

## Application

Apply RootShield *PLUS* early, before roots have emerged or fully developed. The actively growing fungi form a "shield" by growing around the roots. Forming that "shield" right away is key to preventing pathogens from damaging the roots. RootShield *PLUS* will protect plugs, cuttings, liners, and all container plants.

## RootShield *PLUS*<sup>+</sup> Granules

Incorporate into media. RootShield *PLUS* Granules is compatible with all soils, all soilless media including peat-, bark- and coir-based mixes, as well as substrates used in hydroponic growing.

## Packaging and Product Shelf Life

The granules are available in 10 lb. boxes, 40 lb. bags, 500 lb and 1,000 lb. bulk bags.

**Shelf life:** 6 months: 50 – 77°F (10 – 25°C)  
12 months: 32 – 50°F (0 – 10°C)  
12 months: below 32°F (0°C)

If desired, request your distributor to direct ship – freight pre-paid!

## Blend Rates

For small volumes blend 3 – 4.5 tbsp. per cubic foot (ft.<sup>3</sup>) of potting soil. If you prefer large volume custom blending with your media, contact your mix company. Large volume blend rates are 1 – 3 lbs. per cubic yard (yd.<sup>3</sup>) of mix, or a minimum of three 40 lb. bags per truckload of mix (100 yds.<sup>3</sup>). The shelf life of RootShield *PLUS* Granules when blended at 1.5 lbs. per yd.<sup>3</sup> is 12 weeks at 5°F (-15°C), 20 weeks at 40 – 77°F (4 – 25°C), and 8 weeks at 100°F (39°C).

## RootShield *PLUS*<sup>+</sup> WP

The wettable powder can be drenched into the soil for root rot protection on ornamentals and edible crops.

## Packaging and Product Shelf Life

RootShield *PLUS* WP is available in 1 lb. and 3 lb. bags, and 30 lb. boxes.

**Shelf life:** 4 months: 50 – 77°F (10 – 25°C)  
10 months: 32 – 50°F (0 – 10°C)  
10 months: below 32°F (0°C)

If desired, request your distributor to direct ship – freight pre-paid!

## Application

Suspend RootShield *PLUS* WP (3 – 8 oz. per 100 gallons of water, or for smaller volume: 1 – 2 tbs. per 5 gallons) in sufficient water with agitation and apply as a drench to greenhouse planting mixes and container nursery crops. Constant agitation in a stock tank is required to maintain RootShield *PLUS* in suspension.

RootShield *PLUS* WP can be applied through low pressure watering nozzles, irrigation boom type sprayers or sprinklers, sub-irrigation (5 – 6 oz/100 gals.) or other drench watering systems. When using a fertilizer injector to drench RootShield *PLUS* WP, keep the injector pick up tube screen at least 1-2 inches from the bottom of the stock tank. Set the injector at 1:100.

## Soil/Media Coverage

- Trays/flats/liners and pots less than 4 inches deep: 50–100 gals./800 ft.<sup>2</sup>
- Beds and pots 4-inches deep or deeper: 100 gals./400 ft.<sup>2</sup>
- 6-inch pots: approximately 1 cup (8 fl. oz. of solution)/pot (One pound of RootShield *PLUS* WP will treat 6400 six-inch pots)

Enclosed scoop holds 1.5 oz/ (Three scoops equals 4.5 oz.)

## Maintenance Programs

### Seeding/Flats/Liners/Woody Cuttings

Plant seeds into propagation mix containing RootShield *PLUS* Granules (1 – 3 lbs. / yd.<sup>3</sup>). Alternatively, drench flats with RootShield *PLUS* WP immediately after seeding (3 – 8 oz./100 gals.).

### Cuttings; Poinsettias/Mums/Geraniums

Place un-rooted or rooted cuttings directly into propagation media containing RootShield *PLUS* Granules, or apply RootShield *PLUS* WP approximately 7 days after sticking un-rooted cuttings (drench rooted cuttings). Please note: if using Oasis wedges or cubes, growers should wait to apply when roots emerge or when stepping up into pots.

