Cotton Catchment Communities CRC
Queensland Government Department of Primary Industries and Fisheries

COTTON *TALES*

Lower Balonne Region

Dallas King, Regional Cotton Extension Officer – 0427 635 621

2007/08

01/10/07

Extension to the Bollgard II Planting Window for St George and Dirranbandi areas.

Please find attached a letter from the ACGRA / TIMS committee granting approval to change the planting dates for Bollgard II in the Lower Balonne region.

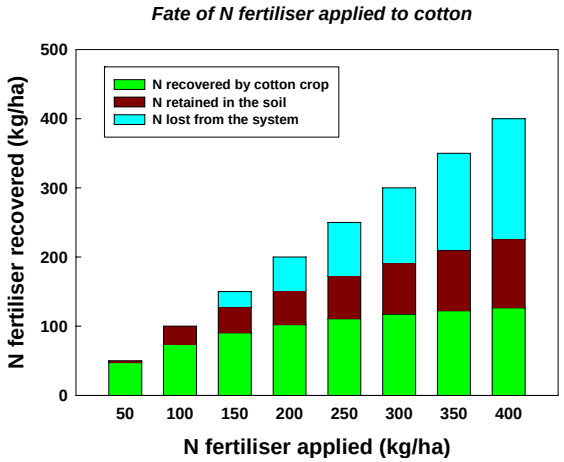
The new dates allow for Bollgard II crops to be planted from the 15th of October up to and including the 26th of November, thus a 42 day window. Should you have any further questions please do not hesitate to call myself, James Thomas (St George CGA President) or Greg Nichol (Dirranbandi CGA President) Hopefully all growers will have the opportunity to utilize the extra days.

N fertiliser efficiency

Cotton crops use less than half of applied N obtaining most of their N from soil N rather than applied N. An average of 33% of applied N is recovered, 25% remains in the soil at crop maturity and the remainder (approximately 42% is assumed lost from the system.

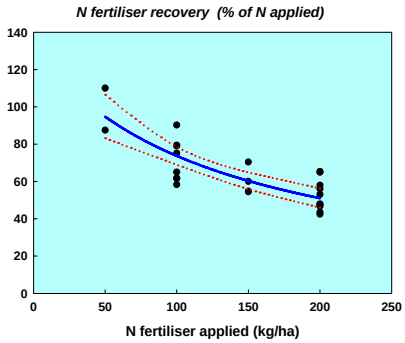
Cotton is considered a high risk system with respect to N losses. N fertiliser losses may exceed 100kg/ha each season. On average, one third of applied N is lost. At higher N fertiliser rates the soil and crop retain less applied N so that more of this is lost from the system through denitrification and leaching. As well as environmental concerns, this has a significant economic implication for growers as fertiliser costs increase.

Soils have limits to the amount of N fertiliser that can be retained. Where there are high levels of soil N, cotton makes limited use of fertiliser N and a greater proportion of applied N is lost through denitrification and leaching. Generally, about two-thirds of N taken up by cotton is derived from the soil organic pool ie non fertiliser N. This N is mineralised from soil organic N.



The fate of N fertiliser applied to cotton crops growing in light-medium clay soil. Losses will be greater from heavier soils.

Nitrogen Fertiliser Recovery, the proportion of applied N that is taken up by the crop, is reduced as N fertiliser rates increase. Generally, small amounts of N fertiliser are used more efficiently, higher rates less efficiently.



Apparent nitrogen fertiliser recovery by cotton crops as influenced by the amount of N fertiliser applied. Dotted lines represent the 95% confidence intervals which indicate a close and significant relationship.

Cotton crops only need to accumulate approximately 200-250kh N/ha to achieve maximum yield. While crops can take up more N than this, N uptake greater than 250kg N/ha up will not increase lint yield. Rather, the **crop nitrogen use efficiency**, how effectively a crop produces lint yield from the N that it has accumulated, will be reduced.

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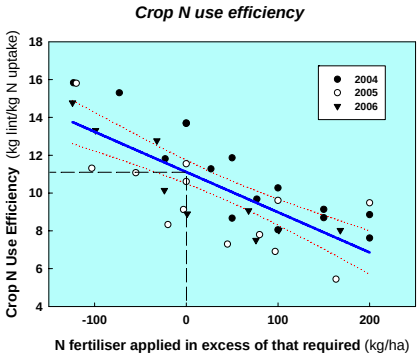

Crop N use efficiency declines with N fertiliser application. Dotted lines represent the 95% confidence intervals which indicate a close and significant relationship.

At optimum production cotton produces about 11 kg cotton lint for each kg of nitrogen in the plant. Higher values indicate too little applied N and lower values indicate too much fertiliser or that crop growth was severely limited by some other factor.

Higher yields do not always mean higher rates of nitrogen fertilisers. Improved soil N conversion and recovery rates facilitates higher yield with less fertiliser.

	Old	New
Yield (b/ha)	7.5	10
Removal (kgN/ha)	75	100
Conversion (%)	**50**	60
Uptake (kgN/ha)	150	167
Soil N (kgN/ha)	**50**	70
Deficit (kgN/ha)	100	97
Recovery (%)	**40**	50
Fertiliser rate (kgN/ha)	250	194

N fertiliser rate decisions should consider soil N at sowing and the crop rotation system (which indicates how much native soil N is likely to be present). Soil testing is currently the only way of quantifying N fertiliser requirements to optimise nitrogen management. The NutriLOGIC program can provide a good indication of the N fertiliser required, based on soil nitrate-N levels.

http://tools.cotton.crc.org.au/CottonLOGIC/NutriLOGIC/

Thanks to Julie O'Halloran, Regional Cotton Extension Officer, NSW DPI and the Cotton CRC for collating this information with contribution from Dr Ian Rochester, CSIRO and the Cotton CRC.

New Website

Checkout www.irrigate.net.au

This is a new website that provides an extensive range of valuable information and tools such as:

- Oversched – a Centre Pivot & Lateral Move management support tool.
- Ready Reckoner – to caculate dam evaporation rates and possible mitigation systems.
- BMP Watercalc – a whole farm water balance spreadsheet.
- Wheat production - "Usage tab"\"Sector use"\"wheat"
- Waterpak & Soilpak.

Overall an excellent site that provides easy access across a wide range of associated areas. Well worth checking out what is available.

Drought Funding for Irrigators.

Also please find attached a letter from the Federal government regarding assistance measures being offered to irrigators in the Murray Darling Basin.

Grants of up to $20,000 are available to irrigators adjusting to reduced water availability. The grants can be used to help meet the costs of implementing on farm practices which aim to enhance water use efficiency. The funds may be available for the cost of C Probes, Height increases on storages, the use of evaporation mitigation practices e.g. Aquatain etc. WUE evaluations using Irrimate conducted during the season may be eligible for reimbursement.

Once more information becomes available I will forward it on.

Airborne Geophysics & Borehole Monitoring Program

For those growers whom attended the above meeting please find contact details for Des and his team below as well as contact details for Ross Bigwood.

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Regards, Dallas.