



प्रगति प्रतिवेदन  
Progress Report  
2016-17

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

उत्पादन वृद्धि से किसान समृद्धि  
Higher Productivity for Farmers' Prosperity

फसल सुधार  
Crop Improvement

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

# **AICRP on Wheat & Barley**

**PROGRESS REPORT  
2016-17**

## **CROP IMPROVEMENT**

**Vinod Tiwari  
Chandra Nath Mishra  
Vikas Gupta  
Karnam Venkatesh  
Satish Kumar  
Sanjay Kumar Singh  
Gopalareddy K  
Charan Singh  
Mamrutha HM  
Amit Kumar Sharma  
Rinki  
Arun Gupta  
Bhudeva Singh Tyagi  
Raj Kumar  
Gyanendra Singh  
Ratan Tiwari  
Ravish Chatrath  
Ajay Verma  
Gyanendra Pratap Singh**



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



## **Correct Citation:**

ICAR-IIWBR 2017. Progress Report of AICRP on Wheat and Barley 2016-17, Crop Improvement. Eds: Vinod Tiwari, Chandra Nath Mishra, Vikas Gupta, Karnam Venkatesh, Satish Kumar, Sanjay Kumar Singh, Gopalareddy K, Charan Singh, Mamrutha HM, Amit Kumar Sharma, Rinki, Arun Gupta, Bhudeva Singh Tyagi, Raj Kumar, Gyanendra Singh, Ratan Tiwari, Ravish Chatrath, Ajay Verma and Gyanendra Pratap Singh. ICAR-Indian Institute of Wheat and Barley Research, Karnal, Haryana, India. p. 249.

**NO PART OF THIS REPORT SHOULD BE REPRODUCED  
WITHOUT PRIOR PERMISSION OF THE DIRECTOR**

*Issued on the occasion of 56<sup>th</sup> All India Wheat & Barley Research Workers' Meet at  
Banaras Hindu University, Varanasi during August 25-28, 2017.*

## ***Acknowledgement***

I thankfully acknowledge the whole hearted support of each one of the large number of co-operators from funded and voluntary centres of the AICRP on Wheat & Barley for successful conduction of various coordinated trials, nurseries and other experiments.

I am thankful to all the zonal coordinators Drs Lakshmi Kant, VS Sohu, HG Prakash, SV Sai Prasad, AP Padhye and M Sivasamy for their efforts in constitution and dispatch of the AVT/IVT sets to different centres in their zone. The constitution of Special Trials was done at the lead centres for which the efforts made by Drs BK Honrao, AK Singh, GS Mavi, Ratan Tiwari and K Venkatesh are thankfully acknowledged.

The sincere efforts made by IIWBR scientists namely, Drs R Chatrath, Gyanendra Singh, BS Tyagi, SK Singh, Satish Kumar, CN Mishra K Venkatesh and K Gopalareddy in constitution and timely dispatch of various NIVTs to the conducting centres are very praiseworthy and all of them deserve appreciation and encouragement. The efforts of Drs Mamrutha HM and Rinki in organizing the physiological trials and nursery and Drs Raj Kumar and AK Sharma in organizing breeder seed production are appreciable.

All the members of the zonal monitoring teams from the cooperating centres and IIWBR deserve full appreciation for diligently conducting the monitoring work.

The notable contribution by technical staff of IIWBR, Karnal associated with the Crop Improvement Programme namely, Dr BK Meena, Om Parkash, Suresh Kumar, Rahul Singh, Ronak Ram, Bhal Singh, Raj Kumar and Ravinder Singh in the constitution and dispatch of coordinated trials/nurseries, handling field experiments, seed production, recording observations and compilation of raw data is acknowledged. The contribution made by Om Parkash in compiling three-years yield data of final year entries in advance varietal trials is worthy of a special mention. The supporting staff of Crop Improvement Division namely, Ramesh Pal and Aman Kumar contributed admirably in preparation of seed packets and parcels, field work, office work and photocopying.

The biotechnology group comprising Drs Ratan Tiwari, R Malik, R Singh, P Sharma and S Sheoran deserve full appreciation in preparing the molecular marker profiles of final year AVT entries.

I acknowledge the contribution of Dr Ajay Verma for undertaking statistical analysis of all wheat varietal trials. A special mention is to be made for Yogesh Sharma who diligently arranged the data sheets for printouts. The great care taken by Bhim Sain and Ronak Ram in undertaking the reprographic work of the Progress Report is very commendable.

Thanks are also due to the officers and staff of the Administration, Finance, and Farm Section, particularly Mandan Lal, of IIWBR Karnal for their cooperation and support to the Crop Improvement Programme.

The support provided by Ashok Kumar (Bunty) in undertaking the typing and script setting of this report deserves full appreciation and thanks for his diligent and tireless work even till late hours with me. He provided all secretarial help to me in the coordination work.

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.



(Vinod Tiwari)  
Principal Investigator  
(Crop Improvement)

Dated: 11<sup>th</sup> August, 2017

## Contents

SN	Contents	Page
1.	Highlights of Crop Improvement, 2016-17	i – xix
2.	Breakup of the 2016-17, Coordinated Wheat Varietal Trials as proposed, conducted and reported	xx
3.	Abbreviations used in the text	xxi – xxii
4.	Parentage of wheat and triticale varieties under test in 2016-17 trial	xxiii – xl
<b>Data on Yield, Diseases, Agronomic and Grain Characters of Varieties Under Test in Different Series of Coordinated Wheat Varietal Trials</b>		
<b>National Initial Varietal Trials (NIVTs)</b>		
1.	NIVT-1A (Irrigated, Timely sown, <i>T. aestivum</i> ), NWPZ & NEPZ	1-11
2.	NIVT-1B (Irrigated, Timely sown, <i>T. aestivum</i> ), NWPZ & NEPZ	12-22
3.	NIVT-2 (Irrigated, Timely sown, <i>T. aestivum</i> ), CZ & PZ	23-29
4.	NIVT-3A (Irrigated, Late sown, <i>T. aestivum</i> ), NWPZ & NEPZ	30-38
5.	NIVT-3B (Irrigated, Late sown, <i>T. aestivum</i> ), CZ & PZ	39-46
6.	NIVT-4 (Irrigated, Timely sown, <i>T. durum</i> ), CZ & PZ	47-51
7.	NIVT-5A (Restricted Irrigation, Timely sown, <i>T. aestivum</i> ), NWPZ, NEPZ, CZ & PZ	52-64
8.	NIVT-5B (Restricted Irrigation, Timely sown, <i>T. durum</i> ), CZ & PZ	65-69
<b>Northern Hills Zone</b>		
1.	Advance Varietal Trial (Rainfed, Early sown), <i>T. aestivum</i>	70-72
2.	Advance Varietal Trial (Restricted Irrigation, Late sown), <i>T. aestivum</i>	73-75
3.	Initial Varietal Trial (Rainfed/Irrigated, Timely sown), <i>T. aestivum</i>	76-83
4.	Advance Varietal Trial-VHA-Summer, <i>T. aestivum</i>	84-86
<b>North Western Plains Zone</b>		
1.	Advanced Varietal Trial (Irrigated, Timely sown), <i>T. aestivum</i>	87-91
2.	Advanced Varietal Trial (Irrigated, Late sown), <i>T. aestivum</i>	92-95
3.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), <i>T. aestivum</i>	96-99
4.	Zero tillage trial	100-102
<b>North Eastern Plains Zone</b>		
1.	Advanced Varietal Trial (Irrigated, Timely sown), <i>T. aestivum</i>	103-106
2.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), <i>T. aestivum</i>	107-110
<b>Central Zone</b>		
1.	Advanced Varietal Trial (Restricted Irrigation, Timely sown), <i>T. durum</i>	111-113
<b>Peninsular Zone</b>		
1.	Advanced Varietal Trial (Irrigated, Timely sown), <i>T. aestivum</i>	114-116
2.	Advanced Varietal Trial (Rainfed, Timely sown), <i>T. aestivum</i> & <i>T. durum</i>	117-119

SN	Contents	Page
<b>Southern Hills Zone</b>		
1.	Advanced Varietal Trial (Restricted Irrigation, Timely sown/Late sown), <i>T. aestivum</i>	120-121
2.	Initial Varietal Trial (Restricted Irrigation, Timely sown/Late sown), <i>T. aestivum</i>	122-124
<b>Special Trials</b>		
1.	Special Trial – Triticale, (Rainfed, Timely sown), NHZ	125-127
2.	Special Trial - <i>T. dicoccum</i> (Irrigated, Timely sown), All Zones	128-130
3.	Special Trial - Salinity/Alkalinity (Irrigated, Timely sown), <i>T. aestivum</i> , All Zones	131-136
4.	Special Trial - Very Late Sown ( <i>T. aestivum</i> ), NWPZ/NEPZ	137-141
5.	Special Trial - MABB (Irrigated, timely sown), <i>T. aestivum</i> , NWPZ	142-145
<b>Breeder and Nucleus Seed Production</b>		
1.	Seed Production of Wheat Varieties, 2016-17	146-159
<b>Wheat Physiology</b>		
1.	Physiological studies on heat tolerance in wheat - MLHT	160-163
<b>Evaluation of Germplasm Nurseries</b>		
1.	National Genetic Stock Nursery	164-168
2.	Short Duration Screening Nursery	169-171
3.	Yield Component Screening Nursery	172
4.	Elite International Germplasm Nursery	173-174
5.	National Durum Screening Nursery	175-176
6.	Quality Component Screening Nursery	177-178
7.	Drought Tolerance Screening Nursery	179-182
8.	Segregating Stock Nursery	183-184
9.	Spring x Winter Wheat Hybridization	185-186
10.	Promising Accessions in Wheat Germplasm Collection	187-188
11.	International Nurseries and Trials	189-191
<b>Appendices</b>		
1.	<i>Appendix-I:</i> Trials Not Reported	192-207
2.	<i>Appendix-II:</i> Zonal Monitoring Reports	208-244
3.	<i>Appendix-III:</i> Recording of data on various characteristics and date of sowing of coordinated trials	245-246
4.	<i>Appendix-IV:</i> Norms with respect to site mean and coefficient of variation for acceptance/ rejection of coordinated yield trials	247
5.	<i>Appendix-V:</i> Criteria for promotion/retention of varieties under test in Coordinated Wheat Varietal Trials	248-249

# Crop Improvement Principal Investigator's Report

## Research Highlights, 2016-17

The crop year 2016-17 has been one of the most epoch making year during the last over 56 years of coordinated research activities in wheat. This year has witnessed an all-time highest production of 97.44 million tonnes (3<sup>rd</sup> AE, 2017) of wheat grains. The productivity of 31.72q/ha this year is also one of the highest ever recorded in the country.

The weather conditions during the crop season throughout the country were quite favourable, particularly during February and March, helping in good grain development and filling. There was no adverse effect of temperature variations and rain this year.

During the year under report, the entries in advance varietal trials and special trials were not coded, while the coding of national initial varietal trials and initial varietal trials was continued. The constitution and dispatch of the advance varietal trials was performed by zonal coordinating units and the special trials sets were prepared by the respective lead centres. 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 2016-17 in Crop Improvement discipline of the All-India Coordinated Research Project on Wheat & Barley is presented in the ensuing pages.

### Development and release of new wheat varieties for different zones

#### Central released varieties

At the 55<sup>th</sup> All-India Wheat and Barley Research Workers' Meet held in August, 2016 at CCSHAU-Hisar the Varietal Identification Committee (VIC) identified 8 new wheat varieties namely HD 3171, HI 1605, PBW 723, K 1317, MACS 3949 (durum), HI 8759 (durum) and two zinc rich wheat varieties WB 2 and HPBW 01 for release under different production conditions in various zones. During the year 2016-17, the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops (CVRC) recommended the release of 8 varieties, namely HD 3171, HI 1605, PBW 723, WB 2, HPBW01, MACS 3949 (durum), HI 8759 (durum) from among the varieties identified by the VIC and PBW 660 identified during earlier year.

#### Wheat varieties released by CVRC during 2016-17

SN	Variety and parentage	Developed by	Area	Prod. cond.	Grain yield (q/ha)		Notif. No.	Special feature
					Avg.	Pot.		
<b>Bread wheat</b>								
1.	<b>PBW 660</b> (WG6761/WG6798)	PAU, Ludhiana	NWPZ	Rainfed, Timely sown	35.3	49.3	3544(E), dt. 22.11.16	Chapati quality
2.	<b>HD 3171</b> (PBW 343/HD2879)	IARI, Delhi	NEPZ	Rainfed, Timely sown	28.0	46.3	1007(E) dt. 30.03.17	Resistance to yellow, brown and black rusts
3.	<b>WB 2</b> (T. DICOCCON C19309/AE.SQUARROS A (409)/3/ MILAN/ S87230// BAV92/4/ 2*MILAN/ S87320//BAV92)	IWBR, Karnal	NWPZ	Irrigated, Timely sown	51.6	58.9	1007(E) dt. 30.03.17	Zinc (42.0 ppm) rich wheat variety, resistance to yellow and brown rusts



4.	<b>HI 1605</b> (Pusa Ujala) (BOW/VEE/5/ND/VG91 44//KAL/BB/3/YACO/4/C HIL/6/CASKOR/3/CROC _1/AE.SQUARROSA(22 4)//OPATA/7/PASTOR/M ILAN/KAUZ/3/BAV92)	IARI RS, Indore	PZ	Rest. Irrig. Timely sown	29.1	44.0	1007(E) dt. 30.03.17	Resistance to brown and black rust, excellent chapati quality
5.	<b>PBW 723</b> (Unnat PBW343) (PBW343+Lr57/Yr40 +Lr37/Yr17)	PAU, Ludhiana	NWPZ	Irrigated, Timely sown	49.2	63.2	1007(E) dt. 30.03.17	Resistance to yellow and brown rusts
6.	<b>HPBW 01</b> (PBW1 Zn) (T. DICOCCON CI9309/AE.SQUARROS A (409)/3/MILAN/ S87230//BAV92/4/2*MIL AN/S87320//BAV92)	PAU, Ludhiana	NWPZ	Irrigated, Timely sown	51.7	64.8	1007(E) dt. 30.03.17	Zn rich variety, resistance to yellow and brown rusts
<b>Durum wheat</b>								
7.	<b>MACS 3949</b> (STOT//ALTAR84/ALD/ 3/THB/CEP7780//2*MU SK_4)	ARI, Pune	PZ	Irrigated, Timely sown	44.0	64.3	1007(E) dt. 30.03.17	Resistance to stem and leaf rusts, Good pasta quality
8.	<b>HI 8759</b> (Pusa Tejas) (HI8663/HI8498)	IARI RS, Indore	CZ	Irrigated, Timely sown	56.9	75.5	1007(E) dt. 30.03.17	Good for pasta making

#### State released varieties

Eight wheat varieties namely, PBW 677, PBW 725, AKAW 4210-6, VL 953, UP 2784, CG 1015 (Chattisgarh Genhu-4), BRW 3708 (Sabour Samriddhi) and BRW 934 (Sabour Shreshtha) under different production conditions prevailing in the states were recommended by the respective SVRCs which were notified for release by the Central Sub-Committee on Crops Standards, Notification and Release of Varieties for Agricultural Crops.

#### Wheat varieties released by SVRC during 2016-17

SN	Variety name and parentage	Developed by	Area	Prod. cond.	Grain yield (q/ha)		Notif. No.	Special feature
					Avg.	Pot.		
1	<b>PBW 677</b> (PFAU/MILAN/5/CHEN/A E.SQUARROSA/BCN/3/ VEE#7/BOW/4/PASTOR)	PAU, Ludhiana	Punj.	Irrig., Timely sown	59.9	78.2	3544(E) dt. 22.11.16	Resistance to yellow and brown rust
2	<b>PBW 725</b> (PBW621//GLUPRO/3*PB W 568/3/ PBW 621)	PAU, Ludhiana	Punj.	Irrig., Timely sown	61.7	81.5	3544(E) dt. 22.11.16	Resistance to yellow and brown rust
3	<b>AKAW 4210-6</b> (PDKV Sardar) (3 <sup>rd</sup> SSN-1999-Sel. 186)	PDKV, Akola	Maha.	Irrig., Late sown	39.2	62.5	3544(E), dt. 22.11.16	Early maturity
4	<b>VL 953</b> (VL Gehun 953) (VW 0185 /DORADE 5)	VPKAS, Almora	U'Khand	Irrig., Timely sown	33.4 (Hills) 44.74 (Plains)	-	3544(E) dt. 22.11.16	Resistance to yellow and brown rust
5	<b>UP 2784</b> (CPAN 4078/ PBW 442)	GBPUA&T, Pantnagar	U'Khand	Irrig., TS (Plains)	44.3	55.2	3544(E) dt. 22.11.16	Resistance to leaf and stripe rust
6	<b>CG 1015</b> (Chattisgarh Genhu-4) (NI 908/BL 1986)	IGKV, Bilaspur	C'Garh	Irrig., Late sown	36.7	68.8	1007(E) dt. 30.03.17	Resistance to brown and black rust

7	<b>BRW 3708</b> (Sabour Samriddhi) (PASTOR/MILAN/MILAN/SHA7)	BAU, Sabour	Bihar	Irrig., Timely sown	46.9	-	1007(E) dt. 30.03.17	Tolerant to leaf blight and brown rust
8	<b>BRW 934</b> (Sabour Shreshtha) (HUW234/CBW12-SEL)	BAU, Sabour	Bihar	Irrig., Late sown	43.1	54.0	1007(E) dt. 30.03.17	Resistance to brown rust and loose smut

### Registration of new genetic stocks

During the year 2016-17, 20 genetic stocks of wheat namely HIKK1, HIKK2, HIKK3, HIKK4, HIKK5, HIKK6, HIKK7, HIKK8, HIKK9, NABIMG-9-Blue, NABIMG-10-Purple, NABIMG-11-Black, DDW42, DBW150, FLW10, FLW16, FLW21, FLW22, FWW2 and Local wheat Hango were found suitable for registration by the Plant Germplasm Registration Committee for traits like disease resistance to rusts, coloured grains, heat tolerance and high yellow pigment content during. The genetic resources unit of the IIWBR, Karnal multiplies the seeds of these registered genetic stocks and supplies them to breeders across the country for use in wheat improvement.

### Genetic stocks registered during 2016-17

SN	Name	Registration No.	National ID No.	Developed by	Trait
1	HI KK1 (NP4+Lr1)	INGR 16024	IC0620368	IARI RS, Indore	Brown rust resistance gene <i>Lr1</i> in NP 4 background
2	HI KK2 (NP4+Lr2a)	INGR 16025	IC0620369		Brown rust resistance gene <i>Lr2a</i> in NP 4 background
3	HI KK3 (NP4+Lr2c)	INGR 16026	IC0620370		Brown rust resistance gene <i>Lr2c</i> in NP 4 background
4	HI KK4 (NP4+Lr3a)	INGR 16027	IC0620371		Brown rust resistance gene <i>Lr3a</i> in NP 4 background
5	HI KK5 (NP4+Lr9)	INGR 16028	IC0620372		Brown rust resistance gene <i>Lr9</i> in NP 4 background
6	HI KK6 (NP4+Lr10)	INGR 16029	IC0620373		Brown rust resistance gene <i>Lr10</i> in NP 4 background
7	HI KK7 (NP4+Lr15)	INGR 16030	IC0620374		Brown rust resistance gene <i>Lr15</i> in NP 4 background
8	HI KK8 (NP4+Lr17a)	INGR 16031	IC0620375		Brown rust resistance gene <i>Lr17</i> in NP 4 background
9	HI KK9 (NP4+Lr20)	INGR 16032	IC0620376		Brown rust resistance gene <i>Lr20</i> in NP 4 background
10	NABIMG-9 Blue	INGR 17001	IC0620914	NABI, Mohali	Blue colored grains
11	NABIMG-10 Purple	INGR 17002	IC0620915		Purple colored grains
12	NABIMG-11 Black	INGR 17003	IC0620916		Black colored grains
13	DDW 42	INGR 17004	IC0621692	IIWBR, Karnal	High yellow pigment content
14	DBW 150	INGR 17005	IC0621693		Tolerant to heat stress
15	FLW10	INGR 17006	IC0621833	IIWBR RS, Shimla	Yellow rust resistance gene <i>Yr10</i> in WH542 background
16	FLW 16	INGR 17007	IC0621834		Yellow rust resistance gene <i>Yr5</i> in UP2338 background
17	FLW 21	INGR 17008	IC0621836		Yellow rust <i>Yr15</i> and brown rust <i>Lr24</i> resistance genes in the background of UP2338
18	FLW 22	INGR 17009	IC0621837		Rust resistance genes <i>Lr28</i> and <i>YrChina84</i> genes in the background of WH542
19	FWW 2	INGR 17010	IC0621838		Brown rust resistance genes <i>Lr19+Lr24</i> in the background of PBW343
20	Local Wheat Hango	INGR 17011	IC0621839		Susceptible to all the three rusts

## Registration of varieties with the PPVFRA

The registration proposals of 10 varieties under extant variety category namely MP3020, MP3336, MP3382, MP3211, MP3288, MP1203, MP1142, CG5016, MPO1215 and MPO1255 were submitted to the PPV&FRA, New Delhi for seeking protection under the Protection of Plant Varieties and Farmers Rights Act 2001.

## 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 33 funded and 116 voluntary centres spread across six wheat growing zones in the country. As many as 8 new voluntary centres from Rajasthan were added during this year to provide wider testing environments for genotypes in the NWPZ.

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

Zone	Funded centres	Voluntary centres, including ICAR centres
NWPZ	6	35
NEPZ	7	24
CZ	10	15
PZ	4	21
NHZ	6	15
SHZ	-	6
<b>Total</b>	<b>33</b>	<b>116</b>

During the crop season 2016-17, a total of 25 series of trials comprising AVTs, NIVTs, IVTs and Special trials were laid out in the different zones under four major production conditions *viz.* timely sown irrigated, late sown irrigated, timely sown restricted irrigation and timely sown rainfed condition. This year altogether 401 test entries were evaluated along with a total of 63 check varieties in different trials.

In all, 429 trial sets were supplied to 149 centres out of which 415 trials were actually conducted. The non-conduction of the coordinated trials was mainly at voluntary centres. The maximum non-conduction was in the North Eastern Plains Zone followed by Northern Hills, Southern Hills Zone and North West Plains Zone. The percent conduction of trials was 100% in Central Zone. It was 98.6% in North Western Plains Zone and Peninsular Zone. In North Eastern Plains Zone trial conduction was 93.8%, while it was 93.3% in Northern Hills Zone and lowest 85.7% in Southern Hills Zone. The overall conduction of trials during the crop season was 96.7 percent.

#### Breakup of yield trials during 2016-17

Zone	Proposed	Not Conducted	Conducted	Reported	Not Reported
NHZ	45	3	42	27	LSM (8), RMT (2), LSM & HCV (3), DNR (2)
NWPZ	143	2	141	112	RMT (13), LSM (7), HCV (3), ES (2), LS (2), UY (1), LS&UY (1)
NEPZ	97	6	91	59	LSM (11), RMT (8), TF (1), DNR (3), LS (2), UY (2), HCV (2), LCV (2), LSM&HCV (1)
CZ	61	0	61	45	LSM (9), RMT (1), UY (2), LS (2), HCV (1), M Irr (1)

PZ	69	1	68	33	LSM (21), RMT (7), TF (1), DNR (1), HCV (3), LSM & LS (1), LS (1)
SHZ	14	2	12	3	TF (4), RMT (2), ES (2), LS (1)
<b>Total</b>	<b>429</b>	<b>14</b>	<b>415</b>	<b>279</b>	<b>136 (RMT - 33)</b>

**Percent success in trial conduction and reporting during 2016-17**

<b>Zone</b>	<b>% conduction of proposed trials</b>	<b>% reporting of conducted trials</b>
NHZ	93.3	64.3
NWPZ	98.6	79.4
NEPZ	93.8	64.8
CZ	100	73.8
PZ	98.6	48.5
SHZ	85.7	25.0
<b>Total</b>	<b>96.7</b>	<b>67.2</b>

During this year, from amongst the 415 trials conducted, the data of 279 trials were found qualifying for reporting based on set norms for disease resistance and yield performance. The norms for the yield limit for acceptance of trial data for reporting in different series of varietal evaluation trials were enhanced during the 55<sup>th</sup> Wheat and Barley Research Workers' Meet held at Hisar during August 2016. This enhancement caused an increase in the number of trials that did not qualify for reporting, particularly in the PZ. As many as 136 trials were not reported this year. Low site mean in 56 trials was the primary reason for non-reporting of trials, followed by rejection of 33 trials by the monitoring teams in various zones and trial failure at 6 centres. The rest of the unreported trials were not considered for reporting due to high coefficient of variation (9), late sowing (8), data not reported (6), early sowing (4), low site mean & HCV (4), low CV (2), low site mean & late sowing (1) and other anomalies like unrealistic yield (5), late sowing & unrealistic yield (1) and excess irrigation in restricted irrigation trial (1).

The overall reporting of conducted trials during this crop season was 67.2%. The reporting of data was highest in NWPZ (79.4%) followed by CZ (73.8%). The reporting of data in other zones was lower viz., NEPZ (64.8%), NHZ (64.3%), PZ (48.5%) and SHZ (25%). Drought conditions were mainly responsible for low yield at centres in PZ, while many new centres added in NWPZ during the current crop season could not generate quality data for consideration. The centres in SHZ were mainly voluntary centres where trial failure was primarily responsible for low reporting. Low site mean yield at voluntary centres in different zones was one of the main reasons for drop in the percentage of reported data.

**Varieties in the final year evaluation in AVTs**

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

### Varieties in final year of evaluation in AVTs during 2016-17

SN	Trial	Final year entries
1.	<b>North Western Plains Zone</b>	
	AVT-IR-LS-TAS	DBW 173
2.	<b>Northern Eastern Plains Zone</b>	
	AVT-RI-TS-TAS	HI 1612
3.	<b>Peninsular Zone</b>	
(i)	AVT-IR-TS-TAS	DBW 168
(ii)	AVT-RF-TS-TAD	UAS 375, HI 8777(d), MACS 4028(d)

### Marker assisted gene profiling in AVT final year varieties

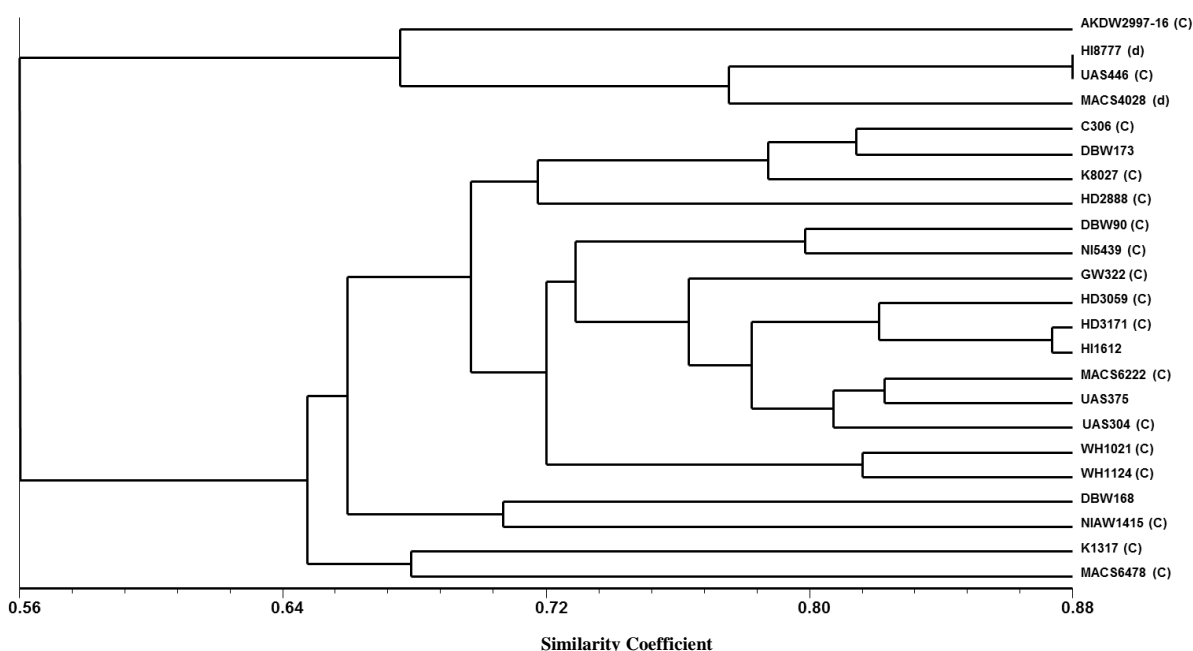
The final year (2016-17) AVT entries in different coordinated trials were screened using various STS/AS-PCR markers for reduced height (*Rht1b*), vivipary (*Vp1B3a*), vernalization (*Vrn*), polyphenol activity (*PPO*) and leaf rust resistance (*Lr*). The dendrogram depicted the genetic relationships among genotypes. Cluster analysis showed that genetic relatedness among the genotypes ranged from 0.56 to 0.88 i.e., 56–88%. The allele distribution using STS /AS-PCR markers in the genotypes screened is given below.

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

Variety	Markers													
	<i>Rht1b</i>	<i>VP1B3A</i>	<i>Wxb1A</i>	<i>Vrn-1a</i>	<i>VrnA1bR1</i>	<i>VrnA1bR2</i>	<i>Ppd-D1</i>		<i>PPO33</i>		<i>DuPw004</i>		<i>Lr10</i>	<i>Lr34</i>
							228	414	290	481	A	B		
UAS375	+	+	+	+	-	-	+	-	+	-	-	+	-	-
HI8777 (d)	+	+	+	+	-	-	-	-	+	-	+	-	-	-
MACS4028 (d)	-	+	+	+	-	-	-	-	+	-	+	-	-	-
AKDW2997-16(d)(C)	+	-	-	-	-	-	-	-	+	-	+	-	-	-
NI5439 (C)	-	+	+	+	+	-	-	+	+	-	-	+	+	+
NIAW1415 (C)	+	+	+	-	+	-	+	-	+	+	+	-	-	+
UAS446 (d) (C)	+	+	+	+	-	-	-	-	+	-	+	-	-	-
HI1612	+	-	+	+	+	-	+	-	+	-	-	+	-	-
C306 (C)	-	+	+	+	-	+	-	+	+	-	+	-	-	-
HD3171 (C)	+	+	+	+	+	+	+	-	+	-	-	+	-	-
K1317 (C)	+	+	+	+	+	+	+	-	-	+	-	+	-	-
K8027 (C)	-	+	+	-	-	-	-	+	+	-	+	-	-	-
HD2888 (C)	+	+	+	-	-	-	-	+	+	-	+	-	-	+
DBW173	+	+	+	+	-	+	+	-	+	-	+	-	-	-
DBW90 (C)	+	-	+	+	+	-	+	-	+	-	-	+	-	-
HD3059 (C)	+	-	+	+	-	-	+	-	+	-	+	-	+	+
WH1021 (C)	+	+	+	-	-	+	+	-	+	-	-	+	-	-
WH1124 (C)	+	+	+	-	+	-	+	-	+	-	-	+	-	+
DBW168	-	+	+	+	-	-	+	-	-	+	-	+	-	-
GW322 (C)	+	+	+	+	+	+	+	-	+	-	-	+	-	+
MACS6222 (C)	+	+	+	+	+	-	+	-	+	-	-	+	-	-
MACS6478 (C)	+	-	+	-	-	-	+	-	-	+	-	+	-	-
UAS304 (C)	+	+	+	-	+	+	+	-	+	+	-	+	-	-

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

**Dendrogram showing relative diversity in AVT entries based on molecular markers**



### Promising varieties in Advanced Varietal Trials

The criteria for promotion of varieties in AVTs was based on significant superiority of genotypes over the best check of the trials and accordingly 59 genotypes were evaluated in different zones during this crop season. From among the varieties evaluated in AVTs, this year only 4 genotypes were identified to be superior on the basis of their yield performance and response to the incidence of rusts. This revealed that only selected varieties possessed the ability to exhibit significant gain in yield enhancement over the check varieties. The entries, thus, found promising were one each under irrigated timely sown and late sown condition and two entries were under restricted irrigation condition.

From among the 30 genotypes tested in 5 special trials conducted for specific requirements, only the special trial for very late condition (January sown) four genotypes in wheat was found promising.

#### Most promising Varieties in AVTs and Special trials

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation
NHZ	-	-	-
NWPZ	-	PBW752	HD3237, HI1620
NEPZ	DBW187	-	-
CZ	-	-	-
PZ	-	-	-
<b>Special trials</b>			
SPL-VLS	PBW 757, HI1621, PBW777, HD3271		

### Promising varieties in NIVTs and IVTs

Among the total 277 new entries evaluated for their performance in 8 NIVTs, as many as 68 entries were found promising on the basis of high yielding ability and disease resistance. Out of these 68 promising entries, 56 were of bread wheat and 12 of durum

wheat. Thirty-three entries were observed to be promising for timely sown irrigated condition, 3 for late sown irrigated condition and 22 for restricted irrigation condition. In all, 14 entries each were promising in NWPZ & NEPZ, 9 in CZ and 21 in PZ under different cultural conditions at the zonal level.

In IVTs, altogether 38 new entries were tested under rainfed and irrigated condition in NHZ and restricted irrigation condition in SHZ.

#### Most promising entries in NIVTs and IVTs

Zone	Timely sown, Irrigated	Late sown, Irrigated	Timely sown, Restricted irrigation	Timely sown, Rainfed
NWPZ	DBW222, DBW221, PBW766, PBW763, BRW3792, DBW233, UP2981	PBW773, DBW237, PBW771	BRW3806, DBW252, HI1628, NIAW3170	-
NEPZ	WH1218, PBW762, DBW221, K1601, HD3249, DBW223, HD3254, PBW769, DBW233	-	DBW252, BRW3806, MP1331, WH1235, HI1628	-
CZ	AKAW4924, GW495, UAS465(d), MPO1343(d), GW1339(d)	-	MP1331, NIAW3170, UAS446(d), AKDW4896(d)	-
PZ	AKAW4924, GW491, HI1624, GW495, DBW235, GW492, MP1338, PBW770, HI1625, MACS6709, GW493, HI8800(d)	-	NIAW3170, MACS6695, MACS6696, GW1346(d), HI8805(d), MACS4058(d), HI8802(d), MACS4059(d), MPO1336(d)	-
NHZ	-	-	-	HPW441, HS634, HPW442

#### Zonal monitoring of coordinated trials and nurseries

This year teams of multidisciplinary scientists were constituted to monitor almost all the trial conducting centres in the six zones. Monitoring of coordinated trials and nurseries was carried out during February to April, 2017 for examining the conduction of trials and performance of test genotypes in each of the six wheat growing zones. The total number of centres monitored was 120 out of the 149 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 33 trials were rejected by the monitoring teams in different zones. The detailed report of the zonal monitoring teams has been appended in this Progress Report. The comments of the members of the zonal teams on the genetic purity of test genotypes would be taken into account for promotion, retention or dropping of a particular test entry during the group meeting at the ensuing workshop.

#### Itinerary of zonal monitoring

Zone	Duration	Centres monitored
PZ	Team I: Feb., 8-10	Dharwad, Bagalkot, Ugar Khurd, Nippani, Kalloli, Arabhavi, Mudhol, Kolhapur and Bailhongal
	Team II: Feb., 13-16	Nasik, Niphad, Savalvihi, Pravaranagar, Pune and Mahableshwar
	Team II: Feb., 16-18	Amaravati, Akola, Washim and Parbhani
CZ	Team I: Feb., 13-16	Junagadh, Amreli, Sanosara, Dhandhuka, Arnej, Anand, SK Nagar and Vijapur
	Team II: Feb., 21-24	Kota, Udaipur, Banswara, Pratapgarh, Indore, Bhopal and Powarkheda
	Team III: 25 Feb.- Mar.1	Raipur, Bilaspur, Jabalpur, Gwalior and Sagar

SHZ	Feb., 20-23	Wellington, Kodaikanal and Krishnagiri
NEPZ	Team I: March, 1-6	Kalyani, Burdwan, Manikchak, Majhian, Kharibari, Coochbehar, Chirang, Barpeta and Shillongani
	Team II: March, 5-10	Ranchi, Gumla, Chianki, Sabour, Pusa and Purnea
	Team III: March, 15-20	Kanpur, Araul, Daleep Nagar, Deegh, Lucknow, Barabanki, Ghaghraghat, Masodha, Kumarganj, Basti, Baxa, Varanasi, Tissuhi and Naini
NWPZ	Team I: March, 7-11	Bikaner, Jodhpur, Pali, Tabiji, Diggi, Vanasthali, Durgapura, Dausa, Bharatpur, Alwar and Kotputli
	Team II: March, 15-18	Delhi, Shikohpur, Bawal, Hisar, Hanumangarh, Sriganganagar, Bhatinda and Karnal
	Team III: March, 15-18	Pantnagar, Kashipur, Nagina, Moradabad, Rampur, Bareilly, Ujhani, Bulandshahr and Modipuram
	Team IV: March, 20-23	Rauni, Ludhiana, Muksar, Faridkot, Kapurthala, Gurdaspur, Balachaur and Jammu
NHZ	Team I: April, 12-14	Ranichauri, Majhera and Hawalbagh
	Team II: April, 18-21	Shimla, Berthin, Akrot, Una, Bara, Kangra, Malan, Palampur, Bajaura and Katrain

The monitoring teams recommended the rejection of the following 33 trials based on poor conduction, faulty layout, poor plant stand, sowing beyond the recommended dates, etc.

#### Trials rejected by zonal monitoring teams

Zone	Centre	Trial
NHZ	Bara-KVK	AVT- RF-ES
	Malan	IVT-IR-TS
NWPZ	Tabiji	AVT-IR-TS, AVT-IR-LS
	Bharatpur	AVT-IR-TS, AVT-IR-LS, AVT-RI-TS
	Kotputli	AVT-IR-TS, AVT-IR-LS
	Bareilly	AVT-IR-LS
	Alwar	AVT-IR-LS
	Karnal	NIVT-5A-RI
	Modipuram	Spl-VLS
	Pantnagar	Spl-VLS
	Moradabad	Spl-VLS
	NEPZ	Kanpur
Faizabad		NIVT-5A-RI, AVT-RI-TS
Varanasi		NIVT-5A-RI
Allahabad		AVT-IR-TS
Basti		AVT-RI-TS
Purnea		AVT-IR-TS, AVT-RI-TS
CZ	Pratapgarh	AVT-RI-TS
PZ	Mudhol	AVT-IR-TS, Spl-DIC
	Amravati	AVT-IR-TS
	Nippani	NIVT-2, NIVT-4,
	Bailhongal	NIVT-5A-RI, NIVT-5B-RI
SHZ	Ooty	AVT-RI-TS/LS, IVT-RI-TS/LS

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



### Entries dropped from further testing

Zone	Trial	Entries dropped for further testing
NWPZ	NIVT-1A	N-112 (K1601), N-138 (JAUW649)
	NIVT-1B	N-212 (HD3258)
	NIVT-5A	N-706 (BRW3798), N-715 (MP3475), N-719 (PBW775)
NEPZ	NIVT-1A	N-125 (HD3250), N-138 (JAUW649)
	NIVT-3A	N-424 (HD3268)
	NIVT-5A	N-715 (MP3475), N-719 (PBW775), N-725 (K1615)
CZ	NIVT-2	N-308 (UAS391), N-324 (UP2983)
	NIVT-3B	N-521 (UAS392)
	NIVT-5A	N-719 (PBW775)
PZ	NIVT-2	N-315 (MP3471), N-324 (UP2983)
	NIVT-4	N-627 (UAS464)
	NIVT-5A	N-719 (PBW775)

### Seed Production

During 2016-17, a total indent of 23492.17q breeder seed of 185 was received from DAC for production. The highest indented varieties were HD2967 (3079.94q), WH1105 (1367q), HD3086 (1347.20q), Lok1 (916q), Raj4079 (887.90q), GW366 (765.95q), Raj 4238 (756q), GW322 (745.80q), DPW621-50 (522.80q) and HI1544 (480.05q).

#### Top indented varieties in breeder seed chain during 2016-17

SN	Variety	Indent (q)			Production (q)	Tentative Indent
		2014-15	2015-16	2016-17	2016-17	2017-18
1.	HD2967	2886.65	2429.20	3079.94	4319.80	2969.24
2.	WH1105	200.00	911.40	1367.00	1654.40	820.10
3.	HD3086	108.00	269.40	1347.20	1621.45	1276.30
4.	LOK1	709.20	860.80	916.00	930.00	1070.37
5.	Raj4079	666.00	985.00	887.90	1144.30	616.00
6.	GW366	674.40	753.40	765.95	2031.60	854.00
7.	Raj4238	165.00	343.40	756.00	359.50	1057.50
8.	GW322	763.60	905.40	745.80	2313.80	772.20
9.	DPW621-50	660.60	628.80	522.80	563.00	397.00
10.	HI1544	529.60	525.40	480.05	972.75	549.90

### Breeder Seed Production:

Total allocation of 22145.69q breeder seed of 157 varieties was made for production at 33 centres after excluding one de-notified (HD2009) and 27 un-notified entries from among the DAC indented varieties. Total production of breeder seed during the year was 35174.91q. Thus, there was a surplus production of 13029.22q over the allocated quantity of breeder seed.

PAU-Ludhiana produced the highest breeder seed (5328.15q) followed by JNKVV-Jabalpur (4970.92q) and ARS-Kota (2705.99q). However, SKNAU-Durgapura produced 1069q deficit quantity of breeder seed against allocation of 1955.50q.

The highest quantity of breeder seed was produced in HD2967 (4319.80q) followed by GW 322 (2313.80q) and GW 366 (2031.6q) varieties.

### Indent & production of top indented varieties breeder seed during 2016-17

SN	Variety	Final Indent (q)			Production (q) 2016-17	Tentative Indent 2017-18
		2014-15	2015-16	2016-17		
1.	HD 2967	2886.65	2429.20	3079.94	4319.80	2969.24
2.	WH 1105	200.00	911.40	1367.00	1654.40	820.10
3.	HD 3086	108.00	269.40	1347.20	1621.45	1276.30
4.	Lok 1	709.20	860.80	916.00	930.00	1070.37
5.	Raj 4079	666.00	985.00	887.90	1144.30	616.00
6.	GW 366	674.40	753.40	765.95	2031.60	854.00
7.	Raj 4238	165.00	343.00	756.00	359.50	1057.50
8.	GW 322	763.60	905.40	745.80	2313.80	772.20
9.	DPW 621-50	660.60	628.80	522.80	563.00	397.00
10.	HI 1544	529.60	525.40	480.05	972.75	549.90

At some centres, a very high production - many times more than the indented/allocated quantity of breeder seed - was produced. The over production of such varieties is a matter of concern, since many times poor varieties are promoted depriving the good and recent varieties from reaching the farmers.

### Varieties with surplus seed production - many times more than the indent

Variety	Year of Release	Name of the Producing Center	Allotment BSP-I (q)	Production (q)	Surplus (q)
MP(JW) 3211	2010	JNKVV, Jabalpur	260.00	1766.00	1506.00
PBW 725	2016	PAU, Ludhiana	121.40	1100.00	978.60
PBW 677	2016	PAU, Ludhiana	116.40	700.00	583.60
Raj 4079	2011	ARS, Kota	487.90	926.90	439.00
MP(RVW) 4106	2012	RVSKVV, Gwalior	140.00	428.00	288.00
Raj 3765	1996	ARS, Kota	62.40	254.80	192.40
WH 147	1978	ARS, Kota	189.30	332.20	142.90

### Nucleus Seed Production:

During 2016-17, total allocation of 1006.0q nucleus seed production of 163 varieties was made. A surplus quantity of 604.97q nucleus seed was produced (1610.97q) against the total allocation. IARI-Indore produced maximum quantity of nucleus seed (272q) followed by JNKVV-Jabalpur (198.25q) and ARS-Kota (140.80q). SKNAU-Durgapura centre produced 32q less nucleus seed against the allocation of 72.0q. Maximum nucleus seed (105.05q) was produced in variety GW 322.

### Test stock multiplication

NSC reported 453q test stock seed multiplication of varieties identified and released during 2016-17. The varieties included four varieties each of bread wheat viz., HS562 (81q), HPBW01 (63q), HI1605 (45q) and WB2 (40q) and durum wheat viz., HD3171 (76q), HD4728 (63q), HD8759 (53q) and MACS3949 (32.0q).

### Evaluation of National and International Nurseries/Trials

#### National Nurseries

During the crop season 2016-17, seven nurseries and two segregating stock nurseries were constituted at IIWBR and supplied to different cooperating centres located across the various zones for evaluation and utilization as per their requirement.

### Nurseries shared with co-operators

Nursery	Genotypes + Checks #	Cooperating centres #
<b>National Nurseries</b>		
National Genetic Stock Nursery (NGSN)	91+3	34
Yield Components Screening Nursery (YCSN)	92+4	29
Short Duration Screening Nursery (SDSN)	40+6	25
Quality Component Screening Nursery (QCSN)	56+3	12
Elite International Germplasm Nursery (EIGN)	88+4	26
National Durum Screening Nursery (NDSN)	65+3	13
Drought Tolerance Screening Nursery (DTSN)	25+4	17
<b>Segregating Stock Nurseries</b>		
Segregating Stock Nursery (SSN)	82 F <sub>2</sub> & F <sub>3</sub>	20
Spring x Winterwheat Segregating Stock Nursery (SWSSN)	46 F <sub>2</sub>	6

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

1. *National Genetic Stock Nursery (NGSN)*: The NGSN comprising 91 lines including bread wheat (74), durum (14) and triticale (3) was provided to 34 centres. This nursery serves the purpose of a 'suggested crossing block' for utilization in breeding programmes. The entries were categorized as sources for disease resistance, new agronomic bases, elite lines, yield component lines and registered genetic stocks. Pooled analysis of data was done for identification of promising lines.

#### Promising lines identified for yield component traits in NGSN during 2016-17

Traits	Criteria	Promising entries	Best check
Tillers/m #	>100	MP3336, DBW129, K1204, Raj4238, DBW93, DBW71, DBW172, GW451, GW463	HD2967 (98)
Grains/spike #	>55	HPW360, K0402, NIAW2349, HPW373, PBW695, AKAW4924, HI1615, KBRL81-1, HS592	HD2967 (55)
1000-gr. wt. (g)	>45	PHSL5, KB2013-05, HUW661, PHSL10, Raj4350, HI1604, HI1600, K1317, HD4758(d), HD4728(d), HD4730(d), HI8737(d), HI8750(d), HI8708(d), HI8759(d), MACS3949(d), HI8755(d), AKDW5012(d)	HI8713 (45) Sonalika (41)
Spike length (cm)	>10	PHSL5, PHSL10, AKAW4924, HUW675, PBW681, VL3004, VL967, UP2864, HPW411, VL1003, NIAW2349, HPW360	HD2967 (10)

The promising genotypes showing resistances to disease under field condition in NGSN have been listed.

#### Genotypes showing resistance to diseases in NGSN under field conditions

Disease	Resistant genotypes
Yellow rust	HPW373, PBW695, AKDW5013(d), TL2992(T), TL2999(T)
Brown rust	HUW677, UP2891, HUW661, K1006, HS593, HPW411, DBW154, VL977, GW455, DBW71, DBW107, MP3336, HD4728(d), HD8750 (d), HI8737(d), HI8708(d), MACS3949(d)
Black rust	VL1003, KBRL79-2, KBRL82-2, TL2999(T), TL2996(T)
Leaf blight	DBW129, HD3133, PBW723, HUW675, HS547, DBW172, KBRL82-2, HS592, K0402

On the basis of utilization report received from 24 locations, it was found that 20.2% genotypes in the NGSN were either directly used for selection or utilized in hybridization as parents.

2. *Yield Component Screening Nursery*: The 29<sup>th</sup> set of Yield Component Screening Nursery (YCSN) having 92 test entries was supplied to 29 centres to provide new germplasm for three major yield components (tillers per meter, grains per spike and 1000-grain weight). The promising lines showing consistent performance for three years are listed below.

**Promising lines showing consistent performance for three consecutive years (2014-17)**

Trait	Promising genetic resources (in order of merit)
Tillers/m (>98)	AKAW 4899 (116), LBPY 2014-8 (102), LBPY 2014-7 (101), RAJ 4444 (100), LBPY 2014-4 (100), LBPY 2014-9 (99)
Grains/spike (>56)	LBPY 2014-5 (58)
1000-gr.wt.(>45g)	NIAW 2844 (49), GW 2013-491 (49), LBPY 2014-12 (46), LBPY 2014-3 (46), GW 2013-489 (45)

3. *Short Duration Screening Nursery*: The Short Duration Screening Nursery consisted of 40 entries and planted at 25 locations. Early maturing genotypes tolerant to high temperature during grain filling period under late sown conditions were identified. The genotype RWP2013-09 in NWPZ and RWP2013-10 in PZ was found superior to check during 3 years of testing in SDSN. Out of 12 genotypes evaluated, none of the genotypes performed better than the best check in respective zones during second year testing in SDSN.

**Promising lines for grain yield/plot identified on the basis of one year test during 2016-17**

Zone	Germplasm line	Best check
NWPZ	CNM15-2 (614), WS15-7 (509)	DBW71 (489)
NEPZ	WS15-7 (562), LBP 2014-12 (540), NIAW 2844 (532), RWP 2014-18 (524)	WR544 (504)
CZ	RAJ4358 (643), GW2015-668 (600), NIAW2844 (593), RWP2013-10 (593), RWP2014-19 (584), AKAW4842 (574), WS 2015-01 (550), CNM15-2 (549), RWP2013-09 (547), RAJ4486(541)	HD2932 (520)
PZ	GW2014-619 (366), GW2015-670 (366), RWP2015-11 (366), GW2014-624 (348)	HD2932 (337)
NHZ	LBP2014-12 (263), GW2015-667 (255), AKAW4842 (245), RAJ4482 (238)	Sonalika (204)

4. *Quality Component Screening Nursery*: QCSN comprising 56 test entries and 3 checks was planted at 12 centres to identify new genetic resource for quality improvement.

**Promising genotypes for individual quality parameters**

Component	Range	Genotypes
Protein content (%)	14.0-14.5	BWL1660, BWL1664, QLD46
Sedimentation value(ml)	61-62	QLD76, BW5872, HD3215, UP2958, QLD78, UP2927
Hardness index	89-91	Hard wheat: GW2015-703(d), GW2015-609(d) QLD89, UP2959
	18-26	Soft wheat: QLD84, QLD49, QLD73, QLD67
Test weight (kg/ml)	81.5-82	Bread wheat: JWS733
	82-82.1	Durum wheat: GW2015-699, GW2015-691

Nine entries completed three years testing in QCSN and two genotypes each were identified for the quality component traits viz., protein (QLD46 and BWL1660), sedimentation value (QLD76 and QLD78) and grain softness (QLD67 and QLD73).

5. *Elite International Germplasm Nurseries*: The elite international germplasm nursery comprising 88 entries were supplied to 26 centres. Promising entries were identified for grain yield/plot and disease resistance. A total of 237 selections were made by the different cooperating centres in EIGN during this year.

#### Promising entries in EIGN

Trait	Entry
Grain yield/plot (>620g)	33 <sup>th</sup> SAWSN 3284 (690), 10 <sup>th</sup> STEMRRSN 6173 (665), 26 <sup>th</sup> HRWSN 2006 (647), 23 <sup>rd</sup> SAWYT 314 (645), 33 <sup>th</sup> SAWSN 3015 (643), 17 <sup>th</sup> KBSN 14 (640), 14 <sup>th</sup> HTWYT 21 (625), 26 <sup>th</sup> HRWSN 2056 (623)
Yellow rust (0/tR)	36 <sup>th</sup> ESWYT 117, 17 <sup>th</sup> KBSN 47, 23 <sup>rd</sup> SAWYT 340, 48 <sup>th</sup> IBWSN 1193, 48 <sup>th</sup> IBWSN 1297, 14 <sup>th</sup> HTWYT 16, 26 <sup>th</sup> HRWSN 2006, 10 <sup>th</sup> STEMRRSN 6152
Black rust (tR/tMR)	36 <sup>th</sup> ESWYT 131, 23 <sup>rd</sup> HRWYT 248, 17 <sup>th</sup> KBSN 30, 17 <sup>th</sup> KBSN 50, 23 <sup>rd</sup> SAWYT 318, 23 <sup>rd</sup> SAWYT 321, 23 <sup>rd</sup> SAWYT 346, 33 <sup>th</sup> SAWSN 3201, 48 <sup>th</sup> IBWSN 1283, 48 <sup>th</sup> IBWSN 1298, 14 <sup>th</sup> HTWYT 21
Leaf blight (<34)	23 <sup>rd</sup> SAWYT 314, 7 <sup>th</sup> HLBSN 11, 10 <sup>th</sup> STEMRRSN 6173

6. *National Durum Screening Nursery*: 3<sup>rd</sup> National Durum Screening Nursery (NDSN) comprising 65 lines including 58 from various international durum nurseries and 7 lines contributed by Indore centre. The nursery was shared with 13 centres for the identification of promising entries for yield components and disease resistance. The feedback reports of NDSN indicate that a total of 88 lines were selected by the breeders of different centres for utilization in breeding programme.

#### Trait-wise rust resistance entries from NDSN

Trait	Original entry numbers
Tillers/m (>111)	47 <sup>th</sup> IDSN7136
1000-gr. wt.(g) (≥52)	HI 8796
Grains per spike (>51)	47 <sup>th</sup> IDSN7091, 47 <sup>th</sup> IDSN7118, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN706, 47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN740, HI8797
Grain yield/plot (>623g)	47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN717, HI8797

7. *Drought Tolerance Screening Nursery*: The 29<sup>th</sup> Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 4 checks (C306, MP3288, HD2888 and NI5439) was conducted at 17 centres to identify wheat genotypes having tolerance to moisture stress. During two years testing, genotypes RW5, DBW136 and DBW166 were observed to be less sensitive to drought stress. Hence, these genotypes can be used as a source in hybridization to develop drought tolerant varieties.

#### Promising drought tolerant genotypes found during two years of testing

Genotype (Parentage)	DSI (2015-16)	DSI (2016-17)	DSI Mean
<b>RW 5</b> (RAJ4014/WH730)	0.77	0.26	0.51
<b>DBW 136</b> (HUW548/MV231-98)	0.98	0.73	0.85
<b>DBW 166</b> (DANPHE/CHONTE)	0.99	0.29	0.64
<b>C 306 (C)</b>	0.61	0.49	0.55

## Segregating Stock Nurseries

(i). *Segregating Stock Nursery*: The 82 segregating populations ( $F_2/F_3$ ) of 20<sup>th</sup> Segregating Stock Nursery (SSN) was shared with 20 upcoming wheat breeding centres in AICW&BIP to enable them to evaluate and select superior plants as per the breeding objectives and cultural conditions. The utilization report indicated that the nursery could achieve 37.8% utilization across the centres. Almost all the segregating populations were utilized by one or the other centre and total of 3146 plants were selected.

**Table 1: Centre-wise utilization of segregating stocks in 20<sup>th</sup> SSN**

SN	Centre	Plants selected	Crosses utilized	Utilization (%)	Selection criteria
1	Jammu	47	14	17.1	Yield components and disease resistance
2	Varanasi	65	17	20.7	Yield components and morphological traits
3	Faizabad	52	15	18.3	Yield components and disease resistance
4	Ranchi	105	25	30.5	Yield components, morphological and seed traits
5	Sabour	638	76	92.7	Yield components, disease resistance, morphological, physiological and seed traits
6	Coochbehar	109	26	31.7	Yield components, disease resistance, morphological, physiological and seed traits
7	Kalyani	81	19	23.2	Yield components, physiological and seed traits
8	Shillongoni	12	6	7.3	Yield components and morphological traits
9	Gwalior	470	54	65.8	Yield components, morphological, physiological and seed traits
10	Bilaspur	610	72	87.8	Yield components and seed traits
11	Lok Bharti	410	49	59.7	Yield components, disease resistance and seed traits
12	Kota	179	49	59.7	Yield components, morphological, physiological and seed traits
13	Udaipur	150	34	41.5	Yield components
14	Sagar	145	27	32.9	Yield components
15	Jabalpur	30	6	7.3	Yield components and disease resistance
16	Akola	43	7	8.5	Yield components
<b>Total</b>		<b>3146</b>	<b>496</b>	<b>37.8</b>	

(ii). *Spring x Winterwheat Segregating Stock Nursery*: The Spring x Winterwheat Segregating Stock Nursery comprising 46 crosses from  $F_2$  generation was shared with six cooperating centres, namely RVSKVV, Gwalior, CSKHPKV Malan, SDAU- Vijapur, NDUAT-Faizabad, CSAUA&T, Kanpur, and BHU, Varanasi. The maximum plants were selected at Malan (951) followed by Gwalior (356).

**Utilization report from cooperating centres**

Name of Centre	Crosses Selected #	Utilization %	Plants Selected #	Characteristics for which utilized
RVSKVV, Gwalior	46	100	356	Yield components and morphological traits
CSKHPKV, Malan	43	93.5	951	Resistance to yellow rust and powdery mildew and yield components
SDAU, Vijapur	14	30.43	17	Rust resistance, yield components, morphological traits and seed characteristics
NDUAT, Faizabad	12	26.1	12	Yield components, leaf blight resistance and seed characteristics
CSAUAT, Kanpur	11	23.9	40	Yield components, morphological and seed characteristics
BHU, Varanasi,	5	10.9	39	Yield components and leaf blight resistance

## International Nurseries and Trials

India has a strong collaboration with CIMMYT, Mexico and ICARDA, Morocco for supplying wheat germplasm. During the crop season 2016-17, CIMMYT, Mexico supplied germplasm in different nurseries/trials comprising 1427 lines (1213 breadwheat and 214 durum wheat). Similarly, ICARDA, Morocco supplied a total of 580 lines (460 breadwheat and 120 durum wheat) in different nurseries/trials which were evaluated at various wheat breeding centres.

One set of each nursery/trial was planted at Karnal for evaluation and facilitate wheat breeders from different centres for exercising *in-situ* selection during the field day organized on 8<sup>th</sup> March, 2017 at Karnal.

The best performing lines from these nurseries are utilized to constitute the Elite International Germplasm Nursery (EIGN) for bread wheat and National Durum Screening Nursery (NDSN) for supplying to cooperating centres for evaluation and utilization in wheat improvement.

The promising genotypes identified from these nurseries are given below.

### Promising lines having higher grain yield & rust resistance and 1000-grains weight in CIMMYT international nurseries/trials

Trial/Nursery	Grain yield (q/ha)	1000-grains weight (g)
<b>Bread wheat</b>		
24 <sup>th</sup> SAWYT	NWPZ: 305 (56), 335 (56), 348 (57)	
	NEPZ: 308 (48), 311(46), 330 (49), 344(48)	
37 <sup>th</sup> ESWYT	NWPZ: 120 (68)	NWPZ: 128 (44),129 (44)
	NEPZ: 111 (71), 138 (68)	NEPZ:117 (43),138 (43)
	CZ: 122 (58), 140 (57)	CZ:128 (50), 30 (49) PZ: 121 (48), 122 (47)
15 <sup>th</sup> HTWYT	NWPZ: 21 (75), 32 (73), 42 (72)	NEPZ: 21 (44), 36 (44)
	NEPZ: 5 (64), 10 (61)	CZ: 36 (49) PZ: 21 (46), 36 (49)
24 <sup>th</sup> HRWYT	NWPZ: 237 (86), 239 (80), 246 (80), 249 (95), 250 (80)	NWPZ: 226 (51), 237 (49), 243 (51), 247 (49) NEPZ: 231 (46), 248 (48)
49 <sup>th</sup> IBWSN		NHZ: 1006 (63),1081 (63), 1089 (61), 1096 (60), 1207 (60)
		CZ: 1072 (55),1145 (56),1161 (55)
34 <sup>th</sup> SAWSN		NWPZ: 3032 (46), 3052 (46), 3098 (46), 3247 (46), 3267 (46), 3268 (47), 3270 (46)
		PZ: 3135 (47), 3148 (47), 3190 (47)
27 <sup>th</sup> HRWSN		NWPZ: 2116 (54)
		NEPZ: 2008 (46), 2101 (48), 2107 (46)
11 <sup>th</sup> STEMRRSN		NWPZ: 6026 (61)
		PZ: 6026 (51)
8 <sup>th</sup> HLBSN		NWPZ: 19 (51)
18 <sup>th</sup> KBSN		NWPZ: 12 (50)
<b>Durum</b>		
48 <sup>th</sup> IDYN		NWPZ: 737 (52),739 (51)
		PZ:737 (52)
48 <sup>th</sup> IDSN		PZ: 7062 (50)

**Promising lines for grain yield in ICARDA trials/nurseries**

Trial / Nursery	Yield (g/plot)	Entry number	Check (g/plot)	Rust response
<b>Bread wheat</b>				
17 <sup>th</sup> ESBWYT	Karnal (>3600)	24, 29, 32, 48	DBW 88 (3500)	YI (0-tS)
	Durgapura (>2700)	2,18, 44	RAJ 4238 (2000)	-
	Niphad (>1100)	2,14,18, 20, 38	NIAW 1994 (995)	-
17 <sup>th</sup> DSBWYT	Karnal (>3400)	4, 26, 28, 30, 40, 48	DBW 88 (3010)	YI (0-tS)
	Dharwad (>970)	4, 13, 39, 40	-	-
	Vijapur (>1000)	6, 21, 23, 24, 31, 33, 36, 40, 44, 47, 50	GW 451 (1065)	BI (0-tS)
17 <sup>th</sup> SBW-ON	Karnal (>990)	47, 97, 99,111,123	WH 1105 (540)	-
	Powarkheda (>700)	26,135,146	MP 1201 (600)	-
17 <sup>th</sup> SBWON-HT	Karnal (>930)	6, 66, 126, 129, 160	WH 1105 (560)	-
	Vijapur (>680)	33, 56, 57, 113	GW 173 (332)	-
<b>Durum wheat</b>				
40 <sup>th</sup> IDYT	Karnal (>3400)	4,17,18, 20	PDW 314 (2862)	-
40 <sup>th</sup> IDON	Karnal (>1130)	24, 84, 85	PDW 233 (1010)	-
	Powarkheda (>650)	26, 43, 44, 47, 64, 84, 91	MPO 1215 (525)	-

**Physiological studies on heat stress tolerance**

The multilocation heat tolerance trial (MLHT) is conducted to identify heat tolerant genotypes among the AVT genotypes. Two trials, MLHT-1 (1<sup>st</sup> year AVT) and MLHT-2 (AVT 2015-16 genotypes) were conducted during crop season 2015-16. Each trial consisting of 16 genotypes including checks was evaluated at 14 centres.

**MLHT-1**

The pooled analysis across centres revealed that HSI values ranged from 0.68 to 1.29. The genotype HI1617 (0.80) was found to be less sensitive to thermal regimes.

**HSI of genotypes in MLHT-1 across locations**

Genotype	Grain yield (g/plot)		*R%	HSI	Genotype	Grain yield (g/plot)		*R%	HSI
	TS	LS				TS	LS		
HI 1617	1491.1	1176.5	21.09	0.80	HD 3226	1601.4	1078.7	32.64	1.24
DBW 187	1604.0	1173.6	26.83	1.02	PBW 750	1663.1	1099.5	33.89	1.29
HD 3219	1600.8	1169.8	26.92	1.02	<b>Checks</b>				
DBW 189	1590.5	1130.4	28.93	1.10					
WH 1202	1571.9	1115.9	29.01	1.10	DBW 14(C)	1334.6	1096.1	17.87	0.68
PBW 752	1609.4	1138.5	29.26	1.11	DBW 71(C)	1458.4	1080.7	25.90	0.98
DBW 196	1448.8	1018.5	29.70	1.13	HD 2932(C)	1342.6	1096.7	18.31	0.70
UP 2942	1504.5	1053.0	30.01	1.14	RAJ 3765(C)	1385.7	1138.6	17.83	0.68
HP 1963	1541.9	1074.3	30.32	1.15	WH 730(C)	1306.9	1079.1	17.43	0.66

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



## MLHT-2

Pooled analysis of eleven genotypes tested during two years (2015-16 and 2016-17) at ten centres showed that the genotypes AKAW 4842 (0.75), GW 477 (0.87), DBW 173 (0.97) and WH 1184 (0.99) were relatively less sensitive to thermal regimes that prevailed under late sown conditions.

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

Genotype	Grain yield (g/plot)		*R%	HSI	Genotype	Grain yield (g/plot)		*R%	HSI
	TS	LS				TS	LS		
AKAW 4842	1419.4	1119.7	21.12	0.75	UP 2903	1525.1	1024.1	32.85	1.16
GW 477	1391.1	1049.3	24.57	0.87	<b>Checks</b>				
DBW 173	1524.8	1105.5	27.50	0.97	DBW 71 (C)	1529.0	1132.3	25.94	0.92
WH 1184	1611.6	1162.3	27.88	0.99	DBW 90 (C)	1588.8	1059.3	33.33	1.18
HD 3184	1536.2	1050.8	31.59	1.12	DBW 107 (C)	1537.2	1164.8	24.23	0.86
DBW 168	1519.0	1027.7	32.34	1.15	HD 2932 (C)	1574.9	1191.7	24.33	0.86

\* - Reduction% in LS compared to TS

## **Issues for discussion during the workshop**

1. Deliberation on recommendations of Brainstorming session held in January 2017
2. Site mean yield fixation for acceptance of trials
3. Re-introduction of coding of entries in AVTs and Special trials
4. Constitution of all coordinated breeding trials at IIWBR, Karnal
5. Merger of MABB trial with AVT
6. Routing of breeding lines through Crop Improvement for testing in IPPSN
7. Discontinuation of varietal trials in SHZ, Spl-TCL and Yield Component Screening Nursery
8. Reduction of trial number and size in NHZ

**Break-up of Co-ordinated Wheat Varietal Trials, 2016-17  
Proposed (PR), Conducted (CD) and Reported (RT)**

SN	Trial series/Zones	NHZ			NWPZ			NEPZ			CZ			PZ			SHZ			ALL ZONE		
		PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT	PR	CD	RT
1	AVT-IR-TS-TAS				31	31	24	29	24	16										60	55	40
2	AVT-IR-TS-TAD													18	18	10				18	18	10
3	AVT-IR-LS-TAS				26	26	19													26	26	19
4	AVT-RF-TS-TAD													10	10	4				10	10	4
5	AVT-RI-TS-TAS				17	17	14	18	17	9	18	18	12							53	52	35
6	AVT-RI-TS/LS-TAS																6	5	1	6	5	1
7	AVT-RI-LS-TAS	10	9	4																10	9	4
8	AVT-RF-ES-TAS	7	7	5																7	7	5
9	AVT-VHA-SUMMER	6	4	2																6	4	2
10	IVT-IR-TS-TAS	5	5	3																5	5	3
11	IVT-RF-TS-TAS	8	8	6																8	8	6
12	IVT-RI-TS/LS-TAS																6	5	1	6	5	1
13	NIVT-1A-IR-TS-TAS				10	10	8	9	9	6										19	19	14
14	NIVT-1B-IR-TS-TAS				8	8	7	10	10	6										18	18	13
15	NIVT-2-IR-TS-TAS										10	10	8	7	7	4				17	17	12
16	NIVT-3A-IR-LS-TAS				9	9	8	9	9	6										18	18	14
17	NIVT-3B-IR-LS-TAS										9	9	7	5	5	3				14	14	10
18	NIVT-4-IR-TS-TDM										6	6	4	6	6	2				12	12	6
19	NIVT-5A-RI-TS-TAS				9	9	8	9	9	6	8	8	7	6	5	1				32	31	22
20	NIVT-5B-RI-TS-TDM										7	7	4	6	6	2				13	13	6
21	SPL-DIC-IR-TS													11	11	7	2	2	1	13	13	8
22	SPL-AST-IR-TS				8	6	4	5	5	3	3	3	3							16	14	10
23	SPL-VLS-TAS				13	13	8	8	8	7										21	21	15
24	SPL-TCL-RF-TS	9	9	7																9	9	7
25	SPL-MABB-IR-TS				12	12	12													12	12	12
<b>TOTAL</b>		<b>45</b>	<b>42</b>	<b>27</b>	<b>143</b>	<b>141</b>	<b>112</b>	<b>97</b>	<b>91</b>	<b>59</b>	<b>61</b>	<b>61</b>	<b>45</b>	<b>69</b>	<b>68</b>	<b>33</b>	<b>14</b>	<b>12</b>	<b>3</b>	<b>429</b>	<b>415</b>	<b>279</b>
% of CD Trial/PR Trial		93.33			98.60			93.81			100.00			98.55			85.71			96.73		
% of RT Trial/CD Trial		64.28			79.43			64.84			73.77			48.52			25.00			67.23		
Trials Rejected by Monitoring Team		2			13			8			1			7			2			33		

## Abbreviations used in the Text

<b>Yield</b>	
Rk	Rank
G	Group (First non-significant)
S.E. (M)	Standard error of the means
C.D.	Critical difference
C.V.	Coefficient of variance
<b>Rusts</b>	
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
<b>Loose smut (LS)</b>	
F	Free
tS	Susceptible in traces
S	Susceptible
<b>Other diseases (OD)</b>	
KB	Karnal bunt (%)
LB	Leaf blight (severity scoring based on double digit method)
PM	Powdery mildew (scale 0-9)
BP	Black point (%)
<b>Agronomic characters</b>	
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
<b>Grain characteristics</b>	
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)

<b>Other symbols</b>	
C	Check variety
(I)	Identified variety
(d)	Durum
*	Final year test entry
AVT	Advanced Varietal Trial
NIVT	National Initial Varietal Trial
IVT	Initial Varietal Trial
AST	Alkalinity/Salinity Trial
IR	Irrigated
RF	Rainfed
RI	Restricted irrigation
TS	Timely sown
LS	Late sown
ES	Early sown
Q	Entry good in quality traits
TAS	<i>Triticum aestivum</i>
TAD	<i>Triticum aestivum + T. durum</i>
TDM	<i>Triticum durum</i>
TCL	Triticale
DIC	<i>Triticum dicoccum</i>
VHA	Very high altitude trial
VLS	Very late sown trial
MABB	Marker aided backcross breeding trial
<b>Zones</b>	
NHZ	Northern Hills Zone
NWPZ	North Western Plains Zone
NEPZ	North Eastern Plains Zone
CZ	Central Zone
PZ	Peninsular Zone
SHZ	Southern Hills Zone
NAT ZONE	National Zone – Trial conducted in two or more zones
<b>Reasons for not reporting the data</b>	
LSM	Low site mean
UY	Unrealistic yield
ES	Early sowing
LS	Late sowing
HCV	High coefficient of variation
LCV	Low coefficient of variation
MI	More irrigations (in RI trials)
RMT	Rejected by monitoring team
ID	Incomplete data
IL	Improper layout
TF	Trial failed
DNR	Data not reported

# Parentage Details

## Parentage of wheat and triticale genotypes, 2016-17

SN	Genotype designation	Centre
1.	AKAW, AKDW	Akola, PDKV
2.	CG	Bilaspur, IGKV
3.	DBW, DDW	Karnal, IIWBR
4.	GW	Vijapur, SDAU
5.	GW	Junagarh, JAU
6.	HD	New Delhi, IARI
7.	HI	Indore, IARI, RS
8.	HP	Pusa, IARI, RS
9.	HS	Shimla, IARI, RS
10.	HW	Wellington, IARI, RS
11.	HUW	Varanasi, BHU
12.	HPW	Malan, CSKHPKV
13.	JAUW	Jammu, SKUAS&T-J
14.	K, KD	Kanpur, CSAUA&T
15.	KRL	Karnal, CSSRI
16.	MACS	Pune, ARI
17.	MP, MPO	Powarkheda, JNKVV
18.	MP	Jabalpur, JNKVV
19.	JWS	Sagar, JNKVV
20.	NW	Faizabad, NDU&T
21.	NIAW, NIDW	Niphad, MPKV
22.	PBW, PDW, TL	Ludhiana, PAU
23.	PBND	Parbhani, MAU
24.	RAJ	Durgapura, SKRAU
25.	BRW	Sabour, BAU
26.	JKW	BAU, Ranchi
27.	RVW	Gwalior, RVSKVV
28.	RKD	Kota, MPUA&T
29.	UAS, DDK	Dharwad, UAS
30.	UBW	Coochbehar,
31.	UP, UPD	Pantnagar, GBPUA&T
32.	VL	Almora, VPKAS
33.	WH, WHD	Hisar, CCShAU

## Parentage, 2016-17

### PDKV, Akola (Maharashtra)

1.	AKAW4924	DL-9-65-2/AKW1071-1-2
2.	AKAW5017	CPAN4066/AKW381/AKAW4288-4-4-3
Durum		
3.	AKDW5012	AKDW4152/MACS2846/AKDW4273-5-3-1
4.	AKDW5013	AKDW4152/MACS2846/AKDW4273-4-2-10
5.	AKDW4896	DWR1003/MACS2846/AKDW4143-6

### Bihar Agricultural University, Sabour, Bhagalpur (Bihar)

1.	BRW3773	FRANCOLIN#1/WBLL1*2/BRAMBLING/3/WBLL1*2
2.	BRW3775	PFAU/SERI.1B//AMAD/3/WAXWING/4/BABAX/LR42//BABAX*/3/KURUKU
3.	BRW3791	PRNCLN/ROLF07
4.	BRW3792	PF74354//LD/ALD/4/2*BR12*2/3/JUP//PAR214
5.	BRW3793	PHS0723/NW2036
6.	BRW3796	RAJ3765/UP2382
7.	BRW3798	DBW39/BH1146
8.	BRW3799	NI5439/MACS2496
9.	BRW3806	NI5439/MACS2496

### IGKV, TCB College of Agriculture, Bilaspur (Chhattisgarh)

1.	CG1023	BOW/VEE/5/ND/VG9144//KAL/BB/3/YACO/4/CHIL/6/CASKOR/3/CROC_1/AE.SQUARROSA(224)//OPATA/7/PASTOR//MILAN/KAUZ/3/BAV92
2.	CG1024	1447/PASTOR//KRICHAUFF/3/ATTILA*2/PBW65
3.	CG1025	HI1544/DBW14
4.	CG1026	HD2402/HP1907
5.	CG1027	WHEAR//2*PRL/2*PASTOR

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

1.	DBW168	SUNSU/CHIBIA
2.	DBW173	KAUZ/AA//KAUZ//PBW602
3.	DBW179	CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA//FRET2/6/MILAN/KAUZ//PRINIA/3/BAV92
4.	DBW187	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
5.	DBW189	KACHU#1/4/CROC_1/AE.SQUARROSA(205)//BORL95/3/2*MILAN/5/KACHU
6.	DBW196	ROLF07*2/KACHU#1
7.	DBW204	KACHU//WBLL1*2/BRAMBLING
8.	DBW221	36IBWSN284/22ESWYT28
9.	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
10.	DBW223	PBW550/CBW38



11.	DBW224	KACHU/6/YAR/AE.SQUARROSA(783)/4/GOV/AZ//MUS/3/ SARA/5/MYNA/VUL//JUN
12.	DBW225	39 <sup>th</sup> IBWSN1108/36 <sup>th</sup> IBWSN138
13.	DBW226	DBW18/PBW580
14.	DBW227	BAJ#1*2/HUIRIVIS#1
15.	DBW228	SHORTENEDSR26TRANSLOCATION/KACHU#1//2*KACHU
16.	DBW229	KACHU//KIRITATI/2*TRCH
17.	DBW230	HW2045/SW-89-5422
18.	DBW231	11 <sup>th</sup> HTWYT59/21 <sup>st</sup> SAWSN159
19.	DBW232	PFAU/SERI.1B//AMAD/3/WAXWING*2/4/TECUE#1
20.	DBW233	CHIBIA//PRLII/CM65531/3/SKAUZ/BAV92/4/MUNAL#1
21.	DBW234	SYNTH99/UP2425/FLW22//PBW502
22.	DBW235	MELON//FILIN/MILAN/3/FILIN/4/TRCH/SRTU//KACHU
23.	DBW236	BOW/VEE/5/ND/VG9144//KAL/BB/3/YACO/4/CHIL/6/CASKOR/3/ CROC_1/ AE.SQUARROSA(224)//OPATA/7/PASTOR//MILAN/KAUZ/3/BAV92
24.	DBW237	NAC/TH/AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
25.	DBW238	92.001E7.32.5/SLVS//PAURAQUE#1
26.	DBW239	MILAN/S87230//BAV92*2/3/AKURI
27.	DBW240	WH1094/DBW64
28.	DBW241	DBW16/BH1146
29.	DBW242	RAJ3765/BL1724
30.	DBW243	BECARD/KACHU
31.	DBW244	NS-732/HER/3/PRL/SARA//TSI/VEE#5/4/FRET2/5/WHEAR/SOKOLL
32.	DBW245	11 <sup>th</sup> WAWSN112/PBW568
33.	DBW246	KACHU/SAUAL/8/ATTILA*2/PBW65/6/PVN//CAR422/ANA/5/BOW/ CROW//BUC/PVN/3/YR/4/TRAP#1/7/ATTILA/2*PASTOR
34.	DBW247	CHIBIA//PRLII/CM65531/3/SKAUZ/BAV92/4/MUNAL#1
35.	DBW248	MILAN/S87230//BAV92*2/3/AKURI
36.	DBW249	JARU//SHA4/CHIL
37.	DBW250	PRL*PASTOR//PBW343*2/KUKUNA
38.	DBW251	PBN142/DBW30
39.	DBW252	PFAU/MILAN/5/CHEN/AE.SQ(TAUS)//BCN/3/VEE#7/BOW/4/PASTOR
Durum		
40.	DDW43	GW2/PDW291
41.	DDW44	HI8727/MPO215//PDW233
42.	DDW45	HI8713/DBP01-9//PDW233
43.	DDW46	HI9704/DBP01-11//PDW291
44.	DDW47	PBW34/RAJ1555//PDW314

#### SDAU, Vijapur (Gujarat)

1.	GW491	HD2808/HI1516//PBW573
2.	GW492	RAJ4040/HD2808

3.	GW493	HW2045//HI1183/PCE2555
4.	GW499	CLN3/PHR1007//GW336
5.	GW500	RAJ4051//HW921/CPAN1934
6.	GW502	GW155/K9102//WR1388/3/GW397
Durum		
7.	GW1338	GW1222/4/ROLA5/3/AJAIA/2/F3LOCAL/SEL-ETHIO-135-8-5
8.	GW1339	DDW04/4/MEMO/YAV//AVK/3/RD214
9.	GW1340	JU110/SOOTY9/RASCON37//WODUCK/CHAM3
10.	GW1341	RD306//V86/HI8371/3/DBPY03-2
11.	GW1343	ZEGZAG/ALTAR84//DIPPER2/3/GW1222
12.	GW1344	DEHSI PUNAGARI/GW1234
13.	GW1346	GW1236/AR06-3
14.	GW1347	GW1245/GW1

### JAU, Junagadh (Gujarat)

1.	GW495	LOK54/RAJ4083
2.	GW498	K9507/GW322
3.	GW501	HD2906/GW322
4.	GW504	WH1013/RAJ4137

### Indian Agricultural Research Institute, New Delhi

1.	HD3219	PBW343/HD2879
2.	HD3226	GRACKLE/HD2894
3.	HD3237	HD3016/HD2967
4.	HD3248	CL1705/HD2687
5.	HD3249	PBW343*2/KUKUNA//SRTU/3/PBW343*2/KHVAKI
6.	HD3250	HD2967/DBW17
7.	HD3251	PBW343/DW1293//PBW498
8.	HD3252	BABAX/LR43//BABAX/6/MOR/VEE#5//DUCULA/3/DUCULA/4/MILAN/5/BAU/ MILAN/7/SKAUZ/BAV92
9.	HD3253	DL989/WR196//HW4022/DW1221
10.	HD3254	CL1705/HD2687
11.	HD3255	SOKOLL//PBW343*2/KUKUNA/3/ATTILA/PASTOR
12.	HD3256	HD2967/DBW50
13.	HD3257	HD2733/GW322//GW366
14.	HD3258	PBW343*2/KUKUNA*2//KITE
15.	HD3259	ND643/2*WBLL1/4/WHEAR/KUKUNA/3/C80.1/3*BATAVIA//2*WBLL1
16.	HD3260	NG8201/KAUZ/4/SHA7//PRL/VEE#6/3/FASAN/5/MILAN/KAUZ/6/ACHYUTA/ 7/PBW343*2/KUKUNA/8/1WA8600211//2*PBW343*2/KUKUNA
17.	HD3261	CAL/NH//H567.71/3/SERI/4/CAL/NH//H567.71/5/2*KAUZ/6/PASTOR
18.	HD3262	VL796/HD2009//HD3003
19.	HD3263	KIRITATI//2*PRL/2*PASTOR/3/CHONTE/5/PRL/2*PASTOR/4/CHOIX/ STAR/3/CNO79//2*SERI

20.	HD3264	CP264/CL1633//CNO63//WR196
21.	HD3265	DW1311//HD2894//HW5028
22.	HD3266	TRCH/5//REH//HARE//2*BCN/3//CROC_1//AE.SQUARROSA(213)//PGO/4//HUITES
23.	HD3267	HD2932//PBW621
24.	HD3268	CL1705//HD2687
25.	HD3269	HD2923//DBW14//DBW16
26.	HD3270	HD2932//RSP561
27.	HD3271	CHIRIYA7//HD2824
28.	HD3272	DW1383//HD2894
29.	HD3273	DBW17//HD2967//HD2864
30.	HD3274	DL788-2//DBW14//HW2004
31.	HD3275	VL907//DBW50

**IARI Regional Station, Indore (M.P.)**

1.	HI1612	KAUZ//ALTAR84//AOS/3//MILAN//KAUZ/4//HUITES
2.	HI1617	BAJ#1*2//HUIRIVIS#1
3.	HI1619	W15.92/4//PASTOR//HXL7573/2*BAU/3//WBLL1
4.	HI1620	NAC//TH.AC//3*PVN/3//MIRLO//BUC/4/2*PASTOR/5//KACHU/6//KACHU
5.	HI1621	W15.92/4//PASTOR//HXL7573/2*BAU/3//WBLL1
6.	HI1622	BAJ#1*2//ND643/2*WBLL1
7.	HI1623	KAUZ//PASTOR//PBW343/3//KIRITATI/4//FRNCLN
8.	HI1624	GW322//PBW498
9.	HI1625	GAINT3//HW2045
10.	HI1626	KAUZ//PASTOR//PBW343/3//KIRITATI/4//FRNCLN
11.	HI1627	HD2380//HI1544
12.	HI1628	FRET2*2/4//SNI//TRAP#1/3//KAUZ*2//TRAP//KAUZ/5//PFAU//WEAVER//BRAMBLING
Durum		
13.	HI8777	B93//HD4672//HI8627
14.	HI8791	HI1531//HI8498//HI8627
15.	HI8794	HI8653//TRINAKARIA//HI8591
16.	HI8795	HI8504//CPAN6206//HI8498
17.	HI8796	HI8498//PDW233//HI8498
18.	HI8797	HI8663//HI8627
19.	HI8798	HD4719//HI8498
20.	HI8799	HI8692//HI8663//HI8663
21.	HI8800	HI8681//HI8663
22.	HI8801	HI8684//PDW233
23.	HI8802	HI8627//HI8653
24.	HI8803	TRINKARIA//HI8663
25.	HI8804	HI8645//TRINKARIA
26.	HI8805	IWP5070//HI8638//HI8663
27.	HI8806	HI8695//HI8663//HI8663

**IARI Regional Station, Pusa (Bihar)**

1.	HP1963	FRET2/TUKURU//FRET2/3/MUNIA/CHTO//AMSEL/4/FRET2/TUKURU//FRET2
2.	HP1966	CS/TH.SC//3*PVN/3/MIRLO/BUC/4/URES/JUN//KAUZ/5/HUITES/6/ YANAC/7/ CS/TH.SC//3*PVN/3/MIRLO/BUC/4/MILAN/5/TILHI
3.	HP1967	KACHU*2//CHIL/CHUM18

**IARI Regional Station, Shimla (H.P.)**

1.	HS611	69-1776/663//2*BCN/3/7*BCN/4/PARUS/PASTOR
2.	HS629	CHIBIA/4/PGO//CROC_1/AE.SQUARROSA(224)/3/2*BORL95/5/WEAVER/ 4/NAC/TH.AC//3* PVN/3/MIRLO/BUC
3.	HS630	CHEN/AE.SQUARROSA(TAUS)//BCN/3/BAV92/4/BERKUT
4.	HS631	WHEAR/VIVITSI//WHEAR
5.	HS632	HS240*2/FLW20(LR19)//HS240*2/FLW13(YR15)
6.	HS633	HS240*2/FLW20(LR19)//HS240*2/FLW13(YR15)
7.	HS634	PBW343*2/KUKUNA/5/CNO79//PF73054/MUS/3/PASTOR/4/BAV92
8.	HS635	PFAU/MILAN/5/CHEN/AE.SQUARROSA(TAUS)//BCN/3/VEE#7/BOW/ 4/PASTOR
9.	HS636	PASTOR//KAUZ/6/CNDO/R143//ENTE/MEX1- 2/3/AEGILOPSSQUARROSA(TAUS)/4/WEAVER/5/2*KAUZ
10.	HS637	PRL/2*PASTOR
11.	HS638	PFAU/MILAN/5/CHEN/AE.SQUARROSA(TAUS)//BCN/3/VEE#7/BOW/ 4/PASTOR
12.	HS639	CHEN/AE.SQUARROSA(TAUS)//BCN/3/BAV92/4/BERKUT
13.	HS640	QG78.5//2*INQALAB*2/TUKURU
14.	HS641	SOKOLL/3/PASTOR//HXL7573/2*BAU
15.	HS642	WBLL//OAX93.24.35/WBLL1
16.	HS643	CHIBIA/4/PGO//CROC_1/AE.SQUARROSA(224)/3/2*BORL95/5/ WEAVER/4/NAC/TH.AC//3*PVN/3/MIRLO/BUC
17.	HS644	VL876/DOVE
18.	HS645	WBM1527/WBM1591//HW2063
19.	HS646	CNDO/R-143//ENTE/MEX1-2/3/AEGILOPSSQUARROSA(TAUS)/4/ WEAVERS/5/2*PASTOR/6/ SKAUZ/PARUS//PARUS
20.	HS647	PFAU//MILAN/5/CHEN/AE.SQUARROSA(TAUS)//BCN/3/VEE#7/ BOW/4/PASTOR
21.	HS648	PSN/BOW//MILAN/3/2*BERKUT

**IARI Regional Station, Wellington (Tamil Nadu)**

1.	HW5052	HW3017*3/HW3048
2.	HW5053	HW5018/HW3048//HW5202
3.	HW5054	HW3083*2/HW5202
4.	HW5254	PBW343*3/SUNSTAR*6/C80-1
5.	HW5255	PBW226*6/TR380-14*7/3Ag#14//HW4444
6.	HW5261	PBW343*2/V763-2312*T.DICOCOIDES
7.	HW5265	PBN51*3/RL6144//2*V763-2312*T.DICOCOIDES

**Banaras Hindu University, Varanasi (U.P.)**

1.	HUW812	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/WBLL4//OAX93.24.35/WBLL1
2.	HUW813	KS940935.7.1.2/2*PASTOR/4/FRAME//MILAN/KAUZ/3/PASTOR
3.	HUW814	MUNAL*2/WESTONIA
4.	HUW815	PASTOR//HXL7573/2*BAU/3/WBLL1
5.	HUW816	KACHU//KIRITATI/2*TRCH
6.	HUW817	KIRITATI//HUW234+LR34/PRINIA/3/BAJ#1
7.	HUW818	KIRITATI//HUW234+LR34/PRINIA/3/BAJ#1
8.	HUW819	PICAFLO#1/8/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA(213)//PGO/4/HUITES/5/T.DICOCCONPI94624/AE.SQUARROSA(409)//BCN/6/REH/HARE//2*BCN/3/CROC_1/AE.SQUARROSA(213)//PGO/4/HUITES/7/MUTUS
9.	HUW820	SUP152/QUAIU#2
10.	HUW821	SEHER06

**CSKHPKV, Malan (H.P.)**

1.	HPW434	SUNCO/2*PASTOR
2.	HPW438	D67.2/P66.270//AE.SQUARROSA(320)/3/CUNNINGHAM
3.	HPW439	NAC/TH.AC//3*MIRLO/BUC/4/2*PASTOR
4.	HPW440	VL858/TYARI1
5.	HPW441	NAC/TH.AC//3*MIRLO/BUC/4/PASTOR
6.	HPW442	LONG291*2/PASTOR
7.	HPW443	PASTOR//HXL7573/2*BAU/3/SOKOLL/WBLL1
8.	HPW444	AZAR2/4/CROC_1/AE.SQUARROSA(205)//BORL95/3/2*MILAN/5/BERKUT
9.	HPW445	PBW575/HPW251
10.	HPW446	BOW/URES//KEA/3/SITE
11.	HPW447	HPW266/HPW249
12.	HPW448	VL829/WW1
13.	HPW449	HPW155/HPW288

**SKUAS&T-J, Jammu (J&K)**

1.	JAUW649	43 <sup>rd</sup> IBWSN1047/43 <sup>rd</sup> IBWSN1175
----	---------	---

**BAU, Ranchi (Jharkhand)**

1.	JKW234	PBW65/2*PASTOR//BECARD/3/BECARD
2.	JKW237	BECARD/QUATU#1

**CSAUAT, Kanpur (U.P.)**

1.	K1601	K9107/DBW14
2.	K1602	K9644/K7903
3.	K1603	K9255/2K21
4.	K1604	PBW373/K78
5.	K1605	HD2329/HD2285
6.	K1606	K9006/K0402
7.	K1607	K7903/K0307

8.	K1608	KYP750/PBW373
9.	K1610	K0402/PBW502
10.	K1612	HI1633/K9107
11.	K1613	K8434/K607
12.	K1614	K0307/K616
13.	K1615	K9351/K0307
14.	K1616	HD2711/K711

#### Central Soil Salinity Research Institute, Karnal (Haryana)

1.	KRL370	CHIBIA//PRLII/CM65531/3/MISR2, EGY/4/MUNAL#1
2.	KRL377	KRL99/HD2851
3.	KRL384	RAJ3307/CPAN6207//HI8498
4.	KRL386	EC-663902/KRL99

#### Lok Bharti, Sanosara (Gujarat)

1.	LOK73	PBW570//SS/C306/LOK1//HS295
2.	LOK74	LOK1/J24/SONALIKA"S"//HW2006/HW2002

#### Agharkar Research Institute, Pune (Maharashtra)

1.	MACS6677	D67.2/PARANA66.270//AE.SQUARROSA(320)/3/CUNNINGHAM/4/WBLL1*2/TUKURU
2.	MACS6695	NI5439*2/HD2934
3.	MACS6696	NI5439/HD2934
4.	MACS6706	MACS6221//HP1633/HP1776
5.	MACS6703	KINGBIRD#1//INQALAB91*2/TUKURU
6.	MACS6708	MILAN/KAUZ//DHARWAR DRY/3/BAV/92/4/DANPHE#1
7.	MACS6709	ROLF07/4/BOW/NKT//CBRD/3/CBRD/5/FRET2/TUKURU//FRET2
8.	MACS6714	MACS2496/GW376//HP1633/HP1776
9.	MACS6715	RAJ4037/K9906//MACS2496
Durum		
10.	MACS4028	MACS2846/BHALEGAON3*2
11.	MACS4058	MACS3125/AKDW2997-16//MACS3125
12.	MACS4059	MACS3603/HD4502
13.	MACS4062	MACS2846/AKDW2997-16//MACS3125
14.	MACS4063	MACS3603/HD4502//MACS3125
15.	MACS4064	MACS3125/MALVILOCAL*2
16.	MACS4067	GUAYACANINIA/GUANAY/10/LD357E/2*TC60//JO69/3/FGO/4/GTA/5/SRN_1/6/ TOTUS/7/ENTE/MEXI_2//HUI/4/YAV_1/3/LD357E/2*TCN60//JO69/8/SOMBRA-20/9/JUPARE C2001
17.	MACS4071	SILVER_14/MOEWEE//BISU_1/PATKA_3/3/PORRON_4/YUAN_1/9/USDA595/3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV_1/6/ARDENTE/7/HUI/YAV79/8/POD_9/10/TARRO_1/2*YUAN_1//AJAIA_13/YAZI/4/ARMENT//SRN_3/ NIGRIS_4/3/CANELO_9.1
Dicoccum		
18.	MACS5047	MACS2981/HW1095
19.	MACS5049	MACS2956/DDK1029

**JNKVV, Powarkheda (M.P.)**

1.	MP1318	ATTILA/3*BCN//BAV92/3/TILHI/5/BAV92/3/PRL/SARA//TSI/VEE#5/4/CROC_1/AE.SQUARROSA(224)//2*OPATA
2.	MP1331	PBW343*2/KUKUNA//KITE
3.	MP1332	KA/NAC//TRCH/3/VORB
4.	MP1333	1447/PASTOR//KRICHAUFF/5/2*SERI*3//RL6010/4*YR/3/PASTOR/4/BAV92
5.	MP1334	ATTILA*2/PBW65*2//KACHU
6.	MP1337	BECARD/QUAIU#1
7.	MP1338	MILAN/KAUZ//DHARWAR DRY/3/BAV92/4/PAURAQ
8.	MP1339	STAR//KAUZ/STAR/3/GW241
9.	MP1340	BAV92//IRENA/KAUZ/3/HUITES/4/GONDO/TNMU/5/BAV92//IRENA/KAUZ/3/HUITES
10.	MP1341	TOB/ERA//TOB/CNO67/3/PLO/4/VEE#5/5/KAUZ/6/FRET2/7/MINO
11.	MP1342	BJY/COC//PRL/3/SARA/THB/VEE/4/PIFED/5/KIRITATI
Durum		
12.	MPO1335	GTA/DUR69//PBW215
13.	MPO1336	GW1189/NIDW79
14.	MPO1343	HG822/HI8498
15.	MPO1344	ARMENT//SRN_3/NIGRIS_4/3/CANELO_9.1/7/SRN_3/AJALA_1/5/PICON/3/GREEN/6/CMH82A.1062/3/GERARDOVZ394//SBA81/PLC/4/AAZ_1/CREX/5/HUI//CIT71/CII/10/USDA595/3/D67.3/RABI//CRA/4/ALO/5/HUI/YAV_1/6/ ARDENTE/7/HUI/YAV79/8/POD_9/9/SRN_3/AJALA_15// PICON/3/GREEN/6

**JNKVV, Jabalpur (M.P.)**

1.	MP3469	GW322/J485
2.	MP3470	MP3368/MP4669
3.	MP3471	PFAU/MILLAN/3/SKAUZ/KS94U215//SKAUZ
4.	MP3475	MP3342/MP403-2

**JNKVV, Sagar (M.P.)**

1.	JWS151	FLW6/RAJ4136
2.	JWS152	RAJ4133/MP4033

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

1.	NW6098	QUAIU#1/SUP152
2.	NW7000	HEILO//MILAN/MUNIA/3/KIRITATI/2*TRCH
3.	NW7001	KACHU/DANPHE
4.	NW7002	KACHU/DANPHE
5.	NW7003	KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/5/2*SUP152
6.	NW7004	KIRITATI/4/2*SERI.1B*2/3/KAUZ*2/BOW//KAUZ/5/2*MUNAL
7.	NW7007	MUNAL*2/WESTONIA
8.	NW7008	MUNAL*2/WESTONIA
9.	NW7010	SWSR22T.B/5/KAUZ//ALTAR84/AOS/3/KAUZ/4/SW94.15464/6/2*PRL/2*PASTOR
10.	NW7015	METSO/ER2000/5/2*SERI*3//RL6010/4*YR/3/PASTOR/4/BAV92

**MPKV, Niphad (Maharashtra)**

1.	NIAW3033	LOK62/NIAW1415
2.	NIAW3074	ROLF07*2/5/FCT/3/GOV/AZ//MUS/4/DOVE/BUC
3.	NIAW3161	ROLF07*2/5/FCT/3/GOV/AZ//MUS/4/DOVE/BUC
4.	NIAW3170	SKOLL/ROLF07
5.	NIAW3173	CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA//FRET2/6/MILAN/KAUZ//PRINIA/3/BAV92
6.	NIAW3212	BAJ#1*2/WHEAR
7.	NIAW3217	ND643/2*WBLL1//2*BAJ#1
Durum		
8.	NIDW1099	SOOTY_9/RASCON_37//STORLOM
9.	NIDW1100	SOOTY_9/RASCON_37//GUAYACAN INIA
10.	NIDW1101	PLATA_6/GREEN_17/3/CHEN/AUK//BISU*2/5/PLATA_3//CREX/ALLA/3/SOMBRA_20/4/SILVER_14/MOEWEE
11.	NIDW1113	1A.1D5+1-06/3*WB881/6/CHEN_1/TEZ/3/GUIL//CIT71/CII/4/SORA/PLATA_12/5/STOT//ALTAR84/ALD/7/DUKEM_1//PATKA_7/YAZI_1/3/PATKA_7/YAZI_1

**PAU, Ludhiana (Punjab)**

1.	PBW750	TOB/ERA//TOB/CNO67/3/PLO/4/VEE#5/5/KAUZ/6/FRET2/7/PASTOR//MILAN/KAUZ/3/BAV92
2.	PBW752	PBW621/4/PBW343//YR10/6*AVOCET/3/3*PBW343/5/PBW621
3.	PBW757	PBW550/YR15/6*AVOCET/3/2*PBW550/4/PBW568+YR36/3*PBW550
4.	PBW762	YR5/6*AVOCET//2*PBW550
5.	PBW763	PBW621/3/YR10/6*AVOCET//4*PBW343/4/2*PBW621/5/PBW621/3/YR15/6*AVOCET//4*PBW343/4/2*PBW621
6.	PBW764	WG2829/BW6023//HD2969/PBW568
7.	PBW765	HD2967/4/PBW343+LR24+LR28*3//YR10/6*AVOCET/3/PBW343+LR24+LR28*3//YR15/6*AVOCET/5/2*HD2967
8.	PBW766	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
9.	PBW767	PBW585/4/BABAX//IRENA/KAUZ/3/HUITES
10.	PBW768	HD2967/3/YR15/6*AVOCET//3*PBW343+LR24+LR28/4/2*HD2967
11.	PBW769	ATTILA/3*BCN/3/CROC_1/AE.SQUARROSA(224)//OPATA/4/CHIBIA//PRLII/CM65531/3/KAUZ/BAV92/4/MUNAL#1
12.	PBW770	PBW585/4/BABAX//IRENA/KAUZ/3/HUITES
13.	PBW771	PBW550//YR15/6*AVOCET/3/2*PBW550
14.	PBW772	PRL/2*PASTOR/WHEAR/SOKOLL
15.	PBW773	FRANCOLIN#1*2/KIRITATI
16.	PBW774	T.DICOCCON PI94625/AE.SQ.372//3*PASTOR/3/PBW554
17.	PBW775	PBW585/4/BABAX//IRENA/KAUZ/3/HUITES
18.	PBW776	NIAW34/DBW17
19.	PBW777	T.DICOCCON PI94625/AE.SQUARROSA372//3*PASTOR/3/PBW554
20.	PBW778	KA/NAC//TRCH/3/VORB
21.	PBW779	PBW550//Yr15/6*AVOCET/3/2*PBW550/4/GLUPRO/3*PBW568//3*PBW550
22.	PBW780	HD2967/3/Yr15/6*AVOCET//3*BW9250/4/2*HD2967



Durum		
23.	PDW351	PDW296/PDW297//82420/PDW297
24.	PDW352	SOMAT4/D1832//PDW295/D1832
25.	PDW353	UC1113(GPC)/PDW291
26.	PDW354	DDW11/PDW308
Triticale		
27.	TL3011	T2938/T2969
28.	TL3012	T1849/JNIT123//TL1241
29.	TL3013	TL2930/TL2928
30.	TL3014	TL2396/3/DT78/JNIT128//TL1241
31.	TL3015	T2969/T2987

#### MAU, Parbhani (Maharashtra)

Durum		
1.	PBND5128	Induced mutant from PBND4264

#### SKNAU, Durgapura, Jaipur (Rajasthan)

1.	RAJ4493	RAJ3077/PBW550
2.	RAJ4494	RAJ3077/VL903
3.	RAJ4495	MACS2956/RAJ3765
4.	RAJ4496	RAJ4091/PBW550
5.	RAJ4497	LBPY04-09/RAJ4125
6.	RAJ4498	VL900/RAJ4120
7.	RAJ4499	WHLS1929/DBW17
8.	RAJ4500	MACS2956/RAJ3765
9.	RAJ4501	RAJ4037/PBW568
10.	RAJ4502	RAJ4037/PBW568
11.	RAJ4503	MACS2956/RAJ3765
12.	RAJ4504	MACS2956/RAJ1482

#### Agriculture University, Kota (Rajasthan)

Durum		
1.	RKD318	KOTA LOCAL/RAJ1555
2.	RKD320	KOTA LOCAL/RAJ1555

#### UAS, Dharwad (Karnataka)

1.	UAS375	UAS320/GW322//LOK62
2.	UAS384	RAJ4037//*[BABAX/LR42//BABAX*2/3/VIVITSI]
3.	UAS385	GW344/UAS239/DWR162
4.	UAS387	YAVAROS79/UAS316
5.	UAS388	DWR162/NIAW301//UAS326
6.	UAS389	RAJ4083/DWR195

7.	UAS390	CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA// FRET2/6/MILAN/KAUZ//PRINIA/3/BAV92
8.	UAS391	GW344//UAS239/UAS304
9.	UAS392	HI977/DWR162//UAS304
10.	UAS393	GW322/RAJ4037//UAS259
11.	UAS394	NI5439/C306//K9644
12.	UAS395	C306//NIAW1415/K9644
13.	UAS396	DWR195/NIAW34
14.	UAS397	DWR195/RAJ4083/NIAW34
Durum		
15.	UAS462	DWR1006/HI8671//UAS415
16.	UAS464	STOT//ALTAR84/ALD/3/GREEN_18/FOCHA_1//AIRON_1
17.	UAS465	STOT//ALTAR84/ALD*2/3/AUK/GUIL//GREEN
18.	UAS466	AMRUTH//BIJAGA YELLOW/AKDW299-16
19.	UAS467	CMH85.797//CADO/BOOMER_33/4/ARMENT//SRN_3/ NIGRIS_4/3/CANELO_9.1/B.YELLOW
Dicoccum		
20.	DDK1052	DDK1025/DDK1029//DDK1013
21.	DDK1053	DDK1009/DDK1029

#### UBKV, Coochbehar (W. Bengal)

1.	UBW5	CNO79/PF7035/MUS/3/PASTOR/REYN29
2.	UBW14	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU

#### GBPUAT, Pantnagar (Uttarakhand)

1.	UP2942	CS/TH.SC//3*PVN/3/MIRLO/BUC/4/URES/JUN//KAUZ/5/HUITES/6/ YANAC/7/CS/ TH.SC//3*PVN/3/MIRLO/BUC/4/MILAN/5/TILHI
2.	UP2975	TUKURU//BAV92/RAYON*2/3/KIRITATI
3.	UP2976	CROSBILL#1/VILLAJUAREJF2009
4.	UP2977	SAAR/WBLL1//QUAIU
5.	UP2978	BAJ#1/KISKADEE#1
6.	UP2979	KAUZ*3/MNV//MILAN/3/BAV92*2/4/KBIRD
7.	UP2980	WH1108/HD2967
8.	UP2981	CHYAK/PAURAQ
9.	UP2982	MISR 1/KACHU/5/KIRITATI/4/SERI.1B*2/3/KAUZ*2/BOW//KAUZ
10.	UP2983	WBLL1*2/BRAMBLING/5/BABAX/LR42//BABAX*2/4/SNI/TRAP#1/3/ KAUZ*2/TRAP//KAUZ
11.	UP2984	KACHU//KIRITATI/2*TRCH
12.	UP2985	NG8201/KAUZ/4/SHA7/PRL/VEE#6/3/FASAN/5/MILAN/KAUZ/6/ ACHYUTA/7/ PBW343*2/KUKUNA/8/IWA8600211//2*PBW343*2/KUKUNA
13.	UP2987	WCW2007-12/PBW651
14.	UP2988	HD3044/UP2744
15.	UP2989	RAJ4229/PBW635

16.	UP2990	UP2744/WL711//PBW644
17.	UP2991	SOKOLL/3/PASTOR//HXL7573/2*BAU/4/SOKOLL/WBLL1
18.	UP2992	(ATTILA/3/*BCN*2//BAV92)/MACS6272/ATTILA/3*BCN*2//BAV92
19.	UP2993	SHORTENED SR26 TRANSLOCATION//2*WBLL1*2/KKTS/3/BECARD
Durum		
20.	UPD99	SILVER_14/MOEWEE//BISU_1/PATKA_3/3/PORRON_4/YUAN_1/9/USDA595/3/D67.3/ RABI//CRA/4/ALO/5/HUI/YAV_1/6/ARDENTE/7/HUI/YAV79/8/POD_9/10/TARRO_1/ 2*YUAN_1//AJAIA_13/YAZI/4/ARMENT//SRN_3/NIGRIS_4/3/ CANELO_9.1

#### VPKAS (ICAR), Almora (Uttarakhand)

1.	VL1011	SOMAMA9//SERI82/SHUHA'S'
2.	VL1012	SHORTENEDSR26TRANSLOCATION/4/3*CHIBIA//PRLII/CM65531/3/ SKAUZ/BAV92
3.	VL1013	KLEIBER/2*FL80/DONSK.POLL/RAJ4134
4.	VL2025	LBPY04-1/RAJ4132//HS490
5.	VL2026	GW366/KS82W428/SWM75740//UP2739
6.	VL2027	RAJ4083/SKAUZ/HATUSA//VL900
7.	VL2028	FRANCOLIN#1*2/MUU
8.	VL2029	MUNAL#1/FRANCOLIN#1
9.	VL2030	KA/NAC//TRCH/3/DANPHE#1
10.	VL3013	RWP2003-16/FLW10//RAJ4121
11.	VL3014	WHEAR/VIVITSI//WHEAR*2/3/KACHU
12.	VL3015	RAJ4132/SW89.3218//AGRI/NAC//VL900
13.	VL4002	RAJ4132/SW89.3218//AGRI/NAC//VL900
14.	VL4003	RAJ4132/SW89.3218//AGRI/NAC//VL900

#### CCSHAU, Hisar (Haryana)

1.	WH1202	D67.2/PARANA66.270//AE.SQ.(320)/3/CUNNINGHAM
2.	WH1218	KA/NAC//TRCH/3/VORB
3.	WH1219	FRANCOLIN#1//WBLLI*2/BRAMBLING
4.	WH1220	PFAU/MILAN/5/CHEN/AEGILOPSSQUARROSA(TAUS)//BCN/3/VEE#7/ BOW/4/PASTOR/6/PFAU/MILAN//SKAUZ*2/KS94U215
5.	WH1221	WAXWING/KRONSTADF2004//PRL
6.	WH1222	RAJ3765/WH147//SONAK
7.	WH1223	WAXWING*2/TUKURU//2*FRNCLN
8.	WH1224	BECARD/FRNCLN
9.	WH1234	CHIBIA//PRLII/CM65531/3/MISR2*2/4/QUAIU
10.	WH1226	PRL/2*PASTOR*2//FH6-1-7
11.	WH1227	PRL/2*PASTOR
12.	WH1228	WAXWING*2/VIVITSI
13.	WH1229	PBW511/EXW78/WH291/WH291
14.	WH1230	SERI.1B*2//KAUZ83/BOW/3/PBW343*2/TUKURU/4/C80.1/3*BATAVIA// 2*WBLL1/5WHEAR/SOKOLL

15.	WH1232	MESTO/ER2000/5/2*SERI*3//RL601014*YR/3*/PASTOR/4/BAV92
16.	WH1233	C80.1/3*BATAVIA//2*WBLL1/3/EMB16/CBRD//CBRD
17.	WH1235	METSO/ER2000/5/2*SERI*3//RL6010/4*YR/3/PASTOR/4/BAV92
18.	WH1236	FRANCOLIN#1//WBLL1*2/BRAMBLING
19.	WH1316	BAV92//IRENA/KAUZ/3/HUITES/4/KIRITATI//PRL/2*PASTOR
Durum		
20.	WHD961	OROBEL//BUSHEN_4/2*GREEN_18/8/GEDIZ/FGO//GTA/3/SRN_1/4/ TOTUS/5/ENTE/MEXI_2//HUI/4/YAV_1/3/LD357E/2*TC60//JO69/6/ SOMBRA_20/7/ JUPAREC2001
21.	WHD962	ALTAR84/STINT//SILVER45/3/SOMAT3.1/4/GREEN14/YAV10/AUK

## Checks

Variety	Parentage
C306	REGENT1974/3*CHZ//*2C591/3/P19/C281
CoW(W) 1	HD2646//HW2002A/CPAN3057
DBW14	RAJ3765/PBW343
DBW39	ATTILA/HUI
DBW71	PRINIA/UP2425
DBW88	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
DBW90	HUW468/WH730
DBW93	WHEAR/TUKURU//WHEAR
DBW110	KIRITATI/4/2*SERI1B*2/3/KAUZ*2/BOW//KAUZ
GW322	PBW173/GW196
HD2733	ATTILA/3/TUI/CARC//CHEN/CHTO/4/ATTILA
HD2864	DL509-2/DL377-8
HD2888	C306/ <i>T.SPHAEROCOCCUM</i> //HW2004
HD2932	KAUZ/STAR//HD2643
HD2967	ALD/CUC//URES/HD2160M/HD2278
HD3043	PJN/BOW//OPATA*2/3CROC_1/A.SQUARROSA(224)//OPATA
HD3059	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
HD3086	DBW14/HD2733//HUW468
HD3171	PBW343/HD2879
HI1544	HINDI62/BOBWHITE/CPAN2099
HI1563	MACS2496*2/MC10
HPW251	WW24/LEHMIP2-U149
HS375	BB/G11/CJ71/3/TAEST//KAL/BB
HS490	HS364/HPW114//HS240//HS346
HS507	KAUZ/MYNA/VUL//BUC/FLK/4/MILAN
HS542	MILAN/KAUZ//PRINIA/3/BABAX
HW2044	PBW226*5//SUNSTAR*6/C80-1
HW5216	HW3094//HW4028
K0307	K8321/UP2003
K1006	PBW343/HP1731
K1317	K0307/K9162
K8027	HD1696/2*K852
Kharchia65	KHARCHIALOCAL/EG953
KRL19	PBW255/KRL1-4
KRL210	PBW65/2*PASTOR
MACS6222	HD2189*2/MACS2496
MACS6478	CS/TH.SC//3*VN/3/MIRLO/BUC/4/MILAN/5/TILHI
MP3288	DOVE/BUC/DL788-2
NI5439	NI8883/MP1055

NIAW1415	GW9506/PRL//PRL
PBW550	WH594/RAJ3856//W485
PBW644	PBW175/HD2643
RAJ4083	PBW343/UP2442//WR258/UP2425
RAJ4238	HW2021/RAJ3765
UAS304	SERI/CEP80120//KAUZ/PBW343
VL829	IBWSN149/CPAN2099
VL892	WH542/PBW226
VL907	DYBR1982-83842ABVD50//VW9365//PBW343
WH1021	NYOT95/SONAK
WH1080	PRL/*2PASTOR
WH1105	MILAN/S87230//BABAX
WH1124	MUNIA/CHTO//AMSEL
WH1142	OEN/ <i>Ae. Sq.</i> (TAUS)/FCT/3/2*WEAVER
WR544	KALYANSONA/HD1999//HD2204/DW38
AKDW2997-16	CPAN6140/RAJ1555
HI8627	HD4672/PDW233
HI8737	HI8177/HI8158//HI8498
UAS428	GREEN-14/YAN-10/AUK/UAS402
UAS446	DWR185/DWR2006//UAS419
Dicoccum	
DDK1029	DDK1012/HW1093//276-15
HW1098	NILGIRI LOCAL (Mutagen treated-25Kr)
Triticale	
TL2942	TL2732/DT54
TL2969	JNIT141/TL1210//JNIT141

### Common pedigree during 2016-17

HD3171(C) HD3219	PBW343/HD2879
DBW88(C) HD3059(C) HI1612	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES
BRW3799 BRW3806	NI5439/MACS2496
DBW179 NIAW3173 UAS390	CNO79//PF70354/MUS/3/PASTOR/4/BAV92/5/FRET2/KUKUNA//FRET2/6/ MILAN/ KAUZ//PRINIA/3/BAV92
DBW187 HI1620 PBW766 UBW14	NAC/TH.AC//3*PVN/3/MIRLO/BUC/4/2*PASTOR/5/KACHU/6/KACHU
DBW222 DBW246	KACHU/SAUAL/8/ATTILA*2/PBW65/6/PVN//CAR422/ANA/5/BOW/CROW// BUC/ PVN/3/YR/4/TRAP#1/7/ATTILA/2*PASTOR
DBW229 HUW816 UP2984	KACHU//KIRITATI/2*TRCH
DBW233 DBW247	CHIBIA//PRLII/CM65531/3/SKAUZ/BAV92/4/MUNAL#1
DBW239 DBW248	MILAN/S87230//BAV92*2/3/AKURI(34 <sup>th</sup> ESWYT131)
HD3248 HD3254 HD3268	CL1705/HD2687
HI1619 HI1621	W15.92/4/PASTOR//HXL7573/2*BAU/3/WBLL1
HI1623 HI1626	KAUZ/PASTOR//PBW343/3/KIRITATI/4/FRNCLN
HP1966 UP2942	CS/TH.SC//3*PVN/3/MIRLO/BUC/4/URES/JUN//KAUZ/5/HUITES/6/ YANAC/7/CS/ TH.SC//3*PVN/3/MIRLO/BUC/4/MILAN/5/TILHI
HS630 HS639	CHEN/AE.SQUARROSA(TAUS)//BCN/3/BAV92/4/BERKUT
HS632 HS633	HS240*2/FLW20(LR19)//HS240*2/FLW13(YR15)
HS635 HS638	PFAU/MILAN/5/CHEN/AE.SQUARROSA(TAUS)//BCN/3/VEE#7/ BOW/4/PASTOR
HUW814 NW7007 NW7008	MUNAL*2/WESTONIA
HUW817 HUW818	KIRITATI//HUW234+LR34/PRINIA/3/BAJ#1
MP1332 PBW778 WH1218	KA/NAC//TRCH/3/VORB
NW7001 NW7002	KACHU/DANPHE
NW7015 WH1235	METSO/ER2000/5/2*SERI*3//RL6010/4*YR/3/PASTOR/4/BAV92

NIAW3074 NIAW3161	ROLF07*2/5/FCT/3/GOV/AZ//MUS/4/DOVE/BUC
PBW767 PBW770 PBW775	PBW585/4/BABAX//IRENA/KAUZ/3/HUITES
RAJ4495 RAJ4500 RAJ4503	MACS2956/RAJ3765
RAJ4501 RAJ4502	RAJ4037/PBW568
RKD318 RKD320	KOTA LOCAL/RAJ1555
VL3015 VL4002 VL4003	RAJ4132/SW89.3218//AGRI/NAC//VL900



# National Initial Varietal Trial

## **NIVT-1A-IR-TS-TAS, 2016-17**

The trial consisting of 45 test entries and four checks *viz.*, DBW88, WH1105, K0307 and HD2967 was conducted at 19 locations of NWPZ and NEPZ. Data from Jammu centre was not reported due to high coefficient of variation, while Modipuram, Sabour, Ranchi and Manickchak were not included due to low site mean.

