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

Darling Downs

August 2020

Welcome to the August Edition

New record-keeping and minimum training requirements for chemical use

BIOSECURITY ALERT

Queensland Government

From 19 June 2020, the requirement to make and keep records of chemical use and new minimum training requirements has been extended to all users of agricultural and veterinary (agvet) chemicals under amendments to the Chemical Usage (Agricultural and Veterinary) Control Regulation 2017.

The amendments reflect a nationally harmonised approach regarding record keeping and training for all agvet chemical users.

The Regulation now stipulates what information must be recorded; who must make and keep records; who must be provided with a copy of the record; timeframes within which a record must be made; and the length of time for which the record must be kept. Certain non-agricultural use of some chemicals (e.g. pool chlorine, domestic insecticides, and home garden chemicals) is excluded from these requirements.

Nationally harmonised minimum training and licensing requirements are now in place for occupational (fee-

for-service) users of agvet chemicals and all users of restricted chemical products (RCPs) and Schedule 7 chemicals (i.e. poisons).

New training requirements for use of RCPs commenced on 19 July 2020, while the new requirements for use of Schedule 7 chemicals will commence on 19 July 2021.

Nationally harmonised minimum requirements provide confidence to trade partners, protect Queensland's enviable reputation as a 'clean and green' supplier of high-quality produce, and will allow users of agvet chemicals to conduct their business in any Australian jurisdiction with greater ease.

More information is available on keeping records of agricultural chemical applications or by calling our Customer Support Centre on 13 25 23.

Pest Resistance Update Reports

During the 2019-20 season CottonInfo were out and about looking for pest populations to send to our researchers for resistance monitoring. Here is a short video summary from Dr Lisa Bird (NSW DPI) around resistance information from the past season on some of our major pests Resistance surveillance in major insect pests of cotton.

Dr Jamie Hopkinson (QDAF) has also prepared a video update on Silverleaf whitefly insecticide resistance.

Disease Update

Linda Smith (QDAF) has prepared a summary on the national cotton disease surveys (QLD) for the Cotton Seed Distributors 2020 Cotton Management Tour. It provides an update as to the latest research in this field, supported through investment by the Cotton Research and Development Corporation

QLD REPORT

This short presentation from Duy Le (NSW DPI) was created for the Cotton Seed Distributors 2020 Cotton Management Tour. It provides an update as to the latest research in this field, supported through investment by the Cotton Research and Development Corporation.

