



the cotton tale

20th December 2020



Crop check report 17th December (combined report from agronomists)

Crop stage: Crops vary from 9 to 16 nodes with most at 11 to 12 nodes. Crops have put on at least 2 nodes in the last week and 10 cm in height. Some low rate mepiquat going on before Xmas.

Insects/Beneficials: Adult mirids are moving in and out of crops at thresholds. Spray programs have started.

Weeds: Second glyphosate sprays are starting. Reminder to spray small weeds when stress free for best results.

Disease/Environmental: Some square shedding from environmental conditions (Hot and cold)

General comments: Second irrigation happening now. Some crops on third irrigation. First flower in many crops between Xmas and New Year. Petioles indicating N status is in the satisfactory range and on track.

Weather data 1532 Yield forecast

The new method of calculating day degrees is considered more accurate for Southern NSW as it accounts for our cool nights in the starting weeks of October.



It uses a base temperature of 15.6 degrees C. With this new method and a higher base temperature the adjustment for cold shocks has already been accounted for. Some days due to cool nights getting down to less than 5 degrees the 1532 method results in a zero day for accumulation.

It also caps day degrees at 32 degrees as research has shown that photosynthesis drops away over this temperature.

What it leads to is a more accurate prediction of key development stages in the field.

First square - 339

First flower - 584

Open boll – 1077

What readers of the Cottontale would notice is a relationship between how many 1532 day degrees we accumulate in October and November and final regional yields (see Yield prediction tab). As we have now completed this part of the season the geographic differences are starting to show up. Final yield is determined by a host of factors with management decisions having a big impact on the genetic/environment potential. Where you sit on the graph at this stage is just an indication of potential yield. You can end up above or below this yield depending on many factors such as how the rest of the season unfolds.

As a member of CSD you have full access to tools such as the Day degree calculator which you can customise for individual planting dates for your location.

Silverleaf whitefly monitoring

This season the industry is promoting a new sampling method for monitoring SLW populations. The first major outbreak of silverleaf whitefly (SLW) in Australia occurred in 2001-02 in central Queensland. With a green bridge across some of our regions it will be key to monitor for SLW populations early this season.

The original SLW threshold matrix developed in central Queensland recommended looking for SLW adults on leaves about 4-5 nodes below the terminal. Reports from the cotton industry over the last few years indicating significant inter-regional variability in population dynamics, along with other considerations such as the relatively high mobility of adults, has led to a review of the matrix. A CRDC project by DAF and CSIRO has re-examined sampling methods and validated population dynamics across regions and has developed a new decision support tool (DST) that focusses on monitoring nymphs in the lower canopy.

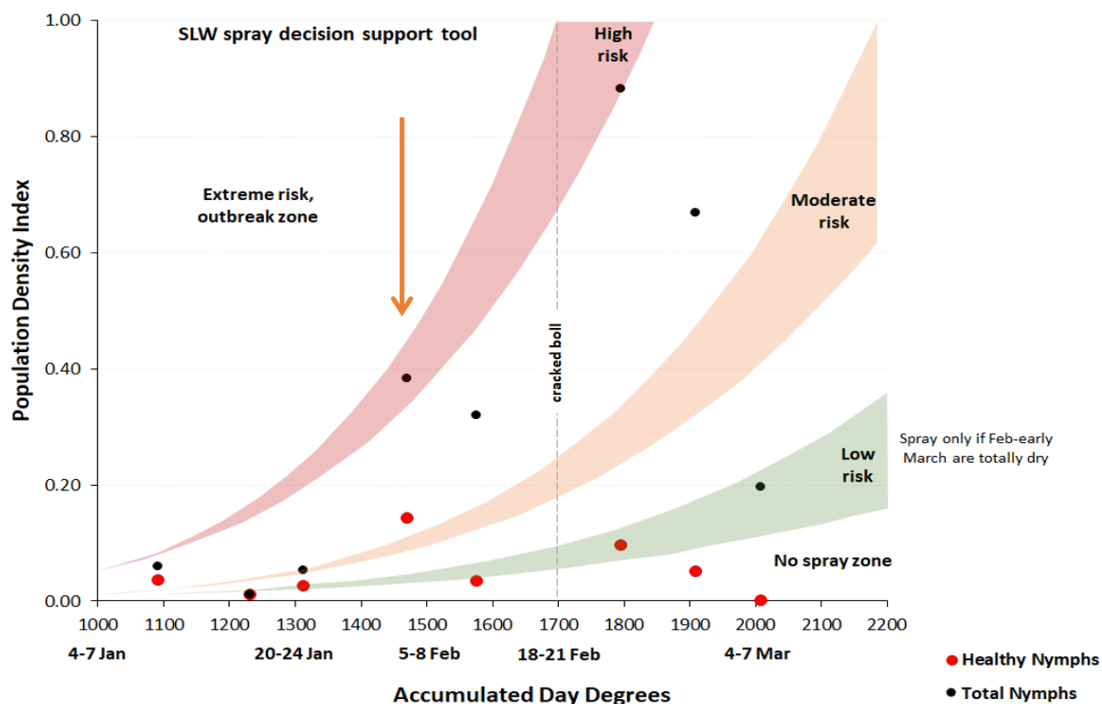
Given the small size of nymphs, a phone sampling app is currently under development in another CRDC project by DAF and USQ. The phone app will potentially automate detection and categorisation of nymph on leaves and circumvent the need for manual checking. However, in the

interim, the DST is available to crop managers for this season (2020-21) as an excel workbook; it includes a data entry and visualisation worksheets.

