

# Trait Specific Germplasm Identified Through Multi-location Evaluation of Chickpea (2004-05 to 2008-09)



*Compiled by:*

Jyoti Kumari  
R.P. Dua  
H.L. Raiger  
Ashok Kumar  
M. Dutta  
O.P. Dahiya  
K.C. Bansal



*Germplasm Evaluation Division*  
*National Bureau of Plant Genetic Resources, New Delhi*



## ACKNOWLEDGEMENT

It gives us immense pleasure to place before you the Trait Specific Germplasm Identified through Multi-location Evaluation of Chickpea (2004-05 to 2008-09). Since, there exists a strong component of GxE interaction, it is always desirable that the germplasm are evaluated at multiple locations to identify stable desirable traits and region specific genotypes for their optimal utilization. With this objective a programme was initiated for multilocation evaluation of germplasm at NBPGR. Chickpea is the most important pulse crop in India having maximum area. However, India has to import chickpea to meet the demand of growing population. This necessitates further improvements in productivity level of chickpea cultivars endowed with resistant to biotic/abiotic stress. It requires identification of the proper trait specific donors for utilization in crop improvement programme. NBPGR initiated a programme to evaluate the germplasm across the zones to identify stable and desirable trait specific promising accessions for various agronomic traits and biotic/abiotic stresses. This programme was initiated in 2004-05 encompassing the entire agro-ecological zone of the country and promising accessions have been identified over the last five years. This information will be useful to germplasm curators, breeders and researchers to select the best material for further improvement of chickpea.

It is to place on record our sincere gratitude to all the scientists of various centres for planning, conducting and recording observations on trials/experiments on chickpea under the multilocation evaluation programme (2004-05 to 2008-09).

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**Authors**

## INTRODUCTION

Germplasm Evaluation is an integral component of Plant Genetic Resources Management. Before utilization, it is of utmost importance that the germplasm should be properly characterized, evaluated and documented to have its exact identification. Since GxE interaction plays major role on the expression of quantitative traits, it is always desired that the germplasm be evaluated at multilocations to identify stable and region specific genotypes for their proper utilization. With this consideration a programme was initiated for multilocation evaluation of the germplasm available at NBPGR in the National Gene Bank.

In India, chickpea is the most important pulse crop having maximum area (8.21 m ha) and production (7.35 m t) among the pulses during (2009-10). During the period from 1950-51 to 2009-2010, there has been a significant improvement in productivity of chickpea and a number of improved varieties have been developed and released. However, to meet the demand of growing population, India has to import chickpea to the tune of about 3.0 lakh tonnes per year. This necessitates a further improvement in the productivity levels of chickpea cultivars endowed with resistance to biotic and abiotic stresses and it requires identification of the proper trait specific donors for utilization in hybridization programme.

The project on Multi-location Evaluation of chickpea germplasm was initiated in *Rabi* 2004-05. The material comprising 3434 accessions was received from National Gene Bank (NGB), NBPGR, New Delhi during 2004-08. Evaluation of these accessions was undertaken during *Rabi* 2004-08 for agro-morphological traits, abiotic stresses and biotic stresses at 9, 4 and 14 locations respectively. The protein content was analyzed at NBPGR, New Delhi.

Data from different centres were analyzed and compiled for drawing inferences related to the performance of the accessions. The character-wise promising accessions for each centre and pooled over all the locations in each set have been indicated in this bulletin.

Evaluation in respect of 9 quantitative characters was undertaken. Mean of each accession was calculated. However, the list of promising accessions location wise as well as based on mean of all the locations has been prepared.

In this bulletin an attempt has been made at NBPGR, the nodal institute for PGR management, to evaluate the material across the zones and to identify the promising accessions for various agronomic traits, biotic and abiotic stresses and for protein content from the available germplasm.

## List of Contributors for Multi-location Evaluation of Chickpea

<b>Aspect</b>	<b>Cooperating Scientist</b>	<b>Location</b>
Agronomic evaluation	Dr. N.K. Ganeshiah	UAS, Bangalore
	Dr. B.M. Jamadagni/ Dr. G.P. Deshmukh	MPKV, Rahuri
	Dr. B.P.S Malik	CCS HAU, Hisar
	Dr. D.M. Mannur	ARS UAS, Gulbarga
	Dr. J. S. Sandhu	PAU, Ludhiana
	Dr. Yogesh Kumar	BAU, Ranchi
	Dr. P.L. Josnson	IGKV, Raipur
	Dr. N. C. Desai	GAU, Navasari
	Dr. S. K. Chaturvedi	IIPR, Kanpur
	Dr.(Mrs.) Anita Babbar	JNKV, Jabalpur
Biotic stress (Diseases)	Dr. N.K Ganeshaih	UAS, Bangalore
	Dr. V. K. Mandhare	MPKV, Rahuri
	Dr. M. S. Sangwan	CCS HAU, Hisar
	Dr. D.M. Mannur	ARS UAS, Gulbarga
	Dr. Livinder Kaur	PAU, Ludhiana
	Dr. O.P. Sharma	ARS, Durgapura
	Dr. R.N. Sharma	IGKV, Raipur
	Dr. D.R Saxena	JNKV, Sehore
	Dr. D. Alice / Dr. N. Nadarajan	TNAU, Coimbatore
	Dr.(Mrs.) Om Gupta	JNKV, Jabalpur
	Dr. S.N. Gupta	IIPR, Kanpur
	Dr. H.S Tripathi	GBPUAT, Pantnagar
Biotic stress (Insects)	Dr. Ram Ujjagir	GBPUAT, Pantnagar
Abiotic stress (Cold)	Dr. J.S. Sandhu	PAU, Ludhiana
Abiotic stress (Drought)	Dr. S.J Singh	ARS, Durgapura
	Dr. H.S Yadava	JNKV, Sehore
Quality (Protein)	Dr. S. Mandal / Dr. Sangita Yadav	NBPGR, New Delhi
Coordination	Dr. R.P. Dua	NBPGR, New Delhi
	Dr. Mohar Singh	NBPGR, New Delhi
	Dr. O.P. Dahiya	NBPGR, New Delhi
	Dr. S .K. Mishra	NBPGR, New Delhi
	Dr. M. Dutta	NBPGR, New Delhi
Documentation	Dr. H.L. Raiger	NBPGR, New Delhi

## Details of Multi-location Evaluation of Chickpea Germplasm at different Centres

Evaluation	Trait	No. of locations	Location	Acc. (Nos.)
<b>2004-05</b>				
Agro-morphological	Agronomic	9	UAS, Bangalore; MPKV, Rahuri; CCS HAU, Hisar; ARS UAS, Gulbarga; PAU, Ludhiana; BAU, Ranchi; IGKV, Raipur; GAU, Navsari; IIPR, Kanpur	Set I- 448acc. Set II- 482 acc.
Biotic stresses (Diseases)	Wilt	7	UAS, Gulbarga, UAS, Bangalore, MPKV, Rahuri, CCS HAU, Hisar, IIPR, Kanpur, PAU, Ludhiana; JNKV, Sehore	Set I- 448acc. Set II- 482 acc.
	Dry root rot	2	ARS, Durgapura, TNAU, Coimbatore,	Set II- 482 acc.
	<i>Ascochyta</i> blight	2	JNKV, Sehore; PAU, Ludhiana	Set II- 482 acc.
	Collar rot	1	JNKV, Jabalpur,	Set II- 482 acc.
	<i>Botrytis</i> grey mould	1	UAS, Gulbarga	Set II- 482 acc.
Biotic stresses (Insects)	Pod borer	2	UAS, Gulbarga; GBPUAT, Pantnagar	Set II- 482 acc.
Abiotic	Cold	2	VPKAS, Almora; PAU Ludhiana	Set II- 482 acc.
	Drought	2	JNKV, Sehore; ARS, Durgapura	Set II- 482 acc.
Quality	Protein	1	NBPGR, New Delhi	Set II- 482 acc.
<b>2005-06</b>				
Agro-morphological	Agronomic	10	UAS, Bangalore; MPKV, Rahuri; CCS HAU, Hisar; ARS UAS, Gulbarga; PAU, Ludhiana; BAU, Ranchi; IGKV, Raipur; GAU, Navsari; IIPR, Kanpur; JNKV Jabalpur	Set I- 450acc. Set II- 442 acc.
Biotic stress (Diseases)	Wilt	8	UAS, Gulbarga, UAS, Bangalore, MPKV, Rahuri, CCS HAU, Hisar, , PAU, Ludhiana; JNKV, Sehore; JNKV Jabalpur; IGKV, Raipur	Set I- 450acc.
	Dry root rot	4	ARS, Durgapura, TNAU, Coimbatore, CCS HAU, Hisar; PAU, Ludhiana	Set I- 450acc.
	<i>Ascochyta</i> blight	1	CCS HAU, Hisar	Set I- 450acc.
	Collar rot	1	JNKV, Jabalpur	Set I- 450acc.
	<i>Botrytis</i> grey mould	1	PAU, Ludhiana	Set I- 450acc.
Biotic stress (Insects)	Pod borer	1	GBPUAT, Pantnagar	Set II- 442 acc.
Abiotic	Cold	1	PAU Ludhiana	Set II- 442 acc.
	Drought	2	JNKV, Sehore; ARS, Durgapura	Set II- 442 acc.
Quality	Protein	1	NBPGR, New Delhi	Set II- 442 acc.
<b>2006-07</b>				
Agro-morphological	Agronomic	12	UAS, Bangalore; MPKV, Rahuri; CCS HAU, Hisar; ARS UAS, Gulbarga; PAU,	Set I- 482acc. Set II- 479acc.