### **North Western Plains Zone**

- The highest mean site yield was reported from Karnal (60.3q/ha) while, Durgapura (46.3q/ha) reported the lowest site yield.
- DBW222 (64.1q/ha), DBW221 (62.0q/ha), PBW766 (61.2q/ha) and PBW763 (61.0q/ha) significantly out-yielded the best check variety WH1105 (55.2q/ha) at the zonal level.
- Twelve entries (K1603, HD3253, DBW228, RAJ4493, WH1220, DBW225, RAJ4496, UP2979, HD3248, UP2977, HP1966 and DBW224) had high incidence of yellow rust (ACI=>15).
- Highest mean TGW was observed in BRW3793 (46g) followed by HP1966 and HD3249 (45g).

### **North Eastern Plains Zone**

- The highest mean site yield was reported from Pusa (55.4q/ha) while, Kalyani (35.5q/ha) reported the lowest site yield.
- WH1218 (51.45q/ha), PBW762 (51.05q/ha), DBW221 (50.6q/ha), DBW228 (50.1q/ha), K1601 (49.7q/ha), HD3249 (49.6q/ha), DBW223 (49.5q/ha), HD3254 (49.3q/ha), K1602 (48.8q/ha) and PBW766 (48.8q/ha) significantly out yielded the best zonal check HD2967 (46.3q/ha).
- Low incidence of leaf blight was reported in WH1105 (36, mean=23) and DBW223 (47, mean=24) while entries WH1221 (78, mean=46), HD3253 and DBW225 (78, mean=35) had the highest incidence of leaf blight.
- Highest mean TGW was observed in HP1966 (45g) followed by HD3249 and BRW3793 (43g)

### **National Level**

- DBW221 along with DBW222, PBW762 and PBW766 formed the first non-significant group.

**1691-NIVT-1A-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ														
			Delhi			Haryana						Punjab					
			Yield	RK	G	Karnal			Hisar			Ludhiana			Gurdaspur		
Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G			
1	WH1221	N-101	63.9	4	1	57.8	34	0	61.5	9	1	64.8	12	1	45.3	42	0
2	HUW812	N-102	58.0	15	0	65.1	19	0	59.4	16	1	66.2	9	1	63.3	8	0
3	NW7015	N-103	52.3	30	0	63.0	24	0	52.1	36	0	60.8	19	0	54.1	29	0
4	K1603	N-104	40.8	45	0	55.0	36	0	55.2	28	0	40.1	48	0	40.1	46	0
5	HD3253	N-105	61.9	5	0	66.5	12	1	63.5	4	1	57.9	27	0	60.2	17	0
6	DBW223	N-106	45.8	43	0	65.5	15	1	60.9	13	1	53.3	35	0	59.9	18	0
7	HD3251	N-107	59.3	10	0	58.2	32	0	57.3	23	1	51.7	41	0	55.7	28	0
8	DBW228	N-108	49.5	37	0	47.4	45	0	54.7	30	0	52.1	39	0	49.5	38	0
9	WH1222	N-110	54.4	23	0	66.6	10	1	57.8	22	1	52.4	37	0	58.6	23	0
10	UP2978	N-111	52.7	28	0	66.1	13	1	62.5	7	1	68.3	4	1	63.1	10	0
11	K1601	N-112	52.7	28	0	62.5	25	0	55.2	28	0	66.9	7	1	59.8	19	0
12	DBW221	N-113	57.5	16	0	65.3	17	0	64.1	2	1	61.6	16	0	63.2	9	0
13	BRW3793	N-114	39.7	47	0	32.6	49	0	45.8	46	0	48.7	45	0	26.6	49	0
14	PBW764	N-115	59.5	9	0	67.4	8	1	64.1	2	1	65.0	11	1	59.5	21	0
15	RAJ4493	N-116	39.2	48	0	51.7	42	0	50.5	38	0	60.7	20	0	43.5	44	0
16	WH1220	N-117	58.4	12	0	65.5	15	1	54.7	30	0	58.9	26	0	57.8	26	0
17	RAJ4497	N-118	31.8	49	0	45.5	46	0	45.8	46	0	56.5	28	0	42.2	45	0
18	DBW225	N-119	70.7	1	1	54.0	37	0	48.4	41	0	52.3	38	0	58.3	24	0
19	PBW766	N-120	52.9	27	0	74.5	1	1	60.9	13	1	48.8	44	0	63.5	7	0
20	DBW222	N-121	50.2	35	0	72.0	4	1	64.6	1	1	69.5	3	1	70.4	1	1
21	RAJ4496	N-123	49.3	39	0	49.3	43	0	46.9	44	0	59.0	25	0	51.6	35	0
22	PBW762	N-124	56.0	19	0	71.6	5	1	63.0	6	1	66.4	8	1	62.5	14	0
23	HD3250	N-125	40.0	46	0	62.2	26	0	53.1	35	0	59.9	24	0	47.0	41	0
24	RAJ4495	N-126	51.2	33	0	53.6	39	0	48.4	41	0	54.3	32	0	52.2	34	0
25	UP2979	N-127	54.3	24	0	53.2	40	0	49.5	40	0	60.2	22	0	66.6	5	1
26	NW7001	N-128	48.2	40	0	65.2	18	0	56.3	26	0	67.0	6	1	62.8	11	0
27	DBW226	N-129	60.0	7	0	72.8	2	1	57.3	23	1	61.0	18	0	56.5	27	0
28	HD3252	N-131	55.1	21	0	57.9	33	0	60.9	12	1	62.0	15	1	60.7	16	0
29	K1602	N-132	53.4	25	0	61.3	27	0	58.3	18	1	60.3	21	0	50.0	37	0
30	PBW763	N-133	65.2	3	1	68.1	6	1	54.7	30	0	69.6	2	1	62.6	12	0
31	HD3248	N-134	57.1	17	0	61.0	28	0	63.5	4	1	61.1	17	0	66.8	4	1
32	HD3249	N-135	49.7	36	0	72.7	3	1	62.5	8	1	56.1	29	0	62.6	12	0
33	DBW227	N-136	50.7	34	0	59.7	30	0	54.2	34	0	67.6	5	1	52.3	32	0
34	UP2977	N-137	58.3	13	0	66.1	13	1	57.3	23	1	65.8	10	1	59.7	20	0
35	JAUW649	N-138	51.6	32	0	54.0	37	0	59.4	16	1	60.0	23	0	53.5	30	0
36	UP2976	N-139	54.7	22	0	67.2	9	1	58.3	18	1	49.4	43	0	64.6	6	0
37	HD3254	N-140	58.7	11	0	59.4	31	0	52.1	36	0	53.5	33	0	52.3	32	0
38	UP2975	N-141	58.2	14	0	67.5	7	1	55.7	27	0	40.1	47	0	48.5	39	0
39	HP1966	N-142	66.8	2	1	64.4	23	0	58.3	18	1	51.9	40	0	59.2	22	0
40	HUW813	N-143	53.1	26	0	59.9	29	0	46.9	44	0	53.5	34	0	44.3	43	0
41	WH1219	N-144	56.0	20	0	66.6	10	1	58.3	18	1	63.4	14	1	58.3	24	0
42	DBW224	N-145	59.8	8	0	64.8	21	0	61.5	9	1	55.3	30	0	68.8	2	1
43	WH1218	N-146	49.3	38	0	57.1	35	0	41.7	49	0	69.9	1	1	50.3	36	0
44	RAJ4494	N-147	52.1	31	0	47.8	44	0	50.0	39	0	40.8	46	0	40.1	46	0
45	PBW765	N-149	56.9	18	0	64.7	22	0	54.7	30	0	63.8	13	1	68.8	2	1
46	K0307(C)	N-109	48.2	41	0	44.6	47	0	47.9	43	0	38.9	49	0	47.5	40	0
47	DBW88(C)	N-122	47.6	42	0	44.2	48	0	60.4	15	1	53.0	36	0	53.5	30	0
48	WH1105(C)	N-130	61.3	6	0	64.9	20	0	61.5	9	1	49.7	42	0	62.0	15	0
49	HD2967(C)	N-148	41.7	44	0	52.1	41	0	44.8	48	0	55.1	31	0	30.1	48	0
Mean			53.4			60.3			55.8			57.7			55.3		
S.E.m			3.515			3.857			3.121			3.330			2.338		
C.D. (10%)			8.3			9.2			7.4			7.9			5.5		
C.V.			9.3			9.0			7.9			8.2			6.0		
D.O.S. (dd.md.yyyy)			15.11.2016			8.11.2016			5.11.2016			1.11.2016			9.11.2016		

Trials proposed & conducted = 19

Trials not reported (5) = Jammu (HCV), Modipuram (LSM), Sabour (LSM), Ranchi (LSM), Manikchak (LSM)

**NIVT-1A-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ									NEPZ					
			Rajasthan			Uttarakhand			Uttar Pradesh			Uttar Pradesh					
			Durgapura			Pantnagar			Bulandshahr			Faizabad			Kanpur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1221	N-101	41.1	42	0	51.4	42	0	55.4	31	0	44.3	38	0	51.0	29	0
2	HUW812	N-102	43.8	35	0	57.8	27	0	54.4	35	0	60.2	10	1	58.1	9	1
3	NW7015	N-103	43.8	35	0	64.2	11	0	58.8	22	0	63.5	1	1	48.7	31	0
4	K1603	N-104	45.3	28	0	53.0	41	0	59.9	17	1	45.6	34	0	41.4	47	0
5	HD3253	N-105	47.9	17	0	75.3	1	1	50.5	42	0	62.2	5	1	52.6	23	0
6	DBW223	N-106	48.4	14	0	57.1	29	0	62.6	11	1	49.2	28	0	49.0	30	0
7	HD3251	N-107	45.8	23	0	54.6	38	0	61.3	12	1	58.9	15	1	44.3	43	0
8	DBW228	N-108	41.7	41	0	65.6	9	0	47.2	46	0	53.1	24	0	58.9	5	1
9	WH1222	N-110	45.8	23	0	55.3	35	0	50.7	41	0	45.1	35	0	48.4	32	0
10	UP2978	N-111	45.8	23	0	57.3	28	0	59.3	19	0	60.9	9	1	51.8	26	0
11	K1601	N-112	45.3	28	0	50.9	43	0	63.5	7	1	51.8	26	0	62.0	1	1
12	DBW221	N-113	50.5	8	0	68.5	6	1	64.9	2	1	62.2	5	1	60.4	3	1
13	BRW3793	N-114	39.6	47	0	38.2	49	0	44.5	49	0	58.3	16	1	34.9	49	0
14	PBW764	N-115	48.4	14	0	54.7	37	0	64.9	3	1	42.7	48	0	48.4	32	0
15	RAJ4493	N-116	44.8	31	0	53.8	39	0	51.6	37	0	49.0	29	0	46.4	40	0
16	WH1220	N-117	45.3	28	0	58.9	25	0	57.5	26	0	56.3	20	1	47.1	39	0
17	RAJ4497	N-118	38.5	48	0	43.8	48	0	46.8	47	0	43.2	44	0	55.5	16	1
18	DBW225	N-119	50.0	11	0	47.1	45	0	60.0	16	1	49.0	29	0	47.4	38	0
19	PBW766	N-120	57.3	1	1	71.7	4	1	59.6	18	1	44.8	36	0	55.7	14	1
20	DBW222	N-121	54.7	3	1	71.5	5	1	60.2	15	1	62.0	7	1	54.4	21	0
21	RAJ4496	N-123	42.7	39	0	61.0	21	0	49.6	44	0	55.5	21	0	52.6	23	0
22	PBW762	N-124	52.6	4	1	53.1	40	0	51.4	38	0	63.5	1	1	54.4	21	0
23	HD3250	N-125	51.0	7	0	63.2	13	0	62.9	10	1	57.8	17	1	57.8	10	1
24	RAJ4495	N-126	40.6	45	0	62.4	15	0	54.5	34	0	47.7	32	0	48.2	35	0
25	UP2979	N-127	47.4	18	0	61.3	18	0	54.7	33	0	43.2	44	0	54.9	18	0
26	NW7001	N-128	45.8	23	0	62.0	17	0	60.3	14	1	44.8	36	0	52.3	25	0
27	DBW226	N-129	38.5	48	0	44.9	47	0	59.1	21	0	48.7	31	0	45.3	41	0
28	HD3252	N-131	55.2	2	1	46.6	46	0	61.2	13	1	44.3	38	0	51.8	26	0
29	K1602	N-132	46.4	21	0	57.0	30	0	58.5	23	0	44.0	40	0	57.8	10	1
30	PBW763	N-133	44.3	32	0	65.1	10	0	58.4	24	0	62.0	7	1	42.7	45	0
31	HD3248	N-134	46.9	19	0	62.7	14	0	65.5	1	1	59.9	12	1	58.3	7	1
32	HD3249	N-135	52.6	4	1	74.2	2	1	45.5	48	0	62.8	3	1	57.8	10	1
33	DBW227	N-136	44.3	32	0	56.5	32	0	49.8	43	0	54.7	22	0	57.0	13	1
34	UP2977	N-137	43.2	37	0	61.1	19	0	56.6	29	0	44.0	40	0	60.2	4	1
35	JAUW649	N-138	40.1	46	0	55.6	34	0	57.1	28	0	51.8	26	0	58.6	6	1
36	UP2976	N-139	48.4	14	0	64.0	12	0	51.0	40	0	43.8	42	0	51.6	28	0
37	HD3254	N-140	46.9	19	0	72.1	3	1	57.4	27	0	62.5	4	1	55.7	14	1
38	UP2975	N-141	44.3	32	0	60.2	23	0	55.1	32	0	53.4	23	0	54.7	20	0
39	HP1966	N-142	42.7	39	0	62.1	16	0	55.6	30	0	57.0	19	1	43.8	44	0
40	HUW813	N-143	52.1	6	1	61.1	20	0	53.3	36	0	43.5	43	0	54.9	18	0
41	WH1219	N-144	50.5	8	0	56.7	31	0	63.9	6	1	43.2	44	0	41.7	46	0
42	DBW224	N-145	50.5	8	0	59.5	24	0	63.1	8	1	59.1	14	1	45.3	41	0
43	WH1218	N-146	41.1	42	0	66.9	8	1	59.1	20	0	60.2	11	1	58.3	7	1
44	RAJ4494	N-147	45.8	23	0	49.2	44	0	64.4	5	1	52.1	25	0	48.4	32	0
45	PBW765	N-149	49.5	12	0	56.1	33	0	63.0	9	1	59.6	13	1	41.1	48	0
46	K0307(C)	N-109	43.2	37	0	58.5	26	0	48.3	45	0	43.0	47	0	48.2	35	0
47	DBW88(C)	N-122	49.0	13	0	55.2	36	0	58.4	25	0	57.8	17	1	62.0	1	1
48	WH1105(C)	N-130	46.4	21	0	67.3	7	1	51.3	39	0	42.4	49	0	55.2	17	0
49	HD2967(C)	N-148	41.1	42	0	60.2	22	0	64.4	4	1	46.4	33	0	47.9	37	0
Mean			46.3			58.9			56.9			52.5			51.7		
S.E.M			2.225			3.564			2.568			3.178			2.830		
C.D. (10%)			5.3			8.5			6.1			7.5			6.7		
C.V.			6.8			8.6			6.4			8.6			7.7		
D.O.S. (dd.mm.yyyy)			15.11.2016			11.11.2016			15.11.2016			24.11.2016			24.11.2016		

**NIVT-1A-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NEPZ											
			Uttar Pradesh			Bihar			West Bengal					
			Varanasi			Pusa			Coochbehar			Kalyani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1221	N-101	42.3	27	0	55.3	27	0	33.0	31	0	32.5	38	0
2	HUW812	N-102	37.8	43	0	57.9	11	0	36.4	28	0	39.1	8	0
3	NW7015	N-103	46.1	13	1	52.4	42	0	32.3	34	0	31.1	45	0
4	K1603	N-104	43.0	24	0	56.1	23	0	24.3	45	0	34.3	29	0
5	HD3253	N-105	40.4	39	0	59.1	5	1	26.4	39	0	41.2	5	0
6	DBW223	N-106	51.9	3	1	58.9	6	0	49.6	6	1	38.3	10	0
7	HD3251	N-107	42.1	29	0	56.6	19	0	32.7	33	0	35.5	23	0
8	DBW228	N-108	48.9	6	1	52.9	40	0	46.2	14	0	40.6	6	0
9	WH1222	N-110	42.2	28	0	56.5	20	0	26.4	40	0	34.9	25	0
10	UP2978	N-111	44.4	20	0	57.7	13	0	24.3	44	0	31.7	43	0
11	K1601	N-112	41.8	33	0	55.5	25	0	42.0	22	0	45.2	1	1
12	DBW221	N-113	44.9	18	0	53.4	37	0	45.9	16	0	36.5	18	0
13	BRW3793	N-114	32.0	48	0	52.0	44	0	34.2	30	0	30.7	47	0
14	PBW764	N-115	46.4	11	1	53.9	35	0	47.3	11	0	41.3	4	0
15	RAJ4493	N-116	48.1	7	1	54.9	29	0	44.3	19	0	36.7	14	0
16	WH1220	N-117	41.9	32	0	52.8	41	0	46.3	13	0	34.2	30	0
17	RAJ4497	N-118	41.9	31	0	54.1	34	0	46.1	15	0	34.9	26	0
18	DBW225	N-119	39.3	40	0	51.1	45	0	23.9	46	0	36.0	21	0
19	PBW766	N-120	52.8	1	1	56.4	21	0	46.3	12	0	36.6	16	0
20	DBW222	N-121	42.1	30	0	60.4	2	1	20.8	49	0	36.1	20	0
21	RAJ4496	N-123	35.2	46	0	55.2	28	0	25.8	41	0	33.3	35	0
22	PBW762	N-124	38.3	42	0	53.4	37	0	52.2	4	1	43.8	2	1
23	HD3250	N-125	40.5	38	0	58.9	6	0	39.7	25	0	30.7	48	0
24	RAJ4495	N-126	31.6	49	0	53.1	39	0	32.7	32	0	33.2	36	0
25	UP2979	N-127	47.2	8	1	54.3	30	0	45.2	17	0	38.6	9	0
26	NW7001	N-128	40.6	37	0	59.8	4	1	30.5	37	0	32.7	37	0
27	DBW226	N-129	43.9	21	0	57.2	16	0	54.7	1	1	31.8	41	0
28	HD3252	N-131	34.1	47	0	55.7	24	0	21.5	48	0	31.7	42	0
29	K1602	N-132	46.7	9	1	61.5	1	1	49.0	8	1	33.8	33	0
30	PBW763	N-133	40.9	36	0	56.8	17	0	36.2	29	0	38.3	11	0
31	HD3248	N-134	35.7	45	0	55.5	25	0	42.8	21	0	34.4	27	0
32	HD3249	N-135	52.0	2	1	56.4	21	0	30.2	38	0	38.2	12	0
33	DBW227	N-136	43.1	23	0	49.5	48	0	51.8	5	1	35.6	22	0
34	UP2977	N-137	42.7	26	0	54.3	30	0	25.5	42	0	33.8	31	0
35	JAUW649	N-138	45.8	14	1	57.4	15	0	23.6	47	0	42.2	3	0
36	UP2976	N-139	41.7	34	0	52.1	43	0	38.1	27	0	34.3	28	0
37	HD3254	N-140	46.4	12	1	58.8	8	0	41.0	23	0	31.6	44	0
38	UP2975	N-141	41.2	35	0	60.0	3	1	39.7	26	0	30.8	46	0
39	HP1966	N-142	45.0	17	0	58.0	10	0	32.2	35	0	30.6	49	0
40	HUW813	N-143	42.8	25	0	54.2	32	0	54.1	3	1	37.1	13	0
41	WH1219	N-144	44.6	19	0	50.7	46	0	49.2	7	1	33.8	34	0
42	DBW224	N-145	46.6	10	1	58.3	9	0	31.4	36	0	35.1	24	0
43	WH1218	N-146	49.8	5	1	53.6	36	0	54.5	2	1	32.1	40	0
44	RAJ4494	N-147	38.9	41	0	44.5	49	0	48.6	9	1	33.8	32	0
45	PBW765	N-149	45.8	15	1	57.9	11	0	25.4	43	0	32.3	39	0
46	K0307(C)	N-109	36.0	44	0	56.8	17	0	44.8	18	0	36.6	17	0
47	DBW88(C)	N-122	50.2	4	1	50.6	47	0	47.3	10	0	36.5	19	0
48	WH1105(C)	N-130	43.5	22	0	54.2	32	0	43.0	20	0	36.7	15	0
49	HD2967(C)	N-148	45.1	16	0	57.5	14	0	40.5	24	0	40.4	7	0
Mean			43.0			55.4			38.4			35.5		
S.E.m			3.034			1.056			2.579			1.220		
C.D. (10%)			7.2			2.5			6.2			2.9		
C.V.			10.0			2.7			9.5			4.9		
D.O.S. (dd.mm.yyyy)			21.11.2016			18.11.2016			15.11.2016			18.11.2016		

**NIVT-1A-IR-TS-TAS, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1221	N-101	55.2	31	0	43.1	42	0	50.0	37	0
2	HUW812	N-102	58.5	15	0	48.2	13	0	54.1	11	0
3	NW7015	N-103	56.1	26	0	45.7	31	0	51.6	30	0
4	K1603	N-104	48.7	46	0	40.8	47	0	45.3	47	0
5	HD3253	N-105	60.5	6	0	47.0	18	0	54.7	7	0
6	DBW223	N-106	56.7	23	0	49.5	8	1	53.6	13	0
7	HD3251	N-107	55.5	29	0	45.0	33	0	51.0	32	0
8	DBW228	N-108	50.9	42	0	50.1	5	1	50.6	36	0
9	WH1222	N-110	55.2	30	0	42.2	44	0	49.7	39	0
10	UP2978	N-111	59.4	12	0	45.1	32	0	53.3	15	0
11	K1601	N-112	57.1	22	0	49.7	6	1	53.9	12	0
12	DBW221	N-113	62.0	2	1	50.6	4	1	57.1	1	1
13	BRW3793	N-114	39.5	49	0	40.4	48	0	39.9	49	0
14	PBW764	N-115	60.4	7	0	46.7	20	0	54.5	9	0
15	RAJ4493	N-116	49.5	43	0	46.5	23	0	48.2	41	0
16	WH1220	N-117	57.1	21	0	46.4	24	0	52.6	21	0
17	RAJ4497	N-118	43.9	48	0	45.9	29	0	44.8	48	0
18	DBW225	N-119	55.1	32	0	41.1	45	0	49.1	40	0
19	PBW766	N-120	61.2	3	0	48.8	11	0	55.9	4	1
20	DBW222	N-121	64.1	1	1	46.0	28	0	56.3	2	1
21	RAJ4496	N-123	51.2	41	0	42.9	43	0	47.6	43	0
22	PBW762	N-124	59.6	10	0	51.0	2	1	55.9	3	1
23	HD3250	N-125	54.9	33	0	47.6	16	0	51.8	29	0
24	RAJ4495	N-126	52.2	40	0	41.1	46	0	47.4	44	0
25	UP2979	N-127	55.9	27	0	47.2	17	0	52.2	23	0
26	NW7001	N-128	58.5	16	0	43.4	40	0	52.0	25	0
27	DBW226	N-129	56.3	25	0	46.9	19	0	52.3	22	0
28	HD3252	N-131	57.5	19	0	39.9	49	0	49.9	38	0
29	K1602	N-132	55.6	28	0	48.8	10	0	52.7	19	0
30	PBW763	N-133	61.0	4	0	46.1	26	0	54.6	8	0
31	HD3248	N-134	60.6	5	0	47.8	14	0	55.1	6	0
32	HD3249	N-135	59.5	11	0	49.6	7	1	55.2	5	0
33	DBW227	N-136	54.4	35	0	48.6	12	0	51.9	27	0
34	UP2977	N-137	58.5	14	0	43.4	41	0	52.0	24	0
35	JAUW649	N-138	53.9	36	0	46.6	22	0	50.8	33	0
36	UP2976	N-139	57.2	20	0	43.6	39	0	51.4	31	0
37	HD3254	N-140	56.5	24	0	49.3	9	1	53.5	14	0
38	UP2975	N-141	53.7	37	0	46.6	21	0	50.7	35	0
39	HP1966	N-142	57.6	18	0	44.4	34	0	52.0	26	0
40	HUW813	N-143	53.0	38	0	47.8	15	0	50.8	34	0
41	WH1219	N-144	59.2	13	0	43.9	37	0	52.6	20	0
42	DBW224	N-145	60.4	8	0	46.0	27	0	54.2	10	0
43	WH1218	N-146	54.4	34	0	51.4	1	1	53.1	16	0
44	RAJ4494	N-147	48.8	44	0	44.4	35	0	46.9	45	0
45	PBW765	N-149	59.7	9	0	43.7	38	0	52.8	17	0
46	K0307(C)	N-109	47.1	47	0	44.2	36	0	45.9	46	0
47	DBW88(C)	N-122	52.7	39	0	50.7	3	1	51.8	28	0
48	WH1105(C)	N-130	58.0	17	0	45.8	30	0	52.8	18	0
49	HD2967(C)	N-148	48.7	45	0	46.3	25	0	47.7	42	0
<b>Mean</b>			55.6			46.1			51.5		
<b>C.D. (10%)</b>			2.6			2.3			1.8		

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: NIVT-1A-IR-TS-TAS, 2016-17

SN	Variety	Code	Rust Reactions			Agronomic Characteristics							Grain Characteristics			
			YI	ACI	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH1221	N-101	5S	1.3	0	78-102	92	127-148	139	91-109	102	Ey	A	H	39-46	42
2	HUW812	N-102	10S	3.3	0	79-105	93	121-150	139	100-124	109	Ey	A	SH	31-50	44
3	NW7015	N-103	20S	6.5	0	81-104	93	127-150	140	96-116	106	Ey	A	H	39-47	42
4	K1603	N-104	60S	26.0	0	78-103	90	125-148	138	90-122	104	Ey	A	H	32-41	37
5	HD3253	N-105	60S	20.6	0	77-103	90	125-145	138	100-121	109	Ey	A	H	32-45	39
6	DBW223	N-106	60S	18.6	0	88-104	96	126-150	142	88-109	97	Ey	A	H	33-45	42
7	HD3251	N-107	40S	10.8	0	71-95	84	120-148	137	91-109	99	Ey	A	H	33-47	40
8	DBW228	N-108	60S	22.0	0	77-102	90	120-150	138	90-119	108	Ey	A	H	36-46	42
9	WH1222	N-110	tR	0.03	tR	82-102	95	123-150	140	92-109	101	Ey	A	H	41-46	43
10	UP2978	N-111	20S	10.6	0	79-100	89	124-150	138	92-117	105	Ey	A	SH	40-49	43
11	K1601	N-112	20S	9.4	0	79-102	91	122-148	138	88-119	104	Ey	A	SH	40-47	44
12	DBW221	N-113	10S	1.5	0	76-101	88	121-142	135	92-102	99	Ey	A	SH	37-47	40
13	BRW3793	N-114	60S	12.6	0	60-83	73	116-141	133	95-114	106	Ey	A	H	41-50	46
14	PBW764	N-115	10S	4.9	0	77-104	92	126-145	139	87-108	96	Ey	A	SH	31-46	38
15	RAJ4493	N-116	60S	35.6	0	68-92	77	118-145	136	85-97	90	Ey	A	H	34-47	40
16	WH1220	N-117	40S	15.1	0	82-105	95	114-152	136	95-111	104	Ey	A	H	37-47	42
17	RAJ4497	N-118	40S	6.6	0	67-93	83	121-150	139	92-110	101	Ey	A	H	31-46	38
18	DBW225	N-119	40S	19.4	0	82-107	94	128-155	140	60-75	67	Ey	A	H	39-46	42
19	PBW766	N-120	20S	7.1	10S	75-103	90	120-152	138	95-114	103	Ey	A	H	32-49	43
20	DBW222	N-121	40S	9.0	0	76-103	89	126-150	139	95-110	102	Ey	A	SH	40-48	44
21	RAJ4496	N-123	40S	17.5	0	67-93	80	119-148	137	86-104	94	Ey	A	H	38-44	40
22	PBW762	N-124	5S	0.7	0	71-97	86	125-145	137	84-108	97	Ey	A	H	37-45	41
23	HD3250	N-125	20S	8.9	0	82-105	96	127-150	141	95-111	104	Ey	A	H	37-44	40
24	RAJ4495	N-126	60S	13.0	10S	72-94	87	122-150	136	86-114	103	Ey	A	H	37-47	42
25	UP2979	N-127	60S	25.1	0	77-103	92	123-150	139	90-109	100	Ey	A	SH	32-42	38
26	NW7001	N-128	20S	8.6	0	84-106	98	126-155	142	87-111	104	Ey	A	H	35-42	39
27	DBW226	N-129	40S	9.1	0	87-104	95	125-152	140	81-95	89	Ey	A	SH	35-41	38

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: NIVT-1A-IR-TS-TAS, 2016-17

SN	Variety	Code	Rust Reactions			Agronomic Characteristics							Grain Characteristics			
			YI	ACI	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
28	HD3252	N-131	10S	4.4	0	77-103	89	126-148	139	92-110	103	Ey	A	SH	32-44	39
29	K1602	N-132	10S	2.9	10S	88-108	98	126-150	141	95-116	107	Ey	A	SH	37-47	43
30	PBW763	N-133	10S	2.9	0	74-102	89	122-148	138	84-109	101	Ey	A	H	41-48	44
31	HD3248	N-134	40S	16.6	0	84-109	100	123-155	142	90-119	106	Ey	A	H	30-40	36
32	HD3249	N-135	20S	5.0	0	78-99	89	124-148	138	78-118	104	Ey	A	SH	37-50	45
33	DBW227	N-136	20S	9.3	0	76-102	89	121-150	137	92-120	105	Ey	A	H	37-44	41
34	UP2977	N-137	40S	18.6	0	82-107	96	128-155	142	92-112	103	Ey	A	SH	35-46	41
35	JAUW649	N-138	20S	10.4	0	74-104	90	122-155	138	97-115	103	Ey	A	SH	35-46	40
36	UP2976	N-139	10S	2.3	tS	83-104	94	127-155	141	90-115	102	Ey	A	SH	36-44	41
37	HD3254	N-140	10S	5.6	0	84-104	96	123-155	140	84-115	105	Ey	A	SH	35-47	40
38	UP2975	N-141	40S	10.0	10S	78-103	92	126-148	139	90-110	101	Ey	A	H	31-46	40
39	HP1966	N-142	40S	21.3	0	83-104	96	123-155	140	90-115	101	Ey	A	SH	34-53	45
40	HUW813	N-143	60S	28.0	0	79-104	92	127-150	140	86-115	101	Ey	A	SH	36-46	40
41	WH1219	N-144	10S	4.7	0	75-100	88	118-150	137	82-108	99	Ey	A	SH	39-49	44
42	DBW224	N-145	40S	15.5	10S	76-104	93	123-150	140	90-107	97	Ey	A	SH	30-42	37
43	WH1218	N-146	20S	3.7	0	74-97	85	122-149	138	100-119	108	Ey	A	H	38-51	44
44	RAJ4494	N-147	40S	9.1	0	70-96	84	125-147	137	92-110	104	Ey	A	SH	37-48	42
45	PBW765	N-149	20S	2.9	0	77-102	92	126-150	141	88-110	101	Ey	A	SH	34-48	41
46	K0307(C)	N-109	60S	37.1	0	78-104	92	126-152	138	92-121	104	Ey	A	H	30-46	38
47	DBW88(C)	N-122	60S	22.9	0	78-105	92	126-152	140	93-109	101	Ey	A	H	29-42	37
48	WH1105(C)	N-130	60S	22.7	0	77-103	90	121-150	137	86-112	96	Ey	A	H	33-44	40
49	HD2967(C)	N-148	60S	42.9	0	84-109	101	129-150	143	95-111	104	Ey	A	H	31-43	36

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



**NIVT-1A-IR-TS-TAS, 2016-17**  
**North Western Plains Zone**  
**Individual Station Rust Data**

SN	Variety	Code	Ludhiana		Karnal		Gurdaspur	Jammu	Pantnagar	Delhi	Hisar
			YI	Br	YI	Br	YI	YI	YI	YI	YI
1	WH1221	N-101	5S	0	0	0	tR	tR	0	10MR	0
2	HUW812	N-102	10S	0	5S	0	tR	tR	0	0	10MS
3	NW7015	N-103	tS	0	20S	0	tR	20S	0	5MS	0
4	K1603	N-104	60S	0	20MS	0	40S	20S	0	30S	20MS
5	HD3253	N-105	60S	0	10MS	0	20S	40S	0	0	20MS
6	DBW223	N-106	5S	0	20S	0	20S	60S	0	20S	5S
7	HD3251	N-107	10S	0	40S	0	tR	10S	tMR	5S	10S
8	DBW228	N-108	60S	0	40S	0	20S	20S	0	10MR	10S
9	WH1222	N-110	0	0	0	tR	0	tR	0	0	0
10	UP2978	N-111	20S	0	10S	0	5S	20S	tS	10MS	10S
11	K1601	N-112	20S	0	20S	0	5S	5S	0	0	20MS
12	DBW221	N-113	10S	0	0	0	0	tR	0	0	0
13	BRW3793	N-114	60S	0	10MS	0	10S	10S	0	0	0
14	PBW764	N-115	10S	0	0	0	tR	10S	0	10MR	10S
15	RAJ4493	N-116	40S	0	60S	0	5S	60S	0	40S	40S
16	WH1220	N-117	5S	0	40S	0	5S	20S	0	10MR	40MS
17	RAJ4497	N-118	20S	0	10MS	0	0	10S	0	0	10MS
18	DBW225	N-119	20S	0	20S	0	40S	40S	0	10MS	10MS
19	PBW766	N-120	10S	10S	0	0	0	20S	0	10S	10S
20	DBW222	N-121	5S	0	5MS	0	10S	40S	0	5MS	0
21	RAJ4496	N-123	40S	0	20MS	0	tR	40S	0	10S	20MS
22	PBW762	N-124	0	0	0	0	0	5S	0	0	0
23	HD3250	N-125	20S	0	10MS	0	10S	tR	0	10MR	20S
24	RAJ4495	N-126	60S	10S	10MS	0	5S	5S	0	5S	10MS
25	UP2979	N-127	60S	0	10S	0	10S	40S	0	40S	20MS
26	NW7001	N-128	20S	0	20MS	0	0	20S	0	0	5MS
27	DBW226	N-129	40S	0	tMS	0	5S	5S	0	10MS	5S
28	HD3252	N-131	tS	0	10S	0	5S	5S	0	10S	0
29	K1602	N-132	10S	10S	0	0	10S	tR	0	0	0
30	PBW763	N-133	0	0	0	0	0	10S	0	10S	0
31	HD3248	N-134	10S	0	40S	0	10S	40S	0	0	20MS
32	HD3249	N-135	10S	0	20S	0	tR	5S	0	0	0
33	DBW227	N-136	20S	0	20S	0	tR	10S	0	10S	5S
34	UP2977	N-137	40S	0	40S	0	tR	40S	0	0	10S
35	JAUW649	N-138	20S	0	10MS	0	5S	20S	0	0	10S
36	UP2976	N-139	tS	tS	0	0	5S	tR	0	10S	0
37	HD3254	N-140	10S	0	10MS	0	tR	5S	0	10MS	10MS
38	UP2975	N-141	10S	10S	0	0	0	40S	0	20S	0
39	HP1966	N-142	40S	0	40MS	0	5S	40S	0	0	40MS
40	HUW813	N-143	60S	0	40MS	0	40S	40S	0	10MR	20S
41	WH1219	N-144	tS	0	10S	0	10S	10S	0	5MR	0
42	DBW224	N-145	40S	10S	10MS	0	tR	40S	0	10S	10S
43	WH1218	N-146	tS	0	0	0	5S	20S	0	0	0
44	RAJ4494	N-147	10S	0	0	0	10S	40S	0	5MS	0
45	PBW765	N-149	0	0	0	0	0	20S	0	0	0
46	K0307(C)	N-109	60S	0	40S	0	20S	60S	0	40S	40S
47	DBW88(C)	N-122	40S	0	20S	0	20S	60S	0	10S	10S
48	WH1105(C)	N-130	40S	0	60S	0	5S	10S	0	10MR	40S
49	HD2967(C)	N-148	60S	0	40S	0	60S	60S	0	40S	40S

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: NIVT-1A-IR-TS-TAS, 2016-17

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
			Br	LB (HS, Av.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	WH1221	N-101	0	78 (46)	72-88	79	112-129	122	84-103	93	Ey	A	H	31-48	39
2	HUW812	N-102	0	57 (24)	69-89	80	112-128	122	97-110	103	Ey	A	SH	35-50	42
3	NW7015	N-103	0	67 (24)	69-89	79	112-131	121	92-115	104	Ey	A	H	32-46	39
4	K1603	N-104	0	56 (34)	64-86	75	109-126	120	96-110	102	Ey	A	H	35-47	39
5	HD3253	N-105	0	78 (35)	69-87	78	110-127	118	95-110	101	Ey	A	H	36-49	40
6	DBW223	N-106	0	47 (24)	70-87	81	113-125	120	90-106	96	Ey	A	H	34-48	40
7	HD3251	N-107	0	56 (34)	58-80	72	110-126	118	87-103	97	Ey	A	H	29-50	39
8	DBW228	N-108	0	68 (35)	70-86	78	110-124	118	93-108	101	Ey	A	H	34-48	40
9	WH1222	N-110	10S	68 (35)	76-90	84	114-129	122	92-105	98	Ey	A	H	32-48	38
10	UP2978	N-111	0	68 (35)	65-88	77	112-130	120	91-108	98	Ey	A	SH	33-50	42
11	K1601	N-112	10S	67 (24)	70-89	79	114-132	121	91-102	98	Ey	A	SH	35-48	41
12	DBW221	N-113	0	68 (35)	64-83	74	107-124	116	82-104	88	Ey	A	SH	29-44	37
13	BRW3793	N-114	30S	67 (35)	50-80	62	99-123	114	94-111	101	Ey	A	H	36-48	43
14	PBW764	N-115	0	47 (34)	69-88	79	112-133	122	83-100	92	Ey	A	SH	32-46	38
15	RAJ4493	N-116	0	69 (34)	53-82	68	101-125	116	77-92	86	Ey	A	H	34-52	40
16	WH1220	N-117	0	67 (34)	72-88	81	112-126	120	85-105	96	Ey	A	H	34-46	40
17	RAJ4497	N-118	0	68 (34)	55-80	69	108-129	117	84-106	96	Ey	A	H	33-44	38
18	DBW225	N-119	0	78 (35)	68-90	79	116-130	121	56-65	61	Ey	A	H	34-46	39
19	PBW766	N-120	0	57 (34)	66-86	76	111-129	118	90-110	99	Ey	A	H	37-48	41
20	DBW222	N-121	0	67 (34)	67-88	76	105-128	119	85-117	97	Ey	A	SH	33-47	39
21	RAJ4496	N-123	0	57 (35)	56-80	68	108-123	117	84-104	91	Ey	A	H	32-48	39
22	PBW762	N-124	0	56 (24)	58-84	72	108-128	118	81-103	92	Ey	A	H	36-53	41
23	HD3250	N-125	0	57 (34)	76-93	83	115-134	126	93-105	99	Ey	A	H	34-46	39
24	RAJ4495	N-126	0	67 (35)	60-84	73	113-125	119	87-104	94	Ey	A	H	30-48	38
25	UP2979	N-127	0	68 (35)	67-89	78	113-128	121	84-100	91	Ey	A	SH	33-47	38
26	NW7001	N-128	0	68 (24)	66-93	83	118-134	125	88-103	94	Ey	A	H	32-46	38
27	DBW226	N-129	0	58 (35)	69-88	78	113-128	121	76-89	83	Ey	A	SH	30-42	37

## Summary of Disease Data and Agronomic Characteristics

### North Eastern Plains Zone

Trial: NIVT-1A-IR-TS-TAS, 2016-17

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
			Br	LB (HS. Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
28	HD3252	N-131	20S	68 (34)	68-88	76	112-127	120	90-103	96	Ey	A	SH	34-46	39
29	K1602	N-132	0	78 (34)	73-93	84	114-135	124	93-118	100	Ey	A	SH	34-46	41
30	PBW763	N-133	0	56 (34)	67-89	77	112-126	120	88-103	95	Ey	A	H	36-53	42
31	HD3248	N-134	0	57 (34)	77-93	85	118-136	125	92-106	97	Ey	A	H	32-44	37
32	HD3249	N-135	0	68 (35)	64-85	76	114-127	120	92-104	98	Ey	A	SH	36-50	43
33	DBW227	N-136	0	68 (35)	65-85	76	112-127	119	92-109	100	Ey	A	H	29-45	38
34	UP2977	N-137	0	78 (35)	76-91	84	114-134	124	92-111	100	Ey	A	SH	32-47	37
35	JAUW649	N-138	0	57 (35)	66-84	76	111-128	119	90-102	97	Ey	A	SH	36-46	40
36	UP2976	N-139	0	68 (34)	77-88	83	115-129	123	89-105	97	Ey	A	SH	33-44	38
37	HD3254	N-140	0	67 (35)	69-92	80	112-132	122	86-104	95	Ey	A	SH	32-44	38
38	UP2975	N-141	0	68 (35)	69-85	78	110-131	120	86-101	95	Ey	A	H	31-48	38
39	HP1966	N-142	0	57 (24)	72-93	83	112-130	121	83-97	93	Ey	A	SH	39-52	45
40	HUW813	N-143	0	68 (35)	58-85	75	112-131	121	83-100	93	Ey	A	SO	34-50	41
41	WH1219	N-144	0	78 (34)	69-84	77	110-125	119	85-98	92	Ey	A	SH	34-50	41
42	DBW224	N-145	0	57 (34)	68-88	79	113-131	122	81-96	88	Ey	A	SH	30-47	36
43	WH1218	N-146	0	57 (35)	60-83	72	106-123	117	94-107	101	Ey	A	H	36-48	41
44	RAJ4494	N-147	10MS	68 (36)	57-85	72	107-127	118	91-104	96	Ey	A	SO	30-49	39
45	PBW765	N-149	0	56 (34)	68-89	77	112-130	122	90-98	93	Ey	A	SH	30-46	38
46	K0307(C)	N-109	0	78 (34)	64-97	80	112-128	121	99-108	103	Ey	A	H	36-47	40
47	DBW88(C)	N-122	0	68 (35)	68-86	78	113-129	122	88-104	95	Ey	A	H	33-46	38
48	WH1105(C)	N-130	0	67 (35)	66-84	76	112-125	119	78-98	90	Ey	A	H	32-44	37
49	HD2967(C)	N-148	0	36 (23)	67-94	87	86-134	123	89-108	98	Ey	A	H	34-46	38

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

**NIVT-1A-IR-TS-TAS, 2016-17**  
**North Eastern Plains Zone**  
**Individual Station Leaf Blight Data**

SN	Variety	Code	Coochbehar	Kalyani	Manikchak	Pusa	Ranchi	Varanasi	Faizabad	Sabour
1.	WH1221	N-101	57	69	25	78	24	35	12	68
2.	HUW812	N-102	57	25	25	35	13	24	12	34
3.	NW7015	N-103	67	58	14	45	14	47	00	13
4.	K1603	N-104	56	25	46	46	23	12	23	35
5.	HD3253	N-105	56	46	35	78	24	24	24	24
6.	DBW223	N-106	45	46	25	47	13	34	12	33
7.	HD3251	N-107	56	46	24	45	24	35	12	46
8.	DBW228	N-108	67	36	13	67	35	36	00	68
9.	WH1222	N-110	56	46	46	68	13	24	23	35
10.	UP2978	N-111	67	36	25	68	24	24	24	35
11.	K1601	N-112	67	35	15	34	13	12	36	46
12.	DBW221	N-113	67	46	14	35	25	24	34	68
13.	BRW3793	N-114	67	46	13	45	25	37	34	35
14.	PBW764	N-115	45	46	25	45	13	47	12	35
15.	RAJ4493	N-116	67	69	25	56	13	12	12	46
16.	WH1220	N-117	56	46	14	67	14	36	12	35
17.	RAJ4497	N-118	46	35	24	45	24	12	00	68
18.	DBW225	N-119	46	46	36	78	35	47	13	35
19.	PBW766	N-120	46	46	24	57	23	24	12	35
20.	DBW222	N-121	56	46	25	67	23	24	24	0
21.	RAJ4496	N-123	56	24	46	46	25	57	12	46
22.	PBW762	N-124	56	46	36	45	23	24	00	24
23.	HD3250	N-125	46	46	47	57	13	12	12	35
24.	RAJ4495	N-126	56	35	26	67	24	35	12	46
25.	UP2979	N-127	45	46	46	68	23	47	12	35
26.	NW7001	N-128	34	46	26	68	26	12	34	3
27.	DBW226	N-129	56	58	25	46	35	12	24	46
28.	HD3252	N-131	56	46	26	68	24	12	12	46
29.	K1602	N-132	34	69	46	78	23	24	12	24
30.	PBW763	N-133	56	35	36	45	24	24	12	46
31.	HD3248	N-134	56	46	46	57	24	24	00	34
32.	HD3249	N-135	56	68	36	46	24	25	00	46
33.	DBW227	N-136	67	68	36	46	25	24	12	46
34.	UP2977	N-137	46	58	25	78	13	36	12	46
35.	JAUW649	N-138	45	35	36	57	24	24	34	46
36.	UP2976	N-139	56	24	26	68	13	12	34	35
37.	HD3254	N-140	67	35	25	46	24	24	36	46
38.	UP2975	N-141	56	58	35	46	24	24	45	68
39.	HP1966	N-142	34	57	36	23	13	35	45	3
40.	HUW813	N-143	56	68	24	67	24	47	23	35
41.	WH1219	N-144	46	57	03	78	24	00	00	68
42.	DBW224	N-145	56	57	25	56	13	12	24	46
43.	WH1218	N-146	46	57	36	56	25	47	23	35
44.	RAJ4494	N-147	56	58	25	68	25	00	00	46
45.	PBW765	N-149	56	46	14	45	35	35	12	23
46.	K0307(C)	N-109	78	57	14	68	25	12	12	3
47.	DBW88(C)	N-122	56	35	36	68	25	36	23	68
48.	WH1105(C)	N-130	45	58	36	67	24	24	23	35
49.	HD2967(C)	N-148	34	13	36	13	00	35	12	24

## **NIVT-1B-IR-TS-TAS, 2016-17**

This trial comprising 45 entries with four checks (HD2967, DBW88, WH1105 and K0307) was proposed and conducted at 18 centres in NWPZ & NEPZ. Yield data of 13 centres were reported from Sabour, Burdwan, Kalyani and Modipuram was rejected due to low site mean and Shillongani was not considered due to unrealistic yield.

### **North Eastern Plain Zone:**

- Mean yield ranged from 54.6q/ha (Faizabad) to 40.3q/ha (Coochbehar).
- Two test entries PBW769 (54.0q/ha) and DBW 233 (53.1q/ha) were highest yielding entries and formed the first non-significant group.
- No rust data reported from any centre.
- The test entry K1606 showed highest leaf blight score of 79(57) followed by UP2981 with 79(56).
- Ancillary data revealed that the entries were similar in agronomic features to the check varieties.

### **North Western Plain Zone:**

- Mean yield ranged from 58.2q/ha (Ludhiana) to 45.8q/ha (Delhi) .
- Three test entries BRW3792 (62.0q/ha), DBW233 (60.4q/ha) and UP2981 (60.2q/ha) were highest yielding entries and formed first non-significant group.
- A high incidence of yellow rust was reported in check HD2967 (80S, ACI = 57.14) followed by DBW229 (80S, ACI = 46.43)
- The maximum brown rust incidence (60S, ACI = 20) was reported in check DBW88 followed by HUW817 (10S, ACI = 3.67).
- Ancillary data revealed that the entries were similar in agronomic features to the check varieties. K1605 had high 1000-grains weight of 47g.

### **National Level:**

At national level, the highest yielding entry was DBW233 (57.0q/ha) followed by UP2981 (55.5q/ha), PBW769 (55.5q/ha) and BRW3792 (55.3q/ha) which formed the first non-significant group.

**1692-NIVT-1B-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ														
			Delhi			Haryana						Punjab					
			New Delhi			Karnal			Hisar			Ludhiana			Gurdaspur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1224	N-201	51.6	13	0	64.2	7	0	60.8	4	1	47.2	48	0	42.1	45	0
2	HD3257	N-202	38.5	41	0	41.8	46	0	46.9	35	0	48.0	45	0	59.7	25	0
3	NW7002	N-203	43.5	33	0	58.1	19	0	44.4	45	0	63.2	12	1	35.9	49	0
4	JKW237	N-204	45.5	25	0	57.4	23	0	53.5	15	0	68.4	1	1	44.4	43	0
5	HD3260	N-205	54.9	7	1	48.6	40	0	43.7	47	0	61.4	20	0	77.4	1	1
6	UP2981	N-206	55.5	6	1	70.5	2	1	56.1	9	0	68.1	2	1	61.2	21	0
7	DBW232	N-207	45.9	24	0	44.7	42	0	46.8	36	0	56.8	29	0	60.4	24	0
8	K1607	N-208	49.5	18	0	46.0	41	0	53.5	16	0	58.4	25	0	57.6	29	0
9	PBW768	N-210	50.3	16	0	64.2	9	0	53.8	14	0	61.9	18	0	54.2	35	0
10	K1604	N-211	45.1	27	0	54.8	28	0	56.1	8	0	65.7	7	1	61.6	18	0
11	HD3258	N-212	46.6	22	0	57.1	24	0	50.9	26	0	67.9	3	1	68.2	6	0
12	HD3261	N-213	32.5	48	0	58.0	21	0	57.1	7	0	55.2	32	0	60.5	22	0
13	K1608	N-214	39.7	40	0	31.3	49	0	45.8	40	0	48.1	44	0	66.3	10	0
14	UP2982	N-216	44.9	28	0	56.6	26	0	45.2	43	0	55.1	33	0	51.9	40	0
15	RAJ4498	N-217	52.7	11	0	51.5	35	0	48.9	33	0	60.3	23	0	52.5	39	0
16	RAJ4500	N-218	43.1	35	0	53.6	30	0	49.2	32	0	57.9	27	0	59.4	27	0
17	HUW817	N-219	44.8	29	0	37.0	48	0	46.1	39	0	64.1	11	1	60.5	22	0
18	BRW3796	N-220	43.8	31	0	61.7	13	0	55.4	12	0	62.4	15	1	61.3	20	0
19	HUW815	N-221	36.2	43	0	59.3	17	0	50.3	29	0	54.8	34	0	59.3	28	0
20	DBW229	N-222	55.5	5	1	39.0	47	0	46.2	38	0	51.1	41	0	66.2	11	0
21	DBW233	N-223	46.5	23	0	61.6	14	0	53.1	17	0	61.9	17	1	71.8	2	1
22	NW6098	N-224	55.9	4	1	55.4	27	0	65.2	1	1	62.6	14	1	49.5	41	0
23	PBW767	N-225	40.5	38	0	61.3	15	0	54.0	13	0	67.2	4	1	69.9	4	0
24	NW7004	N-226	50.7	15	0	57.4	22	0	53.0	18	0	59.6	24	0	44.4	43	0
25	WH1223	N-227	36.5	42	0	63.8	10	0	51.4	24	0	64.2	10	1	53.2	37	0
26	K1605	N-228	40.1	39	0	62.0	12	0	46.8	37	0	56.7	30	0	64.5	14	0
27	BRW3799	N-229	43.7	32	0	51.0	36	0	50.9	27	0	48.3	43	0	67.7	7	0
28	HD3255	N-230	42.8	36	0	58.0	20	0	55.8	10	0	60.3	22	0	57.1	30	0
29	DBW230	N-231	41.0	37	0	69.6	4	1	47.5	34	0	53.4	38	0	63.5	15	0
30	HD3262	N-232	35.7	44	0	54.3	29	0	52.0	22	0	55.3	31	0	61.6	18	0
31	HUW816	N-233	45.3	26	0	66.4	5	1	44.1	46	0	61.5	19	0	55.3	33	0
32	DBW234	N-234	43.1	34	0	70.8	1	1	63.4	3	1	62.8	13	1	36.6	48	0
33	PBW769	N-236	44.3	30	0	69.9	3	1	58.0	5	1	62.0	16	1	53.9	36	0
34	HUW818	N-237	34.3	46	0	42.9	44	0	43.1	48	0	57.9	26	0	59.6	26	0
35	RAJ4499	N-238	56.0	3	1	63.2	11	0	44.7	44	0	53.4	38	0	56.5	32	0
36	DBW231	N-239	32.6	47	0	59.0	18	0	50.7	28	0	64.8	8	1	47.2	42	0
37	UBW5	N-240	48.1	21	0	52.9	32	0	55.4	11	0	53.9	36	0	37.3	47	0
38	K1606	N-241	52.5	12	0	50.2	38	0	50.2	31	0	53.7	37	0	69.4	5	0
39	HUW814	N-242	25.5	49	0	51.6	34	0	45.6	41	0	47.3	47	0	65.0	13	0
40	UP2980	N-243	35.3	45	0	44.3	43	0	52.2	21	0	54.4	35	0	66.4	9	0
41	BRW3792	N-245	56.6	2	1	60.4	16	0	64.0	2	1	64.7	9	1	67.6	8	0
42	NW7000	N-246	58.3	1	1	53.4	31	0	51.2	25	0	66.6	6	1	56.9	31	0
43	HD3256	N-247	52.8	10	0	64.2	7	0	50.2	30	0	53.3	40	0	54.3	34	0
44	NW7003	N-248	48.5	20	0	51.0	37	0	57.4	6	0	46.6	49	0	61.8	17	0
45	HD3259	N-249	52.8	9	0	65.3	6	0	52.8	19	0	60.6	21	0	53.2	38	0
46	WH1105(C)	N-209	54.3	8	1	57.1	24	0	51.6	23	0	66.9	5	1	71.4	3	1
47	K0307(C)	N-215	49.0	19	0	49.3	39	0	45.5	42	0	49.1	42	0	41.1	46	0
48	DBW88(C)	N-235	49.9	17	0	52.0	33	0	52.5	20	0	57.3	28	0	61.9	16	0
49	HD2967(C)	N-244	51.4	14	0	42.2	45	0	41.5	49	0	47.5	46	0	65.3	12	0
Mean			45.8			55.4			51.3			58.2			58.1		
S.E.m			2.060			2.052			3.087			2.766			3.115		
C.D. (10%)			4.9			4.9			7.4			6.6			7.4		
C.V.			6.4			5.2			8.5			6.7			7.6		
D.O.S. (dd.mm.yyyy)			15.11.2016			8.11.2016			5.11.2016			1.11.2016			9.11.2016		

Trials proposed & conducted = 18

Trials not reported (5) = Modipuram(LSM), Sabour (LSM), Burdwan (LSM), Kalyani (LSM), Shillongani (UY)

**NIVT-1B-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ						NEPZ					
			Rajasthan			Uttarakhand			Uttar Pradesh					
			Durgapura			Pantnagar			Kanpur			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1224	N-201	48.4	37	0	56.1	29	0	45.3	29	0	42.4	20	0
2	HD3257	N-202	51.0	28	0	58.0	24	0	47.7	16	0	42.7	16	0
3	NW7002	N-203	56.3	12	0	57.2	25	0	48.4	14	0	36.6	44	0
4	JKW237	N-204	54.7	16	0	51.7	41	0	52.3	8	0	37.4	40	0
5	HD3260	N-205	53.6	20	0	64.1	10	0	47.1	20	0	37.1	41	0
6	UP2981	N-206	51.0	28	0	58.5	21	0	50.3	10	0	39.4	33	0
7	DBW232	N-207	56.8	11	0	68.2	6	1	46.4	22	0	44.1	12	0
8	K1607	N-208	60.4	6	1	51.8	39	0	47.4	17	0	42.6	19	0
9	PBW768	N-210	51.0	28	0	68.7	5	1	46.4	22	0	39.8	30	0
10	K1604	N-211	52.6	21	0	58.3	23	0	45.1	31	0	42.7	15	0
11	HD3258	N-212	52.6	21	0	69.2	4	1	42.2	36	0	43.5	13	0
12	HD3261	N-213	50.0	33	0	65.1	9	0	38.8	39	0	42.6	18	0
13	K1608	N-214	37.0	48	0	48.0	44	0	41.9	37	0	36.9	42	0
14	UP2982	N-216	48.4	37	0	62.3	14	0	45.6	27	0	40.1	29	0
15	RAJ4498	N-217	48.4	37	0	47.5	45	0	45.3	29	0	40.8	25	0
16	RAJ4500	N-218	46.9	41	0	45.0	49	0	46.6	21	0	42.7	17	0
17	HUW817	N-219	47.9	40	0	51.7	40	0	32.0	49	0	38.2	38	0
18	BRW3796	N-220	62.0	4	1	56.4	28	0	38.3	41	0	30.0	49	0
19	HUW815	N-221	42.7	47	0	56.5	27	0	48.7	12	0	37.9	39	0
20	DBW229	N-222	51.6	27	0	54.6	32	0	45.8	26	0	42.3	21	0
21	DBW233	N-223	62.5	3	1	65.7	8	0	52.9	6	0	50.4	2	1
22	NW6098	N-224	56.3	12	0	51.9	38	0	36.7	43	0	40.6	26	0
23	PBW767	N-225	55.2	15	0	48.6	43	0	60.9	1	1	40.4	27	0
24	NW7004	N-226	45.8	43	0	52.9	37	0	58.1	2	1	48.5	5	1
25	WH1223	N-227	45.3	45	0	59.3	19	0	38.5	40	0	43.4	14	0
26	K1605	N-228	52.6	21	0	60.8	18	0	41.9	37	0	36.7	43	0
27	BRW3799	N-229	49.5	34	0	53.6	33	0	46.1	25	0	39.6	31	0
28	HD3255	N-230	45.8	43	0	59.2	20	0	47.4	17	0	50.2	3	1
29	DBW230	N-231	50.5	32	0	58.5	22	0	45.1	31	0	46.2	7	1
30	HD3262	N-232	49.5	34	0	53.4	34	0	47.4	17	0	38.7	36	0
31	HUW816	N-233	52.6	21	0	60.9	17	0	45.6	27	0	41.5	24	0
32	DBW234	N-234	64.1	2	1	61.7	15	0	33.6	48	0	41.7	23	0
33	PBW769	N-236	52.6	21	0	56.9	26	0	48.7	12	0	44.7	10	0
34	HUW818	N-237	56.3	12	0	61.3	16	0	52.6	7	0	33.5	48	0
35	RAJ4499	N-238	57.8	8	0	62.9	12	0	37.2	42	0	34.7	45	0
36	DBW231	N-239	57.3	10	0	46.2	47	0	34.1	46	0	44.9	8	0
37	UBW5	N-240	46.4	42	0	52.9	36	0	34.9	44	0	39.4	32	0
38	K1606	N-241	60.9	5	1	55.5	31	0	50.3	10	0	38.5	37	0
39	HUW814	N-242	65.6	1	1	55.8	30	0	48.4	14	0	49.5	4	1
40	UP2980	N-243	49.5	34	0	53.0	35	0	43.5	35	0	39.3	35	0
41	BRW3792	N-245	54.2	19	0	66.2	7	1	51.6	9	0	34.5	46	0
42	NW7000	N-246	54.7	16	0	71.8	3	1	34.4	45	0	44.7	10	0
43	HD3256	N-247	45.3	45	0	75.3	1	1	57.6	4	1	50.7	1	1
44	NW7003	N-248	58.9	7	0	62.6	13	0	54.7	5	1	40.4	28	0
45	HD3259	N-249	54.7	16	0	72.7	2	1	45.1	31	0	42.0	22	0
46	WH1105(C)	N-209	52.6	21	0	47.0	46	0	58.1	2	1	34.5	47	0
47	K0307(C)	N-215	51.0	28	0	46.1	48	0	43.8	34	0	39.4	34	0
48	DBW88(C)	N-235	57.8	8	0	51.2	42	0	46.4	22	0	46.4	6	1
49	HD2967(C)	N-244	36.5	49	0	63.5	11	0	33.9	47	0	44.8	9	0
Mean			52.3			57.9			45.5			41.2		
S.E.m			2.448			3.906			2.903			2.326		
C.D. (10%)			5.8			9.3			6.9			5.6		
C.V.			6.6			9.5			9.0			8.0		
D.O.S. (dd.mm.yyyy)			15.11.2016			11.11.2016			24.11.2016			22.11.2016		

**NIVT-1B-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NEPZ											
			Faizabad			Pusa			Ranchi			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1224	N-201	48.0	42	0	59.6	1	1	49.4	19	0	44.4	23	0
2	HD3257	N-202	61.7	5	1	59.0	3	1	38.3	42	0	51.5	11	0
3	NW7002	N-203	47.3	44	0	56.0	26	0	50.4	15	1	56.2	3	1
4	JKW237	N-204	60.3	11	1	56.1	25	0	47.3	26	0	51.3	12	0
5	HD3260	N-205	60.3	12	1	54.7	33	0	54.8	5	1	27.9	41	0
6	UP2981	N-206	52.1	29	0	54.8	31	0	50.5	14	1	53.9	8	1
7	DBW232	N-207	60.2	13	1	58.9	4	1	50.7	13	1	29.6	38	0
8	K1607	N-208	52.9	25	0	56.0	26	0	48.0	25	0	50.6	13	0
9	PBW768	N-210	53.6	24	0	57.2	16	1	51.4	9	1	28.2	40	0
10	K1604	N-211	55.6	21	0	50.4	38	0	47.2	27	0	22.7	47	0
11	HD3258	N-212	60.0	15	1	45.5	45	0	49.2	20	0	39.2	27	0
12	HD3261	N-213	50.0	37	0	48.1	40	0	44.1	31	0	24.5	45	0
13	K1608	N-214	59.3	19	1	42.9	48	0	19.6	49	0	47.1	17	0
14	UP2982	N-216	51.6	33	0	56.4	23	0	56.3	3	1	57.1	1	1
15	RAJ4498	N-217	57.7	20	1	46.5	42	0	50.0	16	0	37.4	28	0
16	RAJ4500	N-218	51.9	31	0	56.4	23	0	38.4	40	0	54.0	7	1
17	HUW817	N-219	43.3	49	0	51.0	37	0	35.9	45	0	33.5	34	0
18	BRW3796	N-220	46.9	45	0	51.3	36	0	40.8	36	0	46.7	20	0
19	HUW815	N-221	51.4	34	0	56.7	22	0	35.6	46	0	34.7	31	0
20	DBW229	N-222	60.2	14	1	57.7	13	1	54.5	6	1	24.8	44	0
21	DBW233	N-223	63.2	1	1	54.8	31	0	55.0	4	1	42.2	24	0
22	NW6098	N-224	46.8	46	0	57.1	18	0	43.2	34	0	47.3	16	0
23	PBW767	N-225	61.9	4	1	46.4	44	0	49.8	17	0	37.4	29	0
24	NW7004	N-226	59.9	17	1	45.5	45	0	37.6	44	0	49.8	14	0
25	WH1223	N-227	51.7	32	0	56.8	21	0	51.0	11	1	55.6	5	1
26	K1605	N-228	48.2	40	0	52.1	35	0	39.7	39	0	57.0	2	1
27	BRW3799	N-229	61.4	8	1	58.8	5	1	49.2	22	0	14.9	49	0
28	HD3255	N-230	52.9	26	0	57.2	16	1	48.2	24	0	29.2	39	0
29	DBW230	N-231	60.0	16	1	58.0	9	1	52.5	8	1	36.4	30	0
30	HD3262	N-232	62.3	3	1	58.0	9	1	39.9	38	0	53.5	9	1
31	HUW816	N-233	54.7	23	0	56.0	26	0	44.4	29	0	30.7	36	0
32	DBW234	N-234	52.0	30	0	57.9	11	1	35.4	47	0	52.4	10	1
33	PBW769	N-236	61.3	9	1	57.4	15	1	57.4	2	1	54.6	6	1
34	HUW818	N-237	49.4	39	0	48.0	41	0	46.6	28	0	30.4	37	0
35	RAJ4499	N-238	46.0	48	0	56.9	20	0	59.8	1	1	55.9	4	1
36	DBW231	N-239	52.3	28	0	46.5	42	0	51.0	12	1	22.5	48	0
37	UBW5	N-240	51.1	35	0	42.0	49	0	38.0	43	0	49.1	15	0
38	K1606	N-241	51.1	36	0	52.9	34	0	38.4	41	0	41.9	25	0
39	HUW814	N-242	46.2	47	0	58.8	5	1	42.1	35	0	45.2	22	0
40	UP2980	N-243	55.3	22	0	57.8	12	1	43.7	32	0	34.4	32	0
41	BRW3792	N-245	61.7	6	1	49.8	39	0	48.8	23	0	39.5	26	0
42	NW7000	N-246	47.6	43	0	59.1	2	1	43.6	33	0	46.8	19	0
43	HD3256	N-247	62.9	2	1	58.5	8	1	53.2	7	1	22.9	46	0
44	NW7003	N-248	59.7	18	1	57.7	13	1	49.2	21	0	32.7	35	0
45	HD3259	N-249	61.0	10	1	55.1	30	0	44.3	30	0	26.6	43	0
46	WH1105(C)	N-209	48.0	41	0	45.3	47	0	40.6	37	0	26.9	42	0
47	K0307(C)	N-215	52.4	27	0	55.7	29	0	35.1	48	0	47.0	18	0
48	DBW88(C)	N-235	61.7	7	1	57.0	19	0	51.1	10	1	45.6	21	0
49	HD2967(C)	N-244	49.5	38	0	58.6	7	1	49.4	18	0	33.7	33	0
Mean			54.6			54.1			45.9			40.3		
S.E.m			2.659			1.029			4.022			1.987		
C.D. (10%)			6.4			2.4			9.6			4.7		
C.V.			6.9			2.7			12.4			7.0		
D.O.S. (dd.mm.yyyy)			25.11.2016			19.11.2016			22.11.2016			16.11.2016		



**NIVT-1B-IR-TS-TAS, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1224	N-201	52.9	30	0	48.2	21	0	50.7	27	0
2	HD3257	N-202	49.1	47	0	50.1	8	0	49.6	36	0
3	NW7002	N-203	51.2	38	0	49.2	15	0	50.3	33	0
4	JKW237	N-204	53.7	28	0	50.8	6	0	52.3	16	0
5	HD3260	N-205	57.7	8	0	47.0	25	0	52.7	11	0
6	UP2981	N-206	60.2	3	1	50.2	7	0	55.5	2	1
7	DBW232	N-207	54.2	24	0	48.3	20	0	51.5	21	0
8	K1607	N-208	53.9	27	0	49.6	12	0	51.9	18	0
9	PBW768	N-210	57.7	7	0	46.1	28	0	52.3	15	0
10	K1604	N-211	56.3	17	0	43.9	41	0	50.6	30	0
11	HD3258	N-212	58.9	5	0	46.6	26	0	53.2	7	0
12	HD3261	N-213	54.1	26	0	41.4	47	0	48.2	41	0
13	K1608	N-214	45.2	49	0	41.3	48	0	43.4	49	0
14	UP2982	N-216	52.0	32	0	51.2	4	0	51.6	19	0
15	RAJ4498	N-217	51.7	35	0	46.3	27	0	49.2	38	0
16	RAJ4500	N-218	50.7	43	0	48.3	19	0	49.6	37	0
17	HUW817	N-219	50.3	44	0	39.0	49	0	45.1	48	0
18	BRW3796	N-220	57.6	9	0	42.3	44	0	50.5	31	0
19	HUW815	N-221	51.3	37	0	44.2	40	0	48.0	42	0
20	DBW229	N-222	52.0	33	0	47.6	23	0	50.0	34	0
21	DBW233	N-223	60.4	2	1	53.1	2	1	57.0	1	1
22	NW6098	N-224	56.7	14	0	45.3	37	0	51.4	22	0
23	PBW767	N-225	56.7	13	0	49.5	14	0	53.3	6	0
24	NW7004	N-226	52.0	34	0	49.9	10	0	51.0	25	0
25	WH1223	N-227	53.4	29	0	49.5	13	0	51.6	20	0
26	K1605	N-228	54.8	22	0	45.9	30	0	50.7	28	0
27	BRW3799	N-229	52.1	31	0	45.0	38	0	48.8	39	0
28	HD3255	N-230	54.1	25	0	47.5	24	0	51.1	24	0
29	DBW230	N-231	54.9	21	0	49.7	11	0	52.5	13	0
30	HD3262	N-232	51.7	36	0	50.0	9	0	50.9	26	0
31	HUW816	N-233	55.2	20	0	45.5	36	0	50.7	29	0
32	DBW234	N-234	57.5	10	0	45.5	35	0	52.0	17	0
33	PBW769	N-236	56.8	12	0	54.0	1	1	55.5	3	1
34	HUW818	N-237	50.8	41	0	43.4	42	0	47.4	44	0
35	RAJ4499	N-238	56.4	16	0	48.4	17	0	52.7	12	0
36	DBW231	N-239	51.1	39	0	41.9	46	0	46.9	45	0
37	UBW5	N-240	49.5	46	0	42.4	43	0	46.3	47	0
38	K1606	N-241	56.1	18	0	45.5	34	0	51.2	23	0
39	HUW814	N-242	50.9	40	0	48.4	18	0	49.7	35	0
40	UP2980	N-243	50.8	42	0	45.7	32	0	48.4	40	0
41	BRW3792	N-245	62.0	1	1	47.6	22	0	55.3	4	1
42	NW7000	N-246	59.0	4	0	46.0	29	0	53.0	9	0
43	HD3256	N-247	56.5	15	0	51.0	5	0	53.9	5	0
44	NW7003	N-248	55.3	19	0	49.1	16	0	52.4	14	0
45	HD3259	N-249	58.9	6	0	45.7	31	0	52.8	10	0
46	WH1105(C)	N-209	57.3	11	0	42.2	45	0	50.3	32	0
47	K0307(C)	N-215	47.3	48	0	45.6	33	0	46.5	46	0
48	DBW88(C)	N-235	54.7	23	0	51.4	3	0	53.1	8	0
49	HD2967(C)	N-244	49.7	45	0	45.0	39	0	47.5	43	0
Mean			54.1			47.0			50.8		
C.D. (10%)			2.5			2.5			1.8		

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: NIVT-1B-IR-TS-TAS, 2016-17

SN	Variety	Code	Leaf Blight HS (Av)	Agronomic Characteristics								Grain Characteristics			
				Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
1.	WH 1224	N-201	57 (35)	69-84	79	112-125	119	84-105	93	Ey	-	A	H	34-42	38
2.	HD 3257	N-202	68 (46)	68-91	80	114-130	123	82-100	92	Ey	-	A	SH-H	35-46	39
3.	NW 7002	N-203	78 (35)	76-92	83	115-133	124	89-102	96	Ey	-	A	H	34-42	38
4.	JKW 237	N-204	68 (35)	63-87	77	114-133	122	87-112	96	Ey	-	A	SH	34-47	41
5.	HD 3260	N-205	78 (45)	68-83	76	112-127	118	90-109	97	Ey	10	A	H	37-45	41
6.	UP 2981	N-206	79 (56)	69-87	79	110-128	122	86-101	95	Ey	-	A	SH-H	32-40	36
7.	DBW 232	N-207	58 (35)	77-93	84	115-132	124	88-102	95	Ey	-	A	SH	34-45	40
8.	K 1607	N-208	57 (35)	65-85	76	112-127	120	93-110	100	Ey	20	A	SH	35-44	39
9.	PBW 768	N-210	56 (24)	71-93	80	111-132	120	83-95	90	Ey	-	A	SH	33-41	38
10.	K 1604	N-211	68 (46)	70-86	78	110-126	119	89-103	95	Ey	-	A	SH-H	34-45	39
11.	HD 3258	N-212	68 (35)	73-93	83	113-131	122	79-103	96	Ey	-	A	H	37-45	40
12.	HD 3261	N-213	68 (46)	71-99	84	111-135	122	89-105	97	Ey	-	A	SH-H	34-44	39
13.	K 1608	N-214	68 (46)	65-84	76	110-126	118	90-125	109	Ey	10	A	H	37-49	42
14.	UP 2982	N-216	67 (34)	69-86	80	113-127	120	88-105	98	Ey	10	A	SH-H	35-49	41
15.	RAJ 4498	N-217	79 (35)	74-93	84	116-134	125	90-113	100	Ey	20	A	SH-H	32-42	36
16.	RAJ 4500	N-218	56 (34)	70-86	80	110-126	121	88-107	95	Ey	20	A	SH	38-50	42
17.	HUW 817	N-219	78 (57)	67-84	78	110-127	120	86-104	95	Ey	-	A	SH	31-42	37
18.	BRW 3796	N-220	68 (46)	68-89	78	113-128	122	86-106	95	Ey	-	A	H	36-41	39
19.	HUW 815	N-221	79 (46)	67-84	77	112-127	121	89-112	100	Ey	10	A	H	38-46	42
20.	DBW 229	N-222	67 (35)	73-87	80	113-128	120	83-120	97	Ey	20	A	H	33-44	39
21.	DBW 233	N-223	78 (35)	66-84	77	110-125	120	87-99	93	Ey	-	A	SH-H	37-46	41
22.	NW 6098	N-224	57 (35)	64-85	75	112-126	120	84-102	93	Ey	-	A	SH-H	34-49	40
23.	PBW767	N-225	68 (46)	58-84	73	113-129	121	81-107	93	Ey	10	A	SH-H	38-47	43
24.	NW 7004	N-226	68 (35)	72-86	79	110-128	121	93-105	98	Ey	10	A	SH	36-46	41
25.	WH 1223	N-227	47 (35)	74-93	84	110-134	123	92-109	102	Ey	10	A	SH	34-41	37

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: NIVT-1B-IR-TS-TAS, 2016-17

SN	Variety	Code	Leaf Blight HS (Av)	Agronomic Characteristics								Grain Characteristics			
				Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
26.	K 1605	N-228	68 (46)	70-88	79	113-128	122	92-112	101	Ey	-	A	SH	37-52	41
27.	BRW 3799	N-229	45 (23)	74-92	82	115-133	123	87-113	99	Ey	-	A	SH	34-45	40
28.	HD 3255	N-230	56 (35)	70-89	81	110-133	122	92-112	100	Ey	-	A	SH-H	34-45	40
29.	DBW 230	N-231	46 (24)	80-93	87	120-133	127	90-112	100	Ey	10	A	SH	33-42	38
30.	HD3262	N-232	58 (35)	72-84	79	113-126	121	91-119	106	Ey	10	A	SH-H	39-45	41
31.	HUW 816	N-233	58 (35)	74-94	82	113-134	122	88-98	94	Ey	-	A	H	35-44	41
32.	DBW 234	N-234	57 (35)	73-85	80	112-130	122	94-110	101	Ey	-	A	SH	37-46	41
33.	PBW 769	N-236	57 (35)	62-86	77	110-128	119	85-110	98	Ey	10	A	SH	35-42	39
34.	HUW 818	N-237	68 (46)	67-85	78	110-131	121	92-108	99	Ey	-	A	SH	33-42	36
35.	RAJ 4499	N-238	78 (56)	55-83	71	114-125	119	83-110	97	Ey	30	A	SH	35-42	39
36.	DBW 231	N-239	78 (35)	69-89	80	112-132	122	75-98	91	Ey	-	A	H	36-44	39
37.	UBW 5	N-240	68 (45)	59-83	71	111-123	118	86-102	94	Ey	-	A	SH	36-49	42
38.	K 1606	N-241	79 (57)	55-85	73	112-127	120	73-95	85	Ey	-	A	SH-H	32-46	38
39.	HUW 814	N-242	78 (46)	70-84	79	113-129	120	91-103	97	Ey	-	A	SH	37-51	42
40.	UP 2980	N-243	68 (35)	74-89	82	112-133	123	91-103	98	Ey	-	A	SH	34-42	39
41.	BRW 3792	N-245	67 (35)	56-82	74	111-128	121	81-105	91	Ey	10	A	SH	32-43	38
42.	NW 7000	N-246	67 (35)	74-88	81	112-127	121	93-107	98	Ey	-	A	H	35-41	38
43.	HD 3265	N-247	46 (24)	71-87	80	112-129	122	94-109	99	Ey	10	A	SH-H	33-44	38
44.	NW 7003	N-248	45 (24)	74-89	83	114-132	124	97-113	104	Ey	20	A	SH	38-46	41
45.	HD 3259	N-249	58 (35)	70-85	78	110-125	118	94-102	98	Ey	-	A	H	34-46	39
46.	WH 1105(C)	N-209	68 (46)	67-90	80	110-128	122	84-101	92	Ey	-	A	SH	36-41	37
47.	K 0307(C)	N-215	58 (35)	67-84	78	112-127	121	92-112	99	Ey	-	A	H	34-43	37
48.	DBW 88(C)	N-235	68 (46)	69-84	80	112-128	122	88-105	96	Ey	-	A	SH	33-45	39
49.	HD 2967(C)	N-244	35 (13)	68-94	85	114-135	126	82-102	96	Ey	10	A	SH	32-43	37

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

**NIVT-1B-IR-TS-TAS, 2016-17**  
**North Eastern Plains Zone**  
**Individual Station Leaf Blight Data**

SN	Variety	Code	Faizabad	Varanasi	Sabour	Pusa	Coochbehar	Ranchi	Kalyani	Shillongani	Burdwan
1	WH 1224	N-201	12	24	02	46	45	24	57	35	46
2	HD 3257	N-202	12	36	46	68	45	24	58	46	45
3	NW 7002	N-203	23	12	46	78	46	24	36	46	46
4	JKW 237	N-204	12	36	35	68	46	13	47	46	35
5	HD 3260	N-205	23	34	68	78	56	25	35	35	12
6	UP 2981	N-206	24	79	35	78	34	35	68	57	56
7	DBW 232	N-207	34	24	24	58	45	23	46	25	23
8	K 1607	N-208	35	24	46	57	34	24	57	36	46
9	PBW 768	N-210	12	12	23	45	56	13	35	25	12
10	K 1604	N-211	01	57	68	68	67	24	46	47	57
11	HD 3258	N-212	12	35	24	68	46	14	46	25	67
12	HD 3261	N-213	56	34	68	46	67	24	46	36	34
13	K 1608	N-214	45	24	68	56	56	24	57	25	57
14	UP 2982	N-216	23	24	46	67	45	13	35	24	12
15	RAJ 4498	N-217	12	24	46	79	45	03	46	14	12
16	RAJ 4500	N-218	12	12	46	45	56	25	35	24	35
17	HUW 817	N-219	12	57	68	78	67	24	68	57	68
18	BRW 3796	N-220	23	68	35	68	46	24	58	46	57
19	HUW 815	N-221	23	24	35	79	45	24	58	36	68
20	DBW 229	N-222	24	12	35	67	56	14	46	35	35
21	DBW 233	N-223	12	35	35	78	56	24	46	36	35
22	NW 6098	N-224	12	57	35	45	56	13	46	35	35
23	PBW767	N-225	12	36	68	45	45	25	58	47	67
24	NW 7004	N-226	12	24	46	68	45	24	57	35	13
25	WH 1223	N-227	12	35	24	47	45	14	47	37	46
26	K 1605	N-228	13	68	68	56	46	24	57	57	68
27	BRW 3799	N-229	23	12	23	13	45	13	35	25	12
28	HD 3255	N-230	23	24	24	35	56	24	46	36	23
29	DBW 230	N-231	26	00	03	35	46	03	24	24	12
30	HD3262	N-232	25	24	45	58	56	13	35	25	34
31	HUW 816	N-233	24	00	46	46	56	14	58	36	12
32	DBW 234	N-234	23	24	57	56	45	14	48	25	13
33	PBW 769	N-236	36	35	46	57	56	13	46	25	23
34	HUW 818	N-237	35	57	35	35	45	24	57	46	68
35	RAJ 4499	N-238	12	78	68	56	56	46	68	47	45
36	DBW 231	N-239	12	24	46	78	45	25	35	46	35
37	UBW 5	N-240	34	24	68	45	56	23	46	36	45
38	K 1606	N-241	24	68	68	79	34	35	58	57	67
39	HUW 814	N-242	23	47	35	78	67	25	58	36	46
40	UP 2980	N-243	25	12	68	68	56	03	36	14	12
41	BRW 3792	N-245	12	47	35	35	45	24	46	36	67
42	NW 7000	N-246	23	24	35	67	46	24	47	46	23
43	HD 3265	N-247	23	24	03	36	46	13	35	24	24
44	NW 7003	N-248	12	12	35	13	45	13	36	24	12
45	HD 3259	N-249	12	24	24	46	56	24	58	58	23
46	WH1105(C)	N-209	12	47	68	45	56	13	57	36	46
47	K 0307(C)	N-215	35	35	46	34	56	13	58	25	23
48	DBW88(C)	N-235	12	57	46	35	57	35	68	47	57
49	HD2967(C)	N-244	12	00	02	02	34	03	35	13	12

### Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: NIVT-1B-IR-TS-TAS, 2016-17

SN	Variety	Code	Rust Reactions				Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
1.	WH 1224	N-201	tS	0.2	10S	3.33	72-97	89	120-148	137	90-105	96	Ey	10	A	H	32-48	43
2.	HD 3257	N-202	60S	32.9	0	0	81-107	94	128-150	141	80-110	98	Ey	10	A	H	29-43	38
3.	NW 7002	N-203	20S	12.3	0	0	84-111	99	128-152	143	92-110	102	Ey	10	A	H	38-46	42
4.	JKW 237	N-204	40S	12.9	0	0	68-92	84	123-146	138	87-105	97	Ey	10	A	H	40-47	44
5.	HD 3260	N-205	40S	17.3	10S	3.33	75-101	89	123-147	138	87-110	102	Ey	10	A	H	36-48	42
6.	UP 2981	N-206	10S	1.5	0	0	79-104	92	123-151	139	91-107	99	Ey	30	A	H	39-50	42
7.	DBW 232	N-207	60S	44.3	0	0	81-104	95	125-151	141	95-103	99	Ey	20	A	H	30-43	38
8.	K 1607	N-208	60S	25.1	0	0	76-102	90	122-147	137	94-120	108	Ey	20	A	SH-H	27-43	38
9.	PBW 768	N-210	40S	9.3	0	0	78-104	93	126-148	142	86-101	96	Ey	10	A	H	34-47	41
10.	K 1604	N-211	20S	4.5	tS	0.33	76-102	89	120-147	137	94-115	101	Ey	20	A	H	42-49	46
11.	HD 3258	N-212	40S	23.0	0	0	81-106	95	127-150	142	95-110	101	Ey	10	A	H	36-52	44
12.	HD 3261	N-213	10MS	1.1	0	0	80-106	95	121-148	140	95-110	103	Ey	20	A	H	38-46	42
13.	K 1608	N-214	60S	40.0	0	0	72-97	86	119-149	138	103-130	118	Ey	30	A	H	40-51	45
14.	UP 2982	N-216	60S	24.9	10S	3.40	83-101	92	124-147	138	98-116	104	Ey	20	A	H	43-50	46
15.	RAJ 4498	N-217	20S	7.6	0	0	86-103	98	125-152	140	90-104	98	Ey	20	A	H	32-42	37
16.	RAJ 4500	N-218	10S	4.9	0	0	80-100	92	119-146	138	95-110	103	Ey	10	A	H	40-49	45
17.	HUW 817	N-219	60S	37.2	10S	3.67	75-103	92	122-150	140	87-105	99	Ey	-	A	H	25-50	36
18.	BRW 3796	N-220	tS	0.1	tS	0.33	76-101	91	126-147	139	88-115	102	Ey	10	A	H	38-48	42
19.	HUW 815	N-221	60S	16.0	10S	3.30	77-102	90	123-147	138	98-115	105	Ey	10	A	H	39-49	44
20.	DBW 229	N-222	80S	46.4	0	0	77-102	93	123-150	139	93-109	103	Ey	10	A	H	29-45	37
21.	DBW 233	N-223	10S	6.3	0	0	72-99	87	121-148	137	88-101	97	Ey	20	A	H	35-48	41
22.	NW 6098	N-224	40S	20.1	0	0	76-94	87	123-146	137	92-112	105	Ey	-	A	H	39-46	44
23.	PBW767	N-225	10S	1.7	0	0	69-99	86	119-146	138	91-100	96	Ey	-	A	H	42-49	45
24.	NW 7004	N-226	40S	16.6	0	0	81-102	93	125-149	139	100-113	105	Ey	-	A	H	39-46	42
25.	WH 1223	N-227	10S	1.4	0	0	83-109	96	127-151	142	96-112	104	Ey	30	A	SH-H	34-45	38

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: NIVT-1B-IR-TS-TAS, 2016-17

SN	Variety	Code	Rust Reactions				Agronomic Characteristics								Grain Characteristics			
			YI	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
26.	K 1605	N-228	20S	8.0	10S	3.30	80-102	91	124-147	138	100-115	107	Ey	20	A	H	41-55	47
27.	BRW 3799	N-229	60S	34.3	0	0	82-106	96	126-156	142	97-105	100	Ey	20	A	H	30-46	39
28.	HD 3255	N-230	20S	4.3	0	0	81-105	94	123-149	141	99-109	104	Ey	10	A	H	31-46	42
29.	DBW 230	N-231	40S	9.1	0	0	84-112	102	125-154	142	92-115	104	Ey	20	A	H	36-43	38
30.	HD3262	N-232	40S	12.3	0	0	76-103	90	120-147	137	101-122	111	Ey	10	A	H	37-46	44
31.	HUW 816	N-233	80S	44.3	0	0	83-106	97	128-152	141	84-110	100	Ey	10	A	H	23-47	36
32.	DBW 234	N-234	40S	10.9	0	0	83-104	93	126-147	138	95-115	104	Ey	10	A	H	37-46	42
33.	PBW 769	N-236	5S	0.9	5S	1.67	77-104	91	122-145	137	96-113	106	Ey	10	A	SH-H	38-45	41
34.	HUW 818	N-237	80S	38.6	0	0	79-103	92	124-148	141	95-104	100	Ey	10	A	H	28-39	35
35.	RAJ 4499	N-238	20S	6.3	0	0	70-113	89	122-149	138	95-112	101	Ey	40	A	H	34-45	39
36.	DBW 231	N-239	20S	4.6	0	0	1-100	78	126-152	141	88-100	95	Ey	20	A	H	34-45	40
37.	UBW 5	N-240	60S	31.4	0	0	70-92	80	120-145	138	95-104	99	Ey	-	A	H	41-49	45
38.	K 1606	N-241	60S	28.6	0	0	71-101	84	123-149	138	84-104	95	Ey	-	A	H	32-44	37
39.	HUW 814	N-242	60S	25.3	0	0	76-102	90	123-147	139	93-112	105	Ey	10	A	H	37-51	44
40.	UP 2980	N-243	60S	24.3	0	0	85-107	98	126-154	142	92-109	101	Ey	20	A	H	32-41	37
41.	BRW 3792	N-245	40S	13.0	0	0	72-112	90	125-147	139	80-112	99	Ey	10	A	SH-H	32-41	38
42.	NW 7000	N-246	60S	15.7	0	0	82-103	95	124-149	139	86-108	101	Ey	-	A	H	34-45	39
43.	HD 3265	N-247	60S	18.3	0	0	83-104	94	13-147	118	96-118	108	Ey	10	A	H	38-45	41
44.	NW 7003	N-248	40S	20.1	0	0	83-105	96	122-149	140	98-110	105	Ey	10	A	H	36-48	41
45.	HD 3259	N-249	20MS	3.6	0	0	80-103	92	122-149	138	98-117	104	Ey	10	A	H	38-45	41
46.	WH 1105(C)	N-209	40S	25.9	0	0	76-103	90	122-147	138	91-106	98	Ey	-	A	H	38-47	42
47.	K 0307(C)	N-215	60S	34.5	0	0	77-105	92	123-148	138	90-118	104	Ey	20	A	H	31-45	37
48.	DBW 88(C)	N-235	60S	33.6	60S	20.00	77-104	93	122-147	138	92-118	102	Ey	10	A	H	35-42	38
49.	HD 2967(C)	N-244	80S	57.1	0	0	86-109	100	128-153	144	93-111	102	Ey	10	A	H	28-43	36

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

**NIVT-1B-IR-TS-TAS, 2016-17**  
**North Western Plains Zone**  
**Individual Station Rust Data**

SN	Variety	Code	Ludhiana		Gurdaspur		Pantnagar		Karnal	New Delhi	Hisar	Durgapura
			YI	Br	YI	Br	YI	Br	YI	YI	YI	YI
1	WH 1224	N-201	tS	10S	tR	0	0	0	0	0	0	0
2	HD 3257	N-202	60S	0	10S	0	20S	0	40S	20S	20S	60S
3	NW 7002	N-203	20S	0	20S	0	0	0	20MS	10S	5MS	20MS
4	JKW 237	N-204	10S	0	tR	0	0	0	20S	10S	10S	40S
5	HD 3260	N-205	tS	10S	20S	0	10S	0	40S	20S	10S	20S
6	UP 2981	N-206	10S	0	tR	0	0	0	0	0	0	0
7	DBW 232	N-207	60S	0	10S	0	60S	0	60S	20S	40S	60S
8	K 1607	N-208	60S	0	20S	0	0	0	40S	0	20MS	40S
9	PBW 768	N-210	0	0	0	0	tMS	0	40S	0	5MS	20S
10	K 1604	N-211	tS	tS	tR	0	0	0	20S	10S	0	0
11	HD 3258	N-212	40S	0	tR	0	tS	0	40S	10MS	30S	40S
12	HD 3261	N-213	0	0	0	0	0	0	10MS	0	0	0
13	K 1608	N-214	40S	0	60S	0	0	0	60S	0	60S	60S
14	UP 2982	N-216	20S	0	5S	10S	tS	tR	60S	10MS	40S	40S
15	RAJ 4498	N-217	0	0	5S	0	0	0	20S	0	20S	20MR
16	RAJ 4500	N-218	10S	0	0	tR	0	0	10MS	0	10MS	10MS
17	HUW 817	N-219	40S	10S	tR	0	20S	tS	60S	40S	40S	60S
18	BRW 3796	N-220	tS	0	0	0	0	tS	0	0	0	0
19	HUW 815	N-221	60S	0	10S	10S	0	0	20S	10MS	10S	10MR
20	DBW 229	N-222	40S	0	60S	0	5S	0	60S	40S	40S	80S
21	DBW 233	N-223	10S	0	10S	0	0	0	10MS	10MS	0	10MS
22	NW 6098	N-224	40S	0	5S	0	0	0	40S	0	20MS	40S
23	PBW767	N-225	10S	0	tR	0	0	0	0	5MR	0	0
24	NW 7004	N-226	20S	0	20S	0	0	0	40MS	10MR	20S	20S
25	WH 1223	N-227	0	0	10S	0	0	0	0	0	0	0
26	K 1605	N-228	20S	10S	20S	0	0	0	5MS	10MS	10MR	0
27	BRW 3799	N-229	60S	0	60S	0	40S	0	40MS	40S	10MS	0
28	HD 3255	N-230	10S	0	0	0	0	0	20MS	0	10MR	0
29	DBW 230	N-231	20S	0	40S	0	0	0	0	0	10MR	0
30	HD3262	N-232	5S	0	10S	0	tR	0	40S	10S	20S	tMS
31	HUW 816	N-233	60S	0	40S	0	10S	0	60S	40S	20S	80S
32	DBW 234	N-234	20S	0	0	0	tR	0	40S	5S	10S	tMS
33	PBW 769	N-236	5S	0	tR	5S	tMS	0	0	0	0	0
34	HUW 818	N-237	40S	0	10S	0	20S	0	60S	0	60S	80S
35	RAJ 4499	N-238	20S	0	tR	0	0	0	20MS	10MR	5MS	0
36	DBW 231	N-239	20S	0	tR	0	0	0	10MS	0	5MS	0
37	UBW 5	N-240	20S	0	5S	0	5S	0	60S	10S	60S	60S
38	K 1606	N-241	40S	0	20S	0	0	0	60S	20S	20S	40S
39	HUW 814	N-242	40S	0	tR	0	tS	0	40S	10S	30S	60S
40	UP 2980	N-243	60S	0	60S	0	tS	0	40S	0	10MS	tS
41	BRW 3792	N-245	20S	0	40S	0	tS	0	0	0	10S	20S
42	NW 7000	N-246	5S	0	5S	0	0	0	60S	0	20S	20S
43	HD 3265	N-247	40S	0	60S	0	0	0	10MS	0	10S	10S
44	NW 7003	N-248	40S	0	10S	0	tS	0	40S	0	30S	20S
45	HD 3259	N-249	tS	0	0	0	0	0	20MS	0	10MS	0
46	WH 1105(C)	N-209	40S	0	tR	0	tS	0	40S	40S	20S	40S
47	K 0307(C)	N-215	60S	0	40S	0	tS	0	60S	40S	40S	tMS
48	DBW 88(C)	N-235	40S	60S	5S	0	20S	0	40S	30S	40S	60S
49	HD 2967(C)	N-244	60S	0	60S	0	60S	0	60S	40S	40S	80S

## NIVT-2-IR-TS-TAS, 2016-17

The trial consist of 34 test entries and two check varieties (HI1544 and MACS6222) was proposed and conducted at 17 centres in the Central and Peninsular Zones. The trial at Nippani was rejected by the monitoring team, whereas data from Junagadh, Vijapur, Akola and Dharwad centres were not considered for reporting due to low site mean.

### Central Zone

- The mean location yield ranged from 61.0q/ha (Gwalior) to 43.1q/ha (Indore).
- Entry AKAW4924 (58.9q/ha) was the highest yielding genotype followed by GW495 (58.5q/ha), check variety MACS6222 (58.2q/ha) and entries HI1624 (57.7q/ha), PBW770 (57.0q/ha) and DBW236 (56.6q/ha) which together made 1<sup>st</sup> non-significant group.
- Incidence of black and brown rust was reported from Vijapur centre.
- Entries GW498 and JWS152 showed earlier heading and maturity than the check variety HI1544. RAJ4502 had boldest grains (46g) followed by GW493 (45g).

### Peninsular Zone

- The mean yields ranged from 58.2q/ha (Parbhani) to 39.0q/ha (Ugar).
- AKAW4924 (56.9q/ha) was the highest yielding genotype followed by GW491 (56.0q/ha), HI1624 (55.5q/ha), GW495 (54.6q/ha), check variety HI1544 (54.4q/ha) and another entry HI1623 (54.3q/ha) which together formed the 1<sup>st</sup> non-significant group.
- Incidence of brown rust was reported from Pune centre in traces.
- The test entries showed comparable performance to the checks for agronomic traits. The entry RAJ4502 (47g) possessed the boldest grains.

### National level

- At the national level, AKAW4924 (58.2q/ha) was the highest yielding entry followed by GW495 (57.2q/ha) and HI1624 (57.0q/ha) and these entries together formed the 1<sup>st</sup> non-significant group.



