CottonInfo **Information** *when you need it*

the gwydir grower

20 March 2020

Crop Check - Moree

CROP STAGE –

- 6-12 NACB
- Irrigations finished with some field receiving last irrigation this week.
- Defoliation starting, with most crops getting 1st pass in next 2-3 weeks.

INSECTS/BENEFICIALS -

- SLW present but stable with very high levels of parasitism > 50 %.
- Mites at low levels, stable. Thrips present.
- Seeing higher numbers of cotton strainers in patches
- Beneficial present including spiders, lace wings, red and blue beetles

WEEDS -

- Weeds- Pretty tidy
- Increasing on some farms

DISEASE -

- Alternaria high
- Severe verticillium present in some fields
- Some premature senescence
- Boll rot has taken a heavy toll in the lower crop.
- Tight locking evident.

What the consultants are saying:

"We have not had to apply any whitefly sprays to date, with SLW levels contained and seeing very high parasitism"
"Whitefly present but stable, mites at low levels, stable, hopefully won't need to spray for either"
"Hayati appears to be on top of SLW. Over 50% parasitism. Found 15 Hayati and 2 SLW in one spider web. Mostly a ratio 5 SLW to one Hayati wasps getting caught in spider webs. Lacewing increasing"
"Verticillium is rampant, going off its "nuts" and the plants under the most stress, which happen to have the highest boll loads are getting hit with it the worst"
"Fusarium nowhere near as bad as I would have expected"
"Severe verticillium present in some fields, canopy health is pretty shot, seeing higher levels of alternaria, not a nice finish"

"General leaf disease in lower canopy has helped a bit (boll rot). Dropped lots of bottom leaf and allowed some ventilation"
"Yields down due to multiple shedding events"
"Expect yield is well back from target due to poor retention on mid-crop and loss of lower fruit to boll rot"
"Recent rains/extended cloud has hurt this crop badly. But overall, most have picked up some water and will grow a winter crop!"
"No idea what our yield will be, but I can say confidently that they will definitely not as good as normal, cloudy weather has knocked a lot out. Not as many seeds in the lock, only 7 rather than 8 or 9."
"13b/ha – people are dreaming!"

Day Degrees 1st Nov 2019 – 19th March 2020

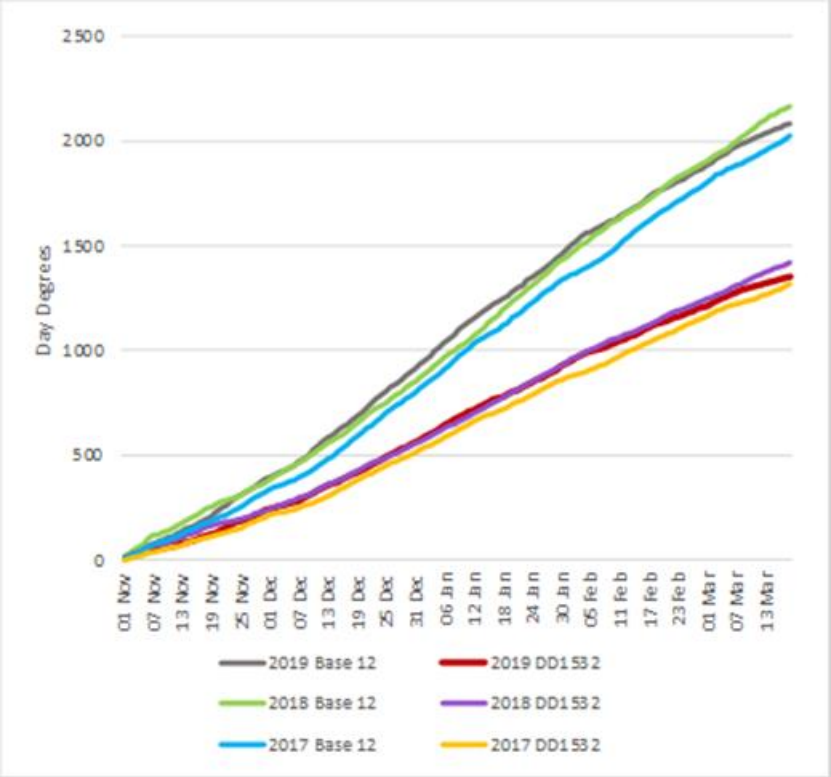


Figure 1: Accumulated Day Degrees 2019 DD 1532, 2018 DD 1532, 2017 DD 1532 compared to Base12
Source: https://www.csd.net.au/ddc

