REPORT OF THE WORK DONE DURING THE YEARS 1979-80, 1980-81, AND 1981-82 AT HISAR SUBCENTER

PROJECT PP-brd-1

(Development of Early Maturing Cultivars and Superior Breeding Lines for Grain Production)

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ICRISAT

Location

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PIGEONPEA BREEDING STAFF AND COOPERATING SCIENTIST

ASSOCIATED WITH PROJECT No. P-brd-1

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PROJECT 1 : DEVELOPMENT OF EARLY MATURING CULTIVARS AND SUPERIOR BREEDING LINES FOR GRAIN PRODUCTION.

OBJECTIVES: a. To develop high yielding early maturing cultivars with acceptable grain quality suited to use in future stands or with short duration companion crops.

b. To contribute breeding lines and populations to breeders throughout the SAT.

A. INTRODUCTION:

The monthly mean rainfall in mm for the years 1977-78 to 1981-82 are presented in Table 1.1. The amount of rainfall received during the peak flowering and pod filling stages of the early maturing crop i.e. September and October was 51, 8, and 27 mm for 1979-80, 1980-81 and 1981-82 respectively. This was followed by dry November both during 1979-80 (0 mm) and 1980-81 (7 mm).

None of the replicated yield trials and single plant progeny evaluations received irrigation. The crossing block, the ICPL lines maintenance and purification block and the demonstrations were irrigated once in September.

During 1979-80, 100 kg DAP (Di-Ammonium Phosphate) per hectare was applied as a basal dose at the time of final harrowing. During 1980-81 and 1981-82, 66 kg SSP (Single Super Phosphate) per hectare was applied. No other nutrients were supplied to the crop. Seeds were not inoculated with rhizobium culture.

BHC 10% dust @ 10 kg/ha was incorporated into the soil with the last harrowing during 1979-80 only. Except the crossing block, and the ICPL maintenance and purification block, none of the pigeonpea trials and progenies received any insecticidal spray during 1979-80 and 1980-81 seasons. During 1981-82, to control the heavy infestation of leaf hoppers during the vegetative stage, all the pigeonpea breeding material was sprayed once with Rogor 30 EC.

B. CROSSES MADE

During 1979-80, four early-maturing advance lines with five or more ovules per pod and large seeds (>12 gms/100 seeds) from three different crosses viz., ICP x 74068 (Prabhat x Baigani), 74092 (6997 x Prabhat) and 75080 [(6997 x Prabhat) x Pant A-3)] were identified and used as donor parents for increasing the pod and seed size of the three promising lines ICPL 2, 4 and 81. Two early maturing large podded parents which were progenies from the triple cross ICPX 77007 [(8504 x Prabhat) x ICPL 10] were used as donors to transfer earliness into 6 large podded but comparatively late progenies derived from the cross between the ICP x 77007 triple cross progenies and ICP 8504 (from the seed size inheritance study). In addition, 13 early maturing, large podded F3 single plant progenies from ICP x 76115 (ICP 8504 x Prabhat) were intermated in a chain fashion i.e. 1 x2, 2 x 3,

3 x 4 and so on. In all, 28 crosses were made with the objective of incorporating earliness in large podded selections and increasing the numbers of seeds per pod and seed size of some promising early maturing lines. The crosses made with their objectives are listed in Table 1.2.

The list of crosses made during 1980-81 with their objectives are tabulated in Table 1.3. Five early maturing large seeded and large podded lines (ICPL 9, 94, 141, 151 and 77007-H30-HB) were used as donors to incorporate these characters in to 5 promising lines viz., ICPL 1, 5, 81, 87 and 164. Also ICPL 81, a promising very early but small podded indeterminate line was crossed with ICPL 86, ICPL 87, ICP 8504, QP 223, QP 227, 77007-H4-H4 and 78343-H1 in order to transfer large seed and pod characteristic (Table 1.3A). For incorporating further earliness into 8 promising lines (ICPL 1, 4,6, 81, 86, 87, 161, and 164) crosses were attempted with three extra-early parents, DL 78-1, 74068-1-B-34-B-1-H1-B0-H12 and 74065-76-3-H1- B0-HB0-H2 (Table 1.3 B).

An advance line from the cross ICP x 75004 [(Prabhat x Hy 3C) x (UPAS 120 x 7086)] was selected to incorporate its non-branching habit into two of our most promising cultivars ICPL 1 and ICPL 87 (Table 1.3C).

In order to accumulate genes for increased seed size and earliness, 19 F4 progenies of the cross ICP x 76115 (8504 x Prabhat) were intermated in a chain cross fashion (Table 1.3 D). In addition, 4 triple cross (ICP x 77007) large podded early maturing lines were used as donor parents for transforming genes for increased pod size and earliness into 10 large podded but late (later than T-21) progenies derived from the cross between 77007 SPP's and ICP 8504 (Table 1.3 E).

Using Prabhat male sterile (determinate) and T 21 male sterile lines as female parents and ICPL's 81, 4, 164, 161, and 87 as pollen parents, five early maturing hybrids were produced (Table 1.4) for preliminary testing.

In 1981-82, 118 crosses were made with different objectives (Table 1.5). Nine large podded indeterminate F1's and Baigani was crossed to ICPL 81, a very early adapted NDT line (Table 1.5A). Three early maturing large podded parents from crosses ICP x 76115 and 78353 were used as donor parents for large podded character in the crosses with 8 promising ICPL lines (Table 1.5B). Three triple crosses using an extra-early line ICPL 267 as third parent were attempted to combine earliness with large pods (Table 1.5C).

An early maturing dwarf progeny (D1 type) from cross ICP x 77324 [(73081-4D1-4 x Prabhat) x Prabhat] was used to transfer dwarfness into 5 ICPL lines and 6 F1s (Table 1.5D). It was also attempted to transfer the profuse branching habit of ICP 7952 into ICPL 81, 179 and 267 (Table 1.5E).

In order to incorporate large pod and big seed characters from new genetic sources (other than ICP 8504), ICP 6915, 8514, 8547, 9158, and 9159 from the part of the GRU collection having more than 5 large (>15 gm) seeds per pod were selected as donor parents in crosses with two early maturing adapted lines, ICPL 81 and 267 (Table 1.5F).

Two parents resistant to Phytophthora stem blight and sterility mosaic disease (Pant A-3-P38 and 73047-14-1-B-1-B-HB0-H3-HB) (Table 1.5G), two resistant to sterility mosaic (74146-B-23-1-H1-HB0-HB-H5 and 74205-1-B-104- 1-HB0-H3) (Table 1.5H), one resistant to wilt (79030-R6B-V40-V10-VB0-1- VB0) (Table 1.5I) and one resistant to Alternaria blight (20 (105)) (Table 1.5J) were used to incorporate their resistance into 8 promising ICPL lines viz. ICPL 81, 87, 94, 142. 150, 179, 185 and 267. 96 crosses attempted for incorporating disease resistance 61 succeeded.

C. BREEDING POPULATIONS

I. BULK POPULATIONS

a) F1: During 1979 kharif, 43 F1's (1978-79 ann.rep. pp 23) were grown in one or two-row plots (depending on seed availability) flanked by parents. The list with parentage is presented in Table 1.6. One of the F1's (ICP x78336) did not emerge. Bulk seed from all the 42 F1's were harvested for growing F2 populations in 1980.

In 1980, 28 F1's made during 1979 (Table 1.2) flanked by the parents were grown. Of 28, 11 F1's either were very poor or looked like female parents (selfs). These were rejected. The remaining 17 were harvested in bulk for growing F2 populations during 1981.

Of 124 crosses made (Table 1.3) during 1980, based on availability of seed, 113 F1's were grown in one-row plots replicated twice. Each F1 was accompanied by a check (ICPL 1). Days taken to flower, maturity and grain yield of the F1's and the close check are summarized in Table 1.7. Although, in general the yield levels were low in F1's mainly because of poor stand, 13 F1's gave more than a 100 percent increase in yield over its nearest check and 65 F1's were inferior in yield to the check. Based on maturity, podding, pod and seed size, branching, parentage and yield, 95 F1's were selected for growing as F2 populations during 1981.

b)F2 :

In 1979, no F2 bulks were grown.

In 1980, 42 F2 bulks were grown (Table 1-8) in plot size ranging from 2 to 20 rows depending upon seed availability. Rows were 9 m long spaced 60 cms apart. The number of selections made in these populations are summarized in Table 1.8. In all 373 (165 DT and 208 NDT) individual plants were selected visually for evaluation as SPP's in 1981 (Table 1.16).

On the basis of bulk yields and parentage, 19 F2 bulks were selected for multilocation testing in the EPUB (Early Pigeonpea Unselected Bulks Test). Five pods per plant (including those from selected plants) were harvested in two separate bulks to make unselected bulk populations. These were sent to ICRISAT Center, one bulk for further maintenance and advance in September sowings and the other for cold storage.

During 1981, 112 F2 bulks were grown. These included 17 F1's made in 1979 and advanced in 1980 kharif and 95 F1's made in 1980 and advanced in the off-season at ICRISAT Center. The plot size was 2 to 13 (depending upon seed availability) 9 meter long rows. Details of the number of selections made in these populations are summarized in Table 1.9. In all 1163 plants with early maturity, with large pods and seeds, profuse branching and the greatest number of pods were selected visually for evaluating as SPP's in 1982. Based on the total bulk yield and parentage, 33 bulks were selected for including in replicated large plot yield trials.

c) F3:

During the 1979 kharif, one F3 bulk population (about 3000 plants) of cross ICP x 76115 (8504 x prabhat) was grown. Twenty-four individual plants having large pods and maturing earlier than ICPL 6 were selected for further evaluation as SPP's in 1980 (Table 1.15).

In 1981, 4 F3 bulk populations of the crosses ICP x 79086, 79087, 79088 and 79089 from the new plant type project were grown in 23 plots with 9 meter long rows. Fifty three early maturing plants with good pod set were selected from these populations (Table 1.10) for evaluating as SPP's in 1982.

d) F4:

With the objective of selecting early maturing dwarf plants, 4 F4 bulk populations involving dwarf (D2 and D3) and early maturing cultivars (Pant A2 and Prabhat) from the new plant type project were grown in 1979. Each population consisted of about 4000 plants. The majority of the plants in all the four populations were later than ICPL 6 in maturity. However, the 20 earliest plants from each population were selected (Table 1.11) for evaluation as SPP's in 1980 (Table 1.15).

In 1980, 4 single cross, one backcross and one triple cross intergeneric F4 population involving A. albicans, A. lineata and early maturing cultivars (Pant A-2 and Baigani) from the new variability project were grown in plot of 27 rows 9 meters long spaced 60 cms between rows. All the plants in these populations were very late, not maturing even in January. Six comparatively early and high branching plants from the F4 population of the cross (Pant A-2 x A. albicans) were selected (Table 1.12) for evaluating as SPP's in 1981 (Table 1.17).

e) F6:

During 1981, 3 F6 unselected bulk populations of crosses ICP x 75338, 75295 and 74120 were grown in 9 meter long 23 row plots. Selections made in these are summarized in Table 1.10. Twenty-nine (1 DT and 28 NDT) comparatively early maturing plants with good pod set were selected visually for evaluation as SPP's in 1982.

f) 1:

In 1979, 7 composite 1 populations (3rd generation) were grown. Each population consisted of about 4000 plants. In all 224 early maturing plants with good pod set were selected visually from these populations for evaluation as SPP's in 1980 (Table 1.13).

In addition bulk seed of all the composite populations was also harvested. Seed of composite 1 ODT was separated into two lots based on seed size.

In 1980, 8 composite 1 populations (4th generation) were grown in plots of 27 rows 9 meter long with rows spaced 60 cms apart. Details of the number of selections in these plots are summarized in Table 1.12. Ninty-six early maturing individual plants were selected from these for further evaluation with close check in 1981.

II. SINGLE PLANT PROGENY EVALUATIONS

During 1979 and 1980, single plant progenies (SPP) were planted in unreplicated two-row plots. In 1981, SPP's were evaluated in one-row plots replicated twice. Progenies were classified into two major classes, DT and NDT. Within each class they were further grouped according to their maturity classes viz., 0, I, II, and III. Every fifth plot was planted with an appropriate check. For DT progenies ICPL 4 and ICPL 8 and for NDT progenies ICPL 1 were used as checks.

1. SINGLE CROSSES:

a) F3: During 1979, 507 F3 SPP's from cross ICP x 76115 (8504 x Prabhat) and 27 from Cross ICP x 76141 (73081-D1 x Pant A-2) (Ann. Rep. 1978-79, pp.15) were evaluated with a close check. The details of the number of selections made are summarized in Table 1.14. From 507 SPP's of cross ICP x 76115 865 (479 DT and 386 NDT) early maturing large podded single plants were selected for further evaluation (Table 1.15). In cross ICP x 76141, 26 NDT plants with dwarf stature and comparatively early maturing were selected from 7 promising looking progenies for further evaluation in 1980 (Table 1.15).

In 1980, 113 F3 SPP's from cross ICP x 76115 selected from a seed size inheritance study and 17 SPP's from three crosses ICP x 76140 (5), 76149 76145 (11) involving dwarfs (D2) and early maturing parents (Pant A-2 and Prabhat) from the new plant type project were evaluated. From 113 SPP's of cross ICP x 76115, 17 large podded and early turing plants were selected (Table 1.15) for further evaluation

(Table 1.17) in 1981. One uniform progeny of cross ICP x 76115 yielding more than the nearest check was selected for inclusion in the replicated yield trial during 1981.

From new plant type progenies, 16 comparatively early maturing dwarf plants from ICP x 76140 (4), 76149 (2) and 76145 (10) were selected (Table 1.15) for further evaluation in 1981 (Table 1.17).

In 1981 kharif, 351 F3 SPP's from 42 different crosses made during 1978 (1978-79 Ann.Rep., pp.23) were evaluated. Details of the number of selections made in these are summarized in Table 1.16. Twenty-four progenies yielding higher and maturing as early or earlier than ICPL 6 were selected for inclusion in the replicated yield trials during 1982. In addition, 1002 individual early maturing plants with good pod set were selected visually (Table 1.16) for further evaluation in 1982.

b) F4:

No F4 SPP's were grown during 1979.

In 1980, 889 F4 SPP's (Table 1.15 and pp.24) from cross ICP x 76115 (8504 x Prabhat), and 26 SPP's from cross ICP x 76141 (Table 1.15) were evaluated for their yield performance. Nine uniform early maturing, large podded progenies of cross ICP x 76115 yielding higher than the nearest check were selected (Table 1.15) for further testing in replicated yield trial in 1981. In addition, 214 early maturing, large podded plants were selected for further progeny evaluation (Table 1.17). All the progenies of cross ICP x 76141 (Table 1.15) were later in maturity than ICPL 6, hence were rejected.

In 1981, 17 F4 SPP's from cross ICP x 76115 and 16 SPP's from crosses ICP x 76140 (4), 76149 (2) and 76145 (10) were grown (Tables 1.15 and 1.17). Of these, only 3 dwarf plants maturing with ICPL 6 were selected from ICP x 76145 progenies (Table 1.17) for further evaluation with a close check.

c) F5:

Eighteen F5 SPP's, 2 of cross ICP x 74075 (UPAS 120 x Baigani), 1 of 74078 (Baigani x Pant A-2) and 15 from cross 74209 (Pant A-2 x NP(VR)15) were grown in 1979 (1978-79 Ann. Rep.; pp-14). Details of the number of selections made in these is summarized in Table 1.14. Five progenies from ICP x 74209 and 1 from 74075 found to be uniform, maturing earlier than ICPL 6 and yielding more than ICPL 1 were selected for inclusion in the replicated yield trial in 1980. In addition, 50 plants from ICP x 74209 and 8 from 74075 having good pod set and maturing earlier than ICPL 1 were selected for retesting (Table 1.19) in 1980.

During the 1980 kharif, of 20 plants each from crosses ICP x 76149, 76145, 76168 and 76166 (Table 1.11) grown for evaluation of their yield performance, 5 visually good looking plants having profuse branching from progenies of cross ICP x 76145 were selected (Table 1.15) for further evaluation in 1981 (Table 1.17). All the other

progenies of crosses ICP x 76149, 76145, 76168 and 76166 were rejected since they were much later than ICPL 6 in maturity.

In 1981 kharif, 214 F5 SPP's of cross ICP x 76115 (Tables 1.15 and 1.17) and 6 SPP's of an intergeneric cross, Pant A-2 x A. albicans (Tables 1.12 and 1.17) were grown with a close check. Of these, 18 progenies from cross ICP x 76115 and 2 from (Pant A-2 x A. albicans) were found to be higher yielding than the nearest check and hence were selected for inclusion in the replicated yield trial in 1982 (Table 1.17). In addition, 74 early maturing, large podded plants from ICP x 76115 progenies and 6 plants with heavy pod set from the intergeneric cross were selected (Table 1.17) for further evaluation as SPP's in 1982.

d) F6:

During 1979, 24 F6 SPP's from 5 different crosses (1978-79 Ann.Rep., pp-12) were evaluated for their yield performance (Table 1.18). Of these, 3 progenies from cross ICP x 74029 (Pant A-2xNP(VR)15) and one each from crosses ICPx74075 (UPAS 120 x Baigani), 74078 (Baigani x Pant A-2), 74149 (Hy 3C x Prabhat) and 74189 (4720 x ICPX 6) were selected (Table 1.18) because of their high yields for inclusion in a replicated yield trial in 1980. In addition, 43 single plants with good pod set and early maturity were selected for further evaluation as SPP's (Table 1.19) in 1980.

In 1980, 50 SPP's from cross ICP x 74209 and 8 from 74075 (Tables 1.14 and 1.19) were grown with a close check. Details of the number of selections made in these progenies are summarized in Table 1.19. One progeny from cross ICP x 74209 which yielded more from the check was selected for inclusion in a replicated yield trial in 1981. Twenty early maturing good looking plants from progenies of cross ICP x 74209 and 3 from progenies of cross ICP x 74075 were selected for reevaluation as SPP's in 1981 (Table 1.17).

All the 5 progenies of cross ICP x 76145 (73081-40D2-3 x Prabhat) (Table 1.15)evaluated in 1981 were found to be later maturing and lower yielding than ICPL 6 hence were rejected (Table 1.17).

e) F7:

During 1979, 83 progenies from 11 different crosses (1978-79 Ann. Rep. pp-9) were evaluated for their yield and maturity. Details of the number of selections made in these progenies are summarized in Table 1.18. Of 83, 18 progenies (as per details given in Table 1.18) that yielded more than the check were selected for inclusion in a replicated yield trial in 1980. In addition, 144 early maturing and visually good looking plants from progenies of 10 crosses were selected for reevaluation as SPP's in 1980 (Table 1.21).

In 1980, 43 SPP's from five different crosses selected in 1979 (Table 1.18 and 1.19) and 9 SPP's from crosses ICP x 74216 (Baigani x 7035) and 73050 (T-21 x EC 100467) from the vegetable type project were evaluated for their yield and maturity. One early maturing progeny of cross ICP X 74149 (HY 3C X Prabhat) yielding more than the

check was selected (Table 1.19) for inclusion in a replicated trial in 1981. Fourteen early maturing and good looking plants with good pod set were selected (Table 1.19) from progenies of crosses ICP x 74075, 74189, 74209 and 74216 for retesting as SPP's in 1981 (Table 1.22).

Twenty SPP's of cross 74209 (Pant A 2 x NP(WR)-15) and 3 of cross 74075 (UPAS 120 x Baigani) selected in 1980 (Table 1.19 and 1.17) were retested in 1981 Of these only one progeny maturing earlier than ICPL 6 and yielding higher was selected (Table 1.17) for inclusion in replicated yield trial next year.

f) F8:

During 1979, 123 F8 SPP's from 12 different crosses (1978-79 Ann. Rep. pp.8) were grown to evaluate their yield performance. Details of the number of selections made is summarized in Table 1.20 Six progenies of cross ICP x 74092 (6997 x prabhat), four each of the crosses ICP x 74078 (Baigani x Pant A-2) and 74146 -(Prabhat x 7035), two of cross ICP x 74068 - (Prabhat x Baigani) and one each of crosses ICP x 73021 (Pusa Ageti x Mukta), 73043 (Pusa Ageti x JA 276), 73062 (T 21 x JA 277), 74174 (7035 x UPAS 120) and 75205 (Hy 3C x Pant A-2) were selected for inclusion in a replicated yield trial in 1980 because they yielded more than the check. In addition, 256 good looking plants from promising but segregating progenies of crosses ICP x 74075, 74092, 74146, 74149 and 74174 were selected for retesting as SPP's in 1980 (Table 1.23).

In 1980, 144 SPP's selected in 1979 (Tables 1.18 and 1.21) from 10 different crosses were evaluated with a close check for their maturity and yield performance. Details of the number of selections made in these progenies are summarized in Table 1.21. Two progenies, one each from crosses ICP x 74065 and 74205 yielded more than the nearest check, hence were selecteed for inclusion in a replicated yield trial in 1981. In addition, 31 good looking plants from promising but segregating rogenies of crosses ICP x 74065 (UPAS 120 x Prabhat), 74146 (Prabhat x 7035) and 74205 (Hy 3C Pant) were selected for reevaluation as SPP's in 1981 (Table 1 2).

In 1981, 14 SPP's selected in 1980 (Tables 1.19 and 1.22) from 4 different crosses (ICP x 74075, 74189, 74209, and 74216) were evaluated with a close check for their yield and maturity. Of these two progenies, one each from crosses ICP x 74209 and 74216, that yielded more than the check, were selected (Table 1.22) for retesting in a replicated yield trial in 1982.

g) F 9-11:

During 1979, 68 F9 SPP's from 4 different crosses ICP x 74068, 74078, 74075, and 73060) selected in 1978 (1978-79 Ann. Rep., pp.6) were evaluated for their yield. Details of the number of selections made in these are summarized in Table 1.20. Five progenies from cross ICP x 74075 and 2 from cross ICP x 74068 were found to be higher yielding than the check. These were selected for retesting in a replicated yield trial in 1980. In addition, 133 plants with good pod set and large seeds were visually selected from segregating progenies

of crosses ICP X 74068 and 74075 for reevaluation as SPP's in 1980 (Table 1.23).

In 1980, 256 F9 SPP's from five different crosses selected in 1979 (Table 1.20) were evaluated. The details of the number of selections made are summarized in Table 1.23. Sixteen progenies yielding higher than the check and 98 good looking plants from segregating progenies of these crosses were selected for retesting in 1981 (Table 1.23). Of 133, F10 progenies from crosses ICP x 74068 and 74075 evaluated (Tables 1.20 and 1.23), 2 progenies from cross ICP x 74068 yielding more than the check and 101 single plants with good pod set from segregating progenies of crosses ICP x 74075 (21) and 74068 (80) were selected for reevaluation in 1981 (Table 1.22).

During 1981, 31 F9 SPP's from 3 crosses (Tables 1.21 and 1.22), 98 F10 SPP's from 5 crosses (Tables 1.22 and 1.23) and 101 F11 SPP's from 2 crosses (Tables 1.22 and 1.23) were evaluated with a close check for their yield performance and maturity. Details of selection in these progenies are summarized in Table 1.22. Fourteen F9, 25 F10 and 20 F11 progenies maturing earlier and yielding higher than the check were selected for retesting in replicated yield trials in 1982.

2. THREE WAY/BACK CROSSES:

Details of progenies planted and the number of selections made in triple/back cross progenies of different crosses in different generations during 1979, 1980 and 1981 seasons are summarized in Tables 1.24, 1.25 and 1.26 respectively.

a) BCF2/TCF2:

During 1979, 38 progenies of BCF2 (73081-40D2-3x Prabhat) x Prabhat)) and 116 progenies of ICP x 77007 TCF2 (8504xPrabhat)xICPL 10) were grown with a close check. Fifty-four and 204 plants were visually selected for further evaluation from these progenies (Table 1.24). The criteria of selection was early maturity, dwarfness and increased branching for backcross progenies and early maturity, large pods and big seeds for triple cross progenies.

In 1980, 78 BCF2 progenies of 2 crosses (ICP x 77001 and 77002) from the seed size inheritance study and 25 TCF2 progenies of crosses ICP x 78374 and 78359 from the new plant type project were grown to evaluate their yield and maturity. Three uniform progenies of cross ICP x 78359 yielding more than the nearest check were selected for further evaluation in replicated yield trial in 1981 (Table 1.25). In addition, 47 early maturing, large podded plants were selected from these progenies for retesting as SPP's in 1981 (Table 1.26).

b) BCP3/TCP3:

In 1979, 3 progenies of the triple cross ICP x 76066 selected in 1978 (1978-79 Ann. Rep.pp 14) were evaluated and rejected because of their late maturity and low yield as compared to ICPL 6 (Table 1.24).

During 1980, 204 of ICP x 77007 TCP3 and 54 BCP3 progenies of cross ((73081-40D2-3xPrabha') x Prabhat) selected in 1979 (Table 1.24), 34 SPP's of ICP x 77007 TCP3 from the seed size inheritance study and 25 BCF3 SPP's of crosses ICPx78364, 78456, and 78367 from the new plant type project were evaluated for their yield and maturity. Numbers of selections made in these progenies are summarized in Table 1.25.

Fifty good looking plants with good pod set from backcross progenies and 47 early maturing large podded plants from triple cross progenies were selected (Table 1.25) for further evaluation as SPP's in 1981 (Table 1.26).

In 1981, 35 progenies from 3 backcrosses and 36 progenies from 3 triple crosses were evaluated for their performance. The numbers of selections made are summarized in Table 1.26. Two uniform progenies from cross ICPx77001 yielding more than the check were selected for inclusion in the replicated yield trial in 1982. Eight plants from backcross progenies and 17 early maturing large podded plants from triple crosses ICPx 77007 and 78359 were selected visually for further evaluation as SPP's in 1982.

c) BCP4/TCP4:

In 1980, 26 BC4 progenies of cross ICP x 77324 from the new plant type project were evaluated. Nine plants maturing early and looking vigorous were selected (Table 1.25) visually for further evaluation as SPP's in 1981 (Table 1.26).

In 1981, 71 backcross progenies from 4 different crosses and 47 from ICP x 77007 TCP4 progenies were evaluated. The number of selections made in these are summarized in Table 1.26. Eight progenies yielding more than the check were selected for inclusion in a replicated yield trial in 1982. In addition, 25 early maturing large podded plants from ICP x 77007 and 47 vigorous plants with good pod set from back crosses were selected for retesting as SPP's in 1982.

d) BCP5/TCP5:

Twenty-four triple cross progenies from crosses ICP x 75071, 75075 and 75083 selected in 1978 (1978-79 Ann. Rep. pp.13) were evaluated for their performance in 1979. One progeny each from crosses ICP x 75075 and 75083 yielding more than the check were selected (Table 1.24) for inclusion in a replicated yield trial in 1980. Twenty three good looking plants were also selected for reevaluation as SPP's in 1980 (Table 1.25).

In 1981, 38 progenies from ICP x 77323 and 77324 backcrosses from the new plant type projet were evaluated for their yield performance. Most of the progenies were later in maturity than ICPL 6. Eight comparatively early maturing and vigorous plants from ICP x 77324 were selected (Table 1.26) for further testing as SPP's in 1982.

e) BCP6/TCP6:

In 1979, 58 SPP's from 6 different crosses (1978-79 Ann. Rep., pp.10) were grown to evaluate their performance. Selections made in these are summarized in Table 1.24. Thirteen progenies from ICP x 75080 and one from ICP x 75072 yielding more than the check were selected for inclusion in a replicated yield trial in 1980. One hundred and thirty five good looking large podded plants from these were selected (Table 1.24) for further evaluation as SPP's in 1980 (Table 1.25).

During 1980, 23 progenies from crosses ICP x 75071, 75075 and 75083 (Table 1.24) were evaluated. Of these, 10 early maturing good looking plants were selected (Table 1.25) for further evaluation as SPP's in 1981 (Table 1.26).

f) BCP7/TCP7:

During 1979, 21 SPP's of crosses ICP x 74436, 74002 and 74003 (1978-79 Ann.Rep., pp-9) were grown for evaluation. One progeny each from ICP x 74436 and 74002 yielding more than the check were selected (Table 1.24) for inclusion in a replicated yield trial in 1980. In addition, 24 early maturing vigorous looking plants from crosses ICP x 74436 and 74002 were selected for retesting as SPP's in 1980 (Table 1.25).

In 1980, 135 SPP's from five different crosses were evaluated. Two progenies yielding more than the check from cross ICP x 75080 were selected for inclusion in a replicated yield trial in 1981. In addition, 66 early maturing large podded plant were selected visually from crosses ICP x 75080, 74003, 75072, and 75078 (Table 1.25) for further evaluation as SPP's in 1981 (Table 1.26).

In 1981, of 10 SPP's from crosses ICP x 75071, 75075 and 75083 tested, one progeny of cross ICP x 75083 yielding more than the check was selected (Table 1.26) for inclusion in a replicated yield trial in 1982.

g) BCP8/TCP8:

During 1980, 24 SPP's selected in 1979 (Table 1.24) and 4 from the new plant type project of cross ICP x 74436 were evaluated for their yield. Of these, only one preogeny of cross ICP x 74436 yielding more than the check was selected (Table 1.25) for retesting in a replicated yield trial in 1981.

In 1981, 66 SPP's from crosses ICPx 74003, 75072, 75078 and 75080 selected in 1980 (Table 1.25) were evaluated. Of these, 6 progenies from the cross ICP x 75080 yieding more than the check were selected

for inclusion in a replicated yield trial. Ten early maturing, large podded plants from cross ICP 75080 were selected (Table 1.26) for reevaluation as SPP's in 1982.

3. DOUBLE CROSSES:

Details of the number of double cross progenies planted and selections made in different generations of different crosses during 1979, 1980, and 1981 seasons are summarized in Tables 1.27, 1.28 and 1.29, respectively.

a) DCP4:

During 1979, one SPP of cross ICP x 75003 was evaluated and because it yielded more than the check was selected (Table 1.27) for replicated yield testing in 1980.

b) DCP5:

In 1979, 30 SPP's from 7 crosses (1978-79 Ann. Rep., pp. 13) were evaluated. One progeny, yielding more than the check, from each of the six double crosses, was selected (Table 1.27) for retesting in a replicated yield trial in 1980. In addition, 57 early maturing vigorous looking plants were selected visually (Table 1.27) for further evaluation as SPP's in 1980 (Table 1.28).

c) DCP6:

During 1979, 20 SPP's of cross ICP x 75001 and 21 from 8 other double crosses (1978-79 Ann. Rep., pp.11) were evaluated for their yield performance. The number of selections made in these are summarized in Table 1.27. Five progenies from cross ICP x 75001, 2 from ICP x 75005, and one each from ICP x 75021, 75025 and 75013 yielded more than the check and hence were selected for replicated yield testing in 1980. One hundred early maturing, large podded good looking plants were selected for further evaluation as SPP's in 1980 (Table 1.28).

In 1980, 71 SPP's (14 from the vegetable type project) from 7 crosses were evaluated (Table 1.28) for their yield performance and maturity. One progeny of cross ICP x 75002, yielding more than the check was selected for replicated yield testing in 1981. In addition, 6 early maturing, large podded plants from crosses ICP x 75001, 75002 and 75011 were selected (Table 1.28) for further evaluation as SPP's in 1981 (Table 1.29).

d) DCP7:

During 1980, 100 SPP's from 7 crosses (selected in 1979; Table 1.27) were evaluated for their yield performance. Two progenies, yielding more than the check, one each from crosses ICP x 75001 and 75013 were selected (Table 1.28) for inclusion in a replicated yield trial in 1980. In addition, 32 early maturing, large podded plants were selected for further evaluation as SPP's in 1981 (Table 1.29).

In 1981, of 6 SPP's from crosses ICP x 75001, 75002 and 75011 tested (Table 1.29) for their yield, only one from cross ICP x 75002 yielding more than the check was selected for further testing in a replicated yield trial in 1982.

e) DCPB:

In 1981, 32 SPP's from 6 crosses were grown with close checks to evaluate their yield performance. Of these, 3 progenies (2 from cross ICP x 75001 and one from cross ICP x 75013) yielded more than the check and hence were selected (Table 1.29).for further evaluation in a replicated yield trial in 1982.

4. COMPOSITE 1:

During 1979, 24 progenies (1978-79 Ann Rep., pp.15) were evaluated for their yield with every fifth plot a check. Five of these, yielding more than the check and uniform in appearance were selected for replicated yield testing in 1980. In addition, 134 early maturing and good looking plants were selected for further evaluation in 1980.

In 1980, 134 plants selected in 1979 from progenies and 224 plants selected from composite populations (Table 1.13) were evaluated for yield. Of these, 28 uniform progenies yielding more than the check were selected for replicated yield testing in 1981 and 161 early maturing good looking plants were selected for retesting as SPP's in 1981.

In 1981, 161 plants selected from progenies and 96 plants from composite populations (Table 1.12) were evaluated for yield. Forty-five progenies yielding more than the check were selected for replicated yield testing and 135 visually early maturing and good looking plants were selected for further evaluation as SPP's in 1982.

5. MUTATION:

Of 45 mutation derived progenies (1978 Ann. Rep., pp.22) yield tested in 1979, 5 yielding more than the check were selected for replicated yield testing in 1980.

6. FARMERS' FIELD SELECTIONS:

During the 1980 crop season, 24 individual plants were selected visually from farmers' fields near Ghaziabad, Sriganganagar, and Samaspur (near Bhivani). These were evaluated as SPP's in 1981. Of 24, 2 uniform looking progenies yielding more than the check were selected for replicated yield testing. In addition, 17 plants from segregating progenies were selected visually for further evaluation as SPP's in 1982.

7. UNIVERSITY OF QUEENSLAND LINES:

In early July 1980, 160 QP lines from the University of Queensland, Australia were received via Dr. S.P. Singh, New Delhi. These were grown in 2 meter long one row plots spaced 60 cms apart. Based on uniformity and yield, 16 lines yielding more than ICPL 4 (check) were selected for replicated yield testing in 1981. Since many of these progenies were still segregating, 168 early maturing, large podded plants were selected for retesting as SPP's in 1981.

In 1981, from 168 progenies tested, 140 early turity, large podded plants were selected for reevaluation as SPP's in 1982.

8. GRU LINES:

On request, 455 lines maturing in less than 150 days at Patancheru were received from the GRU collection and were evaluated for their maturity and yield at Hisar in 1981. Of these, 8 lines yielding better than the nearest check were selected for replicated yield testing in 1982.

D. REPLICATED YIELD TESTS:

1. ALL INDIA ARHAR COORDINATED TESTS:

a) Early Arhar Coordinated Trial (EACT):

Kharif pulse workshop of All India Coordinated Pulse Improvement Project (AICPIP) was not held. Therefore, in 1979, all the 12 1978 EACT entries and 14 new ICRISAT lines (ICPL 81 to ICPL 94) were tested. The test was sown on 12th July in four row plots of 4 meter length spaced 75 cms apart with four replications. Yield and other characteristics of the lines are summarized in Table 1.30. Differences among the entries were significant for days to flower, seed size, plant height, plant stand and yield. ICPL 87 a large seeded (10.2 gms/100 seeds), determinate line gave the highest yield (2264 kg/ha) followed by ICPL 86 and ICPL 81.

Ten new ICRISAT lines were sent to different NPW (North Plains West) zone locations viz., Pantnagar, Delhi, Ludhiana, Hanumangarh, etc., for inclusion in the 1979 EACT trial. Yield data was available only from Hanumangarh. At Hanumangarh ICPL 87 also gave the highest yield followed by ICPL 86 and ICPL 81 (Table 1.30).

In 1980 and 1981, EACT tests were supplied by AICPIP. In these trials row spacings were reduced to 30 cms. and 8 rows 4 meter long constituted a plot. The tests were sown on 27th June in 1980 and on 23rd June in 1981, Five (ICPL 1,81,85,86 and 87) of 11 entries in 1980 and six (ICPL 1, 81, 87, 151, 179 and 185) of 18 entries in 1981 were from ICRISAT.

Yield and other characteristics of the lines tested in 1980 and 1981 EACT's are summarized in Tables 1.31 and 1.32 respectively. Differences among entries were significant for days to flower, days to maturity, seed size and yield in both years. Differences for seeds per pod were not significant during 1980 but were significant in 1981.

In 1980, ICPL 87 gave the highest yield (2909 kg/ha) followed by ICPL 1 and H 76-20 (a H.A.U. entry). Two of the ICRISAT lines ICPL 85 and 86 gave lower yields than the check cultivar, UPAS 120. Therefore, both ICPL 85 and 86 were deleted by the AICPIP from the 1981 EACT test. In 1981, three new ICRISAT lines (ICPL 151, 179 and 185) were included by the AICPIP in the EACT. ICPL 1 gave the highest yield (3459 kg/ha) followed by H 77-216 (3235 kg/ha) a H.A.U. line and ICPL 87 (3131 kg/ha). Only three of the 18 entries were of large seeded types namely ICPL 151 (10.7 gms/100 seeds), ICPL 87 (9.8 gms/100 seeds) and TAT 9 (9.0 gms/100 seeds). Among the large seeded types ICPL 87 gave the highest yield (3131 kg/ha) followed by ICPL 151 (2800 kg/ha) and TAT 9 (1813 kgs/ha).

b): Arhar Coordinated Trial-1 [ACT-1]:

Because of the non-availability of the ACT-1 trial from AICPIP for 1979, the 1978 ACT-1 test was repeated and planting was done on 12 July, 1979. Plot size consisted of 4 rows of 4 meter long spaced 75 cms apart. For 1980 and 1981 ACT-1 tests were supplied by AICPIP. The tests were laid out in a randomized block design with four replications and were sown on 27th June in 1980 and on 23rd June in 1981. Row spacings were 60 cms in 1980 and 30 cms in 1981, respectively.

Yield and other characteristics of the lines tested in ACT-1 are summarized in Table 1.33 for 1979, Table 1.34 for 1980 and Table 1.35 for 1981, respectively. Differences among entries for yield were not significant in 1979 but were significant in 1980 and 1981. Coefficient of variability for yield was higher (30.6%) than the acceptable limit in 1981. As per instructions from AICPIP, the trial was harvested on 30th November (160 days after sowing) irrespective of whether entries were ready for harvest or not. This resulted in significantly lower yields for some of the late maturing entries e.g. S 80, K 10/I-78 and BDN 3. Differences for days to flower, maturity and sed size were significant and for seeds per pod were non-significant during all the three years. In general, as compared to the EACT, yield levels were lower for ACT-1 entries during all the three years of testing (1979, 1980, and 1981).

In 1979, all the five ICRISAT entries (ICPL 5,6,7,8, and 95) in ACT 1 gave lower yields than the check cultivar T 21 (1729 kgs/ha). Two (ICPL 5 and 7) of the five ICRISAT entries were deleted by AICPIP from the 1980 ACT-1 trial. In 1980, BDN 3 gave the highest yield (1838 kgs/ha) followed by T 21 (1516 kgs/ha) and ICPL 6 (1511 kgs/ha). ICPL 95 was low yielding in the NPV zone that gave the highest mean yield in the NPE zone, although the yield levels were low. For the 1981 ACT 1 trial, two of the ICRISAT entries (ICPL 8 and 95) were replaced by two new entries, ICPL 150, and 189. In 1981, ICPL 6 gave the highest yield (2718 kgs/ha) followed by TT 5 (2228 kgs/ha), an

entry from Trombay and T 21 (2122 kgs/ha). All the 3 ICRISAT lines (ICPL 6, 150 and 189) were retained for retesting during 1982 by the AICPIP.

2. MULTILOCATION TRIALS:

In 1979, no replicated multilocation trials were formulated. Twenty-six advanced lines belonging to I to IV maturity groups were sent to north Indian locations for testing in an unreplicated nursery with every third plot as check (Table 1.36). Because of drought at flowering and from the pod filling stage onwards, results were not available from any of the locations except the ICRISAT sub-center, Hisar. Seven of the 26 lines were selected visually for further evaluation in replicated yield trials.

In 1980, two replicated multilocation trials, one for testing the performance of the advanced lines outside India and the other for within India were constituted. The details of the test are as follows:

a) EMPIT-80:

An Early Maturity Pigeonpea International Trial (1980), consisting of 24 ICRISAT lines and 4 cultivars (Prabhat, UPAS 120, T 21, and Pusa Ageti), was sent to 11 locations in 9 countries (Thailand, Pakistan, Tanzania, Nigeria, Nepal, Kenya, Burma, Mali and Sri Lanka) for evaluating the performance of different ICRISAT lines in various environments. The test was layed out in a randomized block design with 3 or 4 replications. EMPIT-80 was also planted at Hisar on 28 June with 4 replications. Each plot consisted of 4 rows of 4 meter long spaced 60 cms apart. The performance of the entries tested in the EMPIT 80 trial at Hisar are summarized in Table 1.37. Except plant stand per plot, the differences among the entries for all other characters, viz days to flower, days to mature, seeds per pod, g/100 seeds and yield, were significant. Two of the large seeded determinate lines gave yields of 3000 kg/ha (ICPL 87) and 2804 kgs/ha (ICPL 140), while large seeded (10.45 gms/100 seeds) indeterminate line (ICPL 150) yielded 2758 kgs/ha. The yield levels of the check cultivars T 21, UPAS 120, Prabhat and Pusa Ageti, were 2377, 2140, 1891 and 1777 kgs per ha., respectively. The mean yield of the trial was 2198 kg/ha. The higher yield level of ICPL 87 and ICPL 140 may be because they took about 10-12 more days from flowering to maturity as compared to the check cultivars T 21 and UPAS 120. Hence, the time available for pod filling was more in ICPL 87 and ICPL 140. Both of these lines matured at the same time as T 21 and UPAS 120 but flowered 10-12 days earlier (Table 1.37).

