A BRIEF REPORT OF THE

TWELFTH INTERNATIONAL CHICKPEA TRIALS AND NURSERIES

1986-87

Prepared for the Group Meet on Rabi and Spring/Summer Pulses 1986-87, held at Directorate of Pulses Research, Kanpur, U.P. 26-27 September 1987.

Chickpea Breeding
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Contents

Introduction

This is the 12th International Chickpea Cooperative Trials and Nurseries coordinated by ICRISAT with the following objectives.

i. To supply segregating populations and advanced breeding lines to cooperators for selection or direct release.

ii. To identify differences in adaptation.

iii. To promote cooperation through visits and information exchange.

In 1986-87 we continued to supply International Chickpea Screening Nurseries and Trials, and discontinued F_2 Multilocational trials but continued to provide F_2 generation seeds in bulk and introduced a trial for kabulis. The details of distribution are in Table 1. The following types of nurseries and trials were distributed in 1986-87.

i. International Chickpea Screening Nursery - Desi Short duration (ICSN-DS)

ii. International Chickpea Screening Nursery - Desi Medium duration (ICSN-DM)

iii. International Chickpea Screening Nursery - Desi Long duration (ICSN-DL)

iv. International Chickpea Cooperative Trial - Desi Short duration (ICCT-DS)

v. International Chickpea Cooperative Trial - Desi Medium duration (ICCT-DM)

vi. International Chickpea Cooperative Trial - Desi Long duration (ICCT-DL)

vii. International Chickpea Cooperative Trial - Kabuli (ICCT-K).

A total of 70 sets were distributed to 35 cooperators in 15 states of India.

In addition we supplied 122 samples of parental materials and other breeding lines to 36 cooperators and 300 samples of early generation materials provided to 25 cooperators in India.

The results were received from 51 locations at the time of analysis and the combined tables are presented in this report. Unlike previous years, this report includes tables on G x E interaction and correlations alongwith results from other countries.

Details of trials proposed for 1987-88 have been circulated and

requests are being received. An outline of this is being attached for information and approval.

Results 1986-87

International Chickpea Screening Nurseries - ICSNs

There were short, medium and long duration nurseries to suit different climatic zones of chickpea. The entries included F_5 to F_8 lines from ICRISAT breeding program with 2 common checks and a local check. These nurseries were arranged in a duplicated augmented design with 4 row plots of 4 m long and 30 cm apart with 10 cm between plants along the rows.

ICSN-DS

The details of entries in ICSN-DS are given in Table 2. Eight sets were distributed to Indian locations and results were received from 4 locations. Plant characters and correlations are summarized in Tables 3-9.

At all locations there were many entries which yielded better than the best check. Overall for Indian locations, ICCL 84239 yielded heaviest (2567 kg ha^{-1}) and Annigeri yielded 2079 kg ha^{-1}.

ICSN-DM

The details of entries are given in Table 10. Out of 10 sets distributed to Indian locations results were received from 6 locations. Combined tables for plant characters and correlations are summarized in Tables 11-17.

At all locations there were few to many entries which yielded better than the best check. Overall ICCL 86301 was the highest yielding (1565 kg ha^{-1}) entry for Indian locations and K 850 yielded 1152 kg ha^{-1}.

ICSN-DL

The details of entries are given in Table 18. Results were received from 7 locations out of 10 sets distributed. Combined tables for plant characters and correlations are summarized in Tables 19-25.

As in other sets of nurseries, there were many entries at individual locations which yielded better than the best check. Overall ICCL 86445 yielded highest (3101 kg ha^{-1}) and the best check yield was 2420 kg ha^{-1} (G 130).

International Chickpea Cooperative Trials (ICCTs)

This year for the first time we have introduced kabuli trial in addition to desi trials for short, medium and long duration regions.

Each trials comprised of 16 entries in a RBD with 4 replications,

with plot sizes of 6 rows of 4 m long and 30 cm apart with 10 cm between plants within rows.

ICCT-DS

The details of entries are given in Table 26 and results were received from 7 locations out of 11 sets distributed. The combined tables, stability and correlation studies are summarized in Tables 27-34.

At each location, there were entries which yielded higher than the best check. Overall, ICCL 84204 yielded heaviest (1718 kg ha^{-1}) and Annigeri yielded 1622 kg ha^{-1}.

ICCT-DM

The details of entries are given in Table 35. Thirteen sets were distributed to Indian cooperators and results were received from 10 locations. Combined tables, stability and correlation studies are summarized in Tables 36 to 43.

Many entries yielded better than best check at most of the individual location and overall ICCL 84303 yielded heaviest (1660 kg ha^{-1}) and Annigeri yield was 1449 kg ha^{-1}.

ICCT-DL

The details of entries are given in Table 44. Eleven sets were distributed and results were received from 9 locations. Combined tables, stability and correlation studies are summarized in Tables 45 to 52.

At all individual locations there were few to many entries which yielded higher than the best check. Overall ICCL 10136 yielded heaviest 2475 kg ha^{-1} and check G 130 yielded 2426 kg ha^{-1}.

ICCT-K

The details of entries are given in Table 53. Seven sets of trials were distributed to cooperators and results were received from all the 7 locations. Combined tables and stability and correlation studies are arranged in Tables 54-61.

At individual locations, Patancheru, Gwalior and Sriganganagar had many entries which yielded better than the check L 550, but overall L 550 ranked first (2281 kg ha^{-1}).

Submission for coordinated trials

The new entries we wish to submit for All India Coordinated trials are in the following page.

Proposals for 1987-88

A list of the trials proposed for 1987-88 season are given in page no. 62.

Acknowledgements

We thank all cooperators for conducting the trials and nurseries successfully, and hope materials and information generated will be useful for chickpea improvement.

List of new chickpea varieties for submission to coordinated trials in 1987-88.

Trial	ICCV No.	ICCL/ICCX No.	Pedigree
GIET	18	ICCX 780359	H 208 x HMS 5
	19	ICCX 800123	BG 209 x G 130
	20	ICCX 790430	ICCC 13 x ICCC 18
	21	ICCX 780215	[BG 203 x (WR 315 x BG 203)] x BG 203
	22	ICCX 800045	ICCL 78005 x P 1675
GCVT - Late sown	23	ICCX 790414	Pant G-114 x ICCX-730167-5-3-B
	24	ICCX 780705	K 468 x Annigeri
	25	ICCX 790518	H 208 x K 850
	26	ICCX 790515	H 208 x G 543
GCVT - Bold	27	ICCX 770382	Pant G-115 x K 56567
	28	ICCX 790529	L 550 x H 208
	29	ICCL 85333	Annigeri x K 850
	30	ICCX 790519	K 850 x ICCX 730032-7-3-B-BH
	17	ICCL 84341	P 2559 x F_5 (BN 10 x NP 34)
GCVT - Special	17	ICCL 84341	P 2559 x F_5 (BN 10 x NP 34)

Table 1. International Trials and Nurseries sent within India in 1985/87.

S.No.	State	Location	Cooperator	MS	MM	ML	LS	TM	TL	TK
1.	Andhra Pradesh	Patancheru	ICRISAT	1	1		1	1		1
2.	Bihar	Dholi	S.K. Choudhary							
3.	Bihar	Sabour	N.B. Singh		1			1		
4.	Delhi	New Delhi	P.N. Bahl			1			1	
5.	Gujarat	Junagadh	J.P. Yadavendra	1	1		1	1		1
6.	Haryana	Hisar	V.P. Singh						1	
7.	Haryana	ICRISAT-Hisar	ICRISAT			2			2	1
8.	Himachal Pradesh	Barthin	B.C. Sood						1	
9.	Karnataka	Karnataka	T. Sunny Rao	1			1			
10.	Maharashtra	Akola	G.R. Pulsale				1			
11.	Maharashtra	Rahuri	R.B. Deshmukh	1						
12.	Madhya Pradesh	Ambikapur	R.L. Pandey		1					
13.	Madhya Pradesh	Indore	S.W. Telang					1		
14.	Madhya Pradesh	Jabalpur	-		1			1		
15.	Madhya Pradesh	Gwalior, ICR.	-		1	1		1	1	1
16.	Madhya Pradesh	Raipur	B.B. Agarwal				1			
17.	Madhya Pradesh	Sehore	M.S. Lal	1	1		1	1		
18.	Orissa	Bhawanipatna	D. Sahu	1			1			
19.	Orissa	Keonjhar	K.M. Samal					1		
20.	Punjab	Faridkot	T.S. Sandhu			1			1	
21.	Punjab	Ludhiana	M.M. Verma						1	
22.	Rajasthan	Jaipur	C.P. Bhatnagar		1		1	1		
23.	Rajasthan	Kota	P.K. Dixit					1		
24.	Rajasthan	Nimgaon	K.K. Jain		1			1		
25.	Rajasthan	Nayagarh	K.C. Panda				1			1
26.	Rajasthan	Sriganganagar	R.V. Maheshwari			1			1	1
27.	Tamil Nadu	Coimbatore	Sr. Scientist	1			1			
28.	Madhya Pradesh	Meerut	P.C. Sharma			1				
29.	Uttar Pradesh	Faizabad	-			1			1	
30.	Uttar Pradesh	Kanpur	B.P. Katiyar			1				1
31.	Uttar Pradesh	Pantnagar	B.P. Pandey							
32.	Uttar Pradesh	Varanasi	R.M. Singh			1				
33.	Uttar Pradesh	Maseera, Nainital							1	
34.	W. Bengal	Berhampore	-					1		
35.	W. Bengal	Sriniketan	-							

Table 2. Details of entries in ICSN-DS, 1986/87.

Sl. No.	ICCL No.	Selection No.	Parentage
1.	84239	ICCX 770001-BP-BP-7P-1P-BP	PRR 1 x Annigeri
2.	[illegible]	[illegible]	(P 850 x P [illegible] x ICCC 1
3.	83128	ICCX 741533-5P-4P-BP-BP-BP	P 5409 x K 850
4.	86201	ICCX 809904-BP-BP-3BP-BP	JG 74 x K 850
5.	86202	ICCX 800004-BP-BP-29P-BP	JG 74 x K 850
6.	86203	ICCX 800007-BP-BP-48P-BP	JG 74 x Phule G-4
7.	86204	ICCX 800051-BP-BP-32P-BP	ICCL 78021 x ICCC 9
8.	86205	ICCX 800066-BP-BP-9P-BP	ICCL 78043 x BDN 9-3
9.	86206	ICCX 800066-BP-BP-37P-BP	ICCL 78043 x BDN 9-3
10.	86207	ICCX 800066-BP-BP-45P-BP	ICCL 78043 x BDN 9-3
11.	86208	ICCX 800081-BP-BP-3P-BP	ICCL 78073 x Annigeri
12.	86209	ICCX 800081-BP-BP-22P-BP	ICCL 78073 x Annigeri
13.	86210	ICCX 800081-BP-BP-30P-BP	ICCL 78073 x Annigeri
14.	86211	ICCX 800082-BP-BP-36P-BP	ICCL 78073 x BDN 9-3
15.	86212	ICCX 800085-BP-BP-27P-BP	ICCL 78073 x P 1675
16.	86213	ICCX 790047-BP-BP-1P-BP	Annigeri x ICCC 9
17.	86214	ICCX 790049-BP-BP-15P-BP	Annigeri x ICCC 9
18.	86215	ICCX 790047-BP-BP-17P-BP	Annigeri x ICCC 9
19.	86216	ICCX 790047-BP-BP-30P-BP	Annigeri x ICCC 9
20.	86217	ICCX 790047-BP-BP-5P-1P-BP	Annigeri x ICCC 9
21.	86218	ICCX 790047-BP-BP-40P-1P-BP	Annigeri x ICCC 9
22.	86219	ICCX 780634-BP-BP-35P-1P-BP	Annigeri x JG 62
23.	86220	ICCX 800002-BP-BP-21P-BP	JG 74 x BDN 9-3
24.	86221	ICCX 800003-BP-BP-19P-BP	JG 74 x ICCC 9
25.	86222	ICCX 810470-70P-2P-BP	(EMS x NP 81)-P1 x 2375
26.	86223	ICCX 800494-5P-1P-1P-BP	EMS 4 x Annigeri
27.	86224	ICCX 810656-18P-BP-BP	ICCC 30 x P 436-2
28.	86225	ICCX 800552-27P-BP-2P-BP	CPS 1 x JG 74
29.	86226	ICCX 780119-13P-1P-BP-1P-1P-BP	Pant G-114 x T 3
30.	86227	ICCX 780119-13P-1P-BP-1P-3P-BP	Pant G-114 x T 3
31.	86228	ICCX 780125-28P-1P-BP-1P-1P-BP	BDN 9-3 x P 436-2
32.	86229	ICCX 780172-38P-2P-BP-BP-3P-BP	T 3 x C 104
33.	86230	ICCX 770029-BP-BP-85P-1P-1P-BP	Annigeri x G 130
34.	86231	ICCX 770026-BP-BP-39P-1P-2P-BP	Annigeri x E 100
35.	86232	ICCX 770148-BP-BP-16P-1P-1P-BP	JGC 1 x ICCC 1
36.	86233	ICCX 760740-BP-BP-23P-5P-1P-1P-BP	P 378 x Annigeri

contd.

Table 2 contd.

Sl. No.	ICCL No.	Selection No.	Parentage
37.	86234	ICCX 760640-BP-BP-23P-1P-1P-1P-BP	P 378 x Annigeri
38.	86235	ICCX 761175-BP-BP-82P-1P-1P-1P-BP	Chaffa x F1 (P 1222 x P 1231)
39.	86236	ICCX 790107-9P-1P-1P-BP	BDN 9-3 x K 1258
40.	86237	ICCX 770350-BP-2P-1P-1P-1P-BP	Annigeri x K 1174
41.	86238	ICCX 790212-21PLB-11PUY-BPWR-BPWR-BPLB	(ICC 506-EB-EB x ICC 1381-EB-EB) x VR 315
42.	86239	ICCX 780379-BP-BP-16P-BP-BP	ICCC 4 x (Annigeri x Pant G-114)-F1
43.	86240	ICCX 780083-BP-BP-16P-BP	(JG 62 x P 496)-5-3-B-BP x K 850
44.	86241	ICCX 780085-BP-BP-39P-BP-BP	(JG 62 x P 496)-5-3-B-BP x Chaffa
45.	86242	ICCX 790067-BP-BP-67P-BP-BP-BP	JG 74 x ICCC 9
46.	86243	ICCX 780100-BP-BP-52P-BP-BP	(JG 62 x P 496)-5-3-B-BP x Annigeri
47.	86244	ICCX 790242-BT-BP-11P-BP-BP	Annigeri x ICCC 1
48.	86245	ICCX 770148-BP-BP-67P-1P-1P-BP	JGC 1 x ICCC 1
49.	86246	ICCX 760218-BP-BP-10P-1P-1P-1P-BP	P 115 x P 9668
50.	86247	Multiseeded 54-5P-BP	
51.	ICC 4918		Annigeri
52.	ICC 4952		JG 62
53.			Local check

Table 3. Mean days to 50% flowering of entries in ICSN DS at 8 locations,1986-87

Entry No.	Mymen singh	Ishu rdi	Parvan nipur	Debre siet	Patan cherul	Patan cheru2	Rahuri	Coimb atore	Mean Indian loc.	Mean Overall
1	68	62	50	80	44	53	39	34	43	54
2	66	63	48	81	45	53	46	36	45	55
3	67	60	44	81	48	50	44	37	45	54
4	69	60	44	81	45	50	46	35	44	54
5	68	59	49	81	46	53	47	40	47	55
6	73	67	49	82	43	53	37	35	42	55
7	64	58	47	81	42	42	37	30	38	50
8	64	59	42	79	43	50	40	33	42	51
9	60	60	42	80	41	48	38	32	40	50
10	66	58	50	80	42	48	37	32	40	52
11	67	59	45	80	42	46	40	36	41	52
12	67	58	44	81	43	48	40	33	41	52
13	67	59	45	77	42	49	44	35	43	52
14	66	61	51	82	41	49	40	32	41	53
15	70	62	42	82	49	54	51	39	48	56
16	65	63	43	81	43	48	40	34	41	52
17	70	60	46	79	44	49	39	31	41	52
18	68	61	42	80	41	48	38	36	41	52
19	68	66	49	82	44	50	37	36	42	54
20	64	62	47	81	43	49	39	39	43	53
21	57	63	44	81	45	53	37	40	44	53
22	60	58	50	76	42	45	37	32	39	50
23	70	58	49	81	43	52	40	31	42	53
24	69	64	47	84	48	51	38	30	42	54
25	69	60	44	81	43	46	41	34	41	52
26	74	59	41	80	45	52	42	37	44	54
27	64	57	50	82	45	46	42	32	41	52
28	63	65	49	82	42	47	38	32	40	52
29	67	64	49	81	45	48	39	35	42	54
30	64	60	42	81	45	48	39	29	40	51
31	63	57	47	81	43	49	46	39	44	53
32	66	59	48	81	44	48	38	32	41	52
33	58	63	44	81	41	50	37	34	41	51
34	68	63	48	77	43	51	38	32	41	53
35	71	61	46	81	40	43	38	31	38	51
36	68	59	48	81	42	50	39	32	41	52
37	71	61	49	80	43	48	39	32	41	53
38	67	59	46	81	42	48	40	32	41	52
39	73	63	49	82	46	53	41	31	43	55
40	67	58	50	82	42	46	43	35	42	53
41	66	62	48	81	44	51	41	38	44	54
42	61	57	51	81	42	51	39	30	41	52
43	67	60	50	82	41	48	41	31	40	53
44	62	55	50	77	42	47	45	31	41	51
45	62	64	50	82	42	44	41	30	39	52
46	61	55	51	81	40	49	41	32	41	51
47	66	59	51	84	42	51	38	33	41	53
48	66	62	50	80	44	50	40	34	42	53
49	65	50	50	82	45	52	38	34	42	52
50	66	59	49	81	44	51	44	32	43	53
51	66	62	46	81	44	53	39	33	42	53
52	66	58	48	81	44	48	42	36	43	53
53	75	61	45	84	42	49	50	32	43	55
Mean	66.2	60.2	47.1	80.7	43.3	49.2	40.2	33.5		
SE	2.6	2.8	1.2	1.3	0.0	1.6	1.5	0.7		
CV	5.5	6.5	3.5	2.3	0.0	4.6	5.1	3.0		

