

WHEAT CULTIVARS IN INDIA

NAMES, PEDIGREES, ORIGINS, AND ADAPTATIONS

Compiled by
K B L JAIN



Promoted by
ICAR/CIMMYT

Dedicated to the Memories of
DR. B.P. PAL
and
DR. R. GLENN ANDERSON

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**COMPILED BY
K.B.L. JAIN**

ICAR/CIMMYT

*Directorate of Wheat Research (DWR), Karnal--132 001 Haryana, India
Indian Agricultural Research Institute (IARI), New Delhi--110 012, India
International Maize and Wheat Improvement Center (CIMMYT),
Lisboa 27, Apdo. Postal 6-641, 06600 Mexico, D.F. Mexico*

FOREWORD

India has a long history of scientific wheat research extending back to the first decade of the present century. Within a span of 90 years, a very large number of wheat varieties have been released, to the considerable benefit of Indian farmers and consumers. At present, an array of improved genotypes, differing in agronomic characters, biotic and abiotic resistance, and quality traits, are grown by farmers on about 24 million hectares in this country, thus helping greatly to sustain productivity.

Numerous Central and State institutions are engaged in wheat breeding, with a large number of accessions, both indigenous and foreign, at their disposal for exploitation. To safeguard genetic diversity in future generations of cultivars, there is a need to maintain and document genetic resources as well as monitor crop genetic diversity, which will (and must) play a vital role in future plant breeding. This publication, *Wheat Cultivars in India: Names, Pedigrees, Origins, and Adaptations*, compiled by Dr. K.B.L. Jain, Principal Scientist (Retd.), Division of Genetics, IARI, New Delhi, and brought out by the Directorate of Wheat Research, Karnal, Haryana, provides the requisite genetic information, to benefit future wheat breeding in this country and abroad.

This work — the result of collaborative efforts by the Directorate of Wheat Research, Karnal, IARI, New Delhi, and CIMMYT, Mexico — deserves appreciation on its own merits and because it is an inter-institutional endeavour. For his tremendous dedication in compiling the information that follows, I compliment Dr. K.B.L. Jain, as well as the institutions that promoted this important effort.

New Delhi
August 1, 1994

V.L. Chopra
Director General, ICAR, and
Secretary, DARE, Government of India

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Many other individuals have helped me at various stages of compiling the data contained in this bulletin. Special mention should be made of J.P. Tandon, S. Nagarajan, and S.M.A. Naqvi, DWR, Karnal; H.J. Dubin, CIMMYT, Kathmandu; and N.E. Borlaug, S. Rajaram, G. Verughese, B. Skovmand, P.N. Fox, M. van Ginkel, and R.A. Fischer, CIMMYT, Mexico. Their scientific input has been essential to the success of this project. I also appreciate the assistance of Laura Saad and Victor Hernández Leal in formatting and printing the data, and of Kelly Cassady in editing the text.

Finally, I would like to thank wheat breeders, various research institutions and universities in India as well CIMMYT for generously providing the data for this bulletin.

K.B.L. JAIN
*Principal Scientist (Retd.),
Division of Genetics, IARI,
New Delhi*

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INTRODUCTION

A wide array of improved wheat cultivars suited to different agro-ecological conditions has been released in India since the inception of systematic research at the turn of the century. These cultivars represent two distinct eras of varietal improvement. The first era, which continued up to early 1960s, mainly emphasised traditional wheats within the frame work of subsistence agriculture. The second era, on the other hand, represents releases largely of short-stawed, high yielding, photo-insensitive cultivars that not only transformed subsistence agriculture into modern agriculture and ushered in the 'Green Revolution'; but also enabled the wheat revolution to be sustained over the years.

International cooperation in the exchange of wheat germplasm and information has played a very important role in the genetic amelioration of this crop worldwide including India. A wealth of improved tall and semidwarf cultivars, elite advanced lines, and segregating materials of foreign origin has been introduced, assessed, and utilized directly as cultivars and/or as breeding parents for broadening the genetic base for disease resistance, short plant height, and other characteristics. Similarly, Indian land races and improved finished products from India have been used directly in several countries as cultivars or as donors for characters such as earliness, tolerance to abiotic stresses, and grain quality. The strengthening of collaboration between India and several international organizations (especially CIMMYT) in the exchange of material and information has enabled rapid inflow as well as outflow of elite germplasm. The finished products from India are being assessed worldwide.

Documentation of pedigrees and other relevant information on cultivars provides an important and easy source of communication among plant breeders and researchers to understand and exchange germplasm. However, such an information on Indian wheats is widely scattered in the literature and is not easily accessible. The Indian literature also does not show consistency in describing the pedigrees of many wheat cultivars released in India. In many cases, codes (i.e., breeding or identification numbers) have been used which have a limited meaning for general use. The present compilation aims to provide, in one package, pedigrees and other relevant information on bread, durum, and emmer spring wheats released in India over nine decades; Indian and foreign germplasm used in developing those wheats; Indian land races and elite germplasm (either developed locally or selected from foreign germplasm) that have been either released or utilized in hybridization to develop improved cultivars in various countries. It is hoped that this information will promote reliable communication about this germplasm.

Tables 1 and 2 provide information on names, abbreviations, synonyms, pedigrees, origins, releasing institutions and research centres, and years/periods of release of hexaploid and tetraploid wheats, respectively, during the subsistence agriculture era. This information is based largely on Murty (1958), Pal (1966), and Kohli (1968). Similar information for cultivars of the second era is given in Tables 3, 4, and 5, which is based mainly on the official list of wheat cultivars (Tanwar and Singh 1985), supplemented with that given by Rao (1978), Agrawal (1986), various wheat research centres, and reported in the AICWIP annual reports of all India coordinated varietal trials, 1970-71 to 1992-93. For a number of varieties listed in Tables 1 and 2, the year of release is not readily available in the publications referred to above. To provide some idea about the period of development of these cultivars, the approximate period of release/seed distribution has been indicated. It may however be noted that release of an improved variety during first era was rather a local affair and provincial in character.

The official system of variety testing, release and notification of new varieties in India came into being in the 1960s. The Central Variety Release Committee (CVRC) and State Variety Release Committees (SVRC) were established. The All India Coordinated Wheat Improvement Project (AICWIP) was established under the aegis of the Indian Council of Agricultural Research in 1961 to develop a programme of coordinated wheat research for the country. This Project took several significant steps, some of which were to define wheat agroclimatic zones, identify major production conditions, and to initiate evaluation of newly developed breeders' lines, through its net work of inter-disciplinary and multilocation testing (see Tables 17 and 18 for details). The data generated under AICWIP have since formed the basis of identification of new improved lines with wider adaptation and their subsequent release by the CVRC at zonal or national level.

The names of cultivars given in Tables 3 and 4 are the same as those in the official records. In a majority of cases, the cultivar name is the same as that of the breeding line, which is assigned at the time of its inclusion in the all India coordinated varietal trials. In some cases, cultivars have been given popular names, but they continue to be known by the original line number or other synonyms. Both line number and synonyms have, therefore, also been included to help researchers to identify the material. However, information on pedigree and adaptation of presented against cultivar name. Details of various organizations, wheat research centres and the prefixes used against numbers by these research centres are set out in Tables 19 to 21.

Information on adaptation of cultivars, though of local significance, has been included in Tables 3 and 4 for cultivars of the second era. This information may prove useful to researchers in the Indian subcontinent and other regions with similar agro-climatic conditions. These cultivars have been released in the country for specific ecosystems at the Zonal or State level. Interestingly, some

of the crosses, both of Indian and foreign origin, have yielded cultivars which are not only adapted to Indian conditions but also show wide adaptability across countries (Table 9).

Various terms have been used in the literature to describe the height of short-strawed wheats: single (one-gene), double gene (two-gene), triple gene (three-gene), single dwarf, double dwarf, and triple dwarf. In this compilation, however, the terms "one-gene dwarf" and "two-gene dwarf" have been used to describe semi-dwarf and dwarf wheats respectively. As all the short-strawed wheat cultivars referred to carry the Norin 10 dwarfing genes *Rht1* and/or *Rht2*, semidwarf height in bread wheat is characterized by either *Rht1* or *Rht2* and in durum wheats by *Rht1*. Dwarf height of bread wheats, on the other hand, is due to the presence of both *Rht1* and *Rht2*. In recent years, dwarfing genes have been identified in several wheat cultivars (Nelson, Dubin, and Rajaram, 1980; Gale, Marshall, and Rao, 1981; Singh *et al.*, 1989; and Jain, unpublished) and information on the same, wherever available, has been incorporated.

Foreign wheat cultivars and elite germplasm that have proved successful either as direct introductions or as breeding parents in Indian wheat programme are given in Tables 6, 8, and 11. Similar information on Indian land races, elite germplasm and finished products that have proved successful in foreign countries is provided in Tables 7 and 12. This information is based on Macindoe and Brown (1968), Dalrymple (1978, 1986), Zeven and Zeven-Hissink (1976), Villareal *et al.* (1985), Zeven and Reiner (1991), AICWIP and CIMMYT records. Many more such cultivars, however, may have remained unnoticed. Indian germplasm that has been successfully used in developing Indian wheats is listed in Table 10.

Pedigrees of the cultivars, in various tables, are presented following the form adopted by CIMMYT. The name of breeding parent in the cross, as far as possible, refers to cultivar name or its synonym. Code/number of advanced line has been used only for widely documented international lines, and other breeding lines whose pedigree was either not available or was very long. Cultivars whose original pedigrees have either been modified or expanded are given in Table 13. For some cultivars and lines, more than one pedigree is reported in the literature. In a majority of such cases, the pedigree given in the official list of cultivars has been retained. In a few cases, the one that appeared correct on the basis of literature and other information has been used. Alternative versions of such pedigrees, however, are presented in Table 14.

The abbreviations used for cultivars and lines are the ones given in *Wheat Cultivar Abbreviations* (Skovmand, 1994). Wheats for which abbreviations had not yet been assigned were given abbreviations following the recent nomenclature and the procedure developed at CIMMYT. Since pedigrees of many foreign wheats are not easily accessible, the abbreviations used for various cultivars and lines have been explained in Tables 15 and 16 so that researchers can trace

the ancestry of cultivars to atleast three generations. Pedigrees of wheat cultivars and lines can be easily located through the index of cultivar/line abbreviations given in Tables 22 and 23.

The sequence of crosses in each pedigree is presented by the system of slashes, as used by CIMMYT and several other wheat-breeding organizations. The table below compares the old and the present systems. A question mark (“?”) indicates cases in which the cross sequence is not clear.

Order of Crosses	Symbol in Old System	Symbol in New System
1	–	/
2	x	//
3	/	/3/
4	()	/4/
5	[]	/5/
6	Key Bracket	/6/
n	Multiple Key Bracket	/n/
?	Sequence not known	/?/
Backcross	Superscript	*

Thus, if parent A is crossed with parent B and the F_1 hybrid is crossed with parent C, its pedigree would be designated as A/B//C. Subsequent crosses with parental material D, E, F and G would be indicated as:

A/B//C/3/D/4/E/5/F/6/G

The female parent is designated by listing it first (to the left side) followed by the pollen parent (placed to the right side of the cross). Thus, A is the female and B is the pollen parent in the first cross. The line A/B is the female and C is the pollen parent in cross two, etc.

Backcrosses are designated with an asterisk(*) and a number which indicates the dosage of the recurrent parent. The asterisk and the number are placed next to the crossing symbol that divides the recurrent and donor parents. The following are examples involving one backcross (two doses):

Example	Notation
A is the recurrent parent:	A*2/B
B is the recurrent parent:	B/2*B
A/B is the recurrent parent:	A/B*2//C/D
C/D is the recurrent parent:	A/B//2*C/D

The selection history is available for some cultivars, especially those of CIMMYT origin, and this information has been included. The procedure adopted by

CIMMYT to describe selection history is: Each pedigree name begins with an alphabetic designation of the cross origin, followed by cross number. After the cross number there is either a letter or number-letter combination. For top and double crosses, a letter is assigned to each plant selected in the F_1 generation. In number-letter combinations, the number identifies the individual plant and the letter indicates the location of selection (see table below). The zero letter combinations (OM, OY, etc.) are reserved for populations carried as bulk in that generation. Examples follow:

Type of cross	Cross number	Plant selection and location (by generation)					
		F_1	F_2	F_3	F_4	F_5	F_6
Simple (Variety x variety)	CM1162	-	2Y	1M	1Y	OM	
Top (F_1 x variety) and Double (F_1 x 0)	CM33027	F	15M	500Y	OM	87B	OY

It is hoped that various national wheat breeding programmes will also develop or evolve a similar standardised system of reporting selection history, which in turn will facilitate identification of cultivars with common origins at global level.

Since a large number of crosses are made annually by Indian Wheat Improvement Programmes, CIMMYT and other cooperating institutions, and many cultivars based on such crosses are released every year, this bulletin will require updating and revision at least every four years to accomodate additional entries. In a compilation of this nature, where the information is based on several sources, including published reports, there is a high probability of carrying forward errors, omissions, etc. I, therefore, welcome information and suggestions for making this compilation more comprehensive and useful to wheat researchers the world over.

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Table 1. Bread wheat varieties selected, evolved or introduced in India, 1905 to 1964

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	ORGANIZATION	CENTRE	YEAR/ PERIOD OF RELEASE@
8A	8A	SEL. LOCAL	DUPB*	LY	1919
9D	9D	SEL. LOCAL	DUPB*	LY	1930
A 013	A013	SEL. LOCAL SUKHARAI PISSI	DCP*	AK	1913-15
A 049	A049	A 068 SIB	DCP*	AK	1913-15
A 068	A068	LCMU/KPH(DM)	DCP*	AK	1913-15
A 085	A085	A 013 SIB	DCP*	AK	1913-15
A 088	A088	SEL. LOCAL MURRIA	DCP*	AK	1913-15
A 090	A090	SEL. PUNJAB LOCAL LAL KUSURWALA	DCP*	AK	1913-15
A 113	A113	LCMUPS/KPH(DM)	DCP*	AK	1915-18
A 115	A115	A 113 SIB	DCP*	AK	1915-18
AUSTRALIAN NO 27		INTRODUCTION FROM AUSTRALIA	DUPB*	LY	1905-06
BENA	BENA	INTRODUCTION FROM AUSTRALIA			
BR 319	BR319	SEL. LOCAL OF BIHAR	DBR	SB	1959
C 13	C13	SEL. LOCAL OF UTTAR PRADESH	DUP*	KP	1916-17
C 46	C46	SEL. C 13	DUP*	KP	1919-20
C 217	C217	C518/C591 SIB	DUPB*	LY/JL	1944
C 228	C228	9D/HF	DUPB*	LY/JL	1940
C 250	C250	C 228 SIB	DUPB*	LY/JL	1944
C 253	C253	25C/NP165	DPB	LY/JL	1948
C 273	C273	C591/C209	DPB	LY/JL	1957
C 281	C281	C591/NP4	DPB	JL	1955
C 285	C285	C228/KB256G	DPB	JL	1960
C 286	C286	TYPE1(DR)/KHP(DM)/C591/3/C250	DPB	JL	1958
C 518	C518	TYPE9/8A	DUPB*	LY	1933
C 591	C591	TYPE9/8B	DUPB*	LY	1934
FEDERATION	FR	INTRODUCTION FROM AUSTRALIA			
GABO	GB-AUS	INTRODUCTION FROM AUSTRALIA			
HY 5	HY5	A090/WIS245 SIB	DMP	PK	
HY 8	HY8	HY 5 SIB	DMP	PK	
HY 11	HY11	A115/WIS245 SIB	DMP	PK	1953-54
HY 12	HY12	HY 11 SIB	DMP	PK	
HY 25	HY25	A013/WIS245 SIB	DMP	PK	1951-52
HY 38	HY38	HY 25 SIB	DMP	PK	1953-54
HY 65	HY65	GB-AUS/A115	DMP	PK	1962-53
HY 277	HY277	HY65 SIB	DMP	PK	
HY 278	HY278	NP52/KC9906	DMP	PK	
HYB 11	HYB11	HY 11	DMP	PK	
HYB 65	HYB65	HY 65	DMP	PK	
HYB 277	HYB277	HY 277	DMP	PK	
IP 4	IP4	NP 4	IARI*	PU	
IP 12	IP12	NP 12	IARI*	PU	
IP 52	IP52	NP 52	IARI*	PU	
IP 80-5	IP80	NP 80-5	IARI*	PU	
IP 100	IP100	NP 100	IARI*	PU	
IP 101	IP101	NP 101	IARI*	PU	
IP 111	IP111	NP 111	IARI*	PU	
IP 114	IP114	NP 114	IARI*	PU	
IP 120	IP120	NP 120	IARI*	PU	
IP 125	IP125	NP 125	IARI*	PU	
IP 165	IP165	NP 165	IARI*	PU	
K 13	K13	C 13	DUP*	KP	1916-17

Continued...

Table 1: Continued

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	ORGANI- ZATION	CENTRE	YEAR/ PERIOD OF RELEASE@
K 46	K46	C 46	DUP*	KP	1919-20
K 53	K53	SEL. LOCAL OF JHANSI	DUP	KP	1951
K 54	K54	SEL. LOCAL OF AZAMGARH	DUP	KP	1951
K 65	K65	C591/NP773	DUP	KP	1964
KCN 133	KCN133	WIS245 SIB/NI4	DMH	NI	1950s
KCN 179	KCN179	NI 179	DBO	NI	
KENPHAD 25	KPD25	K58F(L.1)/NI4	DBO	NI	1951
KENPHAD 28	KPD28	KENPHAD 25 SIB	DBO	NI	
KENPHAD 39	KPD39	KENPHAD 25 SIB	DBO	NI	
MHD 177	MHD177	NI 177	DBO	NI	
MHD 345	MHD345	NI 345	DBO	NI	
MONDHYA 3-2	MDY3	SEL. LOCAL MONDHYA	DBO	NI	1952
N 179	N179	NI 179	DBO	NI	
N 345	N345	NI 345	DBO	NI	
NI 177	NI177	MDY417/HFD	DBO	NI	
NI 179	NI179	WIS245 SIB/NI4	DBO	NI	1950s
NI 345	NI345	NI 177 SIB	DBO	NI	1955
NIPHAD 4	NI4	MOTIA(DR)/KPH(DM)/NP4	DBO*	NI	1942
NP 4	NP4	SEL.HETEROZYGOUS LINE OF LOCAL MUNDIA	IARI*	PU	1911
NP 12	NP12	SEL. LOCAL MUNDIA(AWNLESS)	IARI*	PU	1910
NP 52	NP52	NP6/9D	IARI*	PU	EARLY 20s
NP 80-5	NP80	NP4/NP6	IARI*	PU	EARLY 20s
NP 100	NP100	MNWH/NP22	IARI*	PU	LATE 10s
NP 101	NP101	MNWH/NP22	IARI*	PU	LATE 10s
NP 111	NP111	SPONTANEOUS MUTANT FROM NP 4	IARI*	PU	LATE 10s
NP 114	NP114	NATURAL CROSS IN FEDERATION	IARI*	PU	LATE 10s
NP 120	NP120	NP52/FR	IARI*	PU	1925-26
NP 125	NP125	NP 120 SIB	IARI*	PU	1925-26
NP 165	NP165	NP4/FR	IARI*	PU	LATE 30s
NP 710	NP710	NP52/NP165	IARI	DL	1948
NP 715	NP715	NP 710 SIB	IARI	DL	1948
NP 718	NP718	NP 710 SIB	IARI	DL	1948
NP 720	NP720	NP165/C518	IARI	DL	1948
NP 721	NP721	NP 710 SIB	IARI	DL	1949-50
NP 728	NP728	NP 710 SIB	IARI	DL	1949-50
NP 737	NP737	CHNW/NP111	IARI	DL	1949-50
NP 745	NP745	NP 710 SIB	IARI	DL	1949-50
NP 755	NP755	NP 710 SIB	IARI	DL	1949-50
NP 758	NP758	NP 710 SIB	IARI	DL	1949-50
NP 760	NP760	NP 710 SIB	IARI	DL	1949-50
NP 761	NP761	NP 710 SIB	IARI	DL	1949-50
NP 770	NP770	KNS/NP4	IARI	DL	1952
NP 771	NP771	NP 770 SIB	IARI	DL	
NP 775	NP775	NATURAL CROSS IN NP 4	IARI	DL	1949-50
NP 781	NP781	SELECTION FROM MIXED HYBRIDS	IARI	DL	EARLY 50s
NP 792	NP792	WIS245 SIB/NP165	IARI	SM	1954-55
NP 797	NP797	NP 792 SIB	IARI	DL	1955-56
NP 798	NP798	NP 792 SIB	IARI	DL	1955-56
NP 799	NP799	NP 792 SIB	IARI	DL	1955-56
NP 801	NP801	K58F(L.1)/NP120	IARI	SM	
NP 809	NP809	DO/C518//SPP/NP114/3/WIS245 SIB	IARI	SM	1954

Continued...

