17.3	4	0
5	HPW474	NHLSZ 1905	14.0	10	0
6	UP3069	NHLSZ 1906	19.7	1	1
7	HPW473	NHLSZ 1907	19.6	3	1
8	VL3024	NHLSZ 1909	15.5	7	0
9	HS679	NHLSZ 1911	16.0	6	0
10	VL892 (C)	NHLSZ 1908	15.3	9	0
11	HS490 (C)	NHLSZ 1910	12.8	11	0
G.M.			16.6		
S.E.(M)			0.544		
C.D. (10%)			1.3		
C.V.			6.8		
D.O.S.(dd.mm.yy)			02.12.19		

Trials not Reported (01) = Una (LSM)

1921-AVT-IR-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P.		
			Ujhani		
			Yield	Rk	G
1	PBW840[M]	NW-TS-107	41.0	6	0
2	PBW803	NW-TS-108	37.6	9	0
3	DBW88 (C)	NW-TS-101	43.0	4	0
4	HD2967 (C)	NW-TS-103	51.7	2	1
5	WH1105 (C)	NW-TS-104	38.7	8	0
6	HD3086 (C)	NW-TS-106	42.7	5	0
7	PBW550 (C)	NW-TS-109	39.9	7	0
8	DBW187(I)(C)	NW-TS-102	54.2	1	1
9	DBW222(I)(C)	NW-TS-105	46.0	3	0
G.M.			43.9		
S.E.(M)			1.506		
C.D. (10%)			3.6		
C.V.			6.9		
D.O.S.(dd.mm.yy)			14.11.19		

Trials not reported (01) = Ujhani (LSM)

1922-AVT-IR-LS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Rajasthan			U.P.		
			Tabiji			KVK-Rampur		
			Yield	Rk	G	Yield	Rk	G
1	HD3298*	NW-LS-215	37.3	5	1	50.9	3	0
2	HD3331[#WB]	NW-LS-214	28.2	14	0	38.8	15	0
3	HD3334	NW-LS-201	39.7	3	1	39.6	13	0
4	HD3332	NW-LS-203	40.2	1	1	37.3	16	0
5	PBW811	NW-LS-206	35.9	7	0	42.0	11	0
6	DBW291	NW-LS-207	39.8	2	1	48.3	5	0
7	WH1264	NW-LS-208	32.5	9	0	39.6	14	0
8	PBW812	NW-LS-209	29.5	12	0	52.2	2	0
9	JKW261	NW-LS-210	26.7	15	0	48.3	6	0
10	DBW290	NW-LS-211	32.1	11	0	56.6	1	1
11	PBW813	NW-LS-213	29.0	13	0	47.7	8	0
12	UP3033	NW-LS-217	36.1	6	0	45.6	9	0
13	HD3059 (C)	NW-LS-202	39.1	4	1	39.8	12	0
14	DBW173 (C)	NW-LS-204	32.4	10	0	50.8	4	0
15	WH1021 (C)	NW-LS-205	26.3	16	0	33.8	17	0
16	WH1124 (C)	NW-LS-216	24.3	17	0	42.2	10	0
17	PBW771(I)(C)	NW-LS-212	33.7	8	0	48.2	7	0
G.M.			33.1			44.8		
S.E.(M)			1.468			1.099		
C.D. (10%)			3.5			2.6		
C.V.			8.9			4.9		
D.O.S.(dd.mm.yy)			18.12.19			02.01.20		

Trials not reported (02) = Tabiji (LSM), KVK-Rampur (LS)

1923-AVT-RI-TS-TAS-NWPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Rajasthan		
			Bharatpur		
			Yield	Rk	G
1	HUW838[#WB]	NW-RI-301	33.7	1	1
2	DBW296	NW-RI-304	21.0	9	0
3	JAUW672	NW-RI-307	30.8	2	0
4	HD3043 (C)	NW-RI-302	24.0	7	0
5	PBW644 (C)	NW-RI-303	26.7	3	0
6	WH1080 (C)	NW-RI-306	22.7	8	0
7	WH1142 (C)	NW-RI-308	24.1	6	0
8	HI1628 (I)(C)	NW-RI-305	25.8	4	0
9	NIAW3170 (I)(C)	NW-RI-309	24.2	5	0
G.M.			25.9		
S.E.(M)			0.983		
C.D. (10%)			2.4		
C.V.			7.6		
D.O.S.(dd.mm.yy)			05.11.19		

Trials not reported (01) = Bharatpur (LSM)

1931-AVT-IR-TS-TAS-NEPZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	U.P.			W.B.			Assam		
			Prayagraj			Majhian			Bishwanath		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	PBW804	NE-IR-101	26.2	1	1	30.6	4	0	29.3	5	0
2	DBW187 (C)	NE-IR-102	26.0	2	1	33.8	2	0	39.3	1	1
3	K1006 (C)	NE-IR-103	19.1	5	0	38.2	1	1	29.8	4	0
4	DBW39 (C)	NE-IR-104	21.8	4	1	29.6	5	0	34.1	3	0
5	HD2733 (C)	NE-IR-106	26.0	3	1	33.1	3	0	25.9	6	0
6	HD3249(I)(C)	NE-IR-105	18.1	6	0	29.3	6	0	39.0	2	1
G.M.			22.9			32.4			32.9		
S.E.(M)			2.408			1.659			0.524		
C.D. (10%)			6.0			4.1			1.3		
C.V.			21.1			10.2			3.2		
D.O.S.(dd.mm.yy)			22.11.19			25.11.19			20.11.19		

Trials not reported (03) = Allahabad (LSM), Majhian (LSM), Bishwanath (LSM)

1941-AVT-IR-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	M.P.					
			Shahdol			Sagar		
			Yield	Rk	G	Yield	Rk	G
1	HD3377[B]	CZ-TS-105	32.5	7	0	44.5	10	0
2	RAJ4541[B]	CZ-TS-107	37.8	5	1	53.3	5	0
3	TAW155	CZ-TS-101	30.9	9	0	52.5	7	0
4	HI1636	CZ-TS-102	29.7	10	0	55.8	1	1
5	MP1361	CZ-TS-103	31.7	8	0	55.5	3	1
6	MACS6747	CZ-TS-104	38.4	4	1	52.8	6	0
7	HI1637	CZ-TS-106	33.0	6	1	55.8	1	1
8	GW513	CZ-TS-108	40.6	2	1	53.8	4	1
9	GW322 (C)	CZ-TS-109	38.6	3	1	51.0	8	0
10	HI1544 (C)	CZ-TS-110	41.0	1	1	50.3	9	0
G.M.			35.4			52.5		
S.E.(M)			3.396			0.986		
C.D. (10%)			8.2			2.4		
C.V.			19.2			3.8		
D.O.S.(dd.mm.yy)			22.11.19			08.12.19		

Trials not reported (02) = Shahdol (HCV, LSM), Sagar (LS)

