



WARNING

BACTUR[®] WDG

A biological insecticide for the control of leafroller caterpillars and other lepidopterous larvae on various fruit, vegetable and ornamental crops



ACTIVE INGREDIENT: contains 32,000 International Units/ mg of *Bacillus thuringiensis* subspecies *kurstaki* (serotype 3a, 3b, strain HD 263) in the form of a water dispersible granule.

GSBW161/F03



Grosafe[®]

BACTUR® WDG



HAZARD CLASSIFICATION: Eye irritation Category 2.
Designed for biocidal action.

WARNING: Serious eye irritant.

ENVIRONMENT: Do not apply this substance in a way that adversely affects native Lepidoptera of a species found only in the region of application. Do not apply into or onto water. Avoid contamination of any water supply with chemical or empty container.

PERSONAL PROTECTION: When mixing, wear a face mask or goggles, rubber gloves and overalls. Do not eat, drink or smoke while using. Wash hands and face before meals and after work. Wash protective clothing after use.

STORAGE: Store product in original container, tightly closed, in a cool, dry place. Keep out of reach of children, and away from foodstuffs.

SHELF LIFE: When stored appropriately this product should show no significant degradation for two years from date of manufacture. Contact your supplier for further information about the use of any product that is older than this.

SPILLS: Wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain, collect up and store in labelled, sealed drums for disposal. If spray mixture is spilled, absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, contact the local water authority.

PRODUCT DISPOSAL: If possible, dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

CONTAINER DISPOSAL: Dispose of empty packaging in a suitable land fill.

SAFETY DATA SHEET: A safety data sheet is available from Grosafe Chemicals Ltd.

FIRST AID: For advice call a doctor or the National Poisons Centre (0800 764 766). If on skin, wash with soap and water. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do and continue rinsing. If irritation persists, get medical advice.

EMERGENCY RESPONSE 0800 CHEMCALL: 0800 243 622

GENERAL INFORMATION:

Bactur® is a biological insecticide which acts as a stomach poison. Following ingestion, feeding stops soon after, followed by death within 2 - 4 days.

Bactur® has no contact action and is of very low toxicity to non-target organisms including mammals, birds, bees and fish. **Bactur®** does not harm beneficial insect predators or parasites, and is suitable for inclusion in IPM programmes.

Bactur® is a microbial biolarvicide for use against a range of lepidopterous insects especially leafroller species. Close monitoring and early treatment of insect infestations is recommended. As **Bactur®** must be ingested to be effective, it is important to ensure that thorough spray coverage of all treated crop surfaces is achieved. The following directions should always be followed:

1. Larvae must be actively feeding on exposed plant parts.
2. Applications must be made when larvae are in the early instars before extensive crop damage occurs.

WEATHER:

Avoid spraying during cold conditions when caterpillar feeding is reduced. The effectiveness of **Bactur®** is reduced if rain falls within 6 hours after application.

MIXING:

Measure the required amount of **Bactur®** for the tank volume to be used. Partly fill the tank and add **Bactur®** under agitation. Add the remainder of the water ensuring complete mixing before spraying. Do not allow diluted spray to stand in the sprayer tank for more than 12 hours prior to usage.

SURFACTANT:

The addition of a wetting agent such as EcoSpread® is necessary for full spray coverage.

EQUIPMENT:

Bactur® can be applied with conventional ground spraying equipment. **Bactur®** is not corrosive. Rinse with clean water after use.

DIRECTIONS FOR USE:

It is an offence to use this product on animals.

For Trees, Vines and Vegetables, use sufficient water to ensure complete coverage with a recommendation of 1000-2000 litres water/ha depending on size of crop.

For field Vegetables, use water rates of 500 - 1000 L/ha, with the rate increasing as the crop sizes.

Thorough coverage is essential for good control on all crops.

Note: As **Bactur®** does not control insects other than lepidopterous larvae, such as scale, aphids or passion vine hopper. For these, the strategic application of alternative insecticides may be necessary.