From outside India, the data was available only from three locations, one each from Burma, Nepal and Sri Lanka. Days taken to flower and maturity for EMPIT entries at different locations are summarized in Table 1.38 and their yield is given in Table 1.39. The details are presented in report on International Cooperation.

b) PMT-1:

A Preliminary Multilocation Trial-1 consisting of 30 entries (28 ICRISAT lines and 2 checks) was sent to 12 locations in India (kudumianmalai, Hanumangarh, Bhubaneshvar, Faizabad, Kanpur, Dholi, Delhi, Durgapur, Ludhiana, Pantnagar, Hisar and SK Nagar). Thes test was laid out in a randomized block design with 3 replications. At Hisar it was planted on 28 June with 4 replications. Plot size consisted of four rovs 4 meters long spaced 60 cms apart. At all other North Indian locations the test either could not be sovn or vas vashed out because of heavy rains in July. Therefore, other than Hisar, the data is available only from Kudumianmalai, Tamilnadu and S.K. Nagar, Gujarat. Yield and other characteristics of PMT-1 entries are summarized in Table 1.40 for the Hisar location. Flovering and yields of PMT-1 entries at K.Malai, S.K. Nagar and Hisar are summarized in Table 1.41. Yields both at K.Mali and S.K. Nagar vere very lov and the coefficients of variability vere very high (63.4% at K.Malai and 31.6% at S.K. Nagar) indicating the unreliability of the data. At Hisar, entries were significantly different for days to flover, maturity, seed size and grain yield (table 1.40). Fifteen (11 DT and 4 NDT) lines gave a higher yield than the check cultivar UPAS 120. Two determinate lines (ICPL 169 and ICPL 155) gave significantly higher yield than UPAS 120. Their seeds were also significantly larger than UPAS 120. Lines yielding higher than, UPAS 120 were selected for further multilocation testing during 1981.

SSPAY: During 1981, a short season pigeonpea adaptation Yield Trial (SSPAY) was constituted with 18 ICRISAT lines and 2 checks (UPAS 120 and Prabhat). The test was laid out in randomized block design with 4 replications. At ICRISAT sub-center, Hisar, 5 additional entries were included. At Delhi, instead of UPAS 120, Pusa 84 was included as a check and two ICRISAT entries (ICPL 149 and 169) were not included.

The performance of the SSPAY entries at Hisar location are summarized in table 1.42. Yield performance of these lines at the different locations within India are summarized in table 1.43. Data was not available from any location outside India. Yield levels at Junagadh and Berhampore were very low and the coefficients of variability were high 50.87 and 26.46 percent, respectively. In the north plains West Zone (NPV), yield levels were high at all the 5 locations. At Pantnagar, however, the coefficient of variability was very high (34%). The error variances were not homogeneous for ICRISAT, Hisar, HAU, Hisar, Delhi, and Sri Ganganagar locations, hence pooled analysis was not carried out for the four locations. Fifteen of the 18 lines tested ranked among the top 10 yielding lines at atleast one of the seven locations (table1.43) indicating some degree of genotype-environment interaction.

Mean performance of SSPAY entries in NPV zone and their ranking behaviour across locations are summarized in table 1.44. Two indeterminate (ICPL 142 and ICPL 161) and three determinate (ICPL 155, ICPL 154 and ICPL 148) lines were found to be stable and high yielding. One of the lines, ICPL 142, was highest yielding at 2 locations and was second at 2 other locations. ICPL 161 was among the

10 top yielding lines at all the 7 locations. ICPL 142 and ICPL 148 were among 10 top yielding lines at 6 of the 7 locations. UPAS 120 and 3 lines (ICPL 153, ICPL 146 and ICPL 175) were among 10 top yielding lines at 5 locations. ICPL 142 and ICPL 161 were selected for inclusion in the EACT during 1982.

3. ADVANCED LINES STATION TRIALS :

In 1979, promising advanced lines selected from previous years replicated yield trials and unreplicated single plant progeny evaluations were grouped on the basis of days taken to flower into 4 maturity groups viz: 0 I, II and III. Within each group, lines were sub-divided into two groups based on their growth habit (DT or NDT) except for 0 maturity group where all the lines were of determinate growth habit. Hence, eight advanced lines trials namely, (DT cm row spacing), (DT 37.5 cms row spacing), I DT, I NDT, II NDT, III DT and I NDT were planted with appropriate checks. In a. the tests except 0 DT (37.5 cm row spacing), four rows of 4 m length constituted a plot. Spacing between and within rows was 75 cm and cm, respectively. In 0 DT 37.5 cm row spacing), eight rows spaced at 37.5 cm constituted a plot.

In 1980, a meeting involving Don Faris, J.J. Reddy and Bruce Diker (Principal Statistician), it was decided to grow four trials instead of eight by combining both DT and NDT lines into one trial in each maturity group. Hence, four advanced lines trials in for each maturity groups 0, I, II and III were grown. The maturity test was laid out in a split plot design at two row spacings main plots). The other three trials were laid out triple lattice design with both DT and NDT checks of appropriate maturity. Plot size consisted of 4 rows 4 m long spaced at cm apart.

In 1981, as per the decision made in 1980, four advanced lines trials, one for each maturity group were grown. All the trials were laid out in a triple lattice design with appropriate checks. Advanced lines trials for 0 and I maturity groups (ALT-1 and ALT-2) consisted of 6 row plot. Rows were 4 m long, spaced cm apart. Plots advanced lines trials for II and III maturity groups (ALT-3 and ALT-4 consisted of 4 rows 4 m long spaced by cm apart.

0 MATURITY ADVANCED LINES TEST

In 1979, nine entries including the two checks Prabhat and ICPL 4, were tested in two separate trials at 75 cm (test 1 and 37.5 cm (test-2) row spacings. Observations recorded on days to flower, seeds per pod, 100 seed weight, plant height and yield for test-1 and test-2 are tabulated in Tables 1.45 and 1.46, respectively. In test-1 differences among entries for all the characters except plant height were significant, while in test 2 differences for days to flower and 100 seed weight only were significant. At 75 cm row spacing, none of the lines yielded better than the check (Table 1.45). At 37.5 cm row spacings, although the differences were non-significant, the highest yield was obtained from one of the advanced lines (1533 kg/ha followed by ICPL 4 (1330 kg/ha).

Pooled analysis of the two 0 DT tests revealed significant differences among the entries (Table 1.47). Both, row spacings and interaction between entries and row spacings were non-significant. The tests were not irrigated. Based on yield, visual scoring and uniformity, three lines were given new ICPL numbers (ICPL 147, 159 and 177) (Table 1.46) for inclusion in early maturity pigeonpea international trial (EMPIT) during 1980. In addition, two other lines were selected for further testing in station trial.

In 1980, 12 advanced lines, a 0 DT composite bulk and a check cultivar Prabhat were grown in split-plot test with four replications. Entries were treated as main-plots and row spacings (30 cm and 60 cm) as sub-plots. Observations recorded on yield and other characters are summarized in Table 1.48 for all the entries for both row spacings. Mean sum of squares for days to flower, days to mature, seeds per pod, 100 seed weight and yield are presented in Table 1.49. Days taken to flower and yield of different entires are graphically presented for two row spacings in Figure 1.1. Differences among entries were significant for days to flower, days to mature, seed size and yield. Row spacings and interaction between entries and row spacings were significant for days to flower and yield (Table 1.49). Significant differences between row spacings for yield was expected because visually 60 cm row spacing for '0' maturity lines looked too wide. All the entries flowered somewhat later and almost all yielded significantly less at the wider row spacing (Fig.1.1). The difference in yield at the two row spacings was greatest for ICPL 179 (846 kg/ha) which was the top yielding line. In fact the second top yielding line which has been designated ICPL 268, was more consistent than most lines for its yielding ability at the two row spacings, the difference being 304 kg/ha. One line (ICPL 179) was selected for inclusion in EACT. Three other lines were selected for alloting new ICPL number (ICPL 267, 268 and 287) and for multilocation testing in the SSPAY (short season Pigeonpea Adaptation Yield Test). Lines yielding less than Prabhat were rejected. Two lines (73050 F5-H2-B0-B and 75080-5-B-H1-B0-1-B), although high yielding were very heterogeneous, hence were not selected for inclusion in the 1981 replicated test.

In 1981, 33 advanced lines (30 DT and 3 NDT) and 3 checks (Prabhat, DL 78-1 and UPAS 120 were grown in a 6 x 6 triple lattice design. Each plot consisted of 8 rows 4 meter long 8 spaced 30 cms apart. All the 3 NDT lines and 4 OP lines (DT) were comparatively late in flowering. Yield and other characteristics of ALT-1 (advanced lines test-1) entries are summarized in table 1.50. Entries were significantly different for all the characters studied. Compared to Prabhat (flowering in 74 days), 11 lines flowered in 55 days or less. Ten of these matured in 90 to 97 days. Entry 605 (comp 1 ODT-H10-B0-HB-HB) flowered in 55 days but matured in 123 days, hence remained in flowering for longer period of time (68 days).

This confirmed the earlier visual observations that differences exists among lines for days taken from flowering to maturity. Therefore, an early flowering line may not necessarily be a early maturing also. Similarly, another entry 615 (Comp.1 ODT-H5-HB) was noticed to have a long reproductive period of 62 days (Table 1.50). On the otherhand, entry number 611 (74065-76-9-H2-B0-HB-HB0-HB) had a

short reproductive period of only 39 days. All entries yielding less then the check cultivar Prabhat were rejected except those shoving less then 10 percent infection against any of the three major diseases (sterility mosaic, Phytophthora blight and vilt) in respective disease nurseries at Patancheru. Thus entry numbers 604, 605, 613, 622, 627 and 629, shoved less than 10 percent infection against Phytophthora blight and 618, 621, 624, 626, 628, 630, 631, 632, 635 and 636 shoved less than 10% infection against wilt. Four (3 DT and 1 NDT) high yielding lines were selected for inclusion in the 1982 multilocation EPAY trial so were given nev ICPL numbers (ICPL 313, 314, 315 and 316). Another 20 selected lines were included in the advanced lines trial of the appropriate maturity group in 1982.

b) 'I' MATURITY ADVANCED LINES TESTS:

During 1979, 30 determinate and 16 indeterminate advanced lines of the 'I' maturity group were tested in two separate tests with the appropriate checks, Prabhat (DT) and Pant A-2 (NDT). Tests were laid out in as randomized blocks with 4 replications Each plot consisted of 4 rovs 4 m long spaced 75 cm apart. Both the tests were sovn on 12th July. Yield and other characteristics of the DT lines are presented in Table 1.51 and NDT lines in Table 1.52. One of the 4 replications in the I NDT test vas discarded because of poor plant stand in all the entries. Further, 2 of the 17 entries were deleted from the analysis because of very poor growth and plant stand in all replications.

Differences among entries for all the characters studied were significant in the I DT test (Table 1.51). In the I NDT test the differences among entries were also significant for days to flover, seed size, plant height and yield (Table 1.52). Tventy-two DT and 12 NDT lines yielded more than the respective checks, Prabhat and Pant A-2. Seven DT lines yielding less than Prabhat and the 2 lovest yielding NDt lines were rejected. The rest were selected for retesting in the appropriate maturity 1980 advanced lines test. Ten high yielding determinate lines with large seeds (Table 1.51) and 5 high yielding indeterminate lines with large seeds (Table 1.52) were selected for multilocation testing in 1980. Therefore, they were alloted nev ICPL numbers, the ICPL numbers alloted to DT lines were ICPL 140, 148, 151, 152, 165, 166, 169, 170, 171, 172 and to NDT lines were ICPL 160, 161, 185, 186 and 187.

In 1980, 37 DT and 27 NDT entries of 'I' maturity were sovn on the 26th of June, 1980 in an 8 x 8 triple lattice design. Each plot consisted of 4 rovs 4 m long spaced 60 cm apart. The check cultivars were Prabhat (DT), Pant A-2 (NDT) and T-21 (NDT). Yield and other characteristics of the advanced lines are summarized in Table 1.53. Differences among the entries were significant for all the characters studies (Table 1.53). Because of dry groving conditions at pod filling stage, yield levels in general were low. Mean yield of the test vas 1370 kg/ha. Of the top 10 high yielding lines 6 were NDT and 4 were DT. Based on visual observations, 60 cm rov spacing looked too vide for determinate lines. Hence, sub-optimal population may be the cause of lover yields in some of the determinate lines. One DT and 3 NDT lines were given nev ICPL numbers (ICPL289, 290, 291 and 292).

Based on visual observations for general vigour and uniformity and their seed size and yield 7 DT and 12 NDT lines were selected for further testing in advanced lines tests of the appropriate maturity group.

In 1981, 34 advanced lines (22 DT and 12 NDT) and two checks, Prabhat (DT) and UPAS120 (NDT) were planted on 24 June in a 6 x 6 triple lattice design. Each plot consisted of 8 rovs spaced 30 cm apart. Plant and grain characteristics of the entries are presented in Table 1.54. Differences among entries were significant for all the characters studied. One Top yielding determinate line (74092-B-16-HI-H2-B0-HB-HB) was selected for multilocation testing and was given nev ICPL number (ICPL317). All the entries yielding less than Prabhat were rejected except entry numbers 730,733,734, 735 (0P185,225,232 and 245) because of their large seed size and tolerance to Phytophthora blight (as per screening in the Phytophthora nursery at ICRISAT Center) and entry number 723 (75080-36-B-H4-B0-H1-H40-HB) because of its vilt tolerance and large seed size.

Of 36, 14 entries (703, 704, 706, 707, 708, 709, 710, 712, 713, 714, 717, 721, 723 and 724) shoved less than 10 percent infection to vilt and 6 entries (711, 730, 731, 733 and 735) shoved less than 10 percent infection to Phytophthora blight in the respective disease nurseries at Patancheru.

Twenty-seven high yieding lines with large seeds and good visual score for uniformity were selected for further testing in advanced lines tests of appropriate maturity and growth habit in 1982.

c) 'II' MATURITY ADVANCED LINES TESTS:

In 1979, two separate tests one each for DT and NDT lines were planted on 6 and 12 July, respectively. Both the tests were laidout in a 4 replicate RBD. Each plot consisted of 4 rovs 4m long spaced 75 cms apart. The II DT test consisted of 16 advanced lines, a composite 1 II DT bulk and a check cultivar Prabhat and the II NDT test consisted of 20 advanced lines, a composite 1 II NDT bulk and a check cultivar UPAS120. Because of poor plant stand, one of the 4 repications was discarded in the II NDT test. Five of 22 entries in the II NDT test were dropped from the test because of their very poor stand and growth in all the replications. Plant and grain characteristics of the DT lines are tabulated in Table 1.55 and of the NDT lines in Table 1.56. In both the tests, differences among entries for plant stand per plot were non-significant. Differences among entries were significant for all the other characters studied (Tables 1.55 and 1.56) both for the II DT and II NDT test except for seeds per pod in the II DT test. All the entries yielding less than the check cultivars, Prabhat in the II DT test and UPAS20 in the II NDT test, were rejected. From the II DT test, the 6 highest yielding and uniform looking lines were selected for multilocation testing and were given nev ICPL numbers (ICPL141, 153, 167, 168, 173, 174). From the II NDT test, the 5 top yielding lines (except the composite II NDT bulk) were selected for multilocation testing during 1980 and were alloted nev ICPL numbers (ICPL142,143,162,163 and 188). The other 16 lines (7DT and 9 NDT) yielding higher than their respective checks

were selected for reevaluation in the 1980 advanced lines trials of the appropriate maturity. The lov yield levels in general may be due to delayed planting and sub-optimal plant population in 1979.

During 1980, 70 DT and 48NDT lines and 3 check cultivars, Prabhat (DT), Pant A-2(NDT) and UPAS120(NDT) were sovn on 28 June in a 11 x 11 triple lattice design. Each plot consisted of 4 rovs 4m long spaced 60 cms apart. Yield and other characteristics of entries tested in the II maturity advanced lines test are tabulated in Table 1.57. Differences among entries for days to flover, days to mature, seeds per pod, seed size, and yield were significant. Of the 20 top yielding lines, 10 were determinate and 10 indeterminate (Table 1.57) indicating that determinate lines are not avays lover yieding than indeterminate lines of the same maturity group. Infact, the top yieding line vas determinate (73052-211-1-10-HIIDT3-B0-3-B). Based on visual observations for uniformity, parentage, seed size and yield 17 DT and 10 NDT advanced lines were selected for further testing in the 1981 advanced lines trial of appropriate maturity.

In 1981, 28 determinate and 18 indeterminate lines and 3 checks, Prabhat (DT), UPAS120 (NDT) and T21(NDT) were sovn on the 25th June in a 7 x 7 triple lattice design. Each plot consisted of 4 rovs 4 m long spaced 60 cms apart. Plant and grain characteristics of these lines are summarized in Table 1.58. Differences among entries were significant for all the characters recorded (Table 1.58).

Thirty-one advanced lines (18 determinate and 13 indeterminate) were selected on the basis of visual score for uniformity, parentage, seed size, percent infection in the ICRISAT Center disease nurseries and yield, for further testing in the 1982 advanced lines trials of appropriate maturity and growth habit. Two entries (812 and 818) showed less than 10% infection in steriity mosaic nursery, 5 entries (804, 810, 812, 826 and 845) in Phytophthora nursery and 10 entries (815, 821, 822, 824, 825, 826, 827, 829, 832 and 841) in wilt sick nursery at Patancheru. Two lines (Ent.812 and 826) showed less than 10% infection against two diseases viz. entry 812 against sterility mosaic and Phytophthora blight and entry 826 against Phytophthora blight and wilt. In spite of low yield of some of these lines, all these potentially disease resistant lines were selected for further testing in 1982.

d) 'III' MATURITY ADVANCED LINES TESTS:

During 1979, 48 DT lines with Pusa Ageti as check and 26 NDT lines with ICPL5 and ICPL6 as checks were sovn in two separate tests on the 16th and 30th July, respectively. Plot size consisted of 4 rovs 4 m long spaced 75 cm apart. The III DT trial was laid out in a 7 x 7 triple lattice design and the III NDT in a randomized block design. Because of very poor plant stand and growth the III NDT test was abandoned. All these NDT entries were tested instead during 1980. Plant and grain characteristics of the entries in the III DT test are summarised in Table 1.59. Differences among entries were significant for days to flover, seed size, and yield (Table 1.59). All the 48 DT entries were significantly superior in yield over Pusa Ageti. Thirty-four entries were significantly higher yielding than ICPL8 (a

Pusa Ageti line). Except composite III DT bulk, top 10 yielding lines were selected for multilocation testing during 1980 and were alloted new ICPL numbers (ICPL 144, 145, 146, 154, 155, 156, 157, 158, 175 and 176). All other lines were selected for retesting in station advanced lines trials of appropriate maturity during 1980.

In 1980, 64 advanced lines (16 DT and 48 NDT) of the III maturity group including 4 checks (Pusa Ageti, T21, H77-215 and H78-6) were planted on 26 June in a 8 x 8 triple lattice design. Plots consisted of 4 rows 4m long spaced 60 cm apart. Plant and grain characteristics of these lines are tabulated in Table 1.60. Differences among entries for all the characters recorded were significant. On determinate and 11 indeterminate lines were selected on the basis of visual scoring for uniformity, parentage, maturity, seed size and yield for further testing in advanced lines trials of the appropriate maturity. One indeterminate line (74209-B-IVNDT35-B-B) was selected for multilocation testing and was alloted ICPL number 293.

In 1981, 18 DT and 28 NDT lines with 3 checks (Prabhat, UPAS120 and T21) were planted on 25 June in a 7 x 7 triple lattice design. Each plot consisted of 4 rows 4 m long spaced 60 cm apart. Yield and other plant and grain characteristics of the entries are summarized in Table 1.61. Differences among entries were significant for days to flower, days to mature, plant height, plant stand per plot, seed size and yield. Differences were non-significant for seeds per pod. Based on uniformity, yield and percent infection in disease nurseries (at Patancheru) 22 entries (9 DT and 13 NDT) were selected for further testing in advanced lines tests of the appropriate maturity and growth habit. Entries showing less than 10% infection to sterility mosaic were 912, 920, 932, 937, 938 to Phytophthora blight were 909, 916, 924, 925, 938, 949, and to wilt were 904, 912, 923, 930, 939, 943. Entry 912 showed less than 10% infection against both sterility mosaic and wilt and entry 938 against sterility mosaic and Phytophthora blight.

e) COMPACT LINES TEST

In 1980, 12 advanced lines (5DT and 7NDT) of compact or upright plant type were evaluated in a test with the close spacing of 30 cms between rows. Checks used were Prabhat and UPAS 120 at normal (60 cms) and close (30 cms) row spacings. The test was laid out in a 4 x 4 balanced lattice design and was sown on 27 June. Plant and grain characteristics of these lines are tabulated in Table 1.62. Differences among entries were significant for days to flower, days to maturity, seed size and yield. Both the checks (Prabhat and UPAS 120) gave higher yields at closer row spacings (30 cms) similar to '0' maturity lines discussed earlier (Table 1.48, Fig.1.1). One of the entries 716 (74174-INDTB-27-1-HIINDTB-B0-HI-B) gave a significantly higher yield than the highest yield of check UPAS 120. Two top yielding advanced lines (NDT) were selected for multilocation testing at close spacing during 1981 and were given the ICPL numbers ICPL 269 and ICPL 288.

f) YIELD TEST OF HYBRIDS

During 1981, 4 early maturing hybrids made at Hisar in 1980 using MS-Prabhat and MS-T 21 as female parents and ICPL 4, 81, 87 and 161 as male parents, were evaluated for their performance in a replicated trial which included the male parents and the checks UPAS 120 and T 21. The test was planted on 23 June in a randomized block design with 4 replications. Each plot consisted of 4 rows 4 m long spaced 60 cms apart. Yield and other characteristics of the hybrids, male parents and checks are summarized in Table 1.63. Dirrerences among entries were significant for all the characters recorded. Two hybrids (MS-Prabhat x ICPL 161 and MS-T 21 x ICPL 87) gave significantly higher yield than the best check T 21 (2928 kg/ha). In general, the higher the yield of male parent the higher was the yield of its hybrid. All hybrids were earlier maturing than T 21, only one was earlier than UPAS 120. The highest yielding hybrid (MS-Prabhat x ICPL 161) matured significantly earlier than its male parent and showed the greatest efficiency of yield per hectare per day. Further details about hybrids are discussed in the hybrid project (P-Brd-10).

(E) AGRONOMY AND CROPPING SYSTEMS TRIALS

1. GENOTYPE/DATES OF PLANTING/PLANT POPULATION TRIALS

During 1979, to study the effect of two plant and two row spacings on yield and other plant and grain characters of 5 early maturing lines (2 DT and 3 NDT), a test was planted on 16· July split-split plot design with 4 replications. The objective was to find out the optimum plant population required for maximum yield under Hisar conditions for different genotypes of determinate (Prabhat and comp. 1 ODT) and indeterminate (ICPL 81, ICPL 2 and ICPL 5) growth habit. The genotypes were treated as main plots, the two row spacings (37.5 cm and 75 cm) as sub-plots and the two plant spacings within rows (10 cm and 20 cm) as sub-sub plots. Observations recorded on the 5 cultivars at different row and plant spacings are summarized in Table 1.64. The mean sum of squares for different characters studied are tabulated in Table 1.65. Differences among cultivars were significant for all the characters studied except seeds per pod and plant stand. Days to flower, plant height and grain yield of the 5 genotypes at different plant and row spacings are shown graphically in figure 1.2.

Differences among row spacings were significant for days to flower, plant height and yield. All the lines, except comp 1 ODT, flowered earlier at closer spacings. Similar pattern of early flower at closer spacings was noticed in the 0 maturity advanced lines trials (Tables 1.45 and 1.46). In general, closer spacings increased plant height significantly except for ICPL 81 where there was a decrease in height with increase in plants per square meter above 10 (Fig. 1.2). As for the ODT advanced lines (tables 1.45 and 1.46), in general there was a significant increase in yield at closer spacings except for ICPL 81 and ICPL 5. Yield of ICPL 81 increased from 10 to 20 plants per sq. meter but the highest yield was obtained at 5.7 plants/sq. m (75 x 20 cm). The reasons for this is not apparent. Yield of ICPL 5, a

late flowering line of the T 21 maturity group, increased with increased populaton up to 12 plants/sq m and then decreased at 20 plants/sq m (Fig. 1.2). Plant spacings within rovs and its interactions with cultivars and rov spacings were non-significant for yield. Since this test vas sovn later (16 July) than normal soving dates (end of June) for North India, it vas repeated with some modifications in 1980 to confirm the results.

In 1980, six advanced lines (3 determinate, Comp. 1 ODT, Prabhat, ICPL 7 and 3 indeterminate, ICPL 81, ICPL 2 and ICPL 5) vere included as main plots in a genotype x population trial, vhich vas planted on 27 June in as a split-split plot. Two rov spacings (30 cms and 60 cms) and three plant spacings (10 cms, 20 cms and 30 cms) vere treated as sub-plots and sub-sub plots, respectively. Gross plot size consisted of 9.6 sq. m (2.4 x 4.0 m). Grain yield, days to flover, days to mature, seed size and plant stand for different genotypes at different rov and plant spacings are tabulated in Table 1.66. An analysis of variance table vith mean sum of squares for different sources of variation are presented in Table 1.67. Mean grain yield of the genotypes at different rov and plant spacings are graphically shovn in Fig. 1.3 and 1.4. Differences among entries vere significant for days to flover, & maturity, seed size and grain yield. Differences among rov and plant spacings vere significant for plant stand and grain yield (Table 1.66 and 1.67). On an overall mean basis the 30 cm rov spacing gave a higher mean yield (2350 kg/ha) than the 60 cm rov spacing (2176 kg/ha). Among the plant spacings, 10 cm gave the highest yield of 2424 kg/ha folloved by 20 cm (2304 kg/ha) and 30 cm (2064 kg/ha). Among the interactions plant x rov spacings vas significant both for plant stand and yield (Table 1.67). Other interactions, genotype x rov spacing and genotype x rov x plant spacing vere significant for yield. Mean yield for the combination of rov x plant spacings were 1944, 2136, 2448, 2184, 2472 and 2424 kgs/ha for 60 x 30, 60 x 20, 60 x 10, 30 x 30, 30 x 20 30 x 10 cm respectively (Fig. 1.3 and 1.4). At both 60 and 30 cm rov spacings yield of all the entries (genotypes) increased with reduced plant spacing except for ICPL 81, ICPL 5 and ICPL 7 at 30 x 10 cm spacing (Fig. 1.3 and 1.4). Unexpectedly reduction in the yield of ICPL 81 at 30 x 10 spacing vas highly significant vhereas reduction in ICPL 5 vas non-significant and in ICPL 7 there vas a significant increase in yield upto the 30 x 10 spacing.

Both in 1979 (Tables 1.45, 1.46, 1.64, 1.65, Fig. 1.2) and 1980 (Tables 1.66, 1.67, Fig 1.3 and 1.4); in general there vas an increase in yield up to the highest population of 320,000 plants/ha (30 cm x 10 cm) studied. Therefore, it vas decided to conduct another trial vith still higher plant populations to find plateau preferably at two soving dates during the 1981 kharif.

As per decision made in 1980 during 1981, the genotype x plant population trial vas sovn in a split-split plot vith 4 replications at two dates of planting (26 June and 21 July) vhich vere treated as main plots. Sub-plots consisted of four genotypes, two determinate (ICPL 267 and ICPL 87) and two indeterminate (ICPL 81 and ICPL 142). Six plant spacings, 2.5, 5, 10, 15, 30 and 60 cm, vithin rovs giving 1.33, 0.66, 0.33, 0.22, 0.11 and 0.055 million plants/ha, respectively vere

treated as sub-sub plots. Gross plot size consisted of 8 four long rows spaced 30 cms. apart. Mean yield and other plant and grain characteristics of the 4 genotypes at the different plant populations and dates of planting are tabulated in table 1.68. Mean sum of squares for yield and other characters are tabulated in Table 1.69. Mean yield of the four genotypes and the mean yield of all the genotypes at different plant populations for the two dates of planting are shown graphically in Fig. 1.5. Differences among entries were significant for all characters studied except plant stand (Table 1.68). Differences among population (plant spacing) and dates of planting were significant for days to flover, days to mature plant height, grain yield and also unexpectedly for plant stand. Incidently, cv. for the comparison of planting dates for plant population was very high (50%). As against the expected plant populations of 1.33, 0.66, 0.33, 0.22, 0.11, 0.055 at plant spacings 2.5, 5, 10, 15, 30 and 60 cm, respectively, the observed overall mean populations in June sowings were 0.44, 0.37, 0.22, 0.16, 0.10, 0.055 and in July sowings were 0.72, 0.57, 0.28, 0.24, 0.12 and 0.05, respectively (Table 1.68, Fig. 1.5). The low plant stand at closer spacings in the June sowings may be because of inter-plant competition due to vigrous growth although initially some plants were lost due to termite damage. In the July sowing, populations were close to the expected up to the spacing of 30 x 10. Beyond that observed population reduced significantly again probably due to inter-plant competition. The final count of plant stand was made at harvest. At both dates of planting, plots were thinned about a week after emergence to the proposed population levels (Plant spacings). Hence, the reduction in population happened during the growing period and not because of poor emergence. Interactions between planting date x cultivar and planting date x population were significant for days to flover, mature, plant height, plant stand and yield. Genotype x population interaction was significant for days to flover, maturity and yield. The three way interactions between planting date x cultivar x population were significant for days to flover and yield (Table 1.69). All the 4 genotypes flovered and matured earlier and were shorter in the July sowing than in the June sowing. On the basis of over all mean the Jully sowing (1805 kg/ha) yielded significantly less than the June sowing (2114 kgs/ha). The low yield of the July sowing may have been because of a poor and alkaline soil patch which was further confounded with low moisture content specially at the time of peak pod setting and during the filling stage. Both under June and July sowings ICPL 87 was the top yielder (overall mean 2176 kg/ha) followed by ICPL 81 (2129 kg/ha). Mean yields under the June sowing increased for all genotypes except ICPL 142 with increased population. Beyond the 30 x 15 spacing, yield of ICPL 142 vent down in the June sowing (Fig. 1.5). This may be because it is a late maturing and profusely branching indeterminate type. Mean yields of ICPL 267 and ICPL 81 increased at a slover rate with increase in population between 30 x 15 and 30 x 5 spacings in the June sowing. In the July sowing (Fig.1.5), the yield of ICPL 142 did not increase beyond the 30 x 10 spacing and decreased at the 30 x 2.5 cm spacing. In the other genotypes, the yield trends in June sowing were similar to those in the July soiwng.

Considering the mean yield of populations (plant spacings) over all the genotypes in the June sowings yields increased with increase in population up to the 30 x 10 cm spacing. There was no difference in yields obtained at the 30 x 10 and 30 x 5 cm spacings. Increase in yield at the 30 x 2.5 cm spacing is unexplainable. Hence, in June sowings 30 x 10 spacing can be recommended for all determinate cultivars and for indeterminate cultivars up to the II maturity group. For the III maturity indeterminate cultivars 30 x 15 seems to be the optimum spacing for June sowings. Mean yield of populations over all genotypes for the July sowing increased with increase in population up to the 30 x 5 cm spacing. There was no difference in mean yield obtained at the 30 x 5 and 30 x 2.5 spacings. Therefore, for July sowings 30 x 5 spacing seems to be the most nearly optimum for all the determinate and up to II maturity for indeterminate cultivars. For III maturity indeterminate cultivars like ICPL 142, the optimum spacing for July sowings seems to be about 30 cm x 10 cms.

2. SUMMER TESTING OF ADVANCED LINES INTERCROPPED WITH MUNGBEAN (Vigna radiata)

In a newly developed cropping system in western Uttar Pradesh and parts of Haryana, Punjab and Rajasthan, early maturing pigeonpeas are planted in April, intercropped with summer mung bean (Vigna radiata). This practice reduces weed competition during the rainy season and enables pigeonpea to establish before the onset of the monsoons. In addition, by this practice, farmers harvest a full grain crop of both mung bean and pigeonpea and about double the amount of dried pigeonpea stalk with a reduced cost of cultivation compared to growing the two crops separately.

In 1980, ten advanced lines were evaluated in a replicated trial for their performance in summer sowings. Sowing of the trial was delayed to 21st April, 1980, because of the unavailability of irrigation. Plot size consisted of 4 rows 5 m long 4 rows spaced 100 cms apart. As a later decision, 2 rows of mungbean (Pusa Basakhi) were sown in between the pigeonpea rows on 19th May, 1980. Mungbeans could not be harvested because of rains which was to be expected because of the delay in sowing. The grain and plant characteristics of the pigeonpea lines in the summar sowing are tabulated in Table 1.70. Differences among lines were significant for days to flower, days to mature, seeds per pod, seed size and both grain and dried stalk yields. ICPL 189 was the top yielder both for grain (2692 kg/ha) and dried stalks (19200 kg/ha). Dried stalk yield is important for farmers. These stalks are used as fuel for cooking and for such purposes as roofs and boundry walls for their huts.

In 1981, in order to compare the performance of advanced lines in summer and June sowings, the summer sown (15 April) test was also planted in June (23 June). Both of these tests consisted of 8 determinate and 8 indeterminate entries. In summer, the plot size was 4 rows 4 m long spaced 90 cm apart and in the June sowing 8 rows spaced 30 cms apart. In the summer, 2 rows of mung bean (pusa Baisakhi) were sown in between 2 pigeonpea rows. Spacing between two mung bean rows and pigeonpea to mung bean was 30 cm. The entries in the summer sowing were cut back in mid-July (before flowering) and

green fodder yield was recorded.

Yield and other characteristics of lines and mung bean yield associated with different lines in the April sowing are summerized in Table 1.71 and for June sowing in Table 1.72. Except for mung bean and fodder yield in the summer sowing, the differences among entries were significant for all the characters studied both in the April (Table 1.71) and the June (Table 1.72) sowing. Non-significant mung bean yield indicates that the pigeonpea plant type did not have any differential influence on mung bean yield. This may be because of the slow initial growth of pigeonpea lines not giving much competition to the mung beans. The c.v. for fodder yield was about 30% which is higher than the acceptable limit of 20% . However, large seeded determinate lines ICPL 87, ICPL 140 and ICPL 148 gave the highest green fodder yield (more than 27 qtls./ha.) Three lines, ICPL 179, ICPL 267 and ICPL 87, flowered in the same number of day in the April and the June sowing inspite of longer days and highest temperatures in June (mean min. 26.5°c and mean max. 42.8°c) as compared to September (mean min.23.1°c and mean max. 36.2°c) suggesting that they are photo-insensitive and insensitive to high temperatures. ICPL 179 and ICPL 267 flowered normally in the longer days of June suggesting they were temperature tolerant but ICPL 87 produced only a few flowers without setting any pods until the days became shorter and cooler in mid-September suggesting it was less tolerant of high temperatures. Based on days taken to flower in the April sowing as compared to the June sowing, other relatively photo insensitive lines were ICPL 140 and ICPL 169. In the April sowing, plants were taller (2.5 m) as compared to a mean height of 1.9 m in the June sowing. T 21 gave the highest dried stalk yield (13900 kg/ha) followed by ICPL 150 (12300 kg/ha). In the summer sowing the check cultivars UPAS 120 and T 21 gave 1966 and 2503 kg/ha grain yield, respectively. The five top yielding lines in the summer sovng were ICPL 87 (2799 kg/ha), ICPL 148 (2733 Kg/ha), ICPL 155 (2645 kg/ha), ICPL 1 (2633 kg/ha) and ICPL 140 (2525 kg/ha), except for ICPL 1, all are determinate types. In the June sowing the five top yielding lines were ICPL 81 (3137 kg/ha), ICPL (3110 kg/ha), ICPL 148 (3032 kg/ha), ICPL 87 (3031 kg/ha) and T 21 (2863 kg/ha). Thus three of the lines are in the 5 top yielding lines both in the April and the June sowing, indicating that lines high yielding in June sowings may or may not give high yields in summer plantings. To confirm these observations, it was planned to repeat the tests with different entries in 1982. In general, in addition to normal grain yields in the summer sowing most of the lines produced double the amount of dried stalk yields as in the June sowing.

(F) MAINTENANCE AND PURIFICATION OF LINES AND CULTIVARS:

In 1979, the five top yielding selections each from ICP6 and 3868 pure lines (Ann. Rep. 1977-78, pp. 12-13) were evaluated in separate tests with T 21 and ICP 6 as checks. Four rows 4 m spaced 75 cm apart constituted a plot. Yield and other characteristics of the ICP 6 and 3868 selections test entries are summarized in Tables 1.73 and 1.74, respectively. In the ICP 6 pure lines test entries were significantly different only for yield. Differences among entries in

the ICP 3868 lines test were significant only for seed size and plant height (Table 1.74). In both the tests, none of the pure lines yielded better than the higher yielding check, T 21. One high yielding and visually uniform ICP6 pure line was selected for multiplication testing duirng 1980 and was given the ICPL number ICPL 149. Two ICP 3868 pure lines, yielding well and looking uniform were given the ICPL numbers ICPL 164 and ICPL 150 and were selected for multilocation testing during 1980. These three lines (one from ICP 6 and two from ICP3868) will be maintained as parents.

During 1979, selfed bulk seed of each of the 15 lines (Ann.Rep. 1977-78, pp 5, Table 1.1) namely, ICPL1, 2 and 81 from UPAS 120, ICPL 3 and 4 from Prabhat, ICPL 5 and 6 from T 21, ICPL 7 and 8 from pusa Ageti; ICPL 82 and 83 from Pant A-3, ICPL 84 and 85 from Pant A-2, DL 74-1 and Sehore 197 was planted in a block of 30 rows 4 m long for further purification. In addition, 100 single plant progenies of the cultivar Baigani were grown for purification. About 200 plants were selfed and harvested separately in each of the 16 lines.

In 1980, about 100 single plant progenies of each of the 16 lines were grown for further purification and maintenance. In addition, two advanced lines, ICPL 86 and ICPL 87, were also included in the maintenance program. Six plants in each of about 30 uniform looking and true to type lines of 16 cultivars under maintenance were selfed to obtain seed for further maintenance. About 150 plants in ICPL 86 and ICPL 87 were also selfed.

In 1981, 2 lines from UPAS 120 (ICPL 1, ICPL 81) and one line from each of Prabhat (ICPL 4), T 21 (ICPL 6), Pusa Ageti (ICPL 8) and Pant A-2 (ICPL 85) and Baigani and ICPL 87 were included for maintenance; DL74-1, Sehore 197, Pant A-3 and ICPL 86 lines were deleted, from the maintenance program because of their poor yielding and shortage of space. About 50 single plant progenies each of 14 new promising advance lines (ICPL 94, 140,142,148,149,150,151,161,169, 179,185,189,268 and 269) were included in the program.

(G) SCREENING FOR DISEASE RESISTANCE

In 1979, no early pigeonpea lines from Hisar were screened for disease resistance. Results of 1980 and 1981 the screening against the three major diseases (sterility mosaic, Phytophthora blight and wilt) are discussed in brief. Details of these are given in the breeding for disease resistance project report (P.Bred-19).

a) Sterility ic (SM):

In 1980, 116 early maturing advanced lines from Hisar were screened in the sterilityl mosaic nursery at ICRISAT Center. Of 116, 13 showed less than 10% sterility mosaic infection (Table 1.75). Of these, 5 showed the ringspot symptom and 4 showed less than 5% SM infection. In 1981, 185 early maturing lines from Hisar were screened in the ICRISAT Center SM nursery . Of 185, 6 showed less than 10% SM infection (Table 1.76). Three of these had less than 5% SM infection. In addition, one line (ICPL 292) showed the occurrence of 14.6 percent plants with the ring spot sympotm. Days

taken to mature and grain yield of these lines (in 1981 at Hisar) are presented in Table 1.76. A line (74174-B-1-B-H2-B0- H4-HB) showed no infection against both SM and Phytophthora blight. Another line (ICPL 269), which is one of the very promising lines, showed 2.7% infection against SM and 33% infection against wilt. By further selection within this line, it may be possible to identify ICPL 269 plants having resistance to both sterility mosaic and wilt.

b) Phytophthora blight (PB):

During 1980, 21 advanced early maturity lines from Hisar were screened against Phytophthora blight (P2 isolate) in pot culture at Patancheru. Eight lines were found to have less then 10 percent infection. Six of these had no PB infection at all (Table 1.75). In 1981, of 185 lines screened, 39 showed less than 10 percent PB infection. In 28 lines no PB infection was observed. Seven of these lines (Table 1.76) showed less than 10 percent infection to both PB and wilt. Two lines (74092-B-15-H1-B0-H1-H2- B and ICPL 165) showed no infection at all against both PB and wilt.

c) **Wilt (W):**

In 1980, 13 advanced early maturity lines from Hisar were screened against wilt in the wilt sick nursery at Patancheru. Only one line (ICPL 95) showed less than 10 percent (3.6%) wilt and another line (74209-B-8-B-1-B) showed 10.8% wilt (Table 1.75). In 1981, of 185 early maturing lines from Hisar screened in the wilt sick nursery, 36 showed less than 10% infection by wilt. Fourteen of these showed no wilt at all (Table 1.76). Seven lines showed the occurrence of less than 10 percent infected plants both against wilt and P.B. Days to maturity and grain yield at Hisar of these lines are presented in Table 1.76.

(H) MISCELLANEOUS OBSERVATIONS:

1. DIFFERENTIAL ROOT GROWTH AT HISAR AND GWALIOR:

Both in 1979 and 1980 comparatively poor plant growth was observed at Gwalior for all pigeonpea lines. They also suffered heavily from drought in September and October. It was thought that the poor growth and the susceptibility to drought may e due to poor root development because of delayed sowings and because these sowings coincided with almost continuous rains. Hence, since the roots got the needed moisture close to the plant they may not have grown deep into the soil resulting in stunted root growth. At a later stage of growth, they could not grow deep as fast as moisture depleted hence plants started showing wilting symptoms.