**1693-NIVT-2-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ											
			Rajasthan						MP					
			Kota			Udaipur			Indore			Sagar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI1622	N-301	42.8	30	0	48.2	18	0	41.4	25	0	51.6	28	0
2	MACS6703	N-302	49.4	16	0	63.5	2	1	40.1	30	0	59.2	8	0
3	MP1339	N-303	40.2	36	0	56.4	10	0	42.1	23	0	59.6	7	0
4	PBW770	N-304	45.0	24	0	60.6	4	1	42.9	19	0	51.0	31	0
5	GW498	N-305	53.9	8	0	57.8	6	0	48.6	5	1	51.3	29	0
6	K1610	N-306	49.9	14	0	49.0	16	0	35.4	34	0	52.9	20	0
7	AKAW4924	N-307	44.4	25	0	66.0	1	1	42.0	24	0	57.6	11	0
8	UAS391	N-308	43.9	26	0	51.1	14	0	42.8	20	0	52.1	26	0
9	GW493	N-309	62.5	1	1	52.6	12	0	36.1	33	0	55.5	14	0
10	MACS6709	N-310	55.6	4	0	58.0	5	0	47.2	7	1	63.8	2	1
11	DBW235	N-311	42.0	32	0	56.0	11	0	50.4	3	1	55.7	13	0
12	NIAW3161	N-312	54.8	6	0	44.2	22	0	41.3	26	0	50.3	32	0
13	MP1337	N-314	46.1	20	0	37.5	28	0	41.3	27	0	60.2	5	0
14	MP3471	N-315	45.3	22	0	38.5	27	0	46.2	10	0	45.0	36	0
15	GW492	N-316	47.6	18	0	40.4	25	0	45.0	14	0	52.1	27	0
16	HI1623	N-317	42.7	31	0	43.5	23	0	42.2	22	0	57.7	10	0
17	GW495	N-318	53.1	10	0	62.5	3	1	48.0	6	1	62.1	4	0
18	UAS389	N-319	45.0	23	0	56.5	9	0	36.2	32	0	49.4	35	0
19	WH1234	N-320	49.8	15	0	50.8	15	0	43.4	17	0	50.0	33	0
20	JWS152	N-321	43.9	27	0	34.3	32	0	34.1	35	0	63.5	3	1
21	NIAW3173	N-322	41.6	34	0	39.6	26	0	40.1	29	0	53.6	17	0
22	UAS390	N-323	55.9	2	0	31.9	35	0	43.0	18	0	55.4	15	0
23	UP2983	N-324	50.6	13	0	33.7	33	0	40.9	28	0	52.2	24	0
24	HD3263	N-325	43.8	28	0	31.8	36	0	46.0	11	0	49.9	34	0
25	HI1624	N-326	55.2	5	0	48.9	17	0	52.6	1	1	53.3	18	0
26	DBW236	N-327	55.6	3	0	45.1	21	0	45.8	12	0	52.9	21	0
27	MACS6708	N-328	52.8	11	0	56.9	8	0	42.8	21	0	52.3	23	0
28	RAJ4501	N-329	46.0	21	0	33.6	34	0	39.8	31	0	52.9	21	0
29	CG1024	N-330	51.6	12	0	36.2	29	0	44.9	15	0	53.2	19	0
30	GW491	N-331	54.7	7	0	42.7	24	0	45.4	13	0	57.3	12	0
31	HI1625	N-332	42.0	33	0	57.3	7	0	51.1	2	1	51.2	30	0
32	UAS388	N-333	53.4	9	0	34.3	31	0	46.4	8	0	54.2	16	0
33	MP1338	N-334	47.6	19	0	45.7	19	0	43.8	16	0	60.0	6	0
34	RAJ4502	N-336	40.8	35	0	51.1	13	0	27.2	36	0	52.2	25	0
35	MACS6222(C)	N-313	48.7	17	0	45.1	20	0	46.2	9	0	64.9	1	1
36	HI1544(C)	N-335	43.5	29	0	35.6	30	0	49.2	4	1	58.9	9	0
Mean			48.4			47.1			43.1			54.9		
S.E.m			2.391			3.112			2.309			1.146		
C.D. (10%)			5.8			7.5			5.6			2.8		
C.V.			7.0			9.3			7.6			3.0		
D.O.S. (dd.mm.yyyy)			13.11.2016			13.11.2016			18.11.2016			24.11.2016		

Trials proposed & conducted = 17

Trials not reported (5) = Nippani (RMT), Junagadh (LSM), Vijapur (LSM), Akola (LSM), Dharwad (LSM)

**NIVT-2-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ											
			MP									Chhattisgarh		
			Jabalpur			Gwalior			Powarkheda			Bilaspur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI1622	N-301	58.2	15	0	72.4	5	1	59.1	14	0	59.5	6	1
2	MACS6703	N-302	55.0	22	0	53.2	28	0	55.5	24	0	57.3	13	1
3	MP1339	N-303	71.1	2	1	52.9	29	0	72.9	3	1	53.1	26	0
4	PBW770	N-304	57.4	16	0	74.5	2	1	64.6	12	0	60.2	2	1
5	GW498	N-305	51.7	28	0	70.3	8	1	56.8	21	0	55.8	18	0
6	K1610	N-306	45.8	34	0	56.0	24	0	42.2	34	0	53.3	25	0
7	AKAW4924	N-307	60.6	8	0	71.1	7	1	69.8	6	1	59.5	5	1
8	UAS391	N-308	51.4	29	0	45.9	36	0	51.6	28	0	53.9	23	0
9	GW493	N-309	58.8	13	0	63.7	16	0	47.4	31	0	54.0	22	0
10	MACS6709	N-310	53.5	26	0	62.0	18	0	58.3	15	0	52.3	28	0
11	DBW235	N-311	56.9	18	0	52.7	30	0	74.7	1	1	58.5	10	1
12	NIAW3161	N-312	51.3	30	0	58.1	22	0	57.6	17	0	51.2	32	0
13	MP1337	N-314	63.0	6	0	58.7	21	0	56.3	23	0	60.9	1	1
14	MP3471	N-315	60.9	7	0	57.9	23	0	72.1	4	1	54.6	21	0
15	GW492	N-316	49.6	31	0	64.5	13	0	70.3	5	1	50.3	33	0
16	HI1623	N-317	54.1	23	0	78.2	1	1	49.0	30	0	51.4	30	0
17	GW495	N-318	57.4	17	0	66.7	10	1	61.5	13	0	56.7	15	1
18	UAS389	N-319	60.1	9	0	51.8	31	0	45.8	33	0	53.4	24	0
19	WH1234	N-320	47.7	33	0	54.3	25	0	57.8	16	0	58.4	11	1
20	JWS152	N-321	42.1	36	0	54.3	26	0	53.9	26	0	43.4	36	0
21	NIAW3173	N-322	47.9	32	0	63.0	17	0	74.0	2	1	59.4	7	1
22	UAS390	N-323	59.6	10	0	49.1	33	0	54.2	25	0	60.1	3	1
23	UP2983	N-324	56.0	20	0	46.1	35	0	47.1	32	0	45.3	35	0
24	HD3263	N-325	59.3	11	0	59.4	20	0	57.6	17	0	54.6	20	0
25	HI1624	N-326	53.1	27	0	71.6	6	1	68.0	8	0	58.6	9	1
26	DBW236	N-327	66.6	3	0	72.6	4	1	57.0	20	0	57.2	14	1
27	MACS6708	N-328	55.1	21	0	60.0	19	0	57.3	19	0	56.4	16	1
28	RAJ4501	N-329	43.2	35	0	48.1	34	0	50.5	29	0	56.1	17	0
29	CG1024	N-330	58.4	14	0	66.6	11	0	51.8	27	0	55.0	19	0
30	GW491	N-331	56.3	19	0	63.8	14	0	67.2	9	0	51.9	29	0
31	HI1625	N-332	63.1	5	0	66.0	12	0	65.6	10	0	47.9	34	0
32	UAS388	N-333	53.8	25	0	53.2	27	0	41.9	35	0	59.8	4	1
33	MP1338	N-334	59.3	12	0	73.7	3	1	41.7	36	0	52.7	27	0
34	RAJ4502	N-336	54.1	24	0	51.5	32	0	56.5	22	0	51.3	31	0
35	MACS6222(C)	N-313	72.8	1	1	63.7	15	0	65.1	11	0	59.1	8	1
36	HI1544(C)	N-335	63.4	4	0	66.9	9	1	68.8	7	1	57.4	12	1
Mean			56.4			61.0			58.4			55.0		
S.E.m			2.430			4.792			2.750			1.959		
C.D. (10%)			5.9			11.6			6.6			4.7		
C.V.			6.1			11.1			6.7			5.0		
D.O.S. (dd.mm.yyyy)			8.11.2016			15.11.2016			15.11.2016			11.11.2016		

**NIVT-2-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	PZ											
			Maharashtra									Karnataka		
			Pune			Niphad			Parbhani			Ugar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI1622	N-301	47.7	18	0	47.0	16	0	62.7	8	0	32.7	30	0
2	MACS6703	N-302	49.9	17	0	48.9	10	1	51.5	32	0	39.2	20	0
3	MP1339	N-303	45.6	24	0	47.8	13	1	58.1	20	0	32.6	31	0
4	PBW770	N-304	55.6	9	0	46.5	18	0	60.3	14	0	40.1	14	0
5	GW498	N-305	58.7	5	1	52.1	6	1	59.4	16	0	41.3	13	0
6	K1610	N-306	40.0	34	0	42.5	31	0	53.3	30	0	38.6	21	0
7	AKAW4924	N-307	57.5	7	0	53.2	3	1	67.0	3	1	50.0	2	1
8	UAS391	N-308	36.8	36	0	44.4	22	0	47.4	35	0	32.1	32	0
9	GW493	N-309	46.1	23	0	43.0	29	0	60.9	13	0	42.0	12	0
10	MACS6709	N-310	53.3	12	0	45.0	21	0	59.3	17	0	36.4	26	0
11	DBW235	N-311	53.2	13	0	52.1	5	1	63.4	7	1	43.2	10	1
12	NIAW3161	N-312	41.4	30	0	44.2	24	0	57.8	22	0	40.1	15	0
13	MP1337	N-314	46.8	21	0	45.7	20	0	59.1	18	0	36.8	25	0
14	MP3471	N-315	47.2	20	0	43.5	28	0	58.6	19	0	44.2	8	1
15	GW492	N-316	56.1	8	0	47.6	15	1	62.2	9	0	45.0	6	1
16	HI1623	N-317	53.5	11	0	53.9	2	1	61.6	10	0	48.3	3	1
17	GW495	N-318	57.6	6	0	52.2	4	1	57.9	21	0	50.9	1	1
18	UAS389	N-319	38.6	35	0	44.4	23	0	48.3	34	0	43.4	9	1
19	WH1234	N-320	47.3	19	0	46.4	19	0	54.4	27	0	33.5	29	0
20	JWS152	N-321	52.4	14	0	39.2	35	0	56.0	25	0	39.6	18	0
21	NIAW3173	N-322	46.4	22	0	42.2	32	0	64.5	5	1	34.7	27	0
22	UAS390	N-323	42.1	29	0	46.9	17	0	55.9	26	0	45.0	7	1
23	UP2983	N-324	40.6	33	0	34.7	36	0	53.9	29	0	30.8	34	0
24	HD3263	N-325	41.3	31	0	43.9	26	0	61.5	11	0	39.5	19	0
25	HI1624	N-326	64.0	2	1	42.5	30	0	68.4	1	1	47.2	4	1
26	DBW236	N-327	55.5	10	0	39.7	34	0	60.3	15	0	26.9	35	0
27	MACS6708	N-328	43.5	25	0	47.8	12	1	61.2	12	0	39.6	17	0
28	RAJ4501	N-329	43.4	26	0	49.7	8	1	53.1	31	0	33.5	28	0
29	CG1024	N-330	42.4	28	0	50.3	7	1	54.2	28	0	38.5	22	0
30	GW491	N-331	65.1	1	1	49.1	9	1	67.1	2	1	42.6	11	1
31	HI1625	N-332	60.3	3	1	48.6	11	1	56.5	24	0	30.8	33	0
32	UAS388	N-333	40.9	32	0	47.7	14	1	43.8	36	0	38.0	23	0
33	MP1338	N-334	50.2	16	0	44.0	25	0	64.9	4	1	46.0	5	1
34	RAJ4502	N-336	43.1	27	0	40.6	33	0	50.1	33	0	37.9	24	0
35	MACS6222(C)	N-313	52.0	15	0	43.6	27	0	57.5	23	0	24.4	36	0
36	HI1544(C)	N-335	59.5	4	1	54.7	1	1	63.5	6	1	39.8	16	0
Mean			49.3			46.3			58.2			39.0		
S.E.m			2.737			2.965			2.354			3.668		
C.D. (10%)			6.6			7.2			5.6			8.9		
C.V.			7.8			9.1			5.7			13.3		
D.O.S. (dd.mm.yyyy)			18.11.2016			10.11.2016			11.11.2016			11.11.2016		

**NIVT-2-IR-TS-TAS, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI1622	N-301	54.1	16	0	47.5	17	0	51.9	18	0
2	MACS6703	N-302	54.2	15	0	47.4	19	0	51.9	19	0
3	MP1339	N-303	56.0	8	0	46.0	25	0	52.7	14	0
4	PBW770	N-304	57.0	5	1	50.6	11	0	54.9	7	0
5	GW498	N-305	55.8	10	0	52.9	8	0	54.8	8	0
6	K1610	N-306	48.1	33	0	43.6	32	0	46.6	31	0
7	AKAW4924	N-307	58.9	1	1	56.9	1	1	58.2	1	1
8	UAS391	N-308	49.1	31	0	40.2	35	0	46.1	34	0
9	GW493	N-309	53.8	17	0	48.0	16	0	51.9	20	0
10	MACS6709	N-310	56.3	7	0	48.5	13	0	53.7	9	0
11	DBW235	N-311	55.9	9	0	53.0	7	0	54.9	6	0
12	NIAW3161	N-312	51.1	27	0	45.9	26	0	49.4	27	0
13	MP1337	N-314	53.0	19	0	47.1	20	0	51.0	22	0
14	MP3471	N-315	52.6	20	0	48.4	14	0	51.2	21	0
15	GW492	N-316	52.5	21	0	52.8	9	0	52.6	15	0
16	HI1623	N-317	52.4	23	0	54.3	6	1	53.0	12	0
17	GW495	N-318	58.5	2	1	54.6	4	1	57.2	2	1
18	UAS389	N-319	49.8	29	0	43.7	31	0	47.7	29	0
19	WH1234	N-320	51.5	25	0	45.4	28	0	49.5	26	0
20	JWS152	N-321	46.2	36	0	46.8	22	0	46.4	32	0
21	NIAW3173	N-322	52.4	22	0	47.0	21	0	50.6	23	0
22	UAS390	N-323	51.2	26	0	47.5	18	0	49.9	25	0
23	UP2983	N-324	46.5	34	0	40.0	36	0	44.3	36	0
24	HD3263	N-325	50.3	28	0	46.5	23	0	49.0	28	0
25	HI1624	N-326	57.7	4	1	55.5	3	1	57.0	3	1
26	DBW236	N-327	56.6	6	1	45.6	27	0	52.9	13	0
27	MACS6708	N-328	54.2	14	0	48.1	15	0	52.1	17	0
28	RAJ4501	N-329	46.3	35	0	44.9	29	0	45.8	35	0
29	CG1024	N-330	52.2	24	0	46.4	24	0	50.3	24	0
30	GW491	N-331	54.9	13	0	56.0	2	1	55.3	4	0
31	HI1625	N-332	55.6	11	0	49.1	12	0	53.4	11	0
32	UAS388	N-333	49.6	30	0	42.6	34	0	47.3	30	0
33	MP1338	N-334	53.1	18	0	51.3	10	0	52.5	16	0
34	RAJ4502	N-336	48.1	32	0	42.9	33	0	46.3	33	0
35	MACS6222(C)	N-313	58.2	3	1	44.4	30	0	53.6	10	0
36	HI1544(C)	N-335	55.5	12	0	54.4	5	1	55.1	5	0
Mean			53.0			48.2			51.4		
C.D. (10%)			2.3			3.5			1.9		

## Summary of Disease Data and Agronomic Characteristics

Central Zone

NIVT 2-IR-TS-TAS, 2016-17

SN	Variety	Code	Rust Reactions		Agronomic Characteristics								Grain Characteristics			
			BI	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HI 1622	N-301	tMS	0	51-79	66	96-128	118	76-104	95	-	Ey	A	SH	38-46	42
2	MACS6703	N-302	tMS	0	57-84	71	102-134	121	87-108	98	10	Ey	A	SH-H	38-48	41
3	MP 1339	N-303	tS	0	52-80	66	96-128	117	75-100	90	20	Ey	A	SH	38-45	41
4	PBW 770	N-304	tMS	0	52-79	68	96-130	119	71-99	90	-	Ey	A	SH	43-46	44
5	GW 498	N-305	tS	tR	46-74	62	95-139	116	71-97	87	30	Ey	A	SH	41-47	44
6	K 1610	N-306	tS	tR	56-84	71	97-132	122	84-102	96	35	Ey	A	SH	38-42	40
7	AKAW 4924	N-307	tMS	0	51-81	67	98-131	120	87-111	97	-	Ey	A	SH-H	33-46	42
8	UAS 391	N-308	tMS	0	58-78	69	101-132	120	89-111	101	20	Ey	A	SH	35-43	39
9	GW 493	N-309	tR	0	50-75	65	98-134	119	73-102	91	40	Ey	A	SH	37-53	45
10	MACS 6709	N-310	5S	0	57-81	71	99-130	120	81-100	92	10	Ey	A	SH	39-44	42
11	DBW 235	N-311	tMS	0	53-83	70	97-133	120	74-101	91	10	Ey	A	SH	43-48	46
12	NIAW 3161	N-312	0	0	56-83	71	100-132	123	83-102	95	-	Ey	A	SH	36-42	40
13	MP 1337	N-314	tS	0	56-83	71	99-131	121	78-102	92	15	Ey	A	SH	37-44	40
14	MP 3471	N-315	0	0	53-82	72	100-130	121	89-112	99	20	Ey	A	SH	34-41	39
15	GW 492	N-316	tMS	0	52-76	65	97-131	118	62-105	80	-	Ey	A	SH	40-46	42
16	HI 1623	N-317	tS	0	54-79	68	95-128	118	84-106	94	10	Ey	A	SH	38-43	41
17	GW 495	N-318	tR	0	51-75	65	96-130	118	76-98	90	10	Ey	A	SH	39-46	43
18	UAS 389	N-319	tMS	tMR	68-87	77	108-132	122	85-103	98	20	Ey	A	SH-H	26-41	35
19	WH 1234	N-320	tMS	0	58-83	72	101-131	122	88-109	100	20	Ey	A	SH	41-52	44
20	JWS 152	N-321	5S	0	49-76	63	94-127	115	69-101	88	20	Ey	A	SH	36-45	40
21	NIAW 3173	N-322	tS	0	57-82	72	99-130	120	82-104	97	-	Ey	A	SH	41-49	45
22	UAS 390	N-323	0	0	60-82	73	103-132	123	87-103	96	30	Ey	A	SH	33-43	39
23	UP 2983	N-324	tMS	0	55-84	71	104-133	124	83-105	92	10	Ey	A	SH	41-48	43
24	HD 3263	N-325	tS	0	55-81	69	96-129	118	80-101	91	-	Ey	A	SH	38-46	41
25	HI 1624	N-326	0	0	49-77	65	96-127	119	72-97	87	-	Ey	A	SH	37-50	42
26	DBW 236	N-327	0	0	59-79	72	96-132	121	83-106	99	-	Ey	A	SH	35-43	40
27	MACS 6708	N-328	tMS	0	54-84	70	100-133	121	91-116	101	-	Ey	A	SH-H	39-47	44
28	RAJ 4501	N-329	0	0	57-88	72	100-133	121	84-95	88	25	Ey	A	SH	39-48	43
29	CG 1024	N-330	0	0	57-83	70	97-131	120	85-102	95	20	Ey	A	SH	34-44	39
30	GW 491	N-331	tR	0	51-77	67	96-129	119	76-100	91	10	Ey	A	SH	37-43	40
31	HI 1625	N-332	0	0	46-77	63	98-129	118	71-98	87	-	Ey	A	SH	36-48	41
32	UAS 388	N-333	10S	0	60-85	71	104-132	120	77-100	89	-	Ey	A	SH	34-40	36
33	MP 1338	N-334	tS	0	53-80	68	95-127	118	79-101	91	-	Ey	A	SH	38-46	42
34	RAJ 4502	N-336	0	0	56-83	71	98-132	122	82-100	91	-	Ey	A	SH-H	38-50	45
35	MACS 6222 (C)	N-313	5MR	0	57-84	73	99-132	123	79-101	94	-	Ey	A	SH	36-48	42
36	HI 1544 (C)	N-335	0	0	50-75	64	96-128	117	73-100	88	20	Ey	A	SH	39-47	43

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

## Summary of Disease Data and Agronomic Characteristics

Peninsular Zone

NIVT 2-IR-TS-TAS, 2016-17

SN	Variety	Code	Brown rust reaction	Agronomic Characteristics								Grain Characteristics			
				Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HI 1622	N-301	0	54-62	58	104-120	111	84-102	90	-	Ey	A	SH	33-46	41
2	MACS6703	N-302	0	63-69	66	105-120	112	78-106	90	-	Ey	A	SH-H	33-46	40
3	MP 1339	N-303	0	58-63	61	106-115	110	82-98	89	10	Ey	A	SH	31-46	39
4	PBW 770	N-304	0	55-64	61	106-118	111	73-92	81	-	Ey	A	SH	36-43	40
5	GW 498	N-305	0	51-60	55	105-116	110	75-97	86	-	Ey	A	SH-H	36-45	41
6	K 1610	N-306	0	60-67	64	108-117	113	88-102	95	25	Ey	A	SH	30-46	37
7	AKAW 4924	N-307	0	53-64	59	107-117	112	78-110	92	-	Ey	A	SH	35-43	39
8	UAS 391	N-308	0	64-68	66	105-117	113	83-112	96	25	Ey	A	SH	32-39	36
9	GW 493	N-309	0	52-60	56	106-117	112	70-96	84	-	Ey	A	SH	36-45	41
10	MACS 6709	N-310	tS	61-69	65	104-120	113	86-99	92	-	Ey	A	SH	37-46	39
11	DBW 235	N-311	tR	56-68	62	104-117	111	79-99	89	-	Ey	A	SH	37-48	43
12	NIAW 3161	N-312	0	64-71	67	105-120	112	82-103	93	25	Ey	A	SH	26-42	36
13	MP 1337	N-314	0	60-69	64	107-121	113	75-107	89	10	Ey	A	SH	32-45	38
14	MP 3471	N-315	0	63-70	66	108-120	114	86-108	95	25	Ey	A	SH	31-41	36
15	GW 492	N-316	0	53-62	58	105-117	110	66-84	75	-	Ey	A	SH	36-43	39
16	HI 1623	N-317	0	58-63	61	106-116	111	81-102	90	-	Ey	A	SH	32-40	37
17	GW 495	N-318	0	56-59	58	104-115	110	73-97	87	-	Ey	A	SH	36-44	40
18	UAS 389	N-319	0	61-78	69	105-120	112	84-110	93	-	Ey	A	SH	30-45	36
19	WH 1234	N-320	0	62-70	66	105-120	112	84-108	93	30	Ey	A	SH	32-48	40
20	JWS 152	N-321	0	59-65	61	107-115	110	78-97	86	-	Ey	A	SH	36-43	40
21	NIAW 3173	N-322	0	63-71	66	108-123	115	85-107	94	10	Ey	A	SH	38-48	43
22	UAS 390	N-323	0	62-70	66	105-121	113	81-102	92	30	Ey	A	SH	30-44	37
23	UP 2983	N-324	0	56-69	63	102-121	112	78-97	89	-	Ey	A	SH	30-46	39
24	HD 3263	N-325	0	58-66	62	107-115	111	77-99	89	25	Ey	A	SH	32-45	39
25	HI 1624	N-326	0	52-61	57	107-120	112	69-94	82	-	Ey	A	SH	34-45	40
26	DBW 236	N-327	0	60-69	66	110-116	113	82-110	95	10	Ey	A	SH	34-41	38
27	MACS 6708	N-328	0	57-68	63	104-118	112	79-116	100	15	Ey	A	SH	34-49	41
28	RAJ 4501	N-329	0	59-69	64	105-119	113	78-103	88	-	Ey	A	SH	38-48	44
29	CG 1024	N-330	0	56-70	64	107-120	113	92-106	96	30	Ey	A	SH-H	31-44	37
30	GW 491	N-331	0	58-63	60	105-115	110	69-96	84	15	Ey	A	SH-H	35-41	37
31	HI 1625	N-332	0	52-58	55	106-116	112	78-98	89	-	M	A	SH	37-42	39
32	UAS 388	N-333	0	60-71	66	108-121	114	83-101	91	-	Ey	A	SH	27-38	32
33	MP 1338	N-334	0	57-65	61	107-117	111	73-96	84	15	Ey	A	SH	34-42	40
34	RAJ 4502	N-336	0	61-67	64	108-120	113	73-99	83	10	Ey	A	SH	40-47	43
35	MACS 6222 (C)	N-313	0	64-70	67	106-117	112	77-103	87	-	Ey	A	SH	37-44	40
36	HI 1544 (C)	N-335	0	52-63	57	105-119	111	71-96	87	-	Ey	A	SH	37-46	42

1. Ancillary data from Akola, Niphad, Parbhani, Pune, Dharwad and Ugar centres.
2. Brown rust from Pune centre only.
3. Lodging data from Niphad, Pune and Parbhani.

## **NIVT-3A-IR-LS-NAT-ZONE, 2016-17**

The trial consisting of 32 test entries and four checks (HD3059, DBW90, DBW14 & HI1563) was proposed and conducted in simple lattice design (6x6) at 18 locations of NWPZ and NEPZ. The trial at Kanpur location was rejected by the zonal monitoring team. The data from Jammu and Ranchi was not reported due to high CV and data from Shillongani location was not included due to high coefficient of variation and low site mean.

### **North Western Plains Zone**

- The highest location mean yield was observed at Ludhiana (48.8q/ha) while, Modipuram (48.8q/ha) reported the lowest.
- PBW773 (50.3q/ha), DBW237 (50.1q/ha), PBW771 (48.9/ha) and NW7007 (48.8q/ha) significantly out-yielded the best check variety HD3059 (46.9 q/ha).
- Among the significant superior entries three PBW773 (ACI=1.0), DBW273 (ACI=1.9) and PBW771 (ACI=2.0) had low incidence of yellow rust while NW7007 had high incidence of yellow rust (ACI=12.0).
- Highest mean TGW was observed in K1612 (45g) followed by DBW238 and DBW14 (43g).
- Entry Raj4503 exhibited very high score of powdery mildew (9).

### **North Eastern Plains Zone**

- The highest location mean yield was observed at Pusa (42.5q/ha) while, Coochbehar (32.4q/ha) reported the lowest.
- Although HD3264 (43.5q/ha) was the highest yielder, none of the test entries could significantly out-yield the best zonal check HI1563 (43.1 q/ha).
- Leaf rust of low to moderate intensity was observed at Sabour centre.
- DBW240, RAJ4504 and HD3264 had the lowest incidence of leaf blight (HS=35; Avg.=13) while, check variety HI1563 had the highest incidence of leaf blight (HS=89; Avg.=45).
- Entry K1612 and DBW237 recorded highest thousand grains weight (43g) among the test genotypes.

### **National Level**

- DBW237 (47.1q/ha) was the highest yielder followed by PBW771 (45.9q/ha) and PBW773 (45.7q/ha) together formed the first non- significant group.

**1694-NIVT-3A-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ														
			Haryana						Delhi			Punjab					
			Karnal			Hisar			New Delhi			Gurdaspur			Ludhiana		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JKW234	N-401	44.7	24	0	46.5	17	0	43.2	26	0	41.9	28	0	51.8	11	1
2	DBW238	N-402	41.9	27	0	48.6	8	0	53.1	8	1	51.5	7	0	52.4	9	1
3	BRW3791	N-403	46.9	16	0	49.4	6	0	45.2	20	0	49.5	14	0	50.4	13	0
4	DBW240	N-405	55.0	1	1	47.7	10	0	45.7	19	0	46.6	20	0	46.0	24	0
5	K1614	N-406	44.4	25	0	47.2	11	0	47.2	16	0	46.2	22	0	44.4	33	0
6	PBW773	N-407	45.2	21	0	53.5	3	1	53.4	7	1	61.5	4	1	54.1	6	1
7	K1612	N-408	44.0	26	0	47.0	13	0	49.8	10	1	51.3	8	0	54.9	3	1
8	UP2984	N-409	46.8	17	0	43.8	33	0	36.6	35	0	41.2	29	0	43.2	35	0
9	UBW14	N-410	20.4	36	0	46.6	15	0	26.8	36	0	23.5	36	0	42.7	36	0
10	HUW821	N-411	39.2	31	0	45.2	26	0	43.2	27	0	36.1	35	0	44.5	32	0
11	WH1226	N-412	47.7	13	0	44.0	29	0	44.2	23	0	38.2	33	0	45.8	25	0
12	NW7010	N-413	52.8	2	1	47.0	14	0	43.6	24	0	42.9	27	0	47.5	21	0
13	K1613	N-414	48.0	11	1	44.0	30	0	46.2	18	0	45.1	23	0	49.7	16	0
14	PBW772	N-415	50.7	5	1	43.8	32	0	44.6	21	0	49.9	13	0	55.8	1	1
15	HD3269	N-416	40.5	30	0	41.1	36	0	40.4	31	0	36.8	34	0	44.5	31	0
16	RAJ4503	N-419	29.2	35	0	47.2	11	0	44.4	22	0	50.5	10	0	49.6	17	0
17	RAJ4504	N-420	35.8	34	0	43.7	34	0	39.9	32	0	43.4	26	0	45.6	26	0
18	DBW237	N-421	49.4	6	1	55.0	1	1	48.5	13	0	62.3	2	1	55.2	2	1
19	HD3267	N-422	48.9	8	1	46.6	15	0	41.5	29	0	39.5	31	0	48.1	19	0
20	HD3266	N-423	44.8	22	0	46.4	18	0	41.5	30	0	45.1	23	0	45.6	27	0
21	HD3268	N-424	37.8	32	0	54.5	2	1	55.1	4	1	46.3	21	0	47.9	20	0
22	HD3265	N-425	47.5	14	0	44.2	28	0	55.2	3	1	63.2	1	1	44.6	30	0
23	WH1228	N-427	44.7	23	0	53.4	4	1	54.9	5	1	47.3	18	0	45.4	28	0
24	PBW771	N-428	48.3	10	1	50.7	5	0	50.7	9	1	58.6	5	1	49.8	15	0
25	HUW819	N-429	47.1	15	0	45.7	25	0	42.3	28	0	48.6	16	0	46.4	23	0
26	UP2985	N-430	46.5	19	0	46.0	23	0	48.3	14	0	43.6	25	0	50.1	14	0
27	WH1227	N-431	46.3	20	0	49.3	7	0	49.7	11	1	40.5	30	0	48.8	18	0
28	HUW820	N-432	40.8	28	0	44.8	27	0	37.4	34	0	38.7	32	0	54.3	4	1
29	HD3264	N-433	46.6	18	0	46.0	22	0	54.5	6	1	48.0	17	0	50.5	12	1
30	DBW239	N-434	49.4	6	1	45.9	24	0	56.2	1	1	51.2	9	0	52.2	10	1
31	UP2987	N-435	51.3	4	1	43.9	31	0	38.4	33	0	49.2	15	0	45.2	29	0
32	NW7007	N-436	48.0	12	1	48.2	9	0	46.8	17	0	61.7	3	1	54.0	7	1
33	HI1563(C)	N-404	37.7	33	0	46.1	20	0	48.6	12	0	47.2	19	0	52.6	8	1
34	DBW14(C)	N-417	40.7	29	0	46.2	19	0	43.3	25	0	50.1	12	0	47.0	22	0
35	DBW90(C)	N-418	48.8	9	1	46.1	20	0	55.5	2	1	53.8	6	0	54.2	5	1
36	HD3059(C)	N-426	51.6	3	1	43.7	35	0	47.9	15	0	50.3	11	0	43.5	34	0
Mean			44.7			46.9			46.2			47.3			48.8		
S.E.m			2.979			1.595			2.760			2.015			2.228		
C.D. (10%)			7.1			3.8			6.7			4.8			5.4		
C.V.			9.4			4.8			8.4			6.0			6.5		
D.O.S. (dd.mm.yyyy)			10.12.2016			11.12.2016			17.12.2016			15.12.2016			10.12.2016		

Trials proposed & conducted = 18

Trials not reported (4) = Kanpur (RMT), Jammu (HCV), Ranchi (HCV), Shillongani (HCV, LSM)



**NIVT-3A-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ									NEPZ					
			Uttarakhand			Rajasthan			Uttar Pradesh			Uttar Pradesh					
			Pantnagar			Durgapura			Modipuram			Faizabad			Varanasi		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JKW234	N-401	41.7	19	0	39.4	26	0	28.4	36	0	40.5	25	0	35.9	32	0
2	DBW238	N-402	46.9	3	1	46.3	13	0	39.9	16	0	44.8	7	1	47.5	7	1
3	BRW3791	N-403	37.1	27	0	46.9	11	0	36.5	24	0	43.4	13	1	38.2	26	0
4	DBW240	N-405	43.1	13	0	44.6	19	0	34.7	28	0	40.5	24	0	45.1	12	1
5	K1614	N-406	33.9	32	0	39.9	24	0	46.9	3	0	43.1	14	1	42.8	15	1
6	PBW773	N-407	43.3	11	0	49.8	9	0	41.7	9	0	36.3	34	0	42.8	15	1
7	K1612	N-408	42.8	15	0	39.4	26	0	42.2	6	0	48.6	1	1	41.7	17	0
8	UP2984	N-409	33.9	31	0	35.3	32	0	39.4	18	0	41.6	21	0	46.3	8	1
9	UBW14	N-410	27.6	36	0	28.4	35	0	36.5	24	0	30.1	36	0	38.2	26	0
10	HUW821	N-411	44.1	9	0	39.9	24	0	29.5	35	0	37.9	33	0	34.7	34	0
11	WH1226	N-412	35.2	29	0	43.4	20	0	41.1	11	0	44.8	9	1	38.2	26	0
12	NW7010	N-413	47.0	2	1	48.6	10	0	30.7	33	0	44.6	10	1	35.9	32	0
13	K1613	N-414	46.7	4	0	52.1	4	1	53.8	1	1	39.1	30	0	39.4	24	0
14	PBW772	N-415	46.4	6	0	50.3	6	0	33.0	29	0	41.3	23	0	41.7	17	0
15	HD3269	N-416	35.4	28	0	45.1	16	0	41.7	9	0	40.2	26	0	49.8	4	1
16	RAJ4503	N-419	42.5	18	0	46.9	11	0	42.2	6	0	44.8	7	1	40.5	21	0
17	RAJ4504	N-420	29.7	35	0	38.8	28	0	39.9	16	0	40.2	26	0	26.6	36	0
18	DBW237	N-421	51.9	1	1	38.2	29	0	40.5	13	0	35.3	35	0	52.1	1	1
19	HD3267	N-422	43.1	12	0	33.6	33	0	41.1	11	0	39.6	29	0	52.1	1	1
20	HD3266	N-423	46.4	5	0	44.6	18	0	42.8	5	0	40.2	26	0	41.7	17	0
21	HD3268	N-424	42.5	16	0	52.1	4	1	40.5	13	0	48.6	1	1	39.4	24	0
22	HD3265	N-425	34.5	30	0	43.4	20	0	37.6	21	0	42.5	16	1	46.3	8	1
23	WH1228	N-427	41.0	23	0	55.0	2	1	39.4	18	0	38.2	31	0	41.7	17	0
24	PBW771	N-428	45.1	8	0	52.7	3	1	35.3	26	0	46.3	4	1	46.3	8	1
25	HUW819	N-429	39.9	24	0	45.1	16	0	31.8	31	0	44.4	11	1	38.2	26	0
26	UP2985	N-430	38.0	26	0	38.2	29	0	30.1	34	0	38.0	32	0	40.5	21	0
27	WH1227	N-431	41.1	21	0	50.3	6	0	42.2	6	0	45.1	5	1	37.0	30	0
28	HUW820	N-432	46.1	7	0	26.0	36	0	38.2	20	0	42.4	17	1	34.7	34	0
29	HD3264	N-433	39.4	25	0	50.3	6	0	37.6	21	0	41.7	20	0	52.1	1	1
30	DBW239	N-434	44.1	10	0	32.4	34	0	37.0	23	0	42.2	18	1	37.0	30	0
31	UP2987	N-435	42.8	14	0	38.2	29	0	40.5	13	0	44.0	12	1	45.1	12	1
32	NW7007	N-436	41.1	22	0	45.7	15	0	44.6	4	0	45.1	5	1	46.3	8	1
33	HI1563(C)	N-404	41.2	20	0	42.2	22	0	31.8	31	0	48.3	3	1	49.8	4	1
34	DBW14(C)	N-417	33.6	33	0	55.6	1	1	33.0	29	0	42.8	15	1	40.5	23	0
35	DBW90(C)	N-418	30.8	34	0	41.1	23	0	35.3	26	0	41.4	22	0	45.1	12	1
36	HD3059(C)	N-426	42.5	17	0	46.3	13	0	49.8	2	1	42.2	18	1	48.6	6	1
Mean			40.6			43.5			38.5			42.0			42.2		
S.E.m			2.108			1.716			2.028			2.864			4.245		
C.D. (10%)			5.0			4.1			4.8			6.8			10.1		
C.V.			7.3			5.6			7.4			9.7			14.2		
D.O.S. (dd.mm.yyyy)			24.12.2016			8.12.2016			21.12.2016			25.12.2016			16.12.2016		

**NIVT-3A-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NEPZ											
			Bihar						West Bengal					
			Sabour			Pusa			Coochbehar			Kalyani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JKW234	N-401	33.1	22	0	40.7	25	0	33.5	18	0	32.6	21	0
2	DBW238	N-402	34.4	19	0	39.6	28	0	23.7	31	0	30.7	30	0
3	BRW3791	N-403	27.3	36	0	45.8	9	0	26.4	28	0	33.4	17	0
4	DBW240	N-405	33.0	23	0	42.1	23	0	26.5	27	0	31.9	22	0
5	K1614	N-406	27.7	34	0	38.0	30	0	37.7	10	0	38.8	8	0
6	PBW773	N-407	34.5	18	0	45.8	10	0	47.8	1	1	30.4	32	0
7	K1612	N-408	31.5	28	0	41.0	24	0	20.8	34	0	38.0	11	0
8	UP2984	N-409	32.6	25	0	45.7	12	0	39.9	5	0	31.2	28	0
9	UBW14	N-410	28.6	33	0	36.6	33	0	26.0	29	0	29.9	33	0
10	HUW821	N-411	32.6	26	0	36.9	32	0	20.8	33	0	43.5	1	1
11	WH1226	N-412	34.7	14	0	33.9	35	0	25.1	30	0	31.2	26	0
12	NW7010	N-413	34.7	16	0	43.1	21	0	26.8	26	0	40.7	5	1
13	K1613	N-414	36.2	12	0	37.8	31	0	34.5	16	0	31.3	25	0
14	PBW772	N-415	29.6	30	0	44.2	16	0	38.2	9	0	42.8	2	1
15	HD3269	N-416	33.2	21	0	46.0	7	0	18.6	36	0	31.2	27	0
16	RAJ4503	N-419	35.3	13	0	44.5	15	0	39.1	7	0	31.8	23	0
17	RAJ4504	N-420	28.9	32	0	32.4	36	0	28.5	25	0	34.9	16	0
18	DBW237	N-421	45.2	3	1	45.4	13	0	39.0	8	0	41.1	4	1
19	HD3267	N-422	46.0	2	1	45.8	11	0	32.7	20	0	37.7	12	0
20	HD3266	N-423	30.8	29	0	43.2	20	0	36.4	14	0	31.1	29	0
21	HD3268	N-424	39.3	9	0	46.0	8	0	42.6	3	0	35.3	14	0
22	HD3265	N-425	41.9	6	0	46.8	6	1	39.9	6	0	29.9	35	0
23	WH1228	N-427	34.7	15	0	47.2	2	1	41.5	4	0	33.1	18	0
24	PBW771	N-428	48.0	1	1	47.0	5	1	29.3	23	0	35.0	15	0
25	HUW819	N-429	29.6	31	0	45.3	14	0	22.9	32	0	29.7	36	0
26	UP2985	N-430	33.9	20	0	40.2	27	0	36.9	11	0	29.9	34	0
27	WH1227	N-431	27.6	35	0	40.5	26	0	29.2	24	0	38.7	9	0
28	HUW820	N-432	34.5	17	0	47.1	4	1	36.9	12	0	33.0	19	0
29	HD3264	N-433	42.2	4	1	39.1	29	0	43.4	2	0	42.3	3	1
30	DBW239	N-434	32.6	27	0	34.0	34	0	36.6	13	0	40.3	6	0
31	UP2987	N-435	40.6	7	0	42.1	22	0	33.4	19	0	31.3	24	0
32	NW7007	N-436	39.1	10	0	47.1	3	1	30.9	21	0	39.8	7	0
33	HI1563(C)	N-404	40.0	8	0	48.8	1	1	35.1	15	0	36.3	13	0
34	DBW14(C)	N-417	32.9	24	0	44.1	17	0	19.8	35	0	38.2	10	0
35	DBW90(C)	N-418	42.1	5	1	43.5	19	0	34.2	17	0	30.5	31	0
36	HD3059(C)	N-426	36.8	11	0	44.0	18	0	30.3	22	0	32.9	20	0
<b>Mean</b>			35.2			42.5			32.4			34.7		
<b>S.E.m</b>			2.474			1.030			0.560			1.178		
<b>C.D. (10%)</b>			5.9			2.5			1.4			2.8		
<b>C.V.</b>			10.0			3.4			2.4			4.8		
<b>D.O.S.(dd.mm.yyyy)</b>			22.12.2016			16.12.2016			15.12.2016			19.12.2016		

**NIVT-3A-IR-LS-TAS, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	NWPZ			NEPZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JKW234	N-401	42.2	30	0	36.0	30	0	39.6	31	0
2	DBW238	N-402	47.6	7	0	36.8	23	0	43.0	14	0
3	BRW3791	N-403	45.2	18	0	35.7	31	0	41.2	25	0
4	DBW240	N-405	45.4	17	0	36.5	25	0	41.6	22	0
5	K1614	N-406	43.8	22	0	38.0	18	0	41.3	24	0
6	PBW773	N-407	50.3	1	1	39.6	10	0	45.7	3	1
7	K1612	N-408	46.4	12	0	36.9	22	0	42.3	16	0
8	UP2984	N-409	40.0	34	0	39.5	11	0	39.8	28	0
9	UBW14	N-410	31.5	36	0	31.6	36	0	31.6	36	0
10	HUW821	N-411	40.2	33	0	34.4	34	0	37.7	34	0
11	WH1226	N-412	42.4	29	0	34.7	33	0	39.1	32	0
12	NW7010	N-413	45.0	19	0	37.6	19	0	41.8	21	0
13	K1613	N-414	48.2	5	0	36.4	28	0	43.1	12	0
14	PBW772	N-415	46.8	10	0	39.6	9	0	43.7	9	0
15	HD3269	N-416	40.7	32	0	36.5	26	0	38.9	33	0
16	RAJ4503	N-419	44.1	21	0	39.3	15	0	42.0	18	0
17	RAJ4504	N-420	39.6	35	0	31.9	35	0	36.3	35	0
18	DBW237	N-421	50.1	2	1	43.0	3	1	47.1	1	1
19	HD3267	N-422	42.8	27	0	42.3	4	1	42.6	15	0
20	HD3266	N-423	44.6	20	0	37.2	20	0	41.5	23	0
21	HD3268	N-424	47.1	8	0	41.9	6	1	44.8	6	0
22	HD3265	N-425	46.3	13	0	41.2	8	1	44.1	8	0
23	WH1228	N-427	47.6	6	0	39.4	14	0	44.1	7	0
24	PBW771	N-428	48.9	3	1	42.0	5	1	45.9	2	1
25	HUW819	N-429	43.4	26	0	35.0	32	0	39.8	29	0
26	UP2985	N-430	42.6	28	0	36.6	24	0	40.0	27	0
27	WH1227	N-431	46.0	15	0	36.4	29	0	41.9	19	0
28	HUW820	N-432	40.8	31	0	38.1	17	0	39.6	30	0
29	HD3264	N-433	46.6	11	0	43.5	1	1	45.3	5	0
30	DBW239	N-434	46.1	14	0	37.1	21	0	42.2	17	0
31	UP2987	N-435	43.7	23	0	39.4	13	0	41.9	20	0
32	NW7007	N-436	48.8	4	1	41.4	7	1	45.6	4	0
33	HI1563(C)	N-404	43.5	25	0	43.1	2	1	43.3	11	0
34	DBW14(C)	N-417	43.7	24	0	36.4	27	0	40.6	26	0
35	DBW90(C)	N-418	45.7	16	0	39.5	12	0	43.0	13	0
36	HD3059(C)	N-426	46.9	9	0	39.1	16	0	43.6	10	0
Mean			44.6			38.2			41.8		
C.D. (10%)			1.8			2.8			1.4		

**Summary of Disease Data and Agronomic Characteristics**

North Western Plains Zone

Trial: NIVT-3A-IR-LS-TAS, 2016-17

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	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	JKW234	N-401	40S	14.4	tR	0	74-95	82	110-132	120	88-110	97	Ey	A	H	32-41	37
2.	DBW238	N-402	10S	2.9	5S	4	74-90	80	112-133	121	80-109	101	Ey	A	H	40-48	43
3.	BRW3791	N-403	40S	14.3	0	0	70-90	79	109-130	119	84-97	91	Ey	A	SH-H	35-45	40
4.	DBW240	N-405	40S*	5.1	10S	0	74-92	83	112-131	121	82-102	95	Ey	A	H	30-40	36
5.	K1614	N-406	40S	11.6	5S	0	72-96	85	116-134	123	83-110	100	Ey	A	H	36-45	40
6.	PBW773	N-407	10MS	1.0	5S	0	72-88	79	110-132	120	80-102	94	Ey	A	H	35-40	37
7.	K1612	N-408	tMS	0.1	5S	0	76-91	84	111-130	120	78-102	94	Ey	A	H	38-50	45
8.	UP2984	N-409	60S	25.9	0	0	72-94	85	115-133	123	82-103	93	Ey	A	H	29-42	36
9.	UBW14	N-410	10S	3.0	5S	0	74-93	84	114-133	123	84-100	92	Ey	A	H	33-47	39
10.	HUW821	N-411	60S	15.6	5S	0	75-94	84	108-130	121	84-102	95	Ey	A	H	30-39	34
11.	WH1226	N-412	5MS	0.6	0	0	70-90	82	109-130	120	84-108	99	Ey	A	SH-H	36-46	40
12.	NW7010	N-413	5MS	0.7	10S	0	74-90	83	107-132	122	88-108	98	Ey	A	H	36-42	39
13.	K1613	N-414	20S	5.3	5S	0	78-94	85	112-132	122	90-121	105	Ey	A	H	27-43	38
14.	PBW772	N-415	5MR	0.3	0	0	77-95	85	110-132	121	90-107	100	Ey	A	SH-H	32-49	36
15.	HD3269	N-416	60S	22.4	0	0	72-90	81	111-131	121	60-110	83	Ey	A	H	29-39	34
16.	RAJ4503	N-419	5MR	0.3	tR	9	70-94	83	110-132	120	85-112	97	Ey	A	H	38-42	40
17.	RAJ4504	N-420	40S	6.9	5S	0	73-97	86	111-133	123	82-111	94	Ey	A	H	30-39	35
18.	DBW237	N-421	5S	1.9	0	0	74-91	82	111-132	120	82-109	97	Ey	A	SH-H	39-47	42
19.	HD3267	N-422	60S	23.9	0	0	77-95	85	108-136	121	84-107	97	Ey	A	H	31-42	37
20.	HD3266	N-423	10MS	1.8	0	0	76-92	84	113-132	121	88-106	99	Ey	A	H	29-39	35
21.	HD3268	N-424	20S	4.9	tR	4	77-94	86	114-132	122	98-113	103	Ey	A	H	37-46	41
22.	HD3265	N-425	40S	18.8	5S	0	74-96	83	109-132	120	80-105	97	Ey	A	H	34-44	39
23.	WH1228	N-427	tR	0.0	5S	0	73-86	80	108-132	120	90-102	96	Ey	A	H	36-39	37
24.	PBW771	N-428	10S	2.0	0	4	74-91	82	110-131	120	74-113	86	Ey	A	H	33-41	38
25.	HUW819	N-429	60S	13.9	10S	0	75-87	82	108-131	120	93-106	100	Ey	A	H	36-44	39
26.	UP2985	N-430	20S	4.4	0	0	76-91	83	111-131	121	89-101	95	Ey	A	H	33-40	37
27.	WH1227	N-431	5S	0.7	5S	0	76-93	84	109-130	120	81-107	96	Ey	A	H	35-42	39
28.	HUW820	N-432	60S	17.0	5S	2	74-94	83	107-129	119	81-103	96	Ey	A	H	24-39	32
29.	HD3264	N-433	40S	10.0	5S	0	77-93	85	108-130	122	93-104	99	Ey	A	H	34-42	39
30.	DBW239	N-434	40S	9.2	tR	0	78-94	84	114-131	122	86-100	94	Ey	A	H	36-45	41
31.	UP2987	N-435	40S	15.6	0	0	76-96	85	113-133	122	82-102	94	Ey	A	H	30-39	35
32.	NW7007	N-436	40S	12.0	0	0	75-91	83	111-132	121	88-109	99	Ey	A	H	39-47	43
33.	HI1563(C)	N-404	80S	32.9	0	0	69-91	78	106-133	119	89-100	94	Ey	A	H	35-44	38
34.	DBW14(C)	N-417	40S	8.8	5S	0	68-90	80	108-130	119	77-90	84	Ey	A	H	38-52	43
35.	DBW90(C)	N-418	tR	0.1	5S	0	74-91	83	108-131	120	83-108	92	Ey	A	H	34-43	38
36.	HD3059(C)	N-426	60S	23.6	0	0	72-92	83	111-131	122	92-100	96	Ey	A	H	34-42	38

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

**NIVT-3A-IR-LS-TAS, 2016-17**  
**North Western Plain Zone**  
**Individual Station Yellow Rust Data**

SN	Variety	Code	Gurdaspur	Hisar	Delhi	Karnal	Jammu	Ludhiana	Pantnagar	Durgapura
1	JKW234	N-401	10S	0	20S	20S	40S	0	5S	20S
2	DBW238	N-402	5S	0	10MS	10S	0	0	0	0
3	BRW3791	N-403	20S	5S	20MS	10MS	40S	5S	0	20S
4	DBW240	N-405	tR	0	0	0	tR	0	0	40S
5	K1614	N-406	20S	0	10MS	10MR	40S	0	tS	20S
6	PBW773	N-407	0	0	0	10MS	0	0	0	0
7	K1612	N-408	0	0	0	0	tR	0	0	tMS
8	UP2984	N-409	60S	0	40MS	10S	60S	0	5S	40S
9	UBW14	N-410	10S	0	5MS	0	10S	0	0	0
10	HUW821	N-411	10S	0	20S	5S	60S	0	10S	20S
11	WH1226	N-412	0	tS	5MS	0	0	0	0	0
12	NW7010	N-413	tR	0	5MS	0	0	tS	0	0
13	K1613	N-414	tR	tS	0	20S	20S	0	tS	0
14	PBW772	N-415	tR	0	5MR	0	tR	0	0	0
15	HD3269	N-416	40S	tS	40MS	20MS	60S	10S	tS	20S
16	RAJ4503	N-419	tR	0	0	0	5MR	0	0	0
17	RAJ4504	N-420	10S	0	0	5MS	40S	0	0	tMS
18	DBW237	N-421	5S	tS	5MS	0	5S	0	0	0
19	HD3267	N-422	60S	20S	20MS	20S	60S	0	15S	0
20	HD3266	N-423	tR	tS	0	10MS	tR	0	5S	0
21	HD3268	N-424	10S	0	10MS	0	20S	0	tS	0
22	HD3265	N-425	10S	0	0	20S	40S	0	40S	40S
23	WH1228	N-427	0	0	0	0	tR	0	0	0
24	PBW771	N-428	5S	0	10S	0	tR	0	tS	0
25	HUW819	N-429	0	10S	10S	10S	60S	0	20S	tMS
26	UP2985	N-430	10S	0	5S	0	20S	0	0	0
27	WH1227	N-431	5S	0	0	0	tR	0	0	0
28	HUW820	N-432	10S	0	20MS	20S	60S	0	10S	20S
29	HD3264	N-433	40S	0	0	0	40S	0	0	0
30	DBW239	N-434	20S	5S	10MS	0	40S	0	0	tMS
31	UP2987	N-435	20S	5S	5S	10S	40S	0	5S	40S
32	NW7007	N-436	20S	0	20MS	10S	40S	0	0	10S
33	HI1563(C)	N-404	60S	0	40S	10MS	80S	5S	30S	40S
34	DBW14(C)	N-417	5S	0	30MS	0	40S	tS	0	0
35	DBW90(C)	N-418	tR	0	0	0	tR	0	0	0
36	HD3059(C)	N-426	40S	0	20MS	40MS	60S	0	tS	40S

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: NIVT-3A-IR-LS-TAS, 2016-17

SN	Variety	Code	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
			Br	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	JKW234	N-401	tR	57 (24)	66-76	70	98-105	102	89-97	94	Ey	A	H	34-40	37
2.	DBW238	N-402	0	68 (24)	64-74	67	98-105	101	85-104	97	Ey	A	H	36-49	42
3.	BRW3791	N-403	0	68 (34)	62-69	66	97-107	101	86-97	92	Ey	A	SH-H	37-50	41
4.	DBW240	N-405	0	35 (13)	68-79	72	102-106	105	91-103	96	Ey	A	SH	32-41	37
5.	K1614	N-406	0	57 (24)	55-74	70	98-109	104	88-108	100	Ey	A	H	33-44	39
6.	PBW773	N-407	tR	68 (34)	63-69	66	92-104	99	81-96	91	Ey	A	SH-H	33-46	37
7.	K1612	N-408	tR	68 (24)	65-81	71	99-107	103	86-101	94	Ey	A	H	39-50	43
8.	UP2984	N-409	0	35 (23)	72-80	75	98-111	107	82-106	91	Ey	A	H	34-43	37
9.	UBW14	N-410	0	46 (23)	66-79	72	100-109	106	80-102	94	Ey	A	H	35-41	38
10.	HUW821	N-411	5S	57 (24)	63-76	68	99-109	103	80-103	95	Ey	A	H	31-40	35
11.	WH1226	N-412	0	78 (35)	66-77	70	95-107	102	86-102	94	Ey	A	H	34-49	40
12.	NW7010	N-413	tR	68 (35)	64-77	70	99-106	102	89-108	99	Ey	A	SH-H	39-45	41
13.	K1613	N-414	20S	57 (24)	68-81	72	95-111	104	95-110	104	Ey	A	H	29-44	38
14.	PBW772	N-415	0	78 (24)	66-80	70	95-106	102	87-107	97	Ey	A	H	31-38	35
15.	HD3269	N-416	tR	68 (24)	67-78	71	99-106	103	63-97	79	Ey	A	H	33-40	36
16.	RAJ4503	N-419	0	46 (23)	54-72	67	100-108	104	90-106	97	Ey	A	H	37-49	41
17.	RAJ4504	N-420	0	35 (13)	69-85	75	100-112	108	87-104	96	Ey	A	H	28-39	34
18.	DBW237	N-421	0	57 (24)	64-76	70	99-109	104	93-112	99	Ey	A	H	38-49	43
19.	HD3267	N-422	0	68 (34)	64-72	68	99-113	105	91-109	99	Ey	A	H	32-43	38
20.	HD3266	N-423	tR	57 (23)	68-80	72	98-109	104	85-107	97	Ey	A	H	33-41	36
21.	HD3268	N-424	0	57 (23)	68-82	74	96-109	105	93-103	98	Ey	A	SH-H	36-52	42
22.	HD3265	N-425	tR	68 (35)	64-71	67	97-105	101	79-106	90	Ey	A	SH-H	32-43	39
23.	WH1228	N-427	5S	45 (23)	64-71	66	95-108	101	75-103	88	Ey	A	H	31-44	36
24.	PBW771	N-428	0	68 (34)	65-74	68	100-108	104	80-101	88	Ey	A	H	38-46	40
25.	HUW819	N-429	tR	35 (24)	62-75	67	100-110	104	90-104	97	Ey	A	H	39-45	41
26.	UP2985	N-430	0	68 (35)	64-75	69	98-110	104	87-101	95	Ey	A	SH-H	29-43	36
27.	WH1227	N-431	tR	78 (34)	66-80	72	101-108	105	76-96	90	Ey	A	H	33-42	39
28.	HUW820	N-432	5S	45 (23)	65-77	68	98-107	103	84-104	94	Ey	A	H	34-50	39
29.	HD3264	N-433	0	35 (13)	68-80	73	98-110	105	93-101	97	Ey	A	H	35-41	38
30.	DBW239	N-434	0	45 (24)	66-79	72	99-112	107	86-100	92	Ey	A	H	38-48	41
31.	UP2987	N-435	0	57 (34)	67-78	73	98-111	107	87-97	91	Ey	A	H	32-38	36
32.	NW7007	N-436	0	46 (34)	64-77	69	95-109	104	87-103	97	Ey	A	H	38-51	41
33.	HI1563(C)	N-404	0	89 (45)	58-65	61	96-106	101	78-99	91	Ey	A	H	38-48	41
34.	DBW14(C)	N-417	0	78 (35)	57-66	60	95-106	101	68-100	82	Ey	A	H	35-46	40
35.	DBW90(C)	N-418	tR	68 (34)	66-81	72	99-107	103	90-99	94	Ey	A	H	35-38	37
36.	HD3059(C)	N-426	0	56 (23)	65-78	70	95-109	102	71-105	92	Ey	A	H	33-40	36

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

**NIVT-3A-IR-LS-TAS, 2016-17**  
**North Eastern Plains Zone**  
**Individual Station Leaf blight Data**

SN	Variety	Code	Faizabad	Coochbehar	Pusa	Ranchi	Sabour	Shilongani
1	JKW234	N-401	12	23	57	13	57	00
2	DBW238	N-402	02	12	34	25	68	00
3	BRW3791	N-403	12	34	67	24	68	00
4	DBW240	N-405	23	12	23	14	35	01
5	K1614	N-406	35	12	57	13	46	00
6	PBW773	N-407	35	12	35	24	68	12
7	K1612	N-408	12	12	45	14	68	01
8	UP2984	N-409	13	12	46	02	35	00
9	UBW14	N-410	24	12	24	13	46	00
10	HUW821	N-411	25	12	35	24	57	00
11	WH1226	N-412	35	23	78	25	68	00
12	NW7010	N-413	36	23	57	14	68	01
13	K1613	N-414	12	12	57	25	35	00
14	PBW772	N-415	12	12	14	25	78	01
15	HD3269	N-416	12	12	24	24	68	01
16	RAJ4503	N-419	25	00	23	25	46	00
17	RAJ4504	N-420	26	12	23	02	35	01
18	DBW237	N-421	12	12	34	14	57	24
19	HD3267	N-422	12	23	45	13	68	12
20	HD3266	N-423	02	23	57	14	46	00
21	HD3268	N-424	12	12	13	25	57	01
22	HD3265	N-425	24	23	67	25	68	24
23	WH1228	N-427	45	12	34	13	23	00
24	PBW771	N-428	46	12	24	35	68	01
25	HUW819	N-429	35	12	35	25	34	00
26	UP2985	N-430	34	23	57	14	68	01
27	WH1227	N-431	24	12	78	35	57	00
28	HUW820	N-432	12	12	45	26	35	00
29	HD3264	N-433	24	12	13	14	35	00
30	DBW239	N-434	36	12	34	14	45	00
31	UP2987	N-435	35	12	46	13	57	12
32	NW7007	N-436	45	23	45	14	46	00
33	HI1563(C)	N-404	24	23	56	46	89	12
34	DBW14(C)	N-417	13	23	78	35	58	01
35	DBW90(C)	N-418	24	23	45	24	68	12
36	HD3059(C)	N-426	23	00	24	25	56	12

## **NIVT-3B-IR-LS-NAT-ZONE, 2016-17**

The trial consisting of 32 test entries and four checks (RAJ4083, RAJ4238, HD2864 & HD2932) was proposed and conducted in simple lattice design (6x6) at 14 locations in Central and Peninsular Zone. The trial at Gwalior location was not reported due to unrealistic yield, while the data from Junagadh, Akola and Dharwad was not included due to low site mean.

### **Central Zone**

- The highest location mean yield was observed at Jabalpur (50.2q/ha) while, Vijapur (30.9q/ha) reported the lowest.
- Although HI1626 (47.7q/ha) was the highest yielder, none of the test entries significantly out-yield the best zonal check variety HD2932 (46.9q/ha).
- Black and brown rust was observed from low to moderate intensity in the zone. Lok 73 had high reaction of black (50S) and brown (20S) rust.
- Days to heading among the genotypes varied from 59 to 73 days and maturity ranged from 107 to 115 days in the zone.
- GW501 and HI8794 exhibited the highest thousand grains weight (48g) in the zone.

### **Peninsular Zone**

- The highest location mean yield was observed at Prabhani (49.5q/ha) while, Pune (39.4q/ha) reported the lowest.
- LOK74 (55.4q/ha) was the highest yielder, none of the test entries significantly out yielded the best check variety HD2932 (51.3q/ha).
- Brown rust was reported from Dharwad and Pune centers and entry NIAW3074 was found susceptible with score of 60S.
- Days to heading among the genotypes varied from 53 to 67 days and maturity ranged from 99 to 105 days in the zone.
- Entry LOK74 recorded the highest thousand grains weight (50g) followed by HI8794 (49g) in the zone.

### **National Level**

- LOK74 (49.5q/ha) was the highest yielder and together with HI1626 (48.8q/ha) and HD2932 (C) (48.2q/ha) formed the first non-significant group.



**1694-NIVT-3B-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ														
			Rajasthan			MP						Chhatisgarh					
			Udaipur			Indore		Jabalpur		Powarkheda		Bilaspur					
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G			
1	DBW243	N-501	39.2	30	0	49.6	8	0	50.5	16	0	40.5	28	0	33.0	14	0
2	HI1627	N-503	33.8	33	0	37.2	29	0	61.8	1	1	50.3	12	0	30.4	23	0
3	WH1230	N-504	28.1	36	0	42.9	17	0	51.4	15	0	38.5	31	0	39.8	1	1
4	AKAW5017	N-505	53.0	12	0	32.8	34	0	60.2	2	1	38.2	34	0	34.0	10	0
5	MP1340	N-506	41.3	27	0	50.3	6	0	57.3	7	1	57.3	3	1	31.9	17	0
6	WH1229	N-508	42.3	25	0	56.9	3	1	57.2	8	1	44.3	23	0	33.2	13	0
7	GW500	N-510	52.9	13	0	43.8	16	0	46.0	26	0	49.8	14	0	36.8	4	1
8	LOK73	N-511	45.0	18	0	58.1	2	1	48.9	23	0	54.4	7	1	32.5	16	0
9	NIAW3033	N-512	40.3	29	0	38.9	26	0	42.1	33	0	55.3	5	1	31.9	17	0
10	MP1342	N-513	54.8	9	0	39.5	23	0	59.6	3	1	58.4	2	1	25.2	32	0
11	MACS6715	N-514	49.7	16	0	32.9	33	0	42.2	32	0	37.6	35	0	23.0	36	0
12	HI1626	N-515	53.7	11	0	58.9	1	1	55.2	10	0	55.0	6	1	33.6	12	0
13	GW501	N-516	67.2	1	1	36.2	31	0	52.8	12	0	42.0	26	0	38.8	2	1
14	UAS393	N-517	37.3	32	0	50.2	7	0	44.8	28	0	50.9	9	0	28.5	28	0
15	NIAW3212	N-518	47.1	17	0	45.3	14	0	50.4	17	0	44.6	22	0	29.6	25	0
16	MP3469	N-519	55.6	8	0	42.9	18	0	51.7	13	0	42.5	25	0	27.5	29	0
17	HI8794	N-520	30.8	35	0	50.7	5	0	58.2	6	1	46.6	20	0	35.0	8	0
18	UAS392	N-521	32.2	34	0	46.9	10	0	43.6	30	0	46.6	20	0	32.8	15	0
19	CG1025	N-522	41.2	28	0	36.5	30	0	49.6	20	0	51.5	8	1	29.2	27	0
20	HD3270	N-523	54.6	10	0	41.1	19	0	37.0	36	0	47.5	18	0	29.5	26	0
21	LOK74	N-524	64.2	3	1	46.8	11	0	56.3	9	1	41.7	27	0	33.9	11	0
22	NIAW3074	N-525	44.0	19	0	47.2	9	0	45.2	27	0	38.5	31	0	31.8	19	0
23	CG1026	N-526	43.5	21	0	39.3	24	0	54.8	11	0	37.6	35	0	26.5	30	0
24	DBW241	N-527	38.6	31	0	38.2	27	0	44.4	29	0	49.8	14	0	24.4	34	0
25	PBW774	N-528	43.4	22	0	44.5	15	0	39.6	34	0	57.3	3	1	24.2	35	0
26	MP3470	N-529	41.9	26	0	39.0	25	0	47.2	25	0	39.4	29	0	25.6	31	0
27	GW499	N-530	62.6	4	1	39.5	22	0	38.1	35	0	50.6	10	0	36.8	4	1
28	DBW242	N-531	43.0	23	0	46.0	13	0	49.1	22	0	47.5	19	0	30.7	21	0
29	GW504	N-532	43.9	20	0	38.1	28	0	59.5	4	1	59.0	1	1	30.7	21	0
30	MP1341	N-533	52.5	14	0	39.6	21	0	49.3	21	0	50.1	13	0	35.9	7	0
31	MACS6714	N-535	51.6	15	0	35.2	32	0	59.4	5	1	38.5	31	0	30.4	23	0
32	GW502	N-536	42.5	24	0	13.8	36	0	49.8	19	0	38.8	30	0	24.5	33	0
33	RAJ4083(C)	N-502	58.5	7	1	56.8	4	1	48.0	24	0	48.0	16	0	34.5	9	0
34	RAJ4238(C)	N-507	59.5	6	1	46.4	12	0	42.9	31	0	48.0	16	0	38.0	3	1
35	HD2864(C)	N-509	66.0	2	1	31.7	35	0	51.7	14	0	44.0	24	0	31.3	20	0
36	HD2932(C)	N-534	61.4	5	1	40.5	20	0	50.3	18	0	50.6	10	0	36.7	6	1
Mean			47.7			42.6			50.2			47.0			31.4		
S.E.m			4.392			2.851			2.611			3.373			1.371		
C.D.			10.6			6.9			6.3			8.1			3.3		
C.V.			13.0			9.5			7.4			10.2			6.2		
D.O.S. (dd.mm.yyyy)			13.12.2016			7.12.2016			12.12.2016			7.12.2016			15.12.2016		

Trials proposed & conducted = 14

Trials not reported (4) = Gwalior (UY), Junagadh (LSM), Akola (LSM), Dharwad (LSM)

**NIVT-3B-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ						PZ								
			Chhatisgarh			Gujarat			Maharashtra								
			Raipur			Vijapur			Niphad		Pune		Parbhani				
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW243	N-501	50.2	6	1	33.7	11	1	47.6	9	1	46.7	7	0	51.2	14	0
2	HI1627	N-503	44.3	25	0	22.1	33	0	36.1	34	0	33.5	25	0	45.8	26	0
3	WH1230	N-504	49.2	10	1	32.9	17	1	51.3	4	1	32.6	28	0	55.1	8	1
4	AKAW5017	N-505	45.3	22	0	29.5	24	0	42.5	28	0	31.1	31	0	55.2	7	1
5	MP1340	N-506	36.9	35	0	26.2	29	0	44.8	17	1	32.6	27	0	43.6	30	0
6	WH1229	N-508	45.3	22	0	27.5	27	0	44.1	19	1	45.8	8	0	49.0	21	0
7	GW500	N-510	36.4	36	0	31.5	21	0	49.7	5	1	37.7	19	0	51.6	13	0
8	LOK73	N-511	52.1	2	1	27.1	28	0	43.3	25	0	34.9	23	0	44.8	29	0
9	NIAW3033	N-512	54.1	1	1	35.3	8	1	45.0	16	1	32.8	26	0	40.8	33	0
10	MP1342	N-513	51.6	3	1	31.4	22	0	48.6	7	1	42.1	13	0	47.6	24	0
11	MACS6715	N-514	44.3	25	0	34.4	9	1	39.7	30	0	37.6	20	0	47.2	25	0
12	HI1626	N-515	41.8	30	0	35.9	7	1	45.4	15	1	57.8	1	1	51.2	16	0
13	GW501	N-516	49.2	10	1	31.6	19	0	36.8	33	0	39.9	17	0	43.5	31	0
14	UAS393	N-517	51.2	5	1	23.1	32	0	44.0	20	0	38.7	18	0	48.8	22	0
15	NIAW3212	N-518	50.2	7	1	32.4	18	0	44.4	18	1	42.4	11	0	62.2	1	1
16	MP3469	N-519	44.3	25	0	27.8	26	0	44.0	21	0	40.5	15	0	45.3	28	0
17	HI8794	N-520	49.2	10	1	17.9	36	0	45.5	14	1	40.4	16	0	45.3	27	0
18	UAS392	N-521	49.2	10	1	33.0	15	1	43.8	23	0	52.1	4	1	54.6	9	0
19	CG1025	N-522	43.3	28	0	30.8	23	0	51.6	3	1	40.5	14	0	51.2	15	0
20	HD3270	N-523	39.4	32	0	40.3	2	1	47.1	10	1	55.0	3	1	54.5	10	0
21	LOK74	N-524	49.2	10	1	37.2	4	1	52.2	1	1	56.2	2	1	57.8	4	1
22	NIAW3074	N-525	47.7	21	1	31.6	19	0	42.6	27	0	36.8	22	0	53.3	11	0
23	CG1026	N-526	40.8	31	0	25.3	30	0	46.6	11	1	34.0	24	0	52.4	12	0
24	DBW241	N-527	39.4	32	0	21.4	34	0	33.0	35	0	29.5	34	0	39.9	34	0
25	PBW774	N-528	49.2	10	1	19.2	35	0	37.0	32	0	42.7	10	0	49.6	19	0
26	MP3470	N-529	48.2	18	1	24.2	31	0	48.0	8	1	30.0	33	0	49.6	20	0
27	GW499	N-530	43.3	28	0	40.5	1	1	41.0	29	0	30.1	32	0	48.0	23	0
28	DBW242	N-531	48.2	18	1	36.3	5	1	43.2	26	0	28.7	35	0	55.4	6	1
29	GW504	N-532	48.2	18	1	33.6	13	1	43.4	24	0	47.2	6	0	50.0	18	0
30	MP1341	N-533	50.2	7	1	33.7	11	1	45.7	13	1	28.6	36	0	60.4	3	1
31	MACS6714	N-535	45.3	22	0	29.5	25	0	38.3	31	0	42.2	12	0	42.6	32	0
32	GW502	N-536	39.4	32	0	33.1	14	1	32.0	36	0	37.1	21	0	30.9	36	0
33	RAJ4083(C)	N-502	51.6	3	1	34.1	10	1	46.1	12	1	31.3	30	0	55.7	5	1
34	RAJ4238(C)	N-507	49.2	10	1	33.0	15	1	48.8	6	1	44.7	9	0	60.4	2	1
35	HD2864(C)	N-509	49.2	10	1	36.3	5	1	43.9	22	0	31.7	29	0	37.6	35	0
36	HD2932(C)	N-534	49.7	9	1	38.9	3	1	51.7	2	1	51.3	5	1	50.7	17	0
Mean			46.6			30.9			44.1			39.4			49.5		
S.E.m			3.067			3.234			3.424			3.662			3.044		
C.D.			7.3			7.7			8.2			8.8			7.4		
C.V.			9.3			14.8			11.0			13.2			8.7		
D.O.S. (dd.mm.yyyy)			10.12.2016			9.12.2016			5.12.2016			7.12.2016			12.12.2016		

**NIVT-3B-IR-LS-TAS, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW243	N-501	42.4	19	0	48.5	8	0	44.2	12	0
2	HI1627	N-503	40.0	30	0	38.5	33	0	39.5	32	0
3	WH1230	N-504	40.4	28	0	46.3	11	0	42.2	24	0
4	AKAW5017	N-505	41.8	20	0	43.0	23	0	42.2	23	0
5	MP1340	N-506	43.0	14	0	40.4	29	0	42.2	21	0
6	WH1229	N-508	43.8	13	0	46.3	13	0	44.6	11	0
7	GW500	N-510	42.5	18	0	46.3	12	0	43.6	15	0
8	LOK73	N-511	45.5	6	1	41.0	28	0	44.1	13	0
9	NIAW3033	N-512	42.6	17	0	39.6	32	0	41.7	28	0
10	MP1342	N-513	45.8	5	1	46.1	14	0	45.9	6	0
11	MACS6715	N-514	37.7	34	0	41.5	26	0	38.9	34	0
12	HI1626	N-515	47.7	1	1	51.5	3	1	48.8	2	1
13	GW501	N-516	45.4	7	1	40.1	30	0	43.8	14	0
14	UAS393	N-517	40.9	26	0	43.8	19	0	41.7	27	0
15	NIAW3212	N-518	42.8	16	0	49.7	7	0	44.9	8	0
16	MP3469	N-519	41.8	21	0	43.2	21	0	42.2	22	0
17	HI8794	N-520	41.2	24	0	43.7	20	0	42.0	25	0
18	UAS392	N-521	40.6	27	0	50.1	6	0	43.5	16	0
19	CG1025	N-522	40.3	29	0	47.7	9	0	42.5	19	0
20	HD3270	N-523	41.3	23	0	52.2	2	1	44.6	9	0
21	LOK74	N-524	47.0	3	1	55.4	1	1	49.5	1	1
22	NIAW3074	N-525	40.9	25	0	44.2	18	0	41.9	26	0
23	CG1026	N-526	38.3	32	0	44.3	17	0	40.1	31	0
24	DBW241	N-527	36.6	35	0	34.1	35	0	35.9	35	0
25	PBW774	N-528	39.6	31	0	43.1	22	0	40.7	30	0
26	MP3470	N-529	37.9	33	0	42.5	24	0	39.3	33	0
27	GW499	N-530	44.5	10	0	39.7	31	0	43.1	17	0
28	DBW242	N-531	43.0	15	0	42.4	25	0	42.8	18	0
29	GW504	N-532	44.7	9	0	46.9	10	0	45.4	7	0
30	MP1341	N-533	44.5	11	0	44.9	15	0	44.6	10	0
31	MACS6714	N-535	41.4	22	0	41.0	27	0	41.3	29	0
32	GW502	N-536	34.6	36	0	33.3	36	0	34.2	36	0
33	RAJ4083(C)	N-502	47.4	2	1	44.4	16	0	46.5	5	0
34	RAJ4238(C)	N-507	45.3	8	1	51.3	4	1	47.1	4	0
35	HD2864(C)	N-509	44.3	12	0	37.7	34	0	42.3	20	0
36	HD2932(C)	N-534	46.9	4	1	51.3	5	1	48.2	3	1
<b>Mean</b>			42.3			44.3			42.9		
<b>C.D.</b>			2.7			4.6			2.3		

## Summary of Disease Data and Agronomic Characteristics

Central Zone

Trial: NIVT-3B-IR-LS-TAS, 2016-17

SN	Variety	Code	Rust Reaction		Agronomic Characteristics								Grain Characteristics			
			BI	Br	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	DBW243	N-501	tMS	tR	52-74	63	95-122	110	75-107	92	10	Ey	A	SH	38-53	44
2.	HI1627	N-503	tR	tR	48-74	62	95-121	110	70-102	89	-	Ey	A	SH-H	32-45	40
3.	WH1230	N-504	tMS	0	53-78	67	103-120	113	80-109	93	20	Ey	A	SH-H	35-46	41
4.	AKAW5017	N-505	tS	tR	44-74	59	87-120	108	79-107	93	-	Ey	A	SH	29-48	40
5.	MP1340	N-506	tMS	tR	59-77	70	100-125	113	83-111	94	-	Ey	A	SH	41-48	44
6.	WH1229	N-508	5S	tR	61-83	73	103-126	115	81-105	93	-	Ey	A	SH	28-46	39
7.	GW500	N-510	tR	5R	48-75	63	98-120	110	60-90	80	-	Ey	A	SH	36-46	41
8.	LOK73	N-511	50S	20S	49-76	64	102-121	112	72-97	85	10	Ey	A	SH	36-54	45
9.	NIAW3033	N-512	0	0	47-73	63	98-120	111	67-102	89	-	Ey	A	SH	37-51	44
10.	MP1342	N-513	10MS	5R	51-73	63	95-121	111	81-102	89	-	Ey	A	SH-H	35-54	43
11.	MACS6715	N-514	tR	tR	47-76	62	95-120	109	64-97	79	-	Ey	A	SH-H	35-46	40
12.	HI1626	N-515	10MS	5MR	51-72	63	98-121	111	81-100	90	-	Ey	A	SH	31-48	40
13.	GW501	N-516	10MR	5R	45-74	60	94-118	108	78-107	90	10	Ey	A	SH	41-52	48
14.	UAS393	N-517	tS	0	64-82	72	102-125	114	75-107	90	-	Ey	A	SH	27-42	36
15.	NIAW3212	N-518	5S	tR	50-74	64	91-120	110	70-100	88	15	Ey	A	SH	32-46	39
16.	MP3469	N-519	20S	5S	47-79	63	95-120	110	76-101	87	-	Ey	A	SH	36-45	41
17.	HI8794	N-520	10MS	5MR	57-76	66	98-120	111	75-97	87	-	Ey	A	SH-H	36-57	48
18.	UAS392	N-521	tMS	0	53-76	66	102-123	114	82-102	91	10	Ey	A	SH	35-46	40
19.	CG1025	N-522	tMS	5R	51--72	62	97-120	110	72-96	85	-	Ey	A	SH-H	36-48	42
20.	HD3270	N-523	20S	0	51-77	65	97-120	112	75-103	86	-	Ey	A	SH-H	34-45	40
21.	LOK74	N-524	5R	5MR	45-70	59	95-121	109	73-104	87	-	Ey	A	SH	40-55	46
22.	NIAW3074	N-525	10S	10MR	48-73	62	96-120	109	78-105	91	20	Ey	A	SH	34-48	41
23.	CG1026	N-526	10MS	10S	46-74	60	95-121	110	72-100	85	-	Ey	A	SH-H	33-48	44
24.	DBW241	N-527	0	0	63-82	72	103-126	115	65-94	84	-	Ey	A	SH	33-45	41
25.	PBW774	N-528	20S	5S	47-74	61	94-121	110	68-94	81	-	Ey	A	SH	34-44	39
26.	MP3470	N-529	30S	5S	51-80	65	95-123	111	79-104	90	-	Ey	A	SH	33-43	38
27.	GW499	N-530	tR	tR	47-75	62	96-124	111	75-95	86	-	Ey	A	SH-H	35-53	45
28.	DBW242	N-531	10MS	tR	54-76	67	102-123	114	83-101	90	15	Ey	A	SH	32-48	42
29.	GW504	N-532	tR	0	50-72	63	98-121	111	74-99	86	-	Ey	A	SH	34-51	45
30.	MP1341	N-533	10S	tR	54-76	65	91-122	110	81-103	93	15	Ey	A	SH	35-52	44
31.	MACS6714	N-535	10R	5R	46-76	62	98-124	110	63-100	81	20	Ey	A	SH	39-53	46
32.	GW502	N-536	tR	tR	45-73	59	86-123	107	81-111	95	10	Ey	A	SH	36-46	40
33.	RAJ4083(C)	N-502	10R	5R	47-71	61	94-123	109	68-93	83	-	Ey	A	SH	35-48	41
34.	RAJ4238(C)	N-507	tR	tR	49-72	62	95-121	109	65-93	81	-	Ey	A	SH	37-49	44
35.	HD2864(C)	N-509	tR	tR	46-72	61	97-119	109	72-95	87	-	Ey	A	H	35-46	41
36.	HD2932(C)	N-534	5S	5R	51-77	65	98-123	112	74-100	90	-	Ey	A	SH	37-43	40

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

**NIVT-3B-IR-LS-TAS, 2016-17**  
**Central Zone**  
**Individual Station Rust Data**

SN	Variety	Code	Black Rust		Brown Rust	
			Vijapur	Junagadh	Vijapur	Junagadh
1	DBW243	N-501	tMS	tMR	0	tR
2	HI1627	N-503	0	tR	tR	tR
3	WH1230	N-504	tMS	tR	0	0
4	AKAW5017	N-505	tS	tR	0	tR
5	MP1340	N-506	tMS	tR	0	tR
6	WH1229	N-508	5S	5MR	0	tR
7	GW500	N-510	0	tR	0	5R
8	LOK73	N-511	5S	50S	tR	20S
9	NIAW3033	N-512	0	0	0	0
10	MP1342	N-513	10MS	15MR	0	5R
11	MACS6715	N-514	0	tR	0	tR
12	HI1626	N-515	tS	10MS	0	5MR
13	GW501	N-516	tMS	10MR	tR	5R
14	UAS393	N-517	tS	0	0	0
15	NIAW3212	N-518	5S	tR	0	tR
16	MP3469	N-519	5S	20S	0	5S
17	HI8794	N-520	5S	10MS	tR	5MR
18	UAS392	N-521	tMS	tR	0	0
19	CG1025	N-522	tMS	tR	0	5R
20	HD3270	N-523	10MS	20S	0	0
21	LOK74	N-524	0	5R	0	5MR
22	NIAW3074	N-525	10S	5MR	tR	10MR
23	CG1026	N-526	tMS	10MS	10S	5MR
24	DBW241	N-527	0	0	0	0
25	PBW774	N-528	10MS	20S	0	5S
26	MP3470	N-529	10S	30S	tR	5S
27	GW499	N-530	0	tR	0	tR
28	DBW242	N-531	10MS	5MR	0	tR
29	GW504	N-532	tR	0	0	0
30	MP1341	N-533	10S	10R	0	tR
31	MACS6714	N-535	tR	10R	tR	5R
32	GW502	N-536	0	tR	0	tR
33	RAJ4083(C)	N-502	0	10R	0	5R
34	RAJ4238(C)	N-507	tR	tR	0	tR
35	HD2864(C)	N-509	tS	tR	0	tR
36	HD2932(C)	N-534	5S	10R	tMR	5R

**Summary of Disease Data and Agronomic Characteristics**

**Peninsular Zone**

**Trial: NIVT-3B-IR-LS-TAS, 2016-17**

SN	Variety	Code	Brown Rust Reaction	Agronomic Characteristics							Grain Characteristics			
				Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	DBW243	N-501	0	54-63	58	97-109	104	49-96	80	Ey	A	SH	40-45	43
2.	HI1627	N-503	tMS	53-61	57	98-110	104	72-87	81	Ey	A	H	35-42	40
3.	WH1230	N-504	0	52-65	60	97-107	102	69-93	83	Ey	A	SH	33-46	40
4.	AKAW5017	N-505	0	49-58	53	98-109	103	70-89	82	Ey	A	SH	29-48	38
5.	MP1340	N-506	0	53-70	63	96-110	104	72-95	84	Ey	A	SH	36-44	39
6.	WH1229	N-508	tMS	61-75	67	100-108	105	87-92	89	Ey	A	H	35-42	39
7.	GW500	N-510	5MS	52-58	54	97-106	102	69-78	72	Ey	A	H	34-44	40
8.	LOK73	N-511	5S	53-65	59	100-109	104	73-86	78	Ey	A	SH	38-50	45
9.	NIAW3033	N-512	0	48-63	57	99-109	104	78-89	85	Ey	A	SH	34-51	43
10.	MP1342	N-513	0	54-63	58	102-108	105	64-86	76	Ey	A	SH	33-46	40
11.	MACS6715	N-514	10S	54-59	56	98-109	104	75-87	81	Ey	A	SH	32-41	36
12.	HI1626	N-515	0	45-63	56	97-107	102	84-92	89	Ey	A	SH	32-44	38
13.	GW501	N-516	10S	48-58	53	93-107	99	75-95	88	Ey	A	SH	36-53	45
14.	UAS393	N-517	20S	53-75	65	97-110	105	71-89	83	Ey	A	H	32-46	39
15.	NIAW3212	N-518	10S	56-64	61	101-105	103	78-85	82	Ey	A	H	34-39	37
16.	MP3469	N-519	0	44-64	56	99-111	105	77-89	83	Ey	A	SH	30-46	39
17.	HI8794	N-520	0	53-64	59	100-106	103	72-90	79	Ey	A	H	42-57	49
18.	UAS392	N-521	10S	46-69	60	96-110	105	75-96	88	Ey	A	SH	36-46	41
19.	CG1025	N-522	0	50-65	57	98-109	103	76-84	80	Ey	A	H	32-46	40
20.	HD3270	N-523	tMS	53-68	60	97-108	103	74-87	80	Ey	A	H	33-50	41
21.	LOK74	N-524	0	48-58	53	99-107	103	69-98	85	Ey	A	SH	44-55	50
22.	NIAW3074	N-525	60S	46-61	55	98-109	103	69-87	80	Ey	A	SH	29-47	39
23.	CG1026	N-526	10S	45-61	54	100-109	104	74-88	82	Ey	A	SH	39-48	44
24.	DBW241	N-527	5S	61-78	68	99-107	104	73-85	79	Ey	A	SH	37-41	39
25.	PBW774	N-528	0	44-63	55	97-108	103	71-82	77	Ey	A	SH	30-41	37
26.	MP3470	N-529	0	52-63	58	101-110	105	55-88	77	Ey	A	SH	39-47	42
27.	GW499	N-530	0	46-60	55	99-108	104	56-90	79	Ey	A	SH	30-57	47
28.	DBW242	N-531	5MS	56-68	60	99-109	104	70-85	79	Ey	A	SH	36-49	41
29.	GW504	N-532	0	46-66	57	99-107	103	63-81	75	Ey	A	SH	32-50	42
30.	MP1341	N-533	0	52-64	58	97-109	102	76-88	83	Ey	A	SH	34-48	43
31.	MACS6714	N-535	10S	45-58	53	95-108	102	61-72	68	Ey	A	SH	36-48	43
32.	GW502	N-536	tMS	52-59	54	92-108	102	60-99	81	Ey	A	H	36-44	39
33.	RAJ4083(C)	N-502	10S	51-59	56	99-107	103	66-82	76	Ey	A	SH	35-48	42
34.	RAJ4238(C)	N-507	0	44-60	55	98-108	103	70-83	75	Ey	A	SH	36-46	42
35.	HD2864(C)	N-509	0	49-56	53	94-106	101	77-88	83	Ey	A	SH	32-43	39
36.	HD2932(C)	N-534	tMR	48-64	57	99-106	102	76-86	83	Ey	A	H	37-50	42

1. Ancillary data from Akola, Dharwad, Parbhani, Niphad and Pune.
2. Brown rust data from Dharwad and Pune.

**NIVT-3B-IR-LS-TAS, 2016-17**  
**Peninsular Zone**  
**Individual Station Brown Rust Data**

SN	Variety	Code	Dharwad	Pune
1	DBW243	N-501	0	0
2	HI1627	N-503	0	tMS
3	WH1230	N-504	0	0
4	AKAW5017	N-505	0	0
5	MP1340	N-506	0	0
6	WH1229	N-508	0	tMS
7	GW500	N-510	0	5MS
8	LOK73	N-511	0	5S
9	NIAW3033	N-512	0	0
10	MP1342	N-513	0	0
11	MACS6715	N-514	0	10S
12	HI1626	N-515	0	0
13	GW501	N-516	10S	5MS
14	UAS393	N-517	20S	5S
15	NIAW3212	N-518	0	10S
16	MP3469	N-519	0	0
17	HI8794	N-520	0	0
18	UAS392	N-521	10S	0
19	CG1025	N-522	0	0
20	HD3270	N-523	0	tMS
21	LOK74	N-524	0	0
22	NIAW3074	N-525	0	60S
23	CG1026	N-526	10S	0
24	DBW241	N-527	0	5S
25	PBW774	N-528	0	0
26	MP3470	N-529	0	0
27	GW499	N-530	0	0
28	DBW242	N-531	0	5MS
29	GW504	N-532	0	0
30	MP1341	N-533	0	0
31	MACS6714	N-535	0	10S
32	GW502	N-536	0	tMS
33	RAJ4083(C)	N-502	10S	5MS
34	RAJ4238(C)	N-507	0	0
35	HD2864(C)	N-509	0	0
36	HD2932(C)	N-534	0	tMR

## **NIVT-4-IR-TS-TDM, 2016-17**

The National Initial Varietal Trial for durum wheat under irrigated conditions comprising 36 genotypes including two check varieties (HI8737 and UAS428) laid out in 6×6 simple lattice design was proposed and conducted at 12 locations in CZ and PZ. The trial was rejected by monitoring team at Nippani, while Vijapur, Akola and Dharwad centres were not reported due to low site mean and SK Nagar and Niphad due to high CV.

### **Central Zone**

- The site mean ranged from 61.7q/ha (Powarkheda) to 41.2q/ha (Junagadh).
- UAS465 (55.8q/ha) was the highest yielding genotype followed by MPO1343 (55.3q/ha) and GW1339 (54.8q/ha) which were significantly superior to the best zonal check HI8737 (51.8q/ha).
- Low incidence of black and brown rust was reported from Vijapur centre.
- The test genotypes were similar in agronomic performance to the checks.
- GW1341 had the highest thousand grains weight (54g).

### **Peninsular Zone**

- The site mean ranged from 55.7q/ha (Pune) to 40.4q/ha (Ugar Khurd).
- HI8800 (56.9q/ha) ranked first on zonal basis and it was significantly superior to the best zonal check UAS428 (50.8q/ha).
- No disease incidence was reported by any centre.
- GW1341 and GW1339 (57days) were the earliest heading entries. HI8796 had the highest thousand grains weight (55g) followed by GW1341, RKD320, HI8795, RKD318 and WHD962 with 53g.

### **National Level**

- MPO1343 (55.3q/ha) was top yielder and it was significantly superior to the other entries including best check HI8737 (51.7q/ha).



**1695-NIVT-4-IR-TS-TDM, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ									PZ								
			Rajasthan			MP			MP			Gujarat			Maharashtra			Karnataka		
			Kota			Indore			Powarkheda			Junagadh			Pune			Ugar		
	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G		
1	HI8801	N-601	42.0	31	0	56.2	1	1	50.2	33	0	41.9	15	0	62.2	10	0	42.5	18	0
2	GW1341	N-602	43.2	27	0	44.9	29	0	50.7	32	0	37.6	30	0	53.6	23	0	47.1	6	1
3	NIAW1101	N-603	44.8	24	0	48.5	22	0	57.7	24	0	37.8	28	0	37.9	36	0	33.5	30	0
4	AKDW5012	N-604	45.2	22	0	42.8	31	0	57.4	25	0	32.8	34	0	39.6	34	0	30.8	32	0
5	DDW44	N-605	42.7	28	0	54.9	3	1	52.6	29	0	44.4	10	0	59.0	16	0	45.3	10	1
6	GW1339	N-606	39.6	34	0	52.2	12	1	76.4	3	1	50.9	2	1	63.4	8	1	42.7	16	0
7	MACS4064	N-607	48.9	9	0	47.6	23	0	74.2	4	1	45.5	7	0	60.6	15	0	42.7	17	0
8	MACS4067	N-608	47.7	11	0	45.7	26	0	60.0	20	0	44.9	8	0	56.1	18	0	47.3	5	1
9	UPD99	N-609	39.9	33	0	50.4	18	0	66.0	12	0	38.2	25	0	63.9	7	1	35.6	28	0
10	AKDW5013	N-610	47.4	12	0	43.0	30	0	48.5	34	0	37.9	27	0	48.0	31	0	37.0	24	0
11	PBND5128	N-611	46.2	18	0	35.7	35	0	58.4	23	0	36.0	32	0	56.6	17	0	52.9	1	1
12	HI8800	N-612	47.8	10	0	45.6	27	0	52.5	30	0	55.4	1	1	64.1	6	1	49.8	3	1
13	PDW351	N-613	46.2	19	0	49.2	20	0	67.8	10	0	38.1	26	0	50.6	27	0	42.8	14	0
14	MPO1344	N-614	47.1	14	0	42.6	32	0	54.6	26	0	40.6	22	0	60.8	14	0	46.1	8	1
15	PDW354	N-615	45.3	21	0	45.8	25	0	69.2	8	0	37.2	31	0	54.0	20	0	35.4	29	0
16	MACS4071	N-616	57.8	1	1	53.0	9	1	52.5	31	0	42.6	13	0	51.6	26	0	46.4	7	1
17	HI8799	N-617	49.7	7	0	53.2	8	1	61.0	19	0	47.0	5	0	67.3	3	1	42.8	15	0
18	PDW353	N-618	45.4	20	0	51.0	14	1	64.7	13	0	31.9	35	0	40.3	33	0	36.1	26	0
19	GW1338	N-619	46.6	17	0	40.5	33	0	66.1	11	0	41.8	16	0	55.2	19	0	22.8	36	0
20	UAS465	N-620	50.7	6	0	53.9	7	1	80.8	1	1	37.6	29	0	48.7	29	0	44.0	12	1
21	MPO1343	N-621	39.2	35	0	55.4	2	1	79.6	2	1	47.1	4	0	69.7	1	1	40.5	22	0
22	WHD961	N-622	52.1	3	1	54.6	4	1	64.3	14	0	41.5	18	0	51.6	25	0	33.1	31	0
23	RKD320	N-623	47.0	15	0	46.9	24	0	68.7	9	0	40.9	21	0	53.7	22	0	45.8	9	1
24	PDW352	N-624	37.6	36	0	50.1	19	0	72.3	6	0	41.8	17	0	62.6	9	0	44.0	13	1
25	GW1340	N-625	43.4	25	0	51.3	13	1	63.7	15	0	44.8	9	0	61.4	12	0	30.3	35	0
26	HI8797	N-626	51.8	4	1	50.9	16	0	52.6	28	0	38.6	24	0	49.5	28	0	40.6	21	0
27	UAS464	N-627	42.5	30	0	48.5	21	0	53.0	27	0	39.6	23	0	44.7	32	0	50.3	2	1
28	HI8795	N-628	44.8	23	0	52.8	10	1	59.9	21	0	47.4	3	0	67.1	4	1	30.5	34	0
29	NIAW1100	N-629	47.2	13	0	34.4	36	0	62.3	18	0	35.1	33	0	48.0	30	0	37.0	23	0
30	RKD318	N-630	54.0	2	1	45.5	28	0	70.6	7	0	44.3	11	0	53.8	21	0	35.8	27	0
31	WHD962	N-631	46.9	16	0	50.9	15	0	74.2	5	1	42.8	12	0	61.3	13	0	30.5	33	0
32	HI8798	N-632	40.4	32	0	54.0	5	1	58.5	22	0	42.6	13	0	62.1	11	0	40.6	20	0
33	DDW43	N-634	51.5	5	1	50.8	17	0	46.8	36	0	25.5	36	0	38.7	35	0	45.2	11	1
34	HI8796	N-636	49.2	8	0	52.5	11	1	47.6	35	0	41.1	20	0	67.7	2	1	40.7	19	0
35	UAS428(C)	N-633	43.3	26	0	39.7	34	0	63.1	17	0	41.5	19	0	52.2	24	0	49.5	4	1
36	HI8737(C)	N-635	42.7	29	0	54.0	6	1	63.6	16	0	46.9	6	0	67.0	5	1	36.2	25	0
Mean			46.1			48.6			61.7			41.2			55.7			40.4		
S.E.m			2.698			2.170			2.782			2.315			2.806			3.812		
C.D. (10%)			6.5			5.2			6.7			5.5			6.7			9.2		
C.V.			8.3			6.3			6.4			8.0			7.1			13.3		
D.O.S. (dd.mm.yyyy)			13.11.2016			18.11.2016			16.11.2016			20.11.2016			13.11.2016			11.11.2016		

Trials proposed & conducted = 12

Trials not reported (6) = Nippani (RMT), Vijapur (LSM), SK Nagar (HCV), Niphad (HCV), Akola (LSM), Dharwad (LSM)

**NIVT-4-IR-TS-TDM, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8801	N-601	47.6	26	0	52.3	9	1	49.2	19	0
2	GW1341	N-602	44.1	34	0	50.3	16	0	46.2	29	0
3	NIAW1101	N-603	47.2	27	0	35.7	35	0	43.4	34	0
4	AKDW5012	N-604	44.5	32	0	35.2	36	0	41.4	36	0
5	DDW44	N-605	48.7	21	0	52.1	10	1	49.8	15	0
6	GW1339	N-606	54.8	3	1	53.1	8	1	54.2	2	1
7	MACS4064	N-607	54.1	4	1	51.6	12	1	53.2	4	1
8	MACS4067	N-608	49.6	17	0	51.7	11	1	50.3	14	0
9	UPD99	N-609	48.6	22	0	49.8	18	0	49.0	22	0
10	AKDW5013	N-610	44.2	33	0	42.5	30	0	43.6	33	0
11	PBND5128	N-611	44.1	35	0	54.7	4	1	47.6	26	0
12	HI8800	N-612	50.3	15	0	56.9	1	1	52.5	6	0
13	PDW351	N-613	50.3	16	0	46.7	22	0	49.1	21	0
14	MPO1344	N-614	46.2	29	0	53.4	6	1	48.6	23	0
15	PDW354	N-615	49.4	18	0	44.7	28	0	47.8	25	0
16	MACS4071	N-616	51.5	10	0	49.0	19	0	50.6	11	0
17	HI8799	N-617	52.7	8	0	55.1	3	1	53.5	3	1
18	PDW353	N-618	48.3	24	0	38.2	34	0	44.9	31	0
19	GW1338	N-619	48.8	20	0	39.0	33	0	45.5	30	0
20	UAS465	N-620	55.8	1	1	46.4	23	0	52.6	5	1
21	MPO1343	N-621	55.3	2	1	55.1	2	1	55.3	1	1
22	WHD961	N-622	53.1	7	1	42.3	31	0	49.5	18	0
23	RKD320	N-623	50.9	12	0	49.8	17	0	50.5	12	0
24	PDW352	N-624	50.4	14	0	53.3	7	1	51.4	8	0
25	GW1340	N-625	50.8	13	0	45.8	25	0	49.1	20	0
26	HI8797	N-626	48.5	23	0	45.1	26	0	47.4	27	0
27	UAS464	N-627	45.9	30	0	47.5	21	0	46.4	28	0
28	HI8795	N-628	51.2	11	0	48.8	20	0	50.4	13	0
29	NIAW1100	N-629	44.7	31	0	42.5	29	0	44.0	32	0
30	RKD318	N-630	53.6	6	1	44.8	27	0	50.7	10	0
31	WHD962	N-631	53.7	5	1	45.9	24	0	51.1	9	0
32	HI8798	N-632	48.9	19	0	51.4	14	1	49.7	17	0
33	DDW43	N-634	43.6	36	0	42.0	32	0	43.1	35	0
34	HI8796	N-636	47.6	25	0	54.2	5	1	49.8	16	0
35	UAS428(C)	N-633	46.9	28	0	50.8	15	0	48.2	24	0
36	HI8737(C)	N-635	51.8	9	0	51.6	13	1	51.7	7	0
Mean			49.4			48.0			48.9		
C.D. (10%)			2.9			5.6			2.7		

## Summary of Disease Data and Agronomic Characteristics

Central Zone

Trial: NIVT-4-IR-TS-TDM, 2016-17

SN	Variety	Code	Rust Reactions		Agronomic Characteristics						Grain Characteristics			
			Br	BI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Col.	Tex.	TGW.R	TGW.M
1.	HI8801	N-601	0	tMR	60-81	70	101-133	118	73-94	84	A	H	44-51	48
2.	GW1341	N-602	0	5MR	52-77	63	94-130	114	76-99	86	A	H	49-58	54
3.	NIAW1101	N-603	tMR	tMR	67-84	73	102-136	119	78-100	89	A	H	36-45	41
4.	AKDW5012	N-604	0	10MR	61-84	73	102-135	119	79-101	88	A	H	42-51	47
5.	DDW44	N-605	5MR	5R	64-83	73	103-134	118	82-100	88	A	SH	35-51	43
6.	GW1339	N-606	0	0	52-75	62	98-127	114	70-95	82	A	H	45-51	48
7.	MACS4064	N-607	0	tMR	54-79	66	97-130	116	63-96	80	A	H	41-46	43
8.	MACS4067	N-608	0	tMR	57-82	70	98-132	118	79-106	91	A	H	39-50	45
9.	UPD99	N-609	tMR	10MS	64-83	73	103-134	120	81-103	92	A	SH	36-44	40
10.	AKDW5013	N-610	0	tMR	61-81	72	100-133	117	82-101	90	A	H	42-47	44
11.	PBND5128	N-611	tMR	10MR	65-85	73	102-136	120	84-117	102	A	SH	42-53	48
12.	HI8800	N-612	0	0	60-80	70	99-132	118	73-92	82	A	H	42-49	45
13.	PDW351	N-613	0	0	68-84	75	105-134	120	77-102	90	A	SH	40-54	47
14.	MPO1344	N-614	tMR	5R	56-80	68	99-131	117	75-100	87	A	H	39-49	45
15.	PDW354	N-615	0	tMR	64-86	74	103-138	119	74-102	88	A	H	38-49	43
16.	MACS4071	N-616	0	5MS	63-83	73	101-135	119	76-102	86	A	SH	34-42	38
17.	HI8799	N-617	0	0	61-78	69	101-130	117	68-95	83	A	H	44-52	48
18.	PDW353	N-618	tMR	20MR	70-86	78	106-134	121	73-102	87	A	H	32-50	44
19.	GW1338	N-619	0	10R	56-88	71	100-139	119	65-89	76	A	H	45-52	48
20.	UAS465	N-620	0	5MR	61-84	72	98-135	117	73-101	88	A	H	29-40	35
21.	MPO1343	N-621	tMR	10MS	59-78	68	99-130	117	74-96	87	A	H	45-49	47
22.	WHD961	N-622	tMR	tMR	69-84	77	103-134	120	80-108	91	A	H	40-60	50
23.	RKD320	N-623	0	0	62-79	70	100-131	118	68-104	86	A	H	43-54	46
24.	PDW352	N-624	0	0	65-84	74	104-135	119	71-100	89	A	H	41-55	48
25.	GW1340	N-625	0	tMR	57-80	67	102-132	117	81-99	88	A	H	40-53	48
26.	HI8797	N-626	tMR	10MR	64-81	72	104-133	119	81-103	95	A	H	37-48	43
27.	UAS464	N-627	0	5R	61-84	72	102-134	119	75-98	87	A	SH	29-42	37
28.	HI8795	N-628	0	0	62-84	71	101-135	118	70-96	83	A	H	47-53	49
29.	NIAW1100	N-629	tMR	tMR	65-85	76	103-136	120	70-95	84	A	SH	34-48	42
30.	RKD318	N-630	tMR	10MS	64-80	71	102-132	118	79-101	89	A	H	41-54	48
31.	WHD962	N-631	0	20MR	59-85	71	98-136	119	75-103	87	A	H	47-57	51
32.	HI8798	N-632	0	tMR	55-75	64	96-127	114	65-92	78	A	H	46-51	49
33.	DDW43	N-634	tMR	10MR	62-86	74	102-137	120	76-100	88	A	H	41-52	44
34.	HI8796	N-636	0	10R	63-87	78	111-137	124	77-100	86	A	H	30-51	44
35.	UAS428(C)	N-633	0	0	56-78	67	100-131	116	70-100	85	A	SH	46-52	49
36.	HI8737(C)	N-635	tMR	tMR	62-78	69	99-130	116	65-98	83	A	H	42-61	51

1. Ancillary data from Junagadh, Powarkheda, SK Nagar, Indore, Kota and Vijapur.      2. Brown and black rust reported from Vijapur.

## Summary of Disease Data and Agronomic Characteristics

Peninsular Zone

Trial: NIVT-4-IR-TS-TDM, 2016-17

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.	HI8801	N-601	63-68	65	105-119	111	68-87	77	Ey	A	H	46-52	48
2.	GW1341	N-602	55-59	57	104-119	110	67-99	86	Ey	A	SH	48-58	53
3.	NIAW1101	N-603	67-73	69	105-118	113	71-95	84	Ey-M	A	H	30-45	38
4.	AKDW5012	N-604	62-71	66	108-118	113	74-96	85	Ey-M	A	H	40-52	45
5.	DDW44	N-605	64-971	67	108-118	113	66-92	82	Ey	A	H	40-45	42
6.	GW1339	N-606	56-58	57	107-119	112	69-90	79	Ey	A	H	46-55	52
7.	MACS4064	N-607	57-60	58	109-121	113	71-85	78	Ey-M	A	H	38-44	42
8.	MACS4067	N-608	61-71	65	110-120	114	80-96	87	Ey	A	H	44-47	46
9.	UPD99	N-609	63-70	66	109-119	114	72-97	87	Ey	A	H	39-44	42
10.	AKDW5013	N-610	61-70	66	104-121	113	69-99	88	Ey	A	H	42-48	44
11.	PBND5128	N-611	60-71	65	106-121	113	80-113	95	Ey-M	A	H	48-53	50
12.	HI8800	N-612	61-71	64	104-125	113	72-90	81	M	A	H	42-49	46
13.	PDW351	N-613	65-73	69	105-126	116	74-97	86	Ey	A	H	43-54	49
14.	MPO1344	N-614	60-70	63	106-118	112	68-93	83	Ey	A	H	43-51	47
15.	PDW354	N-615	67-76	70	107-121	115	72-96	83	Ey	A	SH	38-43	40
16.	MACS4071	N-616	60-71	65	104-119	112	78-91	85	Ey-M	A	SH	35-39	38
17.	HI8799	N-617	54-63	60	105-118	111	68-84	79	Ey	A	SH	46-50	48
18.	PDW353	N-618	67-80	73	106-126	116	80-95	87	M	A	H	35-49	44
19.	GW1338	N-619	61-71	65	107-125	113	68-78	74	Ey	A	H	43-50	46
20.	UAS465	N-620	62-71	66	105-125	113	72-91	80	Ey	A	SH	30-41	35
21.	MPO1343	N-621	57-63	60	104-118	111	70-91	79	Ey	A	H	50-55	52
22.	WHD961	N-622	61-76	69	103-121	114	76-105	89	Ey-M	A	H	42-58	50
23.	RKD320	N-623	65-71	67	104-121	114	70-95	85	Ey	A	H	44-59	53
24.	PDW352	N-624	63-73	68	105-120	114	74-96	85	Ey	A	SH	49-53	51
25.	GW1340	N-625	58-65	61	107-126	114	76-91	85	M	A	SH	47-55	52
26.	HI8797	N-626	63-71	66	106-122	113	82-99	89	Ey-M	A	H	39-46	42
27.	UAS464	N-627	61-71	65	108-120	113	72-91	85	Ey	A	H	30-40	34
28.	HI8795	N-628	60-69	64	104-119	112	75-89	81	Ey	A	H	48-57	53
29.	NIAW1100	N-629	65-73	69	108-121	114	77-88	83	Ey	A	H	42-49	45
30.	RKD318	N-630	60-70	65	105-118	112	77-97	86	M	A	SH	47-59	53
31.	WHD962	N-631	62-70	65	105-119	112	66-95	82	Ey	A	H	48-58	53
32.	HI8798	N-632	56-65	60	104-119	110	69-81	77	Ey	A	H	45-51	49
33.	DDW43	N-634	69-83	74	108-127	117	83-98	88	Ey-M	A	H	37-47	43
34.	HI8796	N-636	58-63	61	106-118	111	66-87	80	Ey	A	H	53-59	55
35.	UAS428(C)	N-633	61-72	66	107-119	114	63-94	81	Ey	A	H	37-50	44
36.	HI8737(C)	N-635	58-63	60	105-120	111	60-90	80	Ey	A	H	44-52	49

1. Ancillary data from Niphad, Akola, Dharwad, Ugar Khurd and Pune.

## NIVT-5A-RI-TS-TAS, 2016-17

The National Initial Varietal Trial under restricted irrigated conditions comprising 36 genotypes including four check varieties (WH1142, DBW93, DBW110, HD2888) laid out in 6×6 simple lattice design was proposed at 32 locations but conducted at 31 locations in NWPZ, NEPZ, CZ and PZ. The trial was not conducted at Nippani centre (PZ). The trial was rejected by monitoring team at Karnal, Faizabad, Varanasi, Bailhongal, while Vijapur, Akola, Pune and Dharwad centres were not reported due to low site mean. Kharibari centre did not report the data.

### North Western Plains Zone

- The site mean ranged from 55.5q/ha (Delhi) to 41.7q/ha (Hisar).
- BRW3806 (56.5q/ha), DBW252 (55.1q/ha), HI1628 (55q/ha) and NIAW3170 (54.7q/ha) were significantly superior to the zonal check WH1142 (51.6q/ha) formed the first non-significant group.
- Yellow rust was reported from Ludhiana, Hisar, Gurdaspur and Jammu centres and its severity was high with a total of 19 test entries showed ACI more than 15.
- Brown rust severity was low and reported from Ludhiana and Pantnagar.
- The test genotypes were similar in agronomic performance to the checks.
- NIAW3217 and K1615 had the highest thousand grains weight (46g).

### North Eastern Plains Zone

- The site mean ranged from 43.9q/ha (Pusa) to 27.9q/ha (Ranchi).
- MP1334 (39.4q/ha) alongwith NW7008 (39.2q/ha), UAS394 (38.8q/ha), DBW252 (38.1q/ha), HD3273 (37.7q/ha), UP2989 (37.6q/ha), BRW3806 (37.2q/ha), WH1235 (36.5q/ha), HI1628 (36.3q/ha), MP1331 and MACS6696 (37.1q/ha) formed the first non-significant group and significantly superior to the zonal check HD2888 (32.8q/ha).
- Leaf blight data was reported from Kalyani, Pusa, Sabour and Ranchi centres. None of the entries showed resistance to leaf blight.
- The test entries were similar in agronomic traits to the checks

### Central Zone

- The site mean ranged from 46.1q/ha (Udaipur) to 25.5q/ha (Junagadh).
- MP1331 (41.3q/ha) was the top yielder and significantly superior to the zonal check DBW110 (39q/ha).
- No disease incidence was reported by any of the centres.
- MP3475 (57days) was the earliest entry followed by BRW3798 (59days).
- K1615 had high 1000-grains weight (48g).

### Peninsular Zone

- NIAW3170 (44.3q/ha), MACS6695 (41.6q/ha), MACS6696 (40.5q/ha), MP3475 (39.2q/ha), HD3273 (38.9q/ha) and UAS395 (38.5q/ha) formed the first non-significant group.
- NIAW3170 (44.3q/ha), MACS6695 (41.6q/ha) and MACS6696 (40.5q/ha) were significantly superior to the zonal check DBW93 (34.0q/ha).
- No disease incidence was reported by any of the centre.
- The ancillary data revealed that the test entries were similar in agronomic performance to the checks.

**National Level**

NW7008 (44.4q/ha) was top yielder followed by BRW3806 (44.3q/ha), DBW252 (44.3q/ha) and NIAW3170 (44q/ha) which were significantly superior to the other entries including best check DBW110 (42.4q/ha).