Table 1: Day Degrees seasonal comparison 1/11/19 – 19/03/2020

	2019	2018	2017	10 year mean
Base 12	2085.6	2166.4	2025	2000
DD1532	1352.2	1417.4	1315.1	1320.1
Cold shock days	5	2	3	3
Days above 36°C	59	63	52	40.7
Nights above 25°C	21	11	9	8.9
Days above 40°C	14	12	11	8.5
Average temperature (°C)	27.1	27.7	26.6	26.5

Source: https://www.csd.net.au/ddc

CSD Ambassador Update (March) – Gwydir Valley

CSD Ambassador sites in the Gwydir have been a little delayed in reaching cut out, with fruit shed widespread as a consequence of rain and overcast conditions. This reduced boll load has resulted in continued vegetative growth and crops holding at 5 to 6 NAWF for a number of weeks. That being said, boll numbers are still reasonable and the rain has taken some pressure off irrigation schedules. More information on the rest of the CSD Ambassador Network Program is provided in the Ambassador Advocate, which is distributed to members of CSD.

Table 1. Average of cut out data for irrigated CSD Ambassador sites in the Gwydir Valley.

Cut out date	11/02/2020
Day Degress (Base 12)	1721.3
Day Degrees (1532)	1101.7
Days after planting	110.5
Days of flowering	37.7
Plant height	96.4
Squaring nodes	17.8
Total nodes	25.5
Total bolls	163.4
VGR	5.3

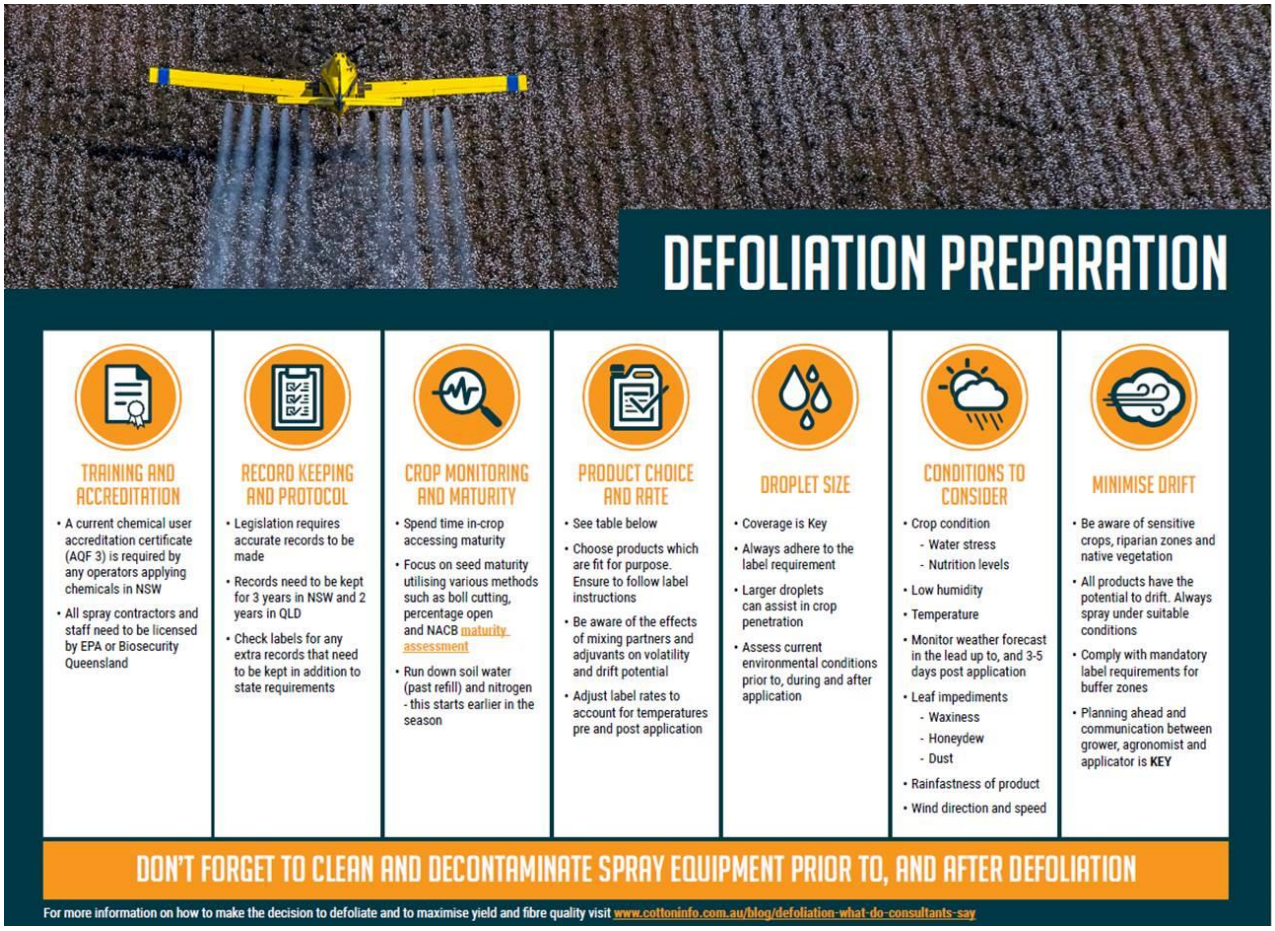
If growers would like to track their crop through BARRY and Cotton Tracka please make contact Alice Curkpatrick, CSD E&D Agronomist (Gwydir Valley) M. 0418 818 142 E. acurkpatrick@csd.net.au

