

# Germinating ideas

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This season has been a challenging one with little or no rain during planting to boost soil moisture levels. Many fields have taken large quantities of water to fill the profile, which has reduced the already limited water supplies even further. Hopefully, wetter times are ahead during the growing season.

## ROUNDUP READY FLEX

The introduction of Roundup Ready Flex technology will provide growers with new challenges in drift management as many properties will have non Roundup Ready, Roundup Ready and Roundup Ready Flex to deal with.

### Benefits of the Flex technology

- Improved crop safety: The Roundup Ready Flex technology has improved the tolerance of all plant parts to the glyphosate herbicide. This eliminates concerns about the effect on reproductive parts of the plant (bolls, flowers and squares);
- Management efficiencies: Under a Roundup Ready Flex system there will be a reduced reliance on residual herbicides at planting, plus labour and time efficiencies generated through the use of 24 metre booms at 20 km per hour



Roundup Ready Flex management will require good communication.

- rather than 12 or eight metre equipment at 12 km per hour; and,
- Flexibility in weed control: Under the previous Roundup Ready system, the emphasis was on spraying on crop triggers (for example, four true leaves).

Roundup Ready Flex allows applications to be based on weed number and size.

### Impacts of Roundup drift on Roundup Ready cotton

In the past seasons there have been several incidences of late Roundup drift onto

FIGURE 1: Field A

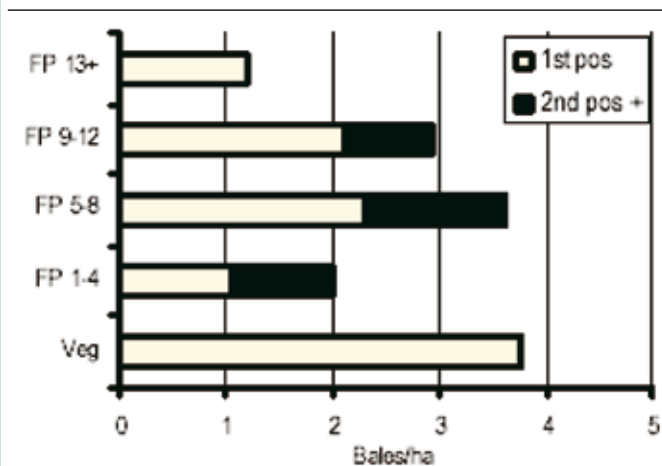
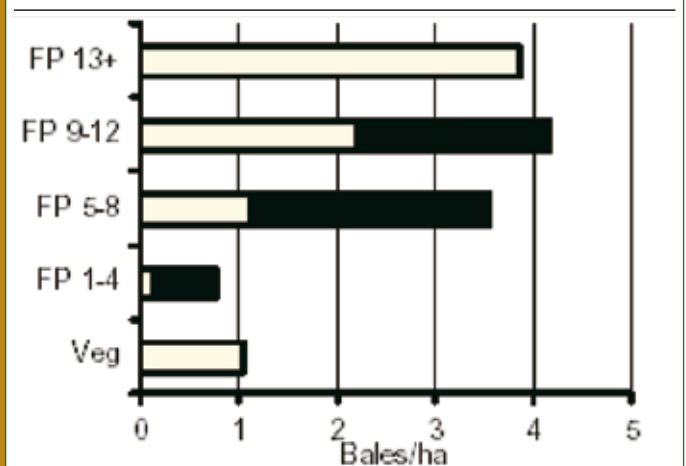


FIGURE 2: Field B



Roundup Ready crops. The result has been the loss of most early fruit and the plant compensating for this by putting on a late crop.

The following example shows data from segmented picking work carried out by the CSD Extension and Development Team in the 2005–06 season. The two fields are both Sicot 71BR, and both had 144 bolls per metre and achieved similar yields of 5.4 bales per acre, with similar management. But the different way they achieved this result is quite significant.

Field A shows a normal pattern of fruit accumulation of what would be expected for a well grown Bollgard II crop. The crop grew to just over one metre in height. Once defoliated, rows were very visible as the fruit was concentrated near the main stem.

Field B suffered drift from a neighbouring fallow field prior to flowering. Much of the crops yield comes from bolls matured later in the season. It grew to almost 180 cm in height and once defoliated looked very 'white', as all the fruit was concentrated on the outside of the plant.

The plants in field B shed a considerable amount of fruit from the bottom fruiting branches. Many of the bolls found on these branches were located in the fourth and fifth position. The impact of the glyphosate drift on this crop was not in the final yield but in the production of the crop. The maturing of such a high proportion of bolls on the top third of plant required extra irrigations, nutrition and insect control.

### Communication

Key to the successful management of the potential problems associated with differing Roundup Ready technologies on farm is communication.

All staff, ground rig and aerial spraying contractors should be aware of which fields can and cannot be sprayed with glyphosate. Also the limitations of the cotton in each field in handling glyphosate drift.

CSD has produced signs to accompany the release of its initial five Roundup Ready Flex varieties which will assist in reminding staff which fields contain Roundup Ready Flex cotton.

