

24th February 2019

Crop/Bug Check (week ending 24th February) – Moree

Crop Stage

- Crop is cutting out or has cut out, high percentage of squares and small bolls shed
- Defoliation started on early plant (dryland)
- Defoliation within 2 to 3 weeks for some irrigated fields

Insects/Beneficial's

- Most irrigated fields have received an admiral, still some fields no application
- SLW active although numbers are low
- Thrips and Rutherglen Bug active, but won't be a problem
- Few mites
- Low numbers of SLW parasites

Disease

- Vert increasing

What the consultants are saying:

"Dryland – late plant 5NAWF, 2nd spray for mirid nymphs (2.25/m), SLW 2% mostly adults with very low levels of nymphs, no honey dew. Early plant defoliating in next 10 days"

"23 nodes, good retention, 4-5NAWF (much already cutout)"

"Admiral has worked well with SLW numbers dropping significantly"

Crop/Bug Check (week ending 24th February) – Mungindi

Crop Stage

- Irrigated: 23 – 24 nodes and all cutout
- 12-15 NACB
- Some limited water crops with last irrigation in January getting close to defoliation
- Dryland – early plant, held on well, 8 NACB. Late plant dryland struggling, no mature bolls, desperate for rain

Insects/Beneficial's

- Moderate mirid activity
- Significant increase in SLW, adults and nymphs. Admiral applied 7-10 days ago, so expect decline in the next week
- Parasitism low, but predator numbers increased significantly

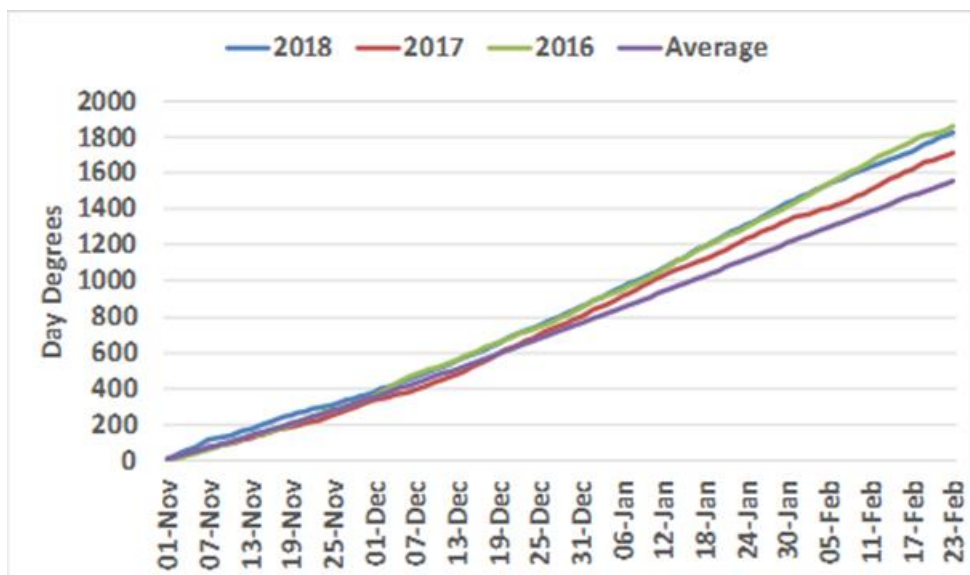
I am not hearing of many reports of parasitism. Nancy Schellhorn, CSIRO developed a brochure looking at "How to get the most out of Hayati", see attached.

Please note, that all agronomic decisions should be based around your crop and the pests found in it. This is a summary of responses from 8 consultants based in the Gwydir/Mungindi districts.

