REPORT OF WORK

JUNE 1988 - MAY 1989

PROJECT NO.: P-102(85)IC

DEVELOPMENT OF SHORT-DURATION PIGEONPEA CULTIVARS

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HIGHLIGHTS

* AICPIP tests:

  EXACT - Based on overall mean grain yield ICPL 83006 was found to be superior over Prabhat in SZ (26%), CZ (22%), NWPZ (22%), WZ (50%) and NEHZ (11%). ICPLs 83015, 84023 and 85010 showed superiority in WZ and NWPZ. A new extra-short-duration line, ICPL 87095, has been identified for inclusion in 1989 EXACT.

  EACT - ICPLs 84052 and 85045 were found to be superior over UPAS 120 in SZ, CZ and NWPZ.

  ICPL 84031 was 30% superior over UPAS 120 in CZ and SZ. Last year (1987) it has shown superiority over UPAS 120 in NEHZ (53%) and NWPZ (32%) but was not tested in 1988.

  Two new lines, ICPLs 86023 and 88026, were identified for inclusion in 1989 EACT.

* Among the lines selected from replicated yield trials based on grain yield and other morphological characters for multilocation testing 29 showed resistance/tolerance to sterility mosaic, 7 resistance/tolerance to wilt and 10 showed some degree of tolerance to Phytophthora blight.

* During 1988 rainy season, higher grain yields were obtained at Patancheru than at Hisar. The mean grain yields of all the replicated tests were 1521 and 2000 kg/ha at Hisar and Patancheru, respectively.

* Higher grain yields at Patancheru were obtained inspite of on an average 1.5 hours less sunshine per day during life cycle (Jun-Sep).

* Some new promising entries were identified:

  Extra-short-duration:

Determinate	Indeterminate
ICPL 87095	ICPL 87111
ICPL 88001	ICPL 89001
ICPL 89024	ICPL 89002

  Short-duration:

Determinate	Indeterminate
ICPL 87104	ICPL 86023
ICPL 88026	ICPL 87113
ICPL 88027	ICPL 87114
ICPL 89029	ICPL 89013
ICPL 89030	ICPL 89016
ICPL 89032	ICPL 89017

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CONTENTS

P-102(85)IC: Development of short-duration pigeonpea cultivars for high yield, wider adaptation and acceptability

Objective: To develop high yielding extra-short- and short-duration pigeonpea cultivars with acceptable grain quality

I. INTRODUCTION:

The work reported here was carried out at ICRISAT Center, Patancheru (18°N, 78°E), Cooperative Research Center, Haryana Agricultural University, Hisar (29°N, 75°E) and Cooperative Research Center, Gwalior (26°N, 78°E).

In 1988, annual rainfall at Patancheru was 1027 mm, 31% above average. During pigeonpea growth period (Jun-Sep) it was 34% above average. At Hisar, rainfall received during Jun to Sep was 672 mm compared with corresponding average of 351 mm, 91% above average. While at Gwalior, total rainfall received during the rainy season (Jun to Oct) was 641 mm, which was 24% below average.

The mean daily sunshine received at Patancheru during Jun to Sep, 1988 was 4 hours 40 minutes as compared to 5 hours 55 minutes in 1987 i.e. 1 hour 15 minutes less sunshine per day.

Air temperatures were within ±2°C of the average at Patancheru. At Hisar and Gwalior daily temperatures during Jul to Oct, 1988 was 2-4°C cooler than average.

Most of the experiments were sown on 20-23 Jun, 1988 at Patancheru, 28-30 Jun at Hisar and 1st Jul at Gwalior. The early and late sown trials at Hisar were planted on 8 May and 30 Jul, respectively. The

fields at Gwalior and Patancheru received 18 kg N and 46 kg P_2O_5 per hectare. At Hisar, only 20 kg P_2O_5 per hectare was applied. Seeds were not inoculated with Rhizobium culture.

II. CROSSES MADE:

A total of 148 crosses were made with different objectives. The details are as follows:

1. Helicoverpa tolerance:

a) Double crosses - combining different sources of Helicoverpa tolerance into promising short-duration lines.

ICPX 880001	ICPX 870025 (ICPL 8309 EB x ICPL 85024) x ICPX 870030 (ICPL 187-1-1 x ICPL 85024)
ICPX 880002	ICPX 870027 (ICPL 8309 EB x ICPL 85050) x ICPX 870031 (ICPL 187-1-1 x ICPL 85050)

b) Triple crosses - incorporation of Helicoverpa tolerance into promising short-duration lines.

ICPX 880003	ICPX 870025 (ICPL 8309 EB x ICPL 85024)	x ICPL 85030
ICPX 880004	"	x ICPL 85031
ICPX 880005	"	x ICPL 86012
ICPX 880006	ICPX 870026 (ICPL 8309 EB x ICPL 85012)	x ICPL 85030
ICPX 880007	"	x ICPL 85031
ICPX 880008	"	x ICPL 88013
ICPX 880009	ICPX 870031 (ICPL 187-1-1 x ICPL 85050)	x ICPL 85030
ICPX 880010	"	x ICPL 86012
ICPX 880011	"	x ICPL 88013
ICPX 880012	ICPX 870032 (ICPL 187-1-1 x ICPL 85055)	x ICPL 85030
ICPX 880013	"	x ICPL 86012
ICPX 880014	"	x ICPL 88013

(c) Germplasm enhancement for Helicoverpa tolerance

ICPX 880105	MS (DT) comp.	x ICPX 870033 (ICPL 187-1-1-6 EB x ICPL 2-EB)
ICPX 880106		x ICPX 870035 (ICPL 2-EB x ICPL 83009-EB)
ICPX 880107		x ICPL 269 EB
ICPX 880108		x ICPL 86026-E2-EB
ICPX 880109		x 82 HP 526-E1-2EB
ICPX 880110		x 82418-12-4EB-E2-2EB
ICPX 880111		x 85HP445-E1-2EB

2. Incorporation of pod-fly tolerance into promising short-duration lines.

ICPX 880114	ICPL 85030 x ICPL 88040
ICPX 880115	ICPL 86012 x ICPL 88040
ICPX 880116	ICPL 85030 x ICP 7946-E1
ICPX 880117	ICPL 86012 x ICP 7946-E1

3. Disease resistance:

(a) Triple crosses - incorporation of sterility mosaic and wilt resistance into promising short-duration lines.

ICPX 880015	ICPX 870049 (ICPL 85024 x ICPL 83024)	x ICPL 85030
ICPX 880016	"	x ICPL 85031
ICPX 880017	"	x ICPL 86012
ICPX 880018	"	x ICPL 88013
ICPX 880019	ICPX 870063 (ICPL 85012 x ICPL 83024)	x ICPL 85030
ICPX 880020	"	x ICPL 88013
ICPX 880021	ICPX 870070 (ICPL 85050 x ICPL 83024)	x ICPL 85030
ICPX 880022	"	x ICPL 85031
ICPX 880023	"	x ICPL 88013
ICPX 880024	ICPX 870056 (ICPL 85055 x ICPL 83024)	x ICPL 85030
ICPX 880025		x ICPL 85031
ICPX 880026		X ICPL 88013

(b) Germplasm enhancement for Phytophthora blight tolerance

ICPX 880124	ICPL 88013	x ICPX 800545-HB-H8-H1-HB-H1-SLTH1-HB
ICPX 880125	"	x KPBR 80-1
ICPX 880126	"	x ICP 11304
ICPX 880127	ICPL 88037	x KPBR 80-1
ICPX 880128	"	x ICP 11304
ICPX 880129	"	x ICPX 820006-H3-HB_HB
ICPX 880130	"	x ICPX 800545-HB-H8-H1-HB-H1-SLTH1-HB
ICPX 880131	ICPX 820006-H3-HB-HB	x KPBR 80-1
ICPX 880132	"	x ICP 11304
ICPX 880133	"	x ICPX 800545 progeny (as above)
ICPX 880134	KPBR 80-1	x "
ICPX 880135	ICP 11304	x "

ICPX 880136	ICPX 860095-1	x KPBR 80-1
ICPX 880137	"	x ICP 11304
ICPX 880138	ICPX 860095-2	x KPBR 80-1
ICPX 880139	"	x ICP 11304
ICPX 880140	ICPL 88013	x ICPL 88037

4. Incorporation of wide genetic base into promising short-duration lines.

a) Triple crosses

ICPX 88027	ICPX 870051 (ICPL 85024 x 60/8)	x ICPL 85030
ICPX 88028	"	x ICPL 85031
ICPX 88029	"	x ICPL 88013
ICPX 88030	ICPX 870052 (ICPL 85024 x 11RA)	x ICPL 85030
ICPX 88031	"	x ICPL 85031
ICPX 88032	"	x ICPL 88013
ICPX 88033	ICPX 870073 (ICPL 85050 x 11RA)	x ICPL 88013
ICPX 88034	ICPX 870048 (ICPL 85024 x ICPL 211)	x ICPL 85030
ICPX 88035	"	x ICPL 85031
ICPX 88036	"	x ICPL 88013
ICPX 88037	ICPX 870055 (ICPL 211 x ICPL 85055)	x ICPL 85030
ICPX 88038	"	x ICPL 86012
ICPX 88039	"	x ICPL 88013
ICPX 880040	ICPX 870062 (ICPL 211 x ICPL 85012)	x ICPL 85030
ICPX 880041	"	x ICPL 86012
ICPX 880042	"	x ICPL 88013

(b) Single crosses

ICPX 880118	ICPL 85030	x ICP 12746
ICPX 880119	"	x ICP 12153
ICPX 880120	"	x ICP 13829
ICPX 880121	"	x ICP 11981
ICPX 880122	ICPL 86012	x ICP 12746
ICPX 880123	"	x ICP 12153

5. Combining high yield and large seed size in short-duration lines (line x tester)

ICPX 88043	ICPL 85030	x ICPL 86030
ICPX 88044	"	x ICPL 87113
ICPX 88045	"	x ICPL 83024
ICPX 88046	"	x ICPL 85012
ICPX 88047	"	x ICPL 86005
ICPX 88048	"	x ICPL 87097
ICPX 88049	"	x ICPL 87104
ICPX 88050	"	x ICPL 88004
ICPX 88051	"	x ICPL 88009
ICPX 88052	"	x ICPL 88023
ICPX 88053	ICPL 88013	x ICPL 86030
ICPX 88054	"	x ICPL 87113
ICPX 88055	"	x ICPL 83024

ICPX 88056	ICPL 88013	x ICPL 85012
ICPX 88057	"	x ICPL 86005
ICPX 88058	"	x ICPL 87097
ICPX 88059	"	x ICPL 87104
ICPX 88060	"	x ICPL 88004
ICPX 88061	"	x ICPL 88009
ICPX 88062	"	x ICPL 88023
ICPX 88063	ICPL 85031	x ICPL 86030
ICPX 88064	"	x ICPL 87113
ICPX 88065	"	x ICPL 83024
ICPX 88066	"	x ICPL 85012
ICPX 88067	"	x ICPL 86005
ICPX 88068	"	x ICPL 87097
ICPX 88069	"	x ICPL 87104
ICPX 88070	"	x ICPL 88004
ICPX 88071	"	x ICPL 88009
ICPX 88072	"	x ICPL 88023
ICPX 88073	ICPL 86012	x ICPL 86030
ICPX 88074	"	x ICPL 87113
ICPX 88075	"	x ICPL 83024
ICPX 88076	"	x ICPL 85012
ICPX 88077	"	x ICPL 86005
ICPX 88078	"	x ICPL 87097
ICPX 88079	"	x ICPL 87104
ICPX 88080	"	x ICPL 88004
ICPX 88081	"	x ICPL 88009
ICPX 88082	"	x ICPL 88023
ICPX 88083	ICPL 87111	x ICPL 86030
ICPX 88084	"	x ICPL 87113
ICPX 88085	"	x ICPL 83024
ICPX 88086	"	x ICPL 85012
ICPX 88087	"	x ICPL 86005
ICPX 88088	"	x ICPL 87097
ICPX 88089	"	x ICPL 87104
ICPX 88090	"	x ICPL 88004
ICPX 88091	"	x ICPL 88009
ICPX 88092	"	x ICPL 88023
ICPX 88093	ICPL 88037	x ICPL 86030
ICPX 88094	"	x ICPL 87113
ICPX 88095	"	x ICPL 83024
ICPX 88096	"	x ICPL 85012
ICPX 88097	"	x ICPL 86005
ICPX 88098	"	x ICPL 87097
ICPX 88099	"	x ICPL 87104
ICPX 88100	"	x ICPL 88004
ICPX 88101	"	x ICPL 88009
ICPX 88102	"	x ICPL 88023

6. Increasing seed size of ICPL 81

ICPX 880103	ICPL 81	x ICPL 86030
ICPX 880104	ICPL 81	x ICPL 88037

7. Adaptation to higher latitudes

ICPX 880112	ICPX 870209 (ICPL 85014 x Pen. State-BS) x ICPL 85030
ICPX 880113	ICPX 870210 (ICPL 85014 x Pen. State-WS) x ICPL 85030

8. Backcrosses for super dwarf mutant (SDM) inheritance study

ICPX 880141	ICPX 860064 (SDM x ICPL 146) x SDM
ICPX 880142	" x ICPL 146
ICPX 880143	ICPX 860066 (SDM x ICPL 85024) x SDM
ICPX 880144	" x ICPL 85024
ICPX 880145	ICPX 860067 (SDM x ICPL 85059) x SDM
ICPX 880146	" x ICPL 85059
ICPX 880147	ICPX 860065 (SDM x ICPL 85037) x SDM
ICPX 880148	" x ICPL 85037

9. One hundred and five short-duration hybrids (IPH 744 to 849) involving 3 male sterile (MS Prabhat DT, MS Prabhat NDT, and MS T-21) lines as female and 89 advanced short-duration lines as male parents were made at Hisar in 1988.

II. BREEDING MATERIALS

A. Populations

F1: Ninety two F_1 hybrids along with two checks (ICPL 151 and Manak) were sown on 30 Jul at Hisar in two replications. Plot size consisted of 4 m long one row spaced 60 cms apart. The characteristics of different F_1's is summarized in Table 1. Based on different characteristics recorded and visual performance 27 F_1's were rejected. Remaining 65 F_1's were selected for growing in 1989 as follows:

- For determinate F_2 trial: 13 (ICPX 870076, 870079, 870083, 870085, 870091, 870095, 870096, 870099, 870100, 870102, 870103, 870105 and 870106).

- For indeterminate F_2 trial: 13 (ICPX 870007, 870008, 870011, 870012, 870014, 870015, 870016, 870024, 870060, 870061, 870067, 870068 and 870092).

- For growing large population for single plant selections: 20 (ICPX 870005, 870006, 870009, 870010, 870013, 870017, 870018, 870019, 870021, 870022, 870023, 870048, 870051, 870052, 870055, 870058, 870062, 870069, 870072 and 870073).

- For growing in disease nurseries: 8 (ICPX 870049, 870050, 870056, 870057, 870063, 870064, 870070 and 870071).

- For growing in unsprayed area: 11 (ICPX 870025, 870026, 870027, 870028, 870029, 870030, 870031, 870032, 870033, 870034, and 870035).

TCF_1: Ten TCF_1 populations were grown at Hisar on 30 Jul in 10 row plots for single plant selections. Based on visual observations 170 determinate and 162 indeterminate plants were selected for further evaluation next year (Table 2).

F_2: Fifty-two F_2 populations were grown at Hisar on 28-30 Jun, 1988 in 20 row plots. The rows were 60 cms apart. The single plant selections made in these populations is summarized in Table 3. In all 1389 determinate (528 white seed and 861 brown seed) and 839 indeterminate (234 white seed and 605 brown seed) plants were selected based on visual observation on maturity, seed size and plant characteristics.

F_3: Eleven F_3 populations were sown at Hisar on 29 Jun, 1988 in 20 row plots. The selections made in these populations are summarized in Table 4. One hundred twenty three determinate and 68 indeterminate

plants were selected visually.

F_4/F_5: Four F_4 and 3 F_5 populations were sown on 29 Jun, 1988 at Hisar in 20 row plots for single plant selections. The selections made are given in Table 5. In all 96 determinate (39 white seed and 57 brown seed) and 87 indeterminate (32 white seed and 55 brown seed) plants were selected for further evaluation.

Disruptive populations: Two populations each of three crosses (ICPX 830015, 830026 and 830033) were advanced at Hisar and Patancheru as planned. At each location, of two bulks for each cross, one (A) was grown at respective location and the other (B) alternated between two locations.

MS composites: The determinate (DT) and indeterminate (NDT) composites harvested in bulk (from male sterile plants) in 1987 were enriched by bulking 100 F_2 seed from each of 21 high yielding hybrids in DT and 52 hybrids in NDT composites, respectively. After enrichment, the two composites were sown in large plots at Hisar. In each composite, seed from male sterile plants were harvested and bulked for growing next year. From these 9 DT and one NDT fertile plants were selected for further evaluation as single plant progenies.

SINGLE PLANT PROGENY EVALUATIONS:

In 1988, 1604 (927 DT and 677 NDT) single plant progenies (SPP) were evaluated at Hisar in 4 m long one row plots. Progenies were sown on 27-29 June. Every fifth plot was planted with a check cultivar. ICPL 4 and ICPL 151 alternately were used as check for determinate SPP's and UPAS 120 and Tanak for indeterminate SPP's.

From high yielding segregating progenies 1181 DT and 1292 NDT plants were selected visually for evaluation as SPP's next year. In addition, 105 determinate (46 white seeded and 59 brown seeded) and 37 indeterminate (16 white seeded and 21 brown seeded), high yielding uniform progenies were selected for further evaluation as SPP bulks next year. The characteristics of the progenies selected are summarized in Table 6 for determinate progeny bulks and in Table 7 for indeterminate progeny bulks.

IV. YIELD TRIALS

A. ALL INDIA COORDINATED PULSES IMPROVEMENT PROJECT (AICPIP) TRIALS:

EXACT: At Hisar, the test consisting of 16 entries including checks (Prabhat and UPAS 120) was sown on 30 Jul. Plot size consisted of 4 m long 8 rows spaced 30 cm apart. The performance of lines tested at Hisar is summarized in Table 8. ICPL 83015 was the top yielding and earliest maturing. The test at Patancheru had 12 entries (Table 9). Among the extra-short-duration lines tested, ICPL 83006 was the top yielding.

EACT: EACT conducted at Hisar (North West Plains Zone) consisted of 30 entries and at Patancheru (South Zone) 16 entries, respectively. The test was sown on 30 June at Hisar and on 23 June at Patancheru. At Hisar, ICPL 84052 was the top yielding (Table 10) and at Patancheru ICPL 85012 gave the highest yield (Table 11) followed by ICPLs 87, 84052 and 84031. The mean yield of the test at Hisar was lower (1309 kg/ha) than at Patancheru (2097 kg/ha).

ACT-1: The test consisting of 22 entries was sown on 30 June at Hisar and on 4 July (18 entries) at Patancheru. Performance of entries are tabulated in Tables 12 and 13, respectively for Hisar and Patancheru.

B. ICRISAT MULTILOCATION YIELD TRIALS

EXPIT 88: The trial consisting of 14 entries including check was supplied to 40 cooperators in India and 26 cooperators outside India. The results from different locations shall be presented and discussed in detail in P-101 progress report. From India, the results have been obtained from 21 locations. Of these, coefficient of variability (CV) was more than 30% at five locations. The yield data from remaining 16 locations is summarised in Table 14. Based on overall mean and rankings at different locations, extra-short-duration lines, ICPLs 83006, 83015, 85010, 87095, 87097 and 87098 were found to be promising. The test failed at 7 locations (Berthin, Majhera, Kaul, Meerut, Pantnagar, Anantapur and Phulbani) and no information was received from other 12 locations. Outside India, at Pullman, Washington, USA, ICPL 87097 was the top yielding (1072 kg/ha) and at Prosser, USA, ICPLs 85010, 85024 and 87098 yielded more than 2.8 t/ha

dry grains.

The test was sown in Randomized Block Design with 3 replications at ICRISAT stations Patancheru (21 June), Gwalior (1 July) and Hisar (8 May, 28 June and 30 July). Plot size at each location consisted of 4 meter long 4 rows spaced 30 cms apart. Performance of entries tested at Patancheru and Gwalior is summarized in Tables 15 and 16, respectively. ICPLs 83006 and 87098 were among top 5 yielding lines at both the locations. Performance at Hisar in three dates of sowing is presented in Tables 17, 18 and 19 for May, June and July sowing, respectively. ICPL 87097 was top yielding in May and June sowing and was fourth in July sowing. It was 7th in yield production both at Patancheru and Gwalior. It is resistant to sterility mosaic.

EPIT 88 DT: The trial consisting of 18 entries including checks (ICPLs 87 and 151) with 3 replications was supplied to 25 cooperators in India and 14 outside India. Test failed at 5 locations (Berthin, Pantnagar, Meerut, Kaul and Anantapur) in India. The data is available from 13 Indian locations. Of these the CV was very high at Ranichauri. The details shall be reported in P-101 progress report. Yield data obtained from 12 locations is given in Table 20. Based on overall mean ICPL 84031 was the top yielding line. It was among top 5 ranks at 7 of the 12 locations tested. It has shown 14% SM and 16% wilt in (SM+W) nursery.

The test was sown at Patancheru on 21 June, Gwalior on 1 July and at Hisar on 8 May, 25 June and 30 July. Observations recorded at Patancheru and Gwalior are given in Tables 21 and 22, respectively. At Patancheru ICPL 85012 was the top yielding line followed by ICPL 86012 (Table 21) and at Gwalior ICPL 84031 gave highest grain yield

followed by ICPL 83024 and ICPL 87102 (Table 22). At Hisar, the test was evaluated in three sowing dates. The characteristics recorded are summarized in Tables 23, 24 and 25 for May, June and July sowings respectively. ICPL 84031 was found to be top yielding in May and July sowings and was second in June sowing. ICPL 87105 and ICPL 86005 was found to be among top 5 yielding lines in all the 3 sowings.

EPIT 88 NDT: The trial with 16 entries was supplied to 19 cooperators in India and 5 outside India. Test failed at Meerut and Phulbani. At Ranichauri, it was affected by powdery mildew resulting in very high CV. The yield data obtained from 13 locations is summarized in Table 26. Other details shall be provided in P-101 progress report. Based on overall yield ICPL 87115 was found to be top yielding followed by ICPL 86029.

The test was sown at Patancheru and Gwalior on 22 June and 1 July, respectively. At Hisar it was planted on 3 dates (8 May, 2 July and 30 July). Performance of entries tested at Patancheru and Gwalior is given in Table 27 and 28, respectively. At Patancheru ICPL 86015 gave highest yield followed by ICPL 84052 and ICPL 87115 (Table 27) and at Gwalior ICPL 87115 was the top yielding followed by ICPL 86023 and ICPL 84052 (Table 28). Characteristics recorded at Hisar is summarized in Tables 29, 30 and 31 for 8 May, 2 July and 30 July sowings, respectively. ICPL 87115 and ICPL 85046 were among top 5 yielding lines in all the three sowings.

C. PRELIMINARY MULTILOCATION YIELD TRIALS

EXPPMLT 88: An extra-short-duration pigeonpea preliminary multilocation trial was conducted at three ICRISAT locations, Hisar (3 dates of sowing), Patancheru and Gwalior. The trial consisting of 18 entries including checks (ICPL 4 and ICPL 151) was laid out in RBD replicated thrice in 4 m long 4 rows. Observations recorded at Patancheru and Gwalior are summarized in Tables 32 and 33, respectively. ICPL 88001, ICPL 88009 and ICPL 87094 were among top 5 yielding lines at both the locations. The data recorded for different characters at three sowings at Hisar are summarized in Tables 34, 35 and 36. ICPLs 88001, 88009 and 87094 were among top 5 yielding lines at 2 of the 3 sowing dates studied. Of these, ICPL 88009 is resistant to sterility mosaic. Although ICPL 87094 was found to be high yielding, it was not selected for further evaluation because of its smaller seed.

EPPMLT 88 DT: The test consisting of 18 entries was sown at Patancheru on 21 June and at Gwalior on 1 July. At Hisar it was sown on 3 dates, 8 May, 28 June and 30 July. Performance of entries tested at Patancheru and Gwalior is presented in Tables 37 and 38, respectively. At Patancheru, ICPL 87104 yielded 3131 kg/ha grains followed by ICPL 88027 (2918 kg/ha). At Gwalior, ICPL 87104 was 7th ranker in yield and ICPL 88027 was 3rd (Table 38). Observations on seed yield and other characters recorded are summarized in Tables 39, 40 and 41, respectively for 3 dates of sowing. ICPLs 88020 and 88026 was found to be among top 5 yielding lines at all the 3 dates of sowing. ICPL 88027 was among top 3 yielding lines at Patancheru, Gwalior and Hisar (June sowing).

EPPMLT 88 MDT: This trial consisting of 20 indeterminate entries including checks (Manak and UPAS 120) was grown in RBD with 3 replications at Patancheru (22 June), Gwalior (1 July), and Hisar (8 May, 22 July and 30 July sowings). The observations recorded at each location is summarised in Tables 42 (Patancheru), 43 (Gwalior), 44 (8 May - Hisar), 45 (25 July - Hisar), and 46 (30 July - Hisar). Both at Patancheru and Gwalior ICPL 88034 gave highest yield (Tables 42 and 43). Another line ICPL 87113 ranked 2nd at Patancheru and 3rd at Gwalior for yield. It was among top 3 yielding lines in all the tests except July sowing at Hisar.

D. ADVANCED LINES STATION TRIALS:

(i) **Advanced Determinate Lines Trials (ADLT):**

During 1988 rainy season, four ADLT's were sown at Patancheru (21 June) and Hisar (28 June) in RBD with three replications. In each test, plot size consisted of 4 meter long 4 rows spaced 30 cms apart.

ADLT 88-1: This test consisted of 14 entries including checks (ICPL 4 and ICPL 151). The mean characteristics of entries tested is given in Tables 47 (Patancheru) and 48 (Hisar). At Patancheru entry no. 3 yielded more than ICPL 4 (check) and at Hisar most of the entries yielded more than ICPL 4 (Table 48), but only two (entry nos. 3 and 12) produced more grains than ICPL 151. Entry 12 showed resistance to sterility mosaic. Based on yield, maturity, seed size and plant height, seven entries were selected for further evaluation. Six of these were allotted new ICPL numbers (ICPLs 89020, 89021, 89022, 89023, 89024 and 89029) and were selected for inclusion in preliminary multilocation testing.

ADLT 88-2: Fourteen entries including two checks (ICPL 4 and ICPL 151) were evaluated in this test. Data recorded on different characters is summarized in Tables 49 and 50 for Patancheru and Hisar, respectively. In this test one entry (no. 3) at Patancheru and three entries (nos. 3, 7 and 8) at Gwalior outyielded high yielding check (ICPL 151). Based on maturity, seed size, plant height and grain yield 8 entries were selected for further evaluation. All these showed resistance to sterility mosaic. Two of these (entries 3 and 12) were selected for peliminary multilocation testing and were allotted new ICPL numbers (ICPLs 89030 and 89031).

ADLT 88-3: In this test 16 entries including two checks (ICPL 87 and ICPL 151) were evaluated. The mean characteristics recorded for the entries tested is summarized in Tables 51 (Patancheru) and 52 (Hisar). ICPL 151 was top yielding at Patancheru and ICPL 87 at Hisar. Based on different characteristics studied, six lines were selected for further evaluation. One of these (entry no. 3) was allotted new ICPL number (ICPL 89025) and selected for inclusion in preliminary multilocation tests.