1942-AVT-IR-LS-TAS-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	M.P.		
			Sagar		
			Yield	Rk	G
1	CG1029*	CZ-LS-205	63.9	1	1
2	HI1634*[Q]	CZ-LS-201	55.3	5	0
3	HD2932 (C)	CZ-LS-202	58.6	3	0
4	MP3336 (C)	CZ-LS-203	58.9	2	0
5	HD2864 (C)	CZ-LS-204	58.6	4	0
G.M.			59.1		
S.E.(M)			1.233		
C.D. (10%)			3.8		
C.V.			4.2		
D.O.S.(dd.mm.yy)			24.12.19		

Trials not reported (01) = Sagar (LS)

1943-AVT-RI-TS-TAD-CZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Gujarat		
			Junagarh		
			Yield	Rk	G
1	MPO1357(d)	CZ-RI-301	17.7	6	0
2	UAS472(d)	CZ-RI-304	15.6	7	0
3	HI8823(d)	CZ-RI-307	18.9	4	0
4	DBW110 (C)	CZ-RI-305	21.7	2	0
5	MP3288 (C)	CZ-RI-306	26.8	1	1
6	HI8627(d) (C)	CZ-RI-302	15.5	8	0
7	UAS466(d)(I)(C)	CZ-RI-303	18.9	3	0
8	DDW47(d)(I)(C)	CZ-RI-308	18.4	5	0
G.M.			19.2		
S.E.(M)			0.849		
C.D. (10%)			2.1		
C.V.			8.8		
D.O.S.(dd.mm.yy)			03.11.19		

Trial not reported (01) = Junagarh (LSM)

1951-AVT-IR-TS-TAD-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra									Karnataka			Telangana		
			Akola			Parbhani			Kolhapur			Mandya			Hyderabad		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDW48(d)*[Q]	PZ-TS-102	28.3	6	0	29.6	7	0	28.4	7	0	12.4	6	0	26.0	3	1
2	DDW49(d)*[Q]	PZ-TS-107	29.7	5	0	34.4	4	0	32.2	3	1	11.6	8	0	25.1	4	0
3	WHD964 (d)	PZ-TS-101	32.2	3	1	32.6	5	0	36.6	1	1	13.8	3	0	29.3	2	1
4	HI8818 (d)	PZ-TS-105	26.4	8	0	24.6	8	0	29.2	6	0	13.4	4	0	21.2	7	0
5	MACS6222 (C)	PZ-TS-103	36.3	1	1	32.3	6	0	27.8	8	0	25.4	1	1	23.5	5	0
6	GW322 (C)	PZ-TS-108	34.5	2	1	37.3	1	1	29.6	5	0	23.7	2	1	19.9	8	0
7	MACS3949(d)(C)	PZ-TS-104	30.3	4	0	35.7	2	1	33.5	2	1	12.0	7	0	22.3	6	0
8	UAS428(d)(C)	PZ-TS-106	28.3	7	0	35.4	3	0	30.8	4	0	12.9	5	0	29.6	1	1
G.M.			30.7			32.7			31.0			15.6			24.6		
S.E.(M)			1.734			0.685			2.235			1.382			1.588		
C.D. (10%)			4.2			1.7			5.4			3.4			3.9		
C.V.			11.3			4.2			14.4			17.7			12.9		
D.O.S.(dd.mm.yy)			21.11.19			19.11.19			15.11.19			14.11.19			03.12.19		

Trial not reported (05) = Akola (LSM, LS), Parbhani (LSM, LS), Kolhapur(LSM), Mandya (LSM), Hyderabad(LSM)

1952-AVT-IR-LS-TAS-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka			Telangana		
			Mandya			Hyderabad		
			Yield	Rk	G	Yield	Rk	G
1	HI1633*	PZ-LS-210	19.4	10	0	19.4	6	1
2	GW519	PZ-LS-201	31.2	1	1	21.4	1	1
3	HI1646	PZ-LS-202	29.2	4	1	20.0	4	1
4	UAS3008	PZ-LS-205	19.7	9	0	18.4	7	0
5	MACS6749	PZ-LS-206	27.6	5	0	20.9	3	1
6	HI1641	PZ-LS-208	24.5	6	0	17.6	9	0
7	HI1642	PZ-LS-209	31.1	2	1	17.3	10	0
8	MACS6752	PZ-LS-211	24.3	7	0	19.7	5	1
9	HD3090 (C)	PZ-LS-203	30.0	3	1	15.3	11	0
10	RAJ4083 (C)	PZ-LS-204	17.5	11	0	18.2	8	0
11	HD2932 (C)	PZ-LS-207	21.0	8	0	21.0	2	1
G.M.			25.0			19.0		
S.E.(M)			1.222			1.231		
C.D. (10%)			2.9			3.0		
C.V.			9.8			12.9		
D.O.S.(dd.mm.yy)			01.12.19			18.12.19		

Trials not Reported (02) = Mandya (LSM), Hyderabad (LSM)

1953-AVT-RI-TS-TAD-PZ, 2019-20
LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Maharashtra		
			Karjat		
			Yield	Rk	G
1	NIDW1149(d)*	PZ-RI-301	10.8	7	0
2	MPO1357(d)[Q]	PZ-RI-309	13.7	3	0
3	MACS4087(d)	PZ-RI-304	10.6	8	0
4	MP1358	PZ-RI-305	9.2	10	0
5	UAS472(d)	PZ-RI-308	12.5	4	0
6	UAS446(d) (C)	PZ-RI-302	14.9	1	1
7	HI1605 (C)	PZ-RI-303	10.5	9	0
8	AKDW2997-16(d)(C)	PZ-RI-306	14.6	2	0
9	NIAW3170(I)(C)	PZ-RI-310	11.1	6	0
10	HI8805(d)(I)(C)	PZ-RI-307	11.7	5	0
G.M.			12.0		
S.E.(M)			0.058		
C.D. (10%)			0.1		
C.V.			1.0		
D.O.S.(dd.mm.yy)			28.11.19		

Trials not reported (01) = Karjat (LSM)

1962-SPL-DIC-IR-TS-ALL ZONES, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Karnataka		
			Mandya		
			Yield	Rk	G
1	MACS5055	DIC-101	12.4	2	0
2	MACS5054	DIC-104	10.9	3	0
3	DDK1058	DIC-105	8.5	6	0
4	DDK1059	DIC-107	9.3	5	0
5	DDK1029 (C)	DIC-103	7.6	7	0
6	HW1098 (C)	DIC-106	9.7	4	0
7	MACS6222(a)(C)	DIC-102	16.1	1	1
G.M.			10.6		
S.E.(M)			1.071		
C.D. (10%)			2.6		
C.V.			20.1		
D.O.S.(dd.mm.yy)			14.11.19		

Trials not reported (01) = Mandya (LSM)

