

### Early season Bt resistance update

#### From Sharon Downes, CSIRO Entomology at ACRI

To date, very low numbers of *H. armigera* have been available for Bt resistance testing. While the early season results are positive, the very low sample sizes, particularly for *H. armigera*, are of concern. Information on resistance frequencies is critical to prolong the useful life of the important Bt technology. We have fewer staff than usual on the ground to collect material this season. Please support us in getting adequate samples for a meaningful analysis.

Summary of early season *Helicoverpa* monitoring in the Lower Namoi – 14/11 to 21/12

Number of eggs	2753	% hatched	74
% <i>H. armigera</i>	3	% parasitised	5

The % *H. armigera* values quoted above do not include the collections from maize and sorghum, due to the dominance of these hosts by *H. armigera*. It should be noted that the levels of egg parasitism presented in the table is an average for the valley and that the actual levels vary greatly among properties.

F<sub>0</sub> screens are likely to pick up only individuals that are homozygous resistant (RR) to Bt. Around 2% survival is expected as a baseline for the doses of toxins used in the F<sub>0</sub> screens. To date, data from the F<sub>0</sub> screens do not indicate any major changes from previous seasons in survival rates to discriminating doses of Cry1Ac or Cry2Ab.

Summary of early season F<sub>0</sub> screens for Bt resistance from collections made in the Lower Namoi

	% survivors (no. individuals tested)	
	<i>Helicoverpa armigera</i>	<i>Helicoverpa punctigera</i>
Cry1Ac	0.00 (10)	0.36 (842)
Cry2Ab	0.00 (24)	0.00 (222)

F<sub>2</sub> screens can detect heterozygote individuals (RS). They involve testing the grandchildren of pairs of moths raised from eggs collected from field populations, and therefore take about 10 weeks to run. The F<sub>2</sub> screens for Bt resistance in the 2006/07 season are in progress but we have not yet scored any lines for resistance.

We record data for each egg collection from every specific location. If you are interested in information that is specific to your collection or a collection made on your property, you can contact Sharon directly at any point throughout the season for details.

#### Larvae Collections

In addition to eggs, we are interested in larvae of *H. armigera* and *H. punctigera* that are at least medium in size (6mm long) growing in Bollgard II® fields. Reports from 2005/06 suggest that the incidence of such larvae is sporadic. Therefore we rely on alerts or collections of larvae from growers, consultants or other interested parties. Ideally, the larvae together with associated leaf samples, would be brought in to the ACRI, but even marking the site

and making a phone call will allow us to complete the collection. To notify us of sites for egg or grub collections, please contact Tracey Parker, Trudy Staines or Sharon Downes, 6799 1500 or 0427 480 967.

### Aphid resistance summary – 05/06 season

#### From Grant Heron, NSW DPI at Camden

Resistance testing results for cotton aphid in 05/06 were particularly encouraging. Pirimicarb resistance was only detected at high frequencies in a single population. This is down from 61% of populations having high resistance frequencies in the previous season. The major contributing factor to the decline is likely to be the drought and subsequent lack of overwintering habourages. Cotton aphid reproduces asexually allowing very rapid changes in resistance levels. This season growers have a resistance reprieve with cotton aphid, but chemical options still need to be used wisely or resistance will certainly return. No resistance was detected against Intruder®, Actara® or Pegasus®. Very low frequencies of resistance were detected against pirimicarb, chlorpyrifos-methyl, profenofos and edosulfan. The one strain with high pirimicarb resistance was collected in the Lower Namoi and also had high frequencies of chlorpyrifos-methyl resistance.

### Consider aphids when controlling mirids

Despite last season's encouraging trends in resistance decline, it is important to remember that pirimicarb can quickly be rendered useless by the previous use of omethoate or dimethoate. Omethoate or dimethoate may be relatively inexpensive, however, their use can cause serious resistance and IPM issues. Control of mirids with omethoate or dimethoate will also select for resistance in any concurrent aphid populations. If spraying mirids always check for concurrent aphids and avoid spraying omethoate or dimethoate if aphids are present.

### Reminder – endosulfan window closes

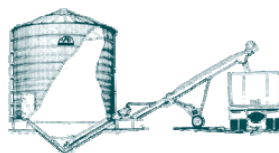
The window for aerial application of endosulfan closes on Monday 15 January (midnight).

### GRDC Grower Update

#### Grain Storage Focus

Friday 23<sup>rd</sup> February

Narrabri RSL from 8:30 am



Having the capacity to store grain on-farm enables growers to target new markets, diversify marketing arrangements and provides flexibility at harvest time. This Grower Update will assist growers who are evaluating different types of storage systems and looking at how to match capability and cost to the benefit that can be achieved.