Keep Defoliation on Target

With defoliation just around the corner the Cotton Industry is reminding all growers, consultants and applicators to be vigilant when applying harvest aids this season. With reduced hectares of cotton across the valley we will have the opportunity to allow for optimum conditions for applying harvest aids. We have the advantage of the improved cotton mapping platform SataCrop https://crop.satamap.com.au/, where it has the function of identifying sensitive crops in our regions. We encourage all farmers to use this platform to share information on ALL crops in your area.

Fig 1: Moree region – Cotton crops in white, dark green citrus and permanent trees in light green. (Source https://crop.satamap.com.au/)

CottonInfo has also produced a Defoliation Preparation 2-page document that is a great summary of **best practice for defoliation**. Please share this document with your clients, applicators and contractors or print it off and leave it in the tractor or spray rig. Contact your Cotton Australia Regional Manager or your CottonInfo REO if you have any concerns about defoliation this season. The full document is attached or is available on the CottonInfo Website here.



Noticed any strange weeds after the drought? Hit them for six (Source: Eric Koetz, CottonInfo Weeds Tech Lead, NSW DPI)

Opening the batting against a fast bowler always gets the heart racing, discovering patches of a new weed might also have similar effect. Have you seen any new/strange weeds after the recent rain? Are there plants on your farm that you haven't seen before? It's very important to get out to those areas where grain and hay was fed out to make sure new weeds aren't germinating with the potential to set seed. The two most obvious weeds to look out for in the northern cropping region are annual ryegrass and wild radish. Why? Surely these weeds have been around the district before, however if they have come in with imported hay or grain from southern regions, there is a big chance they are resistant to several herbicide groups.


Wild radish. Photo. Eric Koetz


Annual ryegrass. Photo. Eric Koetz

So much like facing a slow, medium pace bowler, get on the front foot and be decisive in your approach. Stop seed set. If glyphosate is hard to come by look for other alternatives eg: Valor or Sprayseed. Other options as a double knock include; grazing, slashing, mulching, cultivation or a combination of any two tactics. Whatever the approach being vigilant and taking action now will prevent the introduction of a potential "super weed". Hit weeds for six.
Ideally growers need to continue monitoring throughout the growing season and into next season. Any escapes this year could blow out quickly, especially if follow-up rain results in a large winter cropping program where herbicide options might be compromised. We won't know if our herbicides aren't going to work until the first sprays go out.

