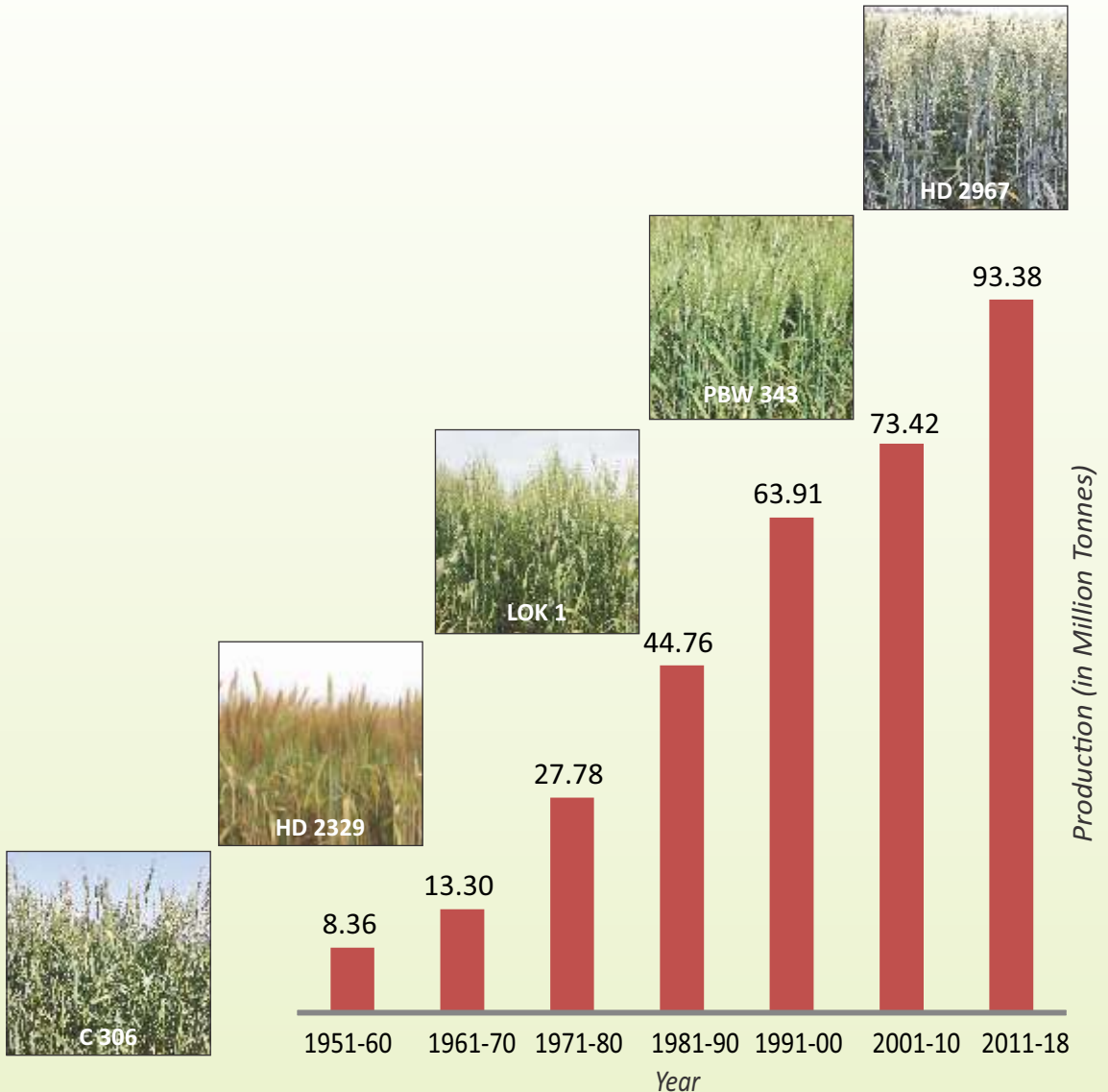


# WHEAT VARIETIES NOTIFIED IN INDIA SINCE 1965



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## FOREWORD

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The wheat production of the country has increased from 10.4 mt in 1965-66 to 98.4 mt during 2016-17. This increase in wheat production has been possible owing to the development of high-yielding varieties and matching production and protection technologies. Varietal development is one of the major components of the All India Coordinated Research Project on Wheat and Barley. A total of 448 wheat varieties have so far been notified for cultivation in different agro-ecological regions of the country. These varieties are instrumental in strengthening the food security of the country. There are product specific varieties for bread, biscuits, pasta etc or varieties tolerant to drought, late heat, micro-nutrient deficient soil, salinity, alkalinity, water logging and biotic stresses. The Genetic Resources Unit (GRU) of the ICAR-Indian Institute of Wheat and Barley Research, Karnal is managing the database of notified varieties besides trait specific genetic stocks of wheat and barley registered by the Plant Germplasm Registration Committee. The GRU of ICAR-IIWBR is also assigned the responsibility of multiplying and supplying seeds of notified varieties, registered genetic stocks, AVT lines and other important exotic and indigenous germplasm. The responsibility of filing applications for registration of wheat varieties under the Protection of Plant Varieties Act (PPV&FRA), 2001 is also been entrusted to the ICAR-IIWBR by the ICAR.

It is highly gratifying to note that the updated information on wheat varieties notified in India has been compiled by the GRU of IIWBR in the form of present book. All the varieties are categorized zone/state wise vis-a-vis production condition wise. Information on parentage, institute and breeders who developed the variety, yield and special features of each variety is also provided in this publication. I hope this publication would be very useful to researchers, extension workers, seed certification agencies and policy makers.



(GP Singh)  
Director  
ICAR-IIWBR



## PREFACE

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The wheat varietal development programme in India is carried out under the aegis of the All India Coordinated Research Project on Wheat and Barley through funded and voluntary centres located in various agro-ecological regions of the country. A total of 448 wheat varieties have been notified by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops (CVRC) since 1965. The varieties released by the CVRC were categorised as 'central variety', similarly wheat varieties released by State Varietal Release Committee (SVRC) of respective states were categorised as 'state variety'. Among the 448 varieties notified in India, 378 are bread wheat, 59 durum, 7 dicoccum and 4 triticale varieties.

The present publication provides up-to-date information on wheat varieties notified in India. Information compiled in this publication is mainly taken from the identification proposal or notification proposal submitted to the Director, ICAR-IIWBR or Department of Agriculture and Farmers' Welfare, Govt. of India. In case of old varieties (Varieties notified before 1965), where the identification/notification proposal were not available, the information were taken from "An update on released wheat varieties and registered genetic stocks (*Triticum spp.*)" published by the ICAR-Indian Institute of Wheat and Barley Research (erstwhile Directorate of Wheat Research) published in 2011 and various published sources and web sites of the universities/institutes or from the scientists at different centers of the All India Coordinated Research Project on Wheat and Barley. The listed varieties have been categorised production condition wise along with information about their pedigree, developing institute/university and name's of breeders responsible for the development of variety, notification number and date of release, average yield, potential yield and special features. The researchers, farmers and policy-makers can select the wheat varieties as per their need.

We hope that this book would be useful to researchers, academicians, students, extension workers, farmers and seed producers in various ways.

Authors





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Wheat breeding in India was first initiated in a systematic way at the Imperial Agricultural Research Institute, Pusa, Bihar in 1905. The emphasis during earlier days was given to varietal development through pureline selection in indigenous material. This led to the development of wheat varieties Pusa4, Pusa6 and Pusa12, which were further used in hybridization programme. Later, wheat improvement work was initiated at Lyallpur, Kanpur, Sabour, Powarkheda, Niphad and Pune resulting in many outstanding wheat varieties like PbC518, PbC591, C273, C281 and C286. In 1935, work on resistance breeding was initiated which resulted in the development of rust resistant varieties like NP783 and NP784 (resistant to brown rust); NP785 and NP786 (resistant to all races of yellow rust); NP789 and NP790 (resistant to black rust). Later NP809 resistant to all the three rusts and loose smut was developed by Dr BP Pal and Dr KC Mehta.

Yield enhancement has been the main aim of wheat breeding in India. However, quality (consumer preference/ grain characteristics) components were also given due emphasis in varietal development. C306, a tall variety developed by CCSHAU, Hisar for rainfed cultivation in NWPZ during early sixties is still preferred by consumers because of its chapatti quality and other traits. The varietal development programme got an impetus with the establishment of the All India Coordinated Wheat Improvement Project (AICWIP) at IARI, New Delhi in 1965. It was just a matter of coincidence that the introduction of semi-dwarf genotypes from Mexico and the establishment of AICWIP took place simultaneously. The massive hybridization work involving dwarf wheat genotypes led to the development of many high yielding and disease resistant wheat varieties in India which ushered in the green revolution in India. The massive success of the green revolution in wheat paved the way for genetic improvement in other food crops too. The green revolution is considered one of the biggest technological achievements of the 20<sup>th</sup> century. This can be witnessed from the fact that the area, production and productivity of wheat has increased by about 143%, 846% and 289%, respectively in the year 2016-17 over the base year 1965-66. The great success of the AICWIP was possible through the development of large number of high yielding varieties of wheat suited to meet the agronomic needs of various agro-ecological wheat growing zones in the country.

**Table 1.1: Area, production and productivity of wheat during 1965-66 and 2016-17**

Year	Area (m ha)	Production (mt)	Productivity (kg/ha)
2016-17	30.60	98.40	3216
1965-66	12.57	10.40	827

The wheat cultivated area in India has now peaked at around 30 million hectares. The major wheat cultivated areas fall in the plains areas (~29mha) of Gangetic Plains of northern and the central and peninsular parts which are further divided into four major agro-ecologic mega-zones viz. North Western Plains Zone (NWPZ), North Eastern

Plains Zone (NEPZ), Central Zone (CZ), Peninsular Zone (PZ). The hills area is around one million hectares and it constitutes the Northern Hills Zone (NHZ) (Table 1.2). The Southern Hill zone comprising Nilgiri and Palni hills was a separate zone till 2014-15, however the foot hills part of Nilgiri where wheat was mainly cultivated was merged with PZ from 2015-16 onwards. The SHZ ceased as a separate zone 2017-18. Each zone has its unique features and agroecological parameters.

**Table 1.2: Wheat growing mega-zones in India**

Zone	Area
North Western Plains Zone (NWPZ)	Punjab, Haryana, Delhi, Rajasthan (except Kota and Udaipur divisions) and Western UP (except Jhansi division), parts of J&K (Jammu and Kathua distt.) and parts of HP (Una distt. and Paonta valley) and Uttarakhand (Tarai region)
North Eastern Plains Zone (NEPZ)	Eastern UP, Bihar, Jharkhand, Odisha, West Bengal and plains of Assam
Central Zone (CZ)	Madhya Pradesh, Chhattisgarh, Gujarat, Rajasthan (Kota and Udaipur divisions) and Uttar Pradesh (Jhansi division)
Peninsular Zone (PZ)	Maharashtra and Karnataka
Northern Hills Zone (NHZ)	Western Himalayan regions of J&K (except Jammu and Kathua distt.); Himachal Pradesh (except Una and Paonta Valley); Uttarakhand (except Tarai area); Sikkim and hills of West Bengal and N.E. States

The wheat crop is cultivated primarily under three broad cultural conditions, viz timely sown irrigated, late sown irrigated and timely sown restricted irrigation, whereas in NHZ, the major area under wheat is rainfed (83%) and irrigated area is confined only to valleys. All the three wheat species are cultivated in India. Bread wheat (*Triticum aestivum*) is grown in more than 96% of the total wheat area, while durum (*T. durum*) and dicoccum (*T. dicoccum*) wheat occupy around 4% area. The bread wheat is grown throughout the zones, while durum wheat is mainly grown in CZ and PZ and dicoccum wheat is confined to PZ.

To cater the need of each agro-climatic condition and cultural conditions, around 294 varieties of wheat have been released and notified by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops (CVRC). Similarly, around 154 wheat varieties released by the State Varietal Release Committee (SVRC) were notified under section 5 of Seeds Act, 1966. So far, 378 bread wheat varieties, 59 durum wheat and 7 dicoccum wheat beside 4 triticale varieties have been notified (Table 1.3).

The present publication is aimed to provide an updated list and features of the notified wheat varieties in India.

**Table 1.3: Breakup of notified varieties of wheat (upto June, 2018)**

Crop species	CVRC	SVRC	Total
Bread wheat ( <i>T. aestivum</i> )	246	132	378
Durum ( <i>T. durum</i> )	37	22	59
Dicoccum	6	1	7
Triticale	4	-	4
Total	293	155	448

There are 11 varieties namely C306, Sonora 64, UP 2382, GW 322, DDK 1029, HD 2278, HD 2380, HD 2932 and HD 2967 which were notified for more than one zone/state.

The development of wheat varieties in India is undertaken primarily through the auspices of a well-knitted public funded programme under the All India Coordinated Research Project on Wheat and Barley. This coordinated research programme is undertaken through the cooperation of funded and voluntary research centres engaged in the development and testing of new genotypes of wheat. The ICAR-Indian Institute of Wheat and Barley Research Institute located at Karnal (Haryana) is the nodal centre for wheat research in India and is bestowed to function as the coordinating unit for organising multi-location research and evaluation/testing schedules for new genotypes of wheat. Wheat is cultivated in India under irrigated, restricted irrigation and rainfed cultural conditions (Table 2.1). As wheat is grown in a cropping system mode, the time of sowing of Wheat is always dependent on the maturity duration of the kharif crops. Thus, there is a late sown crop of wheat besides the normal or timely sown crop which is generally sown during November. The varietal development programme in wheat is thus carried out to meet the crop's cultural conditions, viz., timely sown irrigated, late sown irrigated condition and timely sown restricted irrigation. The rainfed condition is mainly confined to the hill terraces/slopes and valleys of the NHZ.

The evaluation of new genotypes developed at different wheat breeding centres in the country is organised for a period of three years with one year of pre-evaluation for disease reaction of the genotypes in a multi-location Initial Plant Pathological Screening Nursery (IPPSN) which is carried out at hot-spot locations for different diseases. On the basis of disease response, entries are invited from the breeding centres for different coordinated trials. The varietal evaluation programme of three years is split into two types of trials viz., National Initial Varietal Trial (NIVT) which is carried out for one year with small plot size (6 rows of 6m length) and it is followed by two years of evaluation in Advance Varietal Trial (AVT) conducted in double the plot area of NIVT (12 rows of 6m length). NIVTs for different cultural conditions are constituted viz., NIVT1A and NIVT1B for irrigated timely sown condition in NWPZ and NEPZ; NIVT2 for irrigated timely sown condition in CZ and PZ, NIVT3A for late sown irrigated condition in NWPZ and NEPZ, NIVT3B for irrigated late sown conditions in PZ and CZ; NIVT4 for durum under irrigated timely sown condition in CZ and PZ; NIVT5A for timely sown restricted irrigated condition in all plains zones and NIVT5B for durum under restricted irrigated timely sown condition in CZ and PZ. In the hills, Initial Varietal Trial (IVT) is laid out under rainfed and irrigated conditions in NHZ. In NHZ, trials are also constituted for early sown rainfed condition and late sown restricted irrigated condition. The NIVTs are conducted in two or more zones and laid out at main centres, while the AVTs for each series of trial are constituted at zonal level comprising genotypes promoted from NIVT or IVT and these are laid out at large number of centres spread across the concerned zones.

The genotypes promoted to Advance Varietal Trials (AVT) from NIVT are tested for two

Table 2.1: Research Centre under All India Coordinated Research Project on Wheat

<b>Zone</b>	<b>Funded Centres</b>	<b>Voluntary centres</b>
North Western Plains Zone (NWPZ)	PAU-Ludhiana, CCSHAU-Hisar GBPUAT-Pantnagar RAU-Durgapura SKUAST-Jammu	Alwar, Balachaur, Bareilly, Bathinda, Bawal, Bharatpur, Bikaner, Bulandshahr, Dausa, Delhi, Dhakrani, Diggi, Faridkot, Gurdaspur, Hanumangarh, Jodhpur, Kapurthala, Kashipur, Kotputli, Karnal-CSSRI, Modipuram, Nagina, Rampur, Rohtak, Rauni (Patiala), Sriganaganagar, Tabiji, Uchani, Ujhani
North Eastern Plains Zone (NEPZ)	CSAUAT-Kanpur NDUAT-Faizabad BHU- Varanasi RAU-Sabour BAU-Ranchi BCKV-Kalyani UBKV-Coochbehar	AAU-Shillongani Araul, Baharaich, Banka, Barabanki, Basti, Bikramganj, Bishwanath, Burdwan, Chianki, Deegh, Dhubri, Dumka, Ghaghraghat, Ghazipur, Gorakhpur, Gosaigaon, Malda, Majhian, Purnea, Pusa-IARI, Tissuhi
Central Zone (CZ)	ZARS-Powarkheda JNKVV-Jabalpur RARS-Sagar RVSUA&T- Gwalior IGKVV-Bilaspur MPUAT-Udaipur SDAU-Vijapur JAU-Junagarh	Amreli, Anand, Arnej, Banswara, Bhopal, Dhanduka, Indore, Kota, Pratapgarh, Raipur, Rewa, Sanosara, SK Nagar, Tanchha
Peninsular Zone (PZ)	UAS-Dharwad MPKV-Niphad MPKV-Mahabaleshwar ARI-Pune	Akola, Arbhavi, Bagalkot, Bailhongal, K Digraj, Kalloli, Karjat, Karad, Kolhapur, Mandya, Mudhol, Nasik, Nippani, Parbhani, Pravarnagar, Ugar khurd, Savalvahir, Wellington
Northern Hills Zone (NHZ)	CSK-HPKV-Palampur, CSK-HPKV-Bajaura SKUAST- Srinagar CAU- Imphal	Akrot, Almora, Bara, Berthin, Dhaulakuan, Gangtok, Kalimpong, Majhera, Ranichauri, Shimla, Una, Wadura

years i.e., AVT-I and AVT-II. Only the superior genotypes from AVT-I are promoted to AVT-II. The restricted irrigation NIVTs have been recently modified to comprise NIVT 5A having bread wheat genotypes for NWPZ and NEPZ and NIVT 5B having both bread wheat and durum genotypes for CZ and PZ. During the whole testing period, the genotypes are screened for their response to various wheat diseases, particularly rusts which are the most damaging fungal pathogens affecting the yield in wheat. There are set norms based on yield and reaction to various diseases which guide the promotion of genotypes to next level of yield evaluation trials. The quality traits of genotypes are also evaluated during all the years of testing. The agronomic performance of the genotypes under the required cultural condition of the evaluation of the genotypes is evaluated in the final year of trial (AVT-II). This helps to specify the package of practices for each genotype under testing.



Special trials have been formulated to meet the requirements of specific situations eg., salinity/alkalinity, dicoccum, triticale, marker aided backcross breeding and bio-fortification. There is a well-defined protocol for evaluation of entries in these special trials under the required cultural conditions.

All the genotypes which complete three years of multi-location evaluation and found good for yield, disease resistance, quality features and agronomic performance qualify for being considered for identification as new wheat varieties. Proposals for identification of new varieties are placed before the Varietal Identification Committee (VIC) meeting held during the Annual Wheat and Barley Research Workers' Meet which is organised every year. The varieties identified by the VIC are then proposed for release and notification by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Agricultural Crops (CVRC). After approval by the CVRC, the varieties are notified in the gazette of India and this marks the beginning of the commercial seed production chain of the released varieties. Such varieties are categorized as 'Central released' variety. Central varieties generally have wider adaptability.

Many genotypes developed by the state agricultural universities do not perform well in the coordinated varietal yield evaluation trials, but they yield well at centres located in the particular state. Such varieties which perform well within a state are identified and proposed by the concerned State Varietal Release Committee (SVRC) to the CVRC for granting approval for notification in the state. The SVRC released varieties have to be tested at least for one year in the coordinated evaluation system. Such varieties are categorized as 'State released' variety. State varieties are adapted for niche area in the state.

Around 294 central released and 154 state released wheat varieties which have so far been notified under the Seed Act, 1966 are documented in this publication. The zone-wise details of central released varieties and state wise details of state released varieties are given in the publication.

## 2.1 Zone Wise Varieties Released and Notified by the CVRC

### 2.1.1 Wheat Varieties Released for all the zone

Four wheat varieties namely Kalyansona, Sharbati Sonora, Sonalika and Chotti Lerma were released for almost all the zone way back in 1969.

#### **Wheat Varieties developed for different production conditions of all the zones**

Irrigated timely sown conditions: 2

Irrigated late sown conditions: 2

### 2.1.2 Northern Hill Zone (NHZ)

This region encompasses the hilly terrain of Northern region extending from Jammu & Kashmir to North Eastern States. The NHZ comprises J&K (except Jammu and Kathua distt.); Himachal Pradesh (except Una and Paonta Valley); Uttarakhand (except Tarai area); Sikkim, hills of West Bengal and North Eastern states.

The wheat grown in the NHZ generally has productivity of 15-16 q/ha. Moisture stress is the major factor responsible for low productivity besides soil fertility, soil depth, frost damage, small and fragmented holdings, low and imbalanced use of fertilizers. High incidence of weeds and diseases, particularly yellow rust, brown rust and loose smut etc. are the other factors that limit the productivity. Wheat is cultivated in the hills at different altitude under different crop rotation adapted at different elevations. In NHZ, sowing is generally done under rainfed conditions in October/November with residual moisture and harvesting takes place in May/June. In higher hills of Leh (J&K) and Lahaul and Spiti (H.P.), the winter is severe, causing the crop is to be raised between May to September.

Development of high yielding varieties for moisture stress condition is the major objective of wheat improvement programmes in NHZ. State Agricultural universities namely SKUAS&T, Kashmir, CSK HPKV, Palampur and its regional research station located in Malan and Bajaura, GBPUA&T, Pantnagar and ICAR institutes namely ICAR-IARI Regional Station, Shimla and ICAR-VPKAS, Almora are working for development of high yielding varieties for NHZ. These centres have evolved a good number of high yielding rust resistant varieties; among which VL 616, HS 240, HPW 251 and recently released varieties, HS 507, VL 907, VL 892, HPW 349 are quite popular among the farmers of this region. A total of thirty-six wheat varieties have been notified for this region. The details of varieties along with production conditions have been given in table 2.1.2 to 2.1.7.