**1698-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ																	
			J&K			Delhi			Haryana			Punjab								
			Jammu			Delhi			Hisar			Balachaur		Ludhiana		Gurdaspur				
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G			
1	JWS151	N-702	33.9	30	0	53.1	21	0	43.9	10	0	33.2	31	0	44.6	28	0	25.0	36	0
2	NIAW3170	N-703	69.8	2	1	47.0	32	0	50.0	5	1	51.7	8	1	50.4	13	0	70.1	2	1
3	DBW252	N-704	70.3	1	1	50.1	29	0	34.5	34	0	46.2	17	0	55.3	4	1	60.0	11	0
4	UP2989	N-705	41.7	24	0	47.9	31	0	42.2	14	0	37.2	30	0	44.8	26	0	46.8	30	0
5	BRW3798	N-706	29.2	33	0	45.8	34	0	36.4	33	0	32.0	32	0	41.3	35	0	42.6	34	0
6	WH1236	N-707	56.3	14	0	61.2	9	1	43.4	12	0	54.4	1	1	56.5	2	1	63.3	6	0
7	DBW245	N-708	62.5	8	1	65.3	1	1	41.6	17	0	54.1	3	1	47.3	23	0	45.6	31	0
8	NIAW3217	N-709	38.0	27	0	61.2	9	1	38.7	24	0	53.2	6	1	44.4	30	0	59.5	13	0
9	HI1628	N-710	56.3	14	0	61.3	8	1	53.1	1	1	49.7	11	1	53.7	8	1	63.4	5	0
10	CG1027	N-712	55.2	17	0	62.4	5	1	44.2	9	0	44.6	19	0	52.1	11	1	61.7	8	0
11	MP1334	N-713	35.4	29	0	62.8	4	1	37.2	32	0	44.4	21	0	44.5	29	0	55.5	21	0
12	MP3475	N-715	48.4	22	0	59.4	14	1	38.6	25	0	42.4	24	0	44.7	27	0	47.1	28	0
13	MP1331	N-716	39.6	25	0	52.4	25	0	43.7	11	0	52.2	7	1	55.0	5	1	54.0	24	0
14	K1616	N-717	28.6	34	0	51.4	28	0	38.2	26	0	30.6	35	0	44.1	32	0	41.0	35	0
15	DBW244	N-718	62.5	8	1	52.6	24	0	39.9	21	0	43.4	23	0	47.7	20	0	45.1	32	0
16	PBW775	N-719	58.9	11	1	43.0	35	0	38.0	27	0	43.6	22	0	41.0	36	0	54.2	23	0
17	HD3273	N-720	35.9	28	0	58.7	17	1	37.5	30	0	37.6	29	0	48.6	17	0	57.7	20	0
18	UP2988	N-721	50.0	21	0	57.2	18	1	41.5	18	0	31.9	34	0	47.9	19	0	47.3	26	0
19	HD3274	N-722	51.0	20	0	63.1	3	1	37.8	28	0	39.2	27	0	54.9	7	1	67.5	3	1
20	MACS6696	N-723	24.0	35	0	59.8	12	1	37.3	31	0	54.1	2	1	55.0	6	1	58.6	16	0
21	MP1332	N-724	69.3	3	1	62.4	5	1	46.7	7	1	41.7	26	0	56.0	3	1	59.3	15	0
22	K1615	N-725	31.8	31	0	51.7	26	0	32.9	35	0	46.7	15	0	43.3	33	0	44.2	33	0
23	HD3275	N-726	52.6	19	0	55.9	19	0	40.3	19	0	53.9	4	1	47.7	21	0	60.1	10	0
24	HP1967	N-727	53.1	18	0	45.9	33	0	39.6	22	0	49.4	12	1	47.3	22	0	60.9	9	0
25	MP1333	N-728	63.0	7	1	52.8	23	0	52.6	2	1	31.9	33	0	46.7	24	0	46.9	29	0
26	MACS6695	N-730	22.9	36	0	51.6	27	0	37.5	29	0	50.5	9	1	48.3	18	0	59.6	12	0
27	BRW3806	N-731	65.1	6	1	62.4	5	1	41.6	16	0	47.8	14	0	56.6	1	1	72.6	1	1
28	NW7008	N-732	58.9	11	1	59.7	13	1	43.1	13	0	50.0	10	1	52.3	10	1	59.5	14	0
29	UAS395	N-733	38.5	26	0	53.4	20	0	41.6	15	0	46.6	16	0	49.1	16	0	54.8	22	0
30	UAS394	N-734	57.3	13	0	61.0	11	1	40.3	20	0	42.2	25	0	49.4	15	0	58.0	18	0
31	PBW776	N-735	68.2	4	1	52.9	22	0	51.9	4	1	38.7	28	0	41.7	34	0	63.0	7	0
32	WH1235	N-736	59.9	10	1	59.4	14	1	49.2	6	1	53.6	5	1	51.0	12	1	57.8	19	0
33	WH1142(C)	N-701	66.1	5	1	40.1	36	0	52.4	3	1	44.6	19	0	50.3	14	0	64.4	4	0
34	DBW93(C)	N-711	56.3	14	0	64.0	2	1	44.4	8	0	49.4	13	1	44.8	25	0	52.9	25	0
35	DBW110(C)	N-714	47.9	23	0	59.3	16	1	38.9	23	0	45.2	18	0	53.0	9	1	58.0	17	0
36	HD2888(C)	N-729	30.7	32	0	49.8	30	0	31.6	36	0	30.4	36	0	44.2	31	0	47.2	27	0
Mean			49.7			55.5			41.7			44.4			48.8			55.1		
S.E.m			5.117			3.512			3.427			2.303			2.346			3.255		
C.D. (10%)			12.2			8.4			8.3			5.5			5.7			7.9		
C.V.			14.6			8.9			11.6			7.3			6.8			8.3		
D.O.S.(dd.mm.yyyy)			2.11.2016			6.11.2016			29.10.2016			30.10.2016			3.11.2016			4.11.2016		

Trials proposed = 32      Trial not conducted (1) = Nippani  
Trials not reported (9) = Karnal (RMT), Faizabad (RMT), Varanasi (RMT), Bailhongal (RMT),  
Vijapur (LSM), Akola (LSM), Pune (LSM), Dharwad (LSM),  
Kharibari (DNR)

**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NWPZ						NEPZ								
			Rajasthan			Uttarakhand			Uttar Pradesh			West Bengal					
			Diggi			Pantnagar			Kanpur			Kalyani			Coochbehar		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JWS151	N-702	46.9	20	0	31.2	36	0	27.9	34	0	30.9	32	0	27.9	21	0
2	NIAW3170	N-703	51.5	16	0	47.0	23	0	44.5	10	1	32.1	25	0	20.6	34	0
3	DBW252	N-704	69.5	1	1	55.2	12	0	42.2	17	1	34.8	12	0	45.1	5	1
4	UP2989	N-705	53.9	9	0	32.2	35	0	41.7	19	1	31.7	30	0	50.1	1	1
5	BRW3798	N-706	45.0	22	0	36.4	34	0	36.5	26	0	32.5	22	0	23.6	27	0
6	WH1236	N-707	35.5	32	0	45.0	27	0	40.4	21	0	21.9	36	0	22.3	30	0
7	DBW245	N-708	41.9	25	0	45.2	26	0	38.0	22	0	31.8	28	0	25.3	25	0
8	NIAW3217	N-709	31.0	36	0	40.7	30	0	37.2	24	0	34.9	11	0	19.2	36	0
9	HI1628	N-710	49.6	18	0	52.9	15	0	45.1	7	1	42.7	2	1	29.2	17	0
10	CG1027	N-712	32.3	34	0	62.6	3	1	42.2	17	1	31.0	31	0	26.8	23	0
11	MP1334	N-713	66.6	3	1	57.8	7	0	44.3	11	1	32.1	25	0	48.1	2	1
12	MP3475	N-715	52.7	12	0	38.0	33	0	37.2	24	0	33.1	18	0	30.6	15	0
13	MP1331	N-716	39.7	29	0	50.7	19	0	46.4	4	1	34.4	14	0	39.7	8	0
14	K1616	N-717	42.2	23	0	54.4	14	0	26.8	36	0	29.7	35	0	28.1	19	0
15	DBW244	N-718	36.8	31	0	39.0	32	0	34.1	31	0	31.9	27	0	27.9	20	0
16	PBW775	N-719	31.6	35	0	50.7	20	0	37.5	23	0	30.7	33	0	22.9	29	0
17	HD3273	N-720	53.5	10	0	60.0	5	0	47.9	1	1	36.7	7	0	33.5	12	0
18	UP2988	N-721	46.0	21	0	57.5	8	0	34.4	30	0	39.3	4	0	28.9	18	0
19	HD3274	N-722	53.3	11	0	56.4	10	0	43.8	15	1	37.0	6	0	20.8	33	0
20	MACS6696	N-723	52.2	15	0	51.3	17	0	44.3	11	1	36.7	7	0	39.5	9	0
21	MP1332	N-724	40.2	27	0	43.5	28	0	41.1	20	0	33.0	20	0	25.8	24	0
22	K1615	N-725	42.1	24	0	42.8	29	0	30.5	33	0	32.3	23	0	33.4	13	0
23	HD3275	N-726	52.5	13	0	46.5	24	0	45.8	5	1	33.0	20	0	20.5	35	0
24	HP1967	N-727	56.6	7	0	51.1	18	0	36.2	27	0	45.3	1	1	27.1	22	0
25	MP1333	N-728	64.8	4	0	56.0	11	0	32.3	32	0	36.5	9	0	40.0	7	0
26	MACS6695	N-730	47.8	19	0	39.8	31	0	44.3	11	1	33.9	16	0	34.9	11	0
27	BRW3806	N-731	39.9	28	0	65.9	2	1	43.2	16	1	40.5	3	0	23.1	28	0
28	NW7008	N-732	56.9	6	0	48.6	21	0	46.6	3	1	34.5	13	0	47.1	3	1
29	UAS395	N-733	35.0	33	0	70.3	1	1	47.1	2	1	33.1	18	0	25.0	26	0
30	UAS394	N-734	55.3	8	0	57.0	9	0	45.3	6	1	33.9	16	0	46.1	4	1
31	PBW776	N-735	50.0	17	0	61.1	4	0	45.1	7	1	36.1	10	0	21.9	32	0
32	WH1235	N-736	39.1	30	0	58.5	6	0	36.2	27	0	31.8	28	0	38.9	10	0
33	WH1142(C)	N-701	40.6	26	0	54.4	13	0	44.3	11	1	32.3	23	0	41.3	6	1
34	DBW93(C)	N-711	67.1	2	1	45.7	25	0	35.4	29	0	34.4	14	0	29.7	16	0
35	DBW110(C)	N-714	57.1	5	0	51.6	16	0	45.1	7	1	38.6	5	0	22.0	31	0
36	HD2888(C)	N-729	52.5	14	0	48.4	22	0	27.3	35	0	30.5	34	0	32.2	14	0
Mean			48.0			50.1			39.9			34.0			31.1		
S.E.m			1.895			3.252			2.763			1.120			3.777		
C.D. (10%)			4.6			7.9			6.6			2.7			9.1		
C.V.			5.6			9.2			9.8			4.7			17.2		
D.O.S. (dd.mm.yyyy)			5.11.2016			26.10.2016			26.10.2016			9.11.2016			5.11.2016		



**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	NEPZ									CZ					
			Bihar						Jharkhand			Rajasthan					
			Sabour			Pusa			Ranchi			Kota			Udaipur		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JWS151	N-702	20.8	35	0	46.0	9	1	32.1	8	1	40.5	21	0	46.3	20	0
2	NIAW3170	N-703	30.4	13	0	41.4	29	0	29.9	15	1	51.1	3	1	42.0	25	0
3	DBW252	N-704	41.6	1	1	45.8	10	1	19.0	35	0	49.2	7	1	49.0	16	0
4	UP2989	N-705	23.1	33	0	47.7	2	1	31.3	12	1	36.1	26	0	29.5	36	0
5	BRW3798	N-706	19.3	36	0	38.9	35	0	18.0	36	0	31.5	36	0	49.8	15	0
6	WH1236	N-707	27.5	21	0	47.0	5	1	21.8	32	0	34.4	30	0	54.6	7	1
7	DBW245	N-708	28.8	17	0	43.7	21	0	22.2	29	0	36.4	25	0	52.8	10	1
8	NIAW3217	N-709	31.1	11	0	45.3	16	1	26.6	23	0	45.3	11	1	53.2	9	1
9	HI1628	N-710	27.2	23	0	46.7	6	1	26.9	22	0	36.7	24	0	42.9	22	0
10	CG1027	N-712	28.2	19	0	47.6	3	1	29.1	19	1	44.5	13	0	36.5	30	0
11	MP1334	N-713	29.7	15	0	45.6	14	1	36.8	1	1	44.3	14	0	46.6	19	0
12	MP3475	N-715	26.1	28	0	44.9	18	1	32.3	7	1	41.8	17	0	59.1	2	1
13	MP1331	N-716	27.5	20	0	45.3	15	1	29.6	16	1	35.0	28	0	60.0	1	1
14	K1616	N-717	32.5	7	0	39.0	34	0	23.1	26	0	34.4	29	0	57.4	5	1
15	DBW244	N-718	23.1	34	0	45.0	17	1	20.8	34	0	32.3	35	0	58.9	3	1
16	PBW775	N-719	24.2	32	0	45.8	11	1	22.3	28	0	33.9	32	0	31.5	35	0
17	HD3273	N-720	31.5	9	0	41.3	30	0	35.3	3	1	50.7	4	1	44.6	21	0
18	UP2988	N-721	34.0	4	0	42.0	27	0	24.3	25	0	41.4	18	0	37.4	29	0
19	HD3274	N-722	30.6	12	0	39.7	33	0	21.8	31	0	49.2	6	1	51.6	12	1
20	MACS6696	N-723	28.5	18	0	42.0	28	0	31.8	10	1	35.4	27	0	34.2	32	0
21	MP1332	N-724	26.2	25	0	44.4	19	0	29.1	18	1	44.6	12	0	50.5	14	0
22	K1615	N-725	24.9	31	0	41.2	31	0	22.9	27	0	41.0	19	0	41.8	26	0
23	HD3275	N-726	33.5	5	0	43.6	22	0	21.9	30	0	33.6	33	0	48.4	17	0
24	HP1967	N-727	26.5	24	0	45.7	12	1	21.2	33	0	51.3	2	1	54.2	8	1
25	MP1333	N-728	27.3	22	0	42.7	24	0	28.3	21	0	52.0	1	1	35.3	31	0
26	MACS6695	N-730	25.3	30	0	37.3	36	0	31.5	11	1	33.9	31	0	42.3	24	0
27	BRW3806	N-731	40.5	2	1	42.7	25	0	33.1	6	1	46.9	9	1	32.0	34	0
28	NW7008	N-732	26.1	27	0	47.7	1	1	33.2	5	1	33.2	34	0	57.4	4	1
29	UAS395	N-733	29.9	14	0	46.1	8	1	29.1	17	1	41.9	16	0	47.4	18	0
30	UAS394	N-734	32.5	8	0	43.1	23	0	32.1	9	1	40.1	22	0	51.6	13	1
31	PBW776	N-735	26.2	26	0	46.2	7	1	30.9	13	1	45.5	10	1	42.4	23	0
32	WH1235	N-736	33.5	6	0	42.7	26	0	36.1	2	1	40.7	20	0	39.7	28	0
33	WH1142(C)	N-701	25.6	29	0	40.8	32	0	34.2	4	1	50.3	5	1	40.1	27	0
34	DBW93(C)	N-711	31.3	10	0	45.7	13	1	28.5	20	0	37.5	23	0	54.6	6	1
35	DBW110(C)	N-714	29.0	16	0	47.5	4	1	30.1	14	1	47.3	8	1	52.5	11	1
36	HD2888(C)	N-729	36.6	3	1	43.8	20	0	26.3	24	0	43.1	15	0	33.2	33	0
Mean			28.9			43.9			27.9			41.3			46.1		
S.E.m			2.186			1.236			3.238			3.015			3.837		
C.D. (10%)			5.2			3.0			7.8			7.3			9.2		
C.V.			10.7			4.0			16.4			10.3			11.8		
D.O.S. (dd.mm.yyyy)			5.11.2016			5.11.2016			29.10.2016			10.11.2016			6.11.2016		

**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	CZ									PZ								
			MP						Chhattisgarh			Gujarat			Maharashtra					
			Indore			Jabalpur			Sagar			Bilaspur			Junagadh			Niphad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JWS151	N-702	34.1	25	0	38.5	13	0	43.8	4	1	29.0	35	0	23.7	27	0	28.8	30	0
2	NIAW3170	N-703	42.6	1	1	38.4	14	0	42.9	5	1	40.2	3	1	30.2	2	1	44.3	1	1
3	DBW252	N-704	37.6	11	0	40.8	9	0	35.0	25	0	33.7	15	0	28.0	7	1	31.9	22	0
4	UP2989	N-705	30.7	33	0	37.1	17	0	25.3	35	0	38.8	5	0	21.5	35	0	33.3	17	0
5	BRW3798	N-706	31.4	31	0	36.4	22	0	22.3	36	0	30.2	29	0	24.5	23	0	31.2	25	0
6	WH1236	N-707	37.2	12	0	35.3	25	0	39.1	12	0	30.3	28	0	27.0	12	0	36.2	12	0
7	DBW245	N-708	33.3	27	0	43.9	6	0	36.8	21	0	31.2	26	0	23.8	26	0	30.8	26	0
8	NIAW3217	N-709	34.1	26	0	29.9	32	0	36.3	23	0	31.2	25	0	20.4	36	0	37.5	8	0
9	HI1628	N-710	42.3	2	1	36.7	20	0	40.7	8	0	39.8	4	1	29.8	3	1	36.4	11	0
10	CG1027	N-712	37.7	10	0	37.1	18	0	40.3	9	0	43.0	1	1	25.7	18	0	37.0	10	0
11	MP1334	N-713	38.2	7	0	50.4	2	1	38.3	15	0	30.1	31	0	22.6	31	0	32.5	20	0
12	MP3475	N-715	35.4	22	0	45.5	5	0	38.9	13	0	32.6	21	0	22.5	32	0	39.2	4	1
13	MP1331	N-716	39.1	5	1	42.1	8	0	44.7	2	1	37.7	7	0	30.4	1	1	32.9	18	0
14	K1616	N-717	27.2	36	0	35.7	24	0	28.3	34	0	29.8	32	0	22.4	33	0	29.5	29	0
15	DBW244	N-718	30.7	32	0	37.3	16	0	36.5	22	0	33.8	14	0	25.2	21	0	32.1	21	0
16	PBW775	N-719	37.2	12	0	39.7	10	0	39.3	11	0	34.7	13	0	23.5	29	0	33.5	16	0
17	HD3273	N-720	35.9	19	0	26.1	36	0	45.2	1	1	32.9	19	0	27.5	9	1	38.9	5	1
18	UP2988	N-721	34.2	23	0	35.7	23	0	31.2	32	0	33.1	18	0	22.7	30	0	37.9	7	0
19	HD3274	N-722	35.6	20	0	39.4	11	0	31.3	31	0	31.1	27	0	26.3	14	0	25.7	35	0
20	MACS6696	N-723	38.8	6	1	31.5	30	0	44.4	3	1	37.5	8	0	26.5	13	0	40.5	3	1
21	MP1332	N-724	36.1	16	0	49.8	3	1	36.8	20	0	31.4	24	0	28.5	5	1	28.3	31	0
22	K1615	N-725	38.0	8	0	33.2	28	0	36.2	24	0	32.8	20	0	27.0	11	0	30.2	28	0
23	HD3275	N-726	32.0	30	0	28.6	35	0	37.0	19	0	33.6	16	0	23.9	25	0	31.8	23	0
24	HP1967	N-727	33.2	28	0	31.3	31	0	29.2	33	0	29.7	33	0	24.6	22	0	27.6	32	0
25	MP1333	N-728	35.5	21	0	47.6	4	1	37.2	17	0	35.6	11	0	26.1	16	0	26.0	34	0
26	MACS6695	N-730	40.5	4	1	32.2	29	0	42.5	6	0	30.2	30	0	25.4	19	0	41.6	2	1
27	BRW3806	N-731	41.7	3	1	36.6	21	0	40.1	10	0	40.4	2	1	27.4	10	1	35.2	14	0
28	NW7008	N-732	36.0	17	0	51.6	1	1	34.8	26	0	36.0	10	0	27.5	8	1	35.9	13	0
29	UAS395	N-733	32.5	29	0	37.1	19	0	37.1	18	0	29.2	34	0	21.9	34	0	38.5	6	1
30	UAS394	N-734	37.0	14	0	43.4	7	0	38.3	16	0	33.2	17	0	25.8	17	0	25.6	36	0
31	PBW776	N-735	30.5	34	0	33.4	27	0	38.9	13	0	27.2	36	0	23.7	28	0	27.3	33	0
32	WH1235	N-736	35.9	18	0	29.3	33	0	34.0	28	0	37.9	6	0	28.4	6	1	31.4	24	0
33	WH1142(C)	N-701	34.1	24	0	28.6	34	0	41.6	7	0	36.6	9	0	24.0	24	0	30.5	27	0
34	DBW93(C)	N-711	36.5	15	0	33.4	26	0	31.8	30	0	31.5	23	0	26.2	15	0	34.0	15	0
35	DBW110(C)	N-714	37.8	9	0	37.5	15	0	34.3	27	0	35.3	12	0	28.5	4	1	37.3	9	0
36	HD2888(C)	N-729	29.7	35	0	38.8	12	0	33.0	29	0	32.2	22	0	25.2	20	0	32.5	19	0
Mean			35.6			37.5			36.8			33.7			25.5			33.4		
S.E.m			1.665			2.040			1.031			1.563			1.391			2.397		
C.D. (10%)			4.0			4.9			2.5			3.8			3.4			5.8		
C.V.			6.6			7.7			4.0			6.6			7.7			10.1		
D.O.S. (dd.mm.yyyy)			27.10.2016			8.11.2016			6.11.2016			4.11.2016			10.11.2016			5.11.2016		

**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	NWPZ			NEPZ			CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JWS151	N-702	39.0	35	0	31.0	30	0	36.6	18	0	28.8	30	0	35.6	34	0
2	NIAW3170	N-703	54.7	4	1	33.1	24	0	41.0	2	1	44.3	1	1	44.0	4	1
3	DBW252	N-704	55.1	2	1	38.1	4	1	39.1	6	0	31.9	22	0	44.3	3	1
4	UP2989	N-705	43.3	31	0	37.6	6	1	31.3	36	0	33.3	17	0	37.5	30	0
5	BRW3798	N-706	38.6	36	0	28.1	36	0	32.3	35	0	31.2	25	0	33.4	36	0
6	WH1236	N-707	51.9	12	0	30.1	34	0	36.8	17	0	36.2	12	0	40.5	21	0
7	DBW245	N-708	50.4	20	0	31.6	29	0	36.9	16	0	30.8	26	0	40.1	24	0
8	NIAW3217	N-709	45.8	28	0	32.4	27	0	35.8	23	0	37.5	8	0	38.6	28	0
9	HI1628	N-710	55.0	3	1	36.3	12	0	38.4	11	0	36.4	11	0	43.8	5	1
10	CG1027	N-712	51.9	13	0	34.2	19	0	37.8	13	0	37.0	10	0	41.9	12	0
11	MP1334	N-713	50.5	18	0	39.4	1	1	38.6	8	0	32.5	20	0	42.9	7	0
12	MP3475	N-715	46.4	26	0	34.0	20	0	39.4	5	1	39.2	4	1	40.5	20	0
13	MP1331	N-716	48.4	24	0	37.1	8	1	41.3	1	1	32.9	18	0	42.4	9	0
14	K1616	N-717	41.3	34	0	29.9	35	0	33.6	34	0	29.5	29	0	35.2	35	0
15	DBW244	N-718	45.9	27	0	30.5	33	0	36.4	20	0	32.1	21	0	38.0	29	0
16	PBW775	N-719	45.1	29	0	30.6	32	0	34.3	30	0	33.5	16	0	37.2	31	0
17	HD3273	N-720	48.7	22	0	37.7	5	1	37.6	15	0	38.9	5	1	41.7	14	0
18	UP2988	N-721	47.4	25	0	33.8	21	0	33.7	32	0	37.9	7	0	38.9	26	0
19	HD3274	N-722	52.9	9	0	32.3	28	0	37.8	14	0	25.7	35	0	41.2	17	0
20	MACS6696	N-723	49.0	21	0	37.1	9	1	35.5	25	0	40.5	3	1	41.1	18	0
21	MP1332	N-724	52.4	11	0	33.3	23	0	39.7	3	1	28.3	31	0	42.0	11	0
22	K1615	N-725	41.9	32	0	30.9	31	0	35.7	24	0	30.2	28	0	36.4	32	0
23	HD3275	N-726	51.2	17	0	33.0	25	0	33.9	31	0	31.8	23	0	39.8	25	0
24	HP1967	N-727	50.5	19	0	33.7	22	0	36.2	21	0	27.6	32	0	40.3	22	0
25	MP1333	N-728	51.9	14	0	34.5	15	0	38.5	9	0	26.0	34	0	41.7	15	0
26	MACS6695	N-730	44.8	30	0	34.5	16	0	35.3	27	0	41.6	2	1	38.8	27	0
27	BRW3806	N-731	56.5	1	1	37.2	7	1	37.9	12	0	35.2	14	0	44.3	2	1
28	NW7008	N-732	53.6	5	0	39.2	2	1	39.5	4	1	35.9	13	0	44.4	1	1
29	UAS395	N-733	48.7	23	0	35.0	14	0	35.3	26	0	38.5	6	1	40.2	23	0
30	UAS394	N-734	52.6	10	0	38.8	3	1	38.5	10	0	25.6	36	0	43.1	6	1
31	PBW776	N-735	53.4	7	0	34.4	17	0	34.5	29	0	27.3	33	0	41.0	19	0
32	WH1235	N-736	53.6	6	0	36.5	10	0	35.1	28	0	31.4	24	0	42.0	10	0
33	WH1142(C)	N-701	51.6	15	0	36.4	11	0	36.5	19	0	30.5	27	0	41.7	13	0
34	DBW93(C)	N-711	53.1	8	0	34.2	18	0	35.9	22	0	34.0	15	0	41.6	16	0
35	DBW110(C)	N-714	51.4	16	0	35.4	13	0	39.0	7	0	37.3	9	0	42.4	8	0
36	HD2888(C)	N-729	41.8	33	0	32.8	26	0	33.6	33	0	32.5	19	0	36.3	33	0
<b>Mean</b>			49.2			34.3			36.6			33.4			40.4		
<b>C.D. (10%)</b>			2.7			2.5			2.0			5.8			1.4		

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17

SN	Variety	Code	Rust Reactions			Agronomic Characteristics							Grain Characteristics			
			Br	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	JWS151	N-702	0	60S	19.0	82-113	97	135-166	151	97-122	107	Ey	A	H	28-40	34
2.	NIAW3170	N-703	0	60S	17.5	74-98	91	139-167	151	94-117	106	Ey	A	H	39-49	44
3.	DBW252	N-704	0	10S	5.1	80-102	92	135-165	150	81-118	105	Ey	A	H	32-49	42
4.	UP2989	N-705	tS	20S	10.8	65-100	83	140-165	151	92-119	109	Ey	A	H	38-44	40
5.	BRW3798	N-706	30S	80S	57.5	66-100	83	135-165	148	75-127	110	Ey	A	H	37-47	42
6.	WH1236	N-707	5S	tR	0.1	76-102	89	135-161	148	79-109	96	Ey	A	SH	36-48	43
7.	DBW245	N-708	20S	10S	2.5	68-110	87	136-165	149	76-100	91	Ey	A	SH	33-48	41
8.	NIAW3217	N-709	0	60S	22.5	71-102	85	140-162	148	88-114	102	Ey	A	H	40-50	46
9.	HI1628	N-710	0	40S	10.0	68-104	88	135-165	150	95-121	110	Ey	A	H	39-48	44
10.	CG1027	N-712	10S	60S	27.5	79-109	95	139-165	151	97-120	108	Ey	A	H	34-44	41
11.	MP1334	N-713	0	60S	31.5	89-111	99	138-168	152	81-110	99	Ey	A	H	29-40	36
12.	MP3475	N-715	5S	60S	19.6	66-102	86	140-167	149	81-105	96	Ey	A	SH	40-47	43
13.	MP1331	N-716	0	60S	17.6	82-102	94	138-165	152	95-113	103	Ey	A	H	34-46	41
14.	K1616	N-717	0	60S	31.5	83-111	99	137-164	152	106-150	127	Ey	A	SH	34-45	40
15.	DBW244	N-718	0	40S	13.8	69-98	86	135-165	148	76-106	91	Ey	A	H	32-45	40
16.	PBW775	N-719	5S	20S	8.8	72-98	88	137-168	152	90-105	96	Ey	A	H	36-43	40
17.	HD3273	N-720	10S	80S	60.0	80-105	96	138-168	154	79-111	99	Ey	A	SH	30-39	33
18.	UP2988	N-721	0	40S	23.8	83-111	99	140-166	153	105-142	123	Ey	A	H	36-45	42
19.	HD3274	N-722	0	60S	37.0	76-105	93	138-165	149	84-102	97	Ey	A	H	32-46	40
20.	MACS6696	N-723	10S	80S	33.0	70-100	87	136-160	148	83-98	93	Ey	A	H	36-42	39
21.	MP1332	N-724	0	10S	2.6	75-98	88	138-168	151	97-117	104	Ey	A	SH	36-47	42
22.	K1615	N-725	tS	10S	7.5	69-99	85	135-160	147	83-115	101	Ey	A	SH	40-52	46
23.	HD3275	N-726	10S	60S	27.5	75-100	90	137-165	151	82-105	95	Ey	A	SH	35-46	42
24.	HP1967	N-727	0	60S	27.5	73-102	90	140-165	151	86-108	99	Ey	A	H	39-44	42
25.	MP1333	N-728	0	5S	1.3	83-105	95	139-166	152	90-119	107	Ey	A	H	34-42	38
26.	MACS6695	N-730	10S	80S	42.5	77-98	88	135-164	150	84-105	96	Ey	A	SH	33-45	38
27.	BRW3806	N-731	0	40S	11.6	80-100	91	137-165	150	91-119	110	Ey	A	H	33-49	43
28.	NW7008	N-732	0	20S	16.5	77-100	91	139-163	150	88-117	104	Ey	A	SH	32-46	42
29.	UAS395	N-733	tMS	60S	40.5	89-113	100	135-167	153	84-111	102	Ey	A	H	32-41	35
30.	UAS394	N-734	10MS	60S	32.5	75-102	91	136-165	151	84-109	100	Ey	A	SH	36-46	41
31.	PBW776	N-735	tMR	tR	0.1	78-105	95	139-168	152	88-122	105	Ey	A	H	30-47	39
32.	WH1235	N-736	tMS	5S	1.3	75-100	90	139-166	151	97-120	107	Ey	A	H	40-43	41
33.	WH1142(C)	N-701	tR	40S	10.0	75-102	93	137-165	151	85-110	100	Ey	A	H	35-44	39
34.	DBW93(C)	N-711	10S	60S	30.0	79-98	89	138-163	150	72-99	86	Ey	A	H	33-41	39
35.	DBW110(C)	N-714	tS	60S	26.3	78-106	93	136-165	151	87-106	100	Ey	A	SH	33-46	42
36.	HD2888(C)	N-729	10S	40S	17.5	80-102	93	136-166	151	106-137	120	Ey	A	H	37-47	41

1. Ancillary data from Balachur, Digggi, Ludhiana, Hisar, Delhi, Gurdaspur, Jammu and Pantnagar centres.
2. Brown rust reported from Ludhiana and Pantnagar centres.
3. Yellow rust data from Ludhiana, Hisar, Gurdaspur and Jammu centres.

**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**North Western Plains Zone**  
**Individual Station Rust Data**

SN	Variety	Code	Brown Rust		Yellow Rust			
			Ludhiana	Pantnagar	Ludhiana	Hisar	Gurdaspur	Jammu
1.	JWS151	N-702	0	0	0	20MS	0	60S
2.	NIAW3170	N-703	0	0	0	0	10S	60S
3.	DBW252	N-704	0	0	0	10S	tR	10S
4.	UP2989	N-705	0	tS	5S	10MS	10S	20S
5.	BRW3798	N-706	0	30S	10S	60S	80S	80S
6.	WH1236	N-707	0	5S	0	0	tR	tR
7.	DBW245	N-708	0	20S	0	0	0	10S
8.	NIAW3217	N-709	0	0	10S	10S	10S	60S
9.	HI1628	N-710	0	0	0	0	0	40S
10.	CG1027	N-712	0	10S	5S	40S	5S	60S
11.	MP1334	N-713	0	0	10S	20MS	60S	40S
12.	MP3475	N-715	0	5S	10S	10MS	tR	60S
13.	MP1331	N-716	0	0	0	10S	tR	60S
14.	K1616	N-717	0	0	10S	20MS	40S	60S
15.	DBW244	N-718	0	0	5S	10MS	0	40S
16.	PBW775	N-719	0	5S	5S	10MS	tR	20S
17.	HD3273	N-720	10S	tS	40S	60S	60S	80S
18.	UP2988	N-721	0	0	5S	10S	40S	40S
19.	HD3274	N-722	0	0	20S	10MS	60S	60S
20.	MACS6696	N-723	0	10S	10S	40MS	10S	80S
21.	MP1332	N-724	0	0	0	0	tR	10S
22.	K1615	N-725	0	tS	10S	10S	10S	0
23.	HD3275	N-726	0	10S	10S	20S	20S	60S
24.	HP1967	N-727	0	0	20S	20S	10S	60S
25.	MP1333	N-728	0	0	0	0	0	5S
26.	MACS6695	N-730	0	10S	10S	60S	20S	80S
27.	BRW3806	N-731	0	0	tS	5S	tR	40S
28.	NW7008	N-732	0	0	20S	20MS	10S	20S
29.	UAS395	N-733	0	tMS	10S	40MS	60S	60S
30.	UAS394	N-734	0	10MS	20S	10S	40S	60S
31.	PBW776	N-735	0	tMR	0	0	0	tR
32.	WH1235	N-736	0	tMS	0	0	0	5S
33.	WH1142(C)	N-701	0	tR	0	0	0	40S
34.	DBW93(C)	N-711	10S	0	10S	40S	10S	60S
35.	DBW110(C)	N-714	0	tS	0	40S	5S	60S
36.	HD2888(C)	N-729	10S	0	40S	10S	10S	10S

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17

SN	Variety	Code	Disease Reaction	Agronomic Characteristics							Grain Characteristics			
			LB (HS, Avg.)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	JWS151	N-702	89 (57)	69-88	77	114-137	126	88-104	95	Ey	A	SH	37-45	41
2.	NIAW3170	N-703	45 (34)	63-79	73	112-135	126	86-98	92	Ey	A	SH	36-50	43
3.	DBW252	N-704	67 (46)	70-87	79	114-136	127	95-100	98	Ey	A	SH	39-52	46
4.	UP2989	N-705	68 (46)	60-75	67	113-128	123	91-103	98	Ey	A	SH	39-45	42
5.	BRW3798	N-706	67 (56)	52-64	60	113-127	123	75-103	90	Ey	A	SH	34-47	41
6.	WH1236	N-707	68 (47)	68-82	74	110-134	125	84-91	88	Ey	A	SH	38-55	46
7.	DBW245	N-708	68 (46)	61-90	71	114-138	125	73-91	83	Ey	A	SH	38-45	42
8.	NIAW3217	N-709	46 (35)	60-75	68	113-129	122	82-98	89	Ey	A	H	38-56	48
9.	HI1628	N-710	67 (35)	66-82	74	112-134	126	94-101	98	Ey	A	H	37-53	42
10.	CG1027	N-712	57 (35)	69-87	79	113-135	127	88-101	96	Ey	A	SH	40-47	44
11.	MP1334	N-713	56 (34)	79-98	86	112-143	128	87-95	91	Ey	A	H	39-42	40
12.	MP3475	N-715	57 (46)	50-88	66	112-134	124	83-92	88	Ey	A	SH	40-48	44
13.	MP1331	N-716	45 (34)	73-87	79	111-134	124	88-102	93	Ey	A	H	39-48	43
14.	K1616	N-717	35 (13)	75-89	81	112-130	132	117-136	129	Ey	A	H	41-46	42
15.	DBW244	N-718	57 (45)	54-78	68	112-130	122	78-87	83	Ey	A	SH	39-52	45
16.	PBW775	N-719	57 (46)	58-75	67	111-133	125	73-86	81	Ey	A	H	40-47	43
17.	HD3273	N-720	67 (35)	72-88	79	114-136	128	84-97	89	Ey	A	SH	38-55	44
18.	UP2988	N-721	35 (24)	66-92	81	112-139	130	97-130	118	Ey	A	H	39-49	43
19.	HD3274	N-722	46 (36)	68-85	77	110-136	126	81-91	85	Ey	A	SH	40-54	45
20.	MACS6696	N-723	68 (46)	56-76	69	116-132	126	78-94	84	Ey	A	SH	41-50	43
21.	MP1332	N-724	67 (57)	66-84	74	112-134	126	86-98	91	Ey	A	SH	41-50	45
22.	K1615	N-725	57 (46)	55-72	64	112-131	125	79-103	91	Ey	A	H	40-53	47
23.	HD3275	N-726	57 (35)	64-78	72	114-134	125	75-89	85	Ey	A	H	38-48	43
24.	HP1967	N-727	57 (46)	68-79	72	110-128	123	85-97	92	Ey	A	H	40-49	44
25.	MP1333	N-728	35 (24)	66-89	80	110-137	126	94-99	96	Ey	A	SH	37-51	44
26.	MACS6695	N-730	56 (45)	60-80	71	110-135	123	80-85	83	Ey	A	SH	39-53	45
27.	BRW3806	N-731	67 (35)	72-88	81	112-134	127	89-103	98	Ey	A	SH	39-53	47
28.	NW7008	N-732	67 (34)	68-87	78	114-134	125	90-98	95	Ey	A	SH	41-53	47
29.	UAS395	N-733	46 (25)	84-97	89	112-141	131	93-98	96	Ey	A	SH	37-44	40
30.	UAS394	N-734	78 (46)	64-87	73	112-132	124	91-99	95	Ey	A	SH	40-52	44
31.	PBW776	N-735	57 (46)	64-90	74	111-133	127	81-92	87	Ey	A	SH	39-46	42
32.	WH1235	N-736	57 (35)	65-86	76	112-136	126	90-101	94	Ey	A	H	39-54	44
33.	WH1142(C)	N-701	46 (46)	64-82	74	113-132	127	78-92	87	Ey	A	SH	38-46	41
34.	DBW93(C)	N-711	57 (46)	66-85	73	112-136	123	67-83	74	Ey	A	SH	37-50	42
35.	DBW110(C)	N-714	68 (35)	75-82	78	112-136	127	77-95	88	Ey	A	SH	37-52	45
36.	HD2888(C)	N-729	35 (24)	66-89	77	115-138	129	105-129	117	Ey	A	H	40-55	44

1. Ancillary data from Kalyani, Kanpur, Pusa, Coochbehar, Ranchi and Sabour centres.

2. Leaf Blight reported from Kalyani, Pusa, Ranchi and Sabour centres.

**NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**North Western Plains Zone**  
**Individual Station Leaf Blight Data**

<b>SN</b>	<b>Variety</b>	<b>Code</b>	<b>Kalyani</b>	<b>Pusa</b>	<b>Ranchi</b>	<b>Sabour</b>
1.	JWS151	N-702	57	89	35	46
2.	NIAW3170	N-703	45	45	13	34
3.	DBW252	N-704	57	67	24	35
4.	UP2989	N-705	35	57	13	68
5.	BRW3798	N-706	57	67	34	46
6.	WH1236	N-707	68	68	26	35
7.	DBW245	N-708	68	46	25	35
8.	NIAW3217	N-709	46	45	24	35
9.	HI1628	N-710	36	67	14	24
10.	CG1027	N-712	57	46	23	25
11.	MP1334	N-713	35	56	13	23
12.	MP3475	N-715	57	46	13	46
13.	MP1331	N-716	35	23	14	45
14.	K1616	N-717	35	13	13	2
15.	DBW244	N-718	57	23	35	46
16.	PBW775	N-719	47	57	35	35
17.	HD3273	N-720	46	67	24	2
18.	UP2988	N-721	35	13	24	2
19.	HD3274	N-722	46	46	25	35
20.	MACS6696	N-723	46	68	24	35
21.	MP1332	N-724	57	67	35	68
22.	K1615	N-725	57	45	25	46
23.	HD3275	N-726	57	45	24	25
24.	HP1967	N-727	46	57	35	34
25.	MP1333	N-728	35	23	13	23
26.	MACS6695	N-730	46	56	25	34
27.	BRW3806	N-731	57	67	13	2
28.	NW7008	N-732	46	67	0	23
29.	UAS395	N-733	35	46	25	2
30.	UAS394	N-734	57	78	25	23
31.	PBW776	N-735	57	56	25	46
32.	WH1235	N-736	57	45	24	23
33.	WH1142(C)	N-701	46	45	25	46
34.	DBW93(C)	N-711	46	45	24	57
35.	DBW110(C)	N-714	68	23	24	23
36.	HD2888(C)	N-729	35	12	24	24

## Summary of Disease Data and Agronomic Characteristics

Central Zone

Trial: NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17

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.	JWS151	N-702	56-87	72	111-136	122	79-107	93	Ey	A	SH	31-53	39
2.	NIAW3170	N-703	51-79	66	102-130	118	76-109	90	Ey	A	SH	36-60	45
3.	DBW252	N-704	57-82	71	107-133	120	82-99	88	Ey	A	H	35-50	42
4.	UP2989	N-705	47-77	62	105-132	118	78-120	95	Ey	A	SH	39-53	44
5.	BRW3798	N-706	46-73	59	102-127	116	76-115	95	Ey	A	SH	36-52	44
6.	WH1236	N-707	53-81	67	107-131	120	78-96	84	Ey	A	H	36-55	44
7.	DBW245	N-708	51-78	64	103-130	117	70-98	83	Ey	A	H	36-51	45
8.	NIAW3217	N-709	47-82	64	101-131	117	65-105	83	Ey	A	SH	40-53	46
9.	HI1628	N-710	51-79	66	102-130	118	82-100	92	Ey	A	SH	40-54	46
10.	CG1027	N-712	57-82	71	111-137	121	82-100	94	Ey	A	H	34-51	43
11.	MP1334	N-713	60-88	74	112-137	123	73-101	86	Ey	A	H	29-48	38
12.	MP3475	N-715	44-71	57	105-133	117	66-95	79	Ey	A	SH	38-53	45
13.	MP1331	N-716	57-81	69	117-133	122	66-96	82	Ey	A	H	34-50	42
14.	K1616	N-717	56-89	74	103-141	121	73-133	110	Ey	A	SH	38-48	42
15.	DBW244	N-718	48-78	65	107-130	120	68-100	87	Ey	A	H	36-52	43
16.	PBW775	N-719	49-79	64	111-132	122	63-92	78	Ey	A	H	33-51	42
17.	HD3273	N-720	58-84	70	114-134	123	72-100	85	Ey	A	H	29-48	37
18.	UP2988	N-721	65-89	77	114-139	124	88-138	112	Ey	A	SH	36-52	43
19.	HD3274	N-722	54-83	70	114-137	122	69-95	78	Ey	A	H	32-47	39
20.	MACS6696	N-723	49-74	62	105-128	118	70-98	83	Ey	A	H	36-49	43
21.	MP1332	N-724	52-81	65	104-132	118	81-107	92	Ey	A	H	39-55	46
22.	K1615	N-725	47-71	59	103-128	116	66-104	84	Ey	A	SH	38-57	48
23.	HD3275	N-726	51-79	66	105-134	120	72-100	85	Ey	A	H	37-52	44
24.	HP1967	N-727	52-79	65	106-129	119	75-100	86	Ey	A	SH	40-54	45
25.	MP1333	N-728	58-83	72	111-134	121	82-110	94	Ey	A	SH	29-46	37
26.	MACS6695	N-730	50-78	63	103-130	118	71-95	81	Ey	A	H	39-49	44
27.	BRW3806	N-731	53-81	67	109-131	120	78-100	93	Ey	A	SH	40-56	46
28.	NW7008	N-732	54-79	67	109-129	118	77-104	92	Ey	A	SH	40-51	46
29.	UAS395	N-733	66-87	76	116-134	123	73-101	85	Ey	A	SH	26-45	36
30.	UAS394	N-734	55-82	68	108-135	119	66-100	86	Ey	A	H	34-47	40
31.	PBW776	N-735	52-82	69	112-136	122	74-100	84	Ey	A	H	29-52	39
32.	WH1235	N-736	53-81	66	107-132	120	84-100	92	Ey	A	SH	35-53	41
33.	WH1142(C)	N-701	54-83	68	110-131	121	73-99	84	Ey	A	H	32-45	38
34.	DBW93(C)	N-711	56-82	68	104-127	118	63-76	70	Ey	A	SH	33-47	38
35.	DBW110(C)	N-714	55-82	67	101-128	117	74-95	84	Ey	A	SH	34-51	43
36.	HD2888(C)	N-729	57-83	71	109-135	122	94-140	115	Ey	A	SH	36-51	42

1. Ancillary data from Bilaspur, Indore, Junagadh, Kota, Udaipur, Vijapur, Jabalpur and Sagar centres.

2. No disease data reported by any centre.



## Summary of Disease Data and Agronomic Characteristics

Peninsular Zone

Trial: NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17

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.	JWS151	N-702	61-77	67	100-120	112	67-73	70	Ey	A	SH	28-35	31
2.	NIAW3170	N-703	58-71	64	97-116	108	71-94	80	Ey	A	H	33-37	36
3.	DBW252	N-704	62-75	67	101-115	108	70-77	72	Ey	A	SH	30-37	33
4.	UP2989	N-705	52-64	58	97-113	105	72-84	77	Ey	A	H	36-39	37
5.	BRW3798	N-706	51-64	57	98-115	108	82-84	83	Ey	A	H	36-41	40
6.	WH1236	N-707	62-67	65	102-114	107	68-81	76	Ey	A	SH	33-36	35
7.	DBW245	N-708	58-68	62	97-116	107	63-81	72	Ey	A	SH	35-41	38
8.	NIAW3217	N-709	53-67	59	96-112	106	71-76	74	Ey	A	SH	39-41	40
9.	HI1628	N-710	57-67	62	99-115	108	67-83	74	Ey	A	SH	34-38	37
10.	CG1027	N-712	60-76	67	102-119	110	74-80	77	Ey	A	SH	31-41	35
11.	MP1334	N-713	63-82	73	103-120	112	70-79	74	Ey	A	SH	30-33	31
12.	MP3475	N-715	51-63	57	96-111	104	68-84	74	Ey	A	H	38-42	40
13.	MP1331	N-716	62-76	67	100-113	106	71-76	73	Ey	A	H	30-37	34
14.	K1616	N-717	65-81	71	102-119	111	70-98	83	Ey	A	SH	33-44	38
15.	DBW244	N-718	56-68	61	98-113	107	68-77	71	Ey	A	H	36-39	37
16.	PBW775	N-719	56-68	61	104-123	114	79-83	81	M	A	SH	36-37	36
17.	HD3273	N-720	61-76	68	101-121	112	61-81	72	Ey	A	H	30-39	35
18.	UP2988	N-721	62-82	72	106-126	115	72-89	79	Ey	A	SH	36-41	38
19.	HD3274	N-722	56-76	65	99-123	112	69-81	73	Ey	A	H	30-35	33
20.	MACS6696	N-723	56-65	60	97-115	107	72-86	78	Ey	A	SH	35-38	36
21.	MP1332	N-724	57-67	61	98-113	108	71-84	78	Ey	A	SH	35-49	39
22.	K1615	N-725	51-63	57	101-114	109	67-104	81	Ey	A	SH	39-43	40
23.	HD3275	N-726	56-67	61	102-116	110	58-72	70	Ey	A	SH	37-38	38
24.	HP1967	N-727	53-88	69	99-116	109	73-82	78	M	A	SH	34-38	36
25.	MP1333	N-728	64-82	71	106-126	114	74-82	78	Ey	A	SH	29-32	30
26.	MACS6695	N-730	56-67	61	98-120	109	70-80	73	Ey	A	SH	35-37	36
27.	BRW3806	N-731	58-69	64	104-118	111	76-86	82	Ey	A	SH	31-40	35
28.	NW7008	N-732	60-69	63	104-111	109	65-83	74	Ey	A	SH	39-44	41
29.	UAS395	N-733	64-83	77	106-125	115	68-85	76	Ey	A	SH	29-31	30
30.	UAS394	N-734	63-76	69	103-121	112	70-87	79	Ey	A	H	27-35	31
31.	PBW776	N-735	59-75	65	102-116	108	63-83	74	Ey	A	SH	22-35	29
32.	WH1235	N-736	58-74	64	100-116	108	68-86	79	Ey	A	SH	31-37	33
33.	WH1142(C)	N-701	59-72	64	99-115	107	70-91	77	Ey	A	SH	26-31	29
34.	DBW93(C)	N-711	59-76	65	100-115	107	58-62	59	Ey	A	SH	29-31	30
35.	DBW110(C)	N-714	57-74	63	101-115	108	71-75	73	Ey	A	SH	31-40	36
36.	HD2888(C)	N-729	63-80	69	103-117	110	74-87	82	Ey	A	H	34-37	35

1. Ancillary data from Dharwad, Pune, Niphad and Akola.
2. No disease data reported by any centre.

## NIVT-5B-RI-TS-TDM, 2016-17

The trial consisting of 23 test entries and two checks (AKDW2997-16 and HI8627) was conducted at 13 locations of CZ and PZ. Data from Bailhongal centre was not reported due to rejection by monitoring team, while Dhandhuka, Arnej, Tanchha, Akola, Pune and Dharwad were not included due to low site mean.

### Central Zone

- The highest mean site yield was reported from Kota (46.5q/ha), while Indore (32.2q/ha) reported the lowest site yield.
- UAS466 (46.3q/ha) and AKDW4896 (46.0q/ha) significantly out-yielded the best check variety HI8627 (43.4q/ha) at the zonal level.
- Ancillary data revealed that, AKDW4896 was earliest in heading (57days) and maturity (112 days) as compared to other test entries and check varieties.
- AKDW4896 along with two other test entries MPO1336 and MACS4062 had the highest 1000-grains weight (56g) as compared to other entries in the trial.

### Peninsular Zone

- The mean site yield ranged from 30.8q/ha (Niphad) to 30.1q/ha (Bagalkot).
- GW1346 (35.6q/ha) was the highest yielding genotype followed by HI8805 (35.0q/ha), GW1344 (34.0q/ha), MACS4058 (33.4q/ha), HI8802 (33.4q/ha), MACS4059 (33.0q/ha), MPO1336 (32.9q/ha) including check variety HI8627 (34.3q/ha) significantly out-yielded the best zonal check AKDW2997-16 (27.8q/ha).
- Rusts were not observed at any centre in the zone.
- The ancillary data showed MACS4059 and AKDW4896 were earliest in heading (55 days) and maturity (109 days). Highest mean 1000-grains weight was observed in MACS4062 (50g) followed by MPO1336 and MACS4063 (48g).

1699-NIVT-5B-RI-TS-TDM, 2016-17

Locationwise Mean Yield (q/ha)

SN	Variety	Code	CZ								PZ									
			Rajasthan			MP					Maharashtra		Karnataka							
			Kota			Indore		Sagar		Jabalpur		Niphad		Bagalkot						
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G			
1	MACS4058	N-801	39.7	22	0	34.5	8	0	48.0	8	0	44.3	4	0	32.6	10	1	34.3	8	1
2	MPO1336	N-802	40.3	21	0	23.8	25	0	38.7	19	0	20.4	24	0	30.5	17	1	35.3	5	1
3	HI8804	N-803	52.1	3	1	36.6	4	1	45.2	10	0	29.6	14	0	33.8	7	1	29.8	14	0
4	GW1343	N-804	49.3	11	1	25.9	24	0	32.9	24	0	27.9	15	0	27.2	21	0	27.9	15	0
5	UAS466	N-805	49.6	10	1	38.5	1	1	57.5	1	1	39.4	8	0	31.4	12	1	24.7	19	0
6	NIDW1099	N-806	52.5	2	1	34.7	7	0	53.9	2	0	38.1	10	0	29.7	19	0	35.7	4	1
7	DDW45	N-807	45.4	17	0	34.0	10	0	49.7	5	0	15.5	25	0	32.9	9	1	22.4	22	0
8	MPO1335	N-808	45.5	16	0	31.2	19	0	44.6	11	0	38.9	9	0	25.6	22	0	23.6	21	0
9	HI8805	N-809	42.5	20	0	34.5	9	0	49.4	6	0	25.9	19	0	35.4	2	1	34.6	7	1
10	MACS4059	N-810	46.8	14	1	26.5	22	0	33.0	23	0	26.4	18	0	34.2	6	1	31.8	12	0
11	UAS467	N-811	50.1	8	1	27.0	20	0	42.5	13	0	27.5	16	0	25.1	23	0	33.9	9	1
12	GW1346	N-812	50.2	7	1	37.0	3	1	46.9	9	0	44.2	5	0	30.9	14	1	40.4	2	1
13	MACS4063	N-813	52.6	1	1	32.5	13	0	39.6	18	0	20.5	23	0	30.5	16	1	31.0	13	0
14	NIDW1113	N-814	39.2	23	0	26.8	21	0	40.1	16	0	24.9	21	0	27.4	20	0	35.3	5	1
15	GW1347	N-815	36.9	24	0	32.4	14	0	44.0	12	0	32.9	12	0	19.7	25	0	41.8	1	1
16	DDW46	N-817	47.0	13	1	26.5	23	0	39.7	17	0	20.8	22	0	24.5	24	0	24.4	20	0
17	HI8806	N-818	43.9	19	0	37.9	2	1	42.0	14	0	32.0	13	0	33.0	8	1	27.9	15	0
18	HI8803	N-819	44.3	18	0	31.8	16	0	38.5	20	0	34.0	11	0	36.4	1	1	26.6	17	0
19	HI8802	N-821	51.8	4	1	34.8	6	0	50.5	4	0	27.0	17	0	34.4	5	1	32.4	11	0
20	MACS4062	N-822	49.1	12	1	33.2	11	0	29.4	25	0	44.9	3	0	31.0	13	1	22.1	24	0
21	DDW47	N-823	50.8	5	1	31.5	18	0	48.7	7	0	45.6	2	0	30.9	15	1	22.4	22	0
22	AKDW4896	N-824	35.7	25	0	31.8	17	0	41.7	15	0	75.0	1	1	35.2	3	1	18.8	25	0
23	GW1344	N-825	45.7	15	0	32.6	12	0	37.7	21	0	24.9	20	0	34.4	4	1	33.6	10	1
24	AKDW2997-16(C)	N-816	50.6	6	1	36.4	5	1	37.4	22	0	43.3	6	0	29.9	18	0	25.6	18	0
25	HI8627(C)	N-820	49.9	9	1	32.0	15	0	52.0	3	0	39.7	7	0	32.1	11	1	36.5	3	1
Mean			46.5			32.2			43.3			33.7			30.8			30.1		
S.E.m			2.612			1.420			1.279			1.156			2.506			3.419		
C.D. (10%)			6.4			3.5			3.2			2.9			6.2			8.3		
C.V.			8.0			6.2			4.2			4.8			11.5			16.1		
D.O.S. (dd.mm.yyyy)			10.11.2016			27.10.2016			7.11.2016			8.11.2016			5.11.2016			7.11.2016		

Trials proposed & Conducted = 13

Trials not reported (7) = Bailhongal (RMT), Dhandhuka (LSM), Arnej (LSM), Tanchha (LSM), Akola (LSM), Pune (LSM), Dharwad (LSM)

**NIVT-5B-RI-TS-TDM, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	Code	CZ			PZ			NATIONAL		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	MACS4058	N-801	41.6	8	0	33.4	5	1	38.9	6	0
2	MPO1336	N-802	30.8	25	0	32.9	8	1	31.5	24	0
3	HI8804	N-803	40.9	10	0	31.8	10	1	37.8	9	0
4	GW1343	N-804	34.0	21	0	27.6	20	0	31.9	23	0
5	UAS466	N-805	46.3	1	1	28.1	17	0	40.2	4	1
6	NIDW1099	N-806	44.8	3	1	32.7	9	1	40.8	2	1
7	DDW45	N-807	36.2	19	0	27.6	19	0	33.3	20	0
8	MPO1335	N-808	40.0	11	0	24.6	24	0	34.9	15	0
9	HI8805	N-809	38.1	14	0	35.0	2	1	37.0	11	0
10	MACS4059	N-810	33.2	23	0	33.0	7	1	33.1	21	0
11	UAS467	N-811	36.8	16	0	29.5	16	0	34.4	19	0
12	GW1346	N-812	44.6	4	1	35.6	1	1	41.6	1	1
13	MACS4063	N-813	36.3	18	0	30.8	13	1	34.5	18	0
14	NIDW1113	N-814	32.7	24	0	31.4	12	1	32.3	22	0
15	GW1347	N-815	36.6	17	0	30.7	14	1	34.6	17	0
16	DDW46	N-817	33.5	22	0	24.5	25	0	30.5	25	0
17	HI8806	N-818	38.9	13	0	30.5	15	0	36.1	12	0
18	HI8803	N-819	37.2	15	0	31.5	11	1	35.3	13	0
19	HI8802	N-821	41.0	9	0	33.4	6	1	38.5	7	0
20	MACS4062	N-822	39.1	12	0	26.5	23	0	34.9	14	0
21	DDW47	N-823	44.2	5	0	26.6	22	0	38.3	8	0
22	AKDW4896	N-824	46.0	2	1	27.0	21	0	39.7	5	1
23	GW1344	N-825	35.2	20	0	34.0	4	1	34.8	16	0
24	AKDW2997-16(C)	N-816	41.9	7	0	27.8	18	0	37.2	10	0
25	HI8627(C)	N-820	43.4	6	0	34.3	3	1	40.4	3	1
S.E.m			38.9			30.4			36.1		
C.D. (10%)			2.0			5.0			2.1		

## Summary of Disease Data and Agronomic Characteristics

Central Zone

Trial: NIVT-5B-RI-TS-TDM, 2016-17

SN	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	MACS4058	N-801	53-71	61	105-129	115	82-122	99	50	Ey	A	H	46-58	53
2	MPO1336	N-802	55-77	63	103-128	116	73-111	92	15	Ey	A	H	51-60	56
3	HI8804	N-803	62-78	69	110-128	118	79-110	91	5	Ey	A	H	46-64	54
4	GW1343	N-804	52-71	60	102-122	112	80-105	91	20	Ey	A	H	46-65	58
5	UAS466	N-805	63-82	72	112-131	120	72-87	81	-	Ey	A	H	41-63	50
6	NIDW1099	N-806	68-81	74	114-130	121	65-83	75	-	Ey	A	SH-H	38-54	43
7	DDW45	N-807	61-78	68	111-132	119	68-89	80	-	Ey	A	H	39-60	49
8	MPO1335	N-808	70-83	75	116-134	123	71-93	83	-	Ey	A	H	38-52	44
9	HI8805	N-809	55-73	63	106-122	113	76-113	91	20	Ey	A	H	47-56	52
10	MACS4059	N-810	52-73	59	104-124	113	73-118	98	20	Ey	A	H	45-54	50
11	UAS467	N-811	67-84	74	116-129	122	73-91	83	5	Ey	A	H	40-59	48
12	GW1346	N-812	62-83	68	106-132	117	79-116	95	8	Ey	A	H	46-62	52
13	MACS4063	N-813	53-73	59	98-125	112	72-110	91	-	Ey	A	H	53-64	57
14	NIDW1113	N-814	70-83	74	113-133	123	69-85	79	-	Ey	A	SH-H	36-51	42
15	GW1347	N-815	50-74	60	105-122	113	72-103	88	5	Ey	A	H	46-60	55
16	DDW46	N-817	67-83	75	116-134	125	66-83	76	-	Ey	A	H	37-51	42
17	HI8806	N-818	61-77	68	110-126	117	70-85	78	-	Ey	A	H	42-60	50
18	HI8803	N-819	51-74	61	106-122	113	64-87	78	30	Ey	A	SH-H	43-62	53
19	HI8802	N-821	61-81	70	111-133	119	89-109	99	5	Ey	A	H	42-57	50
20	MACS4062	N-822	53-74	62	108-122	114	78-112	98	30	Ey	A	H	45-68	56
21	DDW47	N-823	70-85	76	118-135	124	67-97	85	-	Ey	A	H	33-54	42
22	AKDW4896	N-824	48-72	57	98-125	112	68-108	91	35	Ey	A	H	49-65	56
23	GW1344	N-825	53-73	60	104-121	113	75-115	93	10	Ey	A	H	44-60	52
24	AKDW2997-16(C)	N-816	61-83	68	110-131	118	65-96	81	5	Ey	A	H	38-57	46
25	HI8627(C)	N-820	64-81	72	113-133	121	73-95	87	10	Ey	A	H	42-59	49

1. Ancillary data from Arnej, Dhandhuka, Indore, Jabalpur, Kota, Sagar and Tancha.
2. No rust incidence was reported from any centre.
3. Lodging data from Arnej and Sagar centre.

## Summary of Disease Data and Agronomic Characteristics

Peninsular Zone

Trial: NIVT-5B-RI-TS-TDM, 2016-17

SN	Variety	Code	Agronomic Characteristics								Grain Characteristics			
			Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	MACS4058	N-801	52-58	56	99-117	111	76-88	81	20	Ey	A	H	41-53	47
2	MPO1336	N-802	60-65	63	107-118	113	73-88	82	-	Ey	A	H	45-50	48
3	HI8804	N-803	63-67	64	103-120	111	77-86	83	-	Ey	A	H	41-51	46
4	GW1343	N-804	52-63	58	98-116	110	77-84	79	30	Ey	A	SH-H	43-52	47
5	UAS466	N-805	62-70	65	103-120	113	65-74	69	-	Ey	A	H	36-52	41
6	NIDW1099	N-806	60-71	66	104-120	113	62-87	77	-	Ey	A	H	32-42	36
7	DDW45	N-807	60-66	62	99-117	110	69-75	71	-	Ey	A	SH-H	34-50	40
8	MPO1335	N-808	65-75	69	107-121	112	73-97	86	30	Ey	A	H	31-39	34
9	HI8805	N-809	56-63	59	103-116	109	67-95	77	-	Ey	A	SH-H	42-55	45
10	MACS4059	N-810	52-57	55	98-116	109	79-83	81	5	Ey	A	H	42-50	45
11	UAS467	N-811	59-75	67	105-120	112	68-91	80	-	Ey	A	SH-H	35-45	38
12	GW1346	N-812	57-66	62	100-119	109	71-81	74	10	Ey	A	SH-H	39-51	43
13	MACS4063	N-813	51-65	59	98-117	110	65-88	76	10	Ey	A	H	45-53	48
14	NIDW1113	N-814	57-74	66	107-121	113	62-97	81	-	Ey	A	H	28-40	33
15	GW1347	N-815	53-64	58	99-115	108	70-84	79	10	Ey	A	SH-H	42-55	47
16	DDW46	N-817	60-75	68	106-125	114	59-72	63	-	Ey	A	H	29-37	33
17	HI8806	N-818	60-67	63	103-119	110	60-72	66	-	Ey	A	H	37-54	42
18	HI8803	N-819	55-64	58	98-118	108	56-69	61	-	Ey	A	H	38-52	42
19	HI8802	N-821	62-68	64	105-119	113	62-93	75	-	Ey	A	H	33-51	42
20	MACS4062	N-822	56-64	61	98-115	110	77-93	82	40	Ey	A	SH-H	45-54	50
21	DDW47	N-823	58-74	66	106-119	112	68-86	80	-	Ey	A	SH-H	28-37	33
22	AKDW4896	N-824	51-58	55	98-113	109	67-87	81	80	Ey	A	SH-H	43-52	46
23	GW1344	N-825	53-63	58	96-118	109	70-83	74	10	Ey	A	H	39-51	44
24	AKDW2997-16(C)	N-816	59-67	63	102-117	110	59-74	64	20	Ey	A	H	33-50	38
25	HI8627(C)	N-820	60-68	64	106-122	113	54-76	65	5	Ey	A	H	35-47	41

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

# Northern Hills Zone

### **AVT-RF-ES-TAS-NHZ, 2016-17**

The advanced varietal trial under early sown rainfed conditions was proposed and conducted at 7 locations viz., Almora, Majhera, Bajaura, Bara (KVK), Malan, Shimla and Una (KVK) across the zone. Trial consisted of 12 genotypes including 3 check varieties (HPW251, VL829 and HS542). The trial at Bara (KVK) location was rejected by the monitoring team while Almora centre data was rejected due to low site mean and high coefficient of variation.

- The mean yield of the trial ranged from 39.4q/ha (Bajaura) to 19.3q/ha (Shimla).
- At zonal level, the check variety VL829 (31.0q/ha) was highest yielding followed by HPW439 (30.5q/ha) and VL1011 alongwith check HPW251 both yielding 30.0q/ha. These four varieties together constituted the first non-significant group.
- Higher incidence of yellow rust was reported on the checks HPW251 (40S, ACI=36.7), HS542 (20S, ACI=16.7) and the test entry UP2992 (30S, ACI=16.7). Moderate incidence of brown rust and powdery mildew was also reported in this trial.



**1614-AVT-RF-ES-TAS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	HP												Uttarakhand		
		Bajaura			Malan			Shimla			Una-KVK			Majhera		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW439	43.0	4	1	38.8	1	1	20.2	6	0	24.8	1	1	25.7	6	0
2	HPW440	38.0	7	0	30.8	10	0	19.7	8	0	21.2	6	0	24.8	7	0
3	HS643	33.3	12	0	31.4	8	0	20.2	6	0	20.2	11	0	26.1	5	0
4	HS644	34.9	11	0	33.6	5	0	21.5	2	1	21.5	5	0	24.2	9	0
5	HS645	45.0	1	1	31.0	9	0	21.0	3	1	20.5	9	0	28.6	3	0
6	VL1011	37.3	9	0	38.4	3	1	17.5	9	0	23.7	2	1	33.1	2	1
7	VL1012	36.4	10	0	25.7	12	0	16.2	11	0	18.3	12	0	23.5	11	0
8	VL1013	39.4	6	0	35.4	4	0	21.8	1	1	22.8	4	0	27.6	4	0
9	UP2992	37.4	8	0	29.7	11	0	15.4	12	0	20.3	10	0	24.0	10	0
10	VL829(C)	44.6	2	1	31.9	7	0	20.5	5	1	20.8	7	0	37.0	1	1
11	HPW251(C)	44.0	3	1	38.5	2	1	20.8	4	1	23.4	3	1	23.3	12	0
12	HS542(C)	39.9	5	0	33.5	6	0	16.8	10	0	20.8	8	0	24.4	8	0
G.M.		39.4			33.2			19.3			21.5			26.9		
S.E. (M)		1.421			1.216			0.681			0.688			1.907		
C.D. (10%)		3.4			2.9			1.6			1.6			4.5		
C.V.		8.8			9.0			8.6			7.8			15.9		
D.O.S.(d.m.y.)		8.10.2016			10.10.2016			4.10.2016			10.10.2016			7.10.2016		

Trials proposed & conducted = 7

Trials not reported (2) = Bara-KVK (RMT), Almora (LSM, HCV)

**1614-AVT-RF-ES-TAS-NHZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	HP			Uttarakhand			ZONAL		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW439	31.7	1	1	25.7	6	0	30.5	2	1
2	HPW440	27.4	9	0	24.8	7	0	26.9	9	0
3	HS643	26.3	10	0	26.1	5	0	26.2	10	0
4	HS644	27.9	7	0	24.2	9	0	27.1	7	0
5	HS645	29.4	5	0	28.6	3	0	29.2	6	0
6	VL1011	29.2	6	0	33.1	2	1	30.0	4	1
7	VL1012	24.2	12	0	23.5	11	0	24.0	12	0
8	VL1013	29.9	3	0	27.6	4	0	29.4	5	0
9	UP2992	25.7	11	0	24.0	10	0	25.3	11	0
10	VL829(C)	29.5	4	0	37.0	1	1	31.0	1	1
11	HPW251(C)	31.7	2	1	23.3	12	0	30.0	3	1
12	HS542(C)	27.7	8	0	24.4	8	0	27.1	8	0
G.M.		28.4			26.9			28.1		
S.E. (M)		0.527			1.907			0.568		
C.D. (10%)		1.3			4.5			1.3		

## Northern Hills Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: IVT/AVT-RF-ES-TAS, 2016-17

SN	Variety	Disease Reactions				Agronomic Characteristics							Grain Characteristics			
		YI	ACI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HPW439	0	0.0	tS	3	89-160	120	175-209	192	66-109	91	Ey	A	SH-H	28-46	40
2	HPW440	10S	6.7	10S	4	86-165	125	182-213	194	73-138	110	Ey	A	SH	27-43	37
3	HS643	tS	0.7	10S	4	85-165	119	178-215	193	63-103	87	Ey	A	SH-H	28-52	43
4	HS644	20S	11.7	10S	4	67-169	112	180-211	193	58-97	85	Ey	A	SH	27-45	39
5	HS645	5S	3.3	0	3	123-157	140	184-211	195	92-123	108	Ey	A	SH	30-44	39
6	VL1011	tS	0.7	tS	6	105-158	132	180-217	195	67-108	90	Ey	A	SH	29-48	41
7	VL1012	0	0.0	tS	5	88-151	118	173-209	190	61-105	84	Ey	A	SH	29-45	38
8	VL1013	0	0.0	20S	1	126-164	147	183-214	198	73-119	99	Ey	A	SH	36-50	46
9	UP2992	30S	16.7	tS	7	89-144	118	175-209	191	71-119	100	Ey	A	SH	33-50	44
10	VL829(C)	10S	8.3	10S	5	109-150	131	172-212	193	80-120	105	Ey	A	SH-H	35-52	45
11	HPW251(C)	40S	36.7	0	3	71-163	117	178-219	193	60-108	87	Ey	A	SH	31-46	41
12	HS542(C)	20S	16.7	20S	5	70-144	111	174-214	192	70-111	92	Ey	A	SH-H	34-51	44

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

## Individual Station Rust Data

SN	Variety	Bajaura	Una	Malan	
		YI	YI	YI	Br
1	HPW439	0	0	0	tS
2	HPW440	0	10S	10S	10S
3	HS643	0	tS	tS	10S
4	HS644	5S	10S	20S	10S
5	HS645	0	5S	5S	0
6	VL1011	0	tS	tS	tS
7	VL1012	0	0	0	tS
8	VL1013	0	0	0	20S
9	UP2992	30S	10S	10S	tS
10	VL829(C)	5S	10S	10S	10S
11	HPW251(C)	40S	30S	40S	0
12	HS542(C)	10S	20S	20S	20S

## **AVT-RI-LS-TAS-NHZ, 2016-17**

The Advanced Varietal Trial under late sown restricted irrigation conditions in NHZ consisted of 11 entries including 2 checks (HS490 and VL892). The trial was proposed at ten and conducted at nine locations. The trial was not conducted at Imphal location whereas the Kalimpong centre did not report the yield data. The data was rejected from Almora, Majhera and Ranichauri due to low site mean and Gangtok due to low site mean and high CV.

- The average yield of the trial ranged from 38.3q/ha (Dhaulakuan) to 20.8q/ha (Bajaura).
- At zonal level the check variety HS490 (29.5q/ha) was the top yielding followed by test entry HS648 (28.3q/ha) forming the first non-significant group.
- Low yellow and brown rust incidences were reported on the test entries and checks in the trial. Moderate incidence of powdery mildew was also reported from Malan.

**1613-AVT-RI-LS-TAS-NHZ, 2016-17**  
**Locationwise and Zonal Mean Yield (q/ha)**

SN	Variety	Himachal Pradesh												ZONAL		
		Shimla			Bajaura			Dhaulakuan			Malan					
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 646	20.1	8	0	15.4	10	0	37.9	7	0	24.1	7	0	24.4	11	0
2	HS 647	20.6	7	0	22.0	6	0	39.3	4	1	27.4	4	0	27.3	3	0
3	HS 648	23.4	2	1	17.7	9	0	39.5	3	1	32.7	1	1	28.3	2	1
4	HPW 448	23.4	2	1	23.3	4	1	33.9	11	0	21.6	10	0	25.6	8	0
5	HPW 449	19.6	11	0	15.3	11	0	38.8	6	1	24.8	6	0	24.6	10	0
6	VL 3013	19.7	10	0	19.3	7	0	41.7	1	1	22.9	8	0	25.9	7	0
7	VL 3014	24.2	1	1	19.1	8	0	37.5	8	0	19.2	11	0	25.0	9	0
8	VL 3015	20.1	8	0	24.4	2	1	41.3	2	1	22.0	9	0	27.0	6	0
9	UP 2993	21.2	6	1	22.5	5	0	36.3	10	0	28.1	3	1	27.0	4	0
10	VL 892(C)	22.6	4	1	24.1	3	1	36.4	9	0	24.9	5	0	27.0	4	0
11	HS 490(C)	22.4	5	1	26.0	1	1	39.2	5	1	30.5	2	1	29.5	1	1
G.M.		21.6			20.8			38.3			25.3			26.5		
S.E. (M)		1.475			1.459			1.408			2.004			0.802		
C.D. (10%)		3.5			3.5			3.3			4.8			1.9		
C.V.		10.9			11.1			5.8			12.6					
D.O.S. (d.m.y.)		4.12.2016			10.12.2016			2.12.2016			5.12.2016					

**Trials proposed = 10**

**Trial not conducted (1) = CAU Imphal**

**Trials not Reported (5) = Kalimpong (DNR), Almora (LSM), Majhera (LSM), Gangtok (LSM, HCV), Ranichauri (LSM)**

## Northern Hills Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: IVT/AVT-RI-LS-TAS, 2016-17

SN	Variety	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
		YI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HS646	5S	0	3	78-120	103	111-166	142	55-96	77	Ey	A	SH	27-50	40
2	HS647	0	5S	5	83-122	101	113-166	141	55-93	74	Ey	A	SH	30-50	38
3	HS648	0	0	6	82-123	101	117-157	140	52-102	78	Ey	A	SH	26-48	37
4	HPW448	5S	tS	2	81-116	98	114-164	140	65-93	78	Ey	A	SH-H	33-50	40
5	HPW449	0	0	5	83-115	97	112-158	139	58-92	74	Ey	A	SH	31-48	40
6	VL3013	0	0	5	87-115	95	112-154	137	62-93	75	Ey	A	SH	33-49	41
7	VL3014	0	0	5	78-117	96	114-159	139	65-102	78	Ey	A	SH	34-41	37
8	VL3015	5S	tS	4	78-117	101	116-164	142	58-91	74	Ey	A	SH	32-45	38
9	UP2993	0	0	7	78-116	98	119-154	138	56-90	76	Ey	A	SH	33-52	42
10	VL892(C)	5S	0	5	81-114	96	111-152	136	55-91	77	Ey	A	SH-H	32-48	39
11	HS490(C)	5S	5S	3	78-122	102	117-164	142	62-103	82	Ey	A	SH	34-51	43

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

## IVT-RF/IR-TS-TAS-NHZ, 2016-17

The Initial Varietal Trial (IVT) under timely sown was conducted under rainfed and irrigated condition. The rainfed trial was conducted at 8 locations while irrigated was at 5 centres. A total of 24 genotypes including two checks (HS 507 and VL 907) were evaluated across the zone. The rainfed trial data from Dhaulakuan and Ranichauri were not reported due to low site mean. In the irrigated trial condition, the trial at Malan was rejected by monitoring team, while Shimla data was not considered due to low site mean.

### **Rainfed Condition:**

- The mean yield of the trial ranged from 37.5q/ha (Bajaura) to 17.4q/ha (Shimla).
- At zonal level, HPW441 (32.0q/ha) was the highest yielding entry followed HS634 (31.9q/ha), HPW442 (31.8q/ha) and VL2029 (31.0q/ha). These four genotypes formed the first non-significant group.
- Yellow rust incidence of 20S (ACI=6.3) and 10S (ACI=6.8) was reported on the checks VL907 and HS507 respectively. Brown rust and powdery mildew incidence was also reported.

### **Irrigated condition:**

- The mean yield ranged from 45.6q/ha (Almora) to 32.5q/ha (Dhaulakuan).
- At zonal level, the test entry HS631 (44.8q/ha) was highest yielding genotype followed by HPW444 (44.7q/ha), HPW441 (43.7q/ha), VL2027 (43.5q/ha), HS634 and HS635 both yielded 43.1q/ha. These six genotypes formed the first non-significant group.
- Low incidence of yellow rust and powdery diseases was reported in the trial.

**1615-IVT-RF-TS-TAS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Uttarakhand			HP						J&K								
			Almora			Malan			Shimla		Bajaura		Wadura			Khudwani				
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW441	NHIVT 1601	35.5	10	1	29.6	8	0	20.4	5	0	46.1	1	1	29.7	19	0	30.5	5	0
2	HPW442	NHIVT 1602	36.2	6	1	29.1	11	0	20.9	3	0	45.8	2	1	30.4	10	0	28.6	11	0
3	HPW443	NHIVT 1603	33.5	16	0	29.2	10	0	17.2	13	0	38.2	9	0	32.1	2	0	31.0	3	0
4	HPW444	NHIVT 1604	35.0	13	1	29.3	9	0	13.8	21	0	39.9	4	0	29.7	18	0	25.6	20	0
5	HPW445	NHIVT 1605	29.3	22	0	18.9	24	0	15.9	16	0	38.5	8	0	29.2	21	0	26.0	19	0
6	HPW446	NHIVT 1606	34.0	15	0	22.9	23	0	18.9	9	0	37.2	11	0	31.5	6	0	29.5	9	0
7	HPW447	NHIVT 1607	32.8	17	0	27.5	16	0	22.9	2	1	35.9	18	0	23.4	24	0	20.4	24	0
8	UP2991	NHIVT 1608	34.4	14	0	32.1	4	1	18.0	10	0	29.5	24	0	28.1	23	0	24.0	22	0
9	HS631	NHIVT 1609	35.1	12	1	25.4	20	0	15.4	19	0	36.0	17	0	30.1	15	0	31.9	2	0
10	HS636	NHIVT 1610	28.3	23	0	32.1	4	1	14.0	20	0	36.8	13	0	31.0	8	0	29.8	8	0
11	HS635	NHIVT 1611	30.3	21	0	26.0	18	0	13.0	23	0	38.8	7	0	29.8	17	0	26.2	18	0
12	HS632	NHIVT 1612	30.5	20	0	25.3	21	0	20.0	6	0	36.7	15	0	30.3	14	0	28.5	12	0
13	HS633	NHIVT 1613	36.4	5	1	25.8	19	0	24.3	1	1	33.6	21	0	29.5	20	0	23.8	23	0
14	HS634	NHIVT 1614	38.7	1	1	30.2	7	0	11.3	24	0	39.1	6	0	36.9	1	1	35.2	1	1
15	HS637	NHIVT 1615	35.7	9	1	34.5	1	1	19.8	8	0	38.0	10	0	29.0	22	0	25.5	21	0
16	UP2990	NHIVT 1616	32.7	18	0	31.0	6	1	16.2	15	0	42.9	3	1	30.3	13	0	27.9	15	0
17	VL2026	NHIVT 1617	36.5	3	1	33.8	2	1	15.7	17	0	32.9	23	0	31.6	5	0	30.4	6	0
18	VL2027	NHIVT 1618	25.2	24	0	28.7	12	0	13.1	22	0	35.9	18	0	32.0	3	0	30.2	7	0
19	VL2025	NHIVT 1619	32.1	19	0	28.3	14	0	15.4	18	0	36.8	13	0	31.9	4	0	28.3	14	0
20	VL2029	NHIVT 1620	36.4	4	1	32.7	3	1	20.0	6	0	39.6	5	0	30.4	11	0	26.8	17	0
21	VL 2028	NHIVT 1621	35.9	7	1	28.2	15	0	17.5	12	0	36.8	12	0	31.1	7	0	30.5	4	0
22	VL2030	NHIVT 1622	35.2	11	1	28.6	13	0	17.8	11	0	35.2	20	0	30.0	16	0	27.6	16	0
23	VL907 (C)	NHIVT 1623	37.4	2	1	27.3	17	0	20.7	4	0	33.6	21	0	30.3	12	0	29.4	10	0
24	HS507 (C)	NHIVT 1624	35.8	8	1	23.7	22	0	16.5	14	0	36.7	15	0	30.7	9	0	28.3	13	0
G.M.			33.9			28.3			17.4			37.5			30.4			28.2		
S.E. (M)			1.759			1.605			0.815			1.373			0.778			1.115		
C.D. (10%)			4.2			3.8			1.9			3.2			1.8			2.6		
C.V.			10.4			11.3			9.3			7.3			5.1			7.9		
D.O.S. (d.m.y.)			20.10.2016			28.10.2016			29.10.2016			22.10.2016			1.11.2016			3.11.2016		

Trials proposed & conducted = 8

Trials not Reported (2) = Ranichauri (LSM), Dhaulakuan (LSM)

**1615-IVT-RF-TS-TAS-NHZ, 2016-17  
State and Zonal Mean Yield (q/ha)**

SN	Variety	Code	Uttarakhand			HP			J&K			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HPW441	NHIVT 1601	35.5	10	1	32.0	1	1	30.1	10	0	32.0	1	1
2	HPW442	NHIVT 1602	36.2	6	1	31.9	2	1	29.5	12	0	31.8	3	1
3	HPW443	NHIVT 1603	33.5	16	0	28.2	7	0	31.5	2	0	30.2	6	0
4	HPW444	NHIVT 1604	35.0	13	1	27.6	9	0	27.6	19	0	28.9	15	0
5	HPW445	NHIVT 1605	29.3	22	0	24.4	24	0	27.6	20	0	26.3	24	0
6	HPW446	NHIVT 1606	34.0	15	0	26.4	19	0	30.5	7	0	29.0	12	0
7	HPW447	NHIVT 1607	32.8	17	0	28.7	6	0	21.9	24	0	27.1	23	0
8	UP2991	NHIVT 1608	34.4	14	0	26.5	18	0	26.1	23	0	27.7	20	0
9	HS631	NHIVT 1609	35.1	12	1	25.6	23	0	31.0	5	0	29.0	13	0
10	HS636	NHIVT 1610	28.3	23	0	27.6	10	0	30.4	8	0	28.7	17	0
11	HS635	NHIVT 1611	30.3	21	0	26.0	20	0	28.0	18	0	27.4	22	0
12	HS632	NHIVT 1612	30.5	20	0	27.3	13	0	29.4	14	0	28.5	19	0
13	HS633	NHIVT 1613	36.4	5	1	27.9	8	0	26.6	22	0	28.9	14	0
14	HS634	NHIVT 1614	38.7	1	1	26.9	16	0	36.0	1	1	31.9	2	1
15	HS637	NHIVT 1615	35.7	9	1	30.8	3	1	27.3	21	0	30.4	5	0
16	UP2990	NHIVT 1616	32.7	18	0	30.0	5	0	29.1	15	0	30.2	7	0
17	VL2026	NHIVT 1617	36.5	3	1	27.5	12	0	31.0	4	0	30.1	8	0
18	VL2027	NHIVT 1618	25.2	24	0	25.9	21	0	31.1	3	0	27.5	21	0
19	VL2025	NHIVT 1619	32.1	19	0	26.8	17	0	30.1	9	0	28.8	16	0
20	VL2029	NHIVT 1620	36.4	4	1	30.7	4	1	28.6	17	0	31.0	4	1
21	VL 2028	NHIVT 1621	35.9	7	1	27.5	11	0	30.8	6	0	30.0	9	0
22	VL2030	NHIVT 1622	35.2	11	1	27.2	15	0	28.8	16	0	29.1	11	0
23	VL907 (C)	NHIVT 1623	37.4	2	1	27.2	14	0	29.9	11	0	29.8	10	0
24	HS507 (C)	NHIVT 1624	35.8	8	1	25.6	22	0	29.5	13	0	28.6	18	0
G.M.			33.9			27.8			29.3			29.3		
S.E. (M)			1.759			0.755			0.680			0.529		
C.D. (10%)			4.2			1.8			1.6			1.2		



## Northern Hills Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: IVT-RF-TS-TAS, 2016-17

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	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HPW441	NHIVT-1601	10R	0.8	5S	2	112-182	144	174-222	194	63-103	89	Ey	A	SH	33-47	40
2	HPW442	NHIVT-1602	10MR	1.3	0	5	112-186	143	170-223	192	65-110	94	Ey	A	SH	35-44	41
3	HPW443	NHIVT-1603	10R	0.8	20S	2	112-178	141	174-221	192	73-105	92	Ey	A	SH	35-53	43
4	HPW444	NHIVT-1604	10MR	1.5	0	4	103-187	139	166-222	190	68-110	89	Ey	A	SH	42-56	47
5	HPW445	NHIVT-1605	10MR	1.8	10S	5	113-188	144	173-220	191	76-130	105	Ey	A	SH	37-43	38
6	HPW446	NHIVT-1606	10MR	2.0	10S	4	104-189	138	171-224	193	66-116	90	Ey	A	SH-H	37-45	40
7	HPW447	NHIVT-1607	10S	5.3	30S	5	108-188	137	177-223	192	82-116	103	Ey	A	SH	31-42	39
8	UP2991	NHIVT-1608	5S	2.5	tS	3	111-186	143	174-226	193	68-105	88	Ey	A	SH	37-51	45
9	HS631	NHIVT-1609	5R	0.5	0	3	114-187	143	177-221	193	71-106	95	Ey	A	SH	36-50	44
10	HS636	NHIVT-1610	10R	0.8	5S	6	122-186	148	171-224	194	69-102	86	Ey	A	SH-H	32-43	38
11	HS635	NHIVT-1611	5S	2.0	5S	3	102-187	140	174-223	194	73-103	90	Ey	A	SH-H	37-49	44
12	HS632	NHIVT-1612	10MR	2.1	0	3	105-177	141	171-223	191	73-104	90	Ey	A	SH	25-38	33
13	HS633	NHIVT-1613	5R	0.5	0	4	114-190	144	174-224	193	74-107	92	Ey	A	SH	27-41	35
14	HS634	NHIVT-1614	10MR	2.0	tS	2	104-175	137	166-221	188	64-96	85	Ey	A	SH	38-50	42
15	HS637	NHIVT-1615	10MR	2.0	10S	2	107-190	139	168-222	190	63-95	83	Ey	A	SH	41-52	45
16	UP2990	NHIVT-1616	5S	3.3	0	2	112-187	140	169-226	191	65-104	88	Ey	A	SH	35-54	43
17	VL2026	NHIVT-1617	10MR	1.3	tS	2	109-188	140	169-225	193	73-103	91	Ey	A	SH	39-56	46
18	VL2027	NHIVT-1618	5S	1.8	10S	3	98-186	136	171-223	192	71-109	89	Ey	A	SH	36-48	42
19	VL2025	NHIVT-1619	5R	0.3	5S	2	112-189	142	173-219	193	72-108	95	Ey	A	SH	37-54	43
20	VL2029	NHIVT-1620	10MR	2.0	tS	2	110-185	141	168-221	191	67-99	86	Ey	A	SH	39-49	42
21	VL 2028	NHIVT-1621	5S	3.3	tS	3	111-185	137	170-220	191	64-100	86	Ey	A	SH	38-47	42
22	VL2030	NHIVT-1622	5MR	0.8	10	3	105-187	141	171-224	192	70-105	93	Ey	A	SH	30-51	41
23	VL907 (C)	NHIVT-1623	20S	6.3	10S	5	111-186	140	173-223	194	72-107	93	Ey	A	SH	35-46	41
24	HS507 (C)	NHIVT-1624	10S	6.8	20S	3	104-179	141	170-220	192	84-104	90	Ey	A	SH	38-45	41

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

**Northern Hills Zone  
IVT-RF-TS-TAS, 2016-17  
Individual Station Yellow Rust Data**

SN	Variety	Code	Bajaura	Khudwani	Wadura	Malan
1	HPW441	NHIVT-1601	0	5R	10R	0
2	HPW442	NHIVT-1602	0	5R	10MR	0
3	HPW443	NHIVT-1603	0	5R	10R	0
4	HPW444	NHIVT-1604	0	10MR	5MR	0
5	HPW445	NHIVT-1605	0	10MR	5MR	tS
6	HPW446	NHIVT-1606	0	10MR	10MR	0
7	HPW447	NHIVT-1607	5S	10MR	10R	10S
8	UP2991	NHIVT-1608	5S	5R	10MR	0
9	HS631	NHIVT-1609	0	5R	5R	0
10	HS636	NHIVT-1610	0	5R	10R	0
11	HS635	NHIVT-1611	5S	5R	5MR	0
12	HS632	NHIVT-1612	tR	10MR	10MR	0
13	HS633	NHIVT-1613	0	5R	5R	0
14	HS634	NHIVT-1614	0	10MR	10MR	0
15	HS637	NHIVT-1615	0	10MR	10MR	0
16	UP2990	NHIVT-1616	5S	5R	10R	5S
17	VL2026	NHIVT-1617	0	5R	10MR	0
18	VL2027	NHIVT-1618	5S	5R	5R	0
19	VL2025	NHIVT-1619	0	tR	5R	0
20	VL2029	NHIVT-1620	0	10MR	10MR	0
21	VL 2028	NHIVT-1621	5S	10MR	10MR	0
22	VL2030	NHIVT-1622	0	5R	5MR	0
23	VL907 (C)	NHIVT-1623	20S	5R	10 MR	0
24	HS507 (C)	NHIVT-1624	10S	20MR	10MR	5S

**1617-IVT-IR-TS-TAS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Uttarakhand			HP					
			Almora			Bajaura			Dhaulakuan		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	HPW441	NHIVT 1601	51.6	1	1	47.6	9	0	31.9	15	0
2.	HPW442	NHIVT 1602	47.1	8	0	37.9	22	0	33.5	9	0
3.	HPW443	NHIVT 1603	44.7	14	0	46.1	12	0	33.9	8	0
4.	HPW444	NHIVT 1604	49.6	2	1	53.6	2	1	31.0	18	0
5.	HPW445	NHIVT 1605	41.8	23	0	35.8	24	0	28.1	23	0
6.	HPW446	NHIVT 1606	42.7	20	0	42.8	17	0	34.1	7	0
7.	HPW447	NHIVT 1607	44.4	15	0	50.7	4	1	29.9	20	0
8.	UP2991	NHIVT 1608	47.8	6	1	41.8	19	0	32.3	13	0
9.	HS631	NHIVT 1609	48.9	3	1	46.9	10	0	38.8	1	1
10.	HS636	NHIVT 1610	43.4	16	0	46.9	10	0	36.8	2	1
11.	HS635	NHIVT 1611	46.3	13	0	48.6	8	0	34.4	4	0
12.	HS632	NHIVT 1612	42.7	21	0	50.4	5	0	34.4	4	0
13.	HS633	NHIVT 1613	41.0	24	0	53.7	1	1	33.5	9	0
14.	HS634	NHIVT 1614	47.9	4	1	49.9	6	0	31.5	17	0
15.	HS637	NHIVT 1615	42.8	19	0	48.8	7	0	29.6	21	0
16.	UP2990	NHIVT 1616	43.2	17	0	40.0	21	0	32.1	14	0
17.	VL2026	NHIVT 1617	47.1	10	0	43.4	15	0	29.0	22	0
18.	VL2027	NHIVT 1618	47.1	8	0	51.5	3	1	31.8	16	0
19.	VL2025	NHIVT 1619	42.0	22	0	42.9	16	0	35.9	3	0
20.	VL2029	NHIVT 1620	47.1	7	0	37.2	23	0	33.2	11	0
21.	VL 2028	NHIVT 1621	47.0	11	0	41.3	20	0	34.3	6	0
22.	VL2030	NHIVT 1622	43.0	18	0	45.1	13	0	33.0	12	0
23.	VL907 (C)	NHIVT 1623	46.5	12	0	42.2	18	0	30.6	19	0
24.	HS507 (C)	NHIVT 1624	47.9	5	1	43.5	14	0	27.0	24	0
G.M.			45.6			45.3			32.5		
S.E. (M)			1.729			1.359			0.935		
C.D. (10%)			4.1			3.2			2.2		
C.V.			7.6			6.0			5.7		
D.O.S. (d.m.y.)			12.11.2016			10.11.2016			14.11.2016		

Trials proposed & conducted = 5

Trials not reported (2) = Malan (RMT), Shimla (LSM)

**1617-IVT-IR-TS-TAS-NHZ, 2016-17  
State and Zonal Mean Yield (q/ha)**

SN	Variety	Code	Uttarakhand			HP			Zonal		
			Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	HPW441	NHIVT 1601	51.6	1	1	39.8	11	0	43.7	3	1
2.	HPW442	NHIVT 1602	47.1	8	0	35.7	21	0	39.5	20	0
3.	HPW443	NHIVT 1603	44.7	14	0	40.0	10	0	41.6	11	0
4.	HPW444	NHIVT 1604	49.6	2	1	42.3	4	1	44.7	2	1
5.	HPW445	NHIVT 1605	41.8	23	0	31.9	24	0	35.2	24	0
6.	HPW446	NHIVT 1606	42.7	20	0	38.4	15	0	39.8	17	0
7.	HPW447	NHIVT 1607	44.4	15	0	40.3	9	0	41.7	10	0
8.	UP2991	NHIVT 1608	47.8	6	1	37.1	17	0	40.6	13	0
9.	HS631	NHIVT 1609	48.9	3	1	42.8	2	1	44.8	1	1
10.	HS636	NHIVT 1610	43.4	16	0	41.9	5	1	42.4	9	0
11.	HS635	NHIVT 1611	46.3	13	0	41.5	7	0	43.1	6	1
12.	HS632	NHIVT 1612	42.7	21	0	42.4	3	1	42.5	8	0
13.	HS633	NHIVT 1613	41.0	24	0	43.6	1	1	42.7	7	0
14.	HS634	NHIVT 1614	47.9	4	1	40.7	8	0	43.1	5	1
15.	HS637	NHIVT 1615	42.8	19	0	39.2	13	0	40.4	14	0
16.	UP2990	NHIVT 1616	43.2	17	0	36.1	20	0	38.4	23	0
17.	VL2026	NHIVT 1617	47.1	10	0	36.2	19	0	39.8	18	0
18.	VL2027	NHIVT 1618	47.1	8	0	41.7	6	1	43.5	4	1
19.	VL2025	NHIVT 1619	42.0	22	0	39.4	12	0	40.3	16	0
20.	VL2029	NHIVT 1620	47.1	7	0	35.2	23	0	39.2	22	0
21.	VL 2028	NHIVT 1621	47.0	11	0	37.8	16	0	40.9	12	0
22.	VL2030	NHIVT 1622	43.0	18	0	39.1	14	0	40.4	15	0
23.	VL907 (C)	NHIVT 1623	46.5	12	0	36.4	18	0	39.8	19	0
24.	HS507 (C)	NHIVT 1624	47.9	5	1	35.2	22	0	39.5	21	0
G.M.			45.6			38.9			41.2		
S.E. (M)			1.729			0.825			0.797		
C.D. (10%)			4.1			2.0			1.9		

## Northern Hills Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: IVT-IR-TS-TAS, 2016-17

SN	Variety	Code	Disease Reactions		Agronomic Characteristics							Grain Characteristics			
			YI	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HPW441	NHIVT-1601	0	1	112-142	129	150-187	170	81-106	95	Ey	A	SH	35-40	37
2	HPW442	NHIVT-1602	0	1	112-142	127	152-186	169	85-106	97	Ey	A	SH	37-41	39
3	HPW443	NHIVT-1603	0	3	107-137	124	153-185	169	85-107	96	Ey	A	SH	41-45	43
4	HPW444	NHIVT-1604	0	2	107-137	123	155-186	169	90-114	104	Ey	A	SH	42-52	47
5	HPW445	NHIVT-1605	tR	3	108-141	128	151-184	170	99-124	110	Ey	A	SH	24-36	36
6	HPW446	NHIVT-1606	0	1	105-137	123	155-184	169	89-122	105	Ey	A	SH	44-45	44
7	HPW447	NHIVT-1607	0	1	104-131	121	151-184	168	96-130	111	Ey	A	SH	30-40	36
8	UP2991	NHIVT-1608	tR	1	108-141	125	150-184	168	94-104	100	Ey	A	SH	42-48	45
9	HS631	NHIVT-1609	0	1	106-139	123	153-187	169	89-105	100	Ey	A	SH	41-43	42
10	HS636	NHIVT-1610	0	3	114-142	130	155-186	171	86-95	89	Ey	A	SH	34-37	35
11	HS635	NHIVT-1611	0	0	106-138	124	148-182	166	89-101	97	Ey	A	SH	40-46	42
12	HS632	NHIVT-1612	0	3	107-141	127	151-186	170	88-105	99	Ey	A	SH	31-35	33
13	HS633	NHIVT-1613	0	3	109-139	127	153-188	170	86-110	97	Ey	A	SH	30-35	32
14	HS634	NHIVT-1614	0	1	108-132	121	148-186	167	89-101	96	Ey	A	SH	40-45	44
15	HS637	NHIVT-1615	0	0	106-137	124	153-186	169	84-93	90	Ey	A	SH	40-52	45
16	UP2990	NHIVT-1616	5S	1	107-133	122	158-182	170	85-98	93	Ey	A	SH	40-46	43
17	VL2026	NHIVT-1617	0	1	107-139	124	155-188	170	92-108	99	Ey	A	SH	43-46	45
18	VL2027	NHIVT-1618	0	1	100-136	120	148-184	167	90-104	99	Ey	A	SH	39-46	42
19	VL2025	NHIVT-1619	0	1	107-141	125	153-188	170	92-109	104	Ey	A	SH	43-47	45
20	VL2029	NHIVT-1620	0	3	112-140	127	153-188	170	92-102	97	Ey	A	SH	38-44	40
21	VL 2028	NHIVT-1621	0	0	105-138	123	151-181	167	84-99	91	Ey	A	SH	40-44	43
22	VL2030	NHIVT-1622	0	3	107-138	123	135-169	156	84-105	98	Ey	A	SH	38-42	39
23	VL907 (C)	NHIVT-1623	5S	1	105-139	124	147-185	167	88-106	100	Ey	A	SH	39-41	40
24	HS507 (C)	NHIVT-1624	5S	1	107-138	125	151-182	167	84-96	92	Ey	A	SH	38-40	39

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

## **AVT-RF-VHA-NHZ, SUMMER-2016**

The very high altitude trial consisting of 10 genotypes including two checks (HS490 and HS375) was proposed at six locations *viz.* Dalang Maidan, Kukumseri, Sangla, Leh (3 locations) during summer 2016. Two trials at Leh were not conducted. The trial data from Dalang Maidan and Kukumseri centres was reported, while the trial data from Leh was rejected due to low site mean and Sangla due to low site mean and high CV.

- The trial mean yield ranged from 28.6q/ha at Dalang Maidan to 21.6q/ha at Kukumseri.
- At zonal level the check variety HS490 (31.8q/ha) was the highest yielding genotype and the only entry in the first non-significant group.
- Yellow rust incidence up to 40S was reported in the check variety HS375 from Dalang Maidan.

**1615-AVT-RF-VHA-SUM-NHZ, 2016**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	HP						Zonal		
			Dalang Maidan			Kukumseri			Yield	Rk	G
			Yield	Rk	G	Yield	Rk	G			
1	VL 4002	VHA-501	27.7	7	0	21.0	9	1	24.4	8	0
2	HS 630	VHA-503	29.6	4	0	21.4	6	1	25.5	4	0
3	VL 4003	VHA-504	18.3	10	0	21.9	4	1	20.1	10	0
4	HS 629	VHA-505	30.4	3	0	20.9	10	1	25.7	3	0
5	HPW 434	VHA-506	28.1	6	0	21.9	3	1	25.0	5	0
6	DBW 179	VHA-507	28.3	5	0	21.2	8	1	24.8	7	0
7	DBW 204	VHA-509	27.5	8	0	22.3	1	1	24.9	6	0
8	HPW 438	VHA-510	32.8	2	0	21.8	5	1	27.3	2	0
9	HS 375 (C)	VHA-502	22.3	9	0	21.4	6	1	21.9	9	0
10	HS 490(C)	VHA-508	41.4	1	1	22.2	2	1	31.8	1	1
G.M.			28.6			21.6			25.1		
S.E. (M)			1.607			0.702			0.877		
C.D. (10%)			3.9			1.7			2.6		
C.V.			11.2			6.5					
D.O.S. (d.m.y.)			18.5.2016			13.5.2016					

**Trials proposed = 6**

**Trials not conducted (2) = Leh-II, Leh-III**

**Trials not Reported (2) = Leh-I (LSM), Sangla (LSM, HCV)**

## Northern Hills Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: AVT-RF-VHA, Summer-2016

SN	Variety	Code	Rust Reactions	Agronomic Characteristics							Grain Characteristics			
			YI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	VL 4002	VHA-501	20S	56-89	72	115-136	126	52-55	54	Ey	A	SH	43-46	45
2	HS 630	VHA-503	10S	62-88	72	115-134	126	51-68	60	Ey	A	SH	37-46	43
3	VL 4003	VHA-504	20S	64-89	73	112-136	125	47-65	56	Ey	A	SH	37-42	40
4	HS 629	VHA-505	20S	62-90	71	111-135	124	50-77	64	Ey	A	SH	40-42	41
5	HPW 434	VHA-506	10S	56-88	72	112-136	126	47-59	53	Ey	A	SH-H	43-48	46
6	DBW 179	VHA-507	20S	58-87	69	111-136	124	55-76	66	Ey	A	SH	42-45	44
7	DBW 204	VHA-509	20S	60-89	72	111-136	125	47-75	61	Ey	A	SH	45-51	48
8	HPW 438	VHA-510	20S	56-89	71	112-136	125	53-76	65	Ey	A	SH-H	45-46	46
9	HS 375 (C)	VHA-502	40S	56-90	73	114-136	127	44-72	58	Ey	A	SH	35-40	37
10	HS 490(C)	VHA-508	5S	56-90	70	108-136	123	48-78	63	Ey	A	SH	43-47	45

1. Ancillary data from Kukumseri, Sangla and Leh.
2. Yellow rust data from Dalang Maidan.



# North Western Plains Zone

## AVT-IR-TS-TAS-NWPZ, 2016-17

The Advanced Varietal Trial under irrigated and timely sown conditions in NWPZ comprised twelve genotypes including four checks namely HD2967, WH1105, DBW88 and HD3086. The trial was proposed and conducted at 31 locations across the zone. The trials at Tabiji, Bharatpur and Kotputli were rejected by the monitoring teams. Trial data from Dhaulakuan, Jodhpur and Dhakrani locations are not being reported due to low site mean and at Bareilly due to late sowing.

- The location wise mean yield ranged from 66.0q/ha (Alwar) to 45.6q/ha (Bikaner). At zonal level, test entry HD3226 (59.7q/ha) was the highest yielding and it alongwith 6 other entries including check variety HD3086 (59.5q/ha) formed the first non-significant group.
- Yellow rust incidence was high in the checks except HD3086. Among the test entries DBW189 (60S, ACI = 25.4), DBW196 (40S, ACI = 21.7) and UP2942 (60S, ACI = 15.8) had high yellow rust reaction. A high incidence of brown rust 60S (ACI = 16.3) was reported on the check variety HD3086.
- A perusal of the ancillary data indicated that the test entries were similar to the checks for days to heading, maturity and plant height. UP2962 had the bold grains (50g).

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	J&K		Delhi		Haryana							
		Jammu		Delhi		Karnal		Rohtak		Hisar		Bawal	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1.	DBW189	58.5	5 1	55.4	11 0	60.4	10 0	61.6	10 1	52.3	10 0	62.4	9 1
2.	DBW196	49.0	11 0	58.9	9 0	62.5	9 0	64.4	3 1	54.1	5 0	64.4	6 1
3.	PBW750	50.4	10 0	60.9	7 0	70.2	1 1	61.7	9 1	53.8	7 0	66.3	3 1
4.	WH1202	60.2	2 1	63.1	3 1	63.1	8 0	65.0	1 1	60.6	1 1	66.3	2 1
5.	HD3226	53.0	7 0	61.2	6 0	67.8	4 1	62.5	8 1	59.0	3 1	66.4	1 1
6.	UP2942	60.3	1 1	62.5	4 1	67.0	5 0	64.6	2 1	54.0	6 0	62.4	8 1
7.	HP1963	51.9	8 0	63.3	2 1	67.0	6 0	63.8	7 1	59.7	2 1	65.3	4 1
8.	BRW3773	59.9	3 1	64.8	1 1	66.1	7 0	58.3	12 0	51.3	12 0	59.6	10 0
9.	HD2967(C)	41.0	12 0	47.0	12 0	58.4	12 0	59.0	11 0	53.1	9 0	57.9	11 0
10.	WH1105(C)	56.6	6 1	59.3	8 0	67.9	3 1	64.2	4 1	55.4	4 0	64.6	5 1
11.	DBW88(C)	51.0	9 0	57.4	10 0	59.0	11 0	63.9	6 1	52.3	10 0	54.5	12 0
12.	HD3086(C)	59.3	4 1	61.8	5 0	68.1	2 1	64.0	5 1	53.6	8 0	63.2	7 1
G.M.		54.3		59.6		64.8		62.7		54.9		62.8	
S.E. (M)		2.042		0.999		1.221		1.627		1.685		1.988	
C.D. (10%)		4.9		2.4		2.9		3.9		4.0		4.8	
C.V.		7.5		3.4		3.8		5.2		6.1		6.3	
D.O.S. (d.m.y.)		5.11.2016		15.11.2016		8.11.2016		12.11.2016		5.11.2016		7.11.2016	

Trials proposed & conducted = 31

Trials not reported (7) = Tabiji (RMT), Bharatpur (RMT), Kotputli (RMT), Dhaulakuan (LSM), Jodhpur (LSM), Dhakrani (LSM), Bareilly (LS)

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Haryana		Punjab									
		Shikopur		Gurdaspur		Ludhiana		Bathinda		Kapurthala		Rauni	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1.	DBW189	55.7	6 0	47.3	10 0	62.9	9 0	66.2	2 1	63.6	2 1	63.5	9 0
2.	DBW196	53.9	9 0	46.8	11 0	66.7	4 1	61.5	6 0	59.3	7 0	60.9	10 0
3.	PBW750	47.0	11 0	54.2	4 1	69.1	2 1	63.7	5 0	63.1	6 1	68.8	4 1
4.	WH1202	56.9	5 0	51.1	6 0	67.9	3 1	63.8	3 0	63.5	3 1	66.8	6 1
5.	HD3226	62.0	1 1	49.2	9 0	64.4	7 0	59.9	9 0	59.2	8 0	70.5	2 1
6.	UP2942	52.2	10 0	50.0	7 0	62.5	10 0	58.3	11 0	58.2	10 0	58.4	11 0
7.	HP1963	54.8	7 0	52.1	5 1	64.5	6 0	57.5	12 0	63.2	4 1	66.4	7 1
8.	BRW3773	59.7	2 1	54.2	3 1	65.7	5 1	61.5	7 0	57.6	11 0	69.0	3 1
9.	HD2967(C)	57.7	3 0	34.3	12 0	54.4	12 0	63.7	4 0	54.4	12 0	57.9	12 0
10.	WH1105(C)	44.1	12 0	54.5	1 1	64.3	8 0	61.1	8 0	63.2	4 1	64.7	8 1
11.	DBW88(C)	54.2	8 0	54.5	2 1	62.3	11 0	58.5	10 0	59.2	8 0	68.2	5 1
12.	HD3086(C)	57.2	4 0	49.3	8 0	69.7	1 1	69.4	1 1	63.6	1 1	71.1	1 1
G.M.		54.6		49.8		64.5		62.1		60.7		65.5	
S.E.(M)		1.551		1.340		1.989		2.191		1.760		2.743	
C.D. (10%)		3.7		3.2		4.8		5.2		4.2		6.6	
C.V.		5.7		5.4		6.2		7.1		5.8		8.4	
D.O.S. (d.m.y.)		10.11.2016		9.11.2016		1.11.2016		14.11.2016		4.11.2016		12.11.2016	

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Punjab			Rajasthan														
		Faridkot			Durgapura		Sriganganagar		Alwar		Hanumangarh		Bikaner						
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G			
1.	DBW189	60.6	8	0	42.6	11	0	58.2	11	0	65.5	6	0	50.1	12	0	48.9	4	1
2.	DBW196	66.7	1	1	42.1	12	0	62.8	5	0	62.5	8	0	56.2	5	0	48.3	6	0
3.	PBW750	63.1	6	1	52.4	1	1	61.7	8	0	73.4	4	0	55.2	6	0	49.7	2	1
4.	WH1202	66.3	2	1	48.3	5	0	65.1	4	1	61.8	11	0	54.3	7	0	48.7	5	1
5.	HD3226	64.6	4	1	49.7	4	1	68.0	1	1	79.6	1	1	60.4	2	1	37.8	12	0
6.	UP2942	62.7	7	1	47.3	7	0	62.5	7	0	74.3	3	1	52.1	10	0	45.9	7	0
7.	HP1963	56.9	11	0	47.5	6	0	61.7	8	0	62.4	9	0	56.6	4	0	45.2	8	0
8.	BRW3773	55.4	12	0	50.4	3	1	66.3	3	1	62.2	10	0	52.1	11	0	51.3	1	1
9.	HD2967(C)	63.8	5	1	44.3	10	0	56.8	12	0	64.2	7	0	58.3	3	1	40.1	11	0
10.	WH1105(C)	59.0	9	0	45.1	8	0	62.7	6	0	43.5	12	0	53.8	8	0	41.6	9	0
11.	DBW88(C)	57.5	10	0	44.6	9	0	59.6	10	0	67.3	5	0	61.0	1	1	49.6	3	1
12.	HD3086(C)	65.6	3	1	51.0	2	1	66.8	2	1	75.2	2	1	52.4	9	0	40.4	10	0
	G.M.	61.8			47.1			62.7			66.0			55.2			45.6		
	S.E. (M)	1.827			1.192			1.406			2.388			1.767			1.215		
	C.D. (10%)	4.4			2.9			3.4			5.7			4.2			2.9		
	C.V.	5.9			5.1			4.5			7.2			6.4			5.3		
	D.O.S.(d.m.y.)	15.11.2016			15.11.2016			15.11.2016			10.11.2016			10.11.2016			15.11.2016		

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh						Uttarakhand											
		Rampur-KVK			Nagina		Bulandshahr		Modipuram		Pantnagar		Kashipur						
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G			
1.	DBW189	63.5	1	1	57.7	1	1	59.2	8	0	55.2	4	1	56.5	11	0	59.6	7	0
2.	DBW196	59.1	4	1	51.4	3	0	55.6	11	0	50.9	8	0	57.1	9	0	59.2	8	0
3.	PBW750	45.9	12	0	50.6	6	0	55.3	12	0	52.8	7	0	60.9	3	1	70.4	4	0
4.	WH1202	51.4	11	0	50.0	7	0	59.7	7	0	55.4	3	1	53.7	12	0	60.6	5	0
5.	HD3226	62.6	2	1	49.3	8	0	56.9	10	0	56.8	1	1	57.5	8	0	54.2	10	0
6.	UP2942	56.9	6	1	45.8	12	0	67.2	1	1	48.8	11	0	62.6	2	1	58.1	9	0
7.	HP1963	58.8	5	1	50.6	5	0	64.7	2	1	56.7	2	1	60.4	4	1	70.8	3	0
8.	BRW3773	62.4	3	1	55.3	2	0	60.8	5	0	54.1	5	0	57.7	7	0	75.8	1	1
9.	HD2967(C)	54.1	10	0	50.9	4	0	58.1	9	0	48.0	12	0	58.4	5	0	52.1	11	0
10.	WH1105(C)	56.1	8	1	47.0	11	0	60.2	6	0	53.9	6	0	62.8	1	1	71.0	2	0
11.	DBW88(C)	56.9	6	1	49.1	9	0	61.2	4	0	49.6	10	0	57.1	10	0	60.4	6	0
12.	HD3086(C)	54.3	9	0	47.0	10	0	62.8	3	1	50.6	9	0	58.4	6	0	52.1	11	0
	G.M.	56.8			50.4			60.1			52.7			58.6			62.0		
	S.E. (M)	3.746			0.638			2.475			0.737			1.652			0.526		
	C.D. (10%)	9.0			1.5			5.9			1.8			4.0			1.3		
	C.V.	13.2			2.5			8.2			2.8			5.6			1.7		
	D.O.S.(d.m.y.)	10.11.2016			15.11.2016			15.11.2016			14.11.2016			11.11.2016			15.11.2016		

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	J&K			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	Yield	Rk	G
1	DBW189	58.5	5	1	55.4	11	0	58.5	10	0	60.7	6	0	53.1	10	0	58.9	1	1	58.1	8	0	57.8	8	0
2	DBW196	49.0	11	0	58.9	9	0	59.8	6	0	60.3	8	0	54.4	9	0	54.3	7	0	58.1	7	0	57.3	10	0
3	PBW750	50.4	10	0	60.9	7	0	59.8	7	0	63.7	2	1	58.5	2	1	51.2	12	0	65.7	3	1	59.2	6	1
4	WH1202	60.2	2	1	63.1	3	1	62.4	2	1	63.2	3	1	55.6	7	0	54.1	9	0	57.2	9	0	59.3	4	1
5	HD3226	53.0	7	0	61.2	6	0	63.5	1	1	61.3	4	0	59.1	1	1	56.4	4	1	55.8	10	0	59.7	1	1
6	UP2942	60.3	1	1	62.5	4	1	60.0	5	0	58.4	11	0	56.4	5	0	54.7	5	0	60.4	5	0	58.1	7	0
7	HP1963	51.9	8	0	63.3	2	1	62.1	3	1	60.1	9	0	54.7	8	0	57.7	3	1	65.6	4	1	59.2	5	1
8	BRW3773	59.9	3	1	64.8	1	1	59.0	9	0	60.6	7	0	56.4	4	0	58.1	2	1	66.8	2	1	59.6	2	1
9	HD2967(C)	41.0	12	0	47.0	12	0	57.2	11	0	54.7	12	0	52.7	11	0	52.8	11	0	55.3	11	0	53.7	12	0
10	WH1105(C)	56.6	6	1	59.3	8	0	59.2	8	0	61.1	5	0	49.3	12	0	54.3	6	0	66.9	1	1	57.4	9	0
11	DBW88(C)	51.0	9	0	57.4	10	0	56.8	12	0	60.0	10	0	56.4	6	0	54.2	8	0	58.7	6	0	57.0	11	0
12	HD3086(C)	59.3	4	1	61.8	5	0	61.2	4	0	64.8	1	1	57.2	3	0	53.7	10	0	55.2	12	0	59.5	3	1
	<b>G.M.</b>	<b>54.3</b>			<b>59.6</b>			<b>60.0</b>			<b>60.7</b>			<b>55.3</b>			<b>55.0</b>			<b>60.3</b>			<b>58.1</b>		
	<b>S.E. (M)</b>	<b>2.042</b>			<b>0.999</b>			<b>0.730</b>			<b>0.825</b>			<b>0.740</b>			<b>1.149</b>			<b>0.867</b>			<b>0.375</b>		
	<b>C.D. (10%)</b>	<b>4.9</b>			<b>2.4</b>			<b>1.7</b>			<b>1.9</b>			<b>1.7</b>			<b>2.7</b>			<b>2.1</b>			<b>0.9</b>		

## North Western Plains Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: AVT-IR-TS-TAS, 2016-17

SN	Variety	Disease Reaction				Agronomic Characteristics							Grain Characteristics			
		Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW189	0	0.0	60S	25.4	74-110	99	120-160	144	84-116	104	Ey	A	SH	40-48	44
2	DBW196	0	0.0	40S	21.7	72-110	98	118-161	142	83-119	104	Ey	A	SH	36-48	42
3	PBW750	0	0.0	40S	6.0	64-102	87	111-158	139	82-120	102	Ey	A	H	41-52	46
4	WH1202	5S	1.3	40S	8.8	65-100	89	114-159	141	85-109	97	Ey	A	SH	35-52	43
5	HD3226	0	0.0	20S	3.3	72-106	96	117-161	142	86-116	101	Ey	A	SH	35-53	43
6	UP2942	0	0.0	60S	15.8	74-106	94	115-159	141	84-111	96	Ey	A	SH	37-58	50
7	HP1963	5S	1.3	20S	5.1	72-105	94	108-158	140	84-117	99	Ey	A	SH	32-49	42
8	BRW3773	5S	1.5	40S	9.0	68-100	88	110-158	139	82-109	97	Ey	A	H	41-55	47
9	HD2967(C)	10S	2.8	80S	47.3	80-112	99	127-159	145	83-110	100	Ey	A	SH	31-45	38
10	WH1105(C)	10S	3.8	40S	19.5	69-103	91	111-158	140	83-105	93	Ey	A	H	36-49	41
11	DBW88(C)	5S	1.3	60S	30.0	68-104	92	115-161	141	85-110	96	Ey	A	SH	35-55	41
12	HD3086(C)	60S	16.3	20S	2.2	62-99	86	110-157	139	82-109	95	Ey	A	SH	35-51	44

1. Ancillary data from Delhi, Dhaulakuan, Pantnagar, Rauni, Kapurthala, Faridkot, Gurdaspur, Ludhiana, Hisar, Shikopur, Karnal, Bikaner, Jodhpur, Alwar, Sriganaganar, Hanumangarh, Nagina, and Bulandshahr.
2. Yellow rust data from Delhi, Dhaulakuan, Jammu, Pantnagar, Faridkot, Gurdaspur, Ludhiana, Hisar, Shikopur, Karnal, Rohtak and Durgapura.
3. Brown rust data from Gurdaspur, Ludhiana, Rohtak and Pantnagar.

