

# Nothing grubby in this cropping mix

By Donald Turner, Cottonworld

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Farmers on Queensland's Darling Downs have begun to take advantage of mixed cropping to control insect pests throughout the year.

*Heliothis armigera* numbers rose sharply late this season, with some cotton growers spraying every five or six days to control the pest.

But Jimbour cotton and sorghum grower David Alexander says he and his colleagues have got a better handle on how to manage the problem, through area-wide and integrated pest management.

"It is heartening to see the number of IPM groups forming independently on the Darling Downs," says David, who is also co-chairman of the regional *heliothis* working group.

"If we look at crops in context, the reason *heliothis* is a problem here is the fact that we grow susceptible crops for nine months of the year.

"But our great achievement has been to realise we can use this mix of crops against *Heliothis*. If you adopt a strategy to control grubs early in chickpeas, for example, and later in sorghum, you can maintain control throughout the season without promoting resistance to insecticides."

The main product used to control grubs in sorghum is the viral insecticide Gemstar, with spectacular results, says Craig McDonald of Cotton Growers Services Dalby.

"It's been very good," says Craig. "There seems to be a lot more awareness among growers of the need to get out and scout crops, and to get sprays on early when they are most effective against *heliothis*."

David Alexander says the greatest achievement



Jimbour grower David Alexander believes Darling Downs growers can use cropping diversity against *heliothis*.

of area-wide and IPM programs on the Downs has been the growing awareness among growers and consultants of insect groups.

David and Kay Alexander held a well-attended field day at their property Walmer at Jimbour recently to look at field performance of Gemstar in sorghum, including ultra-low volume applications. Results of these trials are being collated by David Murray, principal entomologist for the Queensland Department of Primary Industries.

“Now we are getting integrated control between different crops,” says David Alexander.

“For example, in one 160 hectare paddock there are 60 hectares of transgenic cotton and the mandatory area of unsprayed refugia. But the balance of the area is sorghum. Growers are seeing that they can build a better refugia using the sorghum and control heliothis with products such as Gemstar.”

David Murray’s trial includes application of the virus in ultra-low volume sprays by air. The registered application rate for Gemstar as emulsifiable concentrate (EC) is 375 ml per hectare, but sorghum growers have reported effective results at lower rates. The trial has two concerns — to test application rates and methods.

Gemstar was applied by air at 200 ml and 375 ml per hectare EC, mixed with 30 litres per hectare of water. A third application by ground rig of Gemstar at 200 ml per hectare was sprayed on a 60 per cent band over the heads.

The second part of the trial involved application by ultra-low volume spray at 100, 200 and 375 ml per hectare, bulked up to a total volume of three litres per hectare with a crop oil. Conditions at time of application were far from ideal, with temperatures of 40°C or more by mid-afternoon.

“The idea of the ULV trial is to assist growers, who don’t always have ideal conditions for EC high water volume applications,” says David Murray.

“Despite the conditions at time of application, we

can see that there are many dead grubs in the crop seven days after application."

"In the past, a lot of grub infestations in sorghum were left alone because control was often uneconomical and, with older chemistry, we saw increased resistance.

"There has been a transition period, in which Gemstar has become more or less the standard treatment in grain sorghum. The benefits are that we are not applying selection pressures and we are conserving beneficials, which is a major contribution to the wider farming system."

David Alexander sees added benefits for growers if Gemstar ULV can be made to work. "On bigger areas there should be substantial cost savings, purely because aerial operators would save a lot of time and fuel in ferrying the more concentrated form," he says.