

PlantShield[®] HC

Biological Root Fungicide

APPLY VIA GROUND APPLICATION ONLY.

ACTIVE INGREDIENT
Trichoderma harzianum Rifai strain KRL-AG2 1.15%*
 OTHER INGREDIENTS 98.85%
 TOTAL 100.00%
 *Contains at least 1.0 x 10⁷ colony forming units per gram dry weight.
 US Patent No. 5,260,213
 EPA Reg.No. 68539-4 EPA Est. No. 068539-NY-001

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

In case of contact, flush eyes with plenty of water. Get medical attention if irritation persists.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION: Avoid contact with skin or eyes. Avoid breathing dust. Do not store near food or feed.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, 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 wash water.

USER SAFETY RECOMMENDATIONS

Users should: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

STORAGE AND DISPOSAL

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

STORAGE: Store in a cool dry place. Do not store at temperatures above 75° F for prolonged periods. Keep container tightly closed when not in use.

DISPOSAL: Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility. Do not reuse container. Dispose of empty container in a sanitary landfill or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

GENERAL INFORMATION

PlantShield HC is a preventative biological fungicide for control of plant diseases. The active ingredient is a beneficial microbe, *Trichoderma harzianum* strain T-22 (KRL-AG2). Applied to seeds, transplants, or other propagative material. Strain T-22 actively grows onto plant roots as they develop and provides prolonged protection against plant root pathogens such as *Pythium*, *Rhizoctonia*, *Fusarium*, *Cylindrocladium* and *Thielaviopsis*. PlantShield HC can be used alone or in conjunction with certain chemical fungicides, consult tank mix compatibility charts below or the company for more information. Where early season seed rot and seedling diseases are expected, use chemically treated seed or other appropriate measures for stand establishment and PlantShield HC for prolonged root disease control.

NOTE: PlantShield HC contains live spores of a beneficial microbe. For best results, PlantShield HC must be used prior to disease onset. PlantShield HC becomes active in soil or on plants when temperatures are above 50° F and is not effective while temperatures remain cold. PlantShield HC can be applied to sterilized or fumigated soil but **MUST BE APPLIED AFTER STERILIZATION OR FUMIGATION.**

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 workers may be in the area during application. For any requirement specific to your state or tribe, consult the 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.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear: a) long sleeved shirt and long pants; b) shoes plus socks; c) when dumping or opening bags, or other operations where dusts may be created, wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N-95, R-95, P-95 or HE filter for biological products.

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

There are no restrictive entry interval (REI) requirements.

Biological fungicide for use in soil applications (drench and in furrow) and seed treatments in or on all raw agricultural commodities, food and fiber crops, and trees, including tree seedlings for transplanting into the forest. **NOTE: DO NOT APPLY to sugarcane, peachay, rice, mushrooms, kiwi, tobacco, barley, oats, lemon, apple and chickpea. Not for use on aquatic crops.**

CROPS ON WHICH PLANTSHIELD HC MAY BE USED

CROPS	USE	RATE
Flowers, Bedding Plants, and Ornamentals , such as: anthurium, azalea, carnation, chrysanthemum, dianthus, dieffenbachia, dracaena, ficus, gardenia, gladiolus, impatiens, lilies, marigold, pansy, petunia, poinsettia, pothos, rhododendron, roses, schefflera, spathiphyllum, tulips, vinca.	Cuttings or Bareroots Greenhouse & Nursery Drench Greenhouse Chemigation	0.5-2.5 lbs./5 gal or dip into dry powder 3.0-5.0 oz./100 gal 3.0-5.0 oz/100 gal
Berries and Small Fruits such as: strawberries, blackberries, raspberries, currants, blueberries, gooseberries, and grapes.	Cuttings or Bareroot Greenhouse & Nursery Drench Greenhouse Chemigation	0.5-2.5 lbs./5 gal or dip into dry powder 3.0-5.0 oz./100 gal 3.0-5.0 oz./100 gal
Citrus Fruits such as: oranges, grapefruit, and tangerine. Do not apply to lemon.	Greenhouse & Nursery Drench	3.0-5.0 oz/100 gal
Cucurbit Vegetables such as: cucumbers, melons, gourds, and squash.	Greenhouse Drench Greenhouse Chemigation	3.0-5.0 oz./100 gal 3.0-5.0 oz/100 gal
Fruiting Vegetables such as: eggplant, sweet and hot peppers, and tomatoes.	Greenhouse Drench Greenhouse Chemigation	3.0-5.0 oz./ 100 gal 3.0-5.0 oz./ 100 gal
Leafy Vegetables and Cole Crops such as: broccoli, Brussels sprouts, cabbage, cauliflower, celery, collards, endive, kale, kohlrabi, lettuce, mustard greens, parsley, and spinach.	Greenhouse Drench Greenhouse Chemigation	3.0-5.0 oz./ 100 gal 3.0-5.0 oz/100 gal
Herbs, Spices, and Mints such as: sage, rosemary, thyme, peppermint, and dill.	Greenhouse Drench Greenhouse Chemigation	3.0-5.0 oz/100 gal 3.0-5.0 oz./ 100 gal
Hydroponic Crops, such as: cucumbers, tomatoes, lettuce, herbs and spices.	Greenhouse Drench Greenhouse Chemigation	3.0-5.0 oz/100 gal 3.0-5.0 oz./100 gal
Pome Fruit such as: pear. Do not apply to apple.	Greenhouse & Nursery Drench	3.0-5.0 oz/100 gal
Shadehouse and Outdoor Nursery Crops such as: deciduous trees (maple, oak, etc.), grapes, citrus, and pine.	Greenhouse & Nursery Drench	3.0-5.0 oz/100 gal
Stone Fruit such as: peaches, plums, and nectarines.	Cuttings or Bareroots Greenhouse & Nursery Drench	0.5-2.5 lbs./5 gal or dip into dry powder 3.0-5.0 oz./100 gal
Tree Nuts such as: pecans, pistachios, almonds, and walnuts.	Greenhouse & Nursery Drench	3.0-5.0 oz/100 gal