1964-SPL-HYPT-IR-ES-TAS-NWPZ, 2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Punjab		
			Gurdaspur		
			Yield	Rk	G
1	DBW303*	HYPT-104	58.1	9	0
2	DBW187*	HYPT-106	60.4	5	0
3	WH1270*	HYPT-110	55.6	11	0
4	DBW327	HYPT-101	61.6	4	0
5	DBW332	HYPT-103	51.7	12	0
6	DBW329	HYPT-107	62.4	3	0
7	WH1252	HYPT-108	58.9	7	0
8	HD3378	HYPT-109	59.6	6	0
9	DBW333	HYPT-111	58.4	8	0
10	DBW330	HYPT-112	77.5	1	1
11	DBW328	HYPT-113	76.8	2	1
12	DBW331	HYPT-114	56.6	10	0
13	HD3086(C)	HYPT-102	50.5	13	0
14	HD2967 (C)	HYPT-105	37.7	14	0
G.M.			59.0		
S.E.(M)			1.561		
C.D. (10%)			4.5		
C.V.			5.3		
D.O.S.(dd.mm.yy)			23.10.19		

Trials not reported (01) = Gurdaspur (LSM)

1965-SPL-CI-HYT-IR-ES-TAS-NWPZ,2019-20

LOCATIONWISE MEAN YIELD (q/ha)

SN	Variety	Code	Uttrakhand		
			Pantnagar		
			Yield	RK	G
1	DBW340	HYT-1	63.4	5	1
2	HD3374	HYT-2	51.6	24	0
3	DBW341	HYT-3	57.8	19	0
4	DBW338	HYT-4	66.0	2	1
5	PBW846	HYT-5	57.9	18	0
6	WH1285	HYT-6	50.3	25	0
7	HD3375	HYT-7	61.5	12	0
8	HD3373	HYT-8	61.9	10	1
9	DBW337	HYT-9	63.0	6	1
10	PBW847	HYT-10	53.0	22	0
11	UP3066	HYT-12	56.6	21	0
12	UP3068	HYT-13	61.7	11	0
13	PBW844	HYT-14	52.4	23	0
14	DBW339	HYT-15	62.2	7	1
15	DBW299	HYT-16	65.4	3	1
16	DBW336	HYT-18	60.9	13	0
17	WH1287	HYT-20	58.5	17	0
18	WH1286	HYT-21	58.6	16	0
19	PBW843	HYT-22	66.0	1	1
20	HD3379	HYT-23	65.1	4	1
21	DBW281	HYT-24	58.9	15	0
22	UP3067	HYT-25	62.2	8	1
23	DBW187(C)	HYT-11	57.8	20	0
24	HD3086 (C)	HYT-17	62.1	9	1
25	HD2967 (C)	HYT-19	59.2	14	0
G.M.			59.8		
S.E.(M)			1.744		
C.D. (10%)			4.2		
C.V.			4.1		
D.O.S.(dd.mm.yy)			04.11.19		

Trials not reported (01) = Pantnagar(LSM)

Appendix - II

Zonal Monitoring Reports

Zonal Monitoring Report, 2019-20

Northern Hills Zone (Virtual)		
Period	**Team**	**Centres monitored**
24th May, 2020	Drs RP Meena, Mamrutha HM, Ravindra Kumar, Lakshmi Kant, KK Mishra, Dibakar Mahanta, Dharam Pal, Madhu Patial, Naval Kishore, Vijay Rana, Bindra, MK Pandey, Ajai Kumar and Anjali Agrawal	Ranichauri, Majhera, Almora, Shimla, Bajaura and Malan

Breeding trials allocated & monitored:

Centre	Trial	Remark
Ranichauri	AVT-TS-RF, IVT-TS-RF	Good, disease data to be recorded by pathologist
	AVT-LS-RI	Satisfactory, disease data to be recorded by pathologist
Majhera	AVT-TS-RF, IVT-TS RF	Very Good
Almora	IVT-TS-RF, AVT-TS-RF	Good*
	IVT/AVT-LS-RI, AVT-TS-IR	Very Good
Shimla	AVT LS RI, IVT TS RF, AVT TS-RF, AVT TS IR	Very Good
Malan	AVT LS RI, IVT TS RF, AVT TS RF, AVT TS IR	Very Good
Bajaura	AVT LS RI, IVT TS RF, AVT TS RF, AVT TS IR	Very Good

*** Partially lodging**

Trials rejected: Nil

Entries recommended to be dropped from further testing: Nil

Entries exhibiting higher diseases/insect infestation: Disease response: High yellow rust was observed at Bajaura & Malan centres for following entries

Entry	Yellow rust
NHTSZ 1902, 1903	40S
NHTSZ 1904	60S
NHTSZ 1905 & 1906	30S
NHIVT 1907 & 1914	40S
NHIVT 1916	60S
NHLS 1905	60S
NHLS 1906 & 1907	40S
NHLS 1908 & 1910	20S

Report on Agronomical Trials:

Trial	Centre	Remark
SPL-1	**Almora**	Conducted properly, treatment effects were visible
SPL-1 & SPL-4	**Malan**	Conducted properly, treatment effects were visible

Report on Pathological Nurseries: Nil

Report on Physiology Trials: Nil

Special comments, if any:

1. The crop is in grain filling stage, data may be expected by the end of June.
2. This year disease pressure, especially yellow rust is quite high at Malan and Bajaura. Dr Naval Kishore is requested to send the samples to Flowerdale for analysis.

North Weastern Plains Zone (NWPZ)		
Period	**Team-I**	**Centers visited**
15-18th March, 2020	Drs JP Jaiswal, Gurdev Singh, Tuhina Dey, GS Mavi, Jaspal Kaur, PL Kashyap, Harikrishna, H Prashanth Babu and Satish Kumar	Jammu, Gurdaspur, Ludhiana, Bhatinda, Hisar, Durgapura and Delhi

Breeding trials allocated & monitored:

Centre	Trial	Remark
Jammu	NIVT-1A, -1B, -3A, -5A AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS	All the trials assigned were conducted nicely at all the locations except AVT-IR-LS-TAS and NIVT-3A at Jammu location.
Gurdaspur	NIVT-1A, -1B, -3A, -5A AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS SPL-HYPT-IR-ES, CI-HYT-IR-ES	
Ludhiana	NIVT-1A, -1B, -3A, -5A AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS SPL-HYPT-IR-ES, CI-HYT-IR-ES	
Bhatinda	AVT-IR-TS-TAS, AVT-IR-LS-TAS	
Hisar	NIVT-1A, -1B, -3A, -5A AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS SPL-HYPT-IR-ES, CI-HYT-IR-ES	
Durgapura	NIVT-1A, -1B, -3A AVT-IR-TS-TAS, AVT-IR-LS-TAS	
Delhi	NIVT-1A, -1B, -3A, -5A AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS SPL-HYPT-IR-ES, CI-HYT-IR-ES	

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

Centre	Trial	Remark
Jammu	AVT-IR-LS-TAS & NIVT-3A	Poor growth and patchy stand

Entries showing promising performance in breeding trials:

Trial	Entry
AVT-IR-TS-TAS	NW-TS-101, 104, 106
AVT-IR-LS-TAS	NW-TS-212
NIVT1A	N-119, N-124
NIVT1B	N-208, 209, 212
NIVT3A	N-412
NIVT5A	N-702, 709, 724
SPL-HYPT	HYPT-107
CI-HYT	HYT-5, 10, 18