#### **Wheat Varieties developed for different production conditions of NHZ**

Rainfed, early sown : 5

Rainfed, timely sown conditions : 3

Rainfed/ irrigated, timely sown conditions : 18

Restricted irrigation, late sown conditions : 6

Rainfed, timely sown conditions : 4

**Table 2.1.1: Varieties notified for all the zones**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
	<b>IR, TS</b>							
1	CHHOTI LERMA (S331)	LR64(SIB)/HUA.R	IARI, N. Delhi		4045(E) 24.09.1969	2.04	2.84	Resistance to yellow rust, black rust and soft to semi-hard grains
2	KALYAN SONA (RR 21)	PJ'S/GB55	IARI, N. Delhi / GBPUA&T, Pantnagar / PAU, Ludhiana	RL Paliwal, JP Srivastava, YL Nene, SK Malik, Sohan Pal (From Pantnagar)	4045(E) 24.09.1969	3.76	4.6	Wider adaptability and resistance to loose smut and hill bunt
	<b>IR, LS</b>							
3	SHARBATI SONORA	Amber Mutant of S64	IARI, N. Delhi	MS Swaminathan and George Verghese	4045(E) 24.09.1969			Amber grained
4	SONALIKA	II54-388/AN/3/ YT54/N10B/LR 64	IARI, N. Delhi/ GBPUA&T, Pantnagar	JP Srivastava, SK Malik, Sohan Pal, YL Nene (From Pantnagar)	4045(E) 24.09.1969	3.74	4.55	Wider adaptability and dark brown colour ear head

**Table 2.1.2: Varieties notified for rainfed, early sown conditions of NHZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	Pusa Kiran (HS 542)	MILAN/KAUZ/PRI NIA/3/BABAX	IARI RS, Shimla	Dharam Pal, Madhu Patial, Sanjay Kumar, Santosh Watpade, KV Prabhu, UD Singh, JB Sharma, Vinod, GP Singh, RK Sharma, Anju M. Singh, Rajbir Yadav, NeeluJain, PK Singh, M. Sivasamy	268(E) 28.01.2015	3.29	4.93	Resistance to yellow rust, brown rust and good for chapatti quality
2	HPW 251	WW 24/LEHMI	CSK HPKV, Palampur	SC Sharma, KS Thakur, SC Negi, SK Rana, S Verma, SL Gantan, D Singh, Vijay Rana, Dhanbir Singh	1108(E) 08.05.2008	3.44	4.95	Resistance to yellow rust, brown rust and loose smut
3	VL 829	IBWSN149/CPAN 2099	VPKAS, Almora	Lakshmi Kant, Jag Shoran, AS Hariprasad, SK Pant, HS Gupta, BD Pandey, Dayashanker	283(E) 12.03.2003	2.90	5.98	Dual purpose (Green fodder+grain) wheat variety
4	HS 277	KVZ/CGN	IARI RS, Shimla	JK Luthra, K Vinod Prabhu, RPS Verma	814(E) 04.11.1992	2.88	4.01	Medium tall and facultative wheat
5	VL 616	SONALIKA/CPAN 1507	VPKAS, Almora	Jag Shoran, JP Tandon, HC Joshi, SK Pant	867(E) 26.11.1986	2.71	3.90	Dual purpose (Green fodder+grain) wheat variety

**Table 2.1.3: Varieties notified for rainfed, timely sown conditions of NHZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	TL 2969 (Triticale)	JNIT141/TL1210// JNIT 141	PAU, Ludhiana	GS Dhindsa, GS Mavi	2125(E) 10.09.2012	2.93	5.38	Resistance to yellow rust, brown rust, powdery mildew and Karnal bunt
2	SKW 196 (SHALIMAR WHEAT-1)	BSP 93-21 (Selection from EIGN 98)	SKUAST, Srinagar	Shafiq A Wani, MN Khan, Gul Zaffar, FA Nehvi, NA Zeerak, Gyanendra Singh	1177(E) 25.08.2005	2.39	3.77	Resistance to yellow rust
3	VL 421	SON 64 / Y 50E/GTO	VPKAS, Almora	JP Tandon, HC Joshi	470(E) 19.02.1980	2.65	3.95	Tolerant to loose smut

Table 2.1.4: Varieties notified for rainfed/ irrigated, timely sown conditions of NHZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HS 562	OASIS/SKAUZ //4*BCN/3/2*P ASTOR	IARI RS, Shimla	Dharam Pal, Madhu Patil, KV Prabhu, J. Kumar, Santosh Watpade, RN Yadav, Sanjay Kumar, RK Sharma, GP Singh, Rajbir Yadav, Vinod, Anju M. Singh, SV Sai Prasad, IS Solanki, M. Srivasamy, JB Sharma, PK Singh, Neelu Jain, Neharika Mallik, Kiran Gaikwad, Tapan Ranjan Das, Vikas, Jaya Prakash, JB Singh, Divya Ambati, Vaibhav Singh, AN Mishra, Shivadhar, AjayArora	2238(E) 29.06.2016	5.27 (IR) 3.60 (RF)	6.22 (IR) 5.88 (RF)	Field resistance to brown and yellow rust
2	HPW 349	OASIS/SKAUZ //4*BCN/3/PAS TOR/4/KAUZ*2 /YACO//KAUZ	CSK HPKV, Palampur	Vijay Rana, SK Rana	952(E) 10.04.2013	4.70 (IR) 2.59 (RF)	6.14 (IR) 4.21 (RF)	Resistance to yellow rust, brown rust and good for chapatti quality
3	HS 507 (PUSA SUKETI)	KAUZ/MYNA/ UL/BUC/FLK/4/ MILAN	IARI RS, Shimla	Sanjay Kumar, Dharam Pal	632(E) 25.03.2011	4.68 (IR) 2.66 (RF)	6.01 (IR) 5.43 (RF)	Resistance to brown rust, yellow rust, leaf blight and karnal bunt
4	VL GEHUN 907 (VL 907)	DYBR 1982- 83/842 ABVD 50/VW9365/IP BW 343	VPKAS, Almora	Lakshmi Kant, SK Pant, JC Bhatt, V Mahajan, HS Gupta, BD Pandey, Dayashanker	733(E) 01.04.2010	4.43l (IR), 2.79 (RF)	5.69 (IR) 5.25 (RF)	Resistance to yellow rust, brown rust and possess high iron content
5	HPW 184 (CHANDRIKA)	NDV/G9144/K AL/BB/YACO/4 /VEE#5	CSK HPKV, Palampur	SC Sharma, GS Sethi, KS Thakur	122(E) 02.02.2005	3.36	4.08	Highly resistance to yellow and brown rust
6	VL 804	CPAN 3018 / CPAN 3004// PBW 65	VPKAS, Almora	Jag Shoran, Lakshmi Kant, AS Hariprasad, SK Pant, HS Gupta, BD Pandey, Dayashanker	937(E) 04.09.2002	2.57 (RF) 4.13 (IR)	4.31 (RF) 5.47 (IR)	Resistance to yellow rust and brown rust
7	VL 738	NS12.07/LIRA "S"/VEE 'S'	VPKAS, Almora	Jag Shoran, AS Hariprasad, SK Pant, JC Bhatt, SDDube, BD Pandey	647(E) 09.09.1997	2.65	4.71	Awnless wheat variety

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**Table 2.1.4 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
8	DT 46* (PUSA TRITICALE 1)	JNIT 140 / DTS/1209	IARI, N. Delhi	MK Upadhya, Bhanwar Singh	408(E) 07.02.1995	2.30	2.80	Resistance to yellow rust and possess high protein content
9	HS 240	AU /KAL-BB//WOP'S/P AVON'S'	IARI RS, Shimla	JK Luthra, K. Vinod Prabhu, RPS Verma	280(E) 13.04.1989	3.80	4.50	Medium tall variety and resistant to yellow rust
10	UP 1109 (PANT WHEAT 1109)	UP 262 /UP 368	GBPUA&T, Pantnagar	TB Singh, PL Gautam, SK Malik, Sohan Pal, DP Saini, Amerika Singh	834(E) 18.09.1987	2.0 (RF) 3.5 (IR)	3.5 (RF) 4.1 (IR)	Moderately resistance to all the three rusts and loose smut
11	CPAN 1796	NAPO/TOB'S' //8156/3/KAL/BB	IWBR, Karnal	-	832(E) 18.11.1985	2.49	2.87	Semi-dwarf, medium-late maturing var.
12	HB 501	27097(CIANO 'S'//S.64 / KI REND)XS CERROS	Bhowali	-	01.01.1982	3.51	4.20	Resistance to Karnal bunt
13	HB 208	SPO/MTA/IMQ /2*RNW//3/PJ' S'/P14/KT54B	Bhowali	-	19(E) 14.01.1982	2.40	3.11	Soft grains, good for chapatti
14	HS 86	E 6160 /3/ S 227/4/ S 308	IARI RS, Shimla	-	19(E) 14.01.1982	2.13	3.04	Resistance to yellow and brown rust
15	HS 1097-17 (GIRIJA)	CJ60/3/SPO/MTA/IMQ/2*RNW	IARI RS, Shimla	-	13 (E) 19.12.1978	4.02	4.21	Resistance to brown rust
16	HS 1138 -64 (SHAILJA)	E4870/SONALI KA	IARI RS, Shimla	-	1313 (E) 19.12.1978	4.20	4.92	Resistance to all the three rusts
17	NP 818	DO/E518/SPP /NP114/3/WIS2 45'S'	IARI RS, Shimla	-	01.01.1967	2.06	3.49	-
18	NP 846	NP 760 /RIONEGRO	Bhowali/ Delhi	-	01.01.1967	2.50	3.51	-

\* Triticale

Table 2.1.5: Varieties notified for restricted irrigation, late sown conditions of NHZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HS 490 (PUSA BAKER)	HS 364/HPW 114//HS 240/HS 346	IARI RS, Shimla	Sanjay Kumar, Dharam Pal, DK Bhatnagar, Rashmi Bhatnagar	449(E) 11.02.2009	3.10	4.97	Good for biscuit making (Spread factor 10.13)
2	VL 892	WH 542/PBW 226	VPKAS, Almora	Lakshmi Kant, SK Pant, V Mahajan, BD Pandey, Dayashanker	1108(E) 08.05.2008	3.76	5.9	Higher content of zinc, copper and manganese
3	HS 420 (SHIVALIK)	KAJ 3302//CMH 73A-497/3*CNO 79	IARI RS, Shimla	Sanjay Kumar, JK Luthra, Dharam Pal, DK Bhatnagar, Rashmi Bhatnagar	283(E) 12.03.2003	2.67	4.47	Resistance to yellow and brown rust
4	HS 295	CQTAZI/A 555/ALDML'S/NAFN/4/PJN'S/PEL1276.69	IARI RS, Shimla	JK Luthra, K Vinod Prabhu, RPS Verma	814(E) 04.11.1992	2.56	2.75	Resistance to yellow and brown rust
5	HD 2380	HD2255 /HD 2257	IARI, N. Delhi	GN Kar, KBL Jain, VP Kulshrestha, D Satyawali, JBL Mathur, MK Upadhyaya, JS Amawate, SP Yadav, S Chaudhary, VS Mathur	599(E) 31.07.1989	3.14	5.08	Resistance to yellow rust
6	HS 207	KAVKAZ /BUHO// KAL/BB	IARI RS, Shimla	JK Luthra	280(E) 13.04.1989	2.00	2.48	Resistance to yellow rust, brown rust, powdery mildew and Karnal bunt



**Table 2.1.6: Varieties notified for rainfed, timely sown conditions of higher altitude areas of NHZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	VL 832	PBW 65/CPAN 3031	VPKAS, Almora	Lakshmi Kant, SK Pant, BD Pandey, Dayashanker	161(E) 04.02.2004	2.62	3.52	Resistance to yellow rust, brown rust, hill bunt and loose smut
2	HS 375 * (HIMGIRI)	BB/G 11/CJ 71/3/TA EST// KAL/BB	IARI RS, Shimla	Sanjay Kumar, JK Luthra, Dharam Pal, DK Bhatnagar, Rashmi Bhatnagar	283(E) 12.03.2003	2.66	4.98	Tolerance to flag smut and hill bunt
3	HS 365	HS 207 /SONALIKA	IARI RS, Shimla	JK Luthra, KV Prabhu, Sanjay Kumar, DK Bhatnagar	401(E) 15.05.1998	1.82	2.68	-
4	HPW 42 (ARADHANA)	VEE'S/4/PVN'S'/ CBB//CNO'S'/3/JA R/ORZ'S	CSK HPKVV, Palampur	SC Sharma, RL Sharma, GS Sethi, KS Thakur	814(E) 04.11.1992	2.91	3.32	Resistance to flag smut, hill bunt and powdery mildew

\*Also suitable for summer sown conditions

### 2.1.3 North Western Plains Zone (NWPZ)

North Western Plains Zone comprises Punjab, Haryana, Delhi, Rajasthan (except Kota and Udaipur Divisions), Western Uttar Pradesh (except Jhansi Division), Jammu and Kathua districts of Jammu and Kashmir, Una district and Paonta valley of Himachal Pradesh and Terai region of Uttarakhand. This zone has the largest (~12m ha) area in the country and contributes about 55% of the total wheat production in the country.

With assured irrigation facility available in ~95% area, wheat is mainly cultivated under high fertilizer dose in this zone. Major part of this zone caters to irrigated, timely sown conditions (mainly rice- wheat rotation) followed by the irrigated, late sown (cotton-wheat in Punjab and Haryana or sugarcane-wheat in western U.P.). The intensive tillage and excessive use of fertilizer and water resources are increasing the cost of cultivation on one hand and causing quicker depletion of organic carbon in the soil on the other hand. Thus, resource conservation technology are becoming the need of the hour. Reduced or zero tillage are becoming popular in North Western Plains of India.

Yellow rust, terminal heat stress during grain filling stage and decline of water table are the major constraints in wheat production. Development of high yield potential, disease resistant and climate resilient varieties are the major objectives of the wheat improvement programmes in NWPZ. Various pioneer research institutes/ Agricultural universities located in this zone such as IARI New Delhi; PAU Ludhiana, CCSHAU Hisar, GBUA&T Pantnagar and SKNA University Regional Station Durgapura played a significant role in the development of wheat varieties for increasing the production and productivity of this zone. Various varieties such as HD 2009, HD 2285, HD 2329, PBW 343, DBW 17, HD 2967 and HD 3086 occupied large areas and had farmers' preference as landmark varieties of this zone. These varieties were instrumental in enhancing the productivity of this zone. Of late, the ICAR-IIWBR has also developed high yielding wheat varieties for NWPZ. Out of 80 wheat varieties notified for NWPZ, around 45% are for irrigated timely sown conditions. The production condition wise varieties are listed in Table 2.1.7 to 2.1.12.

#### **Wheat varieties developed for different production conditions of NWPZ**

Irrigated, timely sown conditions: 36

Irrigated, late sown conditions: 18

Irrigated, timely sown as well as late sown: 3

Rainfed, timely sown conditions: 11

Restricted irrigation, timely sown conditions: 2

Durum and triticale varieties: 10

**Table 2.1.7: Varieties notified for irrigated, timely sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	WB 2	T. DICOCCONC19309/AE. SQUARROSA(4.09) /3/MILAN/S87230//BAV92/4/2*MILAN/S87320//BAV92	IIWBR, Karnal	Ravish Chatrath, Vinod Tiwari, Vikas Gupta, Satish Kumar, SK Singh, CN Mishra, K. Venkatesh, MS Saharan, Gyanendra Singh, BS Tyagi, Ratan Tiwari and Indu Sharma	1007(E) 30.03.2017	5.16	5.89	Zinc (42.0 ppm) and iron (40.0 ppm) rich wheat variety
2	PBW 723 (Unnat PBW 343)	PBW343+Lr57/Yr40+Lr37/Yr17	PAU, Ludhiana	NS Bains, VS Sohu, GS Mavi, Achla Sharma, Indoo Bhagat, Puja Srivastava and Parveen Chhuneja	1007(E) 30.03.2017	4.92	6.32	Resistant to yellow and brown rust
3	HPBW 01 (PBW 1 Zn)	T. DICOCCON C19309/AE.SQUARROSA(409)/3/MILAN/S87230//BAV92/4/2*MILAN/S87320//BAV92	PAU, Ludhiana	VS Sohu, NS Bains, GS Mavi, Achla Sharma, Indoo Bhagat, Puja Srivastava, Hari Ram, Harinderjeet Kaur, Madhu Meeta, Damanjit Kaur, Jaspal Kaur, Ritu Bala, Beant Singh, SK Uppal, Javesh Singh, RS Bal, Harjit Singh Brar, Charanjit Kaur, Naresh Kumar and Vineet Kumar	1007(E) 30.03.2017	5.17	6.48	Zinc (40.6 ppm) rich wheat variety, resistance to yellow and brown rust
4	HD3086 (Pusa Gautami)	DBW14/HD2733//HUUW468	IARI, N. Delhi	GP Singh, KV Prabhu, PK Singh, Anju M Singh, Neelu Jain, P Ramya, M JB Sharma, Jagdish Kumar, M Siwasami, SV Sai Prasad, AN Mishra, P Jayaprakash, Ajay Arora, Vikas, DP Wallia, KB Gaikwad, Sanjay Kumar, Vinod, Rajbir Yadav, Ram Kumar Sharma, Subhash Chander, IS Solanki	244(E) 24.01.2014	5.46	7.11	Resistance to yellow and brown rust
5	DBW 88	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ4/HUITES	IIWBR, Karnal	Ratan Tiwari, V Tiwari, Rajender Singh, SK Singh, R Chatrath, Gyanendra Singh, BS Tyagi, Raj Kumar, CN Mishra, MS Saharan and Indu Sharma	244(E) 24.01.2014	5.42	6.99	Resistance to yellow and brown rust
6	WH 1105	MILAN/S87230//BABAX	CCS HAU, Hisar	AS Redhu, IS Panwar, SS Dhanda, SK Sethi, OP Bishnoi, SR Verma, SS Grakh, Rattan Singh, RAS Lamba, YPS Solanki	952(E) 10.04.2013	5.25	7.16	Resistance to yellow rust, brown rust, leaf blight and powdery mildew

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Table 2.1.7 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
7	DPW 621-50 (PBW 621 & DBW 50)	KAUZ//ALTAR84/AOS/3/MILAN/KAUZ/4/HUITES	IWBR, Karnal/PAU, Ludhiana	R Chatrath, SK Singh, MS Saharan, Ratan Tiwari, M. Prashar, G Singh, Jag Shoran, V Tiwari, Raj Kumar, BS Tyagi and SS Singh	1661(E) 27.01.2011	5.17	6.98	Resistance to yellow rust
8	HD 2967	ALD/COC//URES//HD216 0M/HD2278	IARI, N. Delhi	BS Malik, RK Sharma, Rajbir Yadav, GP Singh, AP Sethi, Rajiv K Sharma, V Tiwari, VC Sinha	2326(E) 10.10.2011	5.04	6.60	Wider adaptability and resistance to yellow and brown rust
9	PBW 550	WH 594/RAJ 3858//W 485	PAU, Ludhiana	VS Sohu, NS Bains, GS Mavi, Karam Chand, VP Mittal, Indoo Bhagat	72(E) 10.01.2008	4.77	6.24	High degree of resistance to yellow and brown rust
10	DWR 17 (DBW 17)	CMH79A.95/3*CNO 79//RAJ3777	IWBR, Karnal	NVPR Ganga Rao, SK Singh, Vinay Mahajan, Jag Shoran, Ravish Chatrath, BS Tyagi, Gyanendra Singh and B Mishra	122(E) 06.02.2007	4.84	6.3	Tolerance to terminal heat and resistance to yellow rust
11	PBW 502	W 485 /PBW 343// RAJ 1482	PAU, Ludhiana	Karam Chand, VS Sohu, GS Nanda, SK Sharma, AS Randhawa	161(E) 04.02.2004	4.62	6.00	Resistance to yellow rust, brown rust and karnal bunt
12	HD 2687 (SHRESTH)	CPAN2009/HD 2329	IARI, N. Delhi	S Chowdhury, AP Sethi, VP Kulshrestha, RK Sharma, VC Sinha, Sanjay Kumar, RN Gadag, JS Amawate, SP Yadav, D Satywalli,	425(E) 08.06.1999	4.94	5.12	Tolerance to yellow and brown rust
13	PBW 343	ND//G9144//KAL/BB/3/Y ACO'S' /4/VEE#5 'S'	PAU, Ludhiana	GS Nanda, Karam Chand, HS Aulakh, Harjinder Singh, Gurdev Singh, AS Randhawa, SK Sharma, AS Grewal	1(E) 01.01.1996	4.92	6.10	Double dwarf variety with profuse tillering and stiff straw
14	WH 542	JUP /BJY"S"//URES	CCS HAU, Hisar	Mohd. Yunus and Others	814(E) 04.11.1992	4.8	6.15	Resistance to yellow and brown rust
15	CPAN 3004 (SANGAM)	GLL/AUSTII161-157// CNO 67/NO/3/VEE	IWBR, Karnal	BS Malik, SS Bisht, RK Agrawal	793(E) 22.11.1991	4.9	6.80	Rust resistance
16	WH 416	WH147 /UP 368	CCS HAU, Hisar	Mohd. Yunus and Others	440(E) 15.05.1990	4.02	5.80	Semi-dwarf, medium bold, amber and semi-hard grains variety

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**Table 2.1.7 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
17	HD 2428	HD1949 /HD2160	IARI, N. Delhi	D Satyawali, VP Kulshrestha, JS Amawate, SP Yadav, GN Kar, MK Upadhaya, JBL Mathur, S Chaudhary, KBL Jain, VS Mathur	599(E) 31.07.1989	4.43	5.83	For manganese deficient soils
18	PBW 154	HD2160/HD 2177	PAU, Ludhiana	GS Nanda and others	1135(E) 01.12.1988	4.24	5.30	Moderately resistance to yellow rust and karnal bunt
19	PBW 65	USA 255/K 816 /3/ WL 202	PAU, Ludhiana	—	165(E) 06.03.1987	3.5	5.35	Good for chappatti
20	RAJ 1972	HD 2195/HD 2160	RARI, Durgapura	—	258(E) 14.05.1986	4.35	5.85	
21	HD 2329	HD 1962/E 4870/3/K 65/5/HD1553/4/UP262	IARI, N. Delhi	VS Mathur and others	540(E) 24.07.1985	4.84	6.08	Semi-dwarf variety
22	RAJ 2184	UP 291/HD 2206	RARI, Durgapura	—	540(E) 24.07.1985	4.6	5.90	Good for chapatti quality
23	WH 283	HD1981/RAJ821	CCS HAU, Hisar	Mohd. Yunus and others	295(E) 09.04.1985	4.37	5.20	Resistance to all the three rusts, Karnal bunt and good for chapatti quality
24	CPAN 1676 (ROHINI)	BON/CNO/SON64/3/KA L/BB	IIWBR, Karnal	—	596(E) 13.08.1984	2.14	3.04	Good for chapatti and bread quality
25	HD 2281	HD 2160//HD1912/ HD1592/3/HD1962/E487 0/4/K65	IARI, N. Delhi	VS Mathur and others	596(E) 13.08.1984	4.3	4.81	—
26	WL 2265	NAPO/TOB'S//18156/3/K AL/BB	PAU, Ludhiana	—	596(E) 13.08.1984	4.54	5.00	—
27	RAJ 1482	NAPO-TOB 'S/8156/KAL-BB	RARI, Durgapura	—	2(E) 03.01.1983	4.01	5.83	Good for chapatti quality

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Table 2.1.7 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
28	MLKS11	IWP 19 E 6254*KS2 IWP 72 E 6056*KS2 IWP 92 S 210*KS3 IWP 98 (NP 875-E 4849-NP 830)*KS2 IWP 123 (NP 875-E 4849-NP 830)*KS2 IWP 106 NORTENO 67 *KS3 IWP109 V 17-LR 64A*KS3 IWP 116 NP 8.52 -E 4871*KS3 IWP 114 HD 1981*KS3	PAU, Ludhiana	-	19(E) 14.01.1982	3.88	5.44	Multi-line component of Kalyansona variety
29	HD 2177	HD1962/E 4870//K65/ HD1593	IARI, N. Delhi	-	470(E) 19.02.1980	4.23	5.01	-
30	HD 2204	HD 2092 //HD 1962/E 4870/K 65	IARI, N. Delhi	-	470(E) 19.02.1980	4.41	4.02	Tolerance to yellow rust
31	WH 157	NP876/S308//CNO/8156	CCS HAU, Hisar	Mohd. Yunus and others	13(E) 19.12.1978	4.35	5.7	For saline/ alkaline soil
32	WL 711	S 308/ CHR//KAL	PAU, Ludhiana	-	3161(E) 29.09.1977	4.75	5.13	High yield potential
33	HD 2009 (ARJUN)	LR 64A /NAI 60	IARI, N. Delhi	-	193(E) 30.04.1975	4.36	4.62	Resistance to all the three rusts; good for chappatti
34	LAL BAHADUR	S 54723 * RS 31-1 ML 293 BB*KAL <sup>2</sup> ML 319 CNO-KAL*CD1(KAL-INIA*INJA-BB) ML328 BB-KAL <sup>2</sup> ML 408 RON-CHA*KAL-NOR67 ML 414 TOB-INIA*KAL	RARI, Durgapura	SM Gandhi and others	2446(E) 21.06.1971	4.2	5.6	Triple dwarf and non lodging variety
35	NP 718	NP 710 SIB	DELHI	-	716(E) 20.02.1970			-
36	SAFED LERMA	Y50//N10B/3/LR 52/3*LR	IARI, N. Delhi	-	4045(E) 24.09.1969	3.44	5.01	Resistance to yellow rust, black rust and soft to semi-hard grains