Table 4 . Mean plant height (cm) of entries in ICSN DS at 8 locations,1986-87

Entry No.	Mymen singh	Ishu rdi	Parvan nipur	Debre ziet	Patan cheru	Patan cheru	Rahuri	Coimb atore	Mean Indian loc.	Mean Overall
1	69	78	30	48	51	36	29	29	36	46
2	71	81	26	56	44	36	30	27	34	46
3	67	64	26	42	41	36	32	29	35	42
4	68	69	29	44	32	36	27	31	32	42
5	59	67	30	50	43	40	34	30	37	44
6	73	82	33	47	38	37	23	32	33	46
7	65	88	30	43	41	34	21	27	31	44
8	57	76	26	52	46	33	27	32	35	44
9	56	74	30	59	42	36	32	26	34	44
10	69	74	30	50	38	32	30	27	32	44
11	69	73	39	51	36	37	30	27	33	45
12	72	68	30	51	41	36	27	25	32	44
13	65	64	27	43	32	30	24	30	29	39
14	61	72	25	47	32	35	27	30	31	41
15	77	81	33	50	40	38	35	30	36	48
16	67	74	34	46	36	34	27	28	31	43
17	72	73	31	47	55	39	27	31	38	47
18	73	74	31	51	39	36	29	31	34	46
19	67	68	35	40	41	39	24	30	34	43
20	70	76	31	48	39	34	18	26	29	43
21	73	73	39	47	38	36	27	25	32	45
22	69	78	28	54	36	32	27	29	31	44
23	65	72	28	48	37	35	24	28	31	42
24	59	76	30	44	43	37	29	28	34	43
25	73	83	29	63	36	48	30	27	35	49
26	59	81	36	57	38	36	27	29	33	45
27	62	79	39	54	38	36	25	30	32	45
28	66	75	31	61	38	38	28	26	33	45
29	62	72	29	48	38	40	31	31	35	44
30	60	78	36	50	36	36	24	29	31	44
31	59	67	32	47	39	37	28	29	33	42
32	64	76	28	54	42	36	29	28	34	45
33	63	80	30	41	30	32	24	27	28	41
34	79	85	30	47	37	36	26	30	32	46
35	87	75	28	58	35	44	27	30	34	48
36	67	82	32	53	36	34	28	29	32	45
37	72	84	29	53	41	30	27	27	31	45
38	64	62	27	43	39	30	23	27	30	39
39	77	94	32	68	46	45	33	36	40	54
40	78	89	29	61	59	46	28	32	41	53
41	57	66	30	53	31	33	28	28	30	41
42	63	68	36	50	38	37	29	30	34	44
43	70	81	33	46	38	33	26	25	31	44
44	69	66	31	55	40	31	20	24	29	42
45	64	77	31	46	38	38	23	26	31	43
46	65	63	31	46	39	33	24	31	32	42
47	65	67	31	49	36	33	26	30	31	42
48	75	76	31	54	37	37	31	30	34	46
49	60	75	34	60	38	38	28	28	33	45
50	74	85	31	48	42	37	21	26	32	46
51	73	78	30	50	37	33	31	29	33	45
52	63	69	28	47	42	36	27	29	34	43
53	50	63	30	40	37	35	30	32	34	40
Mean	67.5	75.3	31.0	50.5	39.3	36.2	27.0	28.7		
SE	4.6	5.5	1.6	4.6	0.8	2.4	3.1	0.8		
CV	9.6	10.3	7.5	12.9	2.7	9.5	16.1	3.9		

Table 5. Mean days to maturity of entries in ICSN DS at 8 locations,1986-87

Entry No.	Mymen singh	Ishu rdi	Parvan nipur	Debre riet	Patan cheru	Patan cheru	Rahuri	Coimb atore	Mean Indian loc.	Mean Overall
1	129	133	95	133	84	115	108	76	96	109
2	128	133	89	136	84	108	102	78	93	107
3	128	125	87	133	87	109	99	78	93	106
4	129	124	86	132	84	105	99	79	92	105
5	123	121	85	133	86	104	104	74	92	104
6	128	133	96	129	83	112	103	74	93	107
7	129	133	90	132	82	114	93	66	89	105
8	131	132	86	132	81	110	99	76	92	106
9	130	131	86	132	81	108	100	67	89	104
10	128	133	93	133	82	106	100	71	90	106
11	130	133	91	135	84	109	103	79	94	108
12	126	128	85	131	81	111	99	78	92	105
13	130	125	90	133	84	104	99	77	91	105
14	131	133	94	131	82	108	103	76	92	107
15	125	129	85	134	89	114	107	71	95	107
16	129	132	84	131	82	111	95	75	91	105
17	131	133	90	133	85	115	103	77	95	108
18	130	132	87	133	82	115	104	77	95	108
19	129	132	88	133	84	107	99	79	92	106
20	130	133	86	133	83	111	104	80	95	108
21	131	133	88	132	85	110	95	76	92	106
22	128	128	95	131	83	110	100	70	91	106
23	128	129	86	135	84	111	98	78	93	106
24	129	132	85	133	88	110	103	73	94	107
25	131	133	86	132	82	111	104	72	92	106
26	125	133	86	132	84	107	100	76	92	105
27	123	129	93	130	84	108	106	77	94	106
28	130	133	95	132	82	107	98	66	88	105
29	128	133	87	134	85	114	97	77	93	107
30	130	133	86	134	85	111	100	67	91	106
31	125	125	92	132	81	119	93	77	93	106
32	128	130	90	132	84	111	104	70	92	106
33	129	133	87	133	81	112	95	69	89	105
34	130	133	96	134	85	111	96	76	92	108
35	127	129	87	132	81	107	93	74	89	104
36	127	129	93	135	81	114	99	70	91	106
37	131	133	97	134	84	109	101	80	94	109
38	130	133	94	132	82	109	97	68	89	106
39	128	132	94	134	86	104	104	78	93	108
40	128	124	97	131	82	107	99	77	91	106
41	130	124	92	136	84	112	102	77	94	107
42	127	128	94	133	82	110	97	75	91	106
43	132	133	92	132	82	109	104	71	97	107
44	131	133	90	135	82	111	99	68	90	106
45	124	133	90	133	84	112	99	73	92	106
46	125	128	90	131	81	111	95	67	89	104
47	129	133	90	132	82	111	101	78	93	107
48	129	132	90	131	84	107	107	77	94	107
49	128	128	90	134	85	111	103	77	94	107
50	130	124	92	134	84	107	97	79	92	106
51	130	133	88	133	84	110	101	77	93	107
52	124	123	89	132	84	112	97	76	92	105
53	122	126	87	132	83	110	106	67	92	104
Mean	128.4	130.4	89.8	132.9	83.4	110.0	100.1	74.4		
SE	1.6	2.7	1.8	1.2	0.3	2.6	2.2	1.1		
CV	1.8	2.9	2.8	1.3	0.5	3.3	3.1	2.2		

Table 6. Mean weight of 100 seeds (g) of entries in ICSN DS at 8 locations, 1986-87

Entry No.	Mymen singh	Ishurdi	Parvan nipur	Debre ziet	Patan cheru	Patan cheru	Rahuri	Coimb atore	Mean Indian loc.	Mean Overall
1	15	17	18	24	24	22	23	18	22	20
2	16	17	20	23	21	19	19	20	20	19
3	15	17	22	21	20	18	19	22	20	19
4	19	17	20	23	21	21	20	20	21	20
5	21	17	17	22	25	23	27	20	24	22
6	14	17	20	24	19	18	18	16	18	18
7	19	17	22	20	16	16	17	16	16	18
8	16	17	21	23	22	21	22	20	21	20
9	13	17	21	20	15	15	15	15	15	16
10	16	17	21	19	16	15	15	17	16	17
11	14	17	33	24	22	20	21	19	21	21
12	24	17	14	27	23	21	26	22	23	22
13	13	17	19	23	21	17	21	20	20	19
14	13	17	16	18	20	19	19	17	19	17
15	20	17	22	27	26	23	23	23	24	23
16	18	17	22	23	22	22	20	21	21	21
17	13	17	25	22	19	18	18	17	18	19
18	15	17	19	18	20	18	20	17	19	18
19	12	17	24	25	18	16	18	18	18	19
20	21	17	28	26	23	21	22	20	22	22
21	16	17	24	23	22	20	25	22	22	21
22	13	17	20	21	16	16	18	17	17	17
23	11	17	18	22	18	16	14	16	16	17
24	15	16	16	23	20	19	18	19	19	18
25	18	17	15	34	31	28	28	21	27	24
26	15	17	29	22	20	18	22	20	20	20
27	14	17	27	22	21	17	17	18	18	19
28	13	17	29	22	16	15	14	14	15	18
29	12	17	18	17	13	13	12	15	13	15
30	10	17	17	17	14	15	15	12	14	15
31	15	17	13	22	21	16	17	12	17	17
32	12	17	15	20	17	15	14	14	15	16
33	18	17	14	19	19	17	17	15	17	17
34	17	17	15	21	22	21	21	19	21	19
35	18	17	18	41	37	35	36	30	35	29
36	17	17	13	21	20	18	19	15	18	18
37	19	17	22	25	22	20	21	19	21	21
38	13	17	16	19	18	16	18	16	17	17
39	17	17	19	27	21	22	22	19	21	21
40	18	17	17	22	19	19	21	17	19	19
41	11	17	17	18	16	15	14	15	15	15
42	13	17	28	18	18	17	16	19	18	18
43	14	17	34	21	18	16	17	27	20	21
44	11	17	20	20	17	16	17	18	17	17
45	14	17	20	20	18	17	17	15	17	17
46	14	17	20	21	18	15	17	15	16	17
47	17	17	20	24	25	22	23	18	22	21
48	20	17	20	33	31	27	31	18	27	25
49	17	19	16	24	22	20	24	22	22	21
50	11	17	20	19	14	13	14	14	14	15
51	14	17	19	25	22	21	18	20	20	20
52	12	12	15	18	16	15	15	17	16	15
53	9	7	13	11	21	18	29	30	25	17
Mean	15.3	17.3	20.3	22.7	20.2	18.7	19.6	18.1		
SE	2.1	*	1.1	1.5	0.5	0.5	0	0.2		
CV	19.1	*	8.0	9.6	3.3	3.7	0.4	1.3		

Table 7. Mean seed yield (kg/ha) and ranks of entries in ICSN-DS at 8 locations, 1986/87

Ent. No.	Mymen singh		Ishu rdi		Parvan nipur		Debre siet		Pabna charul		Patan charu2		Rahuri		Coimb atore		Mean Indian loc.		Mean Overall	
1	533	28	804	26	377	50	900	30	2728	6	3578	1	1754	1	2213	3	2567	1	1610	4
2	577	24	716	30	978	41	1485	6	2698	1	2164	44	1425	8	1435	35	1981	16	1460	15
3	616	21	1356	5	1222	21	648	48	2528	17	2681	20	1185	23	2905	1	2323	2	1642	3
4	933	3	1052	17	1050	35	713	44	2563	14	2923	12	548	50	1240	44	1819	32	1378	30
5	894	4	780	29	626	45	1086	20	2811	3	2474	30	1222	19	1273	42	1945	23	1396	27
6	783	10	165	52	1971	5	1163	17	2624	10	2173	43	1135	25	1906	8	1950	19	1490	13
7	623	39	599	35	959	42	1062	23	2688	9	2614	22	1292	14	1668	23	2054	11	1413	21
8	781	11	789	28	498	48	1588	4	2797	4	2875	14	830	45	1333	40	1959	20	1436	19
9	777	12	710	31	2033	4	1122	19	2380	26	2654	21	1382	9	1735	18	2038	13	1599	5
10	690	13	1054	16	958	43	1163	17	2279	35	3029	5	826	46	849	52	1746	41	1356	34
11	450	35	707	32	1593	11	532	50	2555	15	2465	32	872	42	1072	48	1741	43	1281	43
12	630	15	1292	9	1173	28	1054	25	2529	16	2487	29	1568	5	1760	16	2085	8	1562	8
13	595	23	1299	8	1049	36	1340	9	2058	46	2371	36	795	47	1745	17	1742	42	1407	23
14	626	16	602	33	309	51	1354	7	2116	45	3116	3	1557	6	1612	26	2100	6	1412	22
15	548	26	1078	15	1383	15	819	37	2188	42	2505	27	1093	29	1445	33	1808	34	1382	29
16	625	17	411	41	1077	32	903	28	2689	8	2721	18	1120	26	1640	25	2043	12	1398	26
17	386	40	495	39	1055	34	1240	15	2125	44	3045	4	1264	18	1839	11	2058	10	1431	20
18	654	14	557	38	1662	9	1487	5	2374	27	2470	31	1730	2	1807	14	2095	7	1593	6
19	362	44	368	46	1372	16	504	51	2711	7	3142	2	855	43	1038	50	1937	24	1294	42
20	285	49	299	51	1092	31	820	36	2518	19	2496	28	506	51	1298	41	1705	45	1164	51
21	243	53	366	47	1066	33	1300	13	2848	2	2949	10	1016	36	1177	46	1998	14	1371	32
22	342	48	372	45	1272	19	712	46	2266	36	2330	40	904	40	1678	22	1795	36	1235	46
23	458	34	1489	2	1504	13	717	42	2303	33	2345	38	1188	22	1203	45	1760	40	1401	25
24	517	29	592	36	1481	14	823	35	2243	37	2952	8	1049	33	2632	2	2219	4	1536	10
25	274	50	405	43	1118	30	1056	24	2460	23	1856	50	1327	11	1105	47	1687	47	1200	48
26	617	20	797	27	1763	7	1072	22	2522	17	2542	26	1159	24	1690	21	1978	17	1520	12
27	1145	1	842	23	2223	3	1839	1	2234	38	2014	48	1641	4	1696	20	1896	29	1704	1
28	434	37	417	40	550	47	694	47	2318	30	2348	37	1320	12	1839	11	1956	21	1240	45
29	799	8	952	20	1125	29	1634	3	2744	5	2928	11	1266	17	2057	5	2249	3	1688	2
30	875	5	1004	19	1012	38	880	32	2229	39	2958	7	1692	3	1875	9	2191	5	1567	7
31	602	22	1323	6	201	52	813	38	2229	39	2101	45	1217	20	852	51	1600	50	1167	50
32	857	7	839	24	1237	20	1702	2	2349	29	2573	23	992	38	1341	39	1814	33	1485	14
33	345	47	602	33	706	44	738	41	1778	52	3008	6	1103	28	1436	34	1831	31	1215	47
34	450	35	310	50	1044	37	777	39	2580	13	2887	13	892	41	1595	27	1989	15	1317	41
35	272	51	821	25	1947	6	849	33	1824	50	2774	17	1112	27	1945	7	1914	26	1443	17
36	469	32	1173	12	1197	27	383	52	1978	49	2570	24	1087	31	2038	6	1918	25	1362	33
37	359	45	359	48	1330	18	548	49	2423	24	2554	25	918	39	785	53	1670	48	1160	52
38	382	41	1283	10	604	46	841	34	2496	20	1999	49	834	44	1534	30	1716	44	1247	44
39	365	42	160	53	1624	10	760	40	1739	53	1707	52	454	52	1771	15	1418	52	1073	53
40	566	25	1445	3	1003	39	1290	14	2044	48	2396	35	1090	30	1245	43	1694	46	1385	28
41	495	30	1416	4	2396	2	901	29	2473	22	2262	41	1030	35	1402	36	1792	37	1547	9
42	425	38	866	21	1679	8	958	27	2311	31	1825	51	690	48	1851	10	1669	39	1326	39
43	476	31	407	42	1371	17	716	43	2294	34	2418	34	1541	7	1536	29	1947	22	1345	35
44	363	43	864	22	1218	23	1194	16	2311	31	2846	15	994	37	1712	19	1966	18	1438	18
45	956	2	558	37	1218	23	1081	21	1803	51	2690	19	1050	32	1652	24	1799	35	1376	31

Table 7 contd.