Day Degrees - Moree

Accumulated day degrees from planting date of 1 November until 23th February - Moree

- From 1st Nov: 1826
- 2017: 1712
- 2016: 1857
- Long Term Average: 1556

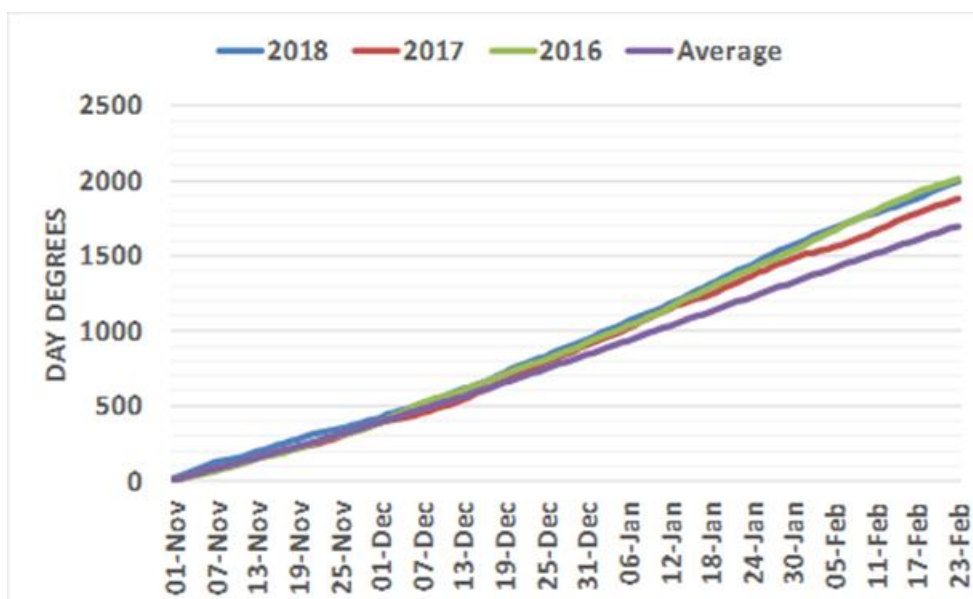


Date	2018	2017	2016	Average
Hot Days	55	48	59	22.7
Cold Shock	2	3	8	4.6

Day Degrees - Mungindi

Accumulated day degrees from planting date of 1 November until 23th February - Mungindi

- From 1st Nov: 1993
- 2017: 1879
- 2016: 2014
- Long Term Average: 1699



Date	2018	2017	2016	Average
Hot Days	73	62	77	41.5
Cold Shock	1	2	6	3.1

Silverleaf Whitefly (SLW) Management

The Gwydir and Mungindi windows are:

- Moree: 28th January 2019 – 28th February 2019.
- Mungindi: 25th January 2019 – 25th February 2019.
- Maximum 1 application of Pyriproxyfen per season

The aim of the threshold matrix is to identify when populations are beginning to enter a phase of rapid increase and enact control prior to numbers reaching levels where they might pose a risk of contaminating opening bolls with honey dew. Other factors that you might consider when approaching a control decision is you are unsure whether you are at threshold is to:

- Consider your crop stage. The aim for pyriproxyfen usage is to bring whiteflies under control by the time the first bolls open. This means that your control decisions when using a product such as pyriproxyfen should be made at least a fortnight before first open boll as the product will take 14-20 days to bring about population decline.
- One of the reasons pyriproxyfen works so well is that it is highly selective and leaves the majority of SLW natural enemies in place after application. These natural enemies are very effective at “mopping up” any SLW that survive treatment and prolong the chance of any SLW resurgence. Fields that have been disrupted through the use of non-selective products for mirid management are more likely to have SLW numbers rebound 4-6 weeks after pyriproxyfen treatment. Also the chance of resistant individuals surviving in disturbed fields is much higher.
- If your numbers are not at threshold but SLW are still present in the crop, continue to monitor the population and keep a look out for signs of honey dew.
- If numbers build up or honey dew starts accumulating after the pyriproxyfen window has closed consider the use of a knockdown product to reduce numbers during boll opening.
- If you are worried that control might still be necessary before defoliation, products such as spirotetramat (Movento®), diafenthuron (Pegasus®), acetamiprid/emamectin (Skope®), cyantraniliprole (Exirel®) or dinotefuran (Starkle) should provide effective control for any late season build-up depending on the situations circumstances.
- Remember that the objective is to limit the opportunity for honey dew contamination of the lint. Even mild honeydew can cause problems.

CottonInfo publication: [Avoid a sticky situation](#) and [Managing silverleaf whitefly in Australian cotton](#)

2018/19 Crop Competition

- We have had some entries sent in already, but we need a few more for some healthy competition!
- Crop Competition entry form attached
- Entry forms due TOMORROW Tuesday 25th February 2018 with judging to commence this Wednesday.
- Email completed forms to janelle.montgomery@cottoninfo.net.au

In case you missed it....

