

# Germinating Ideas

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The 2003 cotton season is almost upon us again and with planting due to commence in some areas soon, this edition of Germinating Ideas will cover some very important issues:

- Plant populations — some results of several trials carried out by the CSD Trials and extension and development teams;
- Planting rate considerations;
- Bollgard II management — observations from last season and how they can be applied to this year; and,
- The CSD website — a valuable information source.

What is the optimum plant population?

CSD's Extension and Development team, coordinated by John Marshall, have conducted trials over the past four years in Queensland and NSW to determine the best plant population establishment in commercial fields.

This work has been done using Sicot 289i Ingard cotton at three Queensland sites — Emerald, St George and Dalby — and a number of NSW sites.

Treatments ranged from three plants per metre with no gaps through five, seven, nine, 11, 13, to 15 plants per metre. There are plots that have 4x50 cm gaps per 10 metres in the three, five, and seven plants per metre sections.

Results to date indicate that established populations of between 11–13 plants per metre give the optimum yield response. The plots with 9–15 plants per metre were significantly higher yielding than 3–5 plants per metre. Seven plants per metre were intermediate. Plots with gaps at lower plant populations yielded similar to plots with no gaps at low populations.

There may have been some compensation affects in those plots. Different regions have



Picking the St George plant population trial.



Planting is not far away in some areas.

different response curves from the analysed data and there are variations between seasons.

Growers should aim to establish at least 10–12 evenly spaced plants per metre, particularly in transgenic cotton. Conventional varieties may be able to compensate slightly more in lower and gappy plant stands.

At lower plant populations, even spacing of established plants is the key. This is very difficult to achieve in reality. Replanting decisions can sometimes be very difficult so it pays to spend a little extra attention to try to minimise potential problems at planting time.

Trial work will be continuing with Bollgard II to assess optimal plant establishment.

## Planting Considerations

There are many factors that can affect the final plant population in a cotton field. They will have varying affects according to their severity and interactions with others.

Some of these considerations are:

- Water up vs. pre water;
- Soil type;
- Stubble type and cropping history;
- Soil tilth;
- Planting equipment/type;
- Planting depth;
- Insect and weed presence and pressure;
- Herbicide program;
- Disease history;
- Soil temperature; and,
- Seed quality — germination and vigour (SVI).

Information on seeds per kg, germination percentage and the Seed Vigour Index (SVI) is available from CSD seed resellers and the CSD website's information centre.

## Bollgard II Management

The CSD Extension and Development team was involved in many commercial large scale and

variety trials where Bollgard II crops were grown. Many of these sites were monitored throughout the season and followed through to picking to determine yields and fibre quality.

Several issues were noticed regarding the management of Bollgard II crops relating to getting the maximum yield from the varieties available. These issues related to avoiding an early cutout.

Most crops showed very high fruit retention — over 90 per cent retention and very little tipping out (less than two per cent). The combination of these two factors meant that many crops were at risk of an early cut out.

It is always a fine line between aiming for crop 'earliness' and not pushing the crop enough, potentially resulting in a premature cutout. With the correct management tools, including plant mapping and monitoring, it is possible to accurately assess how individual crops are progressing. These numbers can then be compared to known standards — such as squaring node number and at flowering and nodes above white flower (NAWF) post flowering. Decisions can then be based on crop performance and adjustments made with crop inputs if required.

### Information in a click

The CSD website is experiencing a large increase in the number of hits as the amount of information continues to build on the site.

The site is continually being updated and a weekly Web on Wednesday video presentation provides in-depth interviews on many current issues. There are many choices available to registered web site users, including:

- Corporate profile;
- Varieties;
- Trial tracking;
- Information centre;
- Agronomy tools; and,
- Request information.

By clicking on any of these headings it is possible to choose from a number of sub headings and this will lead to specific pages within the site.

There are also links to many relevant cotton and agricultural sites and the results from the past four years of CSD trials are available on line.

A recent addition has been the Variety Performance Comparison. This allows users to compare any two varieties yield and fibre quality data across all areas across four years. Specific sites and years can also be obtained.