Table 1: Continued

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	ORGANI- ZATION	CENTRE	YEAR/ PERIOD OF RELEASE@
NP 823	NP823	NP165/C518//NP799/NP770	IARI	DL	EARLY 60s
NP 824	NP824	WIS245 SIB/NP165//NP770/3/C518/NP165	IARI	DL	EARLY 60s
NP 825	NP825	NP 824 SIB	IARI	DL	EARLY 60s
NP 829	NP829	T/NP165	IARI	DL	1958
NP 830	NP830	GB-AUS/N14	IARI	DL	1958-62
NP 832	NP832	KB256G/ LOCAL PISSI	IARI	ID	1958-60
NP 835	NP835	NP760/RN	IARI	DL	1958-60
NP 836	NP836	INDUCED AWNED MUTANT OF NP 799	IARI	DL	1957
NP 890	NP890	GAZA(DR)/2*C281	IARI	DL	EARLY 60s
PADOVA I	PDV1	INTRODUCTION FROM ITALY	DUP*	KP	MID 30s
PADOVA II	PDV2	INTRODUCTION FROM ITALY	DUP*	KP	MID 30s
PUSA 4	PU4	NP 4	IARI*	PU	
PUSA 12	PU12	NP 12	IARI*	PU	
PUSA 52	PU52	NP 52	IARI*	PU	
PUSA 80-5	PU80	NP 80-5	IARI*	PU	
PUSA 100	PU100	NP 100	IARI*	PU	
PUSA 101	PU101	NP 101	IARI*	PU	
PUSA 111	PU111	NP 111	IARI*	PU	
PUSA 114	PU114	NP 114	IARI*	PU	
PUSA 120	PU120	NP 120	IARI*	PU	
PUSA 125	PU125	NP 125	IARI*	PU	
PUSA 165	PU165	NP 165	IARI*	PU	
PW 5	PW5	SEL. LOCAL POTIA	DHY	BD	1931-35
PW 12	PW12	PW 5 SIB	DHY	BD	1931-35
RIDLEY	RIDLEY	INTRODUCTION FROM AUSTRALIA	IARI	SM	1954
RS 31-1	RS31	JPLC/C591	DRJ	DP	1954
TYPE 9	TYPE9	SEL. LOCAL ; LIKELY FROM A NATURAL CROSS WITH T.DURUM OR T.TURGIDUM AS ONE OF THE PARENTS ?	DPB*	LY	1911
TYPE 11	TYPE11	SEL. LOCAL	DPB*	LY	1913

NOTE : ALL CULTIVARS ARE TALL TO MID-TALL IN HEIGHT

* UNDIVIDED INDIA

** LYALLPUR(LYP) IS NOW IN PAKISTAN

@ YEAR FOR RELEASE/SEED DISTRIBUTION IS APPROXIMATE

Table 2: Durum and emmer wheat cultivars selected or evolved in India , 1905 to 1964

NAME	ABBR.	PEDIGREE/SYNONYM	ORGANI- ZATION	CENTRE	YEAR/ PERIOD OF RELEASE@
A 206	A206	SEL. LOCAL OF BHAL TRACT, GUJARAT	DBO	AR	1954
A 624	A624	SEL. LOCAL RATHA KATHA, GUJARAT	DBO	AR	
AMRUT	AMRUT	ANLC/GAZA	DKT	AN	1960
BANSI 168	BNS168	MOTIA	DBO*	NI	
BANSI 202	BNS202	SEL. LOCAL BANSI	DBO*	NI	
BANSI 224	BNS224	GULAB	DBO*	NI	
BANSIPALLI 808	BPL808	JAY	DBO*	NI	
BAXI 288-18	BAX288	SEL. LOCAL BAXI	DBO	NI	1952
EKDANIA 6	EKD6	SEL. LOCAL OF MALWA TRACT	IPI*	IP	1935-40
EKDANIA 69	EKD69	SEL. LOCAL OF MALWA TRACT	IPI*	IP	1935-40
F 16-1	F16-1	AMRUT	DKT	AN	
GULAB	GULAB	SEL. LOCAL BANSI	DBO*	NI	1927
HY 32	HY32	GAZA/HRA116	DMP	PK	1962
HY 34	HY34	HY 32 SIB	DMP	PK	1962
JAI	JAI	JAY	DBO*	NI	
JAY	JAY	MOTIA/KPH(DM)	DBO*	NI	1934
JAYA	JAYA	JAY	DBO*	NI	
K 19-3	K19	SEL. LOCAL KATHIA	DUP*	KP	1931-35
K 21	K21	SEL. LOCAL KATHIA	DUP*	KP	1931-35
K 25	K25	SEL. LOCAL KATHIA	DUP*	KP	1931-35
MOTIA	MOTIA	SEL. LOCAL BANSI	DBO*	NI	1932
MOTIYA	MOTIYA	MOTIA	DBO*	NI	
N 59	N59	GAZA/MOTIA	DMH	NI	1962
NARSINGHAR 111	N111	SEL. LOCAL OF MALWA TRACT	IPI*	ID	1935-40
NI 81	NI81	VIJAY	DBO*	NI	1939
NI 146	NI146	GAZA/BAX23	DMH	NI	1962
NP 406	NP406	GAZA/EKD6	IARI	ID	1961
NP412	NP412	GAZA/EKD69	IARI	ID	1961
PW 1	PW1	SEL. LOCAL BANSI OF AURANGABAD	DHY*	BD	1935-37
PW 3	PW3	SEL. LOCAL BANSI OF OSMANABAD	DHY*	BD	1935-37
PW 7	PW7	SEL. LOCAL BANSI OF OSMANABAD	DHY*	BD	1935-37
TYPE 1	TYPE1	SEL. LOCAL	DPB*	LY**	
VIJAY	VIJAY	NATURAL CROSS OF MOTIA/KHP(DM)	DBO*	NI	1939
EMMER WHEAT					
NP200	NP200	SEL. LOCAL OF RISHI VALLEY	IARI	WN	1958

NOTE : ALL CULTIVARS ARE TALL TO MID TALL IN HEIGHT

* UNDIVIDED INDIA

** LYALLPUR(LY) IS NOW IN PAKISTAN

@ YEAR OF RELEASE/SEED DISTRIBUTION IS APPROXIMATE

Table 3 : Bread wheat cultivars released in India, 1965 to 1993

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
AJANTA	AJANTA	PW5/Y53	MKV	BD	1981	MH	R	TS	1@
AKW 381	AK381	SKA/NI5439	PKV	AK	1988	MH	I	LS	Rht2
AKW 1071	AK1071	VEE/3/FLN/ACC//ANA	PKV	AK	1992	MH	I	TS	1
ARJUN	ARJUN	LR64A/NAI60	IARI	DL	1974	NWPZ	I	TS	Rht1
BDN 519	BDN519	AJANTA	MKV	BD					1@
BITHOOR	BTR	MULTILINE (KALYANSONA) OF NINE COMPONENTS	CSAUAT	KP	1978	UP	I	TS	1
BR 104	BR104	DESHRATNA	RAU	PT					1
BR 346	BR346	RW 346	RAU	PT					1
BR 3016	BR3016	RW 3016	RAU	PT					1
BW 11	BW11	PURBALI	DWB	MD					Rht1
BW 1008	BW1008	TEESTA	DWB	BN					1
C 306	C306	RGN/CSK3//2*C591/3/C217/ NI4//C281	PAU/DPB	HR	1965 NEPZ	NWPZ R	R	TS TS	0
CA 82	CA82	GANGA SONAHERI	DRJ	DP					0
CC 464	CC464	BB//CNO/SN64	IARI	WD	1979	PZ	I	TS	Rht2
CHAMBAL 65	CBL65	AM2-1/RS31	DRJ	DP	1971	RJ	R	TS	0
CHOTI LERMA		CHHOTI LERMA	IARI	DL					Rht1
CHHOTI LERMA	CHL	LR64A SIB/HUAR	IARI	DL	1967	NWPZ SHZ	I I	TS TS	Rht1
CPAN 1676		ROHINI	IARI	WD					Rht2
CPAN 1796		NAPO/TOB SIB// 8156/3/KAL/BB	IARI	WD	1985	NH	R&IL	TS	Rht1
CPAN 3004		SANGAM	WD	KR					Rht1
D 134	D134	RS31/WIS245 SIB	DRJ	DP	1967	CZ	R	TS	0
DA 491	DA491	CHAMBAL 65	DRJ	DP					0
DESHRATNA	DRNA	S503/NP835	RAU	PT	1974	BR	I	LS	1
DL 153-2		KUNDAN	IARI	DL					Rht1
DL 784-3		VAISHALI	IARI	DL					1
DURGAPURA 65	DG65	RS31*5//TH/NP165	DRJ	DP	1965	RJ	IL	TS	0
DWR 16	DWR16	KEERTHI	UAS	DW					Rht2
DWR 39	DWR39	PRAGATI	UAS	DW					1
DWR 162	DWR162	KVZ/BUHO//KAL/BB	UAS	DW	1993	PZ	I	TS	Rht1

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT ***	
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	Rht GENES	Rht2
EA 222-1		LAL BAHADUR	DRJ	DP					Rht1	Rht2
GANGA SONAHERI	GNSR	EG953/RS31	DRJ	DP	1966	RJ	IL	TS	0	
GAUW 10	GW10	S308/WS217	GAU	JG	1973	GJ(N)	I	TS	1	
GIRIJA	GIRIJA	CJ60/3/SPO/MTA//MQ/2*RNW	IARI	SM	1973	NHZ(H)	IL	TS	1	
GW 18	GW18	S331/NP890	GAU	JG	1977	GJ	I	LS	Rht1	
GW 40	GW40	INIA66*2/7C	GAU	JG	1979	GJ	I	TS	1	
GW 89	GW89	KAL SIB/LR64A//SKA	GAU	VP	1984	GJ	I	TS	1	
GW 120	GW120	INIA 66/CNO//INIA66/BB/3/ Y50E/3*KAL	GAU	JG	1985	NWZ	I	LS	1	
GW 173	GW173	TW275-7-6-10/LOK1	GAU	VP	1993	CZ	I	LS	1	
GW 190	GW190	VEE/3/BB SIB /SKA//ARJUN	GAU	VP	1993	CZ	I	TS	1	
GW 405	GW405	CNO//INIA66//BB/3/CNO//PI/GLL	GAU	VP	1985	C	I	LS	1	
GW 496	GW496	HD2285/4/CNO/NO//CC//INIA66/3/ KAL/BB	GAU	JG	1990	GJ	I	TS	1	
GW 503	GW503	TOB SIB//NAPO//CC//INIA66 SIB/3/ CNO/NO/4/CTFN/CNO SIB/3/ JAR SIB//MENG/8156	GAU	JG	1990	GJ	I	TS	1	
H 7-2	H7	KHARCHIA 65	DRJ	DP					0	
HB 208	HB208	SPO/MTA//MQ/2*RNW/3/PJ SIB/ P14//KT54B	IARI	BH	1981	NHZ	R&IL	TS	Rht2	
HD 1467	HD1467	SEL. HY 65 = HY 65(HD 1467)	IARI	DL/ID	1967	CZ	R&IL	TS	0	
HD 1553	HD1553	SEL. S 308 = SONALIKA(HD 1553)	IARI	DL	1967	PLAINS	I	LS	Rht2	
HD 1593	HD1593	SEL. S 227 = KALYANSONA(HD 1593)	IARI	DL	1967	IND	I	TS	Rht1	
HD 1925	HD1925	SHERA	IARI	DL					Rht2	
HD 1941	HD1941	HIRA	IARI	DL					Rht1	Rht2
HD 1949	HD1949	MOTI	IARI	DL					Rht1	Rht2
HD 1981	HD1981	PRATAP	IARI	DL					Rht2	
HD 1982	HD1982	JANAK	IARI	DL					Rht2	
HD 2009	HD2009	ARJUN	IARI	DL					Rht1	
HD 2135	HD2135	BB SIB/5/SL SIB/NP852/4/PJ SIB/ P14//KT54B/3/K65	IARI	DL	1975	SHZ	I	TS	Rht2	
HD 2177	HD2177	SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/KAL	IARI	DL	1979	NWPZ	I	TS	Rht2	

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
HD 2189	HD2189	36896/CJ54//P4160E/3/SN63/5/ MY54/N10B//LR64/3/TAC SIB/4/ LR64//TZPP/Y54	IARI	DL	1979	PZ	I	TS	Rht1
HD 2204	HD2204	BJ66 SIB//NAD63/LR64A/5/SL SIB/ NP852/4/PJ SIB/P14//KT54B/3/K65	IARI	DL	1979	NWPZ	I	TS	Rht2
HD 2236	HD2236	=KSHIPRA	IARI	DL					Rht2
HD 2270	HD2270	SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/CNO SIB/NO/3/C273// NP875/P1 SIB/6/T0B/CNO SIB//BB/4/ NAI60 SIB*2//TT/SN64/3/LR64/SN64	IARI	DL	1988	NPZ	I	LS	Rht1
HD 2278	HD2278	PARVATI	IARI	DL					Rht1
HD 2281	HD2281	HD2160/7/36896//CJ54//P4160E/3/ HUAR/6/KAL SIB/5/SL SIB/NP852/4/ PJ SIB/P14//KT54B/3/K65	IARI	DL	1983	NPZ	I	TS	Rht1
HD 2285	HD2285	36896//CJ54//P4160E/3/HUAR/4/ KAL SIB/5/SL SIB/NP852/4/PJ SIB/ P14//KT54B/3/K65/6/HD2160/7/ SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/2*SKA	IARI	DL	1985 1992	NPZ N.PLAINS	I I	LS VLS	Rht1
HD 2307	HD2307	HD2160/116-1-3	IARI	DL	1985	NEZ	I	LS	Rht2
HD 2327	HD2327	SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/5SKA/6/HD2160	IARI	DL	1985	C	I	LS	Rht1
HD 2329	HD2329	SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/5SKA/6/UP262	IARI	DL	1985	NPZ	I	TS	Rht2
HD 2380	HD2380	HD2135 SIB//SKA/3/TOB/CNO SIB// BB/4/NAI60*2//TT/SN64/3/LR64/ SN64/5/HD2160/HD2170	IARI	DL	1989	NH P	R&IL I	TS TS	Rht2
HD 2402	HD2402	HD2177//CNO67/BB/3/HD2160/4/ HD2236	IARI	DL	1988	FEZ	I	TS	Rht1
HD 2428	HD2428	HD1949/HD2160	IARI	DL	1989	NPZ	I	TS	Rht1 Rht2
HD 2501	HD2501	HD2189/HD2160	IARI	DL	1990	PZ	I	LS	Rht1
HDR 77	HDR77	PTZ/2*HD2204	IARI	DL	1990	FEZ	R	LS	1

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWMNG TIME ^b	
HI 385	HI385	MUKTA	IARI	ID					0
HI 617	HI617	SUJATA	IARI	ID					0
HI 784	HI784	SWATI	IARI	ID					1
HI 977	HI977	GLL/AUSTII61.157//CNO/NO/3/ Y50E/3*KAL	IARI	ID	1988	P	I	LS	Rht2
HI 1077	HI1077	MANGALA	IARI	ID					Rht2
HIRA	HIRA	YT54/N10B//SN64	IARI	DL	1970	NWPZ	I	TS	Rht1 Rht2
HP 1102	HP1102	8156(B)/NAD63	IARI	PU	1979	NEPZ	I	TS	Rht1
HP 1209	HP1209	N10B/Y53//Y50/3/KT54B/4/PJ	IARI	PU	1979	NEPZ	I	LS	Rht2
HP 1493	HP1493	KLRE/NP830	IARI	PU	1985	BR	R	TS	0
HP 1633	HP1633	SONALI	IARI	PU					1
HPW 42	HPW42	VEE/3/PVN SIB/CNO SIB//JAR/ ORZ SIB	HPKV	BJ	1992	NHZ(HH)	R	TS	1
HS 86	HS86	TH/MIDA-U//MCM/EX/3/S227/4/S308	IARI	SM	1981	NHZ(L-M)		R&IL	TS
Rht2									
HS 207	HS207	KVZ/BUHO//KAL/BB	IARI	SM	1989	NH	R	LS	Rht1
HS 240	HS240	AU//KAL/BB/3/WOP/4/PVN	IARI	SM	1989	NH	R&IL	TS	1
HS 277	HS277	KVZ/CGN	IARI	SM	1991	NHZ	R	ES	1
HS 295	HS295	CQT/AZ//IAS 55/ALDML SIB/3/ ALDML SIB/NAFN/4/PJN SIB/ PEL1276.69	IARI	SM	1991	NHZ	R&IL	TS	Rht2
HS 1097-17		GIRIJA	IARI	SM					1
HS 1138-6-1		SHAILJA	IARI	SM					1
HUW 12	HUW12	MALAVIYA 12	BHU	VN					Rht2
HUW 37	HUW37	MALAVIYA 37	BHU	VN					1
HUW 55	HUW55	MALAVIYA 55	BHU	VN					1
HUW 206	HUW206	MALAVIYA 206	BHU	VN					Rht1
HUW 213	HUW213	MALAVIYA 213	BHU	VN					Rht1
HUW 234	HUW234	HUW12//SPRW//HUW12	BHU	VN	1984	NEZ	I	LS	Rht2
HUW 318	HUW318	HUW206//KAL/MUS	BHU	VN	1991	SHZ	IL	TS	Rht1
HW 517	HW517	BB/CC/3/CNO /NO//PI	IARI	WN	1981	SHZ	I	TS	1
HW 657	HW657	TG/K65	IARI	WN	1979	PZ	R	TS	1@
HW 741	HW741	HW 517 SIB	IARI	WN	1985	SHZ	R&IL	TS	1

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
HY 633	HY633	HYB 633	DMP	PK					0
HYB 633	HYB633	LOCAL//KC6042/GUL	DMP	PK	1965	CZ	IL	TS	0
IWP 72	IWP72	FKN/LEE//2* KAL	IARI	WD	1979	NWPZ	R	TS	Rht1
J 1-7	J1	C273/NP835	GAU	JG	1974	CZ	IL	TS	1@
J 18	J18	GW 18	GAU	JG					Rht1
J 24	J24	GAUW 10	GAU	JG					1
J 40	J40	GW 40	GAU	JG					1
J 405	J405	GW 405	GAU	VP					1
J 496	J496	GW 496	GAU	JG					1
J 503	J503	GW 503	GAU	JG					1
JANAK	JANAK	YT54/N10B//HD845	IARI	DL	1974	NEPZ	I&IL	TS&LS	Rht2
K 68	K68	NP773/K13	DUP	KP	1968	UP	IL	TS	0
K 72	K72	PV18/K68	CSAUAT	KP	1983	UP(W)	R	TS	0
K 78	K78	JANAK/K816//K65	CSAUAT	KP	1983	UP(E)	R	TS	1
K 88	K88	VEE/WL711	CSAUAT	KP	1991	NEPZ	I	TS	1
K 816	K816	CNO SIB//SN64/KLRE/3/8156	DUP	KP	1973	UP(E)	I&IL	LS	Rht1 Rht2
K 852	K852	SEL. S308 =SONALIKA SIB	DUP	KP	1973	UP(E)	I	TS	1
K 7229	K7229	K 72	CSAUAT	KP					0
K 7410	K7410	K.POORVI	CSAUAT	KP					Rht1
K 7827	K7827	K 78	CSAUAT	KP					1
K 8020	K8020	TRIVENI	CSUAT	KP					Rht1
K 8027	K8027	MAGHAR	CSAUAT	KP					Rht1
K 8804	K8804	K 88	CSAUAT	KP					1
K 8962	K8962	K816 SIB/PV18//HD2160	CSAUAT	KP	1993	NEPZ	R	LS	1
KAILASH	KLSH	N1917/HD2189//ARJUN	MKV	PB	1989	MH	I	TS	1
KALYAN 227	KAL227	KALYANSONA	PAU	LD					Rht1
KDW 16	KDW16	KEERTHI	UAS	DW					Rht2
KALYANSONA	KAL	PJ SIB/GB55	JT*		1967	IND	I	TS	Rht1
KEERTHI	KRT	SKA/TOB	UAS	DW	1981	KT	I	TS	Rht2
KHARCHIA 65	KH65	KHLC* 5/EG953	DRJ	DP	1966	RJ	IL,SS	TS	0
KML 7046		BITHOOR	CSAUAT	KP					1
K-POORVI	KPV	K816 SIB/KAL	CSAUAT	KP	1979	NEPZ	I&IL	TS	Rht1
KRL 1- 4	KRL1-4	KHLC/WL711	CSSRI	KR	1990	PLAINS	I,SS	TS	1

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
KSHIPRA	KSP	CNO SIB/NO/3/C273//NP875/ PI SIB/4/HD1981	IARI	DL	1981	CZ	I	TS	Rht2
KSML 3	KSML3	MULTILINE (KALYANSONA) OF SIX COMPONENTS	PAU	LD	1981	NWPZ	I	LS	1
KUNDAN	KUNDAN	TI/NP890	IARI	DL	1985	NPZ	R	TS	Rht1
LAL BAHADUR	LALB	S54723/RS31	DRJ	DP	1970	NWPZ	I	TS	Rht1 Rht2
LERMA ROJO 64	LR64	Y50/N10B//L52/3/2*LR	IARI	DL	1965	N IND	I	TS	Rht1
LOK 1	LOK1	S308/S331	LB	SR	1981	CZ	I	TS&LS	Rht2
MACS 2496		VEERY # 5	MACS	PE	1991	PZ	I	TS	Rht1
MAGHAR	MGR	NP875/4/N10B/Y53//Y50/3/ KT54B/5/2*K852	CSAUAT	KP	1988	NEZ	R	TS	Rht1
MALAVIYA 12	MAV12	NP876/CNO	BHU	VN	1979	NEPZ	I	TS	Rht2
MALAVIYA 37	MAV37	KAL/S331//HD1982	BHU	VN	1982	NEZ	I&IL	TS	1
MALAVIYA 55	MAV55	PJ SIB/P14//KT54B/3/HD1982/4/ INIA66/5/HD2189	BHU	VN	1983	NEZ	I&IL	TS	1
MALAVIYA 206	MAV206	KVZ/BUHO//KAL/BB	BHU	VN	1985	NEZ	I	TS	Rht1
MALAVIYA 213	MAV213	NO/MOTI//HD2160	BHU	VN	1985	NEZ	I	TS	Rht1
MANGALA	MGLA	GLL/AUSTII61.157//CNO/NO/3/ KAL/BB	IARI	ID	1989	C	I	TS	Rht2
MLKS 11	MLKS11	MULTILINE (KALYANSONA) OF EIGHT COMPONENTS	IARI	WD	1981	NWPZ	I	TS	1
MOTI	MOTI	YT54/N10B//NP852	IARI	DL	1971	UP(W)	I	TS	Rht1 Rht2
MP 267	MP267	TAWA 267	JNKVV	PK					1
MUKTA	MUKTA	HYB633//GAZA(DR)/KPD25	IARI	ID	1975	CZ	R	TS	0
N 917	N917	NI 917	DMH	NI					0
N 8223	N8223	VINATA	MPKV	NI					0
NARBADA 4	NRB4	GB-AUS/NI4/3/PW5//TH/NP165	JNKVV	PK	1971	CZ	R	TS	0
NARMADA 112	NRM112	HY65/C306	JNKVV	PK	1975	MP	R	TS	0
NARMADA 195	NRM195	C306/HY65	JNKVV	PK	1979	MP	R	TS	0
NI 747-19	NI747	RFP196/MDY3	DMH	NI	1965	PZ	R&IL	TS	0
NI 917	NI917	C591//KC6042/GUL	DMH	NI	1965	MH	IL	TS	0
NI 5439	NI5439	RFP80/3*NP710	MPKV	NI	1973	PZ	R&IL	TS	0
NI 5643	NI5643	N/NI345 SIB	MPKV	NI	1973	MH	I	TS	0

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
NILGIRI	NLG	HD 2135	IARI	DL	1975	SHZ	I	TS	Rht2
NP 818	NP818	DO/C518//SPP/NP114/3/WIS245 SIB-	IARI	SM	1965	NHZ(HH)	R&IL	TS	0
NP 839	NP839	GB-AUS/N14	IARI	ID	1965	CZ	IL	TS	0
NP 846	NP846	RN/NP760	IARI	DL/BH	1965	NHZ(L-M)	R&IL	TS	0
NP 852	NP852	KF/2*NP761	IARI	PU	1965	NEPZ	I	TS&LS	0
NP 884	NP884	KC6042//GUL//PLT/3/K58/N14/NP755	IARI	PU	1969	BR	IL	TS	0
OW 6	OW6	SAGARIKA	OAU	CM					1
OW 801-3	OW801	UTKALIKA	OAU	CM					0
PARVATI	PVT	CNO SIB/NO/3/C273//NP875/ PI SIB/6/36896//CJ54/P4160E/3/ HUAR/4/KAL/5/SL SIB/NP852/4/ NP852/4/PJ SIB/P14/KT54B/3/K65	IARI	DL	1983 1985	P C	I	TS	Rht1 I TS
PBN 51	PBN51	BUC SIB/FLK SIB	MKV	PB	1992	MH	I	TS	1
PBN 142	PBN142	KAILASH	MKV	PB					1
PBW 12	PBW12	CNO SIB/GLL//WL711	PAU	LD	1982	PB	I	TS	1
PBW 54	PBW54	HD2160/WG377	PAU	LD	1983	PB	I	TS	1
PBW 65	PBW65	USA255/K816/3/S738/C306//KAL	PAU	LD	1987	NPZ	R	TS	Rht1
PBW 120	PBW120	WG377/HD2160	PAU	LD	1986	PB	I	TS	1
PBW 138	PBW138	WG357 SIB/HD2177	PAU	LD	1986	PB	I	LS	Rht2
PBW 154	PBW154	HD2160/HD2177	PAU	LD	1989	NPZ	I	TS	Rht2
PBW 175	PBW175	HD2160/4/JN/GAGE//JN/KAL/3/ PV18/C273	PAU	LD	1989	NPZ	R	TS	1
PBW 222	PBW222	NP890/HD2160	PAU	LD	1990	PB	I	TS	Rht1 Rht2
PBW 226	PBW226	C591/RN//JN/3/CHR/HIRA	PAU	LD	1989	NPZ	I	LS	Rht1
PBW 299	PBW299	BB/KAL//WL711/PBW65	PAU	LD	1992	NWPZ	R	TS	1
PRAGATI	PGTI	LR64/2*SN64//S308	UAS	DW	1985	P	I	TS	1
PRATAP	PTP	JANAK SIB	IARI	DL	1974	NWPZ	R	TS	Rht2
PURBALI	PBLI	KVZ/TI//TITO	DWB	MD	1984	FEZ	I	LS	Rht1
PUSA LERMA	PUL	AMBER MUTANT OF - LERMA ROJO 64	IARI	DL	1971	KT	I	TS	Rht1
PV 18	PV18	KALYANSONA SIB	PAU	LD	1966	PB	I	TS	Rht1
RAJ 821	RAJ821	NP875//LR64/2*SN64	RJAU	DP	1977	RJ	I	LS	Rht2

