

# Cotton Research Roundup...



An update on the Cotton Research and Development Corporation's latest investments, innovations and impact from Executive Director, Dr Ian Taylor.



Dr Derek Long of USQ with drone.

**W**ELCOME to 2021. At CRDC, we're always looking to the future, so our planning and preparation for 2021 began some years ago, with the development of our 2018–23 CRDC R&D Strategic Plan. 2021 marks the halfway point for this strategic plan, so a crucial year for our investments. Our focus for this year is to continue to ensure those investments deliver innovation and impact for our industry.

In this edition of my *Cottongrower* column, I take a look at some of the latest activities and projects underway to support the cotton industry.



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## Partner with us to stop SLW from flying under the radar

Last year, we told you about one of our exciting new projects – the development of a new artificial intelligence smartphone app to simplify the identification of silverleaf whitefly (SLW).

SLW continue to be a problem pest for the industry – near impossible to identify and count with the naked eye, and increasing in prevalence in recent years. So, to make identification easier, USQ researchers Dr Alison McCarthy and Dr Derek Long, in collaboration with QLD DAF researcher Dr Paul Grundy, have developed the new app with funding from CRDC. This clever technology will perform pest counts and guide decision making through an in-built population model.

Excitingly, we're now in the next stage of this technology's development: commercialisation. This month, we will release an expression of interest seeking a commercial partner to help us make this technology available to growers and consultants. If you're interested in learning more, please contact CRDC R&D Manager, Susan Maas: [susan.maas@crdc.com.au](mailto:susan.maas@crdc.com.au).

## CRDC Board meets to review research recommendations

Also this month, the CRDC board will meet to review the research recommendations for the 2021–22 funding round, as put forward by the CRDC R&D team.

This follows a meeting of the Cotton Australia research advisory panels – consisting of cotton growers and Cotton Grower Association (CGA) representatives – late last year, where the proposals were considered. Preliminary advice will be provided to the successful researchers in March, while the projects will be formalised to commence on July 1.

Meanwhile, the CRDC board has recently farewelled outgoing directors, and welcomed new ones. Deputy Chair Deputy Chair Kathryn Adams, and directors Liz Alexander, Greg Kauter and Jeremy Burden concluded their terms with CRDC in late September, while new Directors were appointed by the Minister for Agriculture, Drought and Emergency Management, David Littleproud, in early October.

Led by incumbent Chair Richard Haire and CRDC's Executive Director Dr Ian Taylor, the CRDC Board comprises of Les Copeland and Rosemary Richards, who have been returned for a second term and new directors Ross Burnett, Dr Gary Fitt, Dr Danielle

Kennedy and Peta Slack-Smith. The directors come from a diverse range of backgrounds across the cotton, science, technology and corporate affairs sectors, bringing critical skills to the CRDC table.

## RDCs create new innovation investment company

In exciting – and historical – news for CRDC and our fellow research and development corporations (RDCs): a new not-for-profit company has been developed to drive cross-sectoral research, leverage private sector investment and target transformational innovation.

Announced late last year by Minister Littleproud and the Council of Rural RDCs, the new company, Agricultural Innovation Australia (AIA) Ltd, will target opportunities with greatest potential to deliver impact across multiple industries.

The new company enables us to prioritise and streamline co-investment to tackle hard to solve cross-sector problems and drive greater impact for industry and the broader community. AIA Ltd will be the single point of contact for cross-industry strategies, making it easier for investors to navigate and partner with the Australian agricultural innovation system. The company aims to attract contributions from a range of sources, enabling large-scale investment on issues of national importance.

I've been pleased to be part of the leadership team developing the new company, and its first investment project: the climate initiative. This is a significant new co-investment program, led by CRDC, to foster thriving agriculture, fisheries and forestry industries regardless of pressures from a variable and changing climate.

## Work continues on critical area of investment: sustainability

Work to progress one of the most important programs for Australian cotton growers and the broader industry has taken a big step forward with the completion of extensive stakeholder consultation on sustainability targets.

The PLANET. PEOPLE. PADDOCK. sustainability framework has been developed by the industry to coordinate work to make Australia a global leader in sustainable cotton production. An important part of the framework is setting targets and coordinating a whole-of-industry strategy to achieve them.