ADLT 88-4: This trial consisted of 18 entries. Mean performance of entries at Patancheru and Hisar is given in Tables 53 and 54, respectively. Four entries at Patancheru (entry nos. 3, 5, 7 and 16) and two at Hisar (entry nos. 3 and 5) outyielded high yielding check. Seven lines were selected from this trial for further evaluation. Four of these (entry nos. 3, 12, 13 and 15) were selected for preliminary multilocation testing and were allotted new ICPL numbers (ICPLs 89026, 89027, 89028 and 89032).

(ii) **Advanced Indeterminate Lines Trials (AHDLT):**

Two indeterminate lines trials (AHDLT's) were sown at Patancheru (22 June) and Hisar (2 July) in RBD with three replications. Plot size was same as for ADLT's i.e. 4 meter long four rows spaced 30 cms apart.

AHDLT 88-1: This test consisted of 16 entries including checks (Manak and UPAS 120). The mean characteristics recorded at Patancheru and Hisar is given in Tables 55 and 56, respectively. All the entries were used as male parents for producing new short-duration hybrids and were allotted new ICPL numbers (ICPLs 89001 to 89014). In spite of extra-short-duration, four entries at Patancheru (entry nos. 9, 14, 15 and 16) and one (entry no. 15) at Hisar outyielded both the short-duration checks. Eight entries (nos. 3, 4, 9, 10, 13, 14, 15, and 16) were selected for further evaluation in peliminary multilocation trials.

AHDLT 88-2: Fourteen entries including checks (Manak and ICPL 6) were evaluated in this trial. Data recorded on different characters is summarized in Tables 57 (Patancheru) and 58 (Hisar). Six entries at Patancheru (entry nos. 3, 4, 5, 9, 11 and 13) and one at Hisar (entry no. 13) outyielded high yielding check. Based on different characteristics recorded five entries were selected for further evaluation in preliminary multilocation tests. These were allotted new ICPL numbers (ICPLs 89015 to 89019).

The characteristics of lines selected from different station trials for preliminary multilocation testing next year are summarized in Table 59. They have been allotted new ICPL numbers (ICPL 89001 to 89032).

(iii)MISCELLANEOUS TRIALS:

ICPL 87 BC_1F_5 PYT (White Seed): Twelve white seeded ICPL 87 BC_1F_5 progenies along with two checks (ICPL 87 and ICPL 151) were evaluated in a replicated yield trial at Patancheru and Hisar. The test at Patancheru was sown on 21 June and at Hisar on 28 June. Mean characteristics of the entries tested are summarized in Tables 60 and 61 for Patancheru and Hisar, respectively. At Patancheru, ICPL 88027 was the top yielder with maturity and seed size similar to ICPL 87 (Table 60). Although, it was 13 cms taller than ICPL 87. At Hisar, ICPL 88027 ranked 6th in yield (Table 61). This line was selected for inclusion in preliminary multilocation trial next year.

In addition to the above mentioned test, 84 single plant progenies (BC_2F_3) involving ICPL 289 as white seed colour donor and 420 progenies involving ICPL 83023 as white seed colour donor were planted on 20 June at Patancheru in 4 m long one row plots. From these based on yield, maturity, seed size and seed colour 46 progeny bulks were selected for evaluation as progeny bulks next year with close check (ICPL 87).

QPLT 88: This trial consisted of 9 Australian lines (QPL), one ICRISAT line and two checks (ICPL 87 and ICPL 151). The test was sown on 22 June in RBD with 3 replications. One of the entry (QPL 247) was rejected because of high variability for different characters (plant type, flower and pod colour, maturity, etc.). None of the lines were found to be superior than ICPL 151 (Table 62). Therefore, no line was selected for further evaluation.

BSDT LT: This trial consisted of 10 large brown seeded determinate entries including checks (ICPL 87 and ICPL 151). The trial was sown on 21 June in RBD with 3 replications at Patancheru. Two entries (ICPL 87009 and ICPL 87102) yielding higher than both the checks (Table 63) selected for further evaluation for both green pods (for vegetable) and dry grain yields next year.

WSDT LT: Ten large white seeded determinate entries along with two checks (ICPL 87 and ICPL 151) were evaluated in this test. The test was sown on 21 June in RBD with 3 replications at Patancheru. Observations recorded are summarized in Table 64. Four entries (ICPLs 87005, 87006, 87029 and 87030) yielding higher than both the checks were selected for further evaluation both for green pods (for vegetable) and dry grains next year.

INITIAL EVALUATION TRIALS (IET):

IET SSDT: One hundred eighty two determinate progeny bulks were evaluated in an unreplicated IET both at Patancheru (22 June) and Hisar (27 June). Plot size consisted of 4 meter long 4 rows spaced 30 cms apart. Every fifth plot consisted of determinate checks, ICPL 4 and ICPL 151 alternately. Based on maturity, height, seed size and yield both at Patancheru and Hisar, 34 DT progenies were selected for further evaluation in replicated yield trials. Mean characteristics of selected lines along with their close checks are summarized in Table 65.

IET 88 HDT: In this test 175 indeterminate progeny bulks were tested in an unreplicated nursery with close checks both at Patancheru (20 June) and Hisar (29 June). Every fifth plot was planted with indeterminate checks Manak and UPAS-120, alternately. Of 175 tested, 17 progeny bulks were selected for further evaluation in replicated yield trials. Mean characteristics of the selected progenies is summarized in Table 66.

V. MAINTENANCE OF PROMISING LINES:

All the promising advanced lines being tested in different AICPIP (EXACT, EACT and ACT-1) and ICRISAT multilocation trials were included in the maintenance programme. For this 100 single plant progenies of the ICPLs (250 SPP's for ICPL 87 and ICPL 151) were grown in unreplicated one row plots spaced 60 cms apart. For each ICPL, about 150 single plants (300 plants for ICPLs 87 and 151) from uniform and true to type progenies were selfed to continue the maintenance cycle. The open pollinated bulk (after vigorous roguing) seed was collected for supplying to cooperators on request for their experimental purpose.

VI. ADAPTATION AT HIGHER LATITUDES AND ALTITUDES:

Higher latitudes: So for pigeonpea is reported to be grown up to 30° latitudes. Newly developed extra-short-duration lines were tested during 1988 at different locations at latitudes above 30°. The detailed results shall be given in P-101 progress report. A summary of the performance is given below.

Location	Latitude	Higher yielding lines	Grain yield (kg/ha)
Texas, USA	32° N	ICPL 83015	3730
		ICPL 83019	3580
Tifton, Georgia, USA	34° N	ICPL 87109	4966
		ICPL 86029	4240
Suweon, S. Korea	37° N	ICPL 85010	2420
		ICPL 87100	2380
Pullman, USA	46° N	ICPL 87097	1012
		ICPL 86010	909
Prosser, Washington, USA	46° N	ICPL 85031	2534
		ICPL 85030	2460

Higher altitudes: The newly developed extra-short-duration lines were also tested at higher altitudes during 1988. Some of the results obtained are summarized below:

Location	Latitude	Altitude	Higher yielding lines	Grain yield (kg/ha)
Barapani, Shillong	26° N	1000 m	ICPL 85024	1828
			ICPL 87095	1708
Almora, U.P.	30° N	1250 m	ICPL 151	1991
			ICPL 83019	1759
Srinagar, J&K	33° N	1585 m	ICPL 85014	891
			ICPL 85031	810
Salooni, H.P.	33° N	1768 m	ICPL 151	425
Alemaya, Ethiopia	10° N	1980 m	ICPL 86012	487
			ICPL 85015	393
Ranichauri, U.P.	30° N	2100 m	ICPL 85049	656*
			ICPL 87109	648*

* Trials were heavily affected with powdery mildew disease.

VII. **BREEDING FOR DISEASE RESISTANCE:**

(i) **(SM+W) Nursery:** In combined nursery of sterility mosaic (SM) and wilt, all the entries (208) of replicated yield tests were monitored for their reaction to SM and wilt. The entries were planted on 25 June in 2 row plots replicated twice.

(a) **Multilocation Trials Entries:** Of 104 multilocation trial entries tested, 10 (ICPLs 83024, 84032, 86005, 86012, 87101, 87113, 88002, 88003, 88009 and 88037) showed resistance to SM ($\leq$10% SM) and 8 (ICPLs 83019, 86030, 87097, 87104, 87108, 88023, 88025 and 88038) showed tolerance to SM (11-20% SM). Although wilt is not an important disease in short-duration pigeonpea as they mature before the wilt infection builds up. However, two lines (ICPLs 87108 and 88016) showed 12% and 16% wilt incidence, respectively in second flush. In addition, 12 lines (ICPLs 83024, 85027, 85030, 87093, 87098, 87102,

87104, 87105, 87109, 88013, 88023 and 88026) showed between 20-30% wilt incidence. Of these, four lines (ICPLs 83024, 87104, 87108 and 88023) have shown resistance or tolerance to both SM and wilt.

(b) **Station Trials Entries:** Of 104 station trial entries tested, 17 had ≤10% and 4 between 11-20% SM incidence. Three entries had between 11-20% wilt and 4 between 21-30% wilt incidence. Three entries (88P11-10, 88P11-12 (ICPL 89031), 88P12-9) showed resistance or tolerance to both SM and wilt. Of the lines selected for multilocation testing and allotted new ICPL numbers, 4 (ICPLs 890005, 89007, 89026 and 89029) showed resistance or tolerance to SM; 2 (ICPLs 89025 and 89028) to wilt and one (ICPL 89031) to both SM and wilt.

(c) **Populations:** Twenty four F_2 populations (ICPX 860041-48; 860079-85; 860089-98) involving one SM/wilt resistant parent were grown in (SM+W) nursery. The plot size consisted of 20 rows. Seed from disease free plants was bulked for each population for further screening in (SM+W) nursery next year.

Similarly, three F_3 (ICPX 850041, 850060 and 850067) and 4 F_4 (ICPX 840006, 840018, 840050 and 840053) bulk populations were also grown in 40 row plots in (SM+W) nursery. Seed from disease free plants was bulked for each population for further screening.

(ii) **Multiple Disease Nursery (MDN):**

(a) **Tests Entries:** In this nursery all the 208 entries of replicated yield trials and 357 entries of Initial Evaluation Trial were monitored for their reaction to Phytophthora blight (PB). Only three lines showed between 20-40% PB incidence, all others had more than 40%. Individual PB free plants (66) from different entries were selected for further screening in MDN next year.

(b) **Population:** A F_2 population (ICPX 860095) was sown in a 40 row plot on 17 June in MDN. Thirtyfive PB free plants were selected for further screening.

(c) **Germplasm Enhancement for Phytophthora blight tolerance:**

In MDN, PB free plants from following eight lines were intermated (ICPX 880124 to 880140) to generate population for enhancement for PB tolerance.

KPBR 80-1
ICP 11304
ICPL 88013
ICPL 88037
ICPX 800545-HB-H8-H1-H1-SLTH1-HB
ICPX 820006-H3-HB-HB
ICPX 860095-MDN1
ICPX 860095-MDN2

VIII. **BREEDING FOR INSECT PEST TOLERANCE:**

(a) **Trial Entries:** All the multilocation replicated trial entries were monitored for their reaction to insect damage at Hisar. Seventeen lines (ICPLs 83006, 85030, 86009, 86012, 86023, 87093, 87098, 87111, 88002, 88003, 88009, 88013, 88030, 88031, 88032, 88034 and 88039) had less than 10% Helicoverpa borer damage and 7 lines (ICPLs 86005, 86030, 87094, 88005, 88006, 88007, and 88019) had upto 5% pod-fly damage.

(b) **Populations:** In addition, four F_2 populations (ICPX 860049 to 52) were grown in 40 row plots in unsprayed area. From these 31 single plants showing some tolerance to Helicoverpa pod borer were selected for further evaluation.

(c) **Germplasm Enhancement for Helicoverpa tolerance:**

Following seven Helicoverpa tolerant short-duration lines were crossed with male sterile plants from MS(DT) composite (ICPX 880105 to

880111) to generate population for enhancement for Helicoverpa tolerance.

ICPL 269-EB
ICPL 86026-E2-EB
82HP526-E1-2EB
85HP445-E1-2EB
820418-12-4EB-E2-2EB
ICPX 870033 (ICPL 187-1-1-6 EB x ICPL 2-EB)
ICPX 870035 (ICPL 2-EB x ICPL 83009-EB)

IX. ISOLINES - DETERMINATE/INDETERMINATE

To develop determinate and indeterminate near isogenic lines of ICPLs 81, 83022, 83027 and 84019, following four second backcross populations were grown under cage.

ICPX 870001=[((ICPL 84019 x ICPL 81) x ICPL 84019) x ICPL 84019)]

ICPX 870002=[((ICPL 84019 x ICPL 81) x ICPL 81) x ICPL 81)]

ICPX 870003=[((ICPL 83027 x ICPL 83022) x ICPL 83027) x ICPL 83027)]

ICPX 870004=[((ICPL 83027 x ICPL 83022) x ICPL 83022) x ICPL 83022)]

About 100 single plants from each of 4 populations were harvested separately for growing single plant progenies next year. From these the DT and NDT isogenic lines will be derived.

X. MISCELLANEOUS STUDIES:

(a) Genotypic Variation for Outcrossing:

To confirm the visually observed genotypic variability for natural outcrossing, two genotypes ICPL 4 and ICPL 83015 were planted in paired 4 m long 4 row plots at 8 locations amidst other experimental plots (mostly indeterminate) at Hisar during 1987 rainy season. Fifty single plants from each plot (genotype) at each of the 8 locations were harvested separately. The single plant progenies were grown both at Hisar (1988 rainy season) and Patancheru (1988-89 offseason). The segregating progenies (mostly for indeterminate growth habit) were considered as outcrossed. The percentage of outcrossed progenies in two genotypes observed at Hisar and Patancheru are given below:

Genotype	% outcross progenies	
	Hisar	Patancheru
ICPL 4	40.0	40.6
ICPL 83015	10.0	7.5
SE	± 2.11	± 2.40
CV (%)	23.90	28.25

To confirm these observations, an experiment was planted at Patancheru on 27 June 1988 in RBD. Two genotypes (ICPL 4 and ICPL 83015) were planted in 9 m long 9 row plots in pair in 4 replications. Each pair in all the 4 replications was surrounded by an extra-short-duration indeterminate line (ICPL 87111) to serve as a pollinator parent. In addition, the experiment as a whole was also surrounded by ICPL 87111. About 125 plants from each genotype per replication were harvested separately. These 500 plants per genotype were grown in 1988-89 offseason nursery at Patancheru to identify the outcrossed plants (progenies). The results are given below:

Genotypes	% outcross progenies
ICPL 4	43.6
ICPL 83015	10.7
SE	± 4.05
CV (%)	29.81

These results clearly indicate that there is varietal difference in their ability to naturally outcross. The natural outcrossing is much less (10%) in ICPL 83015 than in ICPL 4 (43%). This may be due to several reasons, including wrapped flower of ICPL 83015.

(b) **Inheritance of D_{11} dwarfness:**

During 1986 rainy season at Hisar, a spontaneous dwarf mutant was identified in a short-duration line ICPL 146. It attained the height of about 30 cms as against 1.3 m of ICPL 146. It was allotted the dwarf number D_{11}. To work out its inheritance and allelic relationship with short-duration version of D_1 dwarf (ICPL 85059), it was crossed with ICPL 146, ICPL 85024, ICPL 85037 and ICPL 85059. F_1's were grown in 1987 rainy season at Hisar. All the F_1's were normal indicating presence of recessive genes governing D_11 dwarfness and non-allelic relationship with D_1 dwarf (ICPL 85059).

The F_2 populations of the above mentioned four crosses involving D_{11} dwarf were grown in 9 m long 20 row plots during 1988 rainy season at Hisar. The segregation pattern observed in these crosses is given below.

(i) **ICPI 860064 (ICPL 146 x D_{11} dwarf):**

Of 1211 F_2 plants observed, 302 were D_{11} dwarf type and 909 were of normal ICPL 146 type. This indicated that the one gene in homozygous recessive form controls the D_{11} dwarfness. About 150 single plants were selfed to confirm the observation in F_3 single plant progenies (SPP) next year.

(ii) **ICPI 860065 (ICPL 85037 x D_{11} dwarf):**

Out of 1661 F_2 plants studied, 399 were D_{11} dwarfs and 1262 were normal talls. This again shows that D_{11} dwarfness is controlled by single recessive gene in homozygous condition. This will be confirmed in F_3 SPP's next year.

(iii) **ICPI 860066 (ICPL 85024 x D_{11} dwarf):**

Out of 1257 plants, 305 were dwarfs (D_{11}) and 952 normal fitting 3:1 ratio and confirming above observations that D_{11} dwarfness is governed by single recessive gene in homozygous condition. About 250 F_2 plants were selfed to further confirm these observations in F_3 SPP's next year.

(iv) **ICPI 860067 (ICPL 85059 x D_{11} dwarf):**

ICPL 85059 is a short-duration version of D_1 dwarf. It was crossed with D_{11} dwarf to study the allelic relationship. All the plants in F_1 were normal tall indicating that they have separate genes governing their dwarfness.

Out of 1482 plants studied in F_2, 266 were of D_{11} dwarf type, 386 were of D_1 dwarf type and 830 were normals fitting the segregation ratio of 9:3:4. Presence of both the dominant genes (D_1- and D_{11}-) resulted in normal tall plants. Plants having d_1d_1 in recessive homozygous form ($d_1d_1D_{11}$-) were D_1 dwarfs and plants having $d_1d_1D_{11}$-

in recessive homozygous form (D_1-$d_{11}d_{11}$) were D_{11} dwarfs. In plants having double recessive genes ($d_1d_1d_{11}d_{11}$), d_1d_1 masked the effect of $d_{11}d_{11}$ resulting in D_1 dwarfs. About 250 F_2 plants were selfed to confirm these observations in F_3 SPP's next year.

c) Inheritance of Obtuse Leaf Characteristics:

During 1986 rainy season at Hisar, a spontaneous mutant with obtuse leafs was identified in ICPL 289-H1-HB progeny bulk. It was crossed with ICPL 86108 having normal leaves. The F_2 bulk was grown in 1988 rainy season. Out of 1257 F_2 plants studied, 240 had obtuse leaves and 1017 normal leaves fitting the expected ratio of 13:3. This suggests that one dominant (either in homozygous or in heterozygous form) and one recessive (homozygous) gene governs the obtuse leaf characteristics. To confirm these observations, about 150 F_2 plants were selfed to grow F_3 SPP's next year.

(d) Inheritance of Puckering Leaf Characteristics:

Puckering leaf mutant was identified in a progeny bulk (ICPX 810118-HB-HB-H1-HB) during 1986 rainy season at Hisar. It was crossed with ICPL 86018 having normal leaves. During 1988 rainy season at Hisar 752 F_2 plants were studied. Fifty of these had puckered leaves and 652 normal leaves suggesting two recessive genes in homozygous form govern this character. The segregation fitted the expected ratio of 15:1. About 100 F_2 plants were selfed to confirm these observations in F_3 SPP's next year.

(e) **Inheritance of Single Culm Characteristics:**

During 1986 rainy season at Hisar, a mutant with single culm (non-branching) was identified in a progeny of ICP 7653-H1. This was crossed with ICPL 86018 having normal branching. During 1988 rainy season, the F_2 bulk was grown in 9 m long 20 rows plot at Hisar. Of 1092 F_2 plants studied, 149 had unbranched single culms and 943 with normal branching fitting 55:9 ratio. This suggests that two dominant (either in homozygous or in heterozygous condition) and one recessive (homozygous) genes govern the single culm characteristics. About 160 F_2 plants were selfed to confirm these observations in F_3 SPP's next year.

(f) **Effect of Days to Flower, Plant Height, Seed Size and Seed Colour on Grain Yield of Short-Duration Determinate Pigeonpeas:**

The study was planned as was done by Lin and Nelson (1988) in soybean (Crop Sci 28:27-30 and 218-222).

Five F_2 (ICPX 860002, 860018, 860029, 860058 and 860057) and one F_4 (ICPX 840050) population bulks were planted at Hisar on 30 June in 40 row plots. In each population, following observations were recorded on about 500 plants.

Days to flower
Flower colour
Plant height at flower and at maturity
Days to maturity
Grain yield per plant
100 seed weight (g)
Seed colour

These plants were harvested separately for growing single plant progenies next year. These progenies will be classified into four main groups (extra-early-short; extra-early-tall; early-short- and early-tall) and then four subgroups (large-white seeds, large-brown seeds, small-white seeds, and small-brown seeds) within each group. Variability score and grain yield for each progeny will be recorded.

(g) **Effect of Date of Sowing in Winter on Growth, Maturity and Grain Yield of Different Short-Duration Pigeonpea Lines at Patancheru:**

We normally plant the offseason nursery in winter, at ICRISAT Center, Patancheru to either advance the generation or to multiply the seed of promising early generation progenies for further testing in the main season.

An experiment was conducted to find out how late we can sow to get enough seeds before the close season (15 April). Six determinate (DT) and 4 indeterminate (NDT) short-duration lines were sown in 20 m long 4 row plots in 3 replications on 5 Dec 1988, 16 Dec 1988, 30 Dec 1988, 17 Jan 1989 and 2 Feb 1989. Observation on 10 competitive plants were recoded for different characters. Mean observations recorded for first four dates of sowing (5 Dec to 17 Jan) are summarized in Table 67. On 15 Apr (beginning of close season) all the entries except ICPLs 84023 and ICPL 85030 were in flowering in 2 Feb sowing. ICPLs 84023 and 85030 were in pod filling stage.

The data presented in Table 67 clearly indicates that the short-duration lines can be sown upto 17 Jan to harvest matured seed before 15 Apr. However, after 16 Dec sowing there is significant reduction in grain yield. Even the number of seeds per pod and seed size also reduced significantly.

Table 1. Performance of hybrid entries in F1 test grown at Hissar, rainy season, 1988

Cross No. (ICPX)	Parentage	Growth habit	DF	DM	PH	SP	SH	PST	Yield kg/ha
870005	ICPL 86012 x ICPL 85024	DT	58	110	89	3.9	6.9	16	1037
870006	ICPL 86012 x ICPL 85012	DT	62	116	112	4.0	9.8	19	1474
870007	ICPL 86012 x ICPL 85050	NDT	67	130	137	3.5	9.6	22	2351
870008	ICPL 86012 x ICPL 85055	NDT	65	119	147	3.5	8.7	22	2910
870009	ICPL 87109 x ICPL 85024	DT	62	112	107	4.2	10.8	8	903
870010	ICPL 87109 x ICPL 85012	DT	65	116	121	4.4	11.2	23	2616
870011	ICPL 87109 x ICPL 85050	NDT	75	135	198	5.1	11.4	21	2428
870012	ICPL 87109 x ICPL 85055	NDT	72	135	175	4.8	9.7	28	2375
870013	ICPL 85058 x ICPL 85024	NDT	62	115	137	4.5	9.3	21	1681
870014	ICPL 85058 x ICPL 85012	NDT	68	125	171	4.8	9.2	26	2087
870015	ICPL 85058 x ICPL 85050	NDT	67	125	176	4.1	10.1	11	1312
870016	ICPL 85058 x ICPL 85055	NDT	68	123	162	3.9	9.8	23	2157
870017	ICPL 84023 x ICPL 85024	DT	56	108	91	2.6	5.8	29	808
870018	ICPL 84023 x ICPL 85012	DT	57	109	95	2.9	8.0	29	1729
870019	ICPL 84023 x ICPL 85050	NDT	63	111	133	3.1	12.8	23	1829
870020	ICPL 84023 x ICPL 85055	NDT	64	114	141	3.2	7.0	29	1732
870021	ICPL 86020 x ICPL 85024	NDT	62	114	133	3.5	8.1	18	1112
870022	ICPL 86020 x ICPL 85012	NDT	65	122	155	3.8	13.7	19	2662
870023	ICPL 86020 x ICPL 85050	NDT	65	125	170	3.6	8.1	22	1760
870024	ICPL 86020 x ICPL 85055	NDT	65	121	152	3.8	9.7	28	1829
870025	ICPL 83009 x ICPL 85024	DT	62	112	109	3.8	7.5	15	830
870026	ICPL 83009 x ICPL 85012	DT	65	122	131	3.6	7.1	25	1452
870027	ICPL 83009 x ICPL 85050	NDT	71	130	166	3.7	7.9	13	1458
870028	ICPL 83009 x ICPL 85055	NDT	71	130	157	3.8	10.2	11	1733
870029	ICPL 187-1-1 x ICPL 85024	NDT	70	121	143	3.5	6.3	16	1571
870030	ICPL 187-1-1 x ICPL 85012	NDT	72	135	165	4.1	7.2	29	1750
870031	ICPL 187-1-1 x ICPL 85050	NDT	71	138	165	3.9	8.6	21	2209
870032	ICPL 187-1-1 x ICPL 85055	NDT	71	140	169	3.8	6.7	27	2081
870033	ICPL 187-1-1 x ICPL 002-EB	NDT	80	140	171	3.8	8.9	20	1899
870034	ICPL 187-1-1 x ICPL 83009-EB	NDT	82	141	160	3.8	9.8	13	1737
870035	ICPL 002-EB x ICPL 83009-EB	NDT	81	140	161	4.0	7.9	10	1158
870046	ICPL 85024 x ICP 12210	NDT	72	125	158	3.8	9.2	8	1057
870047	ICPL 85024 x ICP 7104	NDT	73	127	165	3.1	6.5	8	1573
870048	ICPL 85024 x ICPL 211	DT	70	129	100	3.6	9.1	8	1131
870049	ICPL 85024 x ICPL 83024	DT	65	126	99	3.1	11.1	6	579
870050	ICPL 85024 x KPBR-80-2-1	NDT	83	140	169	4.2	6.6	6	772
870051	ICPL 85024 x 60/8	NDT	83	140	178	4.2	7.9	7	810
870052	ICPL 85024 x 11RA	NDT	85	141	161	3.5	7.8	3	391
870053	ICPL 85055 x ICP 12210	NDT	74	138	166	4.0	7.9	7	1899
870054	ICPL 85055 x ICP 7104	NDT	83	140	174	3.1	8.1	6	1702
870055	ICPL 85055 x ICPL 211	NDT	81	137	143	3.1	10.1	8	1293
870056	ICPL 85055 x ICPL 83024	NDT	72	135	131	4.3	10.8	9	869
870057	ICPL 85055 x KPBR-80-2-1	NDT	81	140	154	4.2	6.9	10	917
870058	ICPL 85055 x 60/8	NDT	81	140	198	4.2	9.7	7	1139
870059	ICPL 85055 x 11RA	NDT	83	138	169	4.3	6.1	1	605
870060	ICPL 85012 x ICP 12210	NDT	79	145	167	3.7	-	7	2916
870061	ICPL 85012 x ICP 7104	NDT	81	147	179	3.8	7.2	13	3612
870062	ICPL 85012 x ICPL 211	NDT	79	143	131	3.9	7.1	16	741