Entries recommended for purification:

Trial	Entry	Remarks
AVT-IR-TS-TAS	NW-TS-105, 107, 109	Mixture/ off types /variation in plant height
AVT-IR-LS-TAS	NW-LS-203, 207, 210, 213, 215	
AVT-RI-TS-TAS	NW-RI-301, 309	
NIVT1A	N-113, 115, 118, 122, 126, 129, 134	
NIVT1B	N-206, 208, 210, 219, 226, 234, 235	
NIVT3A	N-403, 407, 411, 413, 431, 434	
NIVT5A	N-703, 711, 712, 721	
SPL-HYPT	HYPT-109, 110, 113	
CI-HYT	HYT-1, 17, 18, 22, 23	

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT1A	N-130	Segregation for plant height / maturity
NIVT1B	N-223, 229, 231	
NIVT3A	N-404, 424 and 429	
NIVT5A	N-705, 708, 719	
CI-HYT	HYT-8 and 12	

Report on Agronomical Trials:

Centres	Name of the trial	Remarks
Jammu	IR-TAS-DOS, SPL-1, SPL-4	All trials were nicely conducted and well managed. Treatment effects were quite visible. In general, very late sowing has poor crop stand due to late winter rains.
Gurdaspur	IR-TS-DOS, SPL-IR-ES-HYT, SPL-1, SPL-4	
Ludhiana	IR-TS-DOS, SPL-IR-ES-HYT, SPL-1, SPL-4	
Hisar	IR-TS-DOS, SPL-IR -ES-HYT, SPL-1, SPL-4	
Durgapura	IR-TS-DOS, SPL-IR -ES-HYT, SPL-1, SPL-4	
Delhi	IR-TS-DOS, SPL-IR -ES-HYT, SPL-1, SPL-4	

Report on Pathological Nurseries:

The pathological nurseries such as IPPSN, PPSN, EPPSN, LSSN, KBSN were conducted nicely at all the locations *viz:* Jammu, Gurdaspur, Ludhiana, Hisar, Durgapura and Delhi. The inoculum load and disease development especially on the infectors was satisfactory.

Report on Physiology Trials

MLHT-1 was properly conducted at Ludhiana, Hisar and Durgapura locations.

North Eastern Plains Zone		
Period	**Team-I**	**Centers visited**
12-17th March, 2020	Drs CN Mishra, Charan Singh, OP Gangwar, HR Saharan, SP Singh, Bhumesh Kumar, Anirban Majhi, VC Dhyani	Ranchi, Sabour, IARI-Pusa, RPCAU-Pusa, Varanasi, Ayodhya, Deegh, Kanpur and Araul

Breeding trials allocated & monitored:

Centre	Trial	Remark
Ranchi	AVT-IR-TS, AVT-RI-TS, NIVT-1A, 1B, 3A & 5A	Good except NIVT-1A
Sabour	AVT-IR, AVT-RI, 1A, 1B, 3A & 5A	Good
IARI-Pusa	AVT-IR-, AVT-RI, NIVT-1A, 1B, 3A & 5A	Good except NIVT5A
RPCAU-Pusa	AVT-IR, AVT-RI, NIVT-1A, 1B, 3A & 5A	Very Good
BHU Varanasi	AVT-IR-TS-TAS, AVT-RI-TS-TAS, 1A, 1B, 3A & 5A	Good
Ayodhya	AVT-IR, AVT-RI, NIVT-1A, 1B, 3A & 5A	Good except AVT-RI and NIVT-5A
Deegh	AVT-RI-TS	Very Good
Kanpur	AVT-IR, AVT-RI, NIVT-1A, 1B, 3A & 5A	Very Good
Araul	AVT-IR	Very Good

Trials not conducted/rejected by monitoring team:

Centre	Trial	Remark
Ranchi	NIVT-1A	Rejected due to rat damage in both replications
IARI-Pusa	NIVT-5A	Rejected due to heavy weed infestation
Ayodhya	AVT-RI and NIVT-5A	Rejected as appeared to be late sown

Entries recommended for purification

Trial	Entry	Remarks
NIVT-1A	N-101, 106, -112, -126 and 136	Mixture/off types /variation in plant height
NIVT-1B	N-204, 205, 208, 211, 215, 218, 220 and 233	
NIVT-5A	N-701, 704, 707, 710	

Trial	Entry	Remarks
NIVT-3A	N-402, 407 and 432	

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-1A	N-115, 118, 121 and 128	Segregation for height/ ear/ maturity
NIVT-1B	N-202, 203, 206, 209, 217, 219, 225 and 227	
NIVT-5A	N-705, 712 and 719	
NIVT-3A	N-405, 413, 422 and 429	

Entries showing high disease incidence in breeding trials:

Trial	Entry	Sabour	RCPAU Pusa	BHU	Kanpur
Leaf rust					
NIVT-1A	N-108	70S	5S	40S	-
	N-112	40S	-	10S	-
	N-118	80S	60S	60S	20S
	N-128	40S	-	-	-
NIVT-1B	N-223	60S	40S	80S	60S
	N-225	60S	40S	20S	-
	N-230	20S	60S	10S	20S
	N-235	40S	-	20S	40S
NIVT-5A	N-708	60S	60S	-	10S

Trial	Entry	Sabour	RPCAU Pusa	BHU	Ayodhy
Leaf blight					
NIVT-1A	N-107	68	57	-	57
	N-121	78	-	-	-
	N-123	78	-	57	-
	N-132	68	-	68	57
NIVT-1B	N-203	-	68	68	-
	N-222	57	57	57	68
NIVT-5A	N-720	-	-	-	68

Report on Agronomical Trials:

1. The trial NE-RIR-TS-TAS, was satisfactorily conducted at all the locations viz., Ranchi, Sabour, IARI Pusa, RPCAU-Pusa, Varanasi, Ayodhya and Kanpur.
2. The SPL-1 trial was conducted at IARI Pusa and RPCAU-Pusa only. At IARI the first date for sowing was left and at RPCAU-Pusa the layout was wrong, hence the trial was rejected at RPCAU-Pusa.
3. The SPL-2 trial was allotted and conducted satisfactorily at Ayodhya centre only.
4. The SPL-3 trial was not conducted at Kanpur centre.
5. The SPL-4 trial was not conducted at IARI Pusa and effect of growth hormones was not observed on plant height at RPCAU Pusa, Varanasi and Kanpur, hence the trial at these three centres are rejected
6. The SPL-5 trial was conducted at Ranchi centre only.

Report on Pathological Nurseries:

1. In LBSN and NIVTs, good development of leaf blight was observed at all centres.
2. In PPSN the brown rust infection was high at Kanpur and Ayodhya in border rows.
3. No incidence of shootfly was observed at Kanpur centre.

Report on Physiology Trials

1. The MLHT-1 at allotted centres was conducted satisfactorily.
2. In MLHT the recording on physiological traits was not being done at Ranchi centre
3. The DTSN at all allocated centres was conducted satisfactorily.