Relatively straightforward to use, the new tool requires the crop accumulated Day Degrees (DD; base 12) at the time of sampling and a count of the proportion of healthy (red eyed) nymphs on each leaf at the 11th nodal position. The ability to also identify predation, parasitism or other mortality is not necessary for making spray decisions but would assist crop managers determine the impact of various natural enemies and contribute to making more effective whitefly management decisions.

The DST's excel chart and booklet <http://bit.ly/2JNDxas> gives the user a real-time visualisation of the whitefly population density in relation to the risk of lint contamination, and the need (or not) for spraying. An example is given below. At around 1475 Day Degrees (orange arrow), a substantial jump in the density of total nymphs (black dot) would indicate a population heading along a trajectory that would result in high risk of severe lint contamination in the absence of mortality but the much lower density of corresponding healthy nymphs (red dot) signifies around 60% mortality. The progression of red dots over the season indicated very high natural mortality of whitefly which largely neutralised the lint contamination threat after cracked boll thereby helping to avoid intervention with chemical insecticides.

The use of the interim whitefly DST to visualise actual data from a crop sampled in NSW in 2019.



(Source: <https://thebeatsheet.com.au/a-new-approach-to-silverleaf-whitefly-sampling/>)

For a recording of a webinar on the DST and sampling guidelines based on the rates of growth of large SLW nymphs in the lower canopy. [Click Here](#) Presented by Richard Sequeira (DAF).

You can also contact Richard directly if you require any further information

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BARRY - Biometric Agronomy for Realising Representative Yield

BARRY - is a new crop modelling tool developed to assist Australian cotton growers and consultants assess the yield potential of their crop at key growth stages. With first flower approaching it is quite easy to do the first assessment using BARRY. All you need to do is enter your crop details and where the field is up to in reproductive development.

BARRY has been developed in partnership with CSIRO, utilising the extensive (six year) agronomic database collected from CSD's Ambassador Network and Variety Trial programs and CSIRO's machine learning algorithms to estimate potential yield with reliable accuracy.

BARRY is available to CSD members and can be accessed by visiting www.csd.net.au/barry.

Not a CSD member? Then you are missing out on some great tools and information. Membership costs just \$20/yr. Join [here](#). Australian growers and cotton industry personnel all welcome!

Early season disease surveys

Summary

A total of 56 arbitrarily selected fields from 39 farms across NSW were surveyed during the months of November and December 2020. After a few years without cotton, growers in Bourke were able to plant around 8,000 ha of cotton this 2020/21 season. Common seedling diseases such as black root rot, Rhizoctonia-like rot and Alternaria leaf spot were detected across all cotton growing regions in NSW. Black root rot and Rhizoctonia-like rot were still major seedling diseases across all regions. Though detected with relatively high incidence, most of the Rhizoctonia-like infection was superficial and the cotton seedlings can grow out of it. Alternaria leaf spot remained prevalent and the disease damage caused minor concerns in most of the surveyed fields. Additionally, unforeseeable weather events such as hailstorms and heavy rainfalls caused some significant seedling damages and replants in several fields in the Lachlan and Namoi, respectively.

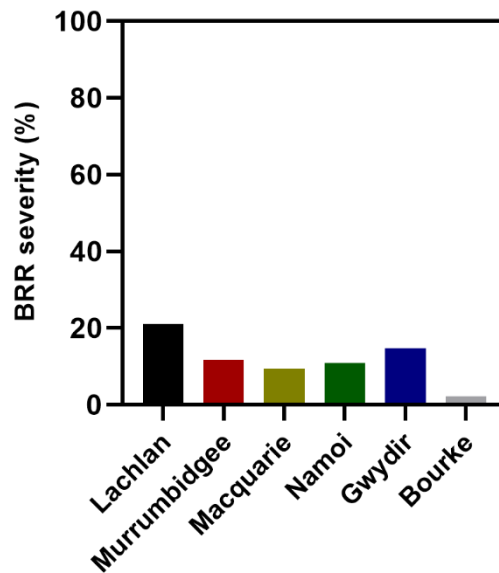
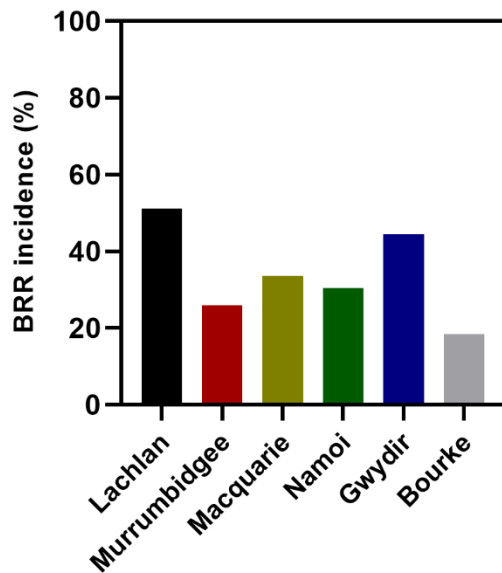
Lachlan