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
RAJ 1114	RAJ1114	SKA/INIA66	RJAU	DP	1977	RJ	I	TS	1
RAJ 1482	RAJ1482	NAPO/TOB SIB//8156/3/KAL/BB	RJAU	DP	1982	NWZ	I	TS	Rht1
RAJ 1972	RAJ1972	C306/NP852/3/GB-AUS/N10B// 2*LR/5/SL SIB/NP852/4/PJ SIB/ P14//KT54B/3/K65/6/HD2160	RJAU	DP	1984	NWZ	I	TS	Rht2
RAJ 2184	RAJ2184	SN64/Y50E//GTO/3/8156/4/ HD2135 SIB	RJAU	DP	1985	NWZ	I	TS	Rht1
RAJ 3077	RAJ3077	HD2177/3/CNO67/BB//HD2160/4/ RAJ1482/5/BB//INIA66 SIB/NAPO	RJAU	DP	1990	NWZ	I	TS,LS	Rht1
ROHINI	ROHINI	BON//CNO/SN64/3/KAL/BB	IARI	WD	1992	PLAINS	I	SS	Rht2
RR 21	RR21	SEL. S 308. MULTIPLIED AS SONALIKA(RR21)	GBPUAT	PN	1983	NPZ	I	TS	Rht2
RW 346	RW346	JANAK/SA42	RAU	PT	1989	BR	I&IL	TS	1
RW 3016	RW3016	NP852/S308	RAU	PT	1986	BR	R	TS	1
S 227	S227	PARENT LINE OF KALYANSONA	JT*						Rht1
S 307	S307	SAFED LERMA	IARI	DL					Rht1
S 308	S308	PARENT LINE OF SONALIKA	JT**						Rht2
S 331	S331	CHHOTI LERMA	IARI	DL					Rht1
SAFED LERMA	SL	Y50/N10B//L52/3/3*LR	IARI	DL	1968	NWPZ	I	TS	Rht1
						NEPZ	I	TS	
						NHZ	I	TS	
						SHZ	I	TS	
SAGARIKA	SGRK	NP798/KAL	OAU	CM	1983	OR	I	TS	1
SANGAM	SANGAM	GLL/AUSTII61-157//CNO/NO/3/VEE	WD	KR	1992	NWPZ	I	TS	Rht1
SHAILJA	SLJ	PJ SIB/P14//KT54B/3/SKA	IARI	SM	1975	NHZ(L-M)	IL	TS	1
SHARBATI SONORA	SHS	AMBER MUTANT OF SONORA 64	IARI	DL	1968	NWPZ	I	LS	Rht2
						NEPZ	I	LS	
						PZ	I	LS	
SHEKHAR	SHKR	K. POORVI	CSAUAT	KP					Rht1
SHERA	SHERA	LR64A/SON64	IARI	DL	1974	CZ	I	LS	Rht2
SKML 1	SKML1	MULTILINE (SONALIKA) OF SIX COMPONENTS	PAU	LD	1982	PB	I	LS	1

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
SONA 227	SONA	KALYANSONA	JT*	DL/PN					Rht1
SONALI	SONALI	TH*6/TF//6*SKA	IARI	PU	1992	NEPZ	I	LS	1
SONALIKA	SKA	MIDA-U/K117A//2*TH/3/FN/4*TH/4/ AN/5/YT54/N10B//LR/6/B4946-A4- 18-1/Y53//3*Y50	JT**		1967	PLAINS	I	TS&LS	Rht2
SONORA 64	SN64	YT54/N10B//2*Y54	IARI	DL	1965	(EXCZ) NWPZ	I	TS TS&LS	Rht1 Rht2
SUJATA	SUJATA	SEL. C 306	IARI	ID	1983	C	R	TS	0
SWATI	SWATI	NAPO/TOB SIB//8156/3/KAL/BB	IARI	ID	1983	CZ	I	LS	1
TAWA 267	TAW267	BB/7C	JNKVV	PK	1979	MP	I	TS	1
TEESTA	TST	PI SIB/NP852	DWB	BN	1990	WB(N)	R&I	TS,LS	1
TRIVENI	TRVN	KAL/HD1982	CSUAT	KP	1986	NEZ	I	TS	Rht1
UP 115	UP115	RIDLEY/NP710/3/PJ SIB/P14// KT54B/4/PJ SIB/GB56//TZPP/NAI60	GBPUAT	PN	1979	NEPZ	I	TS	Rht2
UP 215	UP215	TZPP/SN64	GBPUAT	PN	1974	PZ	I	TS	Rht2
UP 262	UP262	S308/BJ66	GBPUAT	PN	1977	NEPZ	I	TS	Rht2
UP 301	UP301	LR64/SN64	GBPUAT	PN	1970	PZ	I	TS	Rht1 Rht2
UP 310	UP310	KLPE/RAF//LR64/2*SN64	GBPUAT	PN	1973	UP(W)	I	TS	1
UP 319	UP319	CNO SIB//SN64/KLRE/3/8156	GBPUAT	PN	1973	UP(W)	I	TS	Rht2
UP 368	UP368	LR64/SN64	GBPUAT	PN	1974	UP(W)	I	TS	1
UP 1109	UP1109	UP262/UP368	GBPUAT	PN	1989	NH	R&IL	TS	1
UP 2003	UP2003	BB/2*7C	GBPUAT	PN	1980	UP	I	TS	Rht1
UP 2113	UP2113	UP301//KAL/HY65/3/WG377	GBPUAT	PN	1985	UP	R	TS	0
UP 2121	UP2121	NAI60/KAL//UP301/3/SAM68	GBPUAT	PN	1984	UP	I	TS	1
UTKALIKA	UTK	DG65/C306//FAO1061-68R	OAU	CM	1983	OR	R	TS	0
VAISHALI	VSHL	KAL*4//TR 380.27*4/3AG3/3/HD2281	IARI	DL	1993	NEPZ	I	TS	1
VINATA	VINATA	C306/HY65	MPKV	NI	1985	MH	R	TS	0
VL 401	VL401	VL GEHUN 401	VPKAS	AL					1
VL 404	VL404	KT/BAGE//FN/GU/3/ST464(DR)/ PI74106(DR)	VPKAS	AL	1973	UP(HH)	R	TS	1
VL 421	VL421	VL GEHUN 421	VPKAS	AL					Rht2

Continued.....

Table 3: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT *** Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
VL 616	VL616	SKA/P46	VPKAS	AL	1986	NH	R	ES	1
VL GEHUN 401	VL401	FKN/N10B	VPKAS	AL	1973	UP(L-M)	R	TS	1
VL GEHUN 421	VL421	SN64//Y50E/GTO	VPKAS	AL	1979	NHZ(W)	R	TS	Rht2
VW 89	VW89	GW 89	GAU	VP					1
VW 120	VW120	GW 120	GAU	JG					1
WG 357	WG357	PV18/C273	PAU	GP	1973	PB	I	TS	Rht1
WG 377	WG377	WG143/USA255//PV18	PAU	GP	1973	PB	I	TS	1
WH 147	WH147	PJ SIB/P14//KT54B/3/C286/ C273/4/S339/PV18	HAU	HR	1977	CZ	I	TS	Rht2
WH 157	WH157	NP876/S308//CNO/8156	HAU	HR	1977	HA(W)	I	TS	Rht2
					1990	HA	I	TS	Rht2
WH 283	WH283	HD1981/RAJ821	HAU	HR	1984	PLAINS	I,SS	TS	Rht2
WH 291	HW291	SHERA/3/N10B/K68//BB	HAU	HR	1985	NWZ	I	TS	1
WH 416	HW416	WH147/UP368	HAU	HR	1990	NWZ	I	TS	1
WH 533	WH533	VEERY # 5	HAU	HR	1992	HA	R	TS	1
WH 542	WH542	JUP/BJY SIB//URES	HAU	HR	1992	NWPZ	I	TS	1
WL 410	WL410	SN63/4 /36896//CJ54/P4160E/3/ HUAR/5/KAL	PAU	LD	1979	NWPZ	R	TS	Rht1
WL 711	WL711	S308/CHR//KAL	PAU	LD	1979	NWPZ	I	TS	Rht1
WL 1562	WL1562	KAL/JN//UP301	PAU	LD	1979	PB	I	TS	1
WL 2265	WL2265	NAPO/TOB SIB//8156/3/KAL/BB	PAU	LD	1985	NPZ	R	TS	1

* JOINT RELEASE BY IARI(DELHI), PAU(LUDHIANA) AND GBPUAT(PANTNAGAR)

** JOINT RELEASE BY IARI(DELHI) AND GBPUAT(PANTNAGAR)

*** O = TALL-MID TALL ; 1 = ONE GENE DWARF(SEMI-DWARF)

@ = NOT EXPECTED BASED ON PARENTAGE

a R = RAINFED; I = IRRIGATED; IL = LIMITED IRRIGATION; SS = SALINE/SODIC SOIL

Table 4 : Durum wheat cultivars released in India , 1965 to 1993

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT* Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
A 9-30-1		A206/GAZA	DGJ	AR	1970	CZ	R	TS	0
A 13-3	GW 1	GAU		JG					0
A 28	A28	A 206/NP200(DM)	GAU	AR	1977	GJ	R	TS	0
BIJAGA RED	BJGR	MYSORE LOCAL/GAZA	DMY	BP	1965	KT	R	TS	0
BIJAGA YELLOW	BJGY	BIJAGA RED SIB	DMY	BP	1965	KT	R	TS	0
DWL 5023		CR/LDS//PLC/GARZA	PAU	LD	1982	NPZ	I	TS	1
GW 1	GW1	A206/VSM//A206	GAU	JG	1980	GJ	R	TS	0
GW 2	GW2	GS SIB//A206/NP200(DM)	GAU	JG	1982	GJ	R	TS	0
HD 4502	HD4502	MALAVIKA	IARI	DL					1
HD 4530	HD4530	TPT/MOGHK//4/PI/TML//2*TC60/3/ ZENATI/BTL//WLS	IARI	DL	1979	CZ	I	TS	1
HI 7483	HI7483	MEGHDOOT	IARI	ID					0
HI 8381	HI8381	JO69 SIB/AA SIB//FGO SIB	IARI	ID	1993	CZ	I	TS	1
JAIRAJ	JAIRAJ	YAGULATE(POL)/4/PI/3/ZENATI/BTL//WLS	JNKVV	JP	1979	CZ	I	TS	1
JNK 4W-184		JAIRAJ	JNKVV	JP					1
JAYRAJ	JAYRAJ	JAIRAJ	JNKVV	JP					1
JU 12	JU12	GW 2	GAU	JG					0
KIRAN-DR		BJGY/A206	UAS	DW	1981	KT	R	TS	0
KDW 137	KDW137	KIRAN-DR	UAS	DW					0
MACS 9	MACS9	N59/F185(POL)	MACS	PE	1974	PZ	R	TS	0
MACS 1967		GULAB/5/BYE*2/TC60/3/BYE*2/ TC60/STW63/4/AA SIB/CIT SIB	MACS	PE	1986	P	R	TS	0
MALAVIKA	MLVK	PI SIB/2*BY//TC60/3/ZENATI/BTL//WLS	IARI	DL	1974	PZ	I	TS	1
MEGHDOOT	MGDT	GAZA/GD11//A098/GAZA/3/NP404	IARI	ID	1973	CZ	IL&R	TS	0
MPO 215	MPO215	NARMADA 215	JNKVV	PK					1
NARMADA 215	NMD215	FGO SIB//VERN(DM)/GLLA SIB	JNKVV	PK	1981	MP	I	TS	1
NI 5749	NI5749	G4-48/N59	MPKV	NI	1975	MH	R	TS	0
NP 401	NP401	GAZA/EGYPT8626	IARI	ID	1965	UP(S)	IL&R	TS	0
NP 404	NP404	GAZA/EKD6	IARI	ID	1965	CZ	IL&R	TS	0
PBW 34	PBW34	AA SIB/FGO SIB	PAU	LD	1985	NPZ	I	TS	1
PDW 215	PDW215	RAJ911//AA SIB/D#2E/3/DWL5002	PAU	LD	1991	NWPZ	I	TS	1

Continued...

Table 4: Continued

CULTIVAR/ LINE	ABBR.	CULTIVAR PEDIGREE / SYNONYM	ORGANI- ZATION	CENTRE	YEAR	RECOMMENDED FOR			HEIGHT* Rht GENES
						ZONE/ STATE	WATER NEED ^a	SOWING TIME ^b	
RAJ 911	RAJ911	PI/ST464//2*TC60/3/ NACHITSCHIVANICUM(TG)	RJAU	DP	1974	CZ	I	TS	1
RAJ 1555		CIT/RAJ911	RJAU	DP	1982	C	I	TS	1
TAWA 215		NARMADA 215	JNKVV	PK					1

* 0 = TALL TO MID TALL ; 1 = ONE-GENE DWARF (SEMI-DWARF).

^a R = RAINFED; I = IRRIGATED; IL = LIMITED IRRIGATION.

^b TS = TIMELY SOWN.

Table 5: Components of multilines referred to in Table 3

MULTILINE	COMPONENT	PEDIGREE/SYNONYM	CROSS NO./ SELECTION HISTORY	ORIGIN
BITHOOR (KML7046)	C 1	BB/7C//CNO SIB		CIMMYT
	C 2	7C/3/LR64//INIA66//INIA66/BB/4/TOB/8156	CM 5439	CIMMYT
	C 3	VCM/CNO SIB//KAL/BB	CM 4015	CIMMYT
	C 4	TZPP/PL//7C =BLUE JAY	CM 5287	CIMMYT
	C 5	BB/CNO//JAR/3/CNO/7C//CC/TOB		CIMMYT
	C 6	LR64//TZPP/ANE/3/BB/7C		CIMMYT
	C 7	Y50E/3*KAL	II 35188	CIMMYT
	C 8	BB/CNO//JAR/3/CNO/7C//CC/TOB		CIMMYT
	C 9	CC//INIA66/3/TOB/CNO//BB/7C		CIMMYT
KSML 3	C 1	KAL//TOB/CNO/3/KAL		PAU
	C 2	SN64/KLRE//KAL		PAU
	C 3	CNO/BB//CDL/4/7C/3/LR64//INIA66//INIA66/BB	CM 5872-C-1Y- 5M-2Y-1M-0Y	CIMMYT
	C 4	BB/2*KAL	CM 5449	PAU
	C 5	PV18/CNO//KAL/BB		PAU
	C 6	CNO/BB//CDL/4/7C/3/LR64//INIA66//INIA66/BB	CM 5872	CIMMYT
MLKS 11	IWP 19	NAR59 SIB//CLY/FCR/3/2*FCR/4/2*KAL		IARI
	IWP 72	FKN/LEE//2*KAL		IARI
	IWP 87	N10B/Y53//Y50/3/KT54B/4/3*KAL		IARI
	IWP 124	ON/KAL		IARI
	IWP 127	FCR/2*KAL		IARI
	IWP 129	S227/4/FRTR/GUL/3/ME/K324//Y48/5/2*KAL		IARI
	IWP 139	N10B/Y53//Y50/3/KT54B/4/4*KAL		IARI
	IWP 143	NP875/3/SPO/MTA//MQ/2*RNW/4/4*KAL		IARI
SKML 1	C 1	BZA55//S326/C273/4/KAL/3/KAL//N10B/NP852		PAU
	C 2	NOR/CNO//2*SKA		PAU
	C 3	CNO/NO SIB//2*SKA		PAU
	C 4	PATO/7C//2*SKA		PAU
	C 5	LR64*2/SN64//CC/3/SKA/4/TOB SIB/8156		PAU
	C 6	FURY//CNO SIB/NO/3/RAJ821		PAU

Table 6 : Bread wheat cultivar introductions recommended for direct cultivation and referred to in Tables 1 and 3

CULTIVAR	ABBR.	PEDIGREE	ORIGIN	HEIGHT* Rht GENES
AUSTRALIAN NO 27		NOT KNOWN	AUSTRALIA	0
BENA	BENA	HF/MS-A	AUSTRALIA	0
FEDERATION	FR	PP-AUS/YDL	AUSTRALIA	0
GABO	GB-AUS	BBN//BBN/GAZA(DR)	AUSTRALIA	0
LERMA ROJO 64	LR64	Y50/N10B//L52/3/2*LR	MEXICO	Rht 1
PADOVA I	PDV1	NOT KNOWN	ITALY	0
PADOVA II	PDV2	NOT KNOWN	ITALY	0
RIDLEY	RIDLEY	NW/HF	AUSTRALIA	0
SONORA 64	SN64	YT54/N10B//2*Y54	MEXICO	Rht 2

* 0 = TALL TO-MID TALL

Table 7 : Bread wheat cultivars and lines evolved/selected by Indian wheat programmes and introduced/released by foreign countries

CULTIVAR	ABBR.	COUNTRY	YEAR	INDIAN SYNONYM		CENTRE	HEIGHT Rht GENE
				ADVANCED LINE	PEDIGREE/CULTIVAR SYNONYM		
AHGAF	AHGAF	YEMEN	1983	S311/NOR	21931/CH53//CJ60/3/NOR	PN/ICARDA	1
ANNAPURNA 2	ANNA2	NEPAL	1988		CPAN 1796	DL	Rht1
ARZ	ARZ	LEBANON	1973	HD 1931 SIB	MY54E/LR64//TAC SIB/3/LR64//TZPP/Y54	DL	1
		PAKISTAN	1976				
		SAUDI ARABIA	1974				
BAJOKA 1	BJK1	BHUTAN	1992		HD 2380	DL	Rht2
BALKH 66	BKH66	AFGHANISTAN	1987	HD 2322	HD2160/KAL	DL	1
BAW 28	BAW28	BANGLADESH	1983		UP301/C306	PN	1
BLOUDAN	BLDN	SYRIA	1981	HD 2172	HD 2160/5/TOB/CNO SIB//BB/4/NA160//2*TT/ SN64/3/LR64/SN64	DL	Rht1
BLUE SILVER	BLS	PAKISTAN	1971		SONALIKA	JT	Rht2
BALACA	BLCA	BANGLADESH	1981		PRATAP	DL	Rht2
DARULAMAN 1	DMN1	AFGHANISTAN	1980	HB 102-101	KAL SIB/NP846	BH	Rht1
DEBEIRA	DBRA	SUDAN	1983	HD 2172	HD 2160/5/TOB/CNO SIB//BB/4/NA160//2*TT/ SN64/3/LR64/SN64	DL	Rht1
GOLAN	GOL	SYRIA	1982	S311/NOR	21931/CH53//CJ60/3/NOR	PN/ICARDA	1
GREEN VALLEY	GRV	PAKISTAN	1970		CHHOTI LERMA	DL	Rht1
HAMRA 76	HMA	ALGERIA	1976	HD 1931 SIB	MAYO54E/LR64//TAC SIB/3/LR64//TZPP/Y54	DL	1
HD 1220	HD1220	ALGERIA	1982	HD 1220	C281/NP790	DL	0
HD 1999	HD1999	OMAN	1978	HD 1999	SN64//MY54/N10B/3/SN64/P4160E	DL	1
HD 2009	HD2009	PAKISTAN	1978		ARJUN	DL	Rht1
LUMBINI	LUMB	NEPAL	1981		HP 1209	PU	Rht2
JANAK	JANAK	NEPAL	1975		JANAK	DL	Rht2
KALYANSONA	KAL	ETHIOPIA	1970		KALYANSONA	JT	Rht1
		MONGOLIA	1974		KALYANSONA	JT	Rht1
		MYANMAR	1968		KALYANSONA	JT	Rht1
		OMAN	1977		KALYANSONA	JT	Rht1

Continued.....

Table 7: Countinued

CULTIVAR	ABBR.	COUNTRY	YEAR	INDIAN SYNONYM		CENTRE	HEIGHT Rht GENE
				ADVANCED LINE	PEDIGREE/CULTIVAR SYNONYM		
YEMEN			1973		KALYANSONA	JT	Rht1
KANCHAN	KANC	BANGLADESH	1983		UP301/C306	PN	1
MONYWA WHITE	MWH	MYANMAR			NP 4	PN	0
MUKTA	MUKTA	SUDAN	1978		MUKTA	ID	0
NEPAL 30	NL30	NEPAL	1975		N10B/K68//BB		1
NEPAL 251	NL251	NEPAL	1988	HUW 251	WH147/HD2160//2*WH147	VN	Rht2
NEPAL 251	NL251	NEPAL	1988	HUW 251	WH147/HD2160//2*WH147	VN	Rht2
NANGERHAR-64	NGR64	AFGHANISTAN			WL 711	ID	Rht1
NEPAL 297	NL297	NEPAL	1985	HD 2320	N10B/Y53//Y50/3/KT54B/4/SN64/5/ SL SIB/NP852/4 /PJ SIB/P14//KT54B/3/ K65/6/SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65/5/2*SKA/7/HD2160	DL	1
NP 798	NP798	CHINA	1964		NP 798	PU	0
PHRAE 60		THAILAND	1987		UP 262	PN	Rht2
PUSA 4	PU4	AUSTRALIA	1916		NP 4	PU	0
		BRAZIL				PU	0
		SOUTH AFRICA				PU	0
PUSA 12	PU12	ARGENTINA	1916		NP12	PU	0
PUSA 111	PU111	AUSTRALIA	1930		NP111	PU	0
S 227	S227	NEPAL	1968		KALYANSONA	JT	Rht1
S 331	S331	NEPAL	1968		CHHOTI LERMA	DL	Rht1
SAFED LERMA	SL	OMAN	1978		SAFED LERMA	DL	Rht1
SHARBATI SONORA	SHS	MYANMAR	1968		SHARBATI SONORA	DL	Rht2
SIDHARTHA	SDHA	NEPAL	1983		HD 2204	DL	Rht2
RR21	RR21	NEPAL	1968		SONALIKA(RR21)	JT	Rht2
SONALIKA	SKA	BANGLADESH	1968		SONALIKA	JT	Rht2
		BHUTAN	1968		SONALIKA	JT	Rht2
		ETHIOPIA	1970		SONALIKA	JT	Rht2
		NORTH VIETNAM	1972		SONALIKA	JT	Rht2
		YEMEN AR	1976		SONALIKA	JT	Rht2
		YEMEN PDR	1973		SONALIKA	JT	Rht2
TRIVENI	TRVN	NEPAL	1982		HD 2189	DL	Rht1
UP262	UP262	MYANMAR			UP 262	PN	Rht2
		NEPAL	1978			PN	Rht2
VINAYAK	VNYK	NEPAL	1983	LC 55	NOT KNOWN		1
WL 711	WL711	PAKISTAN	1978		WL 711	LD	Rht1

Table 8: Bread and durum wheat cultivars developed through selection in elite international germplasm and referred to in Tables 3, 4 and 7

INDIAN NAME	PEDIGREE	CROSS NO./SELECTION HISTORY	ORIGIN
BREAD WHEATS			
*	N10B/K68//BB	II 27047	CIMMYT
AKW 1071	VEE/3/FLN/ACC//ANA		CIMMYT
ARJUN	LR64A/NA160		MEXICO
HD 1931 SIB*	MY54E/LR64//TAC SIB/3/LR64//TZPP/Y54	II 21419	MEXICO
CC 464	BB//CNO/SN64		CIMMYT
CHHOTI LERMA	LR64 SIB/HUAR	II 15929	CIMMYT
CPAN 1796	NAPO/TOB SIB//8156/3/KAL/BB	CM 7806-15M-2Y-2M-1Y-0M	CIMMYT
DWR 162	KVZ/BUHO//KAL/BB	CM 33027	CIMMYT
GW 40	INIA66*2/7C		CIMMYT
GW 120	INIA66/CNO SIB//INIA66/BB/3/Y50E/3*KAL		CIMMYT
GW 405	CNO SIB//INIA66 SIB//BB/3/CNO SIB//PI//GLL		CIMMYT
HD 1999*	SN64//MY54/N10B/3/SN64/P4160E		MEXICO
HI 977	GLL/AUSTII61.157//CNO/NO/3/Y50E/3*KAL		CIMMYT
HP 1102	8156(B)/NAD63		CIMMYT
HPW 42	VEE/3/PVN SIB/CNO SIB//JAR/ORZ SIB		CIMMYT
HS 207	KVZ/BUHO//KAL/BB	CM 33027	CIMMYT
HS 240	AU//KAL/BB/3/WOP/4/PVN = BOW/PVN	CM 61942-4Y-2M-2Y-1Y-1M-0Y	CIMMYT
HS 277	KVZ/CGN	SE 1066-9S-1S-6S-0S-7KE-0KE	TURKEY/ KENYA
HS 295	CQT/AZ//IAS55/ALDML SIB/3/ALDML SIB/ NAFN/4/PJN SIB/PEL1276.69	CM 58478-13-2Y-1Y-0M	CIMMYT
HW 517	BB/CC/3/CNO SIB/NO//PI	CM 5568	CIMMYT
HW 741	HW 517 SIB	CM 5568	CIMMYT
K 816	CNO SIB//SN64/KLRE/3/8156	II 23854	CIMMYT
K 852	SONALIKA SIB/6/B4946/A4/18/1/Y53//3*Y50	II 18427-4R-1M	MEXICO
KALYANSONA	PJ SIB/GB55	II 8156	MEXICO
KEERTHI	SKA/TOB		CIMMYT
MACS 2496	VEERY #5	CM 33027-F-15M-500Y-0M	CIMMYT
MALAVIYA 206	KVZ/BUHO//KAL/BB	CM 33027-D-15M-4Y-4M-2Y-2M	CIMMYT
MANGALA	GLL/AUSTII61.157//CNO/NO/3/KAL/BB		CIMMYT
PBN 51	BUC SIB/FLK SIB		CIMMYT
PURBALI	KVZ/TI//TITO SIB	CM 33090-TV-2N-4Y-0M-1169	CIMMYT
PV 18	PJ SIB/GB55	II 8156	MEXICO
RAJ 1482	NAPO/TOB SIB//8156/3/KAL/BB	CM 7806	CIMMYT
ROHINI	BON//CNO/SN64/3/KAL/BB	CM 8192-C-1M-1Y-1M-0Y	CIMMYT
SAFED LERMA	Y50//N10B/L52/3/LR	II 15444-118Y-2C	MEXICO
SANGAM	GLL/AUSTII61.157//CNO/NO/3/VEE		CIMMYT
SHERA	LR64A/SON64		MEXICO
SONALI	TH*6/TF//6*SKA		CIMMYT
SONALIKA	MIDA-U/K117A//2*TH/3/FN/4*TH/4/AN/5/ YT54/N10B//LR	II 18427-4R-1M	MEXICO
SONALIKA(RR 21)	SONALIKA	II 18427-4R-1M	MEXICO
SWATI	NAPO/TOB SIB//8156/3/KAL/BB	CM 7806	CIMMYT
UP 215	TZPP/SN64A	II 19021	MEXICO
UP 301	LR64/SN64	II 19008	MEXICO
UP 310	KLPE/RAF//LR64/2*SN64		CIMMYT
UP 319	CNO SIB//SN64/KLRE/3/8156	II 23584	CIMMYT

Continued...