Special comments, if any

The IARI Pusa and RPCAU Pusa centres are located in the close vicinity, so the trials may either be allotted to one location or different trial may be allotted at these two centres of same location**.**

1. Higher incidence of brown rust was observed naturally at Sabour, Pusa and Varanasi, so PPSN centres for brown rust should be increased in the zone. At present it is at Kanpur and Ayodhya only.

2. The Ayodhya centre is doing satisfactorily all the nurseries and trial (LBSN, MDSN, PPSN IPPSN, TPN SARC and NIVT) of pathology; the work load may be distributed equally in this zone.
3. The team also visited the seed production programme at different centres, the nucleus seed production (NSS-I) of the varieties namely K1006 and NW5054 was not conducted at allotted centres.
4. The monitoring team was in of consideration that the centres and team size may be reduced.

North Eastern Plain Zone		
Period	**Team-II**	**Centers visited**
1-7th March, 2020	Drs RS Chhokar, Hanif Khan, PL Kashyap, SK Bishnoi, PK Bardoloi, Surya Prakash, SV Singh, Dhiman Mukharjee	Kalyani, Burdwan, Manikchak, Majhian, Coochbehar, Shillongani, Biswanath Chariali

Breeding trials allocated & monitored:

Centre	Trial	Remark
Kalyani	NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A, AVT-IR, AVT-RI	Satisfactorily conducted
Burdwan,	AVT-IR, AVT-RI	Satisfactorily conducted
Manikchak	NIVT-1A, NIVT-1B	Satisfactorily conducted
Majhian	AVT-IR, AVT-RI	Poor plant population
Coochbehar	NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A, AVT-IR, AVT-RI	Satisfactorily conducted
Shillongani	NIVT-1A, NIVT-1B, NIVT-3A, AVT-IR, AVT-RI	Satisfactory but heavy lodging in NIVT-1A, NIVT-1B, AVT-IR-TS-TAS, AVT-RI-TS-TAS. Layout plan for AVT-IR-TS-TAS and AVT-RI-TS-TAS not followed. NIVT-3A was sown on 21.11.2019 (20 days earlier than the prescribed date)
Biswanath Chariali	AVT-IR, AVT-RI	AVT-IR satisfactorily conducted

Trials rejected:

Centre	Trial	Remarks
Majhian	AVT-RI	Only 10 rows of 6m planted instead of 12. Very poor plant stand.
Biswanath Chariali	AVT-RI	Poor plant stand, some of the plots had < 20% plants, heavy damage by rats and animals

Entries recommended for purification:

Trial	Entry	Remarks
NIVT-1A	N-102, 111, 118, 121, 124	Off-types were found & need purification
NIVT-1B	N-202, 205, 208, 213, 219, 222, 225, 226	
NIVT-3A	N-408, 416, 417, 419	
NIVT-5A	N-703, 705, 707, 713, 719	
AVT-IR-TS-TAS	NE-IR-104, -106	
AVT-RI-TS-TAS	NE-RI-304, -305	

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-1B	N-217	High variation for plant height, ear characteristics, and maturity duration
NIVT-3A	N-413	High variation for waxiness, ear characteristics, maturity duration and spike colour

Entries found promising:

Trial	Entry
NIVT-1A	N-116, 117, 126, 131, 136
NIVT-1B	N-216, 230, 234

NIVT-3A	N-401, 424, 431
NIVT-5A	N-706, 714, 724, 725
AVI-IR-TS-TAS	N-102, 103, 106

Entries exhibiting higher diseases incidence / insect infestation:

Trial	Entry
NIVT-1A	N-104 (BR, LB), N-111 (LB), N-118 (BR), N-124 (LB), N-125 (LB), N-130 (LB), N-131 (LB), N-135 (LB)
NIVT-1B	N-202 (LB), N-204 (LB), N-212 (LB), N-213 (LB), N-217 (LB), N-218 (LB), N-223 (BR), N-224 (LB), N-227 (LB), N-230 (LB), N-231 (LB), N-235 (BR, LB)
NIVT-5A	N-702 (LB), N-720 (LB), N-722 (LB)
AVI-IR-TS-TAS	N-101 (LB)
AVI-RI-TS-TAS	N-301 (BR, LB)

Note: BR-denotes brown rust (>30S) an LB (>56) denotes leaf blight at some of the locations

Report on Agronomical Trials:

SN	Trials	Remarks
1	RIR-TS	Conducted at four locations (Kalyani, Burdwan, Coochbehar and Shillongani) and at all locations trials were conducted satisfactorily. In general response was observed up to two irrigations. Visually genotype NE-RI-305 was looking superior across irrigation levels
2	SPL-1	Conducted at three locations (Kalyani, Burdwan, and Shillongani) and conducted satisfactorily. In Burdwan, the first date of sowing was not taken due to delayed rice harvesting. Phenological differences in wheat crop response to date of sowing observed at all locations except Kalyani.
3	SPL-2	Conducted properly at Coochbehar
4	SPL-4	This special trial was conducted at four locations (Kalyani, Burdwan, Coochbehar and Shillongani) and at all locations the trial was in good conditions
5	SPL-5	Conducted only at Coochbehar and trial was in good condition

Report on Pathological Nurseries:

The pathological nurseries were conducted well and there was sufficient level of disease in the infector lines. Separate monitoring was conducted for PPSN and IPPSN.

Central Zone		
Period	**Team-I**	**Centres Visited**
18-21 Feb., 2020	Drs. SV Saiprasad, Sindhu Sareen, A.G. Pansuriya, K. Venkatesh, Divya Ambati, MA Gud and SI Patel	Udaipur, SK Nagar, Vijapur, Anand, Arnej, Dhandhuka, Amreli, Sanosara and Junagadh

Breeding trials allocated & monitored:

Centre	Trials	Remarks
Udaipur	AVT-IR-TS, AVT-RI-TS, AVT-LS, NIVT-2, NIVT-3B, NIVT-4 and NIVT-5B	Properly conducted
S K Nagar	AVT-IR-TS, AVT-LS and NIVT-4	
Vijapur	AVT-IR, AVT-RI, AVT-LS, NIVT-2, NIVT-3B, NIVT-4 and NIVT-5B	
Dhadhuka	AVT-RI, NIVT-5B	
Arnej	NIVT-5B	
Amreli	AVT-IR, AVT-RI	
Sanosara	AVT-RI and AVT-LS	
Anand	AVT-IR, AVT-LS	
Junagadh	AVT-IR-TS, AVT-RI-TS, AVT-LS, NIVT-2, NIVT-3B, NIVT-4 and NIVT-5B	

Trials not conducted / rejected by monitoring team: None

Entries recommended for purification:

Trial	Entry	Remarks
AVT-IR	CZ-TS- 101 and 105	Mixture of plant types was observed
AVT-RI	CZ-TS- 306, 307	Mixture of plant types was observed
NIVT-2	N-304, 311, 314, 335	Mixture of plant type was observed
NIVT-3B	N-502, 512, 518, 522, 524	Variation for maturity
NIVT-4	N-602, 619, 621	Variation for height, waxiness, awn colour
NIVT-5B-RI	N-801, 807, 813	Variation for maturity, awn colour