Ent. No.	Mymen singh	Ishu rdi	Parvan nipur	Dabre siet	Patan chorui	Patan chorui2	Raturi	Colab atore	Mean Indian loc.	Mean Overall
46	859 6	1490 1	1218 23	1029 26	2586 11	2345 38	608 49	2063 4	1901 27	1525 11
47	247 52	1313 7	1220 22	349 53	2214 41	2950 9	1031 34	1394 37	1897 28	1340 38
48	541 27	395 44	1218 23	1332 11	2163 43	2241 42	1347 10	1342 38	1773 39	1322 40
49	785 9	1275 11	197 53	1312 12	2390 25	2020 47	1280 16	1467 32	1789 38	1341 37
50	467 33	1026 18	2737 1	885 31	2051 47	2075 46	953 53	1049 49	1407 53	1343 36
51	351 46	335 49	1511 12	713 44	2584 12	2838 16	1309 13	1583 28	2079 9	1403 24
52	623 18	1100 13	431 49	1344 8	2475 21	346 53	1204 21	1830 13	1464 51	1169 49
53	621 19	1079 14	980 40	1336 10	2372 28	2425 33	1285 15	1499 31	1895 30	1490 16
Mean	563.0	805.8	1218.3	1003.4	2366.9	2549.1	1104.8	1575.6		
SE	181.8	363.3	331.2	318.4	62.6	293.9	262.2	291.7		
CV	45.7	63.8	38.4	44.9	3.7	16.3	33.6	26.2		

Table 8. Correlations for seed yields (upper diagonal) and ranks (lower diagonal) of entries between locations in ICSN DS, 1986-87

DF = 51

Mymensingh	1	1.0000							
Ishurdi	2	0.2687	1.0000						
Debre Ziet	3	-0.0383	-0.0937	1.0000					
Parwanipur	4	0.5345	0.0393	-0.0883	1.0000				
Patancheru 1	5	0.1212	-0.0823	-0.1801	0.1585	1.0000			
Patancheru 2	6	-0.0434	-0.1473	-0.0825	-0.1629	0.0910	1.0000		
Rahuri	7	0.2293	-0.0267	-0.1912	0.3014	0.1093	0.1251	1.0000	
Coimbatore	8	0.1433	0.0558	0.0503	0.0317	-0.0551	0.0743	0.2569	1.0000
		1	2	3	4	5	6	7	8
Mymensingh	1	1.0000							
Ishurdi	2	0.3363	1.0000						
Debre Ziet	3	-0.1345	-0.1533	1.0000					
Parwanipur	4	0.5205	0.0900	-0.1985	1.0000				
Patancheru 1	5	0.1384	-0.1564	-0.1592	0.1086	1.0000			
Patancheru 2	6	-0.0346	-0.1601	-0.1710	-0.1144	0.0918	1.0000		
Rahuri	7	0.2490	-0.0403	-0.1662	0.2851	0.0663	0.0341	1.0000	
Coimbatore	8	0.1782	0.0497	0.1155	0.0936	-0.0677	0.0663	0.2806	1.0000

Table 9. Correlations among characters at individual locations in ICSH-DS, 1986/87.

Character combinations	Nymon-singh	Ishurdi	Parva-nipur	Dobro seit	Patan-cherul	Patan-cheru2	Rahuri	Coimba-tore
Days to 50% flowering								
Plant height	.18	.23	-.06	-.01	.21	-.03	.24	.04
Days to maturity	-.17	.39	.64	-.14	.88	-.05	.16	.41
Seed yield	-.02	-.59	-.04	-.14	.21	-.01	-.08	-.27
Weight of 100 seeds	.06	-.09	-.01	.09	.06	.01	.09	.17
Plant height								
Days to maturity	.27	.33	-.01	.07	.16	-.11	.36	.28
Seed yield	-.43	-.49	.29	.19	.09	-.21	.22	.19
Weight of 100 seeds	.41	.25	.49	.35	-.06	.45	.25	-.03
Days to maturity								
Seed yield	-.47	-.60	-.02	-.24	.08	.15	.30	-.24
Weight of 100 seeds	-.06	.25	.04	-.18	.02	-.16	.17	.27
Seed yield								
Weight of 100 seeds	-.10	-.10	.27	-.13	-.07	.01	.07	.08

Table 10. Details of entries in ICSN-DM, 1986-87.

Sl. No	ICCL #	Selection #	Parentage
1	85332	ICCI 780898-8P-8P-5P-8P	(JG 62 x P 496) x P 180-1
2	85309	ICCI 770536-2P-1P-1P-8P	K 4 x HRC 882
3	85316	ICCI 770402-8-8P-8P-8P-8H	P 324 x ICCC 5
4	86301	ICCI 800068-8P-8P-37P-8P	ICCL 78043 x K 850
5	86302	ICCI 800082-8P-8P-26P-8P	ICCL 78073 x BDH 9-3
6	86303	ICCI 790019-8P-8P-13P-8P	Phule G-3 x P 1196-1
7	86304	ICCI 760445-8P-8P-34P-1P-1P-1P-8P	JG 62 x P5 (L 850 x HP 405)
8	86305	ICCI 761204-8P-8P-59P-2P-1P-1P-8P	WP 2654-A x P1 (P 1214 x P 1331)
9	86306	ICCI 760640-8P-8P-14P-1P-1P-1P-8P	P 378 x Annigeri 1
10	86307	ICCI 761229-8P-8P-7P-2P-1P-1P-8P	P1 (P 30 x P 450) x P1 (C 214 x P 183)
11	86308	ICCI 761467-8H-8H-13H-1P-1P-1P-8P	P2 (P3 x P 36) x P2 (JG 62 x P 36)
12	86309	ICCI 800012-8P-8P-17P-8P	P 127 x K 850
13	86310	ICCI 800030-8P-8P-33P-8P	P 326 x Phule G-1
14	86311	ICCI 800068-8P-8P-3P-8P	ICCL 78043 x K 850
15	86312	ICCI 800068-8P-8P-8P-8P	ICCL 78043 x K 850
16	86313	ICCI 800068-8P-8P-14P-8P	ICCL 78043 x K 850
17	86314	ICCI 800068-8P-8P-21P-8P	ICCL 78043 x K 850
18	86315	ICCI 800068-8P-8P-39P-8P	ICCL 78043 x K 850
19	86316	ICCI 800068-8P-8P-45P-8P	ICCL 78043 x K 850
20	86317	ICCI 800085-8P-8P-5P-8P	ICCL 78073 x P 1675
21	86318	ICCI 780654-8P-8P-9P-1P-8P	ICCC 1 x K 850
22	86319	ICCI 810492-3P-1P-8P	P1 (HMS 13 x WP 81) x Phule G-5
23	86320	ICCI 810498-14P-1P-8P	P1 (HMS 23 x ICCC 15) x BDHG 20
24	86321	ICCI 780357-118P-8P-1P-1P-8P	K 850 x HMS 8
25	86322	ICCI 780357-208P-8P-1P-1P-8P	K 850 x HMS 8
26	86323	ICCI 810477-1P-1P-8P	P1 (HMS 5 x ICCC 15) x BG 254
27	86324	ICCI 810494-3P-2P-8P	P1 (HMS 13 x P 2994) x BDHG 20
28	86325	ICCI 770019-8P-8P-3P-2P-1P-8P	Annigeri x K 850
29	86326	ICCI 800075-8P-144-2H-8H	ICCL 78054 x ICCC 9
30	86327	ICCI 760705-8H-8H-1H-1H-1H-1H-8H	K 468 x Annigeri
31	86328	ICCI 770940-8H-7H-1H-1H-8H	Pant G-114 x P1 (K 1480 x HRC 1139)
32	86329	ICCI 760368-9H-1H-8H-1H-8H	JG 62 x HMS 18
33	86330	ICCI 780369-21H-1H-8H-1H-8H	Pant G 120 x HMS 30
34	86331	ICCI 800444-8H-1H-1H-8H	HMS 5 x HMS 6
35	86332	ICCI 780357-202P-8H-1H-8H	K 850 x HMS 8
36	86333	ICCI 810508-34H-1H-8H	P1 (HMS 4 x HMS 5) x BDH 9-3
37	86334	ICCI 810510-40H-1H-8H	P1 (HMS 4 x HMS 13) x Phule G 4
38	86335	ICCI 810515-27H-1H-8H	P1 (HMS 4 x HMS 23) x JG 62
39	86336	ICCI 800441-8H-4H-1H-8H	HMS 4 x HMS 6
40	86337	ICCI 810969-8H-8W-44H-8H	GL 769 x GG 586
41	5003	-	K 850
42	11525	-	ICCV 1
43	-	-	Local check

Table 11. Mean days to 50% flowering of entries in ICSN DM at 7 locations, 1986-87

Entry No.	Yezin	Parvanipur	Patancheru	Sabour	Jabalpur	Durgapura	Gwalior	Mean India	Mean Over all
1	68	84	56	75	78	60	88	71	73
2	73	88	58	79	83	63	88	74	76
3	67	81	57	79	83	65	78	72	73
4	62	81	55	76	83	57	79	70	70
5	59	84	54	77	82	53	71	67	69
6	65	86	55	79	83	58	88	73	73
7	56	85	49	80	75	52	56	62	65
8	59	81	47	75	79	51	62	63	65
9	52	88	49	76	80	49	58	62	65
10	57	84	50	79	84	50	58	64	66
11	57	83	49	83	84	50	68	67	68
12	66	83	54	76	85	50	84	70	71
13	64	81	57	78	85	56	81	71	72
14	73	84	61	89	85	57	68	72	74
15	70	81	58	76	83	67	92	75	75
16	65	84	58	80	83	53	66	68	70
17	63	82	55	77	84	53	91	72	72
18	69	84	56	82	85	61	78	72	74
19	67	81	56	76	82	56	70	68	70
20	63	83	56	79	81	57	81	71	71
21	70	84	52	78	80	59	74	69	71
22	63	84	57	80	84	67	75	73	73
23	66	83	59	75	86	64	68	70	72
24	69	86	55	80	83	74	83	75	76
25	69	82	57	75	83	63	92	74	74
26	69	88	59	80	83	66	75	73	74
27	59	83	58	76	82	58	71	69	70
28	54	84	52	77	82	50	71	66	67
29	50	82	54	81	82	49	57	65	65
30	63	81	59	77	83	55	69	69	70
31	73	88	61	75	84	50	92	72	75
32	72	85	58	78	83	52	90	72	74
33	62	82	54	75	85	53	69	67	69
34	54	85	53	75	83	50	57	64	65
35	69	84	57	78	85	51	70	68	71
36	53	82	54	87	83	52	85	72	71
37	55	84	50	82	82	52	58	65	66
38	77	83	62	79	84	70	92	77	78
39	59	84	56	75	82	59	65	67	69
40	67	81	58	75	79	64	68	69	70
41	70	87	56	82	84	60	79	72	74
42	72	83	67	75	81	62	74	72	73
43	59	85	50	87	78	60	76	70	71
Mean	63.7	83.6	55.4	78.2	82.6	56.9	74.6		
SE	2.6	1.6	1.8	2.3	1.8	2.5	1.9		
CV	5.8	2.7	4.7	4.2	3.0	6.3	3.6		

Table 12. Mean plant height (cm) of entries in ICSN DM at 8 locations, 1986-87

Entry No.	Yezin	Parvanipur	Patancheru	Sabour	Ambikapur	Jabalpur	Durgapura	Gwalior	Mean India	Mean Over all
1	29	54	40	54	40	57	41	39	45	44
2	34	62	49	61	52	50	49	40	50	50
3	31	54	35	53	41	53	47	38	45	44
4	27	49	33	55	36	59	38	43	44	43
5	29	52	37	51	41	63	36	39	45	44
6	31	51	43	53	38	53	36	37	43	43
7	27	56	38	52	38	58	35	36	43	43
8	30	53	35	51	47	57	40	39	45	44
9	27	43	38	50	42	65	41	25	44	41
10	23	45	35	50	39	59	38	35	43	41
11	24	54	31	54	43	58	38	45	45	43
12	33	51	39	56	49	59	46	45	49	47
13	32	47	33	54	40	54	33	43	43	42
14	33	56	41	59	45	57	46	32	47	46
15	29	44	38	56	38	49	36	39	43	41
16	44	55	50	52	39	58	60	44	51	50
17	30	51	33	55	45	53	42	46	46	44
18	31	56	35	51	36	54	41	40	43	43
19	30	45	34	49	39	53	46	41	44	42
20	30	55	44	57	38	46	34	41	43	43
21	36	55	45	55	43	61	39	40	47	47
22	29	56	35	56	40	55	42	37	44	44
23	32	65	43	54	41	61	46	36	47	47
24	31	54	34	54	41	55	41	46	45	45
25	35	51	36	47	40	52	47	42	44	44
26	34	53	45	50	41	64	48	46	49	48
27	36	58	42	53	43	51	46	49	47	47
28	25	48	33	46	44	51	35	30	40	39
29	34	54	35	55	41	58	47	47	47	46
30	35	48	41	48	44	58	44	39	46	45
31	38	63	48	59	59	67	57	58	58	56
32	34	52	45	56	42	58	44	49	49	48
33	31	57	37	44	39	54	44	36	42	43
34	34	56	35	55	43	50	36	43	44	44
35	34	46	36	57	44	49	35	42	44	43
36	26	51	35	52	43	64	38	37	45	43
37	27	55	33	59	43	57	33	47	45	44
38	29	56	36	56	47	61	44	48	49	47
39	35	51	35	58	47	58	50	45	49	47
40	35	55	44	56	39	67	54	41	50	49
41	39	54	40	54	41	57	42	42	46	46
42	33	52	33	49	42	55	44	40	44	44
43	28	44	35	53	41	63	40	38	45	43
Mean	31.2	53.0	38.3	53.5	42.2	56.6	42.3	41.1		
SE	2.7	3.4	2.2	4.2	3.2	5.0	4.5	5.6		
CV	12.1	9.2	7.9	11.1	10.6	12.6	14.9	19.3		

Table 13. Mean days to maturity of entries in ICSN DM at 7 locations, 1986-87

Entry No.	Yezin	Parvanipur	Patancheru	Sabour	Jabalpur	Durgapura	Gvalior	Mean India	Mean Over all
1	115	139	114	135	131	141	141	132	131
2	118	138	116	137	130	138	142	133	131
3	123	133	117	137	130	144	141	134	132
4	122	139	114	138	132	142	143	134	133
5	112	140	112	138	133	143	144	134	132
6	111	141	112	137	133	142	144	134	131
7	97	138	110	133	131	136	141	130	127
8	106	139	115	136	130	144	142	133	130
9	102	141	110	138	132	145	141	133	130
10	104	137	111	135	130	138	141	131	128
11	96	135	113	134	135	140	145	133	128
12	112	139	110	137	132	145	145	134	131
13	119	138	113	135	133	140	145	133	132
14	123	138	116	139	133	141	143	134	133
15	118	135	115	138	133	143	145	135	132
16	121	133	119	136	130	141	146	134	132
17	112	137	112	136	132	144	140	133	130
18	117	138	116	138	131	141	141	133	132
19	114	135	112	135	133	143	145	134	131
20	111	141	117	139	129	141	147	135	132
21	118	137	111	137	128	140	140	131	130
22	111	138	113	139	132	144	143	134	131
23	112	137	116	133	130	145	141	133	131
24	115	139	112	139	130	139	141	132	131
25	118	139	115	137	132	140	140	133	132
26	113	142	117	138	134	143	141	135	133
27	113	138	110	136	130	139	145	132	130
28	104	140	113	137	133	140	147	134	131
29	117	137	110	135	132	139	144	132	131
30	109	139	117	133	131	141	143	133	130
31	121	138	115	133	134	142	146	134	133
32	122	139	114	134	131	139	142	132	132
33	109	139	114	134	130	140	143	132	130
34	120	139	113	136	132	140	142	133	132
35	121	138	112	135	134	144	144	134	133
36	97	141	114	138	131	146	142	134	130
37	105	139	111	138	131	143	144	133	130
38	124	141	113	138	133	142	145	134	134
39	125	139	112	138	131	141	142	133	133
40	114	138	117	136	130	142	140	133	131
41	120	140	112	137	133	142	142	133	132
42	121	139	112	135	131	143	141	132	132
43	101	136	112	238	132	141	140	153	143
Mean	113.6	138.2	113.6	136.5	131.5	141.5	142.9		
SE	3.1	1.7	1.7	0.9	1.2	2.4	0.6		
CV	3.9	1.8	2.1	0.9	1.3	2.4	0.6		

Table 14. Mean weight of 100 seeds (g) of entries in ICSN DM at 7 locations, 1986-87

Entry No.	Yezin	Parvanipur	Patancheru	Sabour	Ambikapur	Jabalpur	Durgapura	Gwalior	Mean India	Mean Over all
1	20	19	14	18	15	22	20	14	17	18
2	27	26	23	26	23	19	29	21	24	24
3	15	15	12	14	12	20	15	15	15	15
4	28	26	19	23	19	23	22	21	21	23
5	18	23	16	24	17	22	20	18	20	20
6	20	12	16	19	17	18	21	16	18	17
7	19	21	17	19	15	16	16	17	17	18
8	23	24	21	27	19	29	19	19	22	23
9	21	16	19	22	20	23	22	16	20	20
10	18	17	15	16	13	17	15	12	15	15
11	19	22	16	20	18	21	22	16	19	19
12	21	19	16	22	17	18	29	17	20	20
13	20	20	13	18	15	23	17	16	17	18
14	21	25	17	24	19	24	20	18	20	21
15	25	27	19	24	21	22	25	18	22	23
16	29	31	23	30	26	18	31	22	25	26
17	19	21	17	20	18	18	23	18	19	19
18	26	26	18	25	17	22	22	20	21	22
19	24	23	18	24	19	25	26	15	21	22
20	28	28	23	28	21	20	30	21	24	25
21	27	26	20	24	19	18	28	21	22	23
22	27	23	16	25	18	23	25	21	21	22
23	31	31	21	21	24	23	25	20	22	25
24	18	20	11	17	14	20	18	15	16	17
25	22	22	13	24	17	20	23	19	19	20
26	16	19	13	16	16	20	16	15	16	16
27	27	25	18	27	24	20	27	21	23	24
28	20	22	17	21	17	17	19	15	18	19
29	18	16	12	16	15	18	17	15	16	16
30	22	19	14	18	15	16	18	17	16	17
31	17	18	14	15	15	15	17	14	15	16
32	21	21	16	15	16	23	21	17	18	19
33	17	16	13	19	14	18	16	13	16	16
34	12	16	13	13	12	14	14	11	13	13
35	15	18	12	16	15	21	18	14	16	16
36	18	18	13	15	15	20	17	16	16	17
37	19	20	15	18	17	19	17	16	17	18
38	17	18	13	15	14	20	18	13	16	16
39	13	19	12	15	14	15	15	15	14	15
40	17	19	13	16	15	18	21	14	16	17
41	31	32	19	31	28	28	32	24	27	28
42	18	18	12	18	14	20	15	14	16	16
43	18	10	19	14	14	18	12	13	15	15
Mean	20.9	21.2	16.1	20.2	17.2	19.9	20.8	16.8		
SE	0.2	2.4	0.8	1.9	1.0	3.1	-	1.2		
CV	1.1	16.1	7.0	13.1	8.5	22.3	-	9.9		

Table 15. Mean seed yield (kg/ha) and ranks of entries in ICSN DN at 8 locations, 1986/87.

