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**THE PEARL MILLET  
UNIFORM PROGENY NURSERY  
(UPN 86), 1986**

**Cereals Program  
International Crops Research Institute for the Semi-Arid Tropic  
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## REPORT ON THE UNIFORM PROGENY NURSERY (UPN 86), 1986

### OBJECTIVES

The primary objective of the Uniform Progeny Nursery (UPN) is to provide cooperators with newly generated F<sub>4</sub> and F<sub>5</sub> progenies coming from various ICRISAT pearl millet breeding projects.

### ENTRIES

Entries were drawn from both Indian x Indian and Indian x African crosses from different breeding projects at ICRISAT (Table 1). These entries were selected visually from the Preliminary Uniform Progeny Nursery (Pre-UPN) at two locations, ICRISAT Center and Bhevenisagar in kharif, 1985. The seed was increased in the dry season 1986 downy mildew nursery at ICRISAT Center, Patancheru. A key to abbreviations used in describing the pedigrees of individual entries is given at the beginning of Table 1.

### LOCATIONS

The nursery was available on request to all cooperators. As in previous years, a list of trials and nurseries (ICRISAT, 1986) was made available at the AICMIP workshop (Bangalore 1986) and to visitors to ICRISAT Center, so that cooperators could choose the trials and nurseries they required.

UPN 86 was grown at 29 locations in India, Pakistan, Cameroun, Niger and Sudan.

## DATA

As the main objective of the nursery is to distribute material from the ICRISAT pearl millet breeding projects the collection of data is regarded as of secondary and minor importance. However, to monitor the usefulness of the material and downy mildew incidence, cooperators were requested to return the following data:

- i) Downy mildew count,
- ii) Agronomic score, and
- iii) Number of plants selected for each entry.

The cooperators, depending on the availability of time and manpower, were also requested additional information, which they may have collected for their own use, on characters such as time to 50% bloom, plant height, and ear length.

## RESULTS

Data were returned from 17 locations in India, and from only one location (Niamey, Niger) in Africa.

### Downy Mildew

The downy mildew incidence has been reported in percentages for 15 locations. The data for downy mildew at ICRISAT Center downy mildew nursery was the only data from a disease nursery - at the remaining 14 locations natural incidence was recorded.

Entries 6, 11, 14, 16, 17, 18, 23, 29, 36, 43, 45, 58, 59, 64, 65 and 81 were among those with higher downy mildew incidence over four or more locations. At Hisar, entries 11, 16, 17, 18, 27, 29, 53, and 59 were highly susceptible. However at Aurangabad (MAU), Aurangabad (Neth), Kanpur, Palam, New Delhi, Gulbarga, and Amravathi there was no downy mildew in any of the entries, while at Jalna (Mahendra) only entry 81 was highly susceptible.

Fifteen entries 1, 18, 21, 25, 32, 33, 39, 42, 46, 51, 69, 77, 93, 95 and 96 had no downy mildew at all locations.

#### **Agronomic Score and Selections**

Agronomic score and number of selections were reported for 14 locations (Tables 4 & 5). As in previous years, a few of the cooperators were very selective between entries, while others selected a few plants from many entries.

Entries 9, 32, 34, 36, 38, 52, 54, 56, 61, 97 and 98 were selected at 8 or more locations (Table 5).

#### **Time to 50% Bloom and Plant Height**

Some of the cooperators noted observations on these additional characters. Data on time to 50% bloom was noted at 12 locations (Table 6) while plant height was noted at 9 (Table 7).

Entries 2, 3, 4, 5, 9, 15, 37, 61, 68, 69, 70, 71, 88 and 97 had a minimum flowering time of 53 d or less. The earliest flowering entries across locations were 9, 15, 37, 69, 71 and 88, with entry 71 taking only 50 days to flower. This year there was not a clear pattern, as in previous years, of the entries at northern locations taking longer to flower than in the southern locations. This may be due, in part, to drought conditions at some of the locations. It is rather interesting this year, that no entry (except the check as entry 70) had a range of flowering time of less than 10 days between locations; entries 66 and 68 changed the least in flowering time across locations having ranges of 12 and 11 days. Mean plant height was highest for a non-d<sub>2</sub> entry 6 (195 cm) and was lowest for d<sub>2</sub> entry 93 (87 cm). The entries that changed least for height across locations were 47, 54, 63, 71, 84, 93, 97, and 99; of these two were

d<sub>2</sub> dwarfs (entries 83 and 87). Those that changed most for height were entries 3, 5, 11, 88, 84, 95, and 85. The height of entry 83 was reported to be less than 120 cm at all locations, except at Jains where it was 169 cm.

Data for ear length was reported from only 3 locations in India. Entries with a mean ear length of 27 cm or more were (excluding the check) 23, 42, 43, 94, and 95; while entries 1, 79, and 87 had a mean ear length of 17 cm or less.

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KEY TO ABBREVIATIONS USED TABLE 1

|            |  |
|------------|--|
| 2302B      | Dwarf version of 238 ex Tifton Georgia (230 <sub>2</sub> B).   |
| 23802B     | Dwarf maintainer (2380 <sub>2</sub> B).  |
| 2308E      | Early version of 238 ex Tifton Georgia.  |
| 2302B trtr | Dwarf maintainer trichome less (230 <sub>2</sub> B trtr).  |
| 3/4        | Used with IRAT material to signify dwarf material derived from a first backcross to landrace parent. |
| 5054B      | Maintainer of 5054A (IARI, Delhi).   |
| 700....    | Breeding lines from IAR Millet Program, Kano, Nigeria.   |
| 81B        | Maintainer of 81A (ICRISAT).   |
| 'A'        | Breeding line, IARI, New Delhi.  |
| B 282      | A d <sub>2</sub> dwarf restorer.   |
| B 81B      | Germplasm restorer.  |
| BC         | Backcross.   |
| BSEC       | Bold Seeded Early Composite.   |
| DSC        | Dwarf sidocer project (ICRISAT).   |
| E 298      | Early line.  |
| EC         | Early Composite (ICRISAT).   |
| EB         | Ex Bornu - an improved landrace population from north-east Nigeria.                                  |
| F4FC       | F <sub>4</sub> line selected from ICRISAT material grown in Upper Volta (F <sub>4</sub> FC).         |
| G73-K77    | Variety Gam 73 reselected at Kamboise, Upper Volta and further reselected at ICRISAT.                |
| Gaw-       | Group Amelioration du Mil (Millet Breeding Program Bambey, Senegal) (all d <sub>2</sub> material).   |
| HK         | Haini-Kirei - landrace from Niger.   |
| ICI        | ICRISAT Inbred.  |
| IVC        | Inter Varietal Composite (ICRISAT).  |
| IVS        | Inter Varietal Synthetic (ICRISAT).  |
| 'J' prefix | Breeding lines originating from Jamnagar breeding program.   |
| K 560      | Male parent of BK 560 hybrid (IARI).   |
| LCSN       | Selection from ICRISAT Late Composite (LC) made in Upper Volta.                                      |
| MC         | Medium Composite (ICRISAT).  |
| NEC        | New Early Composite (ICRISAT).   |
| NELC       | New Elite Composite (ICRISAT).   |
| NNK        | Late landrace variety from Mali.   |
| 'P'        | IRAT prefix for Pennisetum landrace collection or selection.   |
| S10B       | Maintainer of SIDA (ICRISAT ex Serere).  |
| SC         | Serere Composite (Uganda).   |
| SD2        | Dwarf Souma line (SD <sub>2</sub> ) (IRAT).  |
| Serere     | Material from Serere breeding program, Uganda.   |
| SRC        | Smut Resistant Composite (ICRISAT).  |
| SS         | Saria (Upper Volta) Synthetic (very late dwarf population).  |
| WC         | World Composite (ICRISAT ex Nigeria).  |
| WC-BC3     | World Composite Dwarf version, line from backcross 3 (WC-BC <sub>3</sub> ).                          |
| WC-C75     | ICRISAT released variety.  |

Table 1. List of entries and their pedigrees in UPN 86.

| Entry no. | Entry     | Pedigree  |
|-----------|-----------|---|
| 1         | UPN 86-1  | ((J 1798x700594+) IVS S2 250)+x((B 282xJ 1244+)xIVS S2 250)+)-12-3-5          |
| 2         | UPN 86-2  | ((EC 298+x(J 25-1x700515+))x(673 FS 41x(J 1798xSerere 34+)))+)-2-3-3          |
| 3         | UPN 86-3  | ((EB 167+x(A 836xSerere 33))x((700250xEB 6-3)xEB 132-2(6 75)))+)-11-2-8       |
| 4         | UPN 86-4  | ((B Senegal-2(P5)x(B 282xJ 804+))x((S02xEB 2)(D 1029+)x700651+)))-2-2-6       |
| 5         | UPN 86-5  | ((S02xEB)(D 1029+)x700651+))x(700112xJ 343+xEC 298+)))-1-1-2                  |
| 6         | UPN 86-6  | ((S02xEB)(D 1029+)x700651+))x(700112xJ 343+xEC 298+)))-9-2-3 (Tel)            |
| 7         | UPN 86-7  | ((S02xEB)(D 1029+)x700651+))x(700112xJ 343+xEC 298+)))-9-2-3                  |
| 8         | UPN 86-8  | ((S02xEB)(D 1029+)x700651+))x(700112xJ 343+xEC 298+)))-9-2-8                  |
| 9         | UPN 86-9  | (Serere 2A-13xSerere 33-26)-6-3-2-2   |
| 10        | Check     | 673-K77   |
| 11        | UPN 86-11 | ((J 934+x700544+)x(J 1644x700490+))x(675 FS171x(J1623x700544+)))-21-3-3-1-4   |
| 12        | UPN 86-12 | ((J 1623x700544+)x700651+))x(675 FS 171x(J 1623x700544+)))-6-1-2-3            |
| 13        | UPN 86-13 | ((J 1623x700544+)x700651+))x(675 FS 171x(J 1623x700544+)))-10-5-1-2           |
| 14        | UPN 86-14 | ((J 1623x700544+)x700651+))x((J 934-7x700544+)x(J 1644+x700490+)))-1-3-3-3    |
| 15        | UPN 86-15 | ((J 1623x700544+)x700651+))x((J 934-7x700544+)x(J 1644+x700490+)))-3-5-3-2    |
| 16        | UPN 86-16 | ((J 1623x700544+)x700651+))x((J 934-7x700544+)x(J 1644+x700490+)))-12-5-1-4   |
| 17        | UPN 86-17 | ((S02xEB)(D 1029-1-1)xEBS 67+))x((J 934-7x700544+)x(J 1644x700490+)))-2-2-2-4 |
| 18        | UPN 86-18 | ((S02xEB)(D 1029-1-1)xEBS 67+))x((J 934-7x700544+)x(J 1644x700490+)))-8-3-2-3 |
| 19        | UPN 86-19 | ((S02xEB)(D 1029-1-1)xEBS 67+))x((J 934-7x700544+)x(J 1644x700490+)))-8-3-4-2 |
| 20        | Check     | 673-K77   |
| 21        | UPN 86-21 | (J 1472x13133-9-6-2-24-2)-5-3-2-2   |
| 22        | UPN 86-22 | (J 1472x13133-9-6-2-24-2)-7-5-1-2   |
| 23        | UPN 86-23 | (J 1472x13133-9-6-2-24-2)-10-1-1-2  |
| 24        | UPN 86-24 | (J 128-3x(A 836xJ 1798-32-2-1)))-3-3-1-2                                      |
| 25        | UPN 86-25 | (J 128-3x(A 836xJ 1798-32-2-1)))-3-3-1-4                                      |

Table 1. List of entries (continued).

| Entry no. | Entry     | Pedigree  |
|-----------|-----------|---|
| 26        | UPN 86-26 | (B 281-1x(A 836xJ 1798-32-2-1))-2-5-1-1                             |
| 27        | UPN 86-27 | (B 281-1x(A 836xJ 1798-32-2-1))-10-1-2-2                            |
| 28        | UPN 86-28 | ((70-1x700544+)x(SD2xEB)-2-9)-33-2-3-1                              |
| 29        | UPN 86-29 | ((SD2xEB 2)x(J 934-3x700638+))-47-1-3-2                             |
| 30        | Check     | 673-K77   |
| 31        | UPN 86-31 | (A 836xJ 1798)-32-2-3   |
| 32        | UPN 86-32 | (J 1623 x 700644)-13-4-3-4  |
| 33        | UPN 86-33 | (J 25-1x700797)-12-1-7  |
| 34        | UPN 86-34 | (J 1623xMC 2)-1-2-1   |
| 35        | UPN 86-35 | (J 1623xMC 2)-1-2-5   |
| 36        | UPN 86-36 | (A 836x700516)-1-3  |
| 37        | UPN 86-37 | (700713xSC3(M)-3-7-1-2)-1-6-3                                       |
| 38        | UPN 86-38 | (700713xSC3(M)-3-7-1-2)-1-11-2                                      |
| 39        | UPN 86-39 | (A 836xJ 1798)-32-2-1-2   |
| 40        | Check     | 673-K77   |
| 41        | UPN 86-41 | ((700112-5xJ 1623)x(700490-1))-2-1-1-1                              |
| 42        | UPN 86-42 | (J 595xNEP18-5638-1-17)-1-1   |
| 43        | UPN 86-43 | ICMS 8119-10-1  |
| 44        | UPN 86-44 | (IVS S2-250x(J 1623x700544-13-4-2))-1-2-2-2                         |
| 45        | UPN 86-45 | ((SD2xEB 1029+)xEBS 67+)x((J 934+x700544+)x(J 1644x700490+)))-8-3-2 |
| 46        | UPN 86-46 | ((673 FS 137x(J 1623x700544+)x((700651x(J 25-1x700797+)))-20-2-3    |
| 47        | UPN 86-47 | ((673 FS 137x(J 1623x700544+)x((700651x(J 25-1x700797+)))-18-1-3    |
| 48        | UPN 86-48 | (700659xJ 888)-9-4-1  |
| 49        | UPN 86-49 | ((J 25-1x700797+)xEBS 67+)x(675 FS 171x(J 1623x700544+)-26))-5-2-1  |
| 50        | Check     | 673-K77   |