70063	[illegible] 85012 x [illegible] 8 4	[illegible]	[illegible]	150	[illegible]	4.6	-	[illegible]	[illegible]
70064	ICPL 85012 x XPBB 80-2-1	NDT	82	152	212	1.3	6.8	7	81
70065	ICPL 85012 x 80/8	NDT	82	153	173	4.3	-	2	11
70066	ICPL 85012 x 11BA	NDT	81	141	181	4.1	8.4	6	118
70067	ICPL 85050 x ICP 12210	NDT	84	150	203	3.8	9.0	8	1000
70068	ICPL 85050 x ICP 7104	NDT	85	155	201	4.0	8.7	11	3300
70069	ICPL 85050 x ICPL 211	NDT	81	146	171	4.0	-	6	500
70070	ICPL 85050 x ICPL 83024	NDT	73	130	147	3.7	11.9	9	592
70071	ICPL 85050 x XPBB 80-2-1	NDT	82	150	202	1.8	7.1	9	289
870072	ICPL 85050 x 80/8	NDT	83	152	201	1.9	8.9	2	134
70073	ICPL 85050 x 11BA	NDT	80	151	195	3.7	8.7	5	270
870074	ICPL 83006 x QPL-321	DT	68	126	115	3.6	4.0	6	302
870075	ICPL 83006 x QPL-207	DT	71	132	105	3.2	7.8	5	1192
870076	ICPL 83006 x ICPL 151	DT	66	117	110	3.5	7.2	12	1957
70077	ICPL 85010 x QPL-321	DT	64	116	105	4.0	7.1	6	613
870078	ICPL 85010 x QPL-207	DT	66	121	101	3.6	7.9	8	1250
870079	ICPL 85010 x ICPL 151	DT	66	121	107	3.7	7.8	6	1503
870080	ICPL 84023 x QPL 321	DT	64	119	76	3.1	6.2	5	638
870081	ICPL 84023 x QPL 207	DT	68	130	106	3.5	7.9	7	995
870082	ICPL 84023 x ICPL 151	DT	65	115	98	1.5	6.7	11	787
870083	ICPL 85032 x QPL 321	DT	67	127	98	3.9	7.6	8	2300
870084	ICPL 85032 x QPL 207	DT	72	112	107	4.2	10.1	3	981
870085	ICPL 85032 x ICPL 151	DT	68	125	105	3.8	8.7	1	1108
870086	ICPL 86002 x QPL 321	DT	68	118	89	2.9	7.2	1	618
870087	ICPL 86002 x QPL 207	DT	67	121	105	2.5	7.2	1	321
870088	ICPL 86002 x ICPL 151	DT	65	111	101	3.2	8.9	1	817
870089	78-1-11-3 x QPL 321	DT	65	115	99	3.1	7.6	5	706
870090	78-1-11-3 x QPL 207	DT	66	120	108	3.3	8.5	9	1227
870091	78-1-11-3 x ICPL 151	DT	60	108	98	3.4	7.9	7	1586
870092	ICPL 001 x QPL 321	NDT	60	115	121	3.7	7.4	9	329
870093	ICPL 001 x QPL 207	NDT	73	125	161	1.2	7.6	1	2111
870094	ICPL 001 x ICPL 151	NDT	72	129	151	3.6	7.5	2	602
870095	PS-2-28 x QPL 321	DT	68	127	121	1.5	9.1	3	868
870096	PS-2-28 x QPL 207	DT	71	130	113	3.7	9.6	6	1629
870097	PS-2-28 x ICPL 151	DT	70	129	122	4.0	8.6	1	907
870098	(95 x T3-55) x QPL 321	DT	68	116	108	4.1	6.6	2	91
870099	(95 x T3-55) x QPL 207	DT	75	132	107	4.2	9.9	1	1211
870100	(95 x T3-55) x ICPL 151	DT	62	120	110	3.9	11.0	6	111
870101	4-16-11-56 x QPL 321	DT	64	121	96	4.5	6.9	8	1.1
870102	4-16-11-56 x QPL 207	DT	66	125	111	1.2	7.1	10	1.1
870103	4-16-11-56 x ICPL 151	DT	66	127	121	1.1	9.3	1	1.1
870104	QPL 274 x QPL 321	DT	63	121	111	3.7	11.5	9	1
870105	QPL 274 x QPL 207	DT	66	116	95	3.9	9.1	3	1.1
870106	QPL 274 x ICPL 151	DT	65	118	101	1.0	8.0	5	1.1
ICPL 151 (Check)				66	121	123	4.2	9.0	22	1
Nanak (Check)				67	120	110	3.7	6.1	27	1.1
	SE ±			2.1	1.6	8.7	0.3	-	2.5	1.0
	Mean			70.0	127.5	117.5	3.9	-	11.2	11
	CV %			4.3	5.1	8.9	12.4	-	25.2	11.1

Date 30 Jul. 1988

Table 2. Summary of single plant selections in TCF populations at Hisar, rainy season, 1988

1988 Hisar Plot Nos.	Cross No.	Parentage	Number of plants selected	
			Determinate	Indeterminate
6461	870036	(ICPL 85012 x ICPL 81) x ICPL 85024	24	29
6462	870037	(ICPL 83024 x ICPL 81) x "	26	24
6463	870038	(ICPL 83015 x ICP 8861)x "	13	13
6464	870039	(ICPL 81 x ICP 8861) x "	-	20
6465	870040	(ICPL 83015 x ICP 7867)x "	12	8
6466	870041	(ICPL 87 x KPBR 80-1-4)x "	13	22
6467	870042	(ICPL 312 x ICP 11304) x "	21	14
6468	870043	(KPBR 80-1-4 x ICPL 312)x "	27	10
6469	870044	(ICPL 85012 x ICPL 81) x ICPL 83024	13	10
6470	870045	(ICPL 84019 x ICPL 81) x "	21	12
		Total	170	162

Table 3. Summary of selections made in F2 populations, rainy season 1988

Cross No. (ICPX)	Parentage	Number of plants selected			
		Determinate		Indeterminate	
		White seed	Brown seed	White seed	Brown seed
DT x DT crosses:					
860001	ICPL 85012 x ICPL 151	109	-	-	-
860005	ICPL 85021 x ICPL 151	36	18	-	-
860006	ICPL 85021 x ICPL 83015	30	54	-	-
860017	ICPL 85031 x ICPL 151	88	1	-	-
860025	ICPL 84019 x ICPL 151	50	38	-	-
860026	ICPL 84019 x ICPL 83015	-	88	-	-
860030	ICPL 85024 x ICPL 83015	-	108	-	-
860037	ICPL 83009 x ICPL 151	52	-	-	-
860038	ICPL 83009 x ICPL 83015	7	52	-	-
860053	ICPL 83004 x ICPL 151	22	30	-	-
860054	ICPL 83004 x ICPL 83015	-	77	-	-
860071	(ICPL 316 x D6) x ICPL 83024	-	26	-	-
860073	(ICPL 316 x D6) x ICPL 85024	-	17	-	-
DT x NDT crosses:					
860068	(ICPL 85037 x D6) x ICPL 83024	-	-	-	-
860070	" x ICPL 85024	-	-	-	19
860059	ICPL 85059 x ICPL 85037	-	-	-	18
860003	ICPL 85012 x ICPL 81	15	22	32	20
860004	ICPL 85012 x ICPL 83027	14	31	24	30
860007	ICPL 85021 x ICPL 81	9	14	30	20
860008	ICPL 85021 x ICPL 83027	9	9	12	8
860009	ICPL 84052 x ICPL 151	16	20	9	12
860010	ICPL 84052 x ICPL 83015	-	23	-	23
860013	ICPL 85050 x ICPL 151	9	17	-	-
860014	ICPL 85050 x ICPL 83015	-	12	-	4
860019	ICPL 85031 x ICPL 81	-	14	-	4
860020	ICPL 85031 x ICPL 83027	5	12	7	20
860021	ICPL 85058 x ICPL 151	11	-	5	-
860022	ICPL 85058 x ICPL 83015	2	6	11	25
860028	ICPL 84019 x ICPL 83027	-	-	-	10
860031	ICPL 85024 x ICPL 81	-	11	-	8
860032	ICPL 85024 x ICPL 83027	-	7	-	19
860033	ICPL 85037 x ICPL 151	14	20	23	26
860034	ICPL 85037 x ICPL 83015	-	8	-	17
860039	ICPL 83009 x ICPL 81	7	14	7	8
860040	ICPL 83009 x ICPL 83027	9	17	3	13
860056	ICPL 83004 x ICPL 83027	-	11	-	8
860086	ICP 13707 x ICPL 151	1	-	1	7
860087	ICP 13707 x ICPL 83015	3	11	1	5
860072	(ICPL 316 x D6) x ICPL 288	-	-	2	5

860074	(ICPL 84043 x ICPL 85037) x ICPL 83024	1	15	1	8
860076	" x ICPL 85024	-	-	-	12
860077	(ICPL 85052 x ICPL 83024) x ICPL 85037	7	6	-	23
860078	" x ICPL 85024	-	17	-	1

NDT x NDT crosses:

860012	ICPL 84052 x ICPL 83027	-	15	-	27
860015	ICPL 85050 x ICPL 81	2	-	1	17
860016	ICPL 85050 x ICPL 83027	-	5	3	27
860023	ICPL 85058 x ICPL 81	-	-	18	37
860024	ICPL 85058 x ICPL 83027	-	-	17	37
860036	ICPL 85037 x ICPL 83027	-	-	-	25
860069	(ICPL 85037 x D6) x ICPL 288	-	7	3	12
860075	(ICPL 84043 x ICPL 85037) x ICPL 288	-	-	23	43
860088	ICP 13707 x ICPL 83027	-	-	1	7
	Total	528	861	234	605

Table 4. Summary of selections made in F3 populations, rainy season 1988

Cross No. (ICPL)	Parentage	Number of plants selected			
		Determinate		Indeterminate	
		White seed	Brown seed	White seed	Brown seed
850003	ICPL 85031 x ICPL 87	14	16	-	-
850005	ICPL 87 x ICPL 85037	3	7	-	11
850008	ICPL 85031 x ICPL 151	19	-	-	-
850018	ICPL 85031 x ICPL 83027	4	-	7	3
850020	ICPL 85037 x ICPL 83027	-	-	-	8
850038	ICPL 83024 x ICPL 151	6	-	-	-
850041	ICP 8862 x ICPL 151	20	-	-	-
850042	ICP 8094 x ICPL 151	9	2	6	7
850052	ICP 8862 x ICPL 81	2	1	16	7
850057	ICPL 289 x ICPL 83027	-	10	-	-
850068	ICPL 85052 x ICPL 85031	9	1	3	-
	Total	86	37	32	36

Table 5. Summary of selections in F4 and F5 populations, rainy season 1988

Cross No. (ICPY)	Parentage	Number of plants selected			
		Determinate		Indeterminate	
		White seed	Brown seed	White seed	Brown seed
840012	ICPL 830009 x ICPL 289	19	-	-	-
840036	ICPL 289 x ICPL 84023	6	11	-	-
840042	ICPL 289 x ICPL 85037	6	4	15	16
840043	ICPL 83009 x ICPL 84023	7	19	-	-
830008	ICPL 4 x (ICPL 316 x ICP 6915)	-	11	2	10
830009	ICPL 82 x (ICPL 316 x ICP 8514)	-	8	-	12
830030	ICPL 317 x ICPL 95	1	4	15	17
	Total	39	57	32	55

Table 6. Characteristics of determinate soybean lines selected at Mokwa rain season 1988

Pedigree	Source	Days to flower	Days to mature	Plant height (cm)	100 seed weight (g)	Grain yield (kg/ha) Lowland Upland	Seed color
A. EXTRA-SHORT-DURATION							
840012-MB-M7-M2-MB	AMMP-1472	68	105	163	10.0	1682/2477	b
840036-MB-M9-M50-MB	1588	65	106	95	9.5	1799/1977	b
840039-MB-MB-M9-MB	1612	65	106	126	10.1	1473/1910	b
840039-MB-MB-M11-MB	1616	63	104	146	10.2	1527/1910	w
840042-MB-MB-M17-MB	1627	62	98	143	8.3	1145/2184	b
840042-MB-M2-M3-MB	1638	69	111	175	9.0	1589/2958	b
840052-MB(X)-M1-M2-MB	1651	69	108	146	11.0	1363/1359	b
840107-MB-MB-M16-MB	1679	67	109	180	8.3	1734/1559	b
840107-MB-MB-M37-MB	1706	65	107	196	8.9	1021/733	b
84108-MB-MB-M2-MB	1712	69	106	200	10.0	2181/1933	b
850001-MB-M20-MB	1799	66	107	170	9.3	1392/1873	b
850006-MB-M12-MB	1857	65	102	195	8.3	1213/1243	w
850008-MB-M19-MB	1868	68	106	170	9.4	1272/1565	w
840006-MB-MB-M22-MB	1899	56	97	138	9.8	835/3315	B
840006-MB-MB-MB-MB	2133	63	105	80	9.3	692/544	B
840022-MB-M15-M1-MB	2259	58	102	108	7.4	583/811	B
840027-MB-MB-M1-MB	2263	66	106	120	9.5	1073/1346	B
840027-MB-MB-M3-MB	2266	66	105	152	8.2	798/1346	B
840028-MB-B1-M1-MB	2267	60	96	90	7.6	484/1346	B
840036-MB-MB-M29-MB	2332	63	107	140	8.6	974/2129	B
840042-MB-MB-MB-MB	2363	58	104	100	9.4	483/912	B
840084-MB-M2-M2-MB	2408	65	110	100	10.1	465/760	B
840107-MB-MB-M9-MB	2441	66	108	115	10.9	512/743	B
850003-MB-M4-MB	2494	64	104	150	10.8	1194/490	B
850035-MB-M6-MB	2544	55	100	110	9.0	1284/1517	B
850035-MB-M7-MB	2546	58	106	121	8.1	1433/1517	B
850035-MB-M9-MB	2548	65	105	140	8.2	1549/1517	B
850035-MB-M13-MB	2553	61	103	137	9.6	1401/1527	B
850057-MB-M5-MB	2563	58	100	143	8.4	803/1952	B
850060-MB-M1-MB	2571	68	107	165	8.1	1179/2264	B
ICPL 83015-M2-MB	5648	59	101	129	8.8	846/1201	B
ICPL 84031-M1-MB	5653	58	102	135	10.8	2096/1201	B
ICPL 83031-M2-MB	5654	57	100	131	9.2	1865/1201	B
ICPL 87094-M1-MB	5659	58	103	110	8.5	1618/1907	B
820002-MB(X)-M2-M1-M1-M3-MB	5702	56	100	95	8.3	1651/2480	B
830015-M35(X)-M2-M1-M1-MB	5716	59	100	140	9.1	1767/1227	B

[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	2073	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	2179	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B40022-HB-HB-H9-HB	2242	70	116	130	8.0	1160/1030	W
B40031-HB-HB-H2-HB	2272	65	112	120	10.3	1417/908	B
B40031-HB-HB-H6-HB	2277	76	120	140	11.8	1103/908	B
B40035-HB-HB-H4-HB	2283	76	111	105	9.3	804/692	B
B40035-HB-HB-H11-HB	2292	71	111	115	9.3	713/188	B
B40036-HB-HB-H15-HB	2314	75	116	160	10.9	731/417	B
B40036-HB-HB-H36-HB	2341	70	112	175	9.1	2241/991	B
B40039-HB-HH-H4-HB	2348	72	113	165	9.7	1225/991	B
B40043-HB-HB-H7-HB	2373	68	112	190	9.8	1875/1027	B
B40050-HB-HB-H7-HB	2382	74	114	180	11.4	1988/1383	B
B40050-HB-HB-H11-HB	2387	72	117	170	10.1	1891/1383	B
B40088-HB(X)-H4-H2-HB	2422	73	118	160	9.6	2008/1210	B
B40090-HB(X)-H6-H2-HB	2424	70	116	150	11.8	1434/1210	B
B40101-HB(X)-H4-H2-HB	2428	75	118	150	11.0	1433/1210	B
B50003-HB-H16-HB	2509	70	116	170	9.1	1674/907	B
B50026-HB-H2-HB	2537	76	125	180	9.1	2892/975	B
B50035-HB-H11-HB	2551	70	115	130	10.0	1702/1527	B
B50038-HB-H2-HB	2557	74	116	160	8.9	1899/1527	B
1CPL 87097-H2	5663	60	107	143	9.8	1756/1907	B
B10100-1-H1-HB-H1-H1-H1-HB	5694	70	118	144	14.5	1120/1619	B
B10106-HB-SB(X)-HB-H9-H1-H3-HB	5698	60	106	135	9.1	1464/2480	B
B20012-HB(X)-H5-H2-H1-H1-HB	5706	60	102	90	9.1	1252/1029	B
B30021-BC2F1-H35-H2-H2-H2-HB	5722	65	110	137	8.6	2341/1227	B
B40011-HB-H88-H1-HB	5761	59	107	132	9.1	1381/1063	B
B40018-HB-HB-H3-HB	5772	61	112	128	10.3	1545/986	B
B40018-HB-HB-H10-HB	5779	65	115	117	12.0	1140/619	B
B40035-HB-HB-H11-HB	5827	61	106	114	8.6	1480/1103	B
B40035-HB-HB-H13-HB	5829	63	110	90	10.9	1260/1103	B

* W = White, B = Brown

Table 7. Characteristics of indeterminate progeny lines selected at Ft. Fairy Seas n 1992

Pedigree	Source	Days to flower	Days to mature	Plant height (cm)	100 seed weight (g)	Grain yield (kg ha) Lima/UPAS 120	Seed color
A. EXTRA-SHORT-DURATION							
800545-HB-H1-HB-H1-H1-H2-H1-HB	**** 2959	53	110	161	8.2	1151/2279	W
810123-H5-HB-HB-HB-H2-H1-HB	3482	64	100	152	9.2	703/1702	W
810123-HB-HB-H5-HB-H1-H2-HB	3494	61	96	150	9.8	1522/873	W
820005-HB(?)-H1-H1-H1-H1-HB	3499	62	95	150	10.0	3831/2873	W
840042-HB-HB-H41-HB	3592	59	94	144	10.2	592/3669	W
840042-HB-HB-H44-HB	3596	60	107	178	10.1	1586/3669	W
840077-HB-H5-H2-HB	3626	59	105	170	10.3	977/3118	W
840077-HB-H2-H1-HB	3634	64	106	136	10.1	709/4261	W
840077-HB-H49-H2-HB	3642	68	106	180	9.1	2146/3393	W
ICPL 86020-H1-HB	3809	63	95	143	9.8	1263/4572	B
ICPL 87111-H1-HB	3812	62	97	148	9.4	1216/3211	B
T90221-HB-H4-H12-H1-H1-H2-HB-HB-HB	3824	61	97	166	8.2	1090/4047	B
900493-HB-H2-H5-H7-H1-HB-H1-HB	3831	65	100	146	8.4	901/4104	B
800545-HB-H1-H1-H1-H2-HB-H1	3838	64	98	152	8.6	718/4104	B
840035-HB-HB-H16-HB	4023	69	107	180	11.0	1725/2490	B
840035-HB-HB-H44-HB	4058	66	105	142	10.4	840/1033	B
850057-HB-H16-HB	4279	70	112	192	8.5	1512/2505	B
B. SHORT-DURATION							
840117-HB-H3-H1-HB	4161	74	115	218	9.0	1399/2813	W
840028-HB-H1-H1-HB	3531	69	115	142	8.5	677/1912	W
840038-HB-H5-H2-HB	3552	77	126	200	8.6	2269/2136	W
850052-HB-H5-HB	3742	79	123	208	8.4	2075/996	W
850063-HB-H12-HB	3761	79	122	212	10.4	2444/1411	W
850068-HB-H11-HB	3767	76	125	192	10.0	2501/1579	W
840052 x ICPL 143-H4-H1-HB	3791	81	127	197	8.3	3592/3453	W
830033-HB-HB-HB-H1-HB	3916	79	121	218	9.8	3075/2154	B
830033-HB-HB-HB-H4-HB	3919	76	123	212	9.4	2291/2154	B
830033-HB-HB-B-H14-HB	3943	80	127	186	9.2	3099/1789	B
830033-HB-HB-B-H18-HB	3948	79	126	200	9.2	1897/1789	B
830034-HB-HB-B-H3-HB	3952	81	123	182	10.2	3292/2279	B
840037-HB-HB-HB-HB	3957	80	126	220	8.7	3082/2279	B
840031-HB-HB-H10-HB	4012	72	115	115	8.5	2596/1921	B
840035-HB-HB-H29-HB	4039	77	121	195	10.0	4393/2871	B
840035-HB-HB-H30-HB	4041	78	123	197	9.7	4973/1614	B
840035-HB-HB-H42-HB	4056	75	118	161	9.1	2305/1833	B
840042-HB-HB-H28-HB	4083	70	112	174	8.4	998/2898	B
850020-HB-H14-HB	4259	77	127	235	9.0	2227/2255	B
840077-HB-H1-H3-HB	3623	75	117	190	10.4	1973/3118	B

** W = White; B = Brown

Table 8: Performance of entries in EXACT (88HT01) grown at Hisar rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
8	ICPL 83015	54	99	92	3.4	9.0	198	1524
12	P 604	52	98	86	3.4	7.8	189	1482
9	ICPL 84023	52	100	85	3.2	7.1	196	1454
7	ICPL 83006	55	106	101	3.1	7.0	212	1352
6	H-87-1	58	110	109	3.5	6.8	220	1270
10	ICPL 85010	52	101	97	3.6	8.9	174	1244
16	UPAS 120	62	127	141	3.4	7.0	199	1218
4	AL-133	56	103	108	3.5	7.3	178	1153
2	AL-15	55	103	109	3.5	7.1	207	1150
5	AF-9-8	57	111	109	3.7	6.3	168	1116
15	TAT-10	59	118	150	3.7	8.2	196	1106
1	AL-13	61	116	150	3.7	7.7	164	1065
14	PRABHAT	55	103	91	3.5	7.0	160	1010
3	AL-31	56	101	104	3.5	7.3	222	975
11	HUA-2	60	130	166	3.6	7.1	204	847
13	P 605	57	106	111	3.5	10.1	133	728
	SE+	0.7	1.0	4.6	0.16	0.17	10.9	76.2
	MEAN	56.1	108.3	113.1	3.47	7.60	188.6	1168.2
	CV(%)	2.4	1.8	8.1	9.02	4.36	11.5	13.0

Date of planting : 30-7-1988
No.of entries 16, No.of reps 4, No.of rows 8
Row length, 4 m, spacing 30 x 10 (cms)
Net plot size : 6.48 m2

Table 9: Performance of entries in EXACT (88P01) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
11	ICPL 151	62	111	113	8	11.6	196	2824
2	ICPL 83006	58	109	114	6	7.6	248	2772
4	AL 15	56	106	119	6	7.0	264	2639
12	ICPL 85010	55	103	95	6	9.9	272	2290
10	UPAS 120	61	115	165	5	7.0	257	2266
1	PRABHAT	55	105	93	6	7.1	197	2140
8	P 601	54	108	101	6	9.7	188	2072
3	P 605	60	115	126	7	9.8	169	2059
5	ICPL 84023	52	101	86	6	7.7	238	1958
7	P 851	66	115	184	6	7.3	270	1939
6	P 604	51	98	88	5	7.9	217	1891
9	BDN 31	70	117	123	5	9.6	235	1000
	SE.	0.5	0.7	4.4	0.2	0.10	10.9	122.8
	MEAN	58.3	108.5	117.1	5.9	8.53	229.0	2154.1
	CV(%)	1.6	1.3	7.5	7.5	2.41	9.5	11.4

Date of planting : 1-7-1988
Net Plot size : 6.48 m2
Spacing : 30 x 10 cms.

Table 10: Performance of entries in EACT (88HT02) grown at Hisar rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	ICPL 84052	86	133	239	3.6	9.0	159	1833
30	MAHAK	72	110	210	3.7	7.3	127	1762
8	H 82-1	74	120	211	3.7	7.8	129	1740
25	P 869	82	129	231	3.8	8.6	138	1724
13	H 84-10	82	143	241	3.7	8.3	141	1711
17	ICPL 85045	81	134	215	3.8	9.4	141	1658
29	UPAS 120	78	124	208	3.6	7.4	123	1602
1	AF 33	86	132	245	3.6	7.5	140	1583
14	H 84-14	88	144	250	3.7	8.0	132	1549
28	ICPL 151	72	113	186	4.0	11.1	145	1546
12	H 83-31	90	140	231	3.9	9.1	128	1512
11	H 83-13	89	139	259	3.7	8.8	131	1498
22	PANT A84-248-4	91	141	263	3.6	8.8	133	1495
23	P 853	85	126	232	3.8	9.1	156	1427
2	AF 179	86	129	227	3.6	7.0	150	1399
18	MTH-10	85	135	253	3.5	6.5	135	1354
3	AL 101	80	129	228	3.7	7.3	155	1350
27	PUSA 33	87	134	247	3.6	8.4	124	1339
19	MTH-16	94	141	248	3.5	7.2	136	1231
10	H 83-9	91	141	253	3.8	9.6	126	1218
21	MUA-1	78	128	227	3.7	8.2	153	1174
9	H 82-12	73	109	190	3.6	6.9	147	1094
7	H 81-95	66	107	184	3.7	8.0	153	1069
4	AL 128	67	106	191	3.6	9.0	120	902
26	PDA 88-1	71	111	175	3.8	9.8	121	826
6	H 81-22	81	126	209	3.5	8.2	123	815
24	P 854	70	111	194	3.8	9.2	113	803
15	ICPL 83022	70	111	178	3.8	9.6	155	746
5	AL 124	68	107	188	3.7	8.1	110	697
20	MTH-17	70	113	198	3.7	8.4	92	610
	SE±	1.0	0.9	7.5	0.07	0.25	11.9	147.4
	MEAN	79.6	125.4	220.3	3.70	8.39	134.4	1308.7
	CV(%)	2.6	1.5	6.8	3.85	5.94	17.7	22.5

Date of planting : 30-6 1988
No.of entries 30. No.of reps 4. No.of rows 4
Row length 4 m. spacing 30 x 10 (cms)
Net plot size : 6.48 m2

Table 11: Performance of entries in EACT (88P02) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	ICPL 85012	63	117	106	7	11.6	109	2754
2	ICPL 87	71	135	115	7	10.2	111	2563
5	ICPL 84052	69	126	198	6	8.0	116	2557
4	ICPL 84031	65	122	116	6	9.5	119	2522
9	P 854	64	118	133	7	8.9	97	2295
11	P 602	63	119	119	6	8.2	108	2196
3	ICPL 83027	66	125	198	7	9.5	113	2079
12	UPAS 120	64	115	155	5	7.0	113	2045
6	ICPL 85045	69	125	178	6	9.3	111	2027
10	P 869	63	122	189	6	8.2	119	1999
7	P 852	65	124	180	6	8.5	117	1940
8	P 853	64	123	184	6	8.6	115	1901
14	MUA 1	66	124	198	6	7.7	113	1850
1	ICPH 8	73	127	210	6	7.6	112	1648
13	MANAK	62	113	168	5	7.0	117	1625
15	P.SVETA 2	67	125	131	8	12.6	90	1549
	SE±	0.5	1.1	5.9	0.2	0.13	2.9	100.6
	MEAN	65.8	122.5	160.9	6.2	8.89	111.1	2096.6
	CV(%)	1.5	1.8	7.3	7.9	2.85	5.2	9.6

Date of planting : 23-6-1988
Net plot size : 6.48 m2
Spacing : 30 x 20 cms.

