CottonInfo Information when you need it

the cotton wrap

JULY 2017

SEASON SUMMARY

It's a bit like the tale of the Newell this winter with the west largely experiencing a very tough season and east of the Newell in a much better position. Quentin Kelly at Merah North is putting a bit of water onto chickpeas as is Dave Miller west of Walgett where both places have had very little useful rain through the winter. Further north at Rowena Ben Shearer received 14mm last week so that is keeping wheat looking okay but there is a lack of subsoil moisture and crops are not really thriving. On the Liverpool plains Ian Carter has well and truly stopped planting due to a lack of moisture near Pine Ridge but over near Breeza Angus Duddy and Pete Lennox are not too bad and winter crops look good. The Boggabri and Harparary area is probably some of the better off with a good fall of 50-90mm back in May still showing benefit's and although rain would be good the season and crops are shaping up pretty well. The Edgeroi and Bellata area is dry too with crops planted into pretty good conditions around Anzac Day now looking desperately to the skies.

Biofumigant planted to reduce Verticillium

One crop doing very well is this crop of a biofumigant, which is a mix of a few species including Mustard and is part of our Verticillium rotation trial where we are measuring inoculum levels. This crop will be green manured in the next few weeks with cotton planted this coming season.

NITROGEN

As some of you would be aware I along with the other REO's conducted Nitrogen rate trials across our respective valleys in the 2015/16 season with the results now ready for publication. I have included a few excerpts from the full document.

Irrigated cotton lint yield response to applied Nitrogen (N) fertiliser has been consistent in on-farm trials across 5 regions in eastern Australia.

Some take home messages are-

- Little or no yield response to applied nitrogen occurred regardless of treatment, timing or application method, meaning factors other than N from fertiliser influence cotton yield;
- Petiole N testing through the growing season was found to be a useful tool to track apparent soil nitrate-N availability and guide in-crop applications of N during peak demand;
- Where a significant amount of nitrogen is drawn from the soil organic N pool, the efficiency of large amounts of applied N is generally poor;

- The zero-N treatments in the Murrumbidgee Valley achieved an impressive 11 b/ha yield with a starting soil N of 164kg N/ha, providing a valuable insight into the contribution of residual soil N and mineralised N at below optimum rates; and
- Measured crop removal and post-harvest soil tests at each of the sites also showed a large proportion of total available N was lost or unaccounted for.

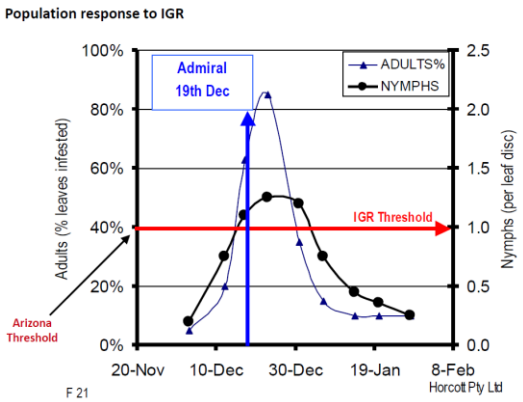
What's the latest N use research telling us?

A snapshot of the latest research on N use efficiency in irrigated cotton can help to understand how to better manage this key input;

