

New collaboration set to shake up cotton disease research

AT A GLANCE...

- With escalating disease pressure impacting cotton yields, profit, and grower confidence, CRDC have committed to a \$10 million five-year initiative that will shake up cotton disease research in Australia
- CRDC is calling on researchers, commercial partners, and the government to join a new Australian Cotton Disease Collaboration (ACDC) to reduce the economic impact of current and emerging diseases of cotton to less than five per cent of the cost of production by 2028.
- Responses to the EOI are due to CRDC via acdc@crdc.com.au by 5pm, Monday August 21.

With escalating disease pressure impacting cotton yields, profit, and grower confidence, the Cotton Research and Development Corporation (CRDC) is rising to the challenge – with a \$10 million five-year initiative that will shake up CRDC’s approach to cotton disease research in Australia.

Championing co-investment and co-design, the Australian Cotton Disease Collaboration (ACDC) heralds a new collaborative approach to cotton disease research aimed at mitigating the economic impact on growers.

Interested partners with the resources, skills, and capacity to help are asked to submit an expression of interest to CRDC by August 21.

A new approach to an old problem

“The cotton industry has invested in disease research for several decades,” said CRDC Innovation Broker, Elsie Hudson. “And while we’ve built a huge knowledge bank



and made some real gains, the breakthroughs are getting harder to find.

“We have a limited toolkit for managing disease, and with impacts rising, it’s time to shake up the way we do research and development. ACDC offers that.”

The first initiative announced under CRDC’s new five year strategic RD&E Plan plan, Clever Cotton, ACDC embodies the industry’s bold, ambitious new approach to solving industry-defining challenges: a shift away from smaller projects to bigger investments with bigger outcomes and bigger impact.

“There’s a lot of work already underway in cotton disease R&D, and a lot of interested players,” said Elsie. “ACDC will bring together researchers, commercial partners, innovators and government agencies willing to help CRDC define the challenge, co-design projects, and co-invest in solutions.”

Moree-based cotton grower, Mick Humphries, has been involved in CRDC’s disease research for the past five years, and he’s hopeful the change in approach can unlock new solutions.

“Disease is such a hard area to get meaningful R&D breakthroughs. We’ll get a head of steam on a promising solution and then, almost out of the blue, it’s back to the drawing board,” he said.

“ACDC is about bringing people together to attack the problem in a strategic, coordinated way – rather than the piecemeal ‘one project here, one project there’ approach the industry has relied on for the past 30 years.”

Delivering the next round of knowledge, capability, and solutions – a call to action

Strategic partnerships are sought from research, government, and commercial partners to understand the impact of disease, enhance foundational pathology resources and capability, and deliver tactical management



CRDC Innovation Broker, Elsie Hudson.



CRDC Innovation Broker, Elsie Hudson with cotton grower, Mick Humphries.

and innovative technical solutions for cotton growers. "Disease is so multifaceted that the solutions will be, too," said Mick. "At one end of the innovation pipeline, it means looking at blue sky research that could transform

disease control.

"At the other end it means chipping away at the 'one percenters' – those incremental small changes that, when aggregated on-farm, can help growers claw back some of what we lose now."

Clawing back what is lost

Growers like Mick are embracing the ACDC's mission of reducing the economic impact of disease to less than five per cent of the cost of production by 2028.

"Our farms grew cotton year in year out through the 1980s and '90s, and that frequency of cropping allowed the disease inoculum to build up to the point where it has become a real production issue for us now.

"All up, I'd estimate disease costs our business 20 per cent of our gross income per annum. "I want to claw that 20 per cent back, so I'm excited to see what ACDC can bring."

Solution providers are encouraged to reach out

Interested parties are encouraged to download the:

- ACDC fact sheet;
- ACDC EOI;
- ACDC EOI response guidelines; and,
- A summary of the Australian cotton disease review.

Responses to the EOI are due to CRDC via acdc@crdc.com.au by 5pm, Monday August 21.

Successful partners will be notified in September, with the co-design process set to commence in October.

MICK HUMPHRIES

A fifth-generation farmer and cotton grower from Moree, Mick Humphries is a father of three and passionate champion for sustainable cotton production.

Depending on seasonal conditions, Mick sows between 600-1,200 hectares of cotton across the family's 4,000 hectare operation. His main disease impact is from *Verticillium*, but he also battles *Fusarium* wilt and black root rot.

"Different regions have different disease profiles and activity. But the main driver of impact is the farming systems we use – the intensity and longevity of cropping," he says.

"We're probably a little bit more severe than some of our neighbours because we've got ground and surface water giving us high reliability of irrigation water. So we've been able to grow crops year-on-year for a long period of time where others might have a forced fallow period due to their surface irrigation water being unavailable that year.

"Being soil borne pathogens, there's a sort of background level of these diseases in the soil. If conditions are cold and wet, disease will express and give us a lot of grief. But if we have better conditions, like a hot, dry summer, there'll be less activity.

"We're at the point with our background level where just one cold morning during irrigation in February can be enough to trigger a massive loss.



Mick Humphries.

"There's been major gains in plant breeding but we seem to have reached a limit to what they can do to combat an issue as diverse and complex as plant disease. Some growers are sitting on their hands waiting for breeding to fix the problem, and it may do that – but it might take another 20 years. If we want to keep growing cotton confidently, we need to be doing something different right now."