



ROOTSHIELD® WP

Biological Fungicide



ACTIVE INGREDIENT:

Trichoderma harzianum Rifai strain T-22* 1.15%

OTHER INGREDIENTS: 98.85%

TOTAL: 100.00%

*Contains at least 1.0 x 10⁷ colony forming units per gram of product.

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

EPA Reg. No. 68539-7
EPA Est. No. 68539-NY-001
US Patent No.: 5,260,213
Net Contents: 1 lb, 3 lb, 30 lb

FIRST AID	
If on skin or clothing	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 - 20 minutes. Call a poison control center or doctor for treatment advice.
If in eyes	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If inhaled	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none"> Call a poison control or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor or going for treatment. For general information on this product, contact the National Pesticide Information Center (NPIC) at 1-800-858-7378, Monday through Friday 8 a.m. to 12 p.m. Pacific Time, or at <http://npic.orst.edu>. For medical emergencies, call your poison control center at 1-800-222-1222.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if absorbed through skin, inhaled, or swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Protective eyewear
- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes and socks

Mixers/loaders and applicators must wear a NIOSH-approved particulate filter with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water) is:

- Protective eyewear
- Coveralls
- Waterproof gloves
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are **not** within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried or dusts have settled.

PRODUCT INFORMATION

RootShield WP Biological Fungicide is a preventative biological fungicide for control of plant diseases. The active ingredient is a microbe, *Trichoderma harzianum* Strain T-22 (KRL-AG2), that when applied to seeds, transplants or other propagative material, or to soil or planting mixes, grows onto plant roots as they develop and provides protection against plant root pathogens such as *Pythium*, *Rhizoctonia*, *Fusarium*, *Cylindrocladium* and *Thielaviopsis*.

RootShield WP Biological Fungicide can be used alone, or in conjunction with certain chemical fungicides. **This product must not be tank mixed with chemicals that contain the following active ingredients: benomyl, imazalil, propiconazole, tebuconazole, and triflumizole.** Do not apply RootShield WP Biological Fungicide immediately before these pesticides are used. **See specific instructions for tank mixing.** Where early season seed rot and seedling diseases are expected, use chemically treated seed or other appropriate measures for

stand establishment and RootShield WP Biological Fungicide for root disease control.

Note: RootShield WP Biological Fungicide contains live spores of a microbe that must be used prior to disease onset. RootShield WP Biological Fungicide becomes active in soil or on plants when temperatures are above 50° F and is not effective while temperatures remain cold. RootShield WP Biological Fungicide can be applied to sterilized or fumigated soil but must be applied after sterilization or fumigation. This biological fungicide is for use in soil applications (drench, in soil furrow, and potting soil), and seed treatments for all listed crops (except those mentioned below**).

USE RESTRICTIONS

**** ATTENTION: DO NOT APPLY to sugarcane, pechay (bok choy), rice, mushrooms, kiwi, barley, oats, lemon, apple, and chickpea. Not for use on aquatic crops.**

APPLICATION INSTRUCTIONS

APPLY VIA GROUND APPLICATION ONLY.

CROPS ON WHICH ROOTSHIELD WP BIOLOGICAL FUNGICIDE MAY BE USED:

CROP	USE	APPLICATION RATE OF ROOTSHIELD WP BIOLOGICAL FUNGICIDE
Nongrass Animal Alfalfa Hay and Forage Crops, including: Alfalfa, Clover, Vetch, Trefoil	Planter Box (on-site)	2.0 – 4.0 oz/cwt seed 0.0564 – 4.233 oz/lb seed
	Commercial seed treatment	
Berries and Small Fruits, including: Blackberries, Blueberries, Currants, Elderberries, Gooseberries, Huckleberries, Loganberries, Raspberries, Strawberries, Grapes ** Refer to excluded crops above tables	Cuttings/bare root	0.5 – 2.5 lb/5 gal or dip into dry powder
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Brassica (Cole) Leafy Vegetables, including: Arugula, Celery, Chervil, Endive, Fennel, Lettuce (head and leaf), Parsley, Radicchio, Rhubarb, Spinach, Swiss Chard, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Kohrabi, Mustard Greens, Asparagus **Refer to excluded crops above table	Cuttings or bare-roots	0.5 – 2.5 lb/5 gal or dip into dry powder
	Commercial seed treatment	0.0141 – 4.233 oz/lb seed
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
Bulb Vegetables, including: Garlic, Leeks, Onions, Shallots, Ornamental Bulbs	Dust (pre-plant)	0.03 – 3.0 lb/cwt bulbs