### Individual Station Rust Data

SN	Variety	Gurdaspur		Ludhiana		Rohtak		Pantnagar		Delhi	Hisar	Shikopur	Karnal	Dhaulakuan	Durgapura	Faridkot	Jammu
		Br	YI	Br	YI	Br	YI	Br	YI	YI	YI	YI	YI	YI	YI	YI	YI
1	DBW189	0	20S	0	60S	0	0	0	20S	40S	20S	0	40S	5S	40S	0	60S
2	DBW196	0	20S	0	20S	0	0	0	40S	10S	40S	0	40S	10S	40S	0	40S
3	PBW750	0	tR	0	0	0	0	0	tS	5S	5S	0	tS	20S	0	0	40S
4	WH1202	tR	10S	0	20S	0	0	5S	0	40S	20S	0	5S	tR	0	0	10S
5	HD3226	0	20S	0	tS	0	0	0	0	10MS	0	0	tS	0	0	0	10S
6	UP2942	0	10S	0	20S	0	0	0	tS	10MS	10S	0	20S	60S	20S	0	40S
7	HP1963	5S	tR	0	tS	0	0	0	0	10S	0	0	10S	20S	10S	0	10S
8	BRW3773	5S	5S	0	0	0	0	tS	tS	40S	0	0	tS	10S	tMS	0	10S
9	HD2967(C)	0	80S	10S	60S	tS	60S	0	40S	40S	40S	10MS	40S	40S	40S	40S	80S
10	WH1105(C)	0	5S	0	30S	5S	tS	10S	20S	10S	40S	10MS	20S	40S	40S	0	20S
11	DBW88(C)	0	20S	0	60S	5S	10S	0	20S	40S	30S	0	40S	40S	40S	0	60S
12	HD3086(C)	60S	0	0	0	0	0	5S	0	0	0	0	tS	5S	0	0	20S

## AVT-IR-LS-TAS-NWPZ, 2016-17

The Advanced Varietal Trial under irrigated and late sown conditions in NWPZ consisting of seven genotypes including four checks *viz.* (WH1021, WH1124, HD3059 and DBW90) was proposed and conducted at 26 locations across the zone. The trials at Bareilly, Alwar, Tabiji, Bharatpur and Kotputli were rejected by the monitoring teams. Trial at Durgapura was sown early, whereas trial from Moradabad had high coefficient of variance and hence they were not reported.

- The location wise mean yield for the trial ranged from 57.8q/ha (Rampur-KVK) to 40.7q/ha (Jammu).
- At zonal level, test entry PBW752 (50.9q/ha) was the best performing entry and it significantly out-yielded all other entries and checks of the trial. Final year test entry DBW173 (49.7q/ha) ranked second in yield at zonal level.
- A high incidence of yellow rust was reported in the check varieties WH1021 (60S, ACI = 29.9) and HD3059 (60S, ACI = 25.4). Brown rust was also reported on the check varieties DBW90 (30S) and WH1124 (20S).
- Ancillary data revealed the test entries to be similar to check varieties for agronomic features, e.g. days to heading, maturity and plant height.

**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	J&K			Delhi			Haryana								
		Jammu			Delhi			Hisar			Karnal			Rohtak		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DBW173*	43.6	1	1	49.3	3	0	45.8	2	0	57.0	1	1	52.3	6	0
2.	PBW752	43.1	3	1	50.1	2	0	48.4	1	1	55.4	3	1	54.6	2	1
3.	HI1617	43.5	2	1	57.4	1	1	44.4	6	0	54.6	5	1	54.5	3	1
4.	HD3059(C)	38.9	5	0	46.1	6	0	44.7	5	0	51.7	6	0	53.8	4	1
5.	DBW90(C)	42.6	4	1	48.5	5	0	44.8	4	0	55.7	2	1	50.6	7	0
6.	WH1021(C)	31.6	7	0	34.4	7	0	41.3	7	0	40.1	7	0	52.6	5	0
7.	WH1124(C)	37.7	6	0	49.2	4	0	45.2	3	0	54.9	4	1	54.6	1	1
G.M.		40.1			47.8			44.9			52.8			53.3		
S.E. (M)		1.295			1.297			0.601			1.121			0.615		
C.D. (10%)		3.2			3.2			1.5			2.7			1.5		
C.V.		6.4			5.4			2.7			4.2			2.3		
D.O.S. (d.m.y.)		15.12.2016			17.12.2016			11.12.2016			10.12.2016			10.12.2016		

Trials proposed & conducted = 26

Trials not reported (7) = Bareilly (RMT), Alwar (RMT), Tabiji (RMT),  
 Bharatpur (RMT), Durgapura (ES), Kotputli (RMT),  
 Moradabad (HCV)

**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Punjab														
		Bathinda			Kapurthala			Ludhiana			Gurdaspur			Faridkot		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DBW173*	49.6	4	0	48.4	3	1	51.1	2	1	46.3	4	1	55.3	2	1
2.	PBW752	52.6	2	1	49.4	2	1	50.9	4	1	49.0	1	1	58.1	1	1
3.	HI1617	55.8	1	1	42.9	7	0	46.7	5	0	43.5	6	0	53.2	5	1
4.	HD3059(C)	51.3	3	1	46.1	5	0	51.1	3	1	47.5	3	1	55.1	3	1
5.	DBW90(C)	49.0	5	0	43.5	6	0	43.2	6	0	48.5	2	1	47.5	6	0
6.	WH1021(C)	45.1	7	0	47.6	4	1	42.7	7	0	34.9	7	0	39.1	7	0
7.	WH1124(C)	47.3	6	0	50.9	1	1	51.8	1	1	46.3	5	1	54.4	4	1
G.M.		50.1			47.0			48.2			45.1			51.8		
S.E.(M)		1.947			1.707			2.001			1.140			2.255		
C.D. (10%)		4.8			4.2			4.9			2.8			5.5		
C.V.		7.8			7.3			8.3			5.1			8.7		
D.O.S. (d.m.y.)		20.12.2016			14.12.2016			10.12.2016			15.12.2016			15.12.2016		



**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Rajasthan						Uttar Pradesh					
		Sriganganagar			Hanumangarh			Nagina			Modipuram		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DBW173*	47.4	2	1	44.8	4	1	50.0	2	0	43.9	1	1
2.	PBW752	50.0	1	1	48.0	1	1	55.3	1	1	41.8	3	0
3.	HI1617	47.3	3	1	47.3	2	1	43.3	5	0	40.1	6	0
4.	HD3059(C)	45.3	6	0	45.5	3	1	41.6	7	0	40.2	5	0
5.	DBW90(C)	45.7	5	0	39.4	7	0	49.2	3	0	38.9	7	0
6.	WH1021(C)	46.5	4	0	44.3	5	1	41.9	6	0	42.2	2	1
7.	WH1124(C)	44.7	7	0	43.8	6	1	48.6	4	0	41.4	4	0
G.M.		46.7			44.7			47.1			41.2		
S.E.(M)		1.168			1.937			0.594			0.706		
C.D. (10%)		2.9			4.7			1.5			1.7		
C.V.		5.0			8.7			2.5			3.4		
D.O.S.(d.m.y.)		19.12.2016			14.12.2016			22.12.2016			20.12.2016		

**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh									Uttrakhand					
		Bulandshahr			Ujhani			Rampur-KVK			Pantnagar			Kashipur		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DBW173*	52.2	4	0	48.0	5	0	56.1	5	0	46.1	4	0	56.7	3	1
2.	PBW752	50.6	5	0	48.6	3	0	65.4	1	1	47.1	3	1	47.9	4	0
3.	HI1617	48.2	6	0	51.0	2	0	60.7	2	0	38.2	7	0	56.9	2	1
4.	HD3059(C)	56.0	1	1	58.0	1	1	58.1	3	0	45.5	5	0	47.0	5	0
5.	DBW90(C)	54.0	2	1	44.2	6	0	53.0	7	0	49.2	2	1	38.9	7	0
6.	WH1021(C)	48.1	7	0	44.1	7	0	53.2	6	0	45.2	6	0	47.0	5	0
7.	WH1124(C)	53.1	3	1	48.4	4	0	57.8	4	0	49.8	1	1	57.6	1	1
G.M.		51.7			48.9			57.8			45.9			50.3		
S.E.(M)		1.358			2.431			1.271			1.126			0.449		
C.D. (10%)		3.3			6.0			3.1			2.8			1.1		
C.V.		5.2			9.9			4.4			4.9			1.8		
D.O.S.(d.m.y.)		14.12.2016			16.12.2016			10.12.2016			24.12.2016			19.12.2016		

**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	J&K			Delhi			Haryana			Punjab			Rajasthan			UP			UK			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.	DBW173*	43.6	1	1	49.3	3	0	51.7	2	1	50.1	3	1	46.1	3	0	50.1	3	0	51.4	2	0	49.7	2	0
2.	PBW752	43.1	3	1	50.1	2	0	52.8	1	1	52.0	1	1	49.0	1	1	52.3	1	1	47.5	4	0	50.9	1	1
3.	HI1617	43.5	2	1	57.4	1	1	51.2	4	0	48.4	5	0	47.3	2	1	48.7	5	0	47.6	3	0	48.9	4	0
4.	HD3059(C)	38.9	5	0	46.1	6	0	50.1	6	0	50.2	2	1	45.4	5	0	50.8	2	0	46.2	5	0	48.6	5	0
5.	DBW90(C)	42.6	4	1	48.5	5	0	50.4	5	0	46.3	6	0	42.5	7	0	47.9	6	0	44.1	7	0	46.6	6	0
6.	WH1021(C)	31.6	7	0	34.4	7	0	44.7	7	0	41.9	7	0	45.4	4	0	45.9	7	0	46.1	6	0	43.3	7	0
7.	WH1124(C)	37.7	6	0	49.2	4	0	51.5	3	0	50.1	4	1	44.2	6	0	49.8	4	0	53.7	1	1	49.3	3	0
G.M.		40.1			47.8			50.3			48.4			45.7			49.4			48.1			48.2		
S.E.(M)		1.295			1.297			0.471			0.827			1.131			0.639			0.606			0.336		
C.D. (10%)		3.2			3.2			1.1			2.0			2.9			1.5			1.5			0.8		

## North Western Plains Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: AVT-IR-LS-TAS, 2016-17

SN	Variety	Disease Reaction			Agronomic Characteristics							Grain Characteristics			
		Br	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW173*	0	40S	7.2	65-91	81	112-131	123	65-108	92	Ey	A	H	34-43	37
2	PBW752	5S	20S	2.2	66-91	79	107-130	120	72-102	90	Ey	A	H	34-43	40
3	HI1617	5S	40S	11.1	68-86	76	106-132	120	70-106	90	Ey	A	H	34-46	39
4	HD3059(C)	tR	60S	25.4	68-91	80	111-132	122	70-103	90	Ey	A	H	33-42	37
5	DBW90(C)	30S	10S	2.2	64-89	79	106-132	121	65-103	90	Ey	A	H	31-43	36
6	WH1021(C)	5S	60S	29.9	69-90	80	110-132	121	70-110	92	Ey	A	H	30-40	36
7	WH1124(C)	20S	20S	4.2	67-89	78	110-132	121	77-102	89	Ey	A	H	33-42	38

1. Ancillary data from Delhi, Pantnagar, Jammu, Ludhiana, Kapurthala, Faridkot, Gurdaspur, Hisar, Karnal, Durgapura, Sriganaganagar, Hanumangarh, Rampur, Nagina, Bulandshahr and Kashipur.
2. Yellow rust data from Delhi, Pantnagar, Durgapura, Jammu, Ludhiana, Faridkot, Gurdaspur, Hisar and Karnal.
3. Brown rust data from Gurdaspur.

## Individual Station Yellow Rust Data

SN	Variety	Gurdaspur	Ludhiana	Delhi	Durgapura	Faridkot	Hisar	Jammu	Karnal	Pantnagar
1	DBW173*	10S	0	0	10MS	0	tS	40S	5S	tS
2	PBW752	0	0	0	0	0	20S	0	0	0
3	HI1617	20S	0	10MS	20S	0	tS	40S	10S	tS
4	HD3059(C)	40S	10S	20MS	40S	0	30S	60S	40MS	tS
5	DBW90(C)	tR	10S	0	0	0	10S	tR	0	0
6	WH1021(C)	60S	10S	40MS	60S	10S	tS	60S	20MS	20S
7	WH1124(C)	tR	10S	20S	0	0	0	0	10MS	0

### **AVT-RI-TS-TAS-NWPZ, 2016-17**

The Advanced Varietal Trial under timely sown and restricted irrigation condition was proposed and conducted at 17 locations in the zone. In this trial, 10 genotypes including 4 checks namely, PBW644, WH1080, HD3043 and WH1142 were evaluated across the zone. The trial at Bharatpur location was rejected by the monitoring team whereas Uchani (late sowing) and Dausa (low site mean) were not reported.

- The locations wise mean yield ranged from 59.0q/ha (Delhi) to 38.9q/ha (Modipuram).
- At zonal level, the test entry HD3237 (48.0q/ha) was highest yielding genotype followed by HI1620 (48.0q/ha), MACS6677 (47.4q/ha) and CG1023 (47.2q/ha). These four genotypes were significantly superior to the best checks and constituted the first non-significant group.
- Most of the entries and the checks showed moderate disease reaction to yellow and brown rusts. Check variety PBW644 had yellow rust score of 40S (ACI = 14.2), while 30S (ACI = 12.5) for brown rust was recorded on the check HD3043.
- Ancillary data of the trial showed that all the entries were similar in agronomic traits. HI1620 had boldest grains (45g).

**1625-AVT-RI-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	J&K			Delhi		Haryana				Punjab											
		Jammu			Delhi		Hisar		Bawal		Ludhiana		Balachaur		Gurdaspur							
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G			
1.	HD3237	46.7	1	1	62.8	1	1	48.8	5	1	43.2	7	0	50.9	3	0	45.1	5	0	43.1	7	0
2.	HI1619	36.7	8	0	59.8	3	1	50.2	2	1	40.8	9	0	52.5	2	1	42.1	9	0	40.8	9	0
3.	HI1620	44.3	3	1	60.1	2	1	40.7	8	0	44.8	6	0	54.1	1	1	43.5	7	0	44.5	4	0
4.	CG1023	39.8	4	0	58.4	6	0	40.4	10	0	45.1	4	0	49.2	4	0	46.9	2	1	43.2	6	0
5.	MP1318	44.6	2	1	57.1	10	0	41.4	7	0	45.0	5	0	45.2	6	0	44.1	6	0	48.0	2	1
6.	MACS6677	38.5	6	0	59.5	4	1	49.0	4	1	47.2	2	1	41.1	8	0	43.4	8	0	48.5	1	1
7.	WH1080(C)	38.4	7	0	58.2	7	0	46.9	6	0	51.5	1	1	42.1	7	0	50.9	1	1	41.2	8	0
8.	PBW644(C)	35.6	9	0	57.5	9	0	40.6	9	0	45.9	3	0	46.4	5	0	41.2	10	0	44.2	5	0
9.	HD3043 (C)	34.3	10	0	58.8	5	1	50.0	3	1	39.8	10	0	35.6	10	0	45.6	3	0	44.8	3	0
10.	WH1142(C)	39.3	5	0	58.0	8	0	51.9	1	1	42.5	8	0	38.5	9	0	45.4	4	0	40.6	10	0
G.M.		39.8			59.0		46.0		44.6		45.6		44.8		43.9							
S.E.(M)		1.965			1.827		1.779		1.912		1.211		1.761		1.136							
C.D. (10%)		4.7			4.4		4.3		4.6		2.9		4.2		2.7							
C.V.		9.9			6.2		7.7		8.6		5.3		7.9		5.2							
D.O.S. (d.m.y.)		28.10.2016			4.11.2016		29.10.2016		5.11.2016		1.11.2016		30.10.2016		5.11.2016							

Trials Proposed & Conducted = 17

Trial not reported (3) = Bharatpur (RMT), Uchani (LS), Dausa (LSM)

**1625-AVT-RI-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Punjab			Rajasthan				UP				UTK									
		Kapurthala			Diggi		Sriganganagar		Hanumangarh		Modipuram		Bulandshahr		Pantnagar							
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G			
1.	HD3237	46.4	7	0	39.4	7	0	55.8	2	0	52.5	3	1	40.3	5	0	46.3	10	0	51.0	2	1
2.	HI1619	44.9	8	0	50.1	1	1	51.3	8	0	53.0	2	1	36.3	7	0	51.4	1	1	46.4	7	0
3.	HI1620	48.6	5	1	49.9	2	1	60.5	1	1	51.3	5	1	34.2	9	0	51.1	2	1	44.0	10	0
4.	CG1023	52.1	1	1	46.1	3	0	50.3	9	0	50.0	8	1	40.7	4	0	49.2	3	1	50.2	3	1
5.	MP1318	47.7	6	1	38.5	9	0	44.6	10	0	49.7	9	1	44.4	1	1	47.8	8	0	48.1	5	1
6.	MACS6677	49.2	4	1	43.2	5	0	54.7	3	0	50.9	7	1	44.0	3	1	48.3	6	0	46.0	8	0
7.	WH1080(C)	50.7	3	1	39.1	8	0	53.3	5	0	51.0	6	1	36.2	8	0	48.6	5	1	47.2	6	1
8.	PBW644(C)	51.3	2	1	42.3	6	0	52.0	7	0	53.1	1	1	44.2	2	1	49.0	4	1	45.0	9	0
9.	HD3043 (C)	42.9	10	0	45.0	4	0	53.4	4	0	44.4	10	0	32.2	10	0	48.2	7	0	51.2	1	1
10.	WH1142(C)	44.1	9	0	34.2	10	0	52.1	6	0	52.3	4	1	36.3	6	0	46.5	9	0	49.8	4	1
G.M.		47.8			42.8		52.8		50.8		38.9		48.7		47.9							
S.E. (M)		2.024			0.910		1.448		1.630		0.563		1.235		1.782							
C.D. (10%)		4.9			2.2		3.5		3.9		1.4		3.0		4.3							
C.V.		8.5			4.3		5.5		6.4		2.9		5.1		7.4							
D.O.S. (d.m.y.)		3.11.2016			5.11.2016		5.11.2016		5.11.2016		2.11.2016		5.11.2016		26.10.2016							

**1625-AVT-RI-TS-TAS-NWPZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	J&K	Delhi	Haryana	Punjab	Rajasthan	UP	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.	HD3237	46.7 1 1	62.8 1 1	46.0 4 0	46.4 3 1	49.2 4 0	43.3 6 0	51.0 2 1	48.0 1 1
2.	HI1619	36.7 8 0	59.8 3 1	45.5 5 0	45.1 8 0	51.5 2 0	43.8 5 0	46.4 7 0	46.9 5 0
3.	HI1620	44.3 3 1	60.1 2 1	42.7 10 0	47.7 2 1	53.9 1 1	42.7 7 0	44.0 10 0	48.0 2 1
4.	CG1023	39.8 4 0	58.4 6 0	42.8 9 0	47.8 1 1	48.8 6 0	45.0 4 1	50.2 3 1	47.2 4 1
5.	MP1318	44.6 2 1	57.1 10 0	43.2 8 0	46.3 4 1	44.3 10 0	46.1 3 1	48.1 5 1	46.2 8 0
6.	MACS6677	38.5 6 0	59.5 4 1	48.1 2 1	45.5 7 0	49.6 3 0	46.2 2 1	46.0 8 0	47.4 3 1
7.	WH1080(C)	38.4 7 0	58.2 7 0	49.2 1 1	46.2 5 1	47.8 7 0	42.4 8 0	47.2 6 1	46.8 6 0
8.	PBW644(C)	35.6 9 0	57.5 9 0	43.3 7 0	45.7 6 0	49.1 5 0	46.6 1 1	45.0 9 0	46.3 7 0
9.	HD3043(C)	34.3 10 0	58.8 5 1	44.9 6 0	42.3 9 0	47.6 8 0	40.2 10 0	51.2 1 1	44.7 10 0
10.	WH1142 (C)	39.3 5 0	58.0 8 0	47.2 3 1	42.2 10 0	46.2 9 0	41.4 9 0	49.8 4 1	45.1 9 0
	<b>G.M.</b>	<b>39.8</b>	<b>59.0</b>	<b>45.3</b>	<b>45.5</b>	<b>48.8</b>	<b>43.8</b>	<b>47.9</b>	<b>46.7</b>
	<b>S.E. (M)</b>	<b>1.965</b>	<b>1.827</b>	<b>1.306</b>	<b>0.789</b>	<b>0.788</b>	<b>0.679</b>	<b>1.782</b>	<b>0.420</b>
	<b>C.D. (10%)</b>	<b>4.7</b>	<b>4.4</b>	<b>3.2</b>	<b>1.9</b>	<b>1.9</b>	<b>1.7</b>	<b>4.3</b>	<b>1.0</b>

## North Western Plains Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: AVT-RI-TS-TAS, 2016-17

SN	Variety	Disease Reaction				Agronomic Characteristics							Grain Characteristics			
		Br	ACI	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD3237	30S	10.0	tR	0.04	70-103	88	127-152	141	93-127	103	Ey	A	SH	35-48	42
2	HI1619	0	0.0	tR	0.08	81-115	97	132-155	144	93-127	102	Ey	A	H	34-54	44
3	HI1620	tR	0.05	20S	4.2	72-103	89	129-152	142	85-112	97	Ey	A	SH-H	35-54	45
4	CG1023	5S	1.5	20S	11.0	79-106	90	129-152	142	85-129	103	Ey	A	H	33-52	42
5	MP1318	5S	1.3	20S	10.2	82-115	95	132-157	144	89-122	103	Ey	A	H	36-54	43
6	MACS6677	0	0.0	30S	14.0	73-105	89	128-152	141	75-118	101	Ey	A	SH-H	35-52	41
7	WH1080(C)	10S	2.5	20S	5.2	75-105	91	131-153	143	74-123	95	Ey	A	H	37-49	42
8	PBW644(C)	tS	0.3	40S	14.2	74-107	91	131-154	141	80-113	102	Ey	A	H	32-47	40
9	HD3043(C)	30S	12.5	10S	7.4	86-112	98	133-155	145	87-120	100	Ey	A	H	31-44	37
10	WH1142(C)	0	0.0	20S	6.0	70-109	94	130-153	143	84-113	98	Ey	A	H	31-45	39

1. Ancillary data from Delhi, Pantnagar, Ludhiana, Balachaur, Gurdaspur, Kapurthala, Bawal, Hisar, Uchani, Diggi, Sriganaganagar and Hanumangarh.
2. Yellow rust data from Pantnagar, Jammu, Ludhiana, Gurdaspur and Hisar.
3. Brown rust data from Pantnagar, Jammu, Ludhiana and Gurdaspur.

### Individual Station Rust Data

SN	Variety	Gurdaspur		Ludhiana		Jammu		Pantnagar		Hisar
		Br	YI	Br	YI	Br	YI	Br	YI	YI
1	HD3237	10S	0	0	0	0	tS	30S	0	0
2	HI1619	0	tR	0	0	0	0	0	0	tR
3	HI1620	0	0	0	0	0	20S	tR	0	tS
4	CG1023	0	20S	5S	5S	0	10S	tS	0	20S
5	MP1318	0	20S	5S	tS	0	20S	0	0	10S
6	MACS6677	0	20S	0	0	0	20S	0	0	30S
7	WH1080(C)	0	0	0	0	0	20S	10S	tS	5S
8	PBW644(C)	tR	tR	0	tS	0	40S	tS	0	30S
9	HD3043(C)	5S	10S	5S	tS	10S	10S	30S	0	20MS
10	WH1142(C)	0	10S	0	0	0	20S	0	0	0

## Zero Tillage Trial- NWPZ, 2016-17

The evaluation of wheat genotypes for CA practices is now the need of the hour. The evaluation of genotypes under zero tillage was hampered due to non-availability of suitable seed drill for applying the basal dose of fertilizer during sowing. The Bhopal precision seed drill used in sowing of breeding trials is not suitable for conducting varietal trial under ZT. So, a specially customized seed-cum-fertilizer plot drill was assembled by ICAR-CIAE, Bhopal on the basis of design conceptualized by ICAR-IIWBR. The new zero-till ferti-seed drill was used this year for evaluating the suitability of genotypes in the AVT-IR-TS-NWPZ under zero tillage (ZT) conditions at Karnal on a test basis. There were some mechanical problems in the new fabricated machine causing unequal distribution of seed in different plots leading to gaps in plant stand.

The results obtained from the test run of the new seed drill are preliminary. However, it demonstrates the feasibility of conducting varietal evaluation of wheat genotypes under zero-till conditions. The machine has now been properly modified to resolve the mechanical issues of seed distribution. It is proposed to use this drill to conduct zero-till AVT trials at more locations during the coming crop season.

The 8 genotypes and 4 checks in the AVT-IR-TS-NWPZ were evaluated for grain and biomass yield besides other agronomic features. The average grain yield under conventional tillage (CT) was 64.8q/ha, while under ZT it was 58.2q/ha. Biomass (152.4q/ha) of zero tillage trial was lower than that of conventional tillage. The rank of entries with respect to grain yield varied largely between the tillage conditions. The entry PBW750 (70.2q/ha) was top yielding under conventional tillage, while HP1963 (64.4q/ha) was the top yielder under ZT. The check variety HD3086 showed consistency and ranked second under both CT (68.7q/ha) and ZT (61.3q/ha), while WH1105 ranked 3<sup>rd</sup> under CT (67.9q/ha) and 7<sup>th</sup> under ZT (58.2q/ha). Although the HI of individual entries varied between two tillage conditions, mainly due to the plant stand variation caused by the machine error, the average HI (0.38) was same in both the trials.

Most of the agronomic traits recorded were comparable among test entries and checks under the two trial conditions. However, the entry HD3226 flowered and matured 4 days early under ZT as compared to CT. Lodging upto 20% was observed in the taller entries (PBW750 and HD3226) under CT and no lodging was observed in these entries under ZT.

**Fig. New seed-cum-fertilizer drill for varietal trial under Zero-tillage**





**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Grain yield and biomass under Conventional tillage vs Zero Tillage**

SN	Variety	Conventional Tillage						Zero tillage							
		GY	Rk	G	BM	Rk	G	HI	GY	Rk	G	BM	Rk	G	HI
1.	DBW189	60.4	10	0	179.2	3	1	0.34	60.4	4	0	166.8	1	1	0.36
2.	DBW196	62.5	9	0	180.0	2	1	0.35	54.2	12	0	149.6	8	0	0.36
3.	PBW750	70.2	1	1	174.8	5	1	0.40	58.3	6	0	151.0	7	0	0.39
4.	WH1202	63.1	8	0	162.1	11	0	0.39	60.6	3	1	156.3	5	1	0.39
5.	HD3226	67.8	4	1	178.5	4	1	0.38	59.2	5	0	158.9	3	1	0.37
6.	UP2942	67.0	5	0	180.4	1	1	0.37	55.4	9	0	144.2	11	0	0.38
7.	HP1963	67.0	6	0	166.3	7	0	0.40	64.4	1	1	158.4	4	1	0.41
8.	BRW3773	66.1	7	0	154.2	12	0	0.43	54.3	11	0	136.2	12	0	0.40
9.	HD2967 (C)	58.4	12	0	171.5	6	1	0.34	57.8	8	0	160.0	2	1	0.36
10.	WH1105 (C)	67.9	3	1	164.8	9	0	0.41	58.2	7	0	144.5	10	0	0.40
11.	DBW88 (C)	59.0	11	0	165.8	8	0	0.36	54.9	10	0	149.5	9	0	0.37
12.	HD3086 (C)	68.1	2	1	164.2	10	0	0.41	61.3	2	1	154.0	6	0	0.40
G.M.		64.8			170.1			0.38	58.2			152.4			0.38
S.E. (M)		1.221			5.047				1.653			4.557			
C.D. (5 & 10%)		2.9			12.1				4.0			10.9			
C.V.		3.8			5.9				5.7			6.0			
D.O.S. (d.m.y)		8.11.2016						6.11.2016							

**Ancillary data in Conventional tillage vs Zero tillage trial**

SN	Variety	Agronomic Characteristics								TGW	
		Heading		Maturity		Ht (cm)		Lodg. %		CT	ZT
		CT	ZT	CT	ZT	CT	ZT	CT	ZT		
1	DBW189	104	103	154	152	106	106	-	-	46.1	47
2	DBW196	102	102	153	152	108	108	-	-	41.0	44
3	PBW750	88	87	151	150	100	100	20	-	44.6	47
4	WH1202	92	89	150	149	94	94	-	-	44.0	45
5	HD3226	100	94	154	150	100	100	10	-	43.2	46
6	UP2942	94	94	151	150	96	96	-	-	53.5	53
7	HP1963	98	95	149	148	109	109	-	-	43.2	43
8	BRW3773	91	92	149	148	97	97	-	-	50.9	52
9	HD2967(C)	103	102	154	153	103	103	-	-	43.1	42
10	WH1105(C)	92	93	151	150	95	95	-	-	40.9	41
11	DBW88(C)	93	92	150	149	102	102	-	-	42.6	41
12	HD3086(C)	84	85	148	147	100	100	-	-	44.1	43

# North Eastern Plains Zone

## **AVT-IR-TS-TAS-NEPZ, 2016-17**

The AVT irrigated-timely sown trial proposed at 29 locations was conducted at 24 locations. Five centres (Baharaich, Patna, Chirang, Barpeta and Dhubri) did not conduct this trial. This trial consisting 7 entries including 5 checks (HD2733, K0307, DBW39, K1006 and HD2967). Trial at Gumla failed and data was not reported from Baxa centre. The yield data was not included for compilation as the trials at Purnea and Allahabad were rejected by monitoring team, low site mean at Kalyani, low CV at Basti and Pusa and high CV at Majhian. The results are summarized as below.

- The zonal grain yield based on 18 centres data, ranged from 49.1q/ha (DBW187) to 45.5q/ha (HD2967) thereby indicating slight differences among the test entries and checks in this trial.
- At zonal basis, entry DBW187 (49.1q/ha) significantly out yielded all the entries and it alone formed the first non-significant group.
- The ancillary data from 19 locations were compiled, but individual trait data from some centres were not considered due to unrealistic reporting.
- In general, most of the entries were of medium height (93-104cm), medium maturity (120-125 days) and bold grains (40-44g).
- The leaf blight data from 3 centres (Burdwan, Faizabad and Sabour) revealed moderate incidence of leaf blight disease (45-68 score).
- There was no natural development of any of the rusts in the zone.

**1631-AVT-IR-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh																	
		Araul			Kanpur			Varanasi			Barabanki			Ghazipur			Faizabad		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW187	51.6	1	1	56.1	1	1	46.3	1	1	45.1	1	1	52.5	5	0	58.3	1	1
2	HD3219	49.4	3	1	51.4	4	0	43.5	3	0	42.2	3	0	54.1	2	0	56.7	2	1
3	HD2733(C)	41.2	7	0	40.6	7	0	44.0	2	0	43.0	2	1	59.4	1	1	52.1	3	0
4	K0307(C)	47.3	5	0	53.8	2	0	43.5	3	0	41.1	5	0	46.9	6	0	50.3	6	0
5	DBW39(C)	48.5	4	0	46.5	6	0	41.7	5	0	40.8	6	0	44.5	7	0	51.7	5	0
6	K1006(C)	45.4	6	0	47.9	5	0	41.0	6	0	42.0	4	0	53.7	4	0	50.1	7	0
7	HD2967(C)	51.0	2	1	52.0	3	0	39.4	7	0	40.7	7	0	54.0	3	0	52.0	4	0
G.M.		47.8			49.8			42.8			42.1			52.2			53.0		
S.E. (M)		0.903			0.770			0.929			0.929			0.443			0.787		
C.D. (10%)		2.2			1.9			2.3			2.3			1.1			1.9		
C.V.		3.8			3.1			4.3			4.4			1.7			3.0		
D.O.S. (d.m.y.)		25.11.2016			24.11.2016			24.11.2016			21.11.2016			25.11.2016			23.11.2016		

Trials proposed = 29

Trials not conducted (5) = Baharaich, ICAR-Patna, Chirang-KVK, Barpeta & Dhubri

Trials not reported (8) = Purnea (RMT), Allahabad (RMT), Gumla (TF), Baxa (DNR), Kalyani (LSM), Majhian (HCV), Basti (LCV), Pusa (LCV)

**1631-AVT-IR-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Bihar									Jharkhand								
		Sabour			Bikramganj			Banka			Ranchi			Chianki			Dumka		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW187	45.8	1	1	49.3	6	0	51.6	5	1	58.6	2	1	42.2	3	0	56.6	4	1
2	HD3219	43.4	4	1	48.3	7	0	53.0	3	1	51.7	6	0	38.4	5	0	60.1	1	1
3	HD2733(C)	42.6	5	1	49.8	5	0	56.8	2	1	62.9	1	1	32.7	7	0	55.8	6	1
4	K0307(C)	45.1	3	1	52.1	3	0	51.7	4	1	46.8	7	0	43.7	2	1	59.1	3	1
5	DBW39(C)	34.4	7	0	50.6	4	0	48.5	6	0	52.6	5	0	49.3	1	1	59.9	2	1
6	K1006(C)	45.2	2	1	56.7	1	1	56.9	1	1	56.8	3	1	40.4	4	0	45.1	7	0
7	HD2967(C)	40.1	6	0	54.0	2	1	40.5	7	0	54.9	4	0	36.8	6	0	56.3	5	1
G.M.		42.4			51.5			51.3			54.9			40.5			56.1		
S.E. (M)		1.786			1.439			3.132			3.178			2.635			2.373		
C.D. (10%)		4.4			3.5			7.7			7.8			6.5			5.8		
C.V.		8.4			5.6			12.2			11.6			13.0			8.5		
D.O.S. (d.m.y.)		19.11.2016			23.11.2016			21.11.2016			23.11.2016			16.11.2016			29.11.2016		

**1631-AVT-IR-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	West Bengal									Assam		
		Coochbehar			Manikchak			Burdwan			Shillongani		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW187	33.9	5	0	52.0	1	1	39.8	4	1	41.9	4	1
2	HD3219	36.9	2	1	46.6	2	0	35.1	6	0	44.5	3	1
3	HD2733(C)	31.0	7	0	41.7	5	0	41.6	1	1	36.6	6	0
4	K0307(C)	35.4	4	1	42.5	4	0	40.1	3	1	38.1	5	0
5	DBW39(C)	31.9	6	0	43.8	3	0	38.9	5	1	48.5	1	1
6	K1006(C)	36.8	3	1	40.1	6	0	40.8	2	1	44.7	2	1
7	HD2967(C)	39.7	1	1	38.5	7	0	35.1	6	0	29.7	7	0
G.M.		35.1			43.6			38.8			40.6		
S.E. (M)		2.254			1.702			1.278			2.824		
C.D. (10%)		5.5			4.2			3.1			6.9		
C.V.		12.8			7.8			6.6			13.9		
D.O.S. (d.m.y.)		14.11.2016			19.11.2016			17.11.2016			17.11.2016		

**1631-AVT-IR-TS-TAS-NEPZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	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	DBW187	51.6	1	1	48.9	4	0	52.4	2	1	41.9	1	1	41.9	4	1	48.8	1	1
2	HD3219	49.5	2	0	48.2	5	0	50.0	4	1	39.5	2	1	44.5	3	1	47.2	2	0
3	HD2733(C)	46.7	5	0	49.7	2	0	50.5	3	1	38.1	6	0	36.6	6	0	45.7	6	0
4	K0307(C)	47.2	4	0	49.6	3	0	49.9	5	0	39.3	3	0	38.1	5	0	46.1	4	0
5	DBW39(C)	45.6	7	0	44.5	7	0	53.9	1	1	38.2	5	0	48.5	1	1	45.8	5	0
6	K1006(C)	46.7	6	0	52.9	1	1	47.4	7	0	39.3	4	0	44.7	2	1	46.5	3	0
7	HD2967(C)	48.2	3	0	44.9	6	0	49.3	6	0	37.8	7	0	29.7	7	0	44.7	7	0
G.M.		47.9			48.4			50.5			39.2			40.6			46.4		
S.E. (M)		0.331			1.294			1.587			1.033			2.824			0.481		
C.D. (10%)		0.8			3.2			3.9			2.5			6.9			1.1		

### North Eastern Plains Zone

#### Summary of Disease Data and Agronomic Characteristics

Trial: AVT-IR-TS-TAS-NEPZ, 2016-17

SN	Variety	Disease Reaction	Agronomic Characteristics								Grain Characteristics			
		LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
1.	DBW187	56 (35)	62-87	75	111-133	120	86-109	98	Ey	10	A	SH-H	34-49	43
2.	HD3219	57 (46)	61-90	78	112-133	122	87-110	100	Ey	-	A	SH-H	32-51	43
3.	HD2733(C)	68 (56)	59-91	81	112-135	123	75-104	93	Ey	-	A	SH	36-52	44
4.	K0307(C)	46 (35)	62-91	77	110-132	122	87-110	100	Ey	-	A	H	33-49	40
5.	DBW39(C)	56 (46)	61-90	78	110-134	122	95-114	104	Ey	-	A	SH	35-47	42
6.	K1006(C)	68 (46)	60-88	76	110-134	121	81-108	97	Ey	10	A	SH	32-52	41
7.	HD2967(C)	45 (34)	59-95	82	113-139	125	85-109	98	Ey	-	A	SH	31-49	40

1. The ancillary data from Araul, Basti, Bikramganj, Burdwan, Chianki, Coochbehar, Dumka, Faizabad, Ghazipur, Kalyani, Kanpur, Majhian, Manikchak, Pusa, Ranchi, Sabour, Shillongani, Varanasi and Barabanki.
2. Leaf blight data from Burdwan, Faizabad and Sabour centres.
3. Lodging data from Burdwan, Dumka, Ghazipur and Shillongani centres.
4. No rust data reported from any centre.

#### Individual Station Leaf Blight Data

SN	Variety	Burdwan	Faizabad	Sabour
1.	DBW187	56	24	46
2.	HD3219	57	35	46
3.	HD2733(C)	45	57	68
4.	K0307(C)	34	45	46
5.	DBW39(C)	56	36	46
6.	K1006(C)	45	35	68
7.	HD2967(C)	45	45	23

## **AVT-RI-TS-TAS-NEPZ, 2016-17**

The restricted irrigated, timely sown trial proposed at 18 locations was conducted by all except Barpeta centre. This trial consisted of 9 entries including a final year (HI1612), 3 first year entries (HI1620, HS611 and UAS384) and 5 checks (HD2888, C306, K8027, HD3171 and K1317). Data was not reported from Baxa centre and was not considered from Kalyani due to late sowing. Trials at Faizabad, Basti and Purnea centres were rejected by the monitoring teams whereas the trial at Tissuhi, Chianki and Manikchak were not considered due to low site mean. The summary results are given as below:

- The mean zonal grain yield based on 9 centres data, ranged from 40.5q/ha (K1317) to 31.9q/ha (HI1620) indicating significant differences among the test entries and checks in this trial.
- Out of total 9 entries in this trial, one latest identified check, K1317 (40.5q/ha) was top yielder and it along with HI1620 (39.9q/ha) formed the first non-significant group.
- The ancillary data from 12 locations were compiled, but individual trait data from some centres were not considered due to unrealistic reporting.
- In general, most of the entries were medium to tall in height (90-116cm), medium maturing (122-129 days) and had bold grains (41-46 g).
- The leaf blight data from 4 centres (Burdwan, Kalyani, Sabour and Shillongani) revealed low to moderate incidence for this disease (35-58 score).
- There was no natural development of any of the rusts in the zone.

**1634-AVT-RI-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh											
		Deegh			Kanpur			Varanasi			Ghaghraghat		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1612*	35.3	4	0	37.7	6	0	37.0	2	0	37.8	5	0
2	HI1620	37.5	3	0	44.9	2	0	42.3	1	1	33.4	9	0
3	HS611	39.5	2	0	44.8	3	0	32.9	5	0	37.8	4	0
4	UAS384	34.6	5	0	41.6	4	0	31.7	6	0	40.1	2	0
5	HD2888(C)	21.0	9	0	25.5	9	0	31.0	8	0	37.6	6	0
6	C306(C)	26.3	7	0	28.2	8	0	33.8	4	0	37.0	7	0
7	K8027(C)	23.9	8	0	34.7	7	0	30.6	9	0	34.6	8	0
8	HD3171(I)(C)	33.8	6	0	39.9	5	0	31.0	7	0	39.1	3	0
9	K1317(I)(C)	42.9	1	1	46.6	1	1	36.5	3	0	46.0	1	1
G.M.		32.8			38.2			34.1			38.1		
S.E. (M)		0.753			0.647			1.787			1.667		
C.D. (10%)		1.8			1.6			4.3			4.0		
C.V.		4.6			3.4			10.5			8.7		
D.O.S. (d.m.y.)		5.11.2016			26.10.2016			9.11.2016			9.11.2016		

Trials proposed = 18    Trial not conducted (1) = Barpeta-KVK  
 Trials not reported (8) = Faizabad (RMT), Basti-KVK (RMT), Purnea (RMT), Baxa (DNR),  
 Tissuhi (LSM), Chianki (LSM), Manikchak (LSM), Kalyani (LS)

**1634-AVT-RI-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Bihar						Jharkhand			West Bengal			Assam		
		Sabour			IARI-Pusa			Ranchi			Burdwan			Shillongani		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1612*	38.9	2	1	42.7	8	0	36.2	5	1	42.1	2	1	38.3	2	0
2	HI1620	40.4	1	1	40.3	9	0	34.4	7	0	40.9	4	0	45.1	1	1
3	HS611	35.9	5	0	44.1	5	0	33.1	8	0	36.2	9	0	36.6	3	0
4	UAS384	33.1	6	0	43.5	6	0	37.9	2	1	41.3	3	1	35.5	4	0
5	HD2888(C)	29.0	7	0	45.8	3	0	29.5	9	0	40.5	5	0	27.2	7	0
6	C306(C)	25.8	9	0	44.4	4	0	36.9	4	1	38.9	6	0	20.0	9	0
7	K8027(C)	27.5	8	0	42.8	7	0	35.0	6	0	44.0	1	1	23.7	8	0
8	HD3171(I)(C)	38.1	3	1	48.9	1	1	40.8	1	1	37.5	7	0	34.1	6	0
9	K1317(I)(C)	37.2	4	1	45.9	2	0	37.3	3	1	37.0	8	0	34.8	5	0
G.M.		34.0			44.3			35.7			39.8			32.8		
S.E. (M)		1.691			0.321			2.025			1.281			1.730		
C.D. (10%)		4.1			0.8			4.9			3.1			4.2		
C.V.		10.0			1.5			11.4			6.4			10.6		
D.O.S. (d.m.y.)		5.11.2016			5.11.2016			30.10.2016			10.11.2016			8.11.2016		



**1634-AVT-RI-TS-TAS-NEPZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	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	HI1612*	36.9	5	0	40.8	3	0	36.2	5	1	42.1	2	1	38.3	2	0	38.4	3	0
2	HI1620	39.5	2	0	40.3	4	0	34.4	7	0	40.9	4	0	45.1	1	1	39.9	2	1
3	HS611	38.8	3	0	40.0	5	0	33.1	8	0	36.2	9	0	36.6	3	0	37.9	5	0
4	UAS384	37.0	4	0	38.3	6	0	37.9	2	1	41.3	3	1	35.5	4	0	37.7	6	0
5	HD2888(C)	28.8	9	0	37.4	7	0	29.5	9	0	40.5	5	0	27.2	7	0	31.9	9	0
6	C306(C)	31.3	7	0	35.1	9	0	36.9	4	1	38.9	6	0	20.0	9	0	32.3	8	0
7	K8027(C)	31.0	8	0	35.1	8	0	35.0	6	0	44.0	1	1	23.7	8	0	33.0	7	0
8	HD3171(I)(C)	35.9	6	0	43.5	1	1	40.8	1	1	37.5	7	0	34.1	6	0	38.1	4	0
9	K1317(I)(C)	43.0	1	1	41.6	2	1	37.3	3	1	37.0	8	0	34.8	5	0	40.5	1	1
	<b>G.M.</b>	<b>35.8</b>			<b>39.1</b>			<b>35.7</b>			<b>39.8</b>			<b>32.8</b>			<b>36.6</b>		
	<b>S.E. (M)</b>	<b>0.659</b>			<b>0.861</b>			<b>2.025</b>			<b>1.281</b>			<b>1.730</b>			<b>0.480</b>		
	<b>C.D. (10%)</b>	<b>1.6</b>			<b>2.1</b>			<b>4.9</b>			<b>3.1</b>			<b>4.2</b>			<b>1.1</b>		

## North Eastern Plains Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: AVT-RI-TS-TAS-NEPZ, 2016-17

SN	Variety	Disease Reaction	Agronomic Characteristics								Grain Characteristics			
		LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Lod.	Col.	Tex.	TGW.R	TGW.M
1.	HI1612*	45 (35)	77-108	87	113-139	127	69-120	94	Ey	-	A	SH	35-44	41
2.	HI1620	35 (24)	66-101	80	107-136	124	71-118	93	Ey	10	A	SH-H	40-54	46
3.	HS611	57 (35)	67-105	81	109-140	124	50-121	91	Ey	10	A	SH-H	38-50	45
4.	UAS384	58 (35)	69-108	82	109-135	125	61-110	90	Ey	-	A	SH-H	35-47	42
5.	HD2888(C)	56 (24)	65-100	80	108-138	124	87-140	116	Ey	40	A	SH	36-46	42
6.	C306(C)	46 (35)	73-108	86	112-140	129	65-145	116	Ey	45	A	H	38-50	43
7.	K8027(C)	45 (24)	66-106	81	112-137	126	75-135	115	Ey	45	A	H	38-50	44
8.	HD3171(I)(C)	56 (35)	60-99	78	106-138	122	82-103	93	Ey	-	A	SH	38-50	44
9.	K1317(I)(C)	36 (35)	72-108	85	112-137	126	87-106	96	Ey	-	A	SH	38-52	45

1. The ancillary data from Burdwan, Chianki, Ghaghraghat, Kalyani, Kanpur, Manikchak, Pusa, Ranchi, Sabour, Shillongani, Tissuhi and Varanasi.
2. Lodging data from Ghaghraghat, Kanpur, Sabour, Kalyani and Shillongani centers.
3. Leaf blight data from Kalyani, Burdwan, Sabour and Shillongani centers.
4. No rust reaction reported from any centre.

## Individual Station Leaf Blight Data

SN	Variety	Burdwan	Kalyani	Sabour	Shillongani
1.	HI1612*	45	35	35	26
2.	HI1620	23	24	34	35
3.	HS611	45	35	57	24
4.	UAS384	34	24	46	58
5.	HD2888(C)	56	13	23	24
6.	C306(C)	46	24	23	36
7.	K8027(C)	45	13	24	35
8.	HD3171(I)(C)	56	24	35	36
9.	K1317(I)(C)	35	24	35	36

# Central Zone

## **AVT-RI-TS-TAD-CZ, 2016-17**

The advance varietal trial under restricted irrigated conditions was proposed and conducted at 18 locations in the states of MP, Chattisgarh, Rajasthan and Gujarat. The trial consisted of 4 test entries and three check varieties (MP3288 and DBW110) of bread wheat and durum wheat (HI8627). The trial at Pratapgarh was rejected by the monitoring team, while data from Junagadh (low site mean), SK Nagar (unrealistic yield), Amreli (delayed sowing), Anand (delayed sowing) and Rewa (more irrigation) were not considered for reporting.

- The mean grain yield ranged from 50.6q/ha (Udaipur) to 25.9q/ha (Sanosara).
- On zonal basis, the bread wheat check MP3288 (41.0q/ha) was the highest yielding genotype and only entry in the 1<sup>st</sup> non-significant group. Among durums, test entry HI8791 (39.4q/ha) was highest yielding and was at par with check variety HI8627 (38.4q/ha).
- No disease occurrence was reported from any centre in the zone.
- The test varieties showed comparable performance for agronomic and grain characteristics as compared to the check varieties.

**1654-AVT-RI-TS-TAD-CZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Rajasthan						MP					
		Kota		Udaipur		Banswara		Bhopal		Sagar		Indore	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1	BRW3775	48.7	1 1	54.3	1 1	44.5	6 0	48.3	2 0	34.8	6 0	37.2	5 1
2	UAS385	42.3	4 0	44.2	7 0	44.3	7 0	46.8	4 0	43.0	2 1	37.4	4 1
3	UAS462(d)	41.5	5 0	45.4	6 0	48.8	4 1	41.7	7 0	38.6	4 0	35.9	6 0
4	HI8791(d)	46.8	2 1	52.0	4 1	44.7	5 0	54.2	1 1	45.0	1 1	38.0	3 1
5	HI8627(d)(C)	41.0	6 0	51.7	5 1	51.6	1 1	48.3	3 0	34.8	6 0	35.1	7 0
6	MP3288(C)	45.7	3 1	52.9	3 1	50.0	2 1	45.6	5 0	38.8	3 0	38.6	2 1
7	DBW110(C)	40.4	7 0	53.9	2 1	49.8	3 1	45.1	6 0	38.6	4 0	38.8	1 1
G.M.		43.8		50.6		47.7		47.2		39.1		37.3	
S.E. (M)		1.797		2.694		1.818		0.785		1.315		1.119	
C.D. (10%)		4.4		6.6		4.5		1.9		3.2		2.7	
C.V.		8.2		10.6		7.6		3.3		6.7		6.0	
D.O.S. (d.m.y.)		10.11.2016		5.11.2016		10.11.2016		7.11.2016		6.11.2016		27.10.2016	

Trials proposed & conducted = 18

Trials not reported (6) = Pratapgarh (RMT), Rewa (More Irrigation), Junagadh (LSM), Amreli (LS), Anand (LS) and SK Nagar (UY)

**AVT-RI-TS-TAD-CZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	MP			Chhattisgarh			Gujarat					
		Jabalpur		Gwalior	Bilaspur		Vijapur	Sanosara		Dhandhuka			
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G		
1	BRW3775	39.0	4 0	49.5	3 1	28.6	6 1	32.8	2 1	27.3	2 1	31.9	1 1
2	UAS385	34.8	7 0	47.4	6 0	24.3	7 0	29.1	3 0	27.3	3 1	28.7	2 0
3	UAS462(d)	37.7	5 0	43.7	7 0	30.2	5 1	22.2	7 0	23.3	7 0	24.9	6 0
4	HI8791(d)	39.2	3 0	47.7	5 0	31.1	4 1	23.3	5 0	24.0	6 0	27.5	5 0
5	HI8627(d)(C)	42.5	2 0	49.0	4 0	31.3	3 1	22.7	6 0	24.3	5 0	28.2	4 0
6	MP3288(C)	45.9	1 1	57.4	1 1	31.9	1 1	35.0	1 1	27.6	1 1	22.7	7 0
7	DBW110(C)	36.8	6 0	56.5	2 1	31.6	2 1	27.5	4 0	27.2	4 1	28.4	3 0
G.M.		39.4		50.2		29.8		27.5		25.9		27.5	
S.E. (M)		1.088		3.328		1.391		1.522		1.246		0.705	
C.D. (10%)		2.7		8.2		3.4		3.7		3.1		1.7	
C.V.		5.5		13.3		9.3		11.1		9.6		5.1	
D.O.S. (d.m.y.)		8.11.2016		10.11.2016		4.11.2016		5.11.2016		10.11.2016		25.10.2016	

**AVT-RI-TS-TAD-CZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	Rajasthan			MP			Chhattisgarh			Gujarat			Zonal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	BRW3775	49.1	2	1	41.8	6	0	28.6	6	1	30.1	1	1	39.7	2	0
2	UAS385	43.6	7	0	41.9	5	0	24.3	7	0	27.3	4	0	37.4	6	0
3	UAS462(d)	45.2	6	0	39.5	7	0	30.2	5	1	25.2	7	0	36.2	7	0
4	HI8791(d)	47.8	5	1	44.8	2	1	31.1	4	1	26.4	6	0	39.4	4	0
5	HI8627(d)(C)	48.1	3	1	41.9	4	0	31.3	3	1	26.6	5	0	38.4	5	0
6	MP3288(C)	49.5	1	1	45.3	1	1	31.9	1	1	29.3	2	1	41.0	1	1
7	DBW110(C)	48.0	4	1	43.2	3	0	31.6	2	1	28.7	3	1	39.6	3	0
G.M.		47.3			42.6			29.8			27.7			38.8		
S.E. (M)		1.238			0.796			1.391			0.628			0.500		
C.D. (10%)		3.0			1.9			3.4			1.5			1.2		

## Central Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: AVT-RI-TS-TAD-CZ, 2016-17

SN	Variety	Agronomic Characteristics							Grain Characteristics			
		Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	BRW3775	62-81	70	105-135	119	82-111	95	Ey	A	SH	38-46	43
2	UAS385	60-82	69	107-138	120	76-105	90	Ey	A	SH	36-44	41
3	UAS462(d)	62-82	72	110-136	121	72-99	84	Ey	A	SH-H	35-48	41
4	HI8791(d)	62-80	71	109-132	119	67-105	84	Ey	A	H	33-47	42
5	MP3288(C)	60-86	71	103-139	120	72-106	89	Ey	A	SH	37-44	40
6	DBW110(C)	60-80	68	103-132	118	74-106	89	Ey	A	SH	36-48	42
7	HI8627(d)(C)	61-79	71	109-134	120	80-107	89	Ey	A	H	37-50	45

1. Ancillary data from Bilaspur, Bhopal, Dhandhuka, Indore, Jabalpur, Gwalior, Kota, Sagar, Sanosara, Udaipur and Vijapur centres
2. No disease incidence reported from any centre.

# Peninsular Zone

## **AVT-IR-TS-TAD-PZ, 2016-17**

The advance varietal trial under irrigated timely sown condition comprising final year test entry DBW168 and four check varieties (MACS6478, MACS6222, GW322, UAS304) was proposed and conducted at 18 locations. The trial was rejected by monitoring team at Mudhol and Amravati, while Akola, Kolhapur, Pravarnagar, K.Digraj and Mandya centres were not reported due to low site mean and Mahabaleshwar due to high CV.

- The site mean ranged from 60.8q/ha (Parbhani) to 35.2q/ha (Kalloli).
- The final year test entry DBW168 (48.8q/ha) ranked third but it was at par with the highest yielding check variety MACS6478 (49.5q/ha) and all the other check varieties.
- The ancillary data revealed that DBW168 was a few days later in heading as compared to the check varieties. This variety was similar in agronomic characters to the check varieties in the trial.
- No disease incidence was reported from any centre.



**1661-AVT-IR-TS-TAD-PZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra														
		Pune			Parbhani			Niphad			Nasik			Karad		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW168*	55.3	4	0	58.0	5	0	48.3	5	0	52.1	2	1	55.7	3	1
2	MACS6478(C)	66.6	1	1	63.8	1	1	51.7	3	0	49.8	5	1	55.6	4	1
3	MACS6222(C)	62.8	2	1	60.8	3	0	54.3	2	1	50.2	4	1	58.1	1	1
4	GW322(C)	52.1	5	0	61.9	2	1	57.2	1	1	56.8	1	1	56.4	2	1
5	UAS304(C)	56.2	3	0	59.7	4	0	49.4	4	0	51.4	3	1	53.9	5	1
	G.M.	58.6			60.8			52.2			52.1			55.9		
	S.E. (M)	2.156			0.902			1.886			2.815			2.087		
	C.D. (10%)	5.4			2.3			4.8			7.1			5.3		
	C.V.	7.4			3.0			7.2			10.8			7.5		
	D.O.S. (d.m.y.)	12.11.2016			11.11.2016			11.11.2016			11.11.2016			9.11.2016		

Trials proposed & conducted = 18

Trials not reported (8) = Mudhol (RMT), Amravati (RMT), Akola (LSM), Kolhapur (LSM), Mahabaleshwar (HCV), Pravarnagar (LSM), K.Digraj (LS, LSM), Mandya (LSM)

**1661-AVT-IR-TS-TAD-PZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Karnataka														
		Dharwad			Nippani			Kalloli			Arbhavi			Ugar		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW168*	44.1	1	1	55.6	3	1	38.0	1	1	39.3	1	1	41.4	4	1
2	MACS6478(C)	38.8	2	1	54.0	4	1	32.0	5	1	36.7	4	1	46.3	1	1
3	MACS6222(C)	36.2	5	0	55.8	1	1	35.9	3	1	37.0	3	1	41.9	3	1
4	GW322(C)	36.4	4	0	55.7	2	1	33.6	4	1	33.2	5	0	40.2	5	0
5	UAS304(C)	37.5	3	0	52.6	5	1	36.4	2	1	38.6	2	1	46.0	2	1
	G.M.	38.6			54.7			35.2			37.0			43.2		
	S.E.(M)	2.362			3.998			2.403			2.209			2.102		
	C.D. (10%)	6.0			10.1			6.1			5.6			5.3		
	C.V.	12.2			14.6			13.7			12.0			9.7		
	D.O.S. (d.m.y.)	12.11.2016			3.11.2016			14.11.2016			15.11.2016			11.11.2016		

**1661-AVT-IR-TS-TAD-PZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	Maharashtra			Karnataka			ZONAL		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW168*	53.9	5	0	43.7	1	1	48.8	3	1
2	MACS6478(C)	57.5	1	1	41.6	3	1	49.5	1	1
3	MACS6222(C)	57.2	2	1	41.4	4	1	49.3	2	1
4	GW322(C)	56.9	3	1	39.8	5	0	48.3	4	1
5	UAS304(C)	54.1	4	0	42.2	2	1	48.2	5	1
	G.M.	55.9			41.7			48.8		
	S.E. (M)	0.923			1.211			0.761		
	C.D. (10%)	2.3			3.0			1.8		

## Peninsular Zone

### Summary of Disease Data and Agronomic Characteristics

Trial: AVT-IR-TS-TAS-PZ, 2016-17

SN	Variety	Agronomic Characteristics						Grain Characteristics				
		Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DBW168*	59-81	67	105-125	112	72-99	85	Ey	A	SH	36-44	40
2	MACS6478(C)	54-79	63	103-119	111	77-92	84	Ey	A	SH	38-52	43
3	MACS6222(C)	55-74	63	105-119	110	74-93	85	Ey	A	SH	34-46	40
4	GW322(C)	55-72	61	99-116	109	76-96	86	Ey	A	SH	32-45	39
5	UAS304(C)	52-75	62	102-120	110	79-100	89	Ey	A	SH	34-48	40

1. Ancillary data from Digraj Nashik, Niphad, Dharwad, Kolhapur, Parbhani, Pravarnagar, Mandya, Arbhavi, Kalloli, Mahabaleshwar, Akola, Nippani, Karad, Pune and Ugar Khurd centres.
2. No disease reaction reported by any centre.

### **AVT-RF-TS-TAD-PZ, 2016-17**

The rainfed timely sown advance varietal trial of bread and durum wheat comprising three test genotypes (UAS375, HI8777, MACS4028) and four check varieties (NI5439, NIAW1415, UAS446, AKDW2997-16) was proposed and conducted at 10 locations. The trial failed at Annigeri and data was not reported from Washim centre, while data from Pune, Savalvihir, Niphad and Dharwad centres were not reported due to low site mean and that of Mahabaleshwar due to high CV.

- The site mean ranged from 25.0q/ha (Bailhongal) to 17.0q/ha (Vijayapur).
- The final year bread wheat entry UAS375 (21.4q/ha) was the top yielder in the trial and it was at par with high yielding check variety NIAW1415 (20.9q/ha).
- Among the two final year durum entries MACS4028 (20.3q/ha) was top yielder but it was at par to the best durum check variety UAS446 (18.4q/ha).
- The ancillary data revealed that the three final year entries were similar in agronomic performance to the respective checks.
- No disease incidence was reported from any centre.

**1663-AVT-RF-TS-TAD-PZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra			Maharashtra			Karnataka			Karnataka		
		Jalgaon			Bagalkot			Vijayapur			Bailhongal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UAS375*	14.7	6	0	24.4	1	1	19.6	1	1	27.1	2	1
2	HI8777(d)*	16.2	5	0	16.5	7	0	17.9	4	1	21.9	7	0
3	MACS4028(d)*	19.7	2	1	17.8	4	0	15.2	6	0	28.7	1	1
4	NI5439(C)	16.9	4	0	21.6	3	1	18.1	3	1	24.9	4	1
5	NIAW1415(C)	18.7	3	1	22.2	2	1	18.2	2	1	24.4	5	1
6	UAS446(d)(C)	20.5	1	1	16.5	6	0	13.8	7	0	22.8	6	0
7	AKDW2997-16(d)(C)	14.0	7	0	17.5	5	0	16.5	5	1	25.2	3	1
G.M.		17.2			19.5			17.0			25.0		
S.E.(M)		1.094			2.119			1.570			2.401		
C.D.(10%)		2.7			5.2			3.9			5.9		
C.V.		12.7			21.7			18.4			19.2		
D.O.S.(d.m.y)		27.10.2016			18.10.2016			28.10.2016			26.10.2016		

Trials proposed & conducted = 10

Trials not reported (6) = Annigeri (TF), Washim (DNR), Pune (LSM), Savalvihir (LSM), Niphad (LSM), Dharwad (LSM)

**1663-AVT-RF-TS-TAD-PZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	Maharashtra			Karnataka			Zonal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	UAS375*	19.5	2	1	23.3	1	1	21.4	1	1
2	HI8777(d)*	16.3	6	0	19.9	6	1	18.1	7	0
3	MACS4028(d)*	18.7	4	1	22.0	2	1	20.3	4	1
4	NI5439(C)	19.3	3	1	21.5	3	1	20.4	3	1
5	NIAW1415(C)	20.4	1	1	21.3	4	1	20.9	2	1
6	UAS446(d)(C)	18.5	5	1	18.3	7	0	18.4	5	0
7	AKDW2997-16(d)(C)	15.7	7	0	20.9	5	1	18.3	6	0
G.M.		18.4			21.0			19.7		
S.E.(M)		1.192			1.435			0.933		
C.D. (10%)		3.0			3.6			2.3		

## Peninsular Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: AVT-RF-TS-TAD-PZ, 2016-17

SN	Variety	Agronomic Characteristics							Grain Characteristics			
		Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	UAS375*	51-60	57	100-110	103	49-77	60	Ey	A	SH-H	31-44	36
2	HI8777(d)*	57-59	57	98-110	105	52-83	59	Ey	A	SH-H	40-50	44
3	MACS4028(d)*	48-62	53	97-110	103	43-91	72	Ey-M	A	SH-H	34-50	43
4	NI5439(C)	53-62	58	98-110	104	50-78	60	Ey	A	SH-H	31-50	35
5	NIAW1415(C)	52-62	58	101-114	107	41-77	55	Ey	A	SH	32-44	37
6	UAS446(d)(C)	51-61	57	100-111	106	46-80	60	Ey	A	H	30-52	38
7	AKDW2997-16(d)(C)	49-63	57	92-113	105	49-87	60	Ey	A	H	36-57	42

1. Ancillary data from Niphad, Jalgaon, Vijayapur, Dharwad, Bailhongal, Pune, Bagalkot and Savalvihir centres.
2. No disease reaction reported by any centre.

# Southern Hills Zone

## **AVT-RI-TS/LS-TAS-SHZ, 2016-17**

The advanced varietal trial for Southern hills zone consisting of 4 entries including three checks (HW2044, CoW (W)1 and HW5216) was proposed for conduction at six locations. Trial was not conducted at Yercaud location. The trial was rejected by monitoring team at Ooty (RMT), trials failed at Munnar and Kodaikanal whereas, trial at Wellington (LS) did not qualify for reporting due to early sowing. Thus yield data from Wellington (TS) was considered for reporting only.

- The mean yield of genotypes ranged from HW5216 (68.9q/ha) to UAS387 (43.3q/ha).
- The highest yielding genotype was the check variety HW5216 (68.9q/ha) was significantly superior to all the other entries in this trial.
- Ancillary data from Wellington TS and LS was considered and compiled. The test entry exhibited susceptibility to brown rust (80S), whereas the check varieties were free from brown rust. Black rust incidence was also reported in UAS387 (10S) and Cow(W)1(10MR). High incidence of powdery mildew was reported in all the genotypes tested.
- The test entry HW2044 was the earliest in heading (70days) and maturity (103 days). The check variety HW5216 had highest thousand grain weight (41g) among all entries.

**1671-AVT-RI-TS/LS-TAS-SHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Tamilnadu		
		Wellington-TS		
		Yield	Rk	G
1	UAS387	43.3	4	0
2	HW2044(C)	48.9	3	0
3	CoW(W)1(C)	50.7	2	0
4	HW5216(C)	68.9	1	1
	G.M.	53.0		
	S.E. (M)	1.969		
	C.D. (10%)	4.9		
	C.V.	9.1		
	D.O.S. (d.m.y.)	22.11.2016		

**Trials proposed = 6**

**Trial not conducted (1) = HRS Yercaud**

**Trials not reported (4) = CPRS-RS-Ooty (RMT), Munnar (TF),  
Kodaikanal (TF), Wellington-LS (ES)**

**Summary of Disease Data and Agronomic Characteristics**

SN	Variety	Disease Reaction			Agronomic Characteristics							Grain Characteristics			
		BI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col	Tex.	TGW.R	TGW.M
1	UAS387	10S	80S	8	76-78	77	108-110	109	85-86	86	Ey	A	SH	35	35
2	HW2044(C)	0	0	5	68-72	70	102-105	103	86-88	87	Ey	A	H	36-38	37
3	CoW(W)1(C)	10MR	0	8	78-80	79	110-112	111	83-84	84	Ey	A	H	34-36	35
4	HW5216(C)	0	0	5	76-78	77	108	108	95-97	96	Ey	A	H	40-42	41

1. Ancillary data reported from Wellington centre for both timely and late sown trials.
2. Black and brown rusts and powdery mildew reaction from Wellington centre.
3. Yellow rust reaction was not reported in any entry.



## IVT-RI-TS/LS-TAS-SHZ, 2016-17

The Initial Varietal Trial for Southern Hills zone consisting of 18 genotypes including three checks (HW2044, CoW(W)1 and HW5216) was proposed for conduction at six locations. The trial was not conducted at HRS, Yercaud centre. Trial at Ooty was rejected by monitoring team (RMT), trials failed at Munnar and Kodaikanal whereas trial at Wellington (LS) did not qualify due to early sowing (ES). Thus yield data from Wellington (TS) was considered for reporting only.

- The mean yield of genotypes ranged from 87.6q/ha (HW5254) to 58.3q/ha (UAS397) at Wellington location where as the trial mean yield was 73.4q/ha.
- The genotype HW5254 (87.6q/ha) was the highest yielding genotype followed by five other genotypes HS641 (86.2q/ha), HW5265 (83.9q/ha), HS638 (83.1q/ha), HW5261 (82.6q/ha) and HS639 (80.5q/ha) which were significantly superior to the best check variety HW5216 (73.7q/ha).
- High incidence of brown rust (60S) was reported in entries UAS397, HS638 and HS640. Black rust infection (20S) was reported on UAS397 and 20MS score in HW5254, HS638, HS640 and HW5052. The check varieties were free from both the rusts. High incidence of powdery mildew was reported in most of the genotypes.

**1672-IVT-RI-TS/LS-TAS-SHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	CODE	Tamilnadu		
			Wellington-TS		
			Yield	Rk	G
1.	UAS397	IVT-SHZ-101	58.3	18	0
2.	HW5261	IVT-SHZ-102	82.6	5	0
3.	HW5265	IVT-SHZ-103	83.9	3	1
4.	HW5254	IVT-SHZ-104	87.6	1	1
5.	UAS396	IVT-SHZ-105	59.0	17	0
6.	HS641	IVT-SHZ-106	86.2	2	1
7.	HW5053	IVT-SHZ-109	75.5	9	0
8.	HS639	IVT-SHZ-111	80.5	6	0
9.	HS638	IVT-SHZ-112	83.1	4	0
10.	MACS6706	IVT-SHZ-113	64.8	13	0
11.	HS642	IVT-SHZ-114	72.9	12	0
12.	HS640	IVT-SHZ-115	62.5	15	0
13.	HW5054	IVT-SHZ-116	74.8	10	0
14.	HW5255	IVT-SHZ-117	77.0	8	0
15.	HW5052	IVT-SHZ-118	77.0	7	0
16.	HW2044(C)	IVT-SHZ-107	59.3	16	0
17.	CoW(W)1(C)	IVT-SHZ-108	62.6	14	0
18.	HW5216(C)	IVT-SHZ-110	73.7	11	0
	G.M.		73.4		
	S.E. (M)		1.623		
	C.D. (10%)		3.8		
	C.V.		4.4		
	D.O.S. (dd.mm.yyyy)		22.11.2016		

**Trials proposed = 6**

**Trial not conducted (1) = HRS, Yercaud**

**Trials not reported (4) = CPRS-RS-Ooty (RMT), Munnar (TF),  
 CSWRI-SRRC-Kodaikanal (TF), Wellington-LS (ES)**

## Southern Hills Zone

## Summary of Disease Data and Agronomic Characteristics

Trial: IVT-RI-TS/LS-TAS-SHZ, 2016-17

SN	Variety	Code	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
			BI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col	Tex.	TGW.R	TGW.M
1	UAS397	SH-IVT-101	20S	60S	9	77-78	78	112-114	113	90-91	91	Ey	A	SH	32-34	33
2	HW5261	SH-IVT-102	0	0	4	76-77	77	110-112	111	83-84	84	Ey	A	H	38-40	39
3	HW5265	SH-IVT-103	0	0	6	79-80	80	114	114	81-82	82	Ey	A	H	36-38	37
4	HW5254	SH-IVT-104	20MS	0	6	72-75	74	110	110	89-90	90	Ey	A	H	40-41	41
5	UAS396	SH-IVT-105	0	30S	8	76-78	77	112	112	86-88	87	Ey	A	H	37-38	38
6	HS641	SH-IVT-106	0	0	6	79-80	80	115	115	98-100	99	Ey	A	H	46-48	47
7	HW5053	SH-IVT-109	0	0	5	76-77	77	112	112	84-85	85	Ey	A	H	46-48	47
8	HS639	SH-IVT-111	10MR	0	6	75-76	76	108	108	98-100	99	Ey	A	H	46-48	48
9	HS638	SH-IVT-112	20MS	60S	5	77-78	78	110	110	100-102	101	Ey	A	SH	48-50	49
10	MACS6706	SH-IVT-113	0	0	8	75-76	76	108-112	109	81-82	82	Ey	A	H	38-40	39
11	HS642	SH-IVT-114	0	0	8	78-80	79	114-115	115	100-102	101	Ey	A	SH	48-50	49
12	HS640	SH-IVT-115	20MS	60S	6	80-82	81	115	115	98-100	99	Ey	A	H	37-38	38
13	HW5054	SH-IVT-116	0	0	5	77-78	78	109-110	110	82-84	83	Ey	A	H	40-42	41
14	HW5255	SH-IVT-117	0	0	5	76	76	110-112	111	84-86	85	Ey	A	H	44-46	45
15	HW5052	SH-IVT-118	20MS	20S	5	78	78	112	112	85-86	86	Ey	A	H	44-46	45
16	HW2044(C)	SH-IVT-107	0	0	4	71-72	72	105	105	87-88	88	Ey	A	H	36-38	37
17	CoW(W)1(C)	SH-IVT-108	0	0	7	80	80	115	115	79-80	80	Ey	A	H	36-38	37
18	HW5216(C)	SH-IVT-110	0	0	5	78-79	79	112-114	113	96-97	97	Ey	A	H	47-48	48

1. Ancillary data reported from Wellington centre for both timely and late sown trial.
2. Black and brown rusts and powdery mildew reaction from Wellington centre.
3. Yellow rust reaction was not reported in any entry.

# Special Trials

## **SPL-TCL-RF-TS-NHZ, 2016-17**

The special trial of Triticale was proposed and conducted at nine locations under timely sown rainfed conditions. In this trial, 5 triticale genotypes and three check varieties (TL2969 & TL2942 and bread wheat check HS507) were evaluated. Data from Dhaulakuan centre was not reported due to low site mean (LSM) and Chamba did not supply the data.

- The mean yield of the trial at different centres ranged from 30.4q/ha (Berthin) to 16.5q/ha (Ranichauri). At zonal level, check variety TL2969 (26.6q/ha) was the highest yielding genotype followed by entry TL3015 (26.3q/ha) and these two genotypes formed the first non-significant group.
- Yellow rust and powdery mildew incidence in low intensity was reported in the trial from few centres.
- Test entry TL3012 had high 1000-grains weight (49g).

**1602-SPL-TCL-RF-TS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	HP					Uttarakhand	J & K
		Malan	Shimla	Berthin	Akrot	Bajaura	Ranichauri	Khudwani
		Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G	Yield Rk G
1	TL3011	21.7 4 0	19.7 5 0	29.4 5 0	21.5 7 0	32.8 1 1	17.7 2 1	32.2 2 1
2	TL3012	20.7 6 0	13.6 7 0	28.6 7 0	27.0 2 1	31.1 3 1	14.6 7 0	34.4 1 1
3	TL3013	21.0 5 0	15.3 6 0	30.5 4 0	23.8 5 0	30.7 4 1	16.7 5 0	30.2 4 0
4	TL3014	19.7 7 0	25.4 2 1	32.6 3 1	28.6 1 1	26.3 6 0	13.5 8 0	24.7 8 0
5	TL3015	22.3 3 0	25.0 3 1	34.6 1 1	23.8 5 0	27.5 5 0	19.3 1 1	31.6 3 0
6	TL2942(C)	16.7 8 0	10.2 8 0	25.5 8 0	21.5 7 0	26.1 7 0	17.7 2 1	25.4 6 0
7	TL2969(C)	24.0 2 1	26.1 1 1	33.1 2 1	24.4 4 0	32.3 2 1	17.2 4 1	29.0 5 0
8	HS507(Aest)(C)	25.1 1 1	21.6 4 0	28.9 6 0	25.1 3 0	23.8 8 0	15.6 6 0	24.9 7 0
G.M.		21.4	19.6	30.4	24.4	28.8	16.5	29.0
S.E. (M)		1.067	1.214	1.398	0.717	1.186	0.862	0.919
C.D. (10%)		2.6	3.0	3.4	1.7	2.9	2.1	2.2
C.V.		10.0	12.4	9.2	5.9	8.2	10.4	6.3
D.O.S. (d.m.y.)		24.10.2016	31.10.2016	31.10.2016	24.10.2016	26.10.2016	24.10.2016	29.11.2016

Trials proposed = 9

Trials not reported (2) = Dhaulakuan (LSM), Chamba (DNR)

**1602-SPL-TCL-RF-TS-NHZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	HP			Uttarakhand			J & K			Zonal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	TL3011	25.0	4	0	17.7	2	1	32.2	2	1	25.0	3	0
2.	TL3012	24.2	7	0	14.6	7	0	34.4	1	1	24.3	5	0
3.	TL3013	24.3	6	0	16.7	5	0	30.2	4	0	24.0	6	0
4.	TL3014	26.5	3	0	13.5	8	0	24.7	8	0	24.4	4	0
5.	TL3015	26.6	2	0	19.3	1	1	31.6	3	0	26.3	2	1
6.	TL2942(C)	20.0	8	0	17.7	2	1	25.4	6	0	20.4	8	0
7.	TL2969(C)	28.0	1	1	17.2	4	1	29.0	5	0	26.6	1	1
8.	HS507(Aest)(C)	24.9	5	0	15.6	6	0	24.9	7	0	23.6	7	0
G.M.		24.9			16.5			29.0			24.3		
S.E. (M)		0.509			0.862			0.919			0.406		
C.D. (10%)		1.2			2.1			2.2			1.0		

## Summary of Disease Data and Agronomic Characteristics

Northern Hills Zone

Trial: SPL-TCL-RF-TS-NHZ, 2016-17

SN	Variety	Disease Reactions			Agronomic Characteristics							Grain Characteristics			
		YI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Tex.	Col.	TGW.R	TGW.M
1	TL3011	5R	0	0	82-171	123	160-211	181	79-108	92	Ey	SO-SH	A	36-52	44
2	TL3012	5R	0	0	86-169	124	162-210	182	80-122	103	Ey	SH-H	A	40-55	49
3	TL3013	tR	0	0	92-170	125	162-210	182	83-105	94	Ey-M	SH	A	35-52	45
4	TL3014	tR	0	0	84-174	126	158-210	182	63-112	92	Ey-M	SH	A	34-52	44
5	TL3015	5MR	0	0	92-166	126	164-208	183	81-113	92	Ey-M	SH	A	37-50	47
6	TL2942(C)	10MR	0	0	85-168	121	158-209	180	81-107	93	Ey	SH	A	34-46	43
7	TL2969(C)	tR	0	0	88-176	130	156-210	182	78-113	93	Ey	SH	A	38-52	47
8	HS507(aest.)(C)	5S	tS	2	90-169	132	162-210	185	77-102	91	Ey	SH	A	37-44	41

1. Ancillary data from Akrot, Bajaura, Berthin, Dhaulakuan, Malan, Shimla, Khudwani and Ranichauri
2. Yellow rust data from Bajaura and Khudwani centres, brown rust data from Malan; Powdery mildew data from Malan

### Individual Station Rust Data

SN	Variety	YI	
		Bajaura	Khudwani
1	TL3011	0	5R
2	TL3012	0	5R
3	TL3013	0	tR
4	TL3014	0	tR
5	TL3015	0	5MR
6	TL2942(C)	0	10MR
7	TL2969(C)	0	tR
8	HS507(aest.)(C)	5S	10MR

## **SPL-DIC-IR-TS-PZ & SHZ, 2016-17**

The special trial of dicoccum wheat was proposed and conducted at 13 locations across Peninsular and Southern hills zone under irrigated timely sown conditions. The trials comprised of 4 genotypes and 3 checks (DDK1029, HW1098 and bread wheat MACS6222). The trial at Mudhol was rejected by the monitoring team (RMT), trials at K Digraj and Paiyur were late sown, trial at Mandya had low site mean (LSM) whereas, trial at Mahabaleshwar did not qualify due to high coefficient of variation (HCV) and hence these trials were not reported.

- The mean yield of the trial at different centres ranged from 52.8q/ha (Karad) to 35.5q/ha (Kalloli). At zonal level, the check variety HW1098 (45.3q/ha) was the highest yielding genotype and was the lone entry in the first non-significant group.
- The brown rust was reported in MACS6222 (40S) at wellington centre. High incidence of powdery mildew was reported in all the genotypes in the trial at Wellington. There was no incidence of any disease from the Peninsular zone.
- The ancillary data indicated that the genotype MACS6222 was the earliest in heading (61 days) and maturity (106 days) as compared to other test entries and check varieties in Peninsular zone. The performance of genotypes with respect to agronomic traits was comparable to the check varieties.
- All the genotypes were red seeded except check variety MACS6222 which has amber seeds.



**1608-SPL-DIC-IR-TS- PZ & SHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra									Karnataka		
		Pune			Karad			Kolhapur			Dharwad		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DDK1052	44.2	2	0	60.5	1	1	49.4	4	0	33.3	7	0
2.	DDK1053	39.8	4	0	48.6	6	0	39.6	6	0	39.6	3	0
3.	MACS5047	36.2	6	0	56.6	3	1	55.2	2	1	35.9	4	0
4.	MACS5049	39.4	5	0	50.1	5	0	51.0	3	1	33.3	6	0
5.	HW1098(C)	43.7	3	0	57.6	2	1	58.6	1	1	34.4	5	0
6.	DDK1029(C)	33.5	7	0	45.6	7	0	45.5	5	0	44.5	1	1
7.	MACS6222(Aest.)(C)	68.7	1	1	50.8	4	0	35.9	7	0	40.6	2	1
G.M.		43.7			52.8			47.9			37.4		
S.E. (M)		2.271			2.308			3.480			1.646		
C.D. (10%)		5.6			5.7			8.5			4.0		
C.V.		10.4			8.7			14.5			8.8		
D.O.S. (d.m.y.)		12.11.2016			9.11.2016			16.11.2016			15.11.2016		

Trials proposed & conducted = 13

Trials not reported (5) = Mudhol (RMT), K.Digraj (LS), Mandya (LSM), Paiyur (LS), Mahableshwar (HCV)

**Locationwise Mean Yield (q/ha)**

SN	Variety	Karnataka									Tamilnadu		
		Arbhavi			Ugar			Kalloli			Wellington		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DDK1052	51.0	1	1	35.0	6	0	35.4	6	0	36.0	6	0
2.	DDK1053	42.2	3	0	43.3	2	1	36.7	4	1	36.6	5	0
3.	MACS5047	35.8	6	0	32.9	7	0	35.5	5	0	42.5	1	1
4.	MACS5049	29.1	7	0	35.5	5	0	36.9	3	1	38.1	4	0
5.	HW1098(C)	44.2	2	1	44.8	1	1	40.4	1	1	38.8	2	0
6.	DDK1029(C)	39.5	5	0	39.3	4	0	37.0	2	1	31.7	7	0
7.	MACS6222(Aest.)(C)	41.4	4	0	40.7	3	1	26.2	7	0	38.7	3	0
G.M.		40.5			38.8			35.5			37.5		
S.E. (M)		2.754			2.016			1.995			0.920		
C.D. (10%)		6.8			4.9			4.9			2.3		
C.V.		13.6			10.4			11.3			4.9		
D.O.S. (d.m.y)		15.11.2016			11.11.2016			14.11.2016			22.11.2016		

**State and Zonal Mean Yield (q/ha)**

SN	Variety	Maharashtra			Karnataka			Tamilnadu			Zonal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	DDK1052	51.4	3	1	38.7	4	1	36.0	6	0	43.1	2	0
2.	DDK1053	42.7	6	0	40.5	2	1	36.6	5	0	40.8	5	0
3.	MACS5047	49.3	4	0	35.1	6	0	42.5	1	1	41.3	4	0
4.	MACS5049	46.9	5	0	33.7	7	0	38.1	4	0	39.2	7	0
5.	HW1098(C)	53.3	1	1	41.0	1	1	38.8	2	0	45.3	1	1
6.	DDK1029(C)	41.5	7	0	40.1	3	1	31.7	7	0	39.6	6	0
7.	MACS6222(Aest.)(C)	51.8	2	1	37.2	5	0	38.7	3	0	42.9	3	0
G.M.		48.1			38.0			37.5			41.7		
S.E. (M)		1.584			1.071			0.920			0.808		
C.D. (10%)		3.9			2.6			2.3			1.9		

## Summary of Disease Data and Agronomic Characteristics

**Peninsular Zone**

**Trial: SPL-DIC-IR-TS- PZ & SHZ, 2016-17**

SN	Variety	Agronomic Characteristics							Grain Characteristics				
		Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	DDK1052	65-75	69	102-114	107	65-98	79	10	H	R	SH-H	31-45	42
2	DDK1053	65-74	69	100-114	108	69-104	86	20	H	R	SH-H	36-48	41
3	MACS5047	65-77	70	104-115	108	71-102	85	15	M-H	R	SH-H	33-50	41
4	MACS5049	62-81	71	101-116	108	71-104	86	20	M-H	R	SH-H	36-49	43
5	HW1098(C)	61-74	68	99-116	107	71-96	83	5	M-H	R	SH-H	30-45	40
6	DDK1029(C)	62-76	68	101-116	108	71-118	87	15	M-H	R	SH	34-48	39
7	MACS6222(aest.)(C)	54-67	61	98-112	106	72-95	83	-	Ey	A	SH	36-45	40

1. Ancillary data reported from Arbhavi, Dharwad, Kalloli, Mahalabeshwar, Kolhapur, K Digraj, Ugar Khurd, Pune, Mandya and Karad centres.
2. No disease data was reported from any centre.

## Summary of Disease Data and Agronomic Characteristics

**Southern Hills Zone**

**Trial: SPL-DIC-IR-TS- PZ & SHZ, 2016-17**

SN	Variety	Disease Reaction		Agronomic Characteristics							Grain Characteristics	
		Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col	Tex.
1	DDK1052	0	8	78-81	79	108-110	109	70-85	78	H	R	H
2	DDK1053	0	8	80-80	80	106-112	109	80-82	81	H	R	H
3	MACS5047	0	8	78-79	79	105-110	108	70-77	73	H	R	H
4	MACS5049	0	9	75-80	77	102-114	108	76-91	83	H	R	H
5	HW1098(C)	0	8	76-78	77	106-112	109	74-82	78	H	R	H
6	DDK1029(C)	0	8	80-82	81	108-112	110	72-82	77	H	R	H
7	MACS6222 (aest.)(C)	40S	8	74-80	77	105-112	109	75-86	82	Ey	A	SH

1. Ancillary data reported from Wellington and Paiyur centers.
2. Brown rust and powdery mildew reaction from Wellington centre.

## SPL-AST-IR-TS-TAS-ALL ZONES, 2016-17

The special trial on salinity/alkalinity comprising eight entries and three checks (KRL210, Kharchia 65 and KRL19) was proposed at 16 locations and conducted at 14 locations across three zones NWPZ, NEPZ and CZ. The yield data from CSSRI Karnal and KVK Kaushambi was not reported due to unrealistic yield. The trial at Lucknow (Late Sown) and Vanasthali (Late Sown and Unrealistic Yield) were not included due to reason mentioned.

- The mean location yield of the 10 conducting sites ranged from 36.2 q/ha (CSSRI Nain) to 24.7 q/ha (CAZRI Pali).
- KRL370 (34.7q/ha) was the highest yielding genotype and it alone formed the first non-significant group. Entries KRL370 (34.7q/ha), KRL386 (32.8q/ha) and KRL377 (32.5q/ha) significantly out-yielded the best check KRL210 (31.0 q/ha).
- Check variety Kharchia 65 (80S, ACI=80.0) and KRL210 (60S, ACI=20.0) showed higher incidence of yellow rust at Karnal, Hisar and Nain and brown rust was also noted in check variety Kharchia 65 (40S) at Karnal and Nain. Brown rust (30S) in KRL377 was observed at Daleep Nagar. Leaf blight was also reported in the zone in all entries with highest score of 68 in Kharchia 65.
- The genotypes were similar to the check varieties KRL19 and KRL210 for most of the agronomic traits in all the zones. High lodging was reported in Kharchia65 in NWPZ (75%) and CZ (40%).

The Sal/Alk Screening Nursery with 28 entries alongwith 4 checks were tested in augmented design and the data of Lucknow, Hisar, Pali, Bhuj, Karnal and Nain were considered for pooling. The promising entries along with rust reactions from IPPSN 2016-17 are listed in table below.

**Promising entries in Sal/ALK Screening Nursery, 2016-17**

SN	Entry	Yield (g/plot)	RK	G	Stem rust	Leaf rust (South)	Leaf rust (North)	Yellow rust
1	KRL399	392.1	1	1	80S (39.3)	30S (16.0)	40S (18.7)	10S (10.0)
2	KRL 396	381.9	2	1	20S (10.3)	60S (18.4)	20S (6.7)	80S (57.5)
3	WS1602	375.1	3	0	30S (13.4)	20S (6.5)	10S (3.3)	40S (30.1)
4	KRL 210 (C)	372.6	4	0				
5	HD2009 (C)	281.7	28	0				
6	KRL 19 (C)	264.6	30	0				
7	Kharchia 65(C)	259.4	32	0				

**1605-SPL-AST-IR-TS-TAS-ALL ZONES, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Haryana			Punjab			Uttar Pradesh								
		CSSRI Nain			Hisar			Muktsar			Dalipnagar			Faizabad		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	KRL370	39.2	4	1	33.9	5	1	37.5	3	0	36.0	2	0	35.5	4	0
2.	KRL377	35.9	7	0	23.5	9	0	27.8	6	0	38.5	1	1	40.5	1	1
3.	KRL384	38.5	5	1	28.7	8	0	27.3	8	0	27.1	10	0	38.2	2	1
4.	KRL386	43.1	1	1	37.2	2	1	35.2	4	0	34.1	4	0	37.8	3	1
5.	DBW246	36.5	6	0	34.8	4	1	37.5	2	0	34.6	3	0	27.8	11	0
6.	DBW247	40.3	2	1	29.1	7	0	27.4	7	0	28.3	9	0	32.5	7	0
7.	DBW248	34.6	8	0	33.7	6	1	26.1	9	0	30.9	6	0	32.7	6	0
8.	WH1316	39.4	3	1	37.3	1	1	35.1	5	0	23.5	11	0	28.0	10	0
9.	KRL210(C)	33.0	9	0	35.5	3	1	41.6	1	1	32.2	5	0	34.3	5	0
10.	Kharchia65(C)	26.9	11	0	12.1	11	0	19.9	11	0	30.9	6	0	28.4	9	0
11.	KRL19(C)	31.0	10	0	21.7	10	0	21.6	10	0	28.3	8	0	29.1	8	0
	G.M.	36.2			29.8			30.6			31.3			33.2		
	S.E.(M)	2.338			1.654			1.337			0.857			1.695		
	C.D. (10%)	5.5			3.9			3.2			2.0			4.0		
	C.V.	18.3			15.7			13.5			7.7			14.5		
	D.O.S. (d.m.y.)	15.11.2016			14.11.2016			19.11.2016			18.11.2016			20.11.2016		

Trials proposed = 16                      Trials not conducted (2) = Bawal & IIWBR-Hisar  
Trials not reported (4) = CSSRI-Karnal (UY), Kaushambi-KVK (UY), Vanasthali (UY, LS),  
Lucknow (LS)

**1605-SPL-AST-IR-TS-TAS-ALL ZONES, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh			Rajasthan			Gujarat								
		Pratapgarh			CAZRI-Pali			CAZRI,Bhuj			Bharuch			Chaswad-KVK		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	KRL370	36.2	3	0	22.7	10	0	27.5	5	0	38.8	1	1	39.8	1	1
2.	KRL377	37.3	2	0	22.2	11	0	29.1	2	0	35.7	2	1	34.7	5	0
3.	KRL384	30.1	7	0	24.2	7	1	16.5	11	0	35.2	3	0	29.1	7	0
4.	KRL386	26.8	9	0	25.6	3	1	24.3	7	0	33.9	6	0	30.2	6	0
5.	DBW246	31.6	5	0	25.4	5	1	27.7	4	0	33.7	7	0	24.3	11	0
6.	DBW247	26.4	10	0	25.4	4	1	32.4	1	1	30.7	8	0	35.8	3	0
7.	DBW248	28.7	8	0	27.5	2	1	28.0	3	0	34.0	5	0	28.3	8	0
8.	WH1316	30.5	6	0	24.3	6	1	26.8	6	0	30.6	9	0	25.8	10	0
9.	KRL210(C)	26.0	11	0	23.4	9	0	19.5	10	0	29.6	11	0	35.1	4	0
10.	Kharchia65(C)	33.3	4	0	23.7	8	0	24.0	8	0	30.5	10	0	27.0	9	0
11.	KRL19(C)	42.5	1	1	27.6	1	1	20.4	9	0	34.8	4	0	37.8	2	1
	G.M.	31.8			24.7			25.1			33.4			31.6		
	S.E.(M)	1.941			1.433			0.722			1.463			0.908		
	C.D. (10%)	4.6			3.4			1.7			3.5			2.2		
	C.V.	17.3			16.4			8.1			12.4			8.1		
	D.O.S. (d.m.y.)	12.11.2016			17.11.2016			28.11.2016			19.11.2016			19.11.2016		

**1605-SPL-AST-IR-TS-TAS-ALL ZONES, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	Haryana			Punjab			Uttar Pradesh			Rajasthan			Gujarat			Zonal		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	KRL370	36.5	3	0	37.5	3	0	35.9	2	0	22.7	10	0	35.4	1	1	34.7	1	1
2.	KRL377	29.7	9	0	27.8	6	0	38.8	1	1	22.2	11	0	33.1	2	0	32.5	3	0
3.	KRL384	33.6	8	0	27.3	8	0	31.8	5	0	24.2	7	1	26.9	11	0	29.5	9	0
4.	KRL386	40.2	1	1	35.2	4	0	32.9	4	0	25.6	3	1	29.5	6	0	32.8	2	0
5.	DBW246	35.6	4	0	37.5	2	0	31.3	6	0	25.4	5	1	28.6	7	0	31.4	4	0
6.	DBW247	34.7	5	0	27.4	7	0	29.1	10	0	25.4	4	1	32.9	3	0	30.8	6	0
7.	DBW248	34.2	7	0	26.1	9	0	30.8	9	0	27.5	2	1	30.1	5	0	30.4	7	0
8.	WH1316	38.3	2	1	35.1	5	0	27.3	11	0	24.3	6	1	27.7	9	0	30.1	8	0
9.	KRL210(C)	34.3	6	0	41.6	1	1	30.9	8	0	23.4	9	0	28.1	8	0	31.0	5	0
10.	Kharchia65(C)	19.5	11	0	19.9	11	0	30.9	7	0	23.7	8	0	27.2	10	0	25.7	11	0
11.	KRL19(C)	26.3	10	0	21.6	10	0	33.3	3	0	27.6	1	1	31.0	4	0	29.5	10	0
	<b>G.M.</b>	<b>33.0</b>			<b>30.6</b>			<b>32.1</b>			<b>24.7</b>			<b>30.0</b>			<b>30.8</b>		
	<b>S.E.(M)</b>	<b>1.432</b>			<b>1.337</b>			<b>0.905</b>			<b>1.433</b>			<b>0.622</b>			<b>0.479</b>		
	<b>C.D. (10%)</b>	<b>3.5</b>			<b>3.2</b>			<b>2.2</b>			<b>3.4</b>			<b>1.5</b>			<b>1.1</b>		

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: SPL-AST-IR-TS-TAS, 2016-17

SN	Variety	Rust Reaction			Agronomic Characteristics								Grain Characteristics			
		Br	YI	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	KRL370	0	10MS	2.7	80-91	87	133-137	135	85-104	94	-	Ey	A	H	36-45	40
2	KRL377	0	40MS	10.7	89-97	94	131-142	138	106-116	111	-	Ey	A	SH-H	37-42	40
3	KRL384	0	20MS	5.3	83-93	89	136-139	137	88-94	90	-	Ey	A	SH-H	28-36	32
4	KRL386	0	10MS	2.7	82-95	90	133-142	138	100-111	105	-	Ey	A	SH-H	40-45	42
5	DBW246	0	0	0.0	87-94	91	137-139	138	87-107	95	-	Ey	A	SH-H	35-40	38
6	DBW247	0	0	0.0	84-96	91	133-143	138	110-121	114	-	Ey	A	SH	37-44	41
7	DBW248	0	0	0.0	86-96	93	137-142	140	82-100	90	-	Ey	A	SH	28-36	32
8	WH1316	0	0	0.0	86-96	92	137-144	140	100-109	103	-	Ey	A	SH-H	35-44	41
9	KRL210(C)	0	0	0.0	80-90	86	134-139	137	75-110	93	-	Ey	A	H	40-46	43
10	Kharchia65(C)	40S	80S	80.0	80-92	87	133-140	136	118-126	122	75	Ey	R	H	31-40	35
11	KRL19(C)	0	60S*	20.0	78-87	83	133-135	134	68-98	85	-	Ey	A	SH-H	27-32	30

1. Ancillary data included from Karnal, Hisar, and Nain
2. Brown Rust data from Nain and Karnal and Yellow rust data from Karnal, Hisar, and Nain centre
3. Lodging data from Nain, Muktsar and Karnal

### Individual Station Rust Data

SN	Variety	Rust Reaction				
		Karnal		Hisar	Nain	
		Br	YI	YI	Br	YI
1	KRL370	0	0	10MS	0	0
2	KRL377	0	0	40MS	0	0
3	KRL384	0	0	20MS	0	0
4	KRL386	0	0	10MS	0	0
5	DBW246	0	0	0	0	0
6	DBW247	0	0	0	0	0
7	DBW248	0	0	0	0	0
8	WH1316	0	0	0	0	0
9	KRL210(C)	0	0	0	0	0
10	Kharchia65(C)	40S	80S	80S	30S	80S
11	KRL19(C)	0	0	60S	0	0

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: SPL-AST-IR-TS-TAS, 2016-17

SN	Variety	Disease Reaction		Agronomic Characteristics							Grain Characteristics			
		Br	LB (HS)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	KRL370	0	24	80-87	84	126-127	126	72-76	74	Ey	A	SH	37-41	40
2	KRL377	20S	24	82-93	87	122-132	127	81-98	89	Ey	A	H	38-46	41
3	KRL384	0	24	83-90	86	126-129	128	69-72	71	Ey	A	H	30-46	37
4	KRL386	0	24	83-91	86	124-130	128	75-84	80	Ey	A	SH	36-43	40
5	DBW246	0	35	85-91	87	120-128	123	70-72	71	Ey	A	SH	34-43	38
6	DBW247	0	24	83-92	88	124-131	127	80-87	85	Ey	A	H	38-43	41
7	DBW248	0	36	83-93	87	122-132	128	67-76	71	Ey	A	H	35-46	39
8	WH1316	0	35	82-91	86	121-127	123	70-74	73	Ey	A	H	38-42	40
9	KRL210(C)	0	35	80-89	85	124-127	126	74-88	80	Ey	A	SH	38-46	42
10	Kharchia65(C)	60S	68	78-87	82	115-126	122	94-104	99	Ey	R	H	28-39	35
11	KRL19(C)	0	35	79-90	84	122-130	126	68-79	73	Ey	A	H	36-45	39

1. Ancillary data included from Faizabad Lucknow and Daleep Nagar centres.
2. Leaf blight data from Faizabad and Daleep Nagar; Brown rust data from Daleep Nagar centre only.

## Summary of Disease Data and Agronomic Characteristics

Central Zone

Trial: SPL-AST-IR-TS-TAS, 2016-17

SN	Variety	Agronomic Characteristics							Grain Characteristics				
		Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Lod.	Thr.	Col.	Tex.	TGW.R	TGW.M
1	KRL370	51-66	58	95-121	108	57-79	73	-	Ey	A	H	40-46	44
2	KRL377	63-68	65	116-129	124	66-91	83	-	Ey	A	H	34-42	39
3	KRL384	61-71	64	95-125	111	50-71	64	-	Ey	A	SH-H	34-36	35
4	KRL386	58-69	65	97-122	112	61-85	77	-	Ey	A	H	38-43	41
5	DBW246	58-70	64	99-129	113	58-78	71	-	Ey	A	SH-H	34-39	37
6	DBW247	57-68	62	97-134	114	65-87	80	-	Ey	A	H	37-46	42
7	DBW248	64-76	69	99-134	116	50-71	62	-	Ey	A	SH-H	36-41	39
8	WH1316	63-78	69	100-122	113	61-81	73	-	Ey	A	SH-H	32-40	37
9	KRL210(C)	56-63	60	98-121	110	59-80	72	-	Ey	A	H	40-44	42
10	Kharchia65(C)	60-67	64	104-132	118	70-108	97	40	Ey	R	H	32-39	35
11	KRL19(C)	47-58	54	90-119	106	54-72	64	-	Ey	A	SH-H	32-41	38

1. Ancillary data included from Bhuj, Bharuch, Pali and Chaswad.
2. Lodging data from Bharuch, Chaswad and Pali.



## **SPL-VLS-TAS-NWPZ/NEPZ, 2016-17**

The special trial under very late sown (January) condition consisting of 11 test entries and three check varieties (DBW14, DBW71 and WR544) was proposed and conducted at 21 centres in NWPZ and NEPZ. Trials at Modipuram, Pantnagar and Moradabad-KVK were rejected by the monitoring team, while data from Hisar (early sowing), Ujhani and Coochbehar (low site mean) were not considered for reporting.

### **North Western Plains Zone**

- The data from eight centres showed the mean location yield ranged from 37.6q/ha (Karnal) to 26.0q/ha (Kashipur).
- Entry PBW757 (35.5q/ha) was the highest yielding genotype followed by HD3271 (35.3q/ha), PBW777 (35.1q/ha), HI1621 (35.0q/ha) and HD3272 (34.9q/ha). These entries formed the 1<sup>st</sup> non-significant group and significantly out-yielded the best check DBW71 (30.6q/ha).
- The ancillary data indicated occurrence of yellow rust to the extent of 60S in WR544 (ACI = 33.0) and DBW249 (ACI=17.0).

### **North Eastern Plains Zone**

- The pooled analysis of data from seven locations indicated centre-wise mean yield ranged from 33.5q/ha (Basti) to 21.7q/ha (Barabanki).
- DBW249 (29.5q/ha) was the highest yielding genotype in the zone followed by check varieties DBW71 and DBW14 each having 29.1q/ha. These formed the 1st non-significant group alongwith another test entry HI1621 (28.8q/ha).
- The ancillary data indicated occurrence of leaf rust in very low intensity at Pusa centre. Leaf blight was reported in all the entries.

### **National level**

- At the national level, PBW757 (32.2q/ha) was the highest yielding genotype followed by HI1621 (32.1q/ha) and PBW777 (31.8q/ha) and these entries together formed the first non-significant group.

**SPL-VLS-TAS-NWPZ/NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Delhi		Haryana		Punjab		Uttar Pradesh									
		Delhi		Karnal		Ludhiana		Kashipur		Bulandshahr		Bareilly		Nagina		Rampur-KVK	
		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.	HD3271	39.3	2 1	39.2	5 1	39.2	2 1	18.8	14 0	35.6	6 0	34.0	8 0	45.5	1 1	30.7	3 1
2.	HD3272	39.3	1 1	38.3	7 0	37.0	6 1	27.3	8 0	35.6	5 0	37.5	3 0	36.7	5 0	27.5	6 0
3.	HI1621	37.1	4 1	40.7	1 1	38.1	5 1	27.5	6 0	38.6	1 1	28.9	11 0	37.2	3 0	31.8	2 1
4.	WH1232	34.3	6 0	37.3	8 0	35.9	8 0	27.8	5 0	33.6	12 0	36.6	4 0	32.4	11 0	27.6	5 0
5.	WH1233	36.2	5 1	35.7	12 0	33.4	10 0	26.4	11 0	33.6	11 0	29.4	10 0	33.4	8 0	24.9	9 0
6.	PBW757	39.1	3 1	40.5	3 1	39.8	1 1	28.7	2 0	35.1	8 0	35.6	6 0	31.2	12 0	34.3	1 1
7.	PBW777	33.4	8 0	35.8	11 0	39.1	3 1	27.5	6 0	33.9	10 0	45.4	1 1	39.0	2 0	26.4	8 0
8.	PBW778	31.6	11 0	35.5	13 0	34.4	9 0	26.9	10 0	34.2	9 0	36.3	5 0	33.8	7 0	22.6	13 0
9.	DBW249	27.9	13 0	40.7	2 1	30.7	12 0	27.8	4 0	32.9	13 0	35.6	6 0	36.9	4 0	27.1	7 0
10.	DBW250	32.0	10 0	39.2	4 1	32.6	11 0	28.5	3 0	31.3	14 0	39.1	2 0	32.5	10 0	24.2	10 0
11.	DBW251	34.0	7 0	39.1	6 0	36.8	7 1	27.3	8 0	36.9	3 1	31.7	9 0	32.6	9 0	23.2	11 0
12.	WR544(C)	24.2	14 0	29.8	14 0	24.0	14 0	30.3	1 1	35.6	6 0	28.2	12 0	30.5	14 0	30.5	4 1
13.	DBW14(C)	28.2	12 0	37.0	10 0	29.8	13 0	20.1	12 0	35.7	4 0	28.2	12 0	36.5	6 0	22.2	14 0
14.	DBW71(C)	32.3	9 0	37.1	9 0	38.9	4 1	19.0	13 0	37.8	2 1	27.8	14 0	30.9	13 0	23.0	12 0
G.M.		33.5		37.6		35.0		26.0		35.0		33.9		34.9		26.9	
S.E. (M)		1.973		0.672		1.346		0.443		1.154		0.587		0.849		1.805	
C.D. (10%)		4.7		1.6		3.2		1.1		2.8		1.4		2.0		4.3	
C.V.		11.8		3.6		7.7		3.4		6.6		3.5		4.9		13.4	
D.O.S. (d.m.y)		5.1.2017		10.1.2017		2.1.2017		3.1.2017		9.1.2017		4.1.2017		5.1.2017		1.1.2017	

Trials proposed & conducted = 21

Trials not reported (6) = Modipuram (RMT), Pantnagar (RMT), Moradabad-KVK (RMT), Hisar (ES), Ujhani (LSM), Coochbehar (LSM)

**SPL-VLS-TAS-NWPZ/NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh						Bihar							
		Faizabad		Kanpur		Varanasi		Barabanki		Basti		Sabour		Pusa	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1.	HD3271	22.6	7 0	24.9	11 0	26.6	9 0	19.4	11 0	28.9	13 0	24.6	4 0	36.6	3 0
2.	HD3272	19.1	11 0	26.3	9 0	22.7	12 0	18.1	12 0	31.3	9 0	23.5	7 0	31.8	7 0
3.	HI1621	28.2	2 1	29.9	4 0	27.1	8 0	26.3	1 1	40.7	1 1	23.3	8 0	25.8	12 0
4.	WH1232	18.0	14 0	32.2	1 1	22.0	14 0	25.7	2 1	37.0	3 0	20.0	13 0	21.9	14 0
5.	WH1233	18.3	13 0	21.1	14 0	24.1	11 0	24.3	4 0	27.9	14 0	18.5	14 0	23.3	13 0
6.	PBW757	24.5	5 0	29.0	7 0	28.9	5 0	22.3	6 0	36.1	5 0	23.5	6 0	33.7	6 0
7.	PBW777	18.5	12 0	29.5	5 0	32.6	3 1	25.7	2 1	31.9	8 0	23.9	5 0	34.3	4 0
8.	PBW778	21.2	9 0	29.3	6 0	22.5	13 0	18.1	12 0	29.4	11 0	20.6	12 0	26.8	11 0
9.	DBW249	25.5	4 0	30.3	3 0	33.3	1 1	21.2	9 0	34.7	7 0	27.0	3 1	34.3	5 0
10.	DBW250	28.9	1 1	22.2	13 0	27.5	7 0	16.4	14 0	38.5	2 0	21.0	11 0	27.4	10 0
11.	DBW251	20.6	10 0	26.2	10 0	25.9	10 0	20.6	10 0	30.5	10 0	22.8	9 0	31.2	9 0
12.	WR544(C)	27.1	3 1	24.1	12 0	33.1	2 1	21.4	7 0	29.2	12 0	28.4	1 1	31.3	8 0
13.	DBW14(C)	23.8	6 0	31.6	2 1	28.5	6 0	21.3	8 0	35.7	6 0	21.5	10 0	41.0	1 1
14.	DBW71(C)	22.1	8 0	27.5	8 0	30.1	4 1	22.8	5 0	36.6	4 0	27.8	2 1	37.0	2 0
G.M.		22.7		27.5		27.5		21.7		33.5		23.3		31.2	
S.E.(M)		1.095		0.703		1.762		0.589		0.166		1.213		0.202	
C.D. (10%)		2.6		1.7		4.2		1.4		0.4		2.9		0.5	
C.V.		9.6		5.1		12.8		5.4		1.0		10.4		1.3	
D.O.S. (d.m.y)		14.1.2017		3.1.2017		11.1.2017		1.1.2017		2.1.2017		2.1.2017		2.1.2017	

**SPL-VLS-TAS-NWPZ/NEPZ, 2016-17**  
**Zonal and National Mean Yield (q/ha)**

SN	Variety	NWPZ			NEPZ			National		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	HD3271	35.3	2	1	26.2	8	0	31.1	4	0
2.	HD3272	34.9	5	1	24.7	12	0	30.1	6	0
3.	HI1621	35.0	4	1	28.8	4	1	32.1	2	1
4.	WH1232	33.2	6	0	25.3	11	0	29.5	8	0
5.	WH1233	31.6	11	0	22.5	14	0	27.4	14	0
6.	PBW757	35.5	1	1	28.3	5	0	32.2	1	1
7.	PBW777	35.1	3	1	28.1	6	0	31.8	3	1
8.	PBW778	31.9	10	0	24.0	13	0	28.2	13	0
9.	DBW249	32.4	8	0	29.5	1	1	31.1	5	0
10.	DBW250	32.4	9	0	26.0	9	0	29.4	9	0
11.	DBW251	32.7	7	0	25.4	10	0	29.3	11	0
12.	WR544(C)	29.1	14	0	27.8	7	0	28.5	12	0
13.	DBW14(C)	29.7	13	0	29.1	3	1	29.4	10	0
14.	DBW71(C)	30.9	12	0	29.1	2	1	30.0	7	0
	G.M.	32.8			26.8			30.0		
	S.E.(M)	0.433			0.369			0.288		
	C.D. (10%)	1.0			0.9			0.7		

## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: SPL-VLS-IR-TAS, 2016-17

SN	Variety	Disease Reactions				Agronomic Characteristics							Grain Characteristics			
		YI	ACI	Br	PM	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD 3271	40S	11.0	0	4	67-77	73	102-115	106	82-102	92	Ey	A	SH	31-40	35
2	HD 3272	40S	12.5	0	0	62-78	73	101-112	105	83-106	92	Ey	A	SH	32-39	34
3	HI 1621	10S	5.0	0	3	65-72	68	97-110	103	80-98	90	Ey	A	SH	32-37	35
4	WH 1232	40S	14.5	0	2	64-75	70	96-110	104	85-100	92	Ey	A	SH-H	30-39	35
5	WH 1233	0	0.0	0	0	67-76	71	100-110	105	81-95	88	Ey	A	SH	30-40	34
6	PBW 757	tS	0.3	0	5	65-73	69	100-110	105	83-90	87	Ey	A	SH	32-38	35
7	PBW 777	0	0.0	0	5	64-74	69	100-112	105	80-90	84	Ey	A	H	35-40	37
8	PBW 778	40S	10.0	0	0	66-79	73	102-112	106	74-88	83	Ey	A	SH	35-41	38
9	DBW 249	60S	17.0	10S	0	61-73	67	96-110	104	70-110	94	Ey	A	SH	28-40	35
10	DBW 250	20S	5.0	0	4	65-78	73	96-108	103	82-102	92	Ey	A	SH-H	32-39	36
11	DBW 251	tS	0.3	0	3	65-75	71	102-110	106	73-93	85	Ey	A	SH	26-40	34
12	DBW 14(C)	40S	18.7	0	4	63-71	66	94-108	103	73-93	82	Ey	A	SH	30-42	37
13	DBW 71(C)	0	0.0	0	5	57-71	66	98-110	105	76-98	84	Ey	A	SH-H	28-40	36
14	WR 544(C)	60S	33.0	20S	7	56-70	61	89-108	100	76-99	87	Ey	A	SH	31-40	35

1. Ancillary data from Ludhiana, Hisar, Karnal, Delhi, Nagina, Rampur and Bulandshahr centres
2. Yellow rust data from Hisar, Ludhiana, Karnal and Delhi centres; Brown rust data from Hisar and Ludhiana centres
3. Powdery mildew data from Karnal centre only.