Table 8 : Continued

INDIAN NAME	CROSS NAME	CROSS NO./SELECTION HISTORY	ORIGIN
UP 368	LR64/SN64	II 19008	MEXICO
UP 2003	BB/2*7C		CIMMYT
VL 404	KT/BG//FN/GU/3/ST464(DR)/PI74106(DR)	II 15079-11B-3T-1B	COLOMBIA
VL GEHUN 401	FKN/N10B	II 7078	MEXICO
VL GEHUN 421	SN64//Y50E/GTO	II 19792	MEXICO
WH 533	VEE # 5	CM 33027	CIMMYT
WH 542	JUP/BJY SIB//URES	CM 67458	CIMMYT
WL 2265	NAPO/TOB SIB//8156/3/KAL/BB	CM 7806	CIMMYT
<u>DURUM WHEATS</u>			
DWL 5023	CR/LDS//PLC/GARZA		CIMMYT
HD 4530	TPT/MOGHK/4/PI/TM//2*TC60/3/ZENATI/BTL//WLS		CIMMYT
HI 8381	JO69 SIB/AA SIB//FGO SIB	CM 9799	CIMMYT
JAIRAJ	YAGULATE(POL)/4/PI/3/ZENATI/BTL//WLS		CIMMYT
MALAVIKA	PI SIB/2*BY//TC60/3/ZENATI/BTL//WLS		CIMMYT
NARMADA 215	FGO SIB//VERN(DM)/GLLA SIB		CIMMYT
PBW 34	AA SIB/FGO SIB		CIMMYT
RAJ 911	PI SIB/ST464//2*TC60/3/NACHITSCHEVANICUM(TG)	D 20528-4R-1R	CIMMYT

* Advanced Line released outside India

Table 9 : Crosses of Indian and foreign origin yielding cultivars with wide adaptation across countries

INDIAN CULTIVAR/LINE NAME	PEDIGREE	CROSS NO.	CULTIVAR NAME ELSEWHERE	ABBR.	COUNTRY
BREAD WHEATS					
	21931/CH53//CJ60/3/NOR		AHGAF GOLAN	AHGAF GOL	YEMEN SYRIA
HD 1931	MY54E/LR64//TAC SIB/3/LR64//TZPP/Y54	II 21419	ARZ	ARZ	LEBANON
II 21419		II 21419	ARZ HAMRA 76	ARZ HMA	PAKISTAN ALGERIA
HD 2189	36896/CJ54//P4160E/3/SN63/5/ MY54E/LR64//TAC SIB/3/LR64//TZPP/Y54		TRIVENI	TRVN	NEPAL
K852	MIDA-U/K117A//2*TH/3/FN/4*TH/4/ AN/5/YT54/N10B//LR/6/B4946-A4-18-1/Y53//3*Y50	II 18427 II 18427 II 18427	BLUE SILVER RR21	BLS RR21	PAKISTAN NEPAL
SONALIKA(RR21) SONALIKA		II 18427	SONALIKA	SKA	MYANMAR
		II 18427	SONALIKA	SKA	BANGLADESH
		II 18427	SONALIKA	SKA	BHUTAN
		II 18427	SONALIKA	SKA	ETHIOPIA
		II 18427	SONALIKA	SKA	VIETNAM
		II 18427	SONALIKA	SKA	PAKISTAN
		II 18427	SONALIKA	SKA	YEMEN
CC 464	BB//CNO/SN64		HELENE	HLN	SOUTH AFRICA
HD 2204	BJ66 SIB//NAD63/LR64A/5/SL SIB/ NP852/4/PJ SIB/P14//KT54B/3/K65		SIDHARTHA	SDHA	NEPAL
K 816	CNO SIB//SN64/KLRE/3/8156	II 23584	AERIE	ARE	SOUTH AFRICA
UP 319		II 23584	CAJEME F 71	CJ	MEXICO
		II 23584	GWEBI	GWB	ZIMBABWE
		II 23584	NURI 70	NR	MEXICO
		II 23584	PARI 73	PARI	PAKISTAN
		II 23584	PROBRED	PBR	USA
		II 23584	QUIMORI 79	QUM	BOLIVIA
		II 23584	SAKHA 8	SKH8	PAKISTAN
		II 23584	SANDAL 73	SAN	PAKISTAN
		II 23584	SARIC F 70	SR	MEXICO
		II 23584	YECORA 70	YR	MEXICO
		II 23584	YECORA ROJO	YRR	USA
HS295	CQT/AZ//IAS55/ALDML SIB/3/ ALDML SIB/NAFN/4/PJN SIB/ PEL1276.69	CM 58478	SPINETAIL	SPT	MEXICO
VL GEHUN 401	FKN/N10B	II 7078	PENJAMO 62	PJ	MEXICO
HD 2380	HD2135 SIB/SKA/5/TOB/CNO SIB//BB/4/NAI60*2//TT/SN64/3/ LR64/SN64/6/HD2160/HD2170		BAJOKA 1	BJK1	BHUTAN

Continued...

Table 9 : Continued

INDIAN CULTIVAR/LINE NAME	PEDIGREE	CROSS NO.	CULTIVAR NAME ELSEWHERE	ABBR.	COUNTRY
HD 2172	HD2160/5/TT0B/CNO//BB/4/NA160*2// TT/SN64/3/LR64/SN64	-	BLOUDAN DEBEIRA	BLDN DBRA	SYRIA SUDAN
MUKTA WH 542	HYB633//GAZA(DR)/KPD25 JUP/BJY SIB//URES	CM 67458	MUKTA BACANORA T88	MUKTA BCN	SUDAN MEXICO
SONORA 64	YT54/N10B//2*Y54	II 8469	SAMOENG 2	SMG2	THAILAND
DWR 162 HS 207 MALAVIVA 206 MACS 2496 WH 533	KVZ/BUHO//KAL/BB	CM 33027 CM 33027 CM 33027 CM 33027 CM 33027 CM 33027	ANADOLU ANNAPURNA 1 ARGANDA CARTHAYA CORDILLERA 3 DASHEN ESTANZUELA CARDENAL GAMTOOS	ANDU ANNA1 ARND CART CORD3 DASHEN ECAR	TURKEY NEPAL SPAIN SPAIN PARAGUAY ETHIOPIA URUGUAY
		CM 33027	GENARO F 81 GICINYA GLENNSON M 81* LIMA 1 LOERIE MILLEAU INIA NL 459 NOBO INIA ICTA OLINTEPE- QUE 86	GEN GCTA GLEN LMA1 LRE MLI NL459 NOBO OPQ	SOUTH AFRICA MEXICO RWANDA MEXICO PORTUGAL ZAMBIA CHILE NEPAL CHILE GUATEMALA
		CM 33027 CM 33027 CM 33027 CM 33027 CM 33027 CM 33027	PAKISTAN 81 PIRSABAK 85 R 253 RUSAPE SERI M 82 SERIC URES T 81 VIRI	PAK81 PIK R253 RUSAPE SERI SERIC URES VIRI	PAKISTAN PAKISTAN KENYA ZIMBABWE MEXICO ZAMBIA MEXICO TANZANIA
PURBALI	KVZ/TV//TITO	CM 33090 CM 33090	CHAT TITICACA	CHAT TTCA	MEXICO PERU
CHHOTILERMA	LR64 SIB/HUAR	II 15929	GREEN VALLEY	GRV	PAKISTAN
UP 301 UP 368	LR64/SN64	II 19008 II 19008 II 19008 II 19008	INIA 66 INIA 66R NOROESTE 66 NORTENO 67 SAMOENG 1	INIA66 INIA66R NO NOR SMG1	MEXICO USA MEXICO MEXICO THAILAND
SHERA	LR64A/SN64	II 19008			
HP 1209	N10B/Y53/Y50/3/KT54B/4/PJ	-	LUMBINI	LUMB	NEPAL

Continued...

Table 9 : Continued

INDIAN CULTIVAR/LINE NAME	PEDIGREE	CROSS NO.	CULTIVAR NAME ELSEWHERE	ABBR.	COUNTRY
CPAN 1796	NAPO/TOB SIB//8156/3/ KAL/BB	CM 7806	ANNAPURNA 2	ANNA2	NEPAL
RAJ 1482		CM 7806			
SWATI		CM 7806			
WL 2265		CM 7806			
KALYANSONA PV 18	PJ SIB/GB55	II 8156	INDUS 66	IND66	PAKISTAN
		II 8156	KALYANSONA	KAL	MONGOLIA
		II 8156	KALYANSONA	KAL	MYANMAR
		II 8156	KALYANSONA	KAL	OMAN
		II 8156	LAKETCH	LKT	ETHIOPIA
		II 8156	MEXIPAK	MXP	PAKISTAN
		II 8156	MIVHOR77	MHR	ISRAEL
		II 8156	SIDI MISRI 1	SMR	LYBIA
		II 8156	SIETE CERROS	7C	MEXICO
		II 8156	SUPER X	SX	MEXICO
UP262	SKA/BJ66	-	UP 262	UP262	NEPAL
			UP 262	UP262	MYANMAR
			UP 262	UP262	THAILAND
WL 711	SKA/CHR//KAL	-	NANGERHAR 64	NGR64	AFGHANISTAN
			WL 711	WL711	PAKISTAN
VL GEHUN 421	SN64//Y50E/GTO	II 9792	CORRECAMINOSCC		MEXICO
UP 215	TZPP/SON64A	II 19021	BAJIO 67	BJ67	MEXICO
		II 19021	PEAK	PEAK	USA
		II 19021	RED RIVER 68	RRV	USA
		II 19021	TOBARI 66	TOB	MEXICO
JANAK PRATAP	YT54/N10B//HD845	-	JANAK	JANAK	NEPAL
		-	BALACA	BLCA	BANGLADESH
<u>DURUM WHEATS</u>					
HI 8381	JO69 SIB/AA SIB//FGO SIB	CM 9799	YAVAROS 79	YR79	MEXICO

Table 10 : Indian advanced lines and land races involved as breeding parents in the pedigrees of bread and durum wheats and not explained in Tables 1 to 7

ABBR.	ADVANCED LINE/ SELECTION	PEDIGREE / SYNONYM	HEIGHT** Rht GENES	ORIGIN
BREAD WHEATS				
25C	25 C	SEL. LOCAL OF PUNJAB	0	LY*
116-1-3	116-1-3	NOT KNOWN		DL
247	247	TOB/CNO SIB//BB/4/NAI60*2// TT/SN64/3/HD1954	1	DL
249	249	HD1912/HD1592//HDEK	1	DL
346-1	346-1	HD2252 SIB	1	DL
AM2-1	AM 2-1	NOT KNOWN	0	
BN179	BN 179	PW5/NP790	0	BP
C209	C 209	NOT KNOWN	0	LY*
C303	C 303	C286/C273	0	HR
C516	C 516	C591 SIB	0	LY*
EB76	EB 76	SEL. LOCAL OF MADHYA PRADESH	0	PK
HD832	HD 832	N10B/K68	1	DL
HD845	HD 845	NOT KNOWN	0	DL
HD1696	HD 1696	NP875/E4871	1	DL
HD1742	HD 1742	H7/C306	0	DL
HD1960	HD 1960	KAL//N10B/NP852	Rht1 Rht2	DL
HD1962	HD 1962	SL SIB/NP852	1	DL
HDEK	HD 1962// E4870/K65	SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65	1	DL
HD2120	HD 2120	CNO/H41.2	1	DL
HD2122	HD 2122	H41.3/HD1553	1	DL
HD2136	HD 2136	HD 2135 SIB	1	DL
HD2137	HD 2137	E4871/SN64//HDEK	1	DL
HD2160	HD 2160	MZ*3//YT54/N10B/3/CAL/4/TOB/ CTFN/5/HD1949	Rht1 Rht2	DL
HD2162	HD 2162	NOT KNOWN	1	DL
HD2170	HD 2170	NOT KNOWN	1	DL
HD2186	HD 2186	HDEK/2*SKA	1	DL
HD2195	HD 2195	C306/NP852//E5550/3/HDEK	1	DL
HD2206	HD 2206	HD 2135 SIB	1	DL
HD2252	HD 2252	HDEK/SKA	1	DL
HD2255	HD 2255	HD2136/SKA//247	1	DL
HD2257	HD 2257	HD2160/HD2170	1	DL
HD2258	HD 2258	HD2119/HD2177	1	DL
HD2267	HD 2267	HD2177//HD2120/HD2160	1	DL
HI535	HI 535	V17/LR64A	1	ID
HS19	HS 19	S227/E6360	1	SM
HUW202	HUW 202	KAL/MUS	1	VN
HY1	HY 1-1	GB-AUS/NI4	0	PK
JPLC	JAIPUR LOCAL	LOCAL OF JAIPUR, RAJASTHAN	0	DP
K7401	K 7401	K818/PV18		
KHLC	KHARCHIA LOCAL	LOCAL OF SANCHORE AREA, RAJASTHAN	0	DP
LCMU	LOCAL MUNDIA	LOCAL OF MADHYA PRADESH	0	AK
LCMUPS	LOCAL MUNDI PISSI	LOCAL OF MADHYA PRADESH	0	AK
MDY417	MONDHYA 417	SEL. LOCAL MONDHYA LAND RACE	0	NI
MNWH	MUZAFFARNAGAR WHITE	LOCAL LAND RACE	0	

Continued...

Table 10 : Continued

ABBR.	ADVANCED LINE/ SELECTION	PEDIGREE / SYNONYM	HEIGHT** Rht GENES	ORIGIN
NI284	NI 284-5	NI 345 SIB	0	NI
NP6	NP 6	SEL. LOCAL MUNDIA	0	PU
NP22	NP 22	SEL. LOCAL	0	PU
NP773	NP 773	NOT KNOWN	0	DL
NP790	NP 790	TH/NP165	0	DL
NP842	NP 842	GAZA(DR)/KPD25	0	ID
NP875	NP 875	C281/NP790	0	DL
NP876	NP 876	NP875 SIB	0	DL
NP880	NP 880	NP875 SIB	0	DL
NP887	NP2 887	RIDLEY/NP710	0	DL
P19	P 19	NI4/C217	0	JL
RAJ1464	RAJ 1464	BB/3/NP880/C303//S310	1	DP
RAJ1802	RAJ 1802	RAJ842/RAJ848	1	DP
RAVI43	RAVI 43	WG 357 SIB	1	GP
UP346	UP 346	UP301//KAL SIB/HY65	1	PN
UP366	UP 366	NAI60/KAL SIB//UP301	1	PN
VA6	VA 6	HD2122/HD2009	1	VP
W245	W 245.44-25:7-5	C10854/NP165	0	DL
WG138	WG 138	C591/RN	0	GP
WG143	WG 143	NOT KNOWN	0	GP
WG750	WG 750	PV18/C273	1	GP
WG1025	WG 1025	JN/GG//JN/KAL/3/WG750	1	GP
WL202	WL 202	S738/C306//KAL SIB	Rht1Rht2	GP
WL212	WL 212	S326/C273//KAL	1	LD
WS217	WS 217	NOT KNOWN		DL
<u>DURUM WHEATS</u>				
ANLC	ANN2IGERI LOCAL	LOCAL OF ANNIGERI	0	AN
B23	B 23	BAXI 23	0	NI
BAX23	BAXI 23	SEL. LOCAL BANSI	0	NI
DWL 5031		RAJ911/AA SIB//D#2E	1	LD
GD11	GD 11	SEL. LOCAL	0	
HRA116	HAURA 116	SEL. LOCAL HAURA	0	AK
HI6-23	HI 6-23	GAZA/GD11	0	ID
HY23	HY 23	AO98/GAZA	0	PK
JA3	JA 3.3.1	A206/NP200(DM)	0	JG
NI14-9	NI 14-9	VISHRAM	0	NI
VSM	VISHRAM	JAY/T.POLONICUM	0	NI
<u>EMMER WHEATS</u>				
KHP	KHAPLI	LOCAL EMMER WHEAT FROM SOUTH INDIA	0	

* NOW IN PAKISTAN

** 0 = TALL TO MID TALL ; 1 = ONE-GENE DWARF (SEMI-DWARF)

Table 11: Cultivars and advanced lines of foreign origin involved as beeding parents in the pedigrees of Indian bread and durum wheats, and not explained in Tables 1 to 7

ABBR.	NAME /INDIAN ACCESSION NO.	PEDIGREE/SYNONYM	CROSS NO./ SELECTION HISTORY	ORIGIN
BREAD WHEATS				
		MZ*3//YT54/N10B/3/CAL/4/TOB/CTFN		CIMMYT
		CAL/4/TOB/CTFN		
II7056	II 7056	N10B/Y53//Y50/3/KT54B	II 7056-2V-5M-6V-4M	MEXICO
II25111	II 25111	CNO/NO	CIMMYT	
II27047	II 27047	HD832/BB	II 27047	CIMMYT
II27829	II 27829	CNO SIB/GLL =MAYA 74 SIB	II 27829	ECUADOR
	CPAN 1507	P 46		
	CPAN 1582	TOB SIB/NAPO//CC//INIA66/3/CNO/NO	CM 15433	CIMMYT
	CPAN 1666	SPARROW		CIMMYT
	CPAN 1861	CNO/NO//CC//INIA66/3/KAL/BB		CIMMYT
BB	BLUEBIRD	CNO SIB//SN64/KLRE/3/8156	II 23854	CIMMYT
BJ66	BAJIO 66	SN64//TZPP/NAI60	II 18889	MEXICO
BZA55	BONZA 55	Y50/KT48		COLOMBIA
C10854	KENYA C 10854	WIS 245 SIB		CANADA
C14112	C 14112	KC6042/GUL		AUSTRALIA
CHR	CHRIS	FN/3*TH/3/K58/N//2*TH		USA
CJ60	CAJEME 60	SPO211/MTA//GB-AUS/3/TH/Q//K/		MEXICO
		MTA/4/GB-AUS		
CNO	CIANO F 67	PI/CHR SIB//SN64	II 19957	MEXICO
CHNW	CHINESE WHITE	NOT KNOWN		CHINA
CSK3	CZECHOSLOVAKIA 3	NOT KNOWN		CZECHOSLOVAKIA
DO	DEMOCRAT	NOT KNOWN		USA
E144	E 144	KENYA 58F(L.1)		KENYA
E145	E 145	KENYA B 256G		KENYA
E220	E 220	C 10854		KENYA
E1913	E 1913	KC6042/GUL/N/PLT/3/K58		AUSTRALIA
E1951	E 1951	KENYA 338AC.2E.2		KENYA
E4717	E 4717	SPO/MTA//MQ/2*RNW	P 4270-2T- 1B-3T-1B-1T	COLOMBIA
E4853	E 4853	PITIC 62 SIB		MEXICO
E4870	E 4870	PJ SIB/P14//KT54B	II 7740-2C-2H-2R	MEXICO
E4871	E 4871	N10B/Y53//Y50/3/KT54B	II 7756-4R-3M-1R	MEXICO
E4894	E 4894	SPO/MTA//MQ/2*RNW	P 4270-3T-	COLOMBIA
E5165	E 5165	CAJEME 60		MEXICO
E5477	E 5477	YT54/N10B		MEXICO/CHILE
E5550	E 5550	GB54/N10B21//2*LR64	NV3746	MEXICO/CHILE
E5553	E 5553	YT54/N10B21		MEXICO/CHILE
E5557	E 5557	YT54/N10B24	NV 3761	MEXICO/CHILE
E5573	E 5573	YT54/N10B1	NV 4073	MEXICO/CHILE
E5868	E 5868	N10B/Y53//Y50/3/KT54B		MEXICO
E6056	E 6056	II50-72/LEE	II 54-76	USA
E6160	E 6160	TH/MIDA-U//MCM/EX	60 GR 57	CANADA
E6254	E 6254	NAR59 SIB//CLY/FCR/3/2*FCR	II 11084-12t-1b-3t-1b	COLOMBIA
E6360	E 6360	LA 1417		BRAZIL
E8841	E 8841	KLEIN RENDIDOR		ARGENTINA
EG953	EG 953	NOT KNOWN		EGYPT
EX30	EX 30	KENYA C 9906		KENYA
EX61	EX 61	GAB0		AUSTRALIA
EX73	EX 73	C 14112		AUSTRALIA

Continued...

