

Crops(s) Sorghum, Maize, Summer & Winter Grain Legumes

Insect(s) Heliothis/Cotton bollworm/Native budworm (*Helicoverpa* spp.)

Guidelines:

1. To help prevent the development of resistance to any specific active ingredient (see table below), observe the following instructions:
 - a. Use in accordance with the current IRMS for your region.
 - b. Apply a specific active ingredient using a “window” approach to avoid exposure of consecutive insect pest generations to the same mode of action. Multiple successive applications of a specific active ingredient are acceptable if they are used to treat a single pest generation.
 - c. Following a ‘window’ of a specific mode of action product, rotate to a ‘window’ of applications of effective insecticides with a different mode of action.
 - d. The total exposure period of any one mode of action ‘active window’ applied throughout the crop cycle (from seedling to harvest) should not exceed 50% of the crop cycle.
 - e. Incorporate IPM techniques into the overall pest management program and
 - f. Monitor insect populations for loss of field efficacy.
2. Always read and follow product labels. Some products place a limit on the number of times they can be applied per crop (see table below) and when they can be applied.
3. Monitor crops regularly and only apply insecticide when the pest threshold is reached.
4. Ensure spray equipment is properly calibrated and achieving good coverage with appropriately sized spray droplets.
5. Time the application to the most susceptible life stage of the target pest.
6. To encourage beneficial insects, use *Bacillus thuringiensis* (Bt) or NPV sprays and avoid broad spectrum insecticides where possible, particularly early to mid-crop cycle.

Please note:

This strategy is a guide only and does not endorse particular products, groups of products or cultural methods in terms of their performance. Always follow the product label for specific use instructions. While all effort has been made with the information supplied in this document, no responsibility, actual or implied, is taken for the day to day accuracy of product or active constituent specific information. Readers should check with the Australian Pesticides and Veterinary Medicines Authority's product database for contemporary information on products and actives. The database can be sourced through www.apvma.gov.au. The information given in this strategy is provided in good faith and without any liability for loss or damage suffered as a result of its application and use. Advice given in this strategy is valid as at 14 July 2023. All previous versions of this strategy are now invalid.

7. Be cautious of using insecticide tank-mixes where both active ingredients control *Helicoverpa* spp. as this strategy is generally not considered best practice for resistance management. Refer to document [IRAC International Insecticide Mixture Statement](#) for more information on this subject.
8. **Do not** re-treat a spray failure with a product from the same chemical group.
9. Practice effective pupae busting as soon as practicable after harvest.

Group*	Active ingredient	Number applications per crop per season [‡]	Crops [‡]
1A	Methomyl (eg. Lannate® L), thiodicarb (eg. Larvin®)	not specified	All cereal grains, oilseed, pulses
3A	syntheticpyrethroids (various – eg. Dominex® Duo, Karate® Zeon, Sumi-alpha® Flex, Trojan®)	not specified	All cereal grains, oilseed, pulses
5	Spinetoram (Success® Neo)	2	All pulses
5 + 18	Spinetoram + methoxyfenozide (Intrepid Edge®)	Chickpeas: 1. Mung beans: 2	Chickpeas Mung beans
6	Emamectin benzoate (eg. Affirm®)	2	All pulses
11A	<i>Bacillus thuringiensis</i> (eg. Dipel®, Xentari®)	not specified	All cereal grains, oilseed, pulses
22A	Indoxacarb (eg. Steward® EC)	1	chickpea, faba bean, mung bean, soybean, azuki bean
28	Chlorantraniliprole (Vantacor®)	Refer to label	All pulses

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UN	Nucleopolyhedrovirus (NPV) – (eg. Gemstar®, Vivus® Max)	no limit but avoid season long use of low rates	All cereal grains, oilseed, pulses
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*Refer: CropLife Australia Expert Committee on Insecticide Resistance Mode of Action Classification for Insecticides

‡Refer: Registered product label

Notes:

- For more information refer to the IPM Guidelines *H. armigera* RMS for Australian grains: <https://ipmguidelinesforgrains.com.au/ipm-information/resistance-management-strategies/#heli>
- POTENTIAL LINK** to NSW DPI resistance monitoring updates.

Notes regarding the application of insecticides:

- To ensure the most effective control of the pest:
 - Product labels should at all times be carefully read and adhered to;
 - Full recommended rates of registered insecticides should always be used; and
 - Ensure good coverage of the target area to maximise contact.

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