Cereal Grains, including: Rye, Wheat, Sorghum, Millet, Buckwheat, Corn (grain, seed, sweet corn, silage, popcorn, high oil) **Refer to excluded crops above the table	Planter Box (on-site)	1.5 – 3.0 oz/cwt seed
	Commercial seed treatment	0.0004 – 0.529 lb/cwt seed
	Field chemigation	3.0 – 5.0 oz/100 gal
Citrus Fruits, including: Citrus hybrids, Grapefruit, Kumquat, Limes, Oranges, Pummelos **Refer to excluded crops above the tables	Cuttings or bare-roots	0.5 – 2.5 lb/5 gal or dip into dry powder
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Cucurbit Vegetables, including: Cucumbers, Melons (e.g. Chinese Waxgourd, Citron Melon, Muskmelons, or Watermelon), Gourds, Pumpkins, Squash	Planter Box (on-site)	2.0 - 8.0 oz/cwt seed
	Commercial seed treatment	0.0141 – 0.564 oz/lb seed
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Flowers, Bedding Plants, and Ornamentals	Cuttings or bare-roots	0.25 – 1.5 lb/20 gal or dip into dry powder
	Commercial seed treatment	0.0141 – 4.233 oz/lb seed
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Fruiting Vegetables, including: Eggplant, Sweet and Hot Peppers, Tomatillos, Tomatoes	Commercial seed treatment	0.0564 – 4.233 oz/lb seed
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Herbs and Spices Mints	Commercial seed treatment	0.0564 – 4.233 oz/lb seed
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal

Legume Vegetables (Succulent or Dried), including: Snap and Dry Beans, Lentils, Succulent and Dry Peas, Soybeans **Refer to excluded crops above the table	Planter Box (on-site)	1.5 – 3.0 oz/cwt seed
	Commercial seed treatment	0.0004 -0.529 lb/cwt seed
Oilseeds, including: Canola (Oilseed Rape), Cotton Safflower, and Sunflower	Planter Box (on-site)	1.5 – 3.0 oz/cwt seed
	Commercial seed treatment	0.0176 – 0.529 lb/cwt seed
Peanut	Planter Box (on-site)	1.0 – 10.0 oz/cwt seed
	Commercial seed treatment	0.0004 – 0.0706 lb/cwt seed
Pome Fruit, including: Pears, Quince ** Refer to excluded crops above the tables	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Root and Tuber Vegetables, including: Beets, Sugar Beets, Carrots, Celeriac, Chicory, Horseradish, Parsnip, Radish, Rutabaga, Salsify, Turnips	Commercial seed treatment	0.0141 – 0.564 oz/lb seed
	Planter Box (On-site)	0.03 – 0.2 lb/cwt seed tubers or cut potato seed pieces or 0.33 – 1.0 lb / 6.7 gal water
Potatoes, Sweet Potatoes, Yams, Jerusalem Artichoke, Cassava, Ginger, Ginseng ¹	Planter Box (on-site)	0.03 - 3.0 oz/cwt seed
	In-furrow spray	16.0 – 32.0 oz/100 gal
	Transplant starter solution	16.0 – 32.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Shadehouse and Outdoor Nursery Crops, including: Deciduous Trees (Maple, Oak, etc.), Ornamentals, Grapes, Citrus, Pine	Cuttings or bare-roots	0.5 – 2.5 lb/5 gal or dip into dry powder
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Stone Fruits, including: Apricots, Cherries, Nectarines, Peaches, Plums, Prunes	Cuttings or bare-roots	0.5 – 2.5 lb/5 gal or dip into dry powder
	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal

¹Not for use in California

Tobacco¹	Cutting or bare-rooted transplant dip	0.5 – 2.5 lb/5 gal water
	Greenhouse drench	3.0 – 5.0 oz/100 gal water
	Nursery drench	3.0 – 5.0 oz/100 gal water
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal water
	Field chemigation	3.0 – 5.0 oz/100 gal water
Tree Nuts, including: Almonds, Beech Nuts, Brazil Nuts, Butternuts, Cashews, Chestnuts, Filberts, Hickory Nuts, Macadamia Nuts, Pecans, Pistachios, Walnuts	Greenhouse drench	3.0 – 5.0 oz/100 gal
	Nursery drench	3.0 – 5.0 oz/100 gal
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal
	Field chemigation	3.0 – 5.0 oz/100 gal
Tropical and Subtropical Fruit¹ Inedible Peel, including: Passionfruit, Banana, Plantain Edible Peel, including: Starfruit	Cutting or bare-rooted transplant dip	.5 – 2.5 lb/5 gal water or dip directly into dry powder
	Greenhouse soil drench	3.0 – 5.0 oz/100 gal water
	Nursery drench	3.0 – 5.0 oz/100 gal water
	In-furrow spray	16.0 – 32.0 oz/acre
	Transplant starter solution	16.0 – 32.0 oz/acre
	Greenhouse chemigation	3.0 – 5.0 oz/100 gal water
	Field chemigation	3.0 – 5.0 oz/100 gal water