			Ludhiana; BAU, Ranchi; IGKV, Raipur; GAU, Navsari; IIPR, Kanpur; JNKV Jabalpur; JNKV, Sehore; ARS, Durgapura	
Biotic stress (Diseases)	Wilt	5	MPKV, Rahuri, CCS HAU, Hisar, , PAU, Ludhiana; JNKV, Sehore ; JNKV Jabalpur	Set I- 482acc.
	Root rot	3	ARS, Durgapura, TNAU, Coimbatore; CCS HAU, Hisar	Set I- 482 acc.
	<i>Ascochyta</i> blight	1	HPKV, Dhaulakuan	Set I- 482 acc.
	Collar rot	1	JNKV, Jabalpur,	Set I- 482 acc.
	<i>Botrytis</i> grey mould	1	GBPUAT, Pantnagar	Set I- 482 acc.
Biotic stress (Insects)	Pod borer	2	UAS, Gulbarga; GBPUAT, Pantnagar	Set II- 479 acc.
Quality	Protein	1	NBPGR, New Delhi	Set II- 479 acc.
<b>2007-08</b>				
Agro-morphological	Agronomic	6	ARS, Durgapura; UAS, Gulbarga; PAU, Ludhiana; BAU, Ranchi; IGKV, Raipur; JNKV, Sehore	434 acc.
Biotic stresses (Diseases)	Wilt	4	UAS, Gulbarga, , PAU, Ludhiana; JNKV, Sehore; JNKV Jabalpur	434 acc.
	Dry root rot	3	ARS, Durgapura; TNAU, Coimbatore; JNKV Jabalpur	434 acc.
	<i>Ascochyta</i> blight	1	PAU, Ludhiana	434 acc.
	Collar rot	1	JNKV, Jabalpur,	434 acc.
	<i>Botrytis</i> grey mould	1	GBPUAT, Pantnagar	434 acc.
Quality	Protein	1	NBPGR, New Delhi	434 acc.
<b>2008-09</b>				
Agro-morphological	Agronomic	6	UAS, Bangalore; MPKV, Rahuri; UAS, Gulbarga; PAU, Ludhiana; BAU, Ranchi; IGKV, Raipur;	217 acc.
Biotic stress (Diseases)	Wilt	4	PAU, Ludhiana; JNKV, Sehore; IGKV, Raipur; JNKV, Jabalpur	217acc.
	Root rot	2	ARS, Durgapura; TNAU, Coimbatore;	217 acc.
	<i>Ascochyta</i> blight	1	PAU, Ludhiana	217 acc.
	Collar rot	1	JNKV, Jabalpur	217 acc.
	<i>Botrytis</i> grey mould	1	GBPUAT, Pantnagar	217 acc.
Quality	Protein	1	NBPGR, New Delhi	217 acc.

### Promising Accessions of Chickpea

Aspect/ Characters	Location	Year	Sets	Range	Promising accessions superior to best check	Best check (Value)
<b>Agronomic</b>						
Days to 50% flowering	Raipur	2004-05	I	53.0- 94.0	IC269058, IC268967, IC269158, IC269246 (< 55)	RG 200326 (57.5)
			II	53.0- 91.0	IC327177, IC327072, IC327078, IC327086, IC327087, IC327090, IC327096, IC327148 (< 55)	RG 200326 (57.5)
		2005-06	I	38.0- 98.0	IC251844, IC251785, EC548032, IC275515, IC275518, EC548038 (< 42)	GNG 469 (65.56)
			II	40.0- 98.0	IC424266, IC424298, IC424299, IC424286, IC424321 (< 59)	KWR 108 (70.17)
		2006-07	I	42.00- 83.00	ICC8634, IC271442, IC271449, IC271440 (< 45)	Pusa 362 (61.00)
			II	41.00- 84.00	ICC12644, ICC12526, ICC12530, ICC12532, ICC12685 (< 49)	Pusa 362 (61.60)
		2007-08	I	56.00- 82.00	IC269287, IC269292, IC269365, IC269433, IC269436 (< 59)	JG 74 (59.50)
		2008-09	I	56.00- 90.00	IC269835, IC269833, IC269470, IC269422, IC269813 (< 68)	JG 74 (73.69)
	Rahuri	2004-05	I	47.0- 91.0	IC268967, IC269138, IC269123, IC268987, IC269246, IC269263 (< 50)	SAKI 9516 (54.6)
			II	46.0- 92.0	IC327225, IC327021, IC327185 (< 48)	SAKI 9516 (54.6)
		2005-06	I	46.0- 63.0	IC251686, IC275583 (< 48)	GNG 663 (56.00)
			II	46.0- 68.0	IC424269, EC434359, IC327402, IC327410, IC424259 (< 49)	GNG 663 (56.44)
		2006-07	I	37.00- 71.00	IC271434, IC271127, ICC8353, ICC8338 (< 44)	Pusa 1053 (48.00)
			II	36.00- 72.00	IC327388, IC327398, ICC10996 (< 42)	Pusa 1053 (53.00)
		2008-09	I	37.00- 78.00	IC269440, IC269875, IC269257, IC269540 (< 41)	Digvijay (41.85)
		Ludhiana	2004-05	I	75.0- 132.0	IC268958, IC268853, IC269214, IC269203, IC268857 (< 92)
	II			92.0- 113.0	IC327151, IC327091, IC327092, IC327096, IC327131, IC327136, IC327150, IC327633, IC327728 (< 92)	GCP 105 (95.9)

Days to 50% flowering	Ludhiana	2005-06	I	69.00-110.00	IC251660, IC251673, IC251707, IC251662, IC251674, IC251675, IC251752 (< 82)	GNG 469 (91.89 )
			II	83.00-109.00	IC327513, IC327514, IC327643, IC327647, IC327386 (< 86)	GNG-663 (89.89 )
		2006-07	I	84.00-116.00	IC270807, ICC5775, ICC5810, ICC8327 (=84)	Pusa 362 (86.75 )
			II	87.0-109.0	ICC11006, IC271608, ICC11060 (< 89)	Pusa 362 (89.00)
		2007-08	I	81.0-107.0	IC269257, IC269406, IC269449, IC269456 (< 82)	PBG 1 (90.73)
		2008-09	I	75.00-100.00	IC269859, IC269799, IC269809, IC269810, IC269857 (< 77)	GPF 2 (83.85)
	Hisar	2004-05	I	48.0-116.0	IC269351, IC268959, IC268962, IC269002 (< 86)	GNG 469 (95.3 )
			II	87.0-116.0	IC327039, IC327144, IC327361, IC327140, IC327141, IC327142, IC327724 (< 90)	GNG 469 (95.3 )
		2005-06	I	94.0-109.0	IC275493, IC251666, IC251789, IC275592, IC275596 (< 96)	GNG 469 (101.25 )
			II	96.0-111.0	IC424350, IC424336, IC424362 (< 98)	KWR 108 (104.25)
		2006-07	I	50.00-80.00	IC271429, IC271430, IC271431, IC271432, IC271434 (= 50)	Pusa 362 (66.00 )
			II	50.00-75.00	ICC12589, ICC12599, ICC12600, ICC12602, ICC12727 (= 50)	-
	Bangalore	2004-05	I	42.0-85.0	IC269124, IC269246, IC268906, IC268967, IC269020, IC269058 (< 49)	ICCV10 (57.2 )
			II	49.0-68.0	IC327065, IC327121, IC327257, IC327736, IC327805, IC327914 (< 50)	ICCV10 (57.2 )
		2006-07	I	35.00-76.00	ICC8342 (= 35)	BGD 72 (51.00)
			II	26.00-70.00	ICC11018, IC271583, IC271681 (< 40)	BGD 72 (50.30)
		2008-09	I	45.00-75.00	IC269440, IC269757 (< 49)	Annegere-1 (49.77 )
		Kanpur	2004-05	I	68.0-106.0	IC268959, IC268967, IC269058, IC269065, IC269209 (< 70)
	II			67.0-109.0	IC327177, IC327015, IC327148, IC327150, IC327936 (< 70)	GCP 105 (81.4)
	2005-06		I	66.00-104.00	IC251675, IC251673, IC251734, IC275451, IC275468 (< 71)	GNG 663 (84.44 )
			II	59.00-107.00	IC424269, EC548046, IC424384 (< 70)	GNG 663 (82.78 )
	2006-07		I	35.00-122.00	IC270941, IC269451, ICC5791, ICC5810, ICC6120 (< 41)	Pusa 1053 (84.50 )
			II	41.00-122.00	IC271581, ICC10963, ICC10973, ICC10980, ICC12548, ic327463 (< 43)	Pusa 362 (86.50 )



Days to 50% flowering	Gulbarga	2004-05	I	45.0-76.0	IC268945, IC269134, IC268935, IC268987, IC269028, IC269211 (< 47)	GCP 101 (50.9)
			II	44.0-81.0	IC327050, IC327783, IC327920 (< 45)	GCP 101 (50.9)
		2005-06	I	39.0-67.0	IC275506, IC251662, EC441770, EC441793, EC548039, EC548080 (< 43)	KWR 108 (53.13)
			II	38.0-69.0	IC327275, IC327412, IC424321 (=38)	GNG 663 (58.78)
		2006-07	I	24.00-64.00	IC270936 (= 24)	BGD 2 (50.88)
			II	42.0-69.0	ICC10963, IC271660, ICC12532, ICC11152 (< 45)	BGD 72 (55.60)
		2007-08	I	34.0-80.0	IC269756, IC269775 (< 36)	-
		2008-09	I	53.00-75.00	IC269440, IC269826, IC269763, IC269779, IC269792 (< 55)	Check 2 (56.00)
	Pooled over locations	2004-05	I	56.82-116.9	None	GCP 101 (56.82)
			II	56.82-116.49	None	GCP 101 (56.82)
		2005-06	I	64.83-86.00	IC275581, IC251852, IC275468, IC251851, IC275583 (< 66.57)	GNG 663 (77.97)
			II	66.38-87.71	IC424269, IC424305, IC424350, IC424383, IC424233 (< 69.06)	GNG 663 (77.24)
		2006-07	I	51.25-88.75	ICC5783, ICC5787, IC270974, ICC8352, IC270941 (< 53.63)	Pusa 362 (67.54)
			II	56.41-91.00	ICC10996, IC271581, IC271582, IC271588, ICC12532 (< 56.63)	Pusa 362 (69.20)
2007-08		I	59.50-91.45	None	JG 74 (59.50)	
2008-09		I	41.85-89.00	IC269440, IC268987, IC269540, IC269875, IC269737 (< 63.4)	-	
No. of primary branches	Raipur	2004-05	I	2.0-7.0	IC269085, IC269028, IC268881, IC268878, IC268955, IC269122, IC269355, IC269066, IC269094, IC269113 (> 5)	SAKI 9516 (3.9)
			II	1.0-6.0	IC327124, IC327155, IC327230, IC327984, IC327025, IC327060, IC327069, IC327282, IC327292, IC327293 (> 5)	SAKI 9516 (3.9)
		2005-06	I	2.0-8.0	IC251785, IC251823, IC251721 (=8)	GNG 469 (5.00)
	II		2.00-6.00	IC424363, IC424277, IC424344, IC424333, EC434359 (=6)	GNG 469 (4.22)	