There are several reasons why weeds might survive a herbicide treatment but it is increasingly common for herbicide resistance to be the culprit. Testing weeds for herbicide susceptibility and resistance can save growers significant dollars. Resistance has been confirmed in 46 weeds in Australia. In cotton growing areas, six common grass weeds are known to be resistant to glyphosate - awnless barnyard grass, liverseed grass, sweet summer grass, windmill grass, feathertop Rhodes grass, and annual ryegrass. In addition, two broadleaf species - flaxleaf fleabane and sowthistle - have developed resistance to glyphosate.

Bayer offers a free herbicide resistance testing program, available to all growers who have grown Roundup Ready Flex® cotton in any of the prior 3 seasons. Growers can test key weeds present in cotton systems for resistance to program herbicides.
Bayer have pre-printed testing envelopes that can be used for weed seed collection. Please contact Tom Luff E. tom.luff@bayer.com.
Samples will be sent to Plant Science Consulting, who will do the testing and provide results directly to the grower.
Further information http://www.roundupreadyplus.com.au/
If you have any weeds you would like tested, give me (Janelle M. 0428640990) a call and I'm happy to come out to your farm and collect some weed seed for testing.

As well as hard to control cropping weeds there is the risk of new "nasty" weeds coming in, eg: parthenium weed, Broome rape etc. More information on Biosecurity and high-risk weeds is available from the NSW DPI website.
https://www.dpi.nsw.gov.au/biosecurity/feed-and-fodder/managing-biosecurity/high-risk-weeds

Plant health top tips – March: using precision spray tech to optimise weed control

In simple terms, precision spray technologies means using optical cameras and sensors to identify individual weeds or patches within fields and applying high rates of herbicide to prevent seed set. Growers who have adopted this technology are reporting savings of up to 90 per cent on their herbicide costs as they are only spraying 10-15 per cent of the field. Read the entire CottonInfo Blog here.

SOS Gwydir – Beers & Bangers: POSTPONED

Unfortunately, the SOS (Stop-Off-Target Spray) on-farm meetings to discuss spray practices (set for 30th & 31st March 2020) **have been POSTPONED.**
We look forward to holding them later in the year, thanks to our local farmers who have welcome Gwydir SOS activities such as these spray workshops onto their farms including Brad Jackson, Stuart Tighe and Tim Grellman.

The overarching goal of SOS Gwydir Valley is to ensure spraying takes place in the correct weather conditions and with compliant spray quality from any platform (hydraulic boom, PWM, optical etc) to get the best job possible in the field sprayed and stop off target spray drift.

If you have any questions regarding best spray practice or would like to have your email included in the SOS Gwydir contact list to receive updates please email sosgwydirvalley@gmail.com.

Late Season SLW Management

From boll opening until leaf drop it is critical that silverleaf whitefly (SLW) are managed to a level that prevents sticky cotton lint.

If numbers have built up or honey dew starting to accumulate since the pyriproxyfen 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®), diafenthiruon (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.

Useful SLW CottonInfo publications: Avoid a sticky situation, Bringing your crop home: SLW management

What are the researchers up to in our district?

Jamie Hopkinson (see Researcher profile below) and Jacob Balzer, QDAF, Toowoomba, were in Moree this week collecting SLW adults for resistance testing. Jamie leads the CRDC funded industry project: Sustainable SLW management through improved insect resistance monitoring.

Jamie & Jacob sampled from three farms with a good geographical spread across the cotton grown in the Gwydir this year. They used a vacuum that gently captures the SLW in a net, walking up through the cotton across a couple of transects. Jamie takes the SLW back to the lab and sets up a colony in order to test offspring for resistance to Pyriproxyfen and other insecticides registered for SLW control. In the past he has also tested the toxicity of insecticides on Eretmocerus hayati, the parasitic wasp.

Jacob Blazer and Jamie Hopkinson, QDAF on a Moree cotton farm

The insect vacuum used to collect SLW adults

Transferring the adult SLW from vacuum bag into the collection cage.

Meet your cotton researcher – Dr Jamie Hopkinson, Research Scientist (Entomology), QDAF

What's your background?
I grew up on the Darling Downs on grain growing property (wheat/sorghum/sunflowers) and a few cattle. I studied Biology at USQ and followed that later with post graduate entomology studies at UQ . I worked in the entomology group on various projects, on pests including helicoverpa, aphids and whitefly in grain and cotton industry's.