To get some idea about this hypothesis root depth and spread of 2 determinate and 3 indeterminate early maturity lines were recorded at Gwalior (sown on 11th July, 1980) and at Hisar (sown on 27th June, 1980) 143 days after sowing i.e. 5th and 19th November, 1980 respectively. Root depth and spread for the two sowing dates are presented in Table 1.77. These were analyzed statistically as a split

plot. The mean sum of squares are tabulated in Table 1.78. Both at Gvalior and Hisar the plants were spaced at 15-20 cm in rows spaced 60 cm apart.

The observations were recorded for two characters termed as root depth and spread. Depth of the main root was measured from ground level down to the root tip after digging out the plant. Root spread is the measure of sidewards spread of secondary or tertiary root branches. Differences among soving dates were significant both for root depth and spread (Table 1.78).

Differences among lines were significant only for root depth. Interactions were not significant.

In the early soving the roots went deeper into the ground in search of moisture (at early stage of growth at Hisar). This helped the plants to withstand drought in September and October because the roots were able to utilize the moisture deep in the soil. In the delayed sowings at Gvalior, the roots did not grow deep because plantings coincided with the rains. Since the moisture was available near the soil surface, the roots spread more sidewards than going deeper (Table 1.77). At the time of drought, the soil at the top became drier but roots were not deep enough to capture the moisture from deep inside the soil, hence the plants started wilting. Although, these observations are confounded with many things such as, location effect, environmental effects, water table at two locations, soil type the observations obtained certainly give the impression that the crop condition (general growth) at Gvalior can be improved by soving pigeonpea experiments in mid or late June.

2. RELATIONSHIP BETWEEN POD COLOR AND INSECT DAMAGE:

During 1980, it was observed at Hisar and Pantnagar that pod borer (Heliothis armigera) infestation was less in green poded lines than in lines with green and purple streaked (GPS) pods.

To test this visual observation, a small experiment was carried out. From among the tests (growing at Hisar) two lines each with green, purple and GPS pods were selected. The best possible care was taken to select lines with similar plant type and the same duration to flowering. The purple podded lines were a little late in flowering and had larger seeds than the other lines. The lines selected were ICPL 175 and 144 (Green pods), ICPL 165 and 169 (GPS pods) and ICPL 178 and 181 (purple pods). These were sown on 28 June 1980. The observations were recorded at complete maturity on 4 December 1980 on 6 individual plants. These were treated as 6 replications and were analyzed in a completely randomized desgin.

Observations recorded on total number of pods, percent infestation by pod borer (Heliothis armigera) and pod fly (Melanogromyza obtusa) are presented in Table 1.79.

Both of the purple poded lines produced significantly fewer pods then the GPS and green poded lines. As visually observed in the field at Hisar and Pantnagar, the GPS poded lines (ICPL 165 and 169) were

found to have significantly more pod borer damage than both green and purple poded lines. Pod borer damage was least in purple poded lines. A similar pattern of infestation was observed for pod fly but the differences among the lines were not statistically significant for pod fly damage. This is mainly because of the very high coefficient of variabillity (46.8%).

The reasons for the lower pod borer damage in purple and green poded lines are not clear. It may be because of thicker and more leathery pods in the green and purple poded lines when compared to the GPS lines. It was also observed that green and purple poded lines had more sticky wax than GPS poded lines. Since the borer infestation was low during 1980, the results can not be conclusive. Entries selected for recording borer and pod-fly infestations were not iso or near-iso lines, hence the observations made on these may be confounded with other plant characters.

3. IDENTIFICATION OF NEW EARLY MATURITY STERILES:

During the 1981 kharif season the following new sources of sterility were identified at Hisar:

(a) New male sterile source MS-41. In an F3 progeny row from a single F2 plant, from the cross comp. 1 DDT-2 x ICPL 86, 11 of 26 plants were found to be male sterile. Acetocarmine squashes of the anthers from the male sterile plants showed a complete absence of pollen, whereas anthers from the fertile plants contained over 99 percent of normal pollen. Young androecium of this male sterile is characterized by small, whitish (translucent), nondehiscent anthers which become brown as the bud grows. Male sterile plants set no pods when selfed but did produce pods when fertilized with pollen from fertile plants in the same progeny row and with pollen from ICPL 81 and ICPL 267. We have designated this male sterile as MS-41. The allelic relationship of MS-41 with other male sterile sources is being studied.

(b) A complete sterile. One F1 plant from the cross ICPL 81 x [(ICP 8504 x Prabhat) x ICPL 10)-H30 -HB] was found to be both male and female sterile. An acetocarmine squash of its scaly and translucent anthers showed a complete absence of pollen. No pod set was obtained either on selfing this plant or on pollinating with pollen from ICPL 81 and ICPL 267. Microscopic examination showed the ovaries to be devoid of ovules. This plant is of no practical use as it formed a dead end.

(c) A syngenesious male sterile. In the single plant progeny ICPL 151-37 one plant with syngenesious like anthers was identified late in the season. All 10 fully developed pale yellow anthers in flowers on this plant were tighly united into a tube surrounding the style with the filaments remaining free. The stigma protruded above the bundle of anthers. The anthers were nondehiscent unless ruptured by a needle or forceps. During the growing season only one single seeded pod was formed. This pod might have been the result of foreign pollen carried to the

flower by an insect. No pod setting was observed on covering the inflorescences with a cloth bag even when the anthers were ruptured. However, pods were set when flowers on this plant were pollinated with pollen from ICPL 81 and ICPL 267. In acetocarmine squashes about 70 to 80 percent of the pollen appeared normal.

This suggests that the male sterility in this plant may be because of non-dehiscent anthers. This supposition is being tested along with an investigation of the stability of this character.

Table 1.1. Monthly Rainfall during 1977/78, 1978/79, 1979/80, 1980/81 and 1981/82 at Hisar.

Month	1977/78 (mm)	1978/79 (mm)	1979/80 (mm)	1980/81 (mm)	1981/82 (mm)	Long term average (mm) (1931-60)
June	68	55	8	10	95	34
July	198	15	163	138	171	122
August	109	82	127	46	59	114
September	64	64	50	0	27	81
October	0	3	1	8	0	15
November	0	0	0	7	61	8
December	7	0	70	29	0	5
January	1	5	11	27	9	19
February	33	66	1	22	18	15
March	57	1	21	43	42	17
April	1	2	0	0	54	6
May	0	36	17	3	78	11
Total :	538	339	469	343	613	447

Hisar Location:

Altitude - 215 m
Latitude - 29° 10 N
Longitude - 75° 46 E

Table 1.2. Early maturing pigeonpea crosses made during 1979-80 at Hisar (a)

Objective	Female parent (Lines)		Male Parent (Donor)	Cross Numbers ICP X	
(A) To increase the number of seeds per pod and seed size of promising advance lines.	ICPL 81	x	74068-1-B-34-B-H1-BB-BB-1(HP-474)	79220	b
	ICPL 4	x	-do-	79222	b
	ICPL 2	x	-do-	79224	b
	ICPL 81	x	74068-11-B-3-B-H1-BB-H1-BB(HP 500)	79234	b
	ICPL 4	x	-do-	79236	b
	ICPL 2	x	-do-	79238	b
	ICPL 81	x	74092-B-16-1-H3-BB-BB(HP 556)	79235	b
	ICPL 4	x	-do-	79237	b
	ICPL 2	x	-do-	79239	b
	ICPL 81	x	75080-71-B-H1-BB-1 (HP 600)	79221	b
	ICPL 4	x	-do-	79223	b
	ICPL 2	x	-do-	79225	b
(B) To incorporate earliness with large pods in large podded plants obtained from the cross between single plant progenies from the triple cross ICPx77007 and ICP 8504	78332-1	x	77007-4-1	79226	
	78339-1	x	-do-	79241	
	78341-1	x	-do-	79242	
	78342-1	x	-do-	79227	b
	78335-1	x	77007-12-1	79240	
	78343-1	x	-do-	79243	b
(C) Intermating of F3 single plant progenies of the cross ICPX 76115 (8504 x Prabhat)	76115-14-1	x	76115-22-1	79244	
	76115-33-4	x	76115-36-2	79228	
	76115-36-2	x	76115-39-3	79245	
	76115-39-3	x	76115-42-3	79246	
	76115-42-3	x	76115-45-3	79229	
	76115-45-3	x	76115-49-3	79230	
	76115-61-5	x	76115-78-2	79247	
	76115-78-2	x	76115-90-3	79231	b
	76115-90-3	x	76115-91-1	79232	b
	76115-91-1	x	76115-95-3	79233	b

a. All the 28 F1's were grown during 1980 kharif at Hisar.
b. F2 bulks of these crosses were planted during 1981 kharif at Hisar.

Table 1.3. Early maturing pigeonpea crosses made during 1980-81 at Hisar.

Objective	Female parent	Male parent	Cross Numbers ICP #
(A) To increase the seed and pod size of some promising lines	77007-M4-M4	x ICPL 81	80490
	ICPL 81	x ICPL 87	80491
	ICPL 81	x ICPL 86	80492
	ICPL 81	x QP 227	80493
	ICPL 81	x ICP 8504-M1	80494
	ICPL 81	x ICP 8504-M2	80495
	ICPL 81	x ICP 8504-M3	80496
	ICPL 81	x ICP 8504-M4	80497
	ICPL 81	x ICP 8504-M5	80498
	ICPL 81	x 78343-M1	80499
	ICPL 81	x QP 223	80500
	ICPL 81	x ICPL 9	80511
	ICPL 81	x ICPL 94	80512
	ICPL 81	x ICPL 151	80513
	ICPL 81	x ICPL 141	80514
	ICPL 81	x 77007-M30-MB	80515
	ICPL 87	x ICPL 9	80516
	ICPL 87	x ICPL 94	80517
	ICPL 87	x ICPL 151	80518
	ICPL 87	x ICPL 141	80519
	ICPL 87	x 77007-M30-MB	80520
	ICPL 164	x ICPL 9	80521
	ICPL 164	x ICPL 94	80522
	ICPL 164	x ICPL 151	80523
	ICPL 164	x ICPL 141	80524
	ICPL 164	x 77007-M30-MB	80525
	ICPL 1	x ICPL 9	80501
	ICPL 1	x ICPL 94	80502
	ICPL 1	x ICPL 151	80503
	ICPL 1	x ICPL 141	80504
	ICPL 1	x 77007-M30-MB	80505
	ICPL 5	x ICPL 9	80506
	ICPL 5	x ICPL 94	80507
	ICPL 5	x ICPL 151	80508
	ICPL 5	x ICPL 141	80509
	ICPL 5	x 77007-M30-MB	80510
(B) To incorporate earliness in the promising lines	ICPL 1	x DL 78-1	80526
	ICPL 4	x DL 78-1	80529
	ICPL 6	x DL 78-1	80532
	ICPL 81	x DL 78-1	80535
	ICPL 86	x DL 78-1	80538
	ICPL 87	x DL 78-1	80541
	ICPL 161	x DL 78-1	80544
	ICPL 164	x DL 78-1	80547
	ICPL 1	x 74060-1-B-36-B-1-M1-BB-M12	80527
	ICPL 4	x -do-	80530
	ICPL 6	x -do-	80533
	ICPL 81	x -do-	80536
	ICPL 86	x -do-	80539
	ICPL 87	x -do-	80542
	ICPL 161	x -do-	80545
	ICPL 164	x -do-	80548
	ICPL 1	x 74065-76-3-M1-BB-BB-M2	80528
	ICPL 4	x -do-	80531
	ICPL 6	x -do-	80534
	ICPL 81	x -do-	80537
	ICPL 86	x -do-	80540
	ICPL 87	x -do-	80543
	ICPL 161	x -do-	80546
	ICPL 164	x -do-	80549

(C) To incorporate non-branching	75004-5-9-M1-M0-M1-M0-M1-M0	x	ICPL 1	80550
character	-do-	x	ICPL 87	80551
(D) Intermating of F4 SPP's of cross ICP x 76115 (8504 x Prabhat) for bringing earliness and large pods together	76115-3-1	x	76115-14-3	80552
	76115-14-3	x	76115-22-1	80553
	76115-22-1	x	76115-27-1	80554
	76115-27-1	x	76115-30-5	80555
	76115-30-5	x	76115-33-1	80556
	76115-33-1	x	76115-36-4	80557
	76115-36-4	x	76115-39-2	80558
	76115-39-2	x	76115-42-3	80559
	76115-42-3	x	76115-45-5	80560
	76115-45-5	x	76115-49-1	80561
	76115-50-5	x	76115-58-3	80562
	76115-58-3	x	76115-59-5	80563
	76115-59-5	x	76115-61-1	80564
	76115-61-1	x	76115-78-5	80565
	76115-78-5	x	76115-90-5	80566
	76115-90-5	x	76115-91-5	80567
	76115-91-5	x	76115-95-3	80568
(E) To incorporate earliness and large pods from ICP 77007 TCP2 single plants into large podded plants obtained from the cross between 77007 TC SPP's and ICP 8504	78332-1	x	77007-M12-M1	80569
	78332-1	x	77007-M12-M2	80570
	78332-1	x	77007-M4-M1	80571
	78332-1	x	77007-M4-M4	80572
	78333-1	x	77007-M12-M1	80573
	78333-1	x	77007-M12-M2	80574
	78333-1	x	77007-M4-M1	80575
	78333-1	x	77007-M4-M4	80576
	78335-1	x	77007-M12-M1	80577
	78335-1	x	77007-M12-M2	80578
	78335-1	x	77007-M4-M1	80579
	78335-1	x	77007-M4-M4	80580
	78337-1	x	77007-M12-M1	80581
	78337-1	x	77007-M12-M2	80582
	78337-1	x	77007-M4-M1	80583
	78337-1	x	77007-M4-M4	80584
	78338-1	x	77007-M12-M1	80585
	78338-1	x	77007-M12-M2	80586
	78338-1	x	77007-M4-M1	80587
	78338-1	x	77007-M4-M4	80588
	78340-1	x	77007-M12-M1	80589
	78340-1	x	77007-M12-M2	80590
	78340-1	x	77007-M4-M1	80591
	78340-1	x	77007-M4-M4	80592
	78341-1	x	77007-M12-M1	80593
	78341-1	x	77007-M12-M2	80594
	78341-1	x	77007-M4-M1	80595
	78341-1	x	77007-M4-M4	80596
	78342-1	x	77007-M12-M1	80597
	78342-1	x	77007-M12-M2	80598
	78342-1	x	77007-M4-M1	80599
	78342-1	x	77007-M4-M4	80600
	78343-1	x	77007-M12-M1	80601
	78343-1	x	77007-M12-M2	80602
	78343-1	x	77007-M4-M1	80603
	78343-1	x	77007-M4-M4	80604
	78344-1	x	77007-M12-M1	80605
	78344-1	x	77007-M12-M2	80606
	78344-1	x	77007-M4-M1	80607
	78344-1	x	77007-M4-M4	80608

Table 1.4. Early maturing pigeonpe
hybrids made during 1980-81 at Hisa..

Sl. No.	Female parent		Male pare
1.	Prabhat MS (DT)	x	ICPL 81
2.	Prabhat MS (DT)	x	ICPL 4
3.	Prabhat MS (DT)	x	ICPL 164
4.	Prahbat MS (DT)	x	ICPL 161

Table 1.5. Early maturing pigeonpea crosses made during 1981-82 at Niaar

Objective	Female parent		Male parent	Cross Number ICP x
(A) Backcrossing of promising F1's to ICPL 81 an early adopted MDT line	80582(78337-M1x77007-M12-M2)	x	ICPL 81	81114
	80579(78335-M1x77007-M4-M1)	x	ICPL 81	81115
	80576(78333-M1x77007-M4-M4)	x	ICPL 81	81116
	80512(ICPL 81xICPL 94)	x	ICPL 81	81117
	80513(ICPL 81xICPL 151)	x	ICPL 81	81118
	80515(ICPL 81x77007-M30-MB)	x	ICPL 81	81119
	80494(ICPL 81xICP 8504-1)	x	ICPL 81	81120
	80497(ICPL 81xICP 8504-4)	x	ICPL 81	81121
	(ICPL 81x ICP 7952)	x	ICPL 81	81122
	Bajpani	x	ICPL 81	81123
(B) Incorporation of large podded character from early large podded lines	80536 (ICPL 81x74068 Prog)	x	76115-M263-M4-MB	81124
	80528 (ICPL 81x74065 Prog)	x	-do-	81125
	80499 (ICPL 81x78343-M1)	x	-do-	81126
	80500 (ICPL 81xQP-223-MB)	x	-do-	81127
	ICPL 87	x	-do-	81128
	ICPL 94	x	-do-	81129
	ICPL 179	x	-do-	81130
	ICPL 185	x	-do-	81131
	ICPL 267	x	-do-	81132
	80536(ICPL-81x74068 Prog)	x	78353-M4	81147
	80500(ICPL 81xQP-223-MB)	x	-do-	81148
	ICPL 81	x	-do-	81149
	ICPL 87	x	76115-M137-MB-M3	81150
	ICPL 94	x	-do-	81151
	ICPL 179	x	-do-	81152
	ICPL 267	x	-do-	81153
	ICPL 81	x	-do-	81154
	ICPL 142	x	-do-	81155
	ICPL 150	x	-do-	81156
	ICPL 185	x	-do-	81157
(C) Bringing together the earliness and large pod and seed size	80542(ICPL 87x74068 Prog)	x	ICPL 267	81133
	80543(ICPL 87x74065 Prog)	x	ICPL 267	81134
	80576(78333-M1x77007-M4-M4)	x	ICPL 267	81135
(D) To incorporate early dwarfness	80542(ICPL 87x74068 Prog)	x	77324-2-2-M2	81136
	80543(ICPL 87x74065 Prog)	x	-do-	81137
	80536(ICPL 81x74068 Prog)	x	-do-	81138
	80499(ICPL 81x78343-M1)	x	-do-	81139
	80500(ICPL 81x QP-223-MB)	x	-do-	81140
	ICPL 81 x ICP 7952	x	-do-	81141
	ICPL 94	x	-do-	81142
	ICPL 267	x	-do-	81143
	ICPL 81	x	-do-	81144
	ICPL 150	x	-do-	81145
	ICPL 185	x	-do-	81146
	80499(ICPL 81x78343-M1)	x	DD Dwarf	81158
a	73081-40D2-G8	x	ICPL 179	81159
(E) To incorporate profuse branching in early DT and MDT lines.	a ICP 7952	x	ICPL 179	81160
	a ICP 7952	x	ICPL 81	81161
	(ICPL 81 x ICP 7952)	x	ICPL 267	81162
(F) To incorporate large pod and seed size from new genetic backgrounds	ICPL 81	x	ICP 8547	81163
	ICPL 267	x	ICP 8547	81164
	ICPL 81	x	ICP 8514	81165
	ICPL 267	x	ICP 8514	81166
	ICPL 81	x	ICP 6915	81167
	ICPL 81	x	ICP 9158	81168
	ICPL 81	x	ICP 9159	81169
	ICPL 267	x	ICP 9159	81170

(G) To incorporate Blight and Sterility mosaic resistance	80536(ICPL 81x74068 Prog.)	x	Pant A-3-P30	81054
	80528(ICPL 81x74065 Prog.)	x	Pant A-3-P30	81054
	80499(ICPL 81x78343-M1)	x	Pant A-3-P30	81055
	80500(ICPL 81xQP-223-MB)	x	-do-	81056
	80542(ICPL 87x74068 Prog)	x	-do-	81057
	80543(ICPL 87x74065 Prog)	x	-do-	81058
	80536(78)(-M1x77007-M4-M4)	x	-do-	81059
	80539(78)(5-M1x77007-M4-M1)	x	-do-	81060
	ICPL 81	x	-do-	81061
	ICPL 87	x	-do-	81062
	ICPL 94	x	-do-	81063
	ICPL 142	x	-do-	81064
	ICPL 150	x	-do-	81065
	ICPL 179	x	-do-	81066
	ICPL 185	x	-do-	81067
	ICPL 267	x	-do-	81068
	80536(ICPL 81x74068 Prog)	x	71047-14-1-B-1 B-MBB-M3-MB	81078
	80499(ICPL 81x78343-M1)	x	-do-	81079
	80500(ICPL 81xQP-223-MB)	x	-do-	81080
	80542(ICPL 87x74068 Prog)	x	-do-	81081
	80543(ICPL 87x74065 Prog)	x	-do-	81082
	(ICPL 87xICP 7952)	x	-do-	81083
	ICPL 87	x	-do-	81084
	ICPL 94	x	-do-	81085
	ICPL 142	x	-do-	81086
	ICPL 150	x	-do-	81087
	ICPL 179	x	-do-	81088
	ICPL 185	x	-do-	81089
	ICPL 267	x	-do-	81090
(H) To incorporate wilt resistance	ICPL 81x ICP 7952	x	70039 PWM W10 W10-MBB-1-MBB	81069
	ICPL 81	x	-do-	81070
	ICPL 87	x	-do-	81071
	ICPL 94	x	-do-	81072
	ICPL 142	x	-do-	81073
	ICPL 150	x	-do-	81074
	ICPL 179	x	-do-	81075
	ICPL 185	x	-do-	81076
	ICPL 267	x	-do-	81077
(I) To incorporate sterility mosaic resistance	80499(ICPL81x78343-M1)	x	74146-B-23-1-M1-MBB-MB-M5	81091
	80500(ICPL 81xQP-223-MB)	x	-do-	81092
	ICPL 81xICP7952)	x	-do-	81093
	ICPL 87	x	-do-	81094
	ICPL 87	x	-do-	81095
	ICPL 94	x	-do-	81096
	ICPL 150	x	-do-	81097
	ICPL 179	x	-do-	81098
	ICPL 185	x	-do-	81099
	ICPL 267	x	-do-	81100
	ICPL 81	x	74205-1-B-104-1 MBB-M3	81101
	ICPL 94	x	-do-	81102
	ICPL 142	x	-do-	81103
	ICPL 150	x	-do-	81104
	ICPL 179	x	-do-	81105
	ICPL 185	x	-do-	81106
	ICPL 267	x	-do-	81107
(J) To incorporate resistance to Alternaria complex	80536(ICPL 81x74068 Prog)	x	20(105)	81108
	ICPL 81	x	20(105)	81109
	ICPL 150	x	20(105)	81110
	ICPL 179	x	20(105)	81111
	ICPL 185	x	20(105)	81112
	ICPL 267	x	20(105)	81113

x crosses made at Gwalior.

Table 1.6. List of F1's grown during 1979 kharif at Hisar

Sl. No.	Cross Number ICP x	Parentage		
1	78318	74068-21-B-1-B-N5-B-N1	x	ICPL 4
2.	78319	74092-B-16-1-N1-B-N1	x	ICPL 4
3	78320	ICPL 86	x	ICPL 4
4.	78321	74078-12-B-1-2-N9-B-N3	x	ICPL 1
5.	78322	-do-	x	ICPL 5
6.	78323	-do-	x	ICPL 6
7.	78324	-do-	x	Sehore 197
8.	78325	-do-	x	ICPL 89
9	78326	74216-B-21-N1-N1	x	ICPL 1
10.	78327	-do-	x	ICPL 5
11	78328	-do-	x	ICPL 6
12.	78329	-do-	x	Sehore 197
13.	78330	-do-	x	ICPL 89
14	78331	77007-1	x	ICP 8504
15.	78332	77007-2	x	ICP 8504
16	78333	77007-3	x	-do-
17.	78334	77007-4	x	-do-
18	78335	77007-5	x	-do-
19 a	78336	77007-6	x	-do-
20	78337	77007-7	x	-do-
21.	78338	77007-8	x	-do-
22.	78339	77007-9	x	-do-
23	78340	77007-10	x	-do-
24	78341	77007-11	x	-do-
25	78342	77007-12	x	-do-
26	78343	77007-13	x	-do-
27	78344	77007-14	x	-do-
28	78345	Comp.1 ODT-1	x	74068-21-B-1-B-N5-B-N1
29	78347	Comp.1 ODT-2	x	-do-
30	78349	Comp.1 ODT-3	x	-do-
31	78351	Comp.1 ODT-5	x	-do-
32	78353	Comp.1 ODT-6	x	-do-
33	78348	Comp.1 ODT-2	x	ICPL 86
34	78350	Comp.1 ODT-4	x	-do-
35	78352	Comp.1 ODT-5	x	-do-
36	78354	Comp.1 ODT-7	x	-do-
37	78375	ICP 8504	x	77007[(8504xPrabhat)x ICPL 10]
38	78376	74068-21-B-1-B-N5-B-N1	x	ICPL 3
39	78377	74092-B-49-B-N1-B	x	Comp.1 ODT
40	78378	ICPL 1	x	ICPL 89
41	78379	ICPL 2	x	ICPL 89
42.	78380	ICPL 11	x	74075-5-B-3-1-N2-B0
43	77007	(8504xPrabhat)	x	ICPL 10

a F2 populations of this cross was not grown during 1980 kharif.

Table 1.? Performance of early maturing pigeonpea F1's grown in single row plots replicated twice during 1981 kharif, Hisar.

Sl No.	Cross Number ICPX	Parentage			Days to flower		Days to mature		Yield(kg/ha)		% increase over Check
					Check (ICPL 1)	F1	Check (ICPL 1)	F1	Check (ICPL 1)	F1	
1	80490	77007-4-4	x	ICPL 81	81	80	130	125	2766	2566	-7.05
2.	80491	ICPL 81	x	ICPL 87	81	83	129	124	1725	2630	53.03
3.	80492	ICPL 81	x	ICPL 86	81	81	129	124	[illegible]	2287	32 36
4.	80493	ICPL 81	x	QP 227	83	77	135	120	1748	2199	25 84
5	80494	ICPL 81	x	ICP 8504-M1	83	87	135	135	1748	2084	19.21
6	80495	ICPL 81	x	ICP 8504-M2	81	100	134	147	[illegible]	1 16	-12 39
7.	80496	ICPL 81	x	ICP 8504-M3	83	88	134	13[illegible]	[illegible]319	222	59.97
8	80497	ICPL 81	x	ICP 8504-M4	83	84	130	135	3218	1602	-50 21
9.	80499a	ICPL 81	x	78343-M1	85	85	132	122	1111	[illegible]269	104.10
0	80500a	ICPL 81	x	QP 223	84	79	128	12[illegible]	1940	1010	-47 80
1.	80511	ICPL 81	x	ICPL 9	80	78	132	126	[illegible]372	1209	-49.06
.2	80512a	ICPL 81	x	ICPL 94	80	84	132	125	2372	3121	31 53
3	80513	ICPL 81	x	ICPL 151	81	78	130	125	1053	894	-15 1[illegible]
4	80514	ICPL 81	x	ICPL 141	81	77	130	124	1053	1727	64 01
5	805[illegible]	ICPL 81	x	77007-H30-HB	81	78	133	122	1218	4351	251 35
6	80516	ICPL 87	x	ICPL 9	8[illegible]	79	133	130	1218	1818	48 41
7	80517	ICPL 87	x	ICPL 94	82	80	129	125	1342	1333	- 0 67
8	80518	ICPL 87	x	ICPL 151	82	72	129	131	1342	1986	47 [illegible]
9	80519	ICPL 87	x	ICPL 141	81	72	131	132	1701	2611	53.45
20	80520	ICPL 87	x	77007-H30-HB	81	76	131	124	1701	1560	- 8 12
21	80521a	ICPL 164	x	ICPL 9	81	88	129	134	2974	1342	-54 8[illegible]
22	80522	ICPL 164	x	ICPL 94	81	91	129	133	2974	1579	-46 91
23	80523a	ICPL 164	x	ICPL 151	80	93	130	140	2547	1481	-41 87
24	80524	ICPL 164	x	ICPL 141	80	86	130	128	2546	1625	-63 81
25	80525	ICPL 164	x	77007-H30-HB	84	86	130	132	521	1227	135.51
26	80501	ICPL 1	x	ICPL 9	81	86	133	128	1817	1209	-33 49
27	80502a	ICPL 1	x	ICPL 94	81	81	133	129	1817	2379	30.90
28	80503	ICPL 1	x	ICPL 151	84	85	130	126	1261	1685	33 57
29	80504a	ICPL 1	x	ICPL 141	84	85	130	125	1261	2021	60.36
30	80505	ICPL 1	x	77007-H30-HB	84	84	135	125	1169	1676	43 37
31	80506	ICPL 5	x	ICPL 9	84	91	135	135	1169	2676	128 91
32	80507	ICPL 5	x	ICPL 94	82	88	133	130	752	1924	155.85
33	80508	ICPL 5	x	ICPL 151	82	90	133	135	752	3055	306 05
34	80509	ICPL 5	x	ICPL 141	80	89	133	132	1819	662	-63.06
35	805[illegible]	ICPL 5	x	77007-H30-HB	80	87	133	131	1819	3023	66 14
36.	80526	ICPL 1	x	DL-78-1	84	81	130	119	521	2012	290.12
37	80527a	ICPL 4	x	DL-78-1	83	66	131	116	2766	1963	-29.00
38.	80532	ICPL 4	x	DL-78-1	81	80	132	125	3171	1680	-47.00
39	80535	ICPL 81	x	-do-	80	79	132	126	1798	856	-52.04
40	80538	ICPL 84	x	-do-	80	65	130	117	2396	1426	-40.48
41	80541	ICPL 87	x	-do-	81	65	129	120	2095	1379	-34.02
42	80544	ICPL 161	x	-do-	81	79	133	123	2604	940	-63.89
43	80547	ICPL 164	x	-do	81	80	132	122	2161	1459	-18 02
44.	80527a	ICPL 1	x	74068-1-B-34-B-1-M1-BB-12	82	72	131	122	2453	1606	-34.05

45	80530a	ICPL 4	x	-do-	83	68	131	118	2766	1990	-28.00
46.	80533	ICPL 6	x	-do-	81	80	131	126	2604	1088	-58.02
47.	80536	ICPL 81	x	-do-	80	74	132	120	1798	1055	-41.83
48.	80539	ICPL 86	x	-do-	83	64	131	124	1481	972	-34.04
49.	80542	ICPL 87	x	-do-	81	64	129	129	2095	1162	-44.05
50.	80545	ICPL 161	x	-do-	81	68	130	123	2093	1389	-52.00
51.	80548	ICPL 164	x	-do-	81	79	132	123	2361	1287	-45.05
52.	80528	ICPL 1	x	74065-76-3-H	82	79	131	124	2453	1588	-35.03
53.	80531	ICPL 4	x	-do-	81	65	132	119	3171	1963	-38.01
54.	80534	ICPL 6	x	-do-	81	81	131	128	2604	1796	-31.00
55.	80537	ICPL 81	x	-do-	80	76	130	120	2396	2375	- 0.88
56.	80540	ICPL 86	x	-do-	83	64	131	116	1481	926	-37.05
57.	80543	ICPL 87	x	-do-	81	65	133	126	2404	1481	-43.81
58	80546	ICPL 161	x	-do-	81	79	130	126	2893	1125	-61.01
59.	80549	ICPL 164	x	-do-	81	79	130	124	1852	1750	- 5.05
60.	80550	75004-5-8-M1-80-M1-8	x	ICPL 1	81	84	131	135	1065	•2044	129.53
61.	80551	-do-	x	ICPL 87	81	78	131	125	1065	1319	23.09
62.	80552	76115-3-1	x	76115-14-3	83	80	135	145	2025	2430	20.00
63.	80554	76115-22-1	x	76115-27-1	83	69	135	132	2025	1356	-33.00
64.	80555	76115-27-1	x	76115-30-5	80	77	130	128	1782	2236	25.04
65.	80556	76115-30-5	x	76115-33-1	80	72	130	128	1782	2592	45.04
66.	80557	76115-33-1	x	76115-36-4	81	80	129	134	1423	2477	74.00
67.	80558	76115-36-4	x	76115-39-2	81	79	129	144	1423	2106	48.00
68.	80559	76115-39-2	x	76115-42-3	81	76	128	134	1886	1069	-43.03
69.	80560	76115-42-3	x	76115-45-5	81	73	128	125	1886	1634	-13.04
70.	80561	76115-45-5	x	76115-49-1	80	71	128	119	2187	2583	18.01
71.	80562	76115-50-5	x	76115-58-3	80	75	128	137	2187	1565	-28.05
72.	80563	76115-58-3	x	76115-59-5	82	80	129	150	1890	1986	4.04
73.	80564	76115-59-5	x	76115-61-1	82	91	129	151	1890	2912	53.04
74.	80565	76115-61-1	x	76115-78-5	81	84	130	135	2766	1597	42.03
75.	80569	78332-1	x	77007-M12-M1	81	87	130	130	1852	2847	53.07
76.	80570	78332-1	x	77007-M12-M2	80	88	132	145	2280	1875	-17.08
77.	80571	78332-1	x	77007-M4-M1	80	93	132	138	2280	1333	-41.05
78	80572	78332-1	x	77007-M4-M4	80	95	132	140	2396	986	-58.08
79.	80573	78333-1	x	77007-M12-M1	80	69	132	135	2396	764	-68.01
80.	80574	78333-1	x	77007-M12-M2	81	84	132	138	1446	2120	-46.06
81.	80575a	78333-1	x	77007-M4-M1	81	68	132	135	1446	550	-61.06
82.	80576	78333-1	x	77007-M4-M4	80	62	132	124	2164	1504	-30.05
83	80577a	78335-1	x	77007-M12-M1	80	75	132	139	2164	•926	-57.02
84.	80578	78335-1	x	77007-M12-M2	80	80	131	135	2500	1773	-29.01
85.	80579	78335-1	x	77007-M4-M1	80	92	131	138	2500	1148	-54.01
86.	80580	78335-1	x	77007-M4-M4	81	91	130	130	1690	1089	-35.06
87	80581	78337-1	x	77007-M12-M1	81	76	130	135	1690	1504	-11.00
88.	80582	78337-1	x	77007-M12-M2	81	78	135	130	1886	2014	6.76
89.	80583	78337-1	x	77007-M4-M1	81	73	135	132	1886	2490	32.00
90	80584	78337-1	x	77007-M4-M4	81	86	130	130	2419	764	-68.04
91	80585a	78338-1	x	77007-M12-M1	81	92	130	149	2419	1041	-56.09
92	80586	78338-1	x	77007-M12-M2	83	92	145	148	1009	2569	154.07
93.	80587a	78338-1	x	77007-M4-M1	83	91	145	151	1009	1852	83.05
94.	80588a	78338-1	x	77007-M4-M4	81	98	146	159	1215	1250	2.09
95.	80589a	78340-1	x	77007-M12-M1	81	98	146	146	1215	3726	206.07
96.	80590	78340-1	x	77007-M12-M2	81	108	143	159	1389	1333	-4.00
97.	80591	78340-1	x	77007-M4-M1	81	107	143	162	1309	926	-33.03
98.	80593	78341-1	x	77007-M12-M1	87	96	130	171	3125	-	-
99.	80594a	78341-1	x	77007-M12-M2	87	96	130	155	3125	1597	-48.09
100.	80595	78341-1	x	77007-M4-M1	81	91	133	153	2164	731	-66.02
101.	80596a	78341-1	x	77007-M4-M4	81	71	133	131	2164	1389	-35.08
102.	80597	78342-1	x	77007-M12-M1	81	77	142	132	1296	1852	42.08
103.	80598	78342-1	x	77007-M12-M2	81	81	142	141	1296	592	-54.03
104.	80599	78342-1	x	77007-M4-M1	83	87	132	135	2361	1172	-50.04
105	80600	78342-1	x	77007-M4-M4	83	83	132	134	2361	2615	10.08
106.	80601	78343-1	x	77007-M12-M1	80	90	137	142	984	2977	202.05
107.	80602a	78343-1	x	77007-M12-M2	80	76	137	138	984	2430	147.00
108.	80603	78343-1	x	77007-M4-M1	80	75	130	130	1875	1157	-38.03
109.	80604	78343-1	x	77007-M4-M4	80	81	130	137	1875	2144	14.32
110.	80605	78344-1	x	77007-M12-M1	78	78	132	134	2477	1935	-21.09
111.	80606	78344-1	x	77007-M12-M2	78	72	132	142	2477	2074	-16.03
112.	80607	78344-1	x	77007-M4-M1	80	78	129	139	1611	3541	119.00
113.	80608	78344-1	x	77007-M4-M4	80	71	129	131	1611	615	-61.08

a One replication only

Table . 8. Summary of numbers of early maturing pigeonpea selections made in F populations during 1980 kharif at Nise:

Sl No	Cross Number ICP x	Parentage	Bulk selected for test		No of plants selected	Total
			DT	NDT		
1	78318	74068-21-B-1-B-M5-B-M1 x ICPL 4	-	-	1	1
2	78319	74092-B-16-1-M1-B-M1 x ICPL 4	1	-	8	8
3	78320	ICPL 86 x ICPL 4	-	2	1	
4	78321	74078-12-B-1-2-M9-B-M3 x ICPL 1	1	-	3	3
5.	78322	-do- x ICPL 5	1	-	5	5
6.	78323	-do- x ICPL 6	1	-	8	8
7	78324	-do- x Sehore 197	1	-	4	4
8	78325	-do- x ICPL 89	-	-	10	10
9	78326	74216-B-21-M1-M1 x ICPL 1	1	-	14	14
10	78327	-do- x ICPL 5	1	-	8	8
11	78328	-do- x ICPL 6	-	-	12	12
12	78329	-do- x Sehore 197	-	-	1	1
13	78330	-do- x ICPL 89	1	-	5	5
14	78331	77007-1 x ICP 8504	-	1	9	9
15	78332	-2 x -do-	-	9	10	19
16	78333	-3 x -do-	-	9	9	18
17	78334	-4 x -do-	-	2	1	3
18	78335	-5 x -do-	-	-	15	15
19	78336	-7 x -do-	-	-	1	1
20	78338	-8 x -do-		6	7	13
21	78339	-9 x -do-		-	11	11
22.	78340	-10 x -do-	-	1	9	10
23	78341	-11 x -do-		-	10	10
24	78342	-12 x -do-	1	-	-	9
25	78343	-13 x -do-		-	8	-
26	78344	-14 x -do-	-	9	8	8
27	78345	Comp 1 ODT-. x 74068-21-B-1-B-M5-B-M1		16	-	16
28	78347	-2 x -do-	1	14		9
29	78349	-4 x -do-		6	-	6
30	78350	-5 x -do-		6	-	6
31	78351	-7 x -do-	-	9	1	10
32	78352	-2 x ICPL 87	1	17	-	17
33	78353	-3 x -do-	1	5	-	5
34	78354	-5 x -do-	1	10	5	15
35	78355	-7 x -do-	1	5	-	5
36	78356	ICP 8504 x 77007	-	4	1	5
37	78357	74068-21-B-1-B-M5-B-M1 x ICPL 3	1	10	-	10
38	78358	74092-B-49-B-M1-B x Comp 1 ODT	1	10	-	10
39	78359	ICPL 1 x ICPL 89	1	-	2	2
40	78359	ICPL 1 x ICPL 89	1	-	2	2
41	78360	ICPL 1 x 74075-5-B-1-1-M2-B8	1	14	1	15
42	77007	ICP 8504xPrabhat x ICPL 10	-	10	12	22
		Total	19	165	208	373

Table 1.9. Summary of the number of early maturing pigeonpea single plant selections made in F2 bulk populations during 1981 kharif, Hisar.