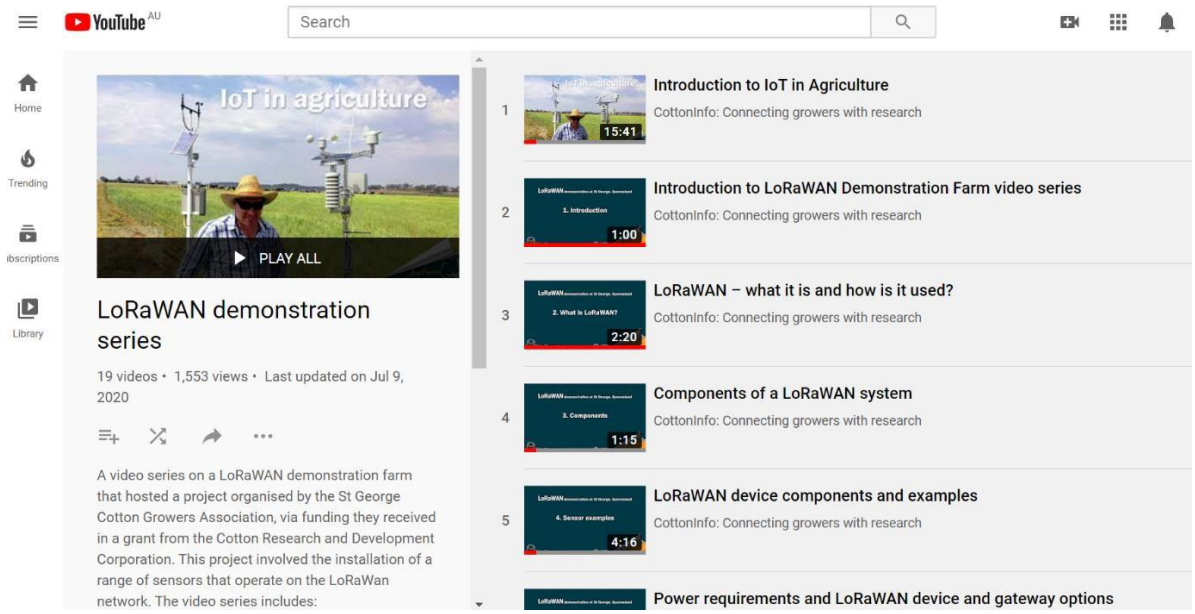
NSW REPORT

LoRaWAN Video Series

Some of you may be aware of some work being done through the 'smart farm tools' and were trialling the effectiveness of the LoRaWAN networks to transfer small packets of data in relatively cheap way around our farms.

There is now a video series on a LoRaWAN demonstration farm that hosted a project organised by the St George Cotton Growers Association, via funding they received in a grant from the Cotton Research and Development Corporation. This project involved the installation of a range of sensors that operate on the LoRaWan network.

There are lots of topics to choose from in this series so click on this link and find out how the technology was used and what were pros and cons and how useful was it on farm.



Aussie Cotton Farmers Grow Communities 2020 is now open ……

Supported by the Bayer Fund and in partnership with the Foundation for Rural & Regional Renewal (FRRR), the program will again deliver 30 grants valued at $5000 across 15 Cotton Growing Areas (CGAs) in Queensland, Victoria, New South Wales, and Northern Australia.

Cotton farmers are invited to nominate a group or project to receive funding under the program. Recipients could include not-for-profit and community organisations across education, rural mental health, nursing, the arts, disability and emergency services and other local charitable projects.

Now in its 7th year, this program has already awarded $900,000 in grants to more than 180 local community projects in the past six years. The support makes a tangible and meaningful impact as these examples from Pittsworth Mens Shed and Jandowae Kindergarten. Entries close on Monday 31 August 2020 and successful entrants will be announced on National Agriculture Day on Friday 20 November 2020.

To enter nominations or for more information, growers can visit the FRRR website: https://www.frrr.org.au/grants/Cotton-Farmers-Grow-Communities.

Plant health top tips – AUGUST: Time to start pre-season planning: Consider your IPM strategies for managing pests and beneficials.

With the 2020-21 season approaching, now's the time to be undertaking preseason planning to reflect and consider strategies on how to manage pests and beneficials.

Integrated pest management (IPM) uses knowledge of pest biology, behaviour and ecology to implement a range of integrated tactics to supress and reduce pest outbreaks and reliance on insecticides for their management. IPM supports the long-term management of pests, maintains profitability, reduces the risk of insecticide resistance and minimises risks to human health and the environment.

https://cottoninfo.com.au/blog/plant-health-top-tips-august-time-start-pre-season-planning-consider-your-ipm-strategies

Water Benchmarking Results ….. What are they good for?

Many growers have generously given up their time and farming data to help the industry pull this information together. In the current climate our social license is almost as important as our water licence. To be able to tell our story we need accurate, real data, from across the growing regions to be able to measure the significant gains our industry has made over the last 30 years. Click on the link to find out how you can be a part of this project. https://www.cottoninfo.com.au/sites/default/files/documents/Water%20researcher%20case%20studies%20Feb%202020%20-%20Benchmarking%20water%20productivity.pdf

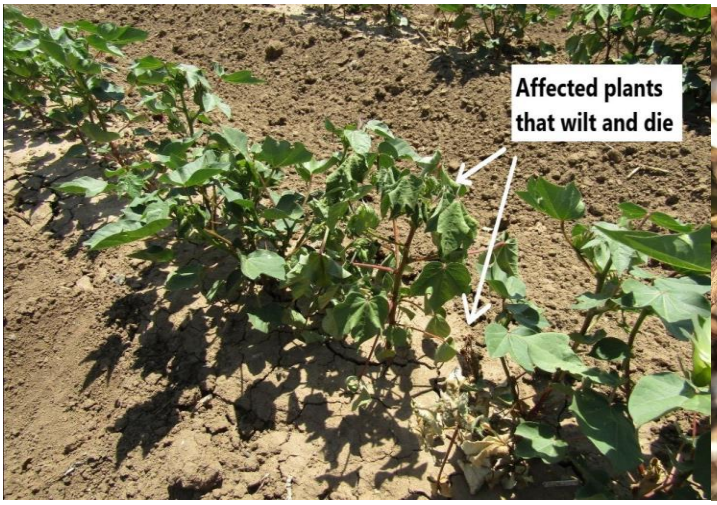
Reoccurring wilt: Possible new cotton disease

