



NURSERY: DISEASE, INSECT & NUTRITION MANAGEMENT

Disease and insect management require planning and prevention to produce high quality container nursery stock. Give your plants a healthy start and keep them clean throughout production with the BioWorks family of products. (See charts on following pages for timing and rates.)

ROOTSHIELD® PLUS⁺ FOR ROOT DISEASE CONTROL

- + 4-hour REI, 0-day PHI, OMRI Listed
- + Promotes healthy root systems and provides long-term root protection for all stages of nursery stock
- + Grows on the roots "shielding" them against root damaging fungi such as *Phytophthora*, *Fusarium*, *Pythium*, *Rhizoctonia*, *Cylindrocladium* and *Thielaviopsis*. RootShield PLUS⁺ also actively consumes pathogenic fungi.
- + Active ingredients: The beneficial fungi *Trichoderma harzianum*, strain T-22 and *Trichoderma virens*, G-41
- + 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
- + Granular formulation for media incorporation or wettable powder for drenching

CEASE® FOR BROAD-SPECTRUM FOLIAR DISEASE CONTROL

- + 4-hour REI, 0-day PHI, OMRI Listed
- + Prevents both fungal and bacterial disease
- + Controls *Botrytis*, powdery mildew, *Pseudomonas*, *Xanthomonas*, *Erwinia*
- + Leaves no unsightly residues
- + Active ingredients: *Bacillus subtilis* (strain QST 713)
- + Safe for beneficial insects and bees

MILSTOP® SP FOR FOLIAR DISEASE CONTROL OF POWDERY MILDEW AND MORE

- + 1-hour REI, 0-day PHI, OMRI Listed
- + Kills powdery mildew on contact and prevents other disease
- + 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



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BOTRYSTOP® WP FOR CONTROL OF BOTRYTIS, SCLEROTINIA AND XANTHOMONAS

- + 4-hour REI, 0-day PHI, OMRI Listed
- + Unique active ingredient *Ulocladium oudemansii* U3 strain
- + Out-competes pathogens for nutrients in the dead and senescing plant tissue
- + This non-pathogenic saprophytic fungus is non-invasive, and causes no damage to live plant tissue
- + Highly unlikely that resistance will develop
- + Product must be stored refrigerated. Do not freeze. Under proper storage conditions, shelf life is 12 months.

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

EPISHIELD™ FOR INSECT AND MITE CONTROL

- + Exempt from restricted entry interval (REI) or preharvest interval (PHI)
- + 10x lower use rates than horticultural oils
- + Excellent crop tolerance profile due to low oil amount applied to the plant. Use caution when applying to open blooms
- + Botanical ingredients with multiple modes of action for optimal control on contact
- + Ideal for spot sprays with the capability of gaining earlier access to treated areas

SUFFOIL-X® FOR INSECT AND MITE CONTROL

- + 4-hr REI, 0-day PHI, 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® FOR FOLIAR AND SOIL-BORNE INSECT CONTROL

- + 4-hr REI, 0-day PHI, OMRI Listed
- + Protects against both foliar and soil-borne pests
- + Low risk of phytotoxicity
- + Excellent for tank mixing or rotating with SuffOil-X
- + Multiple modes of action
- + Generally safe on beneficial insects and bees

ON-GARD® FOR NUTRITION AND STRESS TOLERANCE

- + 100% plant-derived; 100% water soluble, and consistent in composition; OMRI Listed
- + Free amino acids and soluble peptides are immediately available to plants
- + Increases stress tolerance to temperature extremes, drought and salt
- + Enhances nutrient uptake and overall absorption
- + Increases root growth and lateral development
- + Excellent partner in propagation with RootShield PLUS* to get plants off to a healthy start