No. of primary branches	Raipur	2006-07	I	2.00-5.00	IC271221, ICC8635, ICC10067, ICC10068 (> 4)	BGD 72 (3.63)
			II	2.00-4.00	IC271577, ICC10964, ICC10969, ICC11003, ICC11004 (=4)	Pusa 1053 (3.38) Pusa 362 (3.38)
		2007-08	I	1.00-5.00	IC269751, IC269476, IC269764, IC269752, IC269460, IC269502, IC269494, IC269497, IC269444 (> 3)	Vaibhav (2.50) JG 74 (2.50)
		2008-09	I	2.00-4.00	IC269793, IC269794, IC269835, IC269411, IC269412 (= 4)	Vaibhav (2.38)
	Rahuri	2004-05	I	2.6-13.0	IC269214, IC268876, IC269172, IC268910 (> 10)	JG 11 (6.1)
			II	1.8-13.0	IC327051, IC327925, IC327077, IC327933, IC327725, IC327078, IC327680 (> 10)	JG 11 (6.1)
		2005-06	I	1.00-26.30	IC275484, IC275557, IC275497, IC275487, IC275520, IC275547 (>21)	GNG 469 (11.21)
			II	1.30-26.0	IC327436, IC424326, IC424295, IC327412, EC442265 (>23)	KWR 108 (10.06)
		2006-07	I	1.30-14.00	ICC497, IC269047, IC269044, IC269039, IC269055 (> 7.6)	Pusa 362 (6.88)
			II	0.60-7.30	ICC10965, ICC11008, ICC10964, IC271599 (> 5.3)	Pusa 1053 (5.00)
		2008-09	I	2.00-17.00	IC269335, IC269802, IC269796, IC268942, IC269837 (> 11.7)	Uday (5.55)
		Ranchi	2004-05	I	1.2-4.6	IC269018, IC269061, IC269077, IC269090 (> 4.5)
	II			1.4-4.6	IC327159, IC327723, IC327734 (> 4.4)	GCP 105 (3.3)
	2005-06		I	1.00-4.80	IC251661, IC251669, IC251882, IC251740, IC275452, IC251801 (>3.8)	GNG 663 (2.09)
			II	1.00-33.20	IC327477, IC327710, IC327356, IC327450 (>4.8)	GNG 663 (2.98)
	2006-07		I	1.00-4.80	IC269048, IC269026, IC269034, IC2690451, IC271010 (> 4)	Pusa-1053 (2.07)
			II	1.00-4.00	EC441743, IC271593, IC424313 (> 3)	Pusa 362 (1.98)
	2007-08		I	1.00-3.33	-	KWR 108 (3.33)
	2008-09		I	1.20-9.80	IC269877, IC269803, IC269253, IC268975, IC269036 (> 5.8)	HK 94 -134 (3.19)
	Ludhiana	2004-05	I	6.0-22.0	IC268960, IC268878, IC268949, IC269039, IC268854, IC269042 (> 18)	GNG 663 (13.5)
			II	6.0-41.0	IC327058, IC327053, IC327050, IC327059, IC327062 (> 33)	GNG 663 (13.5)
		2005-06	I	4.00-33.00	IC275497, IC275499, IC275502, IC275514, IC275479, IC251693 (>24)	GNG 469 (11.67)

No. of primary branches	Ludhiana	2006-07	I	1.30-3.00	IC271436 (=3)	Pusa 362 (2.16)
			II	1.33-3.00	ICC11185, ICC11188, ICC11191, ICC11321, ICC12249 (= 3)	BGD 72 (2.24)
		2007-08	I	1.00-4.00	IC269685, IC269630, IC269459, IC269711, IC269484, IC269481, IC269743 (> 3)	PBG 1 (2.27)
		2008-09	I	9.00-21.00	IC269864, IC269446, IC269488, IC269571, IC269751 (> 17)	PBG 1 (15.38)
	Hisar	2004-05	I	1.4-13.2	IC268946, IC268933, IC268930, IC269110 (> 11)	GNG 663 (4.6)
			II	2.0-66.0	IC327787, IC327102, IC327903, IC327088, IC327750 (> 7.6)	GNG 663 (4.6)
		2005-06	I	2.0-13.0	IC275553, IC275541, IC275478, EC541852, IC275526, IC275461 (>9)	GNG 663 (5.63)
			II	2.0-14.0	IC424272, IC424353, IC424255, IC424334, IC424289, EC538492 (>9)	KWR 108 (5.67)
		2006-07	I	1.20-6.00	ICC6117, IC270942, IC270977, IC2690333, ICC5759 (> 4.8)	Pusa 1053 (3.38)
			II	1.00-5.60	ICC11010, ICC12426, ICC12762 (> 5)	-
	Bangalore	2004-05	I	1.0-4.0	IC268892, IC269125, IC269333, IC268941, IC268989 ( $\geq 4$ )	ICCV10 (2.5)
			II	1.0-4.0	IC327053, IC327241, IC327894, IC327100, IC327686, IC327734, IC327784, IC327823, IC327154 (> 3)	ICCV10 (2.5)
		2005-06	I	1.60-3.40	IC251870, IC275618, IC251763, IC251782, IC275449, IC269838, EC441894, IC275623 (>3)	-
			II	1.20-3.60	EC441825, EC411839, EC538487, EC548033 (>3.40)	-
		2006-07	I	0.60-11.00	ICC8632, ICC8626, IC271121, IC271440 (> 8.4)	Pusa 1053 (4.15)
			II	0.60-11.60	IC271610, ICC11062, ICC12247, ICC12477, IC271660 (> 10.6)	BGD 72 (5.97)
	Kanpur	2004-05	I	1.0-6.0	IC269146, IC269093, IC269182, IC269237, IC269127, IC269149, IC269247, IC269229 (> 4)	GNG 663 (3.0)
			II	1.0-8.0	IC327264, IC327687, IC327692, IC327277, IC327685, IC327689 (> 5)	GNG 663 (3.0)
		2005-06	I	1.60-8.00	IC251876, IC251833, IC251778, IC251826, IC251819, IC251886, IC251884 (>6.3)	KWR 108 (4.33)
			II	1.30-7.30	IC424365, IC424289, IC424385, IC424286, IC327479, IC424311, EC442620 (>6)	KWR 108 (4.27)

No. of primary branches	Kanpur	2006-07	I	1.30-5.70	IC2690458, IC2690459, IC270806, IC271323, ICC10069 (= 5.7)	Pusa 1053 (4.45)
			II	1.00-7.30	IC327345, IC327423, IC327460, IC271598 (> 6)	Pusa 1053 (3.69)
	Gulbarga	2004-05	I	1.0-5.0	IC268982, IC268858 (> 4)	GNG 663 (2.7)
			II	1.0-4.0	IC327233, IC327193, IC327293, IC327289, IC327291, IC327246 (> 3)	GNG 663 (2.7)
		2005-06	I	1.10-7.30	IC275556, IC251798, EC548070, IC251777, IC251824 (>4.6)	GNG 469 (3.25)
			II	1.10-5.90	EC538488, IC424289, IC327256, IC327333, IC269718 (>5.16)	GNG 469 (2.64)
	Pooled over locations	2004-05	I	2.50-8.00	IC269060, IC269042, IC268878, IC268997, IC268949, IC269036 (> 6.17)	GCP 105 (5.40)
			II	2.50-11.81	IC327053, IC327787, IC327988, IC327102, IC327058 (> 8)	GCP 105 (5.40)
		2005-06	I	2.89-9.22	IC275497, IC275499, IC251721, IC275484, IC275547 (>7.57)	GNG 469 (6.05)
			II	2.25-5.88	IC269718, EC442667, IC327565, IC327478, IC327493 (>5.62)	KWR 108 (4.63)
		2006-07	I	2.17-4.70	ICC497, IC269047, IC269044, IC271437, IC271306 (> 3.93)	Pusa 1053 (3.35)
			II	2.00-4.50	IC327373, ICC12477, IC271587 (> 4.09)	Pusa 1053 (4.07)
		2007-08	I	1.90-6.60	IC269527, IC269863, IC269442, IC269454 (> 4.9)	RSG 888 (4.83)
		2008-09	I	2.20-70.00	IC269524, IC269306, IC269388, IC269485, IC269763 (> 24.67)	-
Plant height (cm)	Raipur	2004-05	I	22.70-68.70	IC268917, IC269016, IC269055, IC268955, IC269013 (> 59.67)	GCP 101 (46.80)
			II	24.70-61.30	IC327672, IC327157, IC327988, IC327707 (> 60)	GCP 101 (46.80)
		2005-06	I	30.20-65.60	IC275467, IC275449, IC251783, IC251775, IC251782 (> 58.6)	GNG 469 (51.83)
			II	32.20-74.60	EC442406, EC442667, EC538488, EC442305, EC442172 (> 58.5)	KWR-108 (48.40)
		2006-07	I	24.80-61.40	ICC6040, ICC5816, ICC6043, ICC8572, IC271094 (> 59.4)	Pusa 1053 (47.44)
			II	25.20-60.00	EC441807 (= 60)	BGD 72 (48.21)
		2007-08	I	16.00-75.00	IC269476, IC269480, IC269433 (> 60)	Vaibhav (51.88)
		2008-09	I	25.80-46.40	IC269468, IC269810 (> 45)	Vaibhav (35.95)

Plant height (cm)	Rahuri	2004-05	I	12.8-56.0	IC269056, IC269007, IC269343, IC269326, IC269344 (> 49.1)	GCP 101 (41.4)
			II	11.6-55.8	IC327727, IC327749, IC327932, IC327738, IC327935 (> 47.60)	GCP 101 (41.4)
		2005-06	I	22.30-70.00	IC251671, IC251688, IC251687, IC251840, IC251823 (> 64)	GNG 469 (53.49)
			II	8.70-68.70	EC538489, EC538497, IC424379, EC441855 (> 63)	KWR 108 (47.26)
		2006-07	I	24.60-58.30	ICC6040, IC271302, IC269039, ICC8606, ICC8616 (> 54)	Pusa 362 (43.95)
			II	19.00-63.00	IC327444, ICC12595, ICC12643, ICC10948, EC538498 (> 52.3)	Pusa 1053 (45.30)
	2008-09	I	5.67-60.30	IC269854, IC269866, IC269833 (> 59.5)	Digvijay (41.28)	
	Ranchi	2004-05	I	15.6-46.4	IC269012, IC268910, IC269185, IC268904 (> 41)	GNG 469 (34.4)
			II	10.0-52.2	IC32723, IC327707, IC327274, IC327253, IC327748 (> 37.60)	GNG 469 (34.4)
		2005-06	I	11.90-85.20	IC275461, IC275629, IC251671, IC251662 (> 40)	GNG 469 (36.24)
			II	3.40-88.00	EC548031, EC442406, IC269724, EC538488, IC327238 (> 41.6)	KWR 108 (33.44)
		2006-07	I	12.80-64.40	ICC8448, IC269026, IC2690452, IC270967, ICC8574 (> 58)	Pusa 362 (41.63)
			II	23.00-60.40	ICC12585, ICC12644, EC441804, ICC12583, ICC12650 (> 58.8)	Pusa 362 (44.40)
		2007-08	I	13.00-65.60	IC269746, IC269319, IC269617, IC269894, IC269585 (> 52)	PG 114 (40.23)
		2008-09	I	12.20-93.00	IC269814 (=93)	HK 94-134 (49.50)
	Ludhiana	2004-05	I	44.0-84.3	IC269188, IC269192, IC269012, IC269245, IC269317 (> 81)	GNG 469 (72.0)
			II	43.0-94.0	IC327697, IC327717, IC327701, IC327813, IC327763 (> 75)	GNG 469 (72.0)
		2005-06	I	17.00-74.30	IC251735, IC251737, IC251738, EC542617, IC251739 (> 58.7)	KWR 108 (45.77)
			II	16.30-77.30	EC442406, IC424289, EC442651, EC538493, EC538489 (> 57.3)	KWR 108 (44.38)
		2006-07	I	32.00-95.00	IC271420 (= 95)	Pusa 1053 (59.25)
			II	33.00-91.66	IC327139, ICC12777 (> 91)	Pusa 362 (63.95)
		2007-08	I	23.00-59.00	IC269906, IC269897, IC269888, IC269788, IC269900 (> 50)	PBG 1 & GPF 2 (40.27)
		2008-09	I	22.30-43.70	IC269335, IC269712, IC269818, IC269833, IC269338 (> 40.3)	PBG 1(35.88)