**Table 1. List of entries (continued).**

| Entry no. | Entry     | Pedigree  |
|-----------|-----------|---|
| 51        | UPN 86-51 | [[IVS 82-60x(700713xSC3(M)+)+]x[(J 1823xMC 2+)x(J 1823x700544+)]]-9-3-1     |
| 52        | UPN 86-52 | [[[(70-1x700594+)xSC2(M)+]x[(J 1798x700797-12)xIVS 82-60-2]]-4-2            |
| 53        | UPN 86-53 | [[[(70-1x700594+)xSC2(M)+]x[(J 1798x700797-12)xIVS 82-60-2]]-5-1            |
| 54        | UPN 86-54 | [[LCFS 226+x(J 834-3x700638+)+]x[IVS 82-60x(B 282xJ 804+)]]-4-1             |
| 55        | UPN 86-55 | [[[(J 1188xCassedy)x700651]x[IVS 82-250x(J 1798xSerere 34+)+]]-3-5          |
| 56        | UPN 86-56 | [[Soune Seox(B 282xJ 804-1-21-3-1)]x[(B 282xJ 804-1-3-9)+]]-5-3             |
| 57        | UPN 86-57 | [[3/4HKx(B 282x3804+)+xICMS 7704 P2]-3-3                                    |
| 58        | UPN 86-58 | [[[(J 25-1x700797+)xEB5 87+)+xICMS 7704 P1]-21-5                            |
| 59        | UPN 86-59 | [[[(J 1798x700594+)xIVS 82-250)]+x[(B 282xJ 1244+)xIVS 82 250+)+]-11-4-4    |
| 60        | Check     | 673-K77   |
| 61        | UPN 86-61 | [[[(673 FS 41x(J 1188xCassedy)]+x[673 FS 41x(J 1798xSerere 34+)]+)-3-1-2    |
| 62        | UPN 86-62 | [[[(673 FS 41x(J 1188xCassedy)]+x[673 FS 41x(J 1798xSerere 34+)]+)-3-2-3    |
| 63        | UPN 86-63 | [[[(700250xEB6-3)xEB 132-2(S75)]+x[(EB 237+(S76)x(700628xB 282)+)+]-8-1-2   |
| 64        | UPN 86-64 | [[EB 167-2x(A 836xSerere 33)+]x[SDM 347-1x(700250xKG 22+)]]-6-1-5           |
| 65        | UPN 86-65 | [[EB 167-2x(A 836xSerere 33)]+x[(700250xEB6-3)xEB 132+)+]-11-5-3            |
| 66        | UPN 86-66 | [[B Senegal-2(P5)x(B 282xJ 804+)+]x[[SD2xEB 2)(D 1029-1-1)x700651+]]-10-2-1 |
| 67        | UPN 86-67 | [[[(SD2xEB)(D 1029+)x700651+]x[(700112xJ 343+)xEC 298+]]-3-1-12             |
| 68        | UPN 86-68 | [[[(SD2xEB)(D 1029+)x700651+]x[(700112xJ 343+)xEC 298+]]-9-2-1              |
| 69        | UPN 86-69 | [[[(SD2xEB)(D 1029+)x700651+]x[(700112xJ 343+)xEC 298+]]-15-2-4             |
| 70        | Check     | 673-K77   |
| 71        | UPN 86-71 | [[[(SD2xEB)(D 1029+)x700651+]x[(700112xJ 343+)xEC 298+]]-15-3-5             |
| 72        | UPN 86-72 | [[700651x(A 836xSerere 31)+]x[(700112xJ 343 +)xEC 298+]]-3-2-2              |
| 73        | UPN 86-73 | [[700651x(A 836xSerere 31)+R]x[(700112xJ 343 +)xEC 298+]]-9-2-8             |
| 74        | UPN 86-74 | [[700651x(A 836xSerere 31)+]x[(700112xJ 343 +)xEC 298+]]-9-4-1              |
| 75        | UPN 86-75 | [[700651x(A 836xSerere 31)+]x[(700112xJ 343 +)xEC 298+]]-9-4-2              |

Table 1. List of entries (continued).

| Entry no. | Entry     | Pedigree  |
|-----------|-----------|---|
| 76        | UPN 86-76 | [NELC 8057x(700620xSS 40-10-2-4)]-2-2                             |
| 77        | UPN 86-77 | [S10LB-30xIP 944-6]-6-1-1   |
| 78        | UPN 86-78 | [LCSM 1173+J 104ST]-8-3-1   |
| 79        | UPN 86-79 | [LCSM 1173+xEC 298]-6-3-1   |
| 80        | Check     | 673-K77   |
| 81        | UPN 86-81 | [[J 1624x3/4 Soune 827-2)xDeuro 317-1]]-1-1-1                     |
| 82        | UPN 86-82 | [2308E 19-2xS108-106]-2-1-2-4                                     |
| 83        | UPN 86-83 | [23028x(J 1623x3/4 EB 96-1-11)]-3-1-1-2                           |
| 84        | UPN 86-84 | (B 282xS108-38)-4-1-4-1-1   |
| 85        | UPN 86-85 | IVC-109-4I-1-2  |
| 86        | UPN 86-86 | IVC-124-9I-1-1  |
| 87        | UPN 86-87 | IVC-16-1I-1   |
| 88        | UPN 86-88 | [[[J 104x700490+)]xJ 1623]x(J 1644+)-1-4]-1-1-2-3                 |
| 89        | UPN 86-89 | [[[J 104x700490+)]xJ 1623]x(J 1644+)-1-4]-2-1-2-1                 |
| 90        | Check     | 673-K77   |
| 91        | UPN 86-91 | [(S02xEB 2)x(J 1623x700544+)]-19-1-3-1                            |
| 92        | UPN 86-92 | [[[J 934-7x700797+)]x700251]+xMC-C75 S1 119+]-14-3                |
| 93        | UPN 86-93 | [(B 282x3/4 EB 100+)]xTogo 8-7-3]-22                              |
| 94        | UPN 86-94 | [Togo 8-7-3x(B 282x3/4 EB 100+)]-16                               |
| 95        | UPN 86-95 | D2C 61-15-2   |
| 96        | UPN 86-96 | [(B 282x3/4 EB 100+)]x(B 282x3/4 100+)]-21                        |
| 97        | UPN 86-97 | [F4FC 1498+xJ 104+)]-1-2  |
| 98        | UPN 86-98 | [[IVS S2-60x(J 1623x700544+)]x[[J 25-1x700797+)]xEB 67+)]-1-5-1-2 |
| 99        | UPN 86-99 | [(S/4 HKx(B 282x3804+)]+xICMS 7704 P1]-4-1                        |
| 100       | Check     | 673-K77   |

**Table 2. Locations and cooperators for UPN 88.**

| S.No. | Location                                | Cooperator                        |
|-------|---|-----------------------------------|
| 1     | Ludhiana, Punjab                        | Dr. D.S. Virk                     |
| 2     | Karnal, Haryana                         | Dr. R.P. Dua                      |
| 3     | Hisar, Haryana                          | MAU/ICRISAT                       |
| 4     | New Delhi, Union Territory              | Dr. O.P. Govila                   |
| 5     | Durgapure, Rajasthan                    | Dr. K.L. Vyas                     |
| 6     | Fatehpur, Rajasthan                     | Dr. R.S. Verma                    |
| 7     | Jobner, Rajasthan                       | Dr. J.R. Mathur & Dr. B.D. Jotwal |
| 8     | Jodhpur, Rajasthan                      | Dr. M.B.L. Saxena                 |
| 9     | Kanpur, Uttar Pradesh                   | Dr. C.N. Chaubey                  |
| 10    | Pantnagar, Uttar Pradesh                | Dr. D.V.S. Tyagi                  |
| 11    | Gwalior, Madhya Pradesh                 | Dr. G.S. Chauhan                  |
| 12    | Jamnagar, Gujarat                       | Dr. H.R. Dave                     |
| 13    | Amaravati, Maharashtra                  | Dr. P.R. Sawanker                 |
| 14    | Aurangabad (MAU), Maharashtra           | Dr. M. Qader                      |
| 15    | Aurangabad (Nath Seeds), Maharashtra    | Nath Seeds                        |
| 16    | Jalna (MAHYCO), Maharashtra             | Dr. R.R. Vohra                    |
| 17    | Jalna (MAHENDRA), Maharashtra           | Dr. K.R. Chopra                   |
| 18    | Pune, Maharashtra                       | Dr. G. Harinarayana               |
| 19    | Rahuri, Maharashtra                     | Dr. S.D. Ugale                    |
| 20    | Patancheru (PHF), Andhra Pradesh        | ICRISAT                           |
| 21    | Patancheru Downy Mildew Nursery (PMDMN) | ICRISAT                           |
| 22    | Palam, Andhra Pradesh                   | Dr. D. Narayana                   |
| 23    | Gulbarga, Karnataka                     | Dr. T. Madhava Rao                |
| 24    | Bhavanisagar, Tamil Nadu                | TNAU/ICRISAT                      |
| 25    | Coimbatore, Tamil Nadu                  | Dr. S. Palanisamy                 |
| 26    | Kovilpatti, Tamil Nadu                  | Dr. N. Sunderesan                 |
| 27    | Pakistan                                | Dr. Quesim Chetha                 |
| 28    | Niamey ICRISAT Sahelian Center (Niger)  | Dr. K. Anand Kumar                |
| 29    | Khartoum (Sudan)                        | Dr. R.P. Jain                     |
| 30    | Maroua (Cameroun)                       | Dr. O.P. Dengi                    |

**Table 3. Downy mildew incidence (%) at 7 locations in India and Africa**

| Entry<br>no. | HAMYCO   |       |       |     |       |            |        |
|--------------|----------|-------|-------|-----|-------|------------|--------|
|              | Ludhiana | Hisar | Jalna | PHF | PMDMN | Kovilpatti | Nisney |
| 1            | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 2            | 2.1      | 0.0   | 4.0   | 0.0 | 7.0   | 0.0        | 0.0    |
| 3            | 2.0      | 0.0   | 0.0   | 0.0 | 6.0   | 0.0        | 2.0    |
| 4            | 2.2      | 0.0   | 0.0   | 0.0 | 44.0  | 0.0        | 0.0    |
| 5            | 0.0      | 0.0   | 0.0   | 2.0 | 19.0  | 0.0        | 1.0    |
| 6            | 2.2      | 4.0   | 0.0   | 0.0 | 7.0   | 0.0        | 2.0    |
| 7            | 0.0      | 5.0   | 0.0   | 0.0 | 21.0  | 0.0        | 1.0    |
| 8            | 0.0      | 0.0   | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 9            | 2.2      | 0.0   | 0.0   | 0.0 | 5.0   | 0.0        | 2.0    |
| 10           | 0.0      | 3.0   | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 11           | 13.3     | 34.0  | 27.0  | 0.0 | 10.0  | 0.0        | 0.0    |
| 12           | 0.0      | 0.0   | 9.0   | 0.0 | 7.0   | 0.0        | 0.1    |
| 13           | 0.0      | 0.0   | 9.0   | 0.0 | 0.0   | 0.0        | 1.0    |
| 14           | 0.0      | 2.0   | 6.0   | 0.0 | 3.0   | 0.0        | 1.0    |
| 15           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 2.0    |
| 16           | 1.03     | 22.0  | 14.0  | 0.0 | 2.0   | 0.0        | 8.0    |
| 17           | 7.7      | 17.0  | 13.0  | 0.0 | 29.0  | 0.0        | 3.0    |
| 18           | 18.9     | 23.0  | 0.0   | 0.0 | 10.0  | 0.0        | 4.0    |
| 19           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 20           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 21           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 22           | 1.9      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 23           | 21.5     | 9.0   | 10.0  | 0.0 | 21.0  | 0.0        | 0.0    |
| 24           | 0.0      | 0.0   | 0.0   | 4.0 | 0.0   | 0.0        | 0.0    |
| 25           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |

**Table 3. Downy mildew incidence (continued).**

| Entry no. | MANYCO   |       |       |     |       |            |        |
|-----------|----------|-------|-------|-----|-------|------------|--------|
|           | Ludhiana | Hisar | Jalna | PNF | PNDMN | Kovilpatti | Nisney |
| 26        | 1.9      | 0.0   | 0.0   | 0.0 | 4.0   | 0.0        | 1.0    |
| 27        | 2.2      | 20.0  | 0.0   | 0.0 | 3.0   | 0.0        | 0.0    |
| 28        | 1.9      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 29        | 6.7      | 21.0  | 13.0  | 0.0 | 0.0   | 0.0        | 6.0    |
| 30        | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 31        | 0.0      | 4.0   | 0.0   | 0.0 | 6.0   | 0.0        | 0.0    |
| 32        | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 33        | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 34        | 0.0      | 0.0   | 0.0   | 0.0 | 9.0   | 0.0        | 1.0    |
| 35        | 0.0      | 0.0   | 0.0   | 0.0 | 8.0   | 0.0        | 0.0    |
| 36        | 5.8      | 0.0   | 8.0   | 0.0 | 2.0   | 0.0        | 1.0    |
| 37        | 1.9      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 6.0    |
| 38        | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 39        | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 40        | 0.0      | 0.0   | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 41        | 5.7      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 42        | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 43        | 4.0      | 3.0   | 0.0   | 2.0 | 7.0   | 0.0        | 5.0    |
| 44        | 0.0      | 0.0   | 0.0   | 0.0 | 7.0   | 0.0        | 0.0    |
| 45        | 2.2      | 5.0   | 9.0   | 0.0 | 10.0  | 0.0        | 0.0    |
| 46        | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 3.0    |
| 47        | 1.9      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 3.0    |
| 48        | 0.0      | 0.0   | 0.0   | 0.0 | 14.0  | 0.0        | 0.0    |
| 49        | 0.0      | 0.0   | 8.0   | 0.0 | 20.0  | 0.0        | 1.0    |
| 50        | 0.0      | 0.0   | 0.0   | 0.0 | 6.0   | 0.0        | 0.0    |

**Table 3. Downy mildew incidence (continued).**

| Entry<br>no. | MAYCO    |       |       |     |       |            |        |
|--------------|----------|-------|-------|-----|-------|------------|--------|
|              | Ludhiana | Hisar | Jalna | PHF | PNDMN | Kovilpatti | Nisarg |
| 51           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 52           | 1.9      | 0.0   | 0.0   | 0.0 | 8.0   | 0.0        | 1.0    |
| 53           | 1.9      | 18.0  | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 54           | 1.9      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 55           | 0.0      | 4.0   | 0.0   | 0.0 | 4.0   | 0.0        | 1.0    |
| 56           | 7.7      | 0.0   | 25.0  | 0.0 | 2.0   | 0.0        | 1.0    |
| 57           | 0.0      | 0.0   | 0.0   | 0.0 | 8.0   | 0.0        | 1.0    |
| 58           | 2.2      | 0.0   | 0.0   | 0.0 | 0.0   | 7.0        | 2.0    |
| 59           | 6.7      | 20.0  | 0.0   | 0.0 | 5.0   | 0.0        | 1.0    |
| 60           | 0.0      | 0.0   | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 61           | 1.9      | 0.0   | 0.0   | 0.0 | 12.0  | 0.0        | 0.0    |
| 62           | 0.0      | 0.0   | 0.0   | 8.0 | 8.0   | 0.0        | 0.0    |
| 63           | 0.0      | 7.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 64           | 0.0      | 4.0   | 15.0  | 0.0 | 8.0   | 0.0        | 2.0    |
| 65           | 7.7      | 3.0   | 10.0  | 0.0 | 2.0   | 0.0        | 0.0    |
| 66           | 0.0      | 0.0   | 0.0   | 0.0 | 4.0   | 0.0        | 0.0    |
| 67           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 3.0    |
| 68           | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 69           | 0.0      | 0.0   | 0.0   | 0.0 | 0.0   | 0.0        | 0.0    |
| 70           | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 71           | 0.0      | 0.0   | 0.0   | 0.0 | 7.0   | 10.0       | 0.0    |
| 72           | 0.0      | 0.0   | 0.0   | 0.0 | 5.0   | 0.0        | 0.0    |
| 73           | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 5.0        | 2.0    |
| 74           | 0.0      | 0.0   | 0.0   | 0.0 | 2.0   | 0.0        | 0.0    |
| 75           | 0.0      | 0.0   | 25.0  | 0.0 | 0.0   | 0.0        | 3.0    |

**Table 3. Downy mildew incidence (continued).**

| Entry<br>no.. | Ludhiana | Hisar | MAHYCO |     |       |            | Nisamy |
|---------------|----------|-------|--------|-----|-------|------------|--------|
|               |          |       | Jalna  | PHF | PHDMN | Kovilpatti |        |
| 76            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 3.0    |
| 77            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 78            | 11.1     | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 79            | 7.7      | 0.0   | 0.0    | 0.0 | 8.0   | 0.0        | 0.0    |
| 80            | 0.0      | 0.0   | 0.0    | 0.0 | 5.0   | 0.0        | 0.0    |
| 81            | 11.1     | 0.0   | 0.0    | 0.0 | 8.0   | 0.0        | 3.0    |
| 82            | 0.0      | 0.0   | 7.0    | 0.0 | 4.0   | 0.0        | 1.0    |
| 83            | 0.0      | 0.0   | 0.0    | 0.0 | 3.0   | 0.0        | 0.0    |
| 84            | 0.0      | 0.0   | 0.0    | 0.0 | 7.0   | 0.0        | 2.0    |
| 85            | 0.0      | 0.0   | 14.0   | 0.0 | 3.0   | 0.0        | 1.0    |
| 86            | 2.2      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 87            | 0.0      | 0.0   | 0.0    | 2.0 | 5.0   | 0.0        | 0.0    |
| 88            | 0.0      | 0.0   | 0.0    | 0.0 | 7.0   | 0.0        | 0.0    |
| 89            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 1.0    |
| 90            | 0.0      | 0.0   | 0.0    | 0.0 | 2.0   | 0.0        | 0.0    |
| 91            | 0.0      | 0.0   | 0.0    | 0.0 | 8.0   | 0.0        | 0.0    |
| 92            | 0.0      | 0.0   | 0.0    | 0.0 | 11.0  | 33.0       | 1.0    |
| 93            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 94            | 0.0      | 0.0   | 8.0    | 0.0 | 5.0   | 0.0        | 2.0    |
| 95            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 96            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 0.0        | 0.0    |
| 97            | 0.0      | 0.0   | 0.0    | 0.0 | 23.0  | 0.0        | 0.0    |
| 98            | 0.0      | 0.0   | 0.0    | 0.0 | 0.0   | 13.0       | 2.0    |
| 99            | 0.0      | 0.0   | 0.0    | 0.0 | 8.0   | 0.0        | 0.0    |
| 100           | 0.0      | 0.0   | 0.0    | 0.0 | 8.0   | 0.0        | 8.0    |

Table 4. Agronomic score at 14 locations in India and Africa.

| Entry no. | New Delhi | Kanpur | Gwali-ior | Amravati | Aurangabad (Nath) | Aurangabad (MAU) | Jalna (Mahan dara) | Jalna (MAHY CO) | PHF | Pales | Gulbarga | Bhavani-sagar | Kovil-patti | Missey | Mean | Min | Max |
|-----------|-----------|--------|-----------|----------|-------------------|------------------|--------------------|-----------------|-----|-------|----------|---------------|-------------|--------|------|-----|-----|
| 1         | 3         | 0      | 0         | 3        | 5                 | 5                | 4                  | 4               | 5   | 8     | 8        | 0             | 5           | 7      | 5    | 3   | 8   |
| 2         | 3         | 3      | 5         | 3        | 7                 | 5                | 4                  | 5               | 5   | 8     | 8        | 6             | 6           | 6      | 5    | 3   | 8   |
| 3         | 3         | 6      | 5         | 5        | 7                 | 5                | 5                  | 3               | 6   | 7     | 0        | 4             | 4           | 5      | 5    | 3   | 7   |
| 4         | 5         | 6      | 0         | 5        | 7                 | 7                | 5                  | 4               | 7   | 9     | 0        | 4             | 5           | 6      | 6    | 4   | 8   |
| 5         | 7         | 6      | 5         | 5        | 5                 | 7                | 5                  | 3               | 5   | 5     | 5        | 3             | 6           | 6      | 5    | 3   | 7   |
| 6         | 7         | 4      | 7         | 3        | 5                 | 7                | 4                  | 3               | 6   | 7     | 5        | 5             | 5           | 5      | 5    | 3   | 7   |
| 7         | 7         | 7      | 5         | 5        | 5                 | 5                | 4                  | 4               | 6   | 5     | 8        | 4             | 5           | 4      | 5    | 4   | 6   |
| 8         | 0         | 7      | 6         | 5        | 7                 | 3                | 5                  | 4               | 7   | 7     | 8        | 5             | 5           | 5      | 6    | 3   | 8   |
| 9         | 3         | 9      | 6         | 3        | 7                 | 3                | 4                  | 3               | 6   | 5     | 5        | 4             | 0           | 6      | 5    | 3   | 8   |
| 10        | 5         | 10     | 4         | 3        | 3                 | 5                | 4                  | 4               | 6   | 5     | 8        | 6             | 3           | 6      | 6    | 3   | 10  |
| 11        | 7         | 6      | 7         | 5        | 5                 | 5                | 5                  | 5               | 6   | 5     | 7        | 6             | 5           | 7      | 6    | 5   | 7   |
| 12        | 3         | 7      | 7         | 5        | 7                 | 7                | 5                  | 3               | 6   | 5     | 6        | 4             | 5           | 6      | 5    | 3   | 7   |
| 13        | 5         | 0      | 7         | 5        | 5                 | 7                | 4                  | 5               | 7   | 4     | 7        | 5             | 0           | 5      | 6    | 4   | 7   |
| 14        | 5         | 4      | 6         | 5        | 7                 | 3                | 5                  | 6               | 7   | 6     | 4        | 6             | 6           | 6      | 5    | 3   | 7   |
| 15        | 7         | 0      | 6         | 3        | 7                 | 3                | 6                  | 5               | 5   | 5     | 6        | 6             | 7           | 6      | 6    | 3   | 7   |
| 16        | 7         | 8      | 6         | 3        | 7                 | 7                | 6                  | 4               | 6   | 4     | 5        | 6             | 7           | 7      | 6    | 3   | 8   |
| 17        | 7         | 0      | 7         | 3        | 7                 | 5                | 6                  | 3               | 7   | 5     | 4        | 6             | 6           | 6      | 6    | 3   | 7   |
| 18        | 7         | 6      | 7         | 5        | 7                 | 3                | 4                  | 5               | 5   | 3     | 2        | 5             | 5           | 7      | 5    | 2   | 7   |
| 19        | 8         | 6      | 7         | 5        | 5                 | 8                | 5                  | 4               | 6   | 4     | 3        | 6             | 6           | 5      | 6    | 3   | 8   |
| 20        | 5         | 5      | 6         | 3        | 5                 | 5                | 4                  | 4               | 6   | 4     | 3        | 5             | 4           | 5      | 5    | 3   | 6   |
| 21        | 7         | 8      | 6         | 5        | 7                 | 7                | 5                  | 4               | 6   | 6     | 6        | 7             | 6           | 7      | 6    | 4   | 7   |
| 22        | 7         | 3      | 5         | 3        | 5                 | 5                | 4                  | 4               | 6   | 6     | 2        | 6             | 7           | 6      | 5    | 2   | 7   |
| 23        | 7         | 6      | 6         | 3        | 5                 | 5                | 4                  | 5               | 5   | 5     | 5        | 3             | 6           | 6      | 5    | 3   | 7   |
| 24        | 5         | 7      | 7         | 3        | 7                 | 9                | 4                  | 4               | 6   | 6     | 7        | 5             | 6           | 6      | 6    | 3   | 9   |
| 25        | 7         | 1      | 7         | 3        | 7                 | 1                | 4                  | 4               | 5   | 4     | 3        | 4             | 6           | 7      | 5    | 1   | 7   |



Table 4. Agronomic score (continued).