Ent. No.	Yes Yesin	Parva nipur	Patan cheru	Sabour	Ambi kapur	Jabal- pur	Durga pura	Gwal- ior	Mean India	Mean Over all
1	809 21	495 36	2296 12	2103 7	959 7	1933 17	555 26	809 26	1443 6	1245 13
2	818 19	1433 3	2609 5	1817 20	841 13	1895 22	450 31	581 36	1356 14	1298 7
3	776 25	1049 14	2292 14	1821 19	898 10	2363 4	575 25	1075 14	1504 3	1356 2
4	1005 7	749 23	2633 4	2002 10	341 36	2349 5	744 16	1330 5	1567 1	1394 1
5	1054 4	610 29	2332 10	1478 36	900 9	2157 11	626 22	922 19	1403 11	1261 10
6	526 43	250 41	2547 6	1117 41	326 37	1322 34	1139 2	667 32	1186 25	987 37
7	859 16	765 22	2015 22	1626 29	687 21	1340 33	321 39	1081 13	1178 26	1087 26
8	1036 5	275 40	2958 2	2388 2	560 27	1700 25	521 27	1099 12	1538 2	1317 5
9	661 38	246 42	1885 24	758 43	756 18	1476 31	1025 5	496 40	1066 38	913 42
10	747 27	216 43	2054 20	1560 32	1018 4	2310 6	730 17	276 43	1325 17	1114 22
11	1210 2	824 21	2221 15	1529 33	265 39	1322 34	305 41	1048 15	1115 33	1091 25
12	677 34	1021 17	2181 18	1462 37	827 14	1841 21	306 40	1828 1	1408 10	1268 9
13	715 30	493 37	345 42	1814 21	957 8	2684 2	398 34	958 17	1194 23	1047 30
14	796 23	587 30	1597 26	1838 18	432 33	1263 36	1039 4	650 33	1137 31	1025 34
15	821 18	1276 6	2987 1	1882 14	176 42	1155 39	935 6	671 31	1301 18	1238 15
16	805 22	1117 11	2305 11	1798 23	193 41	1929 18	932 7	646 34	1301 18	1216 18
17	895 13	1162 8	921 35	2517 1	491 29	1556 30	927 9	1545 2	1326 16	1252 12
18	1253 1	662 24	2488 7	1854 16	476 31	1259 37	305 41	758 28	1190 24	1132 20
19	855 17	1472 2	935 34	1875 15	284 38	777 42	719 19	1286 8	979 41	1025 34
20	749 26	1147 9	2696 3	1703 25	167 43	757 43	595 24	742 29	1110 34	1070 28
21	650 39	1211 7	2210 16	1814 21	663 23	2052 16	509 28	953 18	1367 13	1258 11
22	887 14	1357 4	467 41	2018 9	505 28	1109 41	408 33	703 30	858 42	932 41
23	815 20	511 34	1549 27	2065 8	346 35	1153 40	730 17	424 41	1045 39	949 39
24	1096 3	345 38	1048 31	1494 34	597 26	1880 19	1235 1	1321 6	1263 21	1127 21
25	596 41	1109 12	840 37	1430 38	619 24	1574 29	708 20	1312 7	1081 37	1024 36
26	744 28	316 39	2077 19	1183 40	243 40	2221 9	1043 3	542 39	1218 28	1046 31
27	989 8	871 20	64 43	2143 5	347 34	1403 32	396 35	831 24	864 43	881 43
28	563 42	662 24	2028 21	958 42	618 25	1790 24	769 15	327 42	1082 36	964 38
29	795 24	1504 1	823 38	1420 39	1164 1	2247 8	220 43	1134 11	1168 27	1163 19
30	698 33	964 31	2423 8	1844 17	812 15	2108 13	410 32	893 21	1415 9	1219 17
31	670 37	658 27	1164 30	1609 31	709 20	1857 20	348 37	1228 9	1153 29	1030 33
32	631 40	523 32	1877 25	1624 30	758 17	1603 28	930 8	829 25	1270 20	1097 23
33	948 11	511 34	2293 13	2188 3	1078 2	2291 7	324 38	640 35	1469 5	1284 8
34	737 29	636 28	1013 32	1746 24	854 11	1215 38	470 30	791 27	1015 40	933 40
35	945 12	1029 15	1227 29	1918 12	482 30	1810 23	509 28	841 23	1131 32	1095 24
36	1011 6	520 33	2357 9	1703 25	1013 5	2176 10	622 23	1135 10	1501 4	1317 5
37	970 9	1357 4	1920 23	1640 27	848 12	2095 14	361 36	1437 3	1384 12	1329 4
38	855 15	1093 13	899 36	2157 4	733 19	2084 15	779 14	1341 4	1332 15	1244 14
39	705 32	1011 18	651 39	1481 35	988 6	2115 12	855 12	554 38	1107 35	1045 32
40	676 35	662 24	1529 28	1890 13	772 16	2961 1	823 13	559 37	1422 8	1234 16
41	674 36	1023 16	959 33	1979 11	441 32	1681 26	884 10	970 16	1152 30	1076 27
42	710 31	881 19	524 40	2109 6	1021 3	1681 26	668 21	922 19	1154 28	1065 29
43	964 10	1128 10	2190 17	1627 28	670 22	2392 3	874 11	878 22	1439 7	1340 3
Mean	826.6	807.5	1769.0	1731.6	642.5	1776.8	639.9	906.9		
SE	165.0	326.4	271.2	217.2	114.0	432.3	119.0	316.8		
CV	28.2	57.2	21.7	17.7	25.1	34.4	26.3	49.4		

Table 16. Correlations for seed yields (upper diagonal) and ranks of entries between locations in ICSW DM ,1986-87

DF = 41

Yezin	1	1.0000							
Parwanipur	2	0.0312	1.0000						
Patancheru 1	3	0.1481	-0.2136	1 0000					
Sabour	4	0.3547	0.2283	-0.1435	1.0000				
Ambikapur	5	0.1422	-0.1058	-0.1568	-0.0587	1.0000			
Jabalpur	6	-0.0539	-0.1599	0.0361	-0.0331	0 5774	1.0000		
Durgapur	7	-0.2623	-0.2706	0.0250	-0 2354	-0 3478	-0.0363	1.0000	
Gwalior	8	0.2361	0.3356	-0.1608	0.2297	0.0709	0.0436	-0.2435	1.0000

		1	2	3	4	5	6	7	8
Yezin	1	1.0000							
Parwanipur	2	0.0987	1.0000						
Patancheru	3	0.2025	-0.1655	1.0000					
Sabour	4	0.3836	0.1637	-0.0542	1.0000				
Ambikapur	5	-0.1314	-0.1512	-0.1951	-0.0938	1 0000			
Jabalpur	6	-0.0051	-0.1555	0.0600	-0.1047	0 5675	1.0000		
Durgapura	7	-0.2465	-0.2218	0.0168	-0.1181	-0.3412	-0.0220	1.0000	
Gwalior	8	0.2839	0.3125	-0.1585	0.1143	0.0729	0.0999	-0.2934	1.0000

Table 17. Correlations among characters at individual locations in ICSH-DM, 1986-87.

Character combinations	Yezin	Parva-nipur	Patan-cheru	Sabour	Ambik-apur	Jabal-pur	Durga-pura	Gwa-lior
Days to 50% flowering								
Plant height	.44	.23	.34	.20	-	-.20	.18	.33
Days to maturity	.65	.34	.42	.42	-	.24	-.39	-
Seed yield	.17	-.19	-.37	-.13	-	-.08	.38	.30
Weight of 100 seeds	.21	-.06	-.21	-.01	-	.18	.10	.16
Plant height								
Days to maturity	.64	.02	.45	.01	.17	.23	-.07	-
Seed yield	-.35	.05	.23	.15	.23	.49	.17	.52
Weight of 100 seeds	.21	.34	.41	-.05	-.05	-.05	.19	-.02
Days to maturity								
Seed yield	-.27	-.43	.38	-.07	-.22	-.05	-.22	-
Weight of 100 seeds	.05	-.16	.20	-.17	-.09	.35	.26	-
Seed yield								
Weight of 100 seeds	.04	.23	.40	.19	-.62	-.25	.04	.03

Table 18. Details of entries in ICSN-DL, 1986-87.

No.	Entry	Selection	Pedigree
	86[illegible]	ICCX-800060-BP-6M-1M-BM	ICCL 78023 x [illegible] 850
2	86[illegible]	ICCX-800[illegible]-BP-43M-1M-BM	ICCL 78054 x K 850
	86[illegible]	ICCX-800203-7M-1M-1M-BM	ICCL 79080 x G 130
5	86[illegible]	ICCX-800129-BM-BM-54M-BM	GL 769 x C 235
6	86[illegible]	ICCX-800160-BM-BM-3M-BM	ICCC 3 x PANT G 114
7	86[illegible]	ICCX-800174-BM-BM-42M-BM	ICCC 13 x P-326
8	86[illegible]	ICCX-800241-BM-BM-5M-BM	ICCL 79065 x BG 203
9	86416	ICCX-800204-BM-BM-17M-BM	ICCL 79080 x M-208
10	86415	ICCX-800312-BM-BM-8M-BM	ICCL 79085 x M-208
11	86416	ICCX-790391-BM-BM-30M-1M-BM	P-326 x P-2161
12	86417	ICCX-790393-BM-BM-9M-1M-BM	P-326 x PANT G 114
13	86418	ICCX-790396-BM-BM-13M-1M-BM	P-2161 x P-4353-1
14	86419	ICCX-790435-BM-BM-2M-1M-BM	ICCC 13 x (M-208 x BG 1)
15	8[illegible]	ICCX-[illegible]-BM-BM-7M-1M-BM	PANT G 114 MEC 177
16	86421	ICCX-790359-BM-BM-21M-1M-BM	M-208 x P-4353-1
17	86422	ICCX-760636-B-BP-BM-1M-1M-1M-BM	MEC 249 x GL 630
18	86423	ICCX-761889-BM-BM-6M-1M-1M-1M-BM	(L 550 x MP 341)(JG 39 x C 375)
19	86424	ICCY-761889-BM-BM-6M-3M-1M-1M-BM	(L 550 x MP 34)(JG 39 x C 375)
20	86425	ICCX-791249-BM-BM-BM-10M-BM-BM	P-2974 x P-36
21	86426	ICC 1762	
22	86427	ICCX-780920-BM-BP 23M-BM-BM	PANT G 114 x MEC 2360
23	86428	ICCX-800388-2M-2M-1M-BM	K 1184 x ICCC 10
24	86429	ICCX-770939-BM-2M-1M-1M-1M-BM	C 214 x (K 1480 x MEC 18)
25	86430	ICCX-780351-45P-BM-BM-BM-8M-1M-BM	MYB 16-3 x NMS 5
26	86431	ICCY-780351-23P-BM-BM-BM-11M-BM	MYB 16-3 x NMS 5
27	86432	ICCX-780351-5P-BP-BP-1M-BM	MYB 16-3 x NMS 5
28	86433	ICCY-800449-9M-2M-1M-BM	NMS 13 x NMS 23
29	86434	ICCX-800486-19M-2M-1M-BM	NMS 23 x ICCC 11
30	86435	ICCY-810506-21M-2M-BM	(NMS 4 x NMS 5) x Annigeri
31	86436	ICCX-800447-BM-14M-1M-BM	NMS 6 x NMS 13
32	86437	ICCY-800448-BM-3M-1M-BM	NMS 6 x NMS 23
33	86438	ICCX-800477-4M-1M-BM	NMS 8 x L 550
34	86439	ICCY-799306-BM-11M-1M-BM-BM	PANT G 114 x ICCC 10
35	86440	ICCX-790340-BM-BM-7M-2M-BM	BG 203 x P-4353-1
36	86441	ICCX-790324-BM-BM-3M-1M-BM	BG 203 x T 3 (Gwalior)
37	86442	ICCX-780215-56-BP-BP-1P-BP-BM-BM	BG 203 x (WR-315 x BG 203) x BG 203
38	86443	ICCX-810606-BM-BM-12M-BM	BG 209 x P-436-2
39	86444	ICCX-810606-BM-BM-27M-BM	BG 209 x P-436-2
40	86445	ICCX-810969-BM-BM-9M-BM	GL 769 x BG 588
41	86446	ICCY-810970-BM-BM-67M-BM	GL 769 x M-75-35
42	86447	ICCX-810800-3M-BM-BM-BM	GL 629 x ILC 202
43	86448	ICCX-810806-26M-BM-4M-BM	GL 629 x ILC 3279
44	86449	ICCX-770603-BM-21M-BM-3M-BM	P-4353-1 x WR-315
45	86450	ICCX-770603-18P-2M-2M-BM-2M-BM	P-4353-1 x WR-315
46	86451	ICCX-800771-22PLB-3PMB-2MLB-BMLB	P-326 x (JG 62 x Radhey)
47	86452	ICCX-800771-22PLB-5PLB-6MLB-BMLB	P-326 x (JG 62 x Radhey)
48	86453	ICCX-780301-9PLB-12PLB-5MUY-1MLB-BMLB	BG 203 x (M-208 x P 61)
49	86454	ICCX-780297-39PLB-BP-1PLB-3MLB-2MLB-BMLB	M-208 x ICC 3340-BB-BB
50	86455	ICCX-780302-47PMB-11PLB-BMWR-1MLB-BMLB	BG 203 x (M-208 x P 61)
51	86456	ICCX-800750-2PLB-2PLB-1MWR-BMWR	(M-208 x RS-11)(GW-6/7 x M-223)
52		G 130	
53		M-208	
		Local check	

Table 19. Mean days to 50% flowering of entries in ICSN DL at 7 locations, 1986-87

Entry No.	Hisar1	Hisar2	Meerut	Sriganganagar	Faizabad	Kanpur	Gwalior	Mean
1	87	86	103	89	79	66	88	85
2	83	88	103	90	76	64	95	86
3	88	90	109	92	81	61	94	88
4	88	88	121	92	75	66	92	89
5	97	95	114	96	75	61	95	90
6	87	86	105	92	76	60	90	85
7	87	89	108	92	81	62	90	87
8	90	86	104	92	75	60	89	85
9	86	85	105	93	75	62	89	85
10	89	90	112	91	82	68	94	89
11	88	87	104	93	75	66	90	86
12	87	92	107	91	77	65	91	87
13	87	89	103	90	75	65	90	86
14	85	89	109	90	74	60	90	85
15	91	87	109	92	76	62	90	87
16	92	86	112	94	74	63	97	88
17	88	91	105	95	74	66	90	87
18	99	98	108	94	75	63	94	90
19	84	86	103	90	67	66	90	84
20	86	90	103	91	75	65	88	85
21	83	86	109	90	75	68	88	86
22	93	98	112	94	75	60	93	89
23	88	91	112	91	74	61	95	87
24	87	84	106	88	70	60	91	84
25	84	88	104	90	75	64	88	85
26	86	87	105	88	75	64	91	85
27	86	88	110	89	75	61	90	86
28	89	87	108	90	74	64	89	86
29	86	89	109	91	74	66	93	87
30	83	85	114	90	75	68	90	86
31	81	86	102	90	79	60	89	84
32	87	88	104	92	77	60	89	85
33	88	87	109	94	79	63	92	87
34	87	87	106	89	78	68	90	86
35	94	92	107	94	77	65	92	89
36	88	87	105	88	68	62	89	84
37	88	91	105	90	79	62	93	87
38	88	86	105	88	67	62	92	84
39	83	86	103	91	74	63	90	84
40	81	84	102	90	82	62	91	85
41	90	99	103	94	81	66	96	90
42	86	92	109	92	81	64	96	89
43	88	89	105	90	74	64	90	86
44	86	88	104	92	77	60	89	85
45	84	82	100	90	67	66	88	82
46	84	88	100	94	73	68	88	85
47	88	87	105	90	75	63	90	85
48	89	86	105	90	69	60	87	84
49	88	90	105	91	74	62	92	86
50	92	85	103	90	67	68	90	85
51	91	91	103	94	71	64	92	87
52	89	89	102	93	77	64	90	86
53	86	87	103	91	77	64	88	85
Mean	87.5	88.5	106.3	91.2	75.1	63.5	90.9	
SE	55.0	2.1	1.6	2.2	0.5	1.1	0.6	
CV	56.0	3.5	2.6	2.9	0.7	2.0	1.4	

Table 20. Mean plant height (cm) of entries in ICSN DL at 7 locations, 1986-87

Entry No.	Delhi	Meerut	Sriganganagar	Faisabad	Gwalior	Mean
1	43	49	62	22	32	42
2	52	48	64	26	46	47
3	43	51	67	25	37	45
4	41	49	64	23	38	43
5	55	52	77	21	45	50
6	40	48	66	22	37	43
7	38	51	60	21	39	42
8	41	49	64	21	44	44
9	43	48	66	22	42	44
10	41	50	70	22	32	43
11	49	49	73	23	49	49
12	49	49	60	22	37	43
13	50	46	79	28	41	49
14	51	44	73	22	38	46
15	44	50	67	26	38	45
16	42	48	64	24	53	46
17	57	51	63	22	46	48
18	47	53	70	21	40	46
19	36	48	66	21	40	42
20	38	48	63	21	46	43
21	45	43	67	26	39	44
22	61	68	89	36	56	62
23	52	64	85	26	56	57
24	48	47	66	20	37	44
25	41	50	63	18	48	44
26	40	54	71	21	48	47
27	39	54	73	19	34	44
28	46	45	67	25	39	44
29	52	52	73	20	54	50
30	45	44	64	23	37	43
31	41	45	56	16	39	39
32	46	54	68	19	32	44
33	40	48	69	20	40	43
34	39	49	59	20	33	40
35	41	51	70	21	43	45
36	39	51	65	20	35	42
37	32	46	64	21	35	40
38	35	47	69	24	41	43
39	49	47	74	21	40	46
40	54	51	77	21	44	49
41	41	54	90	21	40	49
42	72	70	88	23	57	62
43	41	49	61	21	40	42
44	41	46	47	21	39	39
45	39	44	59	22	32	39
46	40	42	66	18	35	40
47	42	46	68	19	41	43
48	43	47	60	25	39	43
49	45	45	64	19	42	43
50	47	49	62	22	45	45
51	46	50	70	22	41	46
52	46	46	67	21	39	44
53	46	47	66	22	39	44
	44.7	49.7	67.8	22.1	41.2	
	4.6	2.9	2.2	2.6	4.7	
	14.6	8.3	4.6	16.8	16.1	