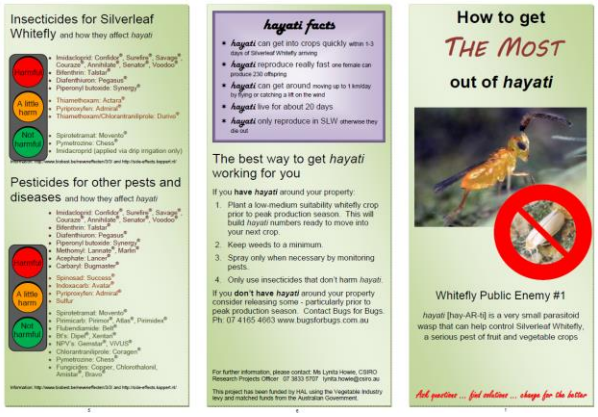
- Analysis of 8 years of experimental data, Rochester and Bange (2016) found crop uptake of N derived from the soil varied from 69 to 75 per cent, with the balance being met by fertiliser. Although crop uptake (kg N/ha) has increased over time with yields, the percentage of N in relation to organic N uptake has changed little. Lint yields may well be limited by the soil's ability to supply N as well as other nutrients.
- Experiments in the Upper Namoi region by Baird (2016) found losses of 20-30kg of pre-applied N through tail water after the first irrigation. The study also found irrigation intensity also affected Water Use Efficiency (WUE) and NUE. The optimised management strategy for cotton productivity was concluded to be 250kg N/ha of applied N and the 70mm irrigation deficit.
- Consistent with the above findings, Macdonald et al. (2017) found over a 5-year period, the majority of dissolved organic N and nitrous oxide occurred between irrigations 1-4 and did not appear to be influenced by fertiliser timing or product.
- Fertiliser product and rate trials conducted by Grace et al. (2017) under furrow and centre pivot irrigation found no significant difference between treatments. The sites averaged 11.9 b/ha. The same study found 198kg N/ha was mineralised during the 2015/16 season from the top 100 cm of soil. 77% of the mineralised N was captured by the plant.
- Using a stable isotope (^{15}N) technique to track the fate of fertiliser, Grace et al. (2017) found only 20% of the N taken up by the plant was derived from fertiliser. I.e. 80% is soil derived N

INSECTS

There is still a lot of discussion about SLW control and so I thought it pertinent to include some more information especially as TIMS are recommending a one month use window for Pyriproxyfen (Admiral®) to be decided by the CGA. The graph below demonstrates the increase in numbers of SLW immediately after an application of Admiral® in Emerald followed by a dramatic crash in numbers.



There has also been a few questions around predators and so I have included part of an industry publication from the Horticulture industry highlighting *Hayati* which is the No 1 predator of SLW, but which are very susceptible to pesticides. The chemicals listed are registered for Horticulture and may/ may not be the same for cotton.



Developed and based on the Horticulture Industry

WEEDS

Places are still available to the upcoming weeds workshops and knowing that fleabane was an issue last season I asked Mark Congreve to provide some insights.

Is fleabane causing you management challenges on your farm?

Flaxleaf fleabane can be problematic in cotton systems, especially low disturbance farming operations heavily reliant of glyphosate for weed control.

Fleabane is naturally more tolerant of glyphosate than many other weeds, making knockdown control difficult even with relatively high application rates. In addition, many fields now contain populations of fleabane selected for non-target site herbicide resistance which further increases tolerance to glyphosate. Understanding the biology of fleabane and how environmental conditions and resistance affect the performance of glyphosate is critical to maximising performance.

Other tools, in particular cultivation and the use of residual herbicides, can be extremely effective in managing fleabane. However the use of residual herbicides at planting is likely to require careful attention to application to minimise the chance of setting the crop back.

WHAT'S ON

1st August Rowena- Weeds Workshop, Village Inn, 8.30 start. Contact www.icanrural.com.au/
3rd August Bellata- Weeds Workshop, Golf Club, 8.30 start. Contact www.icanrural.com.au/
4th August Gunnedah- Weeds Workshop, Services and Bowling Club, 8.30 start. Contact www.icanrural.com.au/
8th August, **2pm**- Dryland Growers Research Assoc update Rowena Village Inn.
9th August, 1pm- Dryland Growers Research Assoc update, Victoria Hotel Goondiwindi.
28th/29th Aug- IPM Short Course, Gunnedah.
30th/31st Aug- IPM Short Course, Burrenn Jct
5-7th Sept- Association of Aust Cotton Sciencists Conference, Canberra.

WELSHY'S WEATHER

The BOMs dry August forecast might be the kiss of death we were looking for. Rain events keep showing up on weather models for early August - at odds with the 30% chance of above median prediction released on Thursday. There are no clear signals from the oceans that we should be in drought, however the persistent high pressure ridge camped in southern Australia is the main factor influencing the outlook. Looking further out, the summer cropping season shows more encouragement with some of the models favouring a long-awaited return of a wet summer. Keep an eye of the early August edition of the Moisture Manager.

A pretty horrific picture below from one of our own but amazingly he did survive. Drive safe.

Until Next time

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