Cotton IPM programs at risk

By David Petrikas

Cotton growers using synthetic pyrethroid (SP) and organophosphate (OP) sprays in their transgenic and conventional cotton crops, are seriously undermining the viability of Integrated Pest Management (IPM) strategies.

According to researchers at the Australian Cotton Research Institute (ACRI) in Narrabri, the result is likely outbreaks of sucking pests such as whiteflies, aphids and mites.

ACRI principal research scientist, Dr Robert Mensah, is concerned that growers reverting to cheaper older style pesticides are having a dramatic impact on beneficial insect populations.

He said it was critical that growers maintained their Insect Resistance Management strategies and did not treat Bollgard II cotton as a 'cure-all' of their insect pests, given the large areas now devoted to transgenic.

His comments were echoed by Alison Young, the Project Officer for NSW DPI's semiochemical project which is looking at developing new 'softer' pest control tools.

Alison said while Bollgard II cotton had helped enormously in the control of Helicoverpa, it was now having an unintended impact on integrated pest management because of growers' increasing tendency to use cheaper broad-spectrum insecticides on their Bollgard.

"In some ways transgenic cotton and the drought have made IPM more difficult as growers, having invested so much in their Bollgard II crops, need to make their decisions based on gross profit margins which have been increasingly difficult to obtain.

"In conventional cotton, spray decisions are made on Helicoverpa numbers with secondary pests generally controlled at the same time. With Bollgard crops, because Helicoverpa is no longer the major pest, there might be instances where the crops are not being checked as often as they used to. This could lead to the spray decisions being made on the very appearance of a secondary pest, instead of monitoring the actual target pest and basing the decision on pest numbers increasing or based on damage to the plant.

"Unfortunately we are hearing recommendations to use SP and OP sprays to save money. This is having a devastating impact on IPM programs and will compromise the softer biological products, which rely on beneficial insects to keep pest numbers under control. If secondary pests such as silverleaf whitefly can become established in a crop then any saving gained is lost by the increased cost of controlling the silverleaf whitefly," Alison said.

Robert agreed it appeared some growers were not looking for trends in insect populations and were using cheaper spray options without thinking about the long-term consequences.

"Some growers are back to using five SP sprays on Bollgard II crops and in so doing are removing predators. We need a strategy which will give economic control

Dr Robert Mensah and Alison Young.

of pests while helping and restoring beneficial insect populations."

"Often a grower finds one or two beneficial insects in their farm after using a harsh broad-spectrum insecticide spray and that makes the grower think that the OP or SP they sprayed did not wipe out all the beneficial insects.

"But as matter of fact the beneficial insect the grower might have seen had emigrated or flown in from a neighbour's farm to his farm. Therefore after a series of repetitive SP and OP sprays, the whole surrounding region may be wiped out of beneficial insects. So using OP or SP in one's farm is depriving neighbouring farms from using beneficial insects to undertake true IPM."

For that reason, Robert said growers should only use harsh products (like OP's and SP's) as a last resort. "That is why it is important to continue to manage and develop new biologicals."

This highlighted a need to think strategically and not just tactically when controlling pests, including IPM and the need to continue to grow conventional cotton and manage insect refuges between crops.

Robert said one softer option for cotton growers would be to start pest control earlier with an effective biological spray (including the spray oil, Canopy) to preserve the effectiveness of beneficial insects building up in the crop.

"If you can get in early with biologicals and include a spray oil you can get on top of the problem. The benefit of using Canopy fairly early in the program is that it won't upset the beneficials.

"There is now a looming problem with whitefly in southern districts and the more we use biologicals the better," Robert said.

There was also a need to take the focus off immediate insecticide costs and think of the 'bigger picture' of effective integrated pest management.

"You can afford a lot of sprays in conventional cotton before you approach the cost of Bollgard for insect control, so it is worth investing in the right products and using them at the right time.

"There are not a lot of soft options in the cupboard and if we mistreat them we will be left with nothing. We also need to discourage the overuse of chemicals and only apply sprays when they are needed," Robert said.