



**BioWorks®**  
How You Grow Matters™



# Vegetables, Transplants & Herbs: Disease, Insect and Nutrition Management

When planning your next vegetable or herb crop, 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® and RootShield® Plus for Root Disease Control – OMRI-Listed

- Provides long-term (12 weeks) root protection for all stages of growing
- Grows on the roots “shielding” them against root damaging fungi such as *Fusarium*, *Pythium*, *Rhizoctonia*, *Cylindrocladium* and *Thielaviopsis*. With RootShield Plus *Phytophthora* spp. is also prevented.
- RootShield utilizes the unique beneficial fungus *Trichoderma harzianum*, strain T-22 that “eats” pathogens as its active ingredient.
- RootShield Plus utilizes the beneficial fungi *Trichoderma harzianum*, strain T-22 and *Trichoderma virens* strain G-41 as active ingredients
- 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
- Granular formulation also available for media incorporation or wettable powder for drenching

## CEASE® and MilStop® for Foliar Disease Control – OMRI-Listed

**CEASE®** for covered production (4-hr REI, OMRI Listed)

- Prevents both fungal & 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 greenhouse production and transplant 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®, Mycotrol® O, SuffOil-X®, and Molt-X® for Insect and Mite Control

**BotaniGard®** (4-hr REI)

- 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
- Use BotaniGard 22WP or Mycotrol O on tomatoes
- 0-day pre-harvest interval

**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, OMRI Listed)

- 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
- 0-day pre-harvest interval

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). © 2008 BioWorks, Inc.

RESPONSIBLE :: ECONOMICAL :: PROVEN

# Disease & Insect Management Program

## Vegetables, Transplants & Herbs

Product and Application		Rates	
<b>Root Disease Prevention</b>  <b>Use in Propagation and in the Greenhouse or in the Field</b>	<b>RootShield® Plus WP, RootShield® WP, RootShield® Plus Granules, RootShield® Granules – OMRI-Listed</b> Use RootShield if your problem is limited to <i>Rhizoctonia</i> , <i>Pythium</i> , <i>Fusarium</i> , <i>Thielaviopsis</i> and <i>Cylindrocladium</i> . Use RootShield Plus if you need added protection against <i>Phytophthora</i> and hot season <i>Pythium</i> ( <i>P. aphanadermatum</i> )		
	Field production in furrow	5-12 lb/acre (G) 16-32 oz/acre (WP)	
	Sow seed or plant clean, disease-free plants into media containing RootShield Granules	1.25 lb/cu yd	
	Sow seed or plant clean, disease-free plants into media containing RootShield Plus Granules	2.0 - 3.0 lb/cu yd	
	Drench immediately after seeding/planting with RootShield WP*	4 oz/100 gal	
	Drench immediately after seeding/planting with RootShield Plus WP*	6 - 8 oz/100 gal	
	Re-apply RootShield WP* again in 10-12 weeks at 1/2 the rate.	2 oz/100 gal	
	Re-apply RootShield WP* again in 10-12 weeks at the full rate. <i>*RootShield Plus WP and RootShield WP can be applied at any stage of the crop to prevent disease.</i>	6 oz/100 gal	
Product and Application		Rates	
<b>Foliar Disease Prevention</b>  <b>Use in Propagation and in the Greenhouse or in the Field</b>	<b>CEASE® – OMRI-Listed</b> Controls: <i>Botrytis</i> , powdery mildew, <i>Erwinia</i> , <i>Pseudomonas</i> , <i>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® – OMRI-Listed</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. If plants become infected with powdery mildew, use MilStop at the curative rate. When control is achieved, switch to the preventative rates shown above.	1.25 lb to 2.5 lb/100 gal 3 lbs/100 gal every 7-10 days	
	For an effective 1 – 2 punch combine CEASE and MilStop as a tank mix to control bacterial and fungal diseases	Preventative (MilStop + CEASE) Curative (MilStop + CEASE)	1.25 lb + 2 qt 3.0 lb + 6 qt
	Product and Application		Rates
	<b>Insect Control</b>  <b>Use in Propagation and in the Greenhouse or in the Field</b>	<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 per 3,400 sq ft
NemaShield Reapplication rates and intervals: 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 per 1,100 - 2,200 sq ft	
<b>BotaniGard® ES, BotaniGard® 22WP and Mycotrol® O</b> Controls: many pests including whitefly, aphid, thrips, etc.			
At first sign of insects (egg hatch or small larval instars) apply BotaniGard ES, BotaniGard 22WP or Mycotrol O at 3 to 10 day intervals. If pest pressure is high, combine initial applications with a contact insecticide or IGR, such as Molt-X, and follow with another BotaniGard or Mycotrol O 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) per 100 gal
		Thrips:	1 to 2 qt(lb) per 100 gal
		Other labeled insects:	½ to 2 qt(lb) per 100 gal
<b>SuffOil-X® – OMRI-Listed</b> Controls: many pests including mites, whitefly, aphids, etc.  At first sign, apply SuffOil-X to suffocate all life stages of many soft-bodied insect and mite pests of vegetables and transplants. Also effective on powdery mildew. Follow all precautions and recommendations for applying horticultural oils. <b>(Note: Herbs are currently not labeled)</b>		1 to 2 gal/100 gal	
<b>Molt-X® – OMRI-Listed</b> Controls many 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	

