

# Cotton Research Roundup...



Bruce Finney.

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## Delivering impact for growers through RD&E

In 2016–17, CRDC invested \$24.1 million into cotton RD&E on behalf of Australia's cotton growers and the Australian Government – continuing our long-standing commitment to delivering real outcomes for growers and enhancing the industry's performance.

We invested into 350 RD&E projects across five key program areas (farmers, industry, customers, people and performance) during this year, working collaboratively with 122 researcher partners and growers.

In this column for *The Australian Cottongrower*, we take a look at some of the highlights of the 2016–17 year.

## CRDC RD&E achievements in 2016–17

### Impact assessment

An impact assessment of CRDC's investment in the efficient use of water and optimising crop nutrition RD&E has found that these investments deliver major economic benefits to growers. The assessment found that CRDC's investment of \$4.90 million on behalf of cotton growers and the Australian Government into six water-use efficiency projects from 2010–15 returned a benefit of \$40.62 million to cotton growers, a benefit-cost ratio of 8.29 to 1. In addition, CRDC's investment of \$11.32 million of grower and Government funds into nine nutrition research projects from 2008–16 returned a benefit of \$61.15 million to growers, or 5.4 to 1. The assessment is part of a series of qualitative and quantitative impact assessments of CRDC's RD&E investments into important project clusters.

### CRDC's early-planting research makes major impact in Central Queensland

CRDC-supported research examining how to help Queensland's Central Highlands cotton growers overcome climate challenges was put into practice commercially in 2016–17, with great success. The project identified that a key tactic may be to plant considerably earlier than the traditional planting window. As a result of the promising results from these commercial trials, it is anticipated that some 80 per cent of growers in the Central Highlands region will use the early-planting research outcomes

to plant in August for the 2017–18 season. An impact analysis, commissioned by QDAF, found that the total investment into the project was \$1.18 million, and the value of total economic benefits back to growers and the industry was \$20.24 million – a benefit-cost ratio of approximately 17.1 to 1.

### CRDC drives research outcomes across three major collaborative projects

CRDC is leading three major projects under the Australian Government's Rural R&D for Profit program:

- Smarter irrigation for profit;
- More profit from nitrogen; and,
- Accelerating precision agriculture to decision agriculture.

Together, these projects and their 29 sub-projects are making major gains across the research fields of irrigation, nutrition and big data. The *Accelerating precision agriculture* project is also delivering the first fully cross-sectoral collaborative research project, with all 15 rural research and development corporations (RDCs) partnering in the program.

### World's best science the basis of the Bollgard 3 Resistance Management Plan

The Australian cotton industry moved into the Bollgard 3 era in 2016–17, with the approval of the Bollgard 3 Resistance Management Plan (RMP) by the Australian Pesticides and Veterinary Medicines Authority – a result of many years of collaborative research between CRDC, Cotton Australia and Monsanto. Industry contribution and consultation is a key part of the regulatory process in Australia for developing RMPs for products containing biotechnology. CRDC and industry play a critical role in providing and reviewing local and international research to assess resistance risks and mitigation strategies.

### Helping growers to manage pest pressure while achieving high yields

Seasonal conditions in the lead up to and during the 2016–17 season resulted in high pest pressure for cotton growers. This pressure, combined with industry concerns regarding increasing insect resistance, saw CRDC, CottonInfo and key CRDC-supported industry researchers join forces to deliver an Integrated Pest Management (IPM) workshop series. It took key IPM RD&E to 130 growers and consultants across five valleys. The workshops delivered two key messages to attendees: IPM plays an essential role in helping to avoid insecticide resistance; and, high-yielding cotton can be achieved using IPM. The workshop series is being reinforced by an IPM short course during 2017–18.

### Improving cotton's disease management capacity

CRDC's annual disease surveys project was completely reviewed in 2016–17 to improve impact and outcomes for growers. The core aim of the surveys remains the same – to determine the type and level of diseases present in cotton fields across NSW and QLD, as well as detect exotic diseases. A major change is that separate surveys previously undertaken by NSW DPI and QDAF pathology have now been combined within one project – ensuring greater collaboration and more strategic use of the resulting data. The new project also uses geospatial digital agricultural analysis and engages CottonInfo regional extension officers in the surveys to broaden monitoring capability.