¹Not for use in California

CROP	USE	APPLICATION RATE OF ROOTSHIELD WP BIOLOGICAL FUNGICIDE
Turfgrass, including: Turf, Sports Fields, Parks, Established and New Preparation of Golf Course Tees, Greens, Fairways and Roughs, Seed Production, Sod Production	Planter Box (on-site)	1.0 – 10.0 oz/cwt seed
	Commercial seed treatment	0.088 - 17.62 lb/cwt seed

SEED TREATMENT FOR TRUE SEED CROPS

Onsite application to seed: RootShield WP Biological Fungicide is applied to seeds at the rate of 1.5 – 10.0 ounces per hundredweight (oz/cwt) for protection against root diseases. To assure uniform application, add half the required amount of RootShield WP Biological Fungicide to half the seed in the hopper, mix with a wooden paddle, and then add the remaining seed and RootShield WP Biological Fungicide. RootShield WP Biological Fungicide can be applied in sufficient water to coat seeds. For maximum seed protection, especially in cold soils, apply RootShield WP Biological Fungicide to commercially treated seed for stand establishment. Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for

immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

Commercial seed treatment: Apply RootShield WP Biological Fungicide as a slurry, a coating, in a pellet, or during seed priming. User must add an EPA-approved dye, imparting an unnatural color to the seed, to RootShield WP Biological Fungicide during the seed treatment process. This product is formulated at 1.0×10^9 CFU/gm and should be applied to deliver the recommended CFU/seed. See table below. The Federal Seed Act requires that bags containing treated seed shall be labeled with the following information: "This seed has been treated with *Trichoderma harzianum* Rifai strain T-22. Do not use for food, feed or oil purposes."

AGRICULTURAL CROPS

SEED SIZE (#SEEDS/OZ)	CFU/SEED	OZ/CWT SEED	G/KG SEED
Large (1-100) e.g. peanuts, beans (green & dry), field corn	100,000 – 200,000	0.0056 – 1.13	0.0035 – 0.70
Medium (100-1,000) e.g. sweet corn, soybeans, sorghum	50,000 – 150,000	0.28 – 8.47	0.176 – 5.28
Small (1,000-10,000) e.g. cabbage, cucumbers, sugar beets	25,000 – 100,000	1.4 – 56.4	39.7 – 1598.9
Fine (10,000-100,000) e.g. tomatoes	10,000 – 75,000	5.6 – 423.3	158.8 - 11992

ORNAMENTAL CROPS

SEED SIZE (#SEEDS/OZ)	CFU/SEED	OZ/CWT SEED	G/KG SEED
Small (1,000-10,000) e.g. Echinacea, Cosmos	25,000 – 100,000	1.41 – 56.4	39.7 – 1598.9
Fine (10,000-100,000) e.g. Texas bluegrass, ryegrass	10,000 – 75,000	5.6 – 423.3	158.8 – 11992
Very fine (100,000-500,000) e.g. bentgrass	5,000 – 10,000	28.0 – 423.3	793.8 - 11992

SEED TREATMENT FOR VEGETATIVELY PROPAGATED CROPS, INCLUDING POTATOES, OTHER TUBERS AND BULBS:

For planting or storage, treat at 0.03 – .20 pounds RootShield WP Biological Fungicide to 100 lbs. (1 cwt) of bulbs or cut potato seed pieces. Apply to seed pieces or bulbs so surfaces are thoroughly covered with dust. Dip bulbs. Tubers or cut potato seed pieces in a suspension of 1.0 – 3.0 lbs. of RootShield WP Biological Fungicide in 20 gallons of water. For potatoes, apply RootShield WP Biological Fungicide with compatible chemical seed dusts. Consult your BioWorks, Inc. representative for more information. All surfaces, knives, and other equipment used to cut and

plant potatoes should be thoroughly sterilized before cutting and planting and at regular intervals. The cut and treated seed pieces may be held for a week or more at cool temperatures, 45-50° F, and high relative humidity to promote suberization or they may be planted immediately.