Table 11: Continued

ABBR.	NAME /INDIAN ACCESSION NO.	PEDIGREE/SYNONYM	CROSS NO./ SELECTION HISTORY	ORIGIN
FAO106-68R	FAO 106-68R	NOT KNOWN		
FCR	FROCOR	FN//C.O./C.R.		BRAZIL
GAGE	GAGE	PNC/3/MI/?/H/?/PN		USA
GLL	GALLO	WTE*3/NAR 59*2//STE/3/JAR SIB	II 22529	CIMMYT
H41.2	H 41.2	SEL. BLUEBIRD		CIMMYT
H41.3	H 41.3	SEL. BLUEBIRD		CIMMYT
HB50	HB(M) 65-50	SEL. E 4870		MEXICO
HD1508	HD(M)1508	LR64/2*SN64		CIMMYT
HD1592	HD 1592	KALYANSONA SIB		MEXICO
HD1912	HD 1912	36896//CJ54/P4160E/3/HUAR		MEXICO
HD1931	HD 1931	MY54/N10B//LR/3/TAC SIB/4/LR//	II 21419	MEXICO
		TZPP/Y54		
HD1954	HD 1954	LR64/SN64		MEXICO
HD1963	HD 1963	36896//CJ 54/P4160E/3/SN63		MEXICO
HD2092	HD 2092	BJ66 SIB//NAD63/LR64A		MEXICO
HD2119	HD 2119	CNO SIB/NO/3/C273//NP875/E4853		CIMMYT
HF	HARD FEDERATION	SEL. FEDERATION		AUSTRALIA
HFD	HOFED	H/FR		AUSTRALIA
J142	J 142	CTFN/CNO SIB/3/JAR SIB//MENG/8156		CIMMYT
JN	JUSTIN	ND4/NS3880.227//CLY		USA
K 812	K 812	CNO SIB/SN64//KLRE/3/8156		CIMMYT
K58	KENYA 58F(L.1)	RE/KBF4		KENYA
K338	KENYA 338AC.2E.2	KENYA FARMER		KENYA
KB256G	KENYA B 256G	KU/K9M.I.A.3, ALSO SEL.? EGYPT NA 96		KENYA
KC6042	KENYA C 6042	NOT KNOWN		KENYA
KC9906	KENYA C 9906	KENYA 324		KENYA
KF	KENYA FARMER	GAZA/2*BOBIN//BUTTON/K73D		KENYA
KLRE	KLEIN RENDIDOR	KLCO SIB/KL33AG//SCHOMA/KLH33AG		ARGENTINA
KNS	KONONSO	NOT KNOWN		JAPAN
KIRAN-BR	HB(M)65-50	MEXICO		
LA1417	LA 1417	FRTR/GUL/3/ME/K324//Y48	C 362-Y6-G1-G1-M1-M4	BRAZIL
LR64A	LERMA ROJO 64A	LERMA ROJO 64 SIB		MEXICO
MAYA	MAYA 74	CNO SIB/GLL	II 27829	ECUADOR
MEW	MILLEWA	SN64/Y50E//GTO/8156	CM 16780	MEXICO
MUS	MUSALA	LEE/KVZ/3/CC//RON/CHA		CIMMYT
N	NEWTHACH	H/3*TH		USA
NAI60	NAINARI 60	CAJEME 60	P 4160- 6H- 3Y- 2Y	MEXICO
NO	NOROESTE 66	INIA 66 SIB		MEXICO
ON	OLESON'S DWARF	S948/A1		ZIMBABWE
P46	P 46	NOT KNOWN		
P4270	P 4270	SPO/MTA//MQ/2*RNW	P 4270-3B-1B-1T	COLOMBIA
PTZ	PARTIZANKA	BEZ//HN7/CMF		YUGOSLAVIA
RAJ842	RAJ 842	BLUEBIRD	II 23584	CIMMYT
RAJ848	RAJ 848	LR64/SN64//NAPO	II 22402	CIMMYT
RFP80	RFPM 80	NOT KNOWN		
RFPM196	RFPM 196	NOT KNOWN		
RGN	REGENT	H44/REWARD		CANADA
RN	RIO NEGRO	CTR/SPS		BRAZIL
S310	S 310	FN/Y53//YT54/3/21931/CH53//CJ60		MEXICO
S311	S 311	21931/2*CH53//CJ60		MEXICO
S326	S 326	HD 1912 SIB		MEXICO
S339	S 339	NOT KNOWN		MEXICO

Continued...

Table 11: Continued

ABBR.	NAME /INDIAN ACCESSION NO.	PEDIGREE/SYNONYM	CROSS NO./ SELECTION HISTORY	ORIGIN
S503	S 503	NOT KNOWN		MEXICO
S738	S 738	NOT KNOWN		MEXICO
	S 54723	NOT KNOWN		COLOMBIA
SA42	SA 42	C271*2//INIA66 SIB		PAKISTAN
SAM68	SAMACA 68	BZA65/2*AFM		COLOMBIA
SN63	SONORA 63	YT54/N10B//2*Y54		MEXICO
SPP	SPALDING	NOT KNOWN		GREAT BRITAIN
	PROLIFIQUE			
SPRW	SPARROW	FN/MIDA-U//K117A/3/2*COFN/4/SN64/ KLRE/3/CNO SIB//2*LR64/SN64		CIMMYT
TG	TIMGALEN	A/K//MRQ/3/SPO/4/GB-AUS/5/WGL	W-3128	AUSTRALIA
TH	THATCHER	MQ/IU(DR)//MQ/KR		USA
TOB	TOBARI 66	TZPP/SN64A		MEXICO
	TR380-27*4/3AG3	WHITE SEEDED RECOMBINANT OF TR 380 AND SEAR'S STOCK 3AG 3		AUSTRALIA
	TW275-7-6-10	NOT KNOWN		
UP291	UP 291	MILLEWA SIB		MEXICO
UP302	UP 302	PJ SIB/GB56//TZPP/NA160		MEXICO
USA255	USA 255	NOT KNOWN		USA
V18	V 18	PV 18		MEXICO
Y53	YAQUI 53	T//E101/Y48		MEXICO
<u>DURUM WHEATS</u>				
CIT71	COCORIT 71	RAE/4*TC60//STW63/3/AA SIB	II 27617-18M-6Y-0M	MEXICO
CPAN1471	CPAN 1471	BYE*2/TC60//4*TC60/3/BYE*2/ TC60//STW63/4/AA SIB		MEXICO
	DWL 5002	NOT KNOWN		MEXICO
EX130	EX 130	GAZA		PALESTINE
G4-48	G 4-48	NOT KNOWN		EGYPT
GS	GANSO	BBAL//BYE*2/TC60	D 22550	MEXICO
GAZA	GAZA	LOCAL VARIETY FROM PALESTINE		PALESTINE
	HD(M)22550-3	GANSO SIB		MEXICO
<u>POLONICUM WHEATS</u>				
F185	F 185	NOT KNOWN		
	YAGULATE	NOT KNOWN		

Table 12: Indian- germplasm- based wheat cultivars developed by wheat programmes of foreign countries (Parents in capital letters are Indian lines)

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	Country	Height*
Almansor	ALMR	E 4870/C 306//M 5392/666.5/3/Cajeme F 71// Correcaminos/Inia 66	Portugal	1
Africano	AFRI	Ramona/PUSA 4	Mali	0
Alkama Pusa	ALPU	Introduction from India	Australia	0
Ajeba	AJEBA	Introduction from India	Australia	0
Amerin	AMERIN	American Prolific//Fife/INDIAN	Australia	0
Arawa	AAW	INDIAN 9/2*Solid straw Tuscan//Dread nought/3/ Cross 7//Federation	Australia	0
BR 12-Aruana	BR12	Buckbuck Sib	Brazil	1
Aspen	ASP	Blount's Lambrigg/Ward's White//INDIAN G	New Zealand	0
Barbu De Crusil	BDEC	Gentile Rosso/PUSA 67	France	0
Buckbuck	BUC	Bucky/Maya Sib/4/Blue Bird//HD 832.5.5/Oleson/3/ Ciano 67/Oleson/3/Ciano 67/Penjamo 62	Mexico	1
Camden	CAMDEN	D.1//PUSA/Hative	Australia	0
Carbine	CARB	Aspen	Australia	0
Carlyle	CRLY	Statesman//Vanessa/INDIAN G	Australia	0
Cstor	CSTR	INDIAN 8/Telford//Marshall Foch	Australia	0
Chukar	CKR	Piamontes/3/Tobari 66/Centrifen//Blue Bird/4/ Blue bird/HD 832.5.5/Oleson	Mexico	1
Ciano T 79	CNO79	Buckbuck	Mexico	1
Comeback	CBBK	Improved Fife//Vanessa/INDIAN G	Australia	0
Coolabah-DR	CLBH	Triticum polonicum/SINDHI	Australia	0
Cowbird	COW	Klein Atlas//Inia 66/Bluebird/4/NP 876/ Penjamo 62//Calidad/3/Bluebird	Mexico	1
Downy Gehun	DGEHUN	Seln. GEHUN	Canada	0
Downy Riga	DRIGA	Onega/GEHUN	Canada	0
Festival	FTV	PUSA 3//Kenya C6041/Baringa	Australia	0
Forest	FOREST	Improved Fife/Blount's Lambrigg//ETAWAH	Australia	0
Fox	FOX	Ble Carre/Horn Blende//Improved Fife/3/ Vanessa/4/INDIAN B	Australia	0
Fraser	FRASER	Alpha/HARD RED CALCUTTA	Canada	0
Gayndah	GAYN	King's Jubilee/INDIAN B	Australia	0
Ghurka	GHURKA	Gallipoli/3/Currawa//INDIAN 4E/Federation	Australia	0
Giza 7	GZ7	HINDI 7/White Federation	Egypt	0
Giza 121	GZ121	Baladi 121/HINDI 62 (Mabrouk)	Egypt	0
Giza 125	GIZ125	Giza 7/HINDI 39	Egypt	0
Giza 139	GZ139	HINDI 90/Kenya B256 (Egypt NA 96)	Egypt	0
Giza 141	GZ141	Beladi 116/HINDI 62	Egypt	0
Giza 145	GZ145	HINDI 62/Mukhtar	Egypt	0
Giza 146	GZ146	Giza 145 Sib	Egypt	0
Giza 147	GZ147	HINDI D/Newthatch	Egypt	0
Harrier	HRR-M	Ciano 67 Sib/Noroeste 66/3/C 273//NP 875/ E4853/4/Siete Cerros/5/Hork Sib	Mexico	0
Hayrick	HAYR	Statesman//Hussar/INDIAN G	Australia	0
Hindi 62	HIN62	Introduction from India	Egypt	0
Hindi 144	HIN144	Introduction from India	Egypt	0
Hindi D	HIND	Introduction from India	Egypt	0
Hussar	HR	Hornblende/INDIAN G	Australia	0
Indexa	INDEXA	INDIAN PEARL/Extreme SUO Algerien	Morocco	0
Indian King	IKING	King's Jubilee/INDIAN A	Australia	0
Inquillab 94	INQ94	WL 711/Crow	Pakistan	1

Continued...

Table 12: Continued

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	Country	Height*
Jackal	JACKAL	Rattling Jack*2//INDIAN G	Australia	0
Jonathan	JONA	Improved Fife/Hussar//INDIAN G	Australia	0
Judy	JUDY	Improved Fife/Hornblende//Vanessa/INDIAN B	Australia	0
Kaal India	KAALI	Sel.from Indian material	South Africa	0
Kasarwali	KASA	Introduction	South Africa	0
Khapstein	KST	Steinwedel/KHAPLI	Australia	0
Krasnovodopadskaj A23	KSV23	INDIAN DWARF/Krasnovodopadskaj 210	USSR	
Krasnovodopadskaj A28	KSV28	INDIAN DWARF/Krasnovodopadskaj 210	USSR	
Kirby	KIRBY	Fife/Hornblende//Venassa/INDIAN G	Australia	0
Koel	KOEL	Bluebird/Gallo//Yaqui 50E/3*Kalyansona/3/ Lilifen//HD 832/Bluebird	Mexico	1
Langshan	LANG	Improved Fife//Vanessa/INDIAN G	Australia	0
Las Rosas Inta	LRI	Klat//Inia 66/Bluebird/4/NP 876/Penjam 62// Calidad/Bluebird	Argentina	1
Mahdi	MAHDI	INDIAN 17/Federation	Australia	0
Marquis	MQ	HARD RED CALCUTTA/Red Fife	Canada	0
Meise	MEI	R 37/Gohls 121/3/Ciano 67 Sib/Inia 66 Sib// HD 832/Oleson	Mexico	1
Merlin	MERLIN	Blount's Lambrigg//INDIAN G	Australia	0
Nabob	NABOB	INDIA 17/Federation	Australia	0
Neelkant	NKT	HD 1220/3/Kalyansona//Nacazari 76	Mexico	1
Nizam	NIZAM	NABOB Sib	Australia	0
Orion	ORION	INDIAN 8/Telford's//Marshall Foch	Australia	0
Paraguacu	PGC	Kenya 155/Heana//Gig.ingels/KHAPLI/3/Saloio	Brazil	
Parsee	PARSEE	Hard Federation/INDIAN H	Australia	0
Puglu	PUGLU	PUSA 4/Gluyas	Australia	0
Pumafior	PFR	PUSA 4/Mt 9290//FAB 193	Algeria	0
Punch	PUNCH	Improved Fife/Hornblende//Venassa/INDIAN B	Australia	0
Puno	PUNO	PUSA 4/Novo	Australia	0
Puora	PUORA	PUSA 4/Flora	Australia	0
Purple Stem	PPSA	Hornblende/INDIAN A	Australia	0
Pusa Florence 380	PUF	PUSA/Florence	Australia	0
Puseas	PUSEAS	PUSA 4/Three Seas	Australia	0
Rajah	RAJAH	INDIAN E/Telford's	Australia	0
Rajah		Hornblende/INDIAN B	Australia	0
Ranee	RANEE	INDIAN F/Federation	Australia	0
Rashid	RSD	NP 788/Azar	Iran	0
Red Indian King	RIKG	Kings Jubilee/INDIAN A	Australia	0
Roma	ROMA	Kings Jubilee/INDIAN G	Australia	0
Roma Pearl	ROMAP	Bunge/INDIA PEARL	Australia	0
Rooi Kleinkoring	ROKK	seln in Kleinkoring	South Africa	0
Ruskin	RUSKIN	Hornblende/Yeoman//Vanessa/INDIAN G	Australia	0
S 2303	S2303	Selection from Indian local wheat	Newzealand	0
Saga	SAGA	PUSA 4/3/Eureka//Bobin*2/Gaza	Australia	0
Saguay 79	SGY	Bluebird/Tobari 66/4/Ciano//Noroeste 66/3/ C 273//NP 876	Bolivia	1
Salter'S 85	SLTR85	Complex cross involving Cedar+Comeback+ INDIAN varieties	Australia	0
Sao paulo	SAO	Instituto/Gig Ingles//Coronation/PUSA 12..	Brazil	0
Satisfaction	SFT	Bayah/PUSA 4	Australia	0
Sepoy	SEPOY	Currawa//INDIAN 4/Federation	Australia	0
Seppom	SEPPOM	KHAPLI/6*Sapo	Sweden	0

Continued...

Table 12: Continued

CULTIVAR	ABBR.	PEDIGREE/SYNONYM	Country	Height*
T 222-51-B-9	T222	Florence/Aurore//PUSA 4	Tunisia	0
Tightfist	THFT	Improved Fife/Hornblende//Yeoman/INDIAN G	Australia	0
Triumph	TMP	Silver King/RANJIT	Australia	0
Tucan	TUC	Bluebird/Tobari 66/4/Ciano 67/Noroeste 66/3/ C 273//NP 876/E 4853	Mexico	1
Tucuman	TUCM	Calidad/3/Bluebird/5/Klein Petiso/Rafaella// Penjamo 62/3/Ciano 67/4/NP 876/Bluebird	Argentina	1
Vanessa	VNSS	Hornblende/INDIAN A	Australia	0
Wallace	WLCE	Purple Straw//Fife/INDIAN	Australia	0
Warner	WARNER	Statesman//Hussar/INDIA G	Australia	0
Warput	WARPUT	PUSA 4/Warren	Australia	0
Willow	WILLO	Statesman//Vanessa/INDIAN G	Australia	0
Wit Kleinkoring	WITKL	Sel. Indian Material	South Africa	0
Yalta	YTA	Kenya C6402/PUSA 4//Dundee	Australia	0
Yandilla	YDL	Improved Fife/ETAWAH	Australia	0
Zaff	ZAFF	Sel. from MUZAFFAR NAGAR variety	Australia	0

* 0 = Tall-MID TALL ; 1 = ONE GENE DWARF

Table 13: Original pedigrees of wheat cultivars/lines along with their expanded/ corrected versions used in Tables 1 to 7

NAME	EXPANDED/ CORRECTED VERSION	ORIGINAL PEDIGREE	SOURCE*
BREAD WHEATS			
AGHAF	21931/CH53//CJ60/3/NOR	S 311/NOR	A
C 306	RGN/CSK3//2*C591/3/C217/NI4//C281	RG1974/CH23//2*C591/3/P19/C281	O
D 134	RS31/W245 SIB	RS31-1/E220	O
GIRIJA	CJ60/3/SPO/MTA//MQ/2*RNW	E5165/E4717	O
GW 89	KAL SIB/LR64A//SKA	H1535/SKA	O
GW 190	VEE/3/BB SIB//SKA//ARJUN	VEE/VA6	O
GW 503	TOB SIB/NAPO//CC//INIA66 SIB/3/CNO/NO/4/ CTFN/CNO SIB/3/JAR SIB//MENG/8156	CPAN1582/J142	O
HB 208	SPO/MTA//MQ/2*RNW/3/PJ SIB/P14//KT54B	E4717/HB(M)65-50 E4717/KIRAN	O A
HD 2135	BB SIB/5/SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65	H41.3/3/HD1962//E4870/K65	O
HD 2177	SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65/5/KAL	HD1962//E4870/K65/3/KAL	O
HD 2189	36896/CJ54//P4160E/3/SON63/5/MY54/N10B// LR64/3/TAC SIB/4/LR64//TZPP/Y54	HD1963/HD1931	O
HD 2204	BJ66 SIB//NAD63/LR64A/5/SL SIB/NP852/4/ PJ SIB/P14//KT54B/3/K65	HD2092/3/HD1962//E 4870/K65	O
HD 2270	SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65/5/ CNO SIB/NO/3/C273//NP875/PI SIB/6/TOB/ CNO SIB//BB/4/NAI60*2//TT/SN64/3/LR64/SN64	HD1962//E4870/K65/3/HD2119/4/247	O
HD 2281	HD2160/7/36896//CJ54/P4160E/3/HUAR/6/ KAL SIB/5/SL SIB/NP852/4/PJ SIB/P14// KT54B/3/K65	HD2160/4/HD1912/HD1592/3/HD1962// E4870/K65 HD2160/249	O A
HD 2285	36896//CJ54/P4160E/3/HUAR/4/KAL SIB/5/SL SIB/ NP852/4/PJ SIB/P14//KT54B/3/K65/6/HD2160/7/ SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65/5/2*SKA	HD1912/HD1592/3/HD1962//E4870/K65/4/O HD2160/5/HD2186 249/HD2160//HD2186	O A
HD 2329	SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65/5/ SKA/6/UP262	HD1962//E4870/K65/3/HD1553/4/UP262 HD2252/UP262	O A
HD 2380	HD2135 SIB/SKA/5/TOB/CNO SIB//BB/4/NAI60*2// TT/SN64/3/LR64/SN64/6/HD2160/HD2170	HD2255/HD2257	O
HD 2402	HD2177//CNO/BB/3/HD2160/4/KSP	HD2177/HD2120//HD2160/3/ HD2119/HD1981 HD2267/HD2236	O A
HIRA	YT54/N10B//SN64	E5477/SON64	A
HP 1209	N10B/Y53//Y50/3/KT54B/4/PJ	E4871/PJ62	O
HP 1493	KLRE/NP830	E8841/NP830	O
HS 86	TH/MIDA-U//MCM/EX/3/KAL/4/SKA	E6160/S227//S308	O
HS 295	CQT/AZ//IAS55/ALDML SIB/3/ALDML SIB/ NAFN/4/PJN SIB/PEL1276.69	CQT/AZ//IAS55/ALD"S"/3/ALD"S"/ NAFN/4/PJN"S"/PEL SEL127	O
HUW 234	HUW12/SPRW//HUW12	HUW12*2/CPAN1666 HUW12/CPAN1666//HUW12	O A
HUW 318	HUW206//KAL/MUS	HUW206/HUW202	O
HY 5	A090/WIS245 SIB	A090/E220	A
HY 8	A013/WIS245 SIB	A013/E220	A
HY 65	GB-AUS/A115	EX61/A115	A
HY 278	NP52/KC9906	NP52/EX30	A
HYB 633	LOCAL//KC6042/GUL	EB76/EX73	O
IWP 19	NAR59 SIB//CLY/FCR/3/2*FCR/4/2*KAL	E6254/2*KAL	A
IWP 72	FKN/LEE//2*KAL	E6056/KAL E6056/2*KAL	O A
IWP 87	N10B/Y53//Y50/3/KT54B/4/3*KAL	E5868/3*KAL	A
IWP 129	S227/4/FRTR/GUL/3/ME/K324//Y48/5/2*KAL	HS19/2*KAL	A

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Table 13: Continued

NAME	EXPANDED/ CORRECTED VERSION	ORIGINAL PEDIGREE	SOURCE*
IWP 139	IWP87 SIB	E5868/3*KAL	A
IWP 143	NP875/3/SPO/MTA//MQ/2*RNW/4/4*KAL	NP875/E4894//4*KAL	A
JANAK	YT54/N10B//HD845	E5557/HD845	O
K 8962	K816 SIB/PV18//HD2160	K7401/HD2160	A
KENPHAD 25	K58F(L.1)/NI4	E144/NI4	A
		K48F(L.1)NI4	A
K.POORVI	K816 SIB/KAL	NOT GIVEN	O
		K812/KAL	A
KSHIPRA	CNO SIB/NO/3/C273//NP875/PI SIB/4/HD1981	CNO/NO/3/C273/NP875//E4853/4/	O
		E5557/HD845	
		HD2119/HD1981	A
MAGHAR	NP875/4/FKN/N10B//P14/3/KT54B/5/2*K852	HD1696/K852//K852	O
		HD1696/2*K852	A
MALAVIYA 12	NP876/CNO	NP876/CNO	O
MOTI	YT54/N10B//NP852	YT54/N10B//NP852	O
		E5557/NP852	A
MUKTA	HYB633//GAZA(DR)//KNP25	HYB633/NP842	O
NARBADA 4	GB-AUS/NI4/3/PW5/TH/NP165	HY1-1/BN179	O
NEPAL 30	N10B/K68//BB	HD832/BB	O
NEPAL 297	N10B/Y53//Y50/3/KT54B/4/SN64/5/SL SIB/ NP852/4/PJ SIB/P14//KT54B/3/K65/6/SL SIB/ NP852/4/PJ SIB/P14//KT54B/3/K65/5/2*SKA/7/ HD2160	HD2137/HD2186//HD2160	O
NI 917	C591//KC6042/GUL	PC591/EX73	O
NI 5643	N/NI345 SIB	N/NI284-5	A
		N/NI284-S	A
NP 792	WIS245 SIB/NP165	E220/NP165	A
NP 801	K58F(L.1)/NP120	E144/NP120	A
		K48F(L.1)/NP120	A
NP 824	WIS245 SIB/NP165//NP770/3/C518/NP165	W245:44-25:7-5/NP770//C518/NP165	A
NP 832	KB256G/PISSI LOCAL	E145/PISSI LOCAL	A
NP 884	KC6042/GUL//PLT3/K58/N/4/NP755	NOT GIVEN	O
		E1913/NP755	A
PARVATI	CNO SIB/NO/3/C273//NP875/PI SIB/6/36896// CJ54/P4160E//CJ54/P4160E/3/HUAR/4/KAL/5/ SL SIB/NP852/4/PJ SIB/P14//KT54B/3/K65	HD2119/4/HD1912/HD1592/3/HD1962// E4870/K65	O
		HD2119/249	A
PBW 65	USA255/K816/3/S738/C306//KAL SIB	USA255/K816//WL202	O
PBW 175	HD2160/4/JN/GAGE//JN/KAL/3/PV18/C273	HD2160/WG1025	O
PBW 226	C591/RN//JN/3/CHR/HIRA	WG138/JN//CHR/HD1941	O
PRATAP	YT54/N10B//HD845	E5557/HD845	O
RAJ 821	NP875//LR64/2*SN64	NP875/HD(M)1508	O
RAJ 1972	C306/NP852/3/GB-AUS/N10B//2*LR/5/SL SIB/ NP852/4/PJ SIB//KT54B/3/K65/6/HD2160	HD2195/HD2160	O
RAJ 2184	SN64/Y50E//GTO/8156/3/HD2135 SIB	UP291/HD2206	O
RAJ 3077	HD2177/3/CNO67/BB//HD2160/4/RAJ1482/5/ BB/3/LR64/SN64//NAPO	HD2267/RAJ1482//RAJ1802	O
SHAILJA	PJ SIB/P14//KT54B/3/SKA	E4870/SKA	O
SONALI	TH*6/TF//6*SKA	RL6010/6*SKA	O
TEESTA	PI SIB/NP852	E5573/NP852	O
UP 115	RIDLEY/NP710/3/PJ SIB/P14//KT54B/4/PJ SIB/ GB56//TZPP/NAI60	NP887/E4870//UP302	O
UP 2113	UP301//KAL/HY65/3/WG377	UP346/WG377	O
UP 2121	NAI60/KAL//UP301/3/SAM68	UP366/SAMACA68	O

