UTILIZATION OF GERMPLASM FOR THE DEVELOPMENT OF EXTRA LONG STAPLE COTTON

K.P.M. Dhamayanthi

Senior Scientist, Central Institute for Cotton Research,
Regional Station, Coimbatore – 641 003

Germplasm offers the basic genetic source material. Proper evaluation and utilization to broaden the genetic base is a prime requisite for any improvement programme. In India, cotton germplasm is conserved at Central Institute for Cotton Research (CICR), Nagpur and at National Bureau of Plant Genetic Resources (NBPGR), New Delhi. Central Institute for Cotton Research, Coimbatore currently maintains 289 *G. barbadense* L. accessions and it represents 97 indigenous and 214 exotic collections. These accessions are being maintained under irrigated conditions.

Germplasm accessions of *G. barbadense* have been evaluated for various economic characters and documented in the form of a catalogue. Varietal improvements in *G. barbadense* were done at Central Institute for Cotton Research, Regional Station, Coimbatore utilizing the introduced germplasm lines. However, some important traits such as lint yield as affected by ginning outturn, micronaire and fibre strength are controlled by many genes with small effect.

Among the germplasm lines, it was short listed that 23 accessions are high yielders (> 16 q/ha), 12 accessions have high fibre length (34 mm to 36 mm), eight have high bundle strength ranges (30 to 32 g/tex) and 17 accessions are possess high micronaire values (4.5 to 5.5). These characters can be utilized either for improving the existing cultivars or in breeding programmes.

Table-1. High yielding germplasm accessions

S.No	Accessions	Yield q/ha
1.	ICB-175	23.4
2.	ICB-143	23.0
3.	ICB-176	22.9
4.	ICB-273	22.7
5.	ICB-133	22.4
6.	Suvin	16.3

Table-2. High length germplasm accessions

S.No	Accessions	2.5%span length
1.	ICB-34	36
2.	ICB- 164	36
3.	ICB- 255	36
4.	Suvin (C)	36

Table- 3. High strength germplasm accessions

S. No	Accessions	B S g/tex
1.	Suvin (C)	33.0
2.	ICB - 204	31.7
3.	NDGB-3	31.1

Table-4. High micronaire germplasm accession

S. No	Accessions	Mic value µg/inch
1.	ICB-248	5.5
2.	ICB-39	4.9
3.	ICB- 2	4.8
4.	ICB-4	4.8
5.	ICB-16	4.7
6.	Suvin (C)	3.5