Plant height (cm)	Hisar	2004-05	I	21.0-76.0	IC269175, IC269310, IC269013, IC269307, IC268855 (> 65)	GNG 469 (57.8)	
			II	20.0-73.0	IC327727, IC327273, IC327056, IC327332, IC327280 (> 67)	GNG 469 (57.8)	
		2005-06	I	23.0-67.0	IC251789, IC275609, IC251729, EC548044 (> 62)	GNG 469 (55.50)	
			II	23.00-80.00	IC424289, IC327888, IC327520, IC327639, IC327647 (> 76)	GNG 469 (57.00)	
		2006-07	I	25.00-70.00	IC271120 (= 70)	BGD 72 (50.71)	
			II	20.00-80.00	EC538506, ICC12245, ICC12470, EC548049 (> 60)	BGD 72 (50.71)	
	Bangalore	2004-05	I	10.0-30.0	IC269272, IC269159, IC69248, IC269129, IC269013, IC69196, IC269148, IC268868, IC268916, IC268966, IC269082, IC268879, IC268927, IC268976, IC269024, IC269093, IC269206 (> 26)	JG 11 (19.2)	
			II	10.0-30.0	IC327918, IC327048, IC327140, IC327759, IC327937, IC327361, IC327748, IC327246, IC327448, IC327730, IC327902, IC327199, IC327975, IC327124, IC327808, IC327086, IC327231, IC327017, IC327038 (> 26)	JG 11 (19.2)	
		2005-06	I	22.40-41.80	IC251909, IC275466, IC275464, EC542617, EC441714 (> 40.2)	-	
			II	2.90-51.40	EC538489, EC538488, EC538504, EC538497, EC441825 (> 42)	-	
		2006-07	I	5.00-46.60	ICC8626, ICC6123, IC271121, ICC7507, ICC8635 (> 40.8)	BGD 72 (35.38)	
			II	5.40-46.80	ICC12759, IC327431, ICC12784, ICC12681, ICC12644 (> 42.8)	BGD 72 (36.03)	
		2008-09	I	23.20-56.40	IC269468, IC269469, IC269335, IC269763, IC269484 (> 47)	Annegere 1 (31.43)	
		Kanpur	2004-05	I	26.6-67.0	IC269122, IC269192, IC269075, IC269131 (> 63.60)	GNG 469 (52.5)
				II	17.3-65.6	IC327120, IC327119, IC327082, IC327940, IC327129 (> 59.3)	GNG 469 (52.5)
			2005-06	I	26.30-62.60	IC251844, IC251749, EC541805, EC541838, EC541830 (> 59.5)	GNG 663 (50.27)
	II			28.00-80.30	EC538490, IC424290, IC424295, IC424298 (> 73)	GNG 663 (53.32)	
	2006-07		I	25.70-65.00	ICC6093, ICC6082, ICC8352, IC270673, IC270675 (> 61)	Pusa 1053 (53.50)	
			II	21.60-59.00	EC538505, EC538503, EC538507, ICC12785, IC327345, IC251699 (> 54)	Pusa 1053 (48.86)	

Plant height (cm)	Gulbarga	2004-05	I	22.8-54.6	IC269066, IC269077, IC269139, IC269226, IC269255, IC269168 (> 45)	GNG 663 (35.9)
			II	24.4-50.4	IC327364, IC327727, IC327705, IC327858, IC327951 (> 48.4)	GNG 663 (35.9)
		2005-06	I	17.0-58.0	EC442562, IC275466, IC251782 (> 46)	KWR 108 (39.00)
			II	18.00-52.00	EC442408, EC442305, EC538492, EC538497, IC424289, EC538480 (> 47)	GNG 469 (38.57)
		2006-07	I	18.20-42.40	IC271114, ICC10395, ICC8452, ICC5710, IC270962 (> 39.8)	BGD 72 (32.23)
			II	13.40-47.20	ICC12708, EC538503, IC424318, ICC12742, EC538506 (> 42)	BGD 72 (32.48)
	Pooled over locations	2004-05	I	18.29-50.88	IC269056, IC269192 (> 50.25)	GNG 469 (50.25)
			II	18.29-50.25	None	GNG 469 (50.25)
		2005-06	I	29.66-52.35	EC442562, IC251671, IC251782, IC251823 (> 47)	GNG 469 (46.29)
			II	31.91-56.58	EC442406, EC538488, EC538489, IC424289, EC441854 (> 49.38)	GNG 469 (44.32)
		2006-07	I	31.03-53.95	IC270675, ICC6043, ICC6041, ICC6050, ICC8448 (> 50.75)	Pusa 1053 (44.31)
			II	35.52-66.83	EC548088, EC548086, EC548066, EC548084, EC548085 (> 53.28)	Pusa-362 (45.63)
		2007-08	I	30.35-53.25	IC269577, IC269266 (> 52)	Vaibhav (51.88)
		2008-09	I	27.08-50.68	IC269814, IC269468, IC269335, IC269833, IC269338 (> 42.24)	-
No. of pods per plant	Raipur	2004-05	I	4.0-135.0	IC269218, IC269326, IC269122, IC268881, IC269142 (>108)	GCP 101 (54.3)
			II	15.0-135.0	IC327245, IC327751, IC327230, IC327281, IC327694 (>115)	GCP 101 (54.3)
		2005-06	I	10.0-52.0	IC275466, IC251682, IC251721, IC251751, IC251730 (> 37)	KWR 108 (27.33)
			II	4.00-34.00	IC424344, IC424278, IC424373, EC442220, IC424335, EC548071 (> 28)	GNG 469 (22.00)
		2006-07	I	10.00-75.00	ICC8586, IC271302 (> 70)	BGD 72 (35.29)
			II	7.00-57.00	IC327437, ICC11040, ICC11018, ICC12649, ICC12585 (> 52)	Pusa 1053 (35.29)
	2007-08	I	8.00-180.00	IC269279, IC269338, IC269458, IC269478, IC269496 (> 140)	Vaibhav (66.50)	
	2008-09	I	7.00-79.00	IC269412, IC269541, IC269334, IC269411, IC269775 (> 51)	JG-74 (21.54)	

No. of pods per plant	Rahuri	2004-05	I	2.4-91.6	IC269282, IC269137, IC269162, IC269289, IC269286 (>80.8)	JG 11 (39.2)	
			II	8.8-126.0	IC327925, IC327936, IC327915, IC327195, IC327757 (>83.6)	JG 11 (39.2)	
		2005-06	I	5.30-139.70	IC275514, IC275586, IC275557, IC275497, IC275556 (> 120)	GNG 469 (64.63)	
			II	5.0-170.0	EC548033, EC442265, IC327436, EC441853, IC327647 (> 119)	KWR 108 (77.82)	
		2006-07	I	3.70-193.00	IC269055, IC271174, IC269057, IC271093, IC270676 (> 137)	Pusa 362 (132.38)	
			II	1.00-126.70	ICC13895, IC327372, ICC12683, ICC12653, ICC12581 (> 110.3)	Pusa 1053 (70.00)	
		2008-09	I	25.70-347.00	IC269599, IC269338, IC269335, IC269466, IC269802 (> 228.3)	Digvijay (100.68)	
		Ranchi	2004-05	I	1.0-77.4	IC268949, IC268891, IC268898, IC268900, IC268895 (>62.4)	GNG 663 (20.4)
				II	1.0-147.4	IC327751, IC327055, IC327805, IC327221, IC327817 (>48.8)	GNG 663 (20.4)
	2005-06		I	4.60-69.0	IC251669, IC251671, IC251667, IC251664, IC251796 (> 54.6)	KWR 108 (28.47)	
			II	2.20-63.60	IC327238, IC327558, IC269724, IC424247, IC327691 (> 44)	KWR 108 (20.31)	
	2006-07		I	4.00-107.00	IC269033, ICC5687, IC269048, IC269026, IC269034 (> 73.2)	Pusa 362 (22.69)	
			II	5.00-47.60	IC327442 (= 47.6)	Pusa 362 (26.80)	
	2007-08		I	5.80-91.20	IC269359, IC269644, IC269642, IC269622, IC269618 (> 84.4)	KWR 108 (46.63)	
	2008-09		I	9.40-75.80	IC269791, IC269792, IC269769 (> 71.5)	HK 94-134 (34.92)	
	Ludhiana	2004-05	I	14.0-268.0	IC268866, IC268863, IC268856, IC268857, IC269161 (>212)	GNG 663 (108.2)	
			II	23.0-210.0	IC327777, IC327775, IC327823, IC327976, IC327751 (>165)	GNG 663 (108.2)	
		2005-06	I	8.00-175.30	IC251795, IC251728, IC251732, IC251685, IC251777 (> 116.7)	KWR 108(45.25)	
			II	5.00-74.00	IC424253, IC424256, IC424265, IC424275, IC327897 (> 58.33)	GNG 469 (25.85)	
		2006-07	I	10.67-95.67	ICC10942, ICC10937, ICC10461 (> 86)	BGD 72 (56.21)	
			II	10.00-97.33	IC271679, ICC11189 (> 97)	Pusa 362 (48.50)	
		2007-08	I	6.00-102.00	IC269419, IC269424, IC269283, IC269701 (> 89)	GPF 2 (44.36)	
		2008-09	I	6.30-72.00	IC269306, IC269739, IC269037, IC269799, IC269422 (> 39.5)	GPF 2 (19.08)	
	Hisar	2004-05	I	7.4-151.4	IC268871, IC268933 (>100)	GNG 663 (61.1)	
			II	13.6-193.0	IC327968, IC327936, IC327912, IC327203, IC327784 (>125)	GNG 663 (61.1)	