Table 21. Mean days to maturity of entries in ICSN DL at 7 locations, 1986-87

Entry No.	Meerut	Sriganganagar	Faizabad	Kanpur	Mean
1	167	152	102	146	142
2	164	154	102	143	141
3	165	154	104	142	141
4	167	155	106	147	144
5	171	156	102	142	143
6	168	156	111	140	144
7	163	156	97	142	140
8	165	155	107	140	142
9	165	157	105	142	142
10	164	154	101	148	142
11	167	156	110	146	145
12	164	155	112	146	144
13	163	154	102	145	141
14	163	154	105	140	141
15	167	154	103	142	142
16	166	155	109	142	143
17	163	155	99	145	141
18	169	158	106	142	144
19	164	155	108	145	143
20	164	155	100	146	141
21	160	154	106	148	142
22	169	154	106	140	142
23	167	155	104	141	142
24	167	153	109	140	142
25	168	154	108	144	144
26	168	153	103	143	142
27	166	154	100	142	141
28	159	155	109	142	141
29	167	156	103	146	143
30	163	154	108	148	143
31	163	154	103	141	140
32	164	155	102	140	140
33	166	157	104	143	143
34	164	153	105	148	143
35	166	157	104	145	143
36	163	154	109	142	142
37	166	154	103	142	141
38	169	152	104	142	142
39	165	154	102	144	141
40	168	154	102	142	142
41	171	157	101	146	144
42	168	154	105	146	143
43	168	154	104	144	143
44	164	156	105	140	141
45	166	155	106	147	144
46	162	157	105	148	143
47	164	154	105	144	142
48	163	156	102	140	140
49	165	155	100	142	141
50	165	154	106	148	143
51	167	157	107	144	144
52	165	155	105	145	143
53	166	154	104	144	142
Mean	165.4	154.8	104.5	143.5	
SE	2.3	0.8	2.4	0.8	
CV	1.9	0.7	3.2	0.8	

Table 22. Mean weight of 100 seeds (g) of entries in ICSN DL at 5 locations, 1986-87

Entry No.	Delhi	Hisar1	Hisar2	Meerut	Gwalior	Mean
1	17	20	17	18	16	18
2	14	14	16	11	14	14
3	13	11	11	11	14	12
4	12	11	12	14	13	12
5	13	12	14	15	13	13
6	13	11	12	12	13	12
7	11	8	9	15	11	11
8	12	11	13	14	12	12
9	14	13	13	12	13	13
10	13	11	13	14	14	13
11	13	11	13	13	14	13
12	13	12	12	16	12	13
13	14	12	14	14	14	14
14	12	11	12	15	13	13
15	11	12	13	11	13	12
16	15	12	14	16	13	14
17	13	11	13	13	19	14
18	13	12	14	13	12	13
19	13	13	14	14	12	13
20	12	9	11	12	11	11
21	13	9	12	13	11	12
22	14	12	16	14	17	15
23	13	13	13	13	14	13
24	15	12	13	13	14	13
25	17	12	13	12	15	14
26	18	13	14	16	15	15
27	15	11	12	13	12	13
28	14	13	14	13	12	13
29	12	10	12	17	13	13
30	14	12	13	15	14	14
31	14	11	12	14	12	13
32	18	17	17	13	18	17
33	13	11	12	15	12	13
34	12	10	10	14	11	11
35	13	10	11	18	13	13
36	13	10	11	14	11	12
37	11	11	13	15	12	12
38	11	11	13	13	14	12
39	14	12	13	14	19	14
40	18	17	18	13	20	17
41	12	12	14	14	16	14
42	17	16	18	15	17	17
43	12	10	14	14	12	12
44	12	9	12	13	12	12
45	12	12	12	16	13	13
46	13	11	13	15	15	13
47	13	11	13	14	11	12
48	12	10	11	11	12	11
49	13	11	13	14	12	13
50	13	12	12	12	12	12
51	12	12	13	14	12	13
52	12	11	12	14	12	12
53	26	11	12	12	12	15
Mean	13.5	11.7	13.1	13.9	13.5	
SE	0.8	0.7	0.6	1.2	1.2	
CV	56.0	8.2	8.8	6.1	12.2	

Table 23. Mean seed yield (kg/ha) and ranks of entries in ICSN DS at 8 locations, 1986-87

Ent. No.	Delhi	Hisar1	Hisar2	Meerut	SG' nagar	Pusa-bad	Kanpur	Gwa-lior	Mean
1	1849 2	1356 16	2781 53	1918 5	3120 7	170 39	1620 29	389 51	2606 24
2	1318 24	1343 17	3520 29	1322 42	2079 47	398 6	1544 33	1129 6	2307 46
3	1575 11	1481 10	3167 45	1253 46	3119 9	238 28	952 51	806 35	2513 30
4	1305 27	1257 24	3489 31	1421 38	2911 12	210 31	2152 1	889 26	2607 23
5	1051 41	1625 7	3038 49	1922 4	2080 46	245 27	1436 39	1083 9	2347 40
6	1268 29	998 40	3670 16	1427 34	3225 4	338 10	1544 33	998 15	2774 10
7	1205 31	1038 36	3341 39	1524 27	2912 10	130 45	1506 37	583 43	2592 25
8	1487 15	1169 30	3697 15	1423 36	3693 1	103 52	1701 21	821 33	2938 2
9	1396 21	1446 11	3806 9	1952 2	2756 18	305 15	1698 22	887 27	2838 7
10	1141 37	1509 9	3221 43	1627 18	2862 14	305 15	1813 14	324 53	2570 26
11	1583 10	1806 2	3759 10	1906 6	2600 27	308 14	1634 27	1056 11	2755 11
12	1653 6	1037 37	3912 7	1694 13	2911 12	193 33	1160 50	445 48	2839 6
13	1182 35	1138 32	3045 48	1687 14	2860 15	354 9	589 53	928 23	2531 27
14	1768 3	934 42	4504 1	1557 22	2704 20	219 30	1922 7	511 47	2922 3
15	1423 18	1254 25	3563 25	1584 20	2808 16	314 12	1523 35	957 20	2652 21
16	1459 16	1107 34	3112 46	1511 29	1977 50	513 1	1571 32	1186 5	2200 52
17	1624 8	1815 1	4040 5	1896 7	2444 36	256 25	1834 13	799 37	2793 9
18	1495 14	1367 14	3415 35	1261 45	2288 42	278 20	1681 23	1128 7	2321 45
19	776 49	1789 3	3440 34	1282 44	2183 45	86 53	1808 15	1010 14	2302 48
20	1170 36	1206 29	2804 52	1581 21	2236 44	135 43	1858 10	620 42	2207 51
21	955 45	1441 12	4387 2	1534 25	2496 33	407 4	2090 3	633 41	2806 8
22	1135 38	820 47	3711 13	1186 48	2600 27	176 36	1379 43	572 44	2499 32
23	729 51	787 49	3007 50	1313 43	1456 53	164 40	1415 41	1244 3	1925 53
24	1639 7	735 51	3625 19	1247 47	2392 39	249 26	1659 24	931 22	2421 35
25	729 51	1314 19	3463 33	1437 33	1820 51	313 13	1362 45	941 21	2240 49
26	862 47	1097 35	4128 3	1128 49	2912 10	180 35	1644 25	971 18	2723 14
27	862 47	1749 4	3640 18	1635 17	2288 42	154 42	1978 5	362 52	2521 28
28	1398 20	1209 28	4102 4	1947 3	2496 33	489 2	1209 49	417 49	2848 5
29	1430 17	1384 13	3382 38	1442 32	2704 20	184 34	1378 44	1831 1	2509 31
30	1542 12	1279 20	3477 32	1479 31	2028 48	276 21	1627 28	812 34	2328 44
31	757 50	1224 27	3328 40	1668 15	3120 7	197 32	1750 19	797 38	2705 17
32	974 44	1324 18	3624 20	1115 50	2808 16	113 50	848 52	408 50	2516 29
33	1203 32	914 43	3750 11	1518 28	2756 18	260 24	1607 30	1017 13	2675 20
34	1020 43	1679 5	3076 47	1423 36	2652 23	132 44	1774 17	1119 8	2384 37
35	1353 23	1357 15	3891 8	1741 12	2495 35	292 18	1867 9	857 30	2709 16
36	1313 26	987 41	3305 42	1538 24	2498 32	273 22	2055 4	845 31	2447 34
37	649 53	906 44	3558 26	1326 41	1820 51	426 3	1429 40	958 19	2235 50
38	1506 13	739 50	3415 35	1667 16	3172 6	398 6	1585 31	1211 4	2751 13
39	1705 4	834 46	3972 6	2004 1	3328 2	365 8	1509 36	985 16	3101 1
40	1051 41	1029 39	3410 37	1062 53	2444 36	123 46	1448 38	691 40	2305 47
41	870 46	790 48	3527 28	1364 40	2600 27	120 48	1341 46	912 24	2497 33
42	1673 5	1521 8	3597 22	1085 52	2340 41	122 47	1399 42	1071 10	2341 41
43	1103 40	1274 22	3653 17	1099 51	2393 38	176 36	1944 6	1038 12	2382 38
44	1363 22	603 53	3570 23	1841 10	2703 22	104 51	1791 16	837 32	2705 17
45	1279 28	1639 6	3616 21	1862 8	2651 25	406 5	1848 11	519 46	2710 15

contd.

Table 23 contd.

Ent. No.	Delhi	Hisar1	Hisar2	Meerut	SG' nagar	Faizabad	Kanpur	Gwalior	Mean
46	1196 34	1151 31	3503 30	1852 9	3276 3	282 19	1877 8	550 45	2877 4
47	1315 25	855 45	3699 14	1625 19	2600 27	176 36	1729 20	880 28	2641 22
48	1199 33	1277 21	3557 27	1525 26	3174 5	297 17	1305 47	703 39	2752 12
49	2266 1	1032 38	3723 12	1756 11	2601 26	327 11	2112 2	974 17	2693 19
50	1226 30	631 52	2866 51	1498 30	2652 23	162 41	1267 48	1303 2	2339 43
51	1121 39	1271 23	3308 41	1414 39	2538 31	230 29	1841 12	895 25	2420 36
52	1404 19	1117 33	3203 44	1425 35	2392 39	269 23	1768 18	866 29	2340 42
53	1599 9	1228 26	3565 24	1551 23	2002 49	118 49	1638 26	803 36	2373 39
Mean	1280.7	1205.1	3537.8	1533.4	2620.8	248.8	1595.4	858.7	
SE	352.5	246.9	218.2	248.5	371.4	101.0	298.1	309.8	
CV	38.9	29.0	8.7	22.9	20.0	57.4	26.4	51.0	

Table 24. Correlations for seed yield (upper diagonal) and ranks (lower diagonal) of entries between locations in ICSN DL 1986-87

DF = 51

Delhi	1	1.0000							
Hisar 1	2	-0.0510	1.0000						
Hisar 2	3	0.1728	0.0037	1.0000					
Meerut	4	0.3450	0.1360	0.0933	1.0000				
Sriganjanagar	5	0.2782	-0.1090	0.1567	0.2410	1.0000			
Faizabad	6	0.1548	0.0207	0.1999	0.3669	-0.0671	1.0000		
Kanpur	7	0.1062	0.1545	0.2186	0.1707	-0.0600	-0.0135	1.0000	
Gwalior	8	0.0029	-0.1180	-0.2294	-0.2139	-0.2260	0.0536	-0.0759	1.0000

		1	2	3	4	5	6	7	8
Delhi	1	1.0000							
Hisar 1	2	-0.0243	1.0000						
Hisar 2	3	0.2389	-0.0324	1.0000					
Meerut	4	0.3230	0.1140	0.1652	1.0000				
Sriganjanagar	5	0.1803	-0.1565	0.1460	0.2613	1.0000			
Faizabad	6	0.1630	0.0440	0.1757	0.3735	0.0003	1.0000		
Kanpur	7	0.0254	0.1901	0.1724	0.1920	-0.0746	0.0064	1.0000	
Gwalior	8	0.0075	-0.1071	-0.1999	-0.2700	-0.2437	0.1336	-0.1681	1.0000

Table 25. Correlations among characters at individual locations in ICSH-DL, 1986-87.

Character combinations	Delhi	Hisar1	Hisar2	Meerut	SG' nagar	Faiza-bad	Kanpur	Gwa-lior
Days to 50% flowering								
Plant height	-	-	-	.33	.25	-.06	-	.46
Days to maturity	-	-	-	.13	.74	-.34	.96	-
Seed yield	-	-.04	-.05	.12	-.03	-.23	.17	.43
Weight of 100 seeds	-	-.11	.13	.12	-.04	-	-	.19
Plant height								
Days to maturity	-	-	-	.50	.06	.24	-	-
Seed yield	.31	-	-	-.47	-.19	.10	-	.54
Weight of 100 seeds	.26	-	-	.04	.40	-	-	.24
Days to maturity								
Seed yield	-	-	-	-.33	.01	.22	.18	-
Weight of 100 seeds	-	-	-	.10	- 19	-	-	-
Seed yield								
Weight of 100 seeds	.05	.09	-.01	.14	-.01	-	-	-.09

Table 26. Details of entries in ICCT-DS, 1986/87.

S.No.	Acc. No.	Parentage	Source
1	ICC 4918	Annigeri	UAS, Karnataka
2	ICC 5003	K 850	CSAUAT, UP
3	ICC 11141	BDN 9-3	MPKV, Maharashtra
4	ICCL 82108	F2 (JG 62 x VR 315)-2 x F2 (1363 x PRR 1)-2	ICRISAT
5	ICCL 83227	JG 62 x NEC 802	ICRISAT
6	ICCL 84215	ICCC 4 x P 436-2	ICRISAT
7	ICCL 84219	P 502 x HMS 13	ICRISAT
8	ICCL 84204	P 2559 x F5 (BN 10 x NP 34)	ICRISAT
9	ICCL 84205	Annigeri x ICCC 9	ICRISAT
10	ICCL 84223	P 4203 x P 1198-1	ICRISAT
11	ICCL 83149	(G 130 x B 108) x (NP 34 x GW 5/7)	ICRISAT
12	ICCL 82104	(Chaffa x Annigeri) x (Rabat x P 378)	ICRISAT
13	ICCL 85210	(JG 62 x P 496) x Chaffa	ICRISAT
14	ICCL 85211	(JG 62 x P 496) x Chaffa	ICRISAT
15	ICCL 85225	BG 203 x [BG 203 x (VR 315 x BG 203)]	ICRISAT
16		Local check	

Table 27. Mean days to 50% flowering of entries in ICCT-DS at 9 locations in 1986-87

Entry No.	Acc. No.	Los Banos	Malati	Patanche ru 1	Patanche ru 2	Akola	Bavalpur	Durgapura	Nayagadh	Coimbatore	Mean Indian loc.	Mean Overall
1	4918	49	42	40	41	49	57	49	61	34	47	47
2	5003	48	58	53	53	58	58	61	59	39	54	54
3	11141	51	40	40	39	48	54	51	47	33	45	45
4	82108	48	45	50	49	54	50	52	55	38	50	49
5	83227	50	44	48	42	51	65	50	48	39	49	49
6	84215	48	40	49	49	54	57	55	49	35	50	48
7	84219	50	43	46	45	48	60	52	54	36	49	48
8	84204	49	40	41	39	47	56	53	51	34	46	46
9	84205	51	40	41	42	48	61	51	48	34	46	46
10	84223	48	40	49	44	49	64	54	53	35	50	48
11	83149	48	40	40	42	50	58	52	54	35	47	47
12	82104	48	40	40	38	46	54	50	47	31	44	44
13	85210	49	42	42	40	48	55	55	51	35	47	46
14	85211	50	42	40	40	46	55	50	52	32	45	45
15	85225	49	42	41	43	53	63	53	47	36	48	47
16	Lo.ch	50	-	40	41	61	64	57	55	33		
SE		0.7	1.5	0.7	0.8	1.2	1.0	2.6	0.7	0.5		
Mean		48.9	42.4	43.6	42.7	50.5	58.2	52.7	51.8	4.7		
CV		2.9	7.0	3.4	3.7	4.7	3.1	10.0	2.5	2.9		

Table 28. Mean plant height of entries in ICCT-DS at 9 locations in 1986-87

Entry No.	Acc. No.	Los Banos	Malati	Patanche ru 1	Patanche ru 2	Akola	Bavalpur	Durgapura	Nayagadh	Coimbatore	Mean Indian loc.	Mean Overall
1	4918	33	44	37	38	29	34	39	30	27	33	35
2	5003	28	58	44	44	34	36	47	32	25	37	39
3	11141	31	41	37	41	32	35	47	31	30	36	36
4	82108	30	49	42	43	32	36	45	33	27	37	37
5	83227	29	44	39	40	31	36	45	33	31	36	36
6	84215	32	48	46	47	40	35	50	32	24	39	39
7	84219	31	48	40	42	33	36	43	29	26	36	36
8	84204	32	45	38	36	31	35	45	29	26	34	35
9	84205	32	43	39	42	31	38	43	32	26	36	36
10	84223	28	46	38	40	35	36	44	28	32	36	36
11	83149	29	45	37	39	31	37	38	31	25	34	35
12	82104	31	44	37	37	31	36	42	29	25	34	35
13	85210	30	41	35	39	31	36	47	31	26	35	35
14	85211	31	43	38	39	31	39	41	31	28	35	36
15	85225	33	49	40	42	34	35	41	33	30	36	37
16	Lo.ch	31	-	38	41	28	36	42	32	35		
SE		1.8	1.3	0.9	1.3	1.4	1.2	2.8	1.7	0.7		
Mean		30.7	45.7	39.0	40.5	32.2	36.1	43.6	30.9	27.7		
CV		11.7	5.8	4.7	6.4	8.9	5.6	12.9	10.7	5.4		

