

# Nemasys®

Advanced Biocontrol for Fungus Gnats and Western Flower Thrips in Greenhouse Growing Operations

## General Description

Nemasys® is a naturally occurring, insect parasitic nematode (*Steinernema feltiae*) that seeks out the larval stages of fungus gnats (*Bradysia* spp.), and the adult and pupal stages of western flower thrips (*Frankliniella occidentalis*).

## Directions for Use

Nemasys can be applied by using common application equipment, including tank sprayers, backpack sprayers and irrigation injection systems.

- Fill spray vessel or stock tank with half of the required amount of cool, clean water.
- Start agitation and add the required number of Nemasys trays.
- Continue agitation while mixing and fill spray tank to the required spray volume.
- Maintain agitation during application to ensure uniform dispersion of nematodes.

Nemasys can be used in a rotational program with conventional chemicals to reduce pest resistance.

## Recommended Rates

### Fungus Gnat Applications

Target	Interval	Rate	Volume <sup>1</sup>
Soil or growing media	2-3 weeks	50 mil./1100 ft <sup>2</sup> (100 m <sup>2</sup> )	30-50 gal./1000 ft <sup>2</sup> (115-190 L/100 m <sup>2</sup> )
		150 mil./3300 ft <sup>2</sup> (300 m <sup>2</sup> )	
		250 mil./5500 ft <sup>2</sup> (500 m <sup>2</sup> )	
	4-6 weeks	50 mil./550 ft <sup>2</sup> (50 m <sup>2</sup> )	
		150 mil./1650 ft <sup>2</sup> (150 m <sup>2</sup> )	
		250 mil./2750 ft <sup>2</sup> (250 m <sup>2</sup> )	

<sup>1</sup> Adjust application volume as needed. Nemasys should be applied in a sufficient water volume to thoroughly soak the soil or growing media, but not beyond the point where water overflows or leaches from the pot.

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## Packaging

Available in trays of 50 million, 150 million or 250 million nematodes.

## Storage and Disposal

### Storage

Upon receipt of product, remove from shipping packaging and use immediately or store in a refrigerator at 40 °F (5 °C). **DO NOT FREEZE.** Ensure good air circulation around each tray. Do not use if past expiration date or incorrectly stored.

### Disposal

Product and packaging waste resulting from the use of this product, or unused, outdated product, may be disposed of on site or at any approved waste disposal facility in accordance with federal and local regulations.

Fungus gnat larvae can be controlled with Nemasys® by making frequent, light applications or less frequent applications at higher rates. Application rate and interval selected should be based on grower preference, management program, and crop growth characteristics. Regardless of program selected, applications of Nemasys should begin early in the growth cycle for best results.

- Applications of Nemasys should be made to moist soil or growing media.
- Soil or growing media temperatures should be between 50 °F-86 °F (10 °C-30 °C).
- If product is applied over foliage, irrigate immediately with plain water to wash nematodes into soil or growing media. Do not over irrigate to cause runoff from the tops of pots or flush nematodes through the pot.
- In propagation areas, treat new plants as they are introduced.
- Interiorscape plants should be treated prior to placement.

### Western Flower Thrips Applications

Target	Interval	Infestation Level	Rate	Volume <sup>1</sup>
Soil or growing media	Initial application	All	50 mil./1100 ft <sup>2</sup> (100 m <sup>2</sup> )	30-50 gal./1000 ft <sup>2</sup> (115-190 L/100 m <sup>2</sup> )
			150 mil./3300 ft <sup>2</sup> (300m <sup>2</sup> )	
			250 mil./5500 ft <sup>2</sup> (500 m <sup>2</sup> )	
Foliage	Once or twice weekly	Light	50 mil./4400 ft <sup>2</sup> (400 m <sup>2</sup> )	2.5 gal./1000 ft <sup>2</sup> (10 L/100 m <sup>2</sup> )
			150 mil./13200 ft <sup>2</sup> (1140 m <sup>2</sup> )	
			250 mil./22000 ft <sup>2</sup> (2040 m <sup>2</sup> )	
		Heavy	50 mil./2200 ft <sup>2</sup> (200 m <sup>2</sup> )	
			150 mil./6600 ft <sup>2</sup> (570 m <sup>2</sup> )	
			250 mil./11000 ft <sup>2</sup> (1020 m <sup>2</sup> )	

<sup>1</sup> Adjust application volume as needed. For applications targeting soil, apply in a sufficient volume of water to thoroughly soak the soil or growing media, but not beyond the point where water overflows or leaches from the pot. For foliar applications, apply in a sufficient application volume to assure uniform foliar coverage, but do not apply to run-off.

Control of western flower thrips (WFT) is best accomplished with a program approach.

The initial drench application of Nemasys should be applied to the soil or growing media for control of soil-dwelling WFT, whereas subsequent applications of Nemasys should be made as foliar sprays to target foliar-dwelling WFT.

For best results with foliar sprays to target WFT:

- Apply Nemasys in the evening when pest activity is low.
- Use of an approved spray adjuvant will promote improved application uniformity and allow nematodes to reach the pest more effectively.
- Ensure that the crop remains wet for at least 2 hours following application by closing windows and ventilation.
- Do not apply in direct sunlight. Use blackout curtains during and for at least 2 hours after application. If using artificial lighting, switch off during and for at least 2 hours after application.

### Precautions

This product contains living organisms that require special handling and application procedures.

- **DO NOT SUBDIVIDE.** Once opened, use the entire tray immediately.
- Use cool water for mixing and keep tank out of direct sunlight.
- **DO NOT STORE MIXED SUSPENSIONS.** Use nematode suspensions immediately after they have been mixed.
- Remove filters that are 50 mesh or finer from application equipment and nozzles.
- Do not exceed 300 psi pump pressure.
- Do not use in application systems where nozzle aperture is smaller than 0.5 mm.
- Agitate nematodes constantly during application.
- **DO NOT SPOT TREAT.** Treat the entire greenhouse crop at the appropriate rate.