| Entry no. | New Delhi | Kanpur | Gwalior | Amara -vatl | Aurang -abad (Nath) | Aurang -abad (MAU) | Jalna (Mahan dare) | Jalna (MAHY CO) | PNF | Palas | Gulba -rge | Bhavnar -seger | Kovil -petti | Niamey | Mean | Min | Max |
|-----------|-----------|--------|---------|-------------|---------------------|--------------------|--------------------|-----------------|-----|-------|------------|----------------|--------------|--------|------|-----|-----|
| 26        | 7         | 4      | 5       | 3           | 1                   | 3                  | 3                  | 6               | 5   | 5     | 4          | 5              | 5            | 6      | 4    | 1   | 7   |
| 27        | 5         | 7      | 7       | 3           | 7                   | 5                  | 4                  | 5               | 6   | 6     | 4          | 7              | 6            | 5      | 6    | 3   | 7   |
| 28        | 5         | 6      | 6       | 5           | 7                   | 7                  | 5                  | 4               | 7   | 6     | 5          | 6              | 6            | 7      | 6    | 4   | 7   |
| 29        | 5         | 9      | 6       | 3           | 7                   | 3                  | 7                  | 5               | 8   | 3     | 7          | 5              | 7            | 7      | 6    | 3   | 9   |
| 30        | 5         | 5      | 4       | 5           | 5                   | 5                  | 4                  | 4               | 6   | 4     | 5          | 5              | 5            | 4      | 5    | 4   | 6   |
| 31        | 7         | 6      | 6       | 5           | 7                   | 5                  | 5                  | 5               | 6   | 7     | 4          | 5              | 0            | 7      | 6    | 4   | 7   |
| 32        | 5         | 8      | 7       | 7           | 5                   | 5                  | 3                  | 4               | 5   | 4     | 9          | 7              | 7            | 6      | 6    | 3   | 9   |
| 33        | 7         | 6      | 6       | 5           | 1                   | 7                  | 3                  | 3               | 5   | 5     | 9          | 8              | 0            | 6      | 5    | 1   | 9   |
| 34        | 5         | 5      | 6       | 7           | 5                   | 1                  | 4                  | 5               | 5   | 3     | 6          | 4              | 4            | 6      | 5    | 1   | 7   |
| 35        | 7         | 4      | 6       | 7           | 3                   | 5                  | 5                  | 4               | 6   | 9     | 7          | 4              | 0            | 5      | 6    | 3   | 9   |
| 36        | 9         | 8      | 5       | 7           | 5                   | 7                  | 4                  | 5               | 5   | 6     | 5          | 3              | 0            | 4      | 6    | 3   | 9   |
| 37        | 9         | 9      | 7       | 9           | 7                   | 5                  | 5                  | 5               | 6   | 6     | 7          | 6              | 7            | 6      | 7    | 5   | 9   |
| 38        | 7         | 7      | 5       | 5           | 3                   | 7                  | 4                  | 4               | 8   | 6     | 8          | 4              | 7            | 5      | 6    | 3   | 8   |
| 39        | 5         | 7      | 6       | 3           | 3                   | 5                  | 3                  | 3               | 7   | 6     | 6          | 5              | 7            | 6      | 5    | 3   | 7   |
| 40        | 5         | 5      | 4       | 7           | 5                   | 5                  | 4                  | 4               | 6   | 6     | 6          | 6              | 4            | 5      | 5    | 4   | 7   |
| 41        | 7         | 4      | 5       | 5           | 5                   | 8                  | 5                  | 2               | 6   | 7     | 6          | 6              | 7            | 5      | 6    | 2   | 8   |
| 42        | 7         | 4      | 6       | 5           | 5                   | 8                  | 4                  | 4               | 5   | 7     | 4          | 7              | 7            | 5      | 6    | 4   | 8   |
| 43        | 8         | 3      | 6       | 5           | 1                   | 7                  | 8                  | 7               | 7   | 4     | 5          | 7              | 5            | 7      | 6    | 1   | 8   |
| 44        | 8         | 4      | 6       | 3           | 5                   | 7                  | 7                  | 2               | 7   | 6     | 9          | 5              | 0            | 6      | 6    | 2   | 8   |
| 45        | 9         | 5      | 7       | 7           | 5                   | 5                  | 4                  | 4               | 6   | 4     | 8          | 5              | 0            | 6      | 6    | 4   | 8   |
| 46        | 7         | 5      | 5       | 5           | 7                   | 3                  | 6                  | 6               | 6   | 4     | 6          | 6              | 4            | 6      | 5    | 3   | 7   |
| 47        | 7         | 6      | 5       | 5           | 3                   | 8                  | 5                  | 7               | 7   | 5     | 6          | 7              | 5            | 6      | 6    | 3   | 8   |
| 48        | 5         | 7      | 5       | 5           | 3                   | 7                  | 4                  | 3               | 3   | 6     | 8          | 4              | 6            | 6      | 5    | 3   | 8   |
| 49        | 5         | 8      | 7       | 7           | 7                   | 7                  | 5                  | 4               | 7   | 5     | 9          | 7              | 6            | 7      | 7    | 4   | 8   |
| 50        | 5         | 6      | 3       | 7           | 5                   | 3                  | 4                  | 4               | 6   | 4     | 5          | 6              | 4            | 6      | 5    | 3   | 7   |

Table 4. Agronomic score (continued).

| Entry no. | New Delhi | Kanpur | Gwalior | Amravati | Aurangabad (Nath) | Aurangabad (MAU) | Jalna (Mahendare) | Jalna (MAHY CO) | PHF | Palem | Gulbarga | Bhevenisagar | Kovilpatti | Nimney | Mean | Min | Max |
|-----------|-----------|--------|---------|----------|-------------------|------------------|-------------------|-----------------|-----|-------|----------|--------------|------------|--------|------|-----|-----|
| 51        | 7         | 7      | 7       | 7        | 3                 | 9                | 4                 | 3               | 5   | 3     | 3        | 5            | 8          | 5      | 5    | 3   | 9   |
| 52        | 7         | 7      | 6       | 5        | 5                 | 1                | 5                 | 6               | 5   | 4     | 6        | 4            | 6          | 7      | 5    | 1   | 7   |
| 53        | 3         | 7      | 7       | 5        | 5                 | 7                | 4                 | 5               | 5   | 6     | 9        | 6            | 5          | 7      | 8    | 3   | 9   |
| 54        | 5         | 7      | 5       | 5        | 5                 | 5                | 4                 | 5               | 5   | 6     | 7        | 6            | 6          | 7      | 6    | 4   | 7   |
| 55        | 7         | 7      | 7       | 5        | 5                 | 9                | 5                 | 5               | 6   | 6     | 2        | 4            | 7          | 8      | 6    | 2   | 9   |
| 56        | 5         | 8      | 6       | 5        | 5                 | 7                | 5                 | 5               | 5   | 4     | 7        | 3            | 6          | 6      | 6    | 3   | 8   |
| 57        | 7         | 8      | 5       | 5        | 3                 | 7                | 4                 | 4               | 5   | 4     | 5        | 3            | 5          | 6      | 5    | 3   | 8   |
| 58        | 8         | 8      | 6       | 5        | 7                 | 7                | 6                 | 5               | 5   | 3     | 6        | 7            | 6          | 7      | 8    | 3   | 8   |
| 59        | 8         | 7      | 5       | 8        | 5                 | 5                | 5                 | 4               | 5   | 4     | 8        | 7            | 7          | 5      | 6    | 4   | 9   |
| 60        | 5         | 5      | 5       | 5        | 5                 | 5                | 4                 | 4               | 6   | 3     | 3        | 7            | 5          | 6      | 5    | 3   | 7   |
| 61        | 3         | 6      | 5       | 5        | 5                 | 3                | 4                 | 5               | 5   | 5     | 9        | 4            | 5          | 7      | 5    | 3   | 9   |
| 62        | 7         | 8      | 7       | 5        | 3                 | 9                | 5                 | 2               | 6   | 0     | 6        | 7            | 5          | 5      | 6    | 2   | 9   |
| 63        | 3         | 6      | 5       | 5        | 7                 | 3                | 4                 | 5               | 5   | 6     | 5        | 5            | 6          | 8      | 5    | 3   | 8   |
| 64        | 3         | 8      | 6       | 5        | 7                 | 1                | 5                 | 6               | 6   | 4     | 6        | 7            | 6          | 7      | 5    | 1   | 7   |
| 65        | 5         | 6      | 6       | 5        | 5                 | 7                | 6                 | 4               | 6   | 6     | 4        | 6            | 7          | 7      | 6    | 4   | 7   |
| 66        | 3         | 8      | 7       | 5        | 5                 | 7                | 5                 | 3               | 7   | 6     | 8        | 6            | 8          | 7      | 6    | 3   | 8   |
| 67        | 5         | 9      | 7       | 5        | 3                 | 7                | 4                 | 0               | 7   | 6     | 9        | 6            | 8          | 7      | 6    | 3   | 8   |
| 68        | 3         | 8      | 8       | 5        | 5                 | 5                | 6                 | 4               | 7   | 5     | 8        | 5            | 5          | 7      | 6    | 3   | 8   |
| 69        | 1         | 8      | 7       | 5        | 3                 | 7                | 3                 | 4               | 6   | 8     | 4        | 4            | 7          | 6      | 5    | 1   | 8   |
| 70        | 5         | 5      | 5       | 5        | 3                 | 5                | 4                 | 4               | 6   | 5     | 3        | 5            | 5          | 7      | 5    | 3   | 7   |
| 71        | 7         | 9      | 6       | 5        | 3                 | 7                | 4                 | 3               | 6   | 6     | 8        | 6            | 7          | 6      | 6    | 3   | 9   |
| 72        | 5         | 6      | 5       | 5        | 5                 | 5                | 5                 | 6               | 5   | 6     | 9        | 4            | 6          | 5      | 6    | 4   | 8   |
| 73        | 7         | 5      | 7       | 5        | 7                 | 7                | 4                 | 4               | 5   | 6     | 7        | 7            | 7          | 7      | 6    | 4   | 7   |
| 74        | 3         | 8      | 5       | 7        | 3                 | 5                | 4                 | 4               | 5   | 6     | 8        | 5            | 7          | 6      | 5    | 3   | 8   |
| 75        | 7         | 8      | 5       | 5        | 3                 | 5                | 5                 | 4               | 5   | 5     | 8        | 6            | 7          | 7      | 6    | 3   | 8   |

Table 4. Agronomic score (continued).

| Entry no. | New Delhi | Kanpur | Gwali -ior | Amara -veti | Aurang -abad (Nath) | Aurang -abad (MAU) | Jalna (Mahan dara) | Jalna (MAHY CO) | PHF | Palam | Gulbe -rga | Bhavani -sagar | Kovil -patti | Misroy | Mean | Min | Max |
|-----------|-----------|--------|------------|-------------|---------------------|--------------------|--------------------|-----------------|-----|-------|------------|----------------|--------------|--------|------|-----|-----|
| 76        | 9         | 0      | 6          | 5           | 7                   | 5                  | 6                  | 4               | 6   | 6     | 5          | 5              | 7            | 6      | 6    | 4   | 9   |
| 77        | 7         | 5      | 5          | 5           | 3                   | 7                  | 5                  | 5               | 7   | 6     | 7          | 3              | 6            | 5      | 5    | 3   | 7   |
| 78        | 9         | 6      | 8          | 7           | 5                   | 5                  | 4                  | 4               | 6   | 6     | 6          | 3              | 7            | 8      | 6    | 3   | 9   |
| 79        | 7         | 8      | 8          | 5           | 5                   | 7                  | 5                  | 6               | 5   | 5     | 5          | 3              | 7            | 8      | 6    | 3   | 8   |
| 80        | 5         | 5      | 4          | 5           | 3                   | 5                  | 4                  | 5               | 6   | 4     | 2          | 6              | 5            | 5      | 5    | 2   | 6   |
| 81        | 7         | 5      | 7          | 5           | 3                   | 7                  | 4                  | 5               | 5   | 5     | 8          | 5              | 5            | 8      | 6    | 3   | 8   |
| 82        | 7         | 4      | 7          | 5           | 3                   | 3                  | 4                  | 6               | 6   | 4     | 7          | 5              | 6            | 5      | 5    | 3   | 7   |
| 83        | 5         | 0      | 8          | 5           | 7                   | 5                  | 6                  | 4               | 5   | 7     | 2          | 4              | 7            | 7      | 6    | 2   | 8   |
| 84        | 3         | 0      | 8          | 5           | 3                   | 9                  | 4                  | 4               | 0   | 6     | 7          | 4              | 7            | 6      | 6    | 3   | 8   |
| 85        | 7         | 6      | 8          | 3           | 3                   | 9                  | 5                  | 6               | 5   | 6     | 6          | 4              | 6            | 7      | 6    | 3   | 8   |
| 86        | 7         | 6      | 8          | 5           | 7                   | 5                  | 5                  | 5               | 5   | 5     | 5          | 4              | 7            | 5      | 6    | 4   | 8   |
| 87        | 7         | 5      | 7          | 7           | 7                   | 3                  | 4                  | 5               | 5   | 4     | 7          | 5              | 7            | 5      | 6    | 3   | 7   |
| 88        | 7         | 8      | 8          | 3           | 7                   | 9                  | 5                  | 4               | 5   | 6     | 4          | 4              | 7            | 7      | 6    | 3   | 8   |
| 89        | 9         | 5      | 7          | 3           | 7                   | 9                  | 6                  | 4               | 7   | 9     | 7          | 6              | 7            | 5      | 7    | 3   | 8   |
| 90        | 5         | 5      | 4          | 5           | 5                   | 5                  | 4                  | 4               | 6   | 3     | 2          | 6              | 6            | 6      | 5    | 2   | 6   |
| 91        | 9         | 0      | 8          | 5           | 7                   | 7                  | 5                  | 4               | 5   | 5     | 7          | 6              | 6            | 6      | 6    | 4   | 8   |
| 92        | 7         | 9      | 7          | 5           | 7                   | 9                  | 4                  | 5               | 5   | 3     | 8          | 7              | 7            | 6      | 6    | 3   | 8   |
| 93        | 0         | 4      | 5          | 5           | 1                   | 7                  | 3                  | 4               | 5   | 6     | 5          | 6              | 7            | 6      | 5    | 1   | 7   |
| 94        | 5         | 5      | 5          | 5           | 1                   | 7                  | 3                  | 5               | 5   | 5     | 4          | 7              | 6            | 5      | 5    | 1   | 7   |
| 95        | 9         | 4      | 5          | 5           | 7                   | 5                  | 3                  | 5               | 5   | 4     | 3          | 5              | 6            | 7      | 5    | 3   | 8   |
| 96        | 9         | 9      | 6          | 5           | 1                   | 9                  | 5                  | 4               | 6   | 3     | 3          | 4              | 7            | 6      | 6    | 1   | 9   |
| 97        | 9         | 9      | 7          | 5           | 7                   | 5                  | 5                  | 5               | 7   | 6     | 4          | 4              | 6            | 7      | 6    | 4   | 8   |
| 98        | 7         | 3      | 5          | 5           | 3                   | 5                  | 3                  | 5               | 5   | 4     | 8          | 4              | 7            | 6      | 5    | 3   | 8   |
| 99        | 0         | 6      | 7          | 5           | 5                   | 3                  | 3                  | 5               | 5   | 5     | 7          | 5              | 6            | 7      | 5    | 3   | 7   |
| 100       | 5         | 5      | 6          | 5           | 3                   | 5                  | 4                  | 4               | 6   | 5     | 2          | 6              | 5            | 5      | 5    | 2   | 6   |

