CottonInfo Information when you need it

the cotton wrap

March 2020

Disease Surveys

Late season disease surveys have been completed in the Namoi Valley. Aphrika and Duy Le would firstly like to extend thanks to all growers and agronomists who facilitate our farm visits throughout the seasons.

Some comments from their collections last week: "We saw boll rots, verticillium wilt and low levels of Alternaria. Over the next few weeks, we will do our laboratory confirmation of pathogens, and collate incidence data across the valleys. Individual grower reports for the 19/20 season will follow."

Please don't hesitate to contact Duy or Aphrika should you see any unusual pathologies or wish to confirm verticillium wilt in your crop as the season ends. For more information you can refer to the diagnostic form attached to this email.

(Alternaria and pollination & Verticillium Wilt hotspot – Aphrika Gregson)

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, was in Narrabri 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 within the Lower Namoi 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.

The insect vacuum used to collect SLW adults

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

Defoliation

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's, we will have the opportunity to allow for optimum conditions for applying harvest aids. We have the advantage of the improved crop mapping platform https://crop.satamap.com.au/, where it has the function of identifying sensitive crops in our regions.

We encourage farmers to use this platform to share ALL crops in your area. Although we hope that all crops are recorded on this platform, we still encourage you to refer to your PAMP (pre-season meetings with neighbours) and communicate with those around you in this time.

Please continue to update SataCrop with every planting following the recent rain we have had.

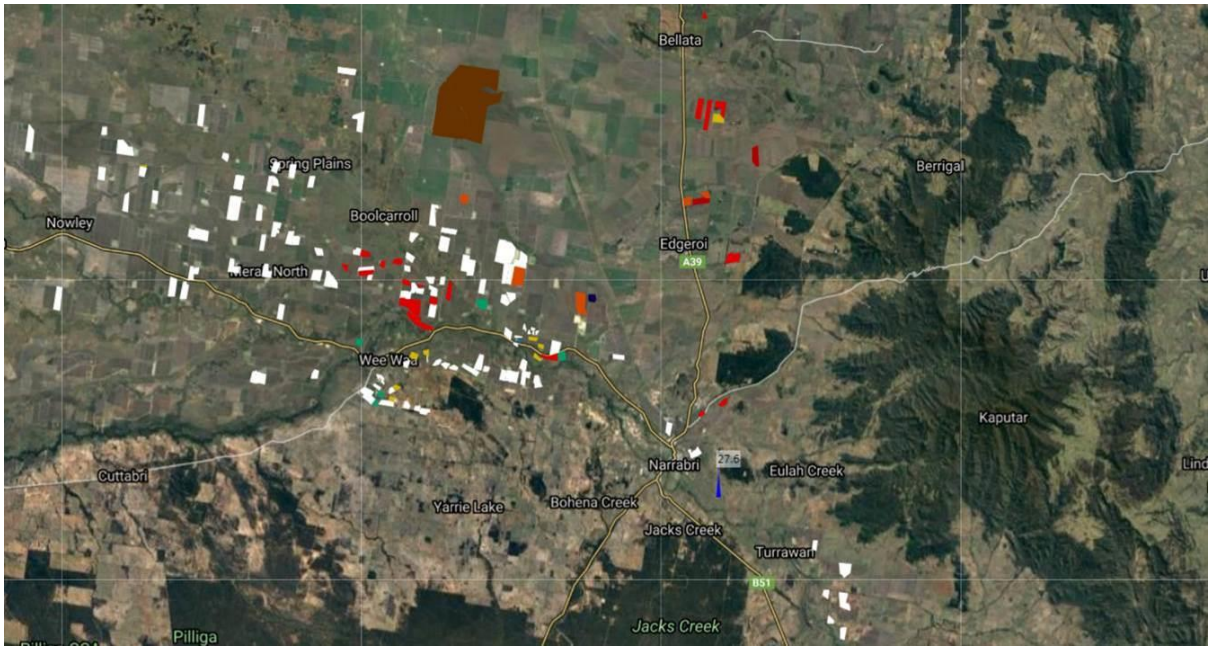

Fig 1: Lower Namoi – Cotton Crops in White, Sorghum in yellow and permanent trees in green. (Source https://crop.satamap.com.au/)

CottonInfo has also produced a Defoliation Preparation 2-page document that is a great summary of best practice for defoliation which I will attach to this email also. 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.

