

New generation product for heliothis and armyworm adults

By Stephen Sexton, Bioglobal Ltd

H*elicoverpa armigera* and *Helicoverpa punctigera* are a key pests of cotton requiring growers to apply multiple insecticide applications against the eggs and larvae or pay licence fees for Bollgard and plant refugia crops to overcome the pests. Either way, they cost cotton growers serious money.

Bt cotton is now the most widely used measure for control of *Helicoverpa spp* in Australia and for the moment has stolen the limelight from a different strategy for management of these pests.

Dr Juan Lopez of the Agricultural Research Service of the United States Department of Agriculture noticed that *Helicoverpa zea* was strongly attracted to the night flowering *Gaura drummondii*. His research group revealed a little known behaviour pattern seen in many large strong flying moths including *Helicoverpa*. In the few days between emergence and reproductive maturity, female moths seek out sources of nectar, tracking upwind to flowering plants by following perfume trails.

The USDA work led to the chemical identification of a number of perfume ingredients which served as cues for *Helicoverpa* and other large moths such as armyworms and cutworms and not surprisingly, they turned out to be common floral and green leaf odours. Two Australian groups, one at the University of New England and the other at Bioglobal

Ltd, a Brisbane based company, took up the lead given by Juan.

Positive results of preliminary trials of a product named BioAttract were reported at the 2002 Grain Research and Development Council congress in Toowoomba. BioAttract Heli was a sugar based bait containing a patented blend of floral volatiles in a controlled release carrier — to the female moths, an artificial nectar source. For the first time in Australia and possibly the world, this presentation revealed that management of *Helicoverpa spp.* by control of adults might be practical.

Targeting adult moths with the behaviour modifying chemicals in BioAttract Heli has dramatic advantages for the cotton grower.



BioAttract targets young females before they lay their eggs.

Only two per cent of the crop needs to be treated as moths seek out the bait and avidly feed on it. Young adult female *Helicoverpa* are a particularly vulnerable target — they are hungry for nectar and have the potential to lay 1500 or more eggs. Insecticide is reduced by 98 per cent when compared with a normal cover spray.

Beneficial insects are left effectively untouched and free to operate.

Bioglobal has worked to refine its formulation. The patented controlled release system in BioAttract Heli has given the product a life of eight days or more in the field. No treatment can survive a deluge but design features of the BioAttract Heli formulation ensures that it remains effective after several showers of rain.

It is available under experimental use permit through Cotton Growers Services in 2004–05.

BioAttract Heli is normally used with Larvin 375 which gives a fast knockdown. As toxicants are used at very low rates, it is practical and economical to use two toxicants simultaneously — Tracer and Affirm are both suitable in this role. They are slow acting but will counter the threat of resistance.

BioAttract Heli can be used to suppress populations of *Helicoverpa* over whole properties with minimum reliance on insecticides. It has the potential to be a low cost alternative control strategy for growers.

FIGURE 1: *Helicoverpa spp.* moths killed by BioAttract Heli in mung beans — Jandowae 2004

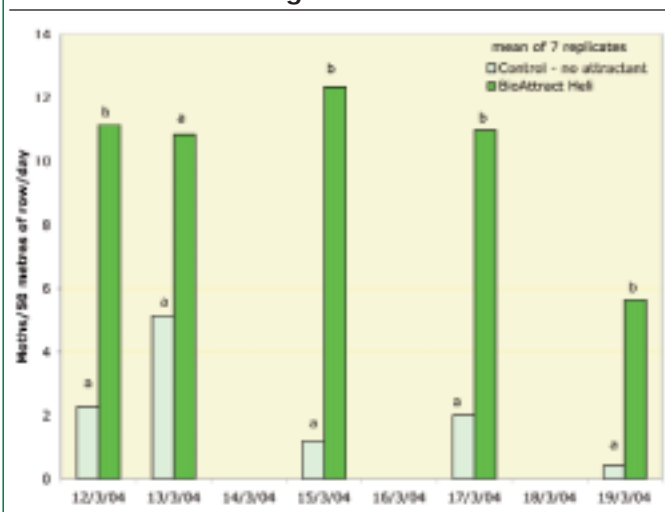


FIGURE 2: *Helicoverpa* moths killed by BioAttract Heli in cotton — Milmerran 2004

