



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. When planning your next woody or perennial container crop, give your plants a healthy start and keep them clean throughout production with the BioWorks' family of products.

Products for a Great Start and Maximum Production

(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: patented 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 / RootShield Granules OMRI Listed

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 a spreader & sticker
- Can be used in rotation with most chemical pesticides or as a stand alone fungicide
- Compatible with many beneficial insects

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

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

RESPONSIBLE :: ECONOMICAL :: PROVEN



Disease & Insect Management Program

Product and Application		Rates					
<p>Root Disease Prevention</p> <p>Use on Stock Plants, in Propagation/ Cuttings/Seeds & when Finishing Crops</p>	<p>RootShield® WP, RootShield® Granules</p> <p>Controls: <i>Rhizoctonia, Pythium, Fusarium, Thielaviopsis</i> and more</p>	5-12 lb / acre (RSG) 16-32oz /acre (RSWP)					
	Field production / in furrow						
	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 application can be made at any time to prevent disease.						
Product and Application		Rates					
<p>Foliar Disease Prevention</p> <p>Use on Stock Plants, in Propagation/ Cuttings/Seeds & when Finishing Crops</p>	<p>CEASE®</p> <p>Controls: <i>Botrytis, powdery mildew, Pseudomonas, Xanthomonas, Erwinia</i> and more</p>	4 qts. / 100 gal. every 5-7 days					
	Spray as a preventative for <i>Botrytis</i> , powdery mildew and bacterial diseases.						
	<p>MilStop®</p> <p>Controls: Powdery mildew, <i>Botrytis</i> and other diseases of vegetable crop</p>	1.25 lb to 2.5 lb / 100 gal. every 7-10 days					
	When conditions are right for powdery mildew or <i>Botrytis</i> , apply MilStop as a preventative.						
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					
<p>Insect Control</p> <p>Use in Propagation/ Cuttings/Seeds & when Finishing Crops</p>	<p>NemaShield™</p> <p>Controls: Fungus gnat larvae and Thrips (WFT) pupae and pre-pupae</p>	One 100 million packet / 3,400 sq.ft.					
	Apply NemaShield for insect control within the first week after seeding or transplant, or immediately after seeing adults flying.						
	Re-application rates and intervals						
	For light to moderate 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.					
	<p>BotaniGard® ES and 22WP (Mycotrol® O – organic formulation)</p> <p>Controls: whitefly, aphid, thrips, etc.</p>						
	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.	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; border: none;">Whiteflies, Aphids, Mealybugs:</td> <td style="width: 40%; border: none; text-align: center;">½ to 1 qt(lb) / 100 gal.</td> </tr> <tr> <td style="border: none;">Thrips:</td> <td style="border: none; text-align: center;">1 to 2 qt(lb) / 100 gal.</td> </tr> <tr> <td style="border: none;">Other labeled insects:</td> <td style="border: none; text-align: center;">½ to 2 qt(lb) / 100 gal.</td> </tr> </table>	Whiteflies, Aphids, Mealybugs:	½ to 1 qt(lb) / 100 gal.	Thrips:	1 to 2 qt(lb) / 100 gal.	Other labeled insects:
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.						
<p>SuffOil-X®</p> <p>Controls: mites, whitefly, aphids, etc.</p>							
At first sign, apply SuffOil-X to suffocate all life stages of many pests. Also, effective on powdery mildew.	1 to 2 gal. / 100 gal.						