Table 12: Performance of entries in ACT-1 (88MT03) grown at Hisar rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight g)	Plant stand	Grain Yield (kg/ha)
21	P 603	78	128	212	3.8	8.5	148	1882
6	H 82-26	86	133	218	3.7	6.8	144	1520
4	AF 22	92	134	220	3.8	9.6	152	1479
16	PANT A-8433	91	142	250	3.7	10.4	134	1356
9	MTH-15	98	140	261	3.7	6.7	159	1344
5	AF 40	87	135	214	3.7	6.8	130	1332
2	T 21	92	135	235	3.8	10.1	136	1324
11	PANT A-103	89	143	226	4.0	8.8	132	1291
3	PUSA -1	77	128	153	3.9	13.0	115	1202
18	PANT A-8508	88	140	227	4.0	9.7	137	1176
10	P 85	79	126	218	3.7	9.5	179	1169
1	ICPH-8	89	133	240	3.9	9.5	121	1167
19	PANT A-8514	93	142	238	3.7	9.8	109	1121
17	PANT A-8505	96	146	233	3.5	9.9	119	1114
15	PANT A-83-4-1	85	131	234	3.6	6.9	113	1105
7	ICPL 269	86	127	181	4.1	7.8	122	1074
14	PANT A-83-4	86	132	223	3.8	6.8	126	1048
12	P 855	85	133	215	3.8	8.2	136	1022
13	PANT A-1-1	87	130	241	3.8	7.7	119	1020
20	PANT A-8518	94	147	238	3.8	7.8	114	818
8	ICPL 83024	86	129	194	3.8	16.4	108	523
22	161-9	107	154	246	4.0	9.9	77	498
	SE±	1.0	1.3	9.3	0.06	0.28	11.8	89.6
	MEAN	88.6	135.7	223.3	3.79	9.12	128.6	1162.8
	CV(%)	2.3	1.9	8.4	3.31	6.11	18.3	15.4

Date of planting : 30-6-1988
No.of entries 22, No.of reps 4, No.of rows 8
Row length 4m. spacing 60 x 10(cms)
Net plot size : 12.96 m2

Table 13: Performance of entries in ACT-1 (88PO3) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
10	BDN-5	115	174	200	6	10.8	77	1810
5	CORG 5	93	145	181	5	8.7	76	1574
3	BDN 13	107	173	186	5	11.4	75	1529
11	BVR 24	98	154	175	6	10.9	77	1291
18	BDN 67	101	152	188	5	10.7	77	1248
7	CO 5	81	137	158	5	8.4	71	1203
4	BSMR 65	95	143	183	5	11.5	73	1167
14	161-9	95	141	210	6	9.9	72	1127
16	MTH 15	92	138	186	6	7.0	73	1067
6	PANT A 8505	82	135	161	5	7.6	75	982
1	ICPL 186	74	134	149	6	8.1	72	791
17	PANT A 102	79	135	161	5	7.3	72	785
8	ICPL 83024	80	137	111	7	14.3	71	725
9	P 855	74	135	154	6	7.8	73	598
15	PANT A 8508	81	134	150	5	6.9	76	574
12	PANT A 104	85	136	150	5	6.9	76	569
2	T-21	84	134	160	5	6.0	72	454
13	B 82-26	79	133	136	5	5.6	77	407
	SE±	1.3	1.2	5.0	0.2	0.24	1.8	101.9
	MEAN	88.5	142.6	166.6	5.4	8.87	74.2	994.3
	CV(%)	2.9	1.8	6.1	8.1	5.32	4.8	20.5

Date of planting : 4-7-88
Net plot size : 8.64 m2
Spacing : 60 x 20 cms.

Table 14. Grain yield (kg/ha) entries in EXPIT 88 trial during 1988.

Sl. No.	Entries	Hisar		Patancheru	Gwalior	Coimbatore	SriGanga-Nagar	Srinagar	Pudukkottai	Rahuri
		Normal	Late							
1	ICPL 151	1849 (3)	1278 (10)	2767 (1)	1898 (2)	1597 (2)	1875 (1)	793 (5)	602 (11)	679 (5)
2	ICPL 83006	1278 (8)	1840 (3)	2222 (3)	1845 (5)	1510 (4)	1181 (8)	652 (12)	463 (14)	690 (4)
3	ICPL 83015	1059 (10)	1888 (2)	2346 (2)	1748 (9)	1477 (5)	1267 (7)	687 (9)	911 (5)	703 (3)
4	ICPL 83019	1003 (11)	1198 (11)	1464 (10)	1634 (11)	1369 (7)	1146 (10)	806 (3)	1065 (1)	584 (9)
5	ICPL 84023	1373 (7)	1566 (6)	1418 (11)	1827 (6)	1133 (9)	1632 (4)	721 (7)	710 (9)	522 (11)
6	ICPL 85010	1173 (9)	1611 (5)	1587 (9)	1876 (4)	1553 (3)	1666 (3)	660 (11)	988 (3)	574 (10)
7	ICPL 85024	627 (13)	1014 (12)	1110 (14)	1246 (14)	914 (12)	885 (12)	891 (1)	849 (7)	388 (14)
8	ICPL 85030	975 (12)	1448 (7)	1211 (12)	1286 (12)	1101 (10)	1684 (2)	694 (8)	556 (12)	514 (12)
9	ICPL 85031	1780 (5)	1009 (13)	1969 (5)	1674 (10)	1422 (6)	833 (13)	810 (2)	556 (13)	591 (8)
10	ICPL 86010	1804 (4)	1366 (9)	1858 (6)	1779 (8)	1082 (11)	1389 (6)	733 (6)	957 (4)	718 (1)
11	ICPL 87093	574 (14)	772 (14)	1111 (13)	1278 (13)	461 (14)	1077 (11)	795 (4)	648 (10)	424 (13)
12	ICPL 87095	1940 (2)	1974 (1)	1705 (8)	1908 (1)	914 (13)	556 (14)	633 (14)	725 (8)	717 (2)
13	ICPL 87097	2542 (1)	1664 (4)	1806 (7)	1809 (7)	1327 (8)	1146 (9)	648 (13)	864 (6)	627 (6)
14	ICPL 87098	1465 (6)	1416 (8)	2145 (4)	1889 (3)	1659 (1)	1423 (5)	668 (10)	1003 (2)	620 (7)
	SE ±	103.1	143.3	148.1	283.4	168.3	81.5	80.1	63.5	55.0
	Mean	1388.7	1433.7	1765.8	1678.6	1253.4	1268.5	728.0	778.3	596.4
	CV%	12.9	17.3	14.5	29.2	23.3	11.1	19.1	14.1	16.0

* ( ) Rank at each location

Table 14. Grain yield (kg/ha) entries in EXPIT SS trial during 1988.

Sl. No.	Entries	Ambikapur	Bankura	Pusa	Dehradun	Delhi	Berhampore	Kanpur	Mean
1	ICPL 151	864 (9)	1140 (10)	766 (8)	2408 (2)	952 (8)	2360 (1)	1333 (1)	1469 (1)
2	ICPL 83006	795 (6)	1340 (7)	1083 (3)	2732 (1)	1380 (3)	2229 (2)	703 (5)	1372 (2)
3	ICPL 83015	417 (11)	1261 (8)	785 (7)	1373 (8)	1174 (5)	2114 (5)	428 (7)	1239 (5)
4	ICPL 83019	1168 (1)	1462 (5)	747 (9)	1358 (9)	1238 (4)	1914 (6)	928 (2)	1181 (8)
5	ICPL 84023	903 (3)	1663 (2)	635 (10)	1868 (6)	778 (9)	1434 (10)	487 (6)	1167 (11)
6	ICPL 85010	895 (4)	1069 (11)	915 (6)	1250 (10)	1936 (1)	1671 (8)	773 (3)	1276 (4)
7	ICPL 85024	301 (13)	1598 (3)	523 (11)	2006 (5)	730 (10)	953 (13)	338 (10)	890 (13)
8	ICPL 85030	247 (14)	731 (13)	915 (5)	1158 (12)	682 (11)	918 (14)	273 (12)	900 (12)
9	ICPL 88021	868 (2)	674 (14)	466 (12)	2377 (3)	571 (13)	960 (12)	467 (9)	1072 (9)
10	ICPL 88010	563 (7)	1218 (9)	449 (13)	1204 (11)	1095 (6)	1892 (7)	658 (4)	1170 (10)
11	ICPL 87093	278 (13)	1419 (6)	263 (14)	1143 (13)	686 (12)	1868 (11)	283 (11)	766 (14)
12	ICPL 87095	486 (8)	1849 (1)	1233 (1)	1389 (7)	955 (14)	2181 (4)	228 (13)	1188 (7)
13	ICPL 87097	463 (10)	1591 (4)	1083 (2)	2161 (4)	1458 (2)	2279 (2)	190 (14)	1388 (3)
14	ICPL 87098	479 (9)	1046 (12)	1047 (4)	1127 (14)	1079 (7)	1886 (9)	747 (4)	1228 (6)
	SE ±	79.1	70.7	135.6	45.8	60.9	88.8	69.3	
	Mean	631.0	1292.0	795.0	1682.8	1035.0	1715.0	574.0	
	CV%	21.8	9.5	29.5	4.7	10.2	8.9	18.2	

* ( ) Rank at each location

Table 15: Performance of entries in EXPIT 88 (88P04) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
1	ICPL 151(Check)	67	116	103	7	11.1	103	2767	1076
3	ICPL 83015	61	110	87	5	9.5	104	2346	543
2	ICPL 83006	59	109	98	5	7.5	106	2222	906
14	ICPL 87098	66	117	92	6	9.6	92	2145	855
9	ICPL 85031	68	130	112	8	12.9	82	1969	371
10	ICPL 86010	67	125	102	7	11.1	83	1858	388
13	ICPL 87097	57	112	82	5	9.3	91	1806	714
12	ICPL 87095	55	105	72	6	8.0	90	1705	543
6	ICPL 85010	54	108	75	6	9.1	103	1587	729
4	ICPL 83019	53	107	82	6	9.4	84	1464	468
5	ICPL 84023	52	98	77	4	7.4	94	1418	614
8	ICPL 85030	57	109	67	8	11.9	73	1211	437
11	ICPL 87093	54	96	78	6	8.9	84	1111	183
7	ICPL 85024	51	98	65	5	8.3	89	1110	307
	SE±	0.7	1.4	3.8	0.3	0.16	4.3	148.1	113.2
	MEAN	58.7	110.0	85.0	6.1	9.57	91.3	1765.8	580.9
	CV(%)	2.0	2.2	7.7	7.3	2.95	8.2	14.5	33.8

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 15a: Performance of entries in EXPIT 88 (Black soil) (88P20) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
13	ICPL 87097	61	130	72	5	9.0	59	1053
9	ICPL 85031	77	134	93	8	10.4	51	676
10	ICPL 86010	78	135	83	7	9.1	48	630
5	ICPL 84023	59	125	63	5	7.2	58	503
4	ICPL 83019	57	124	70	6	9.0	59	491
1	ICPL 151(Check)	76	127	82	6	9.6	50	477
2	ICPL 83006	66	126	73	6	6.6	49	472
12	ICPL 87095	61	124	62	6	8.3	57	463
6	ICPL 85010	61	124	67	6	9.1	48	389
8	ICPL 85030	58	129	58	7	10.6	44	366
3	ICPL 83015	61	124	62	5	8.7	45	352
14	ICPL 87098	66	124	77	6	8.4	48	211
11	ICPL 87093	58	122	66	5	8.4	37	93
7	ICPL 85024	63	122	58	5	7.5	24	43
	SE±	1.4	1.4	3.5	0.3	0.26	6.1	79.4
	MEAN	64.5	126.4	70.4	5.9	8.69	48.4	444.1
	CV(%)	3.7	1.9	8.5	9.8	5.19	22.0	31.0

Date of planting : 4-7-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 16: Performance of entries in EXPIT88 (E88GT05) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
12	ICPL 87095	60	107	121	4	7.6	56	1988
1	ICPL 151(Check)	72	122	137	4	11.1	55	1898
14	ICPL 87098	65	107	138	4	8.3	62	1889
6	ICPL 85010	64	116	132	3	9.4	59	1876
2	ICPL 83006	63	117	146	3	7.5	67	1845
5	ICPL 84023	58	103	115	3	7.2	65	1827
13	ICPL 87097	67	119	137	3	9.4	57	1809
10	ICPL 86010	81	131	146	4	9.9	54	1779
3	ICPL 83015	62	105	128	4	8.3	73	1748
9	ICPL 85031	73	132	139	4	10.7	47	1674
4	ICPL 83019	62	111	130	3	8.7	55	1434
8	ICPL 85030	67	114	117	3	11.3	47	1289
11	ICPL 87093	60	103	140	3	8.7	45	1278
7	ICPL 85024	60	105	122	3	7.6	53	1246
	SE±	1.6	1.5	4.2	0.1	0.23	4.4	283.4
	MEAN	65.4	113.6	132.0	3.5	8.97	56.8	1678.6
	CV(%)	4.1	2.2	5.5	5.9	4.47	13.5	29.2

Date of planting : 1 July, 1988.

Table 17: Performance of entries in EXPIT88 (Early sowing) (88HT04) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
13	ICPL 87097	94	129	198	3.7	9.9	40	9126	1637	12.8
10	ICPL 86010	96	136	242	4.6	11.0	47	10596	1198	8.1
1	ICPL 151(Check)	95	125	222	3.8	11.3	58	10023	1126	8.0
5	ICPL 84023	89	126	176	3.3	7.9	51	4702	1106	14.1
3	ICPL 83015	81	117	149	3.7	9.4	38	5708	999	11.5
12	ICPL 87095	85	124	176	3.3	8.8	41	5267	970	11.5
6	ICPL 85010	93	130	154	3.5	9.6	39	9669	959	9.7
14	ICPL 87098	97	133	207	3.4	9.5	36	11563	918	9.9
2	ICPL 83006	91	119	203	3.7	7.8	38	5159	616	8.0
9	ICPL 85031	95	133	221	3.7	11.9	26	7471	614	6.9
4	ICPL 83019	88	122	208	3.6	9.8	48	8569	594	4.8
8	ICPL 85030	88	120	184	3.6	11.4	46	7424	411	4.3
7	ICPL 85024	83	117	137	3.4	8.7	34	3519	335	7.2
11	ICPL 87093	85	119	174	3.7	10.3	34	5878	293	3.7
	SE+	1.0	1.9	8.0	0.19	0.19	7.5	1728.9	171.3	1.24
	MEAN	90.0	125.1	189.4	3.65	9.81	41.1	7190.5	841.0	8.61
	CV(%)	2.0	2.6	7.3	9.01	3.31	31.4	41.6	35.3	24.84

Date of planting: 8-5-1988.
No.of entries :16, No.of reps 3, No.of rows 4
Row length 4m, Spacing: 60 x 20 cms.
Net plot size : 4.32 sqm.

Table 18: Performance of entries in EXPT88 (Normal sowing) (88MT05) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
13	ICPL 87097	72	118	165	3.6	10.6	63	8874	2542	16.8
12	ICPL 87095	69	114	118	2.8	9.6	62	5695	1940	18.0
1	ICPL 151(Check)	71	116	131	3.2	11.8	69	6543	1849	16.2
10	ICPL 86010	74	115	192	5.4	11.7	58	8608	1804	13.4
9	ICPL 85031	72	116	196	4.9	13.0	52	8611	1788	12.7
14	ICPL 87098	66	108	124	3.7	11.9	56	5355	1465	16.3
5	ICPL 84023	65	112	125	3.5	9.2	44	4429	1373	18.7
2	ICPL 83006	67	110	125	3.4	8.6	65	5679	1278	14.0
6	ICPL 85010	70	112	130	3.5	10.3	55	5618	1173	13.0
3	ICPL 83015	65	113	137	3.7	10.5	51	5046	1059	13.4
4	ICPL 83019	67	109	123	3.1	13.4	65	5911	1003	10.9
8	ICPL 85030	67	110	133	3.9	12.4	44	5170	975	12.7
7	ICPL 85024	64	104	117	3.4	8.8	56	4074	627	10.2
11	ICPL 87093	62	106	138	3.1	11.7	45	4182	574	9.5
	SE±	0.8	0.8	4.5	0.18	0.39	4.9	370.9	103.1	1.84
	MEAN	68.0	111.7	139.5	3.66	10.96	56.1	5991.0	2388.7	13.99
	CV(%)	2.2	1.2	5.6	8.45	6.12	15.9	10.7	12.9	12.90

Date of planting: 28-6-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 20 cms.

Table 19: Performance of entries in EXPIT88 (Late sowing) (88HT06) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
12	ICPL 87095	59	103	86	3.5	8.9	70	3071	1974	25.2
3	ICPL 83015	61	109	95	3.7	8.4	60	3025	1888	26.0
2	ICPL 83006	64	108	110	4.2	6.9	81	3904	1840	20.8
13	ICPL 87097	61	108	98	3.3	9.2	72	4707	1664	16.4
6	ICPL 85010	59	108	96	4.0	9.2	65	3549	1611	22.2
5	ICPL 84023	55	97	88	3.5	6.9	62	2623	1566	27.4
8	ICPL 85030	59	105	85	4.0	10.6	55	2253	1448	26.6
14	ICPL 87098	61	109	106	3.9	10.5	52	4478	1446	14.4
10	ICPL 86010	70	127	97	4.5	10.6	60	4784	1366	14.0
1	ICPL 151(Check)	66	116	112	3.3	11.8	66	5468	1278	11.6
4	ICPL 83019	59	106	97	3.7	9.8	58	3025	1198	19.4
7	ICPL 85024	52	95	77	3.9	8.5	55	1806	1014	26.2
9	ICPL 85031	74	127	130	5.0	12.6	53	6142	1009	8.8
11	ICPL 87093	56	97	78	3.5	8.8	54	1790	772	20.9
	SE±	0.6	1.1	4.9	0.21	0.26	4.2	330.6	143.3	1.80
	MEAN	61.2	108.2	96.8	3.85	9.49	61.5	3614.5	1433.7	19.99
	CV(%)	1.8	1.7	8.7	9.45	4.69	12.0	15.8	17.3	15.60

Date of planting: 30-7-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 20. Grain yield (kg/ha) entries in EPIT 88 DT trial during 1988.

Sl. No.	Entries	Kisar			Patancheru	Gwalior	SriGanga-Nagar	Coimbatore	Pudukkottai
		Early	Normal	Late					
1	ICPL 87	1905 (2)	2793 (1)	1188 (9)	2522 (8)	2058 (9)	764 (15)	689 (4)	1204 (1)
2	ICPL 151	1020 (14)	1428 (15)	1486 (6)	2596 (5)	2320 (4)	1527 (5)	649 (6)	602 (10)
3	ICPL 83024	799 (15)	1528 (11)	1585 (5)	2468 (12)	2496 (2)	781 (14)	563 (11)	255 (18)
4	ICPL 84031	2836 (1)	2520 (2)	2659 (1)	2438 (13)	2770 (1)	1840 (2)	553 (12)	849 (6)
5	ICPL 84032	1610 (6)	2088 (6)	1092 (15)	2293 (15)	1925 (11)	1788 (3)	634 (7)	849 (5)
6	ICPL 85012	1211 (9)	1568 (10)	1210 (8)	2704 (1)	2171 (6)	1840 (1)	521 (13)	733 (7)
7	ICPL 85015	1465 (7)	1494 (12)	1138 (13)	2648 (4)	2206 (5)	1518 (7)	462 (17)	409 (13)
8	ICPL 85027	1033 (13)	1468 (14)	896 (17)	2494 (10)	1974 (10)	1527 (6)	466 (16)	702 (8)
9	ICPL 86005	1897 (4)	2320 (4)	2287 (2)	2536 (7)	981 (18)	868 (13)	766 (1)	301 (17)
10	ICPL 86007	1073 (11)	1142 (16)	1147 (12)	2307 (14)	1671 (16)	1354 (10)	492 (14)	432 (12)
11	ICPL 86009	608 (16)	1084 (17)	1159 (11)	2485 (11)	1754 (12)	1319 (11)	469 (15)	386 (14)
12	ICPL 86012	1074 (10)	1634 (8)	1784 (4)	2701 (2)	1630 (17)	885 (12)	630 (8)	880 (4)
13	ICPL 87102	1073 (12)	1494 (13)	1173 (10)	2537 (6)	2335 (3)	1493 (8)	609 (10)	386 (15)
14	ICPL 87105	2176 (2)	2238 (5)	1929 (3)	2511 (9)	1734 (13)	677 (16)	718 (3)	586 (11)
15	ICPL 87108	1655 (5)	2398 (3)	1435 (7)	2136 (17)	1727 (14)	260 (18)	762 (2)	340 (16)
16	ICPL 87109	1424 (8)	1654 (7)	1036 (16)	2239 (16)	2098 (8)	312 (17)	667 (5)	910 (3)
17	ICPL 85014	-	973 (18)	1130 (14)	1756 (18)	1683 (15)	1441 (9)	459 (18)	648 (9)
18	ICPH 9	-	1613 (9)	867 (18)	2676 (3)	2164 (7)	1562 (4)	616 (9)	1096 (2)
	SE ±	253.2	212.6	186.3	363.7	238.4	60.4	72.8	67.4
	Mean	1428.8	1746.5	1400.1	2447.0	1983.2	1208.2	595.8	642.2
	CV%	30.7	21.1	23.0	25.7	20.8	8.7	21.2	18.2

* ( ) Rank at each location.

Kanpur	Pusa	Dehradun	Delhi	Mean
1103 (2)	336 (13)	2222 (4)	1460 (2)	1520 (2)
1050 (3)	486 (10)	2346 (3)	658 (12)	1347 (5)
733 (11)	112 (18)	1621 (9)	865 (5)	1150 (14)
1167 (1)	897 (1)	1528 (10)	809 (6)	1739 (1)
1000 (6)	187 (14)	2161 (5)	1491 (1)	1427 (3)
707 (12)	598 (5)	1405 (14)	540 (15)	1267 (8)
1020 (4)	523 (8)	1513 (11)	762 (8)	1263 (9)
633 (15)	486 (9)	1836 (7)	793 (7)	1192 (12)
975 (7)	373 (11)	1621 (8)	397 (17)	1277 (7)
-	636 (4)	1235 (16)	952 (4)	1131 (15)
1020 (5)	561 (7)	1235 (15)	714 (10)	1066 (18)
777 (10)	187 (15)	2470 (1)	714 (9)	1288 (6)
697 (13)	598 (6)	1482 (12)	698 (11)	1215 (11)
495 (16)	149 (17)	1080 (17)	412 (16)	1225 (10)
323 (17)	149 (16)	1065 (18)	650 (13)	1075 (17)
645 (14)	336 (12)	1466 (13)	1309 (3)	1175 (13)
868 (9)	785 (2)	2361 (2)	230 (18)	1120 (16)
950 (8)	785 (3)	2099 (6)	619 (14)	1368 (4)
67.5	82.3	51.2	52.8	
833	455	1708	781	
14.8	31.4	5.2	11.7	

Table 21: Performance of entries in EPIT 88-DT (88P05) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
6	ICPL 85012	64	116	102	7	11.3	83	2704	687
12	ICPL 86012	72	123	123	7	12.3	81	2701	555
18	ICPH 9	69	121	118	6	9.3	81	2676	780
7	ICPL 85015	67	119	105	7	9.1	77	2648	462
2	ICPL 151(Check)	67	116	118	7	11.2	84	2596	611
13	ICPL 87102	63	117	103	7	11.6	80	2537	620
9	ICPL 86005	71	135	148	8	13.5	76	2536	526
1	ICPL 87(Check)	72	134	115	7	10.6	81	2522	884
14	ICPL 87105	73	135	142	8	12.5	76	2511	1040
8	ICPL 85027	70	121	123	9	12.2	83	2494	322
11	ICPL 86009	63	113	125	7	9.6	97	2485	688
3	ICPL 83024	74	129	135	8	15.7	81	2468	466
4	ICPL 84031	67	120	118	6	9.0	81	2438	480
10	ICPL 86007	64	116	93	7	10.9	88	2307	560
5	ICPL 84032	70	117	132	7	10.3	84	2293	424
16	ICPL 87109	75	135	142	8	13.7	62	2239	293
15	ICPL 87108	75	136	130	7	14.3	76	2136	412
17	ICPL 85014	61	111	115	5	7.1	98	1756	610
	SE±	1.0	1.4	5.2	0.2	0.20	4.6	363.7	123.7
	MEAN	68.8	122.9	121.6	7.2	11.34	81.6	2447.0	579.0
	CV(%)	2.5	1.9	7.5	5.8	3.06	9.7	25.7	37.0

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table-21a: Performance of entries in EPIT 88-DT (Black soil) (88P21) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	ICPL 87109	84	144	108	8	12.8	76	1710
12	ICPL 86012	82	137	95	7	11.8	77	1519
3	ICPL 83024	84	142	102	8	14.8	65	1463
1	ICPL 87(Check)	83	135	82	7	9.7	70	1414
15	ICPL 87108	84	143	98	7	13.8	63	1326
9	ICPL 86005	84	143	103	7	12.4	69	1215
14	ICPL 87105	85	141	100	8	9.7	71	1125
6	ICPL 85012	71	129	80	7	10.0	60	873
4	ICPL 84031	77	130	88	6	8.7	54	761
5	ICPL 84032	83	130	102	6	9.2	75	757
18	ICPH 9	79	133	98	6	8.1	64	725
8	ICPL 85027	78	134	93	9	11.1	70	651
2	ICPL 151(Check)	81	128	92	7	10.1	77	645
13	ICPL 87102	73	128	76	6	10.5	62	577
11	ICPL 86009	75	125	88	6	7.9	67	508
10	ICPL 86007	72	128	70	6	10.2	51	478
7	ICPL 85015	78	127	83	6	8.1	57	455
17	ICPL 85014	75	128	73	5	7.0	32	213
	SE±	1.0	1.8	4.6	0.3	0.28	6.0	139.5
	MEAN	79.3	133.6	90.7	6.7	10.31	64.7	912.0
	CV(%)	2.3	2.4	8.8	8.3	4.62	16.2	26.5

Date of planting : 6-7-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 22: Performance of entries in EPIT88-DT (K88GT03) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
4	ICPL 84031	72	138	160	4	8.3	63	2770
3	ICPL 83024	91	137	183	3	13.4	50	2496
13	ICPL 87102	65	136	143	4	8.4	59	2335
2	ICPL 151(Check)	68	133	160	4	8.6	51	2320
7	ICPL 85015	66	130	152	4	7.9	50	2206
6	ICPL 85012	66	135	143	4	9.6	45	2171
18	ICPH 9	71	138	160	3	7.4	53	2164
16	ICPL 87109	93	144	193	3	10.2	29	2098
1	ICPL 87(Check)	79	141	155	4	8.3	60	2058
8	ICPL 85027	88	137	172	4	9.8	30	1974
5	ICPL 84032	90	139	173	4	7.8	59	1925
11	ICPL 86009	67	134	158	4	7.6	52	1754
14	ICPL 87105	98	142	172	3	9.6	37	1734
15	ICPL 87108	101	147	173	3	11.1	31	1727
17	ICPL 85014	67	129	162	3	5.9	64	1683
10	ICPL 86007	67	135	150	4	8.4	49	1671
12	ICPL 86012	74	134	160	3	9.7	54	1630
9	ICPL 86005	80	146	188	3	11.2	57	981
	SE+	3.1	1.9	3.0	0.2	0.43	4.6	238.4
	MEAN	77.9	137.5	164.4	3.6	9.07	49.5	1983.2
	CV(%)	6.9	2.5	3.2	9.2	8.11	16.2	20.8

Date of planting : 1 July, 1988.

Table 23: Performance of entries in EPIT88DT (Early sowing) (88HT07) grown at ICRISAT Center, Misaf, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
4	ICPL 84031	95	130	212	4.1	9.0	41	11756	2836	17.3
14	ICPL 87105	95	134	243	4.2	9.1	32	15932	2176	12.3
1	ICPL 87(Check)	106	140	230	4.2	10.3	38	15159	1905	9.5
9	ICPL 86005	86	118	215	4.5	9.1	32	10441	1897	12.3
15	ICPL 87108	110	143	196	4.1	12.4	13	10673	1655	10.2
5	ICPL 84032	100	130	213	3.7	8.4	27	9900	1610	11.2
7	ICPL 85015	85	117	206	3.8	7.5	39	7440	1465	11.8
16	ICPL 87109	105	138	251	4.5	11.2	14	9064	1424	11.0
6	ICPL 85012	91	124	196	3.7	9.7	38	6218	1211	11.7
12	ICPL 86012	97	135	208	4.1	9.9	38	6891	1074	9.6
10	ICPL 86007	95	132	182	3.6	9.3	34	5723	1073	10.9
13	ICPL 87102	95	126	184	3.7	9.1	23	5004	1073	12.7
8	ICPL 85027	104	139	222	5.5	9.5	28	8275	1033	9.2
2	ICPL 151(Check)	94	127	202	3.6	10.1	39	8198	1020	8.9
3	ICPL 81024	111	145	232	3.9	14.5	20	8507	799	5.7
11	ICPL 86009	95	135	214	3.5	8.0	34	7154	608	5.7
	SE±	0.9	0.9	8.2	0.14	0.34	7.1	1441.3	253.2	1.88
	MEAN	97.8	132.1	212.8	4.05	9.81	30.6	9145.9	1428.8	10.61
	CV(%)	1.6	1.2	6.7	5.83	5.98	39.9	27.3	30.7	30.77

Date of planting: 8-5-1988.
Net plot size: 4.32 sqm.
Spacing: 60 x 20 cms.