Sl. No.	Cross Number ICPx	Parentage	Bulks selected for test	No.of single plants selected						Total
				O-I DT	O-I NDT	II DT	II NDT	III DT	III NDT	
1.	79220	ICPL 81 x 74068-1-B-34-B-M1-B0-B0-1	1	12	6	4	21	-	1	44
2.	79222	ICPL 4 x -do-	1	13	-	7	1	-	-	21
3.	79224	ICPL 2 x -do-	-	-	17	1	14	-	-	32
4.	79234	ICPL 81 x 74068-11-B-3-B-M1-B0-M1-B0	-	1	2	3	8	-	1	15
5.	79236	ICPL 4 x -do-	-	16	-	8	1	-	-	25
6.	79238	ICPL 2 x -do-	-	-	50			-	-	50
7.	79235	ICPL 81 x 74092-B-16-1-M3-B0-B0	-	3	14	1	16	-	-	34
8.	79237	ICPL 4 x -do-	-	36	-	16	1	-	-	53
9.	79239	ICPL 2 x -do-	-	6	52	-	-	-	-	58
10.	79221	ICPL 81 x 75080-71-B-M1-B0-1	1	-	7	-	19	-	-	26
11.	79223	ICPL 4 x -do-	1	23	-	10	-	-	-	33
12.	79225	ICPL 2 x -do-	-	2	21	-	6	-	-	29
13.	79227	78342-1 x 77007-4-1	-	6	2	11	11	-	-	30
14.	79243	78343-1 x 77007-12-1	1	16	25	-	11	-	1	53
15.	79231	76115-78-2 x 76115-90-3	-	2	-	11	-	4	-	17
16.	79232	76115-90-3 x 76115-91-1	-	6	-	12	2	1	-	21
17.	79233	76115-91-1 x 76115-95-3	-	17	-	25	2	-	-	44
18.	80490	77007-4-4 x ICPL 81	-	-		-	-	-	1	1
19.	80491	ICPL 81 x ICPL 87	1	-	2	-	-		-	3
20.	80492	" x ICPL 86	-	2	3	-	1	-	-	6
21.	80493	" x QP 227	1	2	3	-	-	-	-	6
22.	80494	" x ICT 8504-H1		-	4	-	2	-	-	6
23.	80495	" x ICP-8504-H2	-		2	-	7	-	-	7
24.	80496	" x ICP-8504-H3		-	1	-	3		-	4
25.	80497	" x ICP-8504-H4	-	-	-	-	2	-	1	5
26	80511	" x ICPL 9	1	-	4	-	1	-	-	5
27	80512	" x ICPL 94	1	-	5	-	2		-	6
28	80513	" x ICPL 151	1	2	1		1	-	-	9
29.	80514	" x ICPL 141	1	4	4	-	2	-	-	11
30.	80515	" x 77007-H30-HB	1	1	4		1	-	-	6
31.	80516	ICPL 87 x ICPL 9	-	2	1	2	-	-	-	9
32.	80517	" x ICPL 94	-	4	-	11	1	-	-	16
33.	80518	" x ICPL 151	-	2	-	5	-	2	-	9
34.	80519	" x ICPL 141	1	3	1	4	-	1	-	10
35	80520	" x 77007-H30-HB	-	6	-	3	-	-	-	9
36	80521	ICPL 164 x ICPL 9		-	-	1	2	-	-	3
37.	80522	" x ICPL 94	-	1	-	2	2	-	-	5
38.	80523	" x ICPL 151	-	-	3		1	-	1	5
39.	80524	" x ICPL 141	1	1	2	1	3	1	-	8
40.	80525	" x 77007-H30-HB	-	2	2	-	3	-	-	7
41.	80501	ICPL 1 x ICPL 9	-	-	1	2	5	-	-	8
42.	80502	" x ICPL 94	-	1	3	-	4	-	1	9
43.	80503	" x ICPL 151	-	2	5	-	-	-	-	7
44.	80504	" x ICPL 141		1	3	-	1	-	-	5
45.	80505	" x 77007-H30-HB	-	2	5	-	-	-	-	7
46.	80506	ICPL 5 x ICPL 9	-	3	1	-	3	-	-	7
47	80507	" x ICPL 94	-	2	-	-	5	-	-	7
48.	80508	" x ICPL 151	-	1	3		3	-	-	7
49	80509	" x ICPL 141	1	3	1	1	1	-	-	7
50	80510	" x 77007-H30-HB	1	-	-	2	5	-	-	8

80526	ICPL 1 x DL 78-1		2	3	-	2	-	-	7
80529	ICPL 4 x "	1	3	2	-	1	-	-	6
80532	ICPL 6 x	-	3	6	-	4	-	-	13
80535	ICPL 81 x "	1	-	1	-	1	-	-	4
80538	ICPL 86 x "	1	3	-	-	2	-	-	9
80541	ICPL 87 x "	1	11	2	2	-	-	-	15
80547	ICPL 164 x "	-	1	3	-	-	-	-	4
80527	ICPL 1 x 74068-1-B-34-B-1-H1-B -1	-	-	1		1	-	1	3
80530	ICPL 4 x "	-	-	4	-	-	-	-	4
80533	ICPL 6 x	-	-	-	-	-	-	-	-
80536	ICPL 81 x "	-	-	3	-	2	-	-	5
80539	ICPL 86 x "	-	6	2	-	-	-	-	8
80542	ICPL 87 x "	1	9	-	1		-	-	11
80544	ICPL 161 x "	1	-	4	-		-	-	4
80548	ICPL 164 x "	-	-	3		1	-	1	5
80528	ICPL 4 x 74065-7A-1-H1-B0-B0-2	1	1	1		-	-	-	4
80531	ICPL 1 x "	-	4				-		4
80534	ICPL 4 x "		1	2		3	-	-	6
80537	ICPL 81 x "	-	-	2	-			-	6
80540	ICPL 86 x	-	3	1	1		-	-	5
80543	ICPL 87 x "	-	4	-	1		-	-	5
80545	ICPL 161 x "	-	1	4		1		-	6
80549	ICPL 164 x "	-	-	4	-		-	-	4
80550	75004-5-R-H1-R -H1-B0 x ICPL 1	1	2	1	4	9	1	-	17
80551	x ICPL 87		4	1	9	1	1	1	19
80569	78332-1 x 77007-H12-H1	-	2	1		1		1	5
80570	" x 77007-H12-H2	-	-	-	1	1		-	2
80571	" x 77007-H4-H1	-	-	-	1	1	1	1	5
80572	" x 77007-H4-H4	1	-	1	-	-		1	3
80573	78333-1 x 77007-H12-H1		2	-	2	2	-	-	6
80574	" x 77007-H12-H2		1	-	2	1	-	-	4
80575	" x 77007-H4-H1		1	1	2	1	-		5
80576	" x 77007-H4-H4	1	-	2		2	-	1	6
80577	78335-1 77007-H12-H1		-	1	1		1		3
80578	" x 77007-H12-H2		-	-	2	1	-	1	4
80579	" x 77007-H4-H1		-		2	-		1	3
80581	78337-1 x 77007-H12-H1		-		1				1
80582	77007-H12-H2		-	1	1	2		-	4
8058	" x 77007-H4-H1			1	1	4	-		7
80584	77007-H4-H1		1	1	-	2	-	-	5
80585	78338-1 77007-H12-H1	-	-	-	-	4	1	1	8
80586	" x 77007-H12-H2	1	1	-	1	-			4
80587	77007-H4-H1	-	-	-	2		-	1	3
80588	" x 77007-H4-H4	-	1	-	2	4	-	1	8
80589	78339-1 x 77007-H12-H1		-	1	-			-	1
80591	" x 77007-H4-H1	-	1	-	2	1	-	1	5
80593	78341-1 x 77007-H12-H1	-	1	-	2	1	-		4
80594	" x 77007-H12-H2	-	3	1	-	2		1	7
80595	" x 77007H4-H1	-	-		2			-	3
80596	" x 77007-H4-H4	-	1	-	1	2	-	1	6
80597	78342-1 x 77007-H12-H1	-	1	1	2	-	1	1	6
80598	" x 77007-H12-H2	-	1	2	-	2		-	5
80599	" x 77007-H4-H1	-	1	1	1	-	-	-	4
80600	" x 77007-H4-H4	1	-	1	1	1	-	-	3
80601	78343-1 x 77007-H12-H1	-	1	-	-	3	-	-	4
80602	" x 77007-H12-H2	-	2	-	2	2	-	1	7
80603	" x 77007-H4-H1	-	2	1	2	-	-	-	5
80604	" x 77007-H4-H4	1	4	3	2	1	-	-	10
80605	78344-1 x 77007-H12-H1	-	-	-	1	1	-	1	5
80606	" x 77007-H12-H2	-	-	-	1	-	-	-	1
80607	" x 77007-H4-H1	1	-	-	-	-	1	-	1
80608	x 77007-H4-H4	-	-	-	1	1	3	-	5

Total 1163

Table 1.10. Number of single plants selections in F3 and F6 bulk populations in 1981 kharif at Hisar.

Sl. No.	Cross Number ICP x	Parentage	Gen.	No.of single plants selected						Total
				O-I DT	O-I MDT	II DT	II MDT	III DT	III MDT	
1.	79086	78363-1xPant A-2	F3	-	1	-	4	-	1	6
2.	79087	78363-2xPant A-2	"	-	1	-	2	-	-	3
3.	79088	78367-1xPant A-2	"	-	5	1	13	-	12	31
4.	79089	78369-1xPant A-2	"	-	5	-	7	-	1	13
									Total	53
5.	75338	(6971x6908)	F6	-	-	-	-	-	2	2
6.	75295	(7018x6903)	"	-	-	-	-	-	4	4
7.	74120	(6997xPant A-2)	"	-	-	1	5	-	17	23
									Total	29

Table 1.11. Number of early maturing pigeonpea plants selected from F4 populations during 1979 kharif at Hisar.

Sl. No.	Cross Number	Parentage	No. of plants selected
1	76149	(73081-40D2-3 x Pant A-2)	20
2	76145	(73081-40D2-3 x Prabhat)	20
3.	76168	(73081-16D3-4 x Pant A-2)	20
4.	76166	(73081-16D3-4 x Prabhat)	20

Table 1.12 Early maturing pigeonpea individual plant selections in the fourth generation of composite 1 and other segregating bulk populations during 1980 kharif, Hisar.

Sl. No	Parentage	Gen.	No. of plants selected
1	Comp.1 ODT-Small seed	-	20
2	Comp.1 ODT-Med. and large seed	-	20
3	Comp 1 I DT	-	18
4	Comp 1 I NDT	-	16
5	Comp.1 II DT	-	5
6	Comp 1 II NDT	-	8
7	Comp.1 III DT	-	3
8	Comp.1 III NDT	-	6
		Total	96
9	Pant A-2 x A. albicans	F4	6
10	Beigani x -do-	"	-
11	4915 x -do-	"	-
12	6997 x -do-	"	-
13	Pant A-2x(Pant A-2xA. lineata	BcF4	-
14	Pant A-2x(6915xA. lineata)	TcF4	-

Table 1.13. Early maturing pigeonpea individual plants selected in the third generation of composite 1 populations during 1979 kharif, Hisar.

Sl. No.	Parentage	No. of plants selected
1	Comp.1 ODT	106
2	Comp.1 I DT	20
3	Comp.1 I NDT	20
4	Comp.1 II DT	20
5	Comp.1 II NDT	20
6	Comp.1 III DT	19
7	Comp.1 III NDT	19

Table 1.14. Details of the number of selections made in the single-cross F3 and F5 early pigeonpea single plant progenies during 1979 kharif at Hisar.

Sl. No.	Cross Number ICP x	Parentage	Gen.	No. of Prog planted	No. of Progenies selected		No. of individual plants selected							Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	
	76115	8504xPrabhat	F3	507	-	190	-	102	18	335	112	42	256	865
	76141	73081-DIxPant A-2	F3	27	-	7	-	-	-	-	-		26	26
	74075	UPAS 120xBaigani	F5	2	1	1	-	-	-	-	8	-	-	8
	74078	BaiganixPant A-2	F5	1	-	-	-		-	-		-	-	-
	74209	Pant A-2xMP(MR)15	F5	15	5	3	-	10	-	-	7	-	33	50

Table 1.15. Details of the number of selections made in the single-cross F3 to F5 early pigeonpea single plant progenies during 1980 kharif, Hisar.

Sl. No.	Cross Number ICP x	Parentage	Gen.	No. of Prog. planted	No. of Prog. selected		No. of plants selected									Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	IV DT	IV NDT	
1	76115a	8504xPrabhat	F3	113	1	8	-	-	-	-	-	3	3	2	9	17
2	76140b		"	5	-	2	-	-	-	-	-	2	2	-	-	4
3	76149b	73081-40D2-3xPant A-2	"	1	-	1	-	-	-	-	-	-	-	-	2	2
4	76145b	73081-40D2-3xPrabhat	"	11	-	5	-	-	-	1	3	-	6	-	-	10
5	76115	8504xPrabhat	F4	889	9	84	-	19	11	63	26	39	24	1	31	214
6	76141	73081-DIxPant A-2	"	26	-	-	-	-	-	-	-	-	-	-	-	-
7	76149	73081-40D2-3xPant A-2	F5	20	-	-	-	-	-	-	-	-	-	-	-	-
8	76145	73081-40D2-3xPrabhat	"	20	-	1	-	-	-	-	1	2	-	-	2	5
9	76160	73081-40D3-4xPant A-2	"	20	-	-	-	-	-	-	-	-	-	-	-	-
10	76166	73081-16D3-4xPrabhat	"	20	-	-	-	-	-	-	-	-	-	-	-	-

a = From seed size inheritance study
b = From new plant type

Table 1.16. Details of numbers of selections made in the single-cross F3 early pigeonpea single plant progenies during 1981 kharif, Hisar

Sl No.	Cross Number ICP X	Parentage	No. of prog planted	No of prog selected For Test	No of prog selected For SPP	No. of single plants selected 0-I DT	0-I NDT	II DT	II NDT	III DT	III NDT	Total
1	78318	74068-21-B-1-B-H5-B-H1xICPL 4	1	.	1	-		5	1	11	-	17
2	78319	74092-B-16-1-H1-B-H1xICPL 4	8		8	16	7	9	13	2	-	47
3	78320	ICPL 84xICPL 4	1		3	3	-	-	1	-	-	4
4	78321	74078-12-B-1-2-H9-HB-H3 x ICPL 1	3	.	3	-	25	-	10	1	-	36
5	78322	" x ICPL 5	5		5	-	13	-	22	-	1	36
6	78323	" x ICPL 6	8		4	2	14	2	17	-	1	36
7	78324	" x Sehore 197	4		4	1	6	-	9	1	4	21
8	78325	" x ICPL 89	10	-	10	-	-	-	14		4	18
9	78326	74216-B-21-H1-H1 x ICPL 1	16		11	2	10	-	43		12	67
10	78327	" x ICPL 5	8		7	-	7	-	16		9	3
11	78328	x ICPL 6	12		8	-	2	-	16		10	28
12	78329	" x Sehore 197	1	-	1	-	-	-	-	-	1	1
13	78330	" x ICPL 89	5		4	-	10	-	11	-	2	23
14	78331	77007-1 x ICP 8504	5		4	-	-	-	4	-	8	12
15	78332	-2 x	15	.	15	-	-	-	12	-	9	21
16	78333	-3 x	10	.	4	-	-	-	4	-	2	6
17	78334	-4 x			1	-	2	-	1		2	3
18	78335	" x	15	2	11	-	-	-	17	-	15	32
19	78337	-7 x		.	1	-	-	-	1	-	-	1
20	78338	-8 x	12		-	-	-	-	-	-	-	-
21	78339	-9 x	11		1	-	-	-	1	-	-	1
22	78340	-10 x	10	-	6	-	.	.	1	-	7	8
23	78341	-11 x	12	-	9	-	1	3	19	-	3	26
24	78342	-12 x	9	.	2	.	1	1	2	2	3	9
25	78343	-13 x	8	1	8	12	6	13	4	-	-	35
26	78344	-14 x	13	1	4		-	.	4	1	2	7
27	78345	[illegible] ODT 1x74068-21-B-[illegible] B -H5-B-H1	16	.	12	34	3	-		-	2	39
28	78347	2x	14	1	10	10	-	7	-	1	-	18
29	78349	4x	[illegible]		5	12	-	-	1	1	1	17
30	78351	6x	6	2	5	14	1	1	-	-	-	16
31	78352	7x	10	1	7	11	1	6	1	-	-	19
32	78348	2xICPL 86	13	1	10	42	-	1	-	-	-	43
33	78350	3x	5		[illegible]	40	6	1	1	-	-	48
34	78354	5x	15	1	10	39	1	3	2	-	-	45
35	78353	7x	[illegible]	[illegible]	6	28	1	5	1	-	-	35
36	78375	ICP 8504x77007	[illegible]		4	-	-	2	-	-	2	4
37	78376	74068-21-B-1-B-H5xICPL 3	10	1	10	21	1	8	1	-	-	31
38	78377	74092-B-49-B-H1-BxComp 1 ODT	10	.	8	26	2	7	1	-	-	36
39	78[illegible]	ICPL 1xICPL 89	2		1	-	17	-	1	-	-	20
40	78[illegible]	ICPL 2xICPL 89	.		1		13		3	-	-	20
41	78[illegible]	ICPL [illegible] 74[illegible]5-5-B [illegible] HO	15	1	10	52	8	3		-	-	63
		Total										1002

Table 1 17. Summary of the number of selections made in single-cross F4 to F7 early pigeonpea single plant progenies during 1981 kharif, Hisar.

Sl No	Cross Number ICP x	Parentage	Gen.	No. of prog. planted	No. of prog. selected		Number of single plants selected						Total
					For Test	For SPP	0-1 DT	0-1 NDT	II DT	II NDT	III DT	III NDT	
1	76115	8504 x Prabhat	F4	17	-	-	-	-	-	-	-	-	-
	76140	"	"	4	-	-	-	-	-	-	-	-	-
	74149	73081-40D2-3xPant A-2	"	2			-	-	-	-	-	-	-
	76145	73081-40D2-3xPrabhat	"	10		3	-	-	1	-	-	2	3
	76115	8504 x Prabhat	F5	214	18	62	10	1	18	25	5	15	74
		PantA-2 x A. albicans	"	6	2	3	6	-	-	-	-	-	6
2	76145	73081-40D2-3xPrabhat	F6	5	-	-	-	-	-	-	-	-	-
3	74075	UPAS 120xBaiganI	F7	3		-	-	-	-	-	-	-	
4	74209	PantA-2 x NP(WR)15	"	20	1	-	-	-	-	-	-	-	-

Table 1 18 Details of number of selections made in the single-cross F6 and F7 (early pigeonpea) single plant progenies during 1979 kharif, Hisar

	Cross Number ICP x	Parentage	Gen	No of prog. planted	No of prog selected		Number of plants selected							Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	
	74075	UPAS 120 x Baiganl	F6	1	1	-	-	-	-	-	4	-	-	4
	74078	Baiganl x Pant A-2	F6	1	1	-	-	4	-	-	-	-	-	4
	74149	Hy3C x Prabhat	F6	5	1	-	-	-	-	-	6	-	-	6
	74189	4720 x ICP 6	F6	4	2	-	-	-	-	-	2	-	-	2
	74209	Pant A-2x NP(WR)15	F6	11		3	-	-	-	19	4	4	-	27
	73094	Granada x NP 69	F7	2	-	-	-	-	-	-	-	-	-	-
	74065	UPAS 120 x Prabhat	F7	6	2	2	17	-	-	-	-	-	-	17
	74075	UPAS 120 x Baiganl	F7	2	1	1	-	-	-	-	9	-	4	13
	74077	Baiganl x ICP 6	F7	10	3	3	-	-	-	-	51	-	4	55
	74092	4997 x Prabhat	F7	2	1	-	-	-	-	-	-	-	6	6
	74120	4997 x Pant A-2	F7	1	1	-	-	-	-	-	4	-	-	4
	74147	Prabhat x 7035	F7	3	1	1	-	-	-	1	-	4	-	5
	74149	Hy 3C x Prabhat	F7	6	1	2	-	-	-	5	4	-	-	9
	74174	7035 x UPAS 120	F7	5	2	-	-	-	-	-	8	-	-	8
	74216	Baiganl x 7035	F7	4	1	1	-	-	-	-	1	-	4	5
	74205	Hy 3C> Pant A-2	F7	8	2	2	-	-	-	7	15	-	-	22

Table 1 19 The number of selections made in the single-cross F6 and F7 early pigeonpea single plant progenies during 19 kharif, Hisar

Sl No	Cross ICP x	Parentage	Gen.	No of prog. planted	No of prog selected		Number of plants selected									Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	IV DT	IV NDT	
1	74075	UPAS 120xBaiganI	F6	8	-	3	-	-	-	-	3	-	-	-	-	3
2	74209	Pant A-2xNP(WR)15	"	50	1	8	-	-	-	8	1	1	10	-	-	20
3	74075	UPAS 120xBaiganI	F7	4	-	1	-	-	-	-	-	-	2	-	-	2
4	74078	BaiganixPant A-2	"	4	-	-	-	-	-	-	-	-	-	-	-	-
5	74149	Hy3CxPrabhat	"	4	1	-	-	-	-	-	-		-	-	-	-
6	74189	4720xICP 6	"	2	-	1	-	-	-	-	-	-	-	-	3	3
7	74209	Pant A-2xNP(WR)15	"	22	-	5	-	-	-	-	-	3	4	1	-	8
8	74216a	Baiganix7035	"	7	-	1	-	-	-	-	-	-	1	-	-	1
9	73050a	T 21xEC 100467	"	2	-	-	-	-	-	-	-	-	-	-	-	-

a = From vegetable types

Table 1 20 Details of the number of selections made in the single-cross F8 and F9 early pigeonpea single plant progenies during 1979 kharif, Hisar.

Sl No	Cross Number ICP x	Parentage	Gen.	No. of Prog planted	No. of Prog selected		No. of plants selected							Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	
1	73021	Pusa Ageti x Mukta	F8	2	1	-	-	-	-	-	-	-	-	-
2	73041	Pusa Ageti x JA 276	F8	3	1	-	-	-	-	-	-	-	-	-
3	73052	T 21 x JA 277	F8	3	1	-	-	-	-	-	-	-	-	-
4	74059	Pusa Ageti x T 21	F8	1	-	-	-	-	-	-	-	-	-	-
5	74068	Prabhat x Baiganl	F8	9	2	-	-	-	-	-	-	-	-	-
6	74075	UPAS 120 x Baiganl	F8	22	-	8	-	19	12	-	8	-	-	39
7	74078	Baiganl x Pant A-2	F8	20	4	-	-	-	-	-	-	-	-	-
8	74092	6997 x Prabhat	F8	37	6	16	13	87	-	23	-	-	-	123
9	74146	Prabhat x 7035	F8	12	4	6	-	17	-	35	12	-	-	64
10	74149	My 3C x Prabhat	F8	5	-	2	13	-	-	-	-	-	-	13
11	74174	7035 x UPAS 120	F8	5	1	1	-	6	-	11	-	-	-	17
12	74205	My 3C x Pant A-2	F8	4	1	-	-	-	-	-	-	-	-	-
13	74068	Prabhat x Baiganl	F9	42	2	23	37	54	-	-	-	4	-	95
14	74078	Baiganl x Pant A-2	F9	2	-	-	-	-	-	-	-	-	-	-
15	74075	UPAS 120 x Baiganl	F9	21	5	6	13	-	-	-	17	-	8	38
16	73060	EC 10754 x T 21	F9	3	-	-	-	-	-	-	-	-	-	-

Table 1 21. Details of the number of selections made in the single cross F8 early pigeonpea single plant progenies during 1980 kharif Hisar

Sl No	Cross Number ICP x	Parentage	Gen.	No of prog. plan-ted	No of prog. selected		No. of plants selected							Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	
1	74065	UPAS 120xPrabhat	F8	17	1	11	11	8	-	-	-	-	-	19
2	74075	UPAS 120xBaiganl	F8	13	-	-	-	-	-	-	-	-	-	-
3	74077	BaiganixICP 6	F8	55	-	-	-	-	-	-	-	-	-	-
4	74092	6997xPrabhat	F8	6	-	-	-	-	-	-	-	-	-	-
5	74120	6997xPant A-2	F8	4	-	-	-	-	-	-	-	-	-	-
6	74146	Prabhatx7035	F8	5	-	1	-	-	-	-	-	2	2	4
7	74149	My 3CxPrabhat	F8	9	-	-	-	-	-	-	-	-	-	-
8	74174	7035xUPAS 120	F8	8	-	-	-	-	-	-	-	-	-	-
9	74216	Baiganix7035	F8	5		-	-	-	-	-	-	-	-	-
10	74205	My 3CxPant A-2	F8	22	1	4	-	-	-	2	2	-	4	8

Table 1 22. Summary of the number of selections made in single cross F8 to F11 early pigeonpea single plant progenies during 1981 kharif, Hisar

Sl. No.	Cross No	Parentage	Gen.	No of prog planted	No of prog selected for test
1	74075	UPAS 120 x Baiganl	F8	2	-
2	74189	4720 x ICP 6	F8	3	-
3	74209	Pant A-2xHP(MR)-15	F8	8	1
4	74216	Baiganl x 7035	F8	1	1
5	74205	Myb-3C x Pant A-2	F9	8	2
6	74146	Prabhatx7035	F9	4	3
7	74065	UPAS 120xPrabhat	F9	19	9
8	74149	Myb-3CxPrabhat	F10	6	2
9	74092	6997xPrabhat	F10	47	10
10	74174	7035xUPAS 120	F10	10	1
11	74075	UPAS 120xBaiganl	F10	17	3
12	74146	Prabhatx7035	F10	18	9
13	74075	UPAS 120xBaiganl	F11	21	6
14	74068	PrabhatxBaiganl	F11	80	14

Table 1.23. The number of selections made in the single cross F9 F10 early pi single plant progenies during 1980 kharif, Hisar.

Sl. No.	Cross Number ICP x	Parentage	Gen.	No. of prog. planted	No. of prog. selected		No. of single plants selected							Total
					For Test	For SPP	0 DT	I DT	I MDT	II DT	II MDT	III DT	III MDT	
1	74075	UPAS 120 x Baigani	F9	39	3	9	-	6	1	-	6	-	4	17
2	74092	6997 x Prabhat	F9	123	10	21	-	10	-	35	-	2	-	47
3	74146	Prabhat x 7035	F9	64	1	8	-	8	-	2	1	3	4*	18
4	74149	My 3Cx Prabhat	F9	13	1	3		4	-	2	-	-	-	6
5	74174	7035 x UPAS 120	F9	17	1	4	-	2	-	2	1	2	3	10
6	74068	PrabhatxBaigani	F10	95	2	43	31	44	-	5	-	-	-	80
7	74075	UPAS 120xBaigani	F10	38	-	11	10	7	-	-	-	-	4	21

Table 1.24 Details of the numbers of selections made in the back and triple cross F2 to F7 early pigeonpea single plant progenies during the 1979 kharif at Hisar.

Sl No	Cross Number ICP x	Parentage	Gen.	No. of prog. planted	No. of prog. selected		No. of plants selected							Total
					For Test	For SPP	0 DT	I DT	I MDT	II DT	II MDT	III DT	III MDT	
1	77334	(73081-40D2-3xPrabhat)x Prabhat	BC1F2	38	-	14	-	-	-	38	-	4	12	54
2	77007	(8504xPrabhat)xICPL 10	TCF2	116	-	50	8	58	-	85	11	5	37	204
3	76066	(6971X7186)x6974	TCF3	3	-	-	-	-	-	-	-	-	-	-
4	75071	(My-3CxPant A-2)xBDN 2	TCF5	9	-	2	-	-	-	3	-	-	4	7
5	75075	(7105xBaigani)xBDN 2	"	13	1	2	-	-	-	-	4	-	8	12
6	75083	(6997x7035) x BDN 2	"	2	1	-	-	-	-	4	-	-	-	4
7	74003	(Pusa Agati x ICP 6) x6997	TCF6	6	-	1	-	-	-	-	6	-	-	6
8	75070	(My 3CxPant A-2)x UPAS 120	"	2	-	1	-	-	-	-	-	-	8	8
9	75072	(My 3CxPantA-2)xPant A-2	BCF6	1	1	-	-	-	4	-	-	-	-	4
10	75076	(7105xBaigani)xPant A 3	TCF6	2	-	-	-	-	-	-	-	-	-	-
11	75078	(6997xPrabhat)x UPAS 120	TCF6	1	-	1	-	7	-	-	-	-	-	7
12	75080	(6997xPrabhat)xPant A 3	TCF6	46	13	11	8	68	-	29	5	-	-	110
13	74036	(T 21x JA 274)xBaigani	TCF7	15	1	3	-	-	-	-	16	-	4	20
14	74002	(Pusa AgetixICP 1)xICP 6	TCF7	5	1	-	-	-	-	4	-	-	-	4
15	74003	(Pusa AgetixICP 6)x6997	TCF7	1	-	-	-	-	-	-	-	-	-	-

able 1.25. Summary of the number of selections made in the back and triple cross F2 to F8 for early pigeonpea single plan
-penies during the 1988 kharif, Hisar

Cross Number ICP a	Parentage	Gen.	No of prog. planted	No. of prog. selected		No. of single plants selected									Total
				For Test	For SPP	0 DT	I DT	I HDT	II DT	II HDT	III DT	III HDT	IV DT	IV HDT	
77001a	(8504xPrabhat)xPrabhat	BC1F2	57	-	14	-	-	2	8	3	3	8	-	2	26
77002a	(8504xPrabhat)x8504	"	21	-	3	-	-	-	-	-	-	1	-	6	7
78174b	(74140x74068-11-8-5-M4-BB)	TCF2	17	-	3	-	-	-	1	-	3	3	-	-	7
78159b	(74140x74075-5-8-3-1-M3-BB)	TCF2	8	3	-	-	-	-	-	2	-	3	-	-	7
77334	(73081-40D2-3xPrabhat)xPrabhat	BC1F3	94	-	14	-	2	-	9	2	10	6	-	-	29
78164b	(73060-21D4-G2-BBx77364)	BC1F3	1	-	1	-	-	-	-	2	-	-	2	-	2
78156b	UPAS 120x (ICP 8422xUPAS 120)	BC2F1	21	-	6	-	-	3	2	10	-	-	-	-	15
78167b	(A. scar 8315-1Dax77372)	"	3	-	1	-	-	-	4	-	-	-	-	-	4
77007a	(8504xPrabhat)x ICPL 10	TCF1	34	-	1	-	-	-	-	-	-	1	-	-	1
77007	(8504xPrabhat)xICPL 10	TCF3	204	-	20	-	10	-	20	1	3	5	-	7	46
77124b	(73081-4D1-4xPrabhat)xPrabhat	BC2F4	26	-	6	-	2	2	2	3	-	-	-	-	9
75071	(Hy 3CxPant A-2)xBDN 2	TCF6	7	-	2	-	-	-	-	-	2	-	-	2	4
75075	(7105xBalganix BDN 2	TCF6	12	-	1	-	-	-	-	-	-	-	-	2	2
75083	(6997x7035)xBDN 2	TCF6	4	-	1	-	-	-	-	-	4	-	-	-	4
75000	Pusa Agetix(ICP 6)x6997	TCF7	6	-	1	-	-	-	-	-	-	-	-	2	2
75070	(Hy 3CxPant A-2) xUPAS 120	TCF7	8	-	-	-	-	-	-	-	-	-	-	-	-
75071	(Hy 3CxPant A-2)xPant A-2	BCF7	4	-	1	-	-	-	-	2	-	-	-	-	2
75078	(6997xPrabhat)xUPAS 120	TCF7	7	-	1	-	-	-	-	-	-	-	-	-	4
75080	(6997xPrabhat)xPant A-3	"	110	2	26	2	13	5	20	4	9	5	-	-	58
75130	(72)x(A 274)xBalganl	TCF8	20	1	-	-	-	-	-	-	-	-	-	-	-
75131	(72)xUA 274 xBalganl	TCF8	6	-	-	-	-	-	-	-	-	-	-	-	-
74002	Pusa Agetix ICP 1)xICP 6	TCF8	4	-	-	-	-	-	-	-	-	-	-	-	-

a From seed size inheritance study. b From new plant type c From vegetable type

Table 1.26. Details of number of selections made in the back and triple crosses for early pigeonpea single plant progenies in the 1981 kharif, Hisar.

Sl. No.	Cross Number ICP x	Parentage	Gen.	No. of prog. planted	No. of prog. selected		No. of single plants selected						Total
					For Test	For SPP	0-I DT	0-I NDT	II DT	II NDT	III DT	III NDT	
	77001	(8504xPrabhat)xPrabhat	BC1F3	26	2	7	-	-	2	3		2	7
	77002	(8504xPrabhat)x8504	BC1F3	7	-	1	-	-	-	1	-	-	1
4	78365a	(A. scar 8335-1Dwx77367)	BC2F3	2	-	-	-	-	-	-	-	-	-
5	78374	(76140x74068-11-B-5-M4-BB)	TCF3	7	-	1	-	-	-	1	-	-	1
6	78359	(76140x74075-5B-3-1-M3-BB)	"	7	-	-	-	-	-	-	-	-	-
	77007	(8504xPrabhat)xICPL 10	TCF3	22	-	9	4	-	3	2	-	7	16
7	78364	(73068-21D4-G2-BBx77364)	BC1F4	2	-	1	-	-	-	4	-	-	4
8	77334	(73081-40D2-3xPrabhat)xPrabhat	BC1F4	29	2	2	-	2	-	1	-	-	3
9	78367	(A. scar 8335-1Dwx77372)	BC2F4	4	-	1	-	1	-	-	-	-	1
10	78356	UPAS 120x(8422xUPAS 120)	"	15	1	15	-	6	1	28	-	4	39
11	78356a	UPAS 120x(8422xUPAS 120)	"	21	-	-	-	-	-	-	-	-	-
12	77007	(8504xPrabhat)xICPL 10	TCF4	47	5	19	1	3	8	3	5	5	25
13	77323a	(76140x73081-4D1-4)	BC1F5	3	-	-	-	-	-	-	-	-	-
14	77324a	(73081-4D1-4xPrabhat)xPrabhat	BC2F5	26	-	-	-	-	-	-	-	-	-
15	77324	(73081-4D1-4xPrabhat)xPrabhat	BC2F5	9	-	5	-	2	1	5	-	-	8
16	75071	(Hy 3CxPant A-2)xBDN 2	TCF7	4	-	-	-	-	-	-	-	-	-
17	75075	(7105xBaigani)xBDN 2	TCF7	2	-	-	-	-	-	-	-	-	-
18	75083	(6997x7035)x BDN 2	TCF7	4	1	-	-	-	-	-	-	-	-
19	74003	(Pusa Agetix ICP 6)x6997	TCF8	2	-	-	-	-	-	-	-	-	-
20	75072	(Hy 3CxPant A-2)xPant A-2	BCF8	2	-	-	-	-	-	-	-	-	-
21	75078	(6997xPrabhat)xUPAS 120	TCF8	4	-	-	-	-	-	-	-	-	-
22	75080	(6997xPrabhat) x Pant A-3	"	58	6	10	-	2	3	4	1	-	10

a From new plant type

Table 1.27 Details of the number of selections made in double cross F4 to F6 for early pigeonpea single plant progenies during 1979 kharif, Hisar..s

Sl. No.	Cross Number ICP x	Parentage	Gen.	No. of prog. planted	No. of prog. selected		No. of plants selected							Total
					For Test	For SPP	0 DT	I DT	I NDT	II DT	II NDT	III DT	III NDT	
1	75003	(Prabhat x Hy 3C) x (T21x102)	DCF4	1	1	-	-	-	-	-	-	-	-	-
2	75001	(Prabhat x Hy 3C)x (Pant A-2x6997)	DCF5	1	1	-	-	-	-	-	4	-	-	4
3	75002	(Prabhat x Hy 3C)x (Baiganix7035)	"	15	1	6	-	3	-	14	7	-	4	28
4	75003	(Prabhat x Hy 3C)x(T21x102)	"	7	1	2	-	-	-	4	4	-	5	13
5	75004	(Prabhat x Hy 3C)x (UPAS 120x7086)	"	2	1	-	-	-	-	-	-	-	2	2
6	75006	(Pant A-2 x 6997)x(T 21x102)	"	1	-	1	-	-	-	-	-	-	3	3
7	75011	(PrabhatxHy 3C)x(ICP-1x7035)	"	3	1	-	-	-	-	-	-	3	-	3
8	75016	(Prabhat x Hy 3C)x(C 11x4708)	"	1	1	-	-	-	-	-	-	-	4	4
9	75004	(Prabhat x Hy 3C)x (UPAS 120x7086)	DCF6	3	-	2	-	5	-	4	-	-	-	9
10	75001	(Prabhat x Hy 3C)x (Pant A-2x6997)	"	20	5	7	-	14	-	27	8	9	-	58
11	75003	(Prabhatx Hy 3C)x(T 21x102	"	6	-	2	-	-	-	-	-	-	10	10
12	75005	(Pant A-2 x 6997)x (Baiganix7035)	"	4	2	-	-	-	-	-	9	-	-	9
13	75006	(Pant A-2x6997)x(T 21x102)	DCF6	1	-	-	-	-	-	-	-	-	-	-
14	75014	(Prabhat x Hy 3C)x(6997x7105)	"	1	-	-	-	-	-	-	-	-	-	-
15	75021	(Pant A-2 x 6997)x(6997x7105)	"	3	1	-	-	-	-	-	4	-	-	4
16	75025	(Baiganí x 7035)x(ICP 1x7035)	"	1	1	-	-	-	-	4	-	-	-	4
17	75013	(Prabhat x Hy 3C)x(4726xNo.148)	"	2	1	1	-	6	-	-	-	-	-	6

Table 1.28. The number of selections made in the double-cross F5 to F7 for early pigeonpea single plant progenies during 1980 kharif, Hisar.

Sl. No.	Cross No. ICPX	Parentage	Gen	No. of prog. planted	No. of prog. selected		No. of plants selected								Total
					For Test	For SPP	0 DT	0 MDT	1 DT	1 MDT	II DT	II MDT	III DT	III MDT	
1	75001	(Prabhat x Hy 3C) x (Pant A-2 x 6997)	DCF6	4	-	1	-	-		-	-		-	1	1
2	75002	(Prabhat x Hy 3C) x (Baiganl x 7035)	DCF6	28	1	1	-	-		-	-		1	-	1
3	75002a	(Prabhat x Hy 3C) x (Baiganl x 7035)	DCF6	14	-	-	-			-	-	-	-	-	-
4	75003	(Prabhat x Hy 3C) x (T21 x 102)	DCF6	13	-	-	-	-	-	-		-		-	-
5	75004	(Prabhat x Hy 3C) x (UPAS 120 x 7086)	DCF6	7	-	-	-	-	-	-	-	-	-	-	-
6	75006	(Pant A-2 x 6997) x (T 21 x 102)	DCF6	7	-	-	-	-	-	-	-	-	-	-	-
7	75011	(Prabhat x Hy 3C) x (ICP 1 x 7035)	DCF6	3	-	1	-	-	-	-	-	-	-	1	1
8	75016	(Prabhat x Hy 3C) x (C 11 x 4740)	DCF6	4	-	-	-	-			-	-	-	-	-
1	75004	(Prabhat x Hy 3C) x (UPAS 120 x 7086)	DCF7	9	-	1	-	-	-	1	-	-		-	1
	75001	(Prabhat x Hy 3C) x (Pant A-2 x 6997)	DCF7	58	1	9	-	-	-	2		0	6	-	2	10
3	75003	(Prabhat x Hy 3C) x (T 21 x 102)	DCF7	10	-	-	-	-	-			-	-	-		-
2	75005	(Prabhat x Pant A-2 x 6997) x (Baiganl x 7035)	DCF7	9	-	1	-	-	-	-	-		-	-	1	1
4	75021	(Pant A-2 x 6997) x (6997 x 7105)	DCF7	4	-	2	-	-				2	2	-	-	4
5	75025	(Baiganl x 7035) x (ICP 1 x 7035)	DCF7	4	-	2	-	-	-	-		1	-	-	-	3
9	75013	(Prabhat x Hy 3C) x (4726 x Nc 148)	DCF7	6	1	1	-	1	-			-	-	-	-	1

* From vegetable types

Table 1.29. The number of selections made in the double crosses for early pigeonpea single plant progenies during 1981 kharif at Hisar

Sl. No	Cross Number ICP x	Parentage	Gen.	No. of prog planted	No. of prog selected		No. of single plants selected						Total
					For Test	For SPP	0-I DT	0-I MDT	II DT	II MDT	III DT	III MDT	
1	75001	Prabhat x Hy 3C) x (Pant A-2 x 6997)	DCF7	2		-	-	-	-	-	-	-	
2	75002	Prabhat x Hy 3C) x (Baiganl x 7035)	"	2	1	-	-	-	-	-	-	-	1
3	75011	Prabhat x Hy 3C) x (ICP 1 x 7035)	"	2	-	-	-	-	-	-	-	-	
4	75004	(Prabhat x Hy 3C) x (UPAS 120 x 7086)	DCF8	1	-	-	-	-	-	-	-	-	-
5	75001	(Prabhat x Hy 3C) x (Pant A-2 x 6997)	"	19	2	-	-	-	-	-	-	-	
6	75021	(Pant A-2 x 6997) x (6997 x 7105)	"	4	-	-	-	-	-	-	-	-	
7	75005	(Pant A-2 x 6997) x (Baiganl x 7035	"	2	-	-	-	-	-	-	-	-	-
8	75025	(Baiganl x 7035) x (ICP 1 x 7035)	"	3	-	-	-	-	-	-	-	-	-
9	75013	(Prabhat x Hy 3C) x (4726 x Nc 148)	"	2	1	-	-	-	-	-	-	-	

Table 1.30. Performance of the early pigeonpea entries tested in the EACT during the 1979 kharif, Hisar.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cm)	Mean plant stand/ plot	Mean yield gm/ plot	Yield kg/ha	Yield kg/ha at Hanumangarh
1	ICPL 87	75	3.1	10.2	110	19	1189	2264	2788
2	ICPL 86	70	3.0	8.5	114	22	1116	2126	2580
3	ICPL 81	66	2.8	7.1	134	20	1064	2026	2523
4	ICPL 85	73	3.0	7.0	125	24	1003	1911	-
5	ICPL 3	68	3.1	9.6	129	23	983	1871	-
6	ICPL 94	69	3.3	10.1	117	22	975	1857	2315
7	ICPL 2	68	3.0	7.7	123	21	963	1833	-
8	UPAS 120	77	2.8	7.9	134	19	954	1816	-
9	H-76 53	64	2.9	7.2	107	20	935	1781	-
10	H-76 19	68	3.0	7.3	121	21	933	1776	-
11	ICPL 82	66	2.8	8.9	119	24	920	1752	-
12	ICPL 4	67	3.5	7.1	124	23	920	1752	-
13	ICPL 89	75	3.0	9.1	131	17	907	1727	1745
14	ICPL 92	73	2.9	8.8	112	22	888	1692	2073
15	ICPL 91	72	3.0	9.2	117	17	879	1674	2203
16	Prabhat	69	2.8	6.3	112	23	873	1663	-
17	ICPL 90	69	3.1	7.4	115	20	868	1652	2023
18	ICPL 1	71	2.9	8.6	122	16	856	1631	-
19	H-76 [illegible]	66	3.3	6.7	117	20	840	1600	-
20	H-73 20	73	3.0	8.5	114	15	799	1521	-
21	ICP 84	72	2.6	7.0	120	20	798	1519	-
22	ICPL 93	74	2.6	10.1	96	15	791	1506	2495
23	HPA 2	72	2.9	7.9	134	18	789	1502	-
24	H 76 20	72	2.9	7.5	109	18	753	1435	-
25	ICPL 83	69	3.0	8.8	126	21	623	1183	-
26	ICPL 88	70	3.0	7.7	107	13	611	1164	1838
Grand mean		71	3.0	8.0	119	20	893.3	1701	
SE ±		1.1	-	0.2	5.6	1.5	94.7	180	
CD 5%		3.0	NS	0.6	15.0	4.4	266.7	508	
CV%		3.0	14.3	5.5	9.5	15.7	21.2	21.2	

Table 1.31. Performance of early pigeonpea cultivars tested in the EACT during the 1980 kharif at Hisar.