### Individual Station Rust Data

SN	Variety	Hisar		Ludhiana		Karnal	Delhi
		YI	Br	YI	Br	YI	YI
1	HD 3271	0	0	40S	0	0	10MR
2	HD 3272	0	0	40S	0	0	10S
3	HI 1621	0	0	10S	0	0	10S
4	WH 1232	0	0	40S	0	10S	10MS
5	WH 1233	0	0	0	0	0	0
6	PBW 757	0	0	tS	0	0	0
7	PBW 777	0	0	0	0	0	0
8	PBW 778	0	0	40S	0	0	0
9	DBW 249	0	tS	60S	10S	5MS	5MS
10	DBW 250	0	0	20S	0	0	0
11	DBW 251	0	0	tS	0	0	0
12	DBW 14 (C)	tS	0	40S	0	0	20MS
13	DBW 71 (C)	0	0	0	0	0	0
14	WR 544 (C)	0	0	60S	20S	40MS	40S

## Summary of Disease Data and Agronomic Characteristics

North Eastern Plains Zone

Trial: SPL-VLS-IR-TAS, 2016-17

SN	Variety	Disease Reactions		Agronomic Characteristics							Grain Characteristics			
		Br	LB (HS, Av)	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1	HD 3271	0	35 (23)	64-72	67	95-99	98	71-98	89	Ey	A	SH	30-36	34
2	HD 3272	0	23 (13)	63-71	67	91-100	96	62-96	82	Ey	A	SH	30-36	34
3	HI 1621	0	46 (35)	56-66	62	86-94	91	67-95	86	Ey	A	SH	29-39	35
4	WH 1232	0	46 (34)	57-69	65	87-96	93	63-92	83	Ey	A	SH	29-40	34
5	WH 1233	0	35 (24)	60-69	65	91-98	94	63-96	85	Ey	A	SH	28-38	34
6	PBW 757	0	46 (34)	57-64	61	92-94	93	64-93	85	Ey	A	SH	28-37	33
7	PBW 777	0	35 (23)	55-66	63	85-98	92	66-89	80	Ey	A	SH	34-41	37
8	PBW 778	0	24 (23)	66-71	68	97-103	100	68-94	84	Ey	A	SH	30-38	35
9	DBW 249	tR	24 (23)	55-64	61	85-96	91	81-100	92	Ey	A	SH	36-40	38
10	DBW 250	tR	35 (24)	63-71	67	93-100	97	69-97	87	Ey	A	SH	30-37	34
11	DBW 251	0	46 (35)	64-71	67	91-100	96	69-94	84	Ey	A	SH	28-35	32
12	DBW 14(C)	0	68 (46)	53-63	59	88-96	91	62-86	78	Ey	A	SH	32-42	36
13	DBW 71(C)	0	45 (35)	60-71	64	87-96	92	66-91	83	Ey	A	SH	33-36	34
14	WR 544(C)	0	68 (56)	42-61	53	82-92	87	73-96	87	Ey	A	SH	34-43	39

1. Ancillary data from Kanpur, Faizabad, Barabanki, Varanasi, Pusa, Sabour and Coochbehar centres.
2. Brown rust data from Pusa centre only
3. Leaf blight data from Faizabad, Pusa and Sabour centres

### Individual Station Leaf Blight

SN	Variety	Leaf Blight		
		Faizabad	Pusa	Sabour
1	HD 3271	12	23	35
2	HD 3272	12	23	13
3	HI 1621	24	45	46
4	WH 1232	23	23	46
5	WH 1233	35	13	35
6	PBW 757	23	23	46
7	PBW 777	12	23	35
8	PBW 778	24	13	23
9	DBW 249	24	23	23
10	DBW 250	25	23	35
11	DBW 251	35	34	46
12	DBW 14 (C)	36	45	68
13	DBW 71 (C)	45	45	25
14	WR 544 (C)	46	35	68

## **SPL-MABB/NIL-IR-TS-NWPZ, 2016-17**

The Special MABB trial for NWPZ under timely sown, irrigated condition consisting of PBW779 and PBW780 as two test entries and 5 checks (PBW550, HD2967, DBW88, WH1105 and HD3086) was proposed and conducted at 12 locations.

- Trial mean yield of the conducting sites ranged from 63.8q/ha at Bulandshahr and Sriganaganagar to 40.1q/ha at Jammu.
- PBW780 (58.0q/ha) out yielded all other entries and checks as compared to the recurrent parent HD2967 (50.7q/ha) and the best check HD3086 (56.2q/ha).
- PBW779 (51.6q/ha) was superior to the recurrent parent PBW550 (49.6q/ha) but yielded lower than other checks.
- Yellow rust was reported from nine centres. PBW780 had lowest yellow rust reaction (15MS, AC I = 2.7) as against the high response observed in recurrent check HD2967 (80S, ACI = 46.7). PBW779 (40S, ACI = 6.9) and its recurrent parent PBW550 (60S, ACI = 36.1) had high incidence of yellow rust. Low incidence of brown rust was observed.
- PBW779 was similar in days to heading and maturity with respect to its recurrent parent PBW550. PBW780 was about a week earlier than HD2967 in days to heading.

**SPL-MABB/NIL-IR-TS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	HP			J&K			Delhi			Haryana						Punjab					
		Dhaulakuan			Jammu			Delhi			Karnal			Hisar			Ludhiana			Gurdaspur		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	PBW779	43.9	2	0	40.6	3	0	50.6	7	0	45.3	6	0	54.9	4	0	60.8	4	0	50.7	5	0
2.	PBW780	46.3	1	1	48.5	1	1	67.0	1	1	59.9	2	1	62.1	1	1	65.4	2	1	58.4	1	1
3.	PBW550(C)	42.5	5	0	29.5	7	0	56.4	5	0	45.1	7	0	54.2	7	0	47.9	7	0	50.1	6	0
4.	HD2967(C)	42.3	6	0	36.4	6	0	52.4	6	0	57.1	4	0	54.5	5	0	55.5	6	0	39.0	7	0
5.	DBW88(C)	42.2	7	0	46.8	2	1	63.2	4	1	61.2	1	1	54.2	6	0	60.8	5	0	56.7	2	1
6.	WH1105(C)	42.5	4	0	40.6	3	0	64.5	3	1	54.9	5	0	61.3	2	1	61.8	3	0	53.9	3	0
7.	HD3086(C)	43.0	3	0	38.1	5	0	64.5	2	1	59.6	3	1	61.2	3	1	66.4	1	1	53.1	4	0
G.M.		43.2			40.1			59.8			54.7			57.5			59.8			51.7		
S.E. (M)		0.616			1.617			1.540			1.549			1.780			1.851			1.264		
C.D. (10%)		1.5			4.0			3.8			3.8			4.4			4.5			3.1		
C.V.		2.9			8.1			5.2			5.7			6.2			6.2			4.9		
D.O.S. (d.m.y.)		11.11.2016			15.11.2016			14.11.2016			10.11.2016			6.11.2016			1.11.2016			7.11.2016		

Trials proposed, conducted & reported = 12

**SPL-MABB/NIL-IR-TS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Rajasthan						Uttar Pradesh						Uttrakhand		
		Durgapura			Sriganganagar			Bulandhshahr			Modipuram			Pantnagar		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1.	PBW779	48.2	3	1	65.8	3	1	60.8	7	0	50.3	2	1	46.7	7	0
2.	PBW780	50.0	1	1	68.4	2	1	65.8	1	1	46.1	6	0	57.6	3	1
3.	PBW550(C)	41.9	7	0	63.3	5	0	63.8	4	1	43.9	7	0	56.3	4	0
4.	HD2967(C)	46.0	5	1	57.7	7	0	65.8	2	1	46.8	4	0	55.2	6	0
5.	DBW88(C)	47.2	4	1	65.3	4	1	65.1	3	1	46.4	5	0	60.9	1	1
6.	WH1105(C)	44.7	6	0	57.8	6	0	61.8	6	0	48.9	3	0	60.2	2	1
7.	HD3086(C)	49.6	2	1	68.6	1	1	63.5	5	0	50.8	1	1	55.6	5	0
G.M.		46.8			63.8			63.8			47.6			56.1		
S.E. (M)		1.827			1.851			0.923			0.685			1.463		
C.D. (10%)		4.5			4.5			2.3			1.7			3.6		
C.V.		7.8			5.8			2.9			2.9			5.2		
D.O.S. (d.m.y.)		15.11.2016			15.11.2016			15.11.2016			15.11.2016			11.11.2016		

**SPL-MABB/NIL-IR-TS-NWPZ, 2016-17**  
**State and Zonal Mean Yield (q/ha)**

SN	Variety	HP			J&K			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	Yield	Rk	G	Yield	Rk	G
1.	PBW779	43.9	2	0	40.6	3	0	50.6	7	0	50.1	6	0	55.8	5	0	57.0	3	1	55.5	5	0	46.7	7	0	51.6	5	0
2.	PBW780	46.3	1	1	48.5	1	1	67.0	1	1	61.0	1	1	61.9	1	1	59.2	1	1	55.9	3	1	57.6	3	1	58.0	1	1
3.	PBW550(C)	42.5	5	0	29.5	7	0	56.4	5	0	49.7	7	0	49.0	6	0	52.6	5	0	53.8	7	0	56.3	4	0	49.6	7	0
4.	HD2967(C)	42.3	6	0	36.4	6	0	52.4	6	0	55.8	5	0	47.2	7	0	51.9	6	0	56.3	2	1	55.2	6	0	50.7	6	0
5.	DBW88(C)	42.2	7	0	46.8	2	1	63.2	4	1	57.7	4	0	58.7	3	0	56.2	4	1	55.7	4	1	60.9	1	1	55.8	3	0
6.	WH1105(C)	42.5	4	0	40.6	3	0	64.5	3	1	58.1	3	1	57.8	4	0	51.3	7	0	55.4	6	0	60.2	2	1	54.4	4	0
7.	HD3086(C)	43.0	3	0	38.1	5	0	64.5	2	1	60.4	2	1	59.8	2	1	59.1	2	1	57.1	1	1	55.6	5	0	56.2	2	0
G.M.		43.2			40.1			59.8			56.1			55.7			55.3			55.7			56.1			53.7		
S.E. (M)		0.616			1.617			1.540			1.180			1.121			1.301			0.575			1.463			0.426		
C.D. (10%)		1.5			4.0			3.8			3.0			2.8			3.3			1.4			3.6			1.0		



## Summary of Disease Data and Agronomic Characteristics

North Western Plains Zone

Trial: SPL-MABB/NIL-IR-TS-NWPZ, 2016-17

SN	Variety	Disease Reactions				Agronomic Characteristics							Grain Characteristics			
		YI	ACI	Br	ACI	Hd.R	Hd.M	Mat.R	Mat.M	Ht.R	Ht.M	Thr.	Col.	Tex.	TGW.R	TGW.M
1.	PBW779	40S	6.9	0	0	70-98	84	120-145	134	79-99	90	Ey	A	H	34-43	37
2.	PBW780	15MS	2.7	0	0	81-103	92	129-150	139	82-105	97	Ey	A	H	33-45	40
3.	PBW550(C)	60S	36.1	0	0	71-99	84	121-146	136	75-95	85	Ey	A	H	36-47	39
4.	HD2967(C)	80S	46.7	0	0	83-112	98	135-155	143	90-111	101	Ey	A	H	34-46	39
5.	DBW88(C)	60S	33.4	0	0	80-104	92	125-152	140	88-111	99	Ey	A	H	37-46	41
6.	WH1105(C)	60S	20.1	10S	3.3	81-102	89	125-150	138	89-104	96	Ey	A	H	34-47	40
7.	HD3086(C)	tR	0.1	20S	12.0	73-98	87	130-145	137	88-107	100	Ey	A	H	40-46	43

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

### Individual Station Rust Data

SN	Variety	Ludhiana		Gurdaspur		Karnal	Hisar	Delhi	Pantnagar		Dhaulakuan	Jammu	Durgapura
		YI	Br	YI	Br	YI	YI	YI	YI	Br	YI	YI	YI
1.	PBW779	tS	0	tR	0	5MS	0	5MR	5S	0	5S	5S	40S
2.	PBW780	0	0	0	0	10MR	15MS	5MR	0	0	tS	5S	0
3.	PBW550(C)	40S	0	10S	0	60S	40S	10S	5S	0	40S	60S	60S
4.	HD2967(C)	80S	0	80S	0	20S	40S	20S	40S	0	40S	60S	40S
5.	DBW88(C)	60S	0	60S	0	10S	40S	10S	tS	0	40S	40S	40S
6.	WH1105(C)	10S	10S	5S	0	5S	40S	10S	tS	0	40S	10S	60S
7.	HD3086(C)	0	20S	0	10S	0	0	0	0	5S	0	tR	0

# Breeder Seed Production

## Seed Production of Wheat Varieties, 2016-17

A total indent of 23492.17q breeder seed of 185 wheat varieties from fourteen states, five public sector agencies (Hindustan Insecticide Ltd., Kribhco, IFFDC, NFL and NSC) and National Seed Association of India (NSAI) was communicated by DAC for production during 2016-17.

The maximum breeder seed indent was placed by NSAI (5524q) followed by MP (4503q) and UP (3450q). NSC placed maximum breeder seed indent of 2566q followed by Kribhco (514.60q) among public sector agencies. The highest indented varieties were HD 2967 (3079.94q), WH 1105 (1367q), HD 3086 (1347.20q), Lok 1 (916q), Raj 4079 (887.90q), GW 366 (765.95q), Raj 4238 (756q), (GW 322 (745.80q), DPW 621-50 (522.80q) and HI 1544 (480.05q).

### Breeder Seed Production:

- Total allocation of 22145.69q breeder seed of 157 varieties was made for production at 33 centres in the country after excluding one de-notified (HD 2009) and 27 un-notified entries from among the 185 DAC indented varieties.
- Total production of breeder seed during the year was 35174.91q. Thus, there was a surplus production of 13029.22q over the allocated quantity of breeder seed.
- PAU Ludhiana produced the highest quantity of breeder seed (5328.15q) followed by JNKVV Jabalpur (4970.92q) and ARS Kota (2705.99q). However, SKNAU Durgapura produced 1069q deficit quantity of breeder seed against 1955.50q.
- The highest quantity of breeder seed was produced in HD 2967 (4319.80q) followed by GW 322 (2313.80q) and GW 366 (2031.6q) varieties.

### Indent & production of top indented varieties breeder seed during 2016-17

SN	Variety	Final Indent (q)			Production (q) 2016-17	Tentative Indent 2017-18
		2014-15	2015-16	2016-17		
1.	HD 2967	2886.65	2429.20	3079.94	4319.80	2969.24
2.	WH 1105	200.00	911.40	1367.00	1654.40	820.10
3.	HD 3086	108.00	269.40	1347.20	1621.45	1276.30
4.	Lok 1	709.20	860.80	916.00	930.00	1070.37
5.	Raj 4079	666.00	985.00	887.90	1144.30	616.00
6.	GW 366	674.40	753.40	765.95	2031.60	854.00
7.	Raj 4238	165.00	343.00	756.00	359.50	1057.50
8.	GW 322	763.60	905.40	745.80	2313.80	772.20
9.	DPW 621-50	660.60	628.80	522.80	563.00	397.00
10.	HI 1544	529.60	525.40	480.05	972.75	549.90

- Allocated breeder seed for varieties namely HD 3171 (150q), HPW 360 (40q), NW 4018 (30q), HI 1479 (29.20q), SHIATS-W6 (20q), HD 2894 (17.20q), MACS 3125 (10q), VL 967 (10q), HD 3117 (7q), HD 3090 (6.20q), HD CSW-18 (5.80q), Raj 3777 (5q) was not produced.
- At some centres, a very high production - many times more than the indented/allocated quantity of breeder seed is produced. The over production of such varieties is a matter of concern, since many times the inferior yielding varieties are promoted, depriving the good and recent varieties from reaching the farmers.

**Centre wise surplus breeder seed production varieties.**

Variety	Name of the Producing Center	Allotment BSP-I (q)	Production (q)	Surplus (q)
HD 2967	RAU, Dholi, Muzaffarpur	286.44	797.00	510.56
	PAU, Ludhiana	340.00	800.00	460.00
	BISA, Ludhiana	411.60	750.00	338.40
	IARI, Pusa, Samastipur	100.00	341.30	241.30
	BISA, Samastipur	300.00	500.00	200.00
	Total			1750.26
GW 322	JNKVV, Jabalpur	126.00	1095.80	969.80
	BISA, Jabalpur	152.20	750.00	597.80
	Total			1567.60
MP(JW) 3211	JNKVV, Jabalpur	260.00	1766.00	1506.00
GW 366	RVSKVV, Gwalior	100.00	999.00	899.00
	JNKVV, Jabalpur	100.00	299.20	199.20
	IGAU, Raipur	92.55	286.00	193.45
	Total			1291.65
PBW 725	PAU, Ludhiana	121.40	1100.00	978.60
MP(JW) 1203	RVSKVV, Gwalior	70.00	555.00	485.00
	JNKVV, Jabalpur	100.00	266.70	166.70
	Total			651.70
PBW 677	PAU, Ludhiana	116.40	700.00	583.60
JW 3288	JNKVV, Jabalpur	200.00	743.80	543.80
HI 1544	IARI, Indore	300.00	750.00	450.00
Raj 4079	ARS, Kota	487.90	926.90	439.00
PBW 550	PAU, Ludhiana	203.20	625.75	422.55
MP(RVW) 4106	RVSKVV, Gwalior	140.00	428.00	288.00
HD 2733	BISA, Samastipur	66.20	350.00	283.80
HD 3086	IARI, N. Delhi	589.00	750.00	161.00
	IIWBR, Karnal	20.00	131.45	111.45
	Total			272.45
HI 8713	IARI, Indore	100.00	324.00	224.00
Raj 3765	ARS, Kota	62.40	254.80	192.40
GW 273	JNKVV, Jabalpur	120.00	273.60	153.60
PBW 590	PAU, Ludhiana	139.40	292.80	153.40
K 0307	RAU, Dholi, Muzaffarpur	11.38	160.00	148.62
HI 8663	IARI, Indore	158.80	305.00	146.20
WH 147	ARS, Kota	189.30	332.20	142.90
WH 1105	PAU, Ludhiana	775.00	914.40	139.40
DPW 621-50	PAU, Ludhiana	100.00	236.70	136.70
K 1006	CSAUAT, Kanpur	35.00	155.00	120.00
MP(JW) 3336	JNKVV, Jabalpur	55.00	174.40	119.40
C 306	ARS, Kota	115.00	221.10	106.10
HD 2985	IARI, Pusa, Samastipur	128.00	228.30	100.30
CG 5016	IGAU, Raipur	170.00	270.00	100.00

- A deficient breeder seed production for 31 varieties was observed. The major deficient breeder seed varieties are Raj 4238 (-396.85q), PBW 343 (-297.20q), Raj 4037 (-210.30q), MP(JW) 1142 (-186.60q), MP(JW) 3173 (-119.90q), Raj 3077 (-99.60q), MP(JW) 1201 (-89.40q), K 0607 (-75q), HD 2932 (-74.70q), Raj 4120 (-74.30q), HI 8759 (-70q), MP(JW) 1202 (-68.40q), MPO(JW) 1215 (-55.50q), HI 8498 (-45.50q), MP(JW) 4010 (-43q), K 0402 (-41.50q), JW 3020 (-41.40q), HD 3043 (-40.80q), HI 617 (-38.18q) and DBW 110 (-33.25q).

### Centre wise breeder seed production deficit varieties

Variety	Production Target (q)	Production (q)	Deficit (q)
<b>SKNAU Durgapura</b>			
Raj 4238	556.00	155.00	-401.00
Raj 4037	215.30	50.00	-165.30
Raj 3077	237.60	138.00	-99.60
Raj 4120	169.00	70.00	-99.00
<b>SPU, IARI New Delhi</b>			
HD 3171	150.00	0.00	-150.00
HD 3059	65.00	50.00	-15.00
<b>CSAUAT Kanpur</b>			
PBW 343	100.00	0.00	-100.00
K 0402	107.50	66.00	-41.50
<b>IIWBR Karnal</b>			
DBW 110	192.00	135.75	-56.25
CBW 38	110.80	80.00	-30.80
<b>NDUA&amp;T Faizabad</b>			
NW 4018	30.00	0.00	-30.00

### Nucleus Seed Production:

- Total allocation of 1006.00q nucleus seed of 163 varieties, including 6 new varieties identified in 2016 was made for production during 2016-17.
- IARI, Indore produced maximum quantity of nucleus seed (272q) followed by JNKVV, Jabalpur (198.25q) and ARS Kota (140.80q).
- A total of 604.97q surplus quantity of nucleus seed (1610.97q) was produced against the total allocation.
- SKNAU Durgapura produced 32q less nucleus seed against the allocation of 72.0q.
- Maximum nucleus seed 105.05 q (GW 322) was produced during 2016-17.
- Varieties with maximum nucleus seed allocation & production 2016-17

SN	Variety	Allocation (q)	Production (q)
1.	GW 322	44.50	105.05
2.	HD 2967	122.00	92.53
3.	HD 3086	35.00	55.97
4.	HI 1544	17.00	42.00
5.	JW 3288	10.00	42.00
6.	HI 8663	8.00	40.00
7.	WH 1105	35.50	38.60
8.	MP (JW)1203	10.50	34.40
9.	LOK 1	8.00	33.00
10.	HI 8498	7.00	32.68

### Test stock multiplication

NSC reported 453q seed test stock multiplication of four varieties each of bread wheat viz., HS 562 (81q), HPBW 01 (63q), HI 1605 (45q) & WB 2 (40q) and durum wheat viz., HD 3171 (76q), HD 4728 (63q), HD 8759 (53q) & MACS 3949 (32.0q), which were identified and released during 2016-17.

**Centre-wise Breeder Seed Production Report, Rabi 2016-17**  
**Year of Indent: 2016-17 (for use during 2017-18)**

Variety	Breeder seed Production (q)				Nucleus seed Production (q)		
	DAC Indent	Allotment as per BSP-I target	Production	Surplus (+)/ Deficit(-) over BSP-I target	Allotment as per BNS-I target	Actual Production	Surplus(+)/Deficit(-)
<b>ARI, Pune</b>							
MACS2496	10.00	10.00	14.00	4.00	0.50	0.50	0.00
MACS2971	10.00	10.00	27.00	17.00	0.50	0.50	0.00
MACS3125	10.00	10.00	0.00	-10.00	0.50	0.50	0.00
MACS3949	0.00	0.00	0.00	0.00	1.00	1.00	0.00
MACS6222	115.50	115.50	125.00	9.50	6.00	6.00	0.00
MACS6478	57.00	57.00	92.00	35.00	3.00	3.00	0.00
<b>Total</b>		<b>202.50</b>	<b>258.00</b>	<b>55.50</b>	<b>11.50</b>	<b>11.50</b>	<b>0.00</b>
<b>BHU, Varanasi</b>							
HUW 234	24.54	12.34	75.00	62.66	1.00	1.50	0.50
HUW 468	12.98	12.98	50.00	37.02	1.00	1.50	0.50
<b>Total</b>		<b>25.32</b>	<b>125.00</b>	<b>99.68</b>	<b>2.00</b>	<b>3.00</b>	<b>1.00</b>
<b>BISA, Jabalpur</b>							
GW 273	284.30	100.00	140.00	40.00	8.00	1.10	-6.90
GW 322	745.80	152.20	750.00	597.80	21.00	1.00	-20.00
GW 366	765.95	160.00	165.00	5.00	7.00	1.00	-6.00
<b>Total</b>		<b>412.20</b>	<b>1055.00</b>	<b>642.80</b>	<b>36.00</b>	<b>3.10</b>	<b>-32.90</b>
<b>BISA, Ludhiana</b>							
DPW 621-50	522.80	140.00	140.00	0.00	24.00	2.00	-22.00
HD 2967	3079.94	411.60	750.00	338.40	15.00	1.00	-14.00
HD 3086	0.00	0.00	0.00	0.00	0.00	1.30	1.30
<b>Total</b>		<b>551.60</b>	<b>890.00</b>	<b>338.40</b>	<b>39.00</b>	<b>4.30</b>	<b>-34.70</b>
<b>BISA, Samastipur</b>							
HD 2967	3079.94	300.00	500.00	200.00	18.50	11.00	-7.50
HD 2733 (VSM)	126.20	66.20	350.00	283.80	5.00	8.50	3.50
<b>Total</b>		<b>366.20</b>	<b>850.00</b>	<b>483.80</b>	<b>23.50</b>	<b>19.50</b>	<b>-4.00</b>
<b>CCS HAU, Hisar</b>							
C 306	174.20	59.20	71.20	12.00	3.00	3.00	0.00
WH 283	24.40	24.40	25.00	0.60	1.50	1.50	0.00
WH 711	181.00	181.00	271.00	90.00	9.00	10.00	1.00
WHD 943	80.00	80.00	120.00	40.00	4.00	4.00	0.00
WH 1021	30.00	20.00	56.50	36.50	1.00	2.00	1.00
WH 1025	51.00	51.00	76.60	25.60	2.50	3.00	0.50
WH 1080	77.00	27.00	83.00	56.00	1.50	2.00	0.50
WH 1105	1367.00	567.00	620.00	53.00	17.00	20.00	3.00
WH 1124	209.20	209.20	218.00	8.80	10.50	11.00	0.50
WH 1142	59.40	59.40	110.60	51.20	3.00	4.00	1.00
<b>Total</b>		<b>1278.20</b>	<b>1651.90</b>	<b>373.70</b>	<b>53.00</b>	<b>60.50</b>	<b>7.50</b>
<b>CSAUAT, Kanpur</b>							
DBW 39	229.80	40.00	60.00	20.00	2.00	3.00	1.00
DBW 107	61.40	55.00	90.00	35.00	3.00	7.50	4.50
HUW 234	24.54	12.20	26.00	13.80	1.00	1.50	0.50
K 0307 (Shatabdi)	108.38	97.00	117.00	20.00	5.00	6.00	1.00

K 0402 (Mahi)	107.50	107.50	66.00	-41.50	5.50	5.55	0.05
K 0607	200.00	130.00	125.00	-5.00	10.00	4.80	-5.20
K 1006	35.00	35.00	155.00	120.00	2.00	6.05	4.05
K 7903 (Halana)	12.60	12.60	34.00	21.40	1.00	5.50	4.50
K 9107 (Deva)	12.58	12.58	18.00	5.42	1.00	1.55	0.55
K 9423 (Unnat Halna)	8.80	8.80	87.00	78.20	0.50	4.20	3.70
PBW 343	402.20	100.00	0.00	-100.00	5.00	7.20	2.20
PBW 550	428.20	105.00	178.00	73.00	5.50	7.10	1.60
K 1317	0.00	0.00	0.00	0.00	1.00	0.00	-1.00
<b>Total</b>		<b>715.68</b>	<b>956.00</b>	<b>240.32</b>	<b>42.50</b>	<b>59.95</b>	<b>17.45</b>
<b>CSSRI, Karnal</b>							
KRL 213	28.20	28.20	35.00	6.80	1.50	3.00	1.50
KRL 210	24.40	24.40	30.00	5.60	1.50	3.00	1.50
<b>Total</b>		<b>52.60</b>	<b>65.00</b>	<b>12.40</b>	<b>3.00</b>	<b>6.00</b>	<b>3.00</b>
<b>DSR, Mau</b>							
HD 2967	3079.94	20.00	20.00	0.00	1.00	0.00	-1.00
<b>Total</b>		<b>20.00</b>	<b>20.00</b>	<b>0.00</b>	<b>1.00</b>	<b>0.00</b>	<b>-1.00</b>
<b>IIWBR, Karnal</b>							
CBW 38	137.80	110.80	80.00	-30.80	5.50	2.60	-2.90
DBW 14	2.00	2.00	3.30	1.30	0.50	1.00	0.50
DBW 16	77.60	26.60	14.60	-12.00	1.50	2.00	0.50
DBW 17	264.44	65.44	81.45	16.01	3.50	4.30	0.80
DBW 39	229.80	85.80	86.92	1.12	4.50	4.61	0.11
DBW 71	88.60	38.60	58.70	20.10	2.00	2.86	0.86
DBW 88	227.40	107.40	140.95	33.55	5.50	4.88	-0.62
DBW 90	188.20	138.20	115.90	-22.30	7.00	2.35	-4.65
DBW 110	217.00	192.00	135.75	-56.25	9.50	1.00	-8.50
DPW 621-50	522.80	122.80	161.30	38.50	6.50	3.00	-3.50
DBW 107	61.40	6.40	8.40	2.00	0.50	1.00	0.50
HD 3086 (Pusa Gautami)	1347.20	20.00	131.45	111.45	1.00	6.17	5.17
HD 2967	3079.94	354.90	216.50	-138.40	17.00	8.02	-8.98
WB 2	0.00	0.00	0.00	0.00	1.00	10.17	9.17
<b>Total</b>		<b>1270.94</b>	<b>1235.22</b>	<b>-35.72</b>	<b>65.50</b>	<b>53.96</b>	<b>-11.54</b>
<b>GBPUAT, Pantnagar</b>							
CBW 38	137.80	27.00	45.00	18.00	1.50	1.00	-0.50
DBW 17	264.44	10.00	50.00	40.00	0.50	1.75	1.25
DPW 621-50	522.80	10.00	25.00	15.00	0.50	2.00	1.50
HD 2329	32.20	32.20	40.00	7.80	2.00	1.50	-0.50
HD 2894 (Pusa Wheat 109)	17.20	17.20	0.00	-17.20	1.00	1.60	0.60
PBW 154	151.80	151.80	180.00	28.20	5.00	5.00	0.00
PBW 343	402.20	50.00	80.00	30.00	2.50	2.00	-0.50
PBW 373	99.20	10.00	50.00	40.00	0.50	1.70	1.20
PBW 502	179.30	99.30	100.00	0.70	5.00	4.50	-0.50
PBW 550	428.20	20.00	50.00	30.00	1.00	1.50	0.50
UP 262	9.60	9.60	35.00	25.40	0.50	1.60	1.10
UP 2338	12.40	12.40	30.00	17.60	1.00	1.35	0.35
UP 2425	2.40	2.40	3.00	0.60	0.50	1.50	1.00
UP 2526	12.40	12.40	30.00	17.60	1.00	1.20	0.20
UP 2554	10.00	10.00	25.00	15.00	0.50	1.75	1.25
UP 2565	4.80	4.80	8.00	3.20	0.50	1.60	1.10

UP 2572	36.40	36.40	50.00	13.60	2.00	2.00	0.00
UP 2628	90.00	90.00	110.00	20.00	4.50	4.50	0.00
WH 1021	30.00	10.00	12.00	2.00	0.50	1.60	1.10
WH 1105	1367.00	15.00	100.00	85.00	1.00	1.60	0.60
PBW 226	51.20	40.00	40.00	0.00	0.00	1.20	1.20
DBW 16	0.00	0.00	0.00	0.00	0.00	1.20	1.20
DBW 71	0.00	0.00	0.00	0.00	0.00	1.60	1.60
HD 2987	0.00	0.00	0.00	0.00	0.00	1.20	1.20
<b>Total</b>		<b>630.50</b>	<b>1063.00</b>	<b>432.50</b>	<b>31.50</b>	<b>46.45</b>	<b>14.95</b>
<b>HPKV, Palampur</b>							
DPW 621-50	522.80	100.00	0.00	-100.00	5.00	0.00	-5.00
HPW 349	75.00	65.00	65.00	0.00	3.50	3.43	-0.07
VL 892	35.00	20.00	20.00	0.00	1.00	1.05	0.05
WH 1080	77.00	40.00	70.00	30.00	2.00	2.10	0.10
HPW 249	30.00	30.00	34.10	4.10	1.50	1.74	0.24
DBW 88	0.00	0.00	0.00	0.00	0.00	1.50	1.50
HPW 236	0.00	0.00	0.00	0.00	0.00	0.90	0.90
<b>Total</b>		<b>255.00</b>	<b>189.10</b>	<b>-65.90</b>	<b>13.00</b>	<b>10.72</b>	<b>-2.28</b>
<b>IARI, Indore</b>							
HI1418	0.00	0.00	0.00	0.00	0.00	2.00	2.00
HI 1479	0.00	0.00	0.00	0.00	0.00	12.00	12.00
HI 1500 (Amrita)	1.20	1.20	21.50	20.30	0.00	17.00	17.00
HI 1531 (Harshita)	90.00	90.00	90.00	0.00	4.50	22.00	17.50
HI 8498 (Malav Shakti)	195.00	50.00	74.50	24.50	5.00	20.00	15.00
HI 8627 (Malav Kirti)	6.20	6.20	18.50	12.30	0.00	14.00	14.00
HI 8663 (Posan)	158.80	158.80	305.00	146.20	8.00	40.00	32.00
HI 1544 (Purna)	480.05	300.00	750.00	450.00	17.00	42.00	25.00
HI 1563 (Pusa Prachi)	299.20	0.00	0.00	0.00	0.00	10.00	10.00
HI 8737 (Pusa Anmol)	37.20	37.20	136.50	99.30	2.00	30.00	28.00
HI 8713 (Pusa Mangal)	248.80	100.00	324.00	224.00	12.50	35.00	22.50
HI 8759	150.00	150.00	80.00	-70.00	5.00	0.00	-5.00
HI 1605	50.00	50.00	52.00	2.00	3.00	0.00	-3.00
HD 2932 (PusaWheat 111)	143.20	36.50	36.50	0.00	0.00	23.00	23.00
HD 2987	34.20	34.20	49.00	14.80	0.00	0.00	0.00
HD 3171	150	0.00	0.00	0.00	6.00	1.00	-5.00
HD 4728	0.00	0.00	0.00	0.00	0.00	5.00	5.00
<b>Total</b>		<b>1012.90</b>	<b>1937.50</b>	<b>924.60</b>	<b>57.00</b>	<b>272.00</b>	<b>215.00</b>
<b>IARI, Karnal/Shimla</b>							
HD 2851 (Pusa Vishesh)	103.90	103.90	110.00	6.10	5.50	2.08	-3.42
HD 2967	3079.94	550.00	570.00	20.00	17.00	15.00	-2.00
HD 3059 (Pusa Pachhati)	143.20	78.20	80.00	1.80	4.00	2.65	-1.35
HD 3086 (Pusa Gautami)	1347.20	738.20	740.00	1.80	17.00	12.00	-5.00
HS 542 (Pusa Kiran)	36.00	36.00	36.00	0.00	2.00	4.00	2.00



HS 490 (Pusa Baker)	5.00	5.00	5.00	0.00	0.50	2.25	1.75
HS 507 (Pusa Suketi)	75.00	75.00	75.00	0.00	4.00	6.00	2.00
HS 562	0.00	0.00	0.00	0.00	1.00	4.35	3.35
WR 544 (Pusa Gold)	30.58	20.20	22.00	1.80	1.00	0.00	-1.00
HD 2932 (Pusa Wheat 111)	143.20	0.00	0.00	0.00	0.00	9.40	9.40
<b>Total</b>		<b>1606.50</b>	<b>1638.00</b>	<b>31.50</b>	<b>52.00</b>	<b>57.73</b>	<b>5.73</b>
<b>SPU, IARI, New Delhi</b>							
HD 2864 (Urja)	15.00	15.00	24.00	9.00	1.00	2.50	1.50
HD 2967	3079.94	350.00	325.00	-25.00	17.00	21.00	4.00
HD 3043	84.80	40.00	44.00	4.00	2.00	4.90	2.90
HD 3059 (Pusa Pachhati)	143.20	65.00	50.00	-15.00	3.50	7.25	3.75
HD 3086 (Pusa Gautami)	1347.20	589.00	750.00	161.00	17.00	31.50	14.50
HD 3090	6.20	6.20	0.00	-6.20	0.50	1.70	1.20
HD 4728	0.00	0.00	0.00	0.00	2.00	8.00	6.00
HD 3171	150.00	150.00	0.00	-150.00	6.00	1.00	-5.00
HDR 77	0.00	0.00	0.00	0.00	0.00	0.20	0.20
HD CSW-18	0.00	0.00	0.00	0.00	0.00	2.50	2.50
HD 3118 (Pusa Vatsala)	34.80	0.00	0.00	0.00	0.00	5.20	5.20
<b>Total</b>		<b>1215.20</b>	<b>1193.00</b>	<b>-22.20</b>	<b>48.00</b>	<b>85.75</b>	<b>36.75</b>
<b>IARI, Pusa</b>							
HD 2733 (VSM)	126.20	25.00	102.50	77.50	1.50	2.26	0.76
HD 2967	3079.94	100.00	341.30	241.30	5.00	8.21	3.21
HD 2985 (Pusa Basant)	128.00	128.00	228.30	100.30	6.50	2.23	-4.27
HI 1563 (Pusa Prachi)	299.20	100.00	197.60	97.60	5.00	0.00	-5.00
HD 3118 (Pusa Vatsala)	34.80	34.80	97.00	62.20	2.00	0.00	-2.00
<b>Total</b>		<b>387.80</b>	<b>966.70</b>	<b>578.90</b>	<b>20.00</b>	<b>12.70</b>	<b>-7.30</b>
<b>IGKVV, Raipur</b>							
DBW 110	217.00	25.00	48.00	23.00	1.50	5.20	3.70
GW 366	765.95	92.55	286.00	193.45	5.00	2.40	-2.60
MP(JW) 1203	210.00	40.00	88.80	48.80	2.00	9.40	7.40
CG 5016 (Ratan)	170.00	170.00	270.00	100.00	8.50	5.20	-3.30
HI 617 (Sujata)	75.00	0.00	16.00	16.00	0.00	3.67	3.67
GW 273	0.00	0.00	0.00	0.00	0.00	5.68	5.68
<b>Total</b>		<b>327.55</b>	<b>708.80</b>	<b>381.25</b>	<b>17.00</b>	<b>31.55</b>	<b>14.55</b>
<b>JNKVV, Jabalpur</b>							
GW 273	284.30	120.00	273.60	153.60	6.00	15.00	9.00
GW 322	745.80	126.00	1095.80	969.80	6.50	60.00	53.50
GW 366	765.95	100.00	299.20	199.20	5.00	12.00	7.00
MP(JW) 1201	110.00	110.00	20.60	-89.40	5.50	3.00	-2.50
MP(JW) 3173	140.00	140.00	20.10	-119.90	7.00	10.00	3.00
MP(JW) 1203	210.00	100.00	266.70	166.70	5.00	15.00	10.00

MP(JW) 3211	260.00	260.00	1766.00	1506.00	13.00	3.00	-10.00
MP(JW) 3336	55.00	55.00	174.40	119.40	3.00	10.00	7.00
MP(JW) 1202	125.00	125.00	56.60	-68.40	6.50	8.00	1.50
MPO(JW)1215	135.00	135.00	79.50	-55.50	7.00	6.25	-0.75
MP(JW) 1142 (Snehil)	214.20	214.20	27.60	-186.60	11.00	4.00	-7.00
MPO(JW)1106 (Sudha)	20.00	20.00	8.00	-12.00	1.00	1.00	0.00
JSW 17	15.00	15.00	16.60	1.60	1.00	1.00	0.00
JW 3020	150.00	150.00	108.60	-41.40	7.50	5.00	-2.50
JW 3288	200.00	200.00	743.80	543.80	10.00	42.00	32.00
MPO 1255	0.00	0.00	0.00	0.00	0.00	3.00	3.00
<b>Total</b>		<b>1870.20</b>	<b>4970.92</b>	<b>3100.72</b>	<b>96.50</b>	<b>198.25</b>	<b>101.75</b>
<b>Lokbharti, Sanosara</b>							
Lok 1	916.00	916.00	930.00	14.00	8.00	33.00	25.00
<b>Total</b>		<b>916.00</b>	<b>930.00</b>	<b>14.00</b>	<b>8.00</b>	<b>33.00</b>	<b>25.00</b>
<b>MPKV, Niphad</b>							
NIAW 34	10.00	10.00	9.00	-1.00	0.50	1.66	1.16
NIAW 1415 (Netravati)	75.00	75.00	75.00	0.00	4.00	5.40	1.40
NIAW 301 (Trimbak)	57.60	57.60	50.00	-7.60	3.00	9.14	6.14
NIDW 295 (Godavari)	25.20	25.20	25.00	-0.20	1.50	1.40	-0.10
NIAW 917 (Tapovan)	7.00	7.00	15.00	8.00	0.50	4.72	4.22
NIAW 1994	0.00	0.00	0.00	0.00	0.00	17.00	17.00
HD 2189	0.00	0.00	0.00	0.00	0.00	1.29	1.29
<b>Total</b>		<b>174.80</b>	<b>174.00</b>	<b>-0.80</b>	<b>9.50</b>	<b>40.61</b>	<b>31.11</b>
<b>MPUA&amp;T, Kota</b>							
C 306	174.20	115.00	221.10	106.10	6.00	11.60	5.60
GW 173	0.00	0.00	0.00	0.00	0.00	6.55	6.55
HI 8498 (Malav Shakti)	195.00	50.00	75.00	25.00	2.00	12.68	10.68
HI 1544 (Purna)	480.05	180.05	222.75	42.70	8.00	10.58	2.58
HD 2987 (Pusa Bahar)	34.20	34.20	10.00	-24.20	2.00	4.20	2.20
HI 8713 (Pusa Mangal)	248.80	148.80	82.09	-66.71	5.00	3.55	-1.45
HD 2932 (Pusa Wheat 111)	143.20	50.00	32.00	-18.00	2.50	2.64	0.14
Raj 3077	216.00	0.00	0.00	0.00	0.00	12.60	12.60
Raj 4079	887.90	487.90	926.90	439.00	17.00	13.45	-3.55
Raj 4083	101.60	50.00	112.50	62.50	2.50	11.50	9.00
Raj 4120	376.80	207.80	232.50	24.70	10.50	10.90	0.40
Raj 4238	756.00	200.00	204.15	4.15	10.00	12.80	2.80
Raj 3765	167.40	62.40	254.80	192.40	3.00	13.90	10.90
WH 147	189.30	189.30	332.20	142.90	5.00	13.85	8.85
<b>Total</b>		<b>1775.45</b>	<b>2705.99</b>	<b>930.54</b>	<b>73.50</b>	<b>140.80</b>	<b>67.30</b>
<b>NDUA&amp;T, Faizabad</b>							
NW 2036	5.00	5.00	26.00	21.00	0.50	0.00	-0.50
PBW 373	99.20	84.20	59.00	-25.20	4.50	4.55	0.05
PBW 550	428.20	100.00	140.00	40.00	5.00	5.15	0.15
NW 1014	3.60	3.60	75.00	71.40	0.50	1.35	0.85
NW 4018	30.00	30.00	0.00	-30.00	1.50	1.55	0.05

DBW 17	0.00	0.00	0.00	0.00	0.00	2.25	2.25
<b>Total</b>		<b>222.80</b>	<b>300.00</b>	<b>77.20</b>	<b>12.00</b>	<b>14.85</b>	<b>2.85</b>
<b>PAU, Ludhiana</b>							
DBW 17	264.44	89.00	144.80	55.80	4.50	3.75	-0.75
DPW 621-50	522.80	100.00	236.70	136.70	5.00	7.00	2.00
HD 2967	3079.94	340.00	800.00	460.00	17.00	17.00	0.00
PBW 343	402.20	79.40	25.00	-54.40	4.00	4.10	0.10
PBW 373	99.20	5.00	3.00	-2.00	0.50	1.00	0.50
PBW 443	56.50	56.50	60.70	4.20	3.00	3.00	0.00
PBW 502	179.30	80.00	145.00	65.00	4.00	6.00	2.00
PBW 509	52.40	52.40	63.00	10.60	3.00	3.00	0.00
PBW 533	6.00	6.00	13.00	7.00	0.50	1.25	0.75
PBW 550	428.20	203.20	625.75	422.55	10.00	10.90	0.90
PBW 590	139.40	139.40	292.80	153.40	7.00	7.60	0.60
PBW 644	96.00	96.00	120.00	24.00	5.00	5.50	0.50
PBW 658	8.00	8.00	25.00	17.00	0.50	1.50	1.00
PBW 660	6.00	6.00	11.00	5.00	0.50	3.00	2.50
PBW 677	116.40	116.40	700.00	583.60	6.00	20.00	14.00
PBW 725	121.40	121.40	1100.00	978.60	6.00	19.85	13.85
WH 1105	1367.00	775.00	914.40	139.40	17.00	17.00	0.00
PBW 723	48.00	48.00	48.00	0.00	2.50	10.00	7.50
HPBW 01	0.00	0.00	0.00	0.00	1.00	11.00	10.00
HD 3086 (Pusa Gautami)	0.00	0.00	0.00	0.00	0.00	5.00	5.00
<b>Total</b>		<b>2321.70</b>	<b>5328.15</b>	<b>3006.45</b>	<b>97.00</b>	<b>157.45</b>	<b>60.45</b>
<b>PDKV, Akola</b>							
AKAW 4627	25.00	25.00	81.85	56.85	1.50	0.31	-1.19
WSM 1472 (PDKV Washim)	2.00	2.00	10.00	8.00	0.50	0.42	-0.08
<b>Total</b>		<b>27.00</b>	<b>91.85</b>	<b>64.85</b>	<b>2.00</b>	<b>0.73</b>	<b>-1.27</b>
<b>RARI, SKNAU, Durgapura</b>							
Raj 1482	216.00	216.00	216.00	0.00	5.00	1.25	-3.75
Raj 3077	237.60	237.60	138.00	-99.60	5.00	2.00	-3.00
Raj 3765	167.40	105.00	39.50	-65.50	5.50	1.80	-3.70
Raj 3777	5.00	5.00	0.00	-5.00	0.50	0.00	-0.50
Raj 4037	215.30	215.30	50.00	-165.30	11.00	2.75	-8.25
Raj 4079	887.90	400.00	217.40	-182.60	17.00	15.00	-2.00
Raj 4083	101.60	51.60	0.00	-51.60	2.50	1.50	-1.00
Raj 4120	376.80	169.00	70.00	-99.00	8.50	3.00	-5.50
Raj 4238	756.00	556.00	155.00	-401.00	17.00	12.00	-5.00
Raj 6560	0.00	0.00	0.00	0.00	0.00	0.50	0.50
<b>Total</b>		<b>1955.50</b>	<b>885.90</b>	<b>-1069.60</b>	<b>72.00</b>	<b>39.80</b>	<b>-32.20</b>
<b>SKUA&amp;T Jammu</b>							
HD 2967	3079.94	10.00	0.00	-10.00	0.50	0.00	-0.50
HPW 349	75.00	10.00	8.00	-2.00	0.50	0.00	-0.50
WH 1080	77.00	10.00	15.00	5.00	0.50	0.00	-0.50
WH 1105	1367.00	10.00	20.00	10.00	0.50	0.00	-0.50
<b>Total</b>		<b>40.00</b>	<b>43.00</b>	<b>3.00</b>	<b>2.00</b>	<b>0.00</b>	<b>-2.00</b>
<b>SVPUA&amp;T, Meerut</b>							
DBW 16	77.60	50.00	60.88	10.88	2.50	0.00	-2.50
DBW 17	264.44	100.00	138.20	38.20	5.00	0.00	-5.00
DBW 71	88.60	50.00	37.59	-12.41	2.50	0.00	-2.50
DBW 88	227.40	120.00	120.71	0.71	6.00	0.00	-6.00
DBW 90	188.20	50.00	80.60	30.60	2.50	0.00	-2.50

DPW 621-50	522.80	50.00	0.00	-50.00	2.50	0.00	-2.50
<b>Total</b>		<b>420.00</b>	<b>437.98</b>	<b>17.98</b>	<b>21.00</b>	<b>0.00</b>	<b>-21.00</b>
<b>RAU, Dholi, Muzaffarpur</b>							
DBW 39	229.80	104.00	140.50	36.50	5.50	0.00	-5.50
HD 2733 (VSM)	126.20	35.00	132.00	97.00	2.00	21.90	19.90
HD 2967	3079.94	286.44	797.00	510.56	14.00	11.30	-2.70
K 0307 (Shatabdi)	108.38	11.38	160.00	148.62	1.00	16.35	15.35
HI 1563 (Pusa Prachi)	299.20	199.20	160.00	-39.20	10.00	4.40	-5.60
WR 544 (Pusa Gold)	30.58	10.38	0.00	-10.38	0.50	2.20	1.70
<b>Total</b>		<b>646.40</b>	<b>1389.50</b>	<b>743.10</b>	<b>33.00</b>	<b>56.15</b>	<b>23.15</b>
<b>RVSKVV, Gwalior</b>							
GW 366	765.95	100.00	999.00	899.00	5.00	25.00	20.00
MP(JW) 4010	55.00	55.00	12.00	-43.00	3.00	5.00	2.00
MP(JW) 1203	210.00	70.00	555.00	485.00	3.50	10.00	6.50
MP(RVW) 4106	140.00	140.00	428.00	288.00	7.00	0.00	-7.00
HI 617 (Sujata)	75.00	0.00	13.82	13.82	0.00	6.00	6.00
HI 617 (Sujata)	75.00	0.00	7.00	7.00	0.00	6.00	6.00
<b>Total</b>		<b>365.00</b>	<b>2001.00</b>	<b>1636.00</b>	<b>18.50</b>	<b>52.00</b>	<b>33.50</b>
<b>SDAU, Vijapur</b>							
GW 173	37.60	37.60	39.00	1.40	2.00	1.55	-0.45
GW 322	745.80	467.60	468.00	0.40	17.00	44.05	27.05
GW 496	162.00	162.00	170.00	8.00	5.00	52.90	47.90
GW 1255	3.00	3.00	5.00	2.00	0.50	1.80	1.30
GW 451	0.00	0.00	0.00	0.00	0.00	14.60	14.60
<b>Total</b>		<b>670.20</b>	<b>682.00</b>	<b>11.80</b>	<b>24.50</b>	<b>114.90</b>	<b>90.40</b>
<b>JAU, Junagarh</b>							
GW 366	765.95	313.40	282.40	-31.00	15.00	12.00	-3.00
<b>Total</b>		<b>313.40</b>	<b>282.40</b>	<b>-31.00</b>	<b>15.00</b>	<b>12.00</b>	<b>-3.00</b>
<b>UAS, Dharwad</b>							
DWR 162	8.75	8.75	17.00	8.25	0.50	0.90	0.40
UAS 415	2.80	2.80	4.50	1.70	0.50	1.55	1.05
UAS 428	10.00	10.00	8.50	-1.50	0.50	1.52	1.02
<b>Total</b>		<b>21.55</b>	<b>30.00</b>	<b>8.45</b>	<b>1.50</b>	<b>3.97</b>	<b>2.47</b>
<b>VPKAS, Almora</b>							
VL 829	5.00	5.00	30.00	25.00	0.50	1.50	1.00
VL 907	35.00	35.00	50.00	15.00	2.00	2.00	0.00
VL 892	35.00	15.00	15.00	0.00	1.00	1.75	0.75
VL 953	10.00	10.00	25.00	15.00	0.50	2.50	2.00
VL 967	10.00	10.00	0.00	-10.00	0.50	0.00	-0.50
<b>Total</b>		<b>75.00</b>	<b>120.00</b>	<b>45.00</b>	<b>4.50</b>	<b>7.75</b>	<b>3.25</b>
<b>Grand Total</b>	<b>23492.17</b>	<b>22145.69</b>	<b>35174.91</b>	<b>13029.22</b>	<b>1006.00</b>	<b>1610.97</b>	<b>604.97</b>

**Variety wise Breeder Seed Production Report of Rabi 2016-17**  
**Year of Indent: 2016-17 (for use during 2017-18)**

SN	Variety	Notification Year	Breeder seed (q)			Nucleus seed (q)		
			DAC Indent	Production	Surplus(+)/ Deficit (-)	BNS-I target	Actual Production	Surplus(+)/Deficit(-)
1.	AKAW 4627	2012	25.00	81.85	56.85	1.50	0.31	-1.19
2.	Barbat	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
3.	C 306	1969	174.20	292.30	118.10	9.00	14.60	5.60
4.	CBW 38	2009	137.80	125.00	-12.80	7.00	3.60	-3.40
5.	CG 5016 (Ratan)	2009	170.00	270.00	100.00	8.50	5.20	-3.30
6.	DBW 14	2002	2.00	3.30	1.30	0.50	1.00	0.50
7.	DBW 16	2006	77.60	75.48	-2.12	4.00	3.20	-0.80
8.	DBW 17	2007	264.44	414.45	150.01	13.50	12.05	-1.45
9.	DBW 39	2010	229.80	287.42	57.62	12.00	7.61	-4.39
10.	DBW 71	2013	88.60	96.29	7.69	4.50	4.46	-0.04
11.	DBW 88	2014	227.40	261.66	34.26	11.50	6.38	-5.12
12.	DBW 90	2014	188.20	196.50	8.30	9.50	2.35	-7.15
13.	DBW 107	2015	61.40	98.40	37.00	12.00	13.70	1.70
14.	DBW 110	2015	217.00	183.75	-33.25	11.00	6.20	-4.80
15.	DBW 168	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
16.	DBW 172	Un notified	2.80	0.00	-2.80	0.00	0.00	0.00
17.	DBW 173	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
18.	DBW 179	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
19.	DL-153-2 (Kundan)	1985	6.00	0.00	-6.00	0.00	0.00	0.00
20.	DPW 621-50	2011	522.80	563.00	40.20	43.50	14.00	-29.50
21.	DWR 162	1993	8.75	17.00	8.25	0.50	0.90	0.40
22.	GW 173	1994	37.60	39.00	1.40	2.00	8.10	6.10
23.	GW 273	1998	284.30	413.60	129.30	14.00	21.78	7.78
24.	GW 322	2002	745.80	2313.80	1568.00	44.50	105.05	60.55
25.	GW 366	2007	765.95	2031.60	1265.65	37.00	52.40	15.40
26.	GW 496	1990	162.00	170.00	8.00	5.00	52.90	47.90
27.	GW 1255	2016	3.00	5.00	2.00	0.50	1.80	1.30
28.	HD 2009	De-notified	2.40	0.00	-2.40	0.00	0.00	0.00
29.	HD 2189	1980	60.50	0.00	-60.50	0.00	0.00	0.00
30.	HD 2285 (Gobind)	1984	4.00	0.00	-4.00	0.00	0.00	0.00
31.	HD 2329	1985	32.20	40.00	7.80	2.00	1.50	-0.50
32.	HD 2643 (Ganga)	1997	15.00	0.00	-15.00	0.00	0.00	0.00
33.	HD 2733 (VSM)	2001	126.20	584.50	458.30	8.50	32.66	24.16
34.	HD 2851 (Pusa Vishesh)	2005	103.90	110.00	6.10	5.50	2.08	-3.42
35.	HD 2864 (Urja)	2005	15.00	24.00	9.00	1.00	2.50	1.50
36.	HD 2894 (Pusa Wheat 109)	2008	17.20	0.00	-17.20	1.00	1.60	0.60
37.	HD 2932 (Pusa Wheat 111)	2008	143.20	68.50	-74.70	2.50	35.04	32.54
38.	HD 2952	Un notified	3.20	0.00	-3.20	0.00	0.00	0.00
39.	HD 2967	2011	3079.94	4319.80	1219.86	122.00	92.53	-29.47
40.	HD 2985 (Pusa Basant)	2011	128.00	228.30	100.30	6.50	2.23	-4.27
41.	HD 2987 (Pusa Bahar)	2011	34.20	59.00	24.80	2.00	5.40	3.40
42.	HD 3043	2012	84.80	44.00	-40.80	2.00	4.90	2.90
43.	HD 3059 (Pusa Pachhati)	2013	143.20	130.00	-13.20	7.50	9.90	2.40

44.	HD 3086 (Pusa Gautami )	2014	1347.20	1621.45	274.25	35.00	55.97	20.97
45.	HD 3090	2014	6.20	0.00	-6.20	0.50	1.70	1.20
46.	HD 3116	Un notified	5.00	0.00	-5.00	0.00	0.00	0.00
47.	HD 3117	2015	7.00	0.00	-7.00	0.00	0.00	0.00
48.	HD 3118 (Pusa Vatsala)	2015	34.80	97.00	62.20	2.00	5.20	3.20
49.	HD 3168	Un notified	10.00	0.00	-10.00	0.00	0.00	0.00
50.	HD 3171	2016	150.00	0.00	-150.00	6.00	1.00	-5.00
51.	HD 3180	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
52.	HD 4728	2017	0.00	0.00	0.00	2.00	8.00	6.00
53.	HD CSW-18	2015	5.80	0.00	-5.80	0.00	0.00	0.00
54.	HDR 77	1990	9.38	0.00	-9.38	0.00	0.00	0.00
55.	HI 617 (Sujata)	1982	75.00	36.82	-75.00	0.00	15.67	15.67
56.	HI 1418	2000	36.20	0.00	-36.20	0.00	0.00	0.00
57.	HI1479 (Swarna)	2003	29.20	0.00	-29.20	0.00	0.00	0.00
58.	HI 1500 (Amrita)	2003	1.20	21.50	20.30	0	17.00	17.00
59.	HI1531 (Harshita)	2006	90.00	90.00	0.00	4.50	22.00	17.50
60.	HI 1544 (Purna)	2008	480.05	972.75	492.70	17.00	42.00	25.00
61.	HI 1563 (Pusa Prachi)	2011	299.20	357.60	58.40	15.00	4.40	-10.60
62.	HI 1605	2016	50.00	52.00	2.00	3.00	0.00	-3.00
63.	HI 2026	Un notified	12.00	0.00	-12.00	0.00	0.00	0.00
64.	HI 8498 (Malav Shakti)	1999	195.00	149.50	-45.50	7.00	32.68	25.68
65.	HI 8627 (Malav Kirti)	2007	6.20	18.50	12.30	0	14.00	14.00
66.	HI 8663 (Posan)	2008	158.80	305.00	146.20	8.00	40.00	32.00
67.	HI 8713 (Pusa Mangal)	2013	248.80	406.09	157.29	17.50	38.55	21.05
68.	HI 8737 (Pusa Anmol)	2015	37.20	136.50	99.30	2.00	30.00	28.00
69.	HI 8759	2016	150.00	80.00	-70.00	5.00	0.00	-5.00
70.	HPBW 01	2017	0.00	0.00	0.00	1.00	11.00	10.00
71.	HPW 249	2010	30.00	34.10	4.10	1.50	1.74	0.24
72.	HPW 349	2013	75.00	73.00	-2.00	4.00	3.43	-0.57
73.	HPW 360	2016	40.00	0.00	-40.00	0.00	0.00	0.00
74.	HS 490 (Pusa Baker)	2009	5.00	5.00	0.00	0.50	2.25	1.75
75.	HS 507 (Pusa Suketi)	2011	75.00	75.00	0.00	4.00	6.00	2.00
76.	HS 542 (Pusa Kiran)	2015	36.00	36.00	0.00	2.00	4.00	2.00
77.	HS 562	2017	0.00	0.00	0.00	1.00	4.35	3.35
78.	HUW 234	1986	24.54	101.00	76.46	2.00	3.00	1.00
79.	HUW 468	1999	12.98	50.00	37.02	1.00	1.50	0.50
80.	JSW 17	1997	15.00	16.60	1.60	1.00	1.00	0.00
81.	JW 3020	2005	150.00	108.60	-41.40	7.50	5.00	-2.50
82.	JW 3288	2012	200.00	743.80	543.80	10.00	42.00	32.00
83.	K 68	1974	1.20	0.00	-1.20	0.00	0.00	0.00
84.	K0307 (Shatabdi)	2007	108.38	277.00	168.62	6.00	22.35	16.35
85.	K 0402 (Mahi)	2013	107.50	66.00	-41.50	5.50	5.55	0.05
86.	K 0607	2014	200.00	125.00	-75.00	10.00	4.80	-5.20
87.	K 1006	2014	35.00	155.00	120.00	2.00	6.05	4.05
88.	K 1317	2017	0.00	0.00	0.00	1.00	0.00	-1.00
89.	K 7903 (Halana)	2001	12.60	34.00	21.40	1.00	5.50	4.50

90.	K 9107 (Deva)	1996	12.58	18.00	5.42	1.00	1.55	0.55
91.	K 9423 (Unnat Halna)	2005	8.80	87.00	78.20	0.50	4.20	3.70
92.	KRL 210	2012	24.40	30.00	5.60	1.50	3.00	1.50
93.	KRL 213	2012	28.20	35.00	6.80	1.50	3.00	1.50
94.	LOK 1	1982	916.00	930.00	14.00	8.00	33.00	25.00
95.	MACS 2496	1991	10.00	14.00	4.00	0.50	0.50	0.00
96.	MACS 2971	2009	10.00	27.00	17.00	0.50	0.50	0.00
97.	MACS 3125	2003	10.00	0.00	-10.00	0.50	0.50	0.00
98.	MACS 3949	2017	0.00	0.00	0.00	1.00	1.00	0.00
99.	MACS 6222	2010	115.50	125.00	9.50	6.00	6.00	0.00
100.	MACS 6478	2014	57.00	92.00	35.00	3.00	3.00	0.00
101.	MP(JW) 1142 (Snehil)	2007	214.20	27.60	-186.60	11.00	4.00	-7.00
102.	MP(JW) 1201	2011	110.00	20.60	-89.40	5.50	3.00	-2.50
103.	MP(JW) 1202	2010	125.00	56.60	-68.40	6.50	8.00	1.50
104.	MP(JW) 1203	2009	210.00	910.50	700.50	10.50	34.40	23.90
105.	MP(JW) 3173	2009	140.00	20.10	-119.90	7.00	10.00	3.00
106.	MP(JW) 3211	2010	260.00	1766.00	1506.00	13.00	3.00	-10.00
107.	MP(JW) 3336	2013	55.00	174.40	119.40	3.00	10.00	7.00
108.	MP(JW) 4010	2003	55.00	12.00	-43.00	3.00	5.00	2.00
109.	MP 9305	Un notified	5.00	0.00	-5.00	0.00	0.00	0.00
110.	MP(RVW)4106	2012	140.00	428.00	288.00	7.00	0.00	-7.00
111.	MPO(JW)1106 (Sudha)	2003	20.00	8.00	-12.00	1.00	1.00	0.00
112.	MPO(JW)1215	2010	135.00	79.50	-55.50	7.00	6.25	-0.75
113.	NIAW 1415 (Netravati)	2011	75.00	75.00	0.00	4.00	5.40	1.40
114.	NIAW 301 (Trimbak)	2002	57.60	50.00	-7.60	3.00	9.14	6.14
115.	NIAW 34	1997	10.00	9.00	-1.00	0.50	1.66	1.16
116.	NIAW 917 (Tapovan)	2006	7.00	15.00	8.00	0.50	4.72	4.22
117.	NIDW 295 (Godavari)	2007	25.20	25.00	-0.20	1.50	1.40	-0.10
118.	NW 1014	1998	3.60	75.00	71.40	0.50	1.35	0.85
119.	NW 2036	2003	5.00	26.00	21.00	0.50	0.00	-0.50
120.	NW 4018	2014	30.00	0.00	-30.00	1.50	1.55	0.05
121.	PBW 154	1988	151.80	180.00	28.20	5.00	5.00	0.00
122.	PBW 226	1989	51.20	40.00	-11.20	0	1.20	1.20
123.	PBW 343	1996	402.20	105.00	-297.20	11.50	13.30	1.80
124.	PBW 373	1997	99.20	112.00	12.80	5.50	7.25	1.75
125.	PBW 443	2000	56.50	60.70	4.20	3.00	3.00	0.00
126.	PBW 502	2004	179.30	245.00	65.70	9.00	10.50	1.50
127.	PBW 509	2006	52.40	63.00	10.60	3.00	3.00	0.00
128.	PBW 533	2006	6.00	13.00	7.00	0.50	1.25	0.75
129.	PBW 550	2008	428.20	993.75	565.55	21.50	24.65	3.15
130.	PBW 590	2009	139.40	292.80	153.40	7.00	7.60	0.60
131.	PBW 623	Un notified	4.00	0.00	-4.00	0.00	0.00	0.00
132.	PBW 644	2012	96.00	120.00	24.00	5.00	5.50	0.50
133.	PBW 650	Un notified	4.00	0.00	-4.00	0.00	0.00	0.00
134.	PBW 658	2015	8.00	25.00	17.00	0.50	1.50	1.00
135.	PBW 660	2013	6.00	11.00	5.00	0.50	3.00	2.50
136.	PBW 667	Un notified	4.00	0.00	-4.00	0.00	0.00	0.00
137.	PBW 677	2015	116.40	700.00	583.60	6.00	20.00	14.00
138.	PBW 707	Un notified	22.00	0.00	-22.00	0.00	0.00	0.00
139.	PBW 723	2016	48.00	48.00	0.00	2.50	10.00	7.50
140.	PBW 725	2015	121.40	1100.00	978.60	6.00	19.85	13.85

141.	PBW 735	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
142.	PBW 760	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
143.	PBW 775	Un notified	12.00	0.00	-12.00	0.00	0.00	0.00
144.	PBW 943	Un notified	20.00	0.00	-20.00	0.00	0.00	0.00
145.	Raj 1482	1983	216.00	216.00	0.00	5.00	1.25	-3.75
146.	Raj 3077	1989	237.60	138.00	-99.60	5.00	14.60	9.60
147.	Raj 3765	1996	167.40	294.30	126.90	8.50	15.70	7.20
148.	Raj 3777	2003	5.00	0.00	-5.00	0.50	0.00	-0.50
149.	Raj 4037	2004	215.30	50.00	-165.30	11.00	2.75	-8.25
150.	Raj 4079	2011	887.90	1144.30	256.40	34.00	28.45	-5.55
151.	Raj 4083	2007	101.60	112.50	10.90	5.00	13.00	8.00
152.	Raj 4120	2009	376.80	302.50	-74.30	19.00	13.90	-5.10
153.	Raj 4128	Un notified	10.00	0.00	-10.00	0.00	0.00	0.00
154.	Raj 4238	2013	756.00	359.15	-396.85	27.00	24.80	-2.20
155.	Sharbati Sonara	1969	1.60	0.00	-1.60	0.00	0.00	0.00
156.	SHIATS- W6 (AAI-W6)	2014	20.00	0.00	-20.00	0.00	0.00	0.00
157.	SW 2	Un notified	2.00	0.00	-2.00	0.00	0.00	0.00
158.	UAS 415	2009	2.80	4.50	1.70	0.50	1.55	1.05
159.	UAS 428	2012	10.00	8.50	-1.50	0.50	1.52	1.02
160.	UP 262	1978	9.60	35.00	25.40	0.50	1.60	1.10
161.	UP 2338	1995	12.40	30.00	17.60	1.00	1.35	0.35
162.	UP 2425	1999	2.40	3.00	0.60	0.50	1.50	1.00
163.	UP 2526	2007	12.40	30.00	17.60	1.00	1.20	0.20
164.	UP 2554	2007	10.00	25.00	15.00	0.50	1.75	1.25
165.	UP 2565	2006	4.80	8.00	3.20	0.50	1.60	1.10
166.	UP 2572	2007	36.40	50.00	13.60	2.00	2.00	0.00
167.	UP 2628	2010	90.00	110.00	20.00	4.50	4.50	0.00
168.	UP 2903	Un notified	4.00	0.00	-4.00	0.00	0.00	0.00
169.	UP 2907	Un notified	4.00	0.00	-4.00	0.00	0.00	0.00
170.	VL 829	2003	5.00	30.00	25.00	0.50	1.50	1.00
171.	VL 892	2008	35.00	35.00	0.00	2.00	2.80	0.80
172.	VL 907	2010	35.00	50.00	15.00	2.00	2.00	0.00
173.	VL 953	2016	10.00	25.00	15.00	0.50	2.50	2.00
174.	VL 967	2016	10.00	0.00	-10.00	0.50	0.00	-0.50
175.	WB 2	2017	0.00	0.00	0.00	1.00	10.17	9.17
176.	WH 147	1978	189.30	332.20	142.90	5.00	13.85	8.85
177.	WH 283	1985	24.40	25.00	0.60	1.50	1.50	0.00
178.	WH 711	2002	181.00	271.00	90.00	9.00	10.00	1.00
179.	WH 1021	2008	30.00	68.50	38.50	1.50	3.60	2.10
180.	WH 1025	2010	51.00	76.60	25.60	2.50	3.00	0.50
181.	WH 1080	2011	77.00	168.00	91.00	4.00	4.10	0.10
182.	WH 1105	2013	1367.00	1654.40	287.40	35.50	38.60	3.10
183.	WH 1124	2014	209.20	218.00	8.80	10.50	11.00	0.50
184.	WH 1127	Un notified	2.40	0.00	-2.40	0.00	0.00	0.00
185.	WH 1142	2014	59.40	110.60	51.20	3.00	4.00	1.00
186.	WH 1164	Un notified	5.80	0.00	-5.80	0.00	0.00	0.00
187.	WH 1166	Un notified	3.60	0.00	-3.60	0.00	0.00	0.00
188.	WH 1184	Un notified	3.60	0.00	-3.60	0.00	0.00	0.00
189.	WHD 943	2011	80.00	120.00	40.00	4.00	4.00	0.00
190.	WR 544 (Pusa Gold)	2005	30.58	22.00	-8.58	1.50	2.20	0.70
191.	WSM 1472 (PDKV Washim)	2012	2.00	10.00	8.00	0.50	0.42	-0.08
<b>Total</b>			<b>23492.17</b>	<b>35174.91</b>	<b>11625.92</b>	<b>1006.00</b>	<b>1610.97</b>	<b>604.97</b>



# Wheat Physiology

## Physiological studies on heat tolerance in wheat

Multi-location Heat Tolerance trial (MLHT) was conducted to identify the heat tolerant lines from AVT genotypes under evaluation in different trials under TS and LS conditions. Two trials MLHT-1 (new entries) and MLHT-2 (final year AVT entries), each consisting of 16 AVT genotypes were conducted during the crop season 2016-17. Both MLHT-1 and MLHT-2 trials were sent to 17 locations. The trials were not conducted at Indore and Patna. The data of Karnal was not included in the analysis as there was very poor germination under late sown condition due to heavy rainfall immediately after sowing.

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

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

- Compared to previous crop season minimum temperature across centres were higher by 1.4<sup>0</sup>C and 0.9<sup>0</sup>C under TS and LS conditions, respectively during vegetative phase. During reproductive phase, minimum temperature was lower by 2.4<sup>0</sup>C and 3.6<sup>0</sup>C under TS and LS conditions, respectively.
- Maximum temperature, compared to previous crop season during vegetative phase across centres were higher by 1.4<sup>0</sup>C & 0.8<sup>0</sup>C under TS and LS conditions, respectively. However the maximum temperature was lower by 1.9<sup>0</sup>C & 1.7<sup>0</sup>C under TS and LS conditions, respectively during reproductive phase. The congenial temperature during the grain filling period contributed to higher productivity this year.
- The temperature during grain filling period was >30<sup>0</sup>C during 2<sup>nd</sup> to 4<sup>th</sup> week of february in CZ and PZ and in 1<sup>st</sup> to 4<sup>th</sup> week of March in NWPZ and NEPZ, except in Durgapura, Kalyani and Malda and highest temperature of 42<sup>0</sup>C was observed at Ludhiana during 4<sup>th</sup> week of February
- The CZ and PZ received on an average of 7-8 hrs sunshine throughout the crop season. NWPZ received an average of 5.5 and 8.2 hrs sunshine during vegetative and grainfilling period, respectively. NEPZ received 6 and 8hrs sunshine during vegetative and grainfilling period, respectively.
- Compared to previous crop season, the mean HDD across centres increased by 53 and 77 degree days under TS and LS conditions, respectively during vegetative phase and it has been reduced by 120 and 96 degree days under TS and LS conditions, respectively during reproductive phase.

- Among the 14 centres, 10 centres received rainfall and there was no rainfall at other 4 centres (Junagadh, Parbhani, Pune and Niphad). The amount of rainfall received were lower during 2016-17 crop season as compared to 2015-16. The Malda centre received the highest rainfall of 227mm during vegetative phase.
- The centrewise minimum and maximum temperature regimes during vegetative and grainfilling period are mentioned in table 1.

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

Location	Vegetative phase						Reproductive phase					
	Min. temp.		Max. temp.		HDD		Min. temp.		Max. temp.		HDD	
	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS
<b>PZ</b>												
Dharwad	14	13.5	30.2	30.1	860	832	15.3	16.7	31.8	33.8	923	961
Pune	10.4	10.5	29.9	29.8	820	805	11.7	13.1	30.3	34.1	449	869
Niphad	8.8	8.7	28.6	28.5	712	681	11.4	10.7	32.9	32.1	1049	892
Parbhani	10.2	10.4	30.0	29.8	846	818	12.9	15.3	32.5	35.5	1117	1055
<b>CZ</b>												
Junagadh	13.5	12.1	32.8	30.7	885	763	13.5	15.9	31.8	34.3	870	802
<b>NWPZ</b>												
Ludhiana	9.0	8.3	22.3	20.5	845	669	11.8	13.8	26.2	29.9	974	899
Hisar	7.8	7.1	23.1	21.5	838	643	9.7	12.3	26.9	30.5	703	682
Pantnagar	8.8	8.5	22.5	22.8	773	710	10.1	13.1	26.3	30.6	707	652
Durgapura	10.8	10.3	25.8	23.9	934	755	12.6	13.8	26.8	28.9	740	666
<b>NEPZ</b>												
Kanpur	15.5	11.1	30.1	25.5	1211	820	8.4	8.9	22.3	23.2	572	527
Faizabad	9.1	8.2	21.8	21.5	685	588	10.5	12.3	27.2	29.8	721	761
Ranchi	6.0	7.4	24.7	25.6	684	734	10.9	14.5	27.9	31.7	720	828
Malda	22.5	17.9	31.4	28.5	1567	1187	14.5	12.5	25.2	24.4	518	546
Kalyani	24.2	20.9	32.6	31.4	1619	1239	14.3	13.0	27.8	26.2	696	609

## Identification of heat tolerant genotypes

### MLHT-1

- Data from all 14 centres was used for pooled analysis across centres.
- The HSI values ranged from 0.68 to 1.29 and the genotype HI1617 (0.80) was found to be less sensitive to thermal regimes alongwith the check entries (Table 2).
- Location wise HSI of 16 genotypes is given in Annexure-I.

**Table 2: HSI of genotypes in MLHT1 across locations**

Genotype	Grain yield (g/plot)		*R%	HSI	Genotype	Grain yield (g/plot)		*R%	HSI
	TS	LS				TS	LS		
HI 1617	1491.1	1176.5	21.09	0.80	HD 3226	1601.4	1078.7	32.64	1.24
DBW 187	1604.0	1173.6	26.83	1.02	PBW 750	1663.1	1099.5	33.89	1.29
HD 3219	1600.8	1169.8	26.92	1.02	<b>Checks</b>				
DBW 189	1590.5	1130.4	28.93	1.10					
WH 1202	1571.9	1115.9	29.01	1.10	DBW 14(C)	1334.6	1096.1	17.87	0.68
PBW 752	1609.4	1138.5	29.26	1.11	DBW 71(C)	1458.4	1080.7	25.90	0.98
DBW 196	1448.8	1018.5	29.70	1.13	HD 2932(C)	1342.6	1096.7	18.31	0.70
UP 2942	1504.5	1053.0	30.01	1.14	RAJ 3765(C)	1385.7	1138.6	17.83	0.68
HP 1963	1541.9	1074.3	30.32	1.15	WH 730(C)	1306.9	1079.1	17.43	0.66

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

## **MLHT-2**

This trial comprised the entries tested under 2015-16 & 2016-17. Eleven genotypes tested during both the years at ten common centres (Dharwad, Niphad, Junagadh, Durgapura, Hisar, Ludhiana, Pantnagar, Faizabad, Kanpur and Malda) were used for pooled analysis.

- The genotypes AKAW 4842 (0.75), GW 477 (0.87), DBW 173 (0.97) and WH 1184 (0.99) were found to be relatively less sensitive to thermal regimes that prevailed under late sown conditions (Table 3).
- The HSI for each of the genotype in each of the study centres are reported in (Annexure-II).

**Table 3: HSI of genotypes in MLHT2 across locations (Pooled over years and locations)**

Genotype	Grain yield (g/plot)		*R%	HSI	Genotype	Grain yield (g/plot)		*R%	HSI
	TS	LS				TS	LS		
AKAW 4842	1419.4	1119.7	21.12	0.75	UP 2903	1525.1	1024.1	32.85	1.16
GW 477	1391.1	1049.3	24.57	0.87	<b>Checks</b>				
DBW 173	1524.8	1105.5	27.50	0.97	DBW 71 (C)	1529.0	1132.3	25.94	0.92
WH 1184	1611.6	1162.3	27.88	0.99	DBW 90 (C)	1588.8	1059.3	33.33	1.18
HD 3184	1536.2	1050.8	31.59	1.12	DBW 107 (C)	1537.2	1164.8	24.23	0.86
DBW 168	1519.0	1027.7	32.34	1.15	HD 2932 (C)	1574.9	1191.7	24.33	0.86

\*Reduction% in LS compared to TS

### **Correlation of HSI with different traits**

- In order to identify the trait association with lower HSI, the Pearson correlation was estimated for all measured traits over 2 years and across locations under LS condition (Table 4).
- The lower HSI showed significant positive correlation with GY, TGW, GFD and significant negative correlation with CCI at 21 DAA under LS condition.
- The instrument measured traits like CCI, CT and CFL values under TS and LS conditions are mentioned in Annexure-III.

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

	PT	GY	TW	GNS	GWS	GFD
<b>HSI (R<sup>2</sup>)</b>	0.166	<b>0.702</b>	<b>0.583</b>	0.281	0.124	<b>0.827</b>
<b>P&lt;0.05</b>	0.605	<b>0.011</b>	<b>0.047</b>	0.377	0.702	<b>0.001</b>
	CCI1	CCI2	CT1	CT2	CFL1	CFLII
<b>HSI (R<sup>2</sup>)</b>	-0.548	<b>-0.640</b>	-0.511	-0.053	-0.133	-0.129
<b>P&lt;0.05</b>	0.065	<b>0.025</b>	0.089	0.870	0.697	0.706

Based on the 2 years testing of 11 genotypes under MLHT-2, 4 genotypes viz. AKAW 4842, DBW 173, GW 477 and WH 1184 were identified as less sensitive to heat stress condition. Hence, these genotypes can be used as a source in hybridization to develop heat tolerant varieties. Some of the traits associated with heat tolerance in these identified genotypes are listed in table 5.

**Table 5: Traits contributing for heat tolerance in MLHT-2**

Traits under late sown condition	Genotype
High GFD	AKAW 4842, DBW 173, GW 477
High HI, GNS, GWS	DBW 173
High TGW & PT	GW 477

**Annexure-I: The location wise HSI of genotypes in MLHT-1**

Genotypes	Dharwad	Pune	Niphad	Parbhani	Junagadh	Ludhiana	Hisar	Pantnagar	Durgapura	Kanpur	Faizabad	Ranchi	Malda	Kalyani
DBW 187	0.30	0.82	0.98	1.30	0.98	0.63	0.92	1.12	2.57	0.24	0.77	-3.85	0.14	1.64
DBW 189	0.89	1.41	1.28	1.07	0.97	0.85	1.09	1.28	-2.63	0.91	1.07	0.69	0.25	0.77
DBW 196	1.29	1.08	0.75	0.65	0.86	1.04	0.86	1.59	2.79	0.94	1.51	0.23	1.02	1.51
HD 3219	1.11	0.79	1.23	1.96	1.02	1.46	1.08	0.90	-2.26	1.24	0.64	2.77	0.78	-2.58
HD 3226	1.21	0.52	0.98	1.33	0.90	1.24	1.11	1.20	3.42	1.39	0.91	-0.17	1.49	1.04
HI 1617	0.66	1.09	1.12	-0.33	1.15	0.57	0.14	1.04	1.42	0.76	1.08	0.21	1.17	-0.67
HP 1963	1.32	0.38	1.14	0.90	0.74	0.57	0.94	1.06	1.44	0.88	1.13	2.29	0.89	5.16
PBW 750	1.39	0.49	1.02	0.59	1.14	1.28	1.12	0.91	2.86	1.40	1.48	2.18	1.27	0.25
PBW 752	1.21	1.19	1.00	0.31	1.21	-0.35	1.07	0.86	-2.53	0.73	0.50	1.22	1.00	-2.15
UP 2942	0.84	0.94	1.13	0.90	1.08	1.51	1.15	0.66	4.20	1.39	0.90	1.61	1.48	-0.13
WH 1202	0.85	1.32	0.99	0.30	1.04	1.68	1.31	1.02	2.71	1.29	1.19	4.17	0.80	2.59
DBW 14(C)	1.13	1.30	1.02	0.78	1.14	1.47	0.91	0.88	-0.64	1.03	1.37	2.21	1.52	-0.16
DBW 71(C)	0.80	1.06	1.05	1.85	0.52	-0.02	0.80	0.46	-2.53	0.93	0.58	-0.43	0.82	0.06
HD 2932(C)	0.57	1.02	0.89	1.52	1.03	1.58	1.01	1.39	2.18	1.05	1.06	0.20	0.78	1.65
RAJ 3765(C)	0.85	1.12	0.57	1.07	1.08	-1.65	1.02	0.73	-2.34	0.69	0.56	0.02	0.32	1.06
WH 730(C)	0.98	1.12	0.91	1.49	0.95	1.88	0.83	0.81	2.44	0.80	0.98	0.23	1.42	2.65

**Annexure-II: The location wise HSI of genotypes in MLHT-2 (pooled over years centrewise)**

Genotype	Dharwad	Niphad	Junagadh	Ludhiana	Hisar	Pantnagar	Durgapura	Kanpur	Faizabad	Malda
AKAW 4842	1.13	1.21	0.66	0.33	0.80	-0.03	0.82	0.00	1.09	0.67
DBW 168	1.11	1.29	0.72	0.93	1.02	0.94	1.22	1.31	1.13	2.54
DBW 173	0.97	0.91	0.90	0.91	1.15	1.23	0.97	0.78	0.69	0.75
GW 477	0.92	0.96	1.14	1.00	0.93	1.05	0.57	1.01	1.01	0.96
HD 3184	1.38	0.95	0.99	1.84	0.98	1.16	0.68	1.09	1.30	1.31
UP 2903	0.94	0.90	1.12	1.53	0.95	1.01	1.23	1.26	1.02	0.81
WH 1184	0.56	1.05	1.16	0.99	1.11	1.06	0.80	0.76	1.18	0.76
DBW 71 (C)	0.75	1.03	1.12	0.64	1.03	1.68	0.99	0.72	0.96	0.81
DBW 90 (C)	1.07	1.00	1.10	1.08	1.07	0.83	1.15	1.82	0.59	1.31
DBW 107 (C)	1.03	0.98	1.10	0.55	0.96	0.51	1.11	0.60	0.61	0.22
HD 2932 (C)	1.00	0.96	1.09	1.00	0.99	0.81	1.14	0.81	0.78	0.18

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

Genotype	CCI				CFL				CT			
	15 DAA		21 DAA		15 DAA		21 DAA		15 DAA		21 DAA	
	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS	TS	LS
AKAW 4842	41.4	42.4	37.8	39.3	0.74	0.75	0.70	0.71	23.2	26.5	27.0	29.8
DBW 168	43.8	43.6	42.5	41.3	0.74	0.76	0.73	0.71	23.0	27.3	26.5	30.5
DBW 173	43.2	41.5	40.2	40.9	0.76	0.75	0.69	0.73	23.9	27.2	26.9	30.6
GW 477	40.3	41.3	37.8	38.5	0.75	0.75	0.69	0.69	23.3	26.9	26.9	30.2
HD 3184	44.9	41.6	40.1	39.5	0.73	0.74	0.71	0.70	22.6	27.1	26.6	29.9
UP 2903	44.8	43.0	41.9	40.3	0.74	0.74	0.74	0.67	23.0	26.9	26.7	30.1
WH 1184	44.0	41.0	40.7	38.3	0.72	0.75	0.69	0.71	22.9	26.7	26.6	29.1
DBW 71 (C)	43.1	42.2	40.5	39.6	0.76	0.76	0.68	0.69	22.7	26.7	27.1	30.1
DBW 90 (C)	45.2	42.5	40.4	40.7	0.74	0.75	0.71	0.71	22.8	27.0	26.8	30.2
DBW 107 (C)	42.8	40.5	40.3	38.9	0.76	0.76	0.68	0.70	22.7	26.8	26.9	30.4
HD 2932 (C)	41.4	39.1	40.1	38.2	0.77	0.74	0.73	0.70	22.9	27.0	26.2	30.2

# Evaluation of Germplasm Nurseries

## National Genetic Stock Nursery

SK Singh, Suresh Kumar, RK Gupta and Vinod Tiwari

National Genetic Stock Nursery, a “suggested crossing block”, provides new germplasm lines for utilization in wheat improvement programmes at 34 cooperating centres. The NGSN of 91 lines included *T. aestivum* (74), *T. durum* (14) and Triticale (3) and three checks (Sonalika, HD2967 and durum wheat HI8713). The entries were categorized as sources for disease resistance, new agronomic bases, elite lines, yield component lines and registered genetic stocks. An infector row was also included for observing disease incidence.

The data 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) were recorded. Quality analysis of these entries was done at IAWBR, Karnal for processing and nutritional quality traits. The data booklets from all 34 locations were pooled for analyzing data on various traits and mean values (Annex.I) were considered for identification of promising genotypes.

### Performance of entries for yield component traits

- Zone-wise analysis was made for the yield component traits in which MP3336, PHSL5, PHSL10, PHSL11 showed better performance for multiple traits in three or more zones.
- Trait-wise analysis indicated better performance of Raj 4394, PHSL 10, PHSL 11, NIAW 2064 for early heading; HPW360 and K0402 for grain number per spike; PHSL5, HD4758 (d) and HD4728 (d) for 1000-grains weight and PHSL5, PHSL10 for spike length in atleast three zones.
- Based on overall performance for yield component traits across the zones, genotypes MP 3336, PHSL 5, PHSL 10, Raj 4350 and Raj 4394 showed better performances for three or more traits in combination compared to the respective best checks (Table.1).
- Genotypes K 0402, K 1317, HI 1605, NW 5054, DBW 129, PBW 695, VL 1004, GW 463, HI1615, NIAW 2349, DBW 107, VL 967 and HI 8737(d) showed higher yield than the best checks in two or more zones. On overall basis, HI1605 was the highest yielding genotype followed by NW 5054, PBW 695, DBW 129, K 1317, VL 967, K 0402 and DBW 179 which can be further utilized in wheat improvement programmes.

**Table 1: Superior genetic stocks for yield traits in NGSN during 2016-17**

Traits	Range	Mean	Criteria	Promising Entries	Best check
Days to heading	68-89	77	≤70	MP3336, PHSL10, PHSL11, Raj4394, TL2995(T), TL2999(T)	Sonalika (73)
Days to maturity	121-131	125	<123	MP3336, MP3382, RAJ4394, NIAW2064, PHSL5, PHSL10, Raj4350, PBW681, KB2013-05, NIAW1994, Raj4238	Sonalika (123)
Tillers /m	49-109	91	>100	MP3336, DBW129, K1204, Raj4238, DBW93, DBW71, DBW172, GW451, GW463	HD 2967 (98)
Grains /spike	42-60	51	>55	HPW360, K0402, NIAW2349, HPW373, PBW695, HI1615, AKAW4924, KBRL81-1, HS592	HD 2967 (55)
1000-gr weight (g)	34-52	42	>45	PHSL5, KB2013-05, HUW661, PHSL10, Raj4350, HI1604, HI1600, K1317, HD4758(d), HD4728(d), HD4730(d), HI8737(d), HI8750(d), HI8708(d), HI8759(d), MACS3949 (d), HI8755(d), AKDW5012(d)	HI8713 (45) Sonalika (41)
Spike length(cm)	7-13	10	>10	PHSL5, PHSL10, AKAW4924, HUW675, PBW681, VL3004, VL967, UP2864, HPW411, VL1003, NIAW2349, HPW360	HD 2967 (10)

*T-Triticale, d-durum; Value in parenthesis indicates the values of the traits*

## Disease resistance

- Response of genotypes was recorded at multilocations under natural conditions against rust and leaf blight.
  - Black rust: Junagarh, Vijapur, Powarkheda, Pune and Wellington
  - Brown rust: Ludhiana, Almora, Kanpur, Vijapur, Powarkheda, Junagadh, Pune and Wellington
  - Yellow rust: Pantnagar, Dhaulakuan, Gurdaspur, Ludhiana, Hisar and Karnal
  - Leaf blight: Faizabad, Varanasi, Sabour, Coochbehar and Kalyani
- Based on highest reactions and ACI, genotypes exhibiting resistant response were identified (Table.2). TL 2999 was resistant to yellow and black rust, whereas KBRL 82-2 showed resistance to black rust and leaf blight.

**Table 2: Disease resistant genotypes in NGSN** (screened under natural conditions)

Disease	Resistant genotypes
Yellow rust	HPW373, PBW695, AKDW5013(d), TL2992(T), TL2999(T)
Brown rust	HUW677, UP2891, HUW661, K1006, HS593, HPW411, DBW154, VL977, GW455, DBW71, DBW107, MP3336, HD4728(d), HD8750 (d), HI8737(d), HI8708(d), MACS3949(d)
Black rust	VL 1003, KBRL 79-2, KBRL 82-2, TL2999(T), TL 2996(T)
Leaf blight	DBW 129, HD 3133, PBW 723, HUW 675, HS547, DBW172, KBRL82-2, HS592, K0402

*d- durum wheat; T- Triticale*

## Processing and nutritional quality

- All the entries and checks were also analysed for processing quality parameters viz., test weight (kg/hl), protein content (%), sedimentation value (ml), grain hardness index as well as nutritional quality parameters like iron and zinc content (ppm) which showed wide range among genotypes indicating existence of variability for these traits.
- Promising genotypes for various quality traits were identified (Table. 3) for further utilization in wheat improvement programmes.
- Genotypes DBW 172, HI 1605, PBW 677, AKAW 4924, KB 2013-05, HD 4758 (d), AKDW 5012 (d), AKDW 5013 (d), TL 2995 (T) were found promising for two or more quality traits together.

**Table 3: Promising genotypes for processing and nutritional quality traits in NGSN**

Traits	Range	Mean	Criteria	Promising Entries
Test weight (kg/hl)	73.2-83.7	80.1	>83.0	K 1204, DBW 93, HI 1605, HD 4730(d), HI 8750(d), UAS 446 (d), HI 8755 (d), HD 4758 (d), HI 8708 (d)
Protein content (%)	8.9-14.0	11.7	>13.00	VL 3004, VL 977, K 0607, DBW 172, AKAW 4924, LBPY 2013-3, AKDW 5012 (d), AKDW 5013 (d)
Sedimentation value (ml)	30-65	49	~65	DBW 129, HPW 373, PBW 677, VL 1004, HD 2967, HI 1605, DBW 172, HI 1604, HI 1615
Grain hardness index	22-99	82	>95	HPW 360, KBRL 78-2, KBRL 81-1, HI 8713 (d), HI 8737( d), HI 8759 (d), MACS 3949 (d), AKDW 5013 (d), TL 2995 (T)
			<45	HS 547, NIAW 2064
Iron (ppm)	33.7-51.5	39.6	>45.0	PBW 677, PBW 723, PBW 681, VL 967, KB 2013-05, HD 4758 (d), AKDW 5012 (d)
Zinc (ppm)	25.7-42.9	32.2	~40.0	MP 3336, DBW 172, AKAW 4924, KB 2013-05, TL 2995 (T)

*d- durum wheat; T- Triticale*



### Utilization of genotypes

- The utilization report from 24 centres indicated 20.2% utilization (Table 4) and all the bread wheat and triticale entries were utilized by either of the centres for different purposes.
- Bread wheat entries showed 23.4% utilization and maximum utilization was observed from elite genotypes followed by new genetic stocks and disease resistant lines. Durum entries showed overall 6.0% utilization whereas it was 8.3% for Triticale entries.
- DBW 129, PBW 681, DBW 179, PHSL 10, HPW 373, DBW 88, GW 463, NIAW 2349, HD 4728 (d), HD 4730 (d), HD 4758 (d) and TL 2992 (T) were the most utilized entries.
- Maximum utilization was done by Sagar (57) followed by Vijapur (37), Udaipur (35), Dharwad (34), Burdwan (32), Junagadh (28) and Powarkheda (28) centres.

**Table 4: Utilization of genotypes by 24 centres during 2016-17**

Category	Entries	Utilization	
		Frequency	%
<b><i>T. aestivum</i></b>			
Disease resistance	32	182	23.7
New agronomic bases	17	88	21.6
Elite lines	6	38	26.4
Yield component lines	9	50	23.1
Genetic stocks	10	57	23.8
<b>Sub total</b>	<b>74</b>	<b>415</b>	<b>23.4</b>
<b><i>T. durum</i></b>			
Disease resistance	6	10	6.9
New agronomic bases	5	9	7.5
Elite lines	2	0	0.0
Genetic stocks	1	1	4.2
<b>Sub total</b>	<b>14</b>	<b>20</b>	<b>6.0</b>
<b><i>Triticale</i></b>			
Disease resistance	3	6	8.3
<b>Total</b>	<b>91</b>	<b>442</b>	<b>20.2</b>

**Annexure-I: Mean Performance of entries in NGSN during 2016-17**

SN	Genotype	Agronomic traits								Processing & Nutritional quality					
		Yld (q/ha)	Head.	Mat.	Ht.	Tillers/m	Gr./spike	TGW	Spike length	Test Wt. (kg/hl)	Protein (%)	Sedim. Value (ml)	Grain Hard.	Iron (ppm)	Zinc (ppm)
1	DBW129	54.2	79	126	98	106	54	42	10	81.0	12.3	65	81	41.1	28.8
2	VL1003	36.3	89	130	99	85	50	39	11	78.0	12.0	45	75	38.7	27.9
3	HPW373	42.1	78	124	94	88	57	39	10	80.6	12.0	63	80	39.6	34.5
4	HS593	47.3	78	124	98	99	50	44	10	79.2	10.6	53	74	34.8	26.1
5	TL2995(T)	41.5	68	123	92	94	45	40	9	74.0	12.8	36	95	38.6	42.9
6	TL2999(T)	37.8	70	123	97	92	47	39	9	77.5	12.3	30	94	39.5	36.3
7	TL2996(T)	45.2	71	124	95	100	45	44	9	74.0	12.0	36	92	36.4	30.4
8	PBW677	49.9	78	125	99	88	55	43	10	81.8	12.2	63	83	46.5	30.5
9	PBW723	45.9	80	126	95	92	50	42	10	82.7	11.9	48	87	47.3	34.9
10	PBW681	42.4	74	122	88	88	52	39	11	82.0	10.6	63	90	45.3	30.2
11	HPW411	41.3	75	124	96	96	49	43	11	79.2	11.7	46	-	40.1	32.2
12	HUW666	46.7	79	125	91	89	53	40	10	81.4	12.2	61	85	39.7	30.0
13	VL967	52.8	78	124	95	93	50	44	11	77.0	11.3	54	64	51.5	26.5
14	DBW154	47.2	74	123	88	100	50	38	10	78.2	11.8	47	91	36.0	29.5
15	HD2932-Lr/Sr25	46.0	74	123	87	98	48	39	10	78.5	11.6	55	80	38.7	34.3
16	HD3133	48.0	76	125	98	89	54	41	10	77.8	11.1	52	87	36.3	33.2
17	HUW675	40.9	89	131	98	99	48	38	11	78.3	11.4	44	93	38.5	35.6
18	VL1004	50.2	78	125	90	85	53	41	10	79.3	12.5	63	86	36.2	32.2
19	VL3004	48.6	77	124	90	87	55	39	11	80.8	13.4	52	84	43.6	34.6
20	DBW110	44.7	78	125	92	82	54	43	10	81.3	11.2	60	73	37.0	30.9
21	VL977	42.6	74	124	93	88	49	42	10	81.0	13.1	49	82	42.0	34.0
22	HD3132	46.5	78	125	92	86	53	40	10	79.0	12.6	62	87	38.0	31.1
23	HS547	46.8	85	128	102	86	52	41	10	81.0	12.5	45	22	40.9	31.4
24	HS595	46.0	85	129	94	89	54	41	9	80.6	12.3	60	85	39.2	33.7
25	GW455	43.6	71	123	91	91	48	42	10	80.2	11.4	55	87	41.9	31.6
26	HD3146	43.4	78	124	90	95	49	43	9	80.0	10.2	36	78	39.9	28.1
27	HUW677	50.5	76	124	93	91	51	45	10	75.5	10.6	50	83	34.4	30.3
28	PBW701	47.0	77	124	92	86	51	43	10	82.0	11.9	44	78	42.9	33.6
29	UP2864	41.4	76	124	83	88	48	41	11	80.7	11.4	46	74	41.4	31.9
30	UP2891	49.0	77	124	94	94	45	45	9	79.7	10.1	45	87	41.3	32.1
31	HS592	43.7	76	125	94	95	56	37	10	81.3	11.9	54	82	37.8	34.7
32	HUW661	49.7	78	124	96	93	51	47	10	81.0	10.2	51	64	40.2	30.9
33	K1204	49.5	78	125	95	106	49	41	9	83.0	11.4	50	77	38.2	29.5
34	PBW695	54.9	80	127	96	100	57	39	10	82.0	10.8	62	76	38.4	28.6
35	PBW698	49.7	79	127	88	97	49	40	9	82.0	11.1	53	70	37.7	32.2
36	DDW30(d)	47.2	81	128	87	94	53	42	7	81.5	10.0	41	83	37.4	28.7
37	HD4728(d)	48.2	77	125	86	84	50	50	8	75.4	9.3	40	74	41.2	25.7
38	HD4730(d)	49.3	78	126	88	89	51	49	8	83.7	8.9	37	75	38.3	27.1
39	HI8750 (d)	42.9	78	126	83	81	50	48	8	83.6	10.9	40	83	43.5	34.8
40	UAS446(d)	46.2	79	127	87	91	51	42	8	83.0	12.0	39	86	39.4	32.4
41	HI8755(d)	45.4	80	128	93	86	51	46	8	83.2	9.6	38	84	37.6	31.6
42	DBW71	49.0	75	124	89	103	46	41	10	82.6	11.0	42	79	40.4	31.2
43	DBW88	49.2	78	126	90	89	53	41	10	82.7	10.8	60	77	38.4	27.5
44	DBW93	46.3	78	124	82	104	50	39	9	83.4	10.7	45	81	35.5	30.8
45	DBW107	50.4	73	123	89	100	47	42	10	82.5	11.5	43	80	40.6	32.5
46	K1006	45.0	78	125	92	98	52	39	10	81.0	10.8	41	86	40.4	32.2
47	NW5054	55.4	78	125	101	94	50	45	10	80.2	10.0	57	71	36.4	30.0
48	HI8713(d)	47.0	82	128	90	87	51	45	9	80.8	10.5	40	89	34.3	32.6
49	HI8737(d)	50.9	78	126	85	82	45	49	8	81.5	12.3	40	98	44.7	35.3
50	HD4758(d)	48.9	77	126	85	83	48	50	8	83.2	11.3	39	90	45.4	34.9
51	MP3336	45.6	69	121	79	109	43	41	9	80.8	11.8	43	83	42.7	38.6
52	MP3382	45.7	71	121	86	97	47	44	9	82.0	12.5	53	76	38.3	35.2
53	HPW360	39.0	85	131	90	75	60	37	11	73.5	12.9	56	97	36.9	32.0
54	HPW368	47.1	81	127	93	96	51	41	10	80.0	11.0	59	87	38.5	30.5
55	GW451	42.0	73	123	85	101	44	41	9	78.0	10.6	54	87	38.9	28.0
56	GW463	49.9	80	127	89	101	49	42	10	77.3	11.2	48	72	40.3	29.7
57	K0402	52.6	81	127	93	99	58	40	10	77.5	10.9	57	85	33.7	26.4
58	K0607	45.6	75	123	90	90	47	42	10	78.0	13.0	56	87	38.9	35.9
59	NIAW1994	41.3	72	122	87	77	49	44	10	81.2	11.4	42	85	37.4	30.0

60	K1317	53.8	80	126	99	100	48	46	10	82.5	12.6	52	79	40.6	32.7
61	HI8759(d)	42.7	78	126	80	79	47	47	8	81.0	12.0	41	98	38.4	36.0
62	HI1605	55.8	75	123	95	95	54	42	9	83.0	12.0	63	84	37.2	31.2
63	MACS3949(d)	44.1	81	127	86	72	47	47	8	82.7	12.0	38	95	36.7	34.0
64	DBW172	41.5	85	129	89	101	53	38	9	82.7	13.9	64	77	43.4	38.5
65	DBW179	52.6	79	126	100	94	55	42	10	80.3	12.6	61	84	44.1	33.7
66	HI1604	50.6	77	125	100	84	53	47	10	79.3	11.1	65	73	36.3	31.4
67	HI1615	52.2	83	128	125	95	57	43	10	79.5	12.6	64	85	38.7	30.4
68	Raj4238	45.2	73	122	87	105	46	42	9	82.0	10.4	54	82	40.5	32.5
69	AKAW4924	47.1	74	124	92	80	57	43	11	81.5	13.1	46	67	42.8	38.0
70	AKDW5012(d)	40.0	81	126	84	79	42	46	8	79.0	14.0	41	94	45.8	36.0
71	AKDW5013(d)	43.5	81	127	91	88	47	45	8	81.0	13.4	37	97	42.3	35.3
72	LBPY2013-1	44.5	77	125	91	87	55	38	10	79.0	12.6	44	72	39.8	31.2
73	LBPY2013-3	43.6	82	127	90	95	53	37	10	79.0	13.0	58	88	42.4	35.0
74	NIAW2349	50.2	81	127	96	94	58	40	11	78.2	12.9	62	76	36.8	34.7
75	LBPY2013-5	44.0	80	126	85	89	51	40	9	81.7	11.7	43	83	38.2	33.3
76	NIAW2064	45.6	71	121	95	97	45	43	9	81.5	12.4	38	44	44.6	36.1
77	Raj4393	48.1	81	127	96	94	52	43	10	78.0	12.4	40	79	40.0	33.9
78	HI1600	48.0	73	123	91	92	46	46	9	78.6	11.1	39	86	38.0	33.1
79	Raj4350	39.7	72	122	82	82	47	47	9	81.0	12.8	44	79	42.9	33.9
80	Raj4394	48.1	70	121	83	92	51	43	9	80.0	11.9	51	84	40.8	34.3
81	KB2013-05	40.4	71	122	90	91	48	48	10	80.3	12.7	38	77	45.2	39.6
82	PHSL5	29.4	71	122	103	49	51	52	13	79.0	12.5	46	76	38.1	31.1
83	PHSL10	34.3	70	122	101	63	54	47	12	79.0	11.7	45	79	38.4	30.0
84	PHSL11	35.1	70	123	94	66	54	45	10	81.2	12.4	57	79	37.0	28.9
85	HI8708 (d)	44.4	80	126	85	78	50	48	9	83.0	11.6	40	92	39.1	30.3
86	KBRL77-1	47.4	82	126	88	94	49	40	9	73.2	10.9	40	80	35.1	31.9
87	KBRL78-2	41.9	77	124	91	95	52	37	9	77.3	11.7	50	99	34.3	30.3
88	KBRL79-2	41.9	79	125	84	91	54	36	9	78.8	12.5	45	94	39.7	32.8
89	KBRL81-1	48.2	81	127	81	100	56	34	9	77.6	12.2	45	97	38.9	30.9
90	KBRL82-2	43.6	82	127	83	88	54	38	10	81.2	12.2	46	87	40.9	29.5
91	KBRL83-3	40.9	81	127	83	90	53	39	10	81.4	12.4	45	92	37.8	30.0
	Sonalika(C)	42.4	73	123	91	95	48	41	10	81.4	12.0	41	84	36.8	31.6
	HD2967(C)	48.2	81	127	94	98	55	40	10	78.0	11.8	62	81	36.3	30.5
	HI8713 (d)(C)	46.8	82	128	90	89	52	45	9	79.5	11.5	42	96	35.1	30.9
	Range	29.4-55.8	68-89	121-131	79-125	49-109	42-60	34-52	7-13	73.2-83.7	8.9-14.0	30-65	22-99	33.7-51.5	25.7-42.9
	Mean	45.8	77	125	91	91	51	42	10	80.1	11.7	49	82	39.6	32.2

## Short Duration Screening Nursery

Ravish Chatrath, Satish Kumar and OP Tuteja

The Short Duration Screening Nursery (SDSN) is conducted during 2<sup>nd</sup> fortnight of December to identify early maturing genotypes along with high yield and tolerant to high temperature during grain filling period under late sown conditions.

- The nursery consisting of 40 genotypes contributed by various centres and six checks (Sonalika, DBW71, DBW14, WR544, HD2932 and NIAW34) was conducted at 25 locations across the country in augmented design. Each entry was sown in a plot size of two row of 2.5 m length spaced 18 cm apart.
- Data were reported by 21 centres (Karnal, Pantnagar, Jammu, Kanpur, Coochbehar, Faizabad, Ranchi, Kalyani, Varanasi, Sabour, Shillongani, Indore, Powarkheda, Bilaspur, Jabalpur, Lok Bharti, Niphad, Pune, Dharwad, Malan and Bajaura). Data booklet from Hisar, Patna, Khudwani and Dhaulakuan centres were not received.
- The data were recorded for days to heading, days to maturity, grain number per spike, 1000-grains weight (g) and yield per plot (g). The data was pooled for each zone on various traits in order to identify promising lines. Performance of promising high yielding, early maturing genotypes for different zones are presented here.
- Identification of short duration entries: Based on the pooled mean for earliness and yield, the promising genotypes showing better performance over the best check were identified.
- Three genotypes (RWP2013-09, RWP2013-10 and GW2012-475) were evaluated for third year and out of these, two promising lines RWP2013-09 and RWP2013-10 were identified as early maturing and high yielding. These two lines can be further used in wheat breeding programs for incorporation to develop genotypes with short maturity duration. Performance of these lines is given in table 1.

**Table 1: Performance of promising genotypes identified for earliness and yield during three years of evaluation**

North Western Plains Zone						
Trait	Year	Genotype	Checks			
		RWP2013-09	Sonalika	DBW 71	WR 544	NIAW 34
Mean Yield (g/plot)	2014-15	473	249	-	283	367
	2015-16	473	367	429	418	391
	2016-17	514	332	489	442	455
	Average	487	316	459	381	404
Heading days	2014-15	76	77	-	74	78
	2015-16	78	76	78	72	78
	2016-17	81	79	81	78	79
	Average	78	77	79	75	78
Maturity days	2014-15	117	122	-	116	122
	2015-16	118	119	120	119	119
	2016-17	121	119	120	118	119
	Average	119	120	120	118	120
Grains/spike	2014-15	52	45	-	42	45
	2015-16	51	40	45	49	43
	2016-17	55	42	53	48	48
	Average	53	42	49	46	45
1000 gr. wt.	2014-15	42	38	-	33	35
	2015-16	34	39	40	39	36
	2016-17	41	37	39	38	38
	Average	39	38	39	37	36
Peninsular Zone						
Trait	Year	Genotype	Checks			
		RWP2013-10	Sonalika	HD 2932	WR 544	NIAW 34
Mean Yield (g/plot)	2014-15	533	285	-	301	345
	2015-16	386	269	299	338	289
	2016-17	393	274	337	318	254
	Average	437	276	318	319	296

Heading days	2014-15	54	54	-	50	57
	2015-16	60	58	64	53	61
	2016-17	61	57	60	53	60
	Average	58	56	62	52	59
Maturity days	2014-15	100	98	-	94	99
	2015-16	96	94	99	92	96
	2016-17	103	101	104	101	103
	Average	100	98	101	96	99
Grains/spike	2014-15	40	38	-	39	43
	2015-16	51	44	45	43	45
	2016-17	46	45	44	47	42
	Average	46	42	44	43	43
1000 gr. wt.	2014-15	39	41	-	38	37
	2015-16	29	34	36	35	33
	2016-17	36	38	37	38	37
	Average	35	38	36	37	36

Twelve genotypes (GW2014-619, GW2010-321, GW2014-624, GW2012-475, LBP2014-12, RWP2011-15, RWP2014-18, RWP2014-19, DWAP1408, WS2014-07, RAJ4358 and AKAW4842) were evaluated for second year. Table 2 gives the performance of these genotypes across two years of testing. However none of these genotypes performed better than the best check in respective zones and hence would not be considered for further testing.

**Table 2: Performance of genotypes in second year of evaluation**

SN	Genotype	Mean Yield (g/plot)		Heading days		Maturity days		Grains/spike		1000 gr. wt.	
		2015-16	2016-17	2015-16	2016-17	2015-16	2016-17	2015-16	2016-17	2015-16	2016-17
<b>NWPZ</b>											
1	GW 2014-619	454	498	76	78	120	119	46	41	42	40
2	LBP 2014-12	517	407	84	82	120	119	37	49	39	42
3	RWP 2011-15	464	452	84	83	121	119	49	37	39	35
4	RAJ 4358	470	400	78	80	118	121	47	49	34	35
5	Sonalika (C)	367	332	76	79	119	119	40	42	39	37
6	DBW 71 (C)	429	489	78	81	120	120	45	53	40	39
7	WR 544 (C)	418	442	72	78	119	118	49	48	39	38
<b>NEPZ</b>											
1	DWAP1408	306	501	69	70	108	109	57	43	35	38
2	GW2010-321	290	531	67	69	104	108	51	53	35	37
3	WS2014-07	278	478	68	71	107	108	44	43	36	35
4	GW2014-624	298	462	69	71	104	109	41	45	40	42
5	Sonalika (C)	215	434	66	66	102	105	43	42	37	41
6	DBW 14 (C)	254	455	66	65	105	105	47	41	38	38
7	WR 544 (C)	247	504	63	63	104	104	44	42	37	40
<b>CZ</b>											
1	GW2010-321	494	477	62	62	113	112	46	47	40	42
2	GW2014-619	497	444	58	59	104	110	43	38	46	46
3	LBP2014-12	528	514	66	63	113	111	41	37	41	44
4	GW2012-475	486	465	61	59	109	109	44	39	43	44
5	Sonalika (C)	442	485	59	60	110	112	34	42	44	46
6	WR 544 (C)	436	465	55	58	105	107	35	44	41	43
7	HD 2932 (C)	406	520	62	62	109	112	40	45	42	43
<b>PZ</b>											
1	AKAW4842	467	276	57	58	96	100	51	46	31	35
2	Sonalika (C)	269	274	58	57	94	101	44	45	34	38
3	WR 544 (C)	338	318	53	53	92	101	43	47	35	38
4	NIAW 34 (C)	289	254	61	60	96	103	45	42	33	37
<b>NHZ</b>											
1	RWP2014-19	450	193	109	106	142	151	-	39	-	48
2	RWP2014-18	500	222	105	102	140	149	-	46	-	53
3	WS2014-07	475	190	104	105	138	151	-	44	-	47
4	Sonalika (C)	219	204	108	96	145	148	-	39	-	48
5	WR 544 (C)	331	165	107	94	144	143	-	44	-	46

During 2016-17, 24 early maturing genotypes with high yield were identified across different zones (Table 3).

