

PMRA Approved  
2019-3661  
2020-07-16

## ROOTSHIELD PLUS G Biological Fungicide GRANULES

For the suppression of Root Rot and Damping-Off caused by *Pythium* spp., *Rhizoctonia* spp., *Fusarium* spp., and *Phytophthora* spp. in Greenhouse Crops, Greenhouse Vegetable Transplants, Cannabis (marihuana) produced commercially indoors and Outdoor Nursery Plants.

COMMERCIAL  
LIVE ORGANISM

### READ THE LABEL BEFORE USING

ACTIVE INGREDIENTS: *Trichoderma harzianum* Rifai strain KRL-AG2 contains a minimum of  $1.0 \times 10^7$  colony forming units per gram of dry weight  
*Trichoderma virens* strain G-41 contains a minimum of  $5.3 \times 10^6$  colony forming units per gram of dry weight

Warning, contains the allergen wheat

POTENTIAL SENSITIZER

REGISTRATION NO. 33781 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 0.45 kg - 100 kg

BioWorks Inc.  
100 Rawson Rd, Suite 205,  
Victor, NY 14564  
1-585-924-4362

Lot No.:

Date of Manufacture:

This product should be used within 12 months of date of manufacture.

**FIRST AID:**

- IF SWALLOWED:** Call a poison control centre 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 centre or doctor. Do not give anything by mouth to an unconscious person.
- IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.
- IF IN EYES:** 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 centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

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

**TOXICOLOGICAL INFORMATION:**

Treat symptomatically.

**PRECAUTIONS:**

**KEEP OUT OF REACH OF CHILDREN.**

May cause sensitization. Avoid contact with skin and eyes or clothing. Avoid breathing dust. Wear a long-sleeved shirt, long pants, shoes and socks, goggles, waterproof gloves, as well as a NIOSH approved mist filtering mask or respirator when mixing/loading, applying and during all clean-up and repair activities

Avoid skin contact with treated soil or potting mix. Wash thoroughly with soap and water after handling product or treated soil/potting mix. Remove contaminated clothing and follow manufacturer's directions for cleaning/maintaining personal protective equipment (PPE) before reuse. If no such instructions are available, use clothing detergent and hot water for cleaning all washable PPE. Keep and wash PPE separately from other laundry.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

Can be applied up to and including the day of harvest. The pre-harvest interval (PHI) is 0 days.

**RESTRICTED ENTRY INTERVAL (REI):**

Entry to the treated area is not restricted following application.

**ENVIRONMENTAL PRECAUTIONS:**

As this pesticide is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

**DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

**DO NOT** apply using aerial application equipment.

**DO NOT** allow effluent or runoff from greenhouses containing this product to enter lakes, streams, ponds or other waters.

**STORAGE:**

Store in a secure dry place at temperatures between 2 °C and 5 °C. Store this product away from food or feed. Do not contaminate water, food, or feed during storage. Keep product in original container during storage and keep container lid tightly closed when not in use. This product should be used within 12 months of the date of manufacture.

**DISPOSAL:**

**DO NOT** reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Thoroughly empty the contents of the container into the application device or medium.
2. Make the container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER:**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

## GENERAL INFORMATION

ROOTSHIELD PLUS G Biological Fungicide is a granule biological fungicide that provides suppression of root rot and damping-off caused by the indicated soil pathogens in the listed greenhouse crops, greenhouse vegetable transplants, Cannabis (marihuana) produced commercially indoors and outdoor nursery plants. When applied to planting mix, or soil, ROOTSHIELD PLUS G Biological Fungicide actively grows onto plant roots as they develop and helps to protect roots against infection caused by *Pythium* spp., *Rhizoctonia* spp., *Fusarium* spp. and *Phytophthora* spp. The two active ingredients are beneficial microbes, *Trichoderma harzianum* strain KRL-AG2 (T-22) and *Trichoderma virens* strain G-41.

For control of seed rot and damping-off of infested seed or internally infected cuttings, use other fungicides registered for these uses or other appropriate measures in addition to ROOTSHIELD PLUS G Biological Fungicide.