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Table 13: Continued

NAME	EXPANDED/ CORRECTED VERSION	ORIGINAL PEDIGREE	SOURCE*
UTKALIKA	DG65/C306//FAO1061-68R	HD1742/FAO1061-68R	O
VL 616	SKA/P46	SKA/CPAN1507	O
VL GEHUN 401	PJ SEL = FKN/N10B	SEL. PJ (TRIGO ENERO)	O
WH 147	PJ SIB/P14//KT54B/3/C286/C273/4/S339/PV18	E4870/C303//S339/V18	O
WL 410	SN63/4/36896//CJ54/P4160E/3/HUAR/5/KAL	SN63/S326//KAL	O
DURUM WHEATS			
DWL 5023	CR/LDS//PLC/GARZA	CR/LD//PLC/GAZA	O
GW 2	GS SIB//A206/NP200(DM)	HD(M)25550-3/JA3.3.1	O
HD 4530	TPT/MOGHK/4/PI/TML//2*TC60/3/ZENATI/ BTL//WLS	T.DURUM(TEP)X T.DURUM (MEGET-KARAK)(PI-TM-PC2)	O
JAIRAJ	YAGULATE(POL)/4/PI/3/ZENATI/BTL//WLS	(T,POLO YAGULATE)PITATE-Z-B-W	O
MACS 1967	GULAB/5/BYE*2/TC60/3/BYE*2/TC60// STW63/4/AA SIB/CIT SIB	GULAB/CPAN1471	O
MEGHDOOT	GAZA/GD11//A098/GAZA/3/NP404	H16-23/HY23//NP404	O
NARMADA 215	FGO SIB/VERN(DM)//GLLA SIB	FG"S"(T.DIC VERMAN)/GII"S"	O
PDW 215	RAJ911//AA SIB/D#2E/3/DWL5002	DWL5031/DWL5002	O
RAJ 911	PI/ST464//2*TC60/3/NACHITSCHIVANICUM(TG)	VO229	O

* O = OFFICIAL LIST OF CULTIVARS

A = ANNUAL REPORTS OF AICWIP AND/OR OTHER PUBLICATIONS

Table 14: Wheat cultivars and lines reported with more than one pedigrees and the and the version marked with * used with appropriate modification/expansion in Tables 1 to 7

NAME	SOURCE*	PEDIGREE		NAME	SOURCE*	PEDIGREE
C 217	P*	C518/C516		MEGHDOOT	O*	HI6-23/HY23//NP404
	P	C516/C518		(HI 7483)	P	HI6-23/HY23//FLORENCE/3/
	P	C516/C591				NP404
C 228	P*	9D/HF		NI 747-19	P*	RFPM196/M2-3
	P	HF/9D			O	RFPM196/MP2-23
C 250	P*	9D/HF		NP 4	P*	SEL.HETEROZYGOUS LINE
	P	HF/9D				OF LOCAL MUNDIA
C 253	P*	25C/NP165			P	SEL. LOCAL MUNDIA
	P	NP165/25C		NP 818	P*	DO/C518//SPP/NP114/3/E220
	P	9D/HF			O	W245/NP165//
C 273	P*	C591/C209				C518/NP770/3/E220
	P	C209/C591		NP 852	O*	E1951/*2NP761
C 281	P*	C591/NP4			A	E1915/2*NP761
	P	NP4/C591		NP 875	P*	C281/NP790
C 518	P*	TYPE9/8A			P	C591/GAZA(DR)//2*C591
	P	8A/TYPE9		NP 876	P*	NP 875 SIB
C 591	P*	TYPE9/8B		PRAGATI	O*	HD(M)1508/S308
	P	8B/TYPE9			A	HD(M)1508/S308//SP6
DURGA-	P*	RS31*5//TH/NP165		RS 31-1	O*	JAIPUR LOCAL/C591
PURA 65	O	RS31-1/NP790			A	C591/LOCAL
GW 40	O*	INIA66*2/7C			P	RS31-1*4BC/NP790
	A	INIA66/7C		SAFED LERMA	O*	Y50/N10B//L52/3/3*LR
GW 405	O*	CNO/INIA//BB/3/CNO SIB/			P	Y50//N10B/L52/3/LR64
		PJ//GALLO			P*	EG953/5*RS31
	A	CNO/INIA//BB/3/CNO SIB/		SONALIKA	CY*	II53-388/AN/3/YT54/N10B//LR/
		PJ//GW110				4/B4946-A4-18-1/Y53//3*Y50
GW 496	O*	HD2285/CPAN1861			CY	II54-388/AN/3/YT54/N10B//LR64
	A	HD2258/CPAN1861			O*	TZZPP/SN64
HD 1962	A*	SL SIB/NP852			A	ND 102/3*P418//SN64
	A	8156(B)/LR64			A	PI/SN64//V626
HD 2137	A*	E4870/SN64//HDEK		UP 215	O*	TZPP/SN64
	A	HD1912/NP858//HDEK			A	ND102/3*P418//SN64
	A	AGATHA/YACORA 70			A	PI/SN64//V626
HD 2327	O*	346-1/HD2160		VAISHALI	O*	KAL*4//TR380.27*4/
	A	HD2160/346-1				3AG3/3/HD2281
HY 11	P*	A115/E220			A	KAL//TR380.27*4/3AG3/3/
	A	E220/A115				HD2281
KHARCHIA 65	P*	KHARCHIA*4BC/EG953		VL GEHUN 421	O*	SN64//Y50E/GTO
	O	KHARCHIA/EG953			CY	SN64/Y50E//GTO II 19792
	P	EG953/KHARCHIA		WG 377	O*	WG143/USA255//PV18
KEERTHI	O*	SKA/TOB			A	54-20-28/C304//S336
	A	KAL//SKA//TOB66 31330		WH 291	P*	HD1925//HD832/23584
MALAVIYA 55	O*	E4870/HD1982//INIA66/HD2189			O	HD1925/HD23584
	A	E4870/HD1982//INIA66			A	HD1925/HD832-23-5-84
MALAVIKA	O*	PI SIB/2*BY//TC60/3/ZENATI//		WH 533	CY*	VEERY # 5
		BTL//WLS			A	AGATHA/YACORA 70
	A	PI SIB/TCT//4*TC60/3/ZENATI//		E 4870	P*	FKN/N10B//P14/3/KT54B
		BTL//LK D 21552			P	FKN/N10B//PUSA4/3/KT54B

+ O = OFFICIAL LIST OF CULTIVARS; A = ANNUAL REPORTS OF AICWIP; P=OTHER PUBLISHED SOURCES
 * = ACCEPTED WITH MODIFICATION; CY = CIMMYT RECORDS

Table 15 : Abbreviations used for bread wheats in various tables but not explained so far

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	CROSS NO.	ORIGIN
0.10	0.10	ORLANDI		ITALY
167	167	NOT KNOWN		
908	908	Y/KT		
8156	8156	PJ SIB/GB55	II 8156	MEXICO
21931	21931	NOT KNOWN		MEXICO
36896	36896	NOT KNOWN		MEXICO
38MA	38 MA	BARLETTA/CHINO		ARGENTINA
II18-47	II 18-47	NOT KNOWN	II 18-47	USA
II50-72	II 50-72	F/K//N	II 50-72	USA
II53-388	II 53-388	MIDA-U/K117A//2*TH/3/FN/4*TH	II 53-388	USA
II12300	II 12300	21931/CH53//AN SIB/3/GB56	II 12300	MEXICO
A	AGUILERA	LOCAL VARIETY OF MEXICO		MEXICO
A1	A1	SEL. BLE DES ALLIES		FRANCE
ACC	ACCIAIO	MARA//MARA/0.10		ITALY
AFM	AFRICA MAYO	AFRICA/MAYO 48		KENYA
ALDML	ALONDRA 4546 ML	D6301/NAI60//WRM/3/CNO*2/CHR	CM 11683	CIMMYT
AMO44D	AMERICANO 44D	SEL. LOCAL		URUGUAY
AN	ANDES 55	KT48/FN//MY48		COLOMBIA
ANA	ANAHUAC F 75	JUPATECO SIB	II 30842	MEXICO
ANE	ANDES ENANO	YT54/N10B//3*AN		MEXICO
AU	AURORA	LUTESCENS 314H147/BEZOSTAJA 1		USSR
	AUST II 61.157	NOT KNOWN		AUSTRALIA
AZ	AZTECA 67	CNO 67 SIB	II 19957-18M-	MEXICO
BAGE	BAGE	SURPRESA/CENTENARIO//LA ESTANZUELA 2787C		BRAZIL
BOBIN	BOBIN	THEW/STEINWEDEL		AUSTRALIA
BBN	BOBIN W39	THEW/STEINWEDEL		AUSTRALIA
BEZ	BEZOSTAJA 1	LUTESCENS 17/SKOROSPELKA 2		USSR
BJY	BLUE JAY	TZPP/PL//7C	CM 5287	CIMMYT
BMAN	BUCK MANANTIAL	RAFAELA MAS/BUC QUEQUEN		ARGENTINA
BON	BONANZA	CIANO F 67 SIB	II 19957	USA
BOW	BOBWHITE	AU//KAL/BB/3/WOP SIB	CM 33203	CIMMYT
BUHO	BUHO	SR/3/LR64//INIA66//INIA66/BB	CM 14040	CIMMYT
BUTTON	BUTTON	?		
C271	C 271	C230/IP165		PAKISTAN
CAL	CALIDAD	TZPP/SN64A/3/LR64A/TZPP//ANE	II 22429	MEXICO/ARGENTINA

Continued.....

Table 15: Continued

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	CROSS NO.	ORIGIN
CDL	CARDINAL	ZA75/JAR SIB//8156	II 27105	CIMMYT
CGN	CIGUENA	SN64*2//TZPP/Y54/3/AN64A/4/2*FCR//Y/KT	II 21406	CIMMYT
CH53	CHAMPINGO 53	BONZA SIB		MEXICO
CHA	CHANATE	CNO SIB/PJ//CNO SIB/7C	II 26265	CIMMYT
CJ54	CAJEME 54	GABO 54		MEXICO
CMP	CAMPODORO	SELN IN MIXT. OF MARA & FRECCIA		ITALY
COFN	COLLAFEN	908/FN*2//4160/3/YT54/N10B/4/2*C14/5/OFN	CH 10296	CHILE
CLY	CONLEY	THATCHER/3/MCMURACHY/EXCHANGE// 2*REDMAN-CANADA/4/LEE		USA
CQT	CINQUENTENARIO	TRITECINCO//EGYPTIAN NA 101/TIMSTEIN 704		BRAZIL
CTFN	CENTRIFEN	Y53/N10B//2*LR		CHILE
CTR	CENTENARIO	SEL. LOCAL		BRAZIL
D6301	D 6301	MAYO 54//NORIN 10/BREVOR		USA
E101	EGYPT NA 101	KENYA GOVERNOR		KENYA
EMU	EMU	TOB SIB/NAPO//NO/ERA/3/BB/GLL	CM 8327	CIMMYT
EX	EXCHANGE	WARDEN/HYBRID ENGLISH		USA
FKN	FKN	FRONTANA/KENYA 58//NEWTATCH		USA
FLK	FLICKER	WREN-MEX//CIANO 67 SIB/NOROESTE 66/3/ZAMBEZI	CM 8954	CIMMYT
FLN	FORLANI	VILLA GLORI/GRANO DEL MIRACOLO(TG)		ITALY
FN	FRONTANA	FRTR/MTA		BRAZIL
FRTR	FRONTIERA	POLYSSU/ALFREDO CHAVES 6.21		BRAZIL
FURY	FURY	FCR/Y50		KENYA
GB54	GABO 54	GB-AUS//KC9906/GU		MEXICO
GB55	GABO 55	T/K58//GB-AUS		MEXICO
GB56	GABO 56	GABO 55 SIB		MEXICO
GJO	GRAJO	TOB/CNO SIB//TOB/8156(R)/3/CAL//BB/CNO SIB	CM 5816	CIMMYT
GTO	GABOTO	BAGE 2018//H 44/SINVALOCHO/3/BAGE 1971.37		ARGENTINA
GU	GENERAL URQUIZA	38 M.A./KL SAN MARTIN		ARGENTINA
GUL	GULAR	WAGGA 13/SEL.MARSHALL'S NO 3		AUSTRALIA
GV	GAVILAN	CNO SIB/NO//CC//INIA66	CM 8399	CIMMYT
H44	H-44	HOPE SIB		USA
HUAR	HUAMANTLA ROJO	LEE/FN//KT52A		MEXICO
HN7	HEINES VII	HYBRIDE A COURTE PAILLE/KRONEN		GERMANY
H	HOPE	VERNAL EMMER(DM)/MARQUIS		USA
IAS55	ISSAUL 55	NOT KNOWN		BRAZIL
JAR	JARAL 66	SN64A//TZPP/NAI60	II 18889	MEXICO

Continued.....

Table 15: Continued

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	CROSS NO.	ORIGIN
JUP	JUPATECO F 73	II12300//LR64/8156/3/NOR	II 30842	MEXICO
K	KENYA	UNKNOWN KENYA CROSSBRED LINE		KENYA
K58	KENYA 58	RED EGYPTION/KENYA BF4.3B.10.V1		KENYA
K95	KENYA 95	NOT KNOWN		KENYA
K58F	KENYA 58F(L.1)	KENYA 58		KENYA
K73D	KENYA 73 D211C	KENYA STANDARD/KENYA 256		KENYA
K117A	KENYA 117A	MARQUIS/AGUILERA 8		KENYA
KBF4	KENYA BF4.3B.10.V.1	? HYBRID ORIGIN		KENYA
KGv	KENYA GOVERNOR	UNKNOWN		KENYA
KLO33	KLEIN 33	ARDITO/KLVC		ARGENTINA
KLAC	KLEIN ACERO	ARDITO/KLVC		ARGENTINA
KLCO	KLEIN COMETA	38BMA/KLAC		ARGENTINA
KLH33AG	KLEIN H33 AG	ARDITO/KLVC		ARGENTINA
KLPE	KLEIN PETISO	CHO/KLO33 SIB/3/KLVC/MQ//KLO33 SIB		ARGENTINA
KLVC	KLEIN VENCEDOR	BARLETA 7D/AMERICANO 44D		ARGENTINA
KR	KANRED	SEL. CRIMEAN (CI 1435)		USA
KT	KENTANA	KENYA C9906/MENTANA		MEXICO
KT48	KENTANA 48	KENTANA		MEXICO
KT52A	KENTANA 52A	KENTANA SIB		MEXICO
KT54	KENTANA 54	KC9906/MTA//RN		MEXICO
KT54B	KENTANA 54B	KENTANA 54 SIB		MEXICO
KVZ	KAVKAZ	LUTESCENS 314H 417/BEZOSTAJA 1		USSR
L52	LERMA 52	MTA*3/K324		MEXICO
LEE	LEE	H/GB-AUS		USA
LR	LERMA ROJO	LERMA 50/YAQUI 48//MARIO ESCOBAR*2/SUPREMO 211		MEXICO
MAS5	MASSAUX No.5	SCHOMA/MQ		ARGENTINA
MCM	MCMURRCHY	SEL. GARNET		USA
ME	MARIA ESCOBAR	UNKOWN		ARGENTINA
MENG	MENGAVI	GABO-AUS*6/MENTANA/3/GABO-AUS*2//EUREKA/CI 12632		AUSTRALIA
MI	MEDITERRANEAN	FROM MEDITERRANEAN REGION		USA
MIDA-U	MIDA	MERCURY/RL 625		USA
MRQ	MARROQUI	?LOCAL VARIETY		MOROCCO
MRQ588	MARROQUI 588	SEL.MARROQUI		MEXICO
MS-A	MARSHALLS' NO 3	SEL. WARD'S PROLIFIC/PURPLE STRAW		AUSTRALIA
MTA	MENTANA	REITI/WILHELMINE//AKAGOMUCHI		ITALY
MY48	MAYO 48	MARROQUI 588/NEWTACH		MEXICO

Continued.....

Table 15: Continued

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	CROSS NO.	ORIGIN
MY54	MAYO 54	E101/T//MY48		MEXICO
MY54E	MAYO 54E	MY54/N10B		MEXICO
MZ	MAZOE	GB-AUS/? OR GB-AUS/NATORAL		RHODASIA
N10B	NORIN 10/BREVOR	DARUMA/FULTZ//TURKEY RED/4/BREVON/ORO// FORTYFOLD/FEDERATION/3/ORO//TURKEY/FLORENCE		USA
NAD63	NADADORES M 63	PJ/2*Y54		MEXICO
NAFN	NAOFEN	PCHU/4/2*KT54A/N10B//KT54B/3/NAR59		CHILE
ND4	ND 4	TH/KF		USA
NAPO	NAPO 63	FCR//FN/Y48/3/NAR59 SIB		ECUADOR
NAR59	NARINO 59	FCR/MCM//KT48/Y48		COLOMBIA
NS 3880.277		LEE/MIDA-U		USA
NW	NAWABA	GLUYAS EARLY/BUNYIP		AUSTRALIA
OFN	OROFEN	Y48/KT48//FN		CHILE
ORLA	ORLANDI	SAITAMA 27//INALLETTABILE95/ARDITO		ITALY
ORZ	ORIZABA	CNO SIB/7C//CC/TOB	II 25918	MEXICO
P14	P 14	Y48/KT54//FN		CHILE
P4160E	P 4160E	NAINARI 60 ENANO		MEXICO
PATO	PATO	TZPP/SN64//NAR59	II 21974	CIMMYT
	PEL 1276.69	NOT KNOWN		BRAZIL
PCHU	PONCHEAU	SEL. LOCAL OF EAST FRANCE		FRANCE
PJN	PAJONAL	KL.H645.Y 48000/JUP//KAL/BB/6/CNO/BB/ GLL/4/167/3/S310/PI//LR//II80.47/5/CGL	CM 36090	CIMMYT
PL	PALOMA	PATO/3/LR64/SN64//NAPO	II 25499	CIMMYT
PLT	PILOT	BUNGE NO2/FLORENCE		AUSTRALIA
PN	PAWNEE	KAWVALE/TENMARQ		USA
PP-AUS	PURPLE STRAW	= ? RED STRAW		AUSTRALIA
PVN	PAVON F 76	VCM//CNO SIB/7C/3/KAL/BB	CM 9399	MEXICO
Q	QUERITARO	LOCAL FROM MEXICO		MEXICO
RAF	RAFAELA 6 MA	38 M.A./KLEIN MARTIN		ARGENTINA
RE	RED EGYPTIAN	NOT KNOWN		SOUTH AFRICA
RL6010	RL 6010	THATCHER*6/TRANSFER		CANADA
RNW	RENOWN	H 44/REWARD		CANADA
RON	ROBIN-M	JAR SIB/ZA75	II 26787	MEXICO
S948	S 948	LUNDI/S 723 A1 B2		ZIMBABWE
SCHOMA	SINVALOCHO MA	KL.SIN RIVAL/38 MA		ARGENTINA
SN64A	SONORA 64A	SEL. SONORA 64		MEXICO
SPO	SUPREMO	SUPRESA//HOPE/MEDITERANEAN		USA

Continued.....

Table 15: Continued

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	CROSS NO.	ORIGIN
SPO211	SUPREMO 211	SUPRESA//HOPE//MEDITERANEAN		USA
SPS	SURPRESA	POLYSSU/ALFREDO CHAVES 5.21		BRAZIL
SR	SARIC F 70	BLUEBIRD # 3	II 23584	MEXICO
STE	SANTA ELENA	SANTA CARTINA/THATCHER//FROCOR		ARGENTINA
T	TIMSTEIN	GABO-USA SIB		AUSTRALIA
TAC	TACAURI INTA	MAS6/GTO		ARGENTINA
TITO	TITO	CHR/VCM//KAL/BB	CM 8212	CIMMYT
TF	TRANSFER	T.DICOCCUM/AEGILOPS UMBELLULATA// CHINESE SPRING		USA
TT	TOM THUMB	SEL. TIBET LOCAL		TIBET
TZPP	TEZANOS PINTO PRECOZ	FN/TH//SCHOMA		ARGENTINA
V17	V 17	KALYANSONA SIB		MEXICO
VCM	VICAM 71	INIA SIB/NAPO	II 22398	MEXICO
WGL	WINGLEN	KENYA C6042/GULAR//WINTER MINFLOR/3/ CELEBRATION SIB		AUSTRALIA
WGL	WINGLEN	GULAR/KENYA C6402//WINTER MINFLOR/3/ CELEBRATION SIB		AUSTRALIA
WOP	WOOD PECKER	INIA66/NAPO//2*CAL/3/PV18/CNO	CM 15856	CIMMYT
WRM	WEIQUE/RED MACE	? WHEAT VARIETY/RYE 1B1R TRANSLOCATION// RED MACE		USA
WT	WILLET	FN/TH		USA
WTE	WILLET ENANO			MEXICO
WW15	WW 15	LR/N10B//3*ANE	II 8739	AUSTRALIA
Y	YAQUI	YAQUI		MEXICO
Y48	YAQUI 48	N/MRQ588		MEXICO
Y50	YAQUI 50	SEL.YAQUI 48		MEXICO
Y50E	YAQUI 50 ENANO	CH53/N10B//4*Y50		MEXICO
Y54	YAQUI 54	Y48//T/KC9906		MEXICO
ZA75	ZARAGOZA 75	MENG/8156	H 22364	MEXICO

Table 16: Abbreviations used for durum and emmer wheats in various tables but not explained so far

ABBR.	CULTIVAR/ADVANCED LINE	PEDIGREE /SYNONYM	ORIGIN
<u>DURUM WHEATS</u>			
AA	ANHINGA	TME/2*TC 60//3*ZENATI/BTL//WLS	CIMMYT
BTL	BOUTEILLE	MAHMOUDI/M'AARI	TUNISIA
BBAL	BUCK BALCARCE	CAPELLI/3/CANAD//CANAD/TAGANROG	ARGENTINA
BY	BARRIGON YAQUI	LOCAL T. TURGIDUM VARIETY FROM MEXICO	MEXICO
BYE	BARRIGON YAQUI ENANO	YT 54/N10B//BY	MEXICO
CR	CRANE	BY*2/TC 60//STW 63/3/ZENATI/BTL// WLS/4/GLLA SIB	CIMMYT
D#2E	DURO NO. 2 ENANO	NOT KNOWN	MEXICO
FGO	FLAMINGO	JO69 SIB/3/61.130/LDS//GALL SIB	CIMMYT
GARZA	GARZA	BYE*2/TC 60*2//ZENATI/BTL//WLS	CIMMYT
GLLA	GRULA	TME/2*TC 60/3/Z/B//WLS	CIMMYT
IU	IUMILLO	NOT KNOWN ; FROM MEDITERRANEAN	USA
JO69	JORI 69	BYE*2/TC 60//TAC 125E/3*TC 60	MEXICO
LD357	LANGDON 357	CARLETON/MINDUM//STEWART/3/NUGGET	USA
LDS	LEEDS	BR 180/WELLS; II 60-115	USA
LK	LAKOTA	SEN//LD 379/LD 357	USA
MOGHK	MOGHRABY EL KARAK	LOCAL VARIETY	TUNISIA
	NACHITSCHEVANICUM	BOTANICAL VARIETY OF T.TURGIDUM	
PLC	PELICANO	GLLA SIB//BYE*2/TC 60	CIMMYT
RAE	RASPINEGRO DE AGUILAS	NOT KNOWN	2MEXICO
	ENANO		
ST464	ST 464	LOCAL VARIETY	ETHIOPIA
STW	STEWART	MINDUM*2/VERNAL EMMER	USA
STW63	STEWART 63	ST 464/8*STEWART	CANADA
TC60	TEHUACAN 60	CARAVACA/LANGDON 357//CAPELLI	MEXICO
TCT	TACUR TIPO 125	IBERIAN DURUM	MEXICO
TCTE	TACUR TIPO 125 ENANO	YT54/N10B//TCT	MEXICO
TPT	TREMEZ PRETO	LOCAL VARIETY	PORTUGAL
TME	TREMEZ MOLLE ENANO	YT54/N10B//TML	MEXICO
TML	TREMEZ MOLLE	LOCAL VARIETY	PORTUGAL
WLS	WELLS	LAKOTA	USA
ZB	ZENATI BOUTEILLE	ZENATI/BOUTEILLE	ALGERIA
ZENATI	ZENATI	SELECTIN OF OUED ZENATI	ALGERIA
<u>EMMER WHEATS</u>			
VN	VERNAL EMMER	YAROSLAV EMMER ; LOCAL	RUSSIA
	VERNUN	?	?