Table 24: Performance of entries in EPIT88DT (Normal sowing) (88HT08) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
1	ICPL 87(Check)	73	127	177	4.4	11.8	52	11234	2793	15.0
4	ICPL 84031	71	114	181	3.5	9.5	64	6821	2520	20.4
15	ICPL 87108	79	132	203	4.3	14.4	31	12083	2398	12.6
9	ICPL 86005	70	111	193	4.9	13.6	55	13194	2320	11.6
14	ICPL 87105	74	124	201	4.5	11.7	42	12361	2238	12.8
5	ICPL 84032	74	116	163	3.5	9.3	58	8611	2088	14.9
16	ICPL 87109	75	117	221	4.5	13.3	28	11049	1654	9.8
12	ICPL 86012	72	113	178	4.0	11.2	53	8626	1634	12.8
18	ICPH 9	74	114	197	3.6	8.9	43	7376	1613	13.5
6	ICPL 85012	70	111	156	3.4	10.8	49	5108	1568	17.3
3	ICPL 83024	77	133	206	4.8	17.6	33	10062	1528	9.8
7	ICPL 85015	68	111	137	3.6	9.3	44	5509	1494	15.8
13	ICPL 87102	71	115	158	3.5	10.6	55	4491	1494	17.4
8	ICPL 85027	73	114	193	3.8	11.9	42	6821	1468	12.8
2	ICPL 151(Check)	70	114	185	3.8	10.8	51	6667	1428	14.2
10	ICPL 86007	70	113	153	3.2	11.1	48	4907	1142	13.5
11	ICPL 86009	68	109	173	3.3	9.3	57	6312	1084	11.0
17	ICPL 85014	68	113	183	3.5	7.3	51	4923	973	12.2
	SE+	0.6	0.8	7.4	0.24	0.31	3.7	618.8	212.6	1.11
	MEAN	72.1	116.7	181.0	3.91	11.25	47.6	8119.8	1746.5	13.71
	CV(%)	1.5	1.2	7.0	10.63	4.84	13.3	13.2	21.1	13.99

Date of planting: 28-6-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 25: Performance of entries in EPIT88DT (Late sowing) (88HT09) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
4	ICPL 84031	69	133	103	4.2	9.7	84	4553	2659	22.4
9	ICPL 86005	77	143	133	4.5	12.8	63	6481	2287	17.4
14	ICPL 87105	74	137	118	4.0	10.7	55	5787	1929	16.6
12	ICPL 86012	70	134	130	3.5	11.0	57	5401	1784	17.6
3	ICPL 83024	73	135	135	4.1	16.3	54	6096	1585	13.3
2	ICPL 151(Check)	68	115	119	3.7	9.9	61	4244	1486	17.0
15	ICPL 87108	78	147	129	4.5	12.8	44	6790	1435	11.7
6	ICPL 85012	66	119	95	3.7	10.5	60	4213	1210	16.5
1	ICPL 87(Check)	74	143	103	4.1	10.5	64	3889	1188	12.6
13	ICPL 87102	62	113	96	3.6	11.4	60	3935	1173	16.2
11	ICPL 86009	62	108	113	3.6	9.0	54	3781	1159	16.8
10	ICPL 86007	63	111	87	3.9	10.3	59	2932	1147	18.8
7	ICPL 85015	66	113	103	4.1	8.6	58	4476	1138	14.3
17	ICPL 85014	60	114	108	3.6	7.4	69	3858	1130	15.4
5	ICPL 84032	71	120	122	4.2	9.2	71	4784	1092	13.3
16	ICPL 87109	78	123	133	4.5	12.6	41	5864	1036	8.4
8	ICPL 85027	72	137	122	4.9	12.6	37	4892	896	10.7
18	ICPH 9	67	114	112	3.6	9.1	47	5247	867	10.4
	SE±	0.9	2.0	3.5	0.20	0.35	5.5	627.8	186.3	1.95
	MEAN	69.4	125.5	114.4	4.00	10.80	57.6	4845.7	1400.1	14.96
	CV(%)	2.2	2.8	5.3	8.72	5.59	16.4	22.4	23.0	22.62

Date of planting: 30-7-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 26. Grain yield (kg/ha) entries in EPIT 88 HDT trial during 1988.

Sl. No.	Entries	Hisar			Patancheru	Gwalior	SriGanga-Nagar	Coimbatore	Pudukkottai
		Early	Normal	Late					
1	UPAS 120	1314 (10)	1846 (9)	1488 (3)	1732 (11)	2006 (6)	1736 (6)	592 (9)	355 (18)
2	ICPL 84045	1129 (13)	1982 (7)	1366 (8)	2167 (5)	1958 (7)	1718 (7)	694 (5)	625 (11)
3	ICPL 84052	1967 (6)	1940 (8)	1428 (4)	2252 (2)	2583 (3)	1944 (2)	680 (7)	741 (6)
4	ICPL 85045	1399 (9)	2463 (1)	1343 (10)	1931 (7)	2208 (4)	1597 (10)	756 (2)	733 (7)
5	ICPL 85046	2261 (5)	2293 (3)	1492 (2)	1917 (8)	1304 (17)	1631 (9)	563 (12)	710 (8)
6	ICPL 85049	2752 (1)	1540 (13)	1423 (5)	1725 (12)	1794 (8)	1441 (13)	684 (6)	988 (2)
7	ICPL 85050	1159 (11)	2091 (5)	622 (18)	1383 (16)	1584 (9)	1580 (11)	482 (15)	509 (13)
8	ICPL 85055	1748 (7)	1515 (14)	792 (16)	1798 (9)	1576 (11)	1771 (5)	446 (16)	394 (15)
9	ICPL 85058	1140 (12)	1125 (15)	1391 (7)	1527 (14)	1577 (10)	1181 (16)	431 (17)	1373 (1)
10	ICPL 86015	1615 (8)	1644 (12)	1270 (12)	2706 (1)	2140 (5)	1910 (3)	512 (14)	748 (5)
11	ICPL 86018	1092 (14)	986 (16)	1142 (13)	1750 (10)	922 (18)	1701 (8)	603 (8)	378 (17)
12	ICPL 86020	598 (16)	559 (17)	977 (15)	1283 (18)	1370 (15)	1493 (12)	541 (13)	826 (3)
13	ICPL 86023	2295 (4)	1829 (10)	1355 (9)	2242 (4)	2692 (2)	2048 (1)	585 (11)	540 (12)
14	ICPL 86029	2727 (2)	1695 (11)	1276 (11)	1724 (13)	1465 (13)	1285 (15)	746 (3)	710 (9)
15	ICPL 87111	974 (15)	428 (18)	633 (17)	1375 (17)	1355 (16)	1354 (14)	340 (18)	393 (16)
16	ICPL 87115	2360 (3)	2074 (6)	2057 (1)	2245 (3)	2759 (1)	1892 (4)	592 (10)	432 (14)
17	ICPH 11	-	2402 (2)	1400 (6)	1968 (6)	1392 (14)	556 (18)	702 (4)	671 (10)
18	ICPH 15	-	2125 (4)	1004 (14)	1400 (15)	1567 (12)	729 (17)	786 (1)	767 (4)
	SE ±	235.1	243.6	218.4	258.4	296.2	72.3	106.7	85.6
	Mean	1658.1	1696.5	1247.7	1840.2	1791.7	1531.4	596.4	661.9
	CV%	24.6	24.9	30.3	24.3	28.6	8.2	31.0	22.4

* ( ) Rank at each location.

Dohad	Pusa	Dehradun	Delhi	Kanpur	Mean
3133 (10)	1345 (4)	1929 (11)	381 (17)	963 (5)	1448 (11)
2824 (11)	1046 (9)	2361 (7)	333 (18)	867 (11)	1467 (9)
2747 (12)	1682 (2)	1698 (14)	587 (11)	967 (4)	1632 (3)
3827 (3)	934 (11)	2408 (5)	428 (14)	757 (12)	1599 (5)
3210 (8)	1532 (3)	2516 (4)	524 (12)	985 (3)	1611 (4)
3241 (6)	1233 (6)	1543 (16)	1380 (4)	962 (6)	1593 (6)
3114 (14)	745 (13)	1976 (10)	389 (16)	737 (13)	1182 (14)
2422 (13)	1084 (8)	2161 (8)	1539 (2)	620 (16)	1374 (13)
1358 (16)	673 (14)	2392 (6)	428 (15)	567 (17)	1045 (16)
3241 (7)	785 (12)	2871 (2)	714 (10)	903 (9)	1421 (12)
1111 (18)	112 (18)	1513 (17)	1571 (1)	437 (18)	1024 (17)
3154 (9)	523 (16)	1713 (13)	476 (13)	960 (7)	1113 (15)
1679 (15)	523 (15)	1682 (15)	793 (9)	622 (15)	1453 (10)
3588 (5)	1233 (7)	2547 (3)	1460 (3)	880 (10)	1641 (2)
1342 (17)	149 (17)	1512 (18)	1016 (7)	640 (14)	885 (18)
3842 (2)	1046 (10)	2917 (1)	1269 (5)	1072 (2)	1889 (1)
3612 (4)	1271 (5)	1729 (12)	1032 (6)	945 (8)	1473 (8)
4197 (1)	2317 (1)	2053 (9)	968 (8)	1117 (1)	1587 (7)
423.8	131.6	51.3	57.3	110.2	
2811.8	1013	2084	849	833	
26.1	22.5	4.3	11.7	22.9	

Table 27: Performance of entries in EPIT 88-NDT (88P06) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
10	ICPL 86015	69	122	172	6	8.9	85	2706	489
3	ICPL 84052	70	122	165	6	8.0	82	2252	385
16	ICPL 87115	69	121	178	5	8.0	80	2245	533
13	ICPL 86023	68	121	150	6	13.4	86	2242	471
2	ICPL 84045	73	122	170	5	9.5	90	2167	520
17	ICPH 11	79	137	195	5	7.2	76	1968	745
4	ICPL 85045	71	123	162	6	9.6	77	1931	414
5	ICPL 85046	69	122	182	5	7.9	79	1917	438
8	ICPL 85055	62	113	157	5	9.3	85	1798	619
11	ICPL 86018	63	109	117	5	8.5	69	1750	194
1	UPAS 120(Check)	64	117	163	5	7.2	90	1732	642
6	ICPL 85049	76	124	172	6	10.9	67	1725	418
14	ICPL 86029	75	124	180	7	9.6	78	1724	280
9	ICPL 85058	72	118	143	7	12.3	79	1527	336
18	ICPH 15	87	145	195	5	7.9	76	1400	1244
7	ICPL 85050	77	125	170	6	10.0	77	1383	497
15	ICPL 87111	57	108	118	5	8.0	89	1375	147
12	ICPL 86020	61	118	145	5	10.1	87	1283	522
	SE±	0.9	1.1	6.4	0.2	0.23	5.0	258.4	119.2
	MEAN	70.2	121.8	163.0	5.5	9.24	80.6	1840.2	494.1
	CV(%)	2.1	1.5	6.8	7.3	4.35	10.8	24.3	41.8

Date of planting : 22-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 28: Performance of entries in EPIT88-MDT (K88GT04) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	ICPL 87115	89	139	205	4	7.3	63	2759
13	ICPL 86023	81	129	172	4	13.2	58	2692
3	ICPL 84052	82	129	197	3	7.9	55	2583
4	ICPL 85045	80	133	187	4	8.6	51	2208
10	ICPL 86015	82	130	195	3	8.5	65	2140
1	UPAS 120(Check)	80	122	197	3	7.3	62	2006
2	ICPL 84045	82	129	183	4	9.4	49	1958
6	ICPL 85049	89	139	210	4	9.9	33	1794
7	ICPL 85050	90	142	193	3	8.9	52	1584
9	ICPL 85058	86	135	182	4	10.8	44	1577
8	ICPL 85055	79	127	173	4	8.9	41	1576
18	ICPH 15	103	148	227	4	6.9	60	1567
14	ICPL 86029	89	144	200	4	8.8	57	1465
17	ICPH 11	87	141	227	3	6.4	53	1392
12	ICPL 86020	69	119	188	4	9.6	57	1370
15	ICPL 87111	65	115	153	3	7.5	57	1355
5	ICPL 85046	83	133	178	4	7.3	54	1304
11	ICPL 86018	66	110	158	3	7.9	52	922
	SE±	1.0	2.3	6.2	0.2	0.27	4.6	296.2
	MEAN	82.4	131.3	190.3	3.5	8.62	53.5	1791.7
	CV(%)	2.1	3.0	5.6	9.6	5.43	14.9	28.6

Date of planting : 1 July, 1988.

Table 29: Performance of entries in EPIT88NDT (Early sowing) (88ET10) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
6	ICPL 85049	120	161	273	4.7	12.5	37	11446	2752	15.2
14	ICPL 86029	113	158	247	4.1	11.0	37	17556	2727	11.7
16	ICPL 87115	120	159	280	3.8	9.9	49	12529	2360	13.7
13	ICPL 86023	117	160	219	3.8	17.7	46	10364	2295	15.0
5	ICPL 85046	114	157	272	3.8	10.4	50	11988	2261	12.7
3	ICPL 84052	118	160	224	4.2	10.8	41	8662	1967	14.9
8	ICPL 85055	109	143	247	3.8	11.7	41	8198	1748	12.5
10	ICPL 86015	114	157	228	3.7	10.9	32	6342	1615	15.2
4	ICPL 85045	109	147	239	3.8	10.5	35	8353	1389	10.2
1	UPAS 120(Check)	119	167	244	3.5	9.8	50	7425	1314	9.8
7	ICPL 85050	120	170	231	4.2	12.3	24	6883	1159	13.2
9	ICPL 85058	114	157	209	4.5	13.2	37	6651	1140	11.0
2	ICPL 84045	118	157	215	3.8	12.0	26	5568	1129	12.2
11	ICPL 86018	97	132	204	3.5	9.7	41	6203	1092	11.2
15	ICPL 87111	92	128	202	3.7	9.5	40	4037	974	13.3
12	ICPL 86020	96	132	227	3.5	10.6	48	6798	598	6.3
	SE±	1.3	2.2	11.7	0.20	0.32	6.4	1851.7	235.1	1.69
	MEAN	111.8	152.7	235.2	3.90	11.41	39.7	8687.7	1658.1	12.39
	CV(%)	2.0	2.5	8.6	8.68	4.86	28.1	36.9	24.6	23.56

Date of planting: 8-5-1988.
Net plot size: 4.32 sqm.
Spacing: 60 x 20 cms.

Table 30: Performance of entries in EPIT88NDT (Normal sowing) (88NT11) grown at ICRISAT Center, Misar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield kg/ha	Grain Yield (kg/ha)	Harvest index %
4	ICPL 85045	82	140	251	3.7	7.3	52	[illegible]787	2463	13.7
17	ICPH 11	91	138	288	3.8	6.0	56	13997	2432	10.8
5	ICPL 85046	75	118	223	3.1	5.3	47	10478	2293	13.9
18	ICPH 15	98	145	281	3.9	7.6	72	9375	2125	14.7
7	ICPL 85050	87	134	257	3.8	8.9	48	12438	2091	10.7
16	ICPL 87115	85	134	261	3.6	7.2	49	10972	2074	12.5
2	ICPL 84045	85	136	251	3.5	7.9	55	10741	1982	11.6
3	ICPL 84052	75	116	249	3.4	6.7	43	10463	1940	11.5
1	UPAS 120(Check)	75	117	234	3.8	6.2	45	9722	1846	12.2
13	ICPL 86023	77	128	246	3.8	10.9	46	8688	1829	13.3
14	ICPL 86029	89	144	269	4.1	7.8	46	12269	1695	8.9
10	ICPL 86015	83	134	255	3.9	7.5	49	9614	1644	10.9
6	ICPL 85049	90	136	257	4.0	9.2	37	11204	1540	9.0
8	ICPL 85055	72	114	233	3.5	7.3	41	8410	1515	11.9
9	ICPL 85058	85	139	240	4.1	9.8	47	9275	1125	8.9
11	ICPL 86018	65	102	180	3.2	7.3	62	5895	986	11.2
12	ICPL 86020	69	104	244	3.4	8.0	43	7979	559	5.2
15	ICPL 87111	65	98	170	3.2	6.5	58	5602	428	6.6
	SE±	0.9	1.3	10.6	0.13	0.36	3.5	821.1	243.6	1.20
	MEAN	80.4	126.5	243.9	3.66	7.64	49.2	9878.2	1696.5	10.96
	CV(%)	2.0	1.8	7.6	5.98	8.18	12.4	14.4	24.9	18.96

Date of planting:2-7-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 31: Performance of entries in EPIT88HDT (Late sowing) (88HT12) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
16	ICPL 87119	76	137	158	3.9	7.3	71	5816	2057	24.2
5	ICPL 85046	74	134	150	3.6	6.9	68	3472	1492	22.2
1	UPAS 120(Check)	67	131	130	3.7	7.5	66	3472	1488	21.8
3	ICPL 84052	75	121	151	3.3	6.3	76	4090	1428	18.7
6	ICPL 85049	80	137	158	4.2	10.2	48	3858	1423	18.9
17	ICPH 11	79	142	169	3.9	6.8	48	6019	1400	15.5
9	ICPL 85058	75	143	150	4.0	11.8	61	4736	1391	21.7
2	ICPL 84045	77	137	166	3.7	9.0	69	17099	1366	15.3
13	ICPL 86023	69	128	112	4.1	9.3	66	2778	1355	22.8
4	ICPL 85045	73	132	133	3.2	8.5	67	4244	1343	16.2
14	ICPL 86029	73	138	147	3.9	8.2	59	4475	1276	15.2
10	ICPL 86015	75	133	139	3.5	8.7	68	3781	1270	17.4
11	ICPL 86018	68	112	121	3.4	7.4	64	2978	1142	23.0
18	ICPH 15	77	133	163	4.1	7.4	63	4892	1004	11.1
12	ICPL 86020	65	115	138	3.5	10.1	60	3657	977	14.3
8	ICPL 85055	69	117	135	3.3	7.9	58	2392	792	17.0
15	ICPL 87111	63	108	112	3.6	7.4	64	1799	633	18.4
7	ICPL 85050	73	128	139	3.5	8.5	48	3519	622	10.6
	SE±	1.1	2.3	8.9	0.28	0.24	3.9	2940.4	218.4	2.93
	MEAN	72.6	129.2	142.7	3.69	8.29	61.9	4570.5	1247.7	17.97
	CV(%)	2.6	3.1	9.7	13.19	5.01	11.0	111.4	30.3	28.29

Date of planting: 30-7-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 32: Performance of entries in EXPPMLT (88P07) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
2	ICPL 151(Check)	67	113	103	7	11.0	89	2539	1010
3	ICPL 87094	65	116	92	6	8.4	86	2113	564
11	ICPL 88009	64	112	98	6	8.9	86	1945	1098
4	ICPL 88001	62	117	87	7	9.8	86	1945	441
1	ICPL 4(Check)	65	108	97	5	5.8	98	1833	558
15	ICPL 88014	49	98	72	6	8.9	78	1774	484
5	ICPL 88002	54	106	83	6	9.5	75	1633	447
8	ICPL 88005	54	109	80	7	11.2	94	1588	741
16	ICPL 88015	53	106	73	7	9.2	74	1449	251
10	ICPL 88007	53	102	70	7	8.5	97	1412	354
18	ICPL 88017	52	104	72	6	9.9	77	1361	672
14	ICPL 88013	53	99	77	6	8.9	64	1290	466
12	ICPL 88010	50	96	77	6	8.0	54	1270	273
6	ICPL 88003	50	100	72	6	9.4	80	1269	435
17	ICPL 88016	51	97	73	6	8.2	67	1207	348
13	ICPL 88011	51	98	73	6	8.8	66	1182	201
7	ICPL 88004	55	98	72	6	7.8	74	1151	184
9	ICPL 88006	52	97	67	6	9.1	77	981	312
	SE±	0.7	1.6	3.3	0.2	0.18	4.3	139.5	70.7
	MEAN	55.5	104.2	79.8	6.3	8.96	79.0	1552.4	490.9
	CV(%)	2.1	2.6	7.2	6.1	3.57	9.5	15.6	24.9

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 33: Performance of entries in EXPPMLT88-DT (E88GT02) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Entry Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
3	ICPL 87094	67	131	149	4	7.3	59	2854
2	ICPL 151(Check)	66	125	158	4	10.8	57	2398
4	ICPL 88001	61	108	144	3	10.1	60	2076
1	ICPL 4(Check)	66	110	156	3	5.5	57	1867
5	ICPL 88002	62	117	126	3	8.3	58	1855
11	ICPL 88009	61	107	145	3	8.2	61	1822
10	ICPL 88007	60	104	118	3	8.3	64	1775
18	ICPL 88017	62	112	125	3	9.1	52	1737
16	ICPL 88015	67	126	142	4	9.3	41	1734
17	ICPL 88016	60	110	127	3	7.8	54	1611
15	ICPL 88014	58	93	117	3	8.8	60	1576
14	ICPL 88013	61	108	126	3	9.7	52	1512
6	ICPL 88003	59	90	127	3	9.4	60	1263
9	ICPL 88006	57	87	118	3	9.2	61	1243
13	ICPL 88011	57	88	127	3	8.4	54	1233
8	ICPL 88005	57	96	131	3	10.7	62	1219
12	ICPL 88010	59	91	127	3	8.2	47	1155
7	ICPL 88004	55	84	116	3	7.6	73	1057
	SE+	0.6	6.2	3.6	0.2	0.35	3.3	265.1
	MEAN	60.8	104.3	132.2	3.3	8.71	57.3	1665.5
	CV(%)	1.7	10.3	4.8	10.1	7.04	10.1	27.6

Date of planting : 1 July, 1988.

Table 34: Performance of entries in EXPPMLT88 (Early sowing) (88ET13) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
3	ICPL 87094	95	126	233	3.4	9.4	44	13117	1265	6.3
11	ICPL 88009	95	133	189	3.4	8.5	47	8391	1125	9.0
16	ICPL 88015	103	136	215	3.5	9.3	33	7884	1065	9.5
14	ICPL 88013	95	128	192	3.9	9.5	42	5824	936	10.3
1	ICPL 4(Check)	94	123	219	3.8	5.8	44	7332	915	8.8
9	ICPL 88006	82	118	157	3.8	8.8	48	10773	903	15.1
10	ICPL 88007	81	117	202	3.7	9.4	50	8507	892	5.6
6	ICPL 88003	81	122	184	3.4	10.8	44	5866	815	10.7
2	ICPL 151(Check)	101	138	232	3.5	9.9	49	8902	786	5.8
15	ICPL 88014	85	120	167	3.6	8.5	46	5568	756	8.6
4	ICPL 88001	91	125	210	3.1	9.7	43	8747	662	3.8
18	ICPL 88017	91	127	179	3.6	10.8	39	7046	651	6.3
7	ICPL 88004	71	105	147	3.6	8.2	50	3929	637	11.0
13	ICPL 88011	70	105	160	3.3	8.8	40	5166	575	7.8
5	ICPL 88002	86	125	198	3.3	9.1	38	7440	515	4.9
8	ICPL 88005	82	116	182	3.5	10.1	45	6002	469	5.6
12	ICPL 88010	83	120	187	3.6	8.9	31	5971	380	4.8
17	ICPL 88016	84	129	189	3.2	8.5	28	5948	371	4.9
	SE+	0.5	0.9	9.3	0.18	0.19	4.0	1690.0	96.4	0.97
	MEAN	87.3	123.0	191.2	3.51	9.01	41.8	7267.4	762.1	7.73
	CV(%)	1.1	1.3	8.4	8.91	3.74	16.7	40.3	21.9	21.84

Date of planting: 8-5-1988.
Net plot size: 4.32 sqm.
Spacing: 60 x 20 cms.

Table 35: Performance of entries in EXPPMLT88 (Normal sowing) (88ET14) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
4	ICPL 88001	69	110	152	3.7	9.0	59	5787	2372	20.6
3	ICPL 87094	72	111	162	3.2	7.3	51	5463	1994	18.8
10	ICPL 88007	68	111	148	3.3	7.8	59	4599	1864	20.1
2	ICPL 151(Check)	72	115	174	3.6	7.8	64	5864	1336	14.6
17	ICPL 88016	71	109	144	3.7	7.9	55	5016	1286	15.6
16	ICPL 88015	73	111	130	3.7	8.5	46	4614	1157	15.0
18	ICPL 88017	70	110	136	3.8	8.0	47	4475	1029	13.2
15	ICPL 88014	63	104	113	3.9	7.4	56	3951	980	15.6
11	ICPL 88009	67	108	152	3.8	8.9	49	4676	956	13.3
1	ICPL 4(Check)	68	112	155	3.3	6.9	52	5432	911	12.2
14	ICPL 88013	65	107	124	3.8	9.0	48	4136	904	16.5
6	ICPL 88003	66	106	119	3.2	9.3	48	3796	864	16.1
7	ICPL 88004	51	97	108	3.6	7.1	58	2994	850	16.7
5	ICPL 88002	65	113	139	3.2	7.7	52	5386	837	10.7
13	ICPL 88011	54	98	119	3.8	7.9	52	3457	821	14.2
9	ICPL 88006	59	100	115	3.5	6.5	62	3580	808	13.5
8	ICPL 88005	60	102	125	3.9	8.6	50	4398	778	11.4
12	ICPL 88010	59	98	124	3.3	7.4	41	4213	571	9.4
	SE±	0.8	1.1	5.3	0.24	0.28	4.4	389.6	114.1	1.29
	MEAN	65.0	106.8	135.5	3.58	7.83	52.6	4546.5	1128.3	14.64
	CV(%)	2.3	1.8	6.8	11.43	6.20	14.4	14.8	17.5	15.30

Date of planting: 28-6-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 36: Performance of entries in EXPPMLT88 (Late sowing) (88MT15) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Entry Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
8	ICPL 88005	60	108	79	3.9	10.6	63	2732	1375	28.5
2	ICPL 151(Check)	67	117	110	3.8	11.1	78	4383	1358	16.5
11	ICPL 88009	62	108	97	3.2	7.8	75	2901	1281	21.2
4	ICPL 88001	60	109	87	3.2	9.5	63	2485	1230	19.9
13	ICPL 88011	53	101	82	3.2	9.0	58	1744	1141	27.6
16	ICPL 88015	65	110	86	3.7	7.7	52	1929	1098	22.6
1	ICPL 4(Check)	63	108	115	3.3	6.0	74	3256	1060	15.7
3	ICPL 87094	65	117	93	3.4	7.8	73	2688	1016	13.7
15	ICPL 88014	60	105	78	3.7	6.7	62	1759	986	21.1
12	ICPL 88010	60	106	85	3.7	8.0	44	1960	962	20.2
9	ICPL 88006	54	100	81	3.3	8.6	70	1620	946	22.8
5	ICPL 88002	62	108	83	3.1	8.0	71	1883	790	13.0
14	ICPL 88013	60	105	82	3.1	8.6	65	1621	776	20.8
10	ICPL 88007	61	106	73	3.1	8.5	78	1759	770	17.0
18	ICPL 88017	61	109	77	3.7	9.1	58	1543	743	17.5
17	ICPL 88016	62	112	80	3.3	7.5	66	1836	710	14.4
6	ICPL 88003	62	109	80	3.7	8.4	49	1342	418	15.0
7	ICPL 88004	53	97	69	3.1	7.6	56	1049	356	16.6
	SE+	0.9	1.1	4.5	0.25	0.38	5.2	256.1	219.5	2.38
	MEAN	60.5	107.5	85.4	3.41	8.43	64.2	2133.9	945.3	18.91
	CV(%)	2.7	1.8	9.2	12.95	7.81	14.8	20.8	40.2	22.29

Date of planting: 30-7-1988.
Net plot size: 2.16 sqm.
Spacing: 30 x 10 cms.