DCRA, CSD & B&W Dryland field walk Carmona Downs, Terry Hie Hie

About 25 growers and consultants attended the field work at Ed Tomlinson's last Friday to look at a planting date comparison of 3 Dryland cotton crops – Mid September, Mid November and Mid December. The variety planted at all times was Sicot 748B3F and all started with a soil profile of only 50%. The early plant (mid Sept) received 172mm in-crop rainfall and flowered for 4 weeks, cutout mid January and was defoliated last week with a reasonable boll load given the hot dry season. The mid Nov plant was sown after 80mm rain in October increasing the profile water to 70%, flowered for 3 weeks, 88mm in-crop rainfall, small bolls present with time to mature. The mid December was 70% profile water by planting, receiving 43mm in crop rainfall, it started to flower early February for 3 weeks, it has very no fruit at the bottom of the plant, just squares at top of plant, needs rain in the next fortnight or its too late. Appears the risky early plant (mid September) has paid off this season for Ed.

The photo below shows compares plants from the 3 planting times.



What are the researchers up to in our district?

CSIRO PhD Student, Claire Welsh has almost completed her 3rd year of trials and preparing for her write up!

Her project is looking at various PGR's (plant growth regulators) to manipulate dryland cotton growth and development so it can better fit to the prevailing or forecast climatic conditions.

One of her trials is located at Ed Tomlinson's "Carmona Downs" Terry Hie Hie and its just been defoliated; Claire has been hand picking weekly since the 25th of Jan to gain an understanding of each treatments progression to maturity, boll size & total boll numbers. Ginning & HVI analysis will follow on directly.

She will also be drilling root cores from both the plant line & skip row to quantify differences in root development and soil moisture between the treatments. Ed has also kindly offered his backhoe to dig some soil pits between the control & TEP treatments this coming week, which should provide some interesting photos!

Concept:

Using PGR's to shift reproductive growth via 1) Stasis (slowing vegetative growth), 2) Delay or accelerate development (the transition to reproduction) and 3) Remove early fruit.

Why?

Early planting: ability to grab the sowing opportunity, then use PGR's to move plant peak demand to an optimal time. Eg if Early Oct plant led to flowering in a forecast heat wave, you could use PGR's to delay flowering.

Normal planting: you could apply PGR's to a 1/3 of the crop ultimately resulting in 2 sowing times with 1 planting opportunity to hedge climate risk.

Results:

Claire still has to analyse the results, but her trials are certainly generating a lot of interest.

There are clear differences between the products trialled, showing interesting changes in crop development and fruit retention with the various PGR's. Some of the PGR's also affect root development; increasing root development could have significant benefits in a dry year. A better understanding of the effect of individual PGR products on crop growth and development and knowing the best time to apply your PGR will enable growers to more confidently manipulate growth and development.

Local growers and consultants had the opportunity last Friday to walk through the Carmona Downs Trial. There was strong interest in this research and the consultants stressed the importance for industry to continue the research.

Claire's PhD has been supported by CRDC, University of Sydney and CSIRO. Thanks to Ed Tomlinson, DCRA and CSD for hosting the field walk.

Claire Welsh, CSIRO is pictured below with Chris Maunder B&W Rural, Moree and Ed Tomlinson, Carmona Downs, Terry Hie Hie.



Paul Grundy and Jamie Hopkinson, QDAF went to a Mungindi CGA meeting last week to provide an update on the latest issues with SLW management. The Daily Grind was at capacity again (thanks Simone). Paul has been either on the phone, via video conference or in person in most of the cotton regions during the last few weeks sharing important information to avoid a sticky situation,

especially if we have a dry finish. (see article above on SLW management). They have also been collecting SLW adults for resistance testing. This is Jamie Hopkinson's core project. They have a vacuum that gently captures the SLW in a net. Jamie takes them back to the lab and tests for resistance of SLW to Pyriproxyfen. He also tests the toxicity of insecticides on *Eretmocerus hayati*, the parasitic wasp.