**Table 2.1.8: Varieties notified for irrigated, late sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	DBW 173	KAUZI/AA/KAUZ/IP BW602	IWBR, Karnal	Ravish Chatraith, Satish Kumar, Vikas Gupta, SK Singh, Mamrutha HM, Poonam Jasrotra, PL Kashyap, OP Gangwar, CN Mishra, Gopalareddy K, Ratan Tiwari, Arun Gupta, Chara Singh, Raj Kumar, Amit Kumar Sharma, Gyanendra Singh, BS Tyagi, Kamam Venkatesh, Vinod Tiwari, GP Singh	1379(E) 27.03.2018	4.72	5.70	Tolerant to terminal Heat (HSI=0.98), Resistant to yellow and brown rust
2	DBW 90	HUW468/WH730	IWBR, Karnal	R Chatraith, SK Singh, V Tiwari, MS Saharan, Sewa Ram, Ratan Tiwari, Gyanendra Singh, Raj Kumar, Satish Kumar, Vikas Gupta, BS Tyagi and Indu Sharma	244(E) 24.01.2014	4.27	6.66	Adult plant resistance to yellow and brown rusts
3	WH 1124	MUNIA/CHTO/AM SEL	CCS HAU, Hisar	SS Dhanda, AS Redhu, IS Panwar, OP Bishnoi, SR Verma, SK Sethi, SS Grakh, RAS Lamba, YPS Solanki, RP Saharan, Vikram Singh	1919(E) 30.7.2014	4.27	5.61	Resistance to yellow rust, brown rust and tolerant to terminal heat
4	HD 3059 (PUSA PACHHETI)	KAUZ//ALTAR84/ AOS/3/MILAN/KA UZ/4/HUITES	IARI, N. Delhi	SS Singh, JB Sharma, PK Singh, Bhanwar Singh, KV Prabhu, GP Singh, RK Sharma, Dinesh Kumar, Sanjay Kumar, Anju M Singh, Rajbir Yadav, Neelu Jain, P Ramya, RN Yadav, JKumar, M Sivasamy, P Jayaprakash, AN Mishra, SV Sai Prasad, IS Solanki, DP Wallia, DN Sharma, Nanak Chand, Rajendra Singh	312(E) 01.02.2013	4.25	5.94	Resistance to all the three rusts and also to black rust race Ug99
5	DBW 71	PRINIA/U/P2425	IWBR, Karnal	SK Singh, R Chatraith, V Tiwari, NVPR Ganga Rao, Raj Kumar, K Venkatesh, CN Mishra, Ratan Tiwari, Pradeep Sharma, Gyanendra Singh, BS Tyagi, Satish Kumar, Charan Singh, MS Saharan and Indu Sharma	2817(E) 19.09.2013	4.27	6.89	Resistance to yellow rust
6	PBW 590	WH594/RAJ38 14/1W485	PAU, Ludhiana	VS Sohu and others	454(E) 11.02.2009	4.22	7.32	High degree of resistance against yellow and brown rust
7	WH 1021	NYOT95/SONAK	CCS HAU, Hisar	RK Rana and others	1108(E) 08.05.2008	3.90	6.25	Resistance to all the three rusts

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Table 2.1.8 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
8	DBW 16	RAJ 3765/WR 484//HUW 468	IWBR, Karnal	Ravish Chaitrath, GP Singh, SK Singh, Gyanendra Singh, Jag Shoran, S Nagarajan	599(E) 25.04.2006	3.82	5.64	Resistance to yellow and brown rust
9	UP 2425	HD 2320/UP 2263	GBPUA&T, Pantnagar	TB Singh, SK Malik, Sohan Pal, DP Saini, RS Rawat	425(E) 08.06.1999	3.88	4.47	Early maturing and resistance to yellow rust
10	PBW 373	ND/VG9144 //KAL/BB/3/YCO" S'4/VEE#5'S'	PAU, Ludhiana	GS Nanda, Karam Chand, HS Aulakh, SK Sharma, AS Randhawa, Harjinder Singh, VS Sohu	647(E) 09.09.1997	4.19	4.39	High degree of resistance against yellow and brown rust
11	RAJ 3765	HD 2402/VL639	RARI, Durgapura	VK Bhatnagar, SN Sharma, CP Nagpal, MS Mann, Mahesh Srimali, US Shekhawat	1(E) 01.01.1996	3.65	4.38	Tolerance to terminal heat
12	PBW 226	C591/RN/JN/3/C HR/HD1941	PAU, Ludhiana	—	280(E) 13.04.1989	3.92	5.10	—
13	HD 2270	HD 1962/E4870/ K65/HD 2119 /247	IARI, N. Delhi	VS Mathur and others	471(E) 05.05.1988	3.48	4.27	Good for chapatti
14	GW 120	INIA66/CNO//INI6 6/BB/3/Y 50E/3 *KAL	RARS, Vijapur	PS Bharodia, AV Agalodiya, JL Vaghani, VJ Patel, JR Patel	832(E) 18.11.1985	2.80	4.20	—
15	WH 291	HD 1925/HD832 //23584	CCS HAU, Hisar	Mohd. Yunus and others	540(E) 24.07.1985	3.40	5.00	Tolerance to yellow rust
16	HD 2285 (GOBIND)	249/HD2150//HD 2186	IARI, N. Delhi	KBL Jain and others	596(E) 13.08.1984	3.60	4.25	Tolerant to Karnal bunt, Early maturing
17	KSML 3	ML 253 RON-CHA//KAL-OR67 ML-265 (CNO) SON-KL.REND)// KAL2 ML 277GT O-KAL//BB-CNO	PAU, Ludhiana	—	2103(E) 12.08.1980	3.75	4.09	Multi-line of Kalyansona

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**Table 2.1.8 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
18	HD 1941 (HIRA)	E 5477 / S64	IARI, N. Delhi	VS Mathur and others	01.01.1972	1.51	2.36	Good for chapatti, protein>13%

**Table 2.1.9: Varieties notified for irrigated, timely sown as well as late sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	UP 2338	UP 368/VL 421/UP 262	GBPUA&T, Pantnagar	TB Singh, SK Malik, Sohan Pal, SS Ahlawat, DP Saini	408(E) 04.05.1995	4.71 (TS) 4.06 (LS)	5.51 (TS) 4.90 (LS)	Tolerance to leaf blight
2	RAJ 3077	HD 2267/RAJ 1482/5/BB/INIA66' S'/NAPO	RARI, Durgapura	-	915(E) 06.11.1989	4.00 (TS) 3.30 (LS)	5.0 (TS) 4.35 (LS)	Suitable for saline/alkaline soil
3	SONORA 64	YT54/N10B//2*Y54	IARI, N. Delhi	-	01.01.1967	2.32	2.93	Red grains

**Table 2.1.10: Varieties notified for rainfed, timely sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	PBW 660	WG 6761 / WG 6798	PAU, Ludhiana	Indoo Bhagat, NS Bains, VS Sohu, GS Mavi, Achla Sharma	3540(E) 22.11.2016	3.53	4.93	High degree of resistance to yellow rust, brown rust and good for chapatti quality (Score: 7.96)
2	PBW 644	PBW175/HD2643	PAU, Ludhiana	NS Bains, VS Sohu, GS Mavi, Achla Sharma, Karam Chand, Indoo Bhagat, VP Mittal	1708(E) 26.07.2012	3.14	4.48	High degree of resistance to yellow rust
3	WH 1080	21 <sup>ST</sup> SAWSN151	CCS HAU, Hisar	SK Sethi and others	1661(E) 27.01.2011	3.08	4.44	High protein content (12.5%)
4	PBW 396	CNO67/MFD //MON"S/3/SERI	PAU, Ludhiana	GS Nanda, Karam Chand, HS Aulakh, SK Sharma, AS Randhawa, Harjinder Singh, VS Sohu, Gurdev Singh, Kuldeep Singh, VP Mittal	340(E) 03.04.2000	3.35	3.94	Resistant to yellow and brown rust
5	PBW 299	BB/KAL/WL 711/PBW 65	PAU, Ludhiana	—	615(E) 17.08.1993	3.59	4.82	Resistance to yellow rust, brown rust and Karnal bunt
6	PBW 175	HD 2160 /WG 1025	PAU, Ludhiana	HS Dhaliwal and others	280(E) 13.04.1989	2.80	4.81	Resistance to yellow rust, brown rust and Karnal bunt
7	DL 153-2 (KUNDAN)	TANORI 71/ NP 890	IARI, N. Delhi	RN Sawhney, Rajendra Kumar, VL Chopra, HR Mohindro, JB Sharma, HK Kaushik	832(E) 18.11.1985	2.34	3.12	Resistance to black rust and tolerant to Karnal bunt
8	IWP 72	E 5606/2*KS	IWBR, Karnal	—	470(E) 19.02.1980	3.04	3.43	Resistance to brown rust and salt sensitive
9	HD 1981 (PRATAP)	E 5557/HD 845	IARI, N. Delhi	VS Mathur and others	13(E) 19.12.1978	2.75	4.15	—
10	WL 410	SN63/4/36896//CJ 54/P4160E/3/HUA R/5/KAL	PAU, Ludhiana	—	13(E) 19.12.1978	2.07	2.81	Resistance to yellow rust
11	C 306	RGN/CSK3//2*C5 91/3/C217/N14 //C281	CCS HAU, Hisar	Vasudeva and others	4045(E) 24.09.1969	2.60	3.60	Good for chapatti quality

**Table 2.1.11: Varieties notified for restricted irrigation, timely sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	WH 1142	CHENAEGILOPS SQUARROSA(TA US)//FCT/3/2*WE AVER	CCS HAU, Hisar	SS Dhanda, OP Bishnoi, RPS Saharan, AS Redhu, SR Verma, SK Sethi, IS Panwar, Vikram Singh, SS Grakh, RAS Lamba, Yogendra Kumar Gulia	1228(E) 07.05.2015	4.81	6.25	Tolerance to drought and lodging
2	HD 3043	PJN/BOW//OPAT A*2/3/CROC_1/A e.squarrosa(224)//OPATA	IARI, N. Delhi	GP Singh, HB Chaudhary, RVP Singh, KV Prabhu, Anju M Singh, Rajbir Yadav, Neelu Jain, Ramya P, Jagdish Kumar, SV SaiPrasad, AN Mishra, PR Kumar, Sanjay Kumar, Ram Kumar Sharma, Dinesh Kumar, JB Sharma, Vinod, PK Singh, IS Solanki	456(E) 16.03.2012	4.28	5.02	Adult plant resistance to yellow and brown rust

**Table 2.1.12: Durum and triticale varieties notified for irrigated, timely sown conditions of NWPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	WHD 943	GLARE/PLATA - 16//AJAIA - 3/SILVER16	CCS HAU, Hisar	SK Sethi, SR Verma, AS Redhu, SS Grakh, Rattan Singh, SK Thakral, RAS Lamba, SS Dhanda, IS Panwar, OP Bishnoi	632(E) 25.03.2011	4.8	6.39	Tolerance to Karnal bunt
2	PDW 314	AJAI A 12/F3 LOCAL (SEL. ETHIO.135.85)//P LATA 13/3/ SOMAT 3/4/ SOOTY9/ RASCON 37	PAU, Ludhiana	Johar Singh and others	733(E) 01.04.2010	5.03	7.12	High degree of resistance against leaf blight
3	PDW 291	BOOMER 21/ MOJO2	PAU, Ludhiana	GS Mahal and others	1177 (E) 25.08.2005	4.76	5.80	Resistance to yellow rust, brown rust, Karnal bunt and flag smut

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**Table 2.1.12 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
4	PDW 233	YAV'S'/TEZ "S"	PAU, Ludhiana	GS Bhullar, GS Mahal, Khem Singh Gill	360(E) 01.05.97	4.71	4.85	High yellow pigment content
5	WHD 896	STIL"S"/YAV"S' //PEN"S	CCS HAU, Hisar	SK Sethi and others	408(E) 04.05.1995	4.20	5.80	Resistance to yellow and brown rust, Karnal bunt and high $\beta$ -carotene (6.7 ppm) content
6	PDW 215	RAJ 911//AA'S/ D#2E/3/DWL 5002	PAU, Ludhiana	—	793(E) 22.11.1991	4.00	4.9	Good for noodles
7	TL 1210 (Triticale)	CINAMON/RAJ 821//INIA.TURKE Y60*2//ARM'S'	PAU, Ludhiana	—	10(E) 01.01.1988	3.47	4.52	Resistance to yellow rust, brown rust, Karnal bunt, loose smut and flag smut
8	PBW 34	AA 'S'/FGO'S'	PAU, Ludhiana	—	540(E) 24.07.1985	4.77	5.15	Resistance to yellow rust, brown rust, Karnal bunt, loose smut and flag smut
9	DWL 5023	CR'S'-LD'S'- GR'S'.	PAU, Ludhiana	—	371(E) 29.05.1982	4.38	5.08	Semi-dwarf durum variety for NWPZ, good semolina recovery
10	TL 419 (Triticale)	ARM'S'/KLA'S'	PAU, Ludhiana	—	371(E) 29.05.1982	4.49	5.26	Resistance to yellow rust, brown rust, Karnal bunt, powdery mildew and loose smut

### **2.1.4 North Eastern Plains Zone (NEPZ)**

The North Eastern Plains Zone comprises eastern Uttar Pradesh, Bihar, Jharkhand, Assam, West Bengal plains. In the NEPZ, wheat is cultivated under highly diverse situations in around 8 million ha area. Among different wheat growing zones, this zone occupies 27% of total wheat area and accounts for 22% of the total wheat production in the country. The average productivity in the NEPZ hovers around 20-21q//ha which is far lower than the national productivity of 30 q/ha registering a yield gap of around 30-35%.

Rice-wheat system is the most common cropping pattern followed in this zone. In Bihar, the rice-wheat, maize-wheat and pulse- wheat cropping patterns are followed, whereas rice- wheat and potato-wheat cropping patterns occupy most of the wheat growing areas in Bengal.

The crop faces harsh environment like high temperature at the time of crop growth and grain filling, moisture stress due to lack of proper irrigation facilities, micro-element deficiencies and toxicities in soil, water-logged situation due to excess rains in some parts. Diseases like spot blotch and brown rust are the most important ones. Development of multiple stress resilient genotypes is the major goal of wheat improvement programmes for NEPZ. Various research institute/ universities such as CSAUA&T, Kanpur, NDU&T, Faizabad, BHU-Varanasi located in this zone have developed many high yielding varieties suitable for cultivation in this zone. At one point of time, wheat varieties such as UP 262 and HUW 234 were quite popular among the farmers of this zone due to their wider adaptability and input responsiveness. Recently released varieties such as HD 2967, DBW 14, DBW 39, CBW 38, K 0307, K 1006, HD 2733, NW 5054 occupy sizeable area in the zone. A total of 55 wheat varieties have been notified for different production conditions of NEPZ (Tables 2.1.13 to 2.1.18).

#### **Wheat Varieties developed for different production conditions of NEPZ**

Irrigated, timely sown conditions: 29

Irrigated, late sown conditions: 14

Irrigated, timely sown as well as late sown: 2

Rainfed, timely sown conditions: 6

Rainfed, late sown conditions: 3

Restricted irrigation, timely sown: 1

**Table 2.1.13: Varieties notified for irrigated, timely sown conditions of NEPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	K 1006	PBW343/HP1731	CSAU&T, Kanpur	LP Tiwari, NB Singh, YP Singh	1919(E) 30.7.2014	4.70	6.54	Tolerance to leaf blight, loose smut and powdery mildew
2	Narendra Wheat 5054 (NW 5054)	THELINI/2*ATTIL A*2/PASTOR	NDUA&T, Faizabad	BN Singh, R Ahmad, Vinay Kumar Singh, SP Singh	1919(E) 30.7.2014	4.70	6.42	Resistance to foliar blight and brown rust
3	HD 2967	ALD/COC//URES H/HD2160M/HD2 278	IARI, N. Delhi	BS Malik, RK Sharma, Rajbir Yadav, GP Singh, AP Sethi, Rajiv K Sharma, V Tiwari, VC Sinha	1919(E) 30.7.2014	4.50	6.50	Wider adaptability
4	DBW 39	ATTILA/HUI	IWBR, Kamal	Gyanendra Singh, Jag Shoran, R Chatrath, DP Singh, BS Tyagi, Raj Kumar, SK Singh, V Tiwari, R Tiwari, SS Singh	733(E) 01.04.2010	4.46	6.47	Resistance to black rust, brown rust and tolerant to leaf blight
5	RAJ 4120	PBW 343V 1	RARI, Durgapura	SM Bhatnagar, SN Sharma, Hoshiyar Singh, Ved Prakash, SR Pancholi	449(E) 11.02.2009	4.70	6.63	Resistance to all the three rusts and tolerant to leaf blight
6	CBW 38	CNDO/R 143/ENTE /MEXI 2/3/Ae.SQU ARROSA (TAUS)/ 4/WEA/ER/5/2*PA STOR	IWBR, Kamal	Ravish Chatrath, SK Singh, Gyanendra Singh, MS Saharan, GP Singh, BS Tyagi, Jag Shoran, B Mishra	449(E) 11.02.2009	4.44	6.53	Resistance to yellow rust, brown rust and tolerant to leaf blight
7	K 0307 (SHATABADI)	K 8321/JP2003	CSAU&T, Kanpur	YP Singh, LP Tiwari, Parvez Alam, VK Singh, NB Singh, VP Singh, Javed Bahar Khan, RP Singh, PN Awasthi, AR Vishwakarma, JK Srivastava	122(E) 06.02.2007	4.56	6.50	Tolerance to terminal heat stress
8	HD 2824 (POORVA)	PTO-1 /CNO 79/PRL /GAA /3/HD 1951	IARI, N. Delhi	BS Malik, AP Sethi, RK Sharma, Vinod Tiwari, S Chowdhury, VC Sinha	161(E) 4.02.2004	4.57	7.0	Resistance to brown rust and tolerant to leaf blight
9	HD 2733 (VSM)	ATTILA/3/TUI /CARC //CHEN / CHTO /4/ATTILA	IARI, N. Delhi	AP Sethi, S Chowdhury, RK ShSinha, VP Kulshreshta, BS Malikarma, VC	92(E) 02.02.2001	4.81	7.15	Resistance to brown rust and tolerant to leaf blight
10	PBW 443	PBW/304 /CPAN 1922	PAU, Ludhiana	GS Nanda, Karam Chand, HS Aulakh, SK Sharma, AS Randhawa, Harjinder Singh, VS Sohu, Kuldeep Singh	340(E) 03.04.2000	4.68	5.27	Resistance to brown rust

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**Table 2.1.13 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
11	HUW 468 (MALVIYA WHEAT468)	CPAN-1962 / TONI //LIRA'S/ PRL'S	BHU, Varanasi	Ram Dhari, AK Joshi, B Arun	425 (E) 08.06.1999	4.28	5.28	Tolerance to leaf blight
12	Narendra Wheat 1012 (NW 1012)	PARANA#2//JUP/ B.J'S/3/VEE#5'S //JUN'S	NDUA&T, Faizabad	BN Singh, RV Singh, AK Singh, R Ahmad, SP Singh, SB Chand	401(E) 15.05.1998	4.24	4.52	Resistance to brown rust
13	HP 1761 (JAGDISH)	RL 6010/ 6*INIA //3* KAUZ	IARI RS, Pusa	MP Jha, BP Sinha, KMP Singh, AK Sinha, RB Rai, AA Ahsan, SNP Yadav, S Prasad, A Kumar, TB Singh	647(E) 09.09.1997	4.24	4.70	Resistance to brown rust and tolerant to leaf blight
14	K 9107 (DEWA)	K 8101 /K 68	CSAU&T, Kanpur	Ziauddin Ahmad, YP Singh, RP Singh, AA Khan, PC Verma, BM Khanna, US Lal Srivastava, JB Khan, Parvez Alam, Meera Srivastava, NB Singh	1(E) 01.01.1996	4.02	5.50	Highly tolerant to brown rust, leaf blight and karnal bunt
15	HP 1731 (RAJLAKSHMI)	LIRA //PARULA/ TONICHI	IARI RS, Pusa	MP Jha, BP Sinha, KMP Singh, Anil Kumar, TB Singh	408(E) 04.05.1995	4.11	4.36	Resistance to brown rust and tolerant to leaf blight
16	K 8804 (K 88)	VEERY 'S'//WL 711	CSAU&T, Kanpur	Ziauddin Ahmad, PC Verma, YP Singh, RP Singh, BM Khanna, RP Awasthi, US Lal Srivastava, JB Khan, Meera Srivastava, US Rana	615(E) 17.08.1993	4.49	6.04	Resistance to brown rust
17	DL 784-3 (VAISHALI)	KAL*4/TR 380 .27*4/3 AG/3/HD 2281	IARI, N. Delhi	RN Sawhney, JB Sharma, DN Sharma, HB Chaudhary, Nanak Chand,	615(E) 17.08.1993	3.84	4.15	Resistance to brown rust, black rust and having dark brown colour of ear head
18	HD 2402	HD2177//CNO67/ BB/3/HD2160/4/H D2236	IARI, N. Delhi		471(E) 05.05.1988	3.59	4.20	Suitable for both timely and late sown conditions and tolerant to terminal heat
19	K 8020 (TRIVENI)	KALYANSONA/ HD1982	CSAU&T, Kanpur	JC Sharma, Ziauddin Ahmad, LS Gupta, NN Dikshit, BM Khanna, Vindhyachal Singh	165(E) 06.03.1987	3.50	4.80	Field resistance to all the three rusts

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Table 2.1.13 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
20	BW 11 (PURBALI)	KVZTI-71/TZTO	Deptt. Of Agri., Malda (WB)	S Chowdhury and others	834(E) 18.09.1987	3.80	4.90	
21	HUW 213 (MALVIYA WHEAT213)	NORTENO / MOTI //HD 2160	BHU, Varanasi	G S Sharma and others	832(E) 18.11.1985	3.85	4.9	Resistance to brown rust
22	HUW 206 (MALVIYA WHEAT206)	KAVKAZ/BUHO// KAL YANSONA. BLUE BIRD	BHU, Varanasi	G S Sharma and others	540(E) 24.07.1985	4.21	4.64	Resistance to all the three rusts
23	HUW 55 (MALVIYA 55)	E 4870/HD 1982 INIA 66 /HD 2189	BHU, Varanasi	G S Sharma and others	596(E) 13.08.1984	3.62	5.54	Tolerance to all major diseases of NEPZ
24	HUW 37 (MALVIYA 37)	KALYANSONA / S 331//HD 1982	BHU, Varanasi	G S Sharma and others	19(E) 14.01.1982	3.67	5.17	Tolerance to all the major diseases of NEPZ
25	K 7410 (SHEKHAR)	K 812 'S'/ KALYANSONA	CSAUA&T, Kanpur	JC Sharma, Ziauddin Ahmad, MP Singh, AN Mishra, Vindhyachal Singh, PC Verma	470(E) 19.02.1980	3.23	4.64	Tolerance to drought and also suitable for alkaline soils
26	UP 115	(NP887/E4870) // UP 302	GBPUA&T, Pantnagar	TB Singh, PL Gautam, SK Malik, Sohan Pal, DP Saini	470(E) 19.02.1980	3.83	4.81	Also suitable for late sown
27	HUW 12 (MALVIYA WHEAT 12)	NP 876 /CIANO 66	BHU, Varanasi	G S Sharma and others	470(E) 19.02.1980	3.38	5.21	Resistance to brown rust
28	HP 1102	8156(B)/NAR 63	IARI RS, Pusa	MP Jha and others	470(E) 19.02.1980	3.68	4.25	Resistance to all the three rusts
29	UP 262	S 308/BAJIO 66	GBPUA&T, Pantnagar	TB Singh, PL Gautam, JP Srivastava, SK Malik, Sohan Pal, DP Saini, PS Sisodia, Amerika Singh	1004(E) 23.03.1978	3.58	4.2	Suitable for both timely and late sown conditions



