

THREE NEW CSIRO VARIETIES

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The CSIRO breeding program at the Australian Cotton Research Institute at Narrabri aims to develop locally adapted varieties for use by Australian farmers. The program has been very successful in developing varieties for all cotton growing areas with eleven conventional and five Ingard varieties available through Cotton Seed Distributors (CSD) for 1998 planting. Key advances from the CSIRO breeding program include the development of varieties with okra leaf (for insect and mite tolerance), better disease resistance (particularly bacterial blight and Verticillium wilt), improved fibre quality and good adaptation to cool growing areas. The varieties produced by CSIRO have brought many millions of extra dollars to farmers and have been a key factor in the rapid expansion of the cotton industry in recent years.

As a continuation of this program of regular release of new high performing varieties we are pleased to announce the introduction of three new varieties: Sicala 40, Siokra V-16 and Sicot 189i.

Sicala 40

This new normal leaf variety shows great versatility, having yielded well in trials in both short and full season areas from the Macquarie to Central Queensland. Sicala 40 is a compact plant type and its erect plant habit is much less prone to lodging. It produces large bolls and with its determinate fruiting pattern it is significantly earlier than Sicala V-2. Because of its determinate growth and early maturity, care should be taken not to hamper its growth during peak fruiting. Growth regulators should only be used after careful assessment of vegetative growth since we have seen cases where the yield of Sicala 40 was reduced through their use.

In our extensive trialing system Sicala 40 has yielded 8% more than Sicala V-2 averaged over four years and incorporating 42 trials on commercial fields. The advantage over V-2 has been greatest in cool growing areas such as the upper Namoi and eastern Darling Downs. However Sicala 40 has been competitive in long season areas such as central Queensland. In the first year of larger scale trials at two Emerald sites, Sicala 40 exceeded the average yield of Sicot 189, CS 50 and Delta Pearl by 5%. The good yield potential combined with earliness offers farmers the opportunity to achieve earlier harvest without yield sacrifice. While Sicala 40 shows slightly more disease symptoms than Sicala V-2 under high Verticillium wilt pressure, its yield is still comparable or better. Like all CSIRO varieties Sicala 40 has near immunity to bacterial blight. The

fibre quality of Sicala 40 is very good, being similar to Sicala V-2 in most characteristics but having greater strength (Table 1).

Table 1. Comparisons of Sicala 40 and Sicala V-2 over 42 trials and four seasons.

	Yield as % of Sicala V-2	Ginning %	Length (ins)	Strength (g/tex)	Micronaire
Sicala V-2	100	39.7	1.18	29.9	4.0
Sicala 40	108	40.1	1.17	30.9	4.1

Siokra V-16

Siokra V-16 is a new okra leaf variety which will replace the very successful Siokra V-15 in 1998. Like Siokra V-15 the new variety combines the pest tolerance and dryland advantages of okra leaf with good *Verticillium* wilt tolerance. Siokra V-16 is very similar to Siokra V-15 in most characteristics but has averaged 5% better yield in 65 trials over 5 seasons. The yield advantage is only small in short season areas but greater in medium and long season districts. The only noticeable differences from V-15 are slightly later maturity and a few centimetres greater height. Because of the slightly later maturity of Siokra V-16, care should be taken in cooler areas to plant the variety early and grow it through to maturity. Siokra S-101 is the preferred okra leaf variety in the shortest season areas. The more vigorous growth of Siokra V-16 means that it is more likely to respond to growth regulators than V-15. Siokra V-16 is not recommended for situations where *Fusarium* wilt is present.

Like Siokra V-15, Siokra V-16 has very good fibre quality with an excellent combination of length, strength and fineness (Table 2). The long staple length helps to reduce the risk of length penalties under water stress conditions. Siokra V-16 is well suited to the major cotton growing areas of NSW and southern Qld, both irrigated and dryland.

Table 2. Comparisons of Siokra V-16 and Siokra V-15 over 57 trials and five seasons.

	Yield as % of Siokra V-15	Ginning %	Length (ins)	Strength (g/tex)	Micronaire
Siokra V-15	100	38.9	1.21	30.1	3.9
Siokra V-16	105	39.6	1.20	30.2	3.9

Sicot 189i

This is the Ingard version of the very popular Sicot 189 and combines the excellent features of the conventional variety with the insect tolerance of Ingard. Sicot 189i, like its conventional parent, is a tall, erect growing, full season variety which is adapted to most growing areas and which will often respond positively to growth regulators. It has good fibre quality, bacterial blight resistance, very good *Verticillium* wilt tolerance and has better *Fusarium* tolerance than most other varieties.

In conjunction with the CSIRO entomologist, Dr Gary Fitt, extensive screening for efficacy against *Heliothis* has been undertaken in the development of Sicot 189i. Its yield and efficacy in trials has generally been very good. Because of its broad adaptation Sicot 189i offers an excellent Ingard alternative for most production areas and will be particularly useful in central Queensland where the major Ingard varieties Sicala V-2i and Siokra V-15i are less well adapted.

Conclusions

These three new CSIRO varieties will provide significant benefits to Australian farmers. Sicala 40, with its high yield combined with early maturity, not only offers farmers the potential for increased production but can also increase the flexibility of their farming operations. The new high yielding Siokra V-16, with its okra leaf pest advantages and broad adaptation, should prove to be an essential variety for irrigated and dryland farmers in most areas. Sicot 189i, with its broad adaptation and excellent standability and disease tolerance greatly enhances the range of Ingard varieties available.

We have other new varieties under evaluation to maintain the breeding progress, including Line 805, a new hot area type, a number of 781 lines for the major central growing areas and new Siokra S-101 types for cool growing areas.

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