

Germinating Ideas

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MONITORING PLANT GROWTH

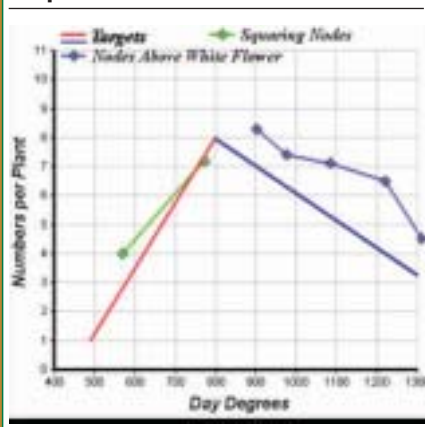
This season, many Bollgard II crops have been monitored extensively from early squaring through to cut out. Using this monitoring it has been possible to plot the crop's progress against a known standard and then make decisions to help the crop try to catch up if it is behind or try to prevent an early cutout if the crop was more advanced than the standard.

This tool has been available on the Cotton CRC website and it has been widely used to plot individual crops' performance. Squaring nodes were monitored prior to flowering and then Nodes above White Flower (NAWF) monitored post flowering.

By collecting these figures and plotting them along with day degrees (also available on the CRC website) from planting, it is possible to see the performance compared against a standard developed by the University of Arkansas.

Initial NAWF at 7-10 is generally accepted as ideal. When this figure reaches four or below the crop could be described as cutting out. Cutout is reached at about 1,100 day degrees with open bolls at about 1,530 day degrees from planting. Monitoring of Bollgard II crops has been easier due to normally low tipping out of the main stem node.

FIGURE 1: Development of a crop of Sicot 289BR at Emerald



Tipping out percentages of cotton plants is high this season.

Figure 1 shows the development of a crop of Sicot 289BR at Emerald.

A crop to the left of the line early season is generally ahead in development. If this is associated with low fruit retention, the VGR (vegetative growth rate) should be measured to determine if a plant growth regulator is required. Bollgard II crops have shown that higher fruit retention has meant that the application of a PGR may not be required. Measurements below the line could indicate a problem with the crop's development and extra inputs may be required.

Monitoring of plants is easier using non-tipped plants.

VARIETAL RESPONSES TO PLANT GROWTH REGULATORS

A number of trials have been conducted to look at the response of different CSD varieties to Pix applications. The trials have shown that varieties vary in yield responsiveness to applications of Pix, often independent of height responsiveness.

Table 1 shows varietal differences in yield responsiveness. If an uncertain (borderline) Pix action results from using the Vegetative Growth Rate measurements, application of Pix at higher rates is recommended with the more responsive varieties.

All crops should be carefully monitored

TABLE 1: Varietal differences in yield response to Pix

Requirement	Conventional and Roundup Ready®	INCARD®	Bollgard® II
↑ More	Sicot 180, Sicot 180RR		
	Sicot 80		
	Sicot 53		
	Sicola V-3, Sicola V-2RR		
	Sicot 71	Sicot 289RRi	
	Sicola 40	Sicola 2004i	
	Sicola 13	Sicola V-3i	Sicot 280BR, Sicot 280B
	Siakra V-18	Sicola V-3RRi, Siakra V-17i	Sicola V-38R, Sicot 13B
	Siakra V-16	Siakra V-10i, Siakra V-16RRi	Siakra V-18B, Sicot 11B
	Sicola 10	Sicola 10i, Sicola 10RRi	Siakra V-10BR, Siakra V-10B
EMSS			Sicola 401 RR, Sicola 401i

Source – Dr Greg Constable, CSIRO Cotton Research Unit, Narrabri

to determine whether excessive growth is occurring and growth regulator applications should be based on that. The table refers to applications at early flowering and Sicala 40 in particular has been found to have yield reductions from applications at this stage. Applications at cutout on all varieties should be evaluated on a case-by-case basis.

Note that just because a variety is not as yield responsive does not mean it will never need Pix. The VGR technique should be used for all varieties.

LATE SEASON SUCKING PEST MANAGEMENT

With Bollgard II exhibiting good heliothis control through the majority of the season, the opportunity now exists to concentrate on secondary pests — particularly piercing and sucking insects. A major late season pest can be the green mirid, (*Creontiades dilutus*). Mirids can damage small squares and bolls, causing growths inside carpels and discolouring lint in bolls up to 15 days old.

Green mirids have been a problem in many areas throughout the season causing early fruit loss and necessitating spraying. With the availability of more selective chemistry, reduction in green mirids numbers is possible without major disruption to beneficial insects. Thresholds late season



Using beat sheets gives more accurate counts.

are yet to be determined with further research, but crops with good boll loads may be able to tolerate higher populations of the green mirid — up to three or four per metre.

The green vegetable bug (GVB) and the cotton harlequin bug have been observed as increasing pests in late season Australian cotton. Bolls up to 12 days old are preferred and once bolls are 20 days old, damage is minimal. Small bolls to 10 days old can be shed due to damage from

GVB. Thresholds are recommended at one GVB per metre when using a drop sheet or 0.5 per metre on visual checks. Damage levels are also used to determine if control is required.

The important thing is not to neglect monitoring for sucking pests and to know the damage symptoms so that corrective action can be taken if required.

Source: The Green Mirid, Dr Moazzem Khan and CSD Extension and development team. 🌱