**Table 2.1.14: Varieties notified for irrigated, late sown conditions of NEPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HD 3118 (PUSA VATSALA)	ATTILA*2/PBW65 /WBLL1*2/TUKURU	IARI, N. Delhi	GP Singh, PK Singh, Anju M Singh, Neelu Jain, Ramya P, SV Sai Prasad, Rajbir Yadav, KB Gaikwad, Jagdish Kumar, VK Singh, JB Sharma, AN Mishra, M Siwasami, P Jayaprakash, Vikas, DP Walia, Sanjay Kumar, Subhash Chander, Ajay Arora, Ram Kumar Sharma, Vinod, RN Yadav, IS Solanki, JB Singh, Divya Ambati, Niharika Mallick, PR Kumar, TR Das, KV Prabhu	268(E) 28.01.2015	4.17	6.60	High degree of resistance to yellow and brown rust
2	DBW 107	TUKURU/INQLAB	IWBR, Kamal	SK Singh, V Tiwari, R Chatrath, NVPR Ganga Rao, Raj Kumar, BS Tyagi, Gyanendra Singh, Indu Sharma	268(E) 28.01.2015	4.13	6.87	Resistance to brown rust and tolerant to terminal heat
3	HD 2985 (PUSA BASANT)	PBW 343/PASTOR	IARI, N. Delhi	GP Singh, HB Chaudhary, Anju M Singh, Rajbir Yadav, Ravish Chatrath, SV Sai, Prasad, RVP Singh	632(E) 25.03.2011	3.77	5.14	High level of resistance against leaf blight, foot rot and adult plant resistance against brown rust
4	HI 1563 (PUSA PRACHI)	MACS 2496*2/MC 10	IARI RS, Indore	MY Samdur, SV Sai Prasanna Mishra, Sita Ram Kantwa, AK Singh, ad, HN Pandey, DK Verma, DC Saxena and GP Singh	632(E) 25.03.2011	3.76	5.17	Resistance to all the pathotypes of the three rusts at seedling stage
5	DBW 14	RAJ 3765/PBW 343	IWBR, Kamal	GP Singh, Ravish Chatrath, Jag Shoran, Gyanendra Singh, SK Singh, S Negarajan,	283(E) 12.03.2003	4.27	6.39	Tolerant to leaf blight
6	Narendra Wheat 2036 (NW 2036)	BOW/CROW/BUC /PVN	NDUA&T, Faizabad	BN Singh, RN Singh, AK Singh, R Ahmad, SP Singh	283(E) 12.03.2003	4.25	6.62	Resistance to brown rust and tolerant to leaf blight
7	HW 2045 (KAUSHAMBI)	HD 2402 *6 /SUNSTAR *6 /C-80-1	IARI RS, Wellington	SMS Tomar, M Sivasamy, MK Menon, Bhanwar Singhy, RN Brahma,	937(E) 04.09.2002	3.37	4.19	Early maturing variety, tolerance to terminal heat
8	Narendra Wheat 1014 (NW 1014)	HAHN 'S'	NDUA&T, Faizabad	BN Singh, RV Singh, AK Singh, R Ahmad, SB Chand, SP Singh	401(E) 15.05.1998	3.08	4.00	High degree of resistance against all the three rusts, leaf blight and karnal bunt

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Table 2.1.14 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
9	HD 2643 (GANGA)	VEE'S/ HD2407 //HD 2329	IARI, N. Delhi	S Chowdhury, VP Kulshreshtha, Sharma, KBL Jain, D Satywali, Sanjay SP Yadav, JS Amawate, AP Sethi, RK Kumar, RN Gadag, VC Sinha	360(E) 01.05.1997	3.64	5.39	Tolerance to brown rust and leaf blight
10	HP 1744 (RAJESHWARI)	CIANO/PARULA //CHILERO /GARUDA	IARI RS, Pusa	MP Jha, BP Sinha, AK Sinha, AA Ahsan, Anil Kumar, TB Singh, RB Rai	647(E) 09.09.1997	3.64	3.94	Resistance to brown and yellow rust; tolerance to leaf blight and good for chapatti quality
11	HP 1633 (SONALI)	RL 6010/5* SKA	IARI RS, Pusa	MP Jha and others	814(E) 04.11.1992	3.10	3.41	Resistance to leaf rust, karnal bunt and tolerant to leaf blight
12	HUW 234 (MALVIYA 234)	HUW 12* 2 / CPAN 1666// HUW 12	BHU, Varanasi	G S Sharma and others	258(E) 14.05.1986	3.34	3.53	Resistance to leaf rust
13	HD 2307	HD-2160/116-1-3	IARI, N. Delhi	KBL Jain and others	832(E) 18.11.1985	2.07	3.8	–
14	HP 1209	E 4871/PJ 62	IARI RS, Pusa	MP Jha and others	470(E) 19.02.1980	3.07	3.28	–

Table 2.1.15: Varieties notified for irrigated, timely sown as well as late sown conditions of NEPZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HD 1982 (JANAK)	YT54/N10B//HD8 45	IARI, N. Delhi	VS Mathur and others	193(E) 30.04.1975	1.39	3.34	Also released in Nepal and Bangladesh
2	NP 852	KF/2*NP 761	IARI RS, Pusa	–	4045 29.09.1969	3.50	4.00	–

**Table 2.1.16: Varieties notified for rainfed, timely sown conditions of NEPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	K 1317	K0307/K9162	CSAUA&T, Kanpur	LP Tiwari, YP Singh, NB Singh, PN Awasthi, SV Singh, JB Khan	1379(E) 27.03.2018	3.01	3.86	Resistant to brown rust and leaf blight. Good Chapati quality (Score:8.05).
2	HD 3171	PBW 343/HD 2879	IARI, N. Delhi	Rajbir Yadav, Kiran B. Gaikwad, GP Singh, IS Solanki, RK Sharma, Vinod, JB Sharma, Anju M. Singh, Sanjay Kumar, Ambrish Sharma, PK Sharma, Neelu Jain, Naresh Kumar, SK Jha, Niharika Mallick, H Prashant	1007(E) 30.03.2017	2.80	4.63	High degree of resistance to yellow, brown and black rusts, Higher iron content (47.1 ppm)
3	HD 2888 (PUSA WHEAT 107)	C306/T.sphaeroco ccum//HW 2004	IARI, N. Delhi	Bhanwar Singh, SMS Tomar, Vinod, S Chaudhary, M Sivasamy	599(E) 25.04.2006	2.25	3.83	High degree of resistance to brown rust, black rust and having high flour recovery
4	MACS 6145	C306+LR28	ARI, Pune	MK Menon, RN Brahma, M Sivasamy, SMS Tomar, (IARI, Wellington)/VS RHonrao, AM Chavan, VD Surve, VM ao, SC Misra, MD Bhagwat, RN Dixit, BK Khade	122(E) 02.02.2005	2.55	3.70	Highly resistant to brown rust
5	K 8027 (MAGHAR)	NP875/4/N10B/Y5 3/Y50/3/KT54B/5/ 2*K852	CSAUA&T, Kanpur	JC Sharma, Ziauddin Ahmad, LS Gupta, BM Khanna, Vindhyachal Singh	599(E) 31.07.1989	2.50	3.70	Tolerant to Foliar blight and loose smut
6	C 306	RGN/CSK3 //2* C591/3/C217/N14 //C281	CCS HAU, Hisar	Vasudeva and others	4045(E) 24.09.1969	2.60	3.60	Good for chapatti quality

Table 2.1.17: Varieties notified for rainfed, late sown conditions of NEPZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	K 9465 (GOMTI)	HD 2160/K 68	CSAU&T, Kanpur	Ziauddin Ahmad, YP Singh, Parvez Alam, JB Khan, BM Khanna, NB Singh, SR Vishwakarma	401(E) 15.05.1998	2.03	3.00	Resistance to brown rust, Tolerance to heat and drought
2	K 8962 (INDRA)	K 7401/HD 2160	CSAU&T, Kanpur	YP Singh, Ziauddin Ahmad, JC Sharma, Parvez Alam, PC Verma, BM Khanna, JB Khan, RP Singh, USL Srivastava	1(E) 01.01.1996	2.04	2.35	Tolerance to brown and black rust
3	HDR 77	PARTIZANKA /HD 2204 //HD2204	IARI, N. Delhi	—	386(E) 15.05.1990	1.98	2.90	Good for chapatti quality

**Table 2.1.18: Varieties notified for restricted irrigation, timely sown conditions of NEPZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	Pusa Wheat 1612 (HI 1612)	Kauz//Altar84/AO S/3/Milani/Kauz/4/Huities	IARI RS, Indore	Jang Bahadur Singh, SV Sai Prasad, Divya Ambati, Rahul M Phuke, TL Prakasha, AN Mishra, KC Sharma, AK Singh, RK Sharma, GP Singh, JB Sharma, Rajbir Yadav, Sanjay Kumar, Vinod, Anju M Singh, PK Singh, Neelu Jain, KB Gaikwad, VK Singh, Niharika Mallick, Harikrishna, SK Jha, Naresh Kumar, M Sivasamy, P Jayaprakash, VK Vikas, IS Solanki, TR Das, Kalyani Kumari, Dharam Pai, Madhu Patial, RNYadav, K Vinod Prabh	1379(E) 27.03.2018	3.76	5.05	Yield gain at one irrigation (32.4%), and two irrigations (52.4%) over no irrigation. High levels of field resistance to yellow and brown rust.

### 2.1.5 Central Zone (CZ)

The Central Zone comprises Madhya Pradesh, Chhattisgarh, Gujarat, Rajasthan (Kota and Udaipur divisions) and Jhansi division of Uttar Pradesh. This zone is known for premium quality bread wheat having typically hard lustrous grains with high gluten strength. This zone is also having sizeable area under durum wheat.

The zone is characterized by black cotton soil classified as vertisols. The vertisols pose problems when too dry or too wet resulting in formation of cloddy or puddle structure, respectively (Krantz et al. 1978). The vertisols have high water retention capacity producing high yield under limited water availability also. Soybean- wheat has emerged as most prevalent cropping system after 1980. Constraints of irrigation water availability and high temperature allthrough the crop cycle limit the exploitation of yield potential. Development of water use efficient high yielding varieties having tolerance to early and late heat and product specific varieties are the major objectives in both bread and durum wheat improvement programme in CZ.

There is need to focus research on new emerging issues like change in the dynamics of diseases and pests under changing climatic condition as well as improvement in quality traits. IARI RS Indore, JNKVV RS Powarkheda, SDAU Vijapur, JAU Junagadh, JNKVV Jabalpur are the major research centres working on development of high yielding varieties in CZ. Lok 1 wheat variety, developed by Lokharti Gramvidyapith, Sanosara, Gujarat was the most preferred wheat variety by the farmers of this zone till 2005. Varieties such as Jairaj, Sujata (HI 617), Swati (HI 787), HI 8498, MP 4010, GW 273, GW 322, GW 366 and HI1544 have made impact in increasing the production and productivity of this zone. A total of 38 bread wheat varieties and 18 durum and dicoccum wheat varieties have been notified for different production conditions of CZ (Tables 2.1.19 to 2.1.25)

#### **Wheat Varieties developed for different production conditions of CZ**

Irrigated, timely sown conditions: 12

Irrigated, late sown conditions: 10

irrigated, timely sown as well as late sown conditions: 2

Rainfed, timely sown conditions: 6

Rainfed/Restricted irrigation, timely sown conditions: 4

Restricted irrigation, timely sown conditions: 4

Durum and dicoccum varieties for irrigated, timely sown conditions: 12

Durum and dicoccum varieties for rainfed, restricted irrigation, timely sown conditions: 6

**Table 2.1.19: Varieties notified for irrigated, timely sown conditions of CZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HI 1544 (PURNA)	HINDI62/BOBWHI TE/CAPAN 2099	IARI RS, Indore	RC Bhawsar, MY Samdur, SV Sai Prasad, AN Mishra, PK Varma, AK Singh, SR Kantwa, HN Pandey	1108(E) 08.05.2008	5.14	6.82	Early maturing, field resistance to brown rust, black rust and having pubescent glume
2	GW 366	DL 802-3/GW 232	JAU, Junagadh	KV Jivani, KL Dobatiya, PR Padhar, RR Rathod, LG Vanapriya, HP Ponkiya, HD Kavani, BG Chovatia	122(E) 06.02.2007	5.17	7.79	Resistance to brown and black rust
3	GW 322	GW 173/GW 196	RARS, Vijapur	BS Jadon, AV Agalodiya, BN Patel, BM Patel, AS Patel, RM Patel	937(E) 04.09.2002	4.47	6.63	High degree of resistance to black rust, brown rust and tolerant to terminal heat
4	GW 273	CPAN 2084/VW 205	RARS, Vijapur	BS Jadon, AV Agalodiya, BN Patel, RM Patel, BM Patel, AS Patel	401(E) 15.05.1998	4.69	6.48	Field resistance to brown rust, black rust and having high sedimentation value
5	DL 803-3 (KANCHAN)	HUW 202/K 7537/MUTANT OF HD2160	IARI, N. Delhi	RN Sawhney, JB Sharma, Nanak Chand, DN Sharma, Om Prakash, HB Chaudhary	408 (E) 04.05.1995	4.65	5.03	Resistance to brown and black rust
6	GW 190	VEE/3/BB'S'/SKA/ /ARJUN	RARS, Vijapur	BS Jadon, AV Agalodiya, BN Patel, DB Patel, RM Patel, Ashok Mishra, AD Patel	636(E) 02.09.1994	4.64	5.22	Tolerance to root rot nematode
7	HI 1077 (MANGLA)	GALL-AUST-II-61-151/CNO-NO66-KAL3	IARI RS, Indore	YM Upadhyaya, BH Matai, JS Ijardar, RCBhavsar, RS Thakur, AN Mishra	915(E) 06.11.1989	4.50	5.9	Tolerance to black rust
8	HD 2278 (PARVATI)	HD 2119 //HD 1912 /HD 1592/ 3/HD 1962/E 4870/4/ K65	IARI, N. Delhi	VS Mathur and others	596(E) 13.08.1984	3.96	4.83	Resistance to black rust
9	RAJ 2535	HD 2204/RAJ 1464	RARI, Durgapura	-	01.01.1984	3.45	4.74	-

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Table 2.1.19 Contd.

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
10	HD 2236 (KSHIPRA)	HD 2119 / HD 1981	IARI, N. Delhi	VS Mathur and others	19(E) 14.01.1982	4.01	4.59	Good for chapatti quality
11	WH 147	E 4870/C286/C2 73 /4/S339/PV18	CCS HAU, Hisar	Mohd. Yunus and others	13(E) 19.12.1978	4.11	5.5	High protein (>13%) content
12	LERMA ROJO	Y50/N 10B/L 52/3/2*LR	IARI, N. Delhi	-	4045(E) 24.09.1969	3.08	4.31	Semi-dwarf variety, Red coloured grains

Table 2.1.20: Varieties notified for irrigated, late sown conditions of CZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	Raj 4238	HW 2021/RAJ 3765	RARI, Durgapura	SN Sharma, Hoshiyar Singh, Ved Prakash, SR Pancholi, SM Bhatnagar	2238(E) 29.06.2016	4.55	6.28	Good for chapatti quality
2	MP 3336 (JW 3336)	HD 2402/GW 173	JNKVV, Jabalpur	RS Shukla, PC Mishra, DK Mishra	2817(E) 19.09.2013	4.47	6.44	Resistance to brown and black rust
3	MP 1203	FASN2TEPOKA/3/ CHEN/A.SQUARRO SA/TA	JNKVV RS, Powarkheda	PC Mishra, RS Shukla, SK Rao	454(E) 11.02.2009	4.12	5.96	High protein content (13.5%)
4	HD 2932 (PUSA WHEAT 111)	KAUZ/STAR/HD 2643	IARI, N. Delhi	BS Malik, Rajbir Yadav, GP Singh, RK Sharma, V Tiwari, AP Sethi, Rajiv K Sharma, VC Sinha	1108(E) 08.05.2008	4.20	5.78	Resistance to brown rust and high zinc content
5	HD 2864 (URJA)	DL 509-2/ DL 377-8	IARI, N. Delhi	SS Singh, GP Singh, JB Sharma, DN Sharma, Nanak Chand	122(E) 02.02.2005	4.17	5.15	Highly resistance to brown rust, foot rot and tolerant to black rust
6	MP 4010	ANGOSTURA 88	RVSKVV, Gwalior	KPS Malik, SPS Tomar, GS Lal	283(E) 12.03.2003	4.01	5.36	Resistance to black rust, brown rust and tolerant to terminal heat

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**Table 2.20 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
7	DL 788-2 (VIDISHA)	K7537/HD2160/HD2278//L24/K4.14	IARI, N.Delhi	RN Sawhney, SS Singh, Harsh Mehta, HB Chaudhary, JB Sharma, Nanak Chand, DN Sharma, Om Prakash	647(E) 09.09.1997	3.93	4.3	Good for chapatti quality and resistance to brown and black rust
8	GW 173	TW275 /7/6/1/ LOK-1	RARS, Vijapur	BS Jadon, AV Agalodiya, BN Patel, DB Patel, RM Patel, Ashok Mishra, AD Patel	636(E) 02.09.1994	4.10	4.9	Tolerance to terminal heat
9	HD 2327	HD-2160/346-1	IARI, N.Delhi		832(E) 18.11.1985	2.64	3.16	Highly resistance to all the three rusts
10	HI 784 (SWATI)	NAPO/TOB S'/3/8 156//KAL/BB	IARI RS, Indore	YM Upadhyaya, JS Ijardar, RC Bhawsar, RS Thakur, P Bahadur, VC Sinha	596(E) 13.08.1984	2.69	3.64	Good degree of resistance to brown rust and good for chapatti making

**Table 2.1.21: Varieties notified for irrigated, timely sown as well as late sown conditions of CZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	LOK 1	S308/S331	Lok Bharti, Sanosara	Zaverbhai Patel	19(E) 14.01.1982	3.80	4.54	Wider adaptability and good for chapatti quality
2	SONORA 64	YT54/N10B//2*Y54	IARI, N.Delhi	-	01.01.1967	2.32	2.93	Red coloured grains

**Table 2.1.22: Varieties notified for rainfed, timely sown conditions of CZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HI 1500 (AMRITA)	HW 2002*2// STREMPALLI/PN C 5	IARI RS, Indore	RC Bhawsar, SV Sai Prasad, AN Mishra, PK Varma, UK Behera, HN Pandey	283(E) 12.03.2003	1.60	3.00	Resistance to brown rust, black rust, and good for chapatti quality
2	HW 2004 (AMAR)	C 306 *7 //TR 380-14 #7 /3 AG14	IARI RS, Wellington	SMS Tomar, RN Brahma, M Sivasamy, MK Menon	360(E) 01.05.1997	1.75	2.02	Resistance to brown rust
3	JWS17 (SWAPNIL)	Selection from HUW 334	JNKVV RS, Sagar	PC Mishra, Y Mishra, SK Jain, RK Pathak, UK Pathak, UK Twari, SM Kurmvanshi	662(E) 17.09.1997	2.33	2.95	Resistance to brown rust and loose smut
4	HI 617 (SUJATA)	Selection from C 306	IARI RS, Indore	YM Upadhyaya, JS Ijardar, RS Thakur, RC Bhawsar	19(E) 14.01.1982	1.47	1.78	Good for chapatti quality
5	HI 385 (MUKTA)	HYB 633/NP 842	IARI RS, Indore	YM Upadhyaya, RS Thakur, RC Bhawsar, JS Ijardar	786 (E) 02.02.1976	1.16	1.77	Fairly resistance to all the three rusts
6	D 134	RS31/WIS245'S'	RARI, Durgapura		566(E) 21.09.1974	1.40	2.80	Non-lodging variety

**Table 2.1.23: Varieties notified for rainfed/restricted irrigation, timely sown conditions of CZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	MP 3288 (JW 3288)	DOVE/BUC/ DL 788-2	JNKVV, Jabalpur	RS Shukla, PC Mishra, DK Mishra, SK Rao	2326(E) 10.10.2011	2.32 (RF) 3.51 (RI)	4.21 (RF) 4.39 (RI)	Tolerance to major diseases
2	MP (JW ) 3173	HI 1011/ WH-9651	JNKVV, Jabalpur	RS Shukla, PC Mishra, SK Rao	449(E) 11.02.2009	2.57	4.6	Tolerance to drought
3	HI 1531 (HARSHITA)	HI 1182/ CPAN 1990	IARI RS, Indore	RC Bhawsar, MY Samdur, SV Sai Prasad, AN Mishra, PK Varma, AK Singh, HN Pandey	599(E) 25.04.2006	2.4 (RF), 2.7 (RI)	3.98 (RF), 4.0 (RI)	Tolerance to drought and resistance to brown rust
4	HYB 65 (HD1467)	GB-AUS/A115	JNKVV RS, Powarkheda	RB Ekbote	786(E) 02.02.1976	1.3 (RF), 1.9 (RI)	2.2 (RF)	Tolerance to drought

**Table 2.1.24: Varieties notified for restricted irrigation and timely sown conditions of CZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	DBW 110	KIRITAT/4/2*SERI *2/3/KAUZ*2/BOW //KAUZ	IIWBR, Karnal	SK Singh, Vinod Tiwari, R Chairath, K Venkatesh, BS Tyagi, Raj Kumar, Gyanendra Singh, Indu Sharma	268(E) 28.01.2015	3.90	5.05	Resistance to brown rust
2	J 1-7	Selection from J1	JAU, Junagadh	-	440(E) 21.08.1975	3.84	5.24	Pink colour auricle and dark brown colour of ear
3	HYB 633	EB76/E 176	JNKVV RS, Powarkheda	SP Singh, RR Sheopuria	01.01.1967	2.55	4.03	Good gluten strength
4	NP 839	GB-AUS/N14	IARI RS, Indore	SP Singh, YM Upadhyaya, VS Mathur	01.01.1967	2.42	4.42	Tall variety with hard grains

Table 2.1.25: Durum and dicoccum varieties notified for irrigated, timely sown conditions of CZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	Pusa Tejas (HI 8759)	HI8663/HI8498	IARI RS, Indore	Divya Ambati, SV Sai Prasad, Jang Bahadur Singh, DK Verma, AN Mishra, TL Prakasha, KC Sharma, AK Singh, Rahul M. Phuke, RK Sharma, GP Singh, JB Sharma, Rajbir Yadav, Sanjay Kumar, Vinod, Anju M. Singh, PK Singh, Neelu Jain, KB Gaikwad, VK Singh, Niharika Mallik, PRamya, Harikrishna, SK Jha, Naresh Kumar, M. Sivasamy, P. Jayaprakash, VK Vikas, IS Solanki, TR Das, Dharam Pal, Madhu Patil, RN Yadav and K. Vinod Prabhu	1007(E) 30.03.2017	5.69	7.55	Zinc (42.8 ppm) and iron (42.1ppm)rich durum wheat variety , Good for pasta making
2	HD 4728 (PUSA MALWI)	ALTAR84/STINT// SILVER 453/ SOMAT 3.1/4/ GREEN14/YAV 10 /AUK	IARI, N.Delhi	Vinod, JB Sharma, PK Singh, Niharika Mallik, KV Prabhu, GP Singh, RK Sharma, Sanjay Kumar, Rajbir Yadav, Anju M. Singh, Kiran Gaikwad, Neelu Jain, P. Ramya, Shiva Dhar, VK Singh, RN Yadav, M. Sivasamy, SV Saiprasad, AN Mishra, JB Singh, Divya Ambati, TR Das, DharaPal, Madhu Patil, IS Solanki, J. Kumar, m VK Vikas, P. Jayaprakash and TL Prakasha	2238(E) 29.06.2016	5.42	7.51	Resistance to brown rust, black rust and bold and lustrous grain with least incidence of yellow berry
3	HI 8737 (PUSA ANMOL)	HI 8177/HI 8158/ HI 8498	IARI RS, Indore	SV Sai Prasad, DK Verma, Jang Bahadur Singh, Divya Ambati, AN Mishra, TL Prakasha, KC Sharma, AK Singh, DC Saxena, KV Prabhu, Anju M Singh, GP Singh, RK Sharma, Rajbir Yadav, Sanjay Kumar, J Kumar, M Sivasami, P Jayaprakash, Vikas, VPK Singh, Neelu Jain, KB Gaikwad, IS inod, JB Sharma, Solanki, TR Das, A Kumar, Dharam Pal, P Ramya, VK Singh	268(E) 28.01.2015	5.34	8.10	Resistance to brown rust, black rust, karnal bunt and high yellow pigment content
4	HI 8713 (PUSA MANGAL)	HD 4672 / PDW 233	IARI RS, Indore	SV Sai Prasad, HN Pandey, AN Mishra, KC Sharma, AK Singh, DK Verma, DC Saxena, Anju M Singh, GP Singh	952(E) 10.04.2013	5.23	6.82	Resistance to brown rust, black rust and high yellow pigment content