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N-316, 324, 330, 334	Indeterminate, ear type, waxiness and maturity
NIVT-3B	N-503, 506, 511	Segregation for height, maturity, ear type
NIVT-4	N-601	*T. aestivum* entry with segregation for height
	N-605, 617, 620	Segregation for height and maturity
NIVT-5B	N-808, 810, 817, 818, 823, 824	Segregation for height, maturity, ear type

Report on Agronomy trials: all allocated trials conducted properly at Udaipur, Vijapur and Junagadh

Centre	Trial	Remarks
Udaipur	SPL-1, SPL-4, SPL-6 and IR-DOS	All trials properly conducted
Vijapur	SPL-1, SPL-4, SPL-6 and IR-DOS	
Dhandhuka	SPL-6	
Junagadh	SPL-1, SPL-4, SPL-6 and IR-DOS	

Report on Physiology Trials: all allocated trials conducted properly

Trial	Centre	Trial	Centre
DTSN	Junagadh	MLHT-2	Udaipur, Vijapur, Junagadh

Entries showing promising performance in breeding trials:

Trial	Entry
NIVT-2	N-302, 306, 308, 315, 322 and 328
NIVT-3B	N-504, 515, 519, 523, 525
NIVT-4	N-611, 613, 618, 623, 625
NIVT-5B	N- 803, 809, 811, 815, 816, 819, 820, 821, 825

Report on Pathological Nurseries:

Nursery	Centre	Remark
PPSN	Vijapur	Development of stem rust and leaf rust is excellent. None of the entry in AVT trial was having more than 20S reaction to stem rust however four NIVT entries (18, 22, 40, 216) recorded >20S reaction to stem rust. Only one entry (NIVT- 233) recorded 40S reaction to leaf rust on 19th Feb,2020.
	Junagadh	Good establishment of leaf rust infection was observed in infector rows however stem rust development is in progress. Three entries of AVT (13, 79, 126) and six NIVT entries (16, 18, 170, 214, 219, 233) shown >20S reaction to leaf rust on 21st Feb,2020.

Special comments, if any:

1. Constitution of three zonal monitoring teams instead of two now may help in efficient monitoring of centres with same expenditure and can cover more centres
2. Released durum wheat varieties may be demonstrated in Bhal Track area of Gujarat with the help of Arnej and Dhandhuka centres.

Central Zone		
Period	**Team -II**	**Centres Visited**
26-29 Feb., 2020	Drs. BS Tyagi, KC Sharma, JM Patel, AP Agrawal, Dinesh Pandey, BC Game, VK Vikas, Yashwantha kumar KJ and Satish Kumar	Raipur, Bilaspur, Jabalpur, Sagar, Sagar, Powarkheda and Indore

Breeding trials allocated & monitored:

Centre	Trials	Remarks
Raipur	AVT-IR-TS, AVT-IR-LS, NIVT-3B	Properly conducted
Bilaspur	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B and 5B	Properly conducted
Jabalpur	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B and 5B	Properly conducted except NIVT-5B
Sagar	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2 and -5B	All the trials were planted late and AVT-IR-LS was poor
Powarkheda	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B, 4 and 5B	Properly conducted
Bhopal	AVT-IR-TS and AVT-RI-TS	Properly conducted
Indore	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B, 4 and 5B	Properly conducted

Trials not conducted / rejected by monitoring team:

Centre	Trial	Reason
Jabalpur	NIVT-5B	Most of the entries were damaged by rats
Sagar	AVT-RI-TS	Late Sown and two blocks were damaged due to water-logging and shade

Entries recommended for purification:

Trial	Entry	Remarks
AVT-IR-TS	CZ-TS-101	Mixture of plant types
NIVT-2	N-304, 311, 316, 320, 328, 335	Mixture of plant type
NIVT-4	N-617, 620	Variation for height, waxiness, awn colour
NIVT-5B	N-802, 808, 813, 821, 823	Variation for maturity, awn colour

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N-324	Indeterminate, ear type, waxiness and maturity
NIVT-3B	N-502, 503, 511	Segregation for height, maturity, ear type
NIVT-4	N-601	*T. aestivum* entry with segregation for height
	N-605	Segregation for height and maturity
NIVT-5B	N- 810, 824	Segregation for height, maturity, ear type

Report on Agronomy trials: all allocated trials conducted properly at Bilaspur, Jabalpur, Powarkheda and Indore

Centre	Trial	Remarks
Bilaspur	SPL-1, SPL-4, SPL-6 and IR-DOS	All trials properly conducted
Jabalpur	SPL-1, SPL-4 and IR-DOS	All trials properly conducted
Powarkheda	SPL-1, SPL-4 and IR-DOS	Trials were conducted properly, however in SPL-1 and SPL-4, due to faulty imposition of treatments the trials were rejected.
Indore	SPL-1, SPL-4 and IR-DOS	SPL-1 was not conducted. SPL-4 and IR-DoS were conducted properly

Report on Physiology Trials: all allocated trials conducted properly

Trial	Centre	Trial	Centre
DTSN	Indore	MLHT-2	Indore

Entries showing promising performance in breeding trials:

Trial	Entry
NIVT-2	N-308, 317, 332
NIVT-3B	N-509, 510, 514, 525
NIVT-4	N-611, 624
NIVT-5B	N- 805, 811, 819, 825
AVT-IR-TS	CZTS 103, 107, 108, 109
AVT-RI-TS	CZRI 307, 308

Report on Pathological Nurseries:

Nursery	Centre	Remark
PPSN	Powarkheda	Development of stem rust was excellent. Leaf rust infection was low. AVT entries 13, 21 and 42 were having high reaction for stem rust.
	Indore	Good establishment of leaf rust and stem rust infection was observed in infector rows. AVT entries with high infection for stem rust were 13, 21, 29, 36, 42, 61 and 102.
IPPSN	Powerkheda	Development of stem rust was excellent. Leaf rust infection was low.
	Indore	Good establishment of leaf rust and stem rust infection was observed in infector rows.
MDSN and EPPSN	Indore	Conducted properly

Special comments, if any:

1. Trial conducting centres should report anomalies if any immediately to the zonal coordinator or IIWBR for timely correction of the same.
2. Trials at Sagar centre were planted very late and a final decision in this regards may be taken.
3. The trial conduction personnel may be given appropriate training for planting of trials, recording data, harvesting reporting.

