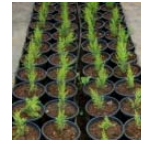




**BioWorks®**  
How You Grow Matters™



# Nursery: Disease & Insect Management

Disease and insect management are challenges you encounter in producing quality container nursery stock. BioWorks' products are used by many growers as their successful, cost-effective strategy for controlling diseases and insect pests. Give your plants a healthy start and keep them clean throughout production with the BioWorks' family of products. (See chart on reverse for timing and rates.)

## RootShield® for Root Disease Control

- Provides long-term root protection for all stages of nursery stock
- Grows on the roots "shielding" them against root damaging fungi such as *Fusarium*, *Pythium*, *Rhizoctonia*, *Cylindrocladium* and *Thielaviopsis*. Also actively consumes pathogenic fungi.
- Active Ingredient: unique beneficial fungus *Trichoderma harzianum*, strain T-22
- Cost effective: reduces or eliminates chemical root fungicide applications
- Grows on the roots within a pH range of 4 – 8 at soil temperatures of 48 to 97° F
- 0-hour REI / OMRI Listed and VeriFlora Approved
- Granular formulation for media incorporation or wettable powder for drenching

## CEASE® and MilStop® for Foliar Disease Control

### CEASE® (4-hr REI, OMRI Listed)

- Prevents both fungal and bacterial diseases
- Controls *Botrytis*, powdery mildew, *Pseudomonas*, *Xanthomonas*, *Erwinia*
- Leaves no unsightly residues
- Active ingredients: *Bacillus subtilis* (strain QST 713)
- Safe for beneficial insects and bees
- 0-day pre-harvest interval

### MilStop® (1-hr REI, OMRI Listed)

- Kills powdery mildew on contact
- Leaves no residues; dries quick, clean
- Active ingredient: Potassium Bicarbonate
- Cost effective, pre-formulated with surfactants
- Can be used in rotation with most chemical pesticides or as a stand alone fungicide
- Compatible with many beneficial insects
- 0-day pre-harvest interval

## NemaShield® for Fungus Gnat Larval Control

- Especially useful in propagation and liner production
- Easy to use dispersible formulation; apply with a sprayer or through an injector
- Active ingredient: *Steinernema feltiae* insect parasitic nematode
- No REI; No human toxicity; exempt from EPA labeling requirements
- Compatible with many pesticides, including insecticides

## BotaniGard® and SuffOil-X® for Insect and Mite Control

### BotaniGard® (4-hr REI, Organic formulation available)

- Controls whiteflies, thrips, aphids, etc.
- Mycoinsecticide with unique mode of action from *Beauveria bassiana* strain GHA
- Spores work by direct contact with insect
- Compatible with IPM programs and beneficial insects
- Ideal resistance management tool

### SuffOil-X® (4-hr REI, OMRI Listed)

- Suffocates and kills eggs, larvae, nymphs and soft bodied insects, mites
- Unique pre-emulsified formulation stays in suspension better than other oils
- Smaller oil particles provide uniform coverage with less chance of phytotoxicity

### Molt-X™ (4-hr REI)

- Protects against both foliar and soil-borne pests
- No phytotoxicity on most plants
- Excellent for tank mixing or rotating with BotaniGard and SuffOil-X
- Multiple modes of action
- Generally safe on beneficial insects and bees

To find out more about the BioWorks family of products, please contact us at 800-877-9443 or visit [www.bioworksinc.com](http://www.bioworksinc.com). © 2010 BioWorks, Inc.

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# Disease & Insect Management Program - Nursery

Product and Application		Rates
<b>Root Disease Prevention</b>  Use on Stock Plants, in Propagation/ Cuttings/Seeds & when Finishing Crops	<b>RootShield® WP, RootShield® Granules</b> Controls: <i>Rhizoctonia, Pythium, Fusarium, Thielaviopsis</i> and more Field production / in furrow	5-12 lb / acre (RSG) 16-32oz /acre (RSWP)
	Sow seed or plant clean, disease-free plants into media containing RootShield Granules, OR	1.25 lb / cu.yd.
	Drench immediately after seeding/planting with RootShield WP*	4 oz / 100 gal.
	Re-apply RootShield WP again in 10-12 weeks at 1/2 the rate.	2 oz / 100 gal.
	*RootShield WP can be applied at any stage of the crop to prevent disease.	
Product and Application		Rates
<b>Foliar Disease Prevention</b>  Use on Stock Plants, in Propagation/ Cuttings/Seeds & when Finishing Crops	<b>CEASE®</b> Controls: <i>Botrytis, powdery mildew, Erwinia, Pseudomonas, Xanthomonas</i> and more Spray as a preventative for <i>Botrytis</i> , powdery mildew and bacterial diseases.	4 qts. / 100 gal. every 5-7 days
	<b>MilStop®**</b> Controls: Powdery mildew, <i>Botrytis</i> and other diseases of vegetable crops When conditions are right for powdery mildew or <i>Botrytis</i> , apply MilStop as a preventative.	1.25 lb to 2.5 lb / 100 gal. every 7-10 days
	If plants become infected with powdery mildew, use MilStop at the curative rate (note precautions on label). When control is achieved, switch to the preventative rates shown above.	2 to 3 lbs / 100 gal. every 7-10 days
Product and Application		Rates
<b>Insect Control</b>  Use on Stock Plants, in Propagation/ Cuttings/Seeds & when Finishing Crops	<b>NemaShield®</b> Controls: Fungus gnat larvae and Thrips (WFT) pupae and pre-pupae Apply NemaShield for insect control within the first week after seeding or transplant, or immediately after seeing adults flying.	One 100 million packet / 3,400 sq.ft.
	<b>Re-application rates and intervals</b>	
	For light or heavy infestations. Re-apply in 14 to 21 day intervals at the light infestation rate. For heavy infestations on highly susceptible crops or newly propagated cuttings, follow the rate recommended above and re-apply at the light infestation rate when necessary after 5 to 6 weeks.	One 100 million packet / 1,100 - 2,200 sq.ft.
	<b>BotaniGard® ES and 22WP (Mycotrol® O – organic formulation)**</b> Controls: whitefly, aphid, thrips, etc.	
	At first sign of insects (egg hatch or small larval instars) apply BotaniGard ES or 22WP at 3 to 10 day intervals. If pest pressure is high, combine initial applications with a contact insecticide or IGR and follow with another BotaniGard spray in 3 to 5 days, making at least 2 applications before returning to the longer spray interval. Can be tank mixed or alternated with Molt-X.	Whiteflies, Aphids, Mealybugs: ½ to 1 qt(lb) / 100 gal. Thrips: 1 to 2 qt(lb) / 100 gal. Other labeled insects: ½ to 2 qt(lb) / 100 gal.
	<b>SuffOil-x® **</b> Controls: mites, whitefly, aphids, etc. At first sign, apply SuffOil-x to suffocate all life stages of many pests of vegetables and herbs. Also effective on powdery mildew. Follow all precautions and recommendations for applying horticultural oils.	1 to 2 gal. / 100 gal.
	<b>Molt-x™**</b> Controls both foliar and soil borne pests Combine or rotate with BotaniGard for an effective control strategy. Maintain pH of diluted mixture at between pH 5.5 - 6.5.	8 to 10 oz / 100 gal.

\*\*Use caution when making applications to open blooms, especially on varieties known to be sensitive. It is recommended that a small group of plants be tested for effects on open blooms before making applications to the whole crop. Always read and follow label directions.

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