Table B. Number of plants selected in the entries at 11 locations in India.

| Entry no. | New Delhi |       | Kanpur | Aasvatl | Aurang -abad |       | Jalna (MAYCO) | ICRISAT (PMF) | Palem | Gulberge | Bhevent-seger | No. of location selected at |
|-----------|-----------|-------|--------|---------|--------------|-------|---------------|---------------|-------|----------|---------------|-----------------------------|
|           | Hisar     | Delhi |        |         | (Neth)       | (MAU) |               |               |       |          |               |                             |
| 1         | 0         | 2     | 0      | 1       | 1            | 0     | 2             | 2             | 0     | 2        | 0             | 6                           |
| 2         | 1         | 2     | 0      | 1       | 2            | 0     | 0             | 1             | 0     | 2        | 0             | 6                           |
| 3         | 1         | 2     | 0      | 1       | 2            | 2     | 2             | 0             | 0     | 0        | 1             | 7                           |
| 4         | 1         | 1     | 0      | 1       | 1            | 0     | 0             | 1             | 0     | 0        | 1             | 6                           |
| 5         | 0         | 0     | 0      | 2       | 2            | 0     | 0             | 1             | 1     | 1        | 2             | 6                           |
| 6         | 0         | 0     | 0      | 2       | 1            | 0     | 2             | 0             | 0     | 1        | 0             | 4                           |
| 7         | 0         | 0     | 0      | 1       | 2            | 3     | 2             | 0             | 0     | 2        | 1             | 6                           |
| 8         | 0         | 0     | 0      | 1       | 1            | 5     | 1             | 0             | 0     | 2        | 0             | 5                           |
| 9         | 1         | 2     | 0      | 1       | 2            | 3     | 0             | 1             | 0     | 1        | 1             | 8                           |
| 10        | 0         | 0     | 0      | 2       | 2            | 0     | 0             | 0             | 2     | 2        | 0             | 3                           |
| 11        | 0         | 0     | 0      | 2       | 1            | 0     | 2             | 1             | 1     | 2        | 0             | 6                           |
| 12        | 0         | 2     | 0      | 2       | 1            | 0     | 1             | 0             | 0     | 2        | 1             | 6                           |
| 13        | 0         | 1     | 0      | 2       | 1            | 0     | 1             | 0             | 2     | 2        | 0             | 6                           |
| 14        | 0         | 1     | 0      | 2       | 1            | 3     | 2             | 0             | 0     | 1        | 0             | 6                           |
| 15        | 0         | 0     | 0      | 2       | 1            | 4     | 2             | 0             | 2     | 1        | 0             | 6                           |
| 16        | 1         | 0     | 0      | 1       | 1            | 0     | 1             | 0             | 2     | 1        | 0             | 6                           |
| 17        | 0         | 0     | 0      | 1       | 1            | 0     | 1             | 0             | 0     | 1        | 0             | 4                           |
| 18        | 0         | 0     | 0      | 1       | 1            | 2     | 2             | 1             | 3     | 1        | 0             | 7                           |
| 19        | 0         | 0     | 0      | 1       | 2            | 0     | 0             | 0             | 3     | 1        | 0             | 4                           |
| 20        | 0         | 0     | 0      | 2       | 2            | 2     | 0             | 0             | 3     | 1        | 0             | 5                           |
| 21        | 0         | 0     | 0      | 2       | 2            | 0     | 1             | 0             | 0     | 1        | 0             | 4                           |
| 22        | 0         | 0     | 0      | 2       | 1            | 2     | 2             | 0             | 0     | 1        | 0             | 5                           |
| 23        | 0         | 0     | 0      | 2       | 1            | 0     | 2             | 1             | 0     | 1        | 2             | 6                           |
| 24        | 1         | 2     | 5      | 2       | 1            | 0     | 1             | 0             | 0     | 2        | 0             | 7                           |
| 25        | 0         | 0     | 0      | 2       | 2            | 4     | 2             | 0             | 4     | 1        | 1             | 7                           |

Table 5. Number of plants selected in the entries at 11 locations in India.

| Entry no. | New Delhi |       | Kanpur | Amravati | Aurangabad |        | Jajna (MAYCO) | ICRISAT (PMF) | Patam | Gulberga | Bhevent-sager | No. of location selected at |
|-----------|-----------|-------|--------|----------|------------|--------|---------------|---------------|-------|----------|---------------|-----------------------------|
|           | Hisar     | Delhi |        |          | -abad      | (Meth) |               |               |       |          |               |                             |
| 26        | 0         | 0     | 3      | 2        | 2          | 4      | 2             | 1             | 0     | 1        | 0             | 7                           |
| 27        | 0         | 1     | 8      | 2        | 1          | 2      | 2             | 0             | 0     | 1        | 0             | 7                           |
| 28        | 0         | 1     | 0      | 2        | 1          | 0      | 1             | 0             | 0     | 2        | 0             | 5                           |
| 29        | 0         | 1     | 0      | 2        | 2          | 3      | 1             | 0             | 3     | 2        | 0             | 7                           |
| 30        | 0         | 0     | 0      | 2        | 2          | 0      | 0             | 0             | 3     | 1        | 0             | 4                           |
| 31        | 0         | 0     | 0      | 1        | 2          | 7      | 2             | 0             | 0     | 1        | 0             | 5                           |
| 32        | 0         | 2     | 0      | 1        | 1          | 5      | 2             | 1             | 3     | 2        | 0             | 8                           |
| 33        | 0         | 0     | 0      | 1        | 2          | 9      | 1             | 1             | 1     | 2        | 0             | 7                           |
| 34        | 0         | 2     | 0      | 2        | 2          | 4      | 1             | 1             | 3     | 1        | 1             | 9                           |
| 35        | 0         | 0     | 0      | 1        | 2          | 7      | 2             | 1             | 0     | 1        | 1             | 7                           |
| 36        | 1         | 0     | 0      | 2        | 2          | 7      | 2             | 1             | 0     | 1        | 2             | 8                           |
| 37        | 0         | 0     | 0      | 1        | 2          | 7      | 2             | 1             | 0     | 2        | 0             | 6                           |
| 38        | 1         | 0     | 0      | 1        | 2          | 5      | 1             | 1             | 0     | 2        | 1             | 8                           |
| 39        | 1         | 2     | 0      | 2        | 2          | 7      | 0             | 0             | 0     | 1        | 0             | 6                           |
| 40        | 0         | 0     | 0      | 1        | 2          | 5      | 0             | 0             | 0     | 1        | 0             | 4                           |
| 41        | 0         | 0     | 0      | 2        | 2          | 0      | 0             | 0             | 0     | 2        | 0             | 3                           |
| 42        | 0         | 0     | 0      | 2        | 3          | 0      | 1             | 0             | 0     | 1        | 0             | 4                           |
| 43        | 0         | 0     | 7      | 1        | 1          | 0      | 2             | 0             | 3     | 1        | 0             | 6                           |
| 44        | 0         | 0     | 0      | 2        | 2          | 0      | 0             | 0             | 0     | 2        | 0             | 3                           |
| 45        | 0         | 0     | 0      | 1        | 2          | 0      | 2             | 1             | 3     | 2        | 0             | 6                           |
| 46        | 1         | 0     | 0      | 2        | 1          | 3      | 2             | 0             | 3     | 2        | 0             | 7                           |
| 47        | 2         | 0     | 0      | 2        | 2          | 0      | 2             | 0             | 2     | 1        | 0             | 6                           |
| 48        | 0         | 3     | 0      | 2        | 2          | 2      | 2             | 0             | 0     | 1        | 1             | 7                           |
| 49        | 0         | 2     | 0      | 1        | 2          | 0      | 1             | 0             | 1     | 3        | 0             | 6                           |
| 50        | 0         | 0     | 0      | 2        | 1          | 4      | 0             | 0             | 3     | 1        | 0             | 5                           |

Table B. Number of plants selected in the entries at 11 locations in India.

| Entry no. | New Delhi |       | Kanpur |            | Aurangabad (Meth) |                  | Aurangabad (MAU) |               | Jalga (MAHYCO) |          | ICPISAT (PMF) |       | Pales Gultarga |   | Bhavnagar |   | No. of location selected at |
|-----------|-----------|-------|--------|------------|-------------------|------------------|------------------|---------------|----------------|----------|---------------|-------|----------------|---|-----------|---|-----------------------------|
|           | Hisar     | Delhi | Kanpur | Aurangabad | Aurangabad (Meth) | Aurangabad (MAU) | Jalga (MAHYCO)   | ICPISAT (PMF) | Pales          | Gultarga | Bhavnagar     | sagar |                |   |           |   |                             |
| 51        | 1         | 0     | 0      | 1          | 2                 | 0                | 2                | 0             | 2              | 1        | 0             | 0     | 2              | 1 | 0         | 0 | 6                           |
| 52        | 1         | 0     | 0      | 1          | 2                 | 5                | 2                | 0             | 3              | 1        | 0             | 0     | 3              | 1 | 1         | 0 | 8                           |
| 53        | 1         | 3     | 0      | 2          | 2                 | 0                | 2                | 1             | 0              | 3        | 0             | 1     | 0              | 3 | 0         | 0 | 7                           |
| 54        | 1         | 2     | 0      | 2          | 2                 | 2                | 2                | 1             | 0              | 1        | 1             | 0     | 0              | 1 | 0         | 0 | 8                           |
| 55        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 0              | 1        | 0             | 0     | 0              | 1 | 1         | 0 | 5                           |
| 56        | 0         | 1     | 0      | 2          | 2                 | 2                | 2                | 1             | 3              | 2        | 1             | 1     | 3              | 2 | 2         | 0 | 8                           |
| 57        | 0         | 0     | 0      | 1          | 2                 | 0                | 2                | 2             | 3              | 1        | 2             | 2     | 3              | 1 | 2         | 0 | 7                           |
| 58        | 0         | 0     | 0      | 1          | 2                 | 0                | 2                | 0             | 3              | 1        | 0             | 0     | 3              | 1 | 0         | 0 | 5                           |
| 59        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 3              | 2        | 0             | 0     | 3              | 2 | 0         | 0 | 5                           |
| 60        | 0         | 0     | 0      | 2          | 2                 | 3                | 2                | 0             | 3              | 1        | 0             | 0     | 3              | 1 | 0         | 0 | 5                           |
| 61        | 0         | 3     | 0      | 2          | 2                 | 4                | 2                | 2             | 3              | 3        | 0             | 0     | 3              | 3 | 1         | 0 | 8                           |
| 62        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 0              | 1        | 0             | 0     | 0              | 1 | 0         | 0 | 4                           |
| 63        | 0         | 2     | 0      | 2          | 2                 | 5                | 2                | 2             | 0              | 2        | 0             | 0     | 0              | 1 | 0         | 0 | 6                           |
| 64        | 0         | 2     | 0      | 2          | 2                 | 5                | 2                | 2             | 3              | 1        | 0             | 0     | 3              | 1 | 0         | 0 | 7                           |
| 65        | 0         | 1     | 0      | 2          | 2                 | 0                | 2                | 0             | 0              | 2        | 0             | 0     | 0              | 1 | 0         | 0 | 5                           |
| 66        | 0         | 2     | 0      | 1          | 2                 | 0                | 2                | 0             | 0              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 5                           |
| 67        | 0         | 1     | 0      | 2          | 2                 | 0                | 2                | 0             | 0              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 4                           |
| 68        | 0         | 1     | 0      | 2          | 2                 | 3                | 2                | 2             | 2              | 2        | 0             | 0     | 2              | 2 | 0         | 0 | 7                           |
| 69        | 0         | 3     | 0      | 2          | 1                 | 0                | 2                | 0             | 0              | 1        | 0             | 0     | 0              | 1 | 1         | 0 | 8                           |
| 70        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 2              | 1        | 0             | 0     | 2              | 1 | 0         | 0 | 4                           |
| 71        | 0         | 0     | 0      | 1          | 2                 | 0                | 2                | 0             | 0              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 4                           |
| 72        | 0         | 2     | 0      | 2          | 2                 | 2                | 2                | 2             | 0              | 2        | 0             | 0     | 0              | 2 | 1         | 0 | 7                           |
| 73        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 0              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 4                           |
| 74        | 0         | 3     | 0      | 1          | 3                 | 3                | 2                | 1             | 0              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 8                           |
| 75        | 0         | 0     | 0      | 2          | 2                 | 0                | 2                | 0             | 1              | 2        | 0             | 0     | 0              | 2 | 0         | 0 | 4                           |

Table 5. Number of plants selected in the entries at 11 locations in India.