**Note:** ROOTSHIELD PLUS G Biological Fungicide contains live spores of beneficial microbes. ROOTSHIELD PLUS G Biological Fungicide becomes active when soil temperatures are above 10 °C. Disease management is not effective while soils remain cold and is more effective in neutral or acidic soils than in alkaline soils.

## PLANT SAFETY

ROOTSHIELD PLUS G Biological Fungicide has been tested on numerous plant varieties with no phytotoxic effects. However, since ROOTSHIELD PLUS G Biological Fungicide has not been tested on all plant varieties, the manufacturer recommends testing ROOTSHIELD PLUS G Biological Fungicide on a small number of plants to check for adverse plant effects before applying to a larger number of plants.

## DIRECTIONS FOR USE:

### ORNAMENTALS, NURSERY CROPS AND GREENHOUSE CROPS

CROPS/CROP GROUPS*	DISEASES/ PATHOGENS SUPPRESSED	RATE	Remarks
Greenhouse Ornamental Crops	Root rot and damping-off caused by: <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Fusarium</i> spp., <i>Phytophthora</i> spp.	600 – 1200 g of product per m <sup>3</sup> of soil/potting mixture	Apply immediately before sowing seed or planting. Mix uniformly into the soil/potting mixture.  When disease pressure is high, use the highest rate.
Greenhouse Vegetable Transplants: Bulb vegetables Leafy vegetables Brassica vegetables Fruiting vegetables Cucurbit vegetables Herbs and Spices	Root rot and damping-off caused by: <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Fusarium</i> spp., <i>Phytophthora</i> spp.	600 - 1200 g of product per m <sup>3</sup> of soil/potting mixture	Apply immediately before sowing seed or planting. Mix uniformly into the soil/potting mixture  When disease pressure is high, use the highest rate.
Greenhouse Fruiting Vegetables	Root rot and damping-off caused by: <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Fusarium</i> spp.,	600 - 1200 g of product per m <sup>3</sup> of soil/potting mixture	Apply immediately before sowing seed or planting. Mix uniformly into the soil/potting mixture.
Greenhouse Cucurbit Vegetables			

Greenhouse Brassica Vegetables	<i>Phytophthora</i> spp.		When disease pressure is high, use the highest rate.
Greenhouse Leafy Vegetables			
Greenhouse Strawberries	Root rot and damping-off caused by: <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Fusarium</i> spp., <i>Phytophthora</i> spp.	600 - 1200 g of product per m <sup>3</sup> of soil/potting mixture	Apply immediately before planting. Mix uniformly into the soil/potting mixture.
Greenhouse Wasabi			When disease pressure is high, use the highest rate.
Cannabis (marihuana) produced commercially indoors	Root rot and damping-off caused by: <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Fusarium</i> spp., <i>Phytophthora</i> spp.	600 - 1200 g of product per m <sup>3</sup> of soil/potting mixture	Apply immediately before sowing seed or planting. Mix uniformly into the soil/potting mixture.  When disease pressure is high, use the highest rate.
		1.25 – 5 g of product per m <sup>2</sup> soil/potting mixture surface if grown in indoor planting beds	Apply immediately before sowing seed or planting. Broadcast uniformly over containers or planting beds. Only apply to containers when plant foliage is dry. Sufficient irrigation at least 5 mm should occur within 24 hours after application to integrate active ingredients into the root zone.  When disease pressure is high, use the highest rate.
		1.25 – 5 g of product per m <sup>2</sup> soil/potting mixture surface if grown in indoor planting beds	Reapplications to containerized plants or plants grown in indoor planting beds may be made at 6- to 10-week intervals, thereafter, if disease is expected. Broadcast uniformly over containers or planting beds. Only apply to containers when plant foliage is dry. Sufficient irrigation or rainfall of at least 5 mm should occur within 24 hours after application to integrate active ingredients into the root zone.  When disease pressure is high, use the highest rate and shortest reapplication interval.

