

BREEDING FOR EARLY MATURITY

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The short season cotton breeding program at Narrabri is continuing to make good progress in developing early maturing cultivars adapted to Australian conditions. The program aims to supply cultivars for the following situations:

- (1) the cooler southern growing areas and the Darling Downs;
- (2) for late plantings, particularly in southern areas;
- (3) to enable earlier harvesting to provide greater management flexibility, reduce costs and to avoid any late build up of *Heliothis armigera*.

The widespread acceptance by farmers of Siokra has illustrated that there is a real demand for high yielding cultivars which possess some earliness. Results of CSD large scale trials and our small scale trials show that Siokra is considerably superior in yield to Deltapine 90 in such areas as the upper Namoi Valley and the Darling Downs. Thus Siokra is providing farmers with a cultivar more suited to shorter growing season areas than the Deltapines and consequently the aims of our short season breeding effort are to further improve on Siokra in terms of yield and quality.

Progress

Siokra has been the outstanding entry for yield in our advanced early maturity trials over recent seasons. However, a number of the newer lines from the short season program have done well and show a big advantage over USA bred cultivars (Table 1).

All the USA cultivars (including the earlier types McNair 235 and Deltapine 30) were easily outyielded in these mainly short season environments. A significant factor in the relatively poor performance of the American types was their susceptibility to bacterial blight. Our Narrabri-bred material has high levels of resistance to blight. The data for 1985/86 shown in Table 1 illustrate that while Siokra has the best yield performance some of the newer lines such as 82041-6 show much better fibre strength and are more acceptable from a marketing point of view.

In our less advanced stages of testing in 1985/86 we have identified some very promising material. For instance, over two sites (Narrabri and the Downs), one line derived from a Siokra cross outyielded Siokra by 10%, Deltapine 90 by 24% and had slightly better strength than Siokra. Another line of great interest showed fibre strength greater than Deltapine 90 (in fact approaching that of Namcala) and was only slightly below Siokra in yield.

Thus the short season breeding program is continuing to make good progress and the better strength, high yielding lines now coming through offer great encouragement for the future.

Acknowledgments

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Table 1. Mean yield and quality of commercial cultivars, advanced CSIRO short season lines, and USA introductions grown at four sites (Narrabri early and late plantings, Breeza and Darling Downs) in 1985/86.

	Mean Yield (kg/ha)	Yield as % of DP 90	Length (ins)	U.R.	Strength (g/tex)	Mike
Siokra	1888	120	1.11	44.0	25.7	4.0
82041-6	1849	118	1.13	46.0	28.4	3.8
81042-11	1819	116	1.09	47.2	27.1	4.0
81042-19	1818	116	1.10	46.0	26.7	3.9
McNair 235	1653	105	1.07	44.5	25.1	4.1
Deltapine 30	1588	101	1.08	44.2	25.0	4.1
Deltapine 90	1571	100	1.11	44.2	29.5	3.8
Deltapine 61	1503	96	1.11	44.3	25.1	4.1