Research Update 2018/19 – IPM Team ACRI

Our IPM team at ACRI, Narrabri planted their fields on the 31st October and had everything in top shape just before Christmas: plots had been chipped out, fields were infested with mites and SLW, some early experiments had started and we were on top of the weeds.

Experiments included:

- Early season assessments of “Insecticide impacts on beneficials” for the CPMG,
- Whitefly x Chemistry trial to compare performance of whitefly chemical options, damage simulations of fruit removal and cotton plant compensation,
- SLW sampling validation trials, and
- Three late season cotton lint colour experiments.

While still planning our work through the Christmas period, we were hailed out on the 20th of December in a superstorm that hit around 6.30 pm that night, reaching winds of 147 km/hr. Within half an hour we only had shattered stalks in the field, three of Katie Broughton's climate chambers were decimated, water started pouring through the roof in one area of the Research Station and nearly all vehicles were hail damaged. Hail was not particularly big (about 2 cm in diameter) but hit with enormous force.

We were due to irrigate on the following day but there was little point and as the storm brought little rain, our crop struggled to recover. Over the next week we made contingency plans and decided to replant any experiment that did not need to be carried through to harvest. Adam Coleman at Auscott very generously offered us a field at “Appletrees” to carry out the fruit damage experiment and fortunately our Spring Ridge site at “Dimby Plains” was still fine. We carried out the second fruit damage at “Appletrees” a fortnight ago and the one at “Dimby Plains”, which is behind the Namoi crops, last week. Paul Grundy is doing the same experiment at Goondiwindi so we should be able to get some data along this axis.

Bayer permitted replanting of 1.3 ha of Bollgard 3 in the first week of January, of which we planted 0.6 ha for Richard Sequeira's and Tanya Smith's whitefly studies. We may be lucky and get whitefly into a later planted crop, or end up with no whitefly at all but it is better to have tried and failed than not having tried at all. The remainder was replanted by Mick Bange's group to re-establish some of their experiments.

We were also able to replant the non-Bt CPMG's beneficial impact experiment which re-started last week. Unfortunately we will have to delay the Whitefly x Chemistry experiment until next season and also some of the Colour Project work.

Mary Whitehouse's plot recovered reasonably well and was re-purposed for use by Sharon Downes to test the efficacy of undamaged, severely hail damaged and lightly hail damaged Bt cotton in a colony of *Helicoverpa punctigera* that is resistant to all three Bt toxins contained in Bollgard 3. This work will continue until the cotton cuts out, after which we will use the same plot to experiment with sooty mould fungicides for the Cotton Colour Project.

Despite the stormy disruption to our 2018/19 research plan, we take advantage of any new opportunities and are flexible in our work, keeping on track with most of our CRDC project milestones. Should you be interested in more information about our research work, please contact:

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Dates for the Diary

Landmark Field Walk, Caroale – Radiate Trial

- Date: Thursday 28th February
- Time: 3:15pm
- Location: Caroale, Carnarvon HWY, Moree
- *Radiate is an IBA Plant growth hormone Loveland has recently been registered with the APVMA after interest from private consultants in the area. It has been used widely in the USA as Radiate and Makaze Yield Pro (radiate+Gly)*
- For more information contact Casey Onus M. 0429 296 210

AWM Meetings this week

- **Gwydir West AWM**
 - Date: Wednesday 27th February 2019
 - Time: 4:00pm
 - Location: **Mallawa Racecourse, Mallawa.**
 - Directions: <https://goo.gl/maps/3JQ1Q7z14vH2>
 - Refreshments sponsored by B&W Rural
- **Gwydir North East AWM**
 - Date: Thursday 28th February 2019
 - Time: **4:00pm**
 - Location: Auscott, Midkin Office
 - Refreshments sponsored by CGS
- **Bayer Cotton Grower of the Year Field Day - Goondiwindi**
 - Date: Wednesday 20th March 2019
 - Time: 7:00am buses depart at 7:30 from Goondiwindi Town Park for "Mundine"
 - Location: Mundine, Goondiwindi
 - RSVP Jess Strauch by 8th March, M: 0427 790 056
 - Flyer attached
 - Supported by Macintyre Valley Cotton Field Day Committee

Janelle Montgomery

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