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**Table 2.1.25 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
5	MPO (JW) 1215 (MPO 1215)	GW 1113/GW 1114//HI 8381	JNKVV RS, Powarkheda	PC Mishra, RS Shukla, SK Rao	733(E) 01.04.2010	4.86	6.53	Field resistance to brown rust, black rust and good for pasta making
6	DDK 1029 (dicoccum)	DDK 1012/HW 1093//276-15	UAS, Dharwad	RR Hanchinal, SA Desai, HC Lohithsawa, BN Patil, IK Kalappanavar, KK Math, Nirmala B Yenagi	1703(E) 05.10.2007	4.09	5.99	Profuse tillering, dwarf growth habit, Heat tolerance
7	HI 8498 (MALAV SHAKTI)	CR 'S'-GS'S'/A-9-30-1//RAJ911	IARI RS, Indore	RS Thakur, DS Rawat, JS Ijardar, RC Bhawsar, AN Mishra, UK Behera	425(E) 08.06.1999	4.43	7.3	Resistance to brown and black rust, suitable for <i>suji</i> and <i>dalia</i>
8	HI 8381 (MALVASHRI)	JO69'S//AA'S'/FGO'S'	IARI RS, Indore	RS Thakur, JS Ijardar, RC Bhawsar, AN Mishra, AK Singh	408(E) 04.05.1995	4.55	4.74	Good for preparation of <i>suji</i> and <i>dalia</i> and resistance to brown rust and black rust
9	RAJ 1555	COCORIT'S' / RAJ 911	RARI, Durgapura	-	2(E) 03.01.1983	4.43	4.68	Wider adaptability, tolerance to karnal bunt
10	HD 4530	TPT/MOGHK//4/PI/ TML//2*TC60/3/ZE NATI/BTL/WLS	IARI, N.Delhi	-	470(E) 19.02.1980	4.33	4.81	Very hard grain texture, protein>13%
11	JNK-4W-184 (JAIRAJ)	T.POLONICUM/Y AGLUTE/PITETE /ZBW	JNKVV, Jabalpur	RP Singh and others	470(E) 19.02.1980	2.52	3.52	Resistance to all three rusts
12	RAJ 911	V-O229	RARI, Durgapura	-	193(E) 30.04.1975	4.17	4.67	Tolerant to Karnal bunt

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Table 2.1.26: Durum varieties notified for rainfed, restricted irrigation, timely sown conditions of CZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HI 8627 (MALAV KIRTI)	HD 4672/PDW 233	IARI RS, Indore	HN Pandey, SV Sai Prasad, RC Bhawsar, AN Mishra, PK Varma, MY Samdur, AK Singh	1703(E) 05.10.2007	2.01 (RF) 2.98 (RI)	3.88 (RF) 4.68 (R I)	Resistance to brown and black rust
2	HD 4672 (MALVA RATNA)	BIJAGA RED /PBW34/ALTAR 84	IARI, N. Delhi	HN Pandey, RB Singh, RC Bhawsar, RSThakur, AN Mishra, KN Ruwali, PK Varma, UK Behera	340(E) 03.04.2000	1.51	3.42	Resistance to brown rust
3	N 59	GAZA/MOTIA	JNKVV RS, Powarkheda		19(E) 14.01.1982	1.83	2.59	Tolerance to drought
4	HI 7483 (MEGHDOOT)	HI 6-23//HY 23//NP 404	IARI RS, Indore		01.01.1975	1.31	1.57	Resistance to all the three rusts
5	A-9-30-1	A 206/GAZA	AAU ARS, Arnej		566(E) 21.09.1974	1.54	2.02	Heat and drought tolerant
6	NP 404	GAZA/EK6	IARI RS, Indore	SP Singh, YM Upadhyaya and VS Mathur	01.01.1967	1.60	3.65	Bold amber grained

### 2.1.6 Peninsular Zone (PZ)

Peninsular Zone primarily comprises Maharashtra and Karnataka. All the three species of wheat viz *aestivum*, *durum*, and *dicoccum* are cultivated in this zone. Bread wheat cultivation is concentrated under irrigated environments, whereas, the cultivation of durum and dicoccum wheat is generally confined to rainfed/ restricted irrigation situation. In this zone, optimum ambient cool temperature for cultivation exists for a very short period causing the wheat to mature in around 90-100 days as compared to 140-150 days in the NWPZ.

Sorghum-wheat is one of the most prevalent cropping systems in western Marathwada and Vidarbha regions of Maharashtra and northern parts of Karnataka. Maize-wheat and sunflower-wheat cropping sequence are being practiced in some parts of Karnataka. Sugarcane-wheat cropping system is also gaining importance in Ahmednagar and Kolhapur districts of Maharashtra and Belgaum district of Karnataka.

High temperature all through the crop cycle, light soils, imbalanced use of organic and inorganic fertilizers, lack of sufficient irrigation are the major reasons for low productivity (15-16q/ha). To increase the production and productivity of wheat in PZ, MPKV Research station Niphad, UAS Dharwad and Agharkar Research Institute Pune are having strong breeding programmes and have developed many popular wheat varieties. Bread wheat cultivation in peninsular zone was revolutionized with the release of variety DWR-162 developed at Dharwad centre in 1993. Varieties HD 2189, NI 5439, NIAW 917 and MACS 6222 are the some of popular varieties of this zone. The condition wise varieties alongwith details are given in table 2.1.27 to 2.1.35.

#### Wheat Varieties developed for different production conditions of PZ

Irrigated, timely sown conditions: 16

Irrigated, late sown conditions: 10

Rainfed/irrigated, timely sown as well as late sown conditions: 1

Rainfed, timely sown conditions: 5

Restricted irrigation, timely sown conditions: 3

Rainfed/irrigated, timely sown conditions: 2

Rainfed/restricted irrigation, timely sown conditions: 3

Durum varieties for Irrigated, timely sown conditions: 12

Durum varieties for rainfed, timely sown conditions: 5

**Table 2.1.27: Varieties notified for irrigated, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	DBW 168	SUNSU/CHIBIA	IWBR, Kamal	D Mohan, RK Gupta, K Gopalareddy, GP Singh	1379(E) 27.03.2018	4.75	7.01	Very good for chapatti (8.15) as well as for biscuit quality, Soft grains (36), resistance to brown and black rust
2	MACS 6478	CS/Th.sc//3* PVN/3MIR LO/BUC/4/MILAN/5/ TILHI	ARI, Pune	SC Misra, BK Honrao	1919(E) 30.07.2014	4.5	6.57	Good for chapatti quality; resistance to black and brown rust
3	UAS 304	SERI/CEP80120//K AUZ/PBW343	UAS, Dharwad	RR Hanchinal, SA Desai, IK Kalappanavar, HC Lohithsawa, KK Math, KK Mirajkar, BN Patil, Rudra Naik, Suma S Biradar	2817(E) 19.09.2013	4.68	5.99	-
4	MACS 6222	HD 2189*2//MACS 2496	ARI, Pune	SC Misra, MD Bhagwat, BK Honrao, VSRao	733(E) 01.04.2010	4.77	6.09	Resistance to black and brown rust
5	NIAW 917 (TAPOVAN)	GW 244//BOB WHITE	MPKV ARS, Niphad	PN Rasal, SG Borkar, DA Gavhane Gadekar, VN	599(E) 25.04.2006	4.66	6.25	Resistance to brown and black rust
6	RAJ 4037	DL 788-2//RAJ 3717	RARI, Durgapura	CP Nagpal, Alka Misra, Hoshiyar Singh, SM Bhatnagar, US Shekhawat, Ved Prakash, VK Bhatnagar	161(E) 04.02.2004	4.09	5.93	Resistance to brown and black rust
7	GW 322	GW 173//GW 196	RARS, Vijapur	BS Jadon, AV Agalodiya, BN Patel, BM Patel, AS Patel, RMPatel	937(E) 04.09.2002	4.17	6.18	Resistance to black rust, brown rust and tolerant to terminal heat
8	AKW 1071 (PURNA)	VEES//3FLN/ ACC//ANA	PDKV, Akola	SB Atale, DG Vitkare, SV Desh Mukh, SK Shivankar, RP Joshi, HB Kale, YP Pathine, DL Yangad	408(E) 04.05.1995	3.70	4.74	Heat tolerant
9	DWR 162	KVZ//BUHO//KAL/ BOBWHITE	UAS, Dharwad	RR Hanchinal, VG Desai, MH Hosamani, Ramesh Babu, PW Basarkar, NK Patil, MN Gennur, PN Umapatni, BN Patil, MB Chethi	615(E) 17.08.1993	4.29	5.49	Tolerance to brown and black rust

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**Table 2.1.27 Contd.**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
10	MACS 2496	SERI"S"	ARI, Pune	VP Patil, VS Rao, SC Mishra, MD Bhagwat, RN Dixit, AM Chavan, SV Kadam, VD Surve	527(E) 16.08.1991	4.0	6.5	Good for chapatti quality
11	HD 2501	HD2189 /HD 2160	IARI, N. Delhi	S Chowdhury, KBL Jain, JS Amawate, DSatwali, SP Yadav, JBL Mathur, P Kulshreshtha, GN Kar, MK Upadhaya, VS Mathur	639(E) 17.08.1990	3.19	3.61	-
12	DWR 39 (PRAGATI)	LR64/2*SN64//S3 08	UAS, Dharwad	IR Morabad	540(E) 24.07.1985	3.24	3.55	Good for chapatti
13	HD 2278 (PARVATI)	HD 2119//HD1912/HD 1592/3/HD1962/E4870/4//K65	IARI, N. Delhi	VS Mathur and others	596(E) 13.08.1984	3.96	4.83	Resistance to all the three rusts
14	CC 464	BB //CNO/SON64	IIVBR, Karnal	-	470(E) 19.12.1980			Resistance to rust
15	HD 2189	HD 1963 / HD 1931	IARI, N. Delhi	VS Mathur and others	470(E) 19.02.1980	4.02	4.57	Resistance to brown rust, black rust and also suitable for late sowing
16	UP 215	TZ PP /SON.64	GBPUA&T, Pantnagar	JP Srivastava, TB Singh, SK Malik, Sohan Pal, DP Saini	193(E) 30.04.1975	2.19	3.62	High protein (13%) content

**Table 2.1.28: Varieties notified for irrigated, late sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HD3090 (Pusa Amulya)	SFW/VAISHALI//UP2425	IARI, N. Delhi	JB Sharma, SS Singh, Vinod, PK Singh, KV Prabhu, GP Singh, Ram Kumar Sharma, Sanjay Kumar, Rajbir Yadav, Neelu Jain, P Ranya, KB, Anju M Singh, Gaikwad, DP Wallia, JaSivsamy, AN Mishra, SV Sai Prasad, IS gdish Kumar, M Solanki, P Jayaprakash, Vikas	244(E) 24.01.2014	4.14	6.31	Resistance to brown and black rust
2	AKAW 4627	WH 147/SUN STAR*/C 80.1	PDKV, Akola	NR Potdukhe, DB Dhumale, Swati G Bharad, SK Deshmukh	456(E) 16.03.2012	4.28	6.09	Resistance to brown and black rust
3	HD 2932 (PUSA WHEAT 111)	KAUZ/STAR//HD 2643	IARI, N. Delhi	BS Malik, Rajbir Yadav, GP Singh, RK Sharma, V Tiwari, AP Sethi, Rajiv K Sharma, VC Sinha	1108(E) 08.05.2008	4.33	5.36	Resistance to brown and black rust
4	RAJ 4083	PBW 343/UP2442 /WR 258/UP2425	RARI, Durgapura	Hoshiyar Singh, SM Bhatnagar, SN Sharma, US Shekhawat, SR Pancholi, Alka Misra, CP Nagpal, Ved Prakash	1178(E) 20.07.2007	4.15	5.66	Resistance to brown and black rust
5	HD 2833 (PUSA WHEAT 105)	PBW 226 / HW 1042//HD 2285	IARI, N. Delhi	SMS Tomar, M Sivasamy, RN Brahma, AJ Prabakaran, KA Nayeem, Bhanwar Singh, Vinod	599(E) 25.04.2006	3.89	5.93	Excellent chapatti quality and adult plant resistance to brown and black rust
6	PBW 533	PBW 343/PBW 138//PBW 343	PAU, Ludhiana	VS Sohu and others	599(E) 25.04.2006	4.04	6.63	–
7	HUW 510 (MALVIYA 510)	HD 2278/HUW 234//DL 230-16	BHU, Varanasi	Ram Dhari, AK Joshi, B Arun, R Chand	92(E) 02.02.2001	3.54	4.73	Resistance to brown and black rust
8	DWR 195 (ANURADHA)	SHI#414/CROW'S	UAS, Dhanwad	RR Hanchinal, V Rudra Naik, VG Desai, NK Patil, BN Patil, PY Kamannavar, CR Konda, BT Nanganur*	408(E) 04.05.1995	3.81	6.06	Resistance to brown and black rust
9	HI 977	GLL/AUST 61.157/CNO/NO6 6/3/Y50E/3/KAL	IARI RS, Indore	YM Upadhyaya, JS Ijardar, RC Bhawsa, RS Thakur, P Bahadur, VC Sinhar,	471(E) 05.05.1988	2.02	3.70	Good for chapatti making
10	HD 1925 (SHERA)	SON.64 L.ROJO 64A	IARI, N. Delhi	VS Mathur and others	01.01.1976	3.70	4.20	Resistance to black rust

**Table 2.1.29: Varieties notified for rainfed/irrigated, timely sown as well as late sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HD 2380	HD2255/HD 2257	IARI, N. Delhi	GN Kar, KBL Jain, VP Kulshrestha, D SaJSAmawate, SP Yadav, SChaudhary, tyawali, JBL Mathur, MK Upadhaya, VS Mathur	599(E) 31.07.1989	3.14	5.08	Also released in Bhutan under the name Bajoka

**Table 2.1.30: Varieties notified for rainfed, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	UAS 375	UAS 320/GW 322// Lok 62	UAS, Dharwad	V Rudra Naik, SA Desai, Suma Biradar, MY Kamatar, SK Singh, T Sudha, PV Patil	1379(E) 27.03.2018	2.14	2.91	Resistance to brown and black rust
2	UAS 347	(TOB/ERA/TOB/C NO67##/PLO/\$/VE E#5/5/KAUZ/6/FR ET2)/DWR162	UAS, Dharwad	SA Desai, V Rudra Naik, Suma S Biradar, RR Hanchinal, IK Kalappanavar, BN Patil	2680(E) 01.10.2015	1.84	2.46	Resistance to black and brown rust
3	HD 2781 (ADITYA)	BOW /C 306 //C591/HW 2004	IARI, N. Delhi	HB Chaudhary, SR Singh, PSL Srivastava, Bhanwar Singh	937(E) 04.09.2002	1.58	2.36	Resistance to brown rust
4	K 9644 (ATAL)	HD 2402 /K 8305	CSAUJ&T, Kanpur	LP Tiwari, Ziauddin Ahmad, JC Sharma, US Rana, Arjun Singh, VK Singh	340(E) 03.04.2000	1.5	1.74	Resistance to brown and black rust, Heat tolerant
5	HW 657	TIMGALLEN * / K65	IARI RS, Wellington	-	470(E) 19.02.1980	1.25	2.58	-

Table 2.1.31: Varieties notified for restricted irrigation, timely sown conditions of PZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	HI 1605 (Pusa Ujala)	BOW/VEE/5/ND/V/G9 144//KAL/BB/3/YACO 4/CHIL/6/CASKOR/3 /CROC 1/AE.SQUAR ROSA(224)//OPATA/ 7/PASTOR/MILAN/K AUZ/3/BAV92	IARI RS, Indore	Jang Bahadur Singh, SV Sai Prasad, Diya Am bati, DK Verma, AN Mishra, TL Prakasha, KC Sharma, AK Singh, Rahul M. Phuke, RK Sharma, GP Singh, JB Sharma, Rajbir Yadav, Sanjay Kumar, Vinod, Anju M. Singh, PK Singh, Neelu Jain, KB Gaikwad, VK Singh, Niharika Mallik, P. Ramya, Harikrishna, SK Jha, Naresh Kumar, M. Sivasamy, P. Das, Dharam Pal, Madhu Patil, RN Jayaprakash, VK Vikas, IS Solanki, TR Yadav and K. Vinod Prabhu	1007(E) 30.03.2017	2.9	4.4	Resistance to brown and black rust, excellent chapatti quality (8.04)
2	DBW 93	WHEARTUKURU// WHEAR	IIWBR, Karnal	SK Singh, V Tiwari, R Chatrath, K Venkatesh, CN Mishra, Raj Kumar, Ratan Tiwari, Gyanendra Singh, BS Tyagi, Indu Sharma	1228(E) 07.05.2015	2.93	3.9	Resistance to black rust
3	NI 917	PC591/CHARTER(EX 73)	MPKV RS, Niphad	-	361(E) 30.06.1973	-	-	-

Table 2.1.32: Varieties notified for rainfed/ restricted irrigation, timely sown conditions of PZ

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	NI AW 1415 (NETRAVATI)	GW 9506/PRL// PRL	MPKV RS, Niphad	PN Rasal, DA Gadekar, SG Borkar, CB Salunke, VN Gavhane, KD Bhoite, L Tagad, JM Patil	632(E) 25.03.2011	1.95 (RF), 3.11 (RI)	3.62 (RF) 3.82 (IR)	-
2	HD 2987 (PUSA BAHAR)	HI1011/HD2348/M ENDOS//IWP 72/DL153-2	IARI, N. Delhi	GP Singh, HB Chaudhary, Anju Rajbir Yadav, SV Sai Prasad, RVP M Singh, Singh	632(E) 25.03.2011	1.75 (RF) 3.15 (RI)	3.22 (RF), 3.86 (RI)	High iron content, and good for chapatti quality

**Table 2.1.32: Varieties notified for rainfed/ restricted irrigated, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
3	PBW 596	PBW 343/ DHARWAR DRY//PBW 343	PAU, Ludhiana	—	454(E) 11.02.2009	3.1	4.62	—
4	NI 5439	REMP 80/3*NP 710	MPKV RS, Niphad	—	01.01.1975	2.75(RI) 1.1(RF)	3.5(RI) 1.5(RF)	Good for chapatti quality
5	NI 747-19 (Deccan Queen)	RFMP196 /MP 2- 23	MPKV RS, Niphad	—	361(E) 30.06.1973	2.17	3.07	Very good for chapatti quality and protein content over 13%

**Table 2.1.33: Diccoccum varieties notified for irrigated, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	MACS 2971 (dic.)	KTR 5*2/NP 200	ARI, Pune	SC Misra, MD Bhagwat, BK Honrao, VS Rao	2187(E) 27.08.2009	5.02	6.20	Resistance to black and brown rust
2	DDK 1029 (dic.)	DDK 1012/HW 1093//276-15	UAS, Dharwad	RR Hanchinal, SA Desai, HC Lohithsawa, BN Patil, IK Kalappanavar, KK Math, Nirmala B Yenagi	1703(E) 05.10.2007	4.56	5.99	Profuse tillering, dwarf growth habit
3	DDK 1025(dic.)	DDK 1013/DDK 1001//278-13	UAS, Dharwad	RR Hanchinal, SA Desai, HC Lohithsawa, BN Patil, IK Kalappanavar, KK Math, Nirmala B Yenagi	599(E) 25.04.2006	3.80	4.97	High thousand grains weight
4	DDK 1009 (GANGA)(dic.)	NP200*4// NP200/ ALTAR -84	UAS, Dharwad	RR Hanchinal, NK Patil, BN Patil, KK Math, IK Kalappanavar, CR Konda, V Rudra Naik	401(E) 15.05.1998	3.80	5.08	Resistance to leaf blight
5	DDK 1001 (VIJAY) (dic.)	LOCAL DIC.4* //LOCAL DIC./ RAJ1555	UAS, Dharwad	RR Hanchinal, SA Desai, HC Lohithsawa, BN Patil, IK Kalappanavar, KK Math, Nirmala B Yenagi	360(E) 01.05.1997	3.6	4.70	Dwarf dicoccum variety

**Table 2.1.34: Durum and dicoccum varieties notified for irrigated, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	MACS 3949	STOT//ALTAR84/AL D/3/THB/CEP7780//2* MUSK 4	ARI, PUNE	SC Misra, BK Honrao, AM Chavan	1007(E). 30.03.2017	4.40	6.43	Resistance to stem and leaf rusts, Good pasta quality (overall acceptability 7.25)
2	WHD 948	Altar84/Stint/Silver	CCS HAU, Hisar	SK Sethi and others	1146 24.04.2014	4.65	6.95	Resistance to karnal bunt and loose smut, good for pasta quality
3	UAS 428	GREEN-14/YAV - 10/AUK/UAS402	UAS, Dhanwad	RR Hanchinal, SA Desai, IK Kalappanavar, BN Patil, V Rudra Naik, Suma S Biradar, HCLohithsawa, KK Math, KK Mirajkar	1708(E) 26.07.2012	4.8	5.88	Resistance to brown and black rust
4	UAS 415	GALLI/BOOMER2 0//WR 185	UAS, Dhanwad	SA Desai, RR Hanchinal, IK Kalappanavar, HCLohitashwa, KK Math, BN Patil	454(E) 11.02.2009	4.96	6.18	Resistance to all the three rusts, foliar blight, powdery mildew
5	HI 8663 (POSHAN)	HI 8177/HI 8185	IARI RS, Indore	SV Sai Prasad, MY Samdur, AN Mishra, PK Varma, AK Singh, SR Kantiwa, HN Pandey	1108(E) 08.05.2008	4.55	7.15	High beta carotene (=6.5 ppm) content, suitable for semolina recovery
6	MACS 2846	CPAN 6079 /MACS 2340	ARI, Pune	VS Rao, MD Bhagwat, AM Chavan, VD Sure, SV Kadam	401(E) 15.05.1998	3.5	4.50	
7	HD 4502 (MALVIKA)	PI'S/2*BY/JC60/3/ZENATI/IBTL/WLS	IARI, N. Delhi		786(E) 02.02.1976	2.63	2.71	Tolerance to high temperature at early stage of crop

**Table 2.1.35: Durum varieties notified for rainfed, timely sown conditions of PZ**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	Pusa wheat 8777 (HI 8777)	B93/HD4672//HI8627	IARI RS, Indore	Divya Ambati, SV Sai Prasad, Jang Bahadur Singh, Rahul M Phuke, AN Mishra, TL Prakash, KC Sharma, AK Singh, RK Sharma, GP Singh, JB Sharma, RSingh, PK Singh, Neelu Jain, KB Gaikwad, albir Yadav, Sanjay Kumar, Vinod, Anju M VK Singh, Niharika Mallick, Harikrishna, Sjayaprakash, VK Vikas, IS Solanki, TR K Jha, Naresh Kumar, M Sivasamy, P Das, Kalyani Kumari, Dharam Pal, Madhu Patil, RN Yadav, K Vinod Prabhu	1379(E) 27.03.2018	1.85	2.88	Resistant to leaf rust and field resistance to stem rust, Higher level of Protein (14.3%), zinc (43.6 ppm) and iron (48.7 ppm) content
2	MACS 4028	MACS2846/ BHALEGAON32	ARI, Pune	SC Misra, BK Honrao, Yashavantha Kumar KJ, VS Baviskar, AM Chavan	1379(E) 27.03.2018	1.93	2.87	High degree of resistance against stem and leaf rust, early maturing (102 days), Higher protein content (14.7%)
3	UAS 446	DWR 185/ DWR 2006//UAS 419	UAS, Dharwad	SA Desai, V Rudra Naik, Suma S Biradar, RR Hanchinal, IK Kalppanavar, BN Patil	1228(E) 07.05.2015	1.83	2.44	Resistance to brown and black rust and high protein content
4	MACS 1967	GULAB /CPAN 1471	ARI, Pune	VP Patil, VS Rao, SC Mishra, MD Bhagwat, RN Dixit, AM, Chavan, BK Honrao, SV Kadam	165(E) 06.03.1987	1.31	2.11	Good for pasta making
5	MACS 9	N59 (T.DUR)/ F183(T.POL)	ARI, Pune	GB Deodikar, GG Patil, SH Tulpule, PT Pandit, VP Patil, SD Patwardhan, PN Deshmukh, SN Agharkar, SP Kelkar, GB Joshi, VS Kulkarni, BK Chitnis, VM Raut, VV Kulkarni, DG Divekar, VG Indulkar, RN Dixit, RD Pingle	13(E) 19.12.1978	2.0	2.81	Grains are hard and bold, Protein content over 13%

### **2.1.7 Southern Hills (Nilgiri and Palni Hills)**

The SHZ comprises hilly areas of Tamil Nadu and Kerala falling in the Nilgiri and Palni hills of southern plateau. The area under wheat cultivation has significantly reduced over the years due to preference for tea and vegetable cultivation by producers. Moisture stress and acidic soils are the major constraints in wheat production. IARI regional station Wellington, Tamilnadu located in this zone is instrumental with the development of improved disease resistance varieties, screening of materials for disease resistance and advancement of generations. The first *dicoccum* wheat in India named as NP 200 was developed by this centre. Nine wheat varieties have been released and notified for these areas are given in Table 2.36 - 2.38. This zone is merged with PZ from 2015-16 onwards. Since the present area under wheat cultivation in SHZ is too less to qualify for delineation as a separate zone, this zone has ceased to be classified as a separate zone for conduction of coordinated trials from 2017-18 season.