COMPATIBILITY: **Bactur®** is compatible with commonly used oils, fungicides and insecticides but not with products that are either alkaline in reaction or based on heavy metals (e.g. copper based products).

| CROP | PEST | RATE | APPLICATION DETAILS |
|--|--|---|--|
| Avocado | Leafroller Caterpillars | 50 g/100L of water or 1kg/2000L of water as a high volume spray to run-off | Apply at early, mid and late flowering. Repeat as necessary every 10-14 days until harvest. The addition of a wetter sticker is recommended. |
| Berryfruit | | | Apply at 10-14 day intervals over the blossom period and as required until harvest. |
| Citrus | | | Apply at 10-14 day intervals from the start of flowering until late January. Then apply every 3-4 weeks or as required, until harvest. The addition of an emulsifiable crop oil such as EnSpray 99® is recommended to give some control of pests not controlled by Bactur® . Follow the label use directions of the oil precisely as oil sprays may increase the amount of fruit russet. |
| Grapes | | | Apply every 10-14 days from the end of September until harvest. |
| Kiwifruit | | | Use the high rate when pest pressure is high. Make the first application at 75% petal fall followed by two further sprays at 2 week intervals. From January to harvest either spray on a regular basis or where pest levels are monitored. Repeat as required. The addition of a wetter/sticker is recommended. |
| Pipfruit | | | Make the first application in late October to coincide with the first generation egg hatch. A programme of three applications at 7-10 day intervals is recommended. Further applications should be made whenever pest thresholds are exceeded. Ensure complete coverage of sheltered feeding sites. |
| Tomatoes (Glasshouse) | Tomato Fruitworm, Looper Caterpillar | | Apply at first sign of insect attack. Repeat at 2-3 week intervals for as long as necessary. Spray every two weeks when tomato fruitworm is a problem. Where motorised mist blower knapsacks are used, the restrictor should be set for dilute spraying. |
| Tomatoes (Field) | Tomato Fruitworm, Looper Caterpillar | 1 kg/ha | Apply at the first sign of egg-laying or young larvae. Repeat at 7-10 day intervals, or if monitoring when thresholds are exceeded. |
| Vegetable (Brassicas (cabbage, Brussels Sprouts, broccoli, cauliflower)) | White Butterfly Caterpillar, Diamond back moth | 500 g - 1 kg/ha | The addition of a non-ionic wetting agent is recommended. Use the higher rates and shorter spray intervals when insect pressure is high or caterpillars are larger, and lower rates or longer spray intervals when insect pressure is light. Resistance management for diamondback moth is to use Bt products such as Bactur® against young larvae on small plants. |
| Forestry, Ornamentals | Fall Webworm | 500 g/100L of water | Apply as soon as larvae are present and repeat as necessary against subsequent generations. |
| Other fruit, vegetable or ornamental crops | Caterpillars | 50 - 100 g 100L of water | For control of susceptible caterpillars, apply every 7 - 10 days or as necessary. |

WITHHOLDING PERIOD: For all crops listed in recommendations: - 1 day
Leaf plucking in vineyards: Sheep must not be sent for slaughter or milked for 2 months after being removed from the vineyard (and placed on clean feed).

RESISTANCE MANAGEMENT: **GROUP 11 INSECTICIDE**

Bactur® contains the GROUP 11 INSECTICIDE, *Bacillus thuringiensis* subspecies *kurstaki*. Resistance to this product may develop from excessive use. To minimise this risk use strictly in accordance with the label instructions and resistance management strategies that exist for any insect pest listed on the label. Avoid using this insecticide exclusively all season and avoid unnecessary spraying. Maintain good cultural practices. Consult www.resistance.nzpps.org/ for details of resistance management strategies (if any).

Registered pursuant to ACVM Act 1997, No. P05017 See www.foodsafety.govt.nz for registration conditions
Approved pursuant to the HSN0 Act. Approval Code HSR000711 See www.epa.govt.nz for approval controls

WARRANTY: This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

Registered and distributed by:

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Batch No:

Date of Manufacture:



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