Table 17 : Wheat growing zones as defined by the AICWIP and the States or the parts of the States covered by each

ORIGINAL & CURRENT*	ZONE CODES		STATES COVERED BY ZONE NAME	STATE CODE	AREA ENTIRE/PART
		REVISED**			
CZ	C		GUJARAT	GJ	SOUTH WEST
CZ	C		RAJASTHAN	RJ	SOUTH (KOTA & UDAIPUR DIVISIONS) (1)
CZ	C		UTTAR PRADESH	UP	SOUTH (JHANSI DIVISION)
CZ	C		MADHYA PRADESH	MP	ENTIRE EXCEPT (3) & (4)
CZ	SEZ		MADHYA PRADESH	MP	SOUTH & SOUTH EASTERN REGION (3)
CZ	NPZ		MADHYA PRADESH	MP	NORTH (GWALIOR, BHIND, MORENA DISTRICTS) (4)
CZ	NWZ		GUJARAT	GJ	NORTH EAST
NEPZ	FEZ		ARUNACHAL PRADESH	AR	ENTIRE
NEPZ	FEZ		ASSAM	AS	ENTIRE
NEPZ	FEZ		MEGHALAYA	MG	ENTIRE
NEPZ	FEZ		MIZORAM	MI	ENTIRE
NEPZ	FEZ		MANIPUR	MN	ENTIRE
NEPZ	FEZ		NAGALAND	NL	ENTIRE
NEPZ	FEZ		TRIPURA	TR	ENTIRE
NEPZ	FEZ		WEST BENGAL	WB	PLAINS
NEPZ	FEZ		BIHAR	BR	CHHOTANAGPUR REGION (5)
NEPZ	NEZ		BIHAR	BR	ENTIRE EXCEPT (5)
NEPZ	NEZ		UTTAR PRADESH	UP	EAST (EAST OF LINE CONNECTING ETAH & NAINITAL)
NEPZ	SEZ		ORISSA	OR	ENTIRE
NHZ	FEZ		SIKKIM	SI	ENTIRE
NHZ	FEZ		WEST BENGAL	WB	HILLS
NHZ	NH		HIMACHAL PRADESH	HP	ENTIRE EXCEPT (6)
NHZ	NH		JAMMU & KASHMIR	JK	ENTIRE EXCEPT (7)
NHZ	NH		UTTAR PRADESH	UP	HILLS (GARHWAL & KUMAON DIVISIONS)
NWPZ	NPZ		DELHI	DL	ENTIRE
NWPZ	NPZ		HARYANA	HA	EAST
NWPZ	NPZ		HIMACHAL PRADESH	HP	FOOT HILLS (UNA DISTRICT & PAONTA VALLEY) (6)
NWPZ	NPZ		JAMMU & KASHMIR	JK	FOOT HILLS (JAMMU) (7)
NWPZ	NPZ		PUNJAB	PB	ENTIRE
NWPZ	NPZ		RAJASTHAN	RJ	NORTH EAST (ALWAR, SRIGANGANAGAR & BHARATPUR DISTRICTS) (2)
NWPZ	NPZ		UTTAR PRADESH	UP	WEST (WEST OF LINE CONNECTING ETAH & NAINITAL)
NWPZ	NWZ		HARYANA	HA	WEST
NWPZ	NWZ		RAJASTHAN	RJ	ENTIRE EXCEPT (1) & (2)
PZ	P		ANDHRA PRADESH	AP	WEST
PZ	P		KARNATKA	KT	ENTIRE
PZ	P		TAMIL NADU	TN	PLAINS
PZ	P		MAHARASHTRA	MH	WEST
PZ	SEZ		MAHARASHTRA	MH	EAST (BHANDARA & CHANDRAPUR DISTRICTS)
PZ	SEZ		ANDHRA PRADESH	AP	EAST (COASTAL AREA)
SHZ***	SHZ		TAMIL NADU	TN	HILLS

* EFFECTIVE 1961-1962 to 1977-78 AND FROM 1988-89 AND ONWARDS

** EFFECTIVE 1978-79 TO 1987-88

*** EFFECTIVE 1975

Table 18 : Explanation of codes used for zones and production conditions

ZONES CODE	EXPLANATION	PRODUCTION CONDITIONS CODE	EXPLANATION
C	CENTRAL ZONE (R)	I	WELL WATERED ; HIGH SOIL FERTILITY
CZ	CENTRAL ZONE (O&C)	IL	LIMITED IRRIGATION ; MODERATE SOIL FERTILITY
FEZ	FAR EASTERN ZONE	R	RAINFED ; LOW SOIL FERTILIYY
NEZ	NORTH EASTERN ZONE (R)	ES	EARLY SOWN
NEPZ	NORTH EASTERN PLAINS ZONE (O&C)	TS	TIMELY SOWN
NH	NORTHERN HILLS ZONE (R)	LS	LATE SOWN
NHZ	NORTHERN HILLS ZONE (O&C)	VLS	VERY LATE SOWN
NPZ	NORTHERN PLAINS ZONE	HH	WINTER SOWN HIGH ALTITUDE (ABOVE 1500 masl) AREAS
NWZ	NORTH WESTERN PLAINS ZONE (R)	L-M	LOW TO MEDIUM ALTITUDE (500-1500 masl)
NWPZ	NORTH WESTERN PLAINS ZONE (O&C)	E	EAST
P	PENINSULAR ZONE (R)	W	WEST
PZ	PENINSULAR ZONE (O&C)	IND	INDIA
SEZ	SOUTH EASTERN ZONE	EX	EXCLUDING
SHZ	SOUTHERN HILLS ZONE	N	NORTH
		SS	SALINE -SODIC SOILS

R = REVISED, O&C = ORIGINAL & CURRENT

Table 19 : Codes used for various institutions and wheat research centres

INSTITUTION/ORGANIZATION		CENTRE		STATE	
CODE	Name	CODE	NAME	CODE	NAME
NATIONAL ORGANIZATIONS					
AICWIP	All India Coordinated Wheat Improvement Project	KR	Karnal	HA	Haryana
BHU	Banaras Hindu University	VN	Varanasi	UP	Uttar Pradesh
CSSRI	Central Soil Salinity Research Institute	KR	Karnal	HA	Haryana
CSUAT	C.S. University of Agriculture & Technology	KP	Kanpur	UP	Uttar Pradesh
DBR	Department of Agriculture, Bihar	SB	Sabour	BR	Bihar
DBO	Department of Agriculture, Bombay (U.I.)	NI	Niphad	BO	Bombay
DCP	Department of Agriculture, Central Provinces & Berar (U.I.)	AK	Akola	CP	Central Provinces
DKT	Department of Agriculture, Karnataka	BP	Bijapur	KT	Karnataka
DKT	Department of Agriculture, Karnataka	DR	Dharwad	KT	Karnataka
DKT	Department of Agriculture, Karnataka	AN	Annigeri	KT	Karnataka
DMH	Department of Agriculture, Hyderabad (U.I.)	BD	Badnapur	HY	Hyderabad
DMH	Department of Agriculture, Maharashtra	NI	Niphad	MH	Maharashtra
DMP	Department of Agriculture, Madhya Pradesh	PK	Powarkheda	MP	Madhya Pradesh
DPB	Department of Agriculture, Punjab	JL	Jalandhar	PB	Punjab
DRJ	Department of Agriculture, Rajasthan	DP	Durgapura	RJ	Rajasthan
DUP	Department of Agriculture, Uttar Pradesh (United Provinces of U.I.)	KP	Kanpur	UP	Uttar Pradesh
DUPB	Department of Agriculture, Punjab (U.I.)	LY	Lyallpur	UPB	Undivided Punjab
DUPB	Department of Agriculture, Punjab (U.I.)	JL	Jalandhar	PB	Undivided Punjab
DWB	Dept. of Agriculture, West Bengal	BN	Burdwan	WB	West Bengal
DWB	Dept. of Agriculture, West Bengal	MA	Malda	WB	West Bengal
GAU	Gujarat Agricultural University	AR	Arnej	GJ	Gujarat
GAU	Gujarat Agricultural University	JG	Junagadh	GJ	Gujarat
GAU	Gujarat Agricultural University	VP	Vijapur	GJ	Gujarat
GBPUAT	G.B. Pant University of Agriculture & Technology	PN	Pantnagar	UP	Uttar Pradesh
HAU	CCS Haryana Agricultural University	HR	Hisar	HA	Haryana
HPKV	Himachal Pradesh Krishi Vidyapeeth	BJ	Bajaura	HP	Himachal Pradesh
IARI	Indian (Imperial) Agricultural Research Institute	BH	Bhowali	UP	Uttar Pradesh
IARI	Indian (Imperial) Agricultural Research Institute	DL	Delhi	NT	National Capital territory
IARI	Indian (Imperial) Agricultural Research Institute	ID	Indore	MP	Madhya Pradesh
IARI	Indian (Imperial) Agricultural Research Institute	PU	Pusa	BR	Bihar
IARI	Indian (Imperial) Agricultural Research Institute	SM	Shimla	HP	Himachal Pradesh
IARI	Indian (Imperial) Agricultural Research Institute	WD*	Delhi	UT	Union Territory
IARI	Indian (Imperial) Agricultural Research Institute	WN	Wellington	TN	Tamil Nadu
IPI	Institute of Plant Industry	IP	Indore	MP	Madhya Pradesh
JNKVV	J.N. Krishi Vishwa Vidyalaya	JP	Jabalpur	MP	Madhya Pradesh
JNKVV	J.N. Krishi Vishwa Vidyalaya	PK	Powarkheda	MP	Madhya Pradesh
LB	Lok Bharti	SR	Sansora	GJ	Gujarat
MACS	Maharashtra Association for Cultivation of Science	PE	Pune	MH	Maharashtra
MKV	Marathwada Krishi Vidyapeeth	BD	Badnapur	MH	Maharashtra
MKV	Marathwada Krishi Vidyapeeth	PR	Parbhani	MH	Maharashtra
MPKV	Mahatma Phule Krishi Vidyapeeth	NI	Niphad	MH	Maharashtra
OAU	Orissa Agricultural University	CM	Chiplima	OR	Orissa
PAU	Punjab Agricultural University	GP	Gurdaspur	PB	Punjab
PAU	Punjab Agricultural University	LD	Ludhiana	PB	Punjab

Continued...

Table 19: Continued

INSTITUTION/ORGANIZATION		CENTRE		STATE	
CODE	Name	CODE	NAME	CODE	NAME
PKV	Punjab Rao Krishi Vidyapeeth	AK	Akola	MH	Maharashtra
RAU	Rajendra Agricultural University	PT	Patna	BR	Bihar
RJAU	Rajasthan Agricultural University	DP	Durgapura	RJ	Rajasthan
RJAU	Rajasthan Agricultural University	KT	Kota	RJ	Rajasthan
UAS	University of Agricultural Sciences	AN	Annigeri	KT	Karnataka
UAS	University of Agricultural Sciences	DH	Dharwad	KT	Karnataka
VPKAS	Vivekanand Parvatiya Krishi Anusandhan Shala	AL	Almora	UP	Uttar Pradesh
INTERNATIONAL ORGANIZATIONS				COUNTRY	
ICARDA	International Center for Agricultural Research in the Dry Areas	ALP	Alleppo	SYR	Syria
CIMMYT	International Maize and Wheat Improvement Center	MEX	Mexico	MEX	Mexico

U.I. = UNDIVIDED INDIA

* NOW AN INDEPENDENT ORGANIZATION : DIRECTORATE OF WHEAT RESEARCH (ICAR) , KARNAL, HARYANA

Table 20: Prefixes assigned against numbers to advanced lines by various wheat research centres

CENTRE	CODE		PREFIXES
	CENTRE	STATE	
AKOLA	AK	MH	A , AKW
ALMORA	AL	UP	VL
ANNIGERI	AN	KT	F , Ann
ARNEJ	AR	GJ	A
BADNAPUR	BD	MH	BDN , PW
BAJAURA	BJ	HP	HPW
BHOWALI	BH	UP	HB , NP
BIJAPUR	BP	KT	BJ
BURDWAN	BN	WB	BW
CHIMPLIM	CM	OR	ORW
DELHI	DL	UT	DL , HD , HDR , NP
DELHI (WD)	WD	UT	CC , CPAN , IWP , MLKS
DHARWAD	DH	KT	KDW , DWR
DURGAPURA	DP	RJ	D , EA , RS , RAJ
GURDASPUR	GP	PB	PBW , PDW , WG
HISAR	HR	HR	WH
INDORE (IPI)	IP	MP	EKDANIA
INDORE (IARI)	ID	MP	HI , NP
JABALPUR	JP	MP	JNK
JALANDHAR	JL	PB	C
JUNAGADH	JG	GJ	GW , J , JU
KANPUR	KP	UP	C , K
KARNAL	KR	HA	KRL
KOTA	KT	RJ	RAJ
LUDHIANA	LD	PB	PBW , PDW , WL , DWL , KSML , SKML
LYALLPUR	LY	*	C
MALDA	MA	WB	BW
NIPHAD	NI	MH	KCN , MHD , N , NI
PANTNAGAR	PN	UP	UP
PALAMPUR	PP	HP	HPW
PARBHANI	PR	MH	PBN
PATNA	PT	BR	BR , RW
POWARKHEDA	PK	MP	HY , HYB , PKD , MP , MPO
PUNE	PE	MH	MACS
PUSA (IARI)	PU	BR	HP , PUSA , NP
SABOUR	SB	BR	BR , WR
SANSORA	SR	GJ	LQK
SHIMLA	SM	HP	H\$, NP
VARANASI	VN	UP	HUW
VIJAPUR	VP	GJ	V , VW , GW
WELLINGTON	WN	TN	HW , NP

* NOW IN PAKISTAN.

Table 21 : Codes, prefixes, symbols, accession numbers, etc. used in various tables but not explained so far

CODE/ SYMBOL	EXPLANATION	CODE/ SYMBOL	EXPLANATION
IF	Prefix before cross number by Minnesota, Colombia, Chile & Mexico	JWJ	Jawahar Lal University Wheat, Jabbaipore
(BC)	Backcross	K	Kanpur
(DM)	Triticum dicoccum	KATHIA	Hard red or amber grained durum
(DR)	Triticum durum	KCN	Kenya-Niphad lines cross derivative
(POL)	Triticum polonicum	KDW	Karnataka Dharwad wheat
(TG)	Triticum turgidum	KENPHAD	Kenya-Niphad lines cross derivative
-DM	Triticum dicoccum	KL	Klein
-DR	Triticum durum	KML	Kalyansona multilene
-POL	Triticum polonicum	KRL	Karnal
A	Akola	KSML	Kalyansona multilene
A	Arnej	LAL KUSURWALA	Local name for red awn or chaff
AKW	Akola wheat	LOK	Lok Bharti
BANSI	Durum wheat with smooth glumes and high grade amber grains	MACS	Maharashtra Association for Cultivation of Science
BAXI	Durum wheat with felted glumes and high grade amber grains	MALVI	Local durum wheat of Malwa (Central India) region
RDN	Badnapur	MALAVIYA	Malaviya Hindu University
BR	Bihar	MHD	Mondhya-Hofed cross derivative
BW	Bengal Wheat	MLKS	Multiline Kalyansona
C	Cawnpore	MONDHYA	Land race of Deccan region
C	Cross (used by Deptt. of Agriculture, Punjab)	MP	Madhya Pradesh
CA	Prefix used before advanced line, Durgapura Centre	MPO	Madhya Pradesh Durum
CC	Coordinating Centre	MUNDI	Local name for awnless
CM	CIMMYT, Mexico	MUNDIYA	Local name for awnless
CPAN	Coordinated Project Accession Number	N	Niphad
D	Prefix used before durum cross no. by CIMMYT	NI	Niphad
D	Durgapura	NP	New Pusa
DL	Delhi	OW	Orissa wheat
DWL	Durum wheat Ludhiana	PBN	Parbhani
DWR	Dharwad	PBW	Punjab wheat
E	Accession no. given to foreign wheats by IARI	PDW	Punjab durum wheat
EA	Prefix used before advanced line, Durgapura Centre	PISSI	Local name for soft-grained wheat
EKDANIA	Durum grain of uniform colour and size	PK	Pakistan
EX	Accession no. given to foreign wheats by Powarkheda	PKD	Powarkheda
F	Prefix used by Annigeri Centre	POTIA	Local name for wheat grain with mottling tendency
GAUW	Gujarat Agricultural University Wheat	PUSA	Pusa (Bihar)
GW	Gujarat Wheat	PV	Punjab variety
HAURA	Local name for hard, yellow coloured grains of durum wheat of Nagpur-Wardha Plains	PW	Parbhani wheat
HD	Hybrid Delhi	RAJ	Rajasthan
HDR	Hybrid Delhi Rainfed	RL	Rust Laboratory, Canada
HI	Hybrid Indore	RR	Rust Resistant Line
HP	Hybrid Pusa	RW	Rajendra Agricultural University wheat
HPW	Himachal Pradesh wheat	SKML	Sonalika multilene
HS	Hybrid Shimla	SUKHARAJ PISSI	Local name for soft, red grained bread wheat
HUW	Hindu University Wheat	S	Sample No. from Mexico
HW	Hybrid Wellington	SE	Spring Wheat Agean, Turkey
HY	Hybrid; used by Powarkheda centre	SWM	Spring x winter cross Mexico
HYB	Hybrid; used by Powarkheda centre	TYPE	Prefix for distinct types selected from land races
IP	Imperial Pusa	V	Vijapur
IWP	Indian Wheat Programme	VL	Vivekananda Laboratory
J	Junagadh bread wheat	VW	Vijapur Wheat
JNK	Jawahar Lal Nehru Krishi Vidyalaya	WG	Wheat Gurdaspur
JU	Junagadh durum wheat	WH	Wheat Hisar
		WL	Wheat Ludhiana

Table 22: Continued

CULTIVAR/LINE/SYNONYM			CULTIVAR/LINE/SYNONYM			CULTIVAR/LINE/SYNONYM		
TABLE			TABLE			TABLE		
ABBR.	NAME	NO.	ABBR.	NAME	NO.	ABBR.	NAME	NO.
C273	C 273	1,14	CNO79	CIANO T 79	12	E144	E 144	11
C281	C 281	1,14	COFN	COLLAFEN	15	E145	E 145	11
C285	C 285	1	CORD3	CORDILLERA 3	9	E220	E 220	11
C286	C 286	1	COW	COWBIRD	12	E1913	E 1913	11
C303	C 303	10	CPAN 1507	11	E1951	E 1951	11	
C306	C 306	3,13	CPAN 1582	11	E4717	E 4717	11	
C516	C 516	10	CPAN 1666	11	E4853	E 4853	11	
C518	C 518	1,14	CPAN 1676	3	E4870	E 4870	11	
C591	C 591	1,14	CPAN 1796	3,8,9	E4871	E 4871	11	
C10854	KENYA C 10854	11	CPAN 1861	11	E4894	E 4894	11	
CA82	CA 82	3	CPAN 3004	3	E5165	E 5165	11	
CAL	CALIDAD	15	CQT	CINQUENTENARIO	15	E5477	E 5477	11
CAMDEN	CAMDEN	12	CRLY	CARLYLE	12	E5550	E 5550	11
CARB	CARBINE	12	CSK3	CZECHOSLOVAKIA 3	11	E5553	E 5553	11
CART	CARTHAYA	9	CSTR	CASTOR	12	E5557	E 5557	11
CBBK	COMEBACK	12	CTE	CHARTER	11	E5573	E 5573	11
CBL65	CHAMBAL 65	3	CTFN	CENTRIFEN	15	E5868	E 5868	11
CC	CORRECAMINOS	9	CTR	CENTENARIO	15	E6056	E 6056	11
CC464	CC 464	3,8,9	D134	D 134	3,13	E6160	E 6160	11
CDL	CARDINAL	15	D6301	D 6301	15	E6254	E 6254	11
CGN	CIGUENA	15	DA491	DA 491	3	E6360	E 6360	11
CH53	CHAMPANGO 53	15	DASHEN	DASHEN	9	E8841	E 8841	11
CHA	CHANATE	11	DBRA	DEBEIRA	7,9		EA 222-1	3
CHAT	CHAT	9	DG65	DURGAPURA 65	3,14	EB76	EB 76	10
CHL	CHHOTI LERMA	3,8,9	DGEHUN	DOWNY GEHUN	12	ECAR	ESTANZUELA CARDENA	9
CHR	CHRIS	11		DL 153-2	3	EG953	EG 953	11
CHNW	CHINESE WHITE	11		DL 784-3	3	EMU	EMU	15
CJ	CAJEME F 71	9	DMN1	DARULAMAN 1	7	EX	EXCHANGE	15
CJ54	CAJEME 54	15	DO	DEMOCRAT	11	EX30	EX 30	11
CJ60	CAJEME 60	11	DRIGA	DOWNY RIGA	12	EX61	EX 61	11
CKR	CHUKAR	12	DRNA	DESHRATNA	3	EX73	EX 73	11
CLY	CONLEY	15	DWR16	DWR 16	3	FALAT	FALAT	9
CM16780	CM16780	11	DWR39	DWR 39	3	FAO106-68R	FAO 106-68R	11
CMPD	CAMPODORO	15	DWR162	DWR 162	3,8,9	FCR	FROCOR	11
CNO	CIANO T 67	11	E101	EGYPT NA 101	15	FKN	FKN	15