QLD DAF pathologists are currently investigating a likely new pathogen as the potential cause of dying plants reported in Central QLD, Gwydir and Namoi cotton fields.

Over the past couple of seasons, this pathogen has presented on multiple farms in the Central QLD region with reoccurring patches of dying plants leading to a report. The same pathogen under investigation was isolated in NSW from dead plants sampled from the Namoi and Gwydir valleys.

Known endemic diseases have been ruled out. Symptoms have similarities to the high priority exotic disease Texas Root Rot, and this has been ruled out as the causal pathogen, along with other industry high priority exotic diseases.

While a formal identification is pending, indicators suggest it has potential to be an important disease. Further work is ongoing to link whether this pathogen in Central QLD, the Gwydir and the Namoi is the cause of dying plants in each valley. **Further information and details from the investigation will be provided to industry as it becomes available.**



Have you seen fields with the following symptoms?

- The odd plant or patches of plants that wilted and suddenly died with dead leaves usually remaining on the plant.

- Reoccurring patches of dying plants getting larger over past seasons with no explanation for plant death i.e. seasonal conditions.
- Dying plants can be amongst healthy plants.
- Bronzing of leaves and petioles.
- Reddening of the roots and root decay i.e. if plants are pulled out of the soil, the taproot snaps due to root decay.
- May see reddening of the vascular tissue.
- Stem canker/lesions may be present.

Keep an eye out for these symptoms this coming season. If you have concerns or plants expressing symptoms, contact your state pathologist:
QLD DAF: Dr Linda Smith 0457 547 617
NSW DPI: Dr Duy Le 0439 941 542 or Dr Karen Kirkby 0428 944 500

We are encouraging growers and consultants to send in any suspected samples for diagnostics to assist with determining the potential extent of the issue across cotton growing regions.

Disease under investigation: webinar

We are hosting a short webinar on the investigation into this possible new cotton disease. Join QLD DAF's Dr Linda Smith, Cotton Australia's Sally Ceeney and CottonInfo's Sharna Holman to answer any questions - like, what does it look like? How damaging has it been? What can growers and agronomists do? And, what is the industry doing?

Date: Thursday 27 August, 12pm-12.45pm AEST
Location: Webinar
To join the meeting: https://cottonseed.webex.com/meet/jmontgomery
or by phone +61 29037 0069
Meeting number (access code): 574173710

Long Fallow Disorder – It's a whole Soil Biology thing

There have been some recent concerns about Long Fallow Disorder and impacts on this season's cotton. Dr Oliver Knox is a Soil Scientist at the University of New England and he is also CottonInfo's Soil Health Tech Lead, has

written a great article in the latest Spotlight Magazine (Winter 2020, pp 21-22). It's also available as a CottonInfo Blog. His key points are as follows, but I highly recommend reading the full article.

- **30 years of cotton research de-bunks the theory that during long fallows the arbuscular mycorrhizal (AM) fungi decrease over time causing Long Fallow Disorder (FLD).**
- The lack of AM colonisation is a **symptom of LFD and not a cause**.
- AM will survive in soil, so long as there are no wetting and drying cycles.
    - During the drought you wouldn't have had these cycles, so AM is still there.
- Latest research suggests LFD is due to all organisms that make up the soil biology competing for organic matter and nutrients after extended dry periods.
    - Some soil biology (bacteria, fungi, nematodes and other invertebrates) can enter a survival stage during dry times and 'sleep' until it becomes wet again.
    - Some soil biology will die, but will not decay until its wet again.
- Once the drought breaks, the dead biology decays releasing nutrients that feeds the surviving soil biology – all of a sudden, the soil biology takes off, feasting on these nutrients and numbers multiplying. Things are out of whack for a while because the soil biology is competing for the nutrients that the plant is also after. BUT it doesn't last forever.
    - Biology **will** return to a more balanced system
    - How quickly it returns depends on initial levels of soil biology, moisture, temperature, soil nutrition etc etc.
- So why did one grower get the best start to his crop in a corner of a field where the weeds had previously gotten away? The weeds were basically acting like a cover crop and providing extra organic matter into the system so a faster recovery of the soil biology after the drought broke. The soil biology would have got back into balance quicker than the rest of the field which had no cover.
    - While we don't encourage weeds, it's an example of how beneficial plant cover can be.