No. of pods per plant	Hisar	2005-06	I	5.0-150.0	IC251814, IC275478, EC548038, IC275459, IC251717 (> 111)	GNG 469 (73.63)	
			II	3.0-133.0	IC424263, IC424255, IC327764, IC424353, IC269726 (> 112)	GNG 469 (90.11)	
		2006-07	I	9.60-90.80	IC271010, ICC8427, ICC484, ICC5754, ICC8426 (> 77)	Pusa 362 (40.77)	
			II	4.80-74.00	ICC11035, ICC10952, ICC10961, IC327130 (> 64.8)	-	
	Bangalore	2004-05	I	1.5-37.5	IC268949, IC268882, IC269210, IC269152, IC269017, IC269398 (>28)	JG 11 (12.1)	
			II	1.5-37.5	IC327216, IC327051, IC327164, IC327762, IC327393, IC327707, IC327908 (>28)	JG 11 (12.1)	
		2005-06	I	1.80-98.20	IC251669, IC251668, IC251679, IC251691, IC251744 (> 72.4)	-	
			II	0.60-90.80	IC424294, EC442563, IC424232, IC424203, IC424266 (> 64.6)	-	
		2006-07	I	1.60-69.80	ICC8632, IC270973, ICC10819, ICC8626, ICC5716 (> 50)	BGD 72 (19.56)	
			II	0.80-108.0	EC442045, ICC10993, ICC12426, ICC11062, IC271660 (> 58.8)	Pusa 1053 (22.66)	
		2008-09	I	12.40-212.50	IC269542, IC269522, IC269541, IC269763, IC269309 (> 132.4)	Annegere 1 (30.50)	
		Kanpur	2004-05	I	11.0-222.0	IC269146, IC269203, IC269186, IC269003, IC269149 (>108)	GNG 663 (42.6)
				II	4.0-114.0	IC327689, IC327330, IC327145, IC327687, IC327092, IC327056 (> 92)	GNG 663 (42.6)
			2005-06	I	16.30-101.60	IC251833, IC251839, IC275499, IC251810, IC251687 (> 78.3)	GNG 663 (47.67)
	II			16.00-99.60	IC424365, IC424250, IC327406, IC327479, IC424363 (> 89)	GNG 663 (50.66)	
	2006-07		I	4.30-195.70	IC271310, IC271324, ICC6030, ICC6091, IC271239 (> 160)	Pusa 1053 (78.93)	
			II	10.00-209.70	IC327423, ICC11027, ICC11036, ICC11013, IC327418 (> 176)	BGD 72 (76.89)	
	Gulbarga		2004-05	I	5.6-66.4	IC269195, IC269076, IC269062, IC268935, IC269065 (>58.2)	GCP 101 (33.7)
				II	8.8-93.8	IC327975, IC327961, IC327190, IC327116, IC327695 (> 64.4)	GCP 101 (33.7)
		2005-06	I	4.0-130.0	IC251773, IC251727, IC251743, IC251747, IC251714 (> 109)	GNG 663 (32.44)	
			II	1.00-113.00	IC327297, IC424304, EC548056, IC327571, IC327591 (> 80)	GNG 663 (24.78)	

No. of pods per plant	Gulbarga	2006-07	I	3.80-46.60	IC270676, IC270964, ICC8342, ICC5680, IC270942 (> 32.4)	BGD 72 (11.35)
			II	3.60-25.00	ICC12695, ICC12674, ICC12683, ICC12249, ICC12655 (> 21.6)	BGD 72 (11.00)
	Pooled over locations	2004-05	I	11.38-88.68	IC269146, IC268949, IC269191, IC269186, IC269218 (>71.71)	GNG 663 (52.88)
			II	11.38-73.54	IC327751, IC327968, IC327961, IC327941, IC327221 (> 60.73)	GNG 663 (52.88)
		2005-06	I	17.42-60.98	IC251691, IC251795, IC251669, IC251814, IC251683 (> 55.78)	KWR 108 (40.01)
			II	12.45-52.90	IC424365, IC424302, IC327307, IC327405, IC327565 (> 48.9)	KWR 108 (38.32)
		2006-07	I	21.18-130.00	ICC8418, IC269057, IC269048, IC269047 (> 55.55)	Pusa 362 (45.36)
			II	17.69-59.56	IC271679, ICC11015, IC327319, ICC11027, IC327423 (> 51.11)	Pusa 1053 (39.99)
		2007-08	I	21.52-90.07	IC269442, IC269622, IC269430, IC269527, IC269264 (> 80.98)	RSG 888 (66.63)
		2008-09	I	13.00-130.00	IC269524, IC269466, IC269599, IC269338, IC269306 (> 102)	-
No. of seeds per pod	Raipur	2004-05	I	1.0-2.0	IC269028, IC269213, IC269175, IC269144, IC269112 (= 2)	GCP 101 (1.5)
			II	1.0-2.0	IC327281, IC327060, IC327988, IC327064, IC327171 (= 2)	GCP 101 (1.5)
		2005-06	I	1.0-2.0	IC251785, IC251781, IC251769, IC251811, IC251810 (= 2)	KWR 108 (1.78)
			II	1.00-2.00	EC434359, IC424366, EC442444, IC424335, EC442261 (= 2)	GNG 663 (1.78)
		2006-07	I	1.00-2.00	IC269449, IC269452, IC269453, IC2690448, IC2690451 (= 2)	BGD 2 (1.38)
		2007-08	I	1.00-2.00	-	Vaibhav & JG 74 (1.00)
		2008-09	I	1.00-2.00	IC269793, IC269802, IC269806, IC269832, IC269835 (=2)	JG 74 (1.08)
	Rahuri	2004-05	I	1.0-1.8	IC269079, IC269082, IC269068, IC269012 (> 1.5)	SAKI 9516 (1.2)
			II	1.0-2.0	IC327094, IC327237, IC327253, IC327798, IC327684, IC327921, IC327821 (> 1.6)	SAKI 9516 (1.2)
		2005-06	I	1.00-1.90	IC275501, IC251866 (> 1.8)	GNG 663 (1.31)
			II	1.00-1.90	EC442406, IC327387, IC327880 (> 1.7)	GNG 663 (1.36)
		2006-07	I	1.00-2.10	ICC8591, IC270985, IC271242, IC271318 (> 1.6)	Pusa 362 (1.27)
			II	1.00-1.70	ICC12247, IC275601, IC271577, ICC11181, IC327343 (> 1.4)	Pusa 1053 (1.00)
		2008-09	I	1.00-24.40	IC269338, IC269648, IC269335, IC269774 (> 1.86)	Uday (1.39)

No. of seeds per pod	Ranchi	2004-05	I	1.0-2.6	IC269230, IC269032, IC269219 (> 2.2)	GNG 663 (1.6)
			II	1.0-3.0	IC327826, IC327805, IC327830, IC327394 (> 2)	GNG 663 (1.6)
		2005-06	I	1.00-2.60	IC275614, IC251670, IC251694 (> 2.2)	GNG 663 (1.78)
			II	1.00-2.20	IC327238, IC327427, IC269891, EC548073, IC424275 (> 2)	GNG 663 (1.67)
		2006-07	I	1.00-2.20	ICC5790 (= 2.2)	Pusa-362 (1.08)
			II	1.00-2.40	ICC12761, ICC12269, ICC12629, ICC12644, IC251700 (> 2)	Pusa 1053 & Pusa 362 (1.20)
		2007-08	I	1.00-2.80	IC269483, IC269487 (> 2.4)	PG 114 (1.85)
		2008-09	I	1.00-2.80	IC269338, IC269426, IC269257, IC269383 (> 2.2)	KWR 108 (1.38)
	Ludhiana	2004-05	I	1.0-2.3	IC268856, IC269084, IC269172, IC269117, IC269127, IC269063, IC268860 (> 1.9)	GCP 105 (1.9)
			II	1.0-2.3	IC327072, IC327095, IC327060, IC327099 (> 2.2)	GCP 105 (1.9)
		2005-06	I	1.00-2.60	IC251744, IC251676, IC251817, IC251851 (> 2.2)	GNG 663 (1.51)
			II	1.00-2.20	IC327294, IC327565, IC424360, IC424279, IC327509 (> 1.8)	GNG 663 (1.47)
		2006-07	I	0.60-2.60	IC269451, IC270971, ICC8353, IC271323 (= 2.6)	Pusa 1053 (1.60)
			II	0.40-2.80	ICC12686, IC271580, IC327440, IC271680 (> 2.2)	Pusa 362 (1.53)
		2007-08	I	0.60-2.20	IC269510, IC269745, IC269418, IC269571, IC269667 (> 2)	PBG 1 (1.68)
		2008-09	I	1.30-2.30	IC269793, IC269796, IC269797, IC269810, IC269817 (> 2)	GPF 2 & PBG 1 (2.00)
	Hisar	2004-05	I	1.0-2.6	IC268916, IC269086, IC268915 (> 2.4)	GCP 105 (1.8)
			II	1.0-2.6	IC327216, IC327230, IC327244 (> 2.4)	GCP 105 (1.8)
		2005-06	I	1.0-2.60	IC251822, IC275484, IC251732, IC251907, IC275635 (> 2.2)	GNG 663 (1.68)
			II	1.00-3.00	IC424304, IC424281, IC424236, IC327880 (> 2.2)	GNG 663 (1.83)
		2006-07	I	1.0-2.60	IC251822, IC275484, IC251732, IC251907, IC275635 (= 2.2)	GNG 663 (1.68)
			II	1.00-2.60	ICC12496, ICC10985, ICC12454 (> 2.30)	-
	Bangalore	2004-05	I	1.0-2.0	IC269193 (= 2)	JG 11 (1.0)
			II	1.0-2.0	IC327078 (= 2)	JG 11 (1.0)
		2006-07	I	0.40-2.00	ICC5692, IC270943, IC270964, IC270965, IC271109 (= 2)	BGD 72 (1.33)
			II	0.20-2.20	ICC12685, ICC12800, IC327345, IC327467, IC275633 (= 2.2)	Pusa 1053 (1.31)
		2008-09	I	1.00-1.00	None	Annegere 1 Uday (1.00)