Sl No	Entry	Pedigree	Days to flower	Days to maturity	Seeds/ pod	g/100 seeds	Plant stand/ plot	Dried stalk yield (kgs)		Seed yield (kgs)	
								per plot	Per hect.	Per plot	Per hect.
1	207	ICPL 87	71	133	3.0	10.3	64	1.58	7524	0.66	3009
2	203	ICPL 1	85	129	3.0	6.8	61	1.53	7286	0.57	2494
3	209	H-76 20	85	123	3.1	7.0	58	1.63	7762	0.48	2121
4	213	Pant A-10	87	131	3.0	7.3	64	1.68	8000	0.48	2114
5	204	ICPL 81	82	119	3.0	7.0	61	1.05	5000	0.46	2004
6	212	DL 78-2	64	111	3.2	6.8	61	1.30	6191	0.46	2003
7	210	H 77-208	87	124	3.3	5.5	61	1.45	6905	0.45	1991
8	202	UPAS 120 (Check)	83	122	2.9	6.4	58	1.15	5476	0.44	1918
9	208	H 76-19	82	127	3.0	6.4	58	1.15	5476	0.38	1676
10	206	ICPL 86	69	128	3.1	8.4	62	1.18	5619	0.35	1531
11	205	ICPL 85	91	132	3.4	6.4	63	1.05	5000	0.34	1484
12	201	Prabhat (Check)	75	115	3.1	5.7	61	1.10	5238	0.31	1364
13	211	DL 78-2	62	95	3.2	7.1	62	0.73	3476	0.26	1151
Grand mean			78 42	123	3.2	7.0	61	1.27	6047	0 43	1905
SEm±			1 1	1.3	-	0.3	-	0.15	714	0.02	108.85
CD 5%			3 0	3.7	NS	0.8	NS	0.43	2043	0.07	312.18
CV %			2 7	2 1	10.1	5.7	7.4	23 8	23.8	11 4	11.4

Table 1.32 Performance of early pigeonpea advanced lines in the EACT during 1981 kharif at Hisar.

Sl. No.	Entry	Origin	Growth habit	Days to		Height (cms)	Seeds/ pod	100 seed weight (gms)	Mean plant stand/ plot	Yield	
				50% flower	75% maturity					kg/plot	kg/hect.
1	Prabhat		DT	70	118	154	3.0	5.7	181	1.354	2090
2	UPAS 120		MDT	99	146	245	3.3	8.4	154	1.996	3081
3	ICPL 1	ICRISAT	MDT	85	130	198	3.1	6.3	167	2.242	3459
4	ICPL 81	ICRISAT	MDT	74	120	196	3.3	6.5	159	1.864	2876
5	ICPL 87	ICRISAT	DT	75	140	174	3.7	9.8	172	2.029	3131
6	H 77-216	HAU	MDT	75	124	187	3.2	6.2	166	2.096	3235
7	ICPL 185	ICRISAT	MDT	92	138	201	3.4	8.6	157	1.865	2878
8	ICPL 151	ICRISAT	DT	70	127	165	3.6	10.6	104	1.815	2800
9	ICPL 179	ICRISAT	DT	53	105	124	2.6	7.2	156	1.377	2124
10	H 76-19	HAU	MDT	80	135	196	3 1	5.6	159	1.858	2867
11	H 76-20	HAU	MDT	82	13'	207	2.9	6.2	159	1.940	2994
12	H 77-208	HAU	MDT	89	138	202	3 6	5.0	158	2.013	3106
13	DL 78-1	Delhi	DT	59	103	135	2.6	6.9	155	1.049	1619
14	DL 78-2	Delhi	MDT	74	123	178	3.1	5.9	129	1.579	2436
15	AL 15	PAU	DT	64	121	165	3.1	6.8	153	1.635	2523
16	TAT 9	Trombay	MDT	78	110	204	3.0	9.0	148	1.175	1813
17	TAT 10	Trombay	MDT	75	129	200	3.0	7.4	170	1.705	2631
18	VL 23	Almora	MDT	89	144	209	3.4	5.9	148	1.884	2908
Grand Mean				76	127	185	3.1	7.1	155	1.75	2701
SEm ±				0 9	0.9	4.2	0.2	0.1	7.3	0.10	154
CD 5%				2.5	2 4	17.5	0.6	0.4	20 8	0.28	432
CV %				2.3	1.3	6.7	12.9	4 2	9 4	11 2	11.2

Table 1.33. Plant and grain characteristics on the early pigeonpea entries tested in ACT 1 during 1979 kharif, Niger.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cms)	Mean plant stand/ plot	Mean yield gms/plot	Yield kg/ha
1	DL 74-1	78	2.9	8.8	151	21	976	1860
2	4-84	75	2.8	7.9	141	22	950	1809
3	JA-9-19	86	2.7	10.5	177	19	935	1781
4	TT-4	77	2.8	8.6	162	20	922	1757
5	TT-6	79	2.7	9.4	167	20	915	1743
6	T-21	76	3.0	6.9	161	19	907	1729
7	TT-5	76	3.1	8.4	147	21	905	1724
8	MY-5	86	2.6	12.0	157	13	890	1695
9	TT-2	79	2.7	7.9	147	21	882	1681
10	ICPL-5	82	3.0	8.5	147	22	842	1605
11	Sohore-197	84	2.7	9.3	150	19	807	1538
12	ICPL-6	82	2.8	9.1	166	18	792	1510
13	ICPL-7	80	2.4	9.5	120	21	777	1481
14	TT-11	72	2.9	8.9	140	19	772	1471
15	ICPL-95	89	3.3	9.6	158	17	742	1414
16	Sohore-68	85	3.0	11.4	130	14	740	1409
17	TT-10	71	3.0	8.9	126	20	726	1384
18	4-84	74	3.1	8.1	136	19	725	1381
19	BDN-1	97	3.5	10.4	142	16	713	1359
20	ICPL-8	78	2.7	9.5	137	22	713	1359
21	TT-9	66	2.9	9.8	130	22	683	1301
22	Pusa Agati	80	2.4	10.4	128	18	676	1288
Grand mean		79.8	2.9	9.3	146.7	19.3	818	1557
SEm±		0.8	-	0.2	8.0	1.7	-	-
CD5%		2.4	N.S.	0.7	22.6	4.8	N.S	N.S
CV%		2.1	13.4	5.3	10.9	17.7	20.5	20.5

Table 1.34. Performance of early pigeonpea cultivars tested in the ACT-1 during 1980 at Hisar

Sl. No	Entry	Pedigree	Days to flower	Days to maturity	Seed/ pod	g/100 seeds	Plant stand/ plot	Yield (kg)	
								Per plot	Per hect.
1	314	BDN 3	101.5	159.2	3.3	9.3	48	0.79	1838
2	315	T 21 (Check)	93.0	132.5	3.1	6.5	51	0.66	1516
3	301	ICPL 6	95.0	132.7	3.3	7.2	48	0.65	1511
4	309	TT 6	97.0	144.0	3.8	9.5	52	0.61	1417
5	304	Hy 5	97.5	142.7	3.6	10.8	44	0.59	1369
6	311	JA 9-19	94.0	143.5	3.4	8.9	47	0.58	1346
7	310	Hy 1	97.2	140.0	3.2	9.2	44	0.56	1303
8	308	TT 5	95.2	144.7	3.0	9.9	50	0.55	1271
9	303	ICPL 95	97.0	145.7	3.2	7.7	44	0.53	1223
10	305	4-84	88.5	129.2	3.9	7.0	49	0.51	1181
11	306	4-64	91.5	127.7	3.2	6.4	52	0.49	1124
12	307	DL 74-1	90.5	134.7	3.1	7.8	47	0.48	1112
13	313	S 80	96.2	147.7	3.2	8.6	49	0.46	1056
14	302	ICPL 8	84.0	137.7	2.7	7.8	49	0.44	1023
15	312	K 80-48	117.0	180.0	3.5	7.4	51	0.18	410
Grand mean			96	142	3.2	8.3	48	0.54	1247
SEm ±			0.4	1.8	-	0.3	-	0.04	81
CD 5%			1.0	5.2	NS	0.9	NS	0.10	232
CV%			1.1	2.6	11	8.0	10.0	13.1	13.1

Table 1.35. Performance of early pigeonpea advance lines in ACT-1 during the 1981 kharif at Hisar.

Sl. No.	Entry	Origin	Growth habit	Days to		Height (cms)	Seeds/ pod	100 seed weight (gms)	Mean plant stand/ plot	Yield	
				50% Flower	75% Maturity					kg/plot	kg/hect.
1	ICPL 6	ICRISAT	NDT	102	156	248	3.6	7.6	174	1.761	2718
2	ICPL 189	ICRISAT	NDT	102	160	261	3.6	9.2	169	1.316	2031
3	K 10/1-78		NDT+DT	70	176	245	3.7	6.4	142	0.529	816
4	ICPL 150	ICRISAT	NDT	105	160	258	3.4	10.2	150	1.178	1818
5	TT 5	Trombay	NDT	97	155	258	3.4	11.0	151	1.444	2228
6	TT 6	Trombay	NDT	101	168	252	3.8	11.1	156	1.218	1880
7	S 80		NDT	105	160	254	3.5	10.3	148	0.629	971
8	BDN 3	Badnapur	NDT	110	160	244	3.4	9.9	167	0.332	512
9	T 21	Kanpur	NDT	97	145	252	4.0	6.9	164	1.375	2122
Grand Mean				99	157	252	35	9.2	158	1.09	1682
SE m ±				0.7	0.3	-	-	0.2	-	0.17	262
CD 5%				2.1	1.0	NS	NS	0.7	NS	0.49	757
CV%				1.4	0.4	4.9	9.1	4.9	8.6	30.7	30.7

Table 1.36. List of early maturity pigeonpea advanced lines sent for multilocation testing in an unreplicated nursery with close checks, 1978 Kharif, Hisar.

Sl. No.	Pedigree	Gen.	Mat. group and growth habit	Source H-78 plot Nos
1	Prabhat (Check)			
2	ICPx74146(Prabhat x ICP 7035)-DTB-13-2-HIDT2-BB-B	F8	I DT	530
3	ICPx74205(Hy 3C x Pant A-2)-HDTIIB-55-B-HIDT1-BB-B	F8	I DT	532
4	Prabhat (Check)			
5	ICPx74065 (Prabhat x UPAS 120)-76-B-HID1-BO-B	F7	I DT	533
6	ICPx74065 (Prabhat x UPAS 120)-76-B-HIDT2-BB-B	F7	I DT	535
7	Prabhat (Check)			
8	ICPx74068 (Prabhat x Baiganl)-HDT1-B-14-B-HIIDT2-BB-B	F9	II DT	781
9	ICPx74092(ICP 6997 x Prabhat)-HDTIIB-102-2-HIIDT2-BB-B	F8	II DT	863
10	Prabhat (Check)			
11	ICPx74174 (ICP 7035 x UPAS 120)-HDP1B-1-2-HIIDT2-BB-B	F8	II DT	879
12	ICPx74146 (Prabhat x ICP 7035)-DTB-23-1-HIIIDT1-BB-B	F8	III DT	1408
13	Pusa Agoti (Check)			
14	ICP x74068(Prabhat x Baiganl)-1-B-H1-IIIDT1-BB-B	F8	III DT	1433
15	ICPx 74146 (Prabhat x ICP 7035)-DTB-12-3-HIIIDT1-BB-B	F8	III DT	1446
16	Pusa Agoti (Check)			
17	ICPx 74146(Prabhat x ICP 7035)-DTB-12-3-HIIIDT2-BB-B	F8	III DT	1448
18	74149-(Hy 3C x Prabhat)-HDTIIB-37-2-HIIIDT1-BB-B	F8	III DT	1449
19	Pusa Agoti (Check)			
20	ICPx74209 (Pant A-2 x MP(MR)15)-B-3-IIIDT-B	F5	III DT	69
21	ICPx74205 (Hyb 3C x Pant A-2)-IHDTB-H105-1-BB-B	F7	I HDT	656
22	UPAS 120 (Check)			
23	Pant A-2 (Check)			
24	ICPx74075 (UPAS 120 x Baiganl)-P4B-HIIHDT1-BB-B	F7	II HDT	1071
25	74078 (Pant A-2 x Baiganl)-41-2-2-1-HIIIHDT2-BB-B	F9	III HDT	1672
26	T 21 (check)			
27	ICP x 860-1(W)-2B-BII-1-IIIHDT6-BB-B	F9	III HDT	1613
28	ICP x 74436 (T-21 x JA 274) x Baiganl)-36-B-H1-IIIHDT3-B-B	TCF7	III HDT	1757
29	T 21 (check)			
30	ICPx(74436 (T 21 x JA 274) x Baiganl)-38-1-H3-IIIHDT2-B-BB	TCF7	III HDT	1778
31	ICPx(74436((T 21 x JA 274) x Baiganl)-38-1-H3-IIIHDT4-BB-B	TCF7	III HDT	1780
32	T 21 (check)			
33	ICPx74209(Pant A-2 x MP(MR) 15)-B-4IIIDT-B	F5	III HDT	70
34	74209 (Pant A-2 x MP(MR) 15)-B-5IIIDT-B	F5	III HDT	71
35	T 21 (check)			
36	ICPx74209(Pant A-2 x MP(MR) 15)-B-12IIIHDT-B	F5	III HDT	78
37	ICPx74146(Prabhat x ICP 7035)-HDTIIB-18-1-HIVHDT1-BB-B	F8	IV HDT	2138
38	T-21 (check)			
39	ICPx74146 (Prabhat x ICP 7035)-HDT IIB-41-2-HIVHDT1-BB-B	F8	IV HDT	2141
40	ICPx74174(ICP 7035 x UPAS 120)-HDT1B-31-1-HIVHDT1-BB-B	F8	IV HDT	2147
41	T 21 (check)			

a Lines selected for replicated yield test.

Table 1.37 Performance of early pigeonpea advanced lines tested in EMPIT during 1988, at Niger.

Sl. No.	Entry	Lines	Growth habit	Days to flower	Days to maturity	Seeds/ pod	g/100 seeds	Plant stand/ plot	Yield (kg)	
									Per plot	Per hect.
1	514	ICPL 87	DT	72.5	138.0	3.1	10.5	32.5		
2	515	ICPL 140	DT	73.5	140.0	2.9	10.6	32.0	.21	2804
3	519	ICPL 150	MDT	87.0	141.2	3.1	10.4	31.7	.19	2758
4	502	ICPL 2	MDT	79.0	129.2	3.0	7.9	31.0	.13	2619
5	505	ICPL 5	MDT	87.5	131.7	3.2	8.2	34.0	.13	2617
6	512	ICPL 84	MDT	83.0	127.0	2.8	7.6	31.5	.05	2440
7	509	ICPL 81	MDT	78.5	113.0	3.0	7.5	28.7	.05	2435
8	527	? 21	MDT	89.0	139.5	3.9	7.5	32.2	.03	2377
9	506	ICPL 6	MDT	90.2	131.7	3.2	7.5	31.5	.02	2365
10	516	ICPL 142	MDT	81.0	127.7	3.1	8.0	30.0	.01	2347
11	501	ICPL 1	MDT	90.0	123.7	2.8	7.3	27.2	.00	2306
12	528	ICPL 86	DT	78.0	118.5	2.8	8.6	32.5	.97	2239
13	522	ICPL 171	DT	74.0	134.7	2.7	9.7	34.7	.96	2218
14	510	ICPL 82	DT	76.5	127.2	2.5	8.9	30.0	.96	2214
15	513	ICPL 85	MDT	86.0	97.7	2.6	7.8	32.0	.95	2204
16	525	UPAS 120	MDT	84.5	137.2	2.7	6.9	32.0	.92	2140
17	518	ICPL 149	MDT	92.5	127.2	2.7	6.3	30.5	.91	2101
18	523	ICPL 177	DT	69.0	110 7	3.3	8.3	32.7	.89	2049
19	521	ICPL 164	MDT	90.7	135.5	3.2	8.7	30.2	.88	2034
20	517	ICPL 147	DT	65.5	109.0	2.8	8.4	33.2	.87	2024
21	511	ICPL 83	DT	77.0	126.0	3.0	9.0	29.7	.86	1989
22	504	ICPL 4	DT	71.5	113.2	3.0	6.0	28.2	.86	1979
23	507	ICPL 7	DT	85.5	131.2	2.5	8.8	33.2	.82	1891
24	524	Prabhat	DT	69.5	109.7	3.8	6.2	33.0	.82	1891
25	508	ICPL 8	DT	85.0	137.7	2.8	9.3	31.0	.79	1819
26	503	ICPL 3	DT	72.5	114.7	2.8	5.8	30.5	.78	1810
27	526	Pusa Aqeti	DT	85.0	137.7	2.5	9.9	34.5	.77	1777
28	520	ICPL 159	DT	65.0	109.5	3.2	9.0	30.2	.48	1104
Grand mean				79.11	125.61	2.94	8.26	31.4	.95	2199
SEm±				1.10	5.43	0.17	0.20		.05	110.31
CD 5%				3.10	15.26	0.47	0.56		.13	310.2
CV%				2.8	8.64	11.4	4.9	10.4	10.0	10.0

Table 1.38. Flowering and maturity of early pigeonpea ENVT entries at different locations in 1980.

Sl. No.	Entries	Days to flower			Days to maturity		
		Burma	Sri Lanka	Hisar	Burma	Sri Lanka	Hisar
1	ICPL 1	72	70	80	156	104	124
2	ICPL 2	71	70	79	211	102	125
3	ICPL 3	67	64	72	156	98	115
4	ICPL 4	66	63	71	170	97	113
5	ICPL 5	93	73	87	211	106	132
6	ICPL 6	86	73	90	211	106	132
7	ICPL 7	84	70	85	211	103	131
8	ICPL 8	77	71	85	211	104	138
9	ICPL 81	65	68	70	156	101	113
10	ICPL 82	65	65	76	156	99	127
11	ICPL 83	67	68	77	156	100	126
12	ICPL 84	81	68	83	156	100	127
13	ICPL 85	84	68	86	156	101	98
14	*Local check	100	71	70	211	103	118
15	ICPL 87	74	70	72	211	103	138
16	ICPL 140	73	71	73	211	102	140
17	ICPL 142	91	68	83	156	99	128
18	ICPL 147	65	65	65	156	102	109
19	ICPL 149	101	69	92	211	100	127
20	ICPL 150	94	71	87	211	101	141
21	ICPL 159	62	60	65	156	98	109
22	ICPL 164	95	71	91	211	102	135
23	ICPL 171	75	66	74	156	100	135
24	ICPL 177	65	68	69	156	97	111
25	PRABHAT	66	63	69	170	98	110
26	UPAS 120	91	69	84	211	101	137
27	Pusa Agoti	79	71	85	211	104	138
28	T 21	63	70	89	211	103	139
	Grand Mean	77	69	79	184	101	126
	SEm ±	1.38	1.39	1.10	3.70	1.45	5.43
	CD 5%	3.9	3.9	3.1	10.4	4.1	15.3
	CV%	3.5	4.1	2.8	4.0	2.9	8.6

* ICPL 86 at Hisar.

Table 1.39. Plant stand and yield of early pigeonpea IVPIT entries at different locations in 1988.

Sl. No.	Entries	Plant stand per plot				Yield (kgs/plot)				Yield (kgs/ha)			
		Burma	Nepal	Sri Lanka	Hisar	Burma	Nepal	Sri Lanka	Hisar	Burma	Nepal	Sri Lanka	Hisar
1	ICPL 1	138	52	21	27	0.60	0.62	0.41	1.00	1250	1240	854	2306
2	ICPL 2	154	52	21	31	0.41	1.05	0.44	1.13	896	2100	917	2619
3	ICPL 3	125	56	19	30	0.58	0.59	0.22	0.78	1208	1180	458	1810
4	ICPL 4	139	48	21	28	1.17	0.80	0.33	0.84	2437	1600	687	1979
5	ICPL 5	141	109	21	34	0.77	1.02	0.25	1.13	1604	2040	521	2617
6	ICPL 6	140	70	19	31	1.41	1.16	0.45	1.02	2937	2320	937	2365
7	ICPL 7	131	71	19	33	0.71	0.38	0.03	0.82	1479	760	62	1891
8	ICPL 8	127	62	21	31	0.14	0.30	0.01	0.79	292	600	21	1818
9	ICPL 81	155	89	19	29	0.68	0.73	0.25	1.05	1416	1460	521	2435
10	ICPL 82	152	103	23	30	0.21	0.42	0.17	0.96	437	840	354	2214
11	ICPL 83	153	84	22	30	0.28	0.49	0.25	0.86	583	980	521	1989
12	ICPL 84	130	56	20	31	0.51	0.58	0.31	1.05	1062	1160	646	2460
13	ICPL 85	150	74	24	32	0.78	0.64	0.34	0.95	1625	1280	708	2204
14	*LOCAL CHECK	137	71	19	32	1.01	5.71	0.06	0.97	2104	11420**	125	2239
15	ICPL 87	146	69	22	32	0.39	0.75	0.11	1.30	812	1500	229	3000
16	ICPL 140	141	67	24	32	0.27	0.75	0.11	1.21	562	1500	229	2804
17	ICPL 142	143	80	25	30	0.57	0.97	0.35	1.01	1187	1940	729	2347
18	ICPL 147	165	92	21	33	0.71	0.64	0.17	0.87	1479	1280	354	2024
19	ICPL 149	123	83	19	30	1.12	0.78	0.10	0.91	2333	1560	208	2101
20	ICPL 150	143	70	24	32	0.48	0.86	0.30	1.19	1000	1720	625	2758
21	ICPL 153	135	71	23	30	0.48	1.12	0.21	0.48	1000	2240	437	1104
22	ICPL 164	121	63	24	30	0.44	0.90	0.21	0.88	916	1800	437	2034
23	ICPL 171	136	60	22	35	0.46	0.37	0.24	0.96	958	740	500	2218
24	ICPL 177	145	66	21	33	0.64	0.64	0.31	0.89	1333	1280	646	2049
25	PRABHAT	136	56	19	31	0.60	0.50	0.20	0.82	1250	1000	416	1891
26	UPAS 120	141	68	21	32	0.44	1.31	0.41	0.92	916	2620	854	2140
27	PUSA AGETI	122	64	25	34	0.12	0.46	0.04	0.77	250	920	83	1777
28	T 21	132	68	20	32	0.85	1.10	0.41	1.03	1770	2200	854	2377
	G Mean	139	71	21	31	0.60	0.91	0.24	0.95	1251	1476	500	2198
	SEm ±	9.2	11.5	2.1	1.6	0.18	0.20	0.06	0.05	104	400	125	110
	CD 5%	NS	32.4	NS	NS	0.49	0.58	0.18	0.13	271	1160	375	310
	CV%	13.2	32.5	20.1	10.1	58.1	44.7	53.1	10.0	58.1	44.7	53.1	10.0

* ICPL 86 at Hisar

** Excluded from mean

Table 1.40. Performance of early pigeonpea advanced lines tested in Preliminary Multilocation Trial-I during 1980, at Hisar.

Sl. No.	Ent. No.	Lines	Gr. Habit	Days to flower	Days to maturity	Seed/ pod	g/100 seeds	Plant stand/ plot	Yield (kgs)	
									Per plot	Per hect.
1	420	ICPL 169	DT	71	132	3.0	9.6	31	1.33	3069
2	410	ICPL 155	DT	80	131	3.5	8.8	30	1.17	2718
3	428	ICPL 185	NDT	80	119	3.5	9.2	33	1.16	2676
4	406	ICPL 151	DT	70	129	3.2	11.2	31	1.15	2662
5	423	ICPL 140	DT	74	132	3.3	10.0	25	1.12	2599
6	409	ICPL 154	DT	75	128	2.9	9.7	31	1.11	2578
7	418	ICPL 165	DT	74	129	3.1	8.6	34	1.10	2545
8	402	ICPL 146	DT	73	132	2.9	9.4	38	1.07	2475
9	425	ICPL 142	NDT	82	126	3.1	8.5	38	1.06	2461
10	404	ICPL 149	NDT	91	132	2.6	6.8	32	1.06	2445
11	403	ICPL 148	DT	79	133	3.2	9.3	35	1.03	2395
12	415	ICPL 161	NDT	80	122	3.1	9.2	32	1.02	2364
13	421	ICPL 175	DT	69	130	3.0	8.7	32	1.02	2359
14	427	ICPL 145	DT	77	131	2.9	9.2	29	1.01	2328
15	407	ICPL 152	DT	75	128	3.0	10.3	32	1.00	2310
16	429	UPAS 120 (check)	NDT	84	137	2.8	7.1	31	0.98	2274
17	424	ICPL 141	DT	73	126	3.1	8.7	22	0.98	2268
18	416	ICPL 162	NDT	82	138	3.1	8.0	30	0.97	2248
19	412	ICPL 157	DT	76	133	3.0	8.7	32	0.95	2208
20	422	ICPL 176	DT	78	130	2.7	7.8	29	0.95	2200
21	419	ICPL 166	DT	76	134	2.9	9.4	32	0.93	2146
22	405	ICPL 150	NDT	93	143	2.8	9.8	31	0.93	2145
23	413	ICPL 158	DT	71	130	2.7	9.5	31	0.92	2122
24	401	ICPL 143	NDT	78	115	3.7	7.6	31	0.90	2093
25	414	ICPL 160	NDT	80	143	3.4	9.8	31	0.90	2093
26	417	ICPL 163	NDT	76	119	3.3	8.2	30	0.90	2085
27	411	ICPL 156	DT	69	125	2.4	8.6	28	0.90	2081
28	426	ICPL 144	DT	70	126	3.2	8.6	30	0.85	1976
29	430	PRABHAT (check)	DT	74	118	2.9	6.5	32	0.80	1861
30	408	ICPL 153	DT	67	130	3.2	9.1	30	0.73	1681
		Grand Mean		77	129	3.0	8.9	31	1.00	2316
		SEm ±		1.5	1.8	-	0.2	-	0.1	154
		CD 5%		4.2	5.2	-	0.5	-	0.2	432
		CV%		3.9	2.8	15.3	4.2	13.8	13.3	13.3

Table 1.41. Days to flower, plant stand and yield of early pigeonpea ExEP-1 entries at different Indian locations in 1990.

Entries	Days to flower			Mean	Stand per plot			Yield (kgs/plot)			Yield (kgs/ha)			Mean
	Rudramkota Mahbubnagar	S.K. Nagar	Hisar		Rudramkota Mahbubnagar	S.K. Nagar	Hisar	Rudramkota Mahbubnagar	S.K. Nagar	Hisar	Rudramkota Mahbubnagar	S.K. Nagar	Hisar	
ICPL 140	69	89	74	77	19	19	25	0.06	0.31	1.12	270	1550	2500	1476
ICPL 141	69	84	73	79	35	15	22	0.13	0.26	0.98	608	1300	2268	1391
ICPL 142	69	92	82	81	24	15	30	0.10	0.26	1.06	465	1300	2461	1409
ICPL 143	69	90	78	79	22	15	31	0.05	0.15	0.90	233	750	2091	1025
ICPL 144	69	86	71	75	21	21	30	0.04	0.23	0.85	186	1150	1976	1104
ICPL 145	69	96	77	81	30	16	29	0.09	0.18	1.01	419	900	2328	1216
ICPL 146	70	95	73	79	27	21	30	0.06	0.22	1.07	272	1100	2475	1316
ICPL 148	68	93	79	80	29	19	35	0.09	0.30	1.03	419	1500	2395	1438
ICPL 149	68	99	91	86	24	18	33	0.08	0.35	1.06	372	1750	2445	1522
ICPL 150	68	100	93	87	16	13	31	0.04	0.20	0.93	186	1000	2145	1110
ICPL 151	69	93	72	78	23	13	31	0.06	0.09	1.15	279	450	2662	1130
ICPL 152	68	90	75	78	15	20	32	0.04	0.29	1.00	186	1450	2310	1315
ICPL 153	67	90	67	75	25	17	30	0.08	0.18	0.73	372	900	1681	984
ICPL 154	81	-	75	78	25	-	31	0.08	-	1.11	372	-	2570	1479
ICPL 155	69	-	88	78	16	-	30	0.05	-	1.17	233	-	2710	1475
ICPL 156	67	-	69	68	17	-	28	0.08	-	0.90	372	-	2081	1226
ICPL 157	70	-	77	74	24	-	33	0.07	-	0.95	326	-	2208	1267
ICPL 158	70	-	71	70	19	-	31	0.08	-	0.92	372	-	2122	1247
ICPL 160	75	89	80	81	15	20	31	0.06	0.18	0.90	279	950	2093	1107
ICPL 161	69	97	81	82	21	18	33	0.08	0.30	1.02	372	1500	2364	1412
ICPL 162	69	82	82	78	21	16	31	0.06	0.20	0.97	279	1000	2248	1176
ICPL 163	69	88	76	78	17	18	30	0.04	0.25	0.90	186	1250	2085	1174
ICPL 165	68	89	74	77	14	15	34	0.03	0.15	1.10	139	750	2549	1145
ICPL 166	84	93	76	84	18	16	32	0.08	0.17	0.93	372	850	2146	1123
ICPL 169	69	89	73	76	27	21	31	0.09	0.24	1.33	419	1200	3069	1563
ICPL 175	70	95	69	78	24	17	32	0.08	0.29	1.02	372	1450	2359	1394
ICPL 176	70	83	78	77	25	18	29	0.08	0.29	0.95	372	1450	2200	1341
ICPL 185	66	89	80	78	23	19	33	0.08	0.25	0.16	372	1250	2676	1433
UPAS 120	69	99	84	84	28	20	31	0.09	0.30	0.98	419	1500	2274	1398
PRABHAT	68	83	74	75	16	17	32	0.03	0.27	0.80	139	1350	1861	1117
Grand Mean	70	91	77	-	22	17	31	0.07	0.22	1.00	326	1100	2316	1247
SEm±	0.1	2.7	1.5	-	NS	NS	NS	NS	0.04	0.07	NS	200	153.78	-
C.D. 5%	0.3	7.8	4.2	-	-	-	-	-	0.11	0.19	-	550	432.05	-
CV%	0.3	5.2	3.9		44.8	22.2	13.8	63.4	31.5	13.3	63.4	31.5	13.3	-

Table 1.42. Performance of promising early pigeonpea advanced lines in the short season Pigeonpea Adaptation Yield Trial, at Hisar in 1981.

Ent. No.	Pedigree	Source 1980EH	D.F.	D.M.	Growth Habit	Height (cms)	Plant Stand	Seeds/ Pod	100 Seeds Wt. (gms)	Yield Kg/ha	Yield Rank
501	T 21	B-527	92	145	MDT	254	143	3.5	6.6	2651	3
502	UPAS 120	B-202	86	149	MDT	220	141	3.4	7.2	1562	22
503	ICPL 185	B-428	90	149	MDT	223	150	3.7	9.7	3042	2
504	PRABHAT	B-201	70	118	DT	158	142	3.0	6.5	2099	14
505	ICPL 140	B-423	78	138	DT	170	143	3.4	10.0	1906	21
506	H-77-208	B-210	81	136	MDT	192	143	3.2	5.5	2386	5
507	ICPL 148	B-403	78	122	DT	173	122	3.6	8.8	2235	11
508	ICPL 142	B-425	86	145	MDT	211	135	3.5	7.2	3571	1
509	ICPL 146	B-402	75	143	DT	166	132	3.4	9.4	2307	6
510	ICPL 155	B-410	77	137	DT	183	124	3.3	8.3	2296	7
511	ICPL 154	B-409	75	131	DT	169	131	3.0	8.9	2519	4
512	ICPL 165	B-418	77	125	DT	178	138	3.6	8.4	2293	8
513	ICPL 161	B-415	90	145	MDT	222	143	3.4	8.9	2256	9
514	ICPL 169	B-420	77	132	DT	157	131	3.8	9.4	1991	16
515	ICPL 177	B-523	75	115	DT	166	149	3.1	7.4	1833	19
516	ICPL 147	B-517	62	120	DT	160	144	3.2	8.0	1832	20
517	ICPL 149	B-404	100	151	MDT	252	119	3.3	6.8	2248	10
518	ICPL 175	B-421	72	138	DT	156	133	3.1	9.0	1964	17
519	ICPL 267	B-619	60	108	DT	199	117	3.0	7.2	2221	13
520	ICPL 268	B-625	58	110	DT	141	125	3.0	7.8	1198	25
521	ICPL 269	B-716	92	141	MDT	210	129	3.2	8.9	1847	18
522	ICPL 94	B-9007	60	133	DT	169	142	3.2	9.5	2082	15
523	ICPL 184	B-9012	78	142	DT	186	146	3.7	9.7	2231	12
524	79001-6-B-MIVDT-MBD-M1-M1-MB	P-1610	79	150	DT	181	118	3.8	13.1	1542	23
525	79002-5MDT38-IIIMDT3-MBD-M2-M3-MB	P-2547	105	159	MDT	261	149	3.8	9.2	1483	24
	Grand Mean		78.9	135	-	190	136	3.4	8.4	2149	
	SEm ±		0.6	2.6	-	7.9	8.6	0.2	0.3	159	
	CD-5%		1.6	7.3	-	22.5	24.5	0.7	1.0	452	
	CV-%		1.2	3.2	-	7.2	10.6	11.8	6.0	12.82	

Table 1.43. Mean yield (kg/ha) of early pigeonpea entries in AVPAF conducted during 1981 Kharif at various locations in India.

Sl. No.	Lines	ICRISAT Hisar	HAU Hisar	Delhi	Pant-nagar	Sriganga-nagar	Junagadh	Berham-pore	Mean
1	T 21 (check)	2651 (3)	-	-	-	-	-	-	[2651] b
2	UPAS 120 (check)	1562	2611 (1)	-	2364 (3)	2612 (4)	650 (8)	689 (1)	[1749]
3	ICPL 185	3042 (2)a	2165 (6)	2139	2036	1890	255	468 (5)	1711
4	Prabhat (check)	2099	1722	1919	2114(10)	2325 (9)	304	292	1539
5	ICPL 140	1806	-	2800 (5)	2019	2129	902 (2)	693 (4)	[1706*]
6	H77-208 (HAU)	2386 (5)	-	-	-	-	-	-	[2386]
7	ICPL 148	2239(10)	1666	3266 (3)	2190 (9)	2204(10)	783 (4)	532 (2)	1834*
8	ICPL 142	3571 (1)	2167 (5)	3398 (2)	2871 (1)	3000 (2)	388	607 (9)	2195
9	ICPL 146	2387 (6)	1666	2873 (6)	2067	2491 (7)	672 (7)	668 (6)	1703*
10	ICPL 155	2296 (7)	2333 (3)	3221 (4)	2290 (7)	2763 (3)	505	314	1961*
11	ICPL 154	2519 (4)	2111 (7)	2398	2369 (2)	2190	496	604(10)	1770*
12	ICPL 165	2293 (7)	2000 (8)	2650 (9)	1690	2000	294	339	1612*
13	ICPL 161	2256 (8)	2270 (4)	2066 (7)	2317 (5)	2582 (5)	510(10)	440 (8)	1897
14	ICPL 169	1991	2000 (9)	-	2298 (6)	-	816 (3)	382	[1497]
15	ICPL 177	1833	1586	2184	1960	1737	180	254	1329*
16	ICPL 147	1832	1900	1673	1857	1525	213	265	1266*
17	ICPL 149	2248 (9)	1778	-	1971	2506 (6)	691 (6)	506 (3)	[1550]
18	ICPL 175	1964	1944(10)	2710 (8)	2329 (4)	2446 (8)	733 (5)	299	1774*
19	ICPL 267	2221	1778	2361(10)	1583	1695	485	215	1448
20	ICPL 268	1198	1056	3095	1719	1902	331	265	1224
21	ICPL 269	1847	2444 (2)	2317	1971	1435	247	-	[1710*]
22	ICPL 94	2082	1943	1733	2274 (8)	2159	528 (9)	246	1566*
23	ICPL 189	-	-	-	-	3140 (1)	1096 (1)	463 (7)	[1566*]
24	ICPL 184	2231	-	-	-	-	-	-	[2231*]
25	75001-6-B-MIVDT-MBB-M1-M1-MB	1542	-	-	-	-	-	-	[1542]
26	75002-MIMDT)8-IIIMDT)-MBB-M2-M3-MB	1483	-	-	-	-	-	-	[1483]
27	Pusa-84 (IARI)	-	-	3377 (1)	-	-	-	-	[3377]
	LOCATION MEAN	2149		2554	2057	2226	540	387	-
	SEm ±	159	-	108	-	190	137	51	-
	CD-5%	452	-	311	NS	540	388	145	-
	CV-%	12.82	-	7.35	14.09	17.13	50.87	26 46	-

( )a Rank within location
* Selected for 1982 EPAT test

b Means does not include all locations

Table 1.44. Mean performance of SSPAY entries accross all locations and mean yield in the NPW zone locations.

Sl. No.	Entries	Gr. Habit	NPW Zone Mean Yield (kgs/ha	Number of locations		
				Tests	In 5 top yielding	In 10 top yielding
1	ICPL 142	NDT	2934	7	5	6
2	ICPL 155	DT	2582	7	3	5
3	ICPL 161	NDT	2460	7	3	7
4	ICPL 154	DT	2309	7	2	4
5	ICPL 148	DT	2304	7	3	6
6	UPAS 120	NDT	2287a	6	4	5
7	ICPL 146	DT	2281	7	-	5
8	ICPL 175	DT	2279	7	2	5
9	ICPL 185	NDT	2252	7	2	3
10	ICPL 140	DT	2210a	6	3	-
11	ICPL 165	DT	2130	7	-	3
12	ICPL 169	DT	2096a	5	1	3
13	ICPL 94	DT	2038	7	-	2
14	PRABHAT	DT	2035	7	-	2
15	ICPL 149	NDT	2026a	6	1	4
16	ICPL 269	NDT	2003	6	1	-
17	ICPL 267	DT	1888	7	-	1
18	ICPL 177	DT	1774	7	-	-
19	ICPL 147	DT	1677	7	-	-
20	ICPL 268	DT	1594	7	-	-

a Mean does not include all NPW zone locations.

NPW zone locations are ICRISAT(Hisar), HAU(Hisar), Delhi, Pantnagar, and Sriganganagar.

Table 1.45. Performance of the early pigeonpea entries tested in the 0 DT advance lines test-1 grown at 75 cm row spacing during 1979, Nizar.

Sl. No.	Pedigree	D.F.	Seeds per pod	g/100 seeds	Plant height (cms)	Mean plant stand at har./ plot	Mean yield gms/ plot	Yield (kg/ ha)	How ICPL Nos.
1	Prabhat	66	3.4	6.8	121	24	1127	2146	
2	ICPL 4	66	3.4	6.9	129	25	1096	2089	
3	74068-2-B-2-B-MOOT1-BB-B-BB	62	3.0	8.4	115	23	962	1832	ICPL 147
4	74068-11-B-3-B-MOOT1-BB-B-BB	61	3.0	9.8	107	23	907	1727	ICPL 159
5	74068-DT1-B-11-2-MOOT1-BB-B-BB	67	3.1	7.9	113	22	898	1711	ICPL 177
6	74068-11-B-4-1-MOOT1-BB-B-BB	60	2.6	9.3	102	26	820	1562	
7	74068-11-B-5-B-MOOT1-BB-B-BB	64	3.2	8.8	108	15	807	1536	
8	Compl 0 DT	57	3.0	8.2	112	26	798	1521	
9	74068-DT1-B-11-1-MOOT1-BB-B-BB	61	2.5	9.7	108	17	715	1362	
	Grand Mean	63.1	3.03	8.4	112.4	22.6	903.1	1721	
	SEm ±	0.8	0.2	0.4		1.4	76.1	145	
	CD 5%	2.4	0.5	0.9	NS	5.4	228.9	436	
	CV%	2.2	8.9	6.0	8.0	13.9	14.7	14.7	

Table 1.46 Performance of the early pigeonpea entries tested in the 0 DT advance lines test-2 grown at 37.5 cm row spacing during 1979, at Nizar.

Pedigree	D.F.	Seeds per pod	g/100 seeds	Plant height (cms)	Plant stand at har./ plot	Yield (gms/ plot)	Yield (kg/ha)	Yield at 75 cm row spacing kg/ha	Mean yield	ICPL
74068-11-B-5-B-MOOT1-BB-B-BB	62	2.8	8.5	117	36	1047	1993	1536	1735	
ICPL 4	64	2.9	6.9	130	41	1017	1936	2089	2013	
74068-2-B-2-B-MOOT1-BB-B-BB	63	2.9	8.4	115	45	975	1857	1832	1845	147
Prabhat	65	2.7	6.5	127	46	957	1822	2146	1984	
74068-DT1-B-11-2-MOOT1-BB-B-BB	63	3.2	8.2	117	43	953	1816	1711	1764	177
74068-11-B-3-B-MOOT1-BB-B-BB	60	3.6	10.4	110	45	903	1720	1727	1724	159
74068-11-B-4-1-MOOT1-BB-B-BB	60	2.5	9.8	111	49	890	1695	1562	1629	
74068-DT1-B-11-1-MOOT1-BB-B-BB	60	3.2	9.0	120	40	802	1526	1362	1444	
Comp. 1 0 DT	56	2.7	8.0	110	48	743	1416	1521	1469	
Grand Mean	61.4	2.9	8.3	118.5	43.7	920.7	1753	1721	-	
SEm ±	1.0	-	0.2	-	-	-	-	145	-	
CD 5%	3.0	NS	0.6	NS	NS	NS	NS	436	-	
CV%	2.8	11.8	4.0	7.0	13.1	12.5	12.5	14.7	-	

Table 1.47. ANOVA table for pooled analysis of the two O DT advance lines tests (1979 kharif, Hisar).