| Entry no. | New | Kanpur | Amaravati | Aurang-<br>bed | Aurang-<br>bed | (Mah) | (MAU) | Jaina<br>(MAHYCO) | ICRISAT<br>(PIF) | Palam | Gulbarga | Bhavn- | No. of<br>location<br>selected at |
|-----------|-----|--------|-----------|----------------|----------------|-------|-------|-------------------|------------------|-------|----------|--------|-----------------------------------|
| 78        | 0   | 0      | 0         | 0              | 2              | 1     | 1     | 2                 | 0                | 0     | 2        | 0      | 5                                 |
| 77        | 0   | 0      | 0         | 0              | 2              | 2     | 2     | 1                 | 0                | 0     | 2        | 2      | 5                                 |
| 79        | 1   | 0      | 0         | 0              | 0              | 1     | 0     | 2                 | 0                | 0     | 2        | 2      | 5                                 |
| 80        | 0   | 0      | 0         | 0              | 1              | 1     | 2     | 0                 | 0                | 3     | 1        | 0      | 5                                 |
| 81        | 0   | 0      | 0         | 0              | 2              | 1     | 2     | 2                 | 0                | 3     | 2        | 0      | 6                                 |
| 82        | 0   | 0      | 0         | 0              | 1              | 1     | 2     | 2                 | 0                | 3     | 2        | 0      | 6                                 |
| 83        | 0   | 0      | 2         | 0              | 2              | 1     | 1     | 2                 | 0                | 0     | 1        | 1      | 6                                 |
| 84        | 0   | 0      | 0         | 0              | 2              | 2     | 1     | 2                 | 0                | 0     | 1        | 1      | 6                                 |
| 85        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 0     | 1        | 1      | 6                                 |
| 86        | 0   | 0      | 0         | 0              | 0              | 2     | 1     | 2                 | 0                | 0     | 1        | 1      | 6                                 |
| 87        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 3     | 1        | 1      | 6                                 |
| 88        | 0   | 0      | 0         | 0              | 0              | 2     | 1     | 2                 | 0                | 0     | 2        | 1      | 6                                 |
| 89        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 1                 | 0                | 0     | 2        | 1      | 6                                 |
| 90        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 1                 | 0                | 3     | 2        | 0      | 6                                 |
| 91        | 0   | 0      | 0         | 0              | 0              | 2     | 1     | 0                 | 0                | 2     | 2        | 0      | 6                                 |
| 92        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 2        | 0      | 6                                 |
| 93        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 94        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 95        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 96        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 97        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 98        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 99        | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |
| 100       | 0   | 0      | 0         | 0              | 0              | 1     | 1     | 2                 | 0                | 2     | 1        | 0      | 6                                 |

Table 8. Time to 50% bloom (d) at 12 locations in India and Africa.

| Entry no. | Ludhi -ana | Hisar | Aurang Aurang Jalna |                   | Gwell -bed -for (Math) (MAU) | Gwell -bed -bed (Mahan dara) | PHF | PMDM | Palem | Gulbe Bhevanl |        | Mean | Min | Max | Range |
|-----------|------------|-------|---------------------|-------------------|------------------------------|------------------------------|-----|------|-------|---------------|--------|------|-----|-----|-------|
|           |            |       | -for (Math)         | -bed (Mahan dara) |                              |                              |     |      |       | -rge          | -sager |      |     |     |       |
| 1         | -          | 68    | 69                  | 51                | 57                           | 54                           | 50  | 60   | 69    | -             | 62     | 59   | 60  | 68  | 18    |
| 2         | 49         | 56    | 59                  | 52                | 54                           | 54                           | 50  | 55   | 66    | 51            | 43     | 53   | 43  | 66  | 23    |
| 3         | 49         | 60    | 62                  | 53                | 51                           | 56                           | 50  | 55   | -     | 49            | 50     | 53   | 48  | 62  | 13    |
| 4         | 47         | 58    | 62                  | 52                | 51                           | 54                           | 53  | 54   | -     | 48            | 50     | 53   | 47  | 62  | 15    |
| 5         | 49         | 58    | 60                  | 53                | 51                           | 54                           | 50  | 55   | 59    | 47            | 48     | 53   | 47  | 60  | 13    |
| 6         | 58         | 72    | 62                  | 54                | 53                           | 59                           | 50  | 56   | 63    | 54            | 52     | 59   | 50  | 72  | 22    |
| 7         | 61         | 58    | 61                  | 52                | 50                           | 53                           | 50  | 55   | 60    | 46            | 48     | 54   | 46  | 61  | 15    |
| 8         | 60         | 59    | 62                  | 55                | 56                           | 59                           | 53  | 62   | 63    | 48            | 48     | 56   | 48  | 63  | 15    |
| 9         | 62         | 50    | 59                  | 51                | 49                           | 51                           | 50  | 54   | 58    | 46            | 48     | 52   | 46  | 62  | 17    |
| 10        | 58         | 56    | 62                  | 49                | 51                           | 54                           | -   | 60   | 66    | 45            | 48     | 54   | 45  | 66  | 21    |
| 11        | 60         | 60    | 64                  | 52                | 56                           | 59                           | 50  | 56   | 68    | 56            | 48     | 57   | 48  | 68  | 20    |
| 12        | 58         | -     | 63                  | 54                | 56                           | 54                           | 57  | 57   | 68    | 50            | 50     | 56   | 50  | 68  | 18    |
| 13        | 60         | 68    | 65                  | 52                | 56                           | 57                           | 50  | 57   | 69    | 46            | 47     | 57   | 46  | 68  | 23    |
| 14        | 51         | 50    | 67                  | 50                | 57                           | 60                           | 48  | 56   | 69    | 49            | 51     | 55   | 48  | 69  | 20    |
| 15        | 50         | 54    | 62                  | 51                | 50                           | 51                           | 50  | 55   | 57    | 46            | 48     | 52   | 46  | 62  | 16    |
| 16        | 60         | 56    | 64                  | 53                | 58                           | 58                           | 55  | 57   | 63    | 47            | 50     | 56   | 47  | 64  | 17    |
| 17        | 57         | 66    | 65                  | 55                | 57                           | 56                           | 55  | 60   | 69    | 52            | 50     | 58   | 50  | 66  | 19    |
| 18        | 54         | 62    | 63                  | 53                | 54                           | 56                           | 50  | 62   | 66    | 51            | 53     | 57   | 50  | 66  | 18    |
| 19        | 61         | 72    | 66                  | 51                | 59                           | 57                           | 50  | 62   | 63    | 54            | 58     | 59   | 50  | 72  | 22    |
| 20        | 59         | 66    | 61                  | 50                | 51                           | 54                           | -   | 56   | 62    | 46            | 50     | 55   | 46  | 66  | 20    |
| 21        | 60         | 60    | 62                  | 48                | 57                           | 57                           | 63  | 67   | 67    | 47            | 69     | 57   | 47  | 67  | 20    |
| 22        | 60         | 66    | 62                  | 51                | 60                           | 60                           | 57  | 60   | 68    | 53            | 63     | 60   | 51  | 66  | 17    |
| 23        | -          | 68    | 63                  | 50                | 59                           | 60                           | 55  | 60   | 66    | 52            | 58     | 59   | 50  | 66  | 18    |
| 24        | -          | 62    | 62                  | 48                | 58                           | 56                           | 55  | 67   | 68    | 54            | 60     | 57   | 48  | 66  | 18    |
| 25        | 59         | 68    | 59                  | 52                | 57                           | 56                           | 52  | 57   | 64    | 50            | 48     | 56   | 48  | 68  | 20    |

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Table 8. Time to 50% bloom (continued).

| Entry no. | Aurang Aurang Jalna |       |                 |       |             |     |       |       |               |        | Mean | Min | Max | Range |    |
|-----------|---------------------|-------|-----------------|-------|-------------|-----|-------|-------|---------------|--------|------|-----|-----|-------|----|
|           | Ludhiana            | Hisar | Gwallior (Neth) | (MAU) | (Mahendara) | PHF | PKDOK | Palam | Gulbe Bhevanl | Missey |      |     |     |       |    |
| 26        | 59                  | 62    | 58              | 62    | 50          | 56  | 56    | 55    | 62            | 69     | 50   | 49  | 49  | 69    | 20 |
| 27        | 56                  | 78    | 60              | 65    | 52          | 58  | 60    | 53    | 56            | 69     | 56   | 48  | 48  | 78    | 29 |
| 28        | 57                  | 58    | 58              | 64    | 49          | 58  | 52    | 48    | 55            | 66     | 48   | 50  | 48  | 68    | 20 |
| 29        | 62                  | 59    | 53              | 58    | 52          | 57  | 54    | 46    | 53            | 68     | 46   | 48  | 46  | 68    | 22 |
| 30        | 64                  | 56    | 47              | 56    | 54          | 51  | 52    | -     | 55            | 64     | 51   | 50  | 47  | 64    | 17 |
| 31        | 60                  | 66    | 55              | 59    | 53          | 53  | 56    | 52    | 57            | 63     | 49   | 52  | 49  | 66    | 19 |
| 32        | 60                  | 66    | 61              | 60    | 56          | 57  | 56    | 52    | 56            | 62     | 49   | 52  | 49  | 66    | 17 |
| 33        | 58                  | 70    | 55              | 61    | 50          | 58  | 56    | 46    | 57            | 63     | 50   | 56  | 46  | 70    | 24 |
| 34        | 58                  | 56    | 54              | 60    | 52          | 60  | 56    | 52    | 63            | 69     | 51   | 52  | 51  | 66    | 18 |
| 35        | 58                  | 62    | 58              | 61    | 51          | 58  | 59    | 55    | 59            | 69     | 52   | 52  | 51  | 69    | 19 |
| 36        | 58                  | 66    | 56              | 62    | 51          | 57  | 62    | 53    | 57            | 69     | 51   | 52  | 51  | 69    | 18 |
| 37        | 48                  | 52    | 53              | 56    | 52          | 49  | 49    | 46    | 59            | 59     | 45   | 48  | 45  | 59    | 12 |
| 38        | 53                  | 61    | 55              | 56    | 48          | 52  | 56    | 50    | 56            | 66     | 47   | 50  | 47  | 66    | 19 |
| 39        | 54                  | 55    | 54              | 58    | 50          | 57  | 59    | 57    | 56            | 69     | 54   | 48  | 49  | 69    | 21 |
| 40        | 56                  | 53    | 50              | 57    | 49          | 51  | 53    | -     | 64            | 66     | 47   | 48  | 47  | 66    | 19 |
| 41        | 50                  | 56    | 56              | 58    | 48          | 56  | 60    | 60    | 62            | 63     | 54   | 56  | 49  | 63    | 15 |
| 42        | 51                  | 53    | 55              | 57    | 48          | 56  | 57    | 56    | 63            | 68     | 50   | 59  | 49  | 66    | 20 |
| 43        | 50                  | 74    | 50              | 60    | 50          | 61  | 67    | 67    | 63            | 66     | 65   | 65  | 50  | 74    | 24 |
| 44        | 54                  | 66    | 56              | 60    | 52          | 61  | 60    | 60    | 63            | 69     | 56   | 57  | 52  | 69    | 17 |
| 45        | 53                  | 64    | 59              | 61    | 52          | 59  | 63    | 53    | 59            | 69     | 56   | 56  | 52  | 69    | 17 |
| 46        | 52                  | 63    | 59              | 59    | 51          | 59  | 59    | 55    | 63            | 70     | 53   | 56  | 51  | 70    | 19 |
| 47        | 51                  | 69    | 59              | 57    | 52          | 59  | 54    | 56    | 58            | 66     | 46   | 51  | 46  | 66    | 23 |
| 48        | 53                  | 56    | 50              | 56    | 51          | 52  | 50    | 53    | 56            | 66     | 50   | 59  | 50  | 66    | 16 |
| 49        | 50                  | 66    | 59              | 57    | 52          | 52  | 57    | 46    | 57            | 66     | 52   | 48  | 46  | 66    | 22 |
| 50        | 53                  | 54    | 50              | 59    | 53          | 52  | 53    | -     | 57            | 66     | 53   | 49  | 49  | 66    | 19 |

Table 8. Time to 50% bloom (continued).

| Entry no. | Aurang Aurang Jalna |        |      |     |     | Gulba Bhavnar |        |      |     |     | Mean | Min | Max | Range |   |
|-----------|---------------------|--------|------|-----|-----|---------------|--------|------|-----|-----|------|-----|-----|-------|---|
|           | Earliest            | Latest | Mean | Min | Max | Earliest      | Latest | Mean | Min | Max |      |     |     |       |   |
| 51        | -                   | 54     | 58   | 58  | 56  | 48            | 57     | 58   | 55  | 53  | 55   | 56  | 48  | 56    | 8 |
| 52        | 54                  | 58     | 58   | 58  | 56  | 49            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 53        | 54                  | 56     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 54        | -                   | 54     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 55        | 53                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 56        | -                   | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 57        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 58        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 59        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 60        | 57                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 61        | 54                  | 58     | 58   | 58  | 56  | 47            | 58     | 58   | 55  | 53  | 56   | 56  | 47  | 56    | 9 |
| 62        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 63        | 51                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 64        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 65        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 66        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 67        | 48                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 68        | 48                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 69        | 48                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 70        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 71        | 47                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 72        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 73        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 74        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |
| 75        | 58                  | 58     | 58   | 58  | 56  | 48            | 58     | 58   | 55  | 53  | 56   | 56  | 48  | 56    | 8 |

Table 6. Time to 50% bloom (continued).