**Table 3: Promising early maturing genotypes in different zones during 2016-17**

SN	Genotype	Yield		Heading		Maturity		Grains/spike		1000 gr. Wt.	
		Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean
<b>NWPZ (Karnal, Jammu and Pantnagar)</b>											
1	CNM15-2	245-886	614	75-88	80	114-128	120	57-63	60	36-40	39
2	WS15-7	280-769	509	78-90	82	115-128	120	45-51	48	30-39	34
3	Sonalika (C)	195-457	332	73-90	79	114-128	119	38-46	42	35-39	37
4	DBW 71 (C)	280-643	489	76-88	81	116-125	120	49-57	53	36-41	39
5	WR 544 (C)	210-586	442	71-88	78	112-125	118	44-51	48	36-41	38
<b>NEPZ (Sabour, Kanpur, Ranchi, Faizabad, Coochbehar, Shillongoni, Kalyani and Varanasi)</b>											
1	WS15-7	260-1545	562	65-78	71	102-115	108	30-61	47	30-42	37
2	LBP2014-12	250-1404	540	64-77	71	96-116	108	26-52	43	34-51	44
3	NIAW2844	230-1106	525	60-78	68	99-121	107	35-63	45	30-57	46
4	RWP2014-18	200-1234	524	57-79	72	105-120	111	31-52	42	26-43	36
5	Sonalika (C)	188-1150	434	57-76	66	98-114	105	29-49	41	33-50	41
6	DBW 14 (C)	216-1251	455	54-76	65	97-115	105	32-54	42	30-46	38
7	WR 544 (C)	236-1147	504	52-75	63	96-115	104	36-53	43	34-47	40
<b>CZ (Jabalpur, Indore, Powarkheda, Lok Bharti and Bilaspur)</b>											
1	RAJ4358	340-800	643	52-77	64	99-127	115	27-56	46	41-51	44
2	GW2015-668	400-832	600	52-68	60	99-120	110	23-52	40	40-48	44
3	NIAW2844	475-640	593	51-69	59	100-121	111	38-49	43	40-53	45
4	RWP2013-10	350-960	593	53-76	64	100-122	113	32-50	41	39-48	43
5	RWP2014-19	400-752	584	54-74	64	101-121	111	40-49	43	39-46	42
6	AKAW4842	458-830	574	52-69	60	98-118	107	36-51	46	39-43	41
7	WS 2015-01	350-824	550	54-80	63	98-129	113	32-48	44	38-55	46
8	CNM 15-2	450-720	549	52-75	62	97-127	112	44-52	46	35-48	43
9	RWP 2013-09	460-750	547	53-75	63	99-121	111	36-53	45	43-50	46
10	RAJ 4486	346-706	541	51-71	60	98-124	111	24-53	39	41-48	44
11	Sonalika (C)	403-545	485	50-70	60	100-120	112	35-51	42	41-51	46
12	WR 544 (C)	388-649	465	46-70	58	96-119	107	36-51	44	39-48	43
13	HD 2932 (C)	420-729	520	54-75	62	99-122	112	34-51	45	42-45	43
<b>PZ (Niphad, Pune and Dharwad)</b>											
1	GW 2014-619	255-462	366	51-62	56	96-107	102	37-51	43	33-42	39
2	GW 2015-670	320-423	366	52-62	57	94-103	100	41-49	45	36-43	40
3	RWP 2015-11	260-434	366	57-73	66	103-109	106	39-57	50	33-34	34
4	GW 2014-624	295-390	348	55-80	67	100-120	108	34-51	41	40-46	44
5	Sonalika (C)	176-347	274	52-64	57	100-104	101	36-52	45	37-39	38
6	WR 544 (C)	229-424	318	47-58	53	92-107	101	43-51	47	37-39	38
7	HD 2932 (C)	239-430	337	54-65	60	102-106	104	41-46	44	37-38	37
8	NIAW 34 (C)	173-375	254	54-65	60	100-107	103	37-51	42	35-41	37
<b>NHZ (Bajaura and Malan)</b>											
1	LBP 2014-12	240-285	263	97-111	104	146-158	152	43-43	43	48-52	50
2	GW 2015-667	180-330	255	95-107	101	146-150	148	40-41	41	44-55	50
3	AKAW 4842	210-280	245	88-108	98	147-160	154	44-47	46	41-43	42
4	RAJ 4482	180-295	238	98-104	101	144-155	150	31-39	35	46-52	49
5	Sonalika (C)	140-267	204	88-105	96	144-152	148	38-39	39	48-48	48
6	WR 544 (C)	140-190	165	85-102	94	141-146	143	44-44	44	43-48	46

## Yield Component Screening Nursery

Gyanendra Singh, Charan Singh, Amit Kumar Sharma, Vikas Gupta and Arun Gupta

The 29<sup>th</sup> set of Yield Component Screening Nursery (YCSN) consisting of 92 test entries and 4 checks (Lok-1 (1000-grain weight), WH-147 (grains/spike), HD 2009 (tillers/meter) and DBW 17) was supplied to 29 centres across zones. During this year reporting was from 27 centres. Test entries showing better performance (numerically higher or at par to the best check for particular component trait) during 2016-17 crop season were shortlisted. On the basis of superior performance of a particular entry for a component trait(s) continuously for three years across locations, promising lines have been identified as genetic resource(s) and will be contributed to NGSN to used as hybridization source line.

### Promising lines showing consistent performance for three consecutive years (2014-17)

Trait	Promising genetic resources (in order of merit)
Tillers / meter (>98)	AKAW 4899 (116), LBPY 2014-8 (102), LBPY 2014-7 (101), RAJ 4444 (100), LBPY 2014-4 (100), LBPY 2014-9 (99)
Grains/spike(>56)	LBPY 2014-5 (58)
1000-gr. wt.(>45g)	NIAW 2844 (49), GW 2013-491 (49), LBPY 2014-12 (46), LBPY 2014-3 (46), GW 2013-489 (45)

The promising entries for multiple or individual component trait(s) based on this year's performance have been identified and are presented below for further promotion in YCSN.

### Promising lines identified for multiple and individual component trait (s)

Trait (s)	Lines/ genotypes
High tillering + high grain weight	LBPY-2014-5
More grains per spike + high gr.wt.	DWAP 1533, GW 2014-574
High tillering	AKAW 4899, LBPY 201-4, LBPY 2014-8, LBPY 2014-9, RAJ 4444, DWAP 1530, GW 2014-562, HI 1607, HI 1610, LBPY 2015-3, LBPY 2015-4, RAJ 4472, RAJ 4480, HI 1616, RAJ 4509, RAJ 4511, PBV 2016-1, LBPY 2016-3,
More grains per spike	LBPY 2014-5, DWAP 1532, GW 2014-574, LBPY 2015-5, UP 2968, UP 2970, AKAW 4800, HI 1614, DWAP 1535
High gr. wt.	GW 2013-49, LBPY 2014-3, LBPY 2014-12, NIAW 2844, DWAP 1531, DWAP 1541, GW 2014-544, GW 2014-545, GW 2014-547, GW 2014-563, GW 2014-574, HI 1609, HI 1610, LBPY 2015-7, NIAW 3033, UP 2969, UP 2971, WS 1503, NIAW 2030, DBPY 2016-1

Besides, the collaborators have made large number of selections from this nursery for use as donor parents in hybridization to improve component trait(s) and maximum selections were made for 1000-grain weight followed by number of tillers and grains per spike.

### List of top 10 entries having maximum mean for different traits alongwith checks

SN	Tillers/meter			Grains/spike Entry			1000-grain weight (g)		
	Entry	Mean	Range	Entry	Mean	Range	Entry	Mean	Range
1	AKAW 4899	116	42-167	UP 2968	59	30-88	DWAP 1531	50	33-57
2	HI 1607	104	55-177	HI 1614	59	35-79	LBPY-2015-07	50	34-58
3	LBPY-2015-03	103	57-190	<b>LBPY-2014-5</b>	58	35-84	GW 2013-491	49	38-60
4	LBPY-2014-8	102	59-170	DWAP 1532	58	33-90	NIAW 2844	49	34-57
5	RAJ 4509	102	40-183	GW 2014-574	58	26-88	GW 2014-544	49	33-60
6	LBPY-2014-7	101	60-170	AKAW 4800	58	28-87	GW 2014-547	49	36-56
7	DWAP 1530	101	50-162	DWAP 1535	57	28-78	HI 1609	49	36-59
8	GW 2014-562	101	46-170	LBPY-2015-05	57	21-84	HI 1610	48	29-59
9	PBY -2016-1	101	56-178	UP 2970	57	31-88	UP 2969	48	40-59
10	LBPY-2014-4	100	59-178	DWAP 1533	56	23-83	NIAW 2030	48	40-56
<b>Checks</b>									
1	Lok 1 (C)	85	36-166	Lok 1 (C)	50	30-76	Lok 1 (C)	45	32-56
2	HD 2009 (C)	92	34-166	HD 2009 (C)	56	39-93	HD 2009 (C)	38	28-47
3	WH 147 (C)	92	47-161	WH 147 (C)	52	35-79	WH 147 (C)	39	27-51
4	DBW 17 (C)	98	41-156	DBW 17 (C)	55	82-56	DBW 17 (C)	42	46-39

## Elite International Germplasm Nursery

Arun Gupta, Charan Singh, Vineet Kumar, Rahul Singh, V Tiwari, RK Gupta and GP Singh

The Elite International Germplasm Nursery (EIGN) was constituted by selection of promising entries from International nurseries and trials of breadwheat evaluate during 2015-16. During 2016-17, the EIGN consist of 88 genotypes and four checks (DBW88, K1006, HI1544 and UAS304 and shared with 26 centres. The 88 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):** The promising entries identified for across the zone vis-à-vis for each zone is given below:

### Promising entries for grain yield in various zones and across the zone

Zone	Entry name	Best check
Across the zone (26 locations) (>620g)	33 <sup>th</sup> SAWSN 3284 (690), 10 <sup>th</sup> STEMRRSN 6173 (665), 26 <sup>th</sup> HRWSN 2006 (647), 23 <sup>rd</sup> SAWYT 314 (645), 33 <sup>th</sup> SAWSN 3015 (643), 17 <sup>th</sup> KBSN 14 (640), 14 <sup>th</sup> HTWYT 21 (625), 26 <sup>th</sup> HRWSN 2056 (623)	DBW 88 (593)
NHZ (2 locations) (>710g)	23 <sup>rd</sup> HRWYT 206 (783), 10 <sup>th</sup> STEMRRSN 6153 (760), 23 <sup>rd</sup> SAWYT 314 (755), 23 <sup>rd</sup> HRWYT 207 (735), 23 <sup>rd</sup> HRWYT 248 (735)	DBW 88 (710)
NWPZ (5 locations) (>1000g)	17 <sup>th</sup> KBSN 14 (1150), 36 <sup>th</sup> ESWYT 126 (1070), 36 <sup>th</sup> ESWYT 117 (1049), 10 <sup>th</sup> STEMRRSN 6173 (1044), 33 <sup>th</sup> SAWSN 3284 (1043), 23 <sup>rd</sup> SAWYT 322 (1017), 23 <sup>rd</sup> SAWYT 318 (1000)	DBW 88 (788)
NEPZ (7 locations) (>600g)	33 <sup>th</sup> SAWSN 3015 (666), 26 <sup>th</sup> HRWSN 2017 (648), 10 <sup>th</sup> STEMRRSN 6173 (630), 33 <sup>th</sup> SAWSN 3284 (629), 33 <sup>th</sup> SAWSN 3080 (627), 14 <sup>th</sup> HTWYT 3 (625), 48 <sup>th</sup> IBWSN 1298 (618), 33 <sup>th</sup> SAWSN 3201 (613), 14 <sup>th</sup> HTWYT 31 (611), 14 <sup>th</sup> HTWYT 21 (605), 7 <sup>th</sup> HLBSN 19 (604), 14 <sup>th</sup> HTWYT 1 (604)	K 1006 (599)
CZ (8 locations) (>600g)	33 <sup>th</sup> SAWSN 3284 (648), 33 <sup>th</sup> SAWSN 3205 (645), 23 <sup>rd</sup> HRWYT 242 (638), 26 <sup>th</sup> HRWSN 2006 (619), 14 <sup>th</sup> HTWYT 21 (610), 1 <sup>st</sup> SATYT 90 (609), 14 <sup>th</sup> HTWYT 25 (608), 33 <sup>th</sup> SAWSN 3015 (607)	HI 1544 (505)
PZ (4 locations) (>500g)	14 <sup>th</sup> HTWYT 16 (518), 14 <sup>th</sup> HTWYT 31 (511), 23 <sup>rd</sup> SAWYT 314 (507), 33 <sup>th</sup> SAWSN 3284 (504), 48 <sup>th</sup> IBWSN 1182 (503)	UAS 304 (498)

Value in parenthesis indicate plot yield in gram

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

- Entry name 23<sup>rd</sup> SAWYT 314 and 10<sup>th</sup> STEMRRSN 6173 were found to be higher yielding and resistance to leaf blight. Similarly, 14<sup>th</sup> HTWYT 21 was found higher yielding and resistance to black rust.

### Lines showing resistance to diseases in EIGN

Disease	Entry name
Yellow rust (0/tR)	36 <sup>th</sup> ESWYT 117, 17 <sup>th</sup> KBSN 47, 23 <sup>rd</sup> SAWYT 340, 48 <sup>th</sup> IBWSN 1193, 48 <sup>th</sup> IBWSN 1297, 14 <sup>th</sup> HTWYT 16, 26 <sup>th</sup> HRWSN 2006, 10 <sup>th</sup> STEMRRSN 6152
Black rust (tR/tMR)	36 <sup>th</sup> ESWYT 131, 23 <sup>rd</sup> HRWYT 248, 17 <sup>th</sup> KBSN 30, 17 <sup>th</sup> KBSN 50, 23 <sup>rd</sup> SAWYT 318, 23 <sup>rd</sup> SAWYT 321, 23 <sup>rd</sup> SAWYT 346, 33 <sup>th</sup> SAWSN 3201, 48 <sup>th</sup> IBWSN 1283, 48 <sup>th</sup> IBWSN 1298, 14 <sup>th</sup> HTWYT 21
Leaf blight (<34)	23 <sup>rd</sup> SAWYT 314, 7 <sup>th</sup> HLBSN 11, 10 <sup>th</sup> STEMRRSN 6173



**Utilization report:** The utilization report of EIGN indicates that breeders across the country selected the genotypes from this nursery for various purposes. A total of 237 selections were made by the cooperating centres during 2016-17 as per details given below:

**Centre-wise selections made from EIGN**

Centre	Selections #	Traits selected
Almora	20	Yield, agronomic traits
Vijapur	7	Hybridization, germplasm enrichment
Faizabad	36	Yield, hybridization, germplasm enrichment
Coochbehar	20	Germplasm enrichment
Sabour	16	1000-grains wt., yield attributing traits
Malan	8	1000-grains weight, agronomic traits
Durgapura	8	Hybridization
Udaipur	41	Yield, grains/ spike, spike length
Pantnagar	10	Yield, 1000-grains weight
Jabalpur	9	Hybridization
Powarkheda	19	Hybridization, further selection
Shillongani	6	Higher yield, earliness
Hisar	13	Yield, Tillers/m, disease resistance
Gwalior	18	Yield, agronomic traits
Dharwad	6	Hybridization, yield
<b>Total</b>	<b>237</b>	

**Quality assessment:** The EIGN lines were analysed for processing quality parameters viz. test weight, protein content, grain hardness index, moisture content & sedimentation value and also for nutritional quality parameters like iron & zinc. Range of variation and promising genotypes identified in EIGN for processing and nutritional quality is given below:

**Promising Genotypes for Processing and Nutritional Quality Parameters (EIGN)**

Parameters	Mean and range	Value	Genotypes
Test Weight (kg/hl)	81.2 (77.5-83.7)	>83.0	36 <sup>th</sup> ESWYT 126, 23 <sup>rd</sup> HRWYT 242, 248, 33 <sup>th</sup> SAWSN 3151, 3152, 3186, 48 <sup>th</sup> IBWSN 1294, 14 <sup>th</sup> HTWYT 25, 26, 39, 26 <sup>th</sup> HRWSN 2003, 2017, 10 <sup>th</sup> STERMRRSN 6039
Protein Content (%)	11.54 (9.51-13.41)	>12.50	36 <sup>th</sup> ESWYT 13023 <sup>rd</sup> SAWYT 318, 33 <sup>th</sup> SAWSN 3186, 3080, 3201, 3205, 328448 <sup>th</sup> IBWSN 1004, 1157, 1299
Sedimentation value (ml)	54 (35-66)	~63	36 <sup>th</sup> ESWYT 126, 23 <sup>rd</sup> HRWYT 240, 17 <sup>th</sup> KBSN 30, 23 <sup>rd</sup> SAWYT 310, 346, 33 <sup>th</sup> SAWSN 3186, 14 <sup>th</sup> HTWYT 39, 26 <sup>th</sup> HRWSN 2006
Grain Hardness Index	72 (22-98)	>85	23 <sup>rd</sup> SAWYT 310, 314, 7 <sup>th</sup> HLBSN 11, 19, 26 HRWSN 2056,
		<45	36 <sup>th</sup> ESWYT 149, 17 <sup>th</sup> KBSN 49, 50, 23 <sup>rd</sup> SAWYT 321, 322, 33 <sup>th</sup> SAWSN 3268, 48 <sup>th</sup> IBWSN 1297, 1299, 14 <sup>th</sup> HTWYT 21, 1 <sup>st</sup> SATYT 35, 90
Iron (ppm)	37.7 (32.9-44.7)	>40.0	23 <sup>rd</sup> SAWYT 321, 346, 33 <sup>th</sup> SAWSN 3152, 3015, 48 <sup>th</sup> IBWSN 1157, 1191, 1283, 14 <sup>th</sup> HTWYT 21, 39, 26 <sup>th</sup> HRWSN 2006, 2042
Zinc (ppm)	29.6 (22.3-34.7)	~35.0	17 <sup>th</sup> KBSN 14, 7 <sup>th</sup> HLBSN 18, 40, 49, 26 <sup>th</sup> HRWSN 2006, 2017, 1 <sup>st</sup> SATYT 39

## National Durum Screening Nursery

A Gupta, BS Tyagi, K Gopalareddy, Vineet Kumar, RK Gupta and V Tiwari

The 3<sup>rd</sup> National Durum Screening Nursery (NDSN) comprising 65 lines including 35 lines selected from 47<sup>th</sup> IDSN, 23 lines from 47<sup>th</sup> IDYN and 7 lines contributed by Indore centre. These lines along with three check varieties (HI8498, PDW291 and HI8737) were shared with 13 centres of the NWPZ, PZ and CZ. The NDSN was evaluated in augmented design with two rows plot of 2.5m length. Data received from all the centres except Akola.

**Disease resistance and yield traits:** Promising entries with rust resistance and superiority over check varieties for yield and yield attributes are presented below.

### Promising entries with rust resistance and superiority over check varieties for yield and yield attributes

Trait	Zones	Genotypes
No. of tillers/m (no.)	Across zones ( $\geq 111$ )	47 <sup>th</sup> IDSN7136
	NWPZ ( $\geq 113$ )	47 <sup>th</sup> IDSN7081, 47 <sup>th</sup> IDSN7091, 47 <sup>th</sup> IDSN7127, 47 <sup>th</sup> IDSN7129, 47 <sup>th</sup> IDSN7136
	CZ ( $\geq 112$ )	47 <sup>th</sup> IDSN7136
	PZ ( $\geq 110$ )	47 <sup>th</sup> IDSN7090, 47 <sup>th</sup> IDYN706, 47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN740
Grains per spike (no.)	Across zones ( $\geq 51$ )	47 <sup>th</sup> IDSN7091, 47 <sup>th</sup> IDSN7118, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN706, 47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN740, HI8797
	NWPZ ( $\geq 55$ )	47 <sup>th</sup> IDSN7091, 47 <sup>th</sup> IDSN7129, 47 <sup>th</sup> IDSN7129, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN706, HI8797
	CZ ( $\geq 51$ )	47 <sup>th</sup> IDSN7096, 47 <sup>th</sup> IDSN7118, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN708, HI8797
	PZ ( $\geq 47$ )	47 <sup>th</sup> IDSN7113, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN706, 47 <sup>th</sup> IDYN740
TGW (gm)	Across zones ( $\geq 52$ )	HI 8796
	NWPZ ( $\geq 53$ )	47 <sup>th</sup> IDSN7081, HI8795
	CZ ( $\geq 47$ )	HI8795, HI8796, HI 8798, HI8800
Grain yield/plot (gm)	Across zones ( $\geq 623$ )	47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN717, HI8797
	NWPZ ( $\geq 810$ )	47 <sup>th</sup> IDSN7091, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN707, HI8797
	CZ ( $\geq 583$ )	47 <sup>th</sup> IDSN7081, 47 <sup>th</sup> IDSN7109, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN707, 47 <sup>th</sup> IDYN717, HI8798
	PZ ( $\geq 627$ )	47 <sup>th</sup> IDYN740

At national level 47<sup>th</sup> IDSN7136 and 47<sup>th</sup> IDYN740, respectively were promising for tiller number and grains per spike along with rust resistance. HI8796 had the boldest grains with 52g. 47<sup>th</sup> IDYN707 and 47<sup>th</sup> IDYN717 was superior to all the three check varieties in yield and resistance to rust diseases.

**Utilization report:** The feedback reports of NDSN indicate that the nursery is very useful and the wheat researchers across the country are making selections from the germplasm provided in this nursery. Pune centre utilized the highest number of entries with 38% for yield, earliness and high tillers per meter traits. The other centre with more than 30% utilization was Vijapur.

### Centre-wise selections from NDSN

Centre	No. of selections	% Utilization	Traits Selected/Utilization
Indore	6	9	Hybridization
Junagadh	9	14	Hybridization and Germplasm collection
Vijapur	20	31	Hybridization and selection
Powarkheda	11	17	Hybridization
Pune	25	38	Yield, Earliness, Tillers/m
Dharwad	14	22	Yield, Spike length, Tillers/m, TGW
Niphad	3	5	Hybridization and selection

**Quality assessment:** All the entries of these NDSN were analysed for processing and nutritional quality parameters and promising entries superior to the checks are presented below. 47<sup>th</sup> IDSN7090 had the highest test weight with 84g, while 47<sup>th</sup> IDSN 7136 ranked 3<sup>rd</sup> highest protein content with 12.4%. 47<sup>th</sup> IDYN 745 had the highest sedimentation value with 42ml, while 47<sup>th</sup> IDSN 7104 ranked first for grain hardness index with 108.

**Promising entries with rust resistance and superiority over check varieties  
for processing and nutritional quality parameters.**

Trait	Mean and range	Value	Genotypes
Test weight (kg/hl)	81.8 (74.4-83.7)	≥84	47 <sup>th</sup> IDSN7090
Protein content (%)	11.24 (8.46-13.38)	≥12.2	47 <sup>th</sup> IDSN7118, 47 <sup>th</sup> IDSN7136
Sedimentation Value (ml)	38 (31-46)	≥40	47 <sup>th</sup> IDSN7090, 47 <sup>th</sup> IDSN7102, 47 <sup>th</sup> IDYN745
Grain Hardness Index	95 (76-108)	≥100	47 <sup>th</sup> IDSN7104, 47 <sup>th</sup> IDSN7129, 47 <sup>th</sup> IDSN7136, 47 <sup>th</sup> IDYN706, 47 <sup>th</sup> IDYN730
Grain Zinc (ppm)	30.6 (25.2-40.0)	≥36.4	47 <sup>th</sup> IDSN7138, 47 <sup>th</sup> IDYN730

## Quality Component Screening Nursery

RK Gupta and D Mohan

The nursery constituted to select useful donors for quality improvement was planted at 12 locations to evaluate 56 entries in comparison to three checks namely HI 977, PDW 233 (durum) and UP 2672 (Table 1). Field conduct was satisfactory at majority of the test sites. Grain quality analysis was done at Karnal for five important parameters (Table 1). Samples were not received from Varanasi centre. Entries showing superiority for individual quality components is presented in Table 1. Detailed information about field conduct of QCSN, quality characteristics of test entries, disease incidence and utilization report is given in the Progress Report of Wheat Quality 2016-17, Vol. IV.

**Table 1: Most promising genotypes for individual quality parameter**

Component	Genotypes	Range	Check
Protein content (%)	BWL 1660, BWL 1664, QLD 46	14.0-14.5	UP 2672: 13.2
Protein yield (g/m <sup>2</sup> )	QLD 67, QLD 89, RAJ 4093	57-59	HI 977: 49.2
Sedimentation value(ml)	QLD 76, BW 5872, HD 3215, UP 2958, QLD 78, UP 2927	61-62	HI 977: 62
Grain hardness index	Hard wheat: GW 2015-703 (d), GW 2015-609 (d), QLD 89, UP 2959 Soft wheat: QLD 84, QLD 49, QLD 73, QLD 67	89-91 18-26	PDW 233: 91 HI 977: 76
Test weight (kg/hl)	Bread wheat: JWS 733, RAJ 4494 Durum wheat: GW 2015-699, GW 2015-691	81.5-82.0 82.0-82.1	HI 977: 80.5 PDW 233: 80.5
Grain appearance score out of 10	Bread wheat: QLD 46, GW 2015-660, JWS 733, QLD 89, UP 2958 Durum wheat: GW 2014-603, GW 2015-691, GW 2015-705	6.5-6.6 7.0-7.1	HI 977: 6.4 PDW 233: 6.6

**New genetic stocks:** Nine entries completed three years testing in QCSN and their mean performance (11 centres per year) was compared with the checks to identify new genetic stocks. Two genotypes each was identified for the component traits like protein (QLD 46 and BWL 1660), sedimentation value (QLD 76 and QLD 78) and grain softness (QLD 67 and QLD 73). Comparative performance of these new genetic stocks is given in Table 2.

**Table 2: Three years average performance of newly identified genetic resources**

Overall mean	PC (%)	PY (g/m <sup>2</sup> )	TGW (g)	TW (kg/hl)	SV (ml)	Hardness index	GAS	YLD (g/m <sup>2</sup> )	Ht (cm)	HD (days)
<b>Soft grain</b>										
QLD-67	13.1	52.3	45.3	78.6	44	25	6.0	401	92	76
QLD-73	12.6	52.7	44.6	78.4	44	24	5.9	416	95	86
QBP-12-9 [I]	12.1	50.3	39.5	78.9	39	28	5.8	417	91	84
QLD-49 [I]	13.3	48.0	36.3	78.2	50	20	5.8	361	94	76
QLD-54 [I]	13.5	48.5	40.0	77.4	39	28	5.9	362	88	73
<b>Sedimentation value</b>										
QLD-76	11.8	46.1	39.7	79.9	60	75	6.1	390	96	85
QLD-78	13.3	47.7	39.5	80.1	60	60	6.2	360	92	85
BW-5872 [I]	12.2	49.6	38.2	77.9	58	76	6.1	402	91	81
HI-977 [C]	12.3	44.4	40.2	79.0	58	72	6.2	363	92	80
<b>Grain protein content at 14% grain moisture</b>										
QLD-46	13.9	46.8	45.8	79.9	50	54	6.5	338	111	82
BWL-1660	14.1	43.9	40.5	79.5	56	63	6.4	311	107	72
BWL-1664	14.2	43.3	39.3	79.0	55	64	6.3	308	108	72
QLD-11 [I]	13.6	46.6	39.0	79.7	41	66	5.8	342	93	86
UP-2672 [C]	13.2	42.5	42.1	79.3	54	70	6.2	322	89	79

PC: Protein content (%), PY: Protein yield, TGW: 1000 grains-weight, TW: Test weight, SV: Sedimentation value, GAS: Grain appearance score, YLD: Yield, Ht: Plant height, HD: Heading

**Preliminary screening:** At Karnal centre, 60 new genotypes contributed by the co-operators were evaluated to select entries for multilocation testing. Promising entries noticed in this preliminary screening are presented in Table 3. Considering the yield traits and disease incidence, some new entries like GW 2016-740, GW 2016-747, TAW 33, Local collection 1c 01, GW 2016-773 (d), GW 2016-775 (d) and GW 2016-794 (d) may be considered for multiple testing in the coming year.

**Table 3: Promising genotypes noted in preliminary screening**

<b>Component</b>	<b>Genotypes</b>	<b>Range</b>
Protein content (%)	GW 2016-772(d), UP 2994, JWS 819, JWS 855, GW 2016-775(d)	13.3-14.7
Sedimentation V. (ml)	UP 2995, UP 2996, Local collection 1c 01, JWS150, JWS 809	63-65
Grain hardness index	GW 2016-772, 775, 778 & 794, HI 8790, TAW 33, UP 2997, Local collection 1c 01, HI 8777	90-99
Test weight (kg/hl)	GW 2016-793 (d), GW 2016-731, GW 2016-741 & 746	83.5-84.0
Grain appearance score out of 10	GW 2016-773 (d), GW 2016-794 (d), AKAW 4894, AKAW 5012, DWAP 1621	7.4-7.7

## Drought Tolerance Screening Nursery

Rinki, Mamrutha HM, BK Meena and Vinod Tiwari

The 29<sup>th</sup> Drought Tolerance Screening Nursery (DTSN) comprising 25 wheat genotypes including 4 checks (C 306, MP 3288, HD 2888 and NI 5439) was conducted at 17 centres to identify wheat genotypes having tolerance to moisture stress. The nursery was sown in 5x5 lattice design both under drought and irrigated conditions on the same date with plot size of 2 rows of 2.0 meter length spaced 23cm apart. Except pre-sowing irrigation no irrigation was given under drought treatment, while recommended numbers of irrigations were provided to irrigated treatment. Vijapur centre did not conduct the trial. The data from Kota, Jabalpur and Niphad were not accepted due to improper conduction and Dharwad and Kalyani due to erroneous recording of data.

### Weather conditions during the year

- In current crop season rainfall occurred during vegetative phase at Kanpur (34 mm), Hisar (10.2 mm) and Karnal (83.2). But during reproductive phase rainfall was recorded only at Hisar (31 mm) and other centres water stress was evident in rainfed treatment.
- In PZ & CZ the nights were cooler and day temperature was  $>25^{\circ}\text{C}$  all through the crop season. The minimum temperature of  $9.5^{\circ}\text{C}$  was found in Akola and a maximum temperature of  $33.8^{\circ}\text{C}$  at Pune.
- In NWPZ, higher temperature was noticed from sowing upto 2<sup>nd</sup> week of December. Cooler temperature prevailed during 4<sup>th</sup> week of December upto 3<sup>rd</sup> week of January in vegetative phase and from 3<sup>rd</sup> week of February upto 2<sup>nd</sup> week of March during reproductive phase.
- In NEPZ cooler condition prevailed during 4<sup>th</sup> week of January during vegetative phase and in 2<sup>nd</sup> and 3<sup>rd</sup> week of February during reproductive phase. Higher temperatures were observed during 2<sup>nd</sup> and 3<sup>rd</sup> week of March in reproductive phase. The maximum temperature of  $36^{\circ}\text{C}$  was recorded at Kanpur (Annexure-I).

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

- 1) **Sowing to heading:** Almost all the centres experienced high temperature during sowing, but the difference between drought and irrigated treatments was not much significant.
- 2) **Heading to physiological maturity:** No rainfall was recorded except Hisar and variations in minimum and maximum temperature range recorded was very high during grain filling. GW 477 showed minimum reduction in grain yield under drought stress followed by JWS 810 and WH 1235. Highest biomass was also recorded for GW 477. HI1628 has highest value of thousand grain weight ranging from 44-52.2g under drought conditions.

The lowest mean grain yield was recorded at Indore, both for drought (140 g) and irrigated (163 g) conditions. Thousand grain weight across the locations ranged from 32.9 to 46.7g. The lowest mean thousand grain weight (32.9g) was recorded at Junagadh for drought condition where as under irrigated condition Karnal has the lowest mean thousand grain weight of 39.5g. The highest thousand grain weight of 46.7g was recorded at Sagar (Annexure-II).

### Drought tolerant genotypes

Drought sensitivity index (DSI) was calculated for each location (Annexure III). During two years testing, genotypes RW 5, DBW 136 and DBW 166 consistently showed less sensitive

to drought stress (Table 1). Hence, these genotypes can be used as a source in hybridization to develop drought tolerant varieties.

**Table 1: Promising drought tolerant genotypes found during two years of testing**

Genotype	DSI (2015-16)	DSI (2016-17)	DSI Mean
<b>RW 5</b> (RAJ 4014/WH 730)	0.77	0.26	0.51
<b>DBW 136</b> (HUW 548/MV 231-98)	0.98	0.73	0.85
<b>DBW 166</b> (DANPHE/CHONTE)	0.99	0.29	0.64
<b>C 306 (C)</b>	0.61	0.49	0.55

Some of the drought tolerant genotypes viz. AKAW 5017, GW 377, HI 1628, JWS 810, NIAW 3212, WH 1235 identified during 2015-16 will be again tested during next year.

**Annexure-I: Temperature and rainfall recorded at different centres**

SN	Location		Vegetative Phase			Reproductive phase		
			Min. temp (°C)	Max. temp (°C)	Rain fall (mm)	Min. temp (°C)	Max. temp (°C)	Rain fall (mm)
<b>PZ</b>								
1	Akola	Mean	9.5	29.6	0	12.7	30.9	0
		Range	5-14.5	24.2-32.9		9.5-17	26.6-33.4	
2	Pune	Mean	12	27.5	0	9.5	29.8	0
		Range	7.4-19.5	24.2-33.8		6.8-16.4	27.8-32.3	
3	Parbhani	Mean	10.5	30.1	0	8	28.7	0
		Range	6.5-20.5	28-32.5		4.1-14.5	24.5-32.5	
<b>CZ</b>								
4	Indore	Mean	10.3	28.2	0	10.4	24.7	0
		Range	6.0-16	23-31		2.0-22.0	18-31	
5	Junagadh	Mean	14.1	33.1	0	12.7	31.4	0
		Range	11.2-21.7	30.4-34.9		5.6-15.4	26-33.7	
6	Sagar	Mean	13.2	28.2	0	11.9	26.8	0
		Range	7.0-18.0	20.4-32.3		4.8-17.1	21.1-31.8	
<b>NEPZ</b>								
9	Kanpur	Mean	15.6	30.4	34	9	22.9	0.4
		Range	6.8-27.4	16.4-36.8		6.1-12.5	15.6-27.5	
8	Ranchi	Mean	7.1	25.2	0	6.4	24.8	0
		Range	2.2-15.4	21.4-29.6		1.1-12.4	18.4-28.3	
<b>NWPZ</b>								
10	Hisar	Mean	7.6	23.4	10.2	6.5	21	31
		Range	0.1-13.5	13-31.5		3.5-14.9	13.8-28.9	
11	Karnal	Mean	9.5	21.4	83.2	10.5	23.1	0
		Range	2.9-15.3	12-29.9		6.3-14.8	19.4-29.8	

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

SN	Location	Condition		Germination (%)	Days to heading	Days to maturity	Plant height (cm)	Productive tiller/2 m	Grain yield/plot (g)	Test wt (g)
1	Akola	Drought	Mean	84	51	108	80	86	184	42
			Range	50-95	49-56	105-115	71-96	58-156	95-283	36.3-56.6
		Irrigated	Mean	90	50	109	94	100	409	43.7
			Range	80-98	48-53	104-118	82-108	55-215	170-630	33.2-56.25
2	Bardoli	Drought	Mean	83	63	92	68	23	185	40.2
			Range	40-96	56-68	84-100	55-96	10-36	24-400	34-48
		Irrigated	Mean	95	63	91	77	86	202	41.1
			Range	80-99	55-67	84-99	62-100	43-160	70-380	36-48
3	Hisar	Drought	Mean	88	83	134	95	227	389	36.9
			Range	80-95	74-93	130-139	80-123	90-352	202-686	19.6-52.5
		Irrigated	Mean	88	87	139	107	281	484	43.6
			Range	80-95	81-100	135-146	90.7-138	108-412	276-756	29.9-55.6
4	Indore	Drought	Mean	69	79	122	91	112	140	42.5
			Range	41-100	65-94	112-131	73-128	51-173	92-178	34.4-52.6
		Irrigated	Mean	73	81	120	97	129	163	41.5
			Range	46-100	71-91	112-128	83-130	74-178	108-228	39.5-52.1
5	Junagadh	Drought	Mean	87	50	86	67	107	316	32.9
			Range	70-93	40-60	82-94	47-87	64-170	131-510	24-41
		Irrigated	Mean	91	54	96	82	141	614	42.7
			Range	89-95	46-62	90-99	66-105	110-168	380-866	35-56
6	Kanpur	Drought	Mean	82	76	117	89	202	408	41.5
			Range	75-90	70-84	112-130	73-115	111-337	100-600	33.2-50.6
		Irrigated	Mean	83	80	120	105	229	632	45
			Range	75-90	72-88	114-130	83-135	110-526	400-1000	36.6-54.4
7	Karnal	Drought	Mean	83	83	130	102	176	525	39.5
			Range	55-97	72-99	121-138	89-132	45-302	211-787	31.5-47.18
		Irrigated	Mean	78	87	134	107	176	502	39.5
			Range	40-97	74-100	130-142	89-142	57-276	239-814	31.8-47.76
8	Parbhani	Drought	Mean	97	58	106	83	209	260	36.2
			Range	95-99	51-66	98-115	73-108	130-300	175-310	30-43.8
		Irrigated	Mean	98	62	120	99	271	614	42.8
			Range	97-99	57-78	112-131	87-123	160-380	344-714	33.4-51.8
9	Pune	Drought	Mean	90	58	99	77	198	247	38.5
			Range	80-95	49-69	89-110	67-101	142-294	154-340	34-46
		Irrigated	Mean	87	62	108	89	236	409	41.8
			Range	75-95	52-78	99-120	80-110	168-368	287-550	36-51
10	Ranchi	Drought	Mean	-	80	124	98	230	444	41.4
			Range	-	71-87	120-128	85.2-133	192-290	160-654	34.2-51.3
		Irrigated	Mean	-	80	125	105	239	471	46.6
			Range	-	70-88	120-129	84.8-288	102.1-340	327-661	38.6-57.5
11	Sagar	Drought	Mean	88	78	132	97	168	264	46.2
			Range	78-95	66-90	126-140	80-134	121-211	175-325	34.3-57
		Irrigated	Mean	92	78	131	99	182	479	46.7
			Range	80-96	70-88	125-138	82-123	131-218	300-600	38.2-57



**Annexure-III: List of drought tolerant genotypes identified during 2016-17**

<b>Location</b>	<b>Genotypes (DSI values)</b>
Pune	JWS 810(0.43)
Parbhani	DBW 136(0.40)
Indore	C 306 (C)(-2.48), DBW 136(-1.08),DBW 166(-0.26),GW 473( 0.06),GW 477(0.04), GW 483(0.22)
Junagadh	C 306(C)(-0.2), NI 5439(C)(0.4)
Bardoli	DBW 136(-3.3),JWS 810(-2.3),AKAW 5017(-1.92),WS 1503(-1.6),GW 477(-1.24), MACS 6713(-0.85), GW 473(-0.75),NIAW 3212(0.28),HI 1628(0),WH 1164(0),WH1235(0)
Ranchi	GW 483(-5.0),RW 5(-3.8),JWS 810(-3.8),WH 1235(-2.2),DBW 166(-1.8),GW 473(-1.6), HI 1628(-1.5), MP 3173(-0.39)
Kanpur	C 306 (C) (0.28), DBW 166(0.26)
Hisar	C 306(C) (0.21), MP 3173(0.23), WH 1164(0.25), GW 477(0.25), HI 1628(0.29), HD 2888 (c )(0.32), DBW 136(0.36), JWS 825(0.36), MACS 6713(0.43), RW 5(0.45)
Karnal	NI 5439 (c)(-7.4), WS 2015-9(-4.9), WH 1236(-3.4), NIAW 3212(-3.1), HI 1628(-1.5), WH 1235(-1.3), C 306(C) (-1.2), DBW 166(-1.1), UASDT 3(-0.3),AKAW 5017(-0.1), RW 5(-0.04), MACS 6713(0.25)
<b>Zone</b>	<b>All centres of the zone</b>
CZ	C 306(C) (0.36)
NEPZ	RW 5(0.17), JWS 810(0.23), DBW 166(0.27), GW 477(0.42), WH 1236(0.48)
NWPZ	MP 3173(-3.02), HD 2888(C)(-2.92), GW 477(-2.36),WH 1164(-1.12),JWS 825(-1.12), DBW 136(-0.38), MP 3288 (C) (-0.30), GW 473(0.15), RAJ 4526(0.27),MACS 6713(0.36), JWS 810(0.48)
Across Zones	AKAW 5017(0.39), GW 377(-0.28), HI 1628(0.41), JWS 810(-0.09), NIAW 3212 (0.5), WH 1235(0.27)

## Segregating Stock Nursery

*Ravish Chatrath, Satish Kumar and Om Parkash Tuteja*

The 20<sup>th</sup> Segregating Stock Nursery (SSN) was constituted with the objective to share promising segregating material with upcoming wheat breeding centres in the country to enable them to evaluate and select superior plants as per the conditions prevailing under agro-climatic conditions. The nursery was supplied to and conducted at 20 wheat breeding centres across five wheat growing zones namely; Khudwani, Dhaulakuan, Malan, Jammu, Faizabad, Varanasi, Ranchi, Sabour, Coochbehar, Kalyani, Shillongoni, Bilaspur, Gwalior, Lok Bharti, Sagar, Udaipur, Kota, Jabalpur, Parbhani, and Akola. Data from four centres namely Khudwani, Malan, Dhaulakuan and Parbhani was not received.

- During 2016-17, the nursery consisted of 82 segregating populations (F<sub>2</sub>/F<sub>3</sub>) that included material from various breeding programs operational at the Indian Institute of Wheat & Barley Research (IIWBR), Karnal.
- The utilization report received from the reported centres indicated that the nursery could achieve 37.8% utilization across the centres. All 82 segregating populations supplied were utilized by one or the other centre and total of 3146 plants were selected.
- The centre wise utilization pattern of segregating populations indicated that the Sabour centre utilized the maximum number of segregating populations followed by Bilaspur, Gwalior, Lok Bharti, Kota, Udaipur, Sagar, Coochbehar, Ranchi, Kalyani, Varanasi, Faizabad, Jammu, Akola, Jabalpur and Shillongoni.
- Selections in the segregating populations were made for different traits. A maximum of 496 (40.9%) plants were selected based on yield components followed by 270 plants for seed characters (22.3%), 174 plants for agro-morphological traits (14.4%), 168 plants for disease resistance (13.8%) and 104 plants for various physiological parameters (8.5%).

**Table 1: Centre-wise utilization of segregating stocks in 20<sup>th</sup> SSN**

SN	Centre	Plants selected	Crosses utilized	Utilization (%)	Selection criteria
<b>NWPZ</b>					
1	Jammu	47	14	17.1	Yield components and disease resistance
<b>NEPZ</b>					
2	Varanasi	65	17	20.7	Yield components and morphological traits
3	Faizabad	52	15	18.3	Yield components and disease resistance
4	Ranchi	105	25	30.5	Yield components, morphological traits and seed traits
5	Sabour	638	76	92.7	Yield components, disease resistance, morphological traits, physiological traits and seed traits
6	Coochbehar	109	26	31.7	Yield components, disease resistance, morphological traits, physiological traits and seed traits
7	Kalyani	81	19	23.2	Yield components, physiological traits and seed traits
8	Shillongoni	12	6	7.3	Yield components and morphological traits
<b>CZ</b>					
9	Gwalior	470	54	65.8	Yield components, morphological traits, physiological traits and seed traits
10	Bilaspur	610	72	87.8	Yield components and seed traits
11	Lok Bharti	410	49	59.7	Yield components, disease resistance and seed traits
12	Kota	179	49	59.7	Yield components, morphological traits, physiological traits and seed traits
13	Udaipur	150	34	41.5	Yield components

14	Sagar	145	27	32.9	Yield components
15	Jabalpur	30	6	7.3	Yield components and disease resistance
<b>PZ</b>					
16	Akola	43	7	8.5	Yield components
<b>Total</b>		<b>3146</b>	<b>496</b>	<b>37.8</b>	

The upcoming and voluntary centres have shown good response towards this nursery as indicated by utilization percentage (Table 1). This nursery can act as an important resource for strengthening the breeding programme at the centres.

## Spring x Winter Wheat Hybridization

V.Tiwari, Lakshmikant\* and C.N.Mishra

\*ICAR-VPKAS Almora

The winter wheats possess huge variability for traits of economic importance along with resistance/tolerance against various biotic (resistance against rusts, powdery mildew and foliar diseases) and abiotic stresses (early and terminal heat, sodicity, drought, mineral toxicity etc.). Utilizing the variability present in winterwheat gene pool for enhancing the productivity of spring wheat along with resistance to various biotic and abiotic stresses is a strategic approach.

### Sharing of segregating material

During the crop season 2016-17 the Spring x Winterwheat Segregating Stock Nursery (SWSSN) comprising 46 F<sub>2</sub> crosses were provided to six centres in three major wheat growing zones (NHZ, NEPZ and CZ) of the country for selection under different biotic and abiotic stresses and diverse agro-ecological conditions. The collaborating centres under the programme were CSKHPKV-Malan, BHU-Varanasi, NDUAT-Faizabad, CSAUAT-Kanpur, SDAU-Vijapur and RVSKVV-Gwalior.

The segregating material was subjected to natural biotic and abiotic stresses at different centres located in major wheat zones. There was occurrence of yellow rust and powdery mildew and early season moisture stress at Malan, stem and leaf rust at Vijapur centre, terminal heat and leaf blight at Varanasi centre; leaf blight and sodicity at Faizabad, and early and late heat at Gwalior centre.

The utilization report from cooperating centres showed that the percent utilization of the spring x winter crosses varied from 11% (Varanasi) to 100% (Gwalior). (Table 1)

**Table 1: Utilization report from cooperating centres**

Name of Centre	Crosses Selected #	Utilization %	Plants selected #	Characteristics for which utilized
RVSKVV, Gwalior	46	100	356	Yield components and morphological traits
CSKHPKV, Malan	43	93.5	951	Resistance to yellow rust and powdery mildew and yield components
SDAU- Vijapur	14	30.43	17	Rust resistance, yield components, morphological traits and seed characteristics
NDUAT-Faizabad	12	26.1	12	Yield components, leaf blight resistance and seed characteristics
CSAUAT- Kanpur	11	23.9	40	Yield components, morphological and seed characteristics
BHU- Varanasi,	5	10.9	39	Yield components and leaf blight resistance

### Promising cross-combinations utilized

None of the cross-combination remained unutilized. The maximum number of 951 single plants was selected at Malan followed by Gwalior (356) and Kanpur (40) as shown in Table-1, wherein, single plants were selected on the basis of morphological and grain characteristics besides disease resistance.

Among the crosses, maximum 59 plants were selected across the zones in cross VHW 6542 followed by VHW6553 (48), VHW6544 (45). The promising cross-combinations that were

utilized by most of the co-operators are being presented in Table 2. The utilization of SWSSN at the cooperating centres was very encouraging and it reflected the usefulness of winter wheats in spring wheat improvement.

**Table 2: Promising Cross-Combinations of SWSSN 2016-17**

SN	Cross#	Pedigree	Total Plant Selected
1	VHW-6542	OWL/SHIROODI/4/OWL/3/ALVAND//ALDAN"S"/IAS 58/PBW 640//VL941	59
2	VHW-6553	ZANDER -22//TAM 200/KAUZ/DERRIMUT//PBW 621	48
3	VHW- 6544	PYN/BAU/3/KAUZ//KAUZ/STAR/VL 2005//QLD 31	45
4	VHW6571	1-60-1//Emu"S"/TJB 84/3/1-12628/MV 17/VL 907//VL 907	44
5	VHW-6525	ALBATROS ODESKAJA # 5//SKAUZ/2*STAR/PBW 580//QLD50	42
6	VHW-6547	SHARK-1/G.K.PINKA/BUC/PVN//MILAN/3/TX96 V 2427//VW20168	42
7	VHW-6517	VL 966/DORADE 5//KS 82117/MLT	41
8	VHW-6520	VW 20106/BUC/PVN//MILAN/3/TX96V2427-Yr15	41
9	VHW-6529	BUC/PVN//MILAN/3/TX 96 V 2427/VL 892//VL 2005	39
10	VHW-6550	VL 977/CHINA 84-400022//UAS 305	39
11	VHW-6524	ALBATROS ODESKAJA # 5//SKAUZ/2*STAR/PBW 580//QLD 39	38
12	VHW-6546	SHARK-1/3/AGRI/BJY//VEE/4/SHARK/F 4105W 2.1/VL 971//PHS1103	36
13	VHW-6565	OWL/SHIROODI/4/OWL/3/ALVAND//ALDAN"S"/IAS 58/HS 507//HS 507	36
14	VHW-6522	VW20168/HSB2527(Yr15+Yr24/6*AVOCET//2*SAPPHIRE)	35
15	VHW-6528	BRAEWOOD/VL 404//RAJ4304	35

## Promising Accessions in Wheat Germplasm Collection

Arun Gupta, Charan Singh, Vineet Kumar, Rahul Singh and Vinod Tiwari

Five hundred thirteen indigenous and exotic accessions comprising 380 accessions of *T. aestivum*, 122 of accessions of *T. durum*, 3 of *T. dicoccum*, two accessions each of *T. timopheevi* and *T. turgidum* and one accession each of *T. polonicum*, *T. urartu*, *T. vavilovi* and *T. compactum* were evaluated and characterized as per DUS testing guideline for 36 characters during 2016-17. The experiment was laid out in augmented design using three checks i.e. Kalyansona, WR 544 and Sonalika. Each accession had raised in 3 rows of 2.50m length with row spacing of 30cm. Data were recorded on 36 agro-morphological traits and 11 metric traits. A wide range of variation was observed for days to heading (67-137 days); days to maturity (132-163 days); plant height (68-157cm); 1000 grains weight (21.8-64.4g); spike length (6.4-21.4cm); spikelets/spike (14-30); grains per spike (17-90); grain weight/spike (g) (0.23-4.32) and protein (%) (7.34-14.68).

*Days to heading and maturity:* Nine accessions of bread wheat flowered in less than or equal to 75 days and matured in less than 140 days. These accessions were HD 1944, HD 2379, HI 1116, HI 2667, HI916, HP1628, HP local 2, HS146, and Kalawada 12-2-5-15.

*Plant height:* Five accessions showed dwarfness and recorded plant height <80cm. These were 98 (67) SP WHEAT (67.4 cm), HD 1944 (72.6 cm), HI 7965 (77 cm), HD 4601 (77.2 cm) and EC 541864 (79 cm). Six accessions namely; HP local 1-B (141.4 cm), IC 78868B (141.4 cm), EC 541182 (142 cm), HY 5-7-6 (144.8 cm), HPW 30 (145.2 cm) and NP 809 (157 cm) recorded plant height more than 140cm.

*Spike length:* Eight accessions had spike length more than or equal to 15 cm. These are Tadia1 (21.4cm), Tadia2 (18.4cm), Tadia3 (18.4cm), Tadia4 (17.5cm), Tadia5 (16.4cm), GW 2001-16 (16.2 cm) and H 954 (15.5cm), GW 2001-19 (15.0 cm).

*Spikelets/spike:* Twelve accessions namely; HI 7728 (d), HUW 330, GW 2001-5, Tadia2, Tadia3, Tadia5, EC 538200(*T.timo.*), PI 176227, EIGN-I(99-2K)47, EIGN-II(97-98)26, EIGN-II(97-98)11, EIGN-II(97-98)15 had spikelet per spike more than or equal to 24.

*Grain number/spike:* Eleven accessions of bread wheat namely; GW2001-52 (77), HP803 (75), Tadia5 (74), HI906 (73), HP152 (73), CCNRV-4 (72), EIGN-I(99-2K)-10 (72), EIGN-I(1999-2K)-11 (71), EIGN-I(1999-2K)-16 (71), HD 2274 (71) and SAWSN(14<sup>th</sup>)221 (71) had more than 70 grains per spike. Similarly 10 accessions of durum wheat namely EIGN-II(1997-98)-1(90), EIGN-II(1997-98)-42(90), EIGN-II(1997-98)-4(83), EIGN-II(1997-98)-36 (81), EIGN-II(1997-98)-41 (80), HI8185 (78), EIGN-II(2001-02)-19 (77), EIGN-II(1997-98)-9 (76), EIGN-II(2001-02)-3 (76) and EIGN-II(1997-98)-37 (75) recorded more than 75 grains per spike.

*Grain weight/spike:* Six accessions Tadia5 (4.33g), EIGN-II(97-98)-11 (3.75g), HY107 (3.57g), Tadia3 (3.57g), SAWSN (14<sup>th</sup>)221 (3.52g) & HP1327 (3.5g) had more than 3.5g spike weight.

*Thousand grains weight:* Eight accessions EIGN-II(2001-2)-4 (64.4g), Tadia5 (58.2g), Kota local (57.5g), HD 4599 (56.6g), HP 1327 (56.6g), EIGN-II(97-98)31 (56.13g), IC78835-(B) (55.8g) & HUW 329 (55.1g) had 1000 grains weight more than 55g.

*Protein content:* Grain protein was estimated a 10-11% grain moisture content using NMR. Seven accessions SAWSN (14<sup>th</sup>) 221 (14.7%), HI 8113 (14.2%), GW 2002-19 (14%), HY 130 (14.0%), EC 541182 (13.7%), HY 128 (13.6%) and PI 338451 (13.5%) had more than 13.5% protein content.

The accession IC 212176 had only one-two tillers per plant and it could be exploited for tiller inhibition trait for use in breeding lines for high productive environments. The accessions HD2274, HP1327, TADIA3, TADIA5, EIGN-II(2001-02)-11, EIGN-II(97-98)-11 and HY632 were found promising for multiple yield traits.

## International Nurseries and Trials

Charan Singh, Arun Gupta, BS Tyagi, Vineet Kumar, Rahul Singh,  
Vinod Tiwari and GP Singh

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

### Nurseries/ trials received during 2016-17

- From CIMMYT, Mexico, set of five trials (4 bread wheat and 1 durum wheat) and seven nurseries comprising 1427 lines (1213 bread wheat and 214 lines of durum wheat) and 580 lines (460 bread wheat and 120 lines of durum wheat from ICARDA, Morocco were evaluated at various wheat breeding centres (Table 1 & 2).
- Duly filled data booklets were received from all the centres.

**Table 1: International germplasm received from CIMMYT, Mexico during 2016-17**

SN	Trial/Nursery	Entries #	Reps. #	Set #	Co-operating centres
<b>Bread wheat</b>					
1	24 <sup>th</sup> SAWYT	50	2	20	Delhi, Karnal, Hisar, Ludhiana, Durgapura, Pantnagar, Faizabad, Kanpur, Varanasi, Bilaspur, Jabalpur, Indore, Powarkheda, Junagadh, Vijapur, Kota, Akola, Pune, Niphad, Dharwad
2	37 <sup>th</sup> ESWYT	50	2	11	Delhi, Karnal, Hisar, Ludhiana, Pantnagar, Gurdaspur, Varanasi, Indore, Pune, Dharwad, Powerkheda
3	24 <sup>th</sup> HRWYT	50	2	3	Karnal, Coochbehar, Shillongani
4	15 <sup>th</sup> HTWYT	50	2	9	Delhi, Karnal, Ludhiana, Pantnagar, Varanasi, Pune, Indore, Vijapur, Dharwad,
5	27 <sup>th</sup> HRWSN	116	-	3	Karnal, Coochbehar, Shillongani
6	49 <sup>th</sup> IBWSN	294	-	16	Jammu, Delhi, Hisar, Karnal, Ludhiana, Gurdaspur, Pantnagar, Kanpur, Faizabad, Ranchi, Varanasi, Powarkheda, Malan, Jaipur, Pune, Dharwad,
7	34 <sup>th</sup> SAWSN	272	-	17	Delhi, Karnal, Hisar, Ludhiana, Durgapura, Pantnagar, Kanpur, IARI (Pusa), Sabour, Jabalpur, Bilaspur, Indore, Vijapur, Powarkheda, Junagadh, Niphad, Pune
8	11 <sup>th</sup> STEMRRSN	171	-	6	Karnal, Pune, Dharwad, Niphad, Mahabaleshwar, Wellington
9	8 <sup>th</sup> HLBSN	52	-	5	Karnal, Faizabad, Varanasi, Sabour, Shillongani
10	18 <sup>th</sup> KBSN	108	-	4	Karnal, Hisar, Ludhiana, Pantnagar
<b>Durum wheat</b>					
11	48 <sup>th</sup> IDYN	50	2	11	Karnal, Hisar, Ludhiana, Indore, Kota, Akola, Vijapur, Pune, Powarkheda, Dharwad, Niphad
12	48 <sup>th</sup> IDSN	164	-	10	Karnal, Hisar, Ludhiana, Pune, Indore, Vijapur, Powarkheda, Junagadh, Dharwad, Niphad

**Table 2: International germplasm received from ICARDA, Morocco during 2016-17**

SN	Trial /Nursery	Entries #	Rep #	Set #	Cooperating centres
<b>Bread wheat</b>					
1	17 <sup>th</sup> ESBWYT	50	2	4	Karnal, Durgapura, Jabalpur, Niphad
2	17 <sup>th</sup> DSBWYT	50	2	5	Karnal, Sagar, Pune, Vijapur, Dharwad
3	17 <sup>th</sup> SBWYT-HT	50	2	5	Karnal, Udaipur, Akola, Dharwad, Niphad
4	17 <sup>th</sup> SBW-ON	150	-	5	Karnal, Kanpur, Varanasi, Gwalior, Powarkheda
5	17 <sup>th</sup> SBWON-HT	160	-	4	Karnal, Hisar, Vijapur, Akola



Durum wheat					
6	40 <sup>th</sup> IDYT	24	2	4	Karnal, Indore, Pune, Vijapur
7	40 <sup>th</sup> IDON	96	-	4	Karnal, Pune, Powarkheda, 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).

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

Trial	Zone	Entries higher in grain yield* with disease resistant	Rust score	Best check yield (q/ha)
<b>Bread wheat</b>				
24 <sup>th</sup> SAWYT	NWPZ	305 (56), 335 (56), 348 (57)	YI (0- 5S)	HD 3086(54), PBW 725(56)
	NEPZ	308(48), 311(46), 330(49), 344(48)	-	HD 2967 (40)
37 <sup>th</sup> ESWYT	Across the zones	119 (67, 61, 55, 52)	YI (0-5MR) Br (0)	-
	NWPZ	120 (68)	Yr (tS-5MR)	DBW 88 (64)
	NEPZ	111 (71), 138 (68)	-	HD 2967 (59)
	CZ	122 (58), 140 (57)	Br (tS)	HI 1544 (49)
15 <sup>th</sup> HTWYT	NWPZ	21 (75), 32 (73), 42 (72)	YI (tS-5MR)	PBW 725 (68)
	NEPZ	5 (64), 10 (61)	-	HD 2967 (55)
24 <sup>th</sup> HRWYT	NWPZ	237 (86), 239 (80), 246 (80), 249 (95), 250 (80)	YI (0-5S)	DBW 88 (70)

\* Grain yield (q/ha) given in parenthesis

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

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

Trial / Nursery	Zone	TKW (g)	Rust score	Best check yield (q/ha)
<b>Bread wheat</b>				
37 <sup>th</sup> ESWYT	Across the zones	128 (44-50)	YI (0)	MP 1201 (42)
	NWPZ	128 (44), 129 (44)	YI (0-tS)	PBW 725 (41)
	NEPZ	117 (43), 138 (43)	-	HD 2967 (39)
	CZ	128 (50), 30 (49)	Br (0-tS)	MP 1201 (42)
	PZ	121 (48), 122 (47)	-	MACS 6222 (41)
15 <sup>th</sup> HTWYT	Across the zones	21 (43-46)	YI, LR, BI (0-5S)	-
	NEPZ	21 (44), 36 (44)	-	HD 2967
	CZ	36 (49)	BI (0)	HD 2932 (46)
	PZ	21 (46), 36 (49)	-	MACS 6222 (40)
24 <sup>th</sup> HRWYT	Across the zones	231 (46), 248 (48)	YI (0-5S)	-
	NWPZ	226 (51), 237 (49), 243 (51), 247 (49)	YI (tR-5S)	DBW 88 (41)
	NEPZ	231 (46), 248 (48)	YI (0-5S)	K 1006 (42)
49 <sup>th</sup> IBWSN	NHZ	1006 (63), 1081 (63), 1089 (61), 1096 (60), 1207 (60)	YI (0-5S)	HS 562 (48)
	CZ	1072(55), 1145(56), 1161(55)	BI (0)	RAJ 4238 (46)
34 <sup>th</sup> SAWSN	NWPZ	3032 (46), 3052 (46), 3098 (46), 3247 (46), 3267 (46), 3268 (47), 3270 (46)	YI (0)	HD 2967 (47)
	PZ	3135(47), 3148(47), 3190(47)	-	MACS 6222 (41)
27 <sup>th</sup> HRWSN	NWPZ	2116 (54)	YI (0)	DBW 88 (45)
	NEPZ	2008(46), 2101(48), 2107(46)	-	K 1006 (41)

11 <sup>th</sup> STEMRRSN	Across the zone	(>46)- 6026, 6055, 6109, 6129	YI (10MS), BI (tR-10S)	HD 2967 (43)
	NWPZ	6026 (61)	YI (20MS)	HD 2967 (43)
	PZ	6026 (51)	BI (0-tR)	MACS 6222 (39)
8 <sup>th</sup> HLBSN	NWPZ	19 (51)	YI (10S),LB (23)	HD 2967 (45)
18 <sup>th</sup> KBSN	NWPZ	12 (50)	YI & BI (0)	DBW 88 (41)
<b>Durum wheat</b>				
48 <sup>th</sup> IDYN	NWPZ	737 (52),739 (51)	YI (0-20S)	PDW 314 (45)
	PZ	737 (52)	-	MACS 3125 (41)
48 <sup>th</sup> IDSN	PZ	7062 (50)	-	NIDW 295 (45)

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

**Table 5: Promising lines for grain yield from ICARDA trials/nurseries during 2016-17**

Trial / Nursery	Location, yield (g/plot)	Entries	Check yield (g/plot)	Rust response
<b>Bread wheat</b>				
17 <sup>th</sup> ESBWYT	Karnal (>3600)	24, 29, 32, 48	DBW 88 (3500)	YI (0-tS)
	Durgapura (>2700)	2, 18, 44	RAJ 4238 (2000)	-
	Niphad (>1100)	2, 14, 18, 20, 38	NIAW 1994 (995)	-
17 <sup>th</sup> DSBWYT	Karnal (>3400)	4, 26, 28, 30, 40, 48	DBW 88 (3010)	YI (0-tS)
	Dharwad (>970)	4, 13, 39, 40	-	-
	Vijapur (>1000)	6, 21, 23, 24, 31, 33, 36, 40, 44, 47, 50	GW 451 (1065)	BI (0-tS)
17 <sup>th</sup> SBW-ON	Karnal (>990)	47, 97, 99, 111, 123	WH 1105 (540)	-
	Powarkheda (>700)	26, 135, 146	MP 1201 (600)	-
17 <sup>th</sup> SBWON-HT	Karnal (>930)	6, 66, 126, 129, 160	WH 1105 (560)	-
	Vijapur (>680)	33, 56, 57, 113	GW 173 (332)	-
<b>Durum wheat</b>				
40 <sup>th</sup> IDYT	Karnal (>3400)	4, 17, 18, 20	PDW 314 (2862)	-
40 <sup>th</sup> IDON	Karnal (>1130)	24, 84, 85	PDW 233 (1010)	-
	Powarkheda (>650)	26, 43, 44, 47, 64, 84, 91	MPO 1215 (525)	-

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

One set of each CIMMYT nursery/trial was planted at IIBWR, Karnal for multiplication to facilitate large number of wheat breeders/pathologist of the country for exercising *in-situ* selection as per their requirement. A wheat field day was organized on March 8<sup>th</sup>, 2017 at Karnal, wherein wheat breeders/pathologist from various co-operating centres participated. Seeds of the selected material were provided to them for further utilization.

# Appendix-I

**Trials not reported**

**1691-NIVT-1A-IR-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	J&K			Uttar Pradesh			Bihar			Jharkhand			West Bengal		
			Jammu			Modipuram			Sabour			Ranchi			Manikchak		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1221	N-101	51.6	37	0	38.0	37	0	30.7	42	0	39.4	19	0	22.8	46	0
2	HUW812	N-102	51.0	38	0	42.2	25	0	43.2	9	0	30.4	41	0	34.7	17	1
3	NW7015	N-103	56.9	33	0	37.0	39	0	37.2	19	0	41.1	15	0	26.4	42	0
4	K1603	N-104	66.1	14	1	37.0	39	0	46.2	6	1	33.7	31	0	34.7	17	1
5	HD3253	N-105	67.2	8	1	44.8	16	0	48.2	3	1	29.1	44	0	33.5	24	0
6	DBW223	N-106	70.8	3	1	36.5	42	0	31.5	38	0	40.4	16	0	37.7	8	1
7	HD3251	N-107	60.9	24	0	51.0	7	0	39.9	13	0	33.1	34	0	32.8	26	0
8	DBW228	N-108	70.8	3	1	55.7	3	1	43.8	8	0	30.3	42	0	36.6	11	1
9	WH1222	N-110	54.2	36	0	37.5	38	0	29.5	44	0	52.0	1	1	41.7	2	1
10	UP2978	N-111	57.8	31	0	36.5	42	0	39.5	16	0	32.7	35	0	35.2	14	1
11	K1601	N-112	59.9	27	0	41.1	28	0	44.8	7	0	35.2	26	0	33.4	25	0
12	DBW221	N-113	60.4	25	0	40.1	31	0	49.8	2	1	40.3	17	0	32.1	30	0
13	BRW3793	N-114	38.5	48	0	34.9	47	0	27.7	47	0	33.2	33	0	22.7	47	0
14	PBW764	N-115	57.3	32	0	42.7	24	0	33.7	35	0	38.1	21	0	21.7	49	0
15	RAJ4493	N-116	59.9	28	0	47.4	10	0	47.9	4	1	41.5	14	0	29.4	37	0
16	WH1220	N-117	44.3	43	0	44.3	18	0	34.2	32	0	24.9	48	0	31.1	35	0
17	RAJ4497	N-118	66.7	11	1	33.9	49	0	25.5	48	0	37.6	24	0	37.9	7	1
18	DBW225	N-119	67.2	8	1	43.2	21	0	27.8	46	0	24.4	49	0	31.6	32	0
19	PBW766	N-120	61.5	21	0	40.1	31	0	42.3	11	0	41.9	12	1	32.3	28	0
20	DBW222	N-121	65.1	16	1	42.2	25	0	39.9	15	0	34.1	30	0	40.6	5	1
21	RAJ4496	N-123	50.0	40	0	47.4	10	0	35.5	25	0	41.9	13	1	25.1	44	0
22	PBW762	N-124	37.5	49	0	46.9	13	0	37.8	17	0	32.6	36	0	34.3	20	1
23	HD3250	N-125	56.8	34	0	52.1	5	0	33.6	36	0	47.2	5	1	30.7	36	0
24	RAJ4495	N-126	49.0	42	0	44.8	16	0	29.2	45	0	35.1	27	0	25.8	43	0
25	UP2979	N-127	63.0	20	1	50.0	8	0	30.9	41	0	26.0	47	0	33.9	23	0
26	NW7001	N-128	61.5	22	0	41.1	28	0	21.5	49	0	48.1	3	1	32.2	29	0
27	DBW226	N-129	60.4	25	0	45.8	14	0	36.4	21	0	33.2	32	0	35.2	14	1
28	HD3252	N-131	79.7	2	1	43.8	20	0	34.6	30	0	46.4	6	1	22.6	48	0
29	K1602	N-132	81.8	1	1	35.4	46	0	35.9	24	0	42.5	11	1	31.9	31	0
30	PBW763	N-133	66.1	14	1	43.2	21	0	39.9	14	0	28.6	46	0	31.5	34	0
31	HD3248	N-134	68.8	6	1	52.1	5	0	31.3	39	0	38.9	20	0	36.4	12	1
32	HD3249	N-135	64.6	18	1	41.7	27	0	42.5	10	0	44.0	8	1	37.6	9	1
33	DBW227	N-136	40.6	47	0	44.3	18	0	35.1	28	0	30.9	39	0	32.7	27	0
34	UP2977	N-137	69.3	5	1	35.9	45	0	34.1	33	0	44.0	8	1	41.0	4	1
35	JAUW649	N-138	58.3	30	0	39.1	35	0	34.9	29	0	30.2	43	0	34.1	22	1
36	UP2976	N-139	61.5	22	0	47.4	10	0	37.8	18	0	31.4	37	0	28.6	39	0
37	HD3254	N-140	65.1	16	1	34.9	47	0	35.3	27	0	37.8	23	0	39.9	6	1
38	UP2975	N-141	43.8	44	0	53.6	4	0	32.1	37	0	37.8	22	0	31.6	32	0
39	HP1966	N-142	67.2	8	1	45.3	15	0	51.9	1	1	47.5	4	1	34.5	19	1
40	HUW813	N-143	50.0	40	0	40.1	31	0	33.9	34	0	31.3	38	0	37.3	10	1
41	WH1219	N-144	67.7	7	1	36.5	42	0	41.7	12	0	28.8	45	0	41.3	3	1
42	DBW224	N-145	66.7	11	1	40.6	30	0	34.6	31	0	51.4	2	1	34.2	21	1
43	WH1218	N-146	66.7	11	1	57.8	1	1	47.6	5	1	37.6	25	0	36.1	13	1
44	RAJ4494	N-147	41.1	46	0	47.9	9	0	31.1	40	0	30.8	40	0	24.6	45	0
45	PBW765	N-149	51.0	38	0	37.0	39	0	35.9	23	0	43.6	10	1	28.4	41	0
46	K0307(C)	N-109	64.1	19	1	38.5	36	0	37.2	20	0	34.9	28	0	42.2	1	1
47	DBW88(C)	N-122	59.9	28	0	56.8	2	1	35.4	26	0	39.7	18	0	34.9	16	1
48	WH1105(C)	N-130	55.7	35	0	40.1	31	0	36.1	22	0	34.3	29	0	28.8	38	0
49	HD2967(C)	N-148	42.7	45	0	43.2	21	0	30.5	43	0	46.4	7	1	28.6	39	0
Mean			59.2			43.0			36.7			37.1			32.8		
S.E.m			7.985			1.628			2.448			4.387			3.438		
C.D. (10%)			18.9			3.9			5.8			10.4			8.2		
C.V.			19.1			5.3			9.4			16.7			14.8		
D.O.S.(dd.mm.yyyy)			7.11.2016			14.11.2016			19.11.2016			21.11.2016			23.11.2016		

Trials proposed & conducted = 19

Trials not reported (5) = Jammu (HCV), Modipuram (LSM), Sabour (LSM), Ranchi (LSM), Manikchak (LSM)

**1692-NIVT-1B-IR-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Uttar Pradesh			Bihar			West Bengal						Assam		
			Modipuram			Sabour			Burdwan			Kalyani			Shillongani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	WH1224	N-201	54.9	2	1	41.3	12	0	32.8	22	0	45.1	1	1	63.6	13	1
2	HD3257	N-202	38.8	39	0	35.4	34	0	34.9	14	0	36.7	14	0	65.4	7	1
3	NW7002	N-203	43.3	23	0	35.7	31	0	37.7	4	0	30.8	42	0	46.8	44	0
4	JKW237	N-204	42.1	27	0	41.6	10	0	33.4	17	0	32.5	33	0	76.3	1	1
5	HD3260	N-205	39.8	35	0	31.5	45	0	25.7	42	0	30.8	42	0	64.4	9	1
6	UP2981	N-206	42.0	29	0	41.8	7	0	35.0	13	0	32.6	32	0	61.2	17	0
7	DBW232	N-207	54.9	3	1	41.8	8	0	31.1	27	0	39.5	4	0	64.5	8	1
8	K1607	N-208	46.1	17	0	49.4	3	1	26.9	38	0	34.2	27	0	66.2	6	1
9	PBW768	N-210	37.3	46	0	32.6	43	0	25.2	44	0	30.8	42	0	39.9	47	0
10	K1604	N-211	44.0	21	0	38.0	23	0	24.8	46	0	30.8	42	0	52.6	36	0
11	HD3258	N-212	40.9	32	0	29.8	49	0	35.7	10	0	30.7	46	0	33.7	49	0
12	HD3261	N-213	37.7	45	0	41.6	9	0	34.7	15	0	41.3	2	0	55.1	29	0
13	K1608	N-214	36.9	48	0	30.5	47	0	29.7	31	0	35.1	22	0	45.4	45	0
14	UP2982	N-216	46.2	15	0	38.8	22	0	26.5	41	0	32.3	34	0	55.6	26	0
15	RAJ4498	N-217	37.1	47	0	31.4	46	0	38.9	2	1	31.6	38	0	46.8	43	0
16	RAJ4500	N-218	39.7	37	0	34.5	37	0	33.2	19	0	34.7	25	0	54.2	31	0
17	HUW817	N-219	51.3	8	0	31.7	44	0	35.4	12	0	38.2	9	0	36.7	48	0
18	BRW3796	N-220	53.5	5	1	39.9	20	0	41.8	1	1	36.6	15	0	55.3	28	0
19	HUW815	N-221	46.9	14	0	41.5	11	0	31.8	25	0	32.3	34	0	67.0	4	1
20	DBW229	N-222	49.8	11	0	41.1	14	0	34.6	16	0	32.7	31	0	63.7	12	1
21	DBW233	N-223	43.1	24	0	44.0	5	0	33.1	20	0	36.9	13	0	62.9	16	1
22	NW6098	N-224	50.5	9	0	46.1	4	0	29.7	32	0	31.6	37	0	53.2	33	0
23	PBW767	N-225	45.5	18	0	41.1	13	0	32.6	23	0	38.1	10	0	53.9	32	0
24	NW7004	N-226	42.4	25	0	36.8	28	0	36.1	8	0	36.1	19	0	55.7	25	0
25	WH1223	N-227	45.2	19	0	35.5	33	0	31.7	26	0	37.5	11	0	58.5	19	0
26	K1605	N-228	52.6	7	0	37.8	25	0	37.1	5	0	35.3	21	0	57.6	20	0
27	BRW3799	N-229	49.3	13	0	40.8	16	0	27.1	37	0	32.8	29	0	47.7	42	0
28	HD3255	N-230	57.4	1	1	37.4	26	0	28.7	34	0	39.9	3	0	66.7	5	1
29	DBW230	N-231	41.9	30	0	33.6	39	0	29.9	29	0	31.4	41	0	48.6	40	0
30	HD3262	N-232	42.1	28	0	38.0	24	0	26.5	40	0	34.9	23	0	56.6	23	0
31	HUW816	N-233	36.0	49	0	32.9	40	0	23.8	49	0	38.3	8	0	63.5	14	1
32	DBW234	N-234	41.4	31	0	35.8	30	0	30.7	28	0	32.3	34	0	55.6	27	0
33	PBW769	N-236	40.7	34	0	39.5	21	0	24.1	47	0	36.4	17	0	64.1	11	1
34	HUW818	N-237	38.0	41	0	34.3	38	0	36.9	7	0	38.4	7	0	48.5	41	0
35	RAJ4499	N-238	44.2	20	0	29.9	48	0	35.7	9	0	36.3	18	0	52.6	34	0
36	DBW231	N-239	43.9	22	0	36.9	27	0	25.5	43	0	36.5	16	0	57.2	22	0
37	UBW5	N-240	39.8	36	0	42.1	6	0	32.8	21	0	33.0	28	0	64.2	10	1
38	K1606	N-241	49.5	12	0	40.0	19	0	35.4	11	0	36.0	20	0	63.1	15	1
39	HUW814	N-242	49.9	10	0	52.1	1	1	32.0	24	0	38.5	6	0	67.2	3	1
40	UP2980	N-243	37.9	43	0	40.4	17	0	29.9	30	0	34.9	23	0	57.4	21	0
41	BRW3792	N-245	53.4	6	1	36.0	29	0	28.0	35	0	31.5	40	0	42.0	46	0
42	NW7000	N-246	39.2	38	0	35.7	32	0	27.7	36	0	34.4	26	0	52.6	35	0
43	HD3256	N-247	42.3	26	0	32.7	42	0	26.7	39	0	38.8	5	0	69.8	2	1
44	NW7003	N-248	37.8	44	0	40.3	18	0	36.9	6	0	32.8	29	0	49.1	38	0
45	HD3259	N-249	40.7	33	0	34.8	35	0	24.0	48	0	31.6	38	0	56.4	24	0
46	WH1105(C)	N-209	38.8	39	0	34.6	36	0	28.7	33	0	30.7	46	0	58.9	18	0
47	K0307(C)	N-215	54.1	4	1	51.2	2	1	37.8	3	1	37.0	12	0	48.8	39	0
48	DBW88(C)	N-235	46.1	16	0	41.0	15	0	25.1	45	0	30.5	48	0	49.8	37	0
49	HD2967(C)	N-244	38.0	41	0	32.9	41	0	33.3	18	0	30.4	49	0	54.7	30	0
Mean			44.2			38.0			31.4			34.7			56.1		
S.E.m			1.860			2.446			1.694			1.019			5.874		
C.D. (10%)			4.4			5.8			4.0			2.4			14.0		
C.V.			6.0			9.1			7.6			4.1			14.8		
D.O.S. (dd.mm.yyyy)			15.11.2016			19.11.2016			17.11.2016			19.11.2016			19.11.2016		

Trials proposed & conducted = 18

Trials not reported (5) = Modipuram(LSM), Sabour (LSM), Burdwan (LSM),Kalyani (LSM), Shillongani (UY)

**1693-NIVT-2-IR-TS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Gujarat						Maharashtra			Karnataka		
			Junagadh			Vijapur			Akola			Dharwad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI1622	N-301	46.38	1	1	42.40	5	1	44.98	4	1	40.7	8	1
2	MACS6703	N-302	41.45	9	0	42.08	6	1	36.47	22	0	39.3	11	1
3	MP1339	N-303	38.16	19	0	30.63	33	0	36.12	24	0	36.8	18	1
4	PBW770	N-304	42.79	4	1	36.98	21	0	34.27	30	0	30.2	30	0
5	GW498	N-305	42.49	5	1	39.27	11	1	37.28	20	0	21.5	36	0
6	K1610	N-306	40.22	12	0	33.96	27	0	38.24	17	0	34.4	23	0
7	AKAW4924	N-307	38.79	17	0	37.92	16	0	36.82	21	0	40.9	7	1
8	UAS391	N-308	35.10	28	0	30.73	32	0	35.07	27	0	24.3	35	0
9	GW493	N-309	40.86	10	0	38.65	13	1	34.90	28	0	35.5	21	0
10	MACS6709	N-310	41.61	8	0	34.38	24	0	46.53	1	1	38.4	14	1
11	DBW235	N-311	41.93	7	0	36.67	22	0	44.88	5	1	39.1	13	1
12	NIAW3161	N-312	38.34	18	0	37.71	18	0	32.06	34	0	33.5	25	0
13	MP1337	N-314	37.71	21	0	35.63	23	0	33.27	32	0	39.1	12	1
14	MP3471	N-315	40.56	11	0	34.17	25	0	44.11	6	1	38.1	15	1
15	GW492	N-316	39.42	15	0	41.67	7	1	37.79	18	0	35.3	22	0
16	HI1623	N-317	43.42	2	1	46.04	1	1	46.09	3	1	43.3	1	1
17	GW495	N-318	42.94	3	1	40.73	9	1	46.31	2	1	29.0	33	0
18	UAS389	N-319	34.55	30	0	33.02	29	0	42.77	9	0	35.6	20	0
19	WH1234	N-320	39.80	14	0	40.10	10	1	34.24	31	0	42.1	6	1
20	JWS152	N-321	31.75	36	0	28.54	35	0	34.39	29	0	43.0	2	1
21	NIAW3173	N-322	33.27	33	0	38.44	14	1	30.37	36	0	42.7	4	1
22	UAS390	N-323	34.46	31	0	37.71	18	0	36.34	23	0	38.0	16	1
23	UP2983	N-324	32.23	35	0	29.69	34	0	39.95	13	0	29.6	31	0
24	HD3263	N-325	35.02	29	0	34.06	26	0	35.80	26	0	31.5	26	0
25	HI1624	N-326	39.08	16	0	44.06	3	1	32.98	33	0	30.7	29	0
26	DBW236	N-327	35.74	26	0	38.44	14	1	42.69	10	0	42.7	3	1
27	MACS6708	N-328	42.23	6	0	44.79	2	1	39.50	14	0	31.4	27	0
28	RAJ4501	N-329	35.23	27	0	31.15	31	0	37.31	19	0	36.1	19	1
29	CG1024	N-330	39.88	13	0	41.35	8	1	42.97	8	0	33.7	24	0
30	GW491	N-331	37.47	23	0	43.02	4	1	43.46	7	1	42.6	5	1
31	HI1625	N-332	33.64	32	0	31.77	30	0	39.20	15	0	30.9	28	0
32	UAS388	N-333	37.57	22	0	28.33	36	0	40.66	11	0	39.6	10	1
33	MP1338	N-334	36.45	25	0	37.81	17	0	39.95	12	0	37.9	17	1
34	RAJ4502	N-336	32.84	34	0	33.75	28	0	35.88	25	0	29.1	32	0
35	MACS6222(C)	N-313	36.73	24	0	39.27	11	1	39.06	16	0	40.0	9	1
36	HI1544(C)	N-335	38.09	20	0	37.40	20	0	31.14	35	0	28.3	34	0
Mean			38.3			37.0			38.4			35.7		
S.E.m			1.700			3.193			1.449			3.074		
C.D. (10%)			4.1			7.6			3.5			7.4		
C.V.			6.3			12.2			5.3			12.2		
D.O.S. (dd.mm.yyyy)			20.11.2016			13.11.2016			14.11.2016			12.11.2016		

Trials proposed & conducted = 17

Trials not reported (5) = Nippani (RMT), Junagard (LSM), Vijapur (LSM), Akola (LSM), Dharwad (LSM)

**1694-NIVT-3A-IR-LS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	J&K			Jharkhand			Assam		
			Jammu			Ranchi			Shillongani		
			Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JKW234	N-401	29.5	30	0	37.6	23	0	19.6	27	0
2	DBW238	N-402	46.3	9	1	42.3	14	1	21.8	21	0
3	BRW3791	N-403	30.7	28	0	36.1	30	0	18.3	30	0
4	DBW240	N-405	51.5	3	1	49.5	1	1	23.3	16	0
5	K1614	N-406	46.9	8	1	42.8	11	1	33.8	4	0
6	PBW773	N-407	42.2	19	1	40.7	15	1	15.4	33	0
7	K1612	N-408	44.6	14	1	39.6	17	1	32.8	5	0
8	UP2984	N-409	29.5	30	0	47.5	5	1	30.5	7	0
9	UBW14	N-410	24.9	36	0	17.5	36	0	24.2	15	0
10	HUW821	N-411	26.6	34	0	39.4	19	1	22.0	20	0
11	WH1226	N-412	31.3	26	0	46.4	7	1	30.1	8	0
12	NW7010	N-413	52.1	2	1	30.5	33	0	35.0	3	0
13	K1613	N-414	45.1	12	1	47.1	6	1	20.0	26	0
14	PBW772	N-415	53.8	1	1	36.0	31	0	24.7	12	0
15	HD3269	N-416	26.0	35	0	44.5	9	1	18.6	29	0
16	RAJ4503	N-419	44.6	13	1	38.7	22	0	20.1	25	0
17	RAJ4504	N-420	39.4	22	0	42.7	13	1	28.6	10	0
18	DBW237	N-421	38.2	23	0	42.8	12	1	28.9	9	0
19	HD3267	N-422	50.9	4	1	37.3	25	0	24.2	14	0
20	HD3266	N-423	43.4	17	1	47.8	4	1	18.9	28	0
21	HD3268	N-424	44.6	14	1	39.7	16	1	18.2	31	0
22	HD3265	N-425	40.5	21	0	36.4	28	0	14.7	34	0
23	WH1228	N-427	27.8	32	0	36.3	29	0	14.4	36	0
24	PBW771	N-428	49.8	5	1	37.0	27	0	15.4	32	0
25	HUW819	N-429	30.1	29	0	27.8	34	0	23.2	17	0
26	UP2985	N-430	47.5	7	1	39.0	21	1	30.9	6	0
27	WH1227	N-431	46.3	9	1	39.5	18	1	22.8	19	0
28	HUW820	N-432	31.3	27	0	37.4	24	0	23.1	18	0
29	HD3264	N-433	49.8	5	1	45.6	8	1	14.7	35	0
30	DBW239	N-434	35.9	24	0	34.8	32	0	46.0	1	1
31	UP2987	N-435	44.0	16	1	39.1	20	1	24.2	13	0
32	NW7007	N-436	34.7	25	0	43.5	10	1	20.6	23	0
33	HI1563(C)	N-404	27.2	33	0	37.3	26	0	21.5	22	0
34	DBW14(C)	N-417	43.4	17	1	22.3	35	0	25.1	11	0
35	DBW90(C)	N-418	45.7	11	1	48.8	2	1	37.2	2	0
36	HD3059(C)	N-426	41.1	20	0	47.8	3	1	20.2	24	0
Mean			39.9			39.4			24.0		
S.E.m			5.157			4.447			3.154		
C.D. (10%)			12.3			10.6			7.6		
C.V.			18.3			16.0			18.6		
D.O.S. (dd.mm.yyyy)			16.12.2016			16.12.2016			18.12.2016		

Trials proposed & conducted = 18  
Trials not reported (4) = Kanpur (RMT), Jammu (HCV),  
Ranchi (HCV), Shillongani (HCV, LSM)

**1694-NIVT-3B-IR-LS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	MP			Gujarat			Maharashtra			Karnataka		
			Gwalior			Junagadh			Akola			Dharwad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	DBW243	N-501	76.4	8	1	28.9	17	0	20.3	32	0	33.7	5	0
2	HI1627	N-503	78.8	5	1	26.9	22	0	18.1	33	0	32.4	10	0
3	WH1230	N-504	63.3	26	0	26.1	24	0	31.6	11	0	27.1	22	0
4	AKAW5017	N-505	67.2	18	0	32.8	10	1	27.9	24	0	24.9	28	0
5	MP1340	N-506	63.2	27	0	22.9	32	0	25.8	27	0	33.6	6	0
6	WH1229	N-508	59.9	31	0	24.5	28	0	36.4	1	1	27.3	20	0
7	GW500	N-510	80.5	3	1	30.0	15	0	30.4	14	0	33.6	7	0
8	LOK73	N-511	62.9	28	0	24.2	31	0	14.7	34	0	25.9	27	0
9	NIAW3033	N-512	65.1	22	0	33.4	8	1	22.2	30	0	24.5	29	0
10	MP1342	N-513	65.1	21	0	28.5	20	0	29.8	17	0	20.9	33	0
11	MACS6715	N-514	65.1	23	0	25.3	27	0	12.4	36	0	26.9	23	0
12	HI1626	N-515	77.0	7	1	25.4	25	0	35.2	4	1	19.1	35	0
13	GW501	N-516	64.1	25	0	27.4	21	0	30.8	12	0	34.6	4	0
14	UAS393	N-517	59.6	32	0	19.8	35	0	27.5	25	0	33.1	9	0
15	NIAW3212	N-518	74.1	10	0	24.3	30	0	34.1	7	1	31.2	12	0
16	MP3469	N-519	66.7	19	0	24.3	29	0	28.4	22	0	31.7	11	0
17	HI8794	N-520	79.4	4	1	18.9	36	0	28.5	21	0	30.0	14	0
18	UAS392	N-521	60.5	29	0	26.2	23	0	34.4	6	1	26.8	25	0
19	CG1025	N-522	70.8	15	0	30.5	13	0	35.3	3	1	29.0	17	0
20	HD3270	N-523	72.4	14	0	30.2	14	0	36.2	2	1	17.3	36	0
21	LOK74	N-524	56.9	34	0	34.3	4	1	35.0	5	1	26.9	24	0
22	NIAW3074	N-525	73.0	13	0	32.9	9	1	28.9	20	0	28.4	18	0
23	CG1026	N-526	87.0	1	1	28.6	19	0	25.7	28	0	29.7	15	0
24	DBW241	N-527	50.9	36	0	20.9	34	0	26.4	26	0	24.2	30	0
25	PBW774	N-528	73.1	12	0	28.7	18	0	30.0	15	0	35.3	3	0
26	MP3470	N-529	60.2	30	0	22.6	33	0	33.0	8	1	20.8	34	0
27	GW499	N-530	84.5	2	1	32.8	11	1	29.6	18	0	33.5	8	0
28	DBW242	N-531	77.6	6	1	30.0	16	0	32.2	9	1	26.3	26	0
29	GW504	N-532	65.3	20	0	36.3	2	1	31.7	10	1	31.0	13	0
30	MP1341	N-533	59.5	33	0	25.3	26	0	24.0	29	0	36.6	2	1
31	MACS6714	N-535	74.0	11	0	36.7	1	1	14.0	35	0	21.8	32	0
32	GW502	N-536	56.1	35	0	34.4	3	1	20.4	31	0	29.3	16	0
33	RAJ4083(C)	N-502	69.1	17	0	31.6	12	0	28.4	22	0	42.2	1	1
34	RAJ4238(C)	N-507	70.5	16	0	34.1	6	1	29.9	16	0	27.2	21	0
35	HD2864(C)	N-509	65.0	24	0	34.2	5	1	30.6	13	0	23.1	31	0
36	HD2932(C)	N-534	75.6	9	0	33.4	7	1	29.3	19	0	28.4	19	0
Mean			68.6			28.5			28.0			28.6		
S.E.m			4.476			1.876			1.966			2.365		
C.D.			10.8			4.5			4.7			5.7		
C.V.			9.2			9.3			9.9			11.7		
D.O.S.(dd.mm.yyyy)			6.12.2016			8.12.2016			9.12.2016			10.12.2016		

Trials proposed & conducted = 14

Trials not reported (4) = Gwalior (UY), Junagarh (LSM),  
Akola (LSM), Dharwad (LSM)



**1695-NIVT-4-IR-TS-TDM-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Gujarat						Maharashtra				Karnataka				
			Vijapur			SK Nagar			Niphad		Akola		Dharwad				
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	HI8801	N-601	41.7	5	0	45.8	12	0	47.2	20	1	31.5	32	0	34.8	19	0
2	GW1341	N-602	44.7	2	1	42.1	20	0	51.6	9	1	20.4	36	0	41.1	9	1
3	NIAW1101	N-603	37.5	15	0	52.0	7	1	45.6	22	1	39.6	15	0	29.9	32	0
4	AKDW5012	N-604	27.8	34	0	44.5	17	0	49.6	12	1	36.3	23	0	22.1	36	0
5	DDW44	N-605	36.5	18	0	59.3	2	1	47.6	18	1	43.2	8	0	29.6	33	0
6	GW1339	N-606	48.5	1	1	52.7	6	1	28.4	36	0	43.0	9	0	37.8	15	0
7	MACS4064	N-607	31.3	28	0	34.9	31	0	47.1	21	1	38.3	19	0	42.5	6	1
8	MACS4067	N-608	38.3	13	0	39.6	26	0	49.5	14	1	35.4	24	0	37.4	17	0
9	UPD99	N-609	37.2	16	0	48.5	9	1	52.0	6	1	42.5	10	0	43.1	5	1
10	AKDW5013	N-610	31.7	25	0	46.3	11	0	52.2	5	1	37.5	22	0	32.4	24	0
11	PBND5128	N-611	32.2	24	0	45.0	15	0	47.6	17	1	38.0	21	0	44.5	3	1
12	HI8800	N-612	34.2	22	0	51.1	8	1	52.8	4	1	30.0	33	0	31.5	28	0
13	PDW351	N-613	28.9	33	0	38.5	27	0	43.7	25	1	29.7	34	0	32.9	23	0
14	MPO1344	N-614	35.5	20	0	44.3	18	0	49.9	10	1	38.2	20	0	38.9	13	0
15	PDW354	N-615	29.1	31	0	47.0	10	1	54.3	3	1	41.9	11	0	31.2	29	0
16	MACS4071	N-616	29.5	30	0	41.3	22	0	42.9	27	1	39.9	14	0	31.8	26	0
17	HI8799	N-617	40.9	7	0	31.9	33	0	54.5	2	1	33.5	29	0	40.7	10	1
18	PDW353	N-618	26.7	35	0	39.7	24	0	32.2	35	0	46.4	4	0	33.2	21	0
19	GW1338	N-619	40.8	8	0	58.9	3	1	42.2	29	1	35.2	25	0	30.6	30	0
20	UAS465	N-620	41.7	5	0	38.3	28	0	39.3	33	0	38.5	18	0	38.7	14	0
21	MPO1343	N-621	25.6	36	0	44.9	16	0	54.9	1	1	34.5	27	0	48.4	1	1
22	WHD961	N-622	40.4	9	0	43.0	19	0	49.6	13	1	33.2	30	0	37.8	16	0
23	RKD320	N-623	31.7	26	0	33.5	32	0	41.8	31	1	46.4	3	0	31.6	27	0
24	PDW352	N-624	38.9	11	0	31.1	36	0	48.0	16	1	50.1	1	1	33.0	22	0
25	GW1340	N-625	36.1	19	0	60.8	1	1	44.8	23	1	49.0	2	1	43.6	4	1
26	HI8797	N-626	38.8	12	0	53.3	5	1	43.5	26	1	45.9	5	0	42.5	7	1
27	UAS464	N-627	31.0	29	0	38.3	28	0	43.9	24	1	38.9	17	0	40.6	11	1
28	HI8795	N-628	44.0	3	1	45.1	14	0	37.1	34	0	35.1	26	0	27.3	34	0
29	NIAW1100	N-629	31.7	27	0	31.6	35	0	49.7	11	1	39.4	16	0	37.0	18	0
30	RKD318	N-630	35.4	21	0	45.8	12	0	51.6	8	1	28.3	35	0	30.3	31	0
31	WHD962	N-631	42.9	4	1	39.7	24	0	51.9	7	1	43.5	7	0	41.8	8	1
32	HI8798	N-632	39.1	10	0	41.8	21	0	47.6	19	1	32.8	31	0	47.3	2	1
33	DDW43	N-634	33.2	23	0	40.6	23	0	42.2	29	1	33.7	28	0	26.4	35	0
34	HI8796	N-636	38.3	14	0	31.8	34	0	40.8	32	0	40.4	13	0	32.0	25	0
35	UAS428(C)	N-633	29.1	31	0	54.8	4	1	42.3	28	1	41.6	12	0	33.8	20	0
36	HI8737(C)	N-635	36.7	17	0	36.4	30	0	49.4	15	1	45.1	6	0	40.3	12	0
Mean			35.8			43.7			46.4			38.2			36.1		
S.E.m			2.552			5.978			5.574			1.444			3.278		
C.D. (10%)			6.1			14.3			13.3			3.5			7.9		
C.V.			10.1			19.3			17.0			5.3			12.9		
D.O.S. (dd.mm.yyyy)			13.11.2016			10.11.2016			10.11.2016			14.11.2016			12.11.2016		

Trials proposed & conducted = 12

Trials not reported (6) = Nippani (RMT), Vijapur (LSM), S.K.Nagar (HCV),  
Niphad (HCV), Akola (LSM), Dharwad (LSM)

**1698-NIVT-5A-RI-TS-TAS-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Gujarat			Maharashtra			Karnataka					
			Vijapur			Akola			Pune			Dharwad		
			Yield	RK	G	Yield	RK	G	Yield	RK	G	Yield	RK	G
1	JWS151	N-702	20.0	24	0	14.5	7	0	15.8	35	0	20.5	19	0
2	NIAW3170	N-703	23.4	10	1	17.2	1	1	18.6	27	0	20.4	21	0
3	DBW252	N-704	17.8	30	0	9.3	33	0	20.8	18	0	24.9	3	1
4	UP2989	N-705	22.9	11	1	12.1	22	0	20.4	22	0	18.4	25	0
5	BRW3798	N-706	16.5	34	0	13.7	10	0	19.0	26	0	21.4	14	1
6	WH1236	N-707	21.5	18	1	11.5	26	0	28.4	1	1	24.4	4	1
7	DBW245	N-708	13.2	36	0	10.1	30	0	18.5	28	0	20.1	22	0
8	NIAW3217	N-709	17.3	31	0	12.7	18	0	23.4	11	1	22.6	11	1
9	HI1628	N-710	25.5	6	1	11.0	27	0	25.1	5	1	19.5	24	0
10	CG1027	N-712	26.5	2	1	16.9	4	1	23.4	10	1	21.1	16	0
11	MP1334	N-713	22.2	13	1	13.7	9	0	22.6	14	0	17.4	30	0
12	MP3475	N-715	16.8	32	0	9.9	32	0	23.0	13	0	21.7	12	1
13	MP1331	N-716	21.1	19	1	16.1	6	1	22.0	16	0	21.2	15	0
14	K1616	N-717	21.8	17	1	13.1	15	0	18.0	30	0	16.2	32	0
15	DBW244	N-718	25.6	4	1	13.6	12	0	23.4	9	1	17.4	29	0
16	PBW775	N-719	18.0	29	0	12.5	21	0	26.0	4	1	23.1	8	1
17	HD3273	N-720	20.1	21	0	12.6	19	0	15.9	34	0	16.5	31	0
18	UP2988	N-721	22.1	14	1	10.2	29	0	19.2	25	0	21.6	13	1
19	HD3274	N-722	25.8	3	1	13.4	13	0	20.6	20	0	26.2	2	1
20	MACS6696	N-723	24.8	7	1	17.1	3	1	27.8	2	1	24.2	6	1
21	MP1332	N-724	22.1	14	1	13.1	16	0	20.5	21	0	21.0	17	0
22	K1615	N-725	13.9	35	0	8.7	35	0	18.1	29	0	15.3	33	0
23	HD3275	N-726	19.7	25	0	13.3	14	0	21.0	17	0	24.4	5	1
24	HP1967	N-727	18.6	28	0	14.2	8	0	24.3	8	1	22.7	9	1
25	MP1333	N-728	22.4	12	1	11.9	23	0	15.7	36	0	14.1	36	0
26	MACS6695	N-730	19.2	27	0	9.9	31	0	24.7	6	1	26.8	1	1
27	BRW3806	N-731	25.6	4	1	12.5	20	0	22.1	15	0	15.2	34	0
28	NW7008	N-732	27.0	1	1	17.1	2	1	27.1	3	1	23.5	7	1
29	UAS395	N-733	20.7	20	0	6.9	36	0	17.1	32	0	14.3	35	0
30	UAS394	N-734	20.1	21	0	11.7	24	0	17.4	31	0	17.4	28	0
31	PBW776	N-735	16.8	32	0	8.9	34	0	20.6	19	0	20.9	18	0
32	WH1235	N-736	22.1	14	1	10.2	28	0	20.4	23	0	20.4	20	0
33	WH1142(C)	N-701	20.1	21	0	11.6	25	0	19.5	24	0	19.7	23	0
34	DBW93(C)	N-711	24.0	8	1	12.9	17	0	16.4	33	0	22.6	10	1
35	DBW110(C)	N-714	19.3	26	0	16.7	5	1	24.4	7	1	18.3	26	0
36	HD2888(C)	N-729	24.0	8	1	13.6	11	0	23.3	12	1	17.7	27	0
Mean			21.1			12.6			21.2			20.4		
S.E.m			2.585			0.843			2.154			2.279		
C.D. (10%)			6.2			2.0			5.2			5.5		
C.V.			17.4			9.4			14.3			15.8		
D.O.S. (dd.mm.yyyy)			5.11.2016			10.11.2016			4.11.2016			8.11.2016		

**Trials proposed = 32**

**Trials not conducted (01) = Nippani**

**Trials not reported (09) = Karnal (RMT), Faizabad (RMT), Varanasi (RMT),  
 Bailhongal (RMT), Vijapur (LSM), Akola (LSM), Pune (LSM),  
 Dharwad (LSM), Kharibari (DNR)**

**1699-NIVT-5B-RI-TS-TDM-NAT-ZONE, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Code	Gujarat						Maharashtra						Karnataka	
			Dhandhuka		Arnej		Tanchha		Akola		Pune		Dharwad			
			Yield	RK G	Yield	RK G	Yield	RK G	Yield	RK G	Yield	RK G	Yield	RK G		
1	MACS4058	N-801	18.7	22 0	24.2	13 0	16.6	24 0	7.5	23 0	25.0	4 0	19.4	16 0		
2	MPO1336	N-802	23.9	13 0	23.4	14 0	26.9	4 1	14.2	3 1	18.4	22 0	28.5	1 1		
3	HI8804	N-803	21.1	17 0	28.6	6 1	20.7	17 0	10.1	12 0	18.6	21 0	19.9	15 0		
4	GW1343	N-804	29.2	1 1	30.6	1 1	24.5	9 1	8.0	20 0	23.0	9 0	16.5	21 0		
5	UAS466	N-805	24.3	11 0	24.4	12 0	23.3	13 0	9.8	13 0	22.8	12 0	22.9	7 1		
6	NIDW1099	N-806	19.6	18 0	18.4	24 0	23.9	11 1	9.3	18 0	20.4	16 0	20.9	10 0		
7	DDW45	N-807	17.2	25 0	20.8	23 0	27.0	3 1	14.0	4 0	22.3	14 0	26.2	4 1		
8	MPO1335	N-808	21.8	16 0	21.1	22 0	17.6	22 0	11.7	8 0	20.4	17 0	15.5	24 0		
9	HI8805	N-809	25.7	6 0	26.2	7 0	23.8	12 1	9.5	16 0	31.1	1 1	20.2	13 0		
10	MACS4059	N-810	19.3	21 0	22.0	20 0	21.3	16 0	9.4	17 0	23.0	10 0	19.3	17 0		
11	UAS467	N-811	19.5	19 0	18.0	25 0	14.1	25 0	8.6	19 0	15.9	25 0	18.9	18 0		
12	GW1346	N-812	27.4	3 0	28.6	5 1	19.0	20 0	11.9	7 0	24.7	6 0	26.9	2 1		
13	MACS4063	N-813	18.5	23 0	22.5	18 0	21.5	15 0	5.5	25 0	24.9	5 0	20.1	14 0		
14	NIDW1113	N-814	28.2	2 1	22.3	19 0	18.8	21 0	9.7	14 0	17.4	23 0	22.3	8 1		
15	GW1347	N-815	25.8	4 0	29.8	3 1	26.6	5 1	12.5	5 0	16.7	24 0	20.6	12 0		
16	DDW46	N-817	25.5	9 0	25.2	9 0	25.1	7 1	8.0	20 0	18.8	20 0	16.7	20 0		
17	HI8806	N-818	23.1	14 0	22.7	16 0	17.3	23 0	15.6	1 1	24.1	7 0	20.8	11 0		
18	HI8803	N-819	25.0	10 0	29.1	4 1	19.7	19 0	7.8	22 0	28.4	2 1	23.1	6 1		
19	HI8802	N-821	22.4	15 0	25.6	8 0	20.5	18 0	9.7	14 0	22.8	11 0	21.6	9 0		
20	MACS4062	N-822	25.7	5 0	22.5	17 0	24.4	10 1	11.2	9 0	23.4	8 0	24.2	5 1		
21	DDW47	N-823	19.4	20 0	22.7	15 0	24.9	8 1	10.7	11 0	21.2	15 0	16.3	23 0		
22	AKDW4896	N-824	18.5	24 0	21.5	21 0	23.1	14 0	7.2	24 0	25.4	3 0	26.3	3 1		
23	GW1344	N-825	25.6	8 0	30.4	2 1	29.5	1 1	12.4	6 0	18.9	19 0	14.8	25 0		
24	AKDW2997-16(C)	N-816	25.6	7 0	24.7	11 0	26.1	6 1	11.1	10 0	22.6	13 0	16.4	22 0		
25	HI8627(C)	N-820	24.0	12 0	24.8	10 0	28.1	2 1	14.3	2 1	20.3	18 0	16.8	19 0		
Mean			23.0		24.4		22.6		10.4		22.0		20.6			
S.E.m			0.503		1.194		2.602		0.580		2.287		2.309			
C.D. (10%)			1.2		2.9		6.3		1.4		5.5		5.6			
C.V.			3.1		6.9		16.3		7.9		14.7		15.9			
D.O.S. (dd.mm.yyyy)			26.10.2016		4.11.2016		8.11.2016		10.11.2016		4.11.2016		8.11.2016			

**Trials proposed & Conducted = 13**

**Trials not reported (07) = Bailhongal (RMT), Dhandhuka (LSM), Akola (LSM),  
Tanchha (LSM), Akola (LSM), Puna (LSM), Dharwad (LSM)**

**1613-AVT-RI-LS-TAS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttarakhand						Sikkim			Uttarakhand		
		Almora			Majhera			Gangtok			Ranichauri		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HS 646	13.4	10	0	11.4	9	1	9.9	4	1	12.9	3	0
2	HS 647	14.5	9	1	11.1	10	1	8.7	9	1	11.2	6	0
3	HS 648	18.0	2	1	11.5	8	1	10.4	2	1	8.9	9	0
4	HPW 448	13.1	11	0	10.6	11	0	9.8	6	1	10.3	8	0
5	HPW 449	14.9	8	1	13.7	3	1	8.3	11	1	8.6	10	0
6	VL 3013	15.2	7	1	14.3	2	1	9.1	8	1	11.9	5	0
7	VL 3014	18.2	1	1	14.9	1	1	8.5	10	1	11.2	6	0
8	VL 3015	16.4	4	1	12.9	4	1	9.6	7	1	8.6	10	0
9	UP 2993	15.9	6	1	12.3	7	1	11.2	1	1	13.2	2	0
10	VL 892(C)	16.3	5	1	12.7	5	1	9.8	5	1	15.2	1	1
11	HS 490(C)	17.2	3	1	12.6	6	1	10.1	3	1	12.2	4	0
G.M.		15.7			12.5			9.6			11.3		
S.E. (M)		1.645			1.614			1.735			0.649		
C.D. (10%)		3.9			3.8			4.1			1.6		
C.V.		15.4			18.9			35.2			11.2		
D.O.S. (d.m.y)		13.12.2016			2.12.2016			3.12.2016			9.12.2016		

Trials proposed = 10

Trial not conducted (1) = CAU Imphal

Trials not Reported (5) = Kalimpong (DNR), Almora (LSM),  
Majhera (LSM), Gangtok (LSM, HCV), Ranichauri (LSM)

**1615-AVT-RF-VHA-SUM-NHZ, 2016**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	J&K			HP		
		Leh-I			Sangla		
		Yield	Rk	G	Yield	Rk	G
1	VL 4002	1.8	4	0	1.4	6	0
2	HS 630	1.7	5	0	1.7	3	1
3	VL 4003	1.6	9	0	1.4	6	0
4	HS 629	1.7	7	0	1.6	4	1
5	HPW 434	2.1	2	1	1.6	4	1
6	DBW 179	2.0	3	1	2.1	1	1
7	DBW 204	2.1	1	1	1.2	9	0
8	HPW 438	1.7	6	0	1.8	2	1
9	HS 375 (C)	1.6	8	0	1.3	8	0
10	HS 490(C)	1.6	10	0	0.8	10	0
G.M.		1.8			1.5		
S.E.(M)		0.104			0.268		
C.D. (10%)		0.2			0.7		
C.V.		11.5			31.3		
D.O.S. (d.m.y)		27.05.2016			25.05.2016		

Trials proposed = 6

Trial not conducted (2) = Leh-II, Leh-III

Trials not Reported (2) = Leh-I (LSM),  
Sangla (LSM, HCV)

**1614-AVT-RF-ES-TAS-NHZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttarakhand		
		Almora		
		Yield	Rk	G
1	HPW439	9.3	4	0
2	HPW440	7.1	8	0
3	HS643	5.6	11	0
4	HS644	4.5	12	0
5	HS645	10.8	2	1
6	VL1011	11.9	1	1
7	VL1012	6.3	9	0
8	VL1013	8.4	6	0
9	UP2992	6.2	10	0
10	VL829(C)	8.5	5	0
11	HPW251(C)	7.9	7	0
12	HS542(C)	10.2	3	1
G.M.		8.1		
S.E. (M)		0.853		
C.D. (10%)		2.0		
C.V.		25.9		
D.O.S. (dd.mm.yyyy)		7.10.2016		

Trials proposed & conducted = 7

Trial not reported (2) = Bara-KVK (RMT),  
Almora (LSM, HCV)

1616-IVT-RF-TS-TAS-NHZ, 2016-17  
Locationwise Mean Yield (q/ha)