Source of variation	d.f.	Mean sum of squares
Row spacings	1	133.80
Cultivars	8	63447.34*
Cultivars x row spacings	8	23345.25
Pooled Error	32	19388.31

* Significant at 5% level of significance

Table 1.48. Performance of the 'O' mat. pigeonpea lines tested at two row spacings during 1988, at Hisar.

Sl. No.	Pedigree	Row spacing (cm)	Days to flower	Days to mat.	Seeds per pod	g/100 seeds	Stand per plot	Yield gm/plot	Yield kg/ha	Suggested Row ICPL Lines
1	Prabhat	30	67	105	3.2	6.1	61	815	1971	
2	Prabhat	60	71	104	3.0	6.6	26	672	1557	
3	73050(T-21 x EC-100467)F5 -M2-B0-B	30	67	110	2.4	8.0	60	930	2172	
4	73050(T-21 x EC-100467)F5 -M2-B0-B	60	70	119	2.9	8.1	31	784	1819	
5	Comp. 1 ODT	30	57	101	3.3	8.1	70	929	2150	
6	Comp. 1 ODT	60	65	102	3.0	7.7	28	755	1747	
7	75080-5-B-MIDT1-B0-1-B (6997 x Prabhat) x Pant A-3)	30	73	118	3.0	7.9	55	927	2165	
8	75080-5-B-MIDT1-B0-1-B (6997 x Prabhat) x Pant A-3	60	81	118	2.8	7.6	28	724	1677	
9	ICPL 147	30	65	101	3.0	8.0	71	930	2152	
10	ICPL 147	60	67	102	2.8	8.2	31	703	1627	
11	ICPL 153	30	66	124	2.8	9.6	61	786	1820	
12	ICPL 153	60	67	124	2.9	9.3	32	627	1451	
13	ICPL 159	30	64	104	3.1	10.0	60	509	1187	
14	ICPL 159	60	65	105	2.6	10.0	32	541	1254	
15	ICPL 179	30	57	101	3.2	7.8	61	1105	2558	
16	ICPL 179	60	58	102	3.0	7.9	31	740	1711	
17	74068-5-B-1-1-MIIDT9-B-B0-B(Prabhat x Baiganl)	30	67	105	2.6	7.4	66	679	1571	
18	74068-5-B-1-1-MIIDT9-B-B0-B(Prabhat x Baiganl)	60	68	105	2.8	7.3	29	537	1242	
19	74068-76-9-MIDT2-B0-B-B (ICPL 267)	30	58	95	3.0	7.4	67	967	2239	ICPL 267
20	74068-76-9-MIDT2-B0-B-B (ICPL 267)	60	61	95	3.1	7.0	28	765	1726	
21	74075-5-B-3-1-MODT2-B0-B0 -B(UPAS 120 x Baiganl)	30	60	95	3.4	8.2	61	683	1581	
22	74075-5-B-3-1-MODT2-B0-B0 -B(UPAS 120 x Baiganl)	60	61	95	3.1	8.7	32	628	1453	
23	Comp. 1 ODT-5-B (ICPL 287)	30	58	101	3.2	8.0	61	917	2122	ICPL 287
24	Comp. 1 ODT-5-B (ICPL 287)	60	60	101	2.7	7.6	29	729	1687	
25	Comp. 1 ODT-9-B (ICPL 268)	30	58	101	3.1	8.1	61	932	2158	ICPL 268
26	Comp. 1 ODT-9-B (ICPL 268)	60	60	102	3.1	8.0	32	801	1855	
27	Comp. 1 ODT-10-B0-B	30	58	106	2.8	8.5	64	854	1977	
28	Comp. 1 ODT-10-B0-B	60	61	106	3.1	8.6	27	735	1700	
	Grand Mean		64.1	105.6	3.0	8.1	46.3	779	1804	
	Entries									
	SEm ±		1.2	1.1	-	0.18	-	39.8	90.4	
	CD 5%		2.5	2.2	NS	0.37	NS	78.9	182.8	
	CV%		3.9	2.1	12.7	4.6	10.1	10.0	10.0	
	Row spacing:									
	SEm ±		0.4	-	-	-	0.9	11.4	26.5	
	CD 5%		0.7	NS	NS	NS	1.9	23.1	53.5	
	CV%		3.1	1.1	10.6	6.0	10.7	7.8	7.8	
	Mean	30	62	105	3.0	8.1	63	861	2000	
		60	65	104	2.9	8.0	30	695	1608	

Table 1.49. Mean sum of squares for early pigeonpea entries tested at two row spacings during 1980, at Niger.

Source of variation	d.f.	Mean sum of squares					
		Days to flower	Days to mature	Seed/ pod	g/100 seeds	Plant stand/ plot	Yield kg/plot
Replications	3	27.38*	14.13*	0.729*	0.279	138.15 *	0.0049
Entries	13	252.20*	682.84*	0.239	0.510*	35.46	0.0087 *
Error 'a'	39	6.18	4.76	0.142	0.135	21.93	0.0061
Row spacings	1	214.90*	3.57	0.172	0.035	30261.40*	0.0054 *
Entries x row spacings	13	10.23*	1.24	0.165	0.168	50.74 *	0.0118*
Error 'b'	42	3.89	1.41	0.099	0.104	24.55	0.0036

* Significant at 5% level of significance

Table 1.56. Performance of early pigeonpea advanced lines tested in the advanced lines test-1 (ALT-1) during 1981 kh
at Hisar.

ent No	Pedigree	Source 1980 HS	DF	DM	Growth Habit	Height (cm)	Plant stand	Seeds/ pod	100 seed Wt. (gm)	Yield		New ICPL Lines
										gm/ plot	kg/ ha	
01	Prabhat	P-201	74	116	DT	163	139	2.8	8.2	1509	2328	-
02	UPAS 120	P-202	92	143	MDT	232	129	3.8	8.4	2001	3091	-
03	DL 78-1	P-211	64	113	DT	204	99	3.3	8.1	1330	2052	-
04	ICPL 287	P 623	58	106	DT	123	177	2.9	7.6	1310	3022	-
05	Comp.1 ODT-H10-HB-HB-HB	P-627	55	123	DT	133	146	2.8	8.9	1421	2193	-
06	74076-6-B-1-B-HB-HB-HB-HB	P-822	74	143	DT	190	165	3.4	9.8	1510	3330	-
07	74066-2-B-2-B-H1-HBB-BB-H1-HB	P-826	69	111	DT	149	169	3.0	8.6	1200	1875	-
08	74078-12-B-1-2-H1-HB-B-HB-HB	P-845	84	124	MDT	192	146	3.1	7.1	1669	2976	ICPL 31
09	74078-1-B-10-B-H3-HB-B-HB-HB	P-9117	83	120	MDT	209	132	3.5	6.9	1653	2551	-
10	(73081-16-D3-3 x Pant A-21 x Pant A-2) 6-B-HB	P-1057	105	178	MDT	251	137	3.3	8.6	956	1475	-
11	74065-76-9-H2-BB-HB-HBB-HB	P-723	60	99	DT	138	160	2.8	7.4	1034	1596	-
12	75080-17-B-H3-BB-H1-H1-H3	P-1014	74	122	DT	196	159	3.1	7.4	1540	2377	ICPL 31
13	Comp.1 ODT-H1-H3	P-2979	59	91	DT	114	150	3.0	8.3	1411	2177	-
14	Comp. 1 ODT-H4-H3	P-2993	56	100	DT	117	160	3.0	8.2	1470	2269	-
15	Comp. 1 ODT-H5-HB	P-2994	59	121	DT	152	162	2.8	7.4	1430	2207	-
16	Comp.1 ODT-H8-HB	P-2996	58	91	DT	135	169	2.8	6.8	1189	1835	-
17	Comp. 1 ODT-H13-HB	P-3001	55	99	DT	126	160	3.2	7.6	1595	2461	ICPL 31
18	Comp. 1 ODT-H14-HB	P-3003	54	98	DT	110	149	2.8	8.9	1615	2492	ICPL 31
19	Comp. 1 ODT-H17-HB	P-3005	58	92	DT	145	139	2.5	8.8	1086	1676	-
20	Comp. 1 ODT-H19-HB	P-3008	56	109	DT	132	143	3.4	7.9	1368	2111	-
21	Comp. 1 ODT-H22-HB	P-3011	56	97	DT	117	145	2.7	7.4	1459	2252	-
22	Comp. 1 ODT-H43-HB	P-3013	55	97	DT	125	176	2.7	8.0	1317	2032	-
23	74058-1-B-34-B-H1-BB-H7-HB	P-3026	52	98	DT	122	148	3.2	7.8	969	1495	-
24	Comp. 1 ODT-H2-H7-HB	P-3096	54	93	DT	122	150	2.4	7.9	1307	2017	-
25	Comp. 1 ODT-H3-HB	P-3775	56	94	DT	121	165	2.7	7.2	1340	2068	-
26	Comp. 1 ODT-H6-HB	P-3776	54	99	DT	110	181	2.8	8.0	1321	2039	-
27	Comp. 1 ODT-H7-HB	P-3778	54	91	DT	143	166	2.7	7.7	1577	2434	-
28	Comp. 1 ODT-H10-HB	P-3784	53	92	DT	120	176	3.0	7.5	1369	2113	-
29	Comp. 1 ODT-H11-HB	P-3785	54	90	DT	122	159	3.4	7.4	1317	2032	-
30	Comp. 1 ODT-H15-HB	P-3790	58	93	DT	126	147	3.4	7.5	1406	2389	-
31	Comp. 1 ODT-H21-H3	P-3798	55	91	DT	119	150	3.2	7.7	1457	2248	-
32	Comp. 1 ODT-H23-HB	P-3800	54	92	DT	116	157	3.1	8.1	1346	2077	-
33	QP 208	P-4543	74	128	DT	156	117	2.8	11.5	1146	1768	-
34	QP 223	P-4560	72	125	DT	135	73	3.3	10.5	946	1460	-
35	QP 242	P-4580	68	133	DT	135	83	3.0	11.1	1070	1651	-
36	QP 262	P-4603	77	138	DT	195	130	3.0	10.0	1343	2073	-
	Grand Mean		64	111	-	163	149	2.90	8.2	1365	2106	
	SEm ±		0.7	6.3	-	9.0	9.2	0.21	0.21	70	108	
	CD 5%		2.0	17.8	-	24.9	26.0	0.59	0.59	197	304	
	C.V%		1.9	9.8	-	10.7	10.7	12.2	4.5	8.8	8.8	

Table 1.51. Performance of the early pigeonpea entries tested in the I DT advance lines test, during 1979, at Hisar.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cms)	Mean plant stand/ plot	Mean yield gms/ plot	Yield kg/ ha	New ICPL Nos.
1	73052-211-1-1-HIDT5-B-B0	71	3.2	9.4	120	22	1175	2238	ICPL 168
2	73052-211-1-1-HIDT1-B-B0	73	2.8	10.2	117	21	1135	2162	ICPL 160
3	74092-HDTB-16-1-HIDT3-B0	67	2.9	11.4	119	19	1087	2071	ICPL 151
4	73052-211-1-1-HIDT4-B-B0	71	3.3	9.7	130	22	1085	2067	ICPL 152
5	74068-23-BI-2-HIDT1-B-B0	72	3.0	8.5	140	20	1080	2057	ICPL 165
6	74068-25-BI-3-HIDT4-B-B0	71	3.3	9.8	127	19	1017	1938	ICPL 166
7	ICPL 87	74	3.2	10.4	110	19	1013	1930	
8	73052-211-1-1-HIDT3-B-B0	68	3.4	8.8	114	19	1005	1914	ICPL 169
9	74068-23-BI-2-HIDT4-B-B	71	2.9	9.6	152	24	972	1852	ICPL 170
10	74068-29-BI-6-HIDT5-B-B0	70	3.0	10.0	116	21	950	1809	ICPL 171
11	Comp. 1 I DT	65	2.9	8.2	129	19	937	1786	
12	74068-29-BI-6-HIDT4-B-B0	68	2.7	10.7	116	24	909	1731	ICPL 172
13	74068-23-BI-2-HIDT2-B-B0	75	2.8	10.1	136	18	895	1705	
14	74092-HDTB-16-1-HIDT2-B0	69	3.0	9.2	119	15	877	1671	
15	74092-HDTB-59-1-HIDT1-B0	68	3.0	8.7	114	22	867	1652	
16	74068-29-BI-6-HIDT1-B-B0	70	3.2	10.3	136	21	856	1631	
17	74068-29-BI-6-HIDT3-B-B0	69	3.2	10.1	129	23	835	1590	
18	74068-25-BI-3-HIDT2-B-B0	66	2.5	10.1	127	20	823	1568	
19	74068-29-BI-6-HIDT2-B-B0	70	3.0	10.0	116	17	810	1543	
20	74092-HDTB-29-1-HIDT4-B0	70	3.5	10.4	112	14	803	1529	
21	74068-10-BI-5-HIDT1-B-B0	65	2.9	10.3	111	22	797	1519	
22	74068-23-BI-2-HIDT3-B-B0	74	3.0	9.7	135	17	776	1478	
23	74068-23-BI-2-HIDT5-B-B0	73	2.8	9.9	142	16	705	1342	
24	Prabhat	68	3.2	6.8	117	16	675	1286	
25	74068-10-BI-5-HIDT5-B-B0	64	3.3	10.0	120	21	652	1243	
26	74068-25-BI-3-HIDT3-B-B0	72	2.5	11.9	134	18	637	1214	
27	74068-10-BI-5-HIDT4-B-B0	70	2.6	10.9	112	21	607	1157	
28	74068-25-BI-3-HIDT5-B-B0	74	2.8	11.7	120	18	597	1138	
29	74068-10-BI-5-HIDT3-B-B0	66	2.8	9.7	114	21	593	1014	
30	74068-10-BI-5-HIDT2-B-B0	68	2.9	10.0	110	19	572	1090	
31	74068-25-BI-3-HIDT1-B-B0	76	2.7	11.0	125	15	525	1000	
	Grand Mean	70	2.98	9.9	123.3	19.6	847.5	1614	
	SEm±	1.1	0.19	0.27	7.7	1.5	86.0	164	
	CD 5%	3.1	0.55	0.75	21.6	4.2	241.5	460	
	CV%	3.1	13.2	5.4	12.5	15.1	20.3	20.3	

Table 1.52. Performance of the early pigeonpea entries tested in I NDT advance lines test during 1979, Hisar.

Sl	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cm)	Plant stand/ plot	Yield gm/ plot	Yield kg/ha	Rev ICPL Nos.
1	74436-31-B-1-2-HINDT3-B-BB	70	2.7	9.7	127	18	993	1892	ICPL185
2	74076-46-BI-1-HINDT4-B-BB	71	2.9	9.5	134	18	993	1892	ICPL181
3	74436-31-B-1-1-HINDT5-B-BB	75	3.0	9.6	140	22	989	1876	-
4	74436-31-B-1-2-HINDT2-B-BB	74	3.0	10.8	154	14	938	1787	ICPL160
5	Comp.1 I NDT	69	2.8	9.1	121	21	917	1746	-
6	74076-46-BI-1-HINDT2-B-BB	72	2.9	9.7	126	18	903	1720	ICPL186
7	74076-46-BI-1-HINDT3-B-BB	73	3.0	9.4	127	17	850	1619	ICPL187
8	74436-31-B-1-1-HINDT1-B-BB	76	2.9	9.4	139	17	847	1613	-
9	74436-31-B-1-2-HINDT4-B-BB	77	2.7	8.8	135	15	800	1524	-
10	74078-9-BI-5-HINDT1-B-BB	70	2.5	11.2	114	18	790	1505	-
11	74436-31-B-1-2-HINDT5-B-BB	76	2.9	8.8	150	18	787	1498	-
12	74436-31-B-1-1-HINDT2-B-BB	72	2.8	8.3	130	17	743	1416	-
13	Pant A-2	76	2.8	8.5	126	18	717	1365	-
14	74078-9-BI-5-HINDT5-B-BB	76	2.8	8.6	132	14	693	1320	-
15	74436-31-B-1-1-HINDT2-B-BB	74	2.8	10.8	127	17	657	1251	
16	74076-46-BI-1-HINDT5-B-BB	71	3.0	10.0	115	13	583	1111	-
17	74436-31-B-1-1-HINDT4-B-BB	74	3.1	9.7	126	17	550	1048	-
	Grand Mean	73.3	2.8	9.5	130.8	17	808.6	1540	
	SEm±	1.0	-	0.28	6.6	-	93.1	177	
	CD 5%	2.9	NS	0.79	18.8	NS	268.2	511	
	CV%	2.8	11.0	5.9	10.2	21.8	19.9	19.9	

Table 1.83. Characteristics of the I maturity pigeonpea advanced lines during 1988, Hisar.

Sl. No.	Ent. No.	Pedigree	Gr. habit	Days to flower	Days to mature	Seeds/ pod	g/100 seeds	Plant stand/ plot	Yield (kgs)/ plot	Yield (kgs)/ hect.	Rank	New ICPL Nos
1	801	Prabhat	DT	69	101		6	44	0.53	1222	43	
2	802	Comp.1 I DT	DT	69	107		5	45	0.85	1970	5	
3	803	ICPLI67	DT	70	106		7	45	0.48	1117	53	
4	804	ICPLI68	DT	70	107		7	44	0.55	1276	40	
5	805	ICPLI72	DT	76	129		9	45	0.61	1422	27	
6	806	ICPLI73	DT	69	106		4	48	0.49	1127	52	
7	807	ICPLI74	DT	66	100		2	42	0.41	954	56	
8	808	ICPLI80	DT	65	98		6	38	0.55	1267	41	
9	809	ICPLI83	DT	70	109		1	44	0.76	1750	8	
10	810	74068-11-B-5-B-MIDT3-BB-MB-BB-MB-MB (Prabhat x Baigani)	DT	68	99		7.7	53	0.62	1432	25	
11	811	74068-DT1-B-11-1-MIDT1-BB-B-BB-B	DT	69	100		8.7	41	0.55	1283	39	
12	812	74068-10-BI-5-MIDT1-B-BB-B	DT	66	119		10.0	49	0.32	743	64	
13	813	74068-25-BI-3-MIDT2-B-BB-B	DT	79	141		9.9	45	0.51	1180	46	
14	814	74092-MDTB-59-1-MIDT1-BB-B (6997 x Prabhat)	DT	67	107		9.1	46	0.64	1492	21	
15	815	74068-5-B-1-1-MIIDT4-B-BB-B	DT	70	114		7.8	32	0.37	867	59	
16	816	74068-5-B-1-1-MIIDT6-B-BB-B	DT	72	117		7.2	46	0.58	1334	36	
17	817	74068-5-B-1-1-MIIDT8-B-BB-B	DT	68	107		7.2	44	0.44	1021	54	
18	818	74068-5-B-1-1-MIIDT9-MB-B-BB-MB-MB	DT	69	108		7.2	40	0.36	833	61	
19	819	74068-5-B-1-1-MIIDT10-B-BB-B	DT	64	100		8.9	47	0.39	906	57	
20	820	74068-4-B-1-1-MIIDT5-B-BB-B	DT	66	123		9.7	45	0.51	1172	50	
21	821	74068-2B-1-B-MIIIDT3-B-B-B	DT	69	126		8.6	51	0.59	1370	31	
22	822	74076-6-B-1-B-MIIIDT-B-B-B (ICPL6 x Pant A-2)	DT	71	108		9.6	46	0.73	1696	10	
23	823	74092-DTB-16-1-MIIIDT3-B-B-BB-B	DT	69	119		10.5	42	0.51	1179	48	
24	824	74092-DTB-16-1-MIIIDT4-B-B-Bx	DT	67	110		10.3	48	0.61	1421	28	
25	825	74146-DTB-13-2-MIDT2-BB-B-B (Prabhat x 7035)	DT	63	106	.1	8.3	38	0.62	1444	24	
26	826	74068-2-B-2-B-MDDT1-BB-BB-1-B	DT	67	100	.2	7.7	52	0.58	1354	34	
27	827	74068-11-B-5-B-MDDT1-BB-BB-B	DT	64	107	.0	9.6	48	0.43	988	55	
28	828	Comp.1 I DT-M3-1-BB-1-B	DT	71	118	2.7	9.8	43	0.34	783	62	
29	829	Comp.1 I DT-M4-1-BB-B	DT	78	129	2.8	7.8	41	0.66	1531	17	
30	830	75001-7-B-MIDT1-BB-1-B (Prabhat x My3C) x (Pant A-2 x 6997)	DT	72	135	2.7	12.6	47	0.65	1512	20	
31	831	75013-1-B-MIDT1-BB-2-B (Prabhat x My3C) x (4726 x No.148)	DT	66	118	3.1	10.4	46	0.72	1667	ICPL 12	289
32	832	75080-19-B-MIIDT3-BB-1-B (6997 x Prabhat) x Pant A-3	DT	71	118	.7	9.5	44	.52	1209	45	
33	833	75080-33-B-MIIDT-BB-3-B	DT	71	106	.1	6.5	45	.65	1513	19	
34	834	75080-36-B-MIIDT2-BB-1-B (6997 x Prabhat) x Pant A-3)	DT	78	127	.1	8.0	43	.78	1810	7	
35	835	75080-36-B-MIIDT4-BB-1-B	DT	77	134	.0	10.0	38	.39	895	58	
36	836	75080-39-B-MIIDT6-BB-1-B	DT	72	127	.7	9.2	40	.59	1366	32	
37	837	Pant A-2	MDT	84	126	.0	7.3	44	.54	1247	42	
38	838	Comp.1 I MDT	MDT	67	108	.0	7.8	42	.95	2188	1	
39	839	H77-120	MDT	66	109	.0	7.2	44	.62	1429	26	
40	840	ICPL-188	MDT	79	115	.2	7.5	46	.63	1453	23	
41	841	ICPL-186	MDT	81	118	.0	8.2	41	.52	1215	44	
42	842	ICPL-187	MDT	81	117	.1	8.1	42	.58	1349	35	

Table 1.54. Performance of early pigeonpea advanced lines tested in advanced lines test-2 during 1991 kharif, at Hisa

Ent	Pedigree	Source 1990RH	DF	DM	Gr. Habit	Plant Stand	Seeds/ pod	100 seed weight (g)	Height (cm)	Yield		New ICPL Lines
										Plot	Kg/ha	
	Prabhat	B-201	78	130	ER	159	3.1	6.6	150	1413	2180	
	UPAS120	B-202	78	130	MDT	164	3.2	7.1	183	2031	3134	
	ICPL143	B-401	86	127	MDT	138	3.4	7.0	172	1529	2360	
	ICPL161	B-417	81	130	MDT	136	3.5	8.1	194	1599	2406	
	ICPL180	B-009	71	125	DT	167	3.1	6.7	149	1499	2307	
	74068-11-B-5-B-M3-[illegible]	B-010	66	126	MDT	122	3.3	8.6	146	1437	2218	
	ICPL209	B-031	60	135	DT	133	2.9	11.1	132	1997	3082	
	74036-31-B-1-1-M2-[illegible]	B-043	63	110	DT	96	3.3	8.3	165	1961	2412	
	74092-B-16-M1-M2-[illegible]	B-9019	67	124	DT	152	3.4	8.9	163	2128	3284	ICP
											317	
	74092-B-29-1-M4-[illegible]	B-9020	61	128	DT	126	3.6	11.1	194	1878	2898	
	74092-B-16-1-M5-[illegible]	B-9031	64	145	DT	159	3.0	11.1	160	1571	2250	
	74092-B-16-1-M2-[illegible]	B-9053	66	129	DT	150	3.5	9.1	155	2072	3198	
	75025-1-B-M1-[illegible]	B-9057	74	138	DT	138	3.1	8.3	165	1850	2855	
	74078-1-B-10-B-M5-B-M2-[illegible]	B-9107	92	145	MDT	144	3.1	7.1	226	1749	2699	
	74075-10-1-1-1-B-M5-B-[illegible]	B-9114	83	130	MDT	150	3.5	7.2	172	1836	2833	
	74075-10-1-1-1-B-M2-B-[illegible]	B-9116	90	145	MDT	146	3.6	7.1	217	1639	2529	
	74078-1-B-10-B-M5-B-[illegible]	B-9119	90	146	MDT	147	3.1	7.4	227	2024	3123	
	(73081-42-D2-3) x Prabhat) x Prabhat)21-B)	B-1016	75	146	DT	150	3.4	7.0	172	1513	2335	
	74077-24-B-M2-B-[illegible]	B-1025	92	149	MDT	148	3.5	8.6	216	2015	3110	
	74078-1-B-17-B-M2-B-[illegible]	B-1026	83	145	MDT	177	3.7	8.9	231	2192	3383	
	74209-B-M78-M6-[illegible]	B-1043	81	135	MDT	151	3.4	6.8	199	1830	2824	
	74068-2-B-2-B-M1-[illegible]	P-922	69	123	MDT	148	2.9	8.0	146	1309	2020	
	75080-36-B-M4-[illegible]	P-1181	74	148	DT	129	3.5	11.4	166	1194	1843	
	T21-M78-M8-M68-[illegible]	P-1904	90	145	MDT	147	3.7	8.5	208	2065	3187	
	Comp.1 ODT-M19-[illegible]	P-3008	56	120	DT	94	2.8	7.9	123	1150	1775	
	76115 (Prabhat x 8504)-M-14-[illegible]	P-3184	70	151	DT	137	4.0	10.7	170	1331	2054	
	QP166	P-4498	75	126	DT	93	3.0	12.2	152	974	1503	
	QP173	P-4505	88	153	DT	106	3.2	11.7	144	764	1179	
	QP183	P-4517	74	149	DT	87	3.8	12.6	142	967	1492	
	QP185	P-4519	69	142	DT	84	3.3	12.1	164	1055	1628	
	QP186	P-4520	78	146	DT	109	3.4	13.3	159	1540	2377	
	QP218	P-4555	76	145	DT	76	3.4	11.7	155	1017	1569	
	QP225	P-4562	73	147	DT	112	3.2	11.8	146	1008	1556	
	QP232	P-4570	74	147	DT	85	2.6	11.9	133	1140	1759	
	QP245	P-4585	70	129	DT	76	3.6	11.9	131	745	1150	
	QP269	P-4610	72	143	DT	96	3.8	12.4	146	936	1444	
	Grand Mean		75	137		129	325	9.39	167	1519	2340	
	SEm±		1.00	1.65		9.32	0.28	0.23	10 77	76	117	
	CD 5%		2 82	4.65		26.28	0.80	0.66	30.39	215	332	
	CV%		2.3	2.1		12.5	14.9	4.3	11.1	8.7	8.7	

Table 1.55. Performance of early pigeonpea entries tested in the II DT advance lines test during 1979 at Hisar.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cm)	Plant stand/ plot	Yield (gm/ plot)	Yield (kg/ha)	New ICPL Nos.
1	74205-5B-47-1-MII2-BB-BB	67	3.4	8.1	129	26	1210	2305	ICPL141
2	Comp.1 II DT	67	2.8	8.6	137	28	1080	2057	
3	74068-4-B-1-1-MII2-B-BB	61	3.0	9.7	102	26	1052	2004	ICPL153
4	74068-5-B-1-1-MII5-B-BB	60	2.9	7.5	128	26	985	1876	ICPL167
5	74068-5-B-1-1-MII0-B-BB	62	3.1	7.7	131	26	926	1765	
6	74068-5-B-1-1-MII1-B-BB	64	3.1	8.7	125	26	855	1629	ICPL168
7	74068-5-B-1-1-MII3-B-BB	64	3.5	8.3	132	25	846	1612	ICPL173
8	74068-4-B-1-1-MII1-B-BB	63	2.9	8.8	112	25	845	1610	ICPL174
9	74068-5-B-1-1-MII6-B-BB	66	3.3	7.2	127	24	839	1598	
10	74068-5-B-1-1-MII9-B-BB	62	2.9	7.6	118	25	824	1569	
11	74068-4-B-1-1-MII5-B-BB	63	3.2	9.5	107	25	819	1559	
12	74068-5-B-1-1-MII8-B-BB	62	2.7	8.6	138	23	800	1524	
13	74068-5-B-1-1-MII4-B-BB	68	3.4	7.9	130	24	797	1519	
14	Prabhat	65	3.5	6.4	126	25	782	1490	
15	74068-4-B-1-1-MII3-B-BB	63	3.4	9.8	111	21	742	1414	
16	74068-5-B-1-1-MII7-B-BB	64	3.1	8.6	118	23	718	1368	
17	74068-5-B-1-1-MII2-B-BB	63	3.3	7.6	128	25	713	1358	
18	74068-4-B-1-1-MII4-B-BB	61	3.0	10.5	117	22	649	1236	
	Grand mean	64	3.14	8.4	123	25	860	1638	
	SEm±	0.67	-	0.17	4.6	-	66.5	127	
	CD 5%	1.89	NS	0.48	13.1	NS	189.8	360	
	CV%	2.1	12.5	4.0	7.5	11.4	15.5	15.5	

Table 1.56. Performance of early pigeonpea entries tested in the II MDT advance lines test during 1979 at Hisar.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cms)	Plant stand/ (cms)	Yield (gm/ plot	Yield (kg/ha) plot)	New ICPL Nos.
1	74070-12-B-1-2-MII2-B-BB	74	2.8	8.3	140	21	1158	2206	ICPL142
2	74070-12-B-1-2-MII5-B-BB	70	3.2	8.0	110	17	980	1867	ICPL143
3	Comp. 1 II MDT	71	2.8	8.1	141	20	963	1835	
4	74070-12-B-1-2-MII6-B-B	72	3.7	6.5	122	19	937	1785	ICPL163
5	74070-12-B-1-2-MII4-B-B	75	3.0	7.4	129	17	870	1657	ICPL188
6	74070-12-B-1-2-MII8-B-B-BB	75	3.2	8.0	151	17	867	1651	ICPL162
7	74070-12-B-1-2-MII7-B-B-BB	75	3.2	8.1	137	18	830	1581	
8	74070-12-B-1-2-MII3-B-B	70	3.0	8.3	125	19	773	1473	
9	74070-12-B-1-2-MII9-B-B-BB	75	2.9	8.2	130	16	772	1470	
10	74070-12-B-1-2-MII1-B-B	73	3.1	8.7	126	14	753	1435	
11	74075-1-B-23-B-MII4-B-B-BB	77	3.1	8.4	124	17	697	1327	
12	74070-46-B-4-1-MII3-B-B	79	3.1	10.8	141	15	630	1200	
13	74070-46-B-4-1-MII1-B-B	75	2.6	11.4	129	16	628	1197	
14	UPAS120	78	2.6	7.3	137	14	605	1152	
15	74205-1B-184-1-DT1-BB-B	75	3.2	10.1	130	18	587	1117	
16	74070-46-B-4-1-MII2-B-B	78	3.3	12.8	145	13	555	1057	
17	74070-46-B-4-1-MII4-B-B	78	3.2	10.2	135	13	412	784	
	Grand mean	75	3.11	8.9	131	16.7	766	1459	
	SEm±	1.0	0.17	0.26	6.6		101.0	192	
	CD 5%	2.7	0.49	0.73	18.6	NS	291.1	554	
	CV%	2.6	11.1	5.8	10.1	17.7	22.9	22.9	

Table 1.57. Performance of entries in the II maturity pigeonpea linse testing during 1988 kharif at Hisar.

Sl.No.	Pedigree	Growth habit	Days to flower	Days to mature	Seeds/ pod	g/100 seeds	Plant stand /plot	Yield (kg/ha)
1	73052-211-1-10-MIIDT3-B0-3-B	DT	76	139	3.2	10.5	32	2736
2	75021-3-B-MIINDT1-B0-1-B	NDT	82	136	3.3	8.4	37	2520
3	74075-10-1-1-1-B-MIIINDT2-B-B-B-B	NDT	81	130	3.0	7.0	36	2476
4	Comp.1 IDT-84-1-B0-2-B	DT	81	138	3.1	8.3	33	2360
5	79092-DTB-16-1-MIII	DT	69	123	3.2	10.4	37	2338
6	Comp.1 IIDT-B-B	DT	78	134	3.1	8.9	32	2321
7	(7308-40DI-4 x Prabhat) x Prabhat)-9-B	DT	80	137	2.8	8.7	37	2313
8	74092-NDTB-16-1-MIDT2-B0-1	DT	70	116	3.2	9.3	31	2301
9	UPAS120	NDT	85	130	2.7	7.5	37	2276
10	74092-NDTB-29-1-MIDT4-B0-B	DT	68	124	3.0	11.1	34	2199
11	74075-10-1-1-1-B-MIIINDT5-B-B-B	NDT	81	119	2.9	7.3	33	2181
12	75083-1-IIIDT1-B0-2	D	81	134	2.9	10.3	36	2181
13	Comp.1 IIIDT-9-B	DT	81	127	3.4	8.2	32	2178
14	74078-P3-B-MIINDT5-B0-3-B	NDT	85	124	3.1	8.8	28	2176
15	74068-23-B1-2-MIDT2-B-B0-B	DT	84	146	2.9	10.0	29	2139
16	74078-1-B-10-B-MIIINDT3-B-B-B	NDT	69	115	3.1	6.9	36	2129
17	ICPL93	DT	71	135	2.5	10.8	29	2127
18	75003-IIDT9-1-B0-1-B	NDT	84	142	3.0	9.1	31	2126
19	74078-1-B-10-B-MIIINDT5-B-B-B	NDT	83	119	3.0	6.7	34	2126
20	74209-B-B-IIINDT-1-B	NDT	89	149	3.0	8.5	34	2066
21	74092-DTB-36-1-MIIIDT10-B-B-B0-B	DT	70	131	2.8	8.9	31	2050
22	74092-NDTB-16-1-MIDT2-B0-B	DT	70	120	3.1	9.0	32	2038
23	74092-DTB-38-1-MIIIDT9-B-B-B0-B	DT	76	124	3.0	10.2	36	2038
24	74092-DTB-25-1-MIIIDT7-B-B-B0-B	DT	73	124	3.6	8.6	35	2036
25	75080-4-B-MIIDT4-B0-2-B	DT	81	140	3.4	7.2	33	2033
26	74149-W18-IIINDT1-B0-3-B	NDT	93	144	2.9	9.8	25	2021
27	ICPL189	NDT	90	144	3.2	8.3	31	2016
28	ICPL91	DT	73	129	2.7	9.0	35	1992
29	74078-1-B-10-B-MIIINDT5-B-2-B	NDT	84	121	2.5	6.7	37	1985
30	ICPL170	DT	75	136	2.9	8.7	31	1971
31	74092-DTB-25-1-MIIIDT1-B-B-B0-B	DT	74	133	3.0	8.3	33	1961
32	74092-DTB-49-B-MIIIDT3-B-B-B0-B	DT	69	117	3.0	8.6	34	1947
33	ICPL94	DT	69	118	3.1	9.5	32	1946
34	74068-21-B-1-B-MIIIDT1-B-B-B0-B	DT	71	133	2.9	11.6	34	1939
35	74078-1-B-17-B-MIIINDT4-B-2-B	NDT	81	115	3.2	7.6	33	1937
36	74075-10-1-1-1-B-MIIINDT3-B-B-B	NDT	86	128	2.9	7.7	33	1931
37	75080-1-B-MIIIDT3-B0-2-B	DT	81	133	3.1	8.3	35	1921
38	T21(CHECK)N78-10-B	NDT	79	130	2.8	7.1	32	1898
39	74120-INDTB-W31-IINDT4-B-1-B	NDT	90	148	2.9	8.3	34	1897
40	75025-1-B-MIIDT1-B0-1-B	DT	76	130	2.8	7.6	34	1881
41	75080-3-B-NDDT1-B0-B0-B	DT	71	118	3.1	10.0	32	1878
42	Comp.1 IIDT	DT	70	126	2.9	8.1	36	1876
43	74075-48-IINDT1-B0-2-B	NDT	82	142	3.3	11.5	33	1872
44	74092-DTB-22-1-MIIIDT3-B-B-B0-B	DT	70	128	3.1	8.7	34	1865
45	74205-NDT1-B-104-IDT1-B0-B	NDT	81	137	2.9	9.7	33	1863
46	Com.1-1 IDT-86-IINDT6-B0-1-B	NDT	88	142	3.0	8.7	33	1850
47	Com.1 IIDT7-B	DT	80	133	3.1	6.9	36	1854
48	74068-29-B-1-B-B-MIIIDT-1	DT	71	122	2.9	8.6	35	1848
49	74077-24-B-MIII-NDT1-B-1-B	NDT	89	136	2.8	8.6	30	1843

50	74092-DTB-38-1-MIIII	DT	78	120	2.9	9.5	34	1836
51	ICPL82	DT	68	130	2.6	8.7	36	1817
52	ICPL2	MDT	76	120	3.2	7.0	39	1815
53	74078-46-B-4-1-MIIIMDT3-B-B-B	MDT	83	119	3.4	8.8	31	1795
54	K1-248-1-B-B-3-B	MDT	84	135	2.5	7.8	35	1779
55	74068-MDT1B-4-B-MIIIMDT-	MDT	87	132	2.9	8.0	37	1773
56	74092-DTB-22-1-MIII	DT	71	128	3.1	7.0	33	1772
57	Comp.1 IIDT6-B	DT	81	133	2.5	7.3	33	1766
58	74092-DTB-49-B-IIII	DT	71	121	3.3	9.5	33	1753
59	74078-12-B-1-2-MII	MDT	81	125	3.3	8.0	31	1750
60	Comp.1-IDT-B8-IIMDT1-B8-1-B	MDT	88	137	3.0	7.7	34	1442
61	(73081-40D2-3 x Prabhat) x Prabhat)-9-B	DT	74	144	3.0	8.5	36	1737
62	K1-93-1-2-B-1-B	MDT	75	116	2.9	8.4	34	1734
63	74078-1-B-17-B-MIIIMDT1-	MDT	83	119	3.0	8.6	30	1730
64	ICPL178	DT	76	146	3.1	10.8	34	1726
65	75001-30-B-MIIIMDT1-B8-2-B	MDT	89	135	3.0	7.2	36	1722
66	74075-1-B-23-B-MIIMDT4-	MDT	80	125	3.2	7.7	33	1714
67	74092-DTB-25-1-MIIIDT10-B-B-B8-B	DT	73	131	3.0	9.4	33	1702
68	74068-23-BI-2-MIDT5-B-B8-B	DT	78	136	2.8	8.7	36	1701
69	74092-DTB-25-1-MIIIDT5-B-B-B8-B	DT	83	135	2.9	9.2	28	1689
70	Comp.1 IIDT11-B	DT	81	135	2.8	7.8	33	1682
71	Pant A-2	MDT	81	118	3.4	7.9	33	1650
72	(73081-40D2-3 x Prabhat) x Prabhat)-8-B	DT	80	142	2.6	6.9	31	1633
73	74092-DTB-25-1-MIIIDT8-B-B-B8-B	DT	75	135	3.2	8.9	31	1629
74	Comp.1 IIDT-2-B	DT	75	133	3.3	8.5	33	1628
75	Prabhat	DT	69	112	2.9	6.2	30	1627
76	74092-DTB-22-1-MIIIDT1-B-B-B8-B	DT	71	117	3.0	8.8	34	1614
77	74092-DTB-22-1-MIIIDT8-B-B8-B	DT	69	125	3.1	8.0	34	1613
78	ICPL90	DT	73	123	3.0	7.0	31	1607
79	74075-10-1-1-1-B-MIIIMDT4-B-B-B	MDT	87	137	2.9	7.7	31	1602
80	74068-29-BI-6-MIDT2-B-B8-B	DT	73	135	2.6	9.8	34	1596
81	Comp.1 IIMDT	MDT	72	131	3.0	7.4	35	1595
82	74205-MDTIIB-47-1-IIDT1-B8-2-B	DT	79	126	3.0	9.6	35	1588
83	74436-31-B-1-2-MIMDT5-B-B8-B	MDT	81	130	3.0	8.4	30	1581
84	75080-4-B-MIIDT4-B8-3-B	DT	78	137	2.8	8.7	33	1574
85	74068-29-B-6-MIDT1-B-B8-B	DT	76	136	2.4	9.9	32	1571
86	ICPL184	DT	78	135	2.9	10.1	32	1559
87	74092-DTB-49-B-MIIDT2-B-B-B8-B	DT	70	125	3.1	8.5	36	1556
88	74078-12-B-1-2-MIIMDT7-B-B-B8-B	MDT	82	117	3.0	7.8	24	1554
89	74436-31-B-1-2-MIMDT4-B-B8-B	MDT	81	127	3.1	3.6	32	1540
90	74436-31-B-1-1-MIMDT3-B-B8-B	MDT	84	125	2.9	9.9	27	1534
91	74092-MDTIIB-15-1-MIIDT2-B8-1-B	DT	74	136	3.1	10.9	34	1534
92	ICPL188	MDT	81	119	3.2	7.2	34	1532
93	74078-1-B-17-B-MIIIMDT4-B-4-B	MDT	85	133	3.0	7.6	33	1529
94	74068-23-BI-2-MIDT3-B-B8-B	DT	73	135	2.7	9.3	36	1522
95	74174-MDT1B-1-2-MIIDT1-B8-1-B	DT	73	124	2.9	10.9	33	1507
96	74077-41-B-MIIIMDT3-B-1-B	MDT	85	136	2.6	9.3	36	1501
97	T-21 (Check) N78-8-B	MDT	85	124	2.8	7.3	36	1500
98	ICPL 3	DT	71	111	2.6	5.8	26	1499
99	75080-61-B-MIIIDT1-B8-2-B	DT	79	137	3.0	9.1	37	1491
100	ICPL181	DT	78	143	2.9	12.5	35	1472
101	ICPL89	MDT	81	120	3.1	8.4	29	1471
102	74068-2-B-3-B-MIIIDT4-B-B-B8-B	DT	69	125	3.0	8.9	36	1464
103	74008-20-B-B-2-DT1-B8-1-B	DT	76	136	3.0	8.0	32	1464
104	74436-31-B-1-1-MIMDT5-B-B8-B	MDT	81	128	2.9	8.6	30	1434
105	74092-DTB-16-1-MIIIDT1-B-B-B8-B	DT	71	121	2.8	8.9	30	1433
106	74075-F2B-MIIMDT1-B8-1-B	MDT	84	141	3.1	9.3	31	1397
107	74092-DTB-25-1-MIIIDT3-B-B-B8-B	DT	72	124	3.0	8.9	34	1384
108	74068-21-B-1-B-MIIIDT2-B-B-B8-B	DT	73	132	2.8	10.0	32	1384
109	74068-2-B-M9-IIDT5-B0-2-B8	DT	74	120	2.8	8.9	27	1358
110	74436-31-B-1-1-MIMDT1-B-B8-B	MDT	81	118	3.0	8.3	35	1357
111	74092-DTB-25-1-MIIIDT4-B-B-B8-B	DT	71	121	2.9	8.8	31	1348
112	K1-248-1-B-B-2-B	MDT	82	131	3.0	7.5	35	1309
113	74075-1-B-23-B-MIIMDT1-B-B-B8-B	MDT	81	130	2.9	8.7	28	1246
114	74092-MDTB-59-1-MIIDT1-B8-1-B	DT	78	126	2.9	8.2	27	1232
115	74078-9-BI-5-MIMDT5-B-B8-B	MDT	81	118	3.9	7.7	31	1214
116	74068-29-BI-6-MIDT3-B-B8-B	DT	71	135	2.9	9.1	35	1203
117	74092-DTB-25-1-MIIIDT6-B-B-B8-B	DT	79	125	2.9	8.5	28	1179
118	ICPL182	DT	85	147	3.5	9.5	32	1050
119	74008-20-B-B-2-DT1-B8-4-B	DT	81	139	2.8	8.9	27	1040
120	74078-1-B-10-B-MIIIMDT2-B-B-B	MDT	87	134	3.0	8.8	29	999
121	74077-5-B-MIIIMDT3-B-1-B	MDT	86	128	2.6	7.6	30	997
	Grand Mean		78	129	3.0	8.6	32	1752
	SEm±		0.8	1.7	0.1	0.2	2.8	327
	CD 5%		2.3	4.8	0.29	0.57	7.7	908
	CV%		1.7	2.1	6.0	4.1	13.4	28.9

Table 1.50. Characteristics of early pigeonpea advanced lines tested in advanced lines test-1 during 1991 kharif, Hisar.

