

MEET YOUR COTTON RESEARCHER

Linda Smith, Principal Plant Pathologist
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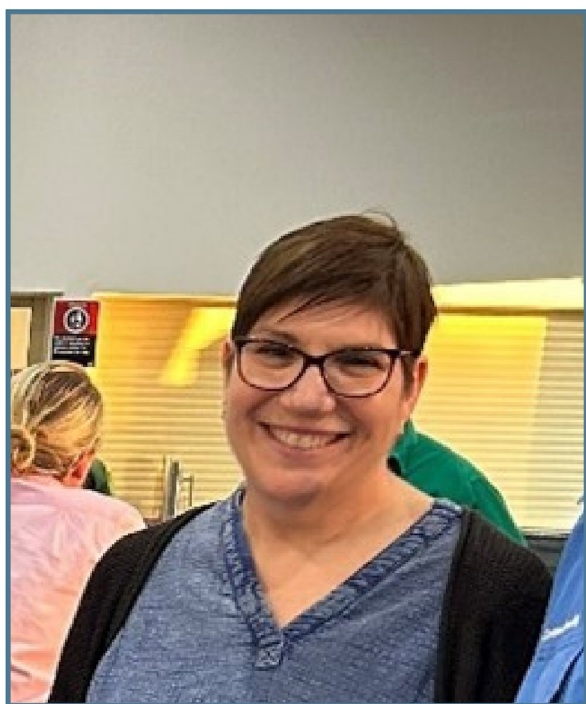
PROFILE

APRIL 2024

RESEARCH AREA

Disease

CRDC Research Project
***Tactical Management and
Surveillance of Verticillium,
Fusarium and Reoccurring
Wilts***



WHAT'S YOUR BACKGROUND?

I was born in Middlesex, a county of Greater London, UK. I travelled from England to Perth, Western Australia on a ship with my family when I was 4 years old; it took 6 weeks and the ship nearly sunk in a terrible storm at the Cape of Good Hope, South Africa!

I grew up in a suburb of Perth and completed a Bachelor of Agricultural Science (Hons) at the University of WA. I travelled to Brisbane, Qld in 1988 for employment and have lived there ever since. I have been fortunate to have worked for the Department of Agriculture and Fisheries for 35 years as a Plant Pathologist.

HOW DID YOU END UP IN COTTON RESEARCH?

I was working 100% of my time on Fusarium wilt research on banana. My supervisor Dr Natalie Moor, who worked 50% on banana disease research and 50% on cotton resigned from DAF to move to NSW. I applied for her position and was successful.

I ended up in cotton research by taking over Natalie's research portfolio. My supervisor Dr Joe Kochman retired in 2006 so I moved 100% into cotton pathology research as Project Leader.



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WHAT EXCITES YOU ABOUT WORKING IN THE COTTON INDUSTRY?

Lots of things excite me working in the cotton industry, but the main thing would have to be the growers and consultants. Having spent many years conducting disease surveys, I have got to know many across the valleys really well and they are all so generous with their time to help the pathology team and they are just terrific people to work with. There's also a great willingness of CRDC to listen to and fund new and innovative ideas, which further supports excellent collaboration between researchers

TELL US SOME MORE ABOUT YOUR RESEARCH & HOW IT WILL BENEFIT GROWERS / INDUSTRY ...

There are multiple research projects within *Tactical Management and Surveillance of Verticillium, Fusarium and Reoccurring Wilts*

One of them is to build on current knowledge of a new biotic threat to cotton production, Reoccurring wilt, caused by novel *Eutypella* species. Understanding pathogen diversity and lifecycle, and the source of inoculum and how this is spread, will enable research to inform growers on the best options for disease management. Reoccurring wilt is a lethal disease. Industry will benefit through the development of management strategies that reduce incidence, spread and economic impact.

KEY FINDINGS TO DATE ...

- To date three novel species of *Eutypella* have been detected in Qld and NSW. Isolates collected from the 2022/23 season are still to be genetically characterised. Once completed, this will inform if other novel species are present in Qld.
- Although new fields were detected with reoccurring wilt during disease surveys (Qld and NSW), incidence was generally low. Spread within fields known to have the disease was also generally low.
- The pathogen is not soilborne. *Eutypella* sequences were only found in diseased roots and not in the rhizosphere of diseased roots. They were not detected in soil collected between plants within a row, or healthy roots and rhizosphere.
- When cotton is infected with *Eutypella*, the roots become dominated by the pathogen. Using qPCR it was determined that in diseased cotton roots *Eutypella* was the dominant fungus (65 – 99%).
- Roots collected from cotton growing in a field known to have two novel species of the pathogen present were determined to be infected with either one or both novel species of *Eutypella*.
- Discussions with Diatrypaceae expert Dr Florent Trouillas informed that the pathogen would have originated from native vegetation adjacent to fields and that in-field infected cotton residues are the most likely source of pathogen.

For further information:

Visit www.cottoninfo.com.au



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