

Crops(s) **Various**

Disease(s) **Fall armyworm (*Spodoptera frugiperda*)**

List of active constituents approved for use under permits by the Australian Pesticides and Veterinary Medicines Authority (APVMA) as of May 2020:**

Group*	Chemical subgroup	Active ingredient
1A	Carbamates	Methomyl (eg. Lannate® L)
3A	Pyrethroids	Gamma-cyhalothrin (Trojan®), alpha-cypermethrin (eg. Dominex® Duo)
5	Spinosyns	Spinetoram (Success® Neo)
6	Avermectins	Emamectin benzoate (eg. Affirm®, Proclaim®Opti)
15	Benzoylureas	Diflubenzuron (Dimilin®) (nursery stock only)
22A	Oxadiazines	Indoxacarb (eg. Steward® EC, Avatar® eVo)
28	Diamides	Chlorantraniliprole (Vantacor®, Coragen®), flubendiamide (Belt®).
31	Nucleopolyhedroviruses (NPVs)	<i>Spodoptera frugiperda</i> multiple nucleopolyhedrovirus (SfMNPV) (Fawligen®, Spodovir® plus)

*Refer: CropLife Australia Expert Committee on Insecticide Resistance Mode of Action Classification for Insecticides

**Refer to the APVMA's PubCris website (<https://portal.apvma.gov.au/permits>) to ensure permit is still active

Guidelines:

1. An Integrated Pest Management (IPM) approach should be adopted in the production system to help manage this pest, with focus on cultural methods and the preservation of beneficial arthropods (insects and spiders):
 - a. This includes regular crop monitoring (at least 2 times per week) to determine incidence x crop damage and the impact of beneficial arthropods.
 - b. Consideration should also be given to the impact of prevailing weather conditions on the

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rate of pest development in the field.

2. **Avoid** sequential plantings of preferred crops, e.g. corn, sorghum, sugarcane, as this will increase local populations of fall armyworm.
3. Management of crop residues/volunteer plants before planting and after harvest also helps reduce local populations of fall armyworm.
4. Where possible, **avoid** the use of broad spectrum foliar applied insecticides in the production system for both larvae and moth control. If broad-spectrum insecticides are to be used, apply at timings when preservation of beneficial species is less likely to be important – i.e. at end of growing season.
5. Consider controlling moths using light or attractant traps and encourage micro-bat habitat (natural or artificial roosting sites) adjacent to production areas.
6. In situations where insecticides are required, consider beneficial arthropods when making spray decisions.
7. When applying insecticides to this pest, key considerations should be given to:
 - a. Apply insecticides only when needed based on economic thresholds;
 - b. **Target early instar stages** (hatching larvae) of the pest before they become entrenched in the crop e.g. lower whorl of maize, sweet corn or grain sorghum;
 - c. Use a **medium spray quality** to ensure sufficient droplets cover the spray target to ensure the larvae ingest a lethal dose of insecticide;
 - d. Use a well calibrated, functioning boom spray with appropriate water rate for the target crop to ensure optimum spray coverage;
 - e. Use the recommended insecticide rates as stipulated on the relevant APVMA Emergency Use Permit;
 - f. Use a recommended adjuvant if stipulated on the relevant APVMA Emergency Use Permit; and
 - g. Inspect the performance of the insecticide 3-4 days after application. Always document the effectiveness of each insecticide application and never re-spray a failure with an insecticide with the same mode of action. Inform your local reseller or agronomist of any

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spray failures. Internationally, known resistance has occurred to the following MoA groups: Carbamates (Group 1A); Organophosphates (Group 1B); Pyrethroids (Group 3); Bacillus thuringiensis and Cry1F protein (Group 11A).

8. When using selected insecticides in-crop targeting fall armyworm, the following resistance management strategy guidelines should be implemented:
 - a. Do not treat successive generations with products of the same MOA;
 - b. The total exposure period of any one MOA insecticide applied throughout the crop cycle (from seedling to harvest) **should not exceed 50% of the crop cycle;**
 - c. Abide by the individual label recommendation for maximum **number of allowable applications per crop per season;**
 - d. Abide by individual label recommendation for the **minimum reapplication interval** and always use the **full recommended label rates;**
 - e. Where possible, an Area Wide Management strategy should be adopted where the same MOA insecticides are used **by all growers** in the **same time period;** and
 - f. As the industry learns more about how to manage this pest, this Strategy may be updated and regional-specific strategies may be developed. Check the CropLife Resistance Management [website](#) to ensure you are following the most up to date fall armyworm strategy.

9. Useful fall armyworm reference documents are available:
 - a. <https://portal.apvma.gov.au/permits>: search for APVMA insecticide permits to use on FAW.
 - b. <https://www.cottoninfo.com.au/insect-and-mite-management>
 - c. <https://thebeatsheet.com.au/fall-armyworm-should-you-be-concerned/>
 - d. <https://irac-online.org/pests/spodoptera-frugiperda/>
 - e. <https://irac-online.org/new-guidelines-on-ipm-irm-for-fall-armyworm-in-s-african-maize/>
 - f. <https://grdc.com.au/resources-and-publications/resources/fall-armyworm>

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Notes regarding the application of insecticides:

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

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