Pedigree	Source ICPH	DF	PH	Growth Habit	Height (cms)	Plant stand	Seed/ pod	100 seed wt.(gms)	Yield gms/plot	Yield kg/h
ICPL151	E-406	69	134	ED	174	138	3.3	11.1	1430	2207
ICPL152	E-407	74	147	ED	193	116	3.3	9.1	983	1471
ICPL157	E-412	71	140	ED	176	123	3.6	9.0	1193	1779
ICPL158	E-413	70	136	ED	187	120	3.3	10.2	936	1444
ICPL162	E-416	93	169	MED	172	104	3.7	8.1	1497	2246
ICPL166	E-419	74	145	ED	167	113	3.0	10.0	1125	1734
ICPL176	E-422	71	126	ED	109	147	3.4	8.0	1275	1961
ICPL141	E-424	72	128	ED	182	113	3.0	8.8	1217	1874
ICPL145	E-427	72	145	ED	196	148	3.3	10.6	1762	2714
ICPL171	E-522	79	150	ED	173	112	3.2	9.4	897	1321
Comp.1 IIDT-H4-H1-B0-HB-HB	E-829	78	139	ED	178	93	3.1	7.8	980	1511
75080-39-B-H6-B0-H1-HB-HB	E-836	72	145	ED	179	138	2.9	9.4	1350	2081
ICPL188	E-840	87	133	MED	218	108	2.9	7.8	1175	1811
74078-12-B-1-2-H3-B-HB-HB	E-844	77	128	MED	218	132	2.9	8.4	1590	2391
74075-1-B-H52-H3-B0-H1-HB	E-848	87	135	MED	193	144	3.9	8.3	1330	2052
75005-7-B-H1-B0-H1-HB-HB	E-855	90	141	MED	213	143	3.5	7.8	1693	2611
ICPL291	E-857	87	135	MED	202	105	3.2	7.1	1384	2134
ICPL292	E-858	93	145	MED	187	107	3.3	9.5	1463	2256
74092-B-38-1-H10-B-HB-B0-HB	E-9021	76	138	ED	166	145	3.1	9.3	1246	1921
74092-B-38-1-H9-B-HB-B0-HB	E-9038	72	143	ED	172	140	3.9	10.4	1294	1996
Comp.1 IIDT-B0-HB-HB	E-9063	72	144	ED	177	134	3.0	8.6	1184	1827
Comp.1 IIDT-H9-HB-HB	E-9064	74	139	ED	196	118	2.7	8.4	1312	1979
T21-H8-HB-HB	E-9108	93	143	MED	249	118	3.4	6.3	1633	2520

824	K248-1-H8-HB-H2-HB-HB	B-9110	93	144	MDT	222	122	3.5	7.8	1443	2227
825	74209-B-H77-H15-HB	B-1042	87	134	MDT	226	132	3.3	7.3	1879	2900
826	77007-H4-H4-HB	P-487	63	146	DT	174	86	3.4	11.8	1092	1685
827	74092-B-16-1-H2-B0-HB0-H2-HB	P-901	65	133	DT	171	123	3.4	9.4	1095	2063
828	79013-1-B-H1-B0--H2-H50-HB	P-994	63	132	DT	156	140	3.3	11.0	1505	2046
829	74075-1-B-H52-H1-B0-H4-H50-HB	P-1044	93	138	MDT	216	126	3.2	6.7	1313	2026
830	74075-1-B-H52-H1-B0-H4-H00-HB	P-1048	95	147	MDT	196	142	3.4	6.6	1411	2177
831	74092-B-27-B-H1-B0-H2-H1-HB	P-1066	77	154	DT	196	132	3.4	11.6	1530	2361
832	74092-B-27-B-H1-B0-H2-H4-HB	P-1069	78	142	DT	198	125	3.4	10.1	1233	1903
833	74092-B-35-2-H1-B0-H1-H2-HB	P-1077	73	145	DT	214	121	3.6	9.4	1307	2017
834	74092-B-52-1-H2-B0-H1-H2-HB	P-1096	93	139	MDT	211	127	3.7	6.8	1157	1785
835	74092-B-52-1-H2-B0-H1-H1-HB	P-1101	70	126	DT	166	146	3.2	9.3	1352	2086
836	76115 (Prabhat x 8504)-H153-H10-HB	P-1264	71	135	MDT	227	113	3.2	8.0	1588	2451
837	76115 (Prabhat x 8504)-H221-H1-HB	P-1774	74	150	DT	204	144	2.9	10.5	1438	2219
838	74146-B-42-2-H1-B0-HB-H4-HB	P-1994	96	155	MDT	240	132	3.2	10.5	1625	2508
839	74149-H18-1-B0-H3-H3-HB	P-2169	96	150	MDT	225	91	3.5	8.0	1711	2640
840	76115 (Prabhat x 8504)-H11-H9-HB	P-2272	78	133	MDT	195	110	3.4	9.8	1164	1796
841	76115-H112-H1-HB	P-3371	72	142	DT	180	137	3.5	8.9	1876	2895
842	76115-H122-H5-HB	P-3378	74	143	DT	195	130	3.3	9.4	1344	2074
843	Comp.1 INDT-H4-HB	P-3833	75	136	DT	187	121	3.4	9.5	1211	1869
844	Comp.1 IINDT-H13-HB	P-3897	97	150	MDT	247	121	3.1	7.1	1681	2594
845	QP280	P-4623	71	150	DT	178	120	3.1	11.2	917	1415
846	QP283	P-4626	62	127	DT	169	127	3.2	10.6	920	1432
847	Prabhat	E-201	69	110	DT	184	123	3.1	6.8	1188	1833
848	UPAS120	E-202	95	147	MDT	229	98	3.0	7.5	1386	2139
849	T21	E-315	94	147	MDT	243	140	3.1	7.9	1399	2159
	Grand mean		79	140	-	196	124	-	-	1349	2081
	SEm±		1.5	2.7	-	13.3	9.8	-	-	94	145
	CD 5%		4.2	7.5	-	37.40	27.4	-	-	266	410
	CV%		3.3	3.3	-	11.8	13.6	-	-	12.2	12.2

Table 1.39. Performance of the early pigeonpea entries tested in the III DF advance lines test grown during 1979, at Hisar.

Sl. No.	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cms)	Plant stand/ plot	Mean yield (gms/ plot)	Yield (kg/ha)	New ICPL Nos.
1	74092-DTB-22-1-HIII7-B-B-B0	69	3.0	8.5	116	25	1303	2482	ICPL144
2	Comp.1 III DF	77	2.9	9.0	135	26	1300	2476	
3	74092-DTB-38-1-HIII1-B-B-B0	71	3.0	9.5	112	29	1247	2374	ICPL145
4	74092-DTB-38-1-HIII8-B-B-B0	70	3.4	9.7	115	26	1200	2286	ICPL146
5	74092-DTB-38-1-HIII7-B-B-B0	71	3.1	8.7	115	24	1190	2267	ICPL154
6	74060-2-B-3-B-HIII1-B-B-B0	66	2.9	8.8	113	25	1180	2260	ICPL154
7	74092-DTB-39-1-HIII4-B-B-B0	72	3.0	8.8	126	28	1180	2247	ICPL155
8	74092-DTB-25-1-HIII9-B-B-B0	72	3.2	9.9	123	27	1113	2120	ICPL157
9	74092-DTB-16-1-HIII2-B-B-B0	68	3.0	9.6	115	24	1110	2114	ICPL158
10	74092-DTB-38-1-HIII6-B-B-B0	69	3.1	8.9	112	24	1103	2101	ICPL175
11	74092-DTB-38-1-HIII2-B-B-B0	70	3.0	8.1	112	24	1097	2089	ICPL176
12	ICPL94	69	3.0	9.9	118	24	1095	2086	
13	74092-DTB-16-1-HIII4-B-B	68	3.0	9.8	125	24	1095	2086	
14	74060-2B-3-B-HIII3-B-B	68	3.0	8.4	113	25	1090	2076	
15	74092-DTB-38-1-HIII9-B-B-B0	72	3.1	10.8	115	24	1080	2057	
16	74092-DTB-38-1-HIII5-B-B-B0	71	3.0	10.0	126	25	1070	2038	
17	74092-DTB-22-1-HIII3-B-B-B0	68	3.6	8.4	112	25	1060	2019	
18	74092-DTB-25-1-HIII8-B-B-B0	73	2.9	9.8	118	25	1057	2013	
19	74092-DTB-25-1-HIII3-B-B-B0	71	3.1	10.8	120	25	1053	2006	
20	74092-DTB-16-1-HIII5-B-B-B0	69	2.7	10.6	112	22	1053	2006	
21	74092-DTB-49-B-HIII5-B-B-B0	73	3.3	9.9	135	24	1050	2000	
22	74068-21-B-1-B-HIII5-B-B-B0	71	2.9	11.2	113	22	1050	2000	
23	74092-DTB-19-B-HIII2-B-B-B0	72	3.5	9.6	120	25	1050	2000	
24	74076-6-B-1-B-HIIIB-B-B	66	2.9	10.2	107	25	1033	1968	
25	74092-DTB-49-B-HIII3-B-B-B0	68	2.9	8.1	127	22	1013	1930	
26	ICPL92	69	3.3	8.7	103	22	1007	1917	
27	74092-DTB-25-1-HIII5-B-B-B0	73	3.3	10.7	113	23	983	1873	
28	ICPL91	73	2.8	9.5	120	19	980	1867	
29	74092-DTB-25-1-HIII10-B-B	70	3.2	10.3	140	24	973	1854	
30	74092-DTB-25-1-HIII1-B-B-B0	74	3.0	10.1	118	22	963	1835	
31	74092-DTB-22-1-HIII1-B-B-B0	69	3.2	8.1	117	22	957	1822	
32	74092-DTB-25-1-HIII7-B-B-B0	69	3.2	9.2	122	22	957	1822	
33	74092-DTB-38-1-HIII1-B-B-B0	70	3.3	9.4	107	19	950	1809	
34	74060-2-B-3-B-HIII4-B-B-B0	70	3.0	9.9	107	24	937	1784	
35	74060-29-B-B-HIII-B-B-B0	69	2.9	9.5	115	24	918	1749	
36	74068-21-B-1-B-HIII2-B-B-B0	69	2.9	10.4	107	22	910	1733	
37	74092-DTB-16-1-HIII3-B-B-B0	66	3.0	10.4	118	20	900	1714	
38	74092-DTB-23-1-HIII8-B-B-B0	68	2.9	8.2	108	20	900	1714	
39	ICPL93	72	3.0	11.5	110	24	890	1695	
40	74068-21-B-1-B-HIII-B-B-B0	69	3.2	11.1	118	23	887	1689	
41	74092-DTB-22-1-HIII4-B-B-B0	71	3.1	8.6	117	24	887	1689	
42	74092-DTB-16-1-HIII1-B-B-B0	69	3.5	9.2	115	18	863	1644	
43	74092-DTB-25-1-HIII4-B-B-B0	71	3.4	10.3	85	22	830	1581	
44	74092-DTB-25-1-HIII6-B-B-B0	72	3.3	10.4	116	21	823	1568	
45	ICPL90	68	3.2	8.1	103	18	820	1562	
46	ICPL8	78	2.7	10.2	122	23	790	1505	
47	ICPL7	77	3.2	10.4	118	26	783	1492	
48	74092-DTB-22-1-HIII9-B-B-B0	66	3.2	9.4	118	23	683	1301	
49	Pusa Ageti	79	3.0	11.3	117	23	507	965	
	Grand Mean	70	3.1	9.7	116.1	23	999	1903	
	SEm±	0.9		0.24		1.5	99.0	188	
	CD5%	2.7	NS	0.70	NS	4.3	277.8	529	
	CV%	2.3	9.1	4.3	11.1	11.4	17.3	17.2	

Table 1.60. Performance of III maturity pigeonpea advanced lines tested during 1988 kharif at Hisar.

Sl. No.	Pedigree	Growth habit	DF	DM	Seeds/ pod	g/100 seeds	Plant stand/ plot	Yield (kg/ha)
1	76141-22-MB-MB	NDT	100	158	3.3	9.1	48	2302
2	H77-216	NDT	84	131	3.4	6.8	55	2212
3	74002-20-MB-4-B0-1-B	DT	87	144	2.9	10.8	50	2162
4	77334-21-B	DT	81	133	3.0	8.6	52	2069
5	76141-13-MB-MB	NDT	100	157	3.6	9.4	53	2033
6	76141-7-MB-MB	NDT	100	156	3.2	8.4	49	1955
7	74209-B-21-13-B	NDT	95	146	3.0	8.2	50	1950
8	H 78-6	NDT	77	128	3.4	7.0	47	1907
9	74078-1-B-17-B-2-B-B-B	NDT	87	136	3.1	8.7	46	1894
10	74092-B-M110-1-B0-1-B	NDT	98	146	3.3	6.3	50	1875
11	74077-41-B-M2-B-2-B	NDT	91	147	2.9	9.6	53	1838
12	74077-24-B-M3-B-B-B	NDT	90	136	3.0	8.5	49	1835
13	74209-B-21-8-B	NDT	95	147	3.2	8.4	48	* 1822
14	74209-B-27-B-B	NDT	97	155	3.2	8.7	48	1820
15	(73081-16-D3-3 x Pant A-2) x Pant A-21-6-MB-MB	NDT	96	154	3.0	8.5	48	1810
16	T21 mutant-2873	NDT	90	138	3.5	9.2	43	1789
17	74077-24-B-M2-B-B-B	NDT	86	137	3.0	7.6	48	1789
18	74078-1-B-17-B-M3-B-B-B	NDT	86	136	3.0	7.4	50	1768
19	ICPL5	NDT	91	135	3.0	7.6	46	1758
20	74209-B-22-B-B	NDT	100	158	3.3	7.7	53	1747
21	74209-W298-6-B0-1-B	NDT	82	145	3.0	8.4	47	1733
22	75001-4-B-M1-B0-2-B	DT	86	147	3.0	10.1	51	1724
23	T21 mutant-407	NDT	87	139	3.2	9.6	48	1709
24	KI 93-1-3-B-1-B	NDT	88	147	3.0	7.7	49	1696
25	74209-W328-2-B0-2-B	DT	95	145	2.8	7.8	50	1694
26	T21 mutant-395	NDT	90	138	3.7	8.7	46	1653
27	74078-1-B-17-B-M5-B-B-B	NDT	88	138	3.0	8.8	48	1650
28	T21	NDT	91	135	3.6	8.6	49	1647
29*	74209-B-35-B-B	NDT	100	157	3.1	9.4	49	1644
30	74068-1-B-111-4-B0-1-B	NDT	94	140	3.0	9.4	52	1641
31	74189-W38-1-B0-2-B	NDT	97	154	3.2	9.3	43	1639
32	Compl III NDT	NDT	86	135	3.0	8.6	47	1617
33	74436-38-B-M2-1-B0-1-B	NDT	96	154	3.2	8.9	49	1617
34	76141-24-MB-MB	NDT	97	158	3.4	8.9	43	1599
35	(73081-4D1-4 x Prabhat) x Prabhat)-5-B	DT	87	136	2.9	6.9	48	* 1582
36	74075-10-1-1-1-B-M1-B-B-B	NDT	90	139	3.1	6.8	54	1579
37	75011-6-1-B0-1-B	DT	85	152	3.1	10.7	51	1578
38	76141-38-MB-MB	NDT	100	145	3.6	9.6	47	1571
39	73043-48-6-5-M2-B0-1-B	DT	86	146	2.9	9.1	49	1562
40	77334-18-8	DT	82	147	3.0	8.5	52	1562
41	74209-B-13-B-B	NDT	99	154	3.0	6.5	50	1561
42	T21 mutant-396	NDT	90	138	3.1	9.1	48	1558
43	73021-30-1-4-M1-B0-1-B	DT	90	141	3.0	8.9	47	1524
44	(73081-16-D3-3 x Pant A-2) x Pant A-21-9-MB-MB	NDT	97	148	3.0	8.5	48	1510
45	76141-6-MB-MB	NDT	101	159	3.6	10.3	45	1504
46	75016-10-1-B0-1-B	NDT	96	147	3.0	7.8	49	1493
47	74146-B-12-3-M2-B0-B-B	DT	75	144	3.0	10.7	48	1479
48	74077-41-B-M5-B-B-B	NDT	91	138	3.1	8.7	46	1460
49	74078-1-B-10-B-M1-B-B-B	NDT	82	119	3.0	7.4	47	1455
50	74078-1-B-17-B-M4-B-B-B	NDT	87	137	3.2	8.7	51	1443
51	75003-19-3-B0-3-B	DT	93	151	3.0	8.9	51	1430
52	75001-24-B-M1-B0-1-B	DT	83	146	2.8	9.7	50	1425
53	74077-41-B-M1-B-B-B	NDT	94	137	2.9	7.8	54	1407
54	74075-P4B-M1-B0-1-MB	NDT	84	134	2.9	6.8	48	1353
55	74209-W328-B-B-B	NDT	89	144	2.9	7.4	50	1342
56	74077-41-B-M3-B-B-B	NDT	86	134	3.0	7.8	50	1342
57	74068-1-B-M1-1-B0-B-B	DT	78	140	2.8	8.5	50	1291
58	KI 243-1-6-B-2-B	NDT	96	148	3.0	8.9	45	1264
59	74216-B-M45-M3-B0-1-B	NDT	99	156	3.7	8.9	52	1264
60	Compl-III DT	DT	82	138	2.9	7.2	52	1230
61	Pusa Ageti	DT	88	143	2.7	9.3	48	1228
62	ICP6-26-1-5-5-B0-B0-B-B	NDT	93	138	3.3	6.1	52	1220
63	74209-W328-2-B0-4-B	DT	98	143	2.9	7.8	49	1142
64	74077-37-B-M3-B-B-B	NDT	87	136	2.8	7.0	49	1117
	Grand mean		91	143	3.1	8.5	-	1626
	SEm±		0.92	1.34	0.08	0.16	-	194
	CD 5%		2.55	3.7	0.23	0.45	-	539
	CV%		1.8	1.6	4.5	3.3	-	21.0

* Alloted ICPL r 293.

able 1.61. Performance of early pigeonpea advanced lines tested in advanced lines Test-4 during 1981 kharif at Hisar

Pedigree	Source ICPMSR	Growth habit	DF	DM	Height (cm)	Plant stand/ plot	Seeds/ pod	100 seed wt.(g)	Yield (kg/ha)
74209-B-8-M1-M1-MB	P-2216	MDT	92	156	239	134	3.6	6 8	2790
75080-99-B-M2-BB-M1-MB-MB	E-851	MDT	94	156	248	121	3.4	8 7	2542
Comp.1DT-M1-MB	P-3900	MDT	100	157	242	130	3.1	6.8	2528
74092-B-15-M1-BB-M1-M2-MB	P-1386	MDT	95	155	245	122	3 1	9.7	2408
76141-22-MB-MB	E-1862	MDT	107	147	255	130	3 5	9.2	2412
UPAS 120	E-202	MDT	92	152	241	144	3.1	7.4	2312
T 21	E-315	MDT	95	152	191	130	3 5	7 4	2282
ICPL 290	E-850	MDT	92	149	214	115	3 2	7 7	2234
ICPL [illegible]	E-9008	DT	72	107	101	96	3 1	8 6	2229
Comp 1DT-M7-B-4-MB	P-1917	DT	78	144	173	132	3 2	5 8	2194
73052-211-1-10-M3-BB-M3-MB-MB	E-9069	DT	72	153	178	119	3 3	11 2	2191
Comp.1MDT-M6-MB	P-1888	MDT	95	149	290	98	3 6	6 5	2043
Comp 1DT-M4-M1-BB-1-M2-MB-MB	E-9054	Seg.	79	147	191	114	3 1	7 3	2028
74174-B-1-2-M2-BB-B-M4-MB	P-1312	DT	76	148	182	111	3 3	9 4	2000
74077-41-B-M2-B-M2-MB-MB	E-1092	MDT	93	153	223	127	3 4	9 6	2003
74078-B-M5-BB-M3-MB-MB	E-9092	MDT	87	133	202	135	3 1	7 6	1977
Comp 1MDT-M9-MB	P 3892	MDT	95	155	237	130	3 1	7 5	1977
75080-1-B-M3-BB-M2-MB-MB	E-9058	DT	74	149	184	144	3 7	8 3	1951
74077-24-B-M1-B-M3-MB-MB	E-9101	MDT	106	160	237	108	3 5	8 5	1948
ICPL 288	E-714	MDT	95	153	239	133	3 1	7 7	1948
74092-B-102-M2-BB-MB-MB-MB	P-819	DT	72	137	160	117	3 5	8 0	1937
74077-24-B-M3-B-MB-MB-MB	E-1024	MDT	101	161	236	122	3 3	8 5	1914
Comp 1MDT-M3-MB	P 1935	MDT	104	160	247	125	3 0	6 9	1887
75002-10-M3-BB-M1-MB-MB	E-854	MDT	90	153	219	105	3 2	9.8	1883
73001-H27-M1-MB	P-182	DT	66	115	197	145	3 4	8 6	1881
74092-B-25-1-M1-B-MB-BB-MB	E-9021	DT	72	133	178	126	3 6	8 8	1881
76115-H263-M4-MB	P-1814	MDT	95	160	245	111	3 6	8 7	1840
Prabhat	E-201	DT	67	110	166	151	3 5	5 8	1856
Comp.1MDT-M1-M3-MB	P 322	DT	72	148	178	116	3 0	7 3	1855
74209-B-21-M13-MB-MB	P-1054	MDT	100	171	237	152	3 5	7 2	1801
76115-H151-MB	P-473	DT	73	127	164	121	3 6	8 0	1795
74436 36-B-M1-M3-B-M4-MB	P-2137	MDT	100	165	232	100	3 2	6 5	1787
74075-10-1-1-1-B-M4-M10-MB	E-856	MDT	92	149	224	118	3 6	8 0	1776
75021 3-B-1M-BB-M1-MB-MB	E-9100	DT	78	155	187	118	3 1	7 3	1753
73001-H17-M1-MB	P-159	DT	78	146	186	117	3 4	7 3	1752
73334-9-MB-MB	E 9070	DT	74	155	181	145	3 0	8 7	1741
76115-M3-M1-MB	P 126	Seg	79	145	239	111	3 9	8 3	1739
74092-B-H110-M1-BB-M1-MB-MB	E-1046	MDT	108	170	243	116	3 4	7 6	1727
74092-B25-M1-BB-M1-M4-MB	P-1086	DT	72	131	175	120	3 5	7.0	1670
74205-1-104-M1-BB-M1-MB-MB	P-598	DT	76	150	186	122	3 2	9 9	1651
ICPL 293	E-1041	MDT	105	180	261	142	3 3	8.6	1647
74075-1-B-M52-M4-BB-M1-M3-MB	P-1288	MDT	92	147	229	148	3 3	7 7	1597
74092-B59-M1-BB-M1-M4-MB	P-1189	DT	78	142	178	112	3 1	9 2	1596
78332-M1-MB	P 474	MDT	106	172	250	108	4 2	10.5	1512
74040-31-1-B-4-MB-B-BB-MB	E-3029	MDT	100	165	264	93	3 4	8.4	1401
74149-B38-B-M1-BB-M1-M3-MB	P 1136	DT	74	142	176	132	3.2	10.0	1386
76115-407-M7-MB	E-2149	MDT	108	192	232	130	3 3	9.5	1214
ICPL 294	E 3005	MDT	107	175	247	102	3 1	6 7	1201
ICPL 10	P 1408	DT	84	160	182	103	3.1	11 6	1043
Grand mean			88	152	211	123	3 3	8 18	1893
SEm±			0 9	3 1	10 9	11 4	-	0 29	85
CD5%			2 5	8 7	30 6	32 8	NS	0 82	238
CV%			1 8	3 5	8 8	15 5	10.7	6 2	7.

Table 1.62. Performance of early pigeonpea compact lines in a yield test during 1990 at Hisar.

Sl No.	Ent. No.	Pedigree	Growth habit	Days to flower	Days to maturity	Seeds/ pod	G/100 seeds	Plant stand/ plot	Yield (kg/ha)	New ICPL Nos.
1.	716	74174-MDT1B-27-1-MIIB-BB-1-B	MDT	88	134	3.3	9.5	57	2396	ICPL 269
2.	711	UPAS 120 (2 rows/ridge)	MDT	91	142	3.1	7.9	62	2200	-
3.	710	UPAS 120 (1 row/ridge)	MDT	89	139	2.7	7.4	58	2199	-
4	714	75001-28-B-MI-BB-2-B	MDT	92	139	2.6	7.7	61	2007	ICPL 288
5	701	74092-B-102-2-2-BB-B-B	DT	71	130	2.8	9 7	61	1929	-
6.	702	74092-B-52-1-MI-BB-2-B	DT	73	130	2.9	10.3	61	1800	-
7.	715	74209-M29B-2-BB-1-B	MDT	89	146	2 9	7 5	65	1780	-
8	709	Prabhat (2 rows/ridge)	DT	71	108	3 1	6.3	63	1731	-
9	707	75005-5-B-MI-BB-1-B	MDT	95	144	3.0	8.0	61	1709	-
10.	704	74146-B-881-1-BB-1-B	DT	93	146	3.2	11.9	56	1683	-
11.	703	74174-B-27-1-MB-BB-2-B	MDT	88	138	2.9	9 6	59	1680	-
12.	705	74092-1-1-B	DT	76	126	3.1	9 6	52	1625	-
13.	713	74209-M32B-2-BB-3-B	MDT	91	131	3.0	7.7	63	1625	
14.	708	Prabhat (1 row/ridge)	DT	72	111	3.2	6 2	64	1618	-
15.	712	74146-B-41-BB-B-B	MDT	92	133	2.7	8 1	61	1582	-
16	714	74174-B-27-1-MB-BB-1-B	MDT	88	134	3 3	9.5	57	2396	-
		Grand Mean		84	134	3.0	8.6	60	1809	-
		SEm±		0.99	1.62	-	0.18	-	67	-
		CD 5%		2.82	4.61	NS	0 51	NS	190	-
		CV %		2 6	2 7	11 2	4 7	9.6	8 2	

ble 1.63 Mean performance of early pigeonpea hybrids, male parents and checks during 1981 kharif at Hisar

Lines/Hybrids	Days to 50% flower	Days to mature	Height (cm)	Seeds per pod	100 seed weight (g)	Plant stand per plot	Grain yield		Rank	Yield as Percent of		Efficiency (kg/ha/day)
							gm/ plot	kgs/ha		UPAS 120	Male parent	
ICP 4	70	117	163	3.2	6.5	55	770	1809	10	81	-	15.5
MS-Prabhat x ICPL 4	68	119	168	3 0	7.3	51	906	2207	4	103	126	18.2
ICPL 81	79	120	198	3.5	7.4	43	819	1896	9	85	-	15.8
MS-Prabhat x ICPL 81	80	120	221	3.3	7.6	45	1255	2905	4	131	153	22.7
ICPL 87	80	140	166	3 6	11.1	34	940	2194	8	99	-	15.7
MS-T 21 x ICPL 87	95	140	250	3 8	7 9	50	1533	3549	2	160	182	25.4
ICPL 161	80	141	210	3 3	9.2	44	1128	2611	5	117	-	18.5
MS-Prabhat x ICPL 161	70	135	235	3 5	7.8	51	1685	3900	1	175	149	28.9
T 21 check)	95	145	236	3 5	7.0	54	1265	2928	3	132	-	20.2
UPAS 120 check)	80	123	206	3 1	7 3	53	961	2225	7	100	-	16.1
Grand Mean	80	131	207	3 4	7.88	48	1140	2639	-	-	-	-
SEm±	0 12	1 09	6 04	0 16	0 21	3 01	68	102	-	-	-	-
CD 5%	0 34	3 17	17 52	0 47	0 60	8 74	138	296	-	-	-	-
CV %	0 29	1 67	5 84	8 62	5 27	12 90	7 77	7 77	-	-	-	-

Table 1.64. Performance of five early pigeonpea lines at different row and plant spacings during 1979 at Hisar

Sl. No.	Entry	Rows per ridge	Plant spacing (cm)	DF	Seeds/ pod	G/100 seeds	Plant height (cm)	Pant stand at harvest		Yield /plot	Yield (kg/ha)
								per plot	per sq.m		
1	Comp. 1 OOT	1	10	60	2.5	7.5	126	53	9.8	913	1740
2	Comp. 1 OOT	1	20	60	2.8	7.4	122	33	6.1	817	1556
3	Comp. 1 OOT	2	10	60	2.7	7.6	125	113	20.9	1177	2242
4	Comp. 1 OOT	2	20	60	2.8	7.6	125	67	12.4	1093	2082
5	ICPL 2	1	10	66	2.9	7.2	126	52	9.6	1192	2271
6	ICPL 2	1	20	66	3.2	7.1	123	28	5.2	988	1883
7	ICPL 2	2	10	64	3.3	6.9	162	119	22.0	1615	3076
8	ICPL 2	2	20	66	3.0	7.3	136	66	12.2	1425	2715
9	Prabhat	1	10	66	3.5	6.0	132	52	9.6	965	1838
10	Prabhat	1	20	65	2.5	6.1	121	32	5.9	871	1659
11	Prabhat	2	10	64	3.4	5.8	137	109	20.2	1230	2342
12	Prabhat	2	20	64	3.1	5.6	133	62	11.5	1110	2114
13	ICPL 81	1	10	63	2.9	6.8	146	54	10.0	1127	2147
14	ICPL 81	1	20	63	3.1	7.3	131	31	5.6	1410	2685
15	ICPL 81	2	10	62	2.3	6.6	137	108	20.0	1300	2476
16	ICPL 81	2	20	62	2.8	6.5	143	62	11.5	1276	2430
17	ICPL 5	1	10	78	2.5	7.1	152	60	11.1	925	1814
18	ICPL 5	1	20	79	3.2	7.1	155	30	5.6	800	1523
19	ICPL 5	2	10	78	2.8	7.0	158	105	19.4	977	1861
20	ICPL 5	2	20	78	2.6	7.6	161	66	12.2	1302	2480
	Cultivars										
	SEm±			0.37	-	0.08	2.90	-	-	54.86	105
	CD 5%			1.15	NS	0.26	8.94	NS	-	169.05	322
	CV %			2.25	17.96	5.05	8.41	16.04	-	19.46	19.46
	Rows/ridge										
	SEm±			0.22	-	-	1.76	1.63	-	27.55	52.
	CD 5%			0.66	NS	NS	5.31	4.90	-	83.03	158
	CV %			2.08	13.81	4.89	8.08	15.83	-	15.46	15.46
	Planting spacing										
	SEm±						1.51	1.36	-	-	-
	CD 5%			NS	NS	NS	4.38	3.93	-	NS	NS
	CV %			1.66	17.39	4.07	6.95	13.25	-	17.84	17.84

Ridges were 75 cms apart.

Table 1.65. Mean sum of squares for early pigeonpea entries tested in a genotype x population trial during 1979, at Hisar

Source of variation	d.f.	Mean sum of squares					
		DF	Seeds/pod	G/100 seeds	Plant height (cm)	Plant stand at harvest/plot	Yield (gm/plot)
Replication	3	4.21	0.16	0.74	238.64	138.73	47873.11
Cultivar	4	882.80*	0.77	6.79*	2330.16*	30.01	3664941.58*
Error 'a'	12	2.23	0.27	0.12	134.74	100.04	48191.09
Rows/ridge	1	13.61*	0.01	0.26	1403.81*	60951.25*	1218451.61*
Cultivar x rows/ridge	4	1.73	0.26	0.41*	362.87	92.19	85695.53
Error 'b'	15	1.91	0.16	0.11	124.27	106.19	30361.90
Plant spacing	1	0.01	0.02	0.25	525.31*	24151.25*	29494.11
Cultivar x Plant spacing	4	1.32	0.64	0.07	169.47	20.25	76140.53
Plant spacing x row/ridge	1	0.11	0.09	0.03	15.31	2737.80*	5831.11
Cultivar x row/ridge x Plant spacing	4	1.36	0.41	0.23*	267.66*	62.42	79246.58
Error	30	1.22	0.26	0.08	91.98	74.27	40465.19

* Significant at 5% level of significance

Table 1.66. Mean performance of some early pigeonpea lines at different spacings in 1988 Kharif, at Hisar.

Lines	Row x Plant Spacing (cms)	Days to Flower	Days to mature	100 seed weight (gms)	Plant stand at harvest		Grain yield (kgs)	
					per plot	per m2	per plot	per hectare
Comp.1ODT	30 x 10	60	104	7.8	134	31.8	1.00	2376
Comp.1ODT	30 x 20	59	104	7.6	69	16.5	0.96	2295
Comp.1ODT	30 x 30	59	104	7.6	50	11.9	0.80	1904
Comp.1ODT	60 x 10	59	104	7.6	68	16.3	0.90	2131
Comp.1ODT	60 x 20	60	104	7 6	36	8.5	0.69	1644
Comp.1ODT	60 x 30	60	104	7 7	27	6.5	0.67	1592
PRABHAT	30 x 10	70	108	6.7	137	32.7	1.01	2398
PRABHAT	30 x 20	70	108	6 5	69	16.4	0.97	2312
PRABHAT	30 x 30	71	108	6.7	49	11.6	0.85	2034
PRABHAT	60 x 10	71	108	6.7	66	15.6	1.00	2376
PRABHAT	60 x 20	71	108	6.5	36	8.7	0.87	2074
PRABHAT	60 x 30	72	108	6 6	25	5.9	0.73	1734
ICPL 7	30 x 10	84	147	9 0	135	32.1	0.80	1904
ICPL 7	30 x 20	84	147	9.0	70	16.7	0.86	2050
ICPL 7	30 x 30	84	147	9.1	48	11.5	0.71	1687
ICPL 7	60 x 10	84	147	9.0	68	16.1	0.84	2006
ICPL 7	60 x 20	84	147	9.0	36	8.5	0.73	1730
ICPL 7	60 x 30	84	147	9.0	27	6.4	0.66	1563
ICPL 81	30 x 10	81	115	7.2	135	32.3	1.04	2485
ICPL 81	30 x 20	80	115	7.0	71	17.0	1.22	2895
ICPL 81	30 x 30	81	115	7.2	46	11.1	1 07	2547
ICPL 81	60 x 10	82	115	7.2	68	16.3	1.21	2878
ICPL 81	60 x 20	81	115	7.1	36	8.6	1.06	2531
ICPL 81	60 x 30	81	115	7.5	24	5.7	0.95	2265
ICPL 2	30 x 10	82	127	7.5	135	32.1	1.18	2801
ICPL 2	30 x 20	82	127	7.7	71	16.9	1.14	2713
ICPL 2	30 x 30	82	127	7.5	51	12.2	1.04	2476
ICPL 2	60 x 10	82	127	7.7	66	15.8	1.24	2946
ICPL 2	60 x 20	82	127	7.7	33	7.9	1.06	2531
ICPL 2	60 x 30	82	127	7.4	26	6.2	1.03	2452
ICPL 5	30 X 10	93	143	7.7	135	32.3	1.02	2435
ICPL 5	30 x 20	93	143	7 7	68	16.3	1.04	2479
ICPL 5	30 x 30	93	143	8.0	47	11.3	0.98	2340
ICPL 5	60 x 10	93	143	7.8	66	15.8	1.06	2522
ICPL 5	60 x 20	93	143	7.7	34	8.1	0.95	2255
ICPL 5	60 x 30	93	143	7.9	25	6.1	0.84	2003
Grand Mean		78.3	123.9	7.7	63.7	-	0.95	2265
Entries	SEm±	0 32	0 45	0.06	-	-	0.019	45.5
	CD5%	0.89	1.35	0.17	NS	-	0.057	135.7
	CV%	1.84	1.77	3.68	5.84	-	9.84	9.8
Row Spacings	SEm±	-	-	-	0.41	-	0.006	15.1
	CD5%	NS	NS	NS	1.22	-	0.019	45.2
	CV%	1.03	0.067	3.75	5.47	-	5.63	5.6
Plant Spacings	SEm±	-	-	-	0.40	-	0.009	23.5
	CD5%	NS	NS	NS	1.13	-	0.028	66.7
	CV%	0 99	0.07	3.75	4.37	-	7.23	7.2

Table 1.67. Mean sum of squares for the early pigeonpea entries, row and plant spacings and interactions in genotypes x population trial (1988 Kharif, Hisar)

Source of variation	d.f.	sum of squares				
		Days to flower	Days to mature	100 seed weight (gms)	Stand per plot	Grain yield per plot (kgs)
Replication(R)	3	3.94	13.95	0.372	39.45	0.004
Entries (E)	5	3222.86*	7852.77*	15.518*	3.69	0.490*
Error 'a'	15	2.09	4.81	0.079	10.33	0.008
Row spacings(RS)	1	2.25	0.01	0.004	63378.06*	0.216*
E x RS	5	0.80	0.01	0.021	7.67	0.029*
Error 'b'	18	0.65	0.01	0.082	12.16	0.003
Plant - spacings (PS)	2	0.71	0.01	0.088	53757.92*	0.281*
EXPS	10	0.57	0.01	0.108	9.64	0.004
PS x RS	2	0.14	0.01	0.002	6626.68*	0.075*
E x RS x PS	10	0.57	0.01	0.031	6.35	0.010*
Error 'c'	72	0.60	0.01	0.082	7.76	0.005

* Significant at 5% level of significance

Table 1.68. Performance of early pigeonpea advance lines at different plant spacings at two dates of planting in 1981 kharif, Hisar.