#### **Wheat Varieties developed for different production conditions of SHZ**

Restricted irrigation, timely sown conditions: 5

Rainfed/Restricted irrigation, timely sown conditions: 2

Dicoccum varieties restricted irrigation, timely sown conditions: 1

### **2.1.8 Salinity and Alkalinity affected soils**

The major states where wheat is cultivated under salinity and alkalinity affected soils are Uttar Pradesh, Rajasthan, Gujarat, Maharashtra and Haryana. The Central Soil Salinity Research Institute, Karnal is exclusively working on development of salt tolerant wheat varieties. A total of five salt tolerant varieties of wheat have been developed having yield potential of 43-48 q/ha (Table 2.1.39) under irrigated timely sown conditions.



**Table 2.1.36: Varieties notified for restricted irrigation, timely sown conditions of Nilgiri and Palni hills**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	HW 5216 (PUSA THENMALAI)	PBW343//HW3083	IARI RS, Wellington	M Sivasamy, Jagdish Kumar, P Jayaprakash, VK Vikas, Rebekah, Nisha, John Peter, E Punniakotti (IARI Wellington) Vinod, Sanjay Kumar, GP Singh, RK Sharma, Rajbir Yadav, JB Sharma and K Vinod Prabhu (IARI, Delhi)	952(E) 10.04.2013	4.56	6.24	Resistance to brown rust
2	HW 1085 (BHAWANI)	UNNATHKALYAN SONA*2//CPAN3057	IARI RS, Wellington	RN Brahama, M Sivasamy, SMS Tomar, MK Menon, Alok Saikia, RAsif	937(E) 04.09.2002	3.92	4.83	Resistance to yellow, brown and black rust
3	HUW 318 (MALVIYA WHEAT 318)	HUW 206/HUW 202	BHU, Varanasi	Ram Dhari, RM Singh, GS Sharma, AK Joshi, BD Singh, RB Singh	340(E) 03.04.2000	3.85	4.93	Resistance to yellow, brown and black rust
4	HW 517	BB-CC/CIANO'S *//NO66-PI62	IARI RS, Wellington	-	19(E) 14.01.1982	3.60	4.50	Resistance to three rusts and loose smut
5	HD 2135 (NILGIRI)	H41-3//HD1962 *(E4870*K 65))	IARI, N. Delhi	VS Mathur and others	01.01.1977	1.44	-	Resistance to all the three rusts

**Table 2.1.37: Varieties notified for rainfed/irrigated, timely sown conditions of Nilgiri and Palni hills**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	HW 2044 (KURINJI)	HD226*5/SUNST AR*6/C-80-1	IARI RS, Wellington	-	340(E) 03.04.2000	5.40	5.87	-
2	HW 741	BB/CC/3/CNO/NO66//PI 62	IARI RS, Wellington	-	832(E) 18.11.1985	1.60	2.9	Resistance to yellow, brown and black rust

**Table 2.1.38: Dicooccum varieties notified for restricted irrigation, timely sown conditions of Nilgiri and Palni hills**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	Nilgiri Khapli (HW 1098) (dic.)	NP 201 (Mutant developed through 20 Kr irradiation)	IARI RS, Wellington	M Sivasamy, Jagdish Kumar, Jayaprakash, VK Vikas, Rebekah Nisha, John Peter (IARI RS Wellington), Vinod, Sanjay Kumar, GP Singh, RK Sharma, Rajbir Yadav, JB Sharma and K Vinod Prabhu (IARI, New Delhi)	268 (E) 28.01.2015	4.55	5.9	Resistance to black, brown and yellow rust

**Table 2.1.39: Varieties notified for saline and alkaline soil conditions of all the zones**

S.N.	Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	KRL 210	PBW65/2*PASTOR	CSSRI, Karnal	Neeraj Kulshreshtha, KN Singh, Gurbachan Singh, SK Sharma	456(E) 16.03.2012	3.37	4.93	Resistance to yellow rust and karnal bunt
2	KRL 213	CNDO/RI43/ENTE/M EXL-2/3/Ae. Squarrosa9TAUS0/4/WEA/ER/5/28KAUZ	CSSRI, Karnal	Neeraj Kulshreshtha, KN Singh, Gurbachan Singh, SK Sharma	2326(E) 10.10.2011	3.25	4.39	Saline as well as alkaline Soil. Resistance to yellow rust and karnal bunt
3	KRL-19	PBW255/KRL 1-4	CSSRI, Karnal	KN Singh and Ravish Chatrath	340(E) 03.04.2000	3.04	4.64	Also suitable for water logging area and tolerant to yellow and brown rust
4	KRL 1-4	KHARCHIA65/WL711	CSSRI, Karnal	KN Singh	386(E) 15.05.1990	3.50	4.90	Salinity tolerance (up to 7.3 dSm <sup>-1</sup> sodicity tolerance (up to 9.3pH)
5	KHARCHIA 65	KHARCHIA LOCAL/EG 953	RARI, Durgapura	-	716(E) 20.02.1970	2.01	2.07	Highly tolerance to salinated

Every state has its own state Seed Sub-Committee for the release of crop varieties. Central Sub-Committee constitutes the State Seed Sub-Committee for every state. The release of new variety for the state is one of the functions of SSSc. The research centres located in the states develop locally adapted Varieties in the state through organised varietal testing programmes which are generally coordinated by the state agricultural departments. For wheat, the SVRC released varieties have to be tested for one year in AICRPW&B trials for disease response screening of the recommended variety. For the release of state variety, SSSc rely on the data generated through All India Coordinated Trials for the particular state or they ask the breeders to generate data on separate set of trials at various location of the state. Once SSSc approve the release of variety, the notification proposal in the prescribed format has to be submitted for the consideration of Central Sub-committee on Crops Standards, Notification and Releases of varieties for consideration and notification. The CVRC recommends notification of varieties after verifying that the varietal evaluation trials were conducted properly. A total of 154 wheat varieties (131 in bread wheat, 22 in durum and 1 in dicoccum) have been notified for various states (Table 2.40 – 2.62).

**Table 2.1 : Number of Wheat Varieties released by SVRC**

State	Production condition					Total
	TS,IR	TS,RF	TS,RIR	LS,IR	Others	
Bihar	1	2	1	2		6
Chattisgarh			1	1		2
Delhi	2			1	2 (Cons. Agri)	5
Delhi (durum)	1					1
Gujarat	6			3		9
Gujarat (durum)	2	2				4
H.P.		5		1		6
Haryana	1	2			1(LS, IR)	4
Haryana (durum)	1					1
J&K	3 for Leh and 1 each for Kashmir and Jammu valley					5
Karnataka	3					3
Karnataka (durum)	2	3				5
M.P.	6	3	2	3		14
M.P. (durum)	1	1	1			3
Maharashtra	4	2		3		9
Maharashtra (durum)	3	2				5
Orissa	1	1				2
Punjab	9	1		4		14
Punjab (durum)	1					1
Rajasthan	2	1	3		3	9
Rajasthan (durum)	1					1
Tamilnadu	1		1		1(dicoccum)	3
Uttar Pradesh	13	8	2	5	2 (saline soil)	30
Uttar Pradesh (durum)		1				1
Uttarakhand	5	4		2	1 (org. cultivation)	12
West Bengal	1					1

**Table 2.2.2: Varieties notified for Bihar state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	Sabour Samridhi (BRW 3708)	PASTOR/MILAN// MILAN/SHA7	BAU, Sabour	Nitish De, M. Haque, Sudhir Kumar, DK Baranwal, CSAZad	1007(E) 30.03.2017	4.78	5.1	Tolerant to leaf blight and brown rust
<b>TS,RF</b>								
2	Sabour Nirjal (BRW 3723)	ACHYUT/BL1887	BAU, Sabour	Nitish De, M. Haque, Sudhir Kumar, DK Baranwal, CSAZad	2805(E) 25.08.2017	2.90	4.70	Tolerant to drought
3	HP 1493	E 8841/NP 830-1	IARI RS, Pusa		386(E) 15.05.1990	2.30	2.90	
<b>TS,IR</b>								
4	NP 884	E1913/NP755	IARI RS, Pusa		4045 29.09.1969	2.36	3.80	
<b>LS,IR</b>								
5	Sabour Shreshtha (BRW 934)	HUW234/CBW12-SEL	BAU, Sabour	AK Singh, N.De, M. Haque, DK Baranwal, Sudhir Kumar, KK Prasad, SN Das, Arvind Kumar, CSAZad	1007(E) 30.03.2017	4.30	5.44	Resistance to brown rust and loose smut
6	Deshratna (BR-104)	S503/NP835	RAU RS, Patna		01.01.1976			-

Table 2.2.3 : Varieties notified for Chattisgarh state

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	Chattisgarh Genhu 3 (CG 1013)	GW 322/KYZ 0285	IGKV RS, Bilaspur	Ajay Prakash Agrawal	1379(E) 27.03.2018	3.33	4.93	Brown rust resistance
<b>LS,IR</b>								
2	Chattisgarh Genhu-4 (CG 1015)	NI 908/BL 1986	IGKV RS, Bilaspur	Ajay Prakash Agrawal	1007(E) 30.03.2017	3.70	6.90	Resistance to brown and black rust
<b>TS,RIR</b>								
3	RATAN (CG 5016)	HUW 325/DL 230-7	IGKV RS, Bilaspur	RU Khan, RL Pandey, RK Mishra, DK Sharma, DJ Sharma, RK Rao, AK Swarnakar, DK Chandrakar, BS Thakur, AK Sahu, Devesh Pandey, AK Awasthi, RKS Tiwari, NK Chauri, OP Kashyap, Santosh Kumar, S Bhandarkar, SK Nair	2187(E) 27.08.2009	2.99	4.83	Resistance to brown and black rust

**Table 2.2.4: Varieties notified for Delhi state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>LS under conservation agriculture</b>								
1	HD 3117	HD2733/HD2824//DW1278	IARI, N. Delhi	Rajbir Yadav, KB Gaikwad, GP Singh, RK Sharma, Vinod, JB Sharma, Sanjay Kuma PK Singh, Anju M Singh, Neelu Jain, r, Niharika Mallick, J Kumar, IS Solanki, BS Malik, M Sivasamy, SV Sai Prasad, AN Mishra, UD Singh, VK Vikas, RN Yadav, Rashmi Agarwal, Priya Ranjan, N Kumar, M Kumar, A Gupta and KV/Prabhu	2238(E) 29.06.2016	4.79	5.01	Tolerance to brown and yellow rust
<b>ES under conservation agriculture</b>								
2	HDCSW 18	PBW 343/CL 1538	IARI, N. Delhi	Rajbir Yadav, KB Gaikwad, GP Singh, RK Sharma, Vinod, JB Sharma, PK Singh, Anju M Singh, Neelu Jain, Jay Kumar, Niharika Mallick, J Kumar, IS Solanki, BS Malik, M Sivasamy, SV Sai Prasad, AN Mishra, UD Singh, VK Vikas, RN Yadav, Rashmi Agarwal, Priya Ranjan, N Kumar, Manjeet Kumar, Ashish Gupta, Raj Gupta, Raj Kuamr Jat, ML Jat, KV Prabhu	2238(E) 29.06.2016	6.30	7.30	Moderately resistance to brown and yellow rust
<b>TS,IR</b>								
3	HD 2894 (PUSA WHEAT 109)	HW 2002/WR 196	IARI, N. Delhi	BS Malik, AP Sethi, Vinod Tiwari, Rajiv K Sharma, VC Sinha, BK Mishra	2458(E) 16.10.2008	5.20	5.77	Resistance to brown rust and non-sticky dough due to non1B/1R translocation
4	HD 4713 (PUSA 110) (durum)	SCOTZ9/TARA1//AJAIA	IARI, N. Delhi	—	2458(E) 16.10.2008	4.95	5.20	Resistance to brown rust and suitable for pasta making
5	HD 2851 (PUSA VISHESH)	CPAN 3004/WR 426//HW 2007	IARI, N. Delhi	Bhanwar Singh, SMS Tomar, Vinod	1566(E) 5.11 2005	4.50	5.76	Resistance to yellow, brown and black rust
<b>L/S/L,S,IR</b>								
6	WR 544 (PUSA GOLD)	KALYANSONA/HD 1999//HD 2204/DW 38	IARI, N. Delhi	Bhanwar Singh, SMS Tomar, Vinod, MK Upadhyay	1566(E) 05.11.2005	3.20	4.70	Very early maturing and resistance to brown rust

**Table 2.2.4: Bread wheat varieties notified for Gujarat state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	Gujarat Junagadh Wheat 463 (GJW 463)	GW496/KLP010	JAU, Junagadh	KH Dabhi, LG Vanpariya, AG Pansuriya, VB Ramani, KL Patel, DK Kadachhi, KL Dobariya, PR Padhar, PR Golakiya, BA Kunadiya, BM Dabhi, AV Khanpara, RR Rathod, HL Sakarvadia, HP Ponkia, LL Jivani, YA Kavathiya, RM Vikani, BJ Chatrabhujji, VL Kikani, JJ Savaliya	2805(E) 25.08.2017	5.10	6.70	Moderately resistance to brown and black rust
2	GW 451	GW324/4/CROC_1/AE.RA RS,QUARROSA(205)/J U Vijapur PJY3/SKAUZ /4/KAUZ5/GW339	JAU, Junagadh	S Acharya, AV Agalodiya, SS Patel, AS Patel, RM Patel, HN Patel, DAA Patel and BN Patel, M Thakor,	2238(E) 29.06.2016	5.39	6.60	Resistant to brown rust, black rust and higher zinc content (40.1 ppm)
3	GW 496 (Gujarat Wheat 496)	HD 2285/4/CNO /NO/CC/INIA 66/3/KAL/BB	JAU, Junagadh	–	639(E) 17.08.1990	4.50	6.70	Resistant to brown rust, black rust and high protein content (13.0%)
4	GW 503 (Gujarat Wheat 503)	CPAN 1582 / J142	JAU, Junagadh	–	639(E) 17.08.1990	4.57	6.59	Long narrow erect flag leaf
5	GW 40 (J-40)	INIA66*2/7C	JAU, Junagadh	–	01.01.1981	4.00	5.10	
6	J 24 (GAUW 10)	S 308 /WS 217	JAU, Junagadh	–	786(E) 02.02.1976	3.83	4.87	Brown coloured ear
<b>LS,IR</b>								
7	GW 11	LOK1/HW 1042// LOK1	RARS, Vijapur	AV Agalodiya, BN Patel, SS Patel, AS Patel, RM Patel, BS Jadon, S Acharya, VA Solanki, DM Thakor, HN Patel	312(E) 01.02.2013	2.59	3.41	High water use efficient variety and resistance to brown and black rust
8	GW 405	CNO/INIA66/BB/3/CNO/PI/GLL	RARS, Vijapur	BS Jadon, DS Shah, KA Patel, ND Kindarkhedia, KB Kathiria, MS Patel, Patel, JR Patel, RL Savalia VJ	832(E) 18.11.1985	3.15	4.07	Hard grains
9	GW 18	S331/NP890	JAU, Junagadh	–	13(E) 19.12.1978	2.90	3.90	Brown coloured ear



**Table 2.2.6: Durum wheat varieties notified for Gujarat state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,RF</b>								
1	GW 2	GS'S//A206/NP200	JAU, Junagadh	–	295(E) 09.04.1985	1.60	2.40	Tolerance to terminal heat
2	A 28 (Armej 28)	A206/NP200	AAU ARS, Armej	–	13(E) 19.12.1978	1.44	1.99	Resistance to brown and black rust
<b>TS,IR</b>								
3	GDW 1255	WH 922// NI 8757/ GW 1053	RARS, Vijapur	AV Agalodiya, SS Patel, AS Patel, RM Patel, BS Jodon, S Acharya, VA Solanki, HN Patel	312(E) 01.02.2013	4.76	6.61	Resistance to brown rust, black rust and High beta carotene(6.20 ppm)
4	GW 1139	MACS2340/IWP5 070	RARS, Vijapur	BS Jodon, AV Agalodiya, JL Vaghani, HPatel, BH Patel, SFateh, NM Patel/S Patel, BN Patel, SM N	92(E) 02.02.2001	4.21	5.44	Resistance to brown rust black rust and hard and bold grain

Table 2.2.7: Varieties notified for Himachal Pradesh state

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, RF (High Altitude)</b>								
1	DH 114 (Himpratham)	VWFW452/WW24	CSK HPKVW, Palampur	H K Chaudhary	3540(E) 22.11.2016	3.74	4.45	Developed through double haploid technique
2	HPW 155 (ONKAR)	BT 2549/FATH	CSK HPKVW, Palampur	SC Sharma, GS Sethi, KS Thakur, S Verma, SC Negi, SK Rana, SL Gartan	599(E) 25.04.2006	2.53	3.66	Resistance to loose smut
3	SAPTDHARA	Selection from 'ATOU'	CSK HPKVW, Palampur	HK Chaudhary, AS Kapoor, GS Sethi, SBhalla, Jagmohan Kumar, Suresh Negi K	408(E) 04.05.1995	2.22	2.7	Resistance to yellow rust, brown rust and powdery mildew
<b>TS, RF</b>								
4	HPW 147 (PALAM)	CPAN 1869/HIM 10BA(WS)	CSK HPKVW, Palampur	KS Thakur, GS Sethi, SC Sharma	122(E) 02.02.2005	3.30	3.82	Anthocyanin pigmentation in auricle
5	HPW 89 (SURABHI)	INTERMEDIO RODI/HD 2248	CSK HPKVW, Palampur	SC Sharma, RL Sharma, GS Sethi, KS Thakur, AK Basandara	401(E) 15.05.1998	4.15	4.74	Resistance to yellow and brown rus and karnal bunt
<b>LS, JR/RF</b>								
6	RAJ 3777	RAJ3160/HD2449	RARI, Durgapura	VK Bhatnagar, SN Sharma, US Shekhawat, CP Nagpal, Alka Misra, Hoshiyar Singh	599(E) 25.04.2006			Tolerance to terminal heat stress

**Table 2.2.8: Varieties notified for Haryana state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, IR</b>								
1	WH 711	ALD 'S' HUAC// HD 2285 /3/ HFW- 17	CCS HAU, Hisar	Mohd Yunus, AS Redhu, IS Pawar, B Yadav, Iqbal Singh, RK Rana, SC Sharma, SR Verma, SK Sethi, SS Dhanda, Rattan Singh, SS Grakh, RAS Lamba, YPS Solanki, OP Bishnoi	937(E) 04.09.2002	4.80	5.95	Tolerance to terminal heat and resistance to yellow rust
2	WHD 912 (durum)	HUI 'S' / YAV 'S'// FULI 'S'//ALYAR 84	CCS HAU, Hisar	–	937(E) 04.09.2002	4.76	5.80	Tolerance to Karnal bunt and high $\beta$ carotene content(7.2 ppm)
<b>TS, RF</b>								
3	WH 1025	C 591/PBW 231	CCS HAU, Hisar	SS Dhanda, SK Thakral, RK Rana, Iqbal Singh, AS Redhu, SR Verma, SK Sethi, IS Panwar, SS Grakh, RAS Lamba, OP Bishnoi, YPS Solanki	211(E) 29.01.2010	2.71	3.71	Resistance to yellow rust and brown rust
4	WH 533	AGATHA/YACORA 17	CCS HAU, Hisar	Mohd. Yunus and Others	615(E) 17.08.1993	2.95	4.25	High tillering
<b>LS/VLS, IR</b>								
5	SONAK	LR 24/SONALIKA (BC-7)	CCS HAU, Hisar	–	401(E) 15.05.1998	3.80	4.60	Resistance to all the three rusts

Table 2.2.9: Varieties notified for Jammu and Kashmir state

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>SUMMER SOWN HIGHER ALTITUDE AREAS OF J &amp; K</b>								
1	MANSAROVAR	HS 342	SKUAST, Srinagar	JP Sharma, AA Mir	1117 (E) 25.08.2005	-	-	Adapted to cold climate
<b>HIGH ALT AREAS IN J&amp;K</b>								
2	SWL 8 (SINGCHEN)	Selection from WL GRP 24	SKUAST, Srinagar	JP Sharma, AA Mir	1177(E) 25.08.2005	3.83	-	
3	KAILASH	VL 746	SKUAST, Srinagar	JPharma, AA Mir	1177(E) 25.08.2005	2.95	3.00	
<b>PLAIN AREAS OF KASHMIR VALLEY UP TO 1700 M ASL</b>								
4	Shalimar wheat 2 ( SKW 355)	MACS2496/U.K ALYANSONA// WW2218/YCBN 13CMH-76A-962	SKUAST, Srinagar	M N Khan and others	1228(E) 07.05.2015	3.38	3.72	Resistance to yellow rust
<b>PLAIN AND MID HILLS OF JAMMU DIVISION OF J&amp;K, TS,IR</b>								
5	RSP 561	HD 2637/Ae. Crassa//HD 2687	SKUAST, Jammu	SK Mondal, Bikram Singh, JS Bijral, Tuhina Dey, Hafiz Ahmad, AK Gupta, Amrsh Vaid	268 (E) 28.01.2015	4.26	5.10	Resistance to all the three rusts

**Table 2.2.10: Bread wheat varieties notified for Karnataka state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	UAS 334	SITE/MO4/INAC/TH. AC//3*PVN/3/MIRL O/BUK	UAS, Dharwad	SA Desai, V Rudra Naik, Sulik Kalppanvar, BN Patilma S Biradar,	1379(E) 27.03.2018	4.91	5.95	Higher Zinc content (43.1), resistant to black and brown rust
2	DWR 16 (KEERTHI)	SKA/70B	UAS, Dharwad	IR Morabad	295(E) 09.04.1985	2.93	3.45	--
3	PUSA LERMA	L.ROJO AMBER MUTANT	IARI, New Delhi	-	1971	--	--	Amber coloured grains with strong gluten