### Bulbs

**Bulb Planting, Growth and Cold Storage:** Pre-blend RootShield *PLUS* Granules (1 – 3 lbs. / yd.<sup>3</sup>), or topdress (3 lbs./1000 ft.<sup>2</sup>). Alternatively, apply RootShield *PLUS* WP immediately after planting (3 – 8 oz./100 gals.). Bulbs may be dusted with RootShield *PLUS* WP (1 – 3 lbs./100 lbs. of bulbs) immediately before planting or may be dipped in a drench slurry (0.25 – 5 lbs./20 gals.). Treated bulbs can be case or pot cooled.

**Post Cold Storage and Crop Growth:** Apply RootShield *PLUS* WP immediately after removing the crop from cold storage, or replant in media containing RootShield *PLUS* Granules.

**NOTE:** Pre-cool bulb application protects the basal roots, while post-cool application protects the stem roots.

### Extended Root Protection

To ensure good root protection over extended periods or at transplant, re-apply RootShield *PLUS* Granules or WP every 10-12 weeks after initial application, or when stepping up/transplanting to a larger container or out into the field.

### Woody Propagation

A healthy start for woody cuttings is key to producing a healthy plant in the container. Treat the woody cuttings as described above with RootShield *PLUS*.



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Please refer to product labels for complete application details. Additional technical information is available from either our website: www.bioworksinc.com, or your BioWorks sales representative. Always read and follow label directions.

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# GOOD NEWS FOR YOU.

# BAD NEWS FOR PATHOGENS.

## RootShield *PLUS*<sup>+</sup>

The next generation of  
RootShield has arrived

The **SCIENCE** of Organic Plant, Tree & Turf Care



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# RootShield<sup>®</sup> PLUS<sup>+</sup>

The results are in. See RootShield PLUS<sup>+</sup> in action.

## Healthy Roots, Healthy Plants

The next generation of RootShield<sup>®</sup>, containing two active ingredients (*Trichoderma harzianum* strain T-22, and *Trichoderma virens* strain G-41), provides preventative control of major root diseases including soilborne **Phytophthora**. RootShield PLUS also controls diseases caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Thielaviopsis*, and *Cylindrocladium* – with improved suppression of the aggressive hot-season *Pythium* (*P. aphanidermatum*). All this protection for three months with just one easy application.

Use on greenhouse and nursery ornamentals, vegetables, herbs, and fruits. RootShield PLUS grows on the plant's root system, inhibits and actively attacks pathogens, preventing their establishment and ensuring uninterrupted plant growth.

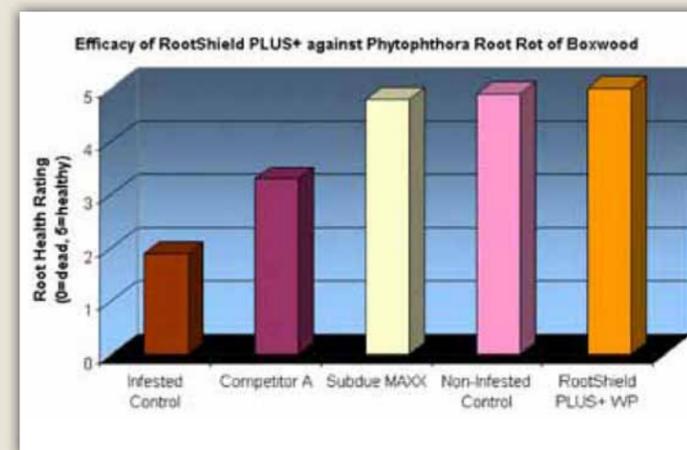
RootShield PLUS is a preventative biofungicide and should be applied to "clean" (disease-free) plants. Diseased plants should be chemically treated first, since the aggressively growing active ingredients grow on the outside of roots and do not enter the plant tissue.