No. of seeds per pod	Kanpur	2004-05	I	1.0-2.1	IC269259, IC269337, IC269210, IC269216, IC268973 (> 1.9)	GNG 663 (1.7)
			II	1.0-2.1	IC327818, IC327698, IC327830, IC327783 (> 1.9)	GNG 663 (1.7)
		2005-06	I	1.00-2.40	IC251781, IC251693, IC275509, IC275450, IC275542, IC275620, IC251883, IC275490 (> 1.8)	GNG 663 (1.69)
			II	1.00-2.00	EC548034, IC424281, IC327307, EC548072, IC424327 (> 1.8)	GNG 663 (1.64)
		2006-07	I	1.00-1.90	IC269027, IC270967, ICC8342, ICC8450, IC271324 (= 1.9)	Pusa 1053 (1.20)
			II	1.00-1.90	IC251699, IC275474, ICC11013, ICC12270, IC327314 (> 1.7)	Pusa 362 (1.23)
	Pooled over locations	2004-05	I	1.0-3.04	IC269314, IC268875, IC268891, IC268904, IC268880 (> 2.34)	GCP 105 (1.67)
			II	1.0-1.89	IC327199 (= 1.89)	GCP 105 (1.67)
		2005-06	I	1.00-1.83	IC251732, IC251866, IC275486, IC251817, IC251781 (> 1.73)	GNG 663 (1.53)
			II	0.94-1.71	EC548073, EC548069, EC548054, EC548079, EC441854, IC424353 (> 1.63)	GNG 663 (1.56)
		2006-07	I	1.06-1.67	ICC8582, IC269452, IC269451, IC269453, IC271117 (> 1.61)	BGD 72 (1.29)
			II	1.00-1.68	ICC12686, ICC12588, IC251700, ICC12681, IC424313 (> 1.57)	Pusa 362 (1.20)
		2007-08	I	0.92-2.00	-	RSG 888 (2.00)
		2008-09	I	1.00-2.06	IC269338, IC269339, IC269426, IC269335, IC269477 (> 1.7)	-
Days to maturity	Raipur	2004-05	I	92.0-129.0	IC269246, IC269003, IC269133, IC268967 (< 103)	RG 200326 (104.6)
			II	102.0-132.0	IC327187, IC327178, IC327118, IC327346, IC327096, IC327147 (< 103)	RG 200326 (104.6)
		2005-06	I	97.0-125.0	IC251796, IC251774 (< 98)	GNG 663 (106.00)
			II	95.0-125.0	IC327404, IC424325 (< 97)	GNG 663 (103.00)
		2006-07	I	120.00-131.00	ICC5716, IC270968, IC269035, IC269036, ICC5775 (< 122)	Pusa 1053 (126.2) Pusa 362 (126.2)
			II	120.00-132.00	IC271580, ICC11004 (< 124)	BGD-72 (126.60)
		2007-08	I	112.00-140.00	IC269258, IC269292, IC269433, IC269436, IC269899 (< 117)	JG 74 (116.25)
		2008-09	I	98.00-119.00	IC269839, IC269469, IC269840, IC269468, IC269761 (< 101)	Vaibhav (105.77)

Days to maturity	Rahuri	2004-05	I	94.0-125.0	IC268919, IC269208, IC269193, IC269132, IC238968, IC268967 (< 101)	SAKI 9516 (107.7)	
			II	102.0-132.0	IC327394, IC327123, IC327149, IC327392, IC327021, IC327187, IC327122 (< 102)	RG 200326 (104.6)	
		2005-06	I	111.0-129.0	IC251675, IC251679, IC251676, IC251780, IC251680, IC251779 (< 117)	GNG 469 (122.00)	
			II	116.0-132.0	ICC2363, IC327567, IC327465, IC327482 (< 117)	KWR-108 (119.60)	
		2006-07	I	80.00-117.00	ICC10941, ICC8343, IC271420, ICC10408, IC271421, IC271573 (< 83)	BGD-72 (96.25)	
			II	81.00-119.00	IC271676, IC327388, ICC11181, IC327395 (< 84)	Pusa-1053 (107.00)	
		2008-09	I	97.00-103.00	IC269090, IC269335 (=97)	Digvijay (99.92)	
		Ranchi	2004-05	I	110.0-139.0	IC269109, IC269110, IC269115, IC269114 (< 111)	GNG 663 (123.3)
				II	117.0-141.0	IC327904, IC327961, IC327092 (= 117)	GNG 663 (123.3)
	2005-06		I	104.0-118.0	IC251660, IC251719 (= 104)	KWR 108 (112.56)	
			II	102.0-119.0	IC327647, IC327645, IC327422, IC269713, IC327416, IC327311, IC327512, IC327410 (< 105)	GNG 469 (111.89)	
	2006-07		I	94.00-149.00	IC8589, IC269028, IC2690333, IC2690455, ICC5337 ( $\leq$ 95)	Pusa-1053 (130.50)	
			II	94.00-148.00	ICC12655, ICC12661, ICC12667, ICC12674, ICC12681 (= 94)	Pusa 362 (122.60)	
	2007-08		I	125.00-141.00	IC269253, IC269254, IC269284, IC269291, IC269315 (= 125)	KWR 108 (132.50)	
	2008-09		I	125.00-149.00	IC269797, IC269806, IC269835, IC269410, IC269435 (=125)	HK 94-134 (132.54)	
	Ludhiana		2004-05	I	175.0-185.0	IC268855, IC268864, IC268860, IC268853, IC268867 (< 177)	GNG 663 (180.7)
		II		177.0-186.0	IC327091, IC327240 (= 177)	GNG 663 (180.7)	
		2005-06	I	129.00-155.00	IC251660, IC251673, IC251707, IC251749 (< 142)	GNG 469 (148.67)	
			II	140.00-158.00	IC327513, IC327239, IC327643, IC327647, IC327514, IC327386, IC327512, IC424389 (=140)	GNG 469 (148.00)	
		2006-07	I	140.00-155.00	ICC498, IC270942, IC271210, ICC8320, ICC8322 (< 142)	Pusa 362 (146.13)	
			II	140.00-155.00	IC327340, IC327343, IC327385, IC327388, IC327401 (= 140)	Pusa 1053 (146.10)	
		2007-08	I	123.00-146.00	IC269656, IC269667, IC269680, IC269669, IC269671, IC269772, IC269654 (< 127)	PBG 1 (138.18)	
		2008-09	I	118.00-136.00	IC269825, IC269826, IC269853 (< 120)	GPF 2 & PBG 1 (127.38)	

Days to maturity	Hisar	2004-05	I	130.0-150.0	IC269136, IC269128, IC269127, IC269130, IC269137, IC269133, IC269126 (= 130)	GNG 663 (139.3)
			II	134.0-150.0	IC327032, IC327031, IC327035, IC327030, IC327034, IC327024, IC327020, IC327023 (< 136)	GNG 663 (139.3)
		2005-06	I	130.0-154.0	IC251662, IC251676, IC251698 (< 131)	GNG 663 (142.38)
			II	135.0-155.0	IC424251, IC424336, EC442444, EC548050, IC327317 (< 140)	KWR 108 (143.00)
		2006-07	I	132.00-139.00	IC269034, IC270959, ICC5742, ICC5768, ICC5787 (= 132)	Pusa 362 (134.50)
			II	132.00-139.00	IC327444 (= 132)	-
	Kanpur	2004-05	I	126.0-155.0	IC269029, IC269039, IC269011, IC268911 (< 130)	GCP 105 (140.1)
			II	127.0-157.0	IC327150, IC327820, IC327633, IC327036 (< 136)	GCP 105 (140.1)
		2005-06	I	135.0-169.0	IC275485, EC026426, IC275606 (< 149)	KWR 108 (158.33)
			II	136.0-194.0	IC424290, IC424335, IC327646 (< 149)	GNG 663 (158.00)
		2006-07	I	132.00-186.00	ICC10017, IC270969 (< 142)	Pusa 362 (148.75)
			II	146.0-163.0	ICC12526, ICC12683, ICC12684 (< 147)	Pusa 1053 (151.10)
	Gulbarga	2004-05	I	79.0-120.0	IC269128, IC269043, IC268967, IC269044 (=79)	GCP 101 (79.5)
			II	77.0-104.0	IC327096, IC327091 (= 77)	GCP 101 (79.5)
		2005-06	I	67.0-119.0	IC251713, IC251718, IC251721, EC441770, EC441793, EC548039, EC548080 (< 88)	KWR 108 (98.13)
			II	86.0-107.0	IC327275 (= 86)	GNG 663 (102.44)
		2006-07	I	82.0-109.0	IC269028, IC269032, ICC491, IC269033, IC269043 (= 82)	BGD 72 (93.63)
			II	82.0-109.0	ICC10952, ICC10960, IC271579, ICC10963, ICC10973 (= 82)	Pusa 362 (91.60)
		2007-08	I	62.00-119.00	IC269893, IC269251, IC269645, IC269729, IC269731, IC269736 (< 66)	-
		2008-09	I	98.00-130.0	IC269826, IC269797, IC269807, IC269798, IC269815 (= 98)	Check 2 (110.38)
	Pooled over locations	2004-05	I	102.32-178.0	None	GCP 101 (102.32)
			II	102.32-150.33	None	GCP 101 (102.32)
		2005-06	I	118.20-136.67	IC275575, IC275569, IC251660, IC275574, IC251853 (< 120.67)	KWR 108 (128.16)
			II	117.64-135.71	IC424383, IC424344, EC442444, IC327412, IC327406 (< 120.07)	GNG 663 (126.97)

Days to maturity	Pooled over locations	2006-07	I	112.17-151.00	ICC8360, ICC8434, ICC5787, ICC10067, IC271421 (< 116.57)	BGD 72 (126.16)
			II	115.69-153.00	ICC12588, IC271681, IC327388, ICC12525, ICC12517 (< 117)	Pusa 1053 (128.37)
		2007-08	I	104.33-142.20	IC269410, IC269527, IC269697, IC269405, IC269407, IC269413 (< 112)	JG 74 (116.25)
		2008-09	I	99.92-142.77	IC269813, IC269440, IC269805, IC269801, IC269756 (< 107.6)	-
Grain yield per plant (g)	Rahuri	2004-05	I	0.3-36.8	IC269160, IC269282, IC269308, IC269141, IC269288 (> 18.5)	JG 11 (11.6)
			II	0.9-28.3	IC327915, IC327937, IC327757, IC327925, IC327936 (> 20)	JG 11 (11.6)
		2005-06	I	1.60-35.80	EC542617, IC275508, IC251716, IC275497, IC275555 (> 28)	GNG 469 (18.07)
			II	0.90-48.20	IC327493, IC327316, IC424295, EC442305, EC442265 (> 34.7)	KWR 108 (25.68)
		2006-07	I	1.60-60.70	ICC5697, IC270938, IC271174, ICC5807, IC270936 (> 29.9)	BGD 72 (9.84)
			II	1.10-24.80	IC327372, ICC12247, ICC12365, ICC10969, ICC11033 (> 19.6)	Pusa 1053 (7.90)
	2008-09	I	4.00-51.00	IC269009, IC269035, IC268940, IC269005, IC269037, IC269093, IC269335 (> 38)	Digvijay (31.31)	
	Ranchi	2004-05	I	0.02-14.2	IC268927, IC269227, IC268890, IC268901, IC268931 (> 11.04)	GCP 105 (3.5)
			II	0.04-16.8	IC327335, IC327176, IC327805, IC327803, IC327686, IC327221 (> 6.98)	GCP 105 (3.5)
	Ludhiana	2004-05	I	0.30-33.33	IC268933, IC269288 (> 13.32)	GNG 663 (27.64)
			II	0.46-30.77	IC327729, IC327751, IC327777, IC327761, IC327231 (> 25)	GNG 469 (19.36)
		2005-06	I	1.98-51.74	IC251795, IC251744, IC251698, IC251732, IC251714 (> 28.42)	KWR-108 (14.45)
			II	1.56-17.27	IC424275, EC442277, EC442319, EC441849, IC424378 (> 15.43)	GNG-469 (9.45)
		2006-07	I	0.31-46.56	ICC5753, ICC10019 (> 35.30)	BGD 72 (16.03)
			II	0.24-45.00	IC424313, IC327254, IC141849, ICC12365, ICC12730 (> 32.92)	Pusa 362 (24.63)
	Hisar	2004-05	I	2.0-26.0	IC268894, IC268897, IC268892, IC268984, IC269322 (> 22.5)	GNG 663 (14.9)
			II	0.5-25.5	IC327937, IC327581, IC327445, IC327025, IC327821 (> 22.5)	GNG 663 (14.9)
		2005-06	I	1.10-17.40	IC251825 (= 17.4)	GNG 469 (17.34)
			II	0.90-19.50	IC424236, EC442353, IC427367, IC424275 (> 18.2)	GNG 469 (17.41)

