

COTTON BREEDING IN QUEENSLAND

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The objective of the cotton breeding programme is to breed cultivars which are adapted to central Queensland environments. Specific objectives include the development of cultivars having high yield, with stability of yield over years, a superior fibre quality (especially high fibre strength) bacterial blight resistance, and resistance to *Heliothis* and pinkspotted bollworm (obtained by selecting for okra leaf, smooth leaf, frego bract and nectarilessness).

At the time this project commenced, statistical analyses of genotype-environment interactions indicated that different cultivars were required for central Queensland, Darling Downs and NSW cotton growing areas. The production of such cultivars will more likely be achieved through a local breeding effort.

From the 1986/87 Biloela Advanced Strain Trials, 38 selections were retained which had yields greater than Deltapine 90 or Siokra and fibre strengths superior to Siokra. These selections were re-evaluated in 1987/88 at both Emerald and Biloela and their yields ranged from 82% to 107% of Deltapine 90 (the highest yielding check cultivar). These results can be compared with the 1987/88 ACGT results at Biloela and Emerald where the highest yielding selections were 72% to 116% of Deltapine 90.

From the 1986/87 Darling Downs Advanced Strain Trials, 11 selections were retained which had yields and strengths superior to Siokra. In 1987/88, yields on the Darling Downs were low (2.3 bales/ha). However, all 11 selections were 113% to 155% higher yielding than Siokra.

Seventeen of these advanced selections were evaluated in three NSW locations in 1987/88. Whilst three strains were higher yielding than Siokra, none were higher yielding than Sicala or Siokra (1-4).

From the 1986/87 Preliminary Strain Trials at Biloela, 408 selections were retained which had yields greater than 124% of Siokra and fibre quality superior to Siokra. These selections were evaluated at both Biloela and Emerald in 1987/88 and yields ranged from 66% to 113% of Deltapine 90 (the highest yielding check) or from 70% to 123% of Siokra. Forty-five selections were higher yielding than Deltapine 90.

In 1988/89, the best selections from the Preliminary and Advanced Trials last season will be evaluated in the Advanced Strains Trial which will be evaluated at Emerald, Biloela, Darling Downs and three NSW locations. Advanced Strain Trials originating from Narrabri will also be tested at these locations and hence we will be able to evaluate the progress being made in the Queensland cotton breeding programme.