Table 29. Mean days maturity of entries in ICCT-DS at 9 locations in 1986-87

Entry No.	Acc. No.	Los Banos	Malati	Patancheru 1	Patancheru 2	Akola	Bavalpur	Durgapura	Nayagadh	Coimbatore	Mean Indian loc.	Mean Overall
1	4918	94	81	99	93	90	142	92	80	96	99	
2	5003	93	106	104	99	93	142	87	80	101	101	
3	11141	96	81	99	91	89	141	79	74	94	96	
4	82108	93	81	102	96	90	141	77	80	95	98	
5	83227	95	81	101	93	96	142	79	80	96	99	
6	84215	93	89	101	96	89	142	80	80	96	98	
7	84219	95	81	100	95	89	141	84	78	95	98	
8	84204	94	88	99	91	90	140	81	73	95	96	
9	84205	96	81	100	92	90	143	80	77	95	97	
10	84223	93	81	102	93	88	141	83	78	95	98	
11	83149	93	81	98	94	91	140	84	82	95	98	
12	82104	93	88	98	91	93	141	80	69	94	95	
13	85210	94	81	98	92	90	142	83	70	94	96	
14	85211	95	81	98	92	90	143	82	69	94	96	
15	85225	95	84	99	94	90	144	79	80	96	98	
16	Lo.ch	95	-	97	92	90	140	88	69	-	-	
	SE	0.7	2.4	0.5	0.6	0.4	0.5	2.1	0.8			
	Mean	94.0	84.3	99.5	93.0	90.5	141.5	82.3	76.0			
	CV	1.5	5.7	1.0	1.3	0.8	0.8	5.1	2.0			

Table 30. Mean seed weight of entries in ICCT-DS at 9 locations in 1986-87

Entry No.	Acc. No.	Los Banos	Malati	Patancheru 1	Patancheru 2	Akola	Durgapura	Coimbatore	Mean Indian loc.	Mean Overall
1	4918	16	15	20	22	20	21	25	22	20
2	5003	18	20	28	28	29	23	30	28	25
3	11141	21	15	14	16	16	17	15	16	16
4	82108	16	12	17	16	18	20	18	18	17
5	83227	16	15	19	21	19	26	17	20	19
6	84215	17	16	21	20	20	28	20	22	20
7	84219	16	11	15	17	18	18	16	17	16
8	84204	17	16	22	25	23	12	21	21	19
9	84205	16	13	18	18	18	19	18	18	17
10	84223	15	13	18	19	19	21	18	19	18
11	83149	16	17	19	20	19	23	19	20	19
12	82104	17	14	17	19	19	15	18	18	17
13	85210	15	12	15	16	16	18	14	16	15
14	85211	17	12	15	16	18	18	16	17	16
15	85225	19	14	18	20	20	17	19	19	18
16	Lo.ch	18	-	19	19	13	13	27	18	-
	SE	1.3	1.1	0.5	0.6	0.9				
	Mean	16.7	14.3	18.3	19.3	19.1				
	CV	15.9	15.6	5.1	6.5	9.6				

Table 31. Mean seed yield (kg/ha) and ranks of entries in ICCT-DS at 9 locations in 1986-87

Entry No.	Acc. No.	Los Banios		Malati		Patanche ru 1		Patanche ru 2		Akola		Bawalpur		Durgapura		Nayagadh		Coimbatore		Mean Indian loc.		Mean Overall	
1	4918	682	15	561	12	3233	1	2237	12	1538	6	557	13	667	9	83	14	1499	10	1622	7	1372	11
2	5003	730	10	693	8	2700	13	2302	8	1333	12	601	12	1182	2	146	13	1238	16	1559	13	1347	14
3	11141	968	1	874	3	2760	12	2324	7	1467	8	640	11	1001	5	328	5	1476	12	1611	9	1439	3
4	82108	655	16	570	11	2791	9	2126	16	1251	15	891	5	737	7	187	12	1357	14	1526	15	1297	15
5	83227	869	4	655	9	3052	4	2450	3	1571	4	724	8	487	15	83	14	1476	12	1627	6	1411	6
6	84215	771	9	903	2	2904	6	2133	15	1736	3	418	16	1043	4	312	7	1547	8	1630	5	1432	4
7	84219	774	8	575	10	2390	16	2441	4	1560	5	863	6	646	11	31	16	1761	1	1610	10	1376	10
8	84204	785	7	515	13	2768	11	2298	9	1207	16	807	7	1515	1	364	1	1714	2	1718	1	1451	1
9	84205	688	13	720	6	2817	8	2494	1	1259	14	696	9	521	14	247	9	1642	3	1572	12	1355	12
10	84223	847	6	405	15	2601	15	2396	5	1938	1	919	2	612	13	356	4	1547	8	1669	3	1408	7
11	83149	932	3	797	5	3174	2	2244	11	1369	11	919	2	660	10	270	8	1357	14	1621	8	1432	4
12	82104	717	12	826	4	2907	5	2191	13	1514	7	557	13	466	16	364	1	1618	4	1542	14	1350	13
13	85210	721	11	931	1	2789	10	2180	14	1391	10	946	1	626	12	208	11	1595	7	1588	11	1397	9
14	85211	853	5	716	7	2873	7	2345	6	1752	2	668	10	695	8	315	6	1618	4	1659	4	1440	2
15	85225	685	14	471	14	2685	14	2454	2	1459	9	919	2	938	6	364	1	1618	4	1679	2	1404	8
16	Lo.ch	956	2	-		3062	3	2257	10	1325	13	501	15	1112	3	224	10	1499	10				
	SE	121.0		120.4		101.8		99.1		138.0		82.5		41.2		67.0		123.8					
	Mean	789.6		680.6		2844.2		2304.5		1479.0		726.5		806.6		243.0		1535.1					
	CV	30.7		35.4		7.2		8.6		19.0		19.7		10.2		55.0		16.1					

Table 32. Stability parameters for seed yields (kg ha^{-1}) in ICCT-DS grown at 6 locations - 1986/87.

	Acc. No.	X	bi	Sdx10^{5}	R^2
1	ICC 4918	1622	1.2	.10*	0.1
2	ICC 5003	1559	0.9	.55*	0.5
3	ICC 11141	1611	1.0	.05	0.1
4	ICCL 82108	1525	0.9	.12*	0.2
5	ICCL 83227	1627	1.2	.04	0.1
6	ICCL 84215	1630	1.0	.57*	0.5
7	ICCL 84219	1611	0.9	.50*	0.4
8	ICCL 84204	1718	0.8	.99*	0.8
9	ICCL 84205	1572	1.1	.19*	0.2
10	ICCL 84223	1669	0.9	.61*	0.5
11	ICCL 83149	1620	1.1	.36*	0.3
12	ICCL 82104	1542	1.1	.10*	0.1
13	ICCL 85210	1588	0.9	.12*	0.2
14	ICCL 85211	1659	1.1	.09	0.1
15	ICCL 85225	1679	0.9	.01	0.1
	SE	88.1	0.11		
	X	1616			

Table 33. Correlations of seed yield (upper diagonal) and ranks (lower diagonal) for entries between locations in ICCT-DS, 1986/87

DF = 13

Los Banios	1	1.0000							
Malati	2	0.2325	1.0000						
Patancheru 1	3	0.1141	0.2948	1.0000					
Patancheru 2	4	0.1789	-0.4545	-0.3556	1.0000				
Akola	5	0.3317	-0.0980	-0.0751	0.1165	1.0000			
Raipur	6	0.0388	-0.4113	-0.3425	0.2443	-0.1932	1.0000		
Bahalpur	7	0.0408	-0.1103	-0.2140	-0.1501	-0.3101	-0.1335	1.0000	
Jaipur	8	0.1948	0.0783	-0.0600	-0.1081	0.1273	0.0006	0.2967	1.0000
Nayagadh	9	-0.1208	-0.1477	-0.3729	0.3432	0.1722	0.1074	-0.0636	0.1959

		1	2	3	4	5	6	7	8	9
Los Banios	1	1.0000								
Malati	2	0.2262	1.0000							
Patancheru 1	3	-0.0370	0.3270	1.0000						
Patancheru 2	4	0.2643	-0.3805	-0.3977	1.0000					
Akola	5	0.3433	0.0167	0.0524	0.1610	1.0000				
Raipur	6	0.0453	-0.3236	-0.3581	0.2001	-0.2004	1.0000			
Bahalpur	7	0.0427	-0.1260	-0.2796	-0.1961	-0.3310	-0.2133	1.0000		
Jaipur	8	0.1317	-0.0595	-0.1397	0.0482	-0.0335	0.0574	0.1622	1.0000	
Nayagadh	9	-0.1443	-0.1281	-0.2737	0.3333	0.1146	0.0552	-0.1884	0.3751	

Table 34. Correlations among characters at individual locations in ICCT-DS, 1986-87.

Character combinations	Los Banos	Malati	Patancheru1	Patancheru2	Akola	Badnapur	Jaipur	Hayagarh	Coimbatore
Days to 50% flowering									
Plant height	.34	.81	.74	.80	.12	.13	.45	-.13	-.41
Days to maturity	.97	.76	.93	.97	.76	.15	-.12	.80	.71
Seed yield	.32	-.81	-.37	-.14	-.24	.42	.56	-.55	-.49
Weight of 100 seeds	.33	.49	.47	.34	.11	-	.65	-	.19
Plant height									
Days to maturity	.42	.78	.70	.72	.77	.84	.15	-.28	-.21
Seed yield	-.32	-.31	-.24	.36	.47	.13	.35	-.18	-.21
Weight of 100 seeds	.28	.50	.54	-.21	.36	-	.27	-	.79
Days to maturity									
Seed yield	.25	-.86	-.38	-.14	-.17	-.16	-.25	-.43	-.42
Weight of 100 seeds	.40	.74	.53	.39	.28	-	.26	-	.17
Seed yield									
Weight of 100 seeds	.32	.15	.16	.35	-.90	-	-.29	-	-.48

Table 35. Details of entries in ICCT-DM, 1986-87.

S.No.	Acc. No.	Parentage	Source
1	ICC 4918	Annigeri	UAS, Karnataka
2	ICC 5003	K 850	CSAUAT, UP
3	ICC 11525	ICCV 1	ICRISAT
4	ICCL 84303	C 214 x BDN 9-3	ICRISAT
5	ICCL 84311	Annigeri x K 850	ICRISAT
6	ICCL 84227	(K 850 x P 378) x P 180-1	ICRISAT
7	ICCL 85307	(Annigeri x ICCC 2) x (ICCC 1 x K 850)	ICRISAT
8	ICCL 85308	VP 2654-A x NEC 802	ICRISAT
9	ICCL 85310	ICCC 4 x P 4083	ICRISAT
10	ICCL 85311	[BG 203 x (VR 315 x BG 203)] x BG 203	ICRISAT
11	ICCL 85314	P 324 x ICCC 5	ICRISAT
12	ICCL 85319	L 550 x Pant G 114	ICRISAT
13	ICCL 85325	K 850 x (NEC 1639 x NEC 1640)	ICRISAT
14	ICCL 85333	Annigeri x K 850	ICRISAT
15	ICCL 85346	Annigeri x K 850	ICRISAT
16		Local check	

Table 36. Mean days to 50% flowering of entris in ICCT DM at 11 locations in 1986-87

E No	Acc. No.	Yezin	Patan cheru	Patan cheru	Sab our	Jaba lpur	Keon jhar	Jai pur	Kota	Mavag ong	Srini kathan	Gval ior	Indian loc.	Overall
1	4918	60	45	45	72	60	57	49	66	67	63	87	61	61
2	5003	74	53	58	85	76	67	56	81	78	65	89	71	71
3	11525	81	51	51	77	69	62	56	74	74	65	86	67	68
4	84303	57	48	43	75	61	60	50	66	61	62	79	61	60
5	84311	63	44	48	75	59	58	42	66	55	61	58	57	57
6	84327	80	50	52	81	63	66	52	76	77	62	88	67	68
7	85307	60	44	45	72	60	58	47	64	55	66	59	57	57
8	85308	81	50	54	78	63	60	63	79	72	64	86	67	68
9	85310	75	51	54	73	69	64	56	76	70	64	86	66	67
10	85311	70	50	50	74	64	61	56	75	70	63	88	65	66
11	85314	72	50	52	83	79	65	55	84	76	65	88	70	70
12	85319	84	49	54	77	79	63	56	74	74	65	87	68	69
13	85325	85	53	58	80	84	66	71	77	81	67	89	73	74
14	85333	76	50	52	86	68	63	52	79	70	64	85	67	68
15	8346	76	57	51	75	68	61	54	70	73	66	87	66	67
16	Lo.ch	60	48	48	86	61	65	59	78	78	67	88	68	67
SE		3.4	1.8	0	1.7	2.7	0.9	0.8	1.1	1.8	1.5	1.9		
Mean		72.1	49.5	50.9	78.1	67.6	62.0	54.5	73.8	70.5	64.2	83.1		
CV		9.3	7.1	0	3.7	8.0	2.1	3.0	3.0	5.2	4.7	4.7		

Table 37. Mean plant height (cm) of entris in ICCT DM at 11 locations in 1986-87

E No	Acc. No.	Yezin	Patan cheru	Patan cheru	Sab our	Jaba lpur	Keon jhar	Jai pur	Kota	Srini kathan	Gval ior	Indian loc.	Overall
1	4918	27	38	36	51	50	34	39	77	51	32	45	44
2	5003	35	43	42	56	52	38	45	79	50	38	49	48
3	11525	34	42	38	50	52	37	41	73	51	38	47	46
4	84303	27	38	37	61	55	31	45	80	49	33	48	46
5	84311	27	34	38	53	49	30	41	77	46	33	45	43
6	84327	32	44	44	51	54	36	42	80	51	41	49	48
7	85307	32	42	39	55	60	35	45	79	55	32	49	47
8	85308	35	42	43	54	53	37	46	81	51	44	50	49
9	85310	33	42	40	50	54	37	45	74	48	34	47	46
10	85311	31	40	38	54	54	33	40	77	50	41	47	46
11	85314	32	40	40	53	52	32	43	79	52	42	48	47
12	85319	31	41	38	52	55	34	44	78	52	38	48	46
13	85325	36	45	47	56	54	39	47	77	58	43	52	50
14	85333	32	45	39	58	53	37	46	81	53	38	50	48
15	8346	32	44	40	54	51	40	43	82	51	39	49	48
16	Lo.ch	28	44	38	57	60	31	43	72	58	36	49	47
SE		1.3	1.2	1.7	2.3	2.8	2.7	2.3	-	1.9	2.8		
Mean		31.5	41.3	39.7	54.1	53.3	35.0	43.4	77.8	51.6	37.6		
CV		8.3	5.9	8.6	7.4	10.6	10.9	10.7	-	7.4	15.0		

Table 38. Mean days to maturity of entris in ICCT DM at 10 locations in 1986-87

E No	Acc. No.	Yezin	Patan cheru	Patan cheru	Sab our	Jaba lpur	Keon jhar	Jai pur	Kota	Srini kathan	Gval ior	Indian loc.	Overall
1	4918	121	91	96	139	142	103	142	153	115	104	121	121
2	5003	122	96	101	136	141	105	142	159	116	107	123	123
3	11525	123	94	102	132	146	104	144	152	115	114	123	123
4	84303	117	92	98	137	144	102	142	150	113	84	118	118
5	84311	120	90	98	137	141	102	143	153	114	88	118	119
6	84327	125	93	99	137	143	104	145	160	113	110	123	123
7	85307	113	88	90	134	140	101	143	153	113	69	115	114
8	85308	123	92	101	132	138	104	145	155	115	111	121	122
9	85310	124	94	100	130	139	104	144	155	115	102	120	121
10	85311	122	93	98	133	141	102	141	150	115	110	120	121
11	85314	116	94	102	135	144	104	144	163	115	106	123	122
12	85319	125	94	99	133	145	103	146	149	115	91	119	120
13	85325	126	99	104	133	143	105	142	150	117	123	124	124
14	85333	123	93	99	136	140	102	141	159	114	91	119	120
15	8346	121	94	102	135	144	104	141	157	115	81	119	119
16	Lo.ch	105	91	98	137	143	105	140	151	115	76	117	116
SE		3.8	1.1	0.6	1.4	1.1	0.7	0.4	1.1	1.1	10.8		
Mean		120.2	92.8	99.1	134.8	142.1	103.1	142.6	154.1	114.6	97.7		
CV		6.3	2.4	1.3	1.8	1.6	1.0	0.6	1.5	1.9	22.0		

Table 39. Mean weight of 100 seeds (g) of entris in ICCT DM at 10 locations in 1986-87