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| | PRODUCT AND APPLICATION | RATES |
|---|--|--|
| Root Disease Prevention | RootShield PLUS⁺ WP, RootShield PLUS⁺ Granules | 5-12 lb/acre (RSPLUS G) |
| | Controls: <i>Phytophthora, Rhizoctonia, Pythium, Fusarium, Thielaviopsis</i> and more | OR |
| | Field production / in furrow | 16-32 oz/acre (RSPLUS WP) |
| | Container production: plant disease-free plants in media containing RootShield PLUS ⁺ G | 1.5-2.0 lb/cu yd |
| | OR - Drench immediately after planting with RootShield PLUS ⁺ WP | 6 oz/100 gal |
| | OR - Dip unrooted cuttings prior to planting. Reapply at transplanting or at 10 weeks. | 1.5 oz/5 gal |
| Foliar Disease Prevention | CEASE | |
| | Controls: <i>Botrytis</i> , powdery mildew, <i>Erwinia, Pseudomonas, Xanthomonas</i> and more | 4 qts/100 gal. every 5-7 days |
| | Spray as a preventative for <i>Botrytis</i> , powdery mildew and bacterial diseases. | |
| | MilStop SP ** | 1.25-2.5 lb/ |
| | Controls: Powdery mildew, <i>Botrytis</i> and other diseases | 100 gal. every 7-10 days |
| | When conditions are right for powdery mildew or <i>Botrytis</i> , apply 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 above. | 2-3 lbs/ 100 gal. every 7-10 days |
| | BotryStop WP | 2-4 lbs/acre in at least 50 gal of water every 7-10 days |
| Controls: <i>Botrytis, Sclerotinia, Monilinia</i> and <i>Xanthomonas</i> | | |
| Spray as a preventative when conditions are conducive to disease development and repeat on 7-10-day intervals as needed. | | |
| Use sufficient water volume to provide good coverage. Add a compatible non-ionic surfactant for proper product wetting and spreading. | | |





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|---|--|---|
| Insect Control | NemaShield | |
| | Controls: Fungus gnat larvae and Thrips (WFT) pupae and pre-pupae | |
| | Apply within the first week of propagation, or immediately after seeing adults flying. | 100 million per 1100-3400 sq ft |
| | Re-apply in 14 to 21 day intervals or as needed. | |
| | Light Infestation: 3,400 sq ft with 100 gal of water Heavy Infestation: 2,200 sq ft with 70 gal of water Highly susceptible crops & newly stuck cuttings: 1,100 sq ft with 50 gal of water | |
| | | |
| | EpiShield** | Foliar Spray |
| | Controls: mites, aphids, whiteflies, thrips, mealybugs | 9-12 fl oz/100 gal |
| | Follow all precautions and recommendations for applying oil-based products. | Dip Rate 2.7 ml/gal |
| | SuffOil-X** | |
| Controls: mites, whiteflies, aphids, etc. | 1-2 gal/100 gal. | |
| Follow all precautions and recommendations for applying horticultural oils. | | |
| Molt-X** | | |
| Controls both foliar and soil borne pests | 8-10 oz/100 gal. | |
| Maintain pH of diluted mixture at between pH 5.5 - 6.5. | | |
| Nutrition Management | ON-Gard | |
| | Pre-plant Dip: Can be used alone or in combination with RootShield PLUS [®] WP | 1% (1 gal/100 gal) as a dip |
| | Foliar Spray or through drip irrigation: Use as a foliar spray during production or mixed with fertilizers run through a drip system. | 0.25%-0.5% (1-2 qt/100 gal) as a foliar spray |
| | Tank mixable with most crop inputs. Test (jar test) to ensure physical compatibility | |

**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. Refer to product labels for complete application details. Additional technical information is available on our website (bioworksinc.com) or from your BioWorks Biological Solutions Advisor.

GOING ABOVE AND BEYOND

At BioWorks, we not only help eradicate harmful diseases and pests that threaten your crops, but we design and support integrated plant health management programs. And because we know how quickly some diseases can work, we respond to any questions you might have in just 48 hours. So you can get back to the business of successful growing.



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