



**PERMIT TO ALLOW MINOR USE OF AN AGVET CHEMICAL PRODUCT**

**FOR CONTROL OF LEPIDOPTERAN PESTS, RUTHERGLEN BUG AND  
THRIPS INCLUDING WESTERN FLOWER THRIPS IN SPECIFIED FRUITING,  
LEGUME, ROOT AND TUBER VEGETABLES, HERB & SPICE CROPS**

**PERMIT NUMBER - 82428**

This permit is issued to the Permit Holder in response to an application granted by the APVMA under section 112 of the Agvet Codes of the jurisdictions set out below. This permit allows a person, as stipulated below, to use the product in the manner specified in this permit in the designated jurisdictions. This permit also allows any person to claim that the product can be used in the manner specified in this permit.

**THIS PERMIT IS IN FORCE FROM 22 APRIL 2016 TO 31 MARCH 2024**

**Permit Holder:**

HORTICULTURE INNOVATION AUSTRALIA LTD  
Level 8, 1 Chifley Square  
SYDNEY NSW 2000

**Persons who can use the product under this permit:**

Persons generally.

## CONDITIONS OF USE

**Product to be used:**

DUPONT MARLIN INSECTICIDE (62320)

PLUS OTHER REGISTERED PRODUCTS

Containing: 225 g/L METHOMYL as their only active constituent.

**Restraints**

**DO NOT** apply as a fog or mist.

**DO NOT** use in protected cropping situations, such as glasshouses, greenhouses, plastic houses, plastic tunnels or shade houses.

**DO NOT** use on crops that are grown hydroponically.

**DO NOT** retreat crops more than the maximum allowed under the directions for use.

**DO NOT** apply less than 7 days between consecutive applications.

**Directions for Use:**

Crop	Pest	Maximum number of applications per crop	Rate	WHP
<b>Fruiting Veg (cucurbits) including;</b> Angled Luffa, bitter melon, cucumber, choko, melons, marrow, pumpkin, squash, gherkin & zucchini, Hairy melon, Japanese pumpkin, smooth luffa, angled luffa, snake gourd, white flower gourd, winter melon	<i>Helicoverpa</i> spp. Cucumber moth Cluster caterpillar Loopers Webworm Rutherglen bug Thrips including WFT	6	100-200 mL/100L to a max of 1-2 L/ha  Add non-ionic wetting agent at 0.025%  All have a 7 day spray interval	3 days
<b>Fruiting veg (other than cucurbits) including:</b> Brinjal, eggplant, okra, peppers (chilli, paprika capsicum), plate brush & tomatoes		6		3 days
<b>Legume Vegetables including;</b> Green soyabean Faba bean, Flower bean, Snake bean, snow peas & sugar snap peas, Winged bean		6		3 days

Crop	Pest	Maximum number of applications per crop	Rate	WHP
<b>Root &amp; Tuber vegetables including;</b> beetroot, burdock, daikon, Galangal Lessor, taro, yam, yam bean	<i>Helicoverpa</i> spp. Cucumber moth Cluster caterpillar Loopers Webworm Rutherglen bug Thrips including WFT	3	100-200 mL/100L to a max of 1-2 L/ha  Add non-ionic wetting agent at 0.025%  All have a 7 day spray interval	7 days
Celeriac				1 day
Radish, Swede & Turnip		4		1 day*
Sweet potato		6		3 days
<b><u>Other veg, herbs &amp; spices</u></b> Silverbeet & Myoga		3		14 days
Ginger, Rakkyo Shallot & Tumeric				7 days
Parsley				3 days
<b>Celery</b>		3	100 mL/100L to a max of 1 L/ha	1 day
<b>Non bearing ornamentals Nursery seedlings</b>		3	200mL with 100L water	1 day

\* **Radish, Swede and Turnip - Harvest:** Leaf material must be trimmed prior to supply. **DO NOT** harvest tops or supply bulbs with leaf material attached for human or animal consumption.

**Critical Use Comments:**

- Apply as a cover spray by ground rig.
- Observe the WFT Insecticide-Resistance Management Strategy, included under ADDITIONAL CONDITIONS (below).
- For effective insect control, proper timing and good coverage is essential. Careful monitoring should identify the earliest incursions to allow timely application.
- This use pattern should be carried out in conjunction with monitoring and a resistance management strategy.
- Use sufficient water to obtain uniform coverage. Use 100-400 L/ha spray mixture.