E No	Acc. No.	Yezin	Patan cheru	Patan cheru	Sab our	Jaba lpur	Keon jhar	Jai pur	Kota	Srini kathan	Gval ior	Indian loc.	Overall
1	4918	22	22	21	22	16	18	21	21	22	16	20	20
2	5003	31	30	29	34	23	24	21	28	31	24	27	28
3	11525	17	15	14	17	15	12	17	14	15	14	15	15
4	84303	17	15	15	16	16	12	15	15	14	13	15	15
5	84311	24	25	23	24	22	20	14	22	22	20	21	22
6	84327	19	19	18	19	16	15	19	18	17	16	17	18
7	85307	19	18	17	20	19	16	19	18	18	16	18	18
8	85308	26	25	23	26	21	20	12	23	23	21	22	22
9	85310	21	17	16	18	15	15	21	16	18	15	17	17
10	85311	15	12	13	13	12	11	15	11	13	11	12	13
11	85314	16	13	12	14	11	10	13	13	13	12	12	13
12	85319	17	15	15	16	14	12	16	14	15	13	14	15
13	85325	14	13	13	14	12	10	14	12	13	12	13	13
14	85333	37	25	23	27	24	19	24	26	25	20	24	25
15	8346	18	15	14	17	13	12	17	13	13	13	14	15
16	Lo.ch	18	16	15	14	16	13	13	11	13	12	14	14
SE		1.0	0.4	0.4	0.8	1.1	0.4	-	-	0.6	0.4		
Mean		20.0	18.3	17.4	19.3	16.4	14.9	17.0	17.3	17.8	15.6		
CV		9.0	4.3	4.8	6.8	13.2	4.2	-	-	6.3	5.6		

Table 40. Mean seed yield (kg/ha) and ranks of entries in ICCT DM at 11 locations 1986-87

E No	Acc. No.	Yezin		Patancheru		Patancheru		Sabour		Jabalpur		Keonjhar		Jaipur		Kota		Navagong		Srinikathan		Gwalior		Mean Indian loc.		Mean Overall loc.	
1	4918	1951	14	2352	8	3152	1	1057	16	1565	11	1930	1	656	11	2686	14	1536	16	1633	6	898	11	1449	11	1521	14
2	5003	3227	2	2435	3	2284	15	1248	12	1220	14	1301	16	966	4	2658	15	2634	7	1655	4	791	14	1437	13	1693	6
3	11525	2244	11	2345	9	2088	16	1629	3	1577	10	1748	4	780	9	3061	9	1883	12	1577	7	1261	4	1596	3	1688	7
4	84303	2426	9	2466	1	2555	9	1231	13	1708	6	1876	2	1070	2	3312	5	2137	11	1217	13	714	16	1660	1	1770	2
5	84311	3019	3	2377	6	2721	5	1179	15	1398	12	1440	11	787	8	2884	13	2753	6	1830	3	1000	8	1446	12	1670	10
6	84327	1903	15	2455	2	2551	10	1231	13	2112	3	1470	10	897	6	2047	16	2172	10	1061	15	1297	3	1351	15	1430	15
7	85307	2878	4	2309	13	2451	11	1421	9	1131	16	1634	5	690	10	3284	6	2795	5	1325	11	904	10	1558	7	1747	3
8	85308	2277	10	2243	14	2754	3	1751	1	1654	7	1434	12	587	13	3482	2	3324	1	915	16	1660	1	1583	6	1682	8
9	85310	2083	13	2321	11	2682	6	1525	5	1160	15	1525	9	587	13	3357	4	3050	3	1347	10	782	15	1553	8	1629	11
10	85311	2442	7	2311	12	2786	2	1439	8	2059	4	1833	3	552	15	3426	3	2870	4	1640	5	1413	2	1594	4	1715	4
11	85314	2207	12	2337	10	2635	7	1591	4	1815	5	1537	8	1056	3	3225	7	1719	14	1093	14	1077	6	1625	2	1708	5
12	85319	2566	6	2152	16	2346	13	1647	2	2445	2	1404	13	794	7	3141	8	2241	9	1998	1	1092	5	1523	9	1672	9
13	85325	1852	16	2218	15	2594	8	1404	10	1398	12	1343	14	966	4	3044	10	3267	2	1464	9	928	9	1496	10	1547	13
14	85333	3410	1	2383	4	2744	4	1473	7	1589	9	1621	6	1139	1	2902	12	2449	8	1919	2	1035	7	1588	5	1848	1
15	85346	2431	8	2353	7	2431	12	1335	11	1595	8	1567	7	380	16	2933	11	1609	15	1264	12	806	13	1430	14	1573	12
16	Lo.Ch	2618	5	2382	5	2333	14	1508	6	2672	1	1307	15	656	11	3496	1	1796	13	1503	8	824	12				
SE		219.9		60.1		91.4		94.0		247.1		188.0		50.5		260.9		829.8		223.0		243.5					
Mean		2470.7		2339.9		2569.3		1417.0		1693.5		1561.0		784.9		3058.7		2389.8		1465.0		1030.3					
CV		17.8		5.1		7.1		11.0		29.2		17.0		12.9		17.1		69.4		30.0		47.3					

Table 41. Stability parameters for seed yield (kg ha^{-1}) in ICCT-DM grown at 6 locations in 1986/87.

	Acc. No.	X	bi	Sdx10^5	R^2
1	ICC 4918	1972	1.1	1.56*	1.2
2	ICC 5003	1815	0.8	.23*	0.3
3	ICC 11525	1942	0.9	.50*	0.5
4	ICCL 84303	2085	1.0	.31*	0.3
5	ICCL 84311	1898	1.0	.05	0.2
6	ICCL 84327	1775	0.7*	1.19*	1.0
7	ICCL 85307	1965	1.1	.02	0.1
8	ICCL 85308	2042	1.2	.45*	0.4
9	ICCL 85310	2000	1.2	- .03	0.1
10	ICCL 85311	2058	1.2	.12	0.2
11	ICCL 85314	2063	1.0	- .01*	0.1
12	ICCL 85319	1914	1.0	.26*	0.3
13	ICCL 85325	1928	1.0	.05	0.2
14	ICCL 85333	2044	0.9	.03	0.1
15	ICC 8346	1833	1.1	.05*	0.2
	SE	98.8	0.12		
	Mean	1956			

Table 42 Correlations of seed yields (upper diagonal) and ranks (lower diagonal) of entries between locations in ICCT-DM ,1986-87

Df = 13

Yezin	1	1.0000										
Patancheru 1	2	0.2186	1.0000									
Patancheru 2	3	-0.1963	0.0055	1.0000								
Sabour	4	-0.0543	-0.6287	-0.3357	1.0000							
Jabalpur	5	-0.2326	-0.2303	-0.0113	0.2177	1.0000						
Keonjhar	6	-0.1642	0.2898	0.3427	-0.2515	0.0918	1.0000					
Jaipur	7	0.2572	0.3128	-0.1191	-0.0851	0.0543	-0.1417	1.0000				
Kota	8	0.0271	-0.4956	0.0292	0.5984	-0.1115	0.1930	-0.2385	1.0000			
Nawagaon	9	0.1280	-0.3479	0.0786	0.2861	-0.3103	-0.4516	-0.0537	0.3738	1.0000		
Srinikathan	10	0.5267	-0.1818	-0.0352	-0.1430	0.0890	0.0131	0.1481	-0.0929	-0.0302	1.0000	
Gwalior	11	-0.1879	-0.3085	0.0823	0.5301	0.4818	-0.0454	-0.1895	0.1112	0.2489	-0.2088	1.0000

		1	2	3	4	5	6	7	8	9	10	11
Yezin	1	1.0000										
Patancheru 1	2	0.1986	1.0000									
Patancheru 2	3	-0.1370	-0.1150	1.0000								
Sabour	4	-0.0203	-0.6075	-0.1306	1.0000							
Jabalpur	5	-0.1649	0.0225	0.0660	0.2409	1.0000						
Keonjhar	6	-0.0893	0.2005	0.2983	-0.1832	0.0813	1.0000					
Jaipur	7	0.1307	0.4012	-0.1973	-0.1149	0.0778	-0.2076	1.0000				
Kota	8	-0.0694	-0.5529	0.2385	0.6212	0.1121	0.2158	-0.3488	1.0000			
Nawagaon	9	0.1296	-0.4314	0.2192	0.2779	-0.2877	-0.4640	-0.1103	0.4354	1.0000		
Srinikathan	10	0.5615	-0.0416	-0.0219	-0.0838	-0.1329	-0.0833	0.1385	-0.3113	0.0286	1.0000	
Gwalior	11	-0.0854	-0.3668	0.1906	0.4753	0.5533	-0.0781	-0.1215	0.1421	0.1897	-0.0154	1.0000

Table 43. Correlations among characters at individual locations in ICCT-DM, 1986/87.

Character combinations	Yezin	Patan-cherul	Patan-cheru2	Sabour	Jabal-apur	Koon-jhar	Jaipur	Kota	Rav-gaon	Srini-ketan	Gwa-lior
Days to 50% flowering											
Plant height	.79	.63	.73	.36	-.13	.31	.47	-.04	-	.79	.59
Days to maturity	.73	.70	.71	.34	.33	.72	.01	.49	-	.54	-
Seed yield	-.24	-.06	-.25	-.14	-.03	-.62	-.35	.04	-.12	-.03	.16
Weight of 100 seeds	.01	-.18	.16	.10	-.35	-.16	-.02	.03	-	-.27	-.24
Plant height											
Days to maturity	.49	.47	.51	.34	-.05	.41	.07	.45	-	.29	-
Seed yield	-.11	-.11	-.10	-.14	.33	-.21	.35	-.30	-	-.04	.63
Weight of 100 seeds	.11	-.09	.07	.10	-.09	.12	.03	.40	-	-.32	-.09
Days to maturity											
Seed yield	-.24	-.23	-.20	-.75	.44	-.59	.06	-.46	-	.19	-
Weight of 100 seeds	.15	-.19	-.13	.22	-.58	-.07	-.11	.42	-	.01	-
Seed yield											
Weight of 100 seeds	.66	.30	.18	-.23	-.34	-.21	.15	-.41	-	.25	.10

Table 44. Details of entries in ICCT-DL, 1986/87.

Entry No.	Acc. No.	Parentage	Source
1	ICC 4948	G 130	PAU, India
2	ICC 10136	Pant G-114	GBPUAT, India
3	ICC 14303	H 81-73	HAU, India
4	ICCL 83408	F2 (GL 651 x P 1092)-2 x F2 (Bengalgram x NEC 130)-2	ICRISAT
5	ICCL 85401	P 324 x ICCC 5	ICRISAT
6	ICCL 85422	(P 2974 x JG 62) x (H 208 x VR 315)	ICRISAT
7	ICCL 85423	BG 203 x [(BG 203 x VR 315) x BG 203]	ICRISAT
8	ICCL 85430	G 130 x BG 482	ICRISAT
9	ICCL 85435	Coll 327 x ICCC 24	ICRISAT
10	ICCL 86401	(ICCC 17 x Pant G-114)	ICRISAT
11	ICCL 86402	(ICCC 4 x G 130)	ICRISAT
12	ICCL 86403	(H 208 x P 4353-1)	ICRISAT
13	ICCL 86404	(P 61 x T 103) (NEC 1639 x NEC 1614)	ICRISAT
14	ICCL 86405	(Pant G-114 x ICC 3316-EB-EB)	ICRISAT
15	ICCL 86406	BG 203 x (VR 315 x BG 203) x BG 203	ICRISAT
16	Local check		

Table 45. Mean days to 50% flowering of entries in ICCT DL 8 locations in 1986-87

Ent. No	Acc. No.	HAU Hisar	ICRI SAT Hisar	Bert hin	Ludh iana	Srig anga nagar	Faiz abad	Gval ior	Nani tal	Mean
1	4948	90	92	120	96	94	90	92	118	99
2	10136	91	91	112	97	92	86	90	120	97
3	14303	94	99	121	97	94	87	96	118	101
4	83408	96	99	126	98	96	85	97	125	103
5	85401	89	89	113	94	91	90	91	116	97
6	85422	86	86	107	94	93	88	89	114	95
7	85423	89	91	120	93	91	94	90	115	98
8	85430	90	90	118	92	94	91	89	121	98
9	85435	94	96	115	97	94	91	97	120	101
10	86401	91	89	108	94	92	88	90	114	96
11	86402	90	92	120	95	93	88	92	118	99
12	86403	89	88	110	94	95	88	91	119	97
13	86404	96	98	124	97	94	86	93	131	102
14	86405	86	86	105	92	90	94	90	112	94
15	86406	88	88	109	96	90	89	89	119	96
16	Lo.ch	88	86	105	93	91	90	89	118	95
SE		0.9	0.8	2.6	0.9	0.4	1.0	0.8	1.8	
Mean		90.5	91.0	114.5	94.8	92.5	88.9	91.4	118.6	
CV		2.0	1.7	3.9	2.0	0.9	2.3	1.7	2.6	

Table 46. Mean plant height (cm) of entries in ICCT-DL at 4 locations in 1986-87

Ent.	Acc. No.	Delhi	Srig anga nagar	Faiz abad	Nani tal	Mean
1	4948	44	76	54	67	60
2	10136	42	65	47	60	54
3	14303	44	70	47	70	58
4	83408	44	77	62	71	64
5	85401	42	67	44	70	56
6	85422	41	65	50	57	53
7	85423	42	64	55	70	58
8	85430	40	66	45	66	54
9	85435	40	63	54	61	55
10	86401	44	72	48	58	56
11	86402	44	73	48	73	60
12	86403	42	66	46	62	54
13	86404	41	64	48	61	54
14	86405	40	63	51	69	56
15	86406	41	60	44	66	53
16	Lo.ch	36	71	51	73	58
SE		1.9	2.1	5.1	3.1	
Mean		41.5	67.6	49.7	65.7	
CV		9.2	6.1	20.5	8.2	

Table 47, Mean days to maturity of entries in ICCT DL
6 locations in 1986-87

Ent. No	Acc. No.	Bert hin	Ludh iana	Srig anga nagar	Faiz abad	Gval ior	Nani tal	Mean
1	4948	193	143	154	126	128	170	152
2	10136	196	145	156	123	109	168	150
3	14303	194	144	157	125	115	167	150
4	83408	193	146	156	125	112	170	150
5	85401	192	144	153	127	112	166	149
6	85422	191	144	155	124	113	169	149
7	85423	192	145	153	126	117	167	150
8	85430	193	144	156	126	104	170	149
9	85435	193	143	152	126	101	168	147
10	86401	192	144	156	126	111	167	149
11	86402	192	145	154	125	106	169	149
12	86403	191	145	155	125	101	169	148
13	86404	193	144	154	127	88	173	147
14	86405	192	146	154	124	100	168	147
15	86406	193	144	156	125	98	169	148
16	Lo.ch	192	143	155	126	97	168	147
SE		1.0	1.0	0.3	1.0	9.8	0.5	
Mean		192.6	144.2	154.6	125.3	107.0	168.6	
CV		0.9	1.4	0.4	1.5	18.4	0.5	

Table 48.Mean weight of 100 seeds (g) of entries in ICCT DL
8 locations in 1986-87

Ent. No	Acc. No.	Del hi	HAU Hisar	ICRI SAT Hisar	Bert hin	Ludh iana	Faiz abad	Gval ior	Nani tal	Mean
1	4948	12	13	13	11	13	12	12	14	13
2	10136	11	11	12	9	12	13	12	13	12
3	14303	16	14	18	16	17	17	18	17	17
4	83408	13	15	17	12	16	15	17	16	15
5	85401	14	12	13	9	13	14	12	14	13
6	85422	13	12	13	10	13	14	12	14	13
7	85423	13	11	11	9	13	12	15	13	12
8	85430	15	15	17	11	15	17	11	16	15
9	85435	12	13	14	11	16	12	14	14	13
10	86401	14	12	13	11	14	14	12	15	13
11	86402	13	14	15	10	13	13	15	15	14
12	86403	12	11	12	11	12	12	12	12	12
13	86404	12	12	13	11	14	13	14	13	13
14	86405	12	10	12	10	11	12	11	12	11
15	86406	13	12	13	12	14	13	13	15	13
16	Lo.ch	27	11	12	9	13	25	12	13	15
SE		0.6	0.4	0.4	1.0	0.7	0	0.5	0.4	
Mean		13.9	12.4	13.6	10.8	13.6	14.0	13.3	14.1	
CV		8.7	6.5	6.0	15.7	10.4	0	7.0	5.4	

Table 49. Mean seed yield (kg/ha) and ranks of entries in ICCT DL at 9 locations in 1986-87

Ent. No	Acc. No.	Delhi		HAU Hisar		ICRI SAT Hisar		Bert hin		Ludh iana		Srig anga nagar		Faiz abad		Gwal ior		Nani tal		Mean	
1	4948	1607	2	3169	3	3082	9	716	4	756	8	2033	7	2374	2	1101	11	2237	10	2426	3
2	10136	1529	3	3062	4	3586	1	257	14	946	2	1842	10	1817	13	1095	12	2356	6	2475	1
3	14303	1184	11	1942	15	2870	12	998	2	714	11	1755	14	1373	16	952	15	2364	5	2023	14
4	83408	1321	5	3281	2	3155	6	535	6	845	5	2050	6	1667	14	910	16	2102	13	2382	4
5	85401	1196	10	3436	1	3233	3	269	13	750	9	1807	13	1914	10	1196	6	2555	3	2445	2
6	85422	1273	8	2673	11	3084	8	654	5	559	14	2267	4	1633	15	1050	14	1983	16	2256	8
7	85423	1232	9	2708	10	2280	15	153	15	1059	1	2120	5	2038	7	1726	1	2578	1	2184	9
8	85430	1000	15	2841	6	2153	16	328	11	422	16	1859	9	2142	3	1166	7	2023	15	1975	15
9	85435	1095	13	2442	14	3359	2	-	-	881	3	1251	16	2064	6	1166	7	2277	8	2085	12
10	86401	1285	7	2852	5	3147	7	446	8	732	10	1833	12	2101	4	1366	4	2578	1	2339	5
11	86402	1297	6	2554	12	2959	11	499	7	631	13	1442	15	2590	1	1505	2	2174	11	2085	12
12	86403	1166	12	2795	7	3167	5	959	3	643	12	2363	2	2070	5	1333	5	2166	12	2331	6
13	86404	1505	4	2744	9	2620	14	1360	1	524	15	2572	1	1963	9	1056	13	2094	14	2307	7
14	86405	988	16	2481	13	3220	4	282	12	881	3	1842	10	2033	8	1107	10	2332	7	2173	10
15	86406	1678	1	1659	16	3042	10	430	9	839	6	1911	8	1823	12	1136	9	2269	9	2112	11
16	Local	1065	14	2759	8	2676	13	403	10	833	7	2285	3	1864	11	1455	3	2396	4		
SE		138.5		379.2		251.9		127.2		137.1		145.3		323.0		218.8		203.9			
Mean		1276.3		2712.4		2977.1		518.0		750.8		1952.0		1966.6		1207.5		2280.3			
CV		21.7		28.0		16.9		42.5		36.5		14.9		32.8		36.2		15.5			

Table 50. Stability parameters for seed yield (kg ha^{-1}) in ICCT-DL grown at 4 locations in 1986/87.

