

Research Reports

Genetic Resources

Chickpea Genetic Resources at ICRISAT

The chickpea germplasm activity of ICRISAT started in the postrainy season of 1973. Existing germplasm from several research stations and institutes in and outside India have been assembled. The cooperation we received in this endeavour is appreciated. New expeditions were undertaken and local cultivars have been collected from areas hitherto poorly represented. In India, collections are due from Punjab, Rajasthan, M.P., and Gujarat states. Other countries like Ethiopia, Iran, Afghanistan, Turkey, and Burma still remain to be explored fully. To date chickpea accessions total 11 483, representing 36 different countries.

The accessions are being grown and evaluated every year at two locations in India, Patancheru (Hyderabad) and Hissar. The germplasm evaluation is undertaken on several agronomic features including: days to flowering, flower color, flowering duration, stem color, growth habit, plant height, plant spread, plant stand, branches (basal primary, basal secondary, apical primary, apical secondary and tertiary), maturity, number of pods, number of seeds, harvest index, 100 seed weight, seed yield, seed shape, seed surface, seed color, presence of dots, reactions against diseases, insect pests, and quality traits. All the passport information and evaluation data have been entered into our computer, and a catalog has been prepared but will not be distributed because of its bulk, and the need to update it every year with new information. However, researchers are welcome to ask for any chickpea seed material with specific characters, and we will be able to retrieve these accessions and supply the seed.

Besides cultivated chickpea (*Cicer arietinum* L.), special efforts are constantly made to collect, maintain, and make use of wild *Cicer* species. All the eight wild annual species, namely, *C. reticulatum*, *C. echinospermum*, *C. bijugum*, *C. judaicum*, *C. pinnatifidum*, *C. cuneatum*, *C. yamashitae* and *C. chorassanicum*, and seven of the perennials, namely, *C. montbretii*, *C. micro-*

phyllum, *C. rechingeri*, *C. anatolicum*, *C. floribundum*, *C. pungens*, and *C. graecum* have been collected and maintained at ICRISAT Center. Perennials are difficult to grow and maintain in Patancheru conditions, but all the annual species grow well and seed is available for interested workers.

- L.J.G. van der Maesen (ICRISAT).

Breeding

The ICRISAT-ICARDA Program

Both ICRISAT and ICARDA have chickpeas as a mandate crop. To strengthen the research work and to avoid unnecessary duplication of effort, the chickpea programs at these two centers were integrated in 1978. Agroecological considerations largely determined the division of responsibilities. ICRISAT is located in a winter-season desi-chickpea-producing area, and ICARDA in a traditional summer-season kabuli-chickpea-producing area. Therefore, ICRISAT has the main responsibility for improvement of desis, including all international trials and nurseries, and ICARDA has a similar responsibility for the kabulis.

Both Centers use outlying locations to provide additional selection pressure for adaptation in other environments. Results of international trials, provided by cooperators, further strengthen the data base for international improvement programs. Both Centers freely provide genetic material to national programs, conduct training programs, sponsor workshops, and publish and distribute reports of research results.

The services of both Centers are available to all chickpea workers; inquiries will be welcome.

- J.M. Green (ICRISAT) and G.C. Hawtin (ICARDA).

International Yield Trials and Nurseries Coordinated by ICRISAT

ICRISAT has been coordinating International Chickpea Trials and Nurseries since 1975-76 with the following objectives:

- a. To strengthen national and regional programs
- b. To supply cultivars, segregating populations, and advanced breeding lines