Entry No.	ICPL Lines	Spacings	Pop./ha (mill.)	DF	DM	Height (cms)	Plant stand per m2	Plant stand per plot	Seed/ pod	100 Seed Wt. (gms)	Yield gms/ plot	Yield Kg/ ha
I - (JUNE SOWING (D1) (26 JUNE, 1981):												
C1P1	ICPL 267	30 cm x 2.5 cm	1.33	90	97	139	50	322	3.2	7.0	1267	1955
C1P2		30 cm x 5 cm	0.66	57	96	135	43	281	2.9	7.0	1117	1724
C1P3		30 cm x 10 cm	0.33	52	95	136	28	181	3.1	6.8	1097	1693
C1P4		30 cm x 15 cm	0.22	51	96	134	17	112	3.2	7.8	1051	1622
C1P5		30 cm x 30 cm	0.11	52	95	124	9	56	3.3	7.9	799	1233
C1P6		30 cm x 60 cm	0.055	55	97	119	5	32	2.8	7.4	589	909
C2P1	ICPL 87	30 cm x 2.5 cm	1.33	63	148	159	43	280	3.8	10.2	1766	2725
C2P2		30 cm x 5 cm	0.66	67	147	155	34	219	3.7	10.2	1675	2585
C2P3		30 cm x 10 cm	0.33	66	147	151	18	120	3.7	10.5	1712	2642
C2P4		30 cm x 15 cm	0.22	66	147	150	15	100	3.4	10.5	1613	2489
C2P5		30 cm x 30 cm	0.11	69	148	165	9	61	3.7	10.7	1564	2414
C2P6		30 cm x 60 cm	0.055	72	151	151	7	44	3.6	10.1	1237	1909
C3P1	ICPL 81	30 cm x 2.5 cm	1.33	71	122	212	50	326	3.1	6.8	1911	2949
C3P2		30 cm x 5 cm	0.66	71	121	208	39	250	3.3	6.5	1693	2613
C3P3		30 cm x 10 cm	0.33	72	122	214	24	158	3.4	7.7	1662	2565
C3P4		30 cm x 15 cm	0.22	72	121	208	20	130	3.3	7.1	1565	2415
C3P5		30 cm x 30 cm	0.11	71	120	206	10	68	3.2	7.2	1360	2099
C3P6		30 cm x 60 cm	0.055	72	120	196	7	48	3.4	6.8	1103	1702
C4P1	ICPL 142	30 cm x 2.5 cm	1.33	92	142	194	34	222	3.6	7.4	1142	1762
C4P2		30 cm x 5 cm	0.66	92	142	197	31	200	3.7	7.5	1398	2157
C4P3		30 cm x 10 cm	0.33	87	139	211	16	106	3.5	7.1	1415	2184
C4P4		30 cm x 15 cm	0.22	87	136	202	13	86	3.8	7.4	1482	2287
C4P5		30 cm x 30 cm	0.11	90	135	207	10	67	3.8	6.8	1330	2052
C4P6		30 cm x 60 cm	0.055	89	136	205	7	43	3.6	7.9	1317	2032
II. JULY SOWING (D2) (21 JULY, 1981):												
C1P1	ICPL 267	30 cm x 2.5 cm	1.33	56	99	115	66	428	3.0	5.7	1446	2231
C1P2		30 cm x 5 cm	0.66	55	96	120	59	384	2.9	5.8	1435	2214
C1P3		30 cm x 10 cm	0.33	57	96	115	28	179	2.9	6.4	1161	1792
C1P4		30 cm x 15 cm	0.22	55	99	116	26	166	2.9	6.5	1212	1870
C1P5		30 cm x 30 cm	0.11	56	103	100	13	83	3.1	6.5	1026	1583
C1P6		3 cm x 60 cm	0.055	59	105	102	6	37	3.1	7.3	936	1444
C2P1	ICPL 87	30 cm x 2.5 cm	1.33	67	130	126	74	479	3.8	9.7	1429	2205
C2P2		3 cm x 5 cm	0.66	67	131	137	56	364	3.4	9.3	1250	1929
C2P3		30 cm x 10 cm	0.33	69	132	130	26	172	3.5	9.8	1244	1920
C2P4		30 cm x 15 cm	0.22	67	131	149	20	132	3.7	10.5	1278	1972
C2P5		30 cm x 30 cm	0.11	69	130	132	13	83	3.3	10.0	1159	1789
C2P6		30 cm x 60 cm	0.055	69	133	119	5	33	3.6	10.5	976	1506
C3P1	ICPL 81	30 cm x 2.5 cm	1.33	67	117	153	72	465	3.5	6.7	1292	1994
C3P2		3 cm x 5 cm	0.66	65	114	166	57	371	3.4	6.3	1407	2171
C3P3		30 cm x 10 cm	0.33	65	118	165	31	200	3.4	6.2	1268	1957
C3P4		30 cm x 15 cm	0.22	65	112	166	24	158	3.5	5.7	1175	1813
C3P5		30 cm x 30 cm	0.11	65	111	156	11	74	3.3	6.1	1131	1745
C3P6		30 cm x 60 cm	0.55	67	120	154	6	37	3.4	6.7	1012	1562
C4P1	ICPL-142	30 cm x 2.5 cm	1.33	77	133	159	77	501	3.4	6.6	1024	1580
C4P2		30 cm x 5 cm	0.66	70	130	168	57	368	3.5	6.6	1096	1691
C4P3		30 cm x 10 cm	0.33	70	130	157	29	187	3.3	7.4	1088	1679
C4P4		30 cm x 15 cm	0.22	70	131	166	25	162	3.3	7.5	1045	1613
C4P5		30 cm x 30 cm	0.11	70	131	151	11	70	3.7	7.3	1072	1654
C4P6		30 cm x 60 cm	0.055	69	133	163	5	31	3.4	8.0	894	1380
Planting details:		SEm±		0.32	0.76	2.96	-	13.09	-	-	29	-
		CD-5%		1.02	2.43	9.44	-	41.65	NS	NS	91	-
		CV-%		3.30	4.32	13.09	-	50.19	9.02	25.85	15.58	-
Cultivars:		SEm±		0.21	0.77	2.04	-	-	0.03	0.30	18	-
		CD5%		0.63	2.30	6.08	-	NS	0.09	0.85	52	-
		CV%		2.18	4.37	9.03	-	21.68	6.19	26.03	9.49	-
Plant spacing: (Population)		SEm±		0.16	0.54	2.21	-	6.65	-	-	21	-
		CD-5%		0.45	1.50	6.19	-	18.63	NS	NS	57	-
		CV-%		1.34	2.48	7.97	-	20.83	8.52	29.67	9.00	-

Table 1.69. Mean sum of squares for date of planting x cultivar x population trial (1981 Kharif, Hisar

Source of variation	d.f.	Mean sum of squares						
		Days to flower	Days to mature	Plant height (cm)	Seeds/ pod	g/100 seeds	Plant stand/ plot	Yield (kg/ plot)
Replication	3	0.72	42.46	396.99	0.715	1.702	1414.67	0.015
Planting date	1	1045.33*	1906.38*	50440.33*	0.270	2.390	226806.25*	1.928*
Error 'a'	3	4.97	20.14	423.81	0.092	4.137	8227.31	0.039
Cultivar	3	5561.87*	16976.76*	43320.76*	3.170*	115.545*	4810.76	1.895*
Planting date x cultivar	3	1232.65*	884.31*	2100.87*	0.304*	3.675	6120.60*	0.932*
Error 'b'	18	2.10	28.83	201.56	0.043	4.19[illegible]	1536.22	0.014
Population	5	23.71*	28.52*	671.58*	0.062	9.999	573978.93*	0.727*
Planting date x population	5	13.79*	26.89*	377.84*	0.054	8.634	42433.50*	0.032*
Cultivar x population	15	24.43*	20.28*	130.80	0.086	4.092	950.92	0.089*
Planting date x cultivar x population	15	4.05*	15.97	129.55	0.069	5.423	2092.70	0.030*
Error 'c'	120	0.82	9.26	156.82	0.082	5.451	1417.50	0.013

* Significant at 5% level of significance

Table 1.70. Performance of early pigeonpea advanced lines tested in April planting intercropped with mungbean planted in May, during 1980, at Hisar.

Sl. No.	Ent. No.	Pedigree	Days to flower	Days to mat.	Seeds per pod	g/100 seed	Plant stand/ plot	Yield/plot (kg)		Yield/hect (kg)	
								Grain	Dried stalk	Grain	Dried stalk
1	110	ICPL 189	134	197	3.1	8.8	36	2.53	18.03	2692	19184
2	103	ICPL 81	124	165	3.0	7.6	35	2.26	13.97	2400	14857
3	102	ICPL 2	130	174	3.0	7.6	39	1.93	12.80	2049	13616
4	107	ICPL 142	144	187	3.3	8.2	35	1.87	14.07	1991	14964
5	101	T 21	151	192	3.1	7.8	36	1.75	11.47	1863	12198
6	106	ICPL 5	143	183	3.6	8.8	37	1.73	14.37	1844	15283
7	109	ICPL 184	126	195	3.2	12.0	36	1.71	14.17	1822	15070
8	108	ICPL 161	148	189	3.7	9.6	34	1.67	14.20	1778	15105
9	104	ICPL 85	149	184	3.0	8.0	37	1.63	11.87	1731	12624
10	105	ICPL 89	139	180	2.9	9.1	36	1.39	9.73	1475	10354
Grand Mean			139	184	3.2	8.7	36	1.85	13.47	1964	14325
SEm±			2.2	1.9	0.17	0.24	-	0.09	0.92	93	983
CD5%			6.6	5.6	0.50	0.72	NS	0.26	2.75	276	2922
CV%			2.7	1.8	9.11	4.83	10.6	8.21	11.89	8.21	11.89

Table 1.71. Performance of early genotypes and mung bean planted in April, 1981 at Hisar.

Sl. No.	Entry	Gr. Habit	DF	DM	Plant Height (cm)	Seeds/ pod	100 seed Wt. (g)	Pigeon-pea plant stand	Green Fodder yield (kg/ ha)	Pigeon-pea dried stalk yield (Q/ha)	Grain yield (kg/ha)		
											Mung	Pigeon-pea	Total (mung+ pigeon-pea)
1	ICPL 148	DT	117	196	237	3.5	9.4	35	2716	117	873	2733	3606
2	ICPL 87	DT	75	202	224	3.8	10.1	31	2748	118	727	2799	3526
3	ICPL 1	MDT	134	186	274	3.3	7.9	27	2515	106	844	2633	3477
4	T 21	MDT	152	197	289	3.4	7.6	33	1898	140	972	2503	3475
5	ICPL 155	DT	118	203	222	3.5	7.8	26	552	100	784	2645	3429
6	ICPL 140	DT	85	200	229	3.7	10.4	29	2748	109	815	2525	3340
7	ICPL 185	MDT	146	194	276	3.6	9.7	23	1548	98	804	2514	3318
8	ICPL 154	DT	115	177	236	3.3	9.6	24	2641	94	877	2367	3244
9	ICPL 150	MDT	162	209	299	3.3	9.2	27	1276	124	929	2261	3190
10	ICPL 189	MDT	161	210	313	3.4	8.4	30	1824	122	912	2241	3153
11	ICPL 81	MDT	126	172	262	3.2	7.2	30	2183	115	787	2256	3043
12	ICPL 142	MDT	144	195	261	3.5	8.3	30	1558	108	855	2145	3000
13	UPAS 120	MDT	135	174	281	3.5	7.3	35	1318	123	931	1966	2897
14	ICPL 267	DT	57	162	171	3.1	7.2	33	1332	60	741	1833	2574
15	ICPL 169	DT	88	199	226	3.6	9.8	28	2350	109	728	1785	2513
16	ICPL 179	DT	54	169	174	3.2	7.6	32	2055	64	810	1569	2379
	Grand Mean		116	190	248	3.4	8.6	30	1954	106	835	2299	
	SEm±		2.2	1.7	9.7	0.12	0.16	2.1	-	8.9	-	173	-
	CD5%		6.4	4.8	27.5	0.36	0.47	5.9	NS	25.3	NS	494	-
	CV%		4.3	2.0	8.7	8.3	4.3	15.6	29.6	18.8	14.4	16.9	-

Table 1.72. Performance of early pigeonpea planted in June, 1981 at Hisar for comparison with April sowing.

Sl. No.	Entries	Gr Habit	DF	DM	Plant Height (cm)	Seeds/ pod	100 seed Wt. (g)	Plant stand	Dried stalk yield (kg/ha)	Grain yield (kg/ha)	
										June sowing	April sowing
1	ICPL 81	MDT	74	121	183	3.0	6.7	153	6636	3137	2256
2	ICPL 1	MDT	86	132	199	2.9	7.1	142	5247	3110	2633
3	ICPL 148	DT	74	145	168	3.2	9.3	135	5064	3032	2733
4	ICPL 87	DT	75	145	165	3.7	10.3	149	5247	3031	2799
5	T 21	MDT	92	150	233	3.3	6.8	158	8487	2863	2503
6	ICPL 155	DT	74	147	195	3.0	8.3	144	6481	2704	2645
7	ICPL 189	MDT	99	162	259	3.5	8.4	144	8950	2573	2241
8	ICPL 140	DT	75	145	169	3.0	9.8	155	5710	2562	2525
9	ICPL 154	DT	74	135	162	2.9	9.4	130	7253	2253	2367
10	ICPL 169	DT	74	145	173	3.0	9.4	146	6018	2545	1785
11	ICPL 150	MDT	99	164	217	2.9	9.7	133	9722	2458	2261
12	ICPL 142	MDT	86	150	218	3.7	7.9	139	6173	2437	2145
13	UPAS 120	MDT	84	150	253	3.0	8.2	130	7561	2403	1966
14	ICPL 185	MDT	90	145	195	3.4	9.1	130	5401	2341	2514
15	ICPL 179	DT	54	95	120	2.8	7.6	163	4938	2207	1569
16	ICPL 267	DT	55	93	131	2.3	7.3	143	4012	2079	1833
	General Mean		79	139	190	3.1	8.4	143	6481	2600	2299
	SEm±		0.6	0.5	8.8	0.15	0.16	8.3	808	171	173
	CD5%		1.7	1.5	25.4	0.42	0.48	24.11	2839	495	494
	CV%		1.2	0.6	7.9	8.1	3.4	8.6	21.5	11.4	16.9

Table 1.73. Performance of early pigeonpea lines tested in the ICP 6 pure lines test during 1979, at Hisar.

Sl. No	Pedigree	DF	Seeds per pod	g/100 seeds	Plant hight (cms)	Mean plant stand/ plot	Mean yield gms/ plot	Yield (kg/ha)	New ICPL Nos.
1	T21	76	3.1	7.0	129	25	977	1861	
2	ICP6-26-1-7-5-BB-BB-B	82	3.1	7.0	137	26	936	1782	ICPL249
3	ICP6	70	3.3	7.1	135	25	933	1778	
4	ICP6-26-1-5-5-BB-BB-B	81	3.1	7.0	133	26	899	1713	
5	ICP6-26-1-5-4-BB-BB-B	82	3.3	7.1	136	26	891	1698	
6	ICP6-26-1-3-1-BB-BB-B	82	3.1	6.6	128	26	819	1560	
7	ICP6-26-1-7-4-BB-BB-B	82	2.8	6.6	133	26	796	1516	
	Grand mean	79	3.14	6.93	133	26	893	1701	
	SEm±						39.21	75	
	CD-5%	NS	NS	NS	NS	NS	112.5	214	
	CV %	13.1	10.1	5.8	5.8	7.6	11.6	11.6	

Table 1.74. Plant and grain characteristics of the early pigeonpea lines tested in ICP 3868 pure lines test during 1979, Hisar.

Sl. No	Pedigree	DF	Seeds/ pod	g/100 seeds	Plant height (cms)	Mean plant stand/ plot	Mean yield (gms/ plot	Yield (kg/ha)	New ICPL Nos.
1	T 21	75	3.2	7.2	144	26	972	1851	
2	ICP 3868-2-4-3-B-B-B	75	3.2	9.5	150	25	913	1739	ICPL 164
3	ICP 6	80	3.1	7.3	134	26	894	1703	
4	ICP 3868-2-8-3-B-B-B	69	3.5	10.7	155	25	887	1690	ICPL 150
5	ICP 3868-2-5-2-B-B-B	74	3.3	10.2	136	24	864	1646	
6	ICP 3868-2-4-4-B-B-B	78	3.5	10.8	159	25	864	1646	
7	ICP 3868-1-B-35-B-B-B	74	3.4	10.7	137	27	811	1546	
	Grand mean	75	3.3	9.5	145.2	24.7	886.5	1688	
	SEm±			-	-	0.17	3.6	-	- -
	CD5%	NS	NS	0.49	10.30	NS	NS	NS	
	CV%	13.81	11.4	4.80	6.5	12.7	12.7	12.7	

Table 1.75. Percent infection of some promising advanced early maturity pigeonpea lines against major diseases in 1980 kharif*

Sl. No.	1979 HK Plot Nos.	Pedigree	Sterility Mosaic Nursery		Wilt Nursery	Phytophthora pot culture
			% SM	% RS	% wilt	% blight
1	7	75002-11-1-BB-5-B	5.9	-	-	-
2	12	73047-14-1-B-1-B-BB-3-B	-	-	-	0.0
3	13	73047-14-1-B-1-B-BB-4-B	-	-	-	0.0
4	14	73047-19-7-1-B-BB-1-B	-	-	-	8.7
5	16	73047-19-7-1-B-BB-2-B	-	-	-	0.0
6	22	74205-B-104-1-BB-1-B	0.0	4.8	-	-
7	28	74149-B-33-2-BB-1-B	4.9	-	-	-
8	31	74216-B-21-2-BB-1-B	1.9	-	-	-
9	57	74146-B-23-1-H1-BB-B-B	0.0	-	-	-
10	86	74146-B-18-1-H1-BB-B-B	0.0	15.1	-	-
11	697	75080-1-B-H3-BB-2-B	-	-	-	0.0
12	715	75080-39-B-H6-BB-1-B	-	-	-	0.0
13	802	74146-B-H81-1-BB-1-B	6.8	-	-	-
14	804	74146-B-H83-3-BB-1-B	6.5	-	-	-
15	832	75080-3-B-H3-BB-1-B	-	-	-	4.2
16	836	75080-61-B-H1-BB-1-B	-	-	-	0.0
17	871	74092-B-H110-1-BB-1-B	3.3	-	-	-
18	925	74209-B-8-B-1-B	-	-	10.8	-
19	939	75006-46-2-BB-1-B	5.3	76.3	-	-
20	940	75016-10-1-BB-1-B	5.9	73.5	-	-
21	1095	73039-RbB-W4B-W1B-WBB-1-B (ICPL-95)	-	-	3.6	-
22	1113	75149-B-18-1-H1-BB-B-B	1.5	4.6	-	-
23	1114	750001-6-B-H1-BB-1-B	5.7	-	-	-

* Lines showing only upto 10% infection are listed here (- indicates more than 10% infection)

Table 1.76 Yield and percent infection of some promising advanced early maturity pigeonpea lines against major diseases in 1981 Kharif*

Sl. No	1980 MP Nos.	Pedigree	Disease reaction in 1981 ICRISAT Center Nurseries			Days to mat. at Niser	Yield (kg/ha) at Niser
			% SM	% Blight (P2)	% Wilt		
1	E-402	ICPL 166	5.4	-	-	163	2307
2	E-716	ICPL 269	2.7	-	33.0	141	1847
3	E-858	ICPL 292	14.6(RS)	-	-	165	2258
4	E-838	75080-39-B-M4-BB-M1-MB-MB	9.7	20.0	-	145	2083
5	P-598	74209-1-104-M1-BB-M1-M3-MB	0.0	-	-	150	1851
6	P-1288	74075-1-B-MB2-M4-BB-M1-M3-MB	7.5	-	-	147	1597
7	P-1332	74174-B-1-2-M2-BB-M4-MB	0.0	0.0	-	148	2009
8	E-428	ICPL 185	-	5.9	28.0	138	2878
9	E-415	ICPL 161	-	9.5	-	145	2296
10	E-523	ICPL 177	-	0.0	10.0	115	1833
11	E-404	ICPL 149	-	4.2	-	151	2248
12	E-625	ICPL 268	-	6.3	15.0	110	1198
13	E-623	ICPL 287	-	5.0	21.4	106	2022
14	E-413	ICPL 158	-	5.0	-	136	1444
15	E-522	ICPL 171	-	0.0	-	150	1323
16	E-9008	ICPL 170	-	0.0	16.7	147	2225
17	P-1408	ICPL 107	-	0.0	28.7	160	1043
18	E-1005	ICPL 294	-	6.3	-	175	1201
19	P-627	Comp 1ODT M10-BB-MB-MB	-	4.8	25.0	123	2193
20	E-9031	74092-B-1A-1-M5-MB-BB-MB-MB	-	0.0	20.5	145	2290
21	E-9053	75025-1-B-M1-BB-M1-MB-MB	-	0.0	-	138	2055
22	E-9107	74078-1-B-10-B-M5-B-M7-MB-MB	-	0.0	4.7	145	2699
23	E-9058	75080-1-B-M3-BB-M2-MB-MB	-	0.0	15.4	149	1951
24	E-9100	75021-3-B-M1-BB-M1-MB-MB	-	0.0	16.1	155	1793
25	E-106.	76141-22-MB-MB		0.0	15.4	147	2412
26	P-2979	Comp 1ODT-M1-MB	-	0.0	-	91	2177
27	P-3011	Comp.1ODT-M22--MB	-	4.8	6.7	97	2252
28	P-3017	Comp.1ODT-M43-MB	-	0.0	17.5	97	2032
29	P-3096	Comp.1ODT-M2-M7-MB	-	0.0	13.5	93	2017
30	P-3776	Comp.1ODT-M6-MB	-	0.0	14.3	99	2039
31	P-3778	Comp.1ODT-M7-MB	-	0.0	16.7	91	2434
32	P-3785	Comp.1ODT-M11-MB		4.3	16.7	90	2032
33	P-3800	Comp.1ODT-M23-MB	-	0.0	6.8	92	2077
34	P-4603	QP262	-	0.0	15.4	138	2073
35	P-4519	QP185	-	0.0	25.9	142	1628
36	P-4520	QP186	-	0.0	-	146	2377
37	P-4542	QP225	-	5.6	-	147	1556
38	P-4570	QP232	-	0.0	29.4	147	1759
39	P-4585	QP245	-	0.0	-	129	1150
40	T-487	77007-M4-M4-MB	-	0.0	-	146	1685
41	P-1069	74092-B-27-B-M1-BB-M2-M4-MB	-	0.0	0.0	142	1903
42	P-4623	QP280	-	0.0	25.0	150	1415
43	P-1386	74092-B-15-M1-BB-M1-M1-MB	-	0.0	9.7	155	2441
44	P-3935	Com 1IIINDT-M3-MB	-	0.0	29.0	160	1887
45	E-207	ICPL 87	-	-	3.7	140	3131

46	E-425	ICPL 142	-	-	0.0	145	3571
47	E-410	ICPL 155	-	-	0.0	137	2296
48	E-418	ICPL 165	-	0.0	0.0	125	2293
49	E-401	ICPL 143	-	-	10.0	127	2360
50	E-417	ICPL 163	-	-	9.1	120	2406
51	E-831	ICPL 289	-	-	6.5	135	3082
52	E-714	ICPL 288	-	13.0	10.0	153	1944
53	E-810	74068-11-B-5-B-H1-HB-HB-HB-HB	-	-	7.7	126	2218
54	E-843	74436-31-B-1-1-H2-HB-BB-HB-HB	-	-	8.3	128	2412
55	E-9019	74092-B-16-H1-H2-BB-HB-HB	-		4.1	124	3284
56	E-9053	74092-B-16-1-H2-BB-HBB HB-HB	-	-	6.7	129	3198
57	E-9119	74078-1-B-10-B-H5-B-HB-HB	-	31.6	0.0	146	3123
58	E-1043	74209-B-H78-H6-HB	-	-	8.8	135	2824
59	E-848	74075-1-B-H52-H3-BB-H1-HB	-	-	7.4	135	2052
60	E-9063	Comp.IIIDT-HB-HB-HB	-	-	10.0	144	1827
61	E-9064	Comp.IIIDT-H9-HB-HB	-	-	0.0	139	1870
62	E-9110	K1-248-1-HB-HB-H2-HB-HB	-	-	0.0	144	2227
63	E-1042	74209-B-H77-H215-HB	-	-	0.0	134	2900
64	P-3003	Comp.1ODT-H14-HB	-	11.8	0.0	98	2492
65	P-3784	Comp.1ODT-H10-HB	-	10.5	3.0	92	2113
66	P-3790	Comp.1ODT-H15-HB	-	-	0.0	93	2309
67	P-3798	Comp.1ODT-H21-HB	-	-	0.0	91	2248
68	P-4580	QP242	-	25.0	9.5	133	1651
69	P-1181	75080-36-B-H4-BB-H1-H4-HB	-	-	4.9	148	1843
70	P-1904	T21-H78-BB-H60-HB	-	-	4.1	145	3187
71	P-901	74092-B-16-1-H2-BB-H2-HB	-	-	0.0	133	2863
72	P-1044	74075-1-B-H52-H1-BB-H4-BB HB	-	-	0.0	138	2026
73	P-3171	76115-H112-H1-HB	-	-	0.0	142	2895
74	P-473	76115-H151-HB	-	-	0.0	127	1795
75	P-2216	74209-B-8-H1-H1-HB	-	-	5.7	156	2799
	Prabhat	a	-	-	-	115	2063
	UPAS-120	a	-	-	-	147	2553

* Only those lines showing less than 10% infection against any one of the three diseases are listed here (- indicates morethan 30% infection)

RS = Ringspots

a Mean of six different trials

Table 1.77. Mean root length and width of five early maturity pigeonpea lines at 27th June (Hisar) and 11th July (Gwalior) sowings during 1980 Kharif.

Lines	Mean Root Length (cm)		Mean Root Spread (cm)	
	27 JUNE SOWING (HISAR)	11 JULY SOWING (GWALIOR)	27 JUNE SOWING (HISAR)	11 JULY SOWING (GWALIOR)
ICPL 4	34	22	34	33
ICPL 87	49	29	38	50
ICPL 81	45	26	21	43
ICPL 1	40	29	22	46
ICPL 5	42	24	29	33
Mean	42	26	29	41

		Root Lenth (cms)	Root width (cms)
SOWING DATES	SEm+	0.473	0.920
	CD-5%	2.038	3.958
	CV%	5.39	10.19
LINES	SEm+	1.517	NS
	CD-5%	3.681	-
	CV%	12.50	25 25

Table 1.78. Mean sum of squares for root length and width of different lines from 27 June (Hisar) and 11 July (Gwalior) sowings during 1980 Kharif.

Source of variation	d.f.	Mean sum of squares	
		Root Length (cms)	Root Width (cms)
Replication	2	11.347	50.700
Sowing dates (SD)	1	1929.612*	1134.675*
Error 'a'	2	3.367	12.700
Lines (L)	4	96.632*	162.950
SD x L	4	24.249	182.383
Error 'b'	16	18.096	78.022

* Significant differences at 5% level of significance.

Table 1.79. Pod borer and pod fly infestation in early pigeonpea lines with different pod colors during 1980 Kharif at Hisar.

Lines	Pod color	Days to flower	100 seed wt. (gms)	Mean pods per plant	Percent infestation	
					Pod Borer	Pod Fly
ICPL 175	Green	70	8.7	206	10.1	7.6
ICPL 144	Green	70	8.6	189	10.0	7.4
Mean				198	10.1	7.5
ICPL 165	GPS	74	8.6	216	16.5	10.8
ICPL 169	GPS	72	9.6	191	14.2	8.5
Mean				203	15.3	9.7
ICPL 178	Purple	78	12.4	113	8.0	5.5
ICPL 181	Purple	76	10.8	96	9.7	5.4
Mean				104	8.9	5.4
SEm+				7.42	0.83	
CD 5%				21.35	2.39	NS
CV%				10.8	17.8	46.8

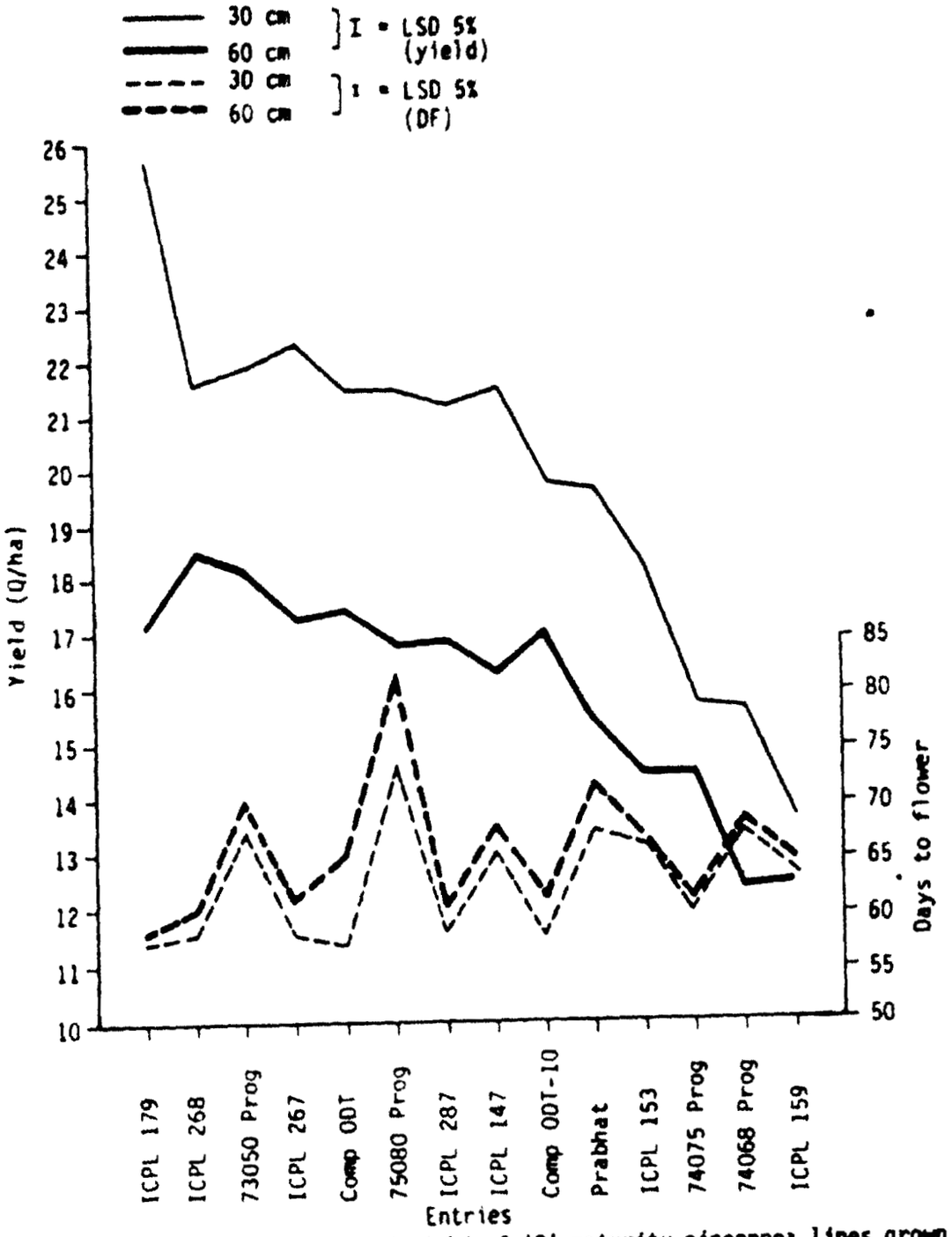

Figure 1.1: Days to flower and yield of '0' maturity pigeonpea lines grown at two row spacings in 1980 at Hisar

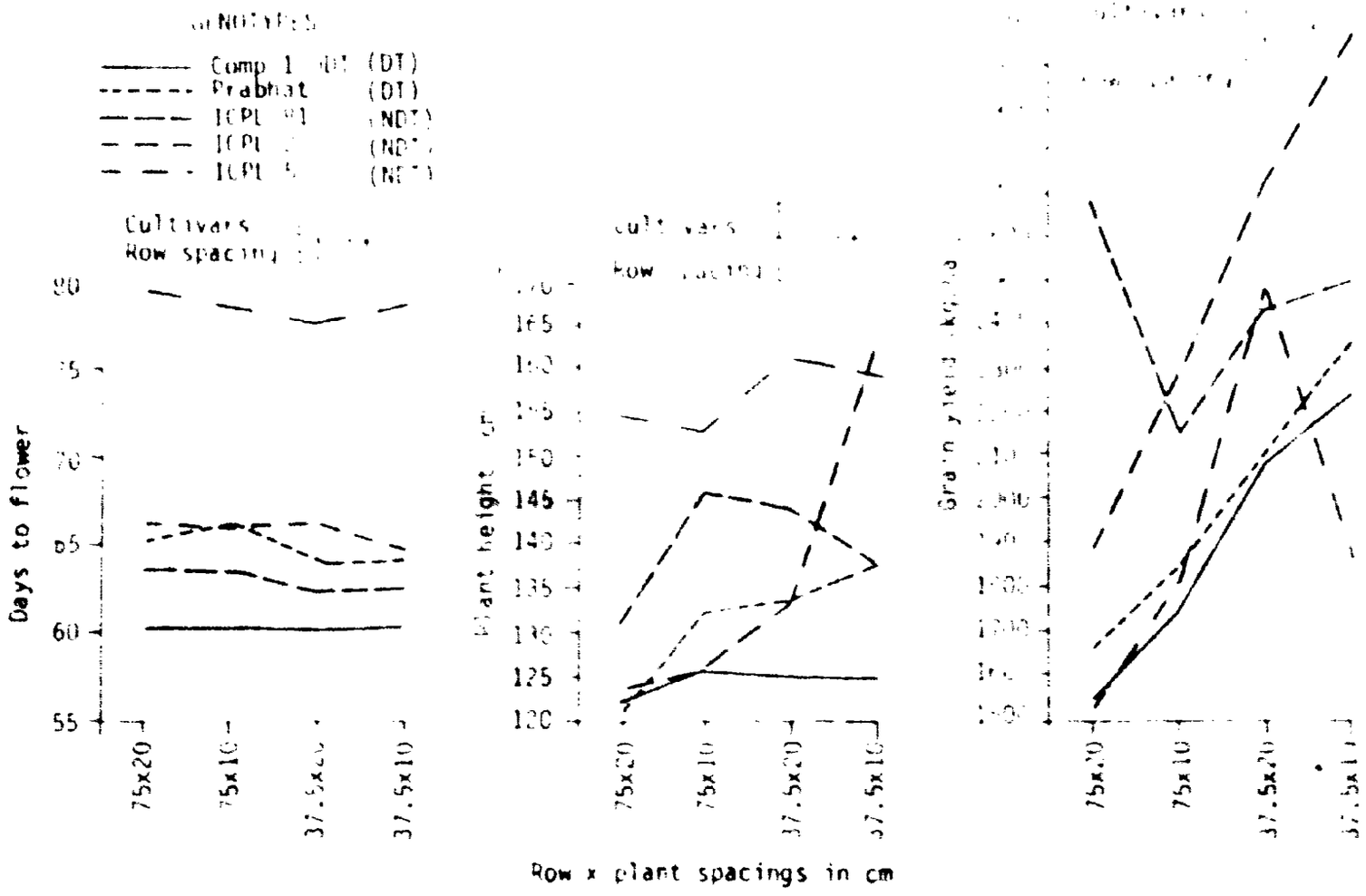

Figure 1.2: Days to flower, plant height and grain yield of five pigeonpea genotypes at different plant and row spacings in 1979 kharif at Hisar

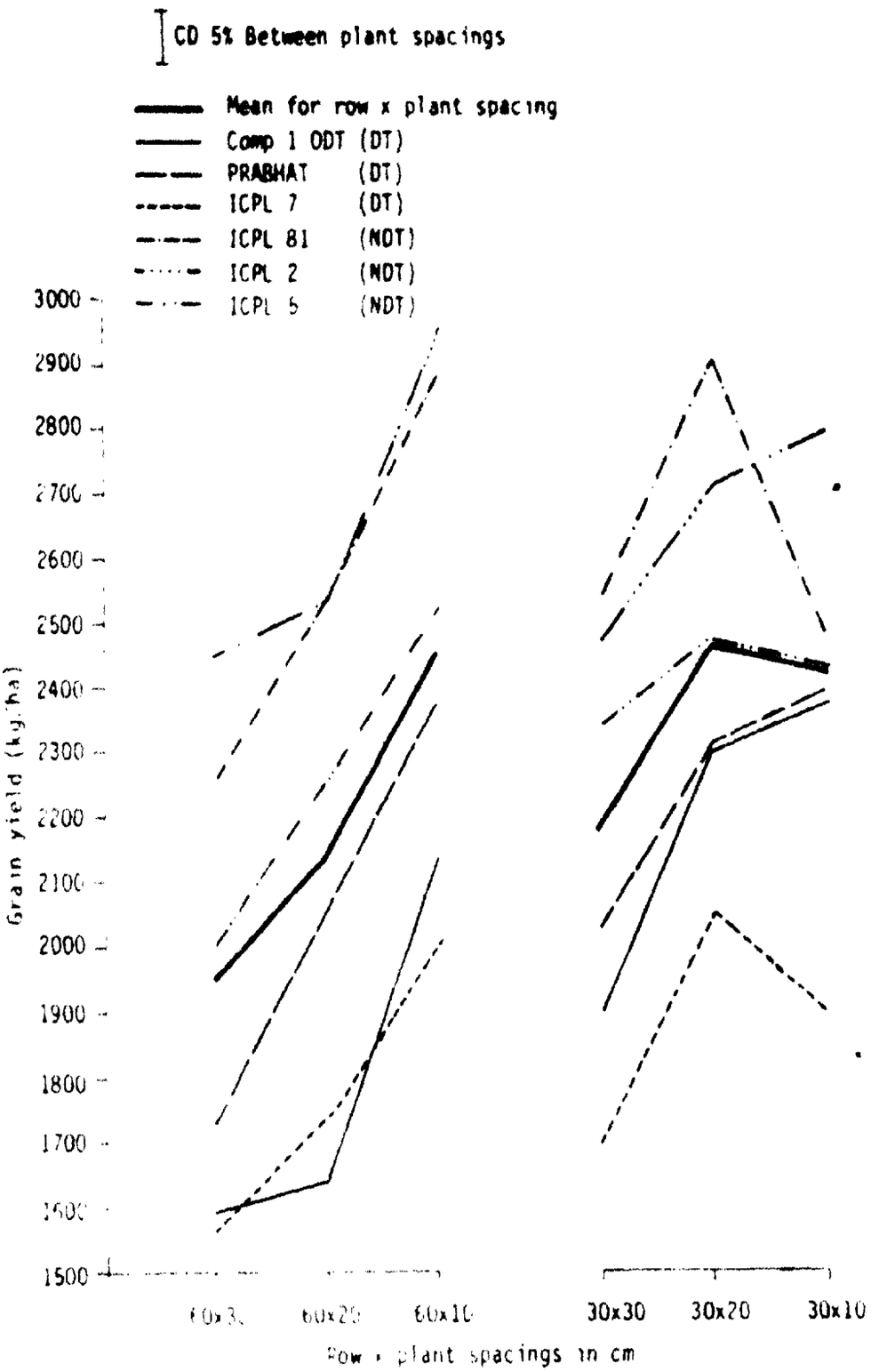

Figure 1.3: Mean grain yield of six early pigeonpea cultivars at different plant and row spacings in 1980 kharif, Hisar

Figure 1.4: Mean grain yield of six early pigeonpea cultivars at different plant and row spacings in 1980 kharif at Hisar

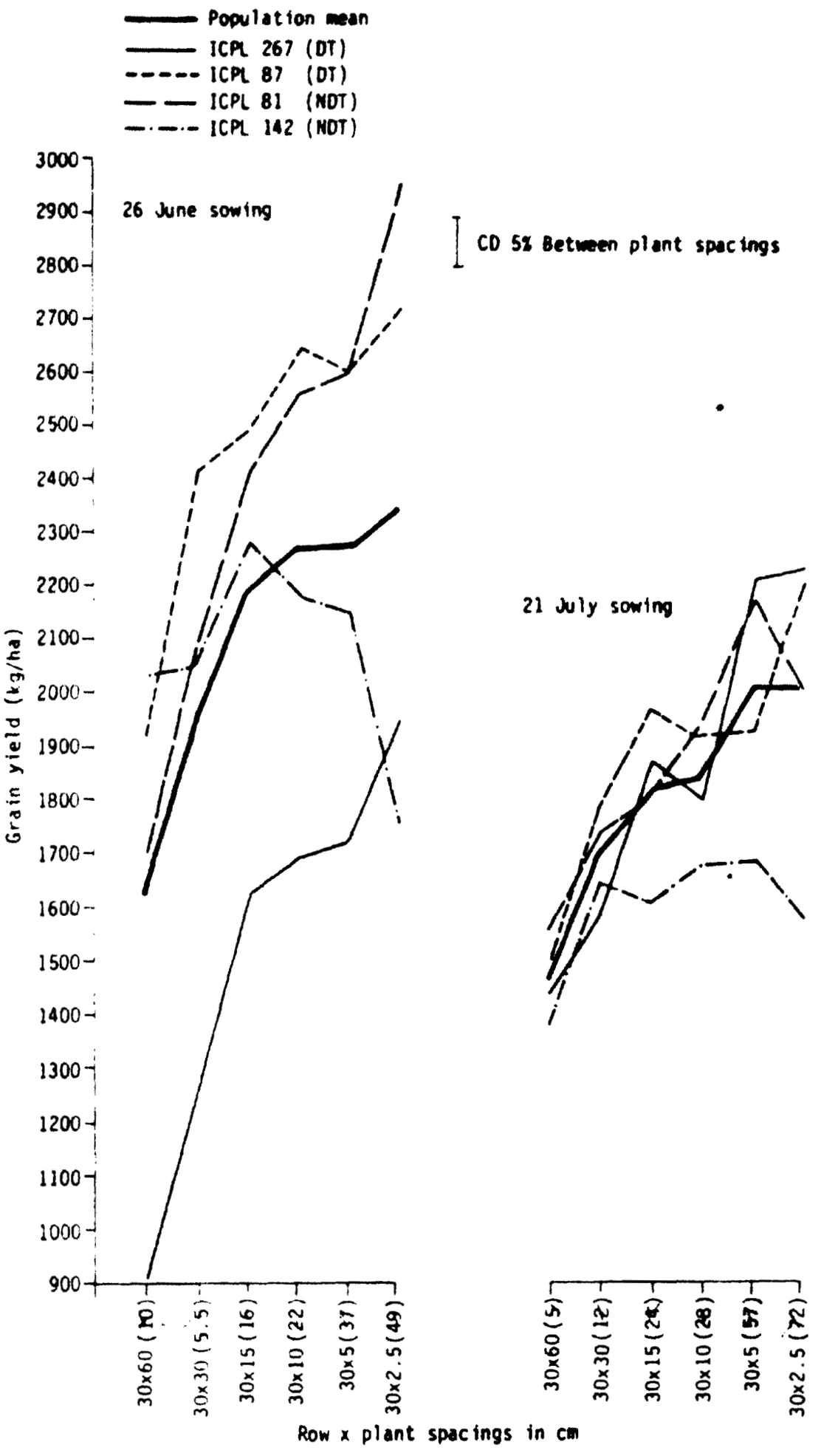

Figure 1.5: Mean grain yield of four cultivars at different plant spacings at two dates of sowings at Hisar (1981 kharif)