### Keeping cotton farms ahead of weed evolution

Minimising the impact of herbicide-resistant weeds remains a major focus for CRDC and cotton growers. In 2016–17,

a CRDC-supported project has delivered a practical tool for growers, helping them to implement the recommended Herbicide Resistance Management Strategy (HRMS). This tool – the BarnYard Grass Understanding and Management (BYGUM) model – is delivered in partnership with CottonInfo, and is available to download from the CottonInfo website. In addition, a series of 16 workshops and masterclasses have delivered information about the impact of increasing levels of glyphosate resistance, and the strategies to delay or manage its onset, to 327 growers and consultants this year.

### Predicting spray drift hazards through a hazard forecast system

A new three-year collaborative cotton and grains project, supported by CRDC and GRDC, is developing a spray hazard forecast system to minimise the damage caused by chemical spray drift. The project is a direct result of the extensive damage to cotton from phenoxy herbicides during the 2015–16 season. The project recognises that it is difficult for both growers and regulators to know when an inversion is present or is likely to form, and hence it is also difficult to know when the restriction of chemical use should apply. The project is particularly focused on understanding surface temperature inversions in cotton/grain landscapes, including a more detailed understanding of when they are present. Ultimately, the project aims to provide notification of a surface temperature inversion that might result in a long-distance drift, out to 36 hours ahead, as well as real-time updates for operators of spray application machinery.

## CRDC organisational highlights 2016–17

### Strong support for, and involvement in, CRDC RD&E by cotton growers

The 2015–16 Cotton Growing Practices Survey, published in July 2016, sought feedback from growers about their perceptions of CRDC and support for our RD&E investments. The survey found that:

- 99.6 per cent of growers are aware of CRDC;

- 88 per cent of growers are supportive of CRDC’s research and investments, and,
- 74 per cent of growers have input into CRDC about research.

### Stakeholder survey shows partner satisfaction

CRDC also commissioned a stakeholder survey in 2016–17, to gauge the strength of the partnership with key stakeholders, including government, industry and research bodies. The survey results showed a strong level of satisfaction, with:

- 82 per cent of key stakeholders indicating overall satisfaction;
- 82 per cent indicating satisfaction with CRDC’s engagement; and,
- 87 per cent indicating CRDC is an organisation they can trust.

### Third annual Research Priority Forum identifies cotton RD&E priorities

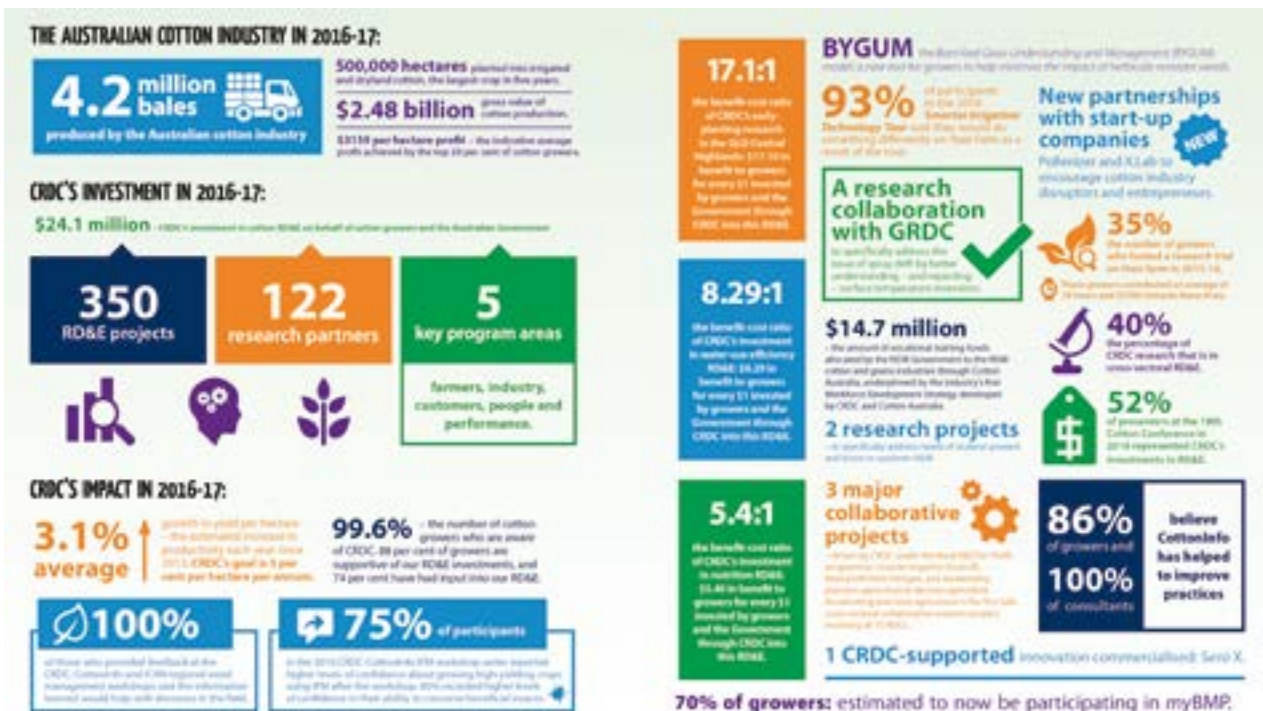
CRDC hosted its third annual Research Priority Forum in Brisbane in May 2017, bringing together cotton growers and industry supply chain members on Cotton Australia’s research advisory panels to help determine the industry’s future research priorities. The Forum is part of CRDC’s procurement process, which was revised in 2015–16 to improve efficiency, streamline the RD&E investment process and provide greater clarity to researchers.