# Verdanta®

## Biofertilizers

**Verdanta® organic and organic-based fertilizers** are developed to enable growers to cultivate stronger, healthier crops while being respectful of the environment. Utilizing years of expertise and testing, these innovative products are specially formulated to ensure your vegetables, transplants and herbs get the precise amount of nutrition they require. Verdanta formulations are carefully developed from high quality ingredients to ensure gradual, longer lasting nutrient release to enhance plant growth and quality. Verdanta fertilizers also improve the soil environment, increasing the amount of soil organic matter to boost the activity of microorganisms, enabling optimum root growth.

### Product Characteristics

- All granular products feature the proprietary **MINIGRAN®** Technology – a unique process which provides dust-free, organic and organo-mineral microgranules with a uniform nutrient content for better controlled nutrient delivery. Verdanta granular products flow freely through all types of application equipment and offer better control of nutrient release. Uncomposted organic raw materials attract a large diverse group of beneficial microorganisms.



### Verdanta Products

- Verdanta RM-1 - MINIGRAN®** Homogeneous, Granular, Compound Fertilizer  
RM-1 is a high phosphorus mixture (4-30-0) of organic and mineral nutrient sources. RM-1 stimulates rooting, enhances flowering in short-term crops with initial application, or on longer crops, with a second topdressed application. Longevity: Approximately 3 months at 60° F.
- Verdanta GM-2 - MINIGRAN®** Homogeneous, Granular, Compound Organic-based Fertilizer  
GM-2 is a general purpose mixture (7-6-12 + 2.3% magnesium) containing a diversity of organic and mineral nutrient sources. It is an excellent overall feed for many crops including herbs, vegetables, annuals, and perennials. Longevity: Approximately 3 months at 60° F.
- K-Vita® - MINIGRAN® - OMRI Listed** Homogeneous, Granular, Compound Organic Fertilizer  
K-Vita is derived from 100% organic sources (2-0-20) and provides extra potassium to assist in producing stockier, more robust plants with shorter internodes. Longevity: Approximately 3 months at 60° F.
- Eco-Vita® - MINIGRAN® - OMRI Listed**  
Eco-Vita is a general purpose mix derived from 100% organic sources (7-5-10) including organic phosphorus for better rooting. The organic nutrient sources in EcoVita provide a gentle, continuous release of nutrition to ornamental or vegetable crops. EcoVita is also useful as a top dressing for fruiting vegetables and as base nutrition for potted plants. Longevity: Approximately 3 months at 60° F.
- PL-2 (Liquid Suspension) - OMRI Listed**  
PL-2 is derived from 100% organic ingredients (2-0-6). It can be used as an organic liquid feed to supplement potassium for any crop. Low salt index means lower ECs in the growing medium. Stimulates the existing microbial populations in field soils or potting media.
- OFE (Liquid formulation)**  
OFE is a chelated iron foliar spray (3-0-0 +3% iron )derived from both organic and mineral sources. It contains urea to help move iron into plant leaf tissue and contributes to greening up leaves. OFE doesn't burn leaves and doesn't leave a residue. Therefore, it does not require washing off after application like most powdered sources of chelated iron. Contains 3% seaweed extract which is an excellent foliar feed producing better greening and growth of all plants.