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Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
FLK	FLICKER	15	GW120	GW 120	3,8
FLN	FORLANI	15	GW173	GW 173	3
FN	FRONTANA	15	GW190	GW 190	3
FOREST	FOREST	12	GW405	GW 405	3,8,14
FOX	FOX	12	GW496	GW 496	3,14
FR	FEDERATION	1,6	GW503	GW 503	3,13
FRASER	FRASER	12	GWB	GWEBI	9
FRTR	FRONTIERA	15	GZ7	GIZA 7	12
FTV	FESTIVAL	12	GZ121	GIZA 121	12
FURY	FURY	15	GZ125	GZ 125	12
GAGE	GAGE	11	GZ139	GZ 139	12
GAYN	GAYNDAH	12	GZ141	GZ 141	12
GB-AUS	GABO	1,6	GZ145	GZ 145	12
GB54	GABO 54	15	GZ146	GZ 146	12
GB55	GABO 55	15	GZ147	GIZA 147	12
GB56	GB 56	15	H	HOPE	15
GCYA	GICINYA	9	H7	H 7-2	3
GEN	GENARO T 81	9	H41.2	H 41.2	11
GIRIJA	GIRIJA	3,13	H41.3	H 41.3	11
GLEN	GLENNSON M 81	9	H44	H-44	15
GHURKA	GHURKA	12	HAYR	HAYRICK	12
GJO	GRAJO	15	HB50	HB(M) 65-50	11
GLL	GALLO	11	HB208	HB 208	3,13
GMT0	GAMTOOS	9	HD832	HD 832	10
GNSR	GANGA SONAHERI	3,14	HD845	HD 845	10
GOL	GOLAN	7,9	HD1220	HD 1220	7
GRV	GREEN VALLEY	7,9	HD1467	HD 1467	3
GTO	GABOTO	15	HD1508	HD(M)1508	11
GU	GENERAL URQUIZA	15	HD1553	HD 1553	3
GUL	GULAR	15	HD1592	HD 1592	11
GV	GAVILAN	15	HD1593	HD 1593	3
GW10	GAUW 10	3	HD1696	HD 1696	10
GW18	GW 18	3	HD1742	HD 1742	10
GW40	GW 40	3,8,14	HD1912	HD 1912	11
GW89	GW 89	3,13	HD1925	HD 1925	3
HD1931	HD 1931	11	HD1941	HD 1941	3
HD1949	HD 1949	3	HD1954	HD 1954	11
HD1960	HD 1960	10	HD1962	HD 1962	10,14
HD1963	HD 1963	11	HD1981	HD 1981	3
HD1982	HD 1982	3,7	HD1999	HD 1999	7,8
HD2009	HD 2009	3,7	HD2092	HD 2092	11
HD2119	HD 2119	11	HD2120	HD 2120	10
HD2122	HD 2122	10	HD2135	HD 2135	3,13
HD2136	HD 2136	10	HD2137	HD 2137	10,14
HD2160	HD 2160	10	HD2162	HD 2162	10
HD2170	HD 2170	10	HD2177	HD 2177	3,13
HD2186	HD 2186	10	HD2189	HD 2189	3,9,13
HD2195	HD 2195	10	HD2204	HD 2204	3,7,9,13
HD2206	HD 2206	10	HD2236	HD 2236	3
HD2252	HD 2252	10	HD2255	HD 2255	10
HD2257	HD 2257	10	HD2258	HD 2258	10
HD2267	HD 2267	10	HD2281	HD 2281	3,13
HD2285	HD 2285	3,13			

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Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
HD2307	3	HS277	3,8	INDEXA	12
HD2327	3,14	HS295	3,8,9	INIA66	9
HD2329	3,13		3	INIA66R	9
HD2380	3,9,13		3	INQ94	12
HD2402	3,13	HUAR	15	IP4	1
HD2428	3	HUW12	3	IP12	1
HD2501	3	HUW37	3	IP52	1
HDEK	10	HUW55	3	IP80	1
HDR77	3	HUW202	10	IP100	1
HF	11	HUW206	3	IP101	1
HFD	11	HUW213	3	IP111	1
HI385	3	HUW234	3,13	IP114	1
HI535	10	HUW318	3,13	IP120	1
HI617	3	HW517	3,8	IP125	1
HI784	3	HW657	3,8	IP165	1
HI977	3,8	HW741	3,8	IWP19	5,13
HI1077	3	HY1	10	IWP72	3,13
HIN62	12	HY5	1	IWP87	5,13
HIN144	12	HY8	1	IWP124	5
HIND	12	HY11	1,4	IWP127	5
HIRA	3,13	HY12	1	IWP129	5,13
HLN	9	HY25	1	IWP139	5,13
HMA	9	HY38	1	IWP143	5,13
HN7	12	HY65	1,13	J1	3
HP1102	3,8	HY278	1,13	J18	3
HP1209	3,9,13	HY633	3,13	J24	3
HP1493	3,13	HYB 11	1	J40	3
HP1633	3	HYB 65	1	J142	11
HPW42	3,8	HYB 277	1	J405	3
HR	12	HYB633	3,13	J496	3
HRR-M	12	IA47	9	J503	3
HS19	10	IAC289	9	JACKAL	7
HS86	3,13	IAS55	15	JANAK	3,7,9,13
HS207	3,8,9	IKING	12	JAR	15
HS240	3,8,13	IND66	9	JPLC	10
				JARAL 66	
				JAIPUR LOCAL	

Continued.....

Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
JN JUSTIN	11	KANC KANCHAN	7	KST KHAPSTEIN	12
JONA JONATHAN	12	KASA KASARWALI	12	KSV23 KRASNOVODOPA-	12
JUDY JUDY	12	KB256G KENYA B 256G	11	DSKAJ A23	
JUP JUPATECO F 73	15	KBF4 KENYA BF4.3B.10.V.	15	KSV28 KRASNOVODOPA-	12
K KENYA	15	KC9906 KENYA C 9906	11	DSKAJ A28	
K13 K 13	1	KCN133 KCN 133	1	KT KENTANA	15
K46 K 46	1	KCN179 KCN 179	1	KT48 KENTANA 48	15
K53 K 53	1	KDW16 KDW 16	3	KT52A KENTANA 52A	15
K54 K 54	1	KF KENYA FARMER	11	KT54 KENTANA 54	15
K58 KENYA 58F(L.1)	11	KGv KENYA GOVERNOR	15	KT54B KENTANA 54B	15
K65 K 65	1	KH65 KHARCHIA 65	3	KUNDAN KUNDAN	3
K68 K 68	3	KHLC KHARCHIA LOCAL	10	KVZ KAVKAZ	15
K72 K 72	3	KIRBY KIRBY	11	L52 LERMA 52	15
K78 K 78	3	KIRBY KIRBY	12	LA1417 LA 1417	11
K88 K88	3	KL033 KLEIN 33	15	LALB LAL BAHADUR	3
K95 KENYA 95	15	KLAC KLEIN ACERO	15	LANG LANGSHAN	12
K117A KENYA 117A	15	KLCO KLEIN COMETA	15	LCMU LOCAL MUNDIA	10
K338AC KENYA 338AC.2E.2	11	KLH33AG KLEIN H33AG	15	LCMUP LOCAL MUNDI PISSI	10
K73D KENYA 73 D211C	15	KLPE KLEIN PETISO	15	LEE LEE	15
K812 K 812	11	KLRE KLEIN RENDIDOR	11	LIMA1 LIMA 1	9
K816 K 816	3,8,9	KLSH KAILASH	3	LKASA LALKASARWALI	12
K818 K 818	11	KLVC KLEIN VENCEDOR	15	LKT LAKETCH	9
K852 K 852	3,8,9	KML 7046	3,5	LOK1 LOK 1	3
K7229 K 7229	3	KNS KONONSO	11	LR LERMA ROJO	15
K7401 K 7401	10	KOEL KOEL	12	LR64 LERMA ROJO 64	3,6
K7410 K 7410	3	KPD25 KENPHAD 25	1,13	LR64A LERMA ROJO 64A	11
K7827 K 7827	3	KPD28 KENPHAD 28	1	LRE LOERIE	9
K8020 K 8020	3	KPD39 KENPHAD 39	1	LRI LAS ROSAS INTA	12
K8027 K 8027	3	KPV K-POORVI	3,13	LUMB LUMBINI	8,9
K8804 K 8804	3	KR KANRED	15	MACS 2496	3,8,9
K8962 K 8962	3	KRL1-4 KRL 4-1	3	MAHDI MAHDI	12
KAALI KAAL INDIA	12	KRT KEERTHI	3,14	MAS5 MASSAUX NO 5	15
KAL KALYANSONA	3,7,8,9	KSML3 KSML 3	3,5	MAV12 MALAVIYA 12	3,13
KAL227 KALYAN 227	3,8,9	KSP KSHIPRA	3,13	MAV37 MALAVIYA 37	3

Continued.....

Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
MAV55 MALAVIYA 55	3,14	MY54E MAYO 54 ENANO	15	NOBO NOBO INIA	9
MAV206 MALAVIYA 206	3,8,9	MZ MAZOE	15	NOR NORTENO 67	9
MAV213 MALAVIYA 213	3	MZ*3/YT54/N10B/3/-	11	NP4 NP 4	1,7
MAYA MAYA 74	11	N NEWTHACH	11	NP6 NP 6	10
MCM MCMURACHY	15	N10B NORIN 10/BREVOR	15	NP12 NP 12	1
MDY3 MONDHYA 3-2	1	N179 N 179	1	NP22 NP 22	10
MDY417 MONDHYA 417	10	N345 N 345	1,7	NP52 NP 52	1
ME MARIA ESCOBAR	15	N917 N 917	3	NP80 NP 80-5	1
MEI MEISE	12	N8223 N 8223	3	NP100 NP 100	1
MENG MENGAVI	15	NABOB NABOB	12	NP101 NP 101	1
MERLIN MERLIN	12	NAD63 NADADORES M 63	15	NP111 NP 111	1
MEW MILLEWA	11	NAFN NAOFEN	15	NP114 NP 114	1
MGLA MANGALA	3,8	NAI60 NAINARI 60	11	NP120 NP 120	1
MGR MAGHAR	3,13	NAPO NAPO 63	15	NP125 NP 125	1
MHD177 MHD 177	1	NAR59 NARINO 59	15	NP165 NP 165	1
MHD345 MHD 345	1	NATA NATA	9	NP710 NP 710	1
MHR MIVHOR 177	9	ND4 ND 4	15	NP715 NP 715	1
MI MEDITERRANEAN	15	NGR64 NANGERHAR-64	7,9	NP718 NP 718	1
MIDA-U MIDA	15	NI4 NIPHAD 4	1	NP720 NP 720	1
MLI MILLALEAU INIA	9	NI177 NI 177	1	NP721 NP 721	1
MLKS11 MLKS 11	3,5	NI179 NI 179	1	NP728 NP 728	1
MNWH MUZAFFARNAGAR WHITE	10	NI284 NI 284-5	10	NP737 NP 737	1
MOTI MOTI	3,13	NI345 NI 345	1	NP745 NP 745	1
MP267 MP 267	3	NI747 NI 747-19	3,14	NP755 NP 755	1
MQ MARQUIS	12,15	NI917 NI 917	3,13	NP758 NP 758	1
MRQ MARROQUI	12	NI5439 NI 5439	3	NP760 NP 760	1
MRQ588 MARROQUI 588	15	NI5643 NI 5643	3,13	NP761 NP 761	1
MS-A MARSHALL'S NO 3	15	NIZAM NIZAM	12	NP770 NP 770	1
MTA MENTANA	15	NKT NEELKANT	12	NP771 NP 771	1
MUKTA MUKTA	3,7,9,13	NL30 NEPAL 30	7,13	NP773 NP 773	10
MUS MUSALA	11	NL251 NEPAL 251	7	NP775 NP 775	1
MWH MONYWA WHITE	7	NL297 NEPAL 297	7,13	NP781 NP 781	1
MXP MEXIPAK	9	NL459 NEPAL 459	9	NP790 NP 790	10
MY48 MAYO 48	15	NLG NILGIRI	3	NP792 NP 792	1,13
MY54 MAYO 54	15	NO NOROESTE 66	9	NP797 NP 797	1

Continued.....

Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
NP798 NP 798	1,7	ORZ ORIZABA	15	PIK PIRSABAK 85	9
NP799 NP 799	1	OW6 OW 6	3	PJ PENJAMO 62	9
NP801 NP 801	1,13	OW801 OW 801-3	3	PJN PAJONAL	15
NP809 NP 809	1	P14 P 14	15	PL PALOMA	15
NP818 NP 818	3,14	P19 P 19	10	PLT PILOT	15
NP823 NP 823	1	P46 P 46	11	PN PAWNEE	15
NP824 NP 824	1,13	P4160E P 4160 ENANO	15	PP-AUS PURPLE STRAW	15
NP825 NP 825	1	P4270 P 4270	11	PPSA PURPLE STEM	12
NP829 NP 829	1	PAK81 PAKISTAN 81	9	PTP PRATAP	3,7,9,13
NP830 NP 830	1	PARI PARI 73	9	PTZ PARTIZANKA	11
NP832 NP 832	1,13	PARSEE PARSEE	12	PU4 PUSA 4	1,7
NP835 NP 835	1	PATO PATO	15	PU12 PUSA 12	1,7
NP836 NP 836	1	PBLI PURBALI	3,8,9	PU52 PUSA 52	1
NP839 NP 839	3	PBN51 PBN 51	3,8	PU80 PUSA 80-5	1
NP842 NP 842	10	PBN142 PBN 142	3,8	PU100 PUSA 100	1
NP846 NP 846	3	PBR PROBRED	9	PU101 PUSA 101	1
NP852 NP 852	3,14	PBW12 PBW 12	3	PU111 PUSA 111	1,7
NP875 NP 875	10	PBW54 PBW 54	3	PU114 PUSA 114	1
NP876 NP 876	10	PBW65 PBW 65	3,13	PU120 PUSA 120	1
NP880 NP 880	10	PBW120 PBW 120	3	PU125 PUSA 125	1
NP884 NP 884	3,13	PBW138 PBW 138	3	PU165 PUSA 165	1
NP887 NP 887	10	PBW154 PBW 154	3	PUF PUSA FLORENCE 380	12
NP890 NP 890	1	PBW175 PBW 175	3,13	PUGLU PUGLU	12
NR NURI 70	9	PBW222 PBW 222	3	PUL PUSA LERMA	3
NRB4 NARBADA 4	3,13	PBW226 PBW 226	3,13	PUNCH PUNCH	12
NRM112 NARMADA 112	3	PBW299 PBW 299	3	PUNO PUNO	12
NRM195 NARMADA 195	3	PCHU PONCHEAU	15	PUORA PUORA	12
NS 3880.277	15	PDV1 PADOVA I	1,6	PUSEAS PUSEAS	12
NW NABAWA	15	PDV2 PADOVA II	1,6	PV18 PV 18	3,8,13
OC OCEPAR 18	9	PEAK PEAK	9	PVN PAVON F 76	15
OFN OROFEN	15	PEL 1276.69	15	PVT PARVATI	3,13
ON OLESON'S DWARF	11	PFR PUMAFLO	12	PW5 PW 5	1
OPQ ICTA OLINTEPEQUE	' 9	PGC PARAGUACU	12	PW12 PW 12	1
ORION ORION	12	PHRAE 60	7	Q QUERETARO	15
ORLA ORLANDI	15	PGTI PRAGATI	3,14	QUM QUIMORI 79	9

Continued.....

Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
R253 R 253	9	RW346 RW 346	3	SKA SONALIKA	3,7,8,9,14
RAF RAFAELA 6MA	15	RW3016 RW 3016	3	SKH8 SAKHA 8	9
RAJ821 RAJ 821	3,13	S227 S 227	3,7,8	SKML1 SKML 1	3,5
RAJ842 RAJ 842	11	S307 S 307	3	SL SAFED LERMA	3,7,8
RAJ848 RAJ 848	11	S308 S 308	3,8	SLJ SHAILJA	3,13
RAJ1114 RAJ1114	3	S310 S 310	11	SLTR85 SALTER'S 85	12
RAJ1464 RAJ1464	10	S311 S 311	11	SMG1 SAMOENG 1	9
RAJ1482 RAJ 1482	3,8,9	S326 S 326	11	SMG2 SAMOENG 2	9
RAJ1802 RAJ 1802	10	S331 S 331	3,8	SMR SIDI MISRI 1	9
RAJ1972 RAJ 1972	3,13	S339 S 339	11	SN63 SONORA 63	11,15
RAJ2184 RAJ 2184	3,13	S503 S 503	11	SN64 SONORA 64	3,6,9
RAJ3077 RAJ 3077	3,13	S738 S 738	11	SN64A SONORA 64A	15
RAJAH RAJAH	12	S948 S 948	15	SONA227 SONA 227	3,9
RANEE RANEE	12	S2303 S 2303	12	SONALI SONALI	3,8
RAVI43 RAVI 43	10	S54723 S 54723	11	SPA SHERPA	12
RE RED EGYPTION	15	SA42 SA 42	11	SPO SUPREMO	15
REP80 RFPM 80	11	SAGA SAGA	12	SPO211 SUPREMO 211	15
REP196 RFPM 196	11	SAM68 SAMACA 68	11	SPP SPALDING PROLIFIQU	11
RGN REGENT	11	SAN SANDAL 73	9	SPRW SPARROW	11
RIDLEY RIDLEY	1,6	SANGAM SANGAM	3,8	SPS SURPRESA	15
RIKG RED INDIAN.KING	12	SAO SAO PAULO	12	SPT SPINETAIL	9
RL6010 RL 6010	15	SASA SASARAIB	9	SPY SEPOY	12
RN RIONEGRO	11	SCHOMA SINVALOCHO MA	15	SR SARIC F 70	9,15
RNW RENOWN	15	SCW101 SCW 101	9	STE SANTA ELENA	15
ROHINI ROHINI	3,8	SDHA SIDHARTHA	7,9	SUJATA SUJATA	3
ROKK ROOI KLEINKORING	12	SEPOY SEPOY	12	SWATI SWATI	3,8,9
ROMA ROMA	12	SEPPOM SEPPOM	12	SX SUPER X	9
ROMAP ROMA PEARL	12	SERI SERI M 82	9	T TIMSTEIN	15
RON ROBIN M	15	SERIC SERIC	9	T222 T 222-51-B-9	12
RR21 SONALIKA(RR21)	3,7,8,9	SFT SATISFACTION	12	TAC TACAURI INTA	15
RRV RED RIVER 68	9	SGRK SAGARIKA	3	TAW267 TAWA 267	3
RS31 RS 31-1	1,14	SGY SAGUAYO 79	12	TF TRANSFER	15
RSD RASHID	12	SHERA SHERA	3,8,9	TG TIMGALEN	11
RUSAPE RUSAPE	9	SHKR SHEKHAR	3	TH THATCHER	11
RUSKIN RUSKIN	12	SHS SHARBATI SONORA	3,7	THFT TIGHTFIST	12

Continued.....

Table 22: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
TILILA	9	USA255	11	WH283	3
TITO	15	UTK	3,13	WH291	3,14
TMP	12	V17	15	WH416	3
TOB	9,11	V18	11,15	WH533	3,8,14
TRVN	3,7,9	VA6	10	WH542	3,8,9
TST	3,13	VCM	15	WILLOW	12
TT	15	VEE	9	WITKL	12
TTCA	9	VIRI	9	WL202	10
	11	VL401	3	WL212	10
TUC	12	VL404	3,8	WL410	3,13
TUCM	12	VL421	3	WL711	3,7,9
	11	VL616	3,13	WL1562	3
TYPE9	1	VL401	3,8,9,13	WL2265	3,8
TYPE11	1	VL 421	3,8,13	WLCE	12
TZPP	15	VNSS	12	WOP	15
		VINATA	3	WRM	15
UP115	3,13	VNYK	7	WS217	10
UP215	3,8,9,14	VSHL	3,14	WT	15
UP262	3,7,9	VW89	3	WTE	15
UP291	11	VW120	3	WW15	15
UP301	3,8,9	W245	10	Y	15
UP302	11	WARNER	12	Y48	15
UP310	3,8	WARPUT	12	Y50	15
UP319	3,8,9	WG138	10	Y50E	15
UP346	10	WG143	10	Y53	11
UP366	10	WG357	3	Y54	15
UP368	3,8	WG377	3,14	YDL	12
UP1109	3	WG750	10	YR	9
UP2003	3,8	WG1025	10	YRR	9
UP2113	3	WGL	15	YTA	12
UP2121	3,13	WH147	3,13	ZA75	15
URES	9,15	WH157	3	ZAFF	12

Table 23: Index of pedigrees of durum ,emmer and polonicum wheats(arranged according to abbreviation)

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.			
DURUM WHEATS		GAZA	GAZA	11	MACS 1967	4.13		
		GARZA	GARZA	16	MGDT	MEGHDOOT	4,13	
A9	A 9-30-1	4	GD11	GD 11	10	MLVK	MALAVIKA	4,8
A13	A 13-3	4	GLLA	GRULA	16	MOGHK	MOGHRABY EL KARAK	16
A28	A 28	4	GS	GANSO	11	MOTIA	MOTIA	2
A206	A 206	2	GULAB	GULAB	2	MOTIYA	MOTIYA	2
A624	A 624	2	GW1	GW 1	4	MPO215	MPO 215	4
AA	ANHINGA	16	GW2	GW 2	4,13	N59	N 59	2
AMRUT	AMRUT	2	HD4502	HD 4502	4	N111	NARASINGHAR 111	2
ANLC	ANNIGERI LOCAL	10	HD4530	HD 4530	4,8,13	NI14-9	NI 14-9	10
BAX23	BAXI 23	10		HD(M)22550-3	11	NI81	NI 81	2
BAX288	BAXI 288-18	2	HI6-23	HI 6-23	10	NI146	NI 146	2
BBAL	BUCK BALCARCE	16	HI7483	HI 7483	4	NI5749	NI 5749	4
BJGR	BIJAGA RED	4	HI8381	HI 8381	4,9	NMD215	NARMADA 215	4,13
BJGY	BIJAGA YELLOW	4	HRA116	HAURA 116	10	NP401	NP 401	4
BNS168	BANSI 168	2	HY23	HY 23	10	NP404	NP 404	4
BNS202	BANSI 202	2	HY32	HY 32	2	NP406	NP 406	2
BNS224	BANSI 224	2	HY34	HY 34	2	NP412	NP 412	2
BPL808	BANSIPALLI 808	2	IU	IUMILLO	16	PBW34	PBW 34	4,8
BTL	BOUTEILLE	16	JA3	JA 3.3.1	10	PDW215	PDW 215	4,13
BY	BARRIGON YAQUI	16	JAI	JAI	2	PLC	PELICANO	16
BYE	BARRIGON YAQUI ENANO	16	JAIRAJ	JAIRAJ	4,8,13	PW1	PW 1	2
CIT71	COCORIT 71	11	JAY	JAY	2	PW3	PW 3	2
CLBH	COOLABAH	12	JAYA	JAYA	2	PW7	PW 7	2
	CPAN 1471	11	JAYRAJ	JAYRAJ	4	RAE	RASPINEGRO DE AGUILAS	16
CR	CRANE	16		JNK 4W-184	4	RAJ911	RAJ 911	4,8,13
D#2E	DUR0 #2 ENANO	16	JO69	JORI 69	16		RAJ 1555	4
	DWL 5002	11	JU12	JU 12	4	ST464	ST 464	16
	DWL 5023	4,8,13	K19	K 19-3	2	STW63	STEWART 63	16
	DWL 5031	10	K21	K 21	2	TAW215	TAWA 215	4
	EGYPT 8626	4	K25	K 25	2	TC60	TEHUACAN 60	16
EKD6	EKDANIA 6	2,10		KIRAN-DR	4	TCT	TACUR TIPIC 125	16
EKD69	EKDANIA 69	2	KD137	KD 137	4	TCTE	TACUR TIPO 125 ENANO	16
EX130	EX 130	11	LD357	LANGDON 357	16	TPT	TREMEZ PRETO	16
F-16-1	F-16-1	2	LDS	LEEDS	16	TME	TREMEZ MOLLE ENANO	16
FGO	FLAMINGO	16	LK	LAKOTA	16	TML	TREMEZ MOLLE	2
G4-48	G 4-48	11	MACS9	MACS 9	4	TYPE1	TYPE 1	2

Continued.....

Table 23: Continued

CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.	CULTIVAR/LINE/SYNONYM ABBR. NAME	TABLE NO.
VIJAY VIJAY	10	<u>EMMER WHEATS</u>		<u>POLONICUM WHEATS</u>	
VSM VISHRAM	16				
WLS WELLS	9	KHP KHAPLI	10	F185 F 185	11
YAV79 YAVAROS 79	16	NP200 NP 200	2	YAGULATE	11
ZB ZENATI BOUTEILLE	16	VERNUN VERNUN	16		
ZENATI ZENATI	16	VN VERNAL EMMER	16		



DIRECTORATE OF WHEAT RESEARCH

Project Director

Post Box No. 158, Karnal 132 001, India.

Grams : WEHAT

Telephones : (0184) 22390, 21830

Telex : 0396-233-DWR-IN

Fax : 91-0184-22390