How did you end up in Cotton Research: In the early years I worked in and out of the cotton industry in response to pest issues, I was fortunate to receive a CRDC scholarship for my PhD which looked at biological control and cotton aphids. Later an opportunity came up to work on silverleaf whitefly and that has been my focus in recent years as it has emerged as a pest problem for cotton.

What excites you about working in the Cotton Industry? It's a great, supportive industry of research, the issue of whitefly and resistance is a high priority, so it's rewarding to provide outcomes that will help growers produce cotton into the future

What is your current research project?
Sustainable SLW management through improved insect resistance monitoring, funded by CRDC

Since 2009 I has been the principal researcher of a CRDC funded projects monitoring Silverleaf Whitefly insecticide resistance. I currently lead a dedicated team to determine the insecticide resistance status of SLW populations collected from the major cotton growing regions across eastern Australia

How will it benefit the grower?
Silverleaf Whitefly (SLW) is a major pest of cotton. It has the ability to contaminate cotton lint with honey dew, has a large host range, can rapidly reproduce and can develop resistance to many insecticides. In addition, the honey dew caused by SLW can cause significant problems in the spinning process causing stickiness in the machinery necessitating shut-down for cleaning. Consequently, cotton producing countries that develop a reputation for supplying honey dew contaminated cotton risk significant discounts. Pyriproxyfen is a cornerstone product that growers are reliant on for SLW control. Monitoring resistance levels and encouraging best practice of insecticide application will ensure the longevity of this product and the continued production of high quality cotton.

How will it benefit the industry?

- Monitoring SLW resistance across the industry to pyriproxyfen.
- Increased human capacity and knowledge and adoption of integrated pest management practices.
- Adoption and increased awareness of insecticide resistance, and the importance of beneficial insects in SLW control.

- A culture change of the cotton industry in the use of Pyriproxyfen with an understanding of the significance of SLW resistance to this cornerstone product

What are your key findings?
Take home messages 2018/19 season
Pyriproxyfen (Admiral)
Nineteen populations were tested, of those 6 populations were resistant, including Mungindi, two (out of 3) populations from Gywdir valley, and all three populations from the Namoi valley. Overall the strength (resistance factor) of resistance is lower.
Bifenthrin (Talstar)
Single populations from St George, Mungindi and Namoi Valley had resistance to bifenthrin
Spirotetramat (Movento)
One population from Emerald had low level resistance to spirotetramat, high level resistance has been detected in Bowen previously.
Acetamiprid
One population from Goondiwindi was initially indicative of resistance, but further testing couldn't confirm this. At this stage our conclusion is there is no resistance to acetamiprid.

What do you like to do when you aren't researching?
Recently I've been looking into the whole ancestry thing, including getting my DNA tested to see who I'm related to, so in a way I'm still researching!

Thanks Jamie. For more information Jamie Hopkinson E. Jamie.Hopkinson@daf.qld.gov.au **M.** 0475 825 340

2019/20 Gwydir Cotton Crop Competition – Judging Thursday 26th March

Thanks for the crop comp entries received. We have received 6 entries. Judging will take next Thursday, 26th March. Happy to take some last minute entries if you are still considering nominating a field. Give me a call, Janelle 0428640990.

The winners will be announced at the Gwydir CGA award and charity dinner later in the year. An opportunity to show case our great industry and the importance of cotton in our region.

Dates for the diary

All CottonInfo workshops and field days have been postponed at this time of COVID-19. However, we will continue to provide timely and relevant information via electronic means. CottonInfo REO's are still conducting all field work, including, trials, regional disease surveys and insect collections and will continue to provide support to growers in our local regions. We just won't call in for a cup of tea!

- **Wednesday 25th March 2020, Bayer Cotton Grower of the Year Field Day - POSTPONED**

- **30 & 31st March 2020, SOS Gwydir Beers & Bangers – POSTPONED**
  - Spray practice get together
  - Places: Gurley, Milguy and Mallawa

- **Wednesday 1st April 2020, AgTeCH20 Demo Day and StartUp Alley, Mungindi, NSW - POSTPONED**

Janelle Montgomery

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