Table 37: Performance of entries in EPPMLT 88-DT (88P08) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
7	ICPL 87104	69	122	117	7	12.6	80	3131	857
17	ICPL 88027	73	137	117	7	10.8	77	2918	723
6	ICPL 87101	70	134	137	7	12.9	75	2880	651
13	ICPL 88023	71	134	118	7	14.1	77	2661	796
2	ICPL 151(Check)	69	116	117	7	11.1	81	2443	649
8	ICPL 87106	75	136	130	8	11.2	76	2393	745
12	ICPL 88021	68	124	97	7	12.3	85	2354	670
1	ICPL 87(Check)	73	136	108	7	10.9	82	2318	976
15	ICPL 88025	66	120	100	7	14.3	93	2272	690
16	ICPL 88026	73	123	122	9	10.8	81	2224	358
5	ICPL 86013	73	127	125	7	10.2	79	2113	709
3	ICPL 86008	70	120	123	9	11.2	80	2085	223
9	ICPL 87107	71	134	130	8	11.2	77	1992	505
18	ICPL 88028	75	139	125	8	12.3	80	1906	646
11	ICPL 88020	73	137	118	7	10.8	78	1881	867
10	ICPL 88018	72	128	120	8	11.0	81	1818	523
14	ICPL 88024	72	135	143	8	10.8	80	1741	764
4	ICPL 86011	74	137	158	8	11.9	79	1738	676
	SE±	0.9	1.5	3.7	0.2	0.20	3.4	279.3	124.8
	MEAN	71.5	130.1	122.5	7.6	11.69	80.1	2270.5	668.3
	CV(%)	2.2	2.0	5.3	4.3	2.97	7.4	21.3	32.3

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 38: Performance of entries in EPPMLT88-DT (KSSGT01) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	ICPL 88026	85	136	190	4	8.8	54	2997
18	ICPL 88028	81	136	182	3	9.6	33	2826
17	ICPL 88027	83	134	178	4	8.1	41	2787
10	ICPL 88018	82	137	185	4	9.2	38	2616
9	ICPL 87107	89	136	188	4	8.6	50	2599
5	ICPL 86013	86	138	192	4	8.2	51	2528
7	ICPL 87104	75	131	168	3	10.6	47	2478
8	ICPL 87106	88	140	187	3	8.7	43	2466
6	ICPL 87101	79	136	183	4	10.3	45	2365
13	ICPL 88023	84	142	173	3	11.0	48	2329
3	ICPL 86008	84	134	175	4	10.1	35	2243
14	ICPL 88024	86	140	180	4	8.8	54	2235
2	ICPL 151(Check)	67	130	165	3	9.5	48	2200
12	ICPL 88021	69	135	142	3	9.9	51	2028
1	ICPL 87(Check)	78	137	158	4	8.5	57	1998
11	ICPL 88020	88	142	177	3	9.4	55	1921
15	ICPL 88025	65	139	147	3	12.6	54	1744
4	ICPL 86011	93	138	203	4	10.2	62	1393
	SE+	2.4	2.2	3.7	0.2	0.33	4.4	347.9
	MEAN	81.2	136.7	176.3	3.6	9.56	48.2	2319.2
	CV(%)	5.2	2.7	3.6	10.9	5.97	15.8	26.0

Date of planting : 1 July, 1988.

Table 39: Performance of entries in EPPHLT88DT (Early sowing) (88HT16) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
11	ICPL 88020	100	131	211	4.2	12.4	34	12181	2115	12.1
16	ICPL 88026	95	127	239	4.6	12.6	28	8507	1819	12.3
13	ICPL 88023	95	134	201	3.7	14.3	37	7734	1517	12.5
5	ICPL 86013	103	137	198	3.8	11.2	26	9436	1471	10.5
7	ICPL 87104	100	133	200	4.1	13.5	31	9590	1428	10.5
9	ICPL 87107	106	138	222	4.7	12.0	35	10828	1351	8.1
17	ICPL 88027	106	137	203	4.1	12.3	18	7780	1289	10.5
6	ICPL 87101	103	133	193	3.4	14.2	14	6303	1176	12.1
12	ICPL 88021	99	131	161	4.3	13.2	32	7193	1139	9.8
10	ICPL 88018	97	130	195	4.5	12.3	21	7734	1086	10.7
2	ICPL 151 (Check)	99	133	204	4.0	12.7	20	5429	1035	11.9
3	ICPL 86008	90	128	199	5.2	13.3	18	7347	1032	9.0
14	ICPL 88024	104	137	225	4.5	11.9	27	13612	1013	5.7
1	ICPL 87 (Check)	100	134	188	4.0	13.1	16	6953	947	8.3
4	ICPL 86011	104	137	262	5.1	13.5	37	17169	863	3.7
18	ICPL 88028	100	128	222	4.5	14.1	24	8353	849	7.7
8	ICPL 87106	107	135	209	4.0	12.8	15	9227	791	6.6
15	ICPL 88025	90	122	168	3.3	13.7	35	5329	446	6.1
	SE+	1.6	2.0	10.2	0.20	0.25	6.0	1827.6	275.6	1.28
	MEAN	100.0	132.4	205.6	4.23	12.96	25.9	8928.1	1187.0	9.33
	CV(%)	2.7	2.6	8.6	8.11	3.37	40.0	35.5	40.2	23.82

Date of planting : 8-5-1988.
Net plot size : 4.32 sqm.
Spacing : 60 x 20 cms.

Table 40: Performance of entries in EPPMLT88DT (Normal sowing) (88HT17) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
11	ICPL 88020	71	115	179	4.2	10.9	52	12145	3090	14.6
16	ICPL 88026	74	115	174	4.8	12.0	55	9151	2816	18.0
17	ICPL 88027	74	132	183	3.9	11.5	47	10540	2686	15.1
5	ICPL 86013	72	115	193	3.8	9.9	48	9522	2441	15.3
9	ICPL 87107	76	118	187	5.2	10.4	53	10447	2201	12.3
6	ICPL 87101	72	116	194	4.2	12.7	41	11003	2167	12.1
10	ICPL 88018	72	115	193	4.1	11.4	58	10463	2153	13.4
8	ICPL 87106	77	129	201	4.5	11.4	44	12268	1911	10.1
13	ICPL 88023	73	124	182	4.0	14.0	49	7593	1881	13.4
3	ICPL 86088	74	127	184	4.3	11.7	41	8089	1733	12.7
7	ICPL 87104	71	115	181	4.4	12.0	54	8009	1687	13.3
1	ICPL 87 (Check)	74	127	186	4.2	12.2	58	11574	1611	9.3
2	ICPL 151 (Check)	71	114	174	3.8	11.5	52	7608	1599	14.9
14	ICPL 88024	74	118	204	5.3	11.4	53	14213	1577	7.7
18	ICPL 88028	74	128	182	4.5	13.1	38	8117	1469	11.8
4	ICPL 86011	81	136	224	4.5	12.4	51	15679	1446	6.9
12	ICPL 88021	71	111	154	4.9	11.2	53	6543	1236	11.7
15	ICPL 88025	66	109	159	4.3	13.9	60	8657	866	7.5
	SE±	0.6	1.0	6.3	0.21	0.22	3.1	841.1	227.1	1.10
	MEAN	73.3	120.2	185.2	4.38	11.87	50.4	10085.6	1920.6	12.23
	CV(%)	1.5	1.5	5.9	8.12	3.35	10.5	14.4	20.5	15.54

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 41: Performance of entries in EPPMLT88DT (Late sowing) (88ET18) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
13	ICPL 88023	71	126	106	3.3	11.5	59	4167	1417	22.5
11	ICPL 88020	72	135	91	3.8	9.7	64	3784	997	14.4
16	ICPL 88026	74	132	115	4.4	9.4	71	4012	834	16.4
2	ICPL 151 (Check)	68	118	102	3.9	9.4	66	3241	748	14.5
15	ICPL 88025	65	127	97	3.6	11.0	46	2932	708	14.8
10	ICPL 88018	75	135	112	4.4	9.5	75	3781	690	11.0
9	ICPL 87107	73	133	117	4.5	10.2	64	4938	574	7.6
12	ICPL 88021	69	128	83	3.7	6.7	61	2515	556	13.2
6	ICPL 87101	71	127	107	3.2	9.3	55	3241	540	9.3
4	ICPL 86011	74	135	125	4.5	9.7	67	5556	511	7.0
17	ICPL 88027	71	137	93	3.3	10.0	42	2932	505	7.5
8	ICPL 87106	77	134	102	4.3	10.2	60	2469	474	7.7
18	ICPL 88028	75	132	114	3.9	8.3	34	3626	469	7.7
1	ICPL 87 (Check)	75	136	78	3.9	10.4	47	2392	457	8.9
7	ICPL 87104	71	126	93	3.4	7.8	50	2160	435	10.7
14	ICPL 88024	74	123	110	3.8	7.9	54	2778	377	7.5
3	ICPL 86008	73	129	100	3.8	9.8	45	2778	319	8.1
5	ICPL 86013	73	126	89	3.6	8.0	56	1929	242	8.3
	SE±	1.2	3.2	5.0	0.30	0.27	7.3	608.9	198.0	2.87
	MEAN	72.2	129.8	102.0	3.85	9.38	56.5	3286.1	603.0	10.95
	CV(%)	2.9	4.3	8.5	13.63	5.02	22.5	32.1	56.9	45.38

Date of planting : 30-7-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 42: Performance of entries in EPPMLT88-NDT (88P09) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)	Ratoon yield (kg/ha)
13	ICPL 88034	68	120	160	7	8.9	81	2673	470
5	ICPL 87113	65	117	157	6	12.1	89	2489	856
6	ICPL 87114	64	116	153	7	9.4	82	2202	533
9	ICPL 88029	58	111	150	6	9.5	96	2099	543
4	ICPL 87112	66	114	135	6	8.8	91	2085	454
2	ICPL 86026	69	123	163	7	9.9	85	2002	682
7	ICPL 87116	68	119	167	7	8.8	86	1977	534
15	ICPL 88036	71	124	170	6	9.0	81	1921	273
19	TAT 10	68	122	178	6	9.3	80	1879	573
12	ICPL 88032	62	116	135	6	8.9	91	1804	551
18	ICPL 88039	56	110	130	6	10.1	89	1795	365
11	ICPL 88031	58	118	140	7	9.4	78	1790	568
16	ICPL 88037	76	127	162	6	11.2	68	1736	804
8	ICPL 87118	70	120	132	7	9.5	78	1701	377
20	UPAS 120(Check)	65	120	150	6	7.2	101	1693	630
17	ICPL 88038	74	124	170	6	10.4	80	1667	538
10	ICPL 88030	61	112	120	6	8.3	95	1602	418
3	ICPL 86030	72	124	193	7	10.7	87	1543	732
1	MANAK (Check)	59	111	153	6	7.0	97	1513	439
14	ICPL 88035	71	122	152	6	10.6	78	1227	169
	SE-	1.0	0.9	6.8	0.3	0.21	6.2	208.5	89.9
	MEAN	66.1	118.6	153.5	6.3	9.45	85.7	1869.9	525.5
	CV(%)	2.5	1.3	7.6	7.6	3.76	12.4	19.3	29.6

Date of planting : 22-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 43: Performance of entries in EPPMLT88-MDT (E88GT06) grown at ICRISAT Center, Gwalior, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
13	ICPL 88034	84	134	202	4	8.8	47	2642
20	UPAS 120(Check)	80	125	183	3	7.1	49	2417
5	ICPL 87113	81	131	198	4	11.0	58	2411
2	ICPL 86026	83	135	192	4	9.7	53	2370
17	ICPL 88038	88	134	193	4	9.1	51	2367
15	ICPL 88036	86	138	213	3	7.7	46	2297
6	ICPL 87114	82	121	183	3	9.9	44	2238
1	Manak(Check)	78	125	175	4	8.7	65	2233
3	ICPL 86030	90	141	225	4	10.3	50	2209
19	TAT 10	83	134	210	3	9.2	51	2208
14	ICPL 88035	91	145	215	4	9.7	56	2173
7	ICPL 87116	83	133	193	3	7.9	48	2121
12	ICPL 88032	79	128	173	4	9.0	52	2072
16	ICPL 88037	89	142	215	4	10.5	39	1937
18	ICPL 88039	71	118	168	3	10.4	63	1883
8	ICPL 87118	88	136	180	4	9.3	54	1826
4	ICPL 87112	72	119	173	3	8.4	55	1819
11	ICPL 88031	69	130	187	3	8.9	42	1646
9	ICPL 88029	70	110	170	3	9.1	56	1171
10	ICPL 88030	66	117	152	3	7.3	59	968
	SE+	1.1	3.1	5.3	0.2	0.47	4.5	223.9
	MEAN	80.6	129.8	190.1	3.5	9.09	52.1	2050.4
	CV(%)	2.3	4.1	4.8	10.1	8.90	14.8	18.9

Date of planting : 1 July, 1988.

Table 44: Performance of entries in EPPMLT88MDT (Early sowing) (88MT19) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest Index %
15	ICPL 88036	118	169	288	4.3	10.9	47	16087	3185	12.9
6	ICPL 87114	114	157	265	3.7	11.6	45	16396	2700	13.6
5	ICPL 87113	114	161	260	4.1	12.8	40	10828	2114	13.0
1	MANAK (Check)	116	160	264	3.6	8.0	51	14231	2075	10.4
7	ICPL 87116	115	157	246	3.4	7.7	33	12606	1882	9.0
13	ICPL 88034	115	157	257	4.0	9.2	43	7734	1585	12.4
12	ICPL 88032	108	150	233	3.7	10.5	50	12142	1555	9.4
4	ICPL 87112	111	143	216	4.0	9.7	49	8484	1465	11.0
3	ICPL 86030	119	160	273	4.0	12.5	27	8353	1454	10.0
14	ICPL 88035	119	158	256	4.9	12.1	36	11137	1376	9.7
10	ICPL 88030	91	128	200	3.8	8.9	48	6404	1247	12.6
2	ICPL 86026	118	165	258	4.0	11.6	45	11910	1117	7.7
17	ICPL 88038	118	160	249	3.6	11.8	37	10835	1065	10.3
11	ICPL 88031	115	150	263	3.1	10.3	35	10255	1054	7.6
8	ICPL 87118	118	156	228	3.9	10.7	37	7811	959	8.3
16	ICPL 88037	119	161	259	4.1	11.9	28	8415	852	7.8
18	ICPL 88039	112	146	214	4.1	10.5	28	5863	824	10.1
9	ICPL 88029	95	128	215	3.7	8.4	38	5545	553	7.4
	SE±	1.2	2.4	14.5	0.19	0.54	10.3	2278.5	340.6	1.60
	MEAN	113.0	153.7	246.8	3.88	10.51	39.8	10279.8	1503.5	10.14
	CV(%)	1.8	2.7	10.1	8.53	8.88	44.8	38.4	39.2	27.42

Date of planting 6-5-1988.
Net plot size : 4.32 sqm.
Spacing : 60 x 20 cms.

Table 45: Performance of entries in EPPMLT88HDT (Normal sowing) (88HT20) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest Index %
3	ICPL 86030	89	147	265	4.1	14.0	52	11574	2764	14.8
5	ICPL 87113	77	135	236	3.4	13.5	55	7670	2457	19.3
14	ICPL 88035	87	148	254	4.4	11.6	52	11574	2273	12.5
6	ICPL 87114	78	136	225	3.4	10.8	49	8333	2185	14.8
15	ICPL 88036	85	145	257	3.9	10.7	41	8457	2074	14.0
7	ICPL 87116	74	146	223	3.7	9.7	46	8364	2037	14.1
20	UPAS 120	74	115	213	3.5	8.7	53	8055	1942	14.2
12	ICPL 88032	67	107	223	3.7	10.6	51	6389	1815	15.9
1	MANAK (Check)	71	112	202	3.6	7.7	54	7546	1738	14.2
16	ICPL 88037	87	147	234	4.0	12.7	49	8935	1611	11.7
17	ICPL 88038	88	146	225	3.7	10.8	46	8179	1602	12.9
18	ICPL 88039	70	112	210	3.7	11.7	52	7176	1577	14.3
4	ICPL 87112	70	112	193	3.6	11.2	48	6235	1408	14.8
13	ICPL 88034	85	139	218	3.8	9.6	47	7639	1360	11.7
11	ICPL 88031	66	106	208	3.8	10.3	46	6589	1331	11.7
2	ICPL 86026	79	120	235	3.6	11.3	54	8812	1310	10.4
19	TAT-10	77	146	233	3.6	10.2	48	8117	1153	9.2
8	ICPL 87118	85	147	197	3.9	9.9	48	5926	992	11.4
9	ICPL 88029	66	102	189	3.7	9.7	48	4938	838	11.3
10	ICPL 88030	65	104	156	3.2	9.9	42	3395	605	12.5
	SE±	0.8	1.2	8.7	0.14	0.21	3.6	872.1	203.0	1.73
	MEAN	77.1	128.5	219.9	3.72	10.73	49.0	7695.2	1653.3	13.29
	CV(%)	1.8	1.6	6.8	6.64	3.38	12.9	19.6	21.3	22.51

Date of planting : 2-7-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 46: Performance of entries in EPPMLT88MDT (Late sowing) (88MT21) grown at ICRISAT Center, Misar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
17	ICPL 88038	70	132	168	3.6	10.4	59	4244	2022	22.4
3	ICPL 86030	80	138	183	3.9	11.3	61	5556	2009	18.9
7	ICPL 87116	71	131	165	3.8	8.8	55	4244	1867	21.0
2	ICPL 86026	76	124	158	3.6	10.1	73	4707	1816	19.9
14	ICPL 88035	81	135	182	5.4	12.2	69	7407	1790	13.7
19	TAT-10	69	130	161	4.1	9.8	64	7330	1759	19.9
15	ICPL 88036	78	130	164	4.0	8.4	72	4784	1736	21.0
16	ICPL 88037	77	142	166	4.1	12.3	59	5124	1699	18.7
13	ICPL 88034	78	133	169	3.7	9.5	75	4707	1687	20.2
1	MAHAK (Check)	64	122	147	3.5	8.4	73	4244	1682	21.8
6	ICPL 87114	70	127	159	3.7	10.1	63	5524	1392	18.2
12	ICPL 88032	70	130	129	4.4	9.3	67	3025	1320	19.2
18	ICPL 88039	64	129	128	3.7	10.8	70	2670	1236	21.4
20	UPAS 120	70	130	162	3.7	9.8	65	3673	1228	18.7
4	ICPL 87112	65	122	129	3.3	10.1	62	2701	1202	22.3
5	ICPL 87113	68	132	163	3.9	11.9	59	4475	1178	14.8
10	ICPL 88030	61	121	138	3.7	9.2	66	2623	1156	20.3
9	ICPL 88029	66	124	151	3.9	10.5	70	2886	1142	22.3
11	ICPL 88031	65	130	144	3.9	10.9	54	3241	1026	17.0
8	ICPL 87118	84	123	147	4.7	10.8	56	3426	832	13.8
	SE±	0.6	1.6	9.3	0.22	0.42	4.8	566.3	254.2	1.82
	MEAN	71.4	129.2	155.6	3.93	10.23	64.7	4329.5	1489.1	19.29
	CV(%)	1.6	2.1	10.4	9.54	7.17	12.7	22.7	29.6	16.31

Date of planting : 30-7-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms

Table 47: Performance of entries in ADLT88-1 (88P10) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
2	ICPL 151(Check)	67	113	110	7	11.3	94	2880
3	ICPX 840112-HB-H1-HB	66	123	115	7	10.4	83	2763
1	ICPL 4(Check)	64	110	105	5	5.8	94	2488
12	ICPX 810081-HB-SB*-HB-H2-HB-HB	61	117	90	6	10.1	85	2417
11	ICPX 820024-HB*-H1-H1-HB-HB	63	121	87	6	10.7	80	2313
13	ICPX 810119-H1-H1-HB-HB-HB-HB	53	99	87	6	9.3	85	2108
14	ICPX 800500-HB-H11-H1-H1-H1-HB-HB	54	106	70	5	8.2	85	1976
4	ICPX 840115-HB-H1-HB	55	110	92	7	9.4	71	1815
9	ICPX 800511-HB-H1-H1-H1-H2-H1-HB	55	98	80	5	8.2	42	1522
6	ICPX 810089-HB-SB*-H3-H1-H1-HB	53	98	82	5	7.9	61	1478
7	ICPX 810090-HB-HB*-H1-H2-H1-HB	50	96	75	5	9.1	48	1466
10	ICPX 800493-HB-H2-H5-H3-H2-H2-HB	53	98	75	5	7.8	73	1372
5	ICPX 820003-HB*-H3-H1-H1-HB	52	98	80	5	9.4	52	1242
8	ICPX 800500-H41-H2-HB-HB*-H1-H2-HB	49	93	68	6	10.5	38	910
	SE±	0.7	1.2	3.0	0.3	0.14	3.2	188.9
	MEAN	56.8	105.6	86.8	5.8	9.14	71.8	1910.8
	CV(%)	2.2	2.0	6.0	8.0	2.57	7.9	17.1

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 48: Performance of entries in ADLT 88-1 (Normal sowing) (88HT22) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
12	ICPX 810081-HB-SB*-HB-H2-HB-HB	69	107	167	4.2	10.1	59	8071	2628	19.6
14	ICPX 800500-HB-H11-H1-H1-H1-HB-HB	66	105	148	4.1	9.8	58	6404	2293	19.6
3	ICPX 840112-HB-H1-HB	69	106	182	4.3	10.4	54	8997	2243	16.1
2	ICPL 151	71	114	192	4.2	11.2	58	8503	1972	15.0
11	ICPX 820024-HB*-H1-H1-HB-HB	69	107	142	3.8	10.4	54	6558	1809	16.1
9	ICPX 800511-HB-H1-H1-H1-H2-H1-HB	64	107	130	4.1	9.0	29	4414	1551	20.0
6	ICPX 810089-HB-SB*-H3-H1-H1-HB	66	106	140	4.1	8.1	36	4444	1094	16.1
7	ICPX 810090-HB-HB*-H1-H2-H1-HB	59	99	123	4.1	9.5	35	3596	1030	17.7
4	ICPX 840115-HB-H1-HB	65	100	137	4.3	8.4	44	4630	988	13.8
13	ICPX 810119-H1-H1-HB-HB-HB-HB	61	99	131	3.7	10.3	49	6753	983	13.5
8	ICPX 800500-H41-H2-HB-HB*-H1-H2-HB	57	96	110	3.4	9.6	41	3889	960	14.8
10	ICPX 800493-HB-H2-H5-H3-H2-H2-HB	48	90	108	3.6	8.3	54	3256	890	16.3
1	ICPL 4	68	110	171	3.5	6.3	46	6018	855	10.1
5	ICPX 820003-HB*-H3-H1-H1-HB	55	96	123	4.0	9.9	36	3719	748	13.3
	SE+	0.7	1.1	3.5	0.16	0.21	3.6	501.7	135.0	1.85
	MEAN	63.3	103.0	143.0	3.96	9.38	46.8	5518.0	1431.8	15.84
	CV %	2.0	1.9	4.3	6.87	3.94	13.3	15.7	16.3	11.45

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 49: Performance of entries in ADLT88-2(88F11) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Entry Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
3	ICPX 840108-HB-H4-HB	66	124	127	8	10.8	86	2848
2	ICPL 151(Check)	66	114	115	7	11.1	79	2513
7	ICPX 790233-HB-HB-H2-H1-H2-HB-HB	69	133	130	8	13.3	78	2278
14	ICPX 820024-HB*-H1-H2-HB-HB	61	120	95	6	11.7	85	2270
10	ICPX 810098-HB-SB*-HB-H3-HB-HB	64	124	103	6	12.3	85	2227
13	ICPX 820024-HB*-H1-H1-HB-HB	64	121	100	7	10.9	98	2204
5	ICPX 810088-HB-H2-H1-H1-HB-HB	64	121	95	6	12.1	90	2153
8	24C-HB-H7-H1-H1-HB-HB	72	131	118	7	13.9	81	2093
12	ICPX 800542-HB-H1-H2-H2-H2-HB-HB	64	121	103	8	15.1	92	2067
6	ICPX 800542-HB-H1-H2-H1-H2-HB-HB	53	115	85	7	11.4	83	1986
1	ICPL 4(Check)	66	111	95	5	6.0	89	1895
11	ICPX 800493-HB-H2-H5-H7-HB-HB-HB	63	109	97	7	8.6	89	1846
4	ICPX 820023-H2-HB-HB-HB-HB	64	124	93	6	10.7	84	1512
9	ICPX 820002-HB*-H2-H1-HB-HB	53	107	80	6	9.8	83	1269
	SE+	0.7	1.2	3.9	0.2	0.20	4.7	237.2
	MEAN	63.4	119.6	102.6	6.7	11.27	85.3	2081.7
	CV(%)	1.9	1.8	6.6	5.6	3.09	9.5	19.7

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 50: Performance of entries in ADLT 88-2 (Normal sowing) (88HT23) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
8	24C-HB-H7-H1-H1-HB-HB	70	112	177	3.9	14.6	51	8318	2486	17.4
3	ICPX 840108-HB-H4-HB	70	110	169	4.3	12.1	53	10031	2310	14.8
7	ICPX 790233-HB-HB-H2-H1-H2-HB-HB	71	113	185	4.8	14.8	46	9614	2272	14.6
2	ICPL 151	70	116	165	4.3	13.4	50	7562	1528	13.6
5	ICPX 810008-HB-H2-H1-H1-HB-HB	71	112	136	4.2	13.4	45	6636	1458	13.7
11	ICPX 800493-HB-H2-H5-H7-HB-HB-HB	69	111	173	3.8	12.2	46	7901	1390	11.1
14	ICPX 820024-HB*-H1-H2-HB-HB	68	114	158	4.0	12.8	49	7361	1324	11.4
13	ICPX 820024-HB*-H1-H1-HB-HB	71	113	158	4.0	12.2	46	6944	1313	11.6
4	ICPX 820023-H2-HB-HB-HB-HB	73	121	169	4.1	12.3	49	8596	1261	8.8
10	ICPX 810098-HB-HB*-HB-H3-HB-HB	75	122	176	3.8	12.7	48	7670	1094	10.0
1	ICPL 4	70	108	166	3.8	8.8	51	6744	1008	11.1
6	ICPX 800542-HB-H1-H2-H1-H2-HB-HB	64	106	128	4.0	12.5	49	5941	884	10.3
12	ICPX 800542-HB-H1-H2-H2-H2-HB-HB	68	109	156	3.6	16.9	53	7531	753	7.4
9	ICPX 820002-HB*-H2-H1-HB-HB	67	107	117	3.9	12.6	47	3966	597	10.2
	SE±	0.6	0.7	4.7	0.18	0.23	3.2	499.3	170.1	0.80
	MEAN	69.8	112.4	159.6	4.04	12.95	48.9	7486.8	1405.7	11.94
	CV(%)	1.5	1.1	5.2	7.52	3.07	11.3	11.6	21.9	11.66