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 industries.

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 have 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 can 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 shutdown 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 from 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

Are you a member of CSD?

Access to the latest CSD trial information, research, apps and calculators on the CSD website is changing. Exclusive CSD member-only content will be available from 2020 via a membership portal on the CSD website. Only CSD members will be able to access the higher-level information and resources currently freely available online.

Membership cost: $20/yr
How do I sign up? http://www.csd.net.au/membership
What if I'm already a member? Your membership will run through to June 2020, after which you will receive communications from CSD to renew your membership.
What if my contact details have changed? You can update your contact details here http://www.csd.net.au/membership

Any questions please contact your local CSD Extension Team Member
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Cheers,

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Day Degrees - www.csd.net.au/ddc

Wee Waa 14th October – 23rd March

Summary | Seasonal comparison

	2019	2018	2017	2016	2015	10 year mean
Base 12	2315.0	2452.8 ▲	2265.5 ▼	2334.8 ▲	2272.5 ▼	2222.0 ▼
DD1532*	1475.9	1596.2 ▲	1439.2 ▼	1450.7 ▼	1504.2 ▲	1431.7 ▼
Cold shock days	11	4 ▼	9 ▼	22 ▲	0 ▼	9.9 ▼
Days above 36°C	65	69 ▲	62 ▼	63 ▼	49 ▼	48.1 ▼
Nights above 25°C	21	17 ▼	11 ▼	21	5 ▼	10.1 ▼
Days above 40°C	20	15 ▼	17 ▼	24 ▲	5 ▼	10.9 ▼
Average temperature (°C)	26.3	27.2 ▲	26.0 ▼	26.2 ▼	26.1 ▼	25.7 ▼

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

Gunnedah 14th October – 23rd March

Summary | Seasonal comparison

	2019	2018	2017	2016	2015	10 year mean
Base 12	2142.5	2226.0 ▲	2058.7 ▼	2105.9 ▼	2045.2 ▼	2011.0 ▼
DD1532*	1299.2	1406.9 ▲	1248.5 ▼	1234.9 ▼	1300.0 ▲	1237.4 ▼
Cold shock days	22	7 ▼	16 ▼	33 ▲	4 ▼	18.2 ▼
Days above 36°C	55	59 ▲	53 ▼	48 ▼	35 ▼	37.1 ▼
Nights above 25°C	4	3 ▼	0 ▼	1 ▼	0 ▼	1.2 ▼
Days above 40°C	14	10 ▼	8 ▼	12 ▼	6 ▼	6.8 ▼
Average temperature (°C)	25.1	25.8 ▲	24.6 ▼	24.5 ▼	24.7 ▼	24.3 ▼

* Experimental calculation.

Climate observations and data are obtained via the State of Queensland SILO patched point dataset.

Crop Check

Crop Stage:

- All fields are cut out and finishing up
- Some late fields 4-6 NAWF

- 26-28 nodes
- Late crops 10-12NACB
- Earlier crops 4-6 NACB

Water:

- A couple of late waters are going on some crops
- Others haven't had water since start of Feb and have moisture to carry through
- Last water just finished on late crops
- Final irrigation has been applied

Insect Pests/Beneficial's:

- Insect pressure has substantially reduced
- Occasional mirid in some later crops
- Whitefly – good success with hayati release this year in combination with cooler weather and rain.
- SLW sprayed at two farms and have had good control
- Some fields have been treated for mites recently as infestation levels have increased since the rain
- Whitefly levels very low – no control needed in early crops

Disease/Environmental:

- Verticillium wilt through fields and showing up worse in older cotton country
- Suspect will have a little impact on yield but not a bad as if it had have come in December/January
- Vert showing up more and more as crop finishes
- Boll rot still very evident in early crops

Comments:

- Defoliation starting on early crops
- Some defol 14 days away
- Defoliation to start in some crops next week

Please note, that all agronomic decisions should be based around your crop and the pests found in it. It is a snapshot in time and not representative of the whole valley. Updates were received from 4 agronomists/consultants across the upper and lower Namoi to pull this Bug/Crop Check together.

Please see next attachment in email for an update on a CSD ambassador site.