SN	Variety	Code	Uttarakhand			HP		
			Ranichauri			Dhaulakuan		
			Yield	Rk	G	Yield	Rk	G
1	HPW 441	NHIVT-1601	12.2	17	0	12.9	12	0
2	HPW 442	NHIVT-1602	16.1	9	0	11.2	22	0
3	HPW 443	NHIVT-1603	10.1	22	0	12.2	14	0
4	HPW 444	NHIVT-1604	8.9	24	0	12.0	15	0
5	HPW 445	NHIVT-1605	14.3	11	0	11.1	23	0
6	HPW 446	NHIVT-1606	18.5	3	1	11.7	17	0
7	HPW 447	NHIVT-1607	12.2	16	0	11.5	21	0
8	UP 2991	NHIVT-1608	17.3	7	1	11.7	18	0
9	HS 631	NHIVT-1609	14.0	13	0	14.9	3	1
10	HS 636	NHIVT-1610	16.7	8	0	10.8	24	0
11	HS 635	NHIVT-1611	16.1	9	0	11.6	20	0
12	HS 632	NHIVT-1612	17.6	6	1	14.5	7	1
13	HS 633	NHIVT-1613	18.6	2	1	14.7	6	1
14	HS 634	NHIVT-1614	10.7	19	0	12.6	13	0
15	HS 637	NHIVT-1615	13.1	14	0	13.8	9	1
16	UP 2990	NHIVT-1616	10.4	20	0	13.8	9	1
17	VL 2026	NHIVT-1617	14.3	11	0	14.7	5	1
18	VL 2027	NHIVT-1618	13.1	14	0	15.2	2	1
19	VL 2025	NHIVT-1619	18.8	1	1	15.3	1	1
20	VL 2029	NHIVT-1620	10.4	21	0	11.6	19	0
21	VL 2028	NHIVT-1621	11.9	18	0	14.1	8	1
22	VL 2030	NHIVT-1622	10.1	22	0	11.9	16	0
23	VL 907(C)	NHIVT-1623	17.9	5	1	14.9	4	1
24	HS 507(C)	NHIVT-1624	18.5	4	1	13.2	11	0
G.M.			14.2			13.0		
S.E. (M)			0.671			0.734		
C.D. (10%)			1.6			1.7		
C.V.			9.4			11.3		
D.O.S. (dd.mm.yyyy)			25.10.2016			22.10.2016		

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

1617-IVT-IR-TS-TAS-NHZ, 2016-17  
Locationwise Mean Yield (q/ha)

SN	Variety	Code	HP		
			Shimla		
			Yield	Rk	G
1	HPW 441	NHIVT-1601	32.0	3	1
2	HPW 442	NHIVT-1602	32.3	2	1
3	HPW 443	NHIVT-1603	28.4	10	0
4	HPW 444	NHIVT-1604	28.0	11	0
5	HPW 445	NHIVT-1605	23.4	21	0
6	HPW 446	NHIVT-1606	28.6	8	0
7	HPW 447	NHIVT-1607	30.5	5	1
8	UP 2991	NHIVT-1608	31.4	4	1
9	HS 631	NHIVT-1609	27.0	14	0
10	HS 636	NHIVT-1610	24.8	19	0
11	HS 635	NHIVT-1611	23.2	22	0
12	HS 632	NHIVT-1612	30.2	6	0
13	HS 633	NHIVT-1613	28.6	8	0
14	HS 634	NHIVT-1614	25.2	17	0
15	HS 637	NHIVT-1615	30.2	6	0
16	UP 2990	NHIVT-1616	24.8	18	0
17	VL 2026	NHIVT-1617	27.0	14	0
18	VL 2027	NHIVT-1618	24.6	20	0
19	VL 2025	NHIVT-1619	27.4	13	0
20	VL 2029	NHIVT-1620	33.4	1	1
21	VL 2028	NHIVT-1621	22.0	23	0
22	VL 2030	NHIVT-1622	21.3	24	0
23	VL 907(C)	NHIVT-1623	27.9	12	0
24	HS 507(C)	NHIVT-1624	25.5	16	0
G.M.			27.4		
S.E. (M)			1.249		
C.D. (10%)			2.9		
C.V.			9.1		
D.O.S. (dd.mm.yyyy)			12.11.2016		

Trials proposed & conducted = 5  
Trial not reported (2) = Malan (RMT),  
Shimla (LSM)

**1621-AVT-IR-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	HP			Rajasthan			Uttarakhand			Uttar Pradesh		
		Dhaulakuan			Jodhpur			Dhakrani			Bareilly		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW189	38.8	5	0	33.8	11	0	42.8	6	0	48.8	1	1
2	DBW196	39.4	4	1	31.4	12	0	44.1	3	0	48.5	3	1
3	PBW750	40.2	1	1	47.8	2	1	40.7	10	0	48.7	2	1
4	WH1202	38.4	6	0	46.9	4	1	42.6	7	0	47.3	5	0
5	HD3226	36.3	9	0	44.6	7	0	41.8	9	0	47.1	6	0
6	UP2942	39.8	2	1	39.5	9	0	43.5	4	0	45.5	8	0
7	HP1963	39.4	3	1	47.5	3	1	38.8	11	0	47.0	7	0
8	BRW3773	36.9	8	0	49.9	1	1	38.5	12	0	47.5	4	0
9	HD2967(C)	35.1	11	0	34.1	10	0	45.8	1	1	44.6	9	0
10	WH1105(C)	34.9	12	0	44.1	8	0	44.5	2	1	43.4	10	0
11	DBW88(C)	36.3	9	0	46.2	6	1	42.5	8	0	43.1	12	0
12	HD3086(C)	37.0	7	0	46.9	5	1	43.2	5	0	43.4	11	0
G.M.		37.7			42.7			42.4			46.2		
S.E. (M)		0.455			1.986			0.626			0.343		
C.D. (10%)		1.1			4.8			1.5			0.8		
C.V.		2.4			9.3			3.0			1.5		
D.O.S. (d.m.y)		11.11.2016			14.11.2016			18.11.2016			3.12.2016		

Trials proposed & conducted = 31

Trials not reported (7) = Tabiji (RMT), Bharatpur (RMT), Kotputli (RMT), Dhaulakuan (LSM), Jodhpur (LSM), Dhakrani (LSM), Bareilly (LS)

**1623-NWPZ-AVT-IR-LS-TAS, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Uttar Pradesh			Rajasthan		
		Moradabad			Durgapura		
		Yield	Rk	G	Yield	Rk	G
1	DBW173*	41.4	7	1	35.4	6	0
2	PBW752	51.3	3	1	47.7	2	1
3	HI1617	43.5	6	1	49.9	1	1
4	HD3059(C)	55.9	1	1	39.0	5	0
5	DBW90(C)	43.9	5	1	41.0	4	0
6	WH1021(C)	45.5	4	1	31.8	7	0
7	WH1124(C)	51.5	2	1	44.7	3	0
G.M.		47.6			41.4		
S.E. (M)		7.130			1.203		
C.D. (10%)		17.5			3.0		
C.V.		30.0			5.8		
D.O.S. (d.m.y)		15.12.2016			8.12.2016		

Trials proposed & conducted = 26

Trials not reported (7) = Bareilly (RMT), Alwar (RMT), Tabiji (RMT), Bharatpur (RMT), Durgapura (ES), Kotputli (RMT), Moradabad (HCV)

**1625-AVT-RI-TS-TAS-NWPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Haryana			Rajasthan		
		Uchani			Dausa		
		Yield	Rk	G	Yield	Rk	G
1	HD3237	45.1	8	0	30.7	1	1
2	HI1619	44.4	9	0	22.6	6	0
3	HI1620	50.4	3	0	22.6	6	0
4	CG1023	50.2	4	0	21.2	9	0
5	MP1318	52.4	2	0	27.0	4	0
6	MACS6677	48.5	5	0	21.6	8	0
7	WH1080 (C)	46.3	7	0	19.8	10	0
8	PBW644 (C)	42.6	10	0	29.0	3	0
9	HD3043 (C)	48.5	6	0	22.6	5	0
10	WH1142 (C)	60.1	1	1	30.5	2	1
G.M.		48.8			24.8		
S.E. (M)		1.976			0.542		
C.D. (10%)		4.8			1.3		
C.V.		8.1			4.4		
D.O.S. (d.m.y)		19.11.2016			5.11.2016		

Trials Proposed & Conducted = 17

Trial not reported (3) = Bharatpur (RMT), Uchani (LS), Dausa (LSM)

**1631-AVT-IR-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	West Bengal						Uttar Pradesh			Bihar		
		Kalyani			Majhian			Basti			IARI-Pusa		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DBW187	34.2	4	0	30.0	7	0	42.8	4	0	59.2	3	0
2	HD3219	38.4	1	1	30.6	6	0	36.6	7	0	63.0	1	1
3	HD2733(C)	32.6	6	0	38.1	5	0	47.5	2	0	59.3	2	0
4	K0307(C)	36.3	2	0	51.7	3	0	42.1	5	0	54.2	7	0
5	DBW39(C)	32.4	7	0	47.3	4	0	41.0	6	0	56.7	6	0
6	K1006(C)	35.3	3	0	71.7	1	1	53.4	1	1	56.9	5	0
7	HD2967(C)	33.8	5	0	57.3	2	1	45.7	3	0	58.2	4	0
G.M.		34.7			46.7			44.2			58.2		
S.E. (M)		0.540			6.677			0.130			0.178		
C.D. (10%)		1.3			16.4			0.3			0.4		
C.V.		3.1			28.6			0.6			0.6		
D.O.S. (d.m.y)		20.11.2016			25.11.2016			25.11.2016			18.11.2016		

Trials proposed = 29

Trials not conducted (5) = Baharaich, ICAR-Patna, Chirang-KVK, Barpeta-KVK & Dhubri

Trials not reported (8) = Purnea (RMT), Allahabad (RMT), Gumla-KVK (TF), KVK-Baxa (DNR), Kalyani (LSM), Majhian (HCV), Basti (LCV), Pusa (LCV)

**1634-AVT-RI-TS-TAS-NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha) Rejected (Not Reported)**

SN	Variety	Uttar Pradesh			Jharkhand			West Bengal					
		Tissuhi			Chianki			Manikchak			Kalyani		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HI1612*	12.5	5	0	25.4	3	1	31.3	1	1	35.9	4	0
2	HI1620	14.6	3	0	17.5	6	0	23.3	5	0	30.2	9	0
3	HS611	10.4	8	0	16.8	7	0	29.7	2	1	32.7	6	0
4	UAS384	16.5	2	1	26.6	1	1	22.1	7	0	31.4	8	0
5	HD2888(C)	12.5	5	0	19.1	5	0	15.6	8	0	36.1	3	0
6	C306(C)	18.3	1	1	26.3	2	1	15.5	9	0	36.5	2	1
7	K8027(C)	14.6	3	0	16.7	8	0	23.0	6	0	34.9	5	0
8	HD3171(I)(C)	6.3	9	0	16.7	8	0	24.3	3	0	37.2	1	1
9	K1317(I)(C)	12.5	5	0	25.1	4	1	23.5	4	0	32.3	7	0
G.M.		13.1			21.1			23.1			34.1		
S.E. (M)		0.949			1.070			1.584			0.418		
C.D. (10%)		2.3			2.6			3.8			1.0		
C.V.		14.5			10.1			13.7			2.4		
D.O.S. (d.m.y)		4.11.2016			10.11.2016			9.11.2016			17.11.2016		

Trials proposed = 18

Trial not conducted (1) = Barpeta-KVK

Trials not reported (8) = Faizabad (RMT), Basti-KVK (RMT), Purnea (RMT), KVK-Baxa (DNR), Tissuhi (LSM), Chianki (LSM), Manikchak (LSM), Kalyani (LS)

**1654-AVT-RI-TS-TAD-CZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	MP		Gujarat									
		Rewa		Junagarh		Anand		SK Nagar		Amreli			
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G		
1	BRW3775	57.6	4 1	20.7	2 0	38.9	4 1	60.4	1 1	50.0	4 0		
2	UAS385	61.2	1 1	18.7	4 0	43.9	2 1	59.2	3 1	50.8	2 1		
3	UAS462(d)	59.4	2 1	13.5	5 0	45.1	1 1	56.8	5 1	45.5	5 0		
4	HI8791(d)	53.8	7 1	11.7	7 0	38.9	5 1	56.7	6 1	39.0	7 0		
5	HI8627(d)(C)	56.3	5 1	12.0	6 0	33.3	6 0	54.8	7 1	41.0	6 0		
6	MP3288(C)	58.4	3 1	23.9	1 1	30.4	7 0	58.1	4 1	50.8	2 1		
7	DBW110(C)	55.7	6 1	20.0	3 0	41.2	3 1	59.8	2 1	56.5	1 1		
G.M.		57.5		17.2		38.8		58.0		47.6			
S.E. (M)		4.739		0.811		3.243		2.520		2.412			
C.D. (10%)		11.6		2.0		8.0		6.2		5.9			
C.V.		16.5		9.4		16.7		8.7		10.1			
D.O.S. (d.m.y)		22.11.2016		10.11.2016		22.11.2016		9.11.2016		17.11.2016			

Trials proposed & conducted = 18

Trial not reported (6) = Pratapgarh (RMT), Rewa (More Irrigation), Junagarh (LSM), Amreli (LS), Anand (LS), SK Nagar (UY)

**1661-AVT-IR-TS-TAD-PZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra								Karnataka		Maharashtra	
		Akola		Kolhapur		Mabaleshwar		K Digraj		Mandya		Pravarnagar	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1	DBW168*	37.8	2 0	45.7	1 1	46.5	5 0	43.7	1 1	24.6	4 0	28.8	1 1
2	MACS6478(C)	34.9	4 0	37.8	4 0	56.3	4 1	32.4	5 0	23.7	5 0	28.7	2 1
3	MACS6222(C)	39.6	1 1	32.2	5 0	58.3	3 1	33.8	3 0	26.0	2 1	27.5	3 1
4	GW322(C)	33.9	5 0	39.4	3 0	65.2	1 1	33.7	4 0	26.5	1 1	26.0	4 1
5	UAS304(C)	35.8	3 0	39.4	2 0	60.4	2 1	37.9	2 0	25.4	3 1	23.3	5 0
G.M.		36.4		38.9		57.3		36.3		25.2		26.9	
S.E. (M)		0.326		1.760		4.865		1.728		0.521		1.528	
C.D. (10%)		0.8		4.4		12.3		4.4		1.3		3.9	
C.V.		1.8		9.1		17.0		9.5		4.1		11.4	
D.O.S. (d.m.y)		15.11.2016		15.11.2016		5.11.2016		26.11.2016		11.11.2016		15.11.2016	

Trials proposed & conducted = 18

Trial not reported (8) = Mudhol (RMT), Amravati (RMT), Akola (LSM), Kolhapur (LSM), Mhabaleshwar (HCV), K.Digraj (LS, LSM), Mandya (LSM), Pravarnagar (LSM)

**1663-AVT-RF-TS-TAD-PZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra						Karnataka	
		Pune		Savalvahir		Niphad		Dharwad	
		Yield	Rk G	Yield	Rk G	Yield	Rk G	Yield	Rk G
1	UAS375*	14.6	2 0	10.1	2 0	11.5	5 0	13.8	1 1
2	HI8777(d)*	10.9	7 0	8.2	6 0	6.9	6 0	9.8	6 0
3	MACS4028(d)*	13.7	3 0	8.5	5 0	1.6	7 0	10.5	4 0
4	NI5439(C)	18.6	1 1	14.5	1 1	14.5	1 1	11.6	3 0
5	NIAW1415(C)	12.5	4 0	9.3	4 0	12.1	2 0	11.7	2 0
6	UAS446(d) (C)	12.5	5 0	7.7	7 0	11.7	4 0	10.2	5 0
7	AKDW2997-16(d) (C)	12.1	6 0	9.3	3 0	11.8	3 0	9.7	7 0
G.M.		13.5		9.7		10.0		11.0	
S.E. (M)		0.707		0.478		0.564		0.613	
C.D. (10%)		1.7		1.2		1.4		1.5	
C.V.		10.4		9.9		11.3		11.1	
D.O.S. (dd.mm.yyyy)		26.10.2016		18.10.2016		16.10.2016		19.10.2016	

Trials proposed & conducted = 10

Trials not reported (6) = Annigeri (TF), Washim (DNR), Pune (LSM), Savalvahir (LSM), Niphad (LSM), Dharwad (LSM)



1671-AVT-RI-TS/LS-TAS-SHZ, 2016-17  
Locationwise Mean Yield (q/ha)

SN	Variety	Tamilnadu Wellington-LS		
		Yield	Rk	G
1	UAS387	50.2	4	0
2	HW2044(C)	52.5	3	0
3	CoW(W)1(C)	54.9	2	0
4	HW5216(C)	67.6	1	1
G.M.		56.3		
S.E. (M)		0.995		
C.D. (10%)		2.5		
C.V.		4.3		
D.O.S. (d.m.y)		15.12.2016		

Trials proposed = 6

Trial not conducted (1) = HRS Yercaud  
Trial not reported (4) = CPRS-RS-Ooty (RMT),  
Munnar (TF), Kodaikanal (TF),  
Wellington-LS (ES)

1602-SPL-TCL-RF-TS-NHZ, 2016-17  
Locationwise Mean Yield (q/ha)

SN	Variety	HP		
		Dhaulakuan		
		Yield	Rk	G
1	TL3011	13.1	5	0
2	TL3012	13.4	3	1
3	TL3013	13.4	3	1
4	TL3014	11.5	8	0
5	TL3015	14.6	2	1
6	TL2942(C)	11.7	7	0
7	TL2969(C)	15.6	1	1
8	HS507(Aest)(C)	12.1	6	0
G.M.		13.2		
S.E. (M)		0.976		
C.D. (10%)		2.4		
C.V.		14.8		
D.O.S.(d.m.y)		22.10.2016		

Trials proposed = 9

Trials not reported (2) = Chamba (DNR)  
Dhaulakuan (LSM),

1672-IVT-RI-TS/LS-TAS-SHZ, 2016-17  
Locationwise Mean Yield (q/ha)

SN	Variety	Code	Tamilnadu Wellington-LS		
			Yield	Rk	G
1	UAS397	IVT-SHZ-101	65.8	13	0
2	HW5261	IVT-SHZ-102	71.6	9	0
3	HW5265	IVT-SHZ-103	88.1	2	1
4	HW5254	IVT-SHZ-104	87.8	3	1
5	UAS396	IVT-SHZ-105	61.3	17	0
6	HS641	IVT-SHZ-106	80.7	5	0
7	HW5053	IVT-SHZ-109	73.6	8	0
8	HS639	IVT-SHZ-111	86.6	4	1
9	HS638	IVT-SHZ-112	76.9	6	0
10	MACS6706	IVT-SHZ-113	67.3	12	0
11	HS642	IVT-SHZ-114	88.6	1	1
12	HS640	IVT-SHZ-115	62.7	15	0
13	HW5054	IVT-SHZ-116	70.9	10	0
14	HW5255	IVT-SHZ-117	62.3	16	0
15	HW5052	IVT-SHZ-118	76.0	7	0
16	HW2044(C)	IVT-SHZ-107	58.2	18	0
17	CoW(W)1(C)	IVT-SHZ-108	64.2	14	0
18	HW5216(C)	IVT-SHZ-110	70.2	11	0
G.M.			72.9		
S.E. (M)			1.535		
C.D. (10%)			3.6		
C.V.			4.2		
D.O.S. (dd.mm.yyyy)			15.12.2016		

Trials proposed = 6

Trial not conducted (01) = HRS, Yercaud  
Trials not reported (04) = CPRS-RS-Ooty (RMT),  
Munnar (TF), CSWRI-SRRC-Kodaikanal (TF),  
Wellington-LS (ES)

**1605-SPL-AST-IR-TS-TAS-ALL ZONES, 2016-17**  
**Locationwise Mean Yield (q/ha) Rejected (Not Reported)**

SN	Variety	Haryana			Uttar Pradesh			Rajasthan			Uttar Pradesh		
		CSSRI Karnal			Kaushambi-KVK			Vanasthali			Lucknow		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	KRL370	39.6	9	0	52.0	4	0	49.0	5	0	29.1	7	0
2	KRL377	46.3	3	1	50.4	6	0	53.3	3	1	19.9	11	0
3	KRL384	42.0	7	1	50.8	5	0	41.7	10	0	31.2	4	0
4	KRL386	48.2	1	1	54.8	2	0	52.6	4	1	34.4	1	1
5	DBW246	47.8	2	1	62.5	1	1	55.6	1	1	33.8	2	1
6	DBW247	40.2	8	0	41.4	10	0	54.7	2	1	33.0	3	1
7	DBW248	42.8	5	1	42.8	9	0	48.1	6	0	21.8	10	0
8	WH1316	39.5	10	0	47.7	7	0	45.8	8	0	26.9	8	0
9	KRL210(C)	45.3	4	1	52.7	3	0	46.5	7	0	30.5	5	0
10	Kharchia65(C)	25.1	11	0	44.3	8	0	45.1	9	0	29.8	6	0
11	KRL19(C)	42.2	6	1	40.1	11	0	36.8	11	0	23.5	9	0
G.M.		41.7			49.0			48.1			28.6		
S.E. (M)		3.115			0.249			2.329			0.727		
C.D. (10%)		7.4			0.6			5.5			1.8		
C.V.		21.1			1.4			15.0			7.2		
D.O.S. (d.m.y)		17.11.2016			26.11.2016			20.11.2016			3.12.2016		

Trial proposed = 16

Trials not conducted (2) = Bawal & IIWBR-Hisar

Trials not reported (4) = CSSRI-Karnal (UY), Kaushambi-KVK (UY),  
 Vanasthali (UY, LS), Lucknow (LS)

**16-SPL-VLS-TAS-NWPZ/NEPZ, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Haryana			Uttar Pradesh			West Bengal		
		Hisar			Ujhani			Coochbehar		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	HD3271	37.4	6	0	14.4	13	0	19.8	2	0
2	HD3272	32.8	12	0	17.1	10	0	19.3	3	0
3	HI1621	36.4	7	0	20.6	1	1	17.1	6	0
4	WH1232	39.0	3	1	16.6	12	0	15.6	9	0
5	WH1233	39.1	2	1	11.2	14	0	16.8	7	0
6	PBW757	37.5	5	0	17.7	7	0	15.5	10	0
7	PBW777	38.9	4	0	18.4	5	0	14.1	11	0
8	PBW778	34.8	11	0	17.4	8	0	18.6	4	0
9	DBW249	29.9	14	0	19.0	3	1	22.2	1	1
10	DBW250	34.9	10	0	16.8	11	0	9.3	14	0
11	DBW251	31.6	13	0	17.9	6	0	17.2	5	0
12	WR544(C)	35.8	9	0	18.5	4	0	9.7	13	0
13	DBW14(C)	36.2	8	0	19.0	2	1	11.5	12	0
14	DBW71(C)	40.7	1	1	17.4	9	0	16.6	8	0
G.M.		36.0			17.3			16.0		
S.E. (M)		0.737			0.801			0.911		
C.D. (10%)		1.8			1.9			2.2		
C.V.		4.1			9.3			11.4		
D.O.S. (d.m.y)		11.12.2016			8.1.2017			6.1.2017		
Trials proposed & conducted = 21										
Trials not reported (6) = Modipuram (RMT), Pantnagar (RMT), Moradabad-KVK (RMT), Hisar (ES), Ujhani (LSM), Coochbehar (LSM)										

**1608-SPL-DIC-IR-TS-ALL ZONES, 2016-17**  
**Locationwise Mean Yield (q/ha)**

SN	Variety	Maharashtra			Karnataka			Tamilnadu			Maharashtra		
		K Digraj			Mandya			Paiyur			Mahableshwar		
		Yield	Rk	G	Yield	Rk	G	Yield	Rk	G	Yield	Rk	G
1	DDK1052	30.2	7	0	22.1	6	0	35.1	7	0	60.8	5	1
2	DDK1053	46.0	2	1	25.0	3	1	42.7	1	1	71.7	1	1
3	MACS5047	46.0	3	1	22.3	5	0	37.3	5	0	65.0	3	1
4	MACS5049	49.7	1	1	25.9	2	1	42.1	2	1	53.1	6	0
5	HW1098(C)	40.2	5	0	26.1	1	1	37.3	4	0	70.8	2	1
6	DDK1029(C)	34.1	6	0	23.6	4	0	35.7	6	0	61.4	4	1
7	MACS6222 (Aest.)(C)	40.5	4	0	21.4	7	0	38.0	3	0	44.7	7	0
G.M.		41.0			23.8			38.3			61.1		
S.E. (M)		2.029			0.851			0.748			7.208		
C.D. (10%)		5.0			2.1			1.8			18.2		
C.V.		9.9			7.2			3.9			20.4		
D.O.S. (dd.mm.yyyy)		22.11.2016			11.11.2016			26.11.2016			5.11.2016		

Trial proposed & conducted = 13

Trials not reported (5) = Mudhol (RMT) K.Digraj (LS), Mandya (LSM),  
Paiyur (LS), Mahableshwar (HCV)

## Appendix - II

# Zonal Monitoring Report

## Northern Hills Zone

**Team – I**

**Period of visit:** 11-14<sup>th</sup> April, 2017

**Name of team members:**

Name	Centre
Dr Chunni Lal	ICAR-IIWBR, Karnal
Dr Lakshmi Kant, Dr K K Mishra	ICAR-VPKAS, Almora
Dr Dharendra Singh	CSK HPKV, HAREC Dhaulakuan
Dr Madhu Patial	ICAR-IARI RS, Tutikandi, Shimla

**Centres visited:** Ranichauri, Majhera and Hawalbagh

**Breeding trials allocated & monitored:**

Centre		Trial	Remark
Ranichauri	Wheat	IVT-TS-RF, IVT/AVT-LS-RI	Good conduct
	Triticale	SPL-TCL- TS-RF	
Majhera	Wheat	IVT/AVT-ES-RF, IVT/AVT-LS-RI	
Hawalbagh	Wheat	IVT/AVT-ES-RF, IVT/AVT-LS-RI, IVT-TS-RF&RI	

**Trials not conducted/rejected by monitoring team:** Nil

**Entries recommended for purification:**

Trial	Entry	Remarks
IVT-TS-RF &IR	NHIVT 1604	Few non-waxy plants
	NHIVT 1608	Few tall plants
	NHIVT 1617	Few awnless plants
	NHIVT 1619	Few tall plants
	NHIVT 1622	Few awnless plants
IVT/AVT-LS-RI	HS 647, HPW 448	Few tall plants
SPL-TCL-RF-TS	TL 3012	Ear shape variation

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remarks
IVT-TS-RF & IR	NHIVT 1605	Segregating for height and maturity

**Entries exhibiting higher diseases/insect infestation:**

Entry	Disease response
HS 490	YI (20S) in IVT/AVT-LS-RI at Ranichauri

**Report on Agronomical Trials:**

Centre	Trial	Remark
Hawalbagh	SPL-1- Evaluation of herbicides in wheat	Conducted properly but no weed infestation in weedy check.
	SPL-2 - Management of lodging nutrient expert	Conducted properly, treatment effects were visible
	SPL-4 Validation of LCC	Conducted properly, treatment effects were visible
	SPL-12 Precision nutrient management in wheat	Conducted properly, treatment effects were visible

**Report on Pathological Nurseries:**

<b>Centre</b>	<b>Nursery</b>	<b>Remark</b>
Hawalbagh	LSSN	Conducted properly and disease pressure was very good.
	PMSN, MDSN, EPPSN, SAARC, HBSN	Conducted properly but disease pressure was less.

**Special comments, if any**

1. Conduct of all trials at Ranichauri was very good. The crop was still in flowering stage, data may be expected by the end of June.
2. Due to no rains, in general disease pressure was less.

**Signature of the monitoring team**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
(Chunni Lal)      (Dhirender Singh)      (Madhu Patial)      (KK Mishra)      (Lakshmi Kant)

## Northern Hills Zone

### Team-II

**Period of visit:** 18-21<sup>st</sup> April, 2017

### Name of team members:

Name	Centre
Dr Dharam Pal	ICAR-IARI Regional Station, Tutikandi Centre, Shimla
Dr Vijay Rana	CSK-HPKV, RWRC, Malan, HP
Dr Naval Kishore	CSK-HPKV, HAREC, Bajaura, HP
Dr Hanif Khan	ICAR-IIWBR, RS, Shimla, HP
Dr PL Kashyap	ICAR-IIWBR, Karnal

**Centres visited:** Shimla, Berthin, Akrot, Una, Bara, Kangra, Malan, Palampur, Bajaura, Katrain

### Breeding trials allocated & monitored:

Centre	Crop	Trial	Remark*
Shimla	Wheat/Triticale	IVT/AVT-RF-ES, IVT-RF & IR-TS, IVT/AVT-RI-LS, SPL-TCL-RF-TS	Good
Berthin	Triticale	SPL-TCL-RF-TS	
Una	Wheat	IVT/AVT-RF-ES	Good
Akrot	Triticale	SPL-TCL-RF-TS	Good
Bara	Wheat	IVT/AVT-RF-ES	Average
Malan	Wheat/Triticale	IVT/AVT-RF-ES, IVT-RF & IR-TS, IVT/AVT-RI-LS, SPL-TCL-RF-TS	Good
Bajaura	Wheat/Triticale	IVT/AVT-RF-ES, IVT-RF & IR-TS, IVT/AVT-RI-LS, SPL-TCL-RF-TS	

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

### Trials not conducted / rejected by monitoring team:

Centre	Crop	Trial	Remark
Bara	Wheat	IVT/AVT-RF-ES	Date of sowing was not in accordance to the specified date and the trial (replication number II and III) was damaged by wild animals. The trial was conducted only in four replications instead of six.
Malan	Wheat	IVT-IR-TS	Trial was rejected due to poor crop stand.

### Entries showing promising performance in breeding trials:

Trial	Entry	Remarks
IVT/AVT-ES-RF	HS 643, VL 1013 and HPW 439	Good agronomic score
IVT-RF & IR-TS	NHIVT 1602, NHIVT 1609, NHIVT 1614	
IVT/AVT-RI-LS	VL 3013 and HS 648	

### Entries recommended for purification:

Trial	Entry	Remarks
IVT/AVT-ES-RF	HPW440 and VL1012	Few off types
IVT-RF & IR-TS	NHIVT-1605	Few off types for height and maturity
	NHIVT-1608	Few off types for height and awn colour
IVT/AVT-RI-LS	HPW448	Few off types for ear pubescence
SPL-TCL-RF-TS	TL 3012 and TL 3014	Few off types and glume colour

### Entries recommended to be dropped from further testing:

Trial	Entry	Remark
IVT-RF & IR-TS-TAS	NHIVT-1604	Mixture, variation for spike colour, height and waxy/non-waxy ears

SPL-TCL-RF-TS	TL 3011	Mixture, variation for height, ear colour and awn colour
	TL 3013	Mixture, variation for height, ear colour and variation for ear waxiness
	TL 3015	Variation for height and spike colour

**Entries exhibiting higher diseases incidence / insect infestation:**

Trial	Entry	Remarks
IVT/AVT-ES-RF	UP2992	30S Yellow rust
	HS644	20S Yellow Rust
	VL1013	20S Brown Rust
IVT-RF&IR-TS	NHIVT-1607	30S Brown rust
	NHIVT-1603, NHIVT-1615, NHIVT-1620 and NHIVT-1622	20S Brown rust
IVT/AVT-RI-LS	UP2993	Powdery Mildew Score:7

**Report on Agronomical Trials:**

Centre	Trial	Remark
Malan	SPL 1, SPL 2, SPL 4, SPL 12	Nicely conducted and responses were visible
Bajaura	SPL 1, SPL 2, SPL 4, SPL 12	Nicely conducted and treatment effects were visible

**Report on Pathological Nurseries:**

Centre	Nursery	Remark (Resistant entries)
HAREC, Bajaura	PPSN (NIVT)	N-1A-101, N-1A-102, N-1A-113, N-1A-114, N-1A-122, N-1A-123, N-1A-132, N-1A-133, N-2-304, N-2-313, N-2-317, N-3B-508, N-3B-515, N-3B-523, N-3B-528, N-3B-529, N-5A-707, N-5A-708, N-5A-715, N-5A-724, N-5A-728, N-5A-735, N-5A-736, N-5B-806, N-5B-807, N-5B-808, N-5B-813, N-5B-814, N-5B-817, N-5B-818, N-5B-823, NHIVT-1605, NHIVT-1606, NHIVT-1607, NHIVT-1615, NHIVT-1616, NHIVT-1621, NHIVT-1622, NHIVT-1623, NHIVT-1624, SHIVT-106, SHIVT-111, SHIVT-112, SHIVT-114
	PPSN (AVT-I)	HPW 439, HPW 440, HPW 448, HS 629, HS 630, HS 645, HS 646, VL 1011, VL 1012, VL 3013, VL 3014, DBW 196, HD 3226, HP 1963, HS 611, MACS 6677, UP 2942, WH 1202, BRW 3775, UAS 462 (d), DBW 248, KRL 384, KRL 386, PBW 779, WH 1316, TL 3011, TL 3012, HD 3271, PBW 778, WH 1232, VHA-03, VHA-06, VHA-09
	PPSN (AVT-II)	DBW 173, WH 1105 (C), HI 1612, K 0307 (C), HI 8777 (d), TL 2942 (C), TL 2969 (C)
Malan	PPSN (NIVT)	N-1A-102, N-1A-110, N-1A-112, N-1A-115, N-1A-124, N-1A-130, N-1A-131, N-1A-134, N-1A-146, N-1A-147, N-1A-149, N-1B-201, N-1B-216, N-1B-217, N-1B-219, N-1B-223, N-1B-224, N-1B-227, N-2-313, N-2-325, N-3A-407, N-3A-421, N-3A-428, N-3B-520, N-3B-528, N-4-601, N-4-603, N-4-605, N-4-607, N-4-609, N-4-610, N-4-611, N-4-613, N-4-614, N-4-615, N-4-617, N-4-621, N-4-622, N-4-624, N-4-625, N-4-626, N-4-628, N-4-631, N-4-632, N-4-633, N-4-635, N-4-636, N-5A-710, N-5A-728, N-5A-735, N-5A-736, N-5B-801, N-5B-805, N-5B-806, N-5B-809, N-5B-811, N-5B-813, N-5B-814, N-5B-815, N-5B-817, N-5B-818, N-5B-820, N-5B-821, N-5B-822, N-5B-823, N-5B-824, NHIVT-1601, NHIVT-1602, NHIVT-1604, NHIVT-1608, NHIVT-1610, NHIVT-1612, NHIVT-1613 and NHIVT-1615



	AVT-I	HS 645, HS 648, UP 2993, VL 1011, VL 3013, VL 3014, VL 4003, BRW 3773, VL 1011, VL 3013, VL 3014, VL 4003, BRW 3773, CG 1023, HD 3237, HI 1617, HI 1619, PBW 750, PBW 752, WH 1202, HD 3219, DBW 247, DBW 248, PBW 780, TL 3011, TL 3012, DBW 249, PBW 757, PBW 777 and VHA-09
	AVT-II	HS 507(C), MP 3288(C), HI 8777(d) and UAS 446(C)
Shimla	PMSN	DDK 1053 and KRL 370

**Special comments, if any –** One agronomist to be included in the monitoring team.

**Signature of the monitoring team members**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
(Dharam Pal)            (PL Kashyap)            (Vijay Rana)            (Naval Kishore)            (Hanif Khan)

## North Western Plains Zone

**Team - I**

**Period of visit:** 7-11<sup>th</sup> March, 2017

**Name of team members:**

Name	Centre
Dr Hoshiyar Singh, Pr. Scientist	RARI, Durgapura
Dr RS Chhokar, Pr. Scientist	ICAR-IIWBR, Karnal
Dr PS Shekhawat, Wheat Pathologist	RARI, Durgapura
Dr K Venkatesh, Scientist	ICAR-IIWBR, Karnal

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

**Breeding trials allocated & monitored:**

Centre	Trial	Remark
Bikaner	AVT-IR-TS	Satisfactorily conducted
Jodhpur	AVT-IR-TS	Satisfactorily conducted
Pali	SPL-AST and ALK/Sal Nursery	Satisfactorily conducted
Tabiji	AVT-IR-TS and AVT-IR-LS	Both trials had poor crop stand due to grazing by wild animals
Diggi	AVT-RI-TS and NIVT-5A	Satisfactorily conducted
Vanasthali	SPL-AST and ALK/Sal Nursery	Satisfactorily conducted, crop seems to be at par to timely sown irrigated condition. The team observed lack of salinity condition. IR-TS trial may be considered for allocation from next year
Durgapura	AVT-IR-TS, AVT-IR-LS, NIVT-1A, NIVT-1B, NIVT-3A	Satisfactorily conducted
Dausa	AVT-RI-TS	Satisfactorily conducted
Bharatpur	AVT-IR-TS, AVT-IR-LS	Plant stand was very poor due to patchy germination in IR-TS and wild animal grazing in IR-LS
Alwar	AVT-IR-TS	Satisfactorily conducted
Kotputli	AVT-IR-TS, AVT-IR-LS	Sowing was delayed and layout was also vitiated

**Trials rejected by monitoring team:**

Centre	Trial	Remark
Tabiji	AVT-IR-TS, AVT-IR-LS	Rejected due to poor crop stand and grazing by wild animals
Bharatpur	AVT-IR-TS, AVT-IR-LS	Rejected due to very poor plant stand in IR-TS and wild animal grazing in IR-LS
Alwar	AVT-IR-LS-TAS	Rejected due to poor crop stand
Kotputli	AVT-IR-TS, AVT-IR-LS	Rejected due to delayed sowing, patchy crop stand and vitiated layout (9 rows instead of 12)

**Entries recommended for purification:**

Trial	Entry	Remark
AVT-IR-TS	UP2942	Ear variations at all locations for waxy and non-waxy ears
	HD2967(C)	Mixture of ear type and height variations

NIVT-1A	N-101, 103, 104, 105, 125, 130, 131	Segregation for rust reaction
	N-107, 109, 139, 142	Variation for maturity duration and ear type
NIVT-1B	N-202, 204, 208, 212, 218, 221, 222, 230, 231, 239, 241, 243, 244, 245	Mixture of ear type and height variations
NIVT-3A	N-420, 425, 433	Segregation for rust reaction, waxy and non-waxy ears
NIVT-5A	N-701, 706, 709, 727, 728, 731	Variation for maturity duration, height and ear type

#### Entries found promising:

Trial	Entry
AVT-IR-TS	WH1202
AVT-IR-LS	PBW752
AVT-RI-TS	MP1318
NIVT-1A	N-108, 113, 120, 123, 146
NIVT-1B	N-220, 225, 234, 239
NIVT-3A	N-405, 412, 417, 418, 428
NIVT-5A	N-704, 711, 714, 720
ALK/SAL	KRL370, DBW248

#### Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-112, 134	Variation for plant height, maturity and ear type
NIVT-3A	N-403	
NIVT-5A	N-715	

#### Entries exhibiting higher diseases incidence / insect infestation:

Heavy stripe rust incidence was observed at only Durgapura centre

Trial	Entry
AVT-IR-TS	DBW189 (60S), DBW196 (60S), UP2942 (60S), HP1963 (20S), HD2967 (80S), WH1105 (80S), DBW88 (80S)
AVT-IR-LS	DBW173 (10S), HP1617 (20S), HD3059 (40S), WH1021 (60S)
NIVT-1A	40S (N-104, 116, 130, 136, 137), 60S (N-119, 122, 127, 148)
SPL-MABB	80S (HD 2967, PBW 550, DBW 88, WH 1105)

#### Report on Agronomical Trials:

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

#### Report on Pathological Nurseries:

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

#### Report on Physiology Trials:

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

**Special comments, if any**

1. For proper crop stand there is need for providing precision plot drill to different centres
2. Irrigated timely sown trial may be allocated to Vanasthali centre instead of Sal/Alk trial, as the centre has proper irrigation and healthy soil condition
3. No disease incidence was observed in farmers' fields

**Signature of the monitoring team members**

-sd-  
(Hoshiyar Singh)

-sd-  
(RS Chhokar)

-sd-  
(PS Shekhawat)

-sd-  
(K Venkatesh)

## North Western Plains Zone

### Team - II

**Period of visit:** 15-18<sup>th</sup> March, 2017

#### Name of team members:

Name	Centre
Dr VS Sohu	PAU, Ludhiana
Dr Kiran Gaikwad	IARI, New Delhi
Dr MS Saharan	IARI, New Delhi
Dr SC Gill	ICAR-IIWBR, Karnal

**Centres visited:** Delhi, Shikohpur, Bawal, Hisar, Hanumangarh, Srigananagar, Bathinda, Karnal

#### Breeding trials allocated & monitored:

Location	Trial	Observations
Delhi	AVT-IR-TS-TAS	Trial conduct was very good, Lodging in some plots
	AVT-IR-LS-TAS, AVT-RI-TS-TAS	Trial conduct was very good
	NIVT-1A, NIVT-1B	Trial conduct was very good, Lodging in some plots
	NIVT-3A, NIVT-5A-RI, SPL-MABB, SPL-VLS-TAS	Trial conduct was very good
Shikohpur	AVT-IR-TS-TAS	
Bawal	AVT-IR-TS-TAS, AVT-RI-TS-TAS	
	SPL-AST	Not conducted
Hisar	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Trial conduct was very good
	AVT-RI-TS-TAS, NIVT-1A	
	NIVT-1B, NIVT-3A, NIVT-5A-RI	
	SPL-MABB, SPL-VLS-TAS	
	SPL-AST	Trial conduct was very good. Salinity stress not apparent except few plots in R1.
Hanumangarh	AVT-IR-TS-TAS	Trial conduct was average, less tillering (low inputs)
	AVT-IR-LS-TAS	Trial conduct was good
	AVT-RI-TS-TAS	Good crop condition, relatively high yield expected. One extra irrigation was given due to sandy soil.
Srigananagar	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Trial conduct was very good
	AVT-RI-TS-TAS	Trial was good, improper randomization
	SPL-MABB	
Bathinda	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Trial conduct was very good
Karnal	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Trial conduct was very good
	NIVT-1A, NIVT-1B, NIVT-3A	Trial grazed by wild animals
	NIVT-5A	
	SPL-MABB, SPL-VLS-TAS	Trial conduct was very good

#### Trials not conducted / rejected by monitoring team:

Location	Trial	Remarks (reason for rejection)
Bawal	SPL-AST	Not conducted due to construction of building in suitable field

Karnal	NIVT-5A	Trial grazed by wild animals
	MLHT -1 & 2	Poor germination in many plots under late sown conditions.

**Entries showing promising performance in breeding trials:**

<b>Trials</b>	<b>Entries</b>
AVT-IR-TS-TAS	HD 3226, PBW 750
NIVT-1A	N-103, -113, -114, -118, -124, -128, -131, -132, -138, -141, -142, -146
NIVT-1B	N-203, -206, -211, -213, -220, -224, -226, -231, -238, -245
NIVT-3A	N-405, -408, -413, -415, -418, -427, -428, -431
NIVT-5A-RI	N-701, -708, -713, -714, -725, -730, -733
SPL-MABB/NIL	PBW 780
SPL-AST	KRL 370, KRL 386, DBW 247, DBW 248, WH 1316, KRL 210
SPL-VLS-TAS	WH 1233, PBW 757

**Entries recommended for purification:**

<b>Trial</b>	<b>Entry</b>
AVT-IR-TS-TAS	UP 2942, DBW 196, WH 1202
NIVT-1A	N-107, -112, -115, -134, -135, -136, -138, -145, -148
NIVT-1B	N-202, -203, -204, -208, -212, -221, -230, -237, -241, -245, -249
NIVT-3A	N-403, -414, -422, -423, -433
NIVT-5A-RI	N-703, -704, -712, -715, -717, -719, -728, -733, -735
SPL-AST	KRL 384, DBW 246

**Entries recommended to be dropped from further testing:**

<b>Trial</b>	<b>Entry</b>
NIVT-1B	N-204
NIVT-5A	N-706

**Entries exhibiting higher disease/insect infestation:**

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

<b>Trial</b>	<b>Entries with stripe rust <math>\geq 10S</math></b>	<b>Entries with leaf rust <math>\geq 10S</math></b>
AVT-IR-TS-TAS	DBW 189, DBW 196, HD 2967, DBW 88, WH 1105	
AVT-IR-LS-TAS	HD 3059, WH 1021	
AVT-RI-TS-TAS	CG 1023, MP 1318, PBW 644, HD 3043	
NIVT-1A	N-104, -107, -108, -109, -116, -117, -122, -127, -130, -134*, -136, -137, -142, -143, -148	
NIVT-1B	N-202, -205, -207, -208, -209, -212, -214, -215, -216, -217, -219, -222, -224, -226, -229, -232, -233, -234, -235, -237, -240, -241, -242, -243, -244, -246, -248	N-236
NIVT-3A	N-404, -409, -416, -417, -422, -425, -426, -429, -432, -435, -436	
NIVT-5A	N-706, -711, -712, -714, -720, -723, -727, -730, -733, -734	
SPL-AST	KRL 377, Kharchia 65, KRL 19	
SPL-MABB/NIL	PBW 550, HD 2967, DBW 88, WH 1105	
SPL-VLS-TAS	WR 544	

**Report on Agronomical Trials:**

All the agronomic trials allotted to Delhi, Hisar, Sriganaganagar and Karnal were conducted and found in good condition.

Centre	Trial	Remarks
Delhi	IR-LS-TAS-DOS	Trial was very good
Hisar	IR-LS-TAS-DOS, SPL -1, 2, 4, 6, 7,10 and 12	Trials were very good
Sriganganagar	IR-LS-TAS-DOS	Trial was very good
Karnal	IR-LS-TAS-DOS, SPL-1, 2, 4, 5, 6, 7,10 and 12	Trials were very good

#### Report on Pathological nurseries

Centre	Trial	Remarks
Delhi	All allotted nurseries	Very good incidence of stripe rust under artificially inoculated condition
Hisar	All allotted nurseries	Moderate incidence of stripe rust and low incidence of leaf rust
Karnal	All allotted nurseries	Very good incidence of stripe rust under artificially inoculated condition

#### Report on Physiology Trials MLHT-1 & 2

Centre	Trial	Remarks
Delhi, Hisar	MLHT-1 & 2	Trial conducted properly
Karnal	MLHT-1 & 2	Poor germination in some plots under late sown conditions

#### Special comments, if any

1. The advanced varietal trials (AVTs) should, depending on number of test entries, preferably be planted in at least two tiers per replication such that the replication or block is as compact as possible. Evaluation of entries in a single tier may vitiate results due to soil heterogeneity.
2. Leaf rust development in plant pathological nurseries was very low at all centres till March 18, 2017
3. Overall the crop performance was good at farmers' fields and crop lodging was negligible.

#### Signature of the monitoring team members

-sd-  
(VS Sohu)

-sd-  
(MS Saharan)

-sd-  
(Kiran Gaikwad)

-sd-  
(SC Gill)

## North Western Plains Zone

**Team - III**

**Period of visit:** 15 -18<sup>th</sup> March, 2017

**Name of team members:**

Name	Centre
Dr BS Tyagi, Principal Scientist	IIWBR, Karnal
Dr JP Jaiswal, Wheat Breeder	GBPUA&T, Pantnagar
Dr Vikram Singh, Wheat Breeder	HAU Hisar
Dr Vaibhav Singh, Scientist Pathology	IARI Delhi
Dr HR Saharan, Agronomist	PAU, Ludhiana

**Centres visited:** Pantnagar, Bareilly, Kashipur, Ujhani, Nagina, Bulandshahr, Moradabad, Modipuram, KVK-Rampur

**Breeding trials allocated & monitored:**

Centre	Trial	Remark*
Pantnagar	AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A, SPL-VLS-TAS-NWPZ, SPL-MABB-IR-TS-NWPZ	Very good except VLS
Kashipur	AVT-IR-TS-TAS, SPL-VLS-TAS-NWPZ	Very good
Nagina	AVT-IR-TS-TAS, AVT-IR-LS-TAS, SPL-VLS-TAS-NWPZ	Very good
KVK-Moradabad	AVT-IR-LS-TAS, SPL-VLS-TAS-NWPZ	Good except VLS
KVK-Rampur	AVT-IR-TS-TAS, AVT-IR-LS-TAS, SPL-VLS-NWPZ	Very good
State farm, Bareilly	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Very good
Ujhani	AVT-IR-LS-TAS, SPL-VLS-TAS-NWPZ	Very good
Bulandshahr	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, SPL-VLS-TAS-NWPZ, SPL-MABB-IR-TS-NWPZ	Very good
Modipuram	AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, SPL-VLS-TAS-NWPZ, SPL-MABB-IR-TS-NWPZ	Very good except VLS

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

**Trials rejected by monitoring team:**

Location	Trial	Remarks (reason for rejection)
KVK, Bellary (Moradabad)	SPL-VLS	Poor germination
Pantnagar		Weedy & sparse germination
Modipuram		Very poor germination in many plots
Bareilly	AVT-IR-LS	Sown early at par with timely sown

**Entries showing promising performance in breeding trials:**

Trial	Entry
AVT-IR-TS-TAS	WH 1202
AVT-IR-LS-TAS	DBW 173, PBW 752, HI1617
AVT-RI-TS-TAS	MP 1318, MACS 6677
NIVT-1A	N-117, N-120, N-123, N-124, N-135, N-145
NIVT-1B	N-210, N-214, N-223, N-234, N-241
NIVT 3A	N-404, N-408, N-416, N-417, N-418
NIVT-5A	N-711, N-713, N-720, N-735



SPL-VLS-TAS-NWPZ	HI 1621, DBW 249, PBW 777
SPL-MABB-IR-TS-NWPZ	PBW 779

**Entries recommended for purification:**

Trial	Entry	Remark
AVT-IR-TS-TAS	UP 2942, BRW 3773	High mixture, segregation
AVT-IR-LS-TAS	HI 1617	Height/ maturity variation
AVT-RI-TS-TAS	HD 3237	
NIVT-1A	N-140	
NIVT-1B	N-204	
NIVT-3A	N-422, 409, 412, 422, 435	
SPL-MABB-IR-TS-NWPZ	PBW 780	
NIVT-5A	N-704, 721, 726	
SPL-VLS-TAS-NWPZ	HI 1621	

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
AVT-RI-TS-TAS	CG 1023	Mixture / segregation for ear shape, height
NIVT-1A	N-109, 112, 125, 138	Maturity/ height, plant type segregation
NIVT-1B	N-212	Height/ear shape/ maturity variation
NIVT-3A	N-433	Mixture/ ear shape/ maturity variation
NIVT-5A	N-702, 715, 719, 725	Very mixture / segregation for height/ maturity

**Entries exhibiting higher diseases incidence / insect infestation:**

Centre	Entry
Pantnagar	AVT-IR-TS: DBW 196 (YI) AVT-IR-LS: WH 1021 (YI) AVT-RI-TS: HD 3237, HD 3043 (Br) N-207, 229, 244 (YI) SPL-MABB-IR-TS: HD 2967 (YI)

**Report on Agronomical Trials:**

Centre	Trial	Remark
Nagina	Sowing date trial 15 <sup>th</sup> Dec, 2016 Jan 16, 2017 (no flowering at time of monitoring)	In mid-Jan. it is very late.

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Pantnagar	All pathological nurseries. The plants were dry.	Dr Vaibhav may send the report.

**Special comments, if any**

- Sowing by machine is necessary for better results.
- The pure seeds of checks should be provided by contributing centres.
- Mixtures were noted in some entries including checks.
- The zonal coordinator and main centre in-charges should inform scientists at the centers well in advance about the visit of zonal monitoring team.

**Signature of the monitoring team members**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
 (BS Tyagi)              (Vikram Singh)              (HR Saharan)              (JP Jaiswal)              (Vaibhav Singh)

## North Western Plains Zone

### Team – IV

**Period of visit:** 20-23 March, 2017

#### **Name of team members:**

Name	Centre
Dr Satish Kumar	ICAR-IIWBR, Karnal
Dr GS Mavi	PAU, Ludhiana
Dr Naresh Kumar	ICAR-IARI, New Delhi
Dr OP Gangwar	ICAR-IIWBR-RS, Shimla

**Centres visited:** Rauni, Ludhiana, Muktsar, Faridkot, Kapurthala, Gurdaspur, Balachaur, Jammu

#### **Breeding trials allocated & monitored:**

Centre	Trial	Remark*
Rauni	AVT-IR-TS-TAS	Trial conduction was very good
Ludhiana	AVT-IR-TS-TAS, AVT-RI-TS-TAS, AVT-IR-LS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A, SPL-VLS, SPL-MABB	Trial conduction was very good
Muktsar	SPL-AST, Alk/Sal Nursery	Trial conduction was good
Faridkot	AVT-IR-TS-TAS, AVT-IR-LS-TAS	Trial conduction was good
Kapurthala	AVT-IR-TS-TAS, AVT-IR-LS-TAS, AVT-RI-TS-TAS	Trial conduction was good
Gurdaspur	AVT-IR-TS-TAS, AVT-RI-TS-TAS, AVT-IR-LS-TAS, NIVT -1A, NIVT-1B, NIVT-3A, NIVT-5A, SPL-MABB	Trial conduction was very good, however there was lodging in the entries due to heavy rain.
Balachaur	AVT-RI-TS-TAS, NIVT-5A	Trial conduction was good
Jammu (J&K)	AVT-IR-TS-TAS, AVT-RI-TS-TAS, AVT-IR-LS-TAS, NIVT-1A, NIVT-3A, NIVT-5A, SPL-MABB	Trial conduction was good

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

**Trials not conducted / rejected by monitoring team:** None

#### **Entries recommended for purification:**

Trial	Entry	Remark
AVT-IR-TS-TAS	WH 1202, UP 2942, HP 1963	Few plants showing height variation
NIVT-1A	N-107, N-108, N-119, N-123, N-129, N-136, N-145, N-146	Few off types plants showing variation in plant height
NIVT-1B	N-204, N-210, N-214, N-220, N-241, N-245, N-249	
NIVT-3A	N-403, N-411, N-414, N-416, N-421, N-423, N-424, N-433	
NIVT-5A	N-701, N-705, N-723, N-725, N-730, N-735	

#### **Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-1A	N-138	Segregating for plant type, height, maturity.
NIVT-1B	N-203, N-212, N-219, N-230	
NIVT-3A	N-429, N-432	Segregating for plant type, height, maturity.
NIVT-5A	N-706, N-715, N-719	

**Entries exhibiting higher diseases incidence / insect infestation:**

- Yellow rust incidence was high on all the trials at Ludhiana, Gurdaspur, Balachaur and Jammu; low to moderate yellow rust incidence was reported from Kapurthala.
- Incidence of brown rust on the breeding trials was observed at Gurdaspur and Kapurthala centres.
- Powdery mildew was also observed at Gurdaspur and Jammu locations.

**Report on Agronomical Trials:**

Centre	Trial	Remark
Ludhiana	Variety x DoS	Nicely conducted trial
	SPL 1, SPL 2, SPL 4, SPL 6, SPL 7, SPL10, SPL12	
Gurdaspur	Variety x DoS	
	SPL 1, SPL 2, SPL 4, SPL 6	
Jammu	Variety x DoS	
	SPL 1, SPL 2, SPL 6	
	SPL 4	Not conducted due to non-availability of green seeker

**Report on Pathological/Entomological Nurseries:**

Centre	Nursery	Remark
Ludhiana	IPPSN, PPSN, LBSN, KBSN, LSSN, DSN, SAARC, EPPSN, MDSN, CCN, ESN, MPSN, Wheat Nematology	All nurseries have been conducted well and good development of diseases especially yellow rust.
Gurdaspur	IPPSN, PPSN, DSN, SAARC	
Jammu	IPPSN, PPSN, KBSN, SAARC, EPPSN, MDSN	

**Report on Physiological Trials/Nurseries**

1. MLHT-I and II were nicely conducted at Ludhiana centre.

**Special comments, if any: Nil**

**Signature of the monitoring team members**

-sd-                                      -sd-                                      -sd-                                      -sd-  
 (Satish Kumar)                      (GS Mavi)                      (Naresh Kumar)                      (OP Gangwar)

## North Eastern Plains Zone

### Team – I

**Period of visit:** 1- 6<sup>th</sup> March, 2017

### Name of team members:

Name	Centre
Dr Saikat Das	UBKV, Coochbehar
Dr Dhiman Mukherjee	BCKV, Kalyani
Dr HC Lal	BAU, Ranchi
Dr Charan Singh	ICAR-IIWBR, Karnal

Note: Dr Anirban Majhi has visited upto Burdwan centre only

**Centres visited:** Kalyani, Burdwan, Manikchak, Majhian, Kharibari, Coochbehar, Chirang, Barpeta, Shillongani

### Breeding trials allocated & monitored:

Centre	Trial	Remark*
Kalyani (WB)	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A	Very good. AVT-RI-TS was sown late by one week.
Burdwan (WB)	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1B	Trial conduction was very good.
Manikchak (WB)	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, MLHT-1& 2	Trial conduction was good
Majhian (WB)	AVT-IR-TS-TAS	Trial conduction was good
Kharibari (WB)	NIVT-5A-RI	Trial conduction was good
Coochbehar (WB)	AVT-IR-TS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A-RI, SPL-VLS-TAS	Trial conduction was very good. Crop stand was less in SPL-VLS-TAS
Shillongani (Assam)	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1B, NIVT-3A	Trial conduction was good. However, heavy lodging was observed in some entries in timely sown trials.

**Trials not conducted / rejected by monitoring team:** AVT-IR-TS-TAS (Chirang) & AVT-IR-TS-TAS, AVT-RI-TS (KVK-Barpeta) were not conducted.

### Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAS	HD3219	Few plants showing height & maturity variation.
AVT-RI-TS-TAS	UAS384	Few off types showing maturity and height variation.
NIVT-1A	N-111, N-112, N-118, N-122, N-125, N-133, N-143, N-149	Few off type plants showing variation in plant height and maturity.
NIVT-1B	N-209, N-212, N-213, N-221, N-222, N-225, N-237, N-245	Few off types plants showing variation in plant height and maturity.
NIVT-3A	N-402, N-425, N-432, N-433	Few off type plants showing variation in plant height.
NIVT-5A-RI	N-702, N-704, N-706, N-712, N-728, N-731, N-736	Few off type plants showing variation in plant height and maturity.

### Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-103, N-115, N-120, N-131, N-132, N-138	Segregating for plant height and maturity.
NIVT-1B	N-210, N-218, N-239	Having more than two types of plant types.
NIVT-3A	N-424	Segregation for plant height.
NIVT-5A-RI	N-705, N-715, N-719, N-725, N-730	Segregating for plant height and maturity.

**Entries exhibiting higher diseases incidence / insect infestation:**

- Leaf blight incidence was high on all the trials at Kalyani, Burdwan & Coochbehar. However low to moderate blight incidence was reported from other centres.
- High Aphid infestation was reported from Kharibari centre. *Helicoverpa* was reported in Kharibari and Shillongani as minor pest. Stem borer infestation was moderate in Kharibari and Shillongani.

**Report on Agronomical Trials:**

Centre	Trial	Remark
Kalyani	Varieties x Irrigation level	Nicely conducted trial
	SPL 1, SPL 2, SPL 10	All the trials were conducted nicely.
Coochbehar	Varieties x Irrigation level	Nicely conducted trial.
	SPL 1*, SPL 2, SPL 8, SPL 9	*Weed ( <i>Polygonum</i> ) infestation was found heavy in controlled plot.
Shillongani	Varieties x Irrigation level	Nicely conducted trial
	SPL 2*, SPL 8, SPL 9	*RDF 60:45:42 was showing poor performance. Proper dose should be standardized for this zone.

**Report on Pathological/Entomological Nurseries:**

Centre	Nursery	Remark
Kalyani	IPPSN, LBSN, Chemical control	All nurseries have been conducted well and good development of foliar blight. No rust symptom was found.
Kharibari	ESN, MPSN, Biocontrol, Chemical control	Aphid infestation was moderate to high on the entomological nurseries.
Coochbehar	IPPSN, LBSN, MDSN	All nurseries have been conducted well and good development of foliar blight was observed. Rust was reported in traces on Sonalika as check variety.
Shillongani	LBSN	All nurseries have been conducted well and moderate development of foliar blight was observed
	EPSN, MPSN	Aphid infestation was low on entomological nurseries.

**Report on Physiological Trials/Nurseries**

MLHT-I and II were nicely conducted at Kalyani and Manichak centres.

**Special comments, if any**

1. Few entries in the AVT-IR-TS-TAS trial was damaged by rats at Kalyani. Bird damage was found in NIVT-1B in some entries at Shillongani.
2. Heavy lodging was found at Shillongani in few genotypes at timely sown trials.
3. The monitoring team did not find any trial at Chirang and Barpeta-KVK centre.
4. Lack of cooperation was found at Chirang and Barpeta-KVK centres.

**Signature of the monitoring team members:**

-sd-                                      -sd-                                      -sd-                                      -sd-  
 (Charan Singh)                              (Saikat Das)                                      (HC Lal)                                      (Dhiman Mukherjee)

## North Eastern Plains Zone

### Team – II

**Period of visit:** 5-10<sup>th</sup> March, 2017

### Name of team members:

Name	Centre
Dr Gyanendra Singh, Principal Scientist	IIWBR, Karnal
Dr Amit Sharma, Senior Scientist	IIWBR, Karnal
Dr SS Vaish, Wheat Pathologist	BHU, Varanasi
Dr SV Singh, Wheat Breeder	CSAUA&T, Kanpur
Dr Naiyer Ali, Wheat Agronomist	BAU Ranchi

Dr. Nitish De from Sabour centre did not join the monitoring.

**Centres visited:** Ranchi, Gumla, Chianki, Sabour, RAU-Pusa, IARI-RS-Pusa, Purnea

### Breeding trials allocated & monitored:

Centre	Trial	Remark*
KVK, Gumla	AVT-IR-TS-TAS	Rejected
BAU-RS, Chianki	AVT-IR-TS-TAS, AVT-RI-TS-TAS	Satisfactory
BAU, Ranchi	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, NIVT-3A, NIVT-5A-RI, DTSN	Satisfactory
BAU, Sabour	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, IVT-3A, NIVT-5A-RI, SPL-VLS, IPPSN-no rust	Satisfactory
IARI-RS, Pusa	AVT-IR-TS-TAS, AVT-RI-TS-TAS, NIVT-1A, NIVT-1B, IVT-3A, NIVT-5A-RI, SPL-VLS, IPPSN, LBSN	Satisfactory
KVK, Purnea	AVT-IR-TS-TAS, AVT-RI-TS-TAS	Rejected

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

At Gumla the plot size was reduced to 4\*2 m only. This means more seed rate and thus biased experimentation.

At Chianki the crop stand was patchy across genotypes and thus lower yields are expected.

### Trials not conducted / rejected by monitoring team:

AVT-IR-TS-TAS at Gumla centre due to faulty layout plan/ reduced plot size

AVT-IR-TS-TAS & AVT-RI-TS-TAS at Purnea centre due to incorrect layout/plot size and variable irrigation schedule in RI trial.

### Entries showing promising performance in breeding trials:

Centre	Trial	Entry
Chianki	AVT-IR-TS-TAS	UAS384
	AVT-RI-TS-TAS	HI1612
Ranchi	AVT-IR-TS-TAS	DBW187
	AVT-RI-TS-TAS	HI1620
	NIVT-1A	N-110, N-116, N-119,
	NIVT-1B	N-205, N-206, N-231, N-234, N-235, N-247
	NIVT-3A	N-416, N-428,
	NIVT-5A-RI-TS	N-702, N-711, N-712,
Sabour	AVT-IR-TS-TAS	DBW187
	AVT-RI-TS-TAS	HI1620
	NIVT-1A	N-110, N-119, N-123, N-144,
	NIVT-1B	N-205, N-207, N-223, N-231, N-234, N-247
	NIVT-3A	N-412, N-417, N-421, N-425, N-428
	NIVT-5A-RI-TS	N-711, N-713, N-714, N-716
	SPL-VLS-TS	DBW249

Pusa	AVT-IR-TS-TAS	DBW187
	AVT-RI-TS-TAS	HI1620
	NIVT-1A	N-110, N-119,
	NIVT-1B	N-223, N-231, N-234, N-247
	NIVT-3A	N-422, N-427
	NIVT-5A-RI-TS	N-712, N-713, N-724,
	SPL-VLS-TAS	DBW 249

**Entries recommended for purification:**

Trial	Entry	Remark
AVT-IR-TS-TAS	HD3219	Height/ maturity variation
AVT-RI-TS-TAS	UAS384, K1317	
NIVT-1A	N-105, N-111, N-145	
NIVT-1B	N-204, N-210, N-216, N-232, N-245, N-249	
NIVT-3A	N-403, N-409, N-413	
NIVT-5A-RI-TS	N-709, N-731	
SPL-VLS-TS	PBW777, HD3272	

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-1A	N-125, N-138,	Mixture / segregating ear shape, height
NIVT-1B	N-225, N-230,	Maturity/ height/ plant type segregation
NIVT-3A	N-414,	Height/ear shape/ maturity variation
NIVT-5A-RI-TS	N-702, N-715, N-719	Bread- durum mixture/ ear shape/ maturity variation
SPL-VLS-TS	PBW 778	High mixture / segregation for height

**Entries exhibiting higher diseases incidence / insect infestation:**

Centre	Entry	Remark
IARI-Pusa	N-116, N-118, N-123, N-147, N-204, N-211, N-214, N-219, N-220, N-224, N-228, N-237, N-238, N-241, N-715, N-723, N-724, N-730, N-734, PBW757	High LB (57 or more)
Sabour	N-107, N-118, N-147, N-211, N-214, N-220, N-225, N-228, N-238, N-240, N-241, N-702, N-715, N-734,	

**Report on Agronomical Trials:**

Centre	Trial	Remark
Ranchi	DOS 26.10.2016	Trial had stress and thus differences were not clear
RAU, Pusa	DOS 03.11.2016	Satisfactory
Sabour	DOS 03.11.2016	Erratic as performance of the trial, zero irrigation was looking better than 1 & 2 irrigations

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Ranchi	LBSN, IPPSN	No disease development
Sabour	LBSN, IPPSN	Only LB – Moderate to higher
Pusa	LBSN, IPPSN	Only LB - Moderate to higher

**Report on Physiology Trials MLHT-1 & 2:**

Centre	DTSN, MLHT-1 / MLHT-2	Remark
Ranchi	DOS of DTSN 4.11.2016 and MLHT-I: 17.11 and MLHT-I: 15.12 & MLHT-II 17.11 MLHT-II 15.12.2016	Satisfactory

**Special comments, if any**

- i. To maintain uniformity in trial conduction and also for proper expression of genotypes machine sowing will be better
- ii. Entry N 410 showed poor germination across locations thereby indicating supply of damaged seed material by the concerned centre.
- iii. Rat/bird damage was observed in Entry N 704 (20%) and N 706 (70%) at Ranchi centre and that need to compensate accordingly.

**Signature of the monitoring team members**

-sd-  
(N Ali)

-sd-  
(SV Singh)

-sd-  
(Amit Sharma)

-sd-  
(SS Vaish)

-sd-  
(Gyanendra Singh)



## North Eastern Plains Zone

**Team - III**

**Period of visit:** 15-20 March, 2017

**Name of team members:**

Name	Centre
Dr SP Singh, Assistant Wheat Pathologist	NDUAT – Faizabad
Dr Surya Prakash, Wheat Breeder	BAU, Ranchi
Dr CN Mishra, Scientist	ICAR-IIWBR, Karnal

**Centres visited:** Kanpur, Araul, Daleep Nagar, Deegh, Lucknow, Barabanki, Ghaghraghat, Masodha, Kumarganj, Basti-KVK, Baxa-KVK, Varanasi, Tissuhi, Naini

**Trials allocated & monitored: BREEDING**

Trials	Centres	Remarks
AVT-IR-TS-TAS	Kanpur, Barabanki	Very Good
	Araul, Faizabad	Good
	Basti, Baxa, Varanasi	Very Good
	Naini	Rejected
AVT-RI-TS-TAS	Kanpur, Ghaghraghat	Very Good
	Deegh, Tissuhi	Good
	Faizabad, Basti	Rejected
	Baxa, Varanasi	Very Good
NIVT-1A	Kanpur	Very Good
	Faizabad	Good
	Varanasi	Very Good
NIVT-1B	Kanpur	Very Good
	Faizabad	Good
	Varanasi	Very Good
NIVT-5A-RI	Kanpur	Very Good
	Faizabad, Varanasi	Rejected
NIVT-3A	Kanpur	Rejected
	Faizabad, Varanasi	Very Good
SPL-AST	Daleepnagar	Good
	Lucknow	Good
	Faizabad	Good
SPL-VLS	Kanpur	Very Good
	Barabanki	Very Good
	Faizabad	Very Good
	Basti	Good
	Varanasi	Very Good

**Trials not conducted**

Centre	Trial	Remark
Baharaich	AVT-IR-TS-TAS	It was informed to the monitoring team that the centre has not conducted the allotted trial

**Trials rejected by the monitoring team:**

Centre	Trial	Remark
Kanpur	NIVT-3A	Rejected – Improper Plant Population within and between plots

Faizabad	AVT-RI-TS-TAS	Rejected- Grazed by nilgai or blue bull
	NIVT-5A-RI	Rejected- Grazed by nilgai or blue bull
Varanasi	NIVT-5A-RI	Rejected- Conducted as rainfed
Basti-KVK	AVT-RI-TS	Rejected- Conducted as irrigated
Allahabad	AVT-IR-TS-TAS	Rejected- Conducted on half dose of Nitrogen and 13 rows plots and poor plant population.

#### Report on Physiology Trials:

Centre	Trials	Remark
Kanpur	MLHT-1 & MLHT-2 and DTSN	Good
Faizabad	MLHT-1 and MLHT-2	Good

#### Entries showing promising performance in breeding trials:

Centre	Trial	Entry	Remarks
Kanpur, Araul, Barabanki, Faizabad, Basti, Baxa, Varanasi	AVT-IR-TS-TAS	DBW-187	Good stand, optimum maturity & uniform
Kanpur, Deegh, Ghaghraghat, Baxa and Varansi	AVT-RI-TS-TAS	HI1612 and UAS384	Good stand, optimum maturity & uniform
Faizabad and Varanasi	NIVT-3A	N-416	Good stand, optimum maturity & uniform
Kanpur, Faizabad and Varanasi	NIVT-1B	N-213, N-246 and N-222	Good stand, optimum maturity & uniform
Kanpur and Varanasi	NIVT-5A-RI	N-726	Good stand, optimum maturity & uniform
Kanpur, Lucknow and Varanasi	SPL-AST	KRL-370	Good stand, optimum maturity & uniform

#### Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS-TAS	HD3219	Mixture of tall plants
NIVT-1A	N-102, 111, 112, 138	
NIVT-1B	N-210, 220, 230, 248	
NIVT-3A	N-403, 414, 425	
NIVT-5A-RI	N-5A-706, 719	

#### Entries recommended to be dropped from further testing:

Trial	Entry	Remark
NIVT-1A	N-125, 136	Variation in plant height, maturity and spike type
NIVT-1B	N-204, 212	
NIVT-3A	N-424, 433	
NIVT-5A-RI	N-715, 725, 735	

#### Entries exhibiting higher diseases incidence / insect infestation:

Centre	Entry	Remark
Ghaghraghat	HD2888	5S Leaf Rust
Daleepnagar	Kh.65	30S Stripe Rust
Faizabad	Kh.65	80S Leaf Rust
Lucknow	Kh 65	20S Stripe rust, 30S Leaf rust

#### Report on Agronomical Trials:

Centre	Trial	Remark
Kanpur, Faizabad, Varanasi	Varieties x Irrigation Level	Properly conducted

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Kanpur	PPSN	Tagging was not proper in the nursery, poorly managed, Leaf rust infection was observed in some of the entries. ESN and MPSN was properly managed.
Faizabad	IPPSN, LBSN, SAARC and MDSN WDMN	Excellent development of leaf blight was observed in the lines. Leaf rust infection from 5S to 20S was observed at the centre in WDMN.
Varanasi	IPPSN, LBSN, WDMN, MDSN	Excellent development of leaf blight was observed in the lines
Naini	LBSN	Rejected- No leaf blight infection and severe bird damage.

**Special comments, if any:**

1. In the farmers field during the visit leaf rust infection of 5S severity was noticed in Baharaich district and Leaf rust infection upto 60S was observed in Fatehpur district. The samples have been send to IIWBR RS Shimla for analysis.
2. Heavy infection of leaf blight was observed in some of the filed in Basti district.
3. Improvement in trial conduction was observed in breeding trials at Kanpur centre.
4. Training needs to be imparted on conduct of trials and data recording with particular reference to voluntary centres.

**Signature of the monitoring team members:**

-sd-  
(SP Singh)

-sd-  
(Surya Prakash)

-sd-  
(CN Mishra)

## Central Zone

### Team – I

**Period of visit:** 13-16<sup>th</sup> February, 2017

#### **Name of team members:**

Name	Centre
Dr SV Sai Prasad	ICAR-IARI RS, Indore
Dr JM Dhakar	AU, Kota
Dr KK Mishra	JNKVV, ZARS Powarkheda
Dr J Chaudhary	MPAUT, Udaipur
Dr Satish Kumar	ICAR-IIWBR, Karnal

**Centres:** Junagadh, Amreli, Lok Bharti, Dhandhuka, Arnej, Anand, SK Nagar and Vijapur

#### **Breeding trials allocated & monitored:**

Centre	Trial	Remark*
Junagadh (Guj)	AVT-RI-TS, NIVT-2, NIVT-3B, NIVT-4, NIVT-5A	Trial conduction was very good across all the centres
Amreli (Guj)	AVT-RI-TS	
Lok Bharti, Sanosara (Guj)	AVT-RI-TS	
Dhandhuka (Guj)	AVT-RI-TS, NIVT-5B	
Arnej (Guj)	NIVT-5B	
Anand (Guj)	AVT-RI-TS	
S K Nagar (Guj)	AVT-RI-TS, NIVT-4	
Vijapur (Guj)	AVT-RI-TS, NIVT-2, NIVT-3B, NIVT-4, NIVT-5A	

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

**Trials not conducted / rejected by monitoring team:** None

#### **Entries recommended for purification:**

Trial	Entry	Remark
AVT-RI-TS	BRW 3775	Few plants showing height variation
NIVT-2	N-304, N-311	Few off types plants showing variation in plant height
NIVT-3B	N-527	Few off types plants showing variation in plant height
NIVT-4	N-623, N-630	Few off types plants showing variation in plant height
NIVT-5A	N-715, N-717	Few off types plants showing variation in plant height
NIVT-5B	N-814	Few off types plants showing variation in plant height and heading

#### **Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-2	N-308, N-321, N-324	Segregating for plant height and maturity
NIVT-3B	N-521	Segregating for plant height and maturity. Also having mixture of more than two types of plant types.
NIVT-4	N-621	Segregating for glabrous and pubescence
NIVT-5A	N-719	Segregating for plant height and maturity

#### **Entries exhibiting higher diseases incidence / insect infestation:**

There was no natural incidence of black and brown rust in the breeding trials across all the centres.

### Report on Agronomical Trials:

Centre	Trial	Remark
Junagadh	Yield maximization (SPL-2), Hydrogel (SPL-6), Method of sowing (SPL-11)	Trials conducted nicely
Vijapur	Yield maximization (SPL- 2), Water management (SPL- 5)	

### Report on Pathological/Entomological Nurseries:

Centre	Nursery	Remark
Junagadh	PPSN	PPSN was conducted nicely and very good development of black and brown rusts was observed.  Entries having high disease development (more than 40S) are reported as:  <b>Black rust:</b> DBW90, HD3086, WH1124, NI5439, Kharchia65, KRL210, HI1619, DBW249, DBW250, PBW757 N-110, N-113, N-508, N-520, N-529, N-607, N-708, N-726, N-804 (100S) and N-825
Vijapur	PPSN	PPSN was conducted nicely and very good development of black and brown rusts was observed.  Entries having high disease development (more than 40S) are reported as:  <b>Black rust:</b> DBW90, HD3086, HD3171, HI8777, AKDW2997-16, GW322, MACS6478, DBW14, Kharchia65, KRL19, KRL210, WR544, HPW439, HPW440, BRW3773, HI1617, HI1619, PBW750, PBW752 (100S), WH1202, DBW248, KRL370, KRL386, PBW757, VHA06  N-108, N-110, N-113, N-114, N-125, N-131, N-136, N-145, N-220, N-221, N-224 (100S), N-226, N-238, N-245, N-247, N-317, N-320, N-508, N-511, N-515, N-520, N-529, N-607, N-706, N-707, N-708, N-726, N-732, N-804 (100S) and N-825

### Report on Physiological Trials/Nurseries

1. MLHT I and II were nicely conducted at Junagadh centre.
2. Heat tolerance trial under very late sown seems not suitable at Junagadh centre and can be conducted at Dhandhuka centre.

### Special comments, if any

1. No incidence of black or brown rust was observed on wheat crop in the farmers' fields.
2. One member from any centre of Gujarat may be included in the monitoring team.
3. Trial conducting centres across the state should plant varietal demonstration of the CVRC released varieties for Central zone.

### Signature of the monitoring team members

-sd-

-sd-

-sd-

-sd-

-sd-

(SV Sai Prasad) (Jeet Mal Dhakar) (KK Mishra) (Jagdish Choudhary) (Satish Kumar)

## Central Zone

### Team - II

**Period of visit:** 21-24<sup>th</sup> February, 2017

#### **Name of team members:**

Name	Centre
Dr KC Sharma, Pr. Scientist	ICAR-IARI-RS, Indore
Dr Hanif Khan, Scientist	ICAR-IIWBR,RS, Shimla
Dr Pramod Prasad, Scientist	ICAR-IIWBR,RS, Shimla
Ms Divya Ambati, Scientist	ICAR-IARI-RS, Indore

**Centres visited:** Kota, Udaipur, Banswara, Pratapgarh, Indore, Bhopal and Powerkheda

#### **Breeding trials allocated & monitored:**

Centre	Trial	Remark
Kota	AVT-RI-TS-TAD, NIVT-2, NIVT-4, NIVT-5A & NIVT-5B	Satisfactorily conducted
Udaipur	AVT-RI-TS-TAD, NIVT-2, NIVT-3B & NIVT-5A	
Banswara	AVT-RI-TS-TAD	
Indore	AVT-RI-TS-TAD, NIVT-2, NIVT-3B, NIVT-4, NIVT-5A & NIVT-5B	
Bhopal	AVT-RI-TS-TAD	
Powerkheda	NIVT-2, NIVT-3B & NIVT-4	

#### **Trials not conducted / rejected by monitoring team:**

Centre	Trial	Remarks
Pratapgarh	AVT-RI-TS-TAD	Rejected due to very less plant stand

#### **Entries recommended for purification:**

Trial	Entry	Remarks
AVT-RI-TS-TAD	BRW3375	Off-types were found & need purification
NIVT-2	N-303, N-304, N-308, N-310, N-311, N-321, N-332	
NIVT-3B	N-517, N-521	
NIVT-4	N-604	
NIVT-5A-RI	N-703, N-715, N-725, N-731	
NIVT-5B-RI	N-811	

#### **Entries recommended to be dropped from further testing:**

Trial	Entry	Remarks
NIVT-2	N-315, N-324	Segregating for pubescence, plant height & ear type
NIVT-4	N-629	Segregating for pubescence
NIVT-5A-RI	N-717, N-719	Segregating for plant height, ear type & maturity

#### **Entries found promising:**

Trial	Entry
NIVT-2	N-309, N-317, N-333, N-335
NIVT 3B	N-503, N-515, N-522
NIVT-4	N-607, N-612, N-628, N-632
NIVT-5A-RI	N-710, N-713, N-720
NIVT-5B-RI	N-807, N-817, N-820

#### **Entries exhibiting higher diseases incidence / insect infestation:**

No rust incidence was observed at all monitored centres. Loose smut was observed in N 336 & 329 (NIVT-2)

**Report on Agronomical Trials:**

SN	Trials	Centre			
		Kota	Udaipur	Indore	Powerkheda
1	Evaluation of herbicides (SPL 1)	-	Nicely conducted	Nicely conducted	-
2	Management of lodging (SPL 2)	Nicely conducted	Nicely conducted	Nicely conducted	Rejected due to wrong execution of trial
3	Effect of organic manures and mulching (SPL 10)	-	Nicely conducted	-	-
4	Performance of line vs dibbling sowing method (SPL 11)	Nicely conducted	Nicely conducted	Nicely conducted	Nicely conducted
5	Nutrient Expert (SPL 12)	-	Nicely conducted	-	-

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Indore	PPSN, IPPSN	PPSN & IPPSN were conducted satisfactorily. Good amount of leaf & stem rust infection was observed on infectors; however, infection on test entries was at initial stage. Wheat disease monitoring nursery was also conducted.
Powerkheda	PPSN, IPPSN	PPSN & IPPSN were conducted satisfactorily. Good amount of leaf & stem rust infection was observed on infectors. Stem rust infection was more than 40S on following test entries. PBW750, WH1202, HD3219, UAS384, BRW3775, DBW248, DBW249, PBW757, WH1233, VHA-04, VHA-06, VHA-08 Wheat disease monitoring nursery was also conducted.

**Report on Physiology Trials:**

Centre	Trial	Remark
Kota	DTSN	Nursery was conducted satisfactorily
Indore	DTSN, MLHT-I & II	DTSN was conducted satisfactorily, MLHT-I & II were not conducted.

**Signature of the monitoring team members**

-sd-  
(KC Sharma)

-sd-  
(Hanif Khan)

-sd-  
(Parmod Prasad)

-sd-  
(Divya Ambati)

## Central Zone

### Team - III

**Period of visit:** 25<sup>th</sup> Feb to 01<sup>st</sup> March, 2017

#### Name of team members:

Name	Centre
Dr Vinod Tiwari, PI Crop Improvement	IIWBR, Karnal
Dr RS Shukla, Wheat Breeder	Jabalpur
Dr BS Tyagi, Principal Scientist	IIWBR, Karnal
Dr SK Jha	IARI Delhi
Dr MK Srivastava, Wheat Breeder	Sagar

**Centres visited:** Raipur, Bilaspur, Jabalpur, Sagar, Gwalior

#### Breeding trials allocated & monitored:

Centre	Trial	Remark*
Raipur	NIVT-3B	Very good
Bilaspur	NIVT-2, NIVT-3B, NIVT-5A, AVT-RI-TS-TAS	Good
Jabalpur	AVT-RI-TS-TAS, NIVT-2, NIVT-3B, NIVT-5A, NIVT-5B	Very good
Sagar	AVT-RI-TS-TAS, NIVT-2, NIVT-5A, NIVT-5B	Very good
Gwalior	AVT-RI-TS-TAS, NIVT-2, NIVT-3B	Very good

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

**Trials not conducted / rejected by monitoring team:** Nil

#### Entries showing promising performance in breeding trials:

Centre	Trial	Entry	Remarks
Raipur	NIVT-3B	N-503, -516, -523, -528	
	NIVT-2	N-302, -314	
	NIVT-5A	N-702, -712, -721	
Jabalpur	AVT-RI-TS-TAS	HI 8791, UAS 462 (aestivum mixt)	
	NIVT-2	N-305, -316, -317, -318, -334, -335	
	NIVT-3B	N-503, -510, -514, -530, -535	
	NIVT-5A	N-701, -707, -708, -714, -722, -727	
	NIVT-5B	N-813, -817, -818, -819, -823	
Sagar	AVT-RI-TS-TAS	HI 8791	
	NIVT-2	N-2-305, -309, -316, -317, -318, -335	
	NIVT-5A	N-703, -708, -709, -714, -718, -724	
	NIVT-5B	N-807, -817, -818, -823	
Gwalior	AVT-RI-TS-TAS	HI 8791	
	NIVT-2	N-309, -313, -316, -318, -329, -335	
	NIVT-3B	N-503, -510, -514, -530, -532, -535	

#### Entries recommended for purification:

Trial	Entry	Remark
AVT-RI-TS-TAS	MP3288 (C)	High mixture
NIVT-2	N-302, 307, 311, 320, 326, 328	Height/ maturity variation
NIVT-3B	N-501, 506, 502, 504, 508, 518, 526, 531, 533	Height/ maturity variation
NIVT-5A	N-704, 715, 716, 719, 725, 731, 734	Height/ maturity variation
NIVT-5B	N-822	Height/ maturity variation

#### Entries recommended to be dropped from further testing:

Trial	Entry	Remark
AVT-RI-TS-TAS	BRW3775, UAS385	Mixture / segregating ear shape, height



NIVT-2	N-308, 312, 315, 322, 324, 325, 333	Maturity/ height, plant type segregation
NIVT-3B	N-506, 519, 521, 526,	Height/ear shape/ maturity variation
NIVT-5A	N-706, 710, 714, 719, 733	Mixture/ ear shape/ maturity variation
NIVT-5B	N-804	Very mixture / segregation for height/ maturity

**Entries exhibiting higher diseases incidence / insect infestation:** No major incidence of any disease at these centers.

**Report on Agronomical Trials:**

Centre	Trial	Remark
Bilaspur	Special trial	The control and treated plot had no difference of plant height revealing that the application of growth hormone was not uniform.
Jabalpur	Exp 1: Effect of growth regulators in spray form (45, 80 DAS)	No difference in control and sprayed treatment.
Gwalior	Exp 1: Line vs dibbling sowing. Treatments 10 and varieties two. Exp 2: Lodging / maximum yield trials. Treatments=16	Experiments conduction is good.

**Report on Pathological Nurseries:** No nursery

**Special comments, if any**

- Hybrid trials were also seen at Jabalpur.
- In genotype MP3288, there was high flecking of leaves.
- At Gwalior centers some sensitivity to 2, 4-D spray sensitivity was noticed.
- Sowing by machine is necessary for better results.
- Too many entries were showing Asynchrony class.
- The seeds of checks be taken only if pure.

**Signature of the monitoring team members**

-sd-  
(BS Tyagi)

-sd-  
(RS Shukla)

-sd-  
(MK Srivastava)

-sd-  
(SK Jha)

-sd-  
(Vinod Tiwari)

## Peninsular Zone

### Team - I

**Period of visit:** 8-10 February, 2017

### Name of team members:

Name	Centre
Dr V Rudra Naik, Pr. Scientist	UAS Dharwad
Dr AB Gosavi, Assistant Professor	MPKV, Niphad
Dr BK Honrao, Pr. Scientist	ARI, Pune
Dr JB Singh, Sr. Scientist	ICAR-IARI-RS, Indore
Dr K Venkatesh Scientist	ICAR-IIWBR, Karnal

### Centres visited:

Dharwad, Bagalkot, Ugar Khurd, Nippani, Kalloli, Arbhavi, Mudhol, Kolhapur and Bailhongal Annigeri centre was not monitored as the allocated trials was failed due to severe drought. Bijapur Centre was not visited as local team members were preoccupied due to scheduling of Viva Voce of postgraduate students.

### Breeding trials allocated & monitored:

Centre	Trial	Remark
Dharwad	AVT-IR-TS-TAD, AVT-RF-TAD, NIVT-2, NIVT-3B, NIVT-4, NIVT-5A-RI, NIVT-5B-RI, SPL-DIC	Satisfactorily conducted.
Bagalkot	AVT-RF-TAD, NIVT-5B-RI	
Arbhavi	AVT-IR-TS-TAD, SPL-DIC	
Kalloli	AVT-IR-TS-TAD, SPL-DIC	
Ugar Khurd	AVT-IR-TS-TAD, NIVT-2, NIVT-4, SPL-DIC	
Nippani	AVT-IR-TS-TAD, NIVT-2, NIVT-4	Satisfactorily conducted, NIVT-2, NIVT-4 were sown late due to late availability of water
Mudhol	AVT-IR-TS-TAD, SPL-DIC	Both trials were sown late due to late availability of water
Kolhapur	AVT-IR-TS-TAD, SPL-DIC	Satisfactorily conducted
Bailhongal	AVT-RF-TAD, NIVT-5A-RI, NIVT-5B-RI	Plant stand was very poor due to drought and patchy field

### Trials not conducted / rejected by monitoring team:

Centre	Trial	Remark
Nippani	NIVT-5A-RI	Not conducted due to scarcity of water
Nippani	NIVT-2, NIVT-4	Rejected due to delayed sowing
Mudhol	AVT-IR-TS, SPL-DIC	
Bailhongal	NIVT-5A, NIVT-5B	Plant stand was very poor due to drought and therefore, rejected
Annigeri	AVT-RF-TS	Trial failed due to severe drought.

### Entries recommended for purification:

Trial	Entry	Remark
AVT-IR-TS	DBW168, MACS 6478 (C)	Off-types
NIVT-2	N-303, N-304, N-308, N-311, N-312, N-330	
NIVT-3B	N-517, N-524, N-531	
NIVT-4	N-629	
NIVT-5A-RI	N-714	
NIVT-5B-RI	N-803	
SPL-DIC	DDK 1029(C), HW 1098 (C)	

**Entries found promising:**

Trial	Entry
NIVT-2	N-317, -318, -323, -325, -329
NIVT-4	N-601, -605, -620, -632
NIVT-5A-RI	N-710, -711, -712, -722
NIVT-5B-RI	N-805, -817, -820
SPL-DIC	DDK 1053, MACS 5049

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-2	N-315, N-324	Variation for plant height, maturity and ear type
NIVT-4	N-627	
NIVT-5A-RI	N-717, N-719	
NIVT-5B-RI	N-801	

**Entries exhibiting higher diseases incidence / insect infestation:**

No rust incidence was observed at all monitored centres and farmer's fields.

Leaf blight was observed in following entries

Trial	Entry
NIVT-2	N-316 (LB Score 57 at Ugar)
NIVT-4	N-602 (LB Score 24 at Dharwad), N-607 (LB Score 57 at Ugar)

**Report on Agronomical Trials:**

Centre	Trial	Remark
Dharwad	Varieties x DOS (IR-TS)	Satisfactory
	Varieties x N Levels (RF)	
	SPL-1, SPL-2, SPL-3, SPL-11 and SPL-12	
Ugar Khurd	Varieties x DOS (IR-TS) & SPL-2	Satisfactory
Annigeri	Varieties x N Levels (RF)	Trial failed due to severe drought

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Dharwad	PPSN, IPPSN, LBSN, DSN, EPPSN, ESN, MPSN	Satisfactory conduction of nurseries. Brown rust severity (20S-30S) was observed on infectors included in the nursery. However, the local infectors planted around, have brown rust severity upto 80S. Development of stem rust was not observed on infectors as well as test entries.

**Report on Physiology Trials:**

Centre	Trial	Remark
Dharwad	DTSN, MLHT-1, MLHT-2	Satisfactory

**Special comments, if any**

1. No rust development was observed in the farmer's fields.
2. Crop in farmer's field in the area visited was suffered due to moisture stress conditions.
3. Traditional dicocum wheat cultivation was observed in the farmer's fields in the Arbhavi, Bagalkot, Ugar, Mudhol and Dharwad area.

**Signature of the monitoring team members**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
 (V Rudra Naik)      (BK Honrao)      (AB Gosavi)      (JB Singh)      (K Venkatesh)

## Peninsular Zone

### Team - II

**Period of visit:** 13-16<sup>th</sup> Feb, 2017

#### Name of team members:

Name	Centre
Dr MY Kamatar, Professor	UAS Dharwad
Dr DA Gadekar, Wheat Breeder	ARS Niphad
Dr KP Deolankar, Wheat Agronomist	ARS Niphad
Dr NV Savant, Jr. Wheat Pathologist	RWRRS Mahabaleshwar
Dr CN Mishra, Scientist	ICAR-IIWBR Karnal

**Centres visited:** Nasik, Niphad, Savalvihir, Pravarnagar, Hol Farm, Mahabaleshwar

#### Trials allocated & monitored: Breeding

Trials	Centre	Remarks
AVT-IR-TS-TAD	Nasik, Niphad, Pravarnagr, Hol Farm & Mahabaleshwar	Very Good
AVT-RF-TS	Niphad, Savalvihir & Hol Farm	
NIVT-2	Niphad & Hol Farm	
NIVT -4		
NIVT-5B-RI		
NIVT-5A		
NIVT-5B		
SPL-DIC	Mahabaleshwar	Very Good (Replication I was rejected due to poor population in 3 plots)
	Hol Farm	Very Good

#### Trials not conducted / rejected by monitoring team:

All the allotted trials were conducted by the respective centers and none of the trials were rejected by the monitoring team

#### Report on Physiology Trials:

Centre	Trial	Remark
Niphad	MLHT-1 & MLHT-2	Good
Hol Farm	MLHT-1 & MLHT-2, DTSN	Good

#### Entries showing promising performance in breeding trials:

Centre	Trial	Entry	Remarks
Niphad, Savalvihir, Hol Farm	AVT-RF-TS	UAS 375, HI 8777(d), MACS 4028 (d)	Good stand, optimum maturity & uniform
Niphad, Hol Farm	NIVT-2	N-316, N-317, N-335	
Niphad, Hol Farm	NIVT-4	N-605, N-607, N-619, N-632	
Niphad, Hol Farm	NIVT-5A	N-718, N-720	
Niphad, Hol Farm	NIVT-3B	N-532, N-535	

#### Entries recommended for purification

Trial	Entry	Remark
AVT-IR-TS	UAS 304	Tall plant mixtures
NIVT-2	N-302, N-307, N-310, N-333	
NIVT -3B	N-506, N-511, N-530, N-534	
NIVT-4	N-611	
NIVT -5A	N-717, N-726, N-733, N-736	
SPL-DIC	DDK 1029	

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-2	N-311, N-312, N-315, N-321, N-324, N-329	Variation for height, maturity and ear shape/type
NIVT -3B	N-521	
NIVT-4	N-604, N-627	
NIVT -5A	N-719	

**Entries exhibiting higher diseases incidence / insect infestation:**

Centre	Entry	Remark
Niphad	DBW 168, MACS 6478, MACS 6222, GW 322, UAS 304, N-325	High Aphid incidence
Pravarnagar	DBW 168, MACS 6478, MACS 6222, GW 322, UAS 304	High Aphid incidence
Niphad	N-329, N-336, N-504	High Loose Smut
Hol Farm	N-329, N-336, N-504	High Loose Smut

**Report on Agronomical Trials:** All the agronomical trials at Niphad, Hol Farm, were properly conducted.

Centre	Trial	Remark
Niphad	Varieties x DOS (Irrigation)	Properly conducted
Hol Farm	Varieties x DOS (Irrigation)	Properly conducted
	Varieties x Nitrogen Levels	Properly conducted

**Note:** Spl Trial 6 needs to be reconstituted at Hol Farm as irrigation treatments are not matching with the duration of the wheat crop in PZ.

**Report on Pathological Nurseries:**

Centre	Nursery	Remark
Niphad	ESN, MPSN, PPSN, IPPSN	Excellent aphid infestation was observed in different Entomological screening Nurseries. Leaf and stem rust infection was observed in the infector rows. Few entries were showing infection.
Hol Farm	PPSN	Excellent development of stem and leaf rust were observed in the lines.
Mahabaleshwar	PPSN, IPPSN, EPPSN & MDSN	Good development of stem & leaf rust were observed in lines.

**Special comments, if any:**

1. No incidence of rust was observed in the farmers' field.
2. Seed production of different varieties at Niphad and Hol Farm was also satisfactory.
3. All the dicoccum entries in Spl Dic Trials showed 80-85 % lodging at Hol Farm. The team was of the view that fertilizer application may be done as per soil testing.
4. Training needs to be imparted on conduct of trials, data recording and rust inoculations.

**Signature of the monitoring team members**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
 (MY Kamatar)        (DA Gadekar)        (KP Deolankar)        (NV Savant)        (CN Mishra)

## Peninsular Zone

**Team – III**

**Period of visit:** 16-18<sup>th</sup> Feb., 2017

**Name of team members:**

Name	Centre
Dr AP Padhye	ARS Niphad
Dr BC Game	ARS Niphad
Dr SS Wanjari, SRS, Wheat	Dr PDKV Akola
Dr Suma Biradar	UAS, Dharwad
Dr Vikas Gupta	ICAR-IIWBR Karnal

**Centres visited:** Amravati, Akola, Washim, Parbhani

**Breeding trials allocated & monitored:**

Centre	Trial	Remark*
Amravati	AVT-IR-TS	Trial conduction was good. However, the trial was rejected due to the late sowing.
Akola	AVT-IR-TS, NIVT-2, NIVT-3B, NIVT-4, NIVT-5A and NIVT-5B	Trial conduct was very good. All the trials were having good plant population except NIVT-5A and 5B. The tillering was very shy in almost all the breeding trials. Few plots in NIVT-5A & 5B were damaged by stray animals and birds.
Washim	AVT-RF-TS	The plant population in all the three test entries was low (60-80%) in three replications. The fourth replication was damaged by the deer and was rejected. It was advised to report only three replication data.
Parbhani	AVT-IR-TS, NIVT-2 and NIVT-3B	Trial conduction was very good and the crop stand in all the trials was excellent as compared to all the locations visited. The sowing of the AVT-TS and NIVT-3B was late due to the late maturity of the preceding soybean crop. However, trials were accepted as the expression of the genotypes was excellent.

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

**Trials not conducted / rejected by monitoring team:**

1. The AVT-IR-TS trial was rejected at Amravati due to the late sowing.
2. AVT-RF-TS: The fourth replication at Washim was damaged by the deer hence the replication was rejected.

**Entries recommended for purification:**

Trial	Entry	Remark
AVT-IR-TS	UAS 304, MACS 6478	There was some mixture in the checks.
NIVT-2	N-304, N-311, N-314, N-318, N-328, N-334	Few off types plants, variation for plant height and earhead
NIVT-3B	N-509, N-510, N-513, N-526, N-532, N-536	Variation was observed for earhead and admixture was also observed.
NIVT-4	N-605, N-611, N-622, N-627, N-630, N-634	Variation was observed for earhead and waxiness, and <i>T. aestivum</i> admixture was also observed.
NIVT-5A	N-710, N-722, N-728, N-731	Variation was observed for height and earhead.
NIVT-5B	N-810	Variation for earhead.

**Entries recommended to be dropped from further testing:**

Trial	Entry	Remark
NIVT-2	N-324	Ear head and height variation.
NIVT-3B	N-505, N-519	Variation for earhead (clubbed/ tapering), waxiness and height was observed.

**Entries exhibiting higher diseases incidence / insect infestation:**

There was no incidence of black and brown rusts in the trials over all the locations. However, loose smut was observed in the trials NIVT-2 (N-304, N-329 and N-336) and NIVT-3B (N-504).

Stem borer infestation (1-5%) was also observed at Akola and Parbhani.

**Report on Agronomical Trials:**

Centre	Trial	Remark
Akola	Varieties x DOS	Nicely conducted trial
Washim	Varieties x DOS	Nicely conducted trial.
	Varieties x LON	Trial conduct was good but planted late (3.12.2016) by three days. N-80kg level replication was rejected as it was damaged by deer.

**Report on Pathological/Entomological Nurseries:**

WDMN (Trap plot nursery): Disease free at Akola centre

**Report on Physiological Trials/Nurseries**

1. MLHT-I & II were nicely conducted at Parbhani centre. Admixture was observed in entry SI.13 in MLHT-II.
2. DTSN was conducted at Akola and Parbhani centres.

**Special comments, if any**

The breeding trials planted at Akola suffer from shading affect from Eucalyptus trees. All the breeding trials may be shifted to the area where late sown trials were planted at present.

**Signature of the monitoring team members**

-sd-                      -sd-                      -sd-                      -sd-                      -sd-  
 (AP Padhye)          (SS Wanjari)          (BC Game)          (Suma Biradar)      (Vikas Gupta)

## Southern Hill Zone

**Period of monitoring:** 20-23<sup>rd</sup> February, 2017

**Name of team members:**

Name	Centre
Dr M Sivasamy PS & Head	IARI, RS, Wellington
Dr V Rudra Naik, Principal Scientist	UAS Dharwad
Dr P Nallathambi, Principal Scientist (Pathology)	IARI, RS, Wellington
Dr VK Vikas, Scientist	IARI, RS, Wellington

**Centres visited:**

ICAR-IARI-RS, Wellington, CSIR-Coonoor, CSWRI, SRC-Mannavanur, Kodaikanal, Adiyaman College of Agriculture and Research, Perumal KVK, Hosur Krishnagiri

**ICAR- IISWCR, Regional Station, Ooty** as one of the centres was not monitored as the allocated trials were failed due to severe drought and grazing of wild animals.

**Breeding trials allocated & monitored:**

Centres	Trials	Remark
ICAR- IARI, RS, Wellington	IVT(TS), AVT(TS), IVT(LS), AVT(LS), Spl. <i>dicoccum</i>	Satisfactorily conducted Late sown trials are yet to be flowered
ICAR- IISWCR, RS, Ooty	IVT(TS), AVT(TS)	Satisfactorily conducted But vitiated due to severe drought and grazing of wild animals
CSIR, Coonoor	IVT(LS), AVT(LS)	Satisfactorily conducted Late sown trials are yet to be flowered
ICAR- CSWRI, SRC, Mannavanur, Kodaikanal	IVT(TS), AVT(TS)	Satisfactorily conducted The early entries suffered due to early frost in the form sterility of the spike lets
Adiyaman college of Agriculture and Research , Perumal KVK, Hosur Krishnagiri	Special Dicoccum	Satisfactorily conducted

**Trials not conducted / rejected by monitoring team:**

Centre	Trial	Remark
ICAR- IISWCR, RS, Ooty	IVT(TS), AVT(TS),	Vitiated due to severe drought and grazing of wild animals

**Entries recommended for purification:**

Trial	Entry	Remark
IVT(TS)	SH-IVT-118	Height variation

**Entries found promising:**

Trial	Entry
SPL-DIC	DDK-1053
IVT(TS)	SH-IVT-102, IVT-111 and IVT-116

**Entries recommended to be dropped from further testing:** Nil



**Entries exhibiting higher diseases incidence / insect infestation:**

Trial	Entry
AVT(TS)	UAS-387 affected by rust at Wellington centre but no rust in other centres
IVT(TS)	Leaf rust severity was recorded in some of the entries viz., SH-IVT-101 (40S), SH-IVT-105 (20S), SH-IVT-101 (40S), SH-IVT-112 (20S), SH-IVT-115 (20S) and SH-IVT-118 (20S). Infection intensity may also increase. It was too early stage to comment on stem rust infection at Wellington centre. The most varieties also showed susceptibility to Pm ranging from 1 to 8 on a scale of 0-9
Special Dicoccum	DDK-1029 Leaf blight 40-50%, Pm-5 HW 1098 Leaf blight 40%, Pm 8

**Report on Agronomical Trials: Nil****Report on Pathological Nurseries:**

Centre	Nursery	Remark
IARI, RS, Wellington	IPPSN, PPSN, MDSN, PMSN, Head Scab	All the nurseries were raised as per the protocol and well maintained. Occurrence of brown rust (upto 40S-60S) and powdery mildew (3-7) was observed in most of the susceptible lines. Stem rust infection was initiated in check lines (5-10S). Overall diseases severity may be less than previous years due to severe drought and high atmospheric temperature.

**Report on Physiology Trials: Nil****Special comments, if any,**

1. Some entries/lines are affected by brown rust with intensity of 20S and above. Powdery mildew was also observed in some lines at wellington centre. It was too early stage to comment on stem rust infection.
2. Spl. *dicoccum* trial is newly introduced in Perumal KVK, Hosur, Krishnagiri. The trial was very good.

**Signature of the monitoring team members**

-sd-  
(M Sivasamy)

-sd-  
(P Nallathambi)

-sd-  
(VK Vikas)

-sd-  
(V Rudra Naik)

# Appendix - III

Recording of data  
on various characteristics and date of sowing  
of coordinated trials

## Guidelines for Recording of Agronomic Characteristics in Coordinated Trials

SN	Characteristics	Method of recording
1.	Days to heading	It is calculated as days taken from sowing to emergence of 75% of ears (spikes) in a plot. Observation on off-type plant(s) should not be considered.
2.	Days to maturity	Total days taken from sowing to maturity when all the plants in the plot show natural senescence and the grains become hard and fit for harvesting.
3.	Plant height	Measured at the time of maturity in centimeters from the ground level upto the terminal spikelet, excluding the awns. Care should be taken to record the measurement from the most commonly representative plants in the plot.
4.	Lodging	It is visually determined in plots per replication and recorded in percentage when plants are bent at more than 30° angle.
5.	Threshability	It is recorded either Easy (Ey), Medium (M) or Hard (H). In easy threshability grains are easily separated when earheads are crushed between the palms. Medium-hard threshability is similar to well-known variety Sonalika. Hard threshability is commonly observed in synthetic wheats and some dicoccum varieties.
6.	Grain colour	This trait is recorded in three categories i.e., Amber (A), White (W) or Red (R). Most of the test entries bear amber coloured grains, few might be white (associated with soft grain texture) and rarely red (except in case of Dicoccum and Triticale).
7.	Grain texture	Grain texture is recorded in three categories i.e., Hard (H), Semi-hard (SH) or Soft (So). Hard grains make a typical sound when crushed between the teeth. A hard grain is vitreous and shining, while a soft grain has dull appearance. Semi-hard category is in-between hard and soft grains. Maximum varieties or test entries usually belong to semi-hard class.
8.	1000-grains weight	Bulk harvest of grains from a test entry should be utilized to draw sample(s) for counting grains (250, 500 or 1000 in number) and their weight is recorded in grams using electronic balance. Grain counter may be used, wherever available, for increasing efficiency and precision.
9.	Grain yield per plot	Two border rows (one row from each side) of the gross plot should be removed to record the grain yield from the remaining rows which comprise the net plot (4 rows in case of NIVT/IVT and 10 rows in case of AVT). The net plot grain yield should be recorded in grams using electronic balance.

### Sowing time of yield trials in different zones

Trial Series	NHZ	NWPZ	NEPZ	CZ	PZ	SHZ
AVT-IR-TS-TAS	Nov. 1-15	Nov. 1-15	Nov. 15-25	-	-	-
AVT-IR-TS-TAD	-	-	-	Nov. 10-20	Nov. 5-15	-
AVT-IR-TS/LS-TAS	-	-	-	-	-	Nov.15-Dec.15/ Dec. 25-Jan.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	Nov 1-10	-
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	Nov.1-10	-
IVT-RF-TS-TAS	Oct. 15-31	-	-	-	-	-
IVT-IR-TS-TAS	Nov. 1-15	-	-	-	-	-
IVT-RI-TS/LS-TAS	-	-	-	-	-	Nov.15-Dec.15/ Dec. 25-Jan.15
AVT-RF-VHA, Sum	April/May	-	-	-	-	-
SPL-RF-TS-TCL	Oct.15-31	-	-	-	-	-
SPL-IR-TS-Dicoccum	-	-	-	-	Nov. 1-15	Nov. 10-25
SPL-IR-TAS-AST	-	Nov. 5-20	Nov. 10-25	Nov. 10-25	-	-
SPL-MABB-IR-TS-TAS	-	Nov. 10-20	-	-	-	-
SPL-MABB-IR-LS-TAS	-	-	Dec. 15-25	Dec. 5-15	Dec. 1-10	-
SPL-WB-IR-TS-TAS	-	Nov. 10-20	Nov. 15-25	Nov. 10-20	Nov. 5-15	-
SPL-VLS-IR-TAS	-	Jan. 1-15	Jan. 1-15	-	-	-

# 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 should be strictly adhered to as given in the planting details supplied with the layout plan of different trials.
4. Seed rate and plot size should not be changed.
5. Plot border rows of the trial entries should be excluded during harvesting for reporting the net plot yield.

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

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

Zone/Trial	Timely sown irrigated condition	Late sown irrigated condition	Timely sown restricted irrigated condition	Timely sown rainfed condition
NHZ	30	20	-	15 (Also for early sown rainfed)
NWPZ	45 (40 in case of Jammu & Dhaulakuan)	35 (30 in case of Jammu) VLS = 25	30	-
	40 (35 for centres in W. Bengal and Assam)	30 (25 for centres in W. Bengal and Assam) VLS = 20	25 (20 for W. Bengal and Assam)	-
CZ	40	30	25	-
PZ	40	30	25	15
SHZ	-	-	35	-
Salinity/ Alkalinity	20	-	-	-
Dicoccum	30	-	-	-
Triticale	-	-	-	15

#### Maximum limit of coefficient of variation (CV)

Production condition	Maximum limit
Irrigated condition (Timely or late sown)	15%
Restricted irrigated condition	20%
Rainfed condition (Timely sown)	25%
Salt affected condition	25%

# Appendix-V

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

## **Criteria for Promotion/Retention of Varieties in the Coordinated Wheat Varietal Trials**

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

### **(I) Yield**

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

### **(II) Resistance to diseases**

#### **(A) Rusts**

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

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

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

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

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

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

- a) ACI upto 15.0
- b) Maximum, susceptibility should be considered if ACI could not be worked out. It should not be more than 40S.
- c) Varieties with higher susceptibility but marked with asterisk should be given benefit of doubt and therefore not to be rejected on this account.
- d) For NEPZ, susceptibility to yellow rust is limited to 40S under natural condition and/ or ACI 25.0 in PPSN.

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

- a) ACI not more than 20.0 for varieties meant for irrigated condition and not more than 25.0 for varieties meant for rainfed condition.
- b) If ACI is not worked out, maximum susceptibility should not exceed 30S both in case of varieties meant for irrigated and rainfed conditions.



- c) Benefit of doubt to be given to varieties with higher degree of susceptibility but marked with an asterisk.

**(B) Other diseases**

Due weightage should be given to other diseases of regional importance such as *leaf blight for NEPZ and Karnal bunt for NWPZ* and varieties with extreme susceptibility shall be avoided from advancement/retention.

**(III) Quality**

Varieties qualifying for yield and disease resistance criteria should have at least 10% protein on dry matter basis. Any such variety having less than 10% protein should not be retained/promoted.

**Disease Criteria for Promotion/Retention of Varieties**

Varieties qualifying for yield	Reaction to rusts of importance in the zone					
	ACI value available		ACI not available		Varieties having higher readings but marked with asterisk	
	Natural conditions	PPSN	Natural conditions	PPSN	Natural conditions	PPSN
Varieties significantly superior in yield to the best check	Upto 15.0	Upto 20.0 for irrigated varieties & upto 25.0 for rainfed varieties	Upto 40S	May be ignored	To be retained/promoted	To be retained/promoted



Issued on the occasion of 56<sup>th</sup> All India Wheat and Barley Research Workers' Meet held at Banaras Hindu University, Varanasi during August 25-28, 2017