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 51: Performance of entries in ADLT 88-3 (88P12) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
2	ICPL 151(Check)	66	116	120	7	11.5	85	3530
8	ICPX 810096-HB-SB*-HB-H1-HB-HB	68	120	125	7	14.4	82	3258
13	ICPX 810098-HB-SB*-HB-H5-HB-HB	58	116	110	6	13.1	93	3255
6	ICPX 830030-HB-HB-H1-HB	62	114	105	7	11.6	84	3068
10	ICPX 810066-HB-SB*-HB-H2-HB-HB	66	116	118	7	11.5	74	3056
9	ICPX 800542-HB-H1-H2-H2-H1-HB-HB	60	121	113	7	14.2	83	2817
1	ICPL 87(Check)	72	134	107	7	10.4	85	2602
16	ICPX 810084-HB-SB*-HB-H7-HB-HB	66	126	88	5	11.6	86	2565
12	ICPX 810082-HB-SB*-H1-H1-HB-HB	62	122	95	7	12.5	87	2537
11	ICPX 810084-HB-SB*-HB-H8-HB-HB	89	146	143	7	11.6	76	2218
14	ICPX 800576-HB-H8-H1-H1-H1-HB-HB	66	118	103	9	11.8	84	2134
3	ICPX 820004-HB*-H2-H1-H1-HB	50	108	80	5	9.5	84	2127
15	EWS Comp-H4-HB-HB	71	126	115	9	11.8	80	1991
4	ICPX 810100-HB-SB*-HB-H1-H1-HB	57	101	107	6	8.1	70	1969
5	ICPX 810120-H10-H1-HB-HB-H1-HB	63	119	122	8	11.6	83	1903
7	ICPX 820004-HB-HB-H1-H1-HB	52	96	90	5	6.8	93	1704
	SE±	0.8	1.1	4.8	0.3	0.20	3.7	266.2
	MEAN	64.2	118.6	108.9	6.8	11.37	83.0	2545.8
	CV(%)	2.1	1.6	7.6	8.4	3.07	7.6	18.1

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 52: Performance of entries in ADLT 88-3 (Normal sowing) (88HT24) grown at ICRISAT Center, Hiser, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
1	ICPL 87	75	127	163	4.1	11.5	57	8503	2645	17.1
10	ICPX 810066-HB-SB*-HB-H2-HB-HB	71	122	120	3.4	10.8	50	5324	1710	18.3
6	ICPX 830030-HB-HB-H1-HB	67	111	123	3.3	10.1	57	4584	1450	18.8
15	EWS COMP. H4-HB-HB	73	121	180	5.2	12.3	48	8369	1648	12.4
14	ICPX 800576-HB-HB-H1-H1-H1-HB-HB	74	121	120	3.9	10.9	55	4799	1520	16.5
2	ICPL 151	73	118	118	3.7	9.9	57	4769	1492	17.9
5	ICPX 810120-H10-H1-HB-HB-H1-HB	73	117	114	3.3	10.5	41	5869	1408	14.0
13	ICPX 810098-HB-SB*-HB-H5-HB-HB	72	119	178	3.7	12.9	46	8102	1307	10.9
4	ICPX 810100-HB-SB*-HB-H1-H1-HB	65	114	109	3.2	9.3	59	3889	1142	16.0
16	ICPX 810084-HB-SB*-HB-H7-HB-HB	77	122	142	3.7	10.5	42	6552	1118	13.0
8	ICPX 810096-HB-SB*-HB-H1-HB-HB	74	123	168	3.9	14.0	57	6451	1117	11.5
12	ICPX 810082-HB-SB*-H1-H1-HB-HB	70	117	141	3.8	12.5	47	4434	1323	14.2
9	ICPX 800542-HB-H1-H2-H2-H1-HB-HB	70	117	148	3.7	13.8	56	5123	801	10.0
11	ICPX 810084-HB-SB*-HB-HB-HB-HB	101	148	139	4.1	11.5	66	4645	711	9.4
7	ICPX 820004-HB-HB-H1-H1-HB	73	112	131	3.3	8.0	31	2901	464	11.6
3	ICPX 820004-HB*-H2-H1-H1-HB	64	105	98	2.8	9.1	36	2330	281	9.8
	SE±	1.4	1.4	5.6	0.19	0.27	6.4	837.6	266.8	1.84
	MEAN	73.2	119.8	137.0	3.70	11.11	53.4	5290.3	1252.4	13.78
	CV(%)	3.2	2.1	7.1	9.11	4.16	22.1	27.4	36.9	23.12

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 53: Performance of entries in ADLT 88-4 (88P13) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
7	ICPX 800519-HB-H4-H1-HB-H1-HB-HB	65	121	108	8	11.4	83	2484
3	ICPX 810134-HB-H19-HB-HB-HB-HB	61	117	103	7	9.4	85	2429
16	ICPX 840101-HB*-H9-HB	64	118	107	7	12.5	66	2361
5	ICPX 810134-HB-H1-H2-H2-HB-HB	63	118	90	6	9.0	86	2352
2	ICPL 151(Check)	66	117	105	7	11.3	96	2250
11	ICPX 810098-HB-SB*-HB-HB-H15-HB	64	119	107	6	11.9	82	2154
1	ICPL 87(Check)	72	129	110	7	10.5	78	2116
6	81d-HB-H12-H6-HB-HB-HB	72	124	123	7	10.4	89	2038
10	ICPX 820011-HB*-H1-H1-H1-HB	68	119	110	8	10.2	80	1988
4	ICPL 88019	69	126	123	7	11.7	83	1699
17	ICPX 810081-HB-SB*-HB-H5-HB	71	137	113	7	11.2	83	1519
13	ICPX 800555-HB-H12-H1-H1-H1-H1-HB	52	98	82	6	9.6	71	1466
18	ICPX 790231-HB-H9-H1-H1-HB-H1-HB-HB	78	136	160	8	11.6	77	1391
15	ICPX 820005-HB*-H3-H1-H1-HB	47	91	75	5	7.3	91	1358
8	84 Comp-H1-HB-HB-HB	82	139	143	8	10.4	76	1234
12	ICPX 810135-HB-HB-HB-H1-H1-HB	61	107	82	7	9.8	72	1105
9	ESR #4004-SB*-HB-HB-HB	70	123	112	6	11.0	84	1085
14	ICPX 830019-H28-H1-H1-HB	49	93	65	5	8.3	19	421
	SE±	1.3	1.3	5.5	0.2	0.21	3.5	275.7
	MEAN	65.2	118.4	106.6	6.8	10.37	77.9	1742.5
	CV(%)	3.4	1.9	9.0	6.3	3.59	7.9	27.4

Date of planting : 22-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 54: Performance of entries in ADLT 88-4 (Normal sowing) (88NT25) grown at ICRISAT Center, Hiser, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
3	ICPX 810134-HB-H19-HB-HB-HB-HB	70	113	161	4.3	11.3	52	7963	3259	28.5
5	ICPX 810134-HB-H1-H2-H2-HB-HB	69	114	164	4.1	11.5	47	8071	3048	28.2
1	ICPL 87	73	120	171	3.7	12.8	52	11466	2508	13.0
8	84 COMP. H1-HB-HB-HB	75	119	180	4.9	12.6	49	12963	2502	12.7
17	ICPX 810081-HB-HB*-HB-H5-HB	72	113	183	3.8	13.2	58	12963	2496	11.7
6	ICP 8101-HB-H12-H6-HB-HB-HB	77	128	188	4.4	11.5	42	8441	2387	16.5
4	ICPL 88019	77	129	186	3.6	13.0	50	9938	2069	12.7
2	ICPL 151	70	114	188	4.4	12.9	49	7970	2063	16.1
16	ICPX 840101-HB*-HB-HB	70	112	166	4.8	14.9	36	7284	1955	16.2
7	ICPX 800519-HB-H4-H1-HB-H1-HB-HB	68	112	187	4.2	13.6	59	8704	1906	16.7
9	ESR 84004-SB*-HB-HB-HB	79	128	196	3.6	13.6	46	11543	1905	11.6
18	ICPX 790231-HB-H9-H1-H1-HB-H1-HB-HB	80	130	216	5.8	13.7	44	13981	1795	9.5
11	ICPX 810098-HB-SB*-HB-HB-H15-HB	74	123	198	3.8	12.8	54	10123	1665	11.3
15	ICPX 820005-HB*-H3-H1-H1-HB	66	111	116	3.4	10.1	63	4120	1153	16.0
10	ICPX 820011-HB*-H1-H1-H1-HB	74	124	177	5.8	11.0	50	8025	1114	9.5
12	ICPX 810135-HB-HB-HB-H1-H1-HB	68	111	139	3.8	10.7	44	4537	876	13.1
13	ICPX 800555-HB-H12-H1-H1-H1-H1-HB	64	104	124	3.7	11.8	35	3025	658	13.0
14	ICPX 830019-H28-H1-H1-HB	64	111	115	3.4	9.8	19	2191	425	12.1
	SE±	0.6	0.9	4.6	0.20	0.33	4.8	621.8	188.1	0.94
	MEAN	71.7	118.0	169.1	4.11	12.26	46.1	8517.6	1874.5	13.93
	CV(%)	1.5	1.4	4.7	8.54	4.61	15.2	12.6	16.6	11.66

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 55: Performance of entries in AMDLT 88-1 (88P14) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
16	EWS Comp.#5-#B-#B	63	109	138	6	9.3	95	2092
9	ICPX 810099-#B-5B*-#B-#B-#B-#B	70	123	168	7	11.6	79	2673
15	ICPX 810161-#B-#5-#2-#B-#B-#B	69	117	152	6	9.9	90	2361
14	ICPX 810123-#7-#B-#B-#B-#B-#B	63	112	145	5	8.3	104	2312
2	UPAS 120(Check)	64	117	148	5	7.4	95	2306
11	ICPX 790221-#B-#1-#1-#B-#B-#B-#B-#B	63	116	133	6	9.4	87	2165
3	ICPX 800493-#B-#2-#1-#9-#1-#B-#B	61	110	123	5	7.8	105	2107
10	ICPX 800500-#B-#20-#1-#B-#1-#B-#B	66	117	130	6	9.4	86	2086
5	ICPX 820005-#B*-#5-#1-#1-#B	61	111	148	6	8.4	102	1986
4	ICPX 800500-#B-#19-#3-#2-#1-#B-#B	60	111	142	6	9.1	93	1972
1	Manak(Check)	61	112	135	5	6.9	95	1940
12	ICPX 790223-#B-#B-#7-#2-#2-#B-#B-#B	67	122	185	6	10.1	82	1908
7	ICPX 810058-#B-#2-#2-#1-#3-#B	69	115	152	5	8.9	97	1906
13	ICPX 810120-#17-#B-#1-#B-#B-#B	63	111	123	6	9.0	90	1619
8	ICPX 820005-#B*-#5-#2-#B-#B	62	114	128	6	8.3	88	1498
6	ICPX 800493-#B-#2-#B-#B-#1-#1-#B	55	110	107	5	7.3	99	1258
	SE±	0.7	1.3	6.2	0.2	0.15	5.3	209.3
	MEAN	63.5	114.2	141.1	5.7	8.81	93.0	2056.9
	CV(%)	2.0	2.0	7.6	7.1	3.01	9.8	17.6

Date of planting : 22-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 56: Performance of entries in ANDLT 88-1 (Normal sowing) (88NT26) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest index %
15	ICPX 810161-HB-H5-H2-HB-HB-HB	76	126	230	3.5	11.1	58	10232	2525	14.9
2	UPAS 120	75	114	231	3.5	8.1	52	7901	2019	16.9
1	HAHAK	72	114	202	3.8	7.6	58	8472	1997	14.8
14	ICPX 810123-H7-HB-HB-HB-HB-HB	78	119	213	3.3	9.1	57	8736	1736	13.9
13	ICPX 810120-H17-HB-H1-HB-HB-HB	68	112	192	3.3	10.6	45	7762	1715	13.8
9	ICPX 810099-HB-5B*-HB-HB-HB-HB	85	138	235	4.0	11.7	46	7562	1551	12.9
7	ICPX 810058-HB-H2-H2-H1-H3-HB	86	124	210	3.5	8.2	51	7901	1343	11.7
10	ICPX 800500-HB-H20-H1-HB-H1-HB-HB	71	112	185	3.3	10.4	49	6420	1133	11.6
12	ICPX 790223-HB-HB-H7-H2-H2-HB-HB-HB	76	143	240	3.9	11.5	55	8642	1059	8.9
16	EWS COMP. H5-HB-HB	74	113	212	3.6	9.7	48	6975	832	8.7
3	ICPX 800493-HB-H2-H1-H9-H1-HB-HB	62	101	170	3.3	8.9	48	4815	810	11.3
4	ICPX 800500-HB-H13-H3-H2-H1-HB-HB	64	100	195	3.3	10.5	47	5339	766	10.5
11	ICPX 790221-HB-H1-H1-HB-HB-HB-HB-HB	66	107	188	3.5	10.2	41	5540	752	9.5
8	ICPX 820005-HB*-H5-H2-HB-HB	58	97	167	3.7	8.7	51	4614	322	5.1
5	ICPX 820005-HB*-H5-H1-H1-HB	60	95	179	3.6	8.6	53	5062	321	4.6
6	ICPX 800493-HB-H2-HB-HB-H1-H1-HB	60	99	168	3.1	8.6	42	3395	95	2.5
	SE±	0.8	1.4	6.8	0.21	0.19	3.0	498.0	174.2	1.22
	MEAN	70.8	113.6	201.1	3.52	9.59	50.0	6835.4	1185.9	10.61
	CV(%)	2.0	2.2	5.9	10.40	3.38	10.5	12.6	25.4	19.96

Date of planting : 2-7-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 57: Performance of entries in AHDLT 88-2 (88P15) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
4	ICPX 810110-HB-HB-HB-HB-HB-HB	64	114	155	5	8.1	86	2718
11	ICPX 800601-HB-HB-HB-HB-HB-HB-HB	66	118	175	6	9.9	76	2452
3	ICPX 800500-HB-HB-HB-HB-HB-HB-HB	69	120	177	7	8.7	77	2358
13	ICPX 790235-HB-HB-HB-HB-HB-HB-HB-HB	71	121	158	5	9.3	82	2326
5	ICPX 810165-HB-HB-HB-HB-HB-HB	69	120	168	6	11.6	72	2203
9	ICPX 820011-HB-HB-HB-HB-HB	74	132	187	6	11.8	75	2148
1	Manak(Check)	60	112	158	5	7.2	89	1969
7	ICPX 800586-HB-HB-HB-HB-HB-HB-HB-HB	76	136	187	6	9.1	76	1954
8	Comp.	76	125	203	6	9.1	84	1937
6	ICPL 85052-HB-HB-HB-HB	76	124	200	8	9.9	79	1880
12	ICPX 810106-HB-SB*-HB-HB-HB-HB	76	126	186	5	9.0	70	1869
2	UPAS 120(Check)	64	115	172	5	7.5	81	1770
14	ICPL 6	81	135	190	6	7.5	79	1647
10	ICPX 810087-HB-SB*-HB-HB-HB-HB	87	142	215	6	10.5	76	1190
	SE±	0.7	1.4	5.7	0.2	0.23	2.8	324.9
	MEAN	72.0	124.5	181.0	5.8	9.23	78.8	2030.0
	CV(%)	1.7	1.9	5.5	7.0	4.27	6.1	27.7

Date of planting : 22-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cm.

Table 58: Performance of entries in AMDLT 88-2 (Normal sowing) (88NT27) grown at ICRISAT Center, Niger, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Stalk Yield (kg/ha)	Grain Yield (kg/ha)	Harvest Index %
13	ICPX 790235-HB-HB-HB-H1-HB-H1-HB	82	141	250	3.8	9.6	42	10370	2144	16.7
2	UPAS 120 (Check)	75	121	255	3.3	8.2	44	9846	2029	13.8
12	ICPX 810106-HB-SB*-HB-H7-HB-HB	87	137	259	3.5	10.1	40	9553	1843	13.4
4	ICPX 810118-H2-H3-H1-HB-HB-HB	75	120	240	3.5	9.1	54	10540	1838	12.2
3	ICPX 800500-HB-HB-HB-H1-H1-HB-HB	83	142	281	3.9	9.5	49	10818	1671	9.5
1	MANAK (Check)	73	124	238	3.6	7.7	48	9599	1691	13.5
6	ICPX 850052-H1-H1-HB-HB	95	147	249	4.6	10.5	44	12870	1691	9.2
5	ICPX 810165-H2-H1-H1-HB-HB-HB	84	137	255	3.9	9.8	36	9583	1644	11.9
14	ICPL 6	93	138	256	3.7	8.4	42	8997	1536	11.8
11	ICPX 800401-HB-H2-H9-H3-H2-HB-HB	76	128	249	3.9	10.7	43	9461	1547	11.4
9	ICPX 820011-H9-HB-HB-HB-HB	92	136	247	3.8	12.9	47	13133	1481	8.4
10	ICPX 810087-HB-SB*-HB-H7-HB-HB	98	158	284	3.7	10.7	52	6019	992	9.9
7	ICPX 800586-HB-H3-HB-HB-HB-HB-HB	90	140	268	3.9	10.4	46	10926	969	6.3
8	COMP.	88	137	248	3.9	9.8	42	9676	838	5.8
	SE±	1.9	1.6	11.8	0.12	0.21	3.6	721.1	218.9	1.17
	MEAN	85.2	136.1	255.7	3.78	9.82	44.8	10113.5	1560.4	10.69
	CV(%)	2.1	2.0	7.5	5.48	3.70	14.1	12.3	25.8	18.95

Date of planting : 2-7-1988.
Net plot size : 2.16 sqm.
Spacing : 30 x 10 cms.

Table 59 : Characteristics of lines selected for preliminary multilocation testing

Sl No.	ICPL No.	Pedigree	Source 1988	Days to Flower		Days to Mature		Plant height (cm)		100-Seeds weight (g)		Grain yield (kg/ha)		Remarks
				Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	
(A)	For EPPMLT 89 NDT		88MT26/											
1	89001	ICPX 800493-HB-H2-H1-H9-H1-HB-HB	88P14-3	62	61	101	110	170	123	8.9	7.8	810	2107	RF,GP
2	89002	ICPX 800500-HB-H19-H3-H2-H1-HB-HB	88P14-4	64	60	100	111	195	142	10.5	9.1	766	1972	WS
3	89003	ICPX 820085-HB*-H5-H1-H1-HB	88P14-5	60	61	95	111	179	140	8.6	8.4	321	1986	
4	89004	ICPX 800493-HB-H2-H8-HB-H1-H1-HB	88P14-6	60	55	99	110	168	107	8.6	7.3	95	1258	
5	89005	ICPX 810058-HB-H2-H2-H1-H3-HB	88P14-7	86	69	124	115	210	152	8.2	8.9	1343	1986	WS,12SM
6	89006	ICPX 820085-HB*-H5-H2-HB-HB	88P14-8	58	62	97	114	167	128	8.7	8.3	322	1498	
7	89007	ICPX 810099-HB-5B*-HB-HB-HB-HB	88P14-9	85	70	138	123	235	168	11.7	11.4	1951	2673	RF,FP,3SM
8	89008	ICPX 800500-HB-H20-H1-HB-H1-HB-HB	88P14-10	71	66	112	117	185	130	10.4	9.4	1133	2006	3SW
9	89009	ICPX 790221-HB-H1-H1-HB-HB-HB-HB-HB	88P14-11	66	63	107	116	188	133	10.2	9.4	752	2165	
10	89010	ICPX 790223-HB-HB-H7-H2-H2-HB-HB-HB	88P14-12	76	67	143	122	240	185	11.5	10.1	1659	1988	
11	89011	ICPX 810120-H17-HB-H1-HB-HB-HB	88P14-13	68	63	112	111	192	123	10.6	9.0	1715	1619	WS
12	89012	ICPX 810123-H7-HB-HB-HB-HB-HB	88P14-14	78	63	119	112	213	145	9.1	8.3	1736	2312	RF,WS
13	89013	ICPX 810161-HB-H5-H2-HB-HB-HB	88P14-15	76	69	128	117	230	152	11.1	9.9	2525	2361	WS
14	89014	EWS COMP. H5-HB-HB	88P14-16	74	63	113	109	212	138	9.7	9.3	832	2892	WS.
		Manak (Check)	88P14-1	72	61	114	112	202	135	7.6	6.9	1997	1948	
		UPAS-120 (Check)	88P14-2	75	64	114	117	231	148	8.1	7.4	2019	2386	
		SE ±		0.8	0.7	1.4	1.3	6.8	6.2	0.2	0.2	174.3	289.3	
		MEAN		70.8	63.5	113.6	114.2	201.1	141.1	9.6	8.8	1185.9	2056.9	
		CV(%)		2.0	2.0	2.2	2.0	5.9	7.6	3.38	5.0	25.4	17.6	
			88MT27/											
15	89015	ICPX 800500-HB-HB-HB-H1-H1-HB-HB	88P15-3	83	69	142	120	281	177	9.5	8.7	1671	2358	WS
16	89016	ICPX 810118-H2-H3-H1-HB-HB-HB	88P15-4	75	64	120	114	240	155	9.1	8.1	1838	2716	
17	89017	ICPX 810165-H2-H1-H1-HB-HB-HB	88P15-5	84	69	137	120	255	168	9.8	11.6	1644	2203	RF
18	89018	ICPX 800601-HB-H2-H9-H3-H2-HB-HB	88P15-11	76	66	128	118	249	175	10.7	9.9	1547	2452	
19	89019	ICPX 790235-HB-HB-H8-H1-HB-HB	88P15-13	82	71	141	121	250	158	9.6	9.3	2144	2324	RF,WS
		Manak (Check)	88P15-1	73	60	124	112	230	158	7.7	7.2	1651	1969	
		UPAS-120 (Check)	88P15-2	75	64	121	115	255	172	8.2	7.5	2029	1778	
		SE ±		1.0	0.7	1.6	1.4	11.0	5.7	0.2	0.2	228.9	324.9	
		MEAN		85.2	72.0	136.1	124.5	255.7	161.0	9.8	9.2	1960.4	2030.8	
		CV(%)		2.1	1.7	2.0	1.9	7.5	5.5	3.7	4.3	25.4	27.7	

Table 59 : Characteristics of lines selected for preliminary multilocation testing

Sl No.	ICPL No.	Pedigree	Source 1988	Days to Flower		Days to Mature		Plant height (cm)		100-Seeds weight (g)		Grain yield (kg/ha)		Remarks
				Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	
(B)	For EXPPMLT 89		##NT22/											
20	89020	ICPX 810090-HB-HB*-H1-H2-H1-HB	##P10-7	59	50	99	96	123	75	9.5	9.1	1038	1466	GP,WB, 10##N,36W
21	89021	ICPX 800500-H41-H2-HB-HB*-H1-H2-HB	##P10-8	57	49	96	93	110	68	9.6	10.5	960	910	WB
22	89022	ICPX 800511-HB-H1-H1-H1-H2-H1-HB	##P10-9	64	55	107	98	130	88	9.8	8.2	1551	1522	WB
23	89023	ICPX 810119-H1-H1-HB-HB-HB-HB	##P10-13	61	53	99	99	131	87	10.3	9.3	983	2198	
24	89024	ICPX 800500-HB-H11-H1-H1-H1-HB-HB	##P10-14	66	54	105	106	148	78	9.8	8.2	2293	1976	
		ICPL 4 (Check)	##P10-1	68	64	110	110	171	105	6.3	5.8	855	2488	
		ICPL 151 (Check)	##P10-2	71	67	114	113	192	110	11.2	11.3	1972	2888	
		SE ±		0.7	0.7	1.1	1.2	3.5	3.0	0.21	0.14	135.0	188.9	
		MEAN		63.3	56.8	103.8	105.6	143.0	86.8	9.4	9.14	1431.8	1910.8	
		CV(%)		2.0	2.2	1.9	2.0	4.3	6.0	3.9	2.57	16.3	17.1	
25	89025	ICPX 820004-HB*-H2-H1-H1-HB	##NT24/ ##P12-3	64	50	105	108	98	80	9.1	9.5	281	2127	HP,GP,WB, 30W
		ICPL 87 (Check)	##P12-1	75	72	127	134	163	107	11.5	10.4	2645	2602	
		ICPL 151 (Check)	##P12-2	73	66	118	116	118	120	9.9	11.5	1492	3530	C
		SE ±		1.4	0.8	1.4	1.1	5.6	4.8	0.3	0.2	266.8	266.2	
		MEAN		73.2	64.2	119.8	118.6	137.0	108.9	11.1	11.4	1252.4	2565.8	
		CV(%)		3.2	2.1	2.1	1.6	7.1	7.6	4.2	3.1	36.9	18.1	
26	89026	ICPX 810135-HB-HB-HB H1-H1-HB	##NT25/ ##P13-12	68	61	111	107	139	82	10.7	9.0	876	1105	HP,WB, 19##N Amm.type
27	89027	ICPX 800555-HB-H12-H1-H1-H1-HB	##P13-13	64	52	104	98	124	82	11.8	9.6	658	1466	WB
28	89028	ICPX 820005-HB*-H3-H1-H1-HB	##P13-15	66	47	111	91	116	75	10.1	7.3	1153	1358	26W
		ICPL 87 (Check)	##P13-1	73	72	128	129	171	110	12.8	10.5	2508	2116	
		ICPL 151 (Check)	##P13-2	70	66	114	117	168	105	12.9	11.3	2003	2250	
		SE ±		0.6	1.3	0.9	1.3	4.6	5.5	0.3	0.2	180.1	275.7	
		MEAN		71.7	65.2	118.0	118.4	169.1	106.6	12.3	10.4	1874.5	1742.5	
		CV(%)		1.5	3.4	1.4	1.9	4.7	9.8	4.6	3.6	16.6	27.4	

Table 59 : Characteristics of lines selected for preliminary multilocation testing

Sl No.	ICPL No.	Pedigree	Source 1988	Days to Flower		Days to Mature		Plant height (cm)		100-Seeds weight (g)		Grain yield (kg/ha)		Remarks
				Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	Hisar	Pat	
(C)	For EPPMLT 89 DT													
29	89029	ICPX 810081-HB-5B*-HB-H2-HB-HB	88HT22/ 88P10-12	69	61	107	117	167	90	10.1	10.1	2628	2617	3SM
		ICPL 4 (Check)	88P10-1	68	64	110	110	171	105	6.3	5.8	855	2488	
		ICPL 151 (Check)	88P10-2	71	67	114	113	192	110	11.2	11.3	1972	2880	
		SE ±		0.7	0.7	1.1	1.2	3.5	3.0	0.2	0.1	135.9	188.9	
		MEAN		63.3	56.8	103.0	105.6	143.8	86.8	9.6	9.1	1452.8	1910.8	
		CV(%)		2.0	2.2	1.9	2.0	4.3	6.8	3.9	2.6	16.3	17.1	
30	89030	ICPX 840108-HB-H4-HB	88HT23/ 88P11-3	70	66	110	124	169	127	12.1	10.8	2310	2848	RF,WS. 3SSM
31	89031	ICPX 800542-HB-H1-H2-H2-H2-HB-HB	88P11-12	68	64	109	121	156	103	16.9	15.1	753	2067	RF,DBS. 8SM
		ICPL 4 (Check)	88P11-1	70	66	108	111	166	95	8.8	6.0	1008	1895	
		ICPL 151 (Check)	88P11-2	70	66	116	114	165	115	13.4	11.1	1528	2513	
		SE ±		0.6	0.7	0.7	1.2	4.7	3.9	0.2	0.2	170.3	237.2	
		MEAN		69.8	63.4	112.4	119.6	159.6	102.6	12.9	11.3	1405.7	2081.7	
		CV(%)		1.5	1.9	1.1	1.8	5.2	6.6	3.1	3.1	21.0	19.7	
32	89032	ICPX 810134-HB-H19-HB-HB-HB-HB	88HT25/ 88P13-3	70	61	113	117	161	103	11.3	9.4	3255	2429	
		ICPL 87 (Check)	88P13-1	73	72	128	129	171	110	12.8	10.5	2508	2116	
		ICPL 151 (Check)	88P13-2	70	66	114	117	180	105	12.9	11.3	2003	2250	
		SE ±		0.6	1.3	0.9	1.3	4.6	5.5	0.3	0.2	180.1	275.7	
		MEAN		71.7	65.2	118.0	118.4	169.1	106.6	12.3	10.4	1874.5	1742.5	
		CV(%)		1.5	3.4	1.4	1.9	4.7	9.0	4.6	3.6	16.6	27.4	