	Acc. No.	X	bi	$Sdix10^{5}$	R^{2}
1	ICC 4948	2240	0.9	-.14	0.1
2	ICC 10136	2328	1.2	.54*	0.6
3	ICC 14303	2043	1.0	-.11	0.1
4	ICCL 83408	2157	1.0	-.01	0.2
5	ICCL 85401	2198	1.2	-.04	0.2
6	ICCL 85422	2152	1.0	.70*	0.7
7	ICCL 85423	2052	0.6	1.76*	1.5
8	ICCL 85430	1759	0.7	.45*	0.6
9	ICCL 84345	1995	1.4	1.28*	1.2
10	ICCL 86401	2211	1.1	.03	0.2
11	ICCL 86402	1968	1.0	.45*	0.6
12	ICCL 86403	2216	1.1	.65*	0.7
13	ICCL 86404	2198	0.6	1.30*	1.2
14	ICCL 86405	2095	1.3	-.30	0.0
15	ICCL 86406	2225	0.8	-.02	0.2
	SE	158.21	0.22		
	Mean	2123			

Table 51. Correlations of seed yields (upper diagonal) and ranks (lower diagonal) of entries between locations in ICCT DL (1986-87)

DF = 12

Table 51. Correlations of seed yields (upper diagonal) and ranks (lower diagonal) of entries between locations in ICCT DL (1986-87)

DF = 12

Delhi	1	1.0000								
HAU Hisar	2	-0.0951	1.0000							
ICRISAT Hisar	3	0.2882	0.1791	1.0000						
Berthin	4	0.2168	-0.1754	0.0659	1.0000					
Ludhiana	5	**0.2085**	**-0.0033**	**0.3141**	**-0.5266**	1.0000				
Sriganganagar	6	0.1812	0.1441	-0.1723	0.5674	-0.1821	1.0000			
Faizabad	7	0.0293	0.2517	-0.1582	-0.1784	-0.1403	-0.2289	1.0000		
Gwalior	8	-0.1435	0.0090	-0.3454	-0.3736	0.2459	-0.1530	0.5900	1.0000	
Nanital	9	-0.0369	0.0497	0.1532	-0.4422	0.4573	-0.3409	0.0042	0.4535	1.0000

		1	2	3	4	5	6	7	8	9
Delhi	1	1.0000								
HAU Hisar	2	0.1765	1.0000							
ICRISAT Hisar	3	0.0265	0.2235	1.0000						
Berthin	4	0.3029	-0.0118	-0.3059	1.0000					
Ludhiana	5	0.0420	-0.0391	0.4363	-0.6595	1.0000				
Sriganganagar	6	0.1258	0.1938	-0.3447	0.3950	-0.1635	1.0000			
Faizabad	7	-0.1088	0.1441	-0.1441	-0.1000	-0.1899	-0.1672	1.0000		
Gwalior	8	-0.3065	-0.0161	-0.1862	-0.4473	0.0808	-0.1182	0.6320	1.0000	
Nanital	9	-0.1254	0.0360	0.1398	-0.4857	0.5653	-0.3511	-0.0245	0.4626	1.0000

Table 52. Correlations among characters at individual locations in ICCT-DL, 1986/87.

Character combinations	Delhi	Hisar	Hisar	Ber-thin	Ludh-iana	SG' nagar	Faisa-bad	Gwa-lior	Naini-tal
Days to 50% flowering									
Plant height	-	-	-	-	-	.46	.05	-	-.07
Days to maturity	-	-	-	.32	-.06	.16	.18	.10	.77
Seed yield	-	.11	-.04	.36	.13	.09	.34	-.42	-.48
Weight of 100 seeds	-	.55	.61	.37	.52	-	-.08	.75	.14
Plant height									
Days to maturity	-	-	-	-	-	.23	-.02	-	-.19
Seed yield	.41	-	-	-	-	-.03	-.03	-	.21
Weight of 100 seeds	-.60	-	-	-	-	-	-.03	-	.20
Days to maturity									
Seed yield	-	-	-	-.03	.22	1.9	.26	-.01	-.78
Weight of 100 seeds	-	-	-	.24	-.28	-	.16	.17	-.03
Seed yield									
Weight of 100 seeds	-.37	.04	-.18	.55	-.16	-	-.32	-.13	-.15

Table 53. Details of entries in ICCT-K, 1986/87.

Entry No.	Acc. No.	Parentage	Source
1	ICC 12970	[F3 (K 850 x GW-5/7) x P 458] x F3 (L 550 x Guamuchil)-2	ICRISAT
2	ICC 12975	" "	ICRISAT
3	ICC 12973	CPS 1 x C 104	ICRISAT
4	ICC 12978	CPS 1 x C 104	ICRISAT
5	ICC 12339	L 550 x L 2	ICRISAT
6	ICCL 86501	L 550 x Kourosh	ICRISAT
7	ICCL 86502	No. 501 x P 2591	ICRISAT
8	ICCL 86503	No. 501 x NEC 141	ICRISAT
9	ICCL 86504	(L 550 x G 130) x L 532	ICRISAT
10	ICCL 86505	L 550 x K 56567	ICRISAT
11	ICCL 86506	L 550 x Kourosh	ICRISAT
12	ICCL 86507	(L 550 x L 2) x GL 622	ICRISAT
13	ICCL 86508	G 130 x (No. 501 x K 56507)	ICRISAT
14	ICCL 86509	(L 550 x Radhey) x (K 850 x H 208)	ICRISAT
15	ICCL 86510	GL 629 x P 1092	ICRISAT
16	ICC 4973	L 550	PAU, India

Table 54. Mean days to 50% flowering of entries in ICCT-K at 7 locations in 1986-87

Ent. No.	Acc. No.	Patan cheru	Juna gadh	His ar	Gva lior	Nayag adh	Srig anga nagar	Kan pur	Mean
1	12970	48	35	54	56	37	82	68	54
2	12975	44	40	54	56	40	82	64	54
3	12973	54	45	79	89	45	93	68	68
4	12978	41	45	74	88	53	90	68	66
5	12339	52	56	83	89	48	87	68	69
6	86501	53	54	73	91	59	88	62	69
7	86502	56	61	76	90	66	91	62	72
8	86503	70	56	95	94	65	95	62	77
9	86504	69	59	89	89	59	88	66	74
10	86505	52	58	73	90	59	89	65	69
11	86506	67	65	90	89	62	92	64	76
12	86507	67	59	79	90	59	91	62	72
13	86508	69	62	91	95	61	92	61	76
14	86509	52	55	68	91	59	90	62	68
15	86510	56	60	74	90	61	89	65	71
16	4973	51	55	73	88	54	90	66	68
	SE	1.9	0.7	1.9	1.1	-	0.5	1.2	
	Mean	56.2	54.0	76.4	85.8	55.4	89.1	64.4	
	CV	6.8	2.6	4.9	2.5	-	1.0	3.7	

Table 55. Mean days to 50% flowering of entries in ICCT-K at 7 locations in 1986-87

Ent. No.	Acc. No.	Patan cheru	Juna gadh	Gva lior	Nayag adh	Mean
1	12970	38	37	29	27	40
2	12975	48	32	32	29	42
3	12973	48	43	39	30	45
4	12978	49	37	39	28	45
5	12339	43	39	37	29	45
6	86501	45	43	39	32	46
7	86502	47	37	40	30	45
8	86503	53	44	43	31	50
9	86504	57	42	38	32	48
10	86505	47	37	38	30	44
11	86506	51	46	43	30	50
12	86507	53	47	41	32	50
13	86508	56	39	40	29	48
14	86509	54	39	41	28	48
15	86510	47	42	43	33	45
16	4973	53	38	38	30	46
	SE	1.2	0.7	1.8	-	
	Mean	49.2	40.2	38.7	30.0	
	CV	4.8	3.6	9.1	-	

Table 56. Mean days to maturity of entries in ICCT-K at 5 locations in 1986-87

Ent. No.	Acc. No.	Patan cheru	Juna gadh	Nayag adh	Srig anga nagar	Kan pur	Mean
1	12970	88	88	78	154	148	111
2	12975	90	91	79	152	142	111
3	12973	99	98	84	155	148	117
4	12978	90	104	89	158	148	118
5	12339	100	113	83	157	148	120
6	86501	101	115	93	156	143	122
7	86502	101	110	98	155	142	121
8	86503	113	109	97	155	142	123
9	86504	110	114	91	155	146	123
10	86505	98	117	90	156	145	121
11	86506	107	113	91	154	143	122
12	86507	108	115	89	156	142	122
13	86508	109	115	93	157	142	123
14	86509	98	116	90	156	142	120
15	86510	104	110	91	154	145	121
16	4973	97	114	88	157	146	120
	SE	0.2	0.2	-	0.3	1.0	
	Mean	100.8	108.8	89.0	155.2	144.3	
	CV	0.5	1.3	-	0.4	1.4	

Table 57. Mean weight of 100 seeds (g) of entries in ICCT-K at 6 locations in 1986-87

Ent. No.	Acc. No.	Patan cheru	Juna gadh	His ar	Gwa lior	Nayag adh	Kan pur	Mean
1	12970	23	23	25	23	22	20	23
2	12975	36	30	36	28	25	34	32
3	12973	24	25	26	23	18	35	25
4	12978	25	26	27	26	22	24	25
5	12339	17	20	18	18	16	24	19
6	86501	21	26	27	22	18	20	22
7	86502	27	32	31	28	20	30	28
8	86503	29	34	33	32	22	22	29
9	86504	28	27	30	26	19	25	26
10	86505	22	24	26	22	24	28	24
11	86506	22	24	28	25	20	22	24
12	86507	27	30	31	26	20	25	27
13	86508	28	28	30	26	18	25	26
14	86509	21	25	24	22	17	32	24
15	86510	23	26	28	23	17	32	25
16	4973	21	23	24	21	16	23	21
	SE	0.3	0.1	0.5	1.1	-	-	
	Mean	24.5	26.3	27.8	24.4	19.6	26.3	
	CV	2.8	1.1	3.5	9.1	-	-	

Table 58. Mean seed yield (kg/ha) and ranks of entries in ICCT-K at 7 locations in 1986-87

Ent. No.	Acc. No.	Patancheru		Junagadh		Hisar		Gwalior		Nayagadh		Sriganganagar		Kanpur		Mean	
1	12970	1423	13	1339	13	1901	16	863	7	242	3	2090	9	806	9	1512	15
2	12975	1672	9	1316	14	2878	15	684	14	105	8	1724	16	676	11	1653	14
3	12973	3192	1	1186	15	3224	11	800	11	200	4	1933	15	546	15	2016	9
4	12978	2031	4	1391	12	2997	13	1041	3	166	5	2012	14	676	11	1821	11
5	12339	2023	5	2036	2	3263	9	851	8	507	1	3044	2	1040	2	2281	1
6	86501	1667	10	1916	3	3830	4	1026	5	117	7	2665	4	546	15	2125	6
7	86502	1733	8	1552	10	4009	3	1032	4	27	12	2639	5	572	14	2101	7
8	86503	274	16	1438	11	2946	14	708	12	0	13	2064	10	613	13	1467	16
9	86504	2394	2	1721	8	3713	6	872	6	0	13	2743	3	806	9	2275	3
10	86505	1514	11	1880	4	3229	10	619	15	82	9	3174	1	832	7	2126	5
11	86506	599	15	1752	7	3211	12	708	12	48	11	2495	6	988	4	1809	12
12	86507	2326	3	1557	9	4090	1	842	10	68	10	2025	13	1066	1	2213	4
13	86508	1447	12	796	16	3403	7	514	16	0	13	2064	10	884	5	1719	13
14	86509	1816	7	1820	5	3359	8	1142	2	133	6	2325	7	858	6	2036	8
15	86510	716	14	1786	6	3787	5	1157	1	0	13	2038	12	832	7	1832	10
16	4973	1985	6	2054	1	4054	2	845	9	263	2	2299	8	1014	3	2281	1
SE		223.5		47.2		308.8		199.9		49.8		200.1		51.6			
Mean		1675.7		1596.2		3368.4		856.6		118.4		2333.3		797.2			
CV		26.7		5.9		18.3		46.7		84.1		17.1		12.9			

Table 59. Stability parameters for seed yield (kg ha^{-1}) in ICCT-K grown at 5 locations in 1986/87.

	Acc. No.	X	bi	$Sdx10^{5}$	R^{2}
1	ICC 12970	1512	0.4*	.50*	0.3
2	ICC 12975	1653	0.8	.04	0.2
3	ICC 12973	2016	0.9	8.49*	3.5
4	ICC 12978	1822	0.9	.49*	0.3
5	ICC 12339	2281	0.9	.65*	0.4
6	ICCL 86501	2125	1.3	-.07	0.1
7	ICCL 86502	2101	1.4	-.36	0.0
8	ICCL 86503	1467	1.0	3.25*	1.4
9	ICCL 86504	2276	1.1	0.50*	0.3
10	ICCL 86505	2126	1.0	1.91*	0.9
11	ICCL 86506	1809	1.0	3.49*	1.5
12	ICCL 86507	2213	1.1	2.05*	1.0
13	ICCL 86508	1719	1.1	1.25*	0.6
14	ICCL 86509	1953	0.9	-.30	0.0
15	ICCL 86510	1832	1.2	3.07*	1.4
16	ICC 4973	2281	1.1	.40*	0.3
	SE	221.57	0.23		
	Mean	1949			

Table 60. Correlations for seed yield (upper diagonal) and ranks (lower diagonal) of of entries between locations in ICCT K ,1986-87

DF = 14

Patancheru	1	1.0000						
Junagadh	2	-0.0640	1.0000					
Hisar	3	0.2182	0.3868	1.0000				
Gwalior	4	0.1097	0.1236	0.2718	1.0000			
Nayagadh	5	0.3840	0.3357	-0.2401	0.0855	1.0000		
Sriganganagar	6	0.0219	0.6457	0.2391	0.0013	0.2336	1.0000	
Kanpur	7	-0.0531	0.3385	0.1669	-0.1789	0.2973	0.1985	1.0000

		1	2	3	4	5	6	7
Patancheru	1	1.0000						
Junagadh	2	0.0206	1.0000					
Hisar	3	0.3235	0.4765	1.0000				
Gwalior	4	0.2009	0.3170	0.2902	1.0000			
Nayagadh	5	0.3995	0.2543	-0.1816	0.1274	1.0000		
Sriganganagar	6	-0.1021	0.6643	0.2589	0.0717	-0.0129	1.0000	
Kanpur	7	0.0273	0.3947	0.2854	-0.1621	0.1142	0.1749	1.0000

Table 61. Correlations among characters at individual locations in ICCT-DR, 1986/87.

Character combinations	Patan-cheru	Juna-gadh	Hisar	Gwa-lior	Haya-garh	SG' nagar	Kanpur
Days to 50% flowering							
Plant height	.61	.51	-	.88	.53	.38	-
Days to maturity	.95	.89	-	-	.96	.48	.96
Seed yield	-.27	.31	.36	.11	-.51	-.01	.06
Weight of 100 seeds	.16	.14	.04	-.05	-.24	-	-.01
Plant height							
Days to maturity	.62	.43	-	-	.51	.34	-
Seed yield	.04	.13	-	.17	-.35	.18	-
Weight of 100 seeds	.33	.11	-	.19	-.20	-	-
Days to maturity							
Seed yield	-.28	.48	-	-	-.53	.16	.05
Weight of 100 seeds	.08	-.04	-	-	-.23	-	-.11
Seed yield							
Weight of 100 seeds	-.06	-.44	.06	-.24	-.49	-	-.26

REQUEST FOR INTERNATIONAL CHICKPEA COOPERATIVE TRIALS AND NURSERIES

Name : _____

Address : _____

_____

_____

_____

Please supply the following sets of chickpea trials and nurseries for 1987/88.

Trial	Design	No. of Entries	No. of sets	Locations
Breeding				
F2-DS		As requested		
F2-DM		As requested		
F2-DL		As requested		
ICSN-DS	DAug	40-50		
ICSN-DM	DAug	40-50		
ICSN-DL	DAug	40-50		
ICCT-DS	RB	16		
ICCT-DM	RB	16		
ICCT-DL	RB	16		
ICCT-K (India)	RB	16		
OBS-K	AUGM	As requested		
ICAT	RB	16		

contd.

Pathology		
ICRRVN (Outside India)	RB	48
IIUCVRRN (For India)	RB	55
ICSDN	RB	33
Entomology		
ICHRN	RB	4-8
Short duration	RB	4-8
Medium duration	RB	4-8
Long duration	RB	4-8

DS : Desi Short Duration

DM : Desi Medium Duration

DL : Desi Long Duration

K : Kabuli

ICSN : International Chickpea Screening Nursery

ICCT : International Chickpea Cooperative Trial

ICAT : International Chickpea Adaptation Trial

ICRRVN : International Chickpea Root-Rot/Wilt Nursery

IIUCVRRN : ICRISAT-ICAR Uniform Chickpea Wilt/Root-Rot Nursery

ICSDN : International Chickpea Stunt Disease Nursery

ICHRN : International Chickpea Heliothis Resistant Nursery

OBS : Observation