Peninsular Zone		
Period	**Team -I**	**Centres Visited**
4-7 Feb., 2020	Drs. SK Singh, SC Tripathi, Sanjay Singh, SS Dodake, Suma Biradar, Gurudatt M. Hegde, Pramod Prasad, Gopalareddy K and GP Singh	Pune, Mahabaleshwar, Karad, K Digraj, Kolhapur and Nippani, Kalloli, Arbhavi, Ugar, Mudhol, Bagalkot and Dharwad

Coordinated breeding trials allocated, conducted & monitored:

Centre	Trials
Pune	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-IR-TS-Dic, NIVT 2, 3B, 4 and 5B
Karad	AVT-IR-TS-TAD, AVT-IR-LS-TAS, AVT-RI-TS-TAD, SPL-IR-TS-Dic, NIVT 3B
Kolhapur	AVT-IR-TS-TAD, AVT-IR-LS-TAS, SPL-IR-TS-Dic, NIVT 3B
Kasbe Digraj	SPL-IR-TS-Dic
Nippani	AVT-IR-TS-TAD, AVT-IR-LS-TAS, AVT-RI-TS-TAD, NIVT 2, 3B, 4 & 5B
Kalloli	AVT-IR-TS-TAD, AVT-IR-LS-TAS, SPL-IR-TS-Dic
Arbhavi	AVT-IR-TS-TAD, AVT-IR-LS-TAS, SPL-IR-TS-Dic
Ugar	AVT-IR-TS-TAD, AVT-IR-LS-TAS, SPL-IR-TS-Dic, NIVT 2 & 4
Mudhol	AVT-IR-TS-TAD, AVT-IR-LS-TAS, SPL-IR-TS-Dic
Bagalkot	AVT-RI-TS-TAD, NIVT 5B
Dharwad	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS, SPL-IR-TS-Dic, NIVT-2, 3B, 4 & 5B
Remarks	All the allocated trials were conducted satisfactorily at the locations monitored. The NIVT-4 trial could not be monitored due to wrong layout problem.

Trials not conducted / rejected by monitoring team:

Centre	Trial	Remark
Karad	AVT-IR-TS, AVT-TS-RI & SPL-Dic	These trials were rejected due to very late sowings (Dec 7, 2019) as compared to other centres in the zone latest by Nov 19, 2019
Kalloli	AVT-IR-LS	Rejected due to faulty layout with no randomization
Nippani	AVT-TS-RI	Very poor plant stand
Dharwad	NIVT-2, NIVT 3B	Rejected due to very high incidence of shoot fly attack.

Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAD	PZ-TS-103, 107	Off-types
AVT-IR-LS-TAS	PZ-LS-203, 207, 209	
AVT-RI-TS-TAT	PZ-RI-307	
NIVT 2	N-302, 303, 304, 310, 311, 318, 323, 330, 331	
NIVT 3B	N-518	
NIVT-5B	N-807, 812, 814, 823, 824	
Spl-Dic	Dic-107	

Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT 2	N-322, 324, 335	High segregation for multiple traits.
NIVT -3B	N-506	
NIVT 5B	N-810, 818	

Entries exhibiting higher diseases incidence / insect infestation: Very low infestation of black rust was observed in PZ-TS-107 at Kalloli. However, brown rust was not observed anywhere at the centres monitored.

Report on Agronomical Trials:

Centre	Trial	Remark
Pune	PZ-Agr-IR-DOS, PZ-Agr-RIR, SPL-4 (Optimization of N doses) and SPL-5 (Precision N management using NDVI sensor)	Conducted satisfactorily
Dharwad		

Report on Pathological Nurseries:

Centre	Nursery	Remarks
Pune	PPSN	Stem rust was not appeared and leaf rust incidence was good
	WDMN	Conduction was satisfactory
Mahabaleshwar	PPSN	High incidence of leaf rust and low incidence of stem rust
Ugar Khurd	WDMN	Conduction was satisfactory
Dharwad	PPSN	High incidence of leaf rust and low incidence of stem rust

Report on Physiology and Quality Trials/nurseries:

MLHT and DTSN at allocated centres namely Pune and Dharwad were conducted satisfactorily. However, MLHT and QCWBN at Dharwad was rejected due to very high infestation of shoot fly.

Special comments, if any

1. Conduction was very good at the centres. The issue of timely fund release for voluntary centres was discussed.
2. The crop performance at farmers' fields was good.

Peninsular Zone		
Period	**Team-II**	**Centres Visited**
10-14 Feb., 2020	Drs. DA Gadekar, RP Meena , Kiran B Gaikwad, VS Baviskar, KK Mishra, J Chaudhary, Udai Reddy and Vikas Gupta	Nashik, Niphad, Savalivihir, Pravarnagar, Parbhani, Washim, Akola

Breeding trials allocated & monitored:

Centre	Trials	Remarks
Nashik	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS	Although trials were planted late due to untimely rains but the crop stand, stage at the time of monitoring and expression was good indicating proper trial conduction therefore all the trials were accepted.
Niphad	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B, 4 and 5B	
Savalivihir	AVT-RI-TS	
Pravarnagar	AVT-IR-TS, AVT-IR-LS	
Parbhani	AVT-IR-TS, AVT-RI-TS, AVT-IR-LS, NIVT-2, 3B and 5B	
Akola	AVT-IR-TS, AVT-IR-LS, NIVT-2, 3B, 4 and 5B	

Trials not conducted / rejected by monitoring team: Nil

Entries recommended for purification:

Trial	Entry	Remarks
AVT-IR-TS	PZ-TS-103, 108	Few off-type plants were observed
AVT-IR-LS	PZ-LS- 204, 210, 207	Variation in plant height, peduncle attitude and ear head observed
AVT-RI-TS	PZ-RI-310	Few off-type plants were observed
NIVT-2	N-303, 304, 314, 322	Mixture of plant type , spike was observed
NIVT-3B	N-502, 512, 517, 522	Ear head variation, off- types
NIVT-4	N-602, 619	Variation for height, pubescence variation
NIVT-5B-RI	N-803, 805, 817, 823	Variation for earhead, off-type plants

Entries recommended to be dropped from further testing:

Trial	Entry	Remarks
NIVT-2	N-311, 316, 322, 324, 326,330, 334, 335	Variation for ear type, waxiness, and maturity
NIVT-3B	N-503, 506, 511, 518	Plant height and ear type variation
NIVT-4	N-601	*T. aestivum* entry with mixture indicating segregation
	N-605, 612, 620	Segregation for height and waxiness
NIVT-5B	N-808, 810, 817, 818, 824	Segregation for height and maturity

Report on Agronomy trials:

Centre	Trial	Remarks
Niphad	IR-DOS, RIR-TS-TAS	Trial conduct was excellent, good plant population
Washim	IR-DOS, RIR-TS-TAS	No statistical design was followed and plant stand was less and hence rejected.
Akola	IR-DOS, RIR-TS-TAS	No plant population in two replications and hence trial rejected.

Report on Physiology Trials: All allocated trials conducted properly.

Entries showing promising performance in breeding trials:

Trial	Entry
NIVT-2	N-302, 317, 321 and 331
NIVT-3B	N-504, 514, 519 and 523
NIVT-4	N-613, 623 and 625
NIVT-5B	N- 809, 811, 815, 819 and 825

Report on Pathological Nurseries:

Epiphytotic creation for black and brown rusts on infector lines around pathological nurseries was very good at Niphad centre.