Table 59 : Characteristics of lines selected for preliminary multilocation testing

Sl. No.	ICPL No.	Pedigree	Parentage
1	89001	ICPX 800493-MB-M2-M1-M9-M1-MB-MB	ICPL 81 X PQ-227
2	89002	ICPX 800500-MB-M19-M3-M2-M1-MB-MB	ICPL 81 X PQ-223
3	89003	ICPX 820005-MB*-M5-M1-M1-MB	780353-M4-MB(P-7543) X ICPL 151
4	89004	ICPX 800493-MB-M2-M8-MB-M1-M1-MB	ICPL 81 X PQ-227
5	89005	ICPX 810058-MB-M2-M2-M1-M3-MB	(ICPL 87 X 74065-F7) X PANT A3-P3*
6	89006	ICPX 820005-MB*-M5-M2-MB-MB	780353-M4-MB (P-7543) X ICPL 151
7	89007	ICPX 810099-MB-SB9-MB-MB-MB-MB	ICPL 185 X 740146-B-23-1-M1-MB*-MB-M5
8	89008	ICPX 800500-MB-M20-M1-MB-M1-MB-MB	ICPL 81 X PQ-223
9	89009	ICPX 790221-MB-M1-M1-MP-MB-MB-MB-MB	ICPL 81 X 750080-71-B-HIDT1-B*-1
10	89010	ICPX 790223-MB-MB-87-M2-M2-MB-MB-MB	ICPL 4 X 750080-71-B-HIDT1-B*-1
11	89011	ICPX 810120-M17-MB-M?-MB-MB-MB	(ICPL 81 X ICP 8504-1) X ICPL 81
12	89012	ICPX 810153-M7-MB-M9-M9-MB-MB	BAIGANI X ICPL 81
13	89013	ICPX 810161-MB-M5-M2-MB-MB-MB	ICPL 150 X BDN-1
14	89014	EWS COMP. M5-MB-M2	
15	89015	ICPX 800500-MB-MB-MB M1-M1-MB-MB	ICPL 81 X PQ-223
16	89016	ICPX 810118-M2-M3-M1-M9-MB MB	(ICPL 81 X ICPL 151) X ICPL 81
17	89017	ICPX 810165-M2-M1-M1-M5-M9-MB	ICPL 150 X BP(WR)-15 (ICP 8859)
18	89018	ICPX 800601-MB-M2-P?-M3-M2-MB-MB	780343-1 X 770007-12-1
19	89019	ICPX 790235-MB-MB-MB-M1-M9 MB	ICPL 81 X 740092-HDTB-16-1-HIDT3-B*-B*
20	89020	ICPX 810090-MB-MB*-M1-M2-M1-MB	BBP10-7 ICPL 267 X 730047-14-1-B-1-B-MB*-M3-MB
21	89021	ICPX 800500-M41-M2-MB-MB*-M1-M2-MB	ICPL 81 X PQ-223
22	89022	ICPX 800511-MB-M1-F1-M1-M2-M1-MB	ICPL 81 X ICPL 9
23	89023	ICPX 810119-M1-M1-P5-MB-MB-MB	(ICPL 81 X 770007-30-B) X ICPL 81
24	89024	ICPX 800500-MB-M11-M1-M1-M1-MB-MB	ICPL 81 X PQ-223
25	89025	ICPX 820004-M3*-M2-M1-M1-MB	780353-M4-MB(P 7543) X ICPL 312
26	89026	ICPX 810135-MB-MB-MB-M1-M1-MB	780333-1 X 770007-4-4) X ICPL 267
27	89027	ICPX 800555-MB-M12-M1-M1-M1-MB	760115-27-1 X 760115-30-5
28	89028	ICPX 820005-MB*-M3-M1-M1-MB	780353-M4-MB(P 7543) X ICPL 316
29	89029	ICPX 810081-MB-SB*-MB-M2-MB-MB	800542 X 730047-14-1-B-1-B-MB*-M3-MB
30	89030	ICPX 840108-MB-M4-MB	ICPL 83010 X ICPL 289
31	89031	ICPX 800542-MB-M1-M2-M2-M2-MB-MB	ICPL 87 X 740068-F11
32	89032	ICPX 810134-MB-M19-MB-MB-MB-MB	800543 X ICPL 267

Table 60: Performance of entries in ICPL 87 BC1F5 PYT (88P16) grown at ICRISAT Center,
Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
1	*ICPL 88027*	73	138	105	7	11.0	76	2882
8	ICPL 87 BC1F1-31-1-B-B	75	142	110	8	11.0	77	2145
13	ICPL 87(Check)	73	138	92	6	10.0	80	2105
14	ICPL 151(Check)	72	119	90	7	11.2	92	2037
2	ICPL 87 BC1F1-34-3-B-B	74	138	103	7	11.3	85	2016
3	ICPL 87 BC1F1-20-4-B-B	75	139	97	7	10.3	78	1991
4	ICPL 87 BC1F1-2-2-B-B	73	124	95	7	10.3	84	1826
10	ICPL 87 BC1F1-12-3-B-B	73	139	107	7	10.6	85	1801
7	ICPL 87 BC1F1-31-1-B-B	73	135	107	7	10.9	77	1792
11	ICPL 87 BC1F1-17-1-B-B	75	142	107	7	11.1	77	1769
6	ICPL 88028	75	142	102	8	12.0	77	1744
5	ICPL 87 BC1F1-21-1-B-B	74	140	93	6	10.6	82	1670
12	ICPL 87 BC1F1-2-1-B-B	76	145	98	7	10.5	77	1369
9	ICPL 87 BC1F1-26-5-B-B	73	139	100	7	11.8	75	1321
	SE±	1.0	1.5	4.1	0.2	0.23	2.5	277.7
	MEAN	73.8	137.2	100.4	7.0	10.89	80.2	1890.5
	CV(%)	2.2	1.9	7.1	4.6	3.63	5.3	25.4

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 61: Performance of entries in WS ICPL 87 (Normal sowing) (88WT28) grown at ICRISAT Center, Hisar, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Seeds per pod	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
13	ICPL 87	74	127	173	4.3	11.9	57	2858
8	ICPL 87 BC1F1-31-3-B-B	77	130	180	4.6	12.4	38	2761
10	ICPL 87 BC1F1-12-3-B-B	74	125	185	4.9	11.2	48	2730
4	ICPL 87 BC1F1-2-2-B-B	72	121	161	4.4	11.4	37	2650
3	ICPL 87 BC1F1-2--4-B-B	74	127	152	3.6	10.8	39	2392
1	ICPL 88027	76	123	164	4.1	11.4	39	2326
2	ICPL 87 BC1F1-34-3-B-B	74	130	161	4.1	11.8	39	2232
11	ICPL 87 BC1F1-17-1-B-B	73	120	162	4.4	12.4	50	2227
12	ICPL 87 BC1F1-2-1-B-B	72	120	128	3.7	10.8	41	2161
5	ICPL 87 BC1F1-21-1-B-B	74	129	163	4.2	11.8	39	2105
7	ICPL 87 BC1F1-31-1-B-B	75	127	168	4.0	11.3	35	2098
6	ICPL 88028	75	127	179	4.7	13.0	34	1806
14	ICPL 151	72	114	150	3.9	11.4	36	1733
9	ICPL 87 BC1F1-26-5-B-B	76	130	160	4.5	12.9	38	1354
	SE±	0.7	0.9	5.8	0.25	0.27	5.3	349.0
	MEAN	74.0	125.0	163.3	4.25	11.75	41.0	2245.1
	CV(%)	1.7	1.3	6.1	10.14	3.94	22.3	24.9

Date of planting : 28-6-1988.
Net plot size : 2.16 sqm
Spacing : 30 x 10 cms.

Table 62: Performance of entries in QPLT 88 (88P19) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
11	ICPL 151(Check)	67	113	115	7	11.4	88	2650
7	QPL 511	69	122	122	8	12.5	77	2596
9	QPL 274	67	125	120	8	11.4	57	2211
10	ICPL 87(Check)	73	135	100	7	10.9	81	2105
3	QPL 120	59	116	108	8	11.4	65	2060
6	QPL 231	73	131	130	8	10.5	63	2028
5	QPL 230	74	136	133	7	10.3	72	1655
8	QPL 580	68	122	113	8	10.6	73	1451
2	QPL 88	71	126	127	7	10.7	73	1446
4	QPL 128	65	115	107	8	9.3	48	1392
1	ICPX 81513-56-1-B-B	75	137	127	7	8.3	76	651
	SE±	0.9	1.5	4.4	0.2	0.24	4.9	219.3
	MEAN	69.3	125.3	118.3	7.5	10.66	70.3	1840.5
	CV(%)	2.3	2.1	6.4	5.4	3.88	12.1	20.6

Note : Most of the entries are late and variable.
One entry QPL 247 was rejected because of variability for plant type, flower color and pod color.

Date of planting : 21-6-1988
Net plot size : 2.16 m2
Spacing : 30 x 10 cms.

Table 63: Performance of entries in 8SDTLT (88P18) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
2	ICPL 87102	72	140	128	8	12.5	216	1617
8	ICPX 82411-1*F2-DT69-B-B-B	73	137	115	8	11.8	187	1607
1	ICPL 87009	72	135	123	8	12.0	233	1582
10	ICPL 151(Check)	72	122	93	7	11.3	247	1529
9	ICPL 87(Check)	74	138	102	7	10.8	232	1494
5	ICPX 82411-1*F2-DT59-B-B-B	70	137	120	8	12.7	201	1328
3	ICPL 87022	71	137	130	8	11.2	210	1223
7	ICPX 82411-4*F2-DT55-B-B-B	74	137	108	8	12.5	138	1216
6	ICPX 82411-1*F2-DT62-B-B-B	72	137	125	8	12.3	212	1109
4	ICPL 87021	73	138	135	8	12.0	201	930
	SE±	1.2	1.8	6.4	0.4	0.24	12.4	261.6
	MEAN	72.2	135.8	118.0	7.7	11.91	207.7	1363.5
	CV(%)	2.9	2.4	9.4	8.4	3.53	10.4	33.2

Date of planting : 21-6-1988
Net plot size : 6.48 m2
Spacing : 30 x 10 cms.

Table 64: Performance of entries in WSDTLT (88P17) grown at ICRISAT Center, Patancheru, rainy season 1988.

Entry No.	Name	Days to Flower	Days to Mature	Plant height (cm)	Pod length (cm)	100-seed weight (g)	Plant stand	Grain Yield (kg/ha)
8	ICPL 87029	69	138	135	8	12.8	208	2268
5	ICPL 87030	68	144	133	8	12.2	196	2140
4	ICPL 87006	70	142	125	7	11.7	181	2043
3	ICPL 87005	70	136	118	8	13.4	205	1884
11	ICPL 87(Check)	74	136	97	7	10.3	213	1649
10	ICPL 87002	74	140	122	8	13.0	244	1647
7	ICPL 87032	71	145	128	8	12.0	220	1586
12	ICPL 151(Check)	70	117	92	7	11.4	214	1539
2	ICPL 87004	70	132	113	8	14.0	214	1506
9	ICPX 82411-4*F2-DT11-B-B-B	74	142	118	9	12.3	105	1476
1	ICPL 87003	70	129	110	8	14.8	189	1234
6	ICPL 87027	73	145	132	7	12.7	211	1194
	SE±	1.2	2.4	6.1	0.2	0.31	11.9	287.8
	MEAN	71.1	137.1	118.6	7.6	12.54	200.0	1680.5
	CV(%)	2.8	3.1	8.9	5.3	4.29	10.3	29.7

Date of planting : 21-6-1988
Net plot size : 6.48 m2
Spacing : 30 x 10 cms.

Table 41. Performance of selected entries in IET 88 29 conducted at Patancheru and Bidar, rainy season, 1988.

1988 Plot No.		Pedigree	Days to Flower		Days to Mature		Plant Height (cm)		100-Seed weight (g)	Seed Color	Yield (kg/ha)	
Bidar	Patancheru		Bidar	Patancheru	Bidar	Patancheru	Bidar	Patancheru	Patancheru		Bidar	Patancheru
2835	5124	ICPL 151 IC	74	67	119	113	190	100	11.0		1589	1047
2837	5126	ICCR003-0B-3C-0C-0C-0B	64	53	108	109	160	85	9.4	0	572	1001
2838	5127	ICCR035-0B4-0C-0C-0C-0B	65	48	93	94	120	90	7.7	0	800	1770
2842	5131	ICPL 4 IC	93	65	147	112	190	105	6.2		863	2004
2844	5133	ICCR062-0B-3B4-0B-0B-0C-0B	85	74	131	112	184	125	10.2	0	1022	1853
2845	5134	ICPL 151 IC	72	66	116	110	200	133	11.2		1021	1542
2846	5135	ICCR068-0B-3B4-0B-0C-0C-0B	74	65	118	112	155	110	11.7	0	1077	2544
2847	5138	ICCR096-0B-3B4-0B-0B-0C-0B	78	68	112	110	185	105	12.4	0	1124	3056
2850	5139	ICPL 4 IC	-	62	135	111	180	120	5.9		710	2246
2851	5140	ICCR104-0B-4B4-0C-0C-0C-0B	72	55	118	110	170	110	11.4	0	826	1192
2852	5141	ICCR114-0B-3B4-0C-0C-0C-0B	67	52	111	108	155	95	9.8	0	1174	2002
2853	5142	ICCR149-0B-3B4-0B-0B-0C-0B	72	64	126	115	195	115	11.6	0	1237	2792
2855	5144	ICPL 151 IC	78	69	117	115	185	120	11.2		1061	2572
2858	5147	ICCR154-0B4-0C-0C-0B-0C-0C-0B	65	48	108	95	135	85	9.6	0	1118	1815
2860	5149	ICPL 4 IC	69	52	113	111	180	120	6.2		973	1727
2861	5151	ICCR191-0B4-0C-0C-0C-0B-0C-0B	74	57	113	114	190	140	7.8	0	1121	1749
2863	5154	ICPL 151 IC	79	67	126	115	200	135	11.8		1015	2211
2867	5156	ICCR200-0B4-0C-0C-0B-0C	74	70	122	121	175	125	10.4		1299	1615
2870	5159	ICPL 4 IC	71	62	115	107	160	110	6		1241	1428
2872	5161	ICCR212-0B-2B-0B4-0B-0C-0B	72	64	117	114	177	117	7.9	0	1414	1777
2873	5162	ICCR218-0B-2B-0B4-0C-0C-0B	72	66	122	118	175	140	11.1	0	1177	1873
2875	5164	ICPL 151 IC	72	62	114	113	145	117	11.1		1114	1564
2877	5166	ICCR235-0B4-0C-0C-0B	74	67	117	121	175	135	12.0	0	1217	1943
2879	5167	ICCR237-0B-4B4-0C-0B	72	67	118	122	175	135	12.0	0	1176	1644
2880	5169	ICPL 4 IC	72	62	120	112	185	130	6		1197	1571
2882	5171	ICCR247-0B4-0C-0B	72	62	114	110	165	115	11.4	0	1196	1670
2883	5172	ICCR251-0B4-0C-0C-0C-0B	65	48	114	99	135	85	8.2	0	1111	1615
2884	5174	ICPL 151 IC	72	66	117	115	200	135	11.8		1179	1237
2886	5175	ICCR264-0C-0C-0C-0C-0B	69	52	117	107	170	110	10.5	0	1119	1953
2888	5177	ICPL 4 IC	72	65	118	112	180	135	6.8		1194	1579
2891	5180	ICCR289-0B-3B-0C-0C-0C-0B	74	72	127	126	190	135	10.5	0	1124	1773
2893	5184	ICPL 151 IC	72	67	116	118	195	135	11.6		1282	1774
2897	5186	ICCR313-0B4-0B-0B	72	61	115	108	190	135	11.2	0	1241	1716
2898	5187	ICCR314-0B4-0C-0B	68	52	116	114	170	95	8.4	0	1114	1994
2913	5191	ICPL 4 IC	71	64	122	112	185	140	6		1142	1742

Table 15. Performance of selected entries in IRT 98 PY conducted at Patancheru and Bimar rainy season, 1998

1998 Plot No		Pedigree	Days to Flower		Days to Mature		Plant Height (cm)		100-Seed weight (g)	Seed Color	Yield (kg ha)	
Bimar	Patancheru		Bimar	Patancheru	Bimar	Patancheru	Bimar	Patancheru	Patancheru		Bimar	Patancheru
2325	2209	ICPL 151 (C)	71	67	115	114	190	150	11.3		1534	2644
2313	2213	843043-88-03-00	73	64	122	120	200	135	11.1	BLACK	1420	2595
2318	2214	ICPL 4 (C)	70	62	114	112	185	120	6.3		1156	1861
2322	2217	840111-00-03-00	70	64	127	122	205	145	11.1	B	2343	2278
2326	2219	ICPL 151 (C)	71	67	124	117	195	135	10.8		1757	2819
2319	2242	9(8024-7C7C-00-15-15-02-01-00	70	52	123	104	180	90	8.4	B	1978	1972
2302	2244	ICPL 4 (C)	69	64	121	115	182	135	5.7		825	1715
2342	2246	9(8024-7C7C-00-02-04-01-01-00	67	54	106	106	152	95	8.7	B	1387	1825
2345	2249	ICPL 151 (C)	71	67	124	115	175	125	10.8		1279	2829
2373	2254	ICPL 4 (C)	75	62	135	121	180	135	6.3		425	1505
2372	2255	8(1344-00-02-04-01-02-00	70	53	120	110	165	110	12.2	B	1535	2215
2374	2258	8(0099-00-304-02-02-01-00	69	62	118	91	157	60	7.7	B	1211	1998
2375	2259	ICPL 151 (C)	75	67	127	114	130	125	11.1		1686	2287
2345	2269	ICPL 151 (C)	75	65	128	116	225	132	11.5		1529	2514
2368	2272	8(9993-00-304-02-01-01-00	69	49	121	104	153	75	9.6	B	1234	2529
2381	2274	ICPL 4 (C)	71	62	115	111	135	110	6.2		817	2352
2380	2284	ICPL 4 (C)	70	64	114	104	174	122	5.8		1242	2048
2322	2286	8(8135-7C7C-00-01C-03-01-00	72	58	124	114	174	95	10.7	B	1453	1959
2381	2287	8(8135-7C7C-00-01C-03-02-00	70	47	122	108	183	122	10.1	B	1435	2017
2385	2289	ICPL 151 (C)	75	65	126	115	122	110	11.2		1752	2397
2327	2291	8(8136-7C7C-00-0201-01-02-01-00	69	56	123	106	185	120	8.5	B	1612	2287
2309	2292	8(8139-02-01-01-01-01-00	74	48	116	115	165	125	10.2	B	2579	2483
2312	2294	ICPL 4 (C)	71	62	114	112	190	129	6.3		1430	2149
2333	2296	ICPL 4 (C)	71	52	112	108	175	134	5.5		365	1190
2332	2297	800954-00-05-01-01-00-00-00	68	54	124	104	140	99	6.4	B	2220	1423
2325	2298	ICPL 151 (C)	77	56	126	115	134	130	11.3		1524	1700
2328	2314	ICPL 4 (C)	74	65	112	112	175	105	5.7		736	1802
2324	2318	240-00-02-01-02-01-01-00	76	64	125	122	167	130	10.2	B	1436	2243
2331	2320	ICPL 151 (C)	75	59	120	115	170	115	12.1		1346	2125

Table 66. Performance of selected entries in IET 86 HOT conducted at Patancheru and Hisar, rainy season, 1986.

1986 Plot No.		Pedigree	Days to Flower		Days to Mature		Plant Height (Cm)		100-Seed weight (g)	Seed Color	Yield (kg/ha)	
Hisar	Patancheru		Hisar	Patancheru	Hisar	Patancheru	Hisar	Patancheru	Patancheru		Hisar	Patancheru
1263	1384	HARAK (C)	77	66	119	116	210	140	6.8		3064	1569
1263	1387	810119-BB-BB2-B9-B1-BB	76	69	117	125	215	156	10.1	B	2201	1958
1265	1389	UPAS 120 (C)	80	68	121	117	230	150	7.3		3000	2097
1270	1404	HARAK (C)	76	66	117	116	205	120	6.5		2507	995
1272	1405	810123-BB-9B-B1-B1-B1-BB	67	53	108	110	195	105	9.5	B	800	972
1285	1439	UPAS 120 (C)	80	71	123	120	210	145	7.5		1710	995
1288	1432	900290-B3-B19-B1-B1-B1-B1-BB	69	66	108	116	170	140	9.8	B	700	1001
1290	1434	HARAK (C)	76	65	119	114	225	125	7.2		2874	1597
1294	1438	900561-BB-B2-B1-B13-B1-B5-BB	75	68	123	117	196	149	9.1	B	2300	1887
1295	1419	UPAS 120 (C)	82	69	126	123	204	160	7.4		1917	1759
1299	1423	840856-BB-B1-BB	79	71	125	122	224	150	10.5	B	2030	1712
1304	1424	HARAK (C)	78	66	120	120	216	135	6.7		1751	1440
1320	1444	HARAK (C)	71	66	117	117	187	130	6.8		2596	940
1321	1445	840877-BB-B10-B8	62	67	97	114	192	95	9.8	B	457	422
1323	1447	840877-BB-B20-BB	82	66	104	115	185	106	8.9	B	1000	1007
1325	1449	UPAS-120 (C)	79	69	124	125	221	125	6.8		2290	1750
1328	1452	840877-BB-B51-BB	78	67	109	116	186	115	9.8	B	2515	988
1329	1453	840877-BB-B54-BB	67	67	107	116	159	130	10.7	B	1790	2043
1330	1454	HARAK (C)	72	65	117	119	110	156	6.9		3118	2005
1334	1459	840877-BB-B84-BB	76	68	118	117	217	150	9.3	B	3078	2213
1335	1460	UPAS 120 (C)	84	66	125	120	231	140	7.6		2301	1366
1340	1464	HARAK (C)	78	67	118	116	210	60	6.2		2290	1128
1342	1466	840877-BB-B37-BB	64	68	106	111	187	110	10.6	B	1837	1352
1345	1469	UPAS 120 (C)	81	69	125	120	216	115	6.8		1915	1088
1349	1473	840877-BB-B73-BB	71	64	114	114	192	130	10.8	B	1948	1750
1354	1474	HARAK (C)	80	65	124	118	230	145	6.7		2302	1425
1357	1477	810133-BB-BB-B1-B1-BB-BB	78	64	119	120	213	105	9.7	B	1250	1267
1365	1479	UPAS 120 (C)	82	63	122	122	217	130	7.1		2200	1556
1430	1548	HARAK (C)	80	66	118	117	205	160	7.1		2429	2190
1432	1550	809545-BB-B9-B1-B9-B1-B1-BL2B1-BB	64	56	108	120	230	120	9.8	B	181	1230
1434	1552	840907-BB-B30-BB	95	65	100	117	175	135	10.8	B	979	1478
1435	1553	UPAS 120 (C)	95	67	120	117	207	165	7.1		2142	2007
1438	1556	840879-BB-B28-BB	69	63	107	110	181	154	9.8	B	1525	1972
1442	1559	HARAK (C)	82	69	121	117	205	170	6.9		2213	2199
1451	1569	HARAK (C)	73	63	119	117	200	153	6.8		2474	1787
1452	1570	7x241-BB-B2-B2-B5-B2-BB-B3-BB	65	62	104	108	170	154	9.5	B	915	2264
1455	1573	UPAS 120 (C)	82	66	119	118	187	145	7.4		2894	1561

Table 87. Performance of short-duration lines in different sowings in winter during 1985-86 at Patancheru

Genotypes	Growth habit	Days to flower				Days to mature				Plant height (cm)				Pods/Plant				Seeds/pod				Grain yield/plant				100 seed wt (g		
		5 Dec	15 Dec	30 Dec	17 Jan	5 Dec	15 Dec	30 Dec	17 Jan	5 Dec	15 Dec	30 Dec	19 Jan	5 Dec	15 Dec	30 Dec	17 Jan	5 Dec	15 Dec	30 Dec	17 Jan	5 Dec	15 Dec	30 Dec	17 Jan	5 Dec	15 Dec	30 Dec
ICPL 87	DT	68	69	71	63	116	120	112	104	36	38	45	46	32	35	28	18	3.0	3.0	2.6	2.5	7.1	6.1	6.0	3.6	9.9	9.3	9.5
ICPL 151	DT	70	70	72	64	120	120	111	104	36	38	45	51	30	29	16	20	3.2	3.0	2.6	2.6	10.2	7.2	6.1	3.7	11.6	9.6	10.0
ICPL 84023	DT	65	63	63	60	114	117	106	96	37	39	43	44	43	31	23	20	3.1	2.9	2.7	2.6	6.1	5.0	4.0	2.5	8.0	7.0	6.7
ICPL 85014	DT	68	68	72	62	116	116	112	102	37	38	42	44	38	40	31	19	3.2	3.1	3.6	2.6	6.8	7.6	5.8	2.8	7.0	6.2	7.3
ICPL 85030	DT	67	64	65	62	126	120	110	96	31	32	36	40	27	29	20	15	3.0	3.0	2.6	2.1	5.8	7.8	5.2	2.7	10.3	10.5	10.1
ICPL 85013	DT	68	68	72	63	120	110	111	104	33	33	38	41	34	32	25	18	3.0	2.7	2.8	2.6	7.0	6.0	6.1	3.0	10.1	8.9	9.6
ICPL 86020	MDT	68	70	72	65	118	120	111	100	39	39	39	37	46	46	27	12	3.8	3.3	2.7	2.2	12.1	9.2	5.7	1.9	9.6	7.5	7.5
ICPL 86023	MDT	66	66	71	62	118	121	110	102	42	43	47	44	27	29	20	14	3.1	2.8	2.4	2.5	8.2	8.8	4.3	2.2	11.0	10.0	8.7
ICPL 87111	MDT	72	68	72	63	116	120	110	103	49	50	52	47	48	35	22	17	3.2	2.9	2.8	2.4	8.8	6.4	4.3	2.6	7.9	6.8	7.6
ICPL 1	MDT	73	69	74	65	121	122	116	100	55	54	52	46	58	57	32	13	3.2	3.1	2.5	2.4	9.4	9.0	6.1	2.0	6.3	6.0	5.6
Mean		69	68	70	63	118	119	111	103	42	42	46	46	38	36	25	17	3.1	3.0	2.6	2.4	7.7	7.6	5.0	2.8	9.0	8.7	8.3
SE (a) Dates		± 0.52				± 0.84				± 1.82				± 3.08				± 0.18				± 0.76				± 0.21		
(b) Date x entries		± 1.28				± 1.68				± 2.34				± 5.07				± 0.20				± 1.20				± 0.03		
CV (%) (a) Dates		0.8				0.8				4.1				13.6				3.6				12.7				2.8		
(b) Date x entries		1.9				1.5				5.3				29.2				7.3				20.7				7.4		