**Table 2.2.11: Durum wheat varieties notified for Karnataka state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,RF</b>								
1	DWR 137 (KIRAN)	BJGY//A206/LR	UAS, Dharwad	IR Morabad	295(E) 09.04.1985	1.25	1.46	--
2	BIJAGA YELLOW	M.LOCAL/GAZA	CoA, Bijapur	IR Morabad, Kadam	1965	1.33	3.39	Bold hard grains
3	BIJAGA RED	M.LOCAL/GAZA	CoA, Bijapur	IR Morabad,	1965	1.01	3.05	--
<b>TS,IR</b>								
4	DWR 1006	LULA / CREX // AAZ	UAS, Dharwad	RR Hanchinal, VG Desai, NK Patil, BN Patil, PY Kammanavar, Ningalur, V Rudra NaikCR Konda, BT	122(E) 06.02.2006	3.76	4.62	--
5	DWR 185	CPAN-6018/2* RAJ1555	UAS, Dharwad	-	401(E) 15.05.1998	4.28	4.88	--

**Table 2.2.12: Bread wheat varieties notified for Madhya Pradesh state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, IR</b>								
1	MP 3382 (JW 3382)	CHOIX/STAR/3/H E1/3*CN079/12*S ERI/4/GW273	JNKVV, Jabalpur	RS Shukla, PC Mishra, DK Mishra	2238(E) 29.06.2016	5.92	7.94	Tolerance to brown and black rust; Good for chapatti (Score:8.03)
2	MP 1201 (JW 1201)	CMH82A.1294/2* KAUZ//MUJNIA/CH TO/3/MILAN	JNKVV, Jabalpur	PC Mishra, RS Shukla, SK Rao	2326(E) 10.10.2011	4.81	5.68	Tolerance to rust
3	MP 1142 (JW 1142) SNEHIL	169-90C369/ CBRD//SW89. 1862	JNKVV RS, Powarkheda	PC Mishra, RP Sharma	1178(E) 20.07.2007	4.70	5.00	Tolerance to terminal heat
4	HI 1479 (SWARNA)	HD 2195/HD 2160/WH 283	IARI RS, Indore	RC Bhawsar, AN Mishra, SV Sai Prasad, KN Ruwali, UK Behera, PK Varma, HN Pandey	283(E) 12.03.2003	1.81	3.03	Resistance to brown rust, black rust and good for chapatti quality
5	HI 1454 (ABHA)	HI1076/CC505/HI 1136	IARI RS, Indore	HN Pandey, AN Mishra, PK Varma, UK Behera	340(E) 03.04.2000	3.80	4.10	Resistance to brown rust, black rust and good for chapatti quality
6	TAWA 267	Bb7C	JNKVV RS, Powarkheda	RR Sheopuria	540(E) 24.07.1985	4.50	5.00	Rust resistant
<b>TS, RF</b>								
7	NARMADA 112	HY65/C306	JNKVV RS, Powarkheda	SP Singh, RR Sheopuria	19(E) 14.01.1982	1.30	2.70	Bold grains
8	NARMADA 195	C306/HY65 (selection of N-112)	JNKVV RS, Powarkheda	SP Singh, RR Sheopuria	19(E) 14.01.1982	1.30	2.00	Tolerance to lodging
9	NARBADA 4	GB-AVS/N14/3/ PW5//THNP165	JNKVV RS, Powarkheda	SP Singh, RR Sheopuria	786(E) 02.02.1976	1.50	2.80	Bold and attractive grains
<b>TS, RIR</b>								
10	MP 3211 (JW 3211)	SKAUZ/2/FCT	JNKVV, Jabalpur	RS Shukla, PC Mishra, SK Rao	211(E) 29.01.2010	2.86	4.97	Resistance to brown rust, black rust and also suitable for late sown restricted irrigation condition

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Table 2.2.12 Contd. from previous page

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, IR</b>								
11	JW 3020	C 306/CB, SPRING(BW)84	JNKVV, Jabalpur	Y Mishra, RS Shukla	1566(E) 05.11.2005	3.17	3.5	Resistance to all the three rusts and lodging
<b>LS,IR</b>								
12	MP 4106 (RAJ VIJAY WHEAT 4106 )	CHIBIA//PRL11/C M65531	RVSKVV, Gwalior	AK Sharma, SPS Tomar, KPS Mallik, VS Kandalkar	456(E) 16.03.2012	4.29	5.73	High protein (13.5%) content
13	MP 1202 (JW 1202)	POCIS/3KAUZ82 .BOW//KAUZ	JNKVV, Jabalpur	PC Mishra, RS Shukla, SK Rao	211 (E) 29.01.2010	4.2	5.39	Tolerance to terminal heat
14	HI 1418 (NAVEEN CHANDOUSI)	HI 999/HI 601	IARI RS, Indore	RC Bhawsar, JS Ijardar, AN Mishra, RS Thakur, DS Rawat, KN Ruwali, UK Behera, PK Varma, VS Hegde and HN Pandey	340(E) 03.04.2000	3.37	4.53	Resistance to brown and black rust

Table 2.2.13: Durum wheat varieties notified for Madhya Pradesh state

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	MPO 1106 (SUDHA)	VANRE/KSE-8	JNKW RS, Powarkheda	PC Mishra, RP Sharma, VSN Rao, MP Jain, SM Harme, Rajesh Verma	283(E) 12.03.2003	4.5	5.5	Field resistance to brown and black rust
<b>TS,RF</b>								
2	NARMADA 215 (TAWA 215)	FGO'S//IVERN(D M)//GILLA'S'	JNKVV RS, Powarkheda	RR Sheopuria	19(E) 14.01.1982			Bold hard grains
<b>TS, RF/IR</b>								
3	MPO 1255 (MPO (JW) 1255)	ALTAR84//STINT// SILVER45/3	JNKVV RS, Powarkheda	PC Mishra, RS Shukla, KK Mishra, DK Mishra	2238(E) 29.06.2016	2.13 (RF) 3.38 (RI)	3.45 (RF) 4.73 (RI)	Suitable for pasta making and resistance to black and brown rust

Table 2.2.14: Bread wheat varieties notified for Maharashtra state

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, IR-Bread wheat</b>								
1	AKAW 3722 (VIMAL)	WH 147/ SUNSTAR*/C 80.1	PDKV, Akola	DG Vitkare, DB Dhumale, BN Phadnawis	72(E) 10.01.2008	4.2		Resistance to black and brown rust
2	NIAW 301 (TRIMBAK)	SERI 82 /3/ MRS/ JUP//HORK 'S'	MPKV, Niphad	PN Rasal, VV Bhavsar, SG Borkar, RW Bharud, BS Patil, AH Jadhav, DA Gadekar, UG Kachhole, KN Choudhari	937(E) 04.09.2002	3.95	5.15	Resistance to black and brown rust
3	PBN 51 (PARBHANI 51)	BUC'S'/FLK'S'	MKV, Parbhani	–	1(E) 01.01.1996	3.93	4.04	Tolerance to terminal heat
4	NI 5643	NEW THATCH /D221 NI 284-S	MPKV, Niphad	–	13(E) 19.12.1978	1.45	2.54	–
<b>TS, RF/RI-Bread wheat</b>								
5	PDKV WASIM (WSM 1472)	Selection for HD 2815	PDKV RS WASHIM	BD Gite, NR Potdukhe, VR Dixit, DB Dhumale, SJ Bankar	2125(E) 10.09.2012	21.3(RF) 39.3 (RI)	31.6(RF) 39.6(RI)	Resistance to black and brown rust
6	AJANTA	PW5/Y53	CoA, Badnapur	–	01.01.1983	1.5	2.6	Tolerance to heat and drought
<b>LS/VLS, IR-Bread wheat</b>								
7	PDKV Sardar (AKAW 4210-6)	3rd SSN-DF-99-186-Sel	PDKV, Akola	NR Potdukhe, Swati G. Bharad, SK Deshmukh and NM Sarmaik	3540(E) 22.11.2016	3.92	6.25	Early maturing
8	NIAW 1994 (PHULE SAMADHAN)	NIAW 34/ PBW 435	MPKV, Niphad	PN Rasal, AP Padhye, DA Gadekar, CB Salunke	2238(E) 29.06.2016	4.42	5.79	Resistance to brown rust
9	NIAW 34	CNO 79/PRL "S"	MPKV, Niphad	VV Chavan, PN Rasal, UG Kachhole, VV Bhavsar	360(E) 01.05.1997	3.06	3.76	Early maturing



**Table 2.2.15: Durum wheat varieties notified for Maharashtra state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
1	NIDW 295 (GODAVARI)	BOOMER 33/ PLATA 8	MPKV, Niphad	PN Rasal, SG BGadekar, VV Bhavsar, DR Attarde, VN orkar, YM Shinde, DA Gavhane	122(E) 06.02.2007	3.95	4.8	Hard and bold grain
2	MACS 3125	RAJ 1555/CPAN 6120	ARI, Pune	VS Rao, SC Misra, MD BhagDixit, BK Honrao, AM Chavan, VD Surwat, RN ve, VMKhade	283(E) 12.03.2003	4.84	5.2	Resistance to brown rust
3	MACS 2694	MEXICALI/RAJ 1555 //MACS 2130	ARI, Pune	VP Patil, VSRao, SC Mishra, MD Bhagwat, RN Dixit, AM Chavan, VD Surve, SV Kadam,	360(E) 01.05.1997	4.05	5.00	–
<b>TS,RF- Durum</b>								
4	NIDW 15 (PANCHVATI)	DOM 50	MPKV, Niphad	RY Thete, VW Chavan, PN Rasal, UG Kachole, VV Bhavsar, DA Gadekar, PL Badhe	1177(E) 25.08.2005	1.16	2.48	Resistance to foot rot
5	NI 5749	G-4-48/N59	MPKV, Niphad	–	13(E) 19.12.1978	0.94	1.55	–

**Table 2.2.16: Bread wheat varieties notified for Orissa state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS,IR</b>								
1	SAGARIKA (OW6)	NP798/KAL	OJA&T, Chiplima	–	01.01.1985	3.9	4.2	–
<b>TS,RF</b>								
2	UTKALIKA	DG65/C306//FAO 1061-68R	OJA&T, Chiplima	–	01.01.1985	1.75	3.0	–

**Table 2.2.17: Bread wheat varieties notified for Punjab state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot	
<b>TS, IR</b>								
1	PBW 725	PBW621//GLUJPR OI3/PBW 568/3/ PBW 621	PAU, Ludhiana	Madhu Meeta, Hari Ram, RP Singh, Harinderjeet Kaur, Damanjit Kaur, Indu Sharma, Beant Singh, Ritu Bala, Jaspal Kaur, SK Uppal, Jayesh Singh, Simarjit Kaur, RS Bal, Onkar Singh, Ratinderbir Kaur, VP Mittal, Vijay Kumar, Kulvir Singh, Harjit Singh Brar, Manpreet Singh, Charanjit Kaur	3540(E) 22.11.2016	6.17	8.15	Resistance to yellow and brown rust
2	PBW 677	PFAU/MILAN/5/C HEN/AE.SQUAR ROSA/BCN/3/VE E#7/BOW/4/PAST OR	PAU, Ludhiana	NS Bains, VS Sohu, GS Mavi, Achla Sharma, Indoo Bhegat, Puja Srivastava, Madhu Meeta, Hari Ram, RP Singh, Harinderjeet Kaur, Damanjit Kaur, Indu Sharma, Beant Singh, Ritu Bala, Jas pal Kaur, SK Uppal, Jayesh	3540(E) 22.11.2016	5.99	7.82	Resistance to yellow and brown rust
3	PBW 120	WG 377/HD 2160	PAU, Ludhiana	–	165(E) 06.03.1987	4.59	4.93	
4	PBW 12	CNO-GALLO/WL 711	PAU, Ludhiana	–	596(E) 13.08.1984	4.3	4.59	
5	PBW 54	HD 2160 / WG 377	PAU, Ludhiana	–	01.01.1985	4.29	5.30	
6	WL 1562	KAL/JNI/UP301	PAU, Ludhiana	–	19(E) 14.01.1982	4.35	5.45	Good for chapatti quality
7	WG 377	(WG143 /USA 255) //PV18	PAU RS, Gurdaspur	–	440(E) 21.08.75	3.03	3.27	
8	WG 357	PV 18 /C 273	PAU RS, Gurdaspur	–	361(E) 30.06.1973	3.85	4.95	Excellent for chapatti quality
9	PV 18	(FN / K 58/N.TH /N10B)//GB55	PAU, Ludhiana	–	4045 24.09.1969	3.25	4.18	Resistance to loose smut

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**Table 2.2.17 Contd.**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>LS, IR</b>								
9	PBW 658	CS/Th.sc//3*PVI/3 MIRLO/BUC/4/MILA N/5/TILHI	PAU, Ludhiana	Indoo Bhagat, VS Sohu, NS Bains, GS Mavi, Achla Sharma, VP Mittal, Indu Sharma, Madhu Meeta, HMittal, Indu Sharma, Madhu Meeta, Hari Ram, RP Singh, Harinderjeet Kaur, iDamanjit Kaur, Beant Singh, JS Kular, VP Sharma Onkar Singh, Puja Srivastava, Sat Pal, Ritu Bala, KSBBrar, SK Uppal	112(E) 12.01.2016	4.67	6.07	Resistance to yellow and brown rust
10	PBW 509	W1634/PBW381	PAU, Ludhiana	Karam Chand, VS Sohu, GS Nanda, SK Sharma, AS Randhawa	1566(E) 05.11.2005	4.14	6.11	Resistance to yellow and brown rust
11	PBW 138	RAVI 43/HD 2177	PAU, Ludhiana	—	165(E) 06.03.1987	3.03	4.11	
12	SKML 1	C-20 (BONZA 55 WL 212)*(KAL-HD 1960) C-21-NOR 67-CNO*SKA2C2 2-LR64-NAI60 SK A2 C23-CNO-IN IA*SKA2 C24-GT O-KAL*SKA2C25 E6006*SKA2 C26 BBGALLO*SKA2	PAU, Ludhiana	—	596(E) 13.08.1984	3.52	4.35	Multiline of Sonalika
<b>TS, RF</b>								
13	PBW 527	PBW 175/PBW389	PAU,	Harjinder Singh, AS Randhawa, VS Sohu	1108(E) 08.05.2008	3.56	4.78	Resistance to yellow and brown rust

**Table 2.2.18: Durum wheat varieties notified for Punjab state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
1	PDW 274 (durum)	DWL6018/KARPA SIA	PAU, Ludhiana	—	283(E) 12.03.2003	4.8	5.6	Bold lustrous grains, resistance to yellow and brown rust

**Table 2.2.19: Bread wheat varieties notified for Rajasthan state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
1	RAJ 4079	UP 2363/WH 595	RARI, Durgapura	SN Sharma, SM Bhatnagar, Hoshiyar Singh, US Shekhawat, SR Pancholi, Alka Misra, CP Nagpal, Ved Prakash	283(E) 07.02.2011	4.37	5.6	Tolerance to terminal heat and resistant to yellow and brown rust
2	RAJ 1114	SKA /INIA 62	RARI, Durgapura	-	13(E) 19.12.1978	3.82	4.07	Resistance to yellow rust
<b>TS, RF</b>								
3	CHAMBAL 65	AM2-1/RS31	RARI, Durgapura	-	566(E) 21.09.1974			-
<b>TS, RIR</b>								
4	DURGAPUR A 65	RS31*5//TH./NP1 65	RARI, Durgapura	-	566(E) 21.09.1974	2.6	3.5	Resistance to black rust
5	GANGA SONAHERI	EG953/RS31	RARI, Durgapura	-	01.01.1968			
6	RS31-1	JPLC/C591	RARI, Durgapura	-	716(E) 20.02.1970			Early maturing and hard lustrous grain
<b>LS/IR/RF</b>								
7	RAJ 3777	RAJ3160/HD2449	RARI, Durgapura	VK Bhatnagar, SN Sharma, US Shekhawat, CP Nagpal, Hoshiyar Singh, Alka Misra,	283(E) 12.03.2003	4.2 (IR) 2.45 (RF)	4.8 (IR) 3.5 (RF)	Tolerance to terminal heat stress
8	RAJ 821	NP 875/HD(M) 1508	RARI, Durgapura	-	13(E) 19.12.1978	3.47	4.51	Double dwarf variety
<b>TS, IR (CCN SOILS)</b>								
9	CCNVRV 01 (RAJMOLYA RODHAK 01)	J 24/AUS 15855	RARI, Durgapura	K Bhatnagar, BN Mathur, Alka Misra, CP Nagpal, Hoshiyar Singh, Ved Prakash, GL Sharma, SN Sharma, RS Sain	283(E) 07.02.2011	4.12	4.50	Cereal Cyst Nematode resistant variety

**Table 2.2.20: Durum wheat varieties notified for Rajasthan state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
1	RAJ 6560 (durum)	TOPDY 6	RARI, Durgapura	CP Nagpal, Alka Mishra, Hoshiyar Ved Prakash, US Shekawat, VK Singh, Bhatnagar, RS Sain	1566(E) 05.11.2005	5.12	6.75	-

**Table 2.2.21: Wheat varieties notified for Tamilnadu state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
1	CoW 2 (HW 1095) (dicoccum)	Mutant of NP 200	IARI RS, Wellington and TNAU Coimbatore	-	1708(E) 26.07.2012	4.59	--	Resistance to black and brown rust
<b>TS, RIR</b>								
2	HW 5207 (CoW 3)	HW3029/I/763 - 2312(Yr15)	IARI RS, Wellington and TNAU Coimbatore	M Sivasamy, Jagdish Kumar, P Jayaprakash, VK Vikas, Vinod, Gnirmala Kumari, N Senthil, P Singh, KV Prabhu (IARI, New Delhi) A Veerabhadhiran, R Ravikesavan, CR Anandakumar, M Maheswaran	2805 25.08.2017	4.8	--	Resistance to leaf and stem rust, carrying LR24+SR24, Sr2, Yr15
3	CoW (W) 1	HD2646/HW2002 A/CPAN3057	IARI RS, Wellington and TNAU Coimbatore	M Sivasamy, AJ Prabhakarana, KA Nayeem (IARI RS Wellington) and N Senthil, G Nallathambi, S Arumugasamy, B. Selvi, TSRaveendran	599(E) 25.04.2006	2.36	--	Resistance to black and brown rust

**Table 2.2.22: Bread wheat varieties notified for Uttar Pradesh state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
1	K 0607 (MAMTA)	HUW468/HD2402 /2/K9162	CSAUA&T, Kanpur	LP Tiwari, YP Singh	1146 (E) 24.04.2014	4.24	5.37	Resistance to brown rust and tolerance to leaf blight
2	K0402 (MAHI)	HP1731/UP2425	CSAUA&T, Kanpur	LP Tiwari, YP Singh	2817 (E) 19.09.2013	4.31	6.74	Tolerance to terminal heat and hard grains texture
3	Narendra Wheat 1067 (NW1067)	TR380-16-30614/CHAT'S'	NDUA&T, Faizabad	BN Singh, RN Singh, AK Singh, RAhmad, SP Singh	1177(E) 25.08.2005	4.66	6.25	Also suitable for saline and alkaline soil
4	K 9006 (UJIYAR)	CPAN 1687/HD 2204	CSAUA&T, Kanpur	Ziauddin Ahmad, YP Singh, Parwez Alam, RP Singh, JB Khan, PC Verma, BM Khanna, RP Awasthi, US Lal Srivastava	401(E) 15.05.1998	4.24	4.95	Resistance to brown rust and loose smut
5	UP 2121	UP 366/SAMAKA 68	GBP UA&T, Pantnagar	PL Gautam, TB Singh, SK Malik, Sohan Pal, DP Saini, Amerika Singh	01.01.1986	3.44	4.32	
6	UP 2003	BB/2*7C	GBP UA&T, Pantnagar	TB Singh, PL Gautam, SK Malik, Sohan Pal, DP Saini	371(E) 29.05.1982	3.7	4.98	
7	BITHOOR (KMIL7406)	Multiline Variety of Kalyansona	CSAUA&T, Kanpur	MP Singh, LS Gupta, HG Singh	01.01.1980			Multiline variety
8	UP 301	L.R./SON.64	GBP UA&T, Pantnagar	JP Srivastava, SK Malik, Sohan Pal	2067(E) 04.06.1970	3.87	4.85	Dwarf variety
<b>TS,IR-Western UP</b>								
9	UP 2382	CPAN 2004/HD 2204	GBP UA&T, Pantnagar	TB Singh, SK Malik, Sohan Pal, SS Ahlawat, DP Saini, KV Singh	425(E) 08.06.1999	4.79	5.84	Resistance to all the three rusts
10	UP 368	LR64 /SON.64	GBP UA&T, Pantnagar	TB Singh, PL Gautam, SK Malik, Sohan Pal, DP Saini, NP Gupta	13 (E) 19.12.1978	3.64	3.91	Triple gene dwarf variety
11	UP 310	KI PET. REF/ 2*LR/SON64	GBP UA&T, Pantnagar	JP Srivastava, TB Singh, SK Malik, Sohan Pal, DP Saini	598(E) 08.10.1974	2.31	4.22	Triple gene dwarf variety

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**Table 2.2.22 Contd.**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR</b>								
12	UP 319	CIANO'S(SON.64 -KL.REND)/8156	GBPUA&T, Pantnagar	JP Srivastava, TB Singh, SK Malik, Sohan Pal, DP Saini	598(E) 08.10.1974	3.97	5.69	Triple gene dwarf variety
13	HD 1949 (MOTI)	YT54/N10B/NP 852	IARI, N. Delhi		01.01.1973	1.08	2.38	Triple gene dwarf variety
<b>TS, RF-Eastern UP</b>								
14	K 852	Selection from S308	CSAUA&T, Kanpur	Ziauddin Ahmad, MP Singh, JC Sharma, AN Khanna	598(E) 08.10.1974	3.03	3.91	Photosynthetic efficient variety
<b>TS, RF-whole of U.P.</b>								
15	Narendra Wheat 4018	VEE/PJN/KAUZ/3/PASTOR	NDUA&T, Faizabad	BN Singh, SP Singh, R Ahmad, Vinay Kumar	244(E) 24.01.2014	1.83	3.12	Resistance to all the three rusts under natural condition
16	K 9351 (MANDAKINI)	K72/K8027//K72	CSAUA&T, Kanpur	Ziauddin Ahmad, YP Singh, JB Khan, Parvez Alam, BM Khanna, NB Singh, SR Vishwakarma, Suresh Singh	1572(E) 20.09.2006	3.08	3.75	Resistant to all the three rusts under natural condition
17	UP 2113	UP 346 /WG 377	GBPUA&T, Pantnagar	PL Gautam, TB Singh, SK Malik, Sohan Pal, DP Saini, Amerika Singh	01.01.1987	2.85	3.9	Very long glume beak length
18	K-72	PV18/K68	CSAUA&T, Kanpur	JC Sharma, Ziauddin Ahmad, NN Dikshit, BM Khanna, Vinayachal Singh	01.01.1985			Tolerant to drought
19	K-78 (K-7827)	JANAK/K816//K65	CSAUA&T, Kanpur	-	01.01.1985	2.68	3.07	Tolerance to drought
20	K 65	C591/NP773	CSAUA&T, Kanpur	-	598(E) 08.10.1974			Tolerance to drought
21	HUW 669 (Malviya 669)	ALTAR84/HUW206 /MILAN	BHU, Varanasi	Ram Dhari, Vinod Kumar Mishra, Balasubramaniam Arun, Arun Kumar Joshi, Lal Chand Prasad	1379(E) 27.03.2018	2.41	4.30	Yellow and brown rust resistance
<b>TS,RIR whole of U.P.</b>								
22	K 68	NP773/K 13	CSAUA&T, Kanpur	-	598(E) 08.10.1974	3.75	2.68	Good for bread making
23	K 816	CIANO 'S'(S.64 / KI.REND)/8156	CSAUA&T, Kanpur	Ziauddin Ahmad, MP Singh, JC Sharma, AN Khanna	598(E) 08.10.1974	5.04	4.09	Tolerance to boron deficiency

