

DR SHARON DOWNES

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E&D Researcher of the Year Finalist

Dr Sharon Downes leads CSIRO Food and Agriculture's IPM and Resistance Evolution research team. She has been located at the Australian Cotton Research Institute since 2004 and has made a significant contribution to the Australian cotton industry through her work on resistance evolution in *Helicoverpa* to the toxins contained in Bt cotton. This includes resistance monitoring data that allows the industry to judge how to effectively manage and adapt the Bt Resistant Management Plan (RMP) for Bt cotton. "The resistance management plan is specifically designed to try and slow resistance in *Helicoverpa*," Sharon says. "We know that it's been very good at developing resistance quickly to any chemical sprays the industry has used to try and control it, and by having a plan in place we hope to protect Bt cotton for as long as possible."

Sharon has made a significant contribution to establishing robust and practical strategies for managing resistance in Australia for both Bt cotton and the insecticides used to control all insect pests. "All of the results from our research are linked to strategies to try and control pests," Sharon explains. "The resistance management plan for Bt cotton and IPM guides to control second-ary pests are used by the industry to modify what they're currently doing to try and stay one step ahead of the pests."





Collaborative work with researchers across several NSW and QLD based research agencies and universities has formed a large part of Sharon's research. She has also collaborated inter-nationally with researchers from the USA, Brazil, China, India and Spain. She leads a strong research team and invests significantly in developing technical staff and mentoring students and trainees. In 2014 Sharon graduated from the highly regarded Australian Rural Leadership Pro-gram. "I would like to see the industry continue to be world leaders in insect and pest management by educating newcomers about the history that has led to the Australian industry being in such a good position today," she says. "We also need to recognise that cotton insect pests sit within a landscape that extends across different commodities in Australia and sometimes globally. We need to consider pest management in that broad context to be prepared for incursions from landscapes where resistance might not be well managed."

Sharon acknowledges the important contributions made in her field of research by Researcher of the Year sponsor, Cotton Seed Distributors. "CSD contribute to CottonInfo which is an extension team that basically take the results from our work and make them understandable by cotton growers," she explains. "This team is at the frontline, so



they get the first knowledge of what the priority issues are for growers and consultants, and they feed them back to industry. Those two things are really important for developing research that's effective and also relevant."

Being selected as a finalist for the CSD Researcher of the Year category has reassured Sharon that her work is considered extremely important by industry. "I'm most proud of my commitment to work with various stakeholders through some pretty challenging issues for the industry," she says. "I'm also available to growers and consultants, place a great importance on national and international collaborations, and work in a mentoring capacity to develop other people within my team and the broader industry."

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