RESEARCHER PROFILE

ACDC
Australian Cotton Disease Collaboration

Dr Noel Knight
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RESEARCH AREA

Fungicides and plant defense mediators

Tell us a bit about yourself?

My roots are on the Darling Downs, where I grew up on a dairy and beef farm, alongside my mother's GP surgery on the property. That mix of agriculture and medicine gave me an early appreciation for evidence-based decision-making, a perspective that continues to shape my work today. I am now a plant pathologist and extension leader passionate about connecting laboratory insights with field realities. My work centres on molecular diagnostics, pathogen diversity, fungicide stewardship, and biosecurity, and I'm committed to translating research into practical strategies for growers and industry.

What research have you previously been involved with?

I have worked across cereals, beetroot, mung beans, and now cotton, focusing on diseases including Fusarium crown rot, net blotch, Cercospora leaf spot, and tan spot. Projects span diagnostics, pathogen diversity and fungicide resistance; plant–microbe interactions to understand how pathogens invade and damage plants; pathogen complexes – studying how multiple pathogens behave in combination, and tracking disease development compared to single infections; and extension and stewardship.

What excites you about working in the Australian cotton industry?

The cotton industry is forward-thinking, collaborative, and committed to sustainability. I'm excited by the opportunity to contribute research that not only addresses immediate disease challenges but also builds long-term resilience for growers.

What do you like to do when you're not researching?

I enjoy playing cricket and rolling out a few leggies, and I try to stay active with running or kayaking when I can. I also love travel and food, and have taken part in volunteer expeditions that strengthened my appreciation for nature and the environment.

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PROJECT OVERVIEW

Fungicides and plant defense mediators for the Australian cotton industry inferred from national and global analyses

Explain your current research project

I am part of the Australian Cotton Disease Collaboration (ACDC), working on a project that is critically reviewing crop protection products currently registered for cotton in Australia, as well as other crop protection products that may hold promise.

What does your current project aim to do?

The project aims to give the Australian cotton industry clear, evidence-based guidance on crop protection tools for managing disease.

Why is it important?

Cotton faces a range of persistent disease challenges that threaten crop productivity and profitability. Foundational approaches such as host resistance and cultural practices are important but are not adequately addressing these pressures. Crop protection products may help fill this gap, but limited effective options are currently available. There is growing interest in expanding access to new fungicides, plant defense activators, and biological products, but their role in cotton production is not yet well defined. By systematically reviewing evidence for the efficacy of a range of crop protection products, this project will help identify the most promising tools and provide the cotton industry with clear, evidence-based guidance on the options available now, those that could be valuable in the future, and the practical challenges of adopting them.

What does it involve?

The project is primarily a desk-based critical analysis, drawing together Cotton Research and Development Corporation (CRDC) trial data and published scientific literature. This is complemented by discussions with growers, agronomists, and chemical companies to capture on-the-ground perspectives and future directions. The evidence gathered through this process will form a review paper, providing perspective on what crop protection options are currently available, what diseases they target, and emerging opportunities that may shape future cotton disease management and stewardship.

How will this work benefit Australian cotton growers and industry?

This project will give the cotton industry a clearer understanding of which crop protection products work, and where the gaps in knowledge remain. In doing so, it will equip growers, agronomists, and industry with the evidence they need to make more confident decisions, reduce the risk of wasted investment, and support long-term stewardship of crop protection tools.

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IN PARTNERSHIP WITH UniSQ Queensland Government