### Development of CRDC’s next five-year Strategic Plan begins

CRDC’s current Strategic R&D Plan will conclude in June 2018, and as such, work started during 2016–17 on the development of the new five-year Strategic Plan, which will guide CRDC’s investments from 2018 to 2023. The Strategic Plan is CRDC’s key planning document; it sets the direction for the organisation’s operation and investments in cotton RD&E over the five years. The plan is developed in close consultation with key stakeholders, including cotton growers.

### Collaboration – a key to cotton RD&E

CRDC works in partnership with other industry bodies and other rural research and development corporations (RDCs) to



achieve strategic outcomes for the industry, and to leverage higher returns for our investments. This underpins our investment strategy, with CRDC partnering in over 80 per cent of RD&E projects conducted in the cotton sector. As of 2016–17, 40 per cent of CRDC investments are in cross-sectoral RD&E, up from 25 per cent in 2015–16.

### Cotton Futures – investing in blue-sky, transformational cotton RD&E

Cotton Futures provides a clear framework for CRDC to invest in long-term, transformational innovations to ensure the industry remains profitable, sustainable and competitive in the future. In 2016–17, CRDC invested in 25 innovative blue-sky projects under the three Cotton Futures themes:

- Profitable futures (Farmers program);
- Sustainable futures (Industry program); and,
- Competitive futures (Customers program).

These projects include new or ongoing research into precision to decision agriculture, agri-intelligence, industry resilience, developing chemicals from cotton biomass, and creating nanofibrous coatings for cotton fabrics.

### CottonInfo – continuation of program to connect growers with CRDC-led R&D

2016–17 marked four years of the industry's joint extension program, CottonInfo, supported by CRDC, Cotton Australia and CSD Ltd. It also marked the formal announcement of the continuation of the program to 2021.

For more information on all of these achievements and highlights, download your copy of our 2016–17 Annual Report or the Annual Report Grower Summary from [www.crdc.com.au/publications](http://www.crdc.com.au/publications)

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# Two persistent industry problems

■ By Michael Murray, General Manager, Cotton Australia

**T**WO important issues have been top-of-mind for the Cotton Australia team in recent months – telecommunications and spray drift.

We know that poor telecommunications – whether mobile blackspots or slow-yet-expensive data connections – are a persistent problem for growers, who could be so much more efficient with access to modern, adequate communications services.

The organisation has dedicated significant resources to the issue in the past year, becoming a founding member of the Regional, Rural and Remote Communications Coalition (RRRCC), which seeks to end the data drought and champion better communications services for consumers and small businesses living in regional, rural and remote areas.

The RRRCC has mobilised 21 agriculture and community organisations – including the Country Womens' Association, Isolated Children's Parents' Association and the National Rural Health Alliance. It has called for important fixes to telecommunications in the bush, such as:

- A technologically-neutral universal service obligation;
- Updated customer service guarantees and reliability measures for voice and data services;
- Long-term public funding for open access mobile network expansion; and,
- Fair and equitable access to Sky Muster that matches the requirements of rural users.

We have pointed out to both legislators and regulators that farmers rely on telecommunications activity to run modern businesses just as much as metropolitan users do. The lack of connectivity severely hampers growers' ability to use sophisticated, web-connected machinery anywhere near its potential.

Rural telecommunications users recently welcomed the Australian Competition and Consumer Commission's (ACCC) decision not to declare a wholesale domestic mobile roaming service.

Domestic mobile roaming is where telecommunications companies can direct their customers' mobile phone transmissions through another company's towers and equipment. Telecommunication companies are already free to come to commercial arrangements with each other to share towers, but the ACCC had been considering whether it should make roaming mandatory.



Michael Murray.