

SOIL APPLICATION - GREENHOUSE VEGETABLES

General Information

RESISTANCE MANAGEMENT

Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of the product should conform to resistance management strategies established for the use area. MONTANA 4F Insecticide contains a Group 4A insecticide. Insect biotypes with acquired or inherent resistance to Group 4A may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species. This may eventually result in partial or total loss of control of those species by MONTANA 4F Insecticide and to other Group 4A products.

The active ingredient in MONTANA 4F Insecticide belongs to the neonicotinoid chemical class.

When applying as a foliar treatment avoid using a block of more than three consecutive applications of MONTANA 4F Insecticide and/or other Group 4A products having the same or similar mode of action. Following a neonicotinoid block of treatments, Rotam strongly encourages the rotation to a block of applications with effective products of a different mode before using additional applications of neonicotinoid products. Using a block rotation or windowed approach, along with other IPM practices, is considered an effective use strategy for preventing or delaying an insect pest's ability to develop resistance to this class of chemistry.

When applying as a soil treatment it is recommended that no more than one application of MONTANA 4F Insecticide be made during a single growing season. Foliar applications of MONTANA 4F Insecticide, or other Group 4A products from the neonicotinoid chemical class should not be made following a long residual, soil application of MONTANA 4F Insecticide, or other neonicotinoid products.

Other Group 4A, neonicotinoid products used as foliar treatments include: Actara, Admire, Assail, Calypso, Centric, Clutch, Couraze, Gallant, Impulse, Intruder, Leverage, Nuprid, Pasada, Provado, Trimax Pro, and Venom. Other Group 4A, neonicotinoid products used as soil/seed treatments include: Admire Pro, Advise,

Alias, Belay, Couraze, Cruiser, Gaucho, Macho, Macho Max, Nuprid, Platinum, Venom and Widow.

Contact your local extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations. Also, for more information on Insect Resistance Management (IRM), visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irac-online.org/>.

APPLICATION INSTRUCTIONS

Soil Application: Direct applications of MONTANA 4F Insecticide into the seed or root-zone of crop. Failure to place MONTANA 4F Insecticide into root-zone may result in loss of control or delay in onset of activity. Apply MONTANA 4F Insecticide with properly calibrated ground or chemigation application equipment. Do not apply with aerial application equipment. Broadcast, foliar applications are only recommended to seedling flats or trays, or where product is intended to be washed from foliage to soil prior to drying on foliage.

Optimum activity of MONTANA 4F Insecticide results from applications to the root-zone of plants to be protected. The earlier MONTANA 4F Insecticide is available to a developing plant, the earlier the protection begins. MONTANA 4F Insecticide is continuously taken into the roots over a long period of time and the systemic nature of MONTANA 4F Insecticide allows movement from roots through the xylem tissue to all vegetative parts of the plant. The rate of MONTANA 4F Insecticide applied affects the length of the plant protection period. Use higher rates when infestations occur later in crop development, or where pest pressure is continuous. MONTANA 4F Insecticide will generally not control insects infesting flowers, blooms or fruit. Additional crop protection may be required for insects feeding in, or on these plant parts and for insects not listed in the crop-specific, pests controlled sections of the label. Additional, specific MONTANA 4F Insecticide application instructions are also provided in the crop-specific sections of the label. Suppression, or less than complete control of certain diseases and insect pests including reduced feeding, may also result from an MONTANA 4F Insecticide applications. Complete control of these pests/diseases may require supplemental control measures.

MONTANA 4F Insecticide use on crops grown for production of true seed intended for private or commercial planting is generally not recommended but may be allowed under State specific supplemental labeling. As with any insecticide, care

should be taken to minimize exposure of MONTANA 4F Insecticide to honey bees and other pollinators. Additional information on MONTANA 4F Insecticide uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCAs, or a private consultant.

Pre-mix MONTANA 4F Insecticide with water or other appropriate diluent prior to application. Keep MONTANA 4F Insecticide and water suspension agitated to avoid settling.

Restriction: Do not apply more than 0.50 lbs active ingredient per acre, per crop season regardless of formulation or method of application.

Foliar Application: Apply MONTANA 4F Insecticide as a direct or broadcast foliar spray. Thorough coverage of foliage is necessary without runoff for insecticidal efficacy. Use adequate spray volumes, properly calibrated application equipment and spray adjuvant if necessary to obtain thorough coverage. Failure to provide adequate coverage and retention of MONTANA 4F Insecticide on leaves and fruit may result in loss of insect control or delay in onset of activity. MONTANA 4F Insecticide may be applied with properly calibrated ground or aerial application equipment. Use minimum labeled spray volumes unless otherwise specified on crop specific application sections are 10 Gallons/Acre by ground application and 5 gallons/Acre through aerial equipment. MONTANA 4F Insecticide may also be applied by overhead chemigation (see additional CHEMIGATION USE DIRECTIONS) if allowed in crop specific recommended application section. MONTANA 4F Insecticide use on crops grown for production of true seed intended for private or commercial planting is generally not recommended but may be allowed under State specific supplemental labeling. As with any insecticide, care must be taken to minimize exposure of MONTANA 4F Insecticide to honey bees and other pollinators.

Restriction:

- Do not apply MONTANA 4F Insecticide on crops requiring bee pollination during bloom and for a minimum of 10 days prior to bloom. Additional information on MONTANA 4F Insecticide uses for these crops and other questions may be obtained from the Cooperative Extension Service, PCAs, or consultants.
- Do not apply more than 0.5 lbs. active ingredient per acre, per crop season, regardless of formulation or method of application.

Limitations, Restrictions, and Exceptions

GREENHOUSE VEGETABLES

Applications:

- Apply specified dosage in a minimum of 16 gallons of water for tomatoes and 21 gallons of water for cucumbers using soil drenches, micro-irrigation, drip irrigation, or hand-held or motorized calibrated irrigation equipment. Do not apply to immature plants since phytotoxicity may occur.
- Apply when infestation pressure threshold and beneficial are not able to maintain pest populations below damage thresholds. Negative effects on pollinators and other beneficials (*Orius* sp.) can occur when MONTANA 4F Insecticide is applied.
- Many varieties of vegetables have been tested for tolerance to MONTANA 4F Insecticide and show good safety. However, certain varieties may show more sensitivity to MONTANA4F Insecticide. Treat a few plants and evaluate before treating the whole greenhouse.
- Not for use on crops grown for seed unless allowed by state-specific 24 (c) labeling.

Method

[Soil drench](#)

[Irrigation](#)

Rates

[field rates 0](#)

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Restricted Entry Interval

12 hours

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Timings

[When infestation pressure surpasses threshold and beneficials are not able to maintain pest populations below damage thresholds.](#)