

MEET YOUR COTTON RESEARCHER

Lisa Bird, Senior Research Scientist
NSW Department of Primary Industries

PROFILE

APRIL 2024

RESEARCH AREA

Entomology

CRDC/GRDC Research Project
***Improved insecticide
resistance monitoring for key
pests to support sustainable
insect management***



WHAT'S YOUR BACKGROUND?

I grew up in a cotton growing community in northern NSW. Studied for an undergraduate science degree at University of Sydney and UNE before embarking on a PhD at ANU, focused on resistance management of transgenic cotton.

HOW DID YOU END UP IN COTTON RESEARCH?

As a student I picked up casual work at the cotton research station at Narrabri during the holidays and then an opportunity came up to work full-time on insecticide resistance research with NSW DPI.

Relocated to Canberra where I continued to work on Bt resistance with CSIRO and gain more valuable experience in cotton research. Had a break from the workforce for a few years to be primary carer for my young daughter and returned to work cotton in 2011, taking up a position as cotton entomologist with NSW DPI at Narrabri.

Relocated to Tamworth in 2015 and now manage the project team at Narrabri remotely.



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WHAT EXCITES YOU ABOUT WORKING IN THE COTTON INDUSTRY?

It's a joy to work in an industry that puts a high value on research and it's rewarding to contribute to research outcomes that support growers.

WHAT DOES YOUR CURRENT PROJECT WORK INVOLVE?

Our project work is focused on resistance surveillance in the major leaf feeding pests of cotton including aphids, mites, mirids and thrips. Although *Helicoverpa* is no longer considered at high risk for insecticide resistance in cotton, it remains a major pest of important rotational options in the broader cotton farming system such as maize and sorghum. Therefore, the team also delivers *Helicoverpa* resistance surveillance to both the cotton and grains industries.

The project team travels far and wide to collect samples from the major cotton growing regions across eastern Australia. We also work closely with colleagues in DAF as well as private consultants so that we can cover as much of the industry as possible.

We aim to deliver in-season updates so that crop managers are provided with decision support at critical times of the season. We are also interested in the genetics and molecular basis of resistance because improved understanding of the underlying mechanisms are important for informing future resistance management strategies.

HOW WILL THIS WORK BENEFIT GROWERS & THE BROADER INDUSTRY?

Resistance surveillance delivers practical outcomes for growers because it raises awareness of emerging issues that might impact the performance and long-term sustainability of insecticides. Resistance has the potential to impact the reputation of the cotton industry for producing high cotton yield and quality lint. Increased awareness and proactive management of resistance within an IPM framework can help protect the industry from economic losses by preserving the efficacy of pivotal insecticidal products.

RESISTANCE UPDATE AT APRIL 2024

Two-spotted mites

Diafenthiuron resistance increasing in northern NSW / Abamectin resistance remains at moderate levels / Very low resistance to propargite and etoxazole

Cotton aphids

High resistance to Group 1 insecticides / Very low resistance to neonicotinoids / No resistance to sulfoxaflor

Green mirids

No resistance to fipronil, neonicotinoids and sulfoxaflor

H. armigera

Moderate but stable resistance to indoxacarb / Very low resistance to spinetoram / No resistance to emamectin benzoate and chlorantraniliprole

For further information:

Visit www.cottoninfo.com.au



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