Outdoor Nursery Crops and container grown plants	Root Rot and damping- off caused by: <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Fusarium</i> spp. <i>Phytophthora cinnamomi</i> and <i>P. parasitica</i>	600 - 1200 g of product per m <sup>3</sup> of soil/potting mixture	<u>For container-grown plants:</u> Apply immediately before sowing seed or planting. Mix uniformly into the soil/potting mixture.
		1.25 – 5 g of product per m <sup>2</sup> soil/potting mixture surface	<u>For field-grown nursery crops:</u> Apply immediately before seeding or planting. Either mix uniformly into the soil before planting or apply uniformly over the soil surface immediately after planting. Sufficient irrigation or rainfall of at least 5 mm should occur within 24 hours after soil surface application to integrate active ingredients into the root zone.
		1.25 – 5 g of product per m <sup>2</sup> soil/potting mixture surface	Reapplications to containerized or field-grown plants may be made at 6- to 10-week intervals, thereafter, if disease is expected. Broadcast uniformly over containers or planting beds. Only apply to containers when plant foliage is dry. Sufficient irrigation or rainfall of at least 5 mm should occur within 24 hours after application to integrate active ingredients into the root zone. When disease pressure is high, use the highest rate and shortest reapplication interval.

**\*CROP GROUPS**

**Crop Group 3-07 - Bulb Vegetables:** chive, Chinese chive, daylily (bulb), Elegans hosta, fritillaria, garlic (bulb, great-headed, serpent), kurrat, leek, lady's leek, wild leek, lily, onion (bulb, Beltsville bunching, Chinese, fresh, green, macrostem, pearl, potato, tree, Welsh), shallot (bulb, fresh leaves).

**Crop Group 4 Leafy Vegetables(except Brassica Vegetables):** amaranth (leafy, Chinese spinach, tampala), arugula (Roquette), cardoon, celery, Chinese celery, celtuce, chervil, chrysanthemum (edible-leaved, garland), corn salad, cress (garden, upland), dandelion, dock (sorrel), endive (escarole), fennel (Florence, finocchio), lettuce (head, leaf), orach, parsley, purslane (garden, winter), radicchio (red chicory), rhubarb, spinach, New Zealand spinach, vine spinach, swiss chard

**Crop Group 5 – Brassica Leafy Vegetables:** broccoli, Chinese broccoli (gai lon), raab broccoli (rapini), Brussels sprouts, cabbage, Chinese cabbage (bok choy, Napa, mustard), cauliflower, cavolo broccoli, collards, kale, kohlrabi, mizuna, mustard greens, mustard spinach, rape greens

**Crop Group 8-09 - Fruiting Vegetables:** eggplant (including African, pea, scarlet), garden huckleberry, goji berry, groundcherry, martynia, okra, pepino, pepper (bell, non-bell), sunberry, tomatillo, tomato (including currant)

**Crop Group 9 - Cucurbit Vegetables:** Chinese waxgourd (Chinese preserving melon), citron melon, cucumber, gherkin, edible gourd (includes hyotan, cucuzza, hechima, Chinese okra), momordica(includes balsam apple, balsam pear, bitter melon, Chinese cucumber), muskmelon (true cantaloupe, cantaloupe, casaba, crenshaw, golden pershaw, honeydew, honey balls, mango Persian, pineapple, Santa Claus, snake), pumpkin, squash (winter, summer), watermelon

**Crop Group 19 - Herbs and Spices:** angelica, anise (anise seed), balm (lemon balm), basil, borage, burnet, chamomile, caraway, black caraway, catnip, celery seed, chervil (dried), chive, Chinese chive, clary, coriander (cilantro or Chinese parsley), coriander (seed), costmary, cumin, dill(dillweed), dill (seed), fennel (common), fenugreek, horehound, hyssop, juniper berry, lavender, lemongrass, lovage(leaf), lovage (seed), marigold, marjoram, mustard (seed), nasturtium, parsley (dried), pennyroyal, poppy (seed), rosemary, rue, saffron, sage, savory (summer, winter), sweet bay (bay leaf), tansy, tarragon, thyme, wintergreen, woodruff, wormwood.