## **LEPIDOPTERAN PESTS**

*Ovicidal control:* Incorporate into a larvicide program when pest indicates. Use a higher rate at peak egg lay and when eggs are mainly laid on flowers and fruit. Applications are most effective when the egg stage is targeted, providing egg parasites are not active.

*Larval control:* Apply when infestation reaches an economically damaging level and repeat if necessary. For optimal results, the spray interval should not exceed 7 days. Increase spray volume as plants grow larger to ensure coverage.

Some lepidopteran pests are resistant to methomyl and will survive after spraying. Monitor the crop after spraying for control. If control is poor, use an insecticide from another chemical group.

## **RUTHERGLEN BUG**

Apply to late stage immature and adult bugs.

Repeat sprays may be necessary if infestations are severe and prolonged.

### **Jurisdiction:**

ALL STATES

### **Additional Conditions:**

This Permit provides for the use of a product in a manner other than specified on the approved label of the product. Unless otherwise stated in this permit, the use of the product must be in accordance with instructions on its label.

Persons who wish to prepare for use and/or use products for the purposes specified in this permit must read, or have read to them, the details and conditions of this permit.

### **Export of Produce:**

Exported produce or animals must have appropriate residue tolerance limits established in the importing countries and any residues must not exceed the tolerance limits.

### **To Avoid Crop Damage:**

The sensitivity of some species and varieties of the crops to be treated under this permit has not been fully evaluated. It is advisable, therefore, to only treat a small number of plants to ascertain their reaction before treating the whole crop.

## **WESTERN FLOWER THRIP (WFT) INSECTICIDE-RESISTANCE MANAGEMENT STRATEGY:**

Chemicals alone will not control western flower thrips. Effective control can only be achieved with an **integrated approach** using additional cultural control methods.

### **Cultural Control**

The most important cultural control method is the removal of all flowering weeds (especially white clover) from within and around the crop. Uncontrolled flowering weeds harbour abundant thrips that reinfest the crop and overwhelm chemical control. Crop debris may harbour western flower thrips and should be ploughed in or burned. If the crop is at all sensitive to viruses, such as Tomato Spotted Wilt Virus (TSWV), it is essential to remove the virus infected plants (burn or bury).

### Monitoring

Monitoring allows insecticides to be used only when necessary and so vigilant crop monitoring will reduce insecticide costs, reduce insecticide impact on beneficial insects and lessen the likelihood of resistance development. Sticky traps should be used to monitor thrip numbers at a minimum density of approximately 3 to 10 traps per hectare.

This should be done at least weekly, to determine if chemical treatments have worked. Stop spraying when WFT numbers are low, and start a fresh series of sprays using a different approved chemical from a chemical group when WFT reappear in the crop. A new series of 3 sprays should not be commenced without appropriate monitoring.

### Life Cycle

Effective chemical management of WFT is made difficult by resistance to a wide range of insecticides and limited accessibility to life stages when spraying. Only the larval and adult stages of WFT are contacted by insecticide sprays. Eggs are protected in plant tissue, while pupal stages shelter in soil and debris. In order to effectively manage WFT in crop, chemicals should be sprayed at intervals. The intervals are governed by the length of the life-cycle, which is controlled by temperature (see below).

### Chemical Control

Chemical applications should be applied in a series of sprays until population levels have fallen to acceptable levels. Application timing intervals in Table 1 must be followed. Apply a series of 3 consecutive sprays of the same chemical or chemical activity group. Monitor WFT population levels during the break and if necessary, alternate to a chemical from a different activity group for the following series of sprays.

Table 1: Spray schedule

Average temperature	Spray Series Interval	Break between spray series
10 – 20 °C	6 days	3 weeks
20 – 30 °C	3-5 days	2 weeks

If monitoring indicates the need to spray earlier, then insect resistance, inappropriate spray application or inadequate cultural control methods should be suspected and expert advice sought.

Issued by the Australian Pesticides and Veterinary Medicines Authority

Note: Permit amended to extend expiry date until 31 March 2024. Permit version 4 issued 15 January 2019.

Permit amended to update holder details. Permit version 3 issued 17 May 2018.

Permit expiry extended to 31 March 2024. Permit version 4 issued 15 January 2019.