

# Germinating ideas

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This issue of Germinating Ideas will look at CSX-8, a new Pima variety, the Fusarium research work and an update on 15 inch cotton.

## CSX-8 — A NEW PIMA VARIETY

A new Pima cotton variety, currently called CSX-8, is in seed production this season. One of these crops is at Hillston in the Lachlan valley. It is from the CSIRO breeding program and is the first new Pima variety for a number of years in Australia.

With an increased interest in Pima cotton and a potentially better outlook for water in the traditional Pima growing area in Australia, planting could increase dramatically in 2004. With prices at around \$1000 a bale achievable and yields approaching upland cotton varieties, there is a good opportunity for expansion, subject to agronomic and commercial limitations — such as the distance to ginning facilities.

## Background

CSX-8 is a Pima variety selected by the CSIRO cotton breeding program from an Arizona introduction. It is a higher yielding variety than Pima S7 and has several attributes that will make it more attractive as a suitable Pima variety in Australia. Seed increase is currently underway for this variety and seed will be available for 2004 planting.

## Bacterial blight resistance

CSX-8 is susceptible to bacterial blight but not as susceptible as Pima S7. True bacterial blight resistance in Pima is around three years away through the CSIRO program.

## Fibre quality

CSX-8 has excellent fibre quality with fibre strength of 45 gms/tex. This is four gms/tex better than S7. Upland cotton is currently around 30–32 gms/tex.

## Fusarium wilt resistance

CSX-8 has a Fusarium Resistance Rank (FRR) of 90 compared with S7 with an FRR of 20. An FRR of 100 is equivalent to Sicut 189. CSX-8's FRR makes it more suitable



Rob Lowe, Tandou Ltd, and Matt Mitchell, Lachlan Farms, in the Hillston seed increase block.



CSD 15-inch trial at Ravensworth, southern NSW.

for areas with potential problems associated with the presence of Fusarium wilt.

## Trial program

Large scale variety trials are planned for CSX-8 against other Pima varieties available in Australia. These trials will be ginned

through commercial roller gins to assess yield and fibre quality characteristics. Current data from CSIRO small-scale trials has CSX-8 with a 15 per cent yield advantage over Pima S7.

80 ▷

### The future for Pima

The CSIRO plant breeding team headed by Dr Greg Constable has a Pima breeding project underway. It is planned to release new Pima varieties under the banner of 'Sipima'.

### NEW FUSARIUM RESISTANCE RANK UPDATES AVAILABLE SOON

With picking all but completed in the Fusarium trial areas, updates on all new and current cotton varieties will be available in May of this year. The extensive trial and screening program is proving invaluable in assessing new and existing lines under moderate to heavy FOV pressure. Many kilometres of trial rows will have been stem cut and ranked according to the presence or absence of FOV.

The incidence of Fusarium wilt has been variable this season with reports that it has not been as bad as previous years. But plant losses both early and late season have been substantial in many higher incidence areas. Many agronomic trials have been carried out this season including the use of seed treatments to help reduce early season plant loss. Results and observations from these experiments will also be available when completed.

### 15 INCH COTTON — IS IT THE WAY OF THE FUTURE?

A number of farms mainly in the southern valleys have developed and adopted a system of cotton production called '15 inch' (38 cm). It is based on growing four rows of cotton 15 inches apart on each bed. It has many advantages over the traditional 40 inch or one metre row spacings — and now that the problems associated with picking it have been overcome, it has become a viable production system. It is different from the Ultra Narrow Row systems that can have six rows in each bed.



Tony Hely and Ron Harris at Ravensworth.

One of the disadvantages of 15 inch cotton is higher input costs including seed and in-furrow insecticides. Planting rates of 28–30 kg of seed and using products such as Temik in four rows of cotton instead of only one row can push up establishment costs considerably.

Heavy wireworm pressure from rotation crops means that an in-furrow insecticide is a must. Planting in conditions with widely variable temperatures can cause seedling establishment problems. The higher seeding rates can help overcome some seedling loss but a viable plant stand of around 200,000 plants per hectare is required with this system. The range could be from 150,000 to 280,000 plants per hectare. Planting rate trials are being conducted to try to determine the most effective plant stand.

One of the main advantages can be an earliness factor with crop maturity. Gains of 14–21 days can greatly assist in getting

the crops picked and avoiding potential losses caused by bad weather.

Time of planting can also add to earliness but spring temperature fluctuations in southern Australia can cause difficulties in establishing a viable plant stand. Seed coatings and treatments will be assessed to try to find out what can be added to seed to help establish crops in less than favourable conditions.

Some Bollgard II and Roundup Ready varieties may have a very good fit in 15-inch cotton. Many Bollgard II crops have not required treatment for heliothis this season. The earliness factor can be enhanced with transgenic crops, aided by high fruit retention and less tipping out.

Weed control is a very important aspect of narrow row cotton. Grasses can be a major weed problem, so Roundup Ready cotton in conjunction with a pre and post plant herbicide program can reduce grass and broadleaf weed pressure.

With picking fast approaching in the southern cotton growing regions, there is a lot of interest in the performance of 15-inch cotton. Other crops on farms can also be grown using the 15 inch system, reducing the need for different planting, cultivating and spraying equipment configurations.

It may be the catalyst to greatly increase cotton plantings in the south and more northern areas and lure growers of other crops such as rice to cotton production. Some southern NSW rice growers attended the recent Hillston Cotton Field Day (March 3, 2004) to look at the potential of cotton.