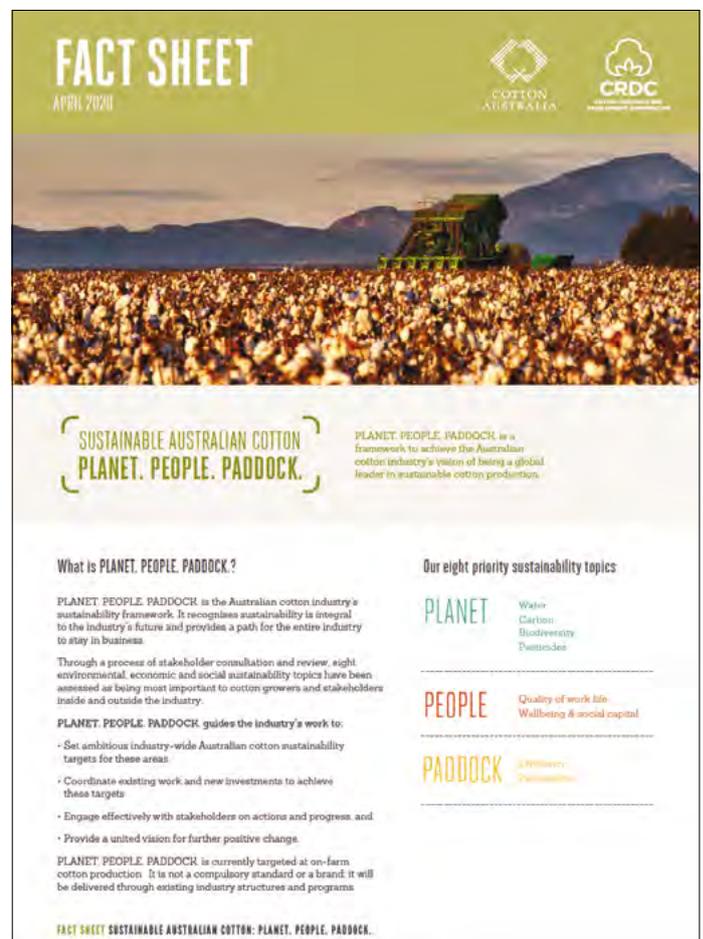
Draft targets and indicators of progress have been developed for each of the core focus areas under the framework:

- PLANET: water; carbon footprint, biodiversity, pesticides, soil health.
- PEOPLE: workplace, wellbeing.
- PADDOCK: productivity, profitability.

In a consultation process in 2020, 356 stakeholders gave feedback on these draft indicators and targets to validate the level of ambition, to test they are the 'right' ones to use, and to elicit suggestions for partnerships and solutions to achieve targets. This feedback has been used to refine some targets and indicators to ensure they meet stakeholder expectation and are still achievable and consistent with the industry's ambition to be a global leader in sustainable cotton production.

Other primary industries such as grains and livestock are also developing or have in place their own sustainability frameworks. Acknowledging that most farms growing cotton are mixed cropping and grazing enterprises, we are working with other industries to have sustainability metrics and methodologies that are as consistent as possible across broadacre industries.

For some PLANET. PEOPLE. PADDOCK. sustainability topics



like carbon footprint, biodiversity and soil health, these common metrics and data collection methodologies don't yet exist and need to be agreed before targets can be set for the industry. Because these are complex areas involving several industries, this work is taking time to get right. Targets will be launched when this work is finalised.

Importantly, we are not waiting for targets to be launched to act. The industry has been improving its sustainability performance for 30 years and this work will continue, with growers supported through existing industry programs such as myBMP, CottonInfo and focused R&D investments.

The targets outlined in PLANET. PEOPLE. PADDOCK. will be a starting point, and the working group along with CRDC and Cotton Australia will seek to frequently and transparently engage with stakeholders on their actions and the progress towards them. Watch this space!

## Evaluating interactions between infrastructure and fish

In line with our goal to improve sustainability, research is underway to better understand and minimise the impact of irrigation infrastructure on fish populations in rivers.

Specialists from QLD DAF, with support from CRDC, are evaluating how various fish species interact with different types of irrigation infrastructure. This information will enable measures to be developed to avoid fish being entrained – or caught up – in irrigation systems. Evaluating the relative impact of different irrigation infrastructure types will identify which are lower impact and which types should be prioritised for mitigation measures in the future. Available mitigation measures and the potential costs and benefits will also be examined.