A total seven fields were surveyed in the Lachlan. Average seedling stand per meter was from 8.3 to 14.5. Black root rot incidence was between 0.6 to 96.5% (mean 51%); of the infected ones, severity was from 1 to 40% (mean 21%). Rhizoctonia-like rot incidence was from 10 to 62% (mean 40%); severity was from 2 to 12% (mean 5%). Alternaria leaf spot was detected in all surveyed fields, with

the incidence from 1 to 26% (mean 8%); only minor pin head lesions were observed in most fields and the severity was less than 1%.

Murrumbidgee

A total 10 fields were surveyed in the Murrumbidgee. Average seedling stand per meter was from 10.5 to 14.2. Black root rot incidence was between 0 to 98% (mean 31.6%); of the infected ones, severity was from 0.5 to 79% (mean 14.5%). Rhizoctonia-like rot incidence was from 2.5 to 78% (mean 35.5%); severity was from 1 to 5% (mean 2.2%). Alternaria leaf spot was detected in most of the surveyed fields. Leaf spot incidence was less than 1% to 43% (mean 13.6%) and the severity was mostly less than 2%.



Update on breeding BRR resistance from Warwick Stiller



Photo J. Millyard 14/12/2020. Sicot 746BF3 on the left compared to BRR breeding Line 1

This year CSD E&D Agronomist Jorian Millyard has been working with Dr Warwick Stiller from the CSIRO Cotton Breeding team who is developing cotton that has resistance to Black Root Rot. As part of a Cotton Breeding Australia (CBA) project, Warwick has been looking into ways to breed for resistance for the past 15 years. Resistance to this disease is not found in any cotton variety anywhere in the world so CSIRO has gone to related species to identify and transfer resistance. This research has now progressed to a proof of concept stage with a trial in Southern NSW to determine if the resistance does result in improved early season growth in the field. So far this is looking great so it will move to the next phase of research to develop agronomically acceptable varieties. Warwick reminds us that it will be another 6-8 years before an elite variety resistant to Black Root rot is released to industry.

Regional wellbeing survey

Your help needed: your thoughts on regional wellbeing.

All in the cotton industry are encouraged to have their say on wellbeing through a shortened version of the University of Canberra Regional Wellbeing Survey.

In October, the Regional Wellbeing Survey was conducted; however, not enough people from the cotton industry completed it for the data to be statistically meaningful.

The survey is important and we need people in the industry to complete it because **the results and data will inform our industry's sustainability targets for wellbeing.**

To encourage more cotton growers and industry members to have their say, the specific questions for the cotton industry have been compiled into a shorter survey, which all in the industry are

encouraged to complete as soon as possible.

By having your say, you will be playing your part and contributing to our industry's sustainability efforts around wellbeing.

The first 200 cotton industry members who complete the survey will be given the choice of receiving a \$30 gift card, or donating \$30 to a charity of their choice.

Closing date is January 31, 2021.

Have your say now: http://canberrahealth.az1.qualtrics.com/jfe/form/SV_6hwiThc1cncCtq5

GROW course coming up

The HUGELY popular GROW course is on again! Designed for women to develop skills in time management, planning, communication, management, industrial relations and WHS - all tailored to women in farming businesses (and for our cotton growers, helping you tick off the WHS/HR modules in my BMP).

Delivery will be a mix of online and face to face training over 6 months. The locations for the first round are Moree, Dubbo and Griffith. Kick off will be January 27th BUT registrations close DECEMBER 24th and the Griffith workshop has very limited places left!! ***This course has been made possible through funding from the NSW Government's AgSkilled program.***

<https://nswtrade.wufoo.com/forms/z1bh1m4r12x7pfk/>

Events coming up

- Grow course registration deadline 24th December
- Cotton Pest Management course Yanco 19th and 20th January (fully booked)
- Annual IREC Field day Thursday 21st January. RSVP required. More details to come



November quiz answer

McClelland Sculpture park Melbourne



December quiz

Where are these silos and why are they so famous?



Wishing everyone a safe and happy Christmas.

Regards Kieran

Disclaimer:

General guide only, not comprehensive or specific technical advice. Circumstances vary from farm to farm. To the fullest extent permitted by law, CSD expressly disclaims all liability for any loss or damage arising from reliance upon any information, statement or opinion in this presentation or from any errors or omissions in this document