### RootShield PLUS<sup>+</sup> Benefits

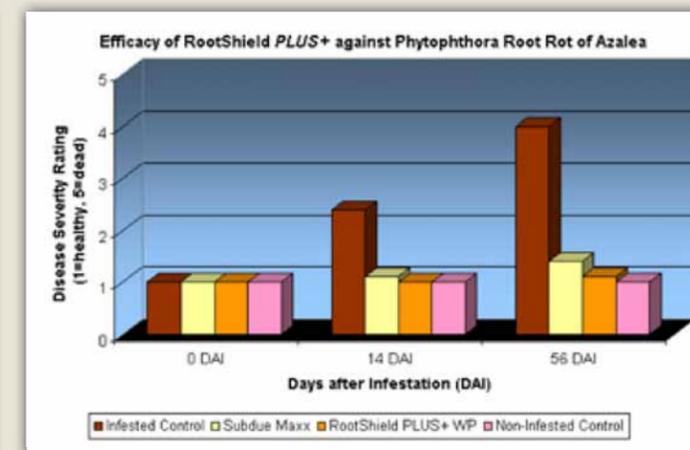
- Dual active ingredients prevent a greater spectrum of root diseases – including *Phytophthora*
- Grows on roots "shielding" them against root-damaging fungi for 10-12 weeks with 1 application
- Costs less than 2¢ per 6-inch pot in a root protection program
- Releases enzymes that dissolve the cell walls of fungal pathogens
- Promotes a healthier root system increasing root mass potential
- Compatible with fertilizers, algacides, insecticides, disinfectants, miticides, herbicides, growth regulators, and many fungicides
- Reduces or eliminates chemical fungicide applications
- Grows between pH 4 and 8 at soil temperatures from 48 – 97 °F (9 – 36 °C)
- Granules: 0-hour REI / 0-day pre-harvest interval (PHI)
- WP: 0-hour REI when drenched into potted crops and potting media, and 4-hour REI when used as a dip or dust / 0-day PHI

Sizes: 10lb., 40lb., 500lb. and 1000lb.

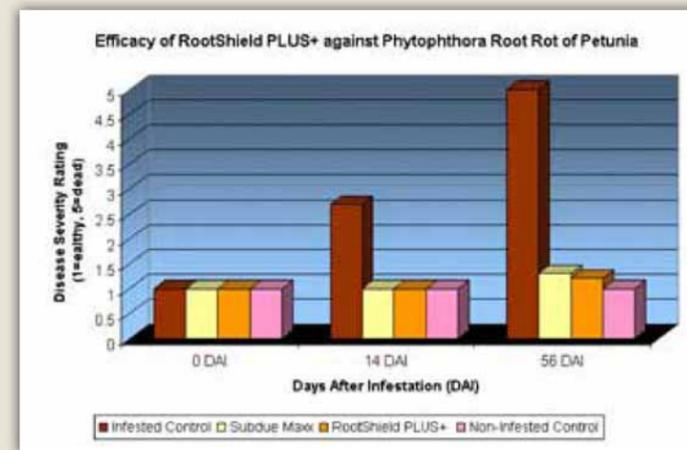
Sizes: 1lb., 3lb. and 30lb.



RootShield PLUS WP at 8 oz effectively controlled *Phytophthora cinnamomi* in Boxwood. RootShield PLUS WP performed better than the chemical standard after 58 days.



RootShield PLUS WP controlled *Phytophthora parasitica* and produced the healthiest and most marketable Azalea plants.



RootShield PLUS WP at 8 oz effectively controlled *Phytophthora parasitica* in Petunia. RootShield PLUS protected Petunia from *Phytophthora parasitica* better than the chemical standard 56 days after inoculation.



## What growers are saying about RootShield PLUS<sup>+</sup>

"Although *Pennisetum* sp. 'Hameln' has been known to die over the winter due to root rot, I was pleased to find our crop healthy in early February...Without a doubt, RootShield PLUS is the primary reason our plants survived the winter, and root rot."

Michael Roe, Production Manager  
Windmill Nursery LLC, LA

"Use of RootShield PLUS reduced or eliminated use of chemical fungicides!"

"We switched to RootShield PLUS and saw a dramatic difference!"

"We've been using RootShield WP since 2003 and now it is even better."

"We have eliminated losses due to root rot."