| Entry no. | Aurang Aurang Jalna |       |                           |                                     |     |       |       |                    |        |      | Min | Max | Range |    |    |    |
|-----------|---------------------|-------|---------------------------|-------------------------------------|-----|-------|-------|--------------------|--------|------|-----|-----|-------|----|----|----|
|           | Ludhi -ena          | Hisar | Gwalli -abad (Nath) (MAU) | Gwalli -abad (Mehen) (Mehen) (dara) | PHF | PHOMH | Palam | Gulbe Bhavevi -rga | Nissey | Mean |     |     |       |    |    |    |
| 76        | 53                  | -     | 50                        | 61                                  | 53  | 59    | 64    | 55                 | 63     | 61   | 51  | 47  | 56    | 47 | 64 | 17 |
| 77        | 55                  | 69    | 45                        | 64                                  | 51  | 52    | 54    | 57                 | 58     | 69   | 47  | 50  | 56    | 45 | 69 | 24 |
| 78        | 52                  | 68    | 48                        | 58                                  | 54  | 56    | 54    | 52                 | 58     | 69   | 48  | 51  | 56    | 48 | 69 | 21 |
| 79        | 56                  | 59    | 55                        | 59                                  | 52  | 56    | 53    | 52                 | 58     | 68   | 48  | 52  | 56    | 48 | 68 | 19 |
| 80        | 58                  | 60    | 50                        | 58                                  | 50  | 51    | 54    | -                  | 58     | 61   | 47  | 50  | 54    | 47 | 61 | 14 |
| 81        | 52                  | 56    | 50                        | 59                                  | 52  | 55    | 50    | 52                 | 57     | 66   | 45  | 50  | 54    | 45 | 66 | 21 |
| 82        | 54                  | 64    | 54                        | 60                                  | 50  | 58    | 53    | 57                 | 64     | 69   | 53  | 52  | 57    | 50 | 69 | 19 |
| 83        | 51                  | 53    | 50                        | 62                                  | 61  | 60    | 56    | 56                 | 65     | 68   | 48  | 55  | 56    | 48 | 68 | 20 |
| 84        | 52                  | 55    | 58                        | 61                                  | 49  | 58    | 56    | 52                 | 63     | 69   | 45  | 49  | 56    | 45 | 69 | 24 |
| 85        | 51                  | 60    | 58                        | 63                                  | 51  | 59    | 58    | 55                 | 62     | 68   | 50  | 51  | 57    | 50 | 68 | 18 |
| 86        | 51                  | 56    | 56                        | 62                                  | 52  | 55    | 53    | 52                 | 64     | 68   | 46  | 50  | 55    | 46 | 68 | 22 |
| 87        | 51                  | 68    | 58                        | 62                                  | 50  | 57    | 58    | 60                 | 58     | 64   | 45  | 51  | 58    | 45 | 64 | 18 |
| 88        | 52                  | 48    | 47                        | 61                                  | 48  | 50    | 51    | 52                 | 58     | 58   | 46  | 48  | 52    | 46 | 61 | 15 |
| 89        | 58                  | 74    | 62                        | 63                                  | 51  | 61    | 60    | 60                 | 63     | 69   | 58  | 55  | 61    | 51 | 74 | 23 |
| 90        | 55                  | 66    | 50                        | 64                                  | 51  | 51    | 54    | -                  | 57     | 63   | 48  | 48  | 56    | 48 | 66 | 18 |
| 91        | 54                  | 59    | 58                        | 62                                  | 53  | 60    | 63    | 60                 | 63     | 69   | 56  | 55  | 58    | 53 | 69 | 16 |
| 92        | 53                  | 68    | 62                        | 62                                  | 50  | 57    | 57    | 57                 | 58     | 60   | 48  | 48  | 57    | 48 | 68 | 19 |
| 93        | 56                  | -     | 50                        | 61                                  | 53  | 59    | 66    | 60                 | 63     | 69   | 58  | 74  | 61    | 50 | 74 | 24 |
| 94        | 50                  | 56    | 50                        | 62                                  | 52  | 56    | 54    | 52                 | 64     | 62   | 53  | 47  | 56    | 47 | 64 | 17 |
| 95        | 52                  | 72    | 60                        | 64                                  | 52  | 58    | 57    | 55                 | 58     | 68   | 53  | 51  | 68    | 68 | 72 | 22 |
| 96        | 51                  | -     | 61                        | 63                                  | 52  | 58    | 62    | 57                 | 63     | 69   | 58  | 52  | 58    | 51 | 68 | 18 |
| 97        | 52                  | 58    | 52                        | 58                                  | 48  | 51    | 48    | 56                 | 62     | 62   | 46  | 48  | 53    | 46 | 62 | 16 |
| 98        | 53                  | -     | 63                        | 58                                  | 48  | 58    | 62    | 55                 | 64     | 69   | 53  | 54  | 58    | 48 | 69 | 21 |
| 99        | 60                  | 56    | 53                        | 57                                  | 48  | 50    | 53    | 56                 | 58     | 63   | 46  | 50  | 54    | 46 | 63 | 17 |
| 100       | 57                  | 64    | 50                        | 68                                  | 48  | 51    | 54    | -                  | 58     | 61   | 48  | 56  | 66    | 48 | 64 | 18 |

Table 7. Plant height (cm) at 9 locations in India and Africa.

| Entry no. | Ludhiana | Hisar | Kanpur | Aurang      |     | Jelna |       | PHE | Palam | Gulba -rga | Mimsey | Mean | Min | Max | Range |
|-----------|----------|-------|--------|-------------|-----|-------|-------|-----|-------|------------|--------|------|-----|-----|-------|
|           |          |       |        | -abad (MAU) | CO) | (MAU) | (MAU) |     |       |            |        |      |     |     |       |
| 1         | -        | 90    | -      | 87          | 144 | 145   | 60    | 106 | 143   | 111        | 60     | 146  | 86  |     |       |
| 2         | 180      | 167   | 215    | 101         | 141 | 195   | 90    | 153 | 172   | 159        | 90     | 218  | 126 |     |       |
| 3         | 204      | 187   | 195    | 129         | 195 | 220   | 90    | -   | 180   | 176        | 90     | 220  | 130 |     |       |
| 4         | 181      | 153   | 210    | 106         | 205 | 185   | 120   | -   | 160   | 167        | 106    | 210  | 102 |     |       |
| 5         | 184      | 220   | 210    | 110         | 204 | 180   | 125   | 147 | 182   | 174        | 110    | 220  | 110 |     |       |
| 6         | 182      | 240   | 190    | 160         | 231 | 230   | 100   | 201 | 215   | 195        | 100    | 240  | 140 |     |       |
| 7         | 175      | 220   | 215    | 138         | 188 | 180   | 140   | 162 | 188   | 177        | 138    | 220  | 82  |     |       |
| 8         | 163      | 170   | 220    | 143         | 203 | 200   | 100   | 130 | 160   | 165        | 100    | 220  | 120 |     |       |
| 9         | 173      | 213   | 218    | 148         | 189 | 220   | 100   | 164 | 161   | 176        | 100    | 220  | 120 |     |       |
| 10        | 148      | 160   | 135    | 113         | 167 | 140   | 130   | 115 | 133   | 138        | 113    | 167  | 54  |     |       |
| 11        | 156      | 227   | 220    | 145         | 217 | 235   | 80    | 161 | 208   | 189        | 80     | 226  | 156 |     |       |
| 12        | 151      | -     | 190    | 106         | 128 | 230   | 160   | 101 | 188   | 157        | 101    | 230  | 129 |     |       |
| 13        | 171      | 150   | -      | 112         | 207 | 200   | 120   | 158 | 163   | 160        | 112    | 207  | 96  |     |       |
| 14        | 168      | 197   | 190    | 154         | 202 | 230   | 170   | 158 | 162   | 184        | 154    | 230  | 78  |     |       |
| 15        | 164      | 227   | -      | 136         | 183 | 180   | 174   | 134 | 184   | 173        | 134    | 227  | 93  |     |       |
| 16        | 212      | 220   | 205    | 148         | 210 | 230   | 116   | 148 | 176   | 165        | 116    | 230  | 114 |     |       |
| 17        | 140      | 137   | -      | 108         | 141 | 160   | 160   | 159 | 150   | 147        | 106    | 180  | 72  |     |       |
| 18        | 151      | 147   | 215    | 126         | 148 | 145   | 120   | 116 | 121   | 143        | 116    | 215  | 98  |     |       |
| 19        | 122      | 117   | 195    | 101         | 132 | 130   | 160   | 106 | 108   | 133        | 101    | 195  | 84  |     |       |
| 20        | 141      | 153   | 140    | 104         | 137 | 150   | 80    | 126 | 133   | 130        | 80     | 158  | 83  |     |       |
| 21        | 168      | 180   | -      | 120         | 180 | 180   | 120   | 125 | 154   | 155        | 120    | 180  | 78  |     |       |
| 22        | 162      | 193   | 185    | 150         | 200 | 220   | 136   | 130 | 171   | 174        | 130    | 200  | 88  |     |       |
| 23        | 188      | 183   | 200    | 133         | 206 | 225   | 154   | 133 | 175   | 177        | 133    | 225  | 82  |     |       |
| 24        | 181      | 180   | 210    | 130         | 188 | 210   | 160   | 147 | 158   | 171        | 130    | 210  | 88  |     |       |
| 25        | 153      | 160   | 200    | 158         | 234 | 208   | 170   | 151 | 176   | 160        | 151    | 204  | 88  |     |       |

**Table 7. Plant height (continued).**

| Entry no. | Ludhiana | Hisar | Kanpur | Aurangabad (MAU) | Jalna (MAHY CO) | PHF | Pales | Gulbarga | Nisamey | Mean | Min | Max | Range |
|-----------|----------|-------|--------|------------------|-----------------|-----|-------|----------|---------|------|-----|-----|-------|
| 26        | 158      | 200   | 190    | 162              | 188             | 225 | 170   | 145      | 173     | 179  | 145 | 225 | 80    |
| 27        | 169      | 153   | 180    | 153              | 170             | 220 | 126   | 160      | 163     | 169  | 126 | 220 | 94    |
| 28        | 198      | 167   | 200    | 132              | 201             | 240 | 147   | 136      | 156     | 175  | 132 | 240 | 108   |
| 29        | 161      | 190   | 180    | 132              | 177             | 190 | 160   | 142      | 172     | 169  | 132 | 190 | 58    |
| 30        | 146      | 123   | 138    | 133              | 137             | 155 | 120   | 127      | 137     | 135  | 120 | 155 | 35    |
| 31        | 153      | 150   | 219    | 150              | 185             | 210 | 154   | 148      | 161     | 170  | 148 | 219 | 71    |
| 32        | 123      | 137   | 210    | 137              | 152             | 185 | 120   | 108      | 155     | 147  | 108 | 210 | 102   |
| 33        | 140      | 183   | 180    | 184              | 188             | 235 | 160   | 151      | 162     | 167  | 124 | 235 | 111   |
| 34        | 148      | 173   | 215    | 167              | 201             | 230 | 164   | 151      | 172     | 180  | 148 | 230 | 82    |
| 35        | 177      | 200   | 200    | 140              | 173             | 215 | 83    | 149      | 172     | 168  | 83  | 215 | 132   |
| 36        | 187      | 187   | 190    | 156              | 192             | 235 | 133   | 139      | 190     | 179  | 133 | 235 | 102   |
| 37        | 147      | 177   | 190    | 121              | 148             | 160 | 98    | 114      | 149     | 145  | 98  | 190 | 92    |
| 38        | 168      | 180   | 198    | 140              | 153             | 195 | 82    | 110      | 157     | 153  | 82  | 198 | 108   |
| 39        | 156      | 183   | 190    | 143              | 148             | 210 | 105   | 130      | 162     | 158  | 105 | 210 | 105   |
| 40        | 140      | 150   | 141    | 124              | 128             | 155 | 100   | 113      | 133     | 132  | 100 | 155 | 55    |
| 41        | 148      | 180   | 210    | 138              | 173             | 220 | 142   | 107      | 163     | 168  | 107 | 220 | 113   |
| 42        | 163      | 187   | 215    | 130              | 178             | 210 | 115   | 132      | 165     | 167  | 115 | 215 | 108   |
| 43        | 202      | 210   | 220    | 148              | 227             | 240 | 130   | 151      | 188     | 191  | 130 | 240 | 110   |
| 44        | 168      | 133   | 180    | 124              | 178             | 185 | 116   | 132      | 188     | 156  | 116 | 188 | 73    |
| 45        | 180      | 183   | 185    | 140              | 208             | 230 | 141   | 132      | 188     | 177  | 132 | 230 | 98    |
| 46        | 181      | 183   | 190    | 162              | 188             | 230 | 130   | 158      | 201     | 181  | 130 | 230 | 100   |
| 47        | 147      | 167   | 180    | 127              | 168             | 180 | 113   | 115      | 161     | 151  | 113 | 180 | 67    |
| 48        | 128      | 130   | 185    | 134              | 168             | 200 | 130   | 122      | 186     | 152  | 122 | 200 | 78    |
| 49        | 151      | 120   | 187    | 133              | 157             | 155 | 117   | 98       | 138     | 138  | 98  | 187 | 88    |
| 50        | 138      | 110   | 130    | 121              | 153             | 150 | 110   | 107      | 128     | 128  | 107 | 188 | 48    |

Table 7. Plant height (continued).

