

# PHC® Root Dip

PHC® Root Dip is used as a preplant root dip to inoculate bareroot and containerized tree seedlings with beneficial mycorrhizal fungi and rhizosphere bacteria prior to field planting or potting. It contains five superior species of endo- and ectomycorrhizal fungi that will colonize the roots of nearly all tree and shrub species under a broad range of growing conditions. The microbes in PHC® Root Dip are mixed with natural yucca, seaweed and humate. It also contains six species of free-living rhizosphere bacteria that together fix nitrogen and solubilize phosphorus. **PHC® Root Dip:**

- Improves absorption of water and minerals from the soil
- Introduces beneficial mycorrhizal fungi and bacteria
- Improves survival by minimizing "transplant shock"
- Increases endurance and growth of difficult-to grow plants
- Helps plants mitigate adverse environmental stresses such as drought, salinity, and extremes of soil pH

## DIRECTIONS FOR USE

Combine PHC® Root Dip and water in a bucket or pail and mix 3-5 minutes into a slurry with a consistency of a heavy gravy. Before planting, dip the seedlings into the mix so that the roots are coated with gel. For container seedlings, gently shake the excess loose rooting medium from the roots and dip roots in the mix. Transplant as soon as possible after dipping. Try to outplant on field sites within one to two weeks of rainfall.

### APPLICATION RATES

Rate per Packaging Size	Water Volume	Average 2-0 Trees
3 ounce bag	1/2 gallon	Treats up to 100 seedlings
15 ounce bag	2.5 gallons	Treats up to 500 seedlings

## COMPATIBILITY

**Species:** PHC® Root Dip is effective for all tree and shrub species except rhododendrons, azaleas, and mountain laurel which associate with ericoid mycorrhizal fungi. Use of PHC® Root Dip with these species will not harm them.

**Soil pH:** The fungi in this product were chosen based on their ability to survive and colonize plant roots in a broad soil pH range of 3 to 9.

**Fungicides:** Some fungicides can have a detrimental effect on mycorrhizae. Soil application of any fungicide is not recommended for two weeks before or after seedling treatment. Foliar applications of non systemic fungicides should pose no problems. Systemic fungicides, like Bayleton, should not be used for three weeks before or after product use.

**Herbicides and Insecticides:** Do not normally interfere with mycorrhizal fungal development.

## MYCORRHIZAL FUNGAL INOCULANT FOR TREE SEEDLINGS

### GUARANTEED ANALYSIS OF SOIL/PLANT AMENDING INGREDIENTS

**Ectomycorrhizal Fungi**.....95 Million spores/Lb  
95 Million spores/Lb *Pisolithus tinctorius*

**VA Endomycorrhizal (VAM) Fungi**.....53,200 spores/Lb  
13,300 spores/Lb *Glomus clarum*  
13,300 spores/Lb *Glomus etunicatum*  
13,300 spores/Lb *Glomus intraradices*  
13,300 spores/Lb *Entrophospora columbiana*

**Rhizosphere *Bacillus* spp** ..... 2.7 Billion cfu/Lb  
450 Million cfu/Lb *Bacillus licheniformis*  
450 Million cfu/Lb *Bacillus megaterium*  
450 Million cfu/Lb *Bacillus polymyxa*  
450 Million cfu/Lb *Bacillus subtilis*  
450 Million cfu/Lb *Bacillus thuringiensis*  
450 Million cfu/Lb *Paenibacillus azotofixans*

**SOIL/PLANT AMENDING INGREDIENTS.....% by Weight**  
Humates (derived from Leonardite) .....25.8%  
16.5% Humic Acids  
Formononetin .....0.1%

**MICROBIAL NUTRIENTS** .....6.5%  
25.9% Kelp Meal (derived from *Ascophyllum nodosum*)  
1% Maltodextrin  
0.7% Citric Acid  
0.6% Dried Yucca pulp (derived from *Yucca schidigera*)  
0.3% Yeast Extract

**INERT INGREDIENTS** .....45.6%

## STORAGE/SHELF LIFE

This product is stable in cool, dry storage conditions. See expiration date on package.

## HEALTH AND SAFETY INFORMATION

- In case of allergic reaction(s), treat symptoms and contact physician.
- Avoid breathing dust or spray mist.
- Wash hands after handling.
- In case of ingestion, seek medical attention.
- **Keep out of reach of children.**

## PACKAGING

3-oz bags, 10 per box and 15-oz bags, 5 per box

## TECHNICAL ASSISTANCE

For technical assistance, call 1-800-421-9051

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