

RESEARCH DIRECTIONS

Protecting cotton from insect pest attack

Associate Professor Robert Spooner-Hart, from the School of Science & Health, together with a team of researchers, has received funding to identify and develop novel botanical insecticides for use in the cotton industry. This 5-year project is being supported by the Cotton Research & Development Corporation (CRDC).

'Australian cotton farmers have achieved substantial reductions in insecticide use from their adoption of GM technology to control the cotton bollworm. However they now face problems associated with a wider range of insect pests that were once incidentally controlled,' says Robert Spooner-Hart. 'Some of the emerging pests have few insecticide options available for their control, forcing ongoing use of older, broad spectrum insecticides that are likely to face increased regulatory scrutiny in the coming years. Reliance on only a few insecticide options can also create secondary problems by destroying beneficial insects and causing pests to become resistant over time. Thus, there is an urgent need to investigate and develop new alternatives such as pesticides derived from natural materials (biopesticides) and chemicals that mediate interactions between organisms (semiochemicals). This project will investigate plant extracts for a range of novel insecticidal activities including toxicity, repellency, antifeedant activity, insect growth regulation, etc. Based on our experience over the past 15 years, it is highly likely that secondary compounds with significant insecticidal activity can be found in Australian plant species, as well as in untested exotic species.'

Plants selected for this study will be sourced primarily from plant families which have a history of use in botanical insecticides. Promising active ingredients will be subjected to greenhouse and field trials. This project will extend the bioassay work of active extracts, generating substantial



Cotton Bollworm Moth
Photo courtesy of Dr Robert Mensah, NSW DPI

scientific data to support the registration of novel active compounds within the Centre for Biopesticides and Semiochemicals (CBS) which will be established by the CRDC to support R&D in this area. The research team and the CBS will look for commercial partners to develop new products and promote technology uptake by farmers.

Benefits from this project will include improving the sustainability and economic viability of the cotton industry. As well as economic benefits, development of new insecticide products and synergists is likely to prolong the life of existing insecticides and other management strategies by reducing the risk of pests developing resistance to them.

Project Title: Centre for Biopesticides and Semiochemicals: Novel insecticides and synergists from endemic and exotic flora

Funding has been set at: \$1,213,591

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June 2014

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