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**Table 2.2.22 Contd.**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>LS, IR</b>								
24	SHIATS-W6 (AAI-W6)	CNO79/PF70354/MUS/3/PASTOR/4/CROC-1	SHIATS, Allahabad	Mahabal Ram, RB Lal, SB Lal	1146 (E) 24.04.2014	3.725	5.00	–
25	K 9533 (NAINA)	HI 1077/HUW 234	CSAUA&T, Kanpur	LP Tiwari, Ziauddin Ahmad	1572(E) 20.09.2006	3.37	4.05	Resistance to brown rust
26	K 9423 (UNNAT HALNA)	HP1633/KAL/UP2 62	CSAUA&T, Kanpur	JC Sharma, LP Tiwari, CN Chaubey, US Rana, A Singh, LS Gupta, RP Singh, SN Tiwari, VK Singh, Ramji Shukla	1566(E) 5.11.2005	3.66	4.07	Tolerance to heat at grain development stage
27	K 7903 (HALNA)	HD 1982/K816	CSAUA&T, Kanpur	LP Tiwari, Ziauddin Ahmad, JC Sharma, US Rana, Arjun Singh, LS Gupta, CN Choubey, RP Singh, VK Singh	92(E) 02.02.2001	2.5	3.5	Tolerance to high temperature
28	K 9162 (GANGOTRI)	K 7827/HD 2204	CSAUA&T, Kanpur	Ziauddin Ahmad, YP Singh, Parvez Alam, JB Khan, BM Khanna, NB Singh, SR Vishwakerma	92(E) 02.02.2001	3.4	4.2	Resistance to brown rust
<b>Saline soil whole of U.P.</b>								
29	KRL 283	CPAN 3004/KHAR-CHIA 65//PBW 343	CSSRI, Karnal	Neeraj Kulshreshtha, YP Singh, SK Sharma, GG Rao, PC Sharma, Arvind Kumar, DK Sharma, VK Mishra, KN Singh	1379(E) 27.03.2018	2.0	4.10	Resistant to leaf blight, Karnal bunt and hill bunt
30	K 8434 (PRASAD)	HD 2160/K 68	CSAUA&T, Kanpur	LP Tiwari, Ziauddin Ahmad, JC Sharma, US Rana, JS Gupta, RP Singh, Ramji Shukla	92(E) 02.02.2001	1.52	2.32	For Alkaline and saline soil

**Table 2.2.23: Durum wheat varieties notified for Bundelkhand area of Uttar Pradesh**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	NP 401	GAZA/EGYPT8 626	IARI RS, Indore	–	1146(E) 24.04.2014	4.24	5.37	–



**Table 2.2.24: Bread wheat varieties notified for Uttarakhand state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>TS, IR (Uttarakhand Plains)</b>								
1	UP 2784	CPAN 4078/ PBW 442	GBPUA&T, Pantnagar	JP Jaiswal, Swati, Anil Kumar, RS Rawat	3540(E) 22.11.2016	4.42	5.51	Resistance to brown rust, yellow rust and moderately resistance to leaf blight under field condition
2	UP 2628	HD 2660/ RW3464	GBPUA&T, Pantnagar	DP Saini, RSRawat, JP Jaiswal, Anil Kumar, Swati, SK Malik, Sohan Pal, TB Singh	211(E) 29.01.2010	4.88	-	Resistance to yellow and brown rust
3	UP 2554	SM4-HSN 24E /CPAN 2099	GBPUA&T, Pantnagar	Sohan Pal, SK Malik, DP Saini, RS Rawat, JP Jaiswal, TB Singh, KV Singh	122(E) 06.02.2007	4.98	-	Resistance to rust
4	UP 2382	CPAN 2004 / HD 2204	GBPUA&T, Pantnagar	TB Singh, SK Malik, Sohan Pal, SS Ahlawat, DP Saini, KV Singh	425(E) 08.06.1999	4.79	5.84	Resistance to yellow rust and smut
<b>TS, IR (Uttarakhand Hills)</b>								
5	UP 2572	HD 2009/ SKA //HD 2329	GBPUA&T, Pantnagar	Sohan Pal, TB Singh, SK Malik, DP Saini, RS Rawat, JP Jaiswal, KV Singh	122(E) 06.02.2007	4.36	5.50	Resistance to yellow and brown rust
<b>TS, IR/RF (Uttarakhand Hills)</b>								
6	VL 802	CPAN3018/CPA N 3004//PBW65	VPKAS, Almora	Lakshmi Kant, Jag Shoran, APandey, Daya ShankerS Hariprasad, SK Pant, HS Gupta, BD	122 (E) 02.02.2005	2.12(RF) 4.84(IR)	2.97(RF) .....	Resistance to yellow rust, brown rust and loose smut
7	VL 719	VEE # 5"S"	VPKAS, Almora	Jag Shoran, SK Pant, BD Pandey	408(E) 04.05.1995	3.0 (RF) 4.2( IR)	3.8 (RF) 5.0(IR)	Resistance to yellow and brown rust
<b>TS, RF (Uttarakhand Hills)</b>								
8	VL 401	FKN/N 10B	VPKAS, Almora	-	13(E) 19.12.1978	2.50	2.80	Semi-hard and medium bold grains
9	VL 404	KT/BAGE//FN/G U/3/ST 464(DR)/P1741 06(DR)	VPKAS, Almora	-	13(E) 19.12.1978	2.00	3.50	For higher hills

**Contd. on next page**

**Table 2.2.24: Contd.**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
<b>LS, IR (Uttarakhand Plains)</b>								
10	UP 2526	HD 2009/SKA// HD 2329	GBPJA&T, Pantnagar	Sohan Pal, SK Malik, DP Saini, RS Rawat, JP Jaiswal, TB Singh, KV Singh	122(E) 06.02.2007	2.33	3.00	Resistance to all the three rusts
11	UP 2565	PBW 352/CPAN 4020	GBPJA&T, Pantnagar	Sohan Pal, TB Singh, SK Malik, DP Saini, RS Rawat, JP Jaiswal, KV Singh	599(E) 25.04.2006	4.18	4.44	Tolerance to heat and resistance to rusts, smut and powdery mildew
<b>TS, IR-Uttarakhand (Hills-organic farming &amp; Plains)</b>								
12	VL 953	VW 0185/ DORADE 5	VPKAS, Almora	Lakshmi Kant, SK Pant, SK Jain, BR Raghui; BD Pandey, Daya, Shanker, GS Bankoti	3540(E) 22.11.2016	3.34 (HILLS) & 4.47(Pl.)	–	Resistance to yellow and brown rust

**Table 2.2.25: Bread wheat varieties notified for West Bengal state**

S.N.	Prod. Condition Name of variety	Parentage	Developed by	Scientists involved in developing the variety	Notification number and date	Yield (t/ha)		Special features
						Av.	Pot.	
1	BW 1008 (TEESTA)	E5573/NP852	Deptt. Of Agri., Burdwan (WB)	–	821(E) 13.09.2000	–	–	Tolerance to boron deficiency

The naming of variety is an important in varietal evaluation in AICRP-W&B. The names, generally abbreviated, are prefixed before a numbered series to identify the variety developing centre. There is well defined set of prefix (Appendix II), which are being used by the research centre while nominating entries for testing in coordinated trials. However at the time of notification, different or other common names are assigned to the entry by some of the breeders/Institute for popularizing the varieties. These names are considered as synonyms of variety. Sometimes, synonym causes confusion to farmers as well as to scientific community, whether the variety they are referring is same or different. In this chapter, name of the variety and other synonym name is presented.

Variety Name	Common Name	Variety Name	Common Name
A28	ARNEJ 28	HD 2278	PARVATI
AKAW 3722	VIMAL	HD 2285	GOBIND
AKAW 4210-6	PDKV SARDAR	HD 2643	GANGA
AKW 1071	PURNA	HD 2687	SHRESTH
BR 104	DESHRATNA	HD 2733	VSM
BRW 934	SABOUR SHRESHTHA	HD 2781	ADITYA
BRW 3708	SABOUR SAMRIDDHI	HD 2824	POORVA
BRW 3723	SABOUR NIRJAL	HD 2833	PUSA WHEAT 105
BW 11	PURBALI	HD 2851	PUSA VISHESH
BW 1008	TEESTA	HD 2864	URJA
C 306	IMPROVED DESI	HD 2888	PUSA WHEAT 107
CCNNRV 01	RAJMOLYARODHAK 01	HD 2894	PUSA WHEAT 109
CG 1013	CHATTISGARH GENHU-3	HD 2932	PUSA WHEAT 111
CG 1015	CHATTISGARH GENHU-4	HD 2985	PUSABASANT
CG 5016	RATAN	HD 2987	PUSA BAHAR
CPAN 1676	ROHINI	HD 3059	PUSAPACHHETI
CPAN 3004	SANGAM	HD 3086	PUSA GAUTAMI
DDK 1001	VIJAY	HD 3090	PUSAAMULYA
DDK 1009	GANGA	HD 3118	PUSAVATSALA
DH 114	HIMPRATHAM	HD 4502	MALVIKA
DL 153-2	KUNDAN	HD 4672	MALVARATNA
DL 784-3	VAISHALI	HD 4713	PUSA 110
DL 788-2	VIDISHA	HD 4728	PUSAMALWI
DL 803-3	KANCHAN	HI 385	MUKTA
DPW 621-50	PBW 621, DBW 50	HI 617	SUJATA
DT 46	PUSA TRITICALE 1	HI 784	SWATI
DWR 16	KEERTHI	HI 1077	MANGLA
DWR 17	DBW 17	HI 1418	NAVEEN CHANDOUSI
DWR 39	PRAGATI	HI 1454	ABHA
DWR 137	KIRAN	HI 1479	SWARNA
DWR 195	ANURADHA	HI 1500	AMRITA
GAUW 10	J 24	HI 1531	HARSHITA
GJW 463	GUJARAT JUNAGADH WHEAT 463	HI 1544	PURNA
GW 40	J-40	HI 1563	PUSAPRACHI
GW 496	GUJARAT WHEAT 496	HI 1605	PUSA UJALA
GW 503	GUJARAT WHEAT 503	HI 1612	PUSA WHEAT 1612
HD 1925	SHERA	HI 7483	MEGHDOOT
HD 1941	HIRA	HI 8381	MALVASHRI
HD 1949	MOTI	HI 8498	MALAV SHAKTI
HD 1981	PRATAP	HI 8627	MALAV KIRTI
HD 1982	JANAK	HI 8663	POSHAN
HD 2009	ARJUN	HI 8713	PUSAMANGAL
HD 2135	NILGIRI	HI 8737	PUSAANMOL
HD 2236	KSHIPRA	HI 8759	PUSATEJAS

Variety Name	Common Name	Variety Name	Common Name
HI 8777	PUSA WHEAT 8777	K 8962	INDRA
HP 1633	SONALI	K 9006	UJIYAR
HP 1731	RAJLAKSHMI	K 9107	DEWA
HP 1744	RAJESHWARI	K 9162	GANGOTRI
HP 1761	JAGDISH	K 9351	MANDAKINI
HPBW 01	PBW 1 Zn	K 9423	UNNAT HALNA
HPW 42	ARADHANA	K 9465	GOMTI
HPW 89	SURABHI	K 9533	NAINA
HPW 147	PALAM	K 9644	ATAL
HPW 155	ONKAR	KML7406	BITHOOR
HPW 184	CHANDRIKA	MP 1142	SNEHIL
HS 1097-17	GIRIJA	MP 1201	JW 1201
HS 1138-6-4	SHAILJA	MP 1202	JW 1202
HS 375	HIMGIRI	MP 3211	JW 3211
HS 420	SHIVALIK	MP 3288	JW 3288
HS 490	PUSABAKER	MP 3336	JW 3336
HS 507	PUSA SUKETI	MP 3382	JW 3382
HS 542	PUSA KIRAN	MP 4106	RAJ VIJAY WHEAT 4106
HUW 12	MALAVIYA WHEAT 12	MPO 1106	SUDHA
HUW 37	MALAVIYA WHEAT 37	MPO 1215	MPO (JW) 1215
HUW 55	MALAVIYA WHEAT 55	MPO 1255	MPO (JW) 1255
HUW 206	MALAVIYA WHEAT 206	MP 3173	JW 3173
HUW 213	MALAVIYA WHEAT 213	NW 1012	NARENDRA WHEAT 1012
HUW 234	MALAVIYA WHEAT 234	NW 1014	NARENDRA WHEAT 1014
HUW 318	MALAVIYA WHEAT 318	NW 1067	NARENDRA WHEAT 1067
HUW 468	MALAVIYA WHEAT 468	NW 2036	NARENDRA WHEAT 2036
HUW 510	MALAVIYA WHEAT 510	NW 4018	NARENDRA WHEAT 4018
HW 1085	BHAWANI	NW 5054	NARENDRA WHEAT 5054
HW 1095	CoW 2	NI 747-19	DECCAN QUEEN
HW 1098	NILGIRI KHAPLI	NARMADA 215	TAWA 215
HW 2004	AMAR	NIAW 301	TRIMBAK
HW 2044	KURINJI	NIAW 917	TAPOVAN
HW 2045	KAUSHAMBI	NIAW 1415	NETRAVATI
HW 5207	CoW 3	NIAW 1994	PHULE SAMADHAN
HW 5216	PUSATHENMALAI	NIDW 15	PANCHVATI
HYB 65	HD1467	NIDW 295	GODAVARI
JNK-4W-184	JAIRAJ	OW6	SAGARIKA
JWS 17	SWAPNIL	PBN 51	PARBHANI 51
K 72	K 7229	PBW 723	Unnat PBW 343
K 78	K 7827	RR21	SONALIKA
K 88	K 8804	S331	CHHOTI LERMA
K 0307	SHATABADI	SHIATS-W6	AAI-W6
K0402	MAHI	SKW 196	SHALIMAR WHEAT-1)
K 0607	MAMTA	SKW 355	SHALIMAR WHEAT 2
K 7410	SHEKHAR	SWL 8	SINGCHEN
K 7903	HALNA	UP 1109	PANT WHEAT 1109
K 8020	TRIVENI	WR 544	PUSA GOLD
K 8027	MAGHAR	WSM 1472	PKV WASIM
K 8434	PRASAD		

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## Abbreviations used in text

APR	Adult Plant Resistance
AV.	Average Yield
CZ	Central Zone (Madhya Pradesh, Chhattisgarh, Gujarat, Bundelkhand regions of Uttar Pradesh, Kota and Udaipur divisions of Rajasthan)
CCN	Cereals Cyst Nematode
GUJ	Gujarat
HA	High Altitude
HP	Himachal Pradesh
IR	Irrigated
J & K	Jammu & Kashmir
KAR	Karnataka
KB	Karnal Bunt
LB	Leaf Blight
IR	Restricted Irrigation
LS	Late Sown
MAH	Maharashtra
MP	Madhya Pradesh
NEPZ	North Eastern Plains Zone (Eastern Uttar Pradesh, Bihar, Jharkhand, West Bengal, Orissa, Plains of Assom)
NHZ	Northern Hills Zone
NWPZ	North Western Plains Zone (Punjab, Haryana, Western Uttar Pradesh, Delhi, Una & Paontai Valley of Himachal Pradesh, Terai of Uttarakhand, Parts of Rajasthan Alwar, Bharatpur & Sriganganagar)
PZ	Peninsular Zone (Maharashtra, Karnataka, Plains of Tamil Nadu Chennai and Andhra Pradesh)
POT.	Potential yield
RAJ	Rajasthan
RES	Resistant
RF	Rainfed
SEL	Selection
SHZ	Southern Hills Zone (Nilgiris&Palni Hills)
SPS	Species
SVRC	State Variety Release Committee
TGW	Thousand grain weight
TN	Tamil Nadu
TOL	Tolerance
TS	Timely Sown
UP	Uttar Pradesh
UT	Uttarakhand
VLS	Very late sown
WB	West Bengal

### Prefix assigned to the varieties developed by different research institutes and their address

Prefix	Centre name	Address
AKDW	AKOLA	Crop Research Station, PDKV, Akola, Maharashtra
AAI, SHIATS	ALLAHABAD	Sam Higginbottom Institute of Agriculture, Technology and Sciences (erstwhile Allahabad Agricultural Institute), Allahabad, U.P.
VL	ALMORA	ICAR-Vivekanand Parvatiya Krishi Anusandhan Sansthan, Almora, Uttarakhand
A	ARNEJ	Anand Agricultural University, Regional Research Station, Arnej, Gujarat
HPW	BAJAURA	CSK-HPKV, Regional Station, Bajaura, Himachal Pradesh
HB	BHOWALI	ICAR-NBPGR Regional Station, Bhowali, Uttarakhand
BIJA	BIJAPUR	UAS-College of Agriculture, Bijapur, Karnataka
CG	BILASPUR	IGKV-TCB College of Agriculture and Research Centre, Bilaspur, Chattisgarh
BW	BURDWAN/MALDA	Deptt. of Agriculture, West Bengal, Burdwan; Department of Agriculture West Bengal, Malda
OW	CHIPLIMA	Orissa University of Agriculture & Technology, Regional Station, Chiplima, Odisha
UBW	COOCHBEHAR	UBKV, Coochbehar, West Bengal
KRL	CSSRI	ICAR-Central Soil Salinity Research Institute, Karnal, Haryana
UAS, DDK, DWR	DHARWAD	University of Agricultural Sciences, Dharwad, Karnataka
RAJ	DURGAPURA	SKNA University, Rajasthan Agricultural Research Institute, Durgapura, Rajasthan
CBW, CPAN, DBW, DDW, WB,	IIWBR, KARNAL	ICAR-Indian Institute of Wheat and Barley Research (erstwhile Directorate of Wheat Research), Karnal, Haryana
NW	FAIZABAD	ND University of Agriculture & Technology, Faizabad, U.P.
GW	GUJARAT	Wheat Research Station, S D Agricultural University, Gujarat
WG	GURDASPUR	Punjab Agricultural University, Regional Station, Gurdaspur, Punjab
RVW	GWALIOR	RVSKVV, Gwalior, M.P.
WH, WHD	HISAR	CCS Haryana Agricultural University, Hisar, Haryana
HI	INDORE	ICAR-IARI Regional Station, Indore, M.P.
MP, JW	JABALPUR	JNKVV, Jabalpur, M.P.
JAUW, RSP	JAMMU	SKUAS&T, Jammu, J&K



GW	JUNAGARH	Junagadh Agricultural University, Junagarh, Gujarat
RKW	KOTA	MPUA&T, Kota, Rajasthan,
K, KD	KANPUR	CSA University of Agriculture & Technology, Kanpur, U.P.
PBW, PDW, WL, TL	LUDHIANA	Punjab Agricultural University, Ludhiana, Punjab
NP, HD	N DELHI	ICAR-Indian Agricultural Research Institute, New Delhi
NIAW, NIDW	NIPHAD	MPKV, Regional Station, Niphad, Maharashtra
HPW	PALAMPUR	CSK-HPKV, Palampur, H.P.
UP, UPD	PANTNAGAR	GB Pant University of Agriculture & Technology, Pantnagar, Uttarakhand
PBN, PBND	PARBHANI	Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra
BR	PATNA & SABOUR	Rajendra Agricultural University, Regional Station, Patna, Bihar Agriculture College, Sabour, Bhagalpur, Bihar
MP, MPO	POWARKHEDA	JNKVV Regional Station, Powarkheda, M.P.
MACS	PUNE	Agharkar Research Institute, Pune, Maharashtra
HP	PUSA	ICAR-IARI Regional Station, Pusa, Bihar
JKW	RANCHI	BAU, Ranchi, Jharkhand
BRW	SABOUR	BAU, Sabour, Bhagalpur, Bihar
JWS	SAGAR	JNKVV Regional Station, Sagar, M.P.
LOK	SANOSARA	Lok Bharti, Sanosara, Gujarat
HS	SHIMLA	ICAR-IARI Regional Station, Shimla, H.P.
SKW	SRI NAGAR	SKUAS&T, Srinagar, J&K
HUW	VARANASI	Banaras Hindu University, Varanasi, U.P.
GW	VIJAPUR	Gujarat Agricultural University, Regional Station, Vijapur, Gujarat
PDKV WSM	WASHIM	PDKV Agriculture Research Station, Washim, Maharashtra
HW	WELLINGTON	IARI Regional Station, Wellington, Tamilnadu

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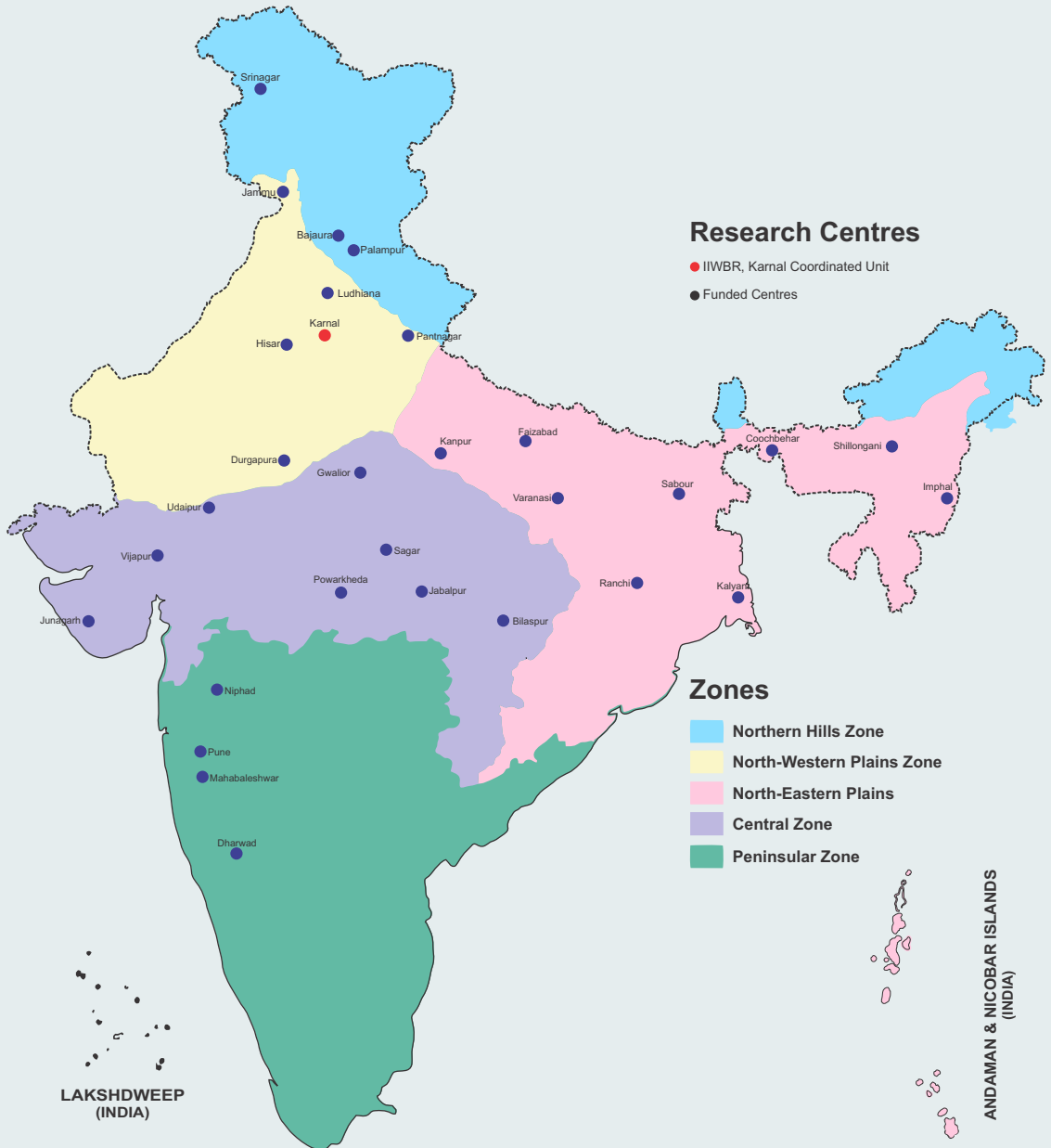




## Notes



# Wheat Growing Zones and Funded Centres of AICRP on Wheat





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