Grain yield per plant (g)	Hisar	2006-07	I	0.80-22.40	ICC6036, ICC8437, ICC6027 (> 19.5)	Pusa 1053 (9.15)	
			II	0.70-14.30	ICC10952, ICC10948, ICC10961, ICC11035, ICC10950 (> 11.30)	-	
	Kanpur	2004-05	I	1.6-40.0	IC269146, IC269203, IC269288, IC269186, IC269355 (> 23)	GCP 105 (11.4)	
			II	0.7-23.0	IC327689, IC327171, IC327686, IC327145 (> 21)	GCP 105 (11.4)	
		2005-06	I	2.10-71.70	IC251837, IC251783, IC251786, IC251838, IC251834 (> 21)	GNG 469 (10.43)	
			II	2.50-64.40	IC424234, IC424365, IC424329, IC424349 (> 18)	GNG 469 (12.56)	
		2006-07	I	2.50-30.30	IC271409, ICC10383 (> 24.4)	Pusa 362 (23.94)	
			II	2.00-37.60	IC271667, IC251702, IC327423 (> 36.2)	Pusa 1053 (18.17)	
	Gulbarga	2004-05	I	5.0-75.6	IC269076, IC269035, IC269197, IC269269 (> 51)	GNG 663 (37.7)	
			II	4.4-80.0	IC327975, IC327961, IC327293, IC327792, IC327190 (> 60.8)	GNG 663 (37.7)	
		2005-06	I	0.10-25.40	IC251773, IC251714, IC251747, IC251743 (> 20.4)	KWR 108 (6.22)	
			II	0.10-98.0	IC327558, IC327571, IC327520, IC327591, IC269713 (> 15.4)	GNG 663 (6.49)	
		2006-07	I	1.10-14.60	IC269051, ICC7506, ICC484, IC271462, IC271097 (> 9)	BGD 72 (4.34)	
			II	0.90-7.40	ICC12441, EC548064 (> 7)	BGD 72 (3.96)	
		2007-08	I	0.01-0.37	IC269251, IC269688, IC269491, IC269663, IC269885 (> 0.19)	-	
		Pooled over locations	2004-05	I	2.37-22.35	None	GCP 101 (22.35)
	II			3.11-22.35	None	GCP 101 (22.35)	
	2005-06		I	3.38-21.72	IC251837, IC251783, IC251795, IC251744, IC251714 (> 13.12)	GNG 469 (12.48)	
			II	3.75-17.48	IC424234, IC424365, EC442305, IC424354, IC424709 (> 14.87)	KWR 108 (11.73)	
	2006-07		I	3.24-20.10	ICC8418, ICC5697, ICC6093, ICC5753, IC270936 (> 14.35)	BGD 72 (10.44)	
			II	2.47-19.62	EC548088, ICC12646, EC548084, IC271667, IC271677 (> 13.67)	BGD 72 (10.75)	
	2007-08		I	0.88-9.75	IC269694, IC269356, IC269554, IC269452, IC269473 (> 6.6)	-	
	2008-09		I	4.72-38.00	IC269522, IC269542, IC269009, IC269524, IC269489 (> 27.2)	-	
	100 seed weight (g)	Raipur	2004-05	I	8.96-46.64	IC268967, IC269064, IC269131, IC269144, IC269142 (> 23)	JG 11 (22.18)
				II	7.46-23.77	IC327107, IC327813 (> 22.4)	JG 11 (22.18)



100 seed weight (g)	Raipur	2005-06	I	7.09-33.99	IC275448, IC275584 (> 28.94)	KWR 108 (28.36)	
			II	3.34-37.32	IC424290, EC538493, IC424386, IC424329, EC442351 (> 30.46)	GNG 469 (26.47)	
		2006-07	I	7.44-34.80	IC270936, IC271174, IC270807, ICC5336, ICC5697 (> 30)	Pusa 1053 (27.32)	
			II	8.69-32.76	ICC11153, EC442080, EC548084, ICC12365, IC327395 (> 28.19)	BGD 72 (26.59)	
		2007-08	I	8.09-37.84	IC269258, IC269291, IC269294, IC269454, IC269825 (> 24.71)	Vaibhav (23.99)	
		2008-09	I	8.00-25.49	IC269683 (= 25.49)	Vaibhav (23.48)	
	Rahuri	2004-05	I	9.40-32.0	IC269131, IC269064, IC268903, IC269143 (> 21)	SAKI 9516 (19.8)	
			II	8.1-26.1	IC327709, IC327107, IC327727, IC327274, IC327194 (> 20)	SAKI 9516 (19.8)	
		2005-06	I	6.00-34.00	IC251701, EC442048, IC251800, EC542617, IC275461 (> 28.20)	KWR-108 (27.98)	
			II	8.00-36.40	IC424320, IC424354, EC442651, IC424356, IC305430 (> 32)	KWR-108 (29.28)	
		2006-07	I	7.44-34.80	IC270936, IC271174, IC270807, ICC5336, ICC5697 (> 34.4)	Pusa 1053 (27.32)	
			II	7.20-33.70	IC327139, EC442247, IC327398, EC538506, ICC12365 (> 27.4)	Pusa 1053 (13.6)	
		2008-09	I	8.00-25.49	IC269683 (= 25.49)	Vaibhav (23.48)	
		Ranchi	2004-05	I	7.9-21.3	IC269012, IC269225, IC268958, IC269143 (> 19.6)	GNG 469 (18.7)
	II			6.1-36.0	IC327144, IC327826, IC327580, IC327246, IC327703 (> 21.1)	GNG 469 (18.7)	
	2005-06		I	9.00-28.80	IC251720 (= 28.8)	KWR 108 (27.49)	
			II	10.0-48.0	EC442277, IC424312, EC442631, IC327256, IC269745, EC442033, EC422267 (> 31)	GNG 469 (24.49)	
	2006-07		I	9.20-38.95	ICC5337, IC271225, ICC5697 (> 35.90)	Pusa 1053 (27.39)	
			II	11.52-40.41	IC271660 (= 40.41)	BGD 72 (27.29)	
	2007-08		I	3.90-30.20	IC269479, IC269724, IC269746, IC269688, IC269656 (> 24.30)	KWR 108 (20.89)	
	2008-09		I	7.10-30.00	IC269750 (= 30)	HK 94-134 (27.27)	
	Ludhiana		2004-05	I	9.7-30.8	IC269131, IC268945 (> 25.6)	GNG 469 (25.3)
				II	10.5-25.3	None	GNG 469 (25.3)

100 seed weight (g)	Ludhiana	2005-06	I	6.00-35.20	IC251821, EC026426, EC442048 (> 28.8)	KWR 108 (26.51)
			II	5.00-40.40	EC538489, EC442319, IC424298, EC442353, IC305430 (> 32.8)	KWR 108 (22.09)
		2006-07	I	8.40-27.80	ICC7496, ICC10819 (> 26.3)	Pusa 1053 (26.14)
			II	6.90-30.90	EC538495, EC538498, IC271660, IC327398 (> 26.9)	Pusa 1053 (26.19)
		2007-08	I	8.00-35.00	IC269380, IC269746, IC269786, IC269486 (> 26)	GPF 2 (16.00)
		2008-09	I	2.00-27.30	IC269819, IC269814, IC269845, IC269854, IC269818 (> 21.3)	GPF 2 (14.90)
	Hisar	2004-05	I	9.6-33.6	IC269064, IC269131 (> 27)	GNG 469 (25.49)
			II	10.0-25.2	IC327821, IC327789, IC327750, IC327791, IC327798 (> 21.2)	GNG 469 (25.49)
		2005-06	I	4.40-26.30	IC275448 (= 26.3)	GNG 469 (23.19)
			II	4.70-25.40	IC424289, IC305430, IC424356 (> 22.6)	GNG 469 (22.00)
		2006-07	I	6.60-30.60	IC270806, ICC7496, ICC5336, IC271130, ICC10819 (> 28.4)	BGD 72 (25.23)
			II	8.80-35.20	ICC12532, ICC12461, ICC12543, ICC12365, EC548057 (> 28.7)	-
	Bangalore	2004-05	I	7.0-25.0	IC269064, IC268995 (=25)	JG 11 (14.4)
			II	7.0-25.0	IC327960, IC327816, IC327918, IC327921, IC327920 (> 24)	JG 11 (14.4)
		2005-06	I	6.90-37.50	EC26426, IC251672, IC275447, IC275475, EC442048 (> 25.5)	-
			II	3.00-52.50	IC327416, IC269717, EC442174, IC424298, IC424354 (> 34.3)	-
		2006-07	I	8.30-36.60	ICC5697, ICC7496, IC270938, ICC5337, ICC5335 (> 32.2)	BGD 72 (24.66)
			II	5.20-34.60	IC271660, IC327397, IC327388, ICC12577 (> 26)	BGD 72 (25.66)
		2008-09	I	9.00-31.00	IC269468 (= 31)	Uday (24.38)
		Kanpur	2004-05	I	7.6-35.7	IC269064, IC269131 (> 26.6)
	II			7.0-25.9	None	GNG 469 (25.9)
	2005-06		I	8.40-31.00	IC251821, EC542617, EC442562, IC251789 (> 24.5)	KWR 108 (23.58)
			II	8.20-37.20	IC424298, IC424329, IC424290, IC424320, IC424354 (> 35.1)	KWR 108 (25.9)
	2006-07		I	8.20-32.30	IC270936, ICC10819, ICC5337, ICC5697, ICC5683 (> 27.5)	Pusa 362 (25.7)
			II	7.00-37.80	IC424317 (= 37.8)	Pusa 1053 (25.70)