DIP FOR CUTTINGS, BULBS OR BARE ROOTED TRANSPLANTS:

Dip cuttings, bulbs or transplants in RootShield WP Biological Fungicide dry powder or in a suspension of 0.25 – 3.0 pounds RootShield WP Biological Fungicide in 20 gallons of water. Plant treated cuttings, bulbs or transplants in potting mix or soil in the usual manner.

GREENHOUSE DRENCH:

Suspend 3.0 – 5.0 ounces of RootShield WP Biological Fungicide in 100 gallons of water with agitation, and apply as a drench to greenhouse planting mixes. For seeding flats or shallow (up to 4-inch depth) beds or pots, apply at a rate of 50 – 100 gallons per 800 square feet. For deeper beds or pots, apply at a rate of 100 gallons per 400 square feet, 1/2 - 1 cup (4-8 fl. ounces) per 3" – 6" pot. Apply RootShield WP Biological Fungicide through low pressure watering nozzles such as fan nozzles, or other drench watering systems. Constant agitation is required to maintain RootShield WP Biological Fungicide in suspension. RootShield WP Biological Fungicide can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on greenhouse/ornamental plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in the mixtures. Consult the tank mix compatibility chart below or the company for more information.

NURSERY DRENCH:

Suspend 3.0 – 5.0 ounces of RootShield WP Biological Fungicide in 100 gallons of water with agitation, and apply as a drench to container nursery crops. For shallow (up to 4-inch depth) beds or pots, apply at a rate of 50 – 100 gallons per 800 square feet. For deeper beds or pots, apply at a rate of 100 gallons per 400 square feet, 1/2 – 1 cup (4 - 8 fl. ounces) per 3" – 6" pot. Apply RootShield WP Biological Fungicide directly to the soil through low pressure watering nozzles such as fan nozzles, or other drench watering systems. Constant agitation is required to maintain RootShield WP Biological Fungicide in suspension. RootShield WP Biological Fungicide may be applied through soil-directed handheld or backpack soil-directed sprayers. RootShield WP Biological Fungicide can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, insecticides and biological control products registered for use on nursery plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or the company for more information.

IN-FURROW SPRAY OR TRANSPLANT STARTER SOLUTION:

Apply as an in-furrow spray or transplant starter solution at a rate of 16.0 – 32.0 ounces/acre in sufficient water to achieve uniform application. Maintain constant agitation.

RootShield WP Biological Fungicide can be tank mixed with certain fertilizers and pesticides; consult tank mix compatibility chart below for detailed information.

TANK MIXING:

RootShield WP Biological Fungicide can be tank mixed and is compatible with many commonly used fungicides, liquid fertilizers, herbicides, and insecticides registered for use on greenhouse/ornamental plants. If tank mixes are desired, observe the most restrictive of labeling limitations and precautions of all products used in mixtures. Consult the tank mix compatibility chart below or the company for more information. **This product must not be tank mixed with chemicals that contain the following active ingredients: benomyl, imazalil, propiconazole, tebuconazole, and triflumizole.** Do not apply RootShield WP Biological Fungicide immediately before these pesticides are used.

Do not combine RootShield WP Biological Fungicide in the spray tank with pesticides, surfactants, adjuvants, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective and non-injurious under your use conditions. RootShield WP Biological Fungicide is compatible with many commonly used pesticides, fertilizers, adjuvants and surfactants but has not been fully evaluated with all of these. To ensure compatibility of tank-mix combinations, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of products to water. Add wettable powders first, followed by water dispersible granules, then by liquid flowables and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Do not exceed label dosage rates.

This product cannot be mixed with any product containing a label prohibition against such mixing.

GREENHOUSE AND FIELD CHEMIGATION:

Suspend 3.0 – 5.0 ounces of RootShield WP Biological Fungicide in 100 gallons of water with agitation, and apply through the following systems: 1) Over head boom-type sprayers or sprinklers, mist-type irrigation systems, sprinklers such as impact or micro-sprinklers, center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move (Pre-plant only) 2) pressurized drench (flood) or drip (trickle) systems, 3) furrow, 4) micro-irrigation such as spaghetti-tube or individual tube irrigation, 5) soil-directed hand-held calibrated irrigation equipment such as the hand-held wand with injector, and 6) ebb and flow systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a

public water system unless the pesticide safety systems for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems:

- 1) Public water system means a system for the provision to the public of piped water for human consumption if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- 2) Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 4) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Apply RootShield WP Biological Fungicide during the last half of the water application period. Mix RootShield WP Biological Fungicide in enough water to be able to draw through the system for the last half of the water application.
- 9) Apply enough water to move RootShield WP Biological Fungicide into the root zone. Amounts will vary depending on soil type and existing moisture level. Avoid applying water volumes that would cause runoff or excessive leaching.