What can you do to overcome the effects of LFD?

Unfortunately, it's inevitable that some fields will experience signs of LFD after this prolonged drought and given no cover was possible, being so dry for so long. However, it's due to the rapid expansion of the soil biology, all the microorganisms needing a feed! It's not because of a reduced population of AM.

- Keep improving your soil health.

A healthy soil is the lifeblood of your farm. Good soil structure and nutrition levels are essential (Oliver Knox).

Cotton Industry Soil Health Best Practices include:

- Establish measures to prevent or minimise erosion in susceptible areas, including a monitoring plan to keep an eye on progress
- Monitor your soils for structural issues like compaction, hard setting, salinity and sodicity and adopt infield practices to minimise potential problems
- Use soil tests and field history information to determine nutrient input requirements
- Employ the most appropriate and efficient nutrient application methods and timing

- These management practices will help build your soil health.

Please find Oliver's full blog - Understanding the real nature of long fallow disorder here.

CSD Ambassador Update (season review 2020) – Darling Downs

Larissa Holland – CSD Agronomist has provided us with an update on how the CSD Ambassador sites went this season.

Darling Downs Ambassador Averages 2019/20		
End of Season Overview	**Solid Plant Trials**	**Semi-Irrigated Trials**
Final plant height (cm)	97.9	107.9
Final squaring nodes	15.3	16.3
Total nodes	23.3	24.1
1st flower retention (%)	67.4	67.4
Final bolls/m2	137.4	111.0
Overall boll lint weight (g/boll)	2.35	2.27
Picked date (average)	08/05/2020	07/05/2020
Yield (b/ha)	12.27	9.83
Staple (decimal)	1.24	1.23
Staple (imperial)	40	39
HVI class colour	21	21
HVI class leaf	2	3
Micronaire	4.1	3.9
Strength (gms/tex)	31.3	32.0
Gin turn out (%)	43.3	41.5
Uniformity (%)	83.1	82.8
Total irrigations (In-crop only)	4.2	3.2
Water use (ML/ha)	2.7	2.5
Total rainfall (mm)	312.6	322.4
Effective rainfall (mm)	203.8	233.2
Applied ML WUE	6.4	4.6
Kg lint/mm	5.2	3.8

Season summary

- A difficult start to the season with temperature fluctuation and having to contend with well above average day time temperatures, as well a cool nights. This was coupled with a lack of early rain and poor soil

moisture, resulting in higher water use for pre-irrigation and watering up, and limited any dryland cotton planting on the Darling Downs

- Rainfall in late January and into February was very effective for crops that had managed to hold on until then and were in the process of flowering. Some previously cut-out crops were able to restart their flowering period and accumulate more nodes and fruit. This allowed a well-timed final irrigation this year, which has been hard to achieve in the previous few years
- Good boll weights and boll numbers across Ambassador trials translated into good yields
- Quality results were excellent; colour and leaf results were all base or above. Staple length and strength were very good across irrigated and semi-irrigated sites respectively and micronaire was also in range for all Ambassador trials
- Picking occurred later than usual on average for the Downs, with the majority beginning in early May rather than late April, due to an initial later planting and a slower start, combined with trying to grow crops on to utilise water picked up from rainfall events

Dates for the Diary

- Thursday 27th August – 12pm -12.45pm – Disease Under Investigation Webinar (details above)
- Wednesday 2nd September – 10.30-3.30 – CCA Regional Workshop – Goondiwindi (is being livestreamed)

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