

COTTON GERMPLASM

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The Australian Tropical Crops Genetic Resource Centre has recently been established at Biloela to conserve the germplasm of a wide range of tropical field crops including cotton. The main responsibilities of the Centre are:

- to regenerate and establish a collection of cotton germplasm which would be available to all cotton researchers
- to establish a database on all accessions in the collection which can be easily accessed by all cotton researchers.

Currently in Australia there are approximately 700 cotton germplasm accessions located with CSIRO, QDPI and a few private seed companies. My job during 88/89 season will be to obtain samples of all these accessions and to grow them in the field for seed increase and evaluation of morphological and fibre characteristics. Good quality seed will be harvested, dried to 6% moisture content, and stored in alfoil packets at -20oC. Seed stored under these conditions will remain viable for 20-50 years. Data collected on morphological and fibre characteristics together with passport data (pedigree, origin, etc) will be entered on our computer database.

Large germplasm collections exist in USA (5 700 accessions), USSR (4 900 accessions), India (11 600 accessions), France (2 000 accessions), Greece (5 000 accessions), and many other countries. Genetic variation contained in these collections is the raw material used by cotton breeders to develop improved cultivars. Another responsibility of the Genetic Resource Centre will be to liaise with the curators of these national and international germplasm collections and to import some of this potentially useful genetic variation into Australia. New characteristics required by Australian cotton breeders in the near future are high fibre strength, fine mature lint, resistance to new races of bacterial blight, and tolerance to drought stress.

The cotton industry is concerned about the possible introduction of new races of bacterial blight through the introduction of cotton seed of new germplasm accessions. The establishment of an Australian cotton collection with a register of all introductions will enable us to monitor the disease situation of all introductions.

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