### CONSIDERATIONS FOR PIMA COTTON

There has been increased interest in Pima cotton in non traditional growing regions like the Gwydir and Macintyre in the past two seasons. This has largely been caused by low upland cotton prices in comparison to Pima prices. Pima cotton has longer and stronger fibre than Upland



Kim Packer and Brendan Barry in a crop of CPX 42 Pima cotton at Hillston.

varieties and attracts a premium, but is generally lower yielding, and more risky to produce. In the hot, dry 2005–06 season some good Pima results were achieved in areas such as the Gwydir as shown by the trial result in Table 1. This gives an indica-

tion of yield and fibre quality differences between upland and Pima.

The CSIRO Cotton Breeding Program has Pima lines with better yield and disease

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FIGURE 3: Average March rainfall

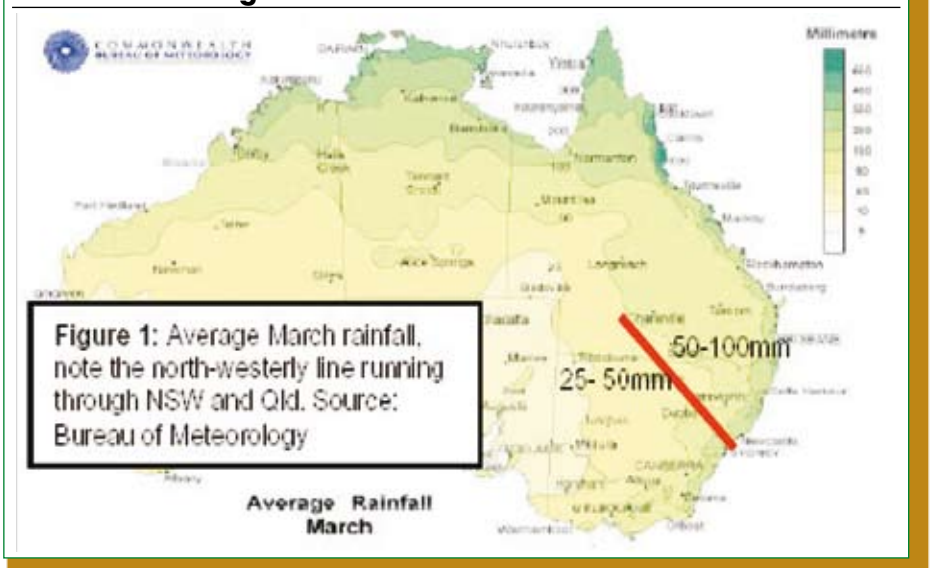


TABLE 1: CSD replicated Pima trial, Moree 2005–06 CP06-13

	Yield (B/ha)	Length inches (32nds)	Strength (gms/tex)	Micronaire
Sicot 71B	11.6	1.16 (37)	30.5	4.5
Sicot 71	11.1	1.13 (36)	31.3	4.5
Pima A8	8.7*	(46)*	45.8	4.1

\* ACTUAL Pima yield and length determined by roller gin

packages than current commercial varieties. These will be trialled more widely in the next couple of seasons

There are three key considerations that growers considering Pima cotton should be aware of.

### Diseases

Pima is very susceptible to some common diseases and their impact can be very devastating.

- Bacterial blight: Pima is extremely susceptible to this disease, making it one of the biggest production risks. Infected crops may be completely defoliated and have the majority of bolls infected within a short period of time. A number of copper bactericides should be planned, ensuring complete coverage of the entire plant. Pima cotton should not be planted into fields with a history of bacterial blight. There are lines within the CSIRO Pima breeding program with resistance to bacterial blight
- Black root rot: Pima cotton requires a longer season length than Upland cotton — at least 100DD more. Black root rot will delay the development and therefore the maturity of the crop,

which may lead to problems at defoliation and picking. Fields with a history of black root rot should be avoided. Planting should be prepared and timed to ensure optimum conditions for germination and emergence.

- Alternaria leaf spot affects Pima cotton more severely than Upland cotton. Outbreaks can lead to complete defoliation of the crop and up to 40 per cent reductions in yield. Various forms of Mancozeb are registered for use on Pima cotton. Regular applications may be required prior to rainfall or heavy dews. Thorough coverage of all parts of the plant is vital for Alternaria control in Pima.
- Cotton bunchy top (CBT): Pima cotton is a symptomless host for CBT. It is not affected, but plants fed on by aphids carrying CBT can become infected and transfer the disease to other plants and fields.

### Fibre quality

Pima fibre is a quality product and priority needs to be given to optimising fibre quality. Pima is classed primarily on colour and length and discounted heavily if the base criteria are not met. Quality downgrades due to weathering during

picking are very severe. Growers should note the probability and the average rainfall for March and April for their district (Figure 3).

- Wet humid conditions at harvest will degrade the fibre (colour) at a greater rate than in Upland cotton. The probability of wet, humid conditions especially in March and April should be factored into the decision to grow Pima.
- After wet weather, higher levels of trash are often seen in the picked sample. There are no lint cleaners in a Pima gin and trash has to be removed through heat which can damage the fibre and slow the ginning process, which will increase the cost of ginning. The crop should not be picked wet or at speed if trash is of concern.

### Ginning

Pima needs to be ginned through a roller gin. There are currently only two in Australia, located at Bourke and Tandou. Growers should make arrangements with these gins before planting.



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