

MEDIA RELEASE

NEW RESEARCH PROGRAM TO REVIEW COTTON INSECT THRESHOLDS

A new collaborative research program between Monsanto and the Cotton CRC is underway to determine the threshold level of insect pressure needed to warrant the use of conventional sprays on *Helicoverpa spp.* in biotech (Bollgard II®) cotton.

Since its commercial introduction in 2003-04, Monsanto's Bollgard II® has replaced Ingard® cotton as the insect protection technology available to Australian growers. Bollgard II® technology was chosen by growers on about 80 per cent of the cotton planted last season.

It improves on Ingard® by incorporating an additional Bt insecticidal protein (Cry2Ab) providing additional efficacy and reduced resistance risk for *H. armigera*.

The current threshold for Bollgard II® is the same as that determined for Ingard®, but field evidence suggests that this may not be appropriate. *Helicoverpa armigera* is the most economically damaging pest of cotton in Australia.

Researchers believe there could be significant differences in the patterns of growth and health of surviving larvae on Ingard® versus Bollgard II® crops. Differences in growth rates and health could significantly affect the degree of crop damage caused by survivors, and hence threshold levels.

Secondly, communities of natural enemies of *Helicoverpa* in cotton landscapes have changed substantially since thresholds for Ingard® were developed, due to fewer and different insecticides being applied to Bollgard II® cotton crops. Different communities of beneficial insects and spiders could significantly impact on the mortality of larvae in cotton crops.

Moreover, different rates of development and viability of larvae could substantially affect their attractiveness and vulnerability to predators and parasites. These differences could significantly increase mortality of larvae, and hence threshold levels, which would lead to further reductions in insecticide use on Bollgard II®.

Cotton CRC chief scientist, Professor Peter Gregg, said determining threshold levels for spraying Bt-susceptible *Helicoverpa* larvae in Bollgard II® is critical for protecting cotton crops from significant economic damage.

“Bollgard II® crops present an opportunity to significantly reduce the amount of insecticides applied as sprays to crops.

“In turn, this technology reduces both the amount of insecticides that run off into the environment, and the cost of using insecticides to control a significant target pest.

“The consequences of these processes include a safer and cleaner environment, and an opportunity to maintain profitability and competitiveness in the world cotton market.”

Monsanto's Steve Ainsworth said this project highlights Monsanto's commitment to ensuring the sustainability of the technology.

“We are dedicated to actively supporting and investing in the Australian cotton industry. This project is an example of our continued commitment to stewardship of this technology and highlights the benefits possible to growers and the industry from high calibre collaboration.”

The new \$300,000 research project, which will be conducted by a University of New England PhD student based at ACRI Narrabri from 2006 to 2009, will involve input from the UNE, Cotton CRC, CRDC, CSIRO, ACGRA and Monsanto.

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September 2, 2006



Caption: Professor Peter Gregg