| Entry no. | Aurang -abad (MAU) CO) |       |        |                 |     |       |            |        |      |     | Range |     |     |
|-----------|------------------------|-------|--------|-----------------|-----|-------|------------|--------|------|-----|-------|-----|-----|
|           | Ludhiana               | Hisar | Kanpur | Jains (MAU) CO) | PHF | Pales | Gulbe -rge | Himsey | Mean | Min |       | Max |     |
| 51        | 151                    | 150   | 192    | 105             | 170 | 175   | 124        | 141    | 176  | 154 | 105   | 192 | 87  |
| 52        | 165                    | 180   | 215    | 150             | 201 | 220   | 129        | 157    | 189  | 178 | 129   | 220 | 91  |
| 53        | 159                    | 153   | 210    | 137             | 192 | 180   | 144        | 155    | 177  | 167 | 137   | 210 | 73  |
| 54        | 155                    | 143   | 190    | 126             | 186 | 190   | 143        | 143    | 153  | 159 | 126   | 190 | 84  |
| 55        | 171                    | 133   | 185    | 113             | 163 | 230   | 112        | 103    | 177  | 154 | 103   | 230 | 127 |
| 56        | 183                    | 150   | 230    | 122             | 181 | 175   | 120        | 143    | 111  | 157 | 111   | 230 | 119 |
| 57        | 139                    | 119   | 215    | 106             | 167 | 190   | 114        | 144    | 167  | 151 | 106   | 215 | 109 |
| 58        | 218                    | -     | 210    | 120             | 153 | 185   | 113        | 133    | 172  | 164 | 113   | 218 | 105 |
| 59        | 207                    | 183   | 190    | 155             | 181 | 210   | 133        | 158    | 181  | 171 | 131   | 218 | 79  |
| 60        | 146                    | 117   | 135    | 111             | 156 | 150   | 108        | 119    | 167  | 134 | 108   | 167 | 58  |
| 61        | 141                    | 180   | 190    | 144             | 190 | 200   | 115        | 150    | 167  | 164 | 115   | 200 | 84  |
| 62        | 145                    | 157   | 178    | 139             | 162 | 180   | 122        | 124    | 174  | 153 | 122   | 180 | 58  |
| 63        | 154                    | 173   | 195    | 144             | 194 | 170   | 128        | 144    | 165  | 163 | 128   | 185 | 87  |
| 64        | 162                    | 110   | 188    | 149             | 190 | 205   | 134        | 154    | 158  | 161 | 110   | 205 | 85  |
| 65        | 176                    | 183   | 181    | 142             | 218 | 230   | 159        | 170    | 163  | 180 | 142   | 230 | 88  |
| 66        | 151                    | 157   | 198    | 126             | 176 | 200   | 132        | 155    | 135  | 159 | 126   | 200 | 74  |
| 67        | 124                    | 127   | 210    | 106             | 175 | 175   | 138        | 127    | 144  | 148 | 108   | 210 | 102 |
| 68        | 128                    | 147   | 224    | 118             | 175 | 180   | 132        | 150    | 154  | 159 | 118   | 224 | 106 |
| 69        | 156                    | 147   | 201    | 107             | 153 | 175   | 110        | 157    | 159  | 152 | 107   | 201 | 94  |
| 70        | 145                    | 123   | 145    | 121             | 155 | 150   | 98         | 112    | 146  | 133 | 98    | 155 | 57  |
| 71        | 171                    | 170   | 186    | 124             | 178 | 180   | 121        | 128    | 130  | 152 | 121   | 185 | 84  |
| 72        | 178                    | 190   | 215    | 134             | 217 | 210   | 124        | 148    | 181  | 177 | 124   | 217 | 89  |
| 73        | 178                    | 153   | 225    | 118             | 175 | 195   | 128        | 130    | 178  | 184 | 118   | 225 | 107 |
| 74        | 152                    | 143   | 224    | 128             | 185 | 180   | 147        | 121    | 144  | 158 | 121   | 224 | 103 |
| 75        | 188                    | 147   | 224    | 128             | 177 | 200   | 122        | 136    | 148  | 161 | 122   | 224 | 102 |

Table 7. Plant height (continued).

| Entry no. | Ludhiana | Misar | Kanpur | Aurangabad (MAU) | Jalna (MAHY CO) | PHF | Pales | Gulbarga | Missey | Mean | Min | Max | Range |
|-----------|----------|-------|--------|------------------|-----------------|-----|-------|----------|--------|------|-----|-----|-------|
| 76        | 160      | -     | -      | 105              | 146             | 170 | 93    | 120      | 171    | 136  | 93  | 171 | 78    |
| 77        | 174      | 117   | 220    | 122              | 172             | 165 | 115   | 127      | 169    | 153  | 115 | 220 | 105   |
| 78        | 133      | 137   | 210    | 116              | 167             | 170 | 115   | 134      | 142    | 147  | 115 | 210 | 95    |
| 79        | 97       | 100   | 188    | 115              | 154             | 135 | 107   | 95       | 121    | 124  | 95  | 188 | 93    |
| 80        | 114      | 137   | 133    | 112              | 155             | 140 | 120   | 114      | 145    | 130  | 112 | 155 | 43    |
| 81        | 149      | 153   | 195    | 111              | 153             | 200 | 129   | 130      | 150    | 152  | 111 | 200 | 69    |
| 82        | 156      | 143   | 205    | 120              | 164             | 180 | 105   | 141      | 155    | 152  | 105 | 205 | 100   |
| 83        | 119      | 100   | -      | 92               | 169             | 115 | 67    | 97       | 114    | 109  | 67  | 169 | 102   |
| 84        | 126      | 147   | -      | 115              | 130             | 150 | 85    | 123      | 106    | 123  | 85  | 150 | 65    |
| 85        | 161      | 170   | 198    | 109              | 201             | 155 | 99    | 114      | 139    | 150  | 99  | 201 | 102   |
| 86        | 154      | 163   | 180    | 107              | 176             | 160 | 105   | 129      | 154    | 147  | 105 | 180 | 75    |
| 87        | 184      | 180   | 215    | 139              | 175             | 200 | 124   | 158      | 172    | 172  | 124 | 215 | 91    |
| 88        | 129      | 143   | 217    | 110              | 175             | 180 | 100   | 106      | 121    | 140  | 100 | 217 | 117   |
| 89        | 152      | 110   | 225    | 118              | 156             | 165 | 79    | 136      | 151    | 144  | 79  | 225 | 146   |
| 90        | 155      | 117   | 140    | 123              | 186             | 155 | 119   | 115      | 119    | 136  | 115 | 186 | 71    |
| 91        | 158      | 160   | -      | 137              | 203             | 180 | 113   | 135      | 139    | 153  | 113 | 203 | 90    |
| 92        | 137      | 137   | 185    | 116              | 192             | 205 | 167   | 140      | 116    | 159  | 116 | 205 | 69    |
| 93        | 88       | -     | 100    | 92               | 102             | 100 | 57    | 68       | 76     | 87   | 57  | 100 | 43    |
| 94        | 122      | 167   | 220    | 109              | 100             | 210 | 59    | 79       | 145    | 134  | 59  | 220 | 161   |
| 95        | 207      | 187   | 199    | 91               | 139             | 245 | 163   | 113      | 153    | 165  | 91  | 245 | 134   |
| 96        | 115      | -     | 210    | 110              | 156             | 120 | 106   | 119      | 144    | 135  | 106 | 210 | 104   |
| 97        | 94       | 87    | 126    | 79               | 115             | 100 | 70    | 66       | 90     | 89   | 70  | 126 | 56    |
| 98        | 217      | -     | 230    | 102              | 169             | 180 | 91    | 122      | 113    | 156  | 91  | 230 | 139   |
| 99        | 134      | 157   | 186    | 101              | 156             | 180 | 134   | 110      | 113    | 134  | 101 | 187 | 56    |
| 100       | 139      | 143   | 132    | 105              | 141             | 180 | 123   | 121      | 124    | 130  | 105 | 180 | 46    |

**Table 8. Ear length (cm) at 3 locations in India.**

| Entry no. | Hisar | Aurangabad (Nath) | PHF | Mean | Entry no. | Hisar | Aurangabad (Nath) | PHF | Mean |
|-----------|-------|-------------------|-----|------|-----------|-------|-------------------|-----|------|
| 1         | 16    | 15                | 18  | 16   | 26        | 25    | 20                | 21  | 22   |
| 2         | 19    | 16                | 20  | 18   | 27        | 27    | 23                | 22  | 24   |
| 3         | 23    | 20                | 22  | 22   | 28        | 29    | 18                | 27  | 25   |
| 4         | 25    | 18                | 22  | 22   | 29        | 20    | 18                | 15  | 18   |
| 5         | 25    | 20                | 20  | 22   | 30        | 38    | 28                | 39  | 34   |
| 6         | 24    | 17                | 20  | 20   | 31        | 25    | 23                | 28  | 25   |
| 7         | 22    | 19                | 22  | 21   | 32        | 25    | 19                | 22  | 22   |
| 8         | 26    | 22                | 23  | 24   | 33        | 21    | 26                | 27  | 25   |
| 9         | 25    | 18                | 24  | 22   | 34        | 25    | 23                | 21  | 23   |
| 10        | 32    | 25                | 26  | 28   | 35        | 28    | 20                | 24  | 24   |
| 11        | 31    | 17                | 21  | 23   | 36        | 27    | 17                | 18  | 21   |
| 12        | -     | 17                | 30  | 24   | 37        | 23    | 18                | 22  | 21   |
| 13        | 22    | 23                | 24  | 23   | 38        | 28    | 25                | 22  | 25   |
| 14        | 25    | 19                | 21  | 22   | 39        | 31    | 24                | 24  | 28   |
| 15        | 23    | 17                | 20  | 20   | 40        | 41    | 27                | 31  | 33   |
| 16        | 28    | 25                | 24  | 26   | 41        | 29    | 23                | 25  | 28   |
| 17        | 25    | 15                | 19  | 20   | 42        | 29    | 26                | 28  | 28   |
| 18        | 23    | 20                | 24  | 22   | 43        | 30    | 21                | 30  | 27   |
| 19        | 25    | 22                | 24  | 24   | 44        | 23    | 21                | 20  | 21   |
| 20        | 39    | 28                | 31  | 23   | 45        | 25    | 20                | 29  | 25   |
| 21        | 24    | 18                | 22  | 21   | 46        | 25    | 18                | 22  | 21   |
| 22        | 22    | 24                | 22  | 23   | 47        | 20    | 18                | 18  | 18   |
| 23        | 31    | 24                | 25  | 23   | 48        | 22    | 18                | 20  | 20   |
| 24        | 24    | 21                | 21  | 22   | 49        | 22    | 28                | 19  | 23   |
| 25        | 23    | 18                | 20  | 20   | 50        | 33    | 17                | 30  | 27   |



**Table 8. Ear length (cm) at 3 locations in India (continued).**

| Entry no. | Hisar | Aurangabad (Nath) | PMF | Mean | Entry no. | Hisar | Aurangabad (Nath) | PMF | Mean |
|-----------|-------|-------------------|-----|------|-----------|-------|-------------------|-----|------|
| 51        | 24    | 17                | 17  | 18   | 76        | -     | 19                | 18  | 18   |
| 52        | 24    | 20                | 18  | 21   | 77        | 21    | 24                | 22  | 22   |
| 53        | 24    | 20                | 20  | 21   | 78        | 20    | 19                | 17  | 19   |
| 54        | 25    | 23                | 21  | 23   | 79        | 17    | 18                | 17  | 17   |
| 55        | 25    | 20                | 25  | 23   | 80        | 36    | 25                | 38  | 33   |
| 56        | 30    | 22                | 22  | 25   | 81        | 25    | 20                | 17  | 21   |
| 57        | 21    | 19                | 21  | 20   | 82        | 20    | 18                | 17  | 18   |
| 58        | -     | 22                | 18  | 20   | 83        | 20    | 23                | 21  | 21   |
| 59        | 30    | 24                | 25  | 26   | 84        | 20    | 17                | 19  | 19   |
| 60        | 34    | 24                | 30  | 29   | 85        | 25    | 22                | 22  | 23   |
| 61        | 25    | 21                | 18  | 21   | 86        | 23    | 18                | 20  | 21   |
| 62        | 23    | 20                | 18  | 20   | 87        | 22    | 19                | 18  | 20   |
| 63        | 24    | 19                | 22  | 22   | 88        | 24    | 18                | 25  | 22   |
| 64        | 19    | 19                | 23  | 20   | 89        | 19    | 20                | 18  | 19   |
| 65        | 27    | 20                | 21  | 23   | 90        | 34    | 27                | 34  | 32   |
| 66        | 23    | 18                | 22  | 21   | 91        | 19    | 21                | 19  | 20   |
| 67        | 22    | 14                | 19  | 18   | 92        | 22    | 18                | 23  | 21   |
| 68        | 22    | 20                | 20  | 21   | 93        | -     | 23                | 24  | 24   |
| 69        | 28    | 20                | 22  | 23   | 94        | 26    | 26                | 29  | 27   |
| 70        | 33    | 27                | 30  | 30   | 95        | 32    | 21                | 27  | 27   |
| 71        | 22    | 20                | 13  | 18   | 96        | -     | 25                | 27  | 26   |
| 72        | 26    | 19                | 24  | 23   | 97        | 15    | 14                | 17  | 15   |
| 73        | 24    | 18                | 20  | 20   | 98        | -     | 18                | 19  | 19   |
| 74        | 22    | 19                | 22  | 21   | 99        | 24    | 18                | 19  | 20   |
| 75        | 25    | 18                | 16  | 19   | 100       | 26    | 26                | 33  | 30   |