**A golden perch caught by electrofishing in river pools to assess populations and species.**

This work is an important step in developing and prioritising best management practices to reduce the direct impacts of water extraction on fish without sacrificing irrigation efficiency. The results of this work could be applied to new irrigation developments and upgrades to existing systems.

## **BRII grants announced: revolutionising ag spray application**

Late last year, CRDC partnered with the Department of Industry, Science, Energy and Resources on their Business Research and Innovation Initiative (BRII) grants. The grants encourage businesses to develop innovative solutions in response to specific ‘challenges’ – including one set by CRDC on behalf of the cotton industry: to revolutionise agricultural spray application.

In January, the Minister for Industry, Science and Technology, Karen Andrews announced the latest round of the grants – including funding for six small/medium businesses under the cotton challenge. These six businesses are sharing in \$587,000 to further develop their ideas and test their feasibility over the next three months – all with the aim of helping us solve one of cotton’s wicked problems: spray drift.

The most successful of these ideas may then be eligible for a grant of up to \$1 million through BRII to develop a prototype or proof of concept over 18 months. The successful grant applicant will have the chance to work closely with government to create a product that could be commercialised locally and even globally.

## **Australian Future Cotton Leaders Program participants announced**

Fifteen growers, consultants and researchers have been selected to participate in the Australian cotton industry’s premier leadership initiative – the Australian Future Cotton Leaders Program (AFCLP) – for 2021.

The leadership program, delivered by Cotton Australia and CRDC, is run every two years, with this year’s program being the seventh time it has been staged. The program is aimed at emerging leaders actively working in the Australian cotton industry who want to progress their leadership skills.

The importance of leadership has been at the forefront during the challenging year that was 2020, and this program is designed to empower our emerging leaders.

The participants in the 2021 program are: Nicole McDonald, Joe Briggs, Sally Ceeney, Patrick Fillipi, Jess Lehmann, James Traill, Richard Gray, Charlie Clark, Alexandria Galea, Will Jackman, Chris Hutchinson, Matthew Anning, Rob Weinthal, Melinda Swift and Kimberley Fawkes. Our congratulations to all 15.

## **Reoccurring wilt: A possible new cotton disease**

With support from CRDC, QLD DAF pathologists are investigating a likely new pathogen as the potential cause of dying plants reported in Central QLD, Gwydir and Namoi valley cotton fields in recent seasons.

A coordinated industry effort is underway, with CRDC, Cotton Australia, CottonInfo, QLD DAF and NSW DPI pathologists working together on the initial response with CSD and the CSIRO breeding team. The research is focused on identifying the causal agent with bioassays underway in a controlled environmental growth room to see if a microbe that has been consistently isolated in dead plants can cause the disease seen in affected cotton fields.

While we are only aware of a few patches, we are still concerned that this may have potential to be a serious issue for the cotton industry. Given this could potentially be a new disease to cotton, there are many unknowns. Plans and resources are in place so that research can address what is causing these plant deaths and how, so then work can begin on how to mitigate any impact.

We would like to acknowledge and thank the growers and agronomists who identified and reported their concerns – early identification of issues provides the best opportunity for response.

Research is being led by QLD DAF pathologist Dr Linda Smith and up-to-date information and details from the ongoing investigation will be provided to industry as it becomes available. So far, the pathologists have ruled out known endemic diseases. The symptoms have similarities to Texas root rot, which is a high priority exotic disease of the Australian cotton industry and is a national priority exotic disease for Australian agriculture – but it’s been ruled out, along with other high priority exotic diseases.

The symptoms, which include wilting and plant death, are very similar to sudden wilt, but this potential new disease is different from sudden wilt because the disease was observed in the same area of a field and the affected area was growing larger every season.

According to Linda, the symptoms were also not quite right for sudden wilt as the affected plants had leaf bronzing. There were also no other factors normally associated with sudden wilt, such as an irrigation or rain event followed by bright and hot conditions.

As part of the industry response, it is imperative to be on the lookout for any suspicious symptoms in crops, and if seen, or unsure, to contact your local state pathologist or CottonInfo REO and organise a collection for diagnostics. Sending in suspected samples for diagnostics will assist in determining the potential extent of the issue across cotton growing regions.

Good farm hygiene and biosecurity practices are also essential to preventing the spread of this potential disease. For more, including a list of symptoms to watch out for, see the Summer 2020–21 edition of Spotlight magazine.

*Until next time – Ian.*

February–March 2021