100 seed weight (g)	Gulbarga	2004-05	I	9.4-28.0	IC269193, IC269185, IC269269, IC269157, IC268884 (> 19)	GCP 101(16.1)
			II	9.4-22.4	IC327279, IC327107, IC327293, IC327727, IC327791 (> 20.4)	GCP 101(16.1)
		2005-06	I	3.0-56.0	IC251825, IC275475, IC251694, IC275448, IC251717 (> 23.6)	KWR 108(19.0)
			II	6.00-33.00	IC424298, IC424329, IC424389, EC442174, EC442265 (> 27.2)	KWR 108(17.07)
		2006-07	I	9.60-33.80	ICC7496, ICC5337 (> 32.0)	BGD 72 (21.03)
			II	8.40-33.20	IC271660, IC327398 (> 30.5)	Pusa 362 (17.40)
		2007-08	I	10.80-29.20	IC269742, IC269529, IC269477, IC269293, IC269722 (> 22.6)	-
	Pooled over locations	2004-05	I	9.58-27.76	IC269131, IC269064, IC268945 (> 21)	GNG 469 (20.70)
			II	9.59-21.0	IC327727 (= 21)	GNG 469 (20.70)
		2005-06	I	9.29-24.91	None	KWR 108 (24.91)
			II	10.06-29.56	IC424329, IC305430, EC442631, IC424298, IC424345 (> 27.44)	GNG 469 (22.59)
		2006-07	I	9.79-30.72	ICC5697, ICC7496, ICC10819, IC270936, ICC5337 (> 24.96)	BGD 72 (24.27)
			II	10.94-25.80	EC548088, IC271660, ICC12365, IC327398, EC548086 (> 23.5)	BGD 72 (23.52)
		2007-08	I	10.53-26.68	IC269454, IC269420 (> 24)	Vaibhav (23.99)
2008-09		I	2.00-27.27	IC269845, IC269822, IC269649, IC269819, IC268949 (> 20.43)	-	

### Biotic Stresses

<i>Fusarium</i> wilt (%)	Bangalore	2004-05	II	Scale 1-9	IC327021, IC327071, IC327072, IC327077, IC327103 (node 1)	
		2005-06	I	Scale 1-9	EC441716, EC548032, EC548036, IC251685, IC251734 (node 1)	
	Sehore	2004-05	II	Scale 1-9	IC327029, IC327030, IC327045, IC327048, IC327049 (node 1)	
		2005-06	II	Scale 1-9	IC251681, IC251698, IC251740, IC251743 (node1)	
		2006-07	I	Scale 1-9	ICC8328, ICC5707, IC271001, ICC6109, IC27122 (node 1)	
		2007-08		Scale 1-9	IC269283, IC269293, IC269411, IC269505, IC269508 (node 1)	
2008-09		Scale 1-9	IC269737, IC269039, IC269750, IC268980, IC269251 (node 1)			

<i>Fusarium</i> wilt (%)	Ludhiana	2004-05	II	Scale 1-9	IC327015, IC327031, IC327039, IC327041, IC327043 (node 1)	
		2005-06	I	Scale 1-9	EC541852, IC251661, IC251665, IC251671, IC251672 ( node 1)	
		2006-07	I	Scale 1-9	ICC5707, ICC5750, ICC5681, IC269039, IC269040 (node 2)	
		2007-08		Scale 1-9	IC269257, IC269262, IC269338, IC269374, IC269397 (node 1)	
		2008-09		Scale 1-9	IC269739 (node 1)	
	Gulberga	2004-05	II	Scale 1-9	IC327100, IC327580, IC327582, IC327776 (node 2)	
		2005-06	I	Scale 1-9	IC251666, IC275594, IC251668, IC251685, IC251842 ( node 1)	
		2007-08		Scale 1-9	IC269251, IC269253, IC269254, IC269262, IC269265 (node 1)	
	Rahuri	2004-05	II	Scale 1-9	IC327140, IC327281, IC327336, IC327349, IC327392 (node 2)	
		2005-06	I	Scale 1-9	IC251670, IC251676, IC251725, IC251755, IC251806 (node 1)	
		2006-07	I	Scale 1-9	ICC8328, ICC5707, ICC10933, IC271001, ICC6109 (node 1)	
	Jabalpur	2004-05	II	Scale 1-9	IC327153, IC327220, IC327223, IC327224, IC327225 (node 1)	
		2005-06	I	Scale 1-9	IC251663, IC251706, IC251710, IC251711, IC251721 ( node 1)	
		2006-07	I	Scale 1-9	ICC5801, IC271321, ICC5803, ICC8382, ICC10464 (node 1)	
		2007-08		Scale 1-9	IC269254, IC269266, IC269274, IC269279, IC269315 (node 1)	
		2008-09		Scale 1-9	IC269737, JG-315 (node 1)	
	Kanpur	2004-05	II	Scale 1-9	IC327015, IC327023, IC327024, IC327026, IC327035 (node 1)	
	Hisar	2004-05	II	Scale 1-9	IC327019, IC327035, IC327041, IC327044, IC327048 (node 1)	
		2005-06	I	Scale 1-9	EC441718, EC441771, EC548048, IC251716, IC251721 ( node 1)	
		2006-07	I	Scale 1-9	ICC5337, ICC5775, IC270979, ICC5801, IC271002 (node 1)	
	Raipur	2005-06	I	Scale 1-9	EC26426, EC441714, EC441716, EC441793, EC442562 (node 1)	
		2005-06	II	Scale 1-9	EC401841, EC441846, EC441856, EC441895, EC441998 (node 1)	
		2008-09		Scale 1-9	IC269750, IC268980, IC269251, IC269543, IC269595 (node 1)	

Dry root rot (%)	Coimbatore	2004-05	II	Scale 1-9	None	
		2005-06	I	Scale 1-9	EC541852, IC251824, IC269709 (node 1)	
		2007-08		Scale 1-9	IC269721, IC269753, IC269756, IC269770, IC269784 (node 1)	
	Jabalpur	2004-05	II	Scale 1-9	IC327076, IC327063, IC327739, IC327733, IC327072 (node 1)	
		2007-08		Scale 1-9	IC269251, IC269253, IC269254, IC269257, IC269258 (node 1)	
	Durgapura	2004-05	II	Scale 1-9	IC327032, IC327100, IC327050, IC327039, IC327031 (node 2)	
		2005-06	I	Scale 1-9	IC251661, IC251667, IC251684, IC251685, IC251716 (node 2)	
		2007-08		Scale 1-9	IC269264, IC269266, IC269306, IC269309, IC269368 (node 1)	
		2008-09		Scale 1-9	IC269541 (node 1)	
	Hisar	2004-05	II	Scale 1-9	IC327906, IC327795, IC327804, IC327104, IC327059 (node 1)	
		2005-06	I	Scale 1-9	IC251741, IC251780, IC251822, IC251907, IC275488 (node 1)	
	Ludhiana	2004-05	II	Scale 1-9	IC327060, IC327754, IC327330, IC327073, IC327680 (node 1)	
2005-06		I	Scale 1-9	IC251661, IC251665, IC251672, IC251676, IC251686 (node 1)		
Wet root rot (%)	Hisar	2004-05	II	Scale 1-9	IC327906, IC327414, IC327055, IC327104, IC327904 (node 1)	
Ascochyta blight (%)	Ludhiana	2004-05	II	Scale 1-9	IC327352, IC327414, IC327231, IC327737, IC327229 (node 1)	
		2007-08		Scale 1-9	IC269530 (node 4) IC269316, IC269336, IC269339, IC269356 (node 5)	
		2008-09		Scale 1-9	IC269826, IC269791, IC269840, IC269870, IC269792 (node 7)	
	Hisar	2004-05	II	Scale 1-9	-	
		2005-06	I	Scale 1-9	IC251909, IC275447, IC251661, IC275449, IC275558 (node 1)	
	Dhaulakuan	2006-07	I	Scale 1-9	IC270967, ICC6040, ICC8451, ICC8582, IC271173 (node 4)	
Collar rot (%)	Jabalpur	2004-05	II	Scale 1-9	IC327736, IC327081, IC327745, IC327046, IC327259 (node 1)	
		2005-06	I	Scale 1-9	IC275448, IC275447, IC251730, IC251743, IC251686 (node 1)	
		2006-07	I	Scale 1-9	ICC6082, ICC5783, IC271011, IC271527, ICC6099 (node 1)	
		2007-08		Scale 1-9	IC269251, IC269257, IC269258, IC269264, IC269265 (node 1)	
		2008-09		Scale 1-9	IC269595, IC269383, IC269330, IC269834, IC269543 (node 1)	

<i>Botrytis</i> Grey Mould (%)	Pantnagar	2004-05	II	Scale 1-9	IC327288, IC327583, IC327933, IC327446, IC327749 (node 1)	
		2005-06	I	Scale 1-9	IC251660, IC251661, IC251663, IC251664, IC251665 (node 1)	
		2006-07	I	Scale 1-9	IC269026, IC269039, IC269052, IC269058, ICC849 (node 5)	
		2007-08		Scale 1-9	IC269380 (node 3) IC269287, IC269293, IC269294, IC269313 (node 5)	
		2008-09		Scale 1-9	IC269792, IC269595, IC269850, IC269780, IC269760 (node 5)	
Foot rot (%)	Ludhiana	2004-05	II	Scale 1-9	IC327201, IC327276, IC327200, IC327692, IC327034 (node 1)	
Pod borer (%)	Pantnagar	2004-05	II	Scale 1-9	All entries are scale 9	
	Navsari	2004-05	II	Scale 1-9	IC327743, IC327288, IC327582, IC327985, IC327921 (node 1)	
	Gulbarga	2004-05	II	Scale 1-9	IC327967, IC327150, IC327141, IC327777, IC327041 (node 1)	
	Pooled over location	2004-05	II	Scale 1-9	IC327744 IC327293, IC327172, IC327150, IC327188 (node 1)	
	Pantnagar	2005-06	II	Scale 1-9	IC424274, IC424336, IC327570, IC424270, IC424279 (node 1)	
	Gulbarga	2006-07	II	Scale 1-9	ICC10952, ICC11019, ICC11033, ICC12233, ICC12235 (node 1)	
<b>Abiotic stresses</b>						
Cold	Almora	2004-05	II	7.0-71.0	IC327194, IC327976, IC327119, IC327109, IC327019 (> 69 pods)	
	Ludhiana	2004-05	II	1.0-36.0	IC327361, IC327806, IC327080, IC327109, IC327800 (> 35 pods)	
Drought	Durgapura	2004-05	II	0.42-10.7	IC327821, IC327026, IC327097, IC327188, IC327191 (> 10 q/ha)	
	Sehore	2004-05	II	0.88-9.2	IC327289, IC327288, IC327695, IC327821, IC327693 (> 8.8 q/ha)	
<b>Quality</b>						
Protein content (%)	Delhi	2004-05	II	17.53-28.83	IC327265, IC327263, IC327281, IC327707, IC327246 (> 28)	
	Delhi	2006-07	II	17.34-27.02	ICC12271, IC271667, ICC11180, ICC11181, IC271664 (> 26.5)	