Name of nursery/ trial	Brown Rust (SN of entries and Rust score)
AVT material in PPSN at Niphad	79-20MS, 107-20MS, 119-20MS,126-20MS
NIVT Materials in PPSN at Niphad	18-60S, 49-20MS, 66-20MS, 95-20MS,150-20MS, 216-20MS
NIVT-4	N-601- 80S

Note. At other centres there was no rust incidence.

Special comments, if any:

1. New centers in coastal areas of Goa and Maharashtra may be proposed.
2. Agronomy personnel working at coordinating centers should be considered for training.

Appendix - III

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

Guidelines for Recording Agro-morphological Characteristics in Coordinated Trials

SN	Characteristics	Method of recording
1.	Days to heading	It is calculated as days taken from sowing to emergence of 75% of ears (spikes) in a plot. Observation on off-type plant(s) should not be considered.
2.	Days to maturity	Total days taken from sowing to maturity when all the plants in the plot show natural senescence and the grains become hard and fit for harvesting.
3.	Plant height	Measured at the time of maturity in centimeters from the ground level upto the terminal spikelet, excluding the awns. Care should be taken to record the measurement from the most commonly representative plants in the plot.
4.	Lodging	It is visually determined in plots per replication and recorded in percentage when plants are bent at more than 30° angle.
5.	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	The gross plot grain yield (g $plot^{-1}$) from all trials (NIVT/IVT/AVT/SPL) should be recorded using electronic balance.
10.	Biological yield per plot	The gross plot biomass yield (kg $plot^{-1}$) from all trials (NIVT/IVT/AVT/SPL) should be recorded using electronic balance.

Sowing Time Schedule of Coordinated Yield Trials

Trial Series	NHZ	NWPZ	NEPZ	CZ	PZ
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-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	-	-	-	-
SPL-IR-TS-Dicoccum	-	-	-	-	Nov. 1-15
SPL-VLS-IR-TAS	-	Jan. 1-15	Jan. 1-15	-	-
SPL-SAL/ALK	-	Nov. 1-15	Nov. 15-25	Nov. 10-20	-
HYPT-IR-ES	-	Oct. 20-Nov.5	-	-	-

Note: During 2019-20, some relaxation in sowing date was allowed due to unseasonal rains in some states

Appendix - IV

Norms with respect to site mean and coefficient of variation for acceptance/ rejection of coordinated 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 and agronomic practices should be strictly adhered to as given in the planting details supplied with the layout plan of different trials.
4. Seed rate and plot size should not be changed.
5. All rows of the trial entries should be harvested for reporting the gross plot yield.

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

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

Zone/Trial	Timely sown irrigated condition	Late sown irrigated condition	Timely sown restricted irrigated condition	Timely sown rainfed condition
NHZ	30	IR=20 RI=15	-	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*	-
Salinity/ Alkalinity	20	-	-	-
Dicoccum	30*	-	-	-
HYPT-IR-ES, NWPZ	65	-	-	-

* During 2019-20, some locations recorded lower site mean (LSM) due to erratic weather conditions and the limit of LSM was relaxed

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 Genotypes in the Coordinated Wheat Varietal Trials

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

(I) Yield

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

(II) Resistance to diseases

(A) Rusts

Varieties qualifying from yield point of view must have adequate degree of resistance to rusts under both natural as well as artificial conditions of infection.

The average coefficient of infection (ACI) for each of the rusts of importance in the particular zones should be considered in respect of varieties qualifying in yield criteria. Important rusts in each zone are as follows:

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

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

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

(i) Under natural conditions of rust infection (In coordinated varietal trials)

a) ACI upto 20.0

b) Maximum, susceptibility should be considered if ACI could not be worked out. It should not be more than 60S.

c) Varieties with higher susceptibility but marked with asterisk should be given benefit of doubt and therefore not to be rejected on this account.

d) For NEPZ, susceptibility to yellow rust is limited to 60S under natural condition and/ or ACI 20.0 in PPSN.

(ii) Under artificial conditions of rust infection (in plant pathological screening nurseries).

a) ACI upto 20.0.
b) If ACI is not worked out, maximum susceptibility should not exceed 60S 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. Varieties at par in yield but showing resistance to wheat blast disease would be promoted/retained.

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 20.0	Upto 20.0	Upto 60S	May be ignored	To be retained/ promoted	To be retained/ promoted

(Ill) Quality

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

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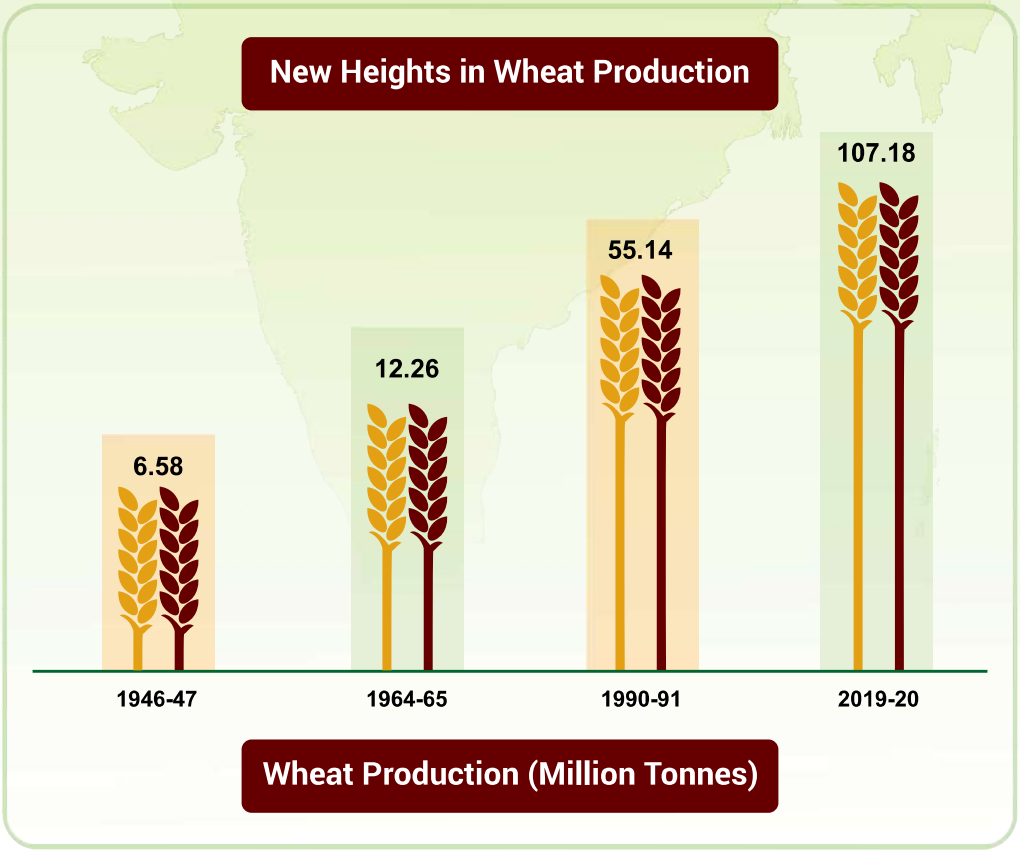

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