

# A review of the Helicoverpa Resistance Management Strategy (RMS) after two seasons: what works, what doesn't, and making it fit for purpose

Melina Miles<sup>1</sup> and Lisa Bird<sup>2</sup>

<sup>1</sup> DAF Queensland

<sup>2</sup> NSW DPI

## Key words

*Helicoverpa armigera*, insecticide resistance, resistance management strategy

## GRDC codes

DAQ00196, DAN1908-005RTX

## Take home messages

- The Helicoverpa RMS is designed to extend the life of insecticides through reducing the selection pressure on individual products
- Repeated use in a single crop and cutting rates are two practices that will speed the development of insecticide resistance. Highly efficacious products are at greatest risk of misuse
- In regions where there are sequential plantings of mungbeans and soybeans, e.g. coastal, Burdekin, there are particular challenges in sticking to the RMS.

The Helicoverpa resistance management strategy (Helicoverpa RMS) has been available to the grains industry since June 2018. At the time the strategy was developed, the National Insecticide Resistance Management (NIRM) working group gave an undertaking to stakeholders to review how the strategy was working and make modifications to it if necessary.

Under normal conditions, we would have expected to have had two winter and two summer seasons implementing the Helicoverpa RMS by now. Unfortunately, much of the northern region has not had summer or winter crops during this period, so the opportunities to trial the strategy have been limited largely to central Queensland and the coastal production regions (summer pulses in the Burdekin – Bundaberg).

The review is currently being undertaken through interviews with agronomists in all regions where *H. armigera* is a pest in winter and summer pulses (the focus of the current RMS). At the time of writing this paper, the interviews are not yet completed, so only preliminary impressions can be presented here. The presentation at the Update will include all data and a discussion of the future of the Helicoverpa RMS.

## Preliminary findings

It is evident that those agronomists with a 'lived experience' of insecticide resistance, specifically the *H. armigera* resistance in the late 1990s and early 2000, have a heightened awareness of the importance of reducing the risk of resistance development. Communicating the importance of resistance management to the younger agronomists is a key challenge.

The coastal regions are characterised by almost continuous cropping of summer pulses, which presents major challenges for resistance management. The efficacy of Altacor® (chlorantraniliprole) makes it the highly preferred option for the control of Helicoverpa and the product at greatest risk of overuse. In these regions, the current RMS does not appear 'fit for purpose' as it greatly restricts the use of Altacor. However, to be effective, the Helicoverpa RMS must abide by a number of 'rules' or resistance management. Most importantly, the restriction of exposure of successive generations to an individual active. The more generations exposed to an individual active, the higher the risk of

resistance developing. This is the basis for the windowing of products. Consequently, there is little option for increasing the window of use, or the number of applications of at risk products without jeopardising the long term efficacy of products like Altacor. Confidence in the effectiveness of alternate products and strategies for targeted use of Altacor during periods of highest helioverpa risk, are needed in these regions.

Affirm® (emamectin benzoate) and Success Neo® (spinetoram) are not currently windowed. The low pulse area has continued to limit the use of these products to date, and there is no evidence of a change in susceptibility of *H. armigera* to Affirm in testing (L Bird, NSW DPI pers comm). More agronomists reported using Affirm and having increased confidence in it as an option for control of Helioverpa control. It is proposed that no changes to the windowing of these products be implemented at this stage.

### **Resources**

The Helioverpa RMS, and a detailed “Science behind” document, are available for download at <https://ipmguidelinesforgrains.com.au/ipm-information/resistance-management-strategies/>

### **Acknowledgements**

The research undertaken as part of this project is made possible by the significant contributions of growers through both trial cooperation and the support of the GRDC, the author would like to thank them for their continued support.

Julie Ferguson undertook the agronomist interviews and we thank all those who generously gave their time to discuss their experiences and opinions on the Helioverpa RMS.

### **Contact details**

Melina Miles  
Queensland Department of Agriculture and Fisheries  
203 Tor St, Toowoomba, Qld, 4350  
Ph: 0407 113 306  
Email: melina.miles@daf.qld.gov.au

® Registered trademark