Sprinkler Chemigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

- 2) The pesticide injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back towards the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.

Center-pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment (Pre-plant only): Use only with electric or oil hydraulic drive systems which provide a uniform water distribution):

- 1) Determine size of area to be treated.
- 2) Determine the time required to apply no more than 1/4 inch of water (6,750 gallons water per acre) over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer. Run system at 80 to 95% of manufacturer's rated capacity.
- 3) Using only water, determine the injection pump output when operated at normal line pressure.
- 4) Determine the amount of RootShield WP Biological Fungicide required to treat area.
- 5) Add required amount of RootShield WP Biological Fungicide and sufficient water to meet the injection time requirements of the solution tank.
- 6) Maintain constant solution tank agitation during the injection period.
- 7) Stop injection equipment after treatment is completed. Continue to operate the system until RootShield WP Biological Fungicide solution has cleared the sprinkler head.

Solid-set, Side (wheel) Roll, and Hand Move Irrigation Equipment (Pre-plant only):

- 1) Determine acreage covered by sprinkler.
- 2) Fill injector solution tank with water and adjust flow rate to use contents over a 10- to 30-minute interval.
- 3) Determine the amount RootShield WP Biological Fungicide required to treat area.
- 4) Add the required amount of RootShield WP Biological Fungicide into the same quantity of water used to calibrate the injection equipment.

- 5) Maintain constant solution tank agitation during the injection period.
- 6) Operate system at normal pressures recommended by the manufacturer of the injection equipment and used for the time interval established during calibration.
- 7) Inject RootShield WP Biological Fungicide at the end of the irrigation cycle or as a separate application to maximize fungicide retention.
- 8) Stop injection equipment after treatment is completed. Continue to operate the system until RootShield WP Biological Fungicide solution has cleared the last sprinkler head.

Drip (Trickle) Chemigation and Micro-irrigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Apply RootShield WP Biological Fungicide during the last half of the water application period. Mix RootShield WP Biological Fungicide in enough water to be able to draw through the system for the last half of the water application.
- 8) Apply enough water to move RootShield WP Biological Fungicide into the root zone. Amounts will vary depending on soil type and existing moisture level. Avoid applying water volumes that would cause runoff or excessive leaching.

Flood and Furrow Chemigation Requirements:

- 1) Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity, such as a drop structure or weir box, to decrease potential for water source contamination from back flow if water flow stops.
- 2) Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
 - a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain

- appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
 - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
 - c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
 - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
 - e. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
 - f. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 3) Apply RootShield WP Biological Fungicide during the last half of the water application period. Mix RootShield WP Biological Fungicide in enough water to be able to draw through the system for the last half of the water application.
 - 4) Apply enough water to move RootShield WP Biological Fungicide into the root zone. Amounts will vary depending on soil type and existing moisture level. Avoid applying water volumes that would cause runoff or excessive leaching.

PLANT SAFETY:

RootShield WP Biological Fungicide has been tested on numerous plant varieties with no phytotoxic effects. However, since RootShield WP Biological Fungicide has not been tested on all plant varieties or in combination with all available tank mixes, the manufacturer recommends testing RootShield WP Biological Fungicide on a small number of plants to check for adverse plant effects before applying to a larger number of plants.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in original container under refrigerated conditions. Short periods at room temperatures below 75° F will not affect performance. Do not store near food or feed commodities. Keep container tightly closed when not in use.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty bag by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available, or dispose of empty bag in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke. If outer box is contaminated, dispose of it in the same manner as required for the bag.

WARRANTY: Seller warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated on this label when used and stored in accordance with the directions for use. This warranty does not extend to use of this product contrary to label directions or under conditions not reasonably foreseeable by the Seller, and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, Seller disclaims all other warranties, express or implied, including any warranty of fitness or merchantability. To the extent consistent with applicable law, Seller shall not be liable for consequential, special or indirect damages resulting from use or handling of this product, and Seller's sole liability and Buyer's and User's exclusive remedy shall be limited to refund of the purchase price. This product is sold only for uses stated on its label. No express or implied license is granted to use or sell this product under any patent in any country except as specified.

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BioWorks, Inc.

100 Rawson Rd., Ste 205

Victor, NY 14564

(800) 877-9443
bioworksinc.com

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