GREENHOUSE DRENCH: Suspend 3.0 – 5.0 ounces PlantShield HC 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, or at the rate of ½ - 1 cup (4 – 8 fl. ounces) per pot. PlantShield HC can be applied through low pressure watering nozzles such as fan nozzles, through overhead boom type sprayers or sprinklers, or other drench watering systems. Constant agitation is required to maintain PlantShield HC in suspension. PlantShield HC 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 all directions, precautions and limitations on labeling of all products used. Consult the tank mix compatibility chart below or the company for more information. This product should not be tank mixed with chemicals that contain the following active ingredients: benomyl, imazilil, propiconazole, tebuconazole, and triflumizole.

NURSERY DRENCH: Suspend 3.0 – 5.0 ounces PlantShield HC in 100 gallons of water with agitation and apply as a drench to container nursery crops. PlantShield HC may be applied through handheld or backpack sprayers. Maintain constant agitation. For shallow pots (up to 4-inch depth) beds or pots, apply at a rate of 50-100 gallons per 800 square feet. For deeper pots, apply at a rate of 100 gallons per 400 square feet, or at the rate of ½ - 1 cup (4 – 8 fl. ounces) per pot. PlantShield HC 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 all directions, precautions and limitations on labeling of all products used. Consult the tank-mix compatibility chart below or the company for more information. This product should not be tank mixed with chemicals that contain the following active ingredients: benomyl, imazilil, propiconazole, tebuconazole, and triflumizole.

CUTTINGS OR BARE ROOTED TRANSPLANTS: Dip cuttings or transplants in PlantShield HC dry powder or in a suspension of 0.5-2.5 pounds PlantShield HC in 5 gallons of water. Plant treated cuttings or transplants in potting mix or soil in the usual manner.

COMPATIBILITY FOR DRENCH TANK MIXES:

Chemical Name	% A.I. Formulati on	Product Name	Product Rate	Dilution
Captan	85% WP	Captan 85 WP	1.88 lb/acre	0.1 oz/gal
Chlorothalonil	82.5% WDG	Daconil Ultrex	3.7 oz/1000 sq. ft.	0.56 oz/gal
Iprodione	23.3% FL	Chipco 26019 Flo	4.0 oz/1000 sq. ft.	0.6 oz/gal
Iprodione	50% SG	Rovral	0.75 lb/acre	0.04 oz/gal
Thiophanate methyl	50% WP	Cleary's 3336 in water soluble bags	8.0 oz/1000 sq. ft.	1.2 oz/gal
Metalaxyl	21.3% L	Subdue Maxx	0.25 oz/800 sq. ft.	0.05 oz/gal
Chlorpyrifos	50% EL	Lorsban 4E	3.2 oz/gal	3.2 oz/gal

GREENHOUSE CHEMIGATION: Suspend 3.0 – 5.0 ounces of PlantShield HC in 100 gallons of water with agitation and apply through the following systems: 1) overhead boom-type sprayers, mist-type irrigation systems, or sprinklers such as impact or micro-sprinklers, 2) pressurized drench (flood) or drip (trickle) systems, 3) micro-irrigation such as spaghetti-tube or individual tube irrigation, 4) hand-held calibrated irrigation equipment such as the hand-held wand with injector, 5) ebb and flow systems.

The following precautions must be observed when using this product in any type of irrigation system:

Do not apply this product through any other type of irrigation equipment. Lack of effectiveness or crop injury can result from non-uniform distribution of treated water. Do not connect an irrigation system, (including greenhouse system), used for pesticide application to a public water system unless the pesticide safety systems for public water systems are in place. If you have questions about calibration, you should contact State Extension specialists, equipment manufacturers or other experts. 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. 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 backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. 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. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. 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. Do not apply when wind speed favors drift beyond the area intended for treatment.

NOTICE TO BUYER AND SELLER: Seller warrants that this product conforms to the description on the label and is reasonably fit for the purposes stated on the label when used and stored in accordance with directions under normal conditions of 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. Seller disclaims all other warranties express or implied, including any warranty of fitness or merchantability. 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.

In Case of Emergency, Call CHEMTREC: (800) 424-9300

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