

# PHC<sup>®</sup> Ecto Root Dip

PHC<sup>®</sup> Ecto Root Dip is used as a preplant root dip to inoculate bareroot seedlings and small seedling plugs with spores of ectomycorrhizal fungi prior to field planting. Included are spores of *Pisolithus tinctorius* and *Scleroderma citrinum*. These fungi will colonize roots of ectomycorrhizal tree species, including Pine, Spruce, Hemlock, Larch, Fir, Cypress, Cedar, Oak, Beech, Birch, Hickory, Pecan, Willow, Eucalyptus, Chestnut, and Linden, among others, under a broad range of growing conditions.

Also included are spores of six species of beneficial rhizosphere bacteria that promote soil fertility by fixing nitrogen, solubilizing phosphorus, and releasing soluble mineral nutrients bound in organic matter. All these are mixed with natural extracts of yucca and seaweed, as well as mineral humates. **PHC<sup>®</sup> Ecto Root Dip:**

- Improves absorption of water and minerals from the soil
- Introduces beneficial mycorrhizal fungi and bacteria
- Helps plants mitigate adverse environmental stresses such as drought, salinity, and extremes of soil pH

## DIRECTIONS FOR USE

Combine PHC<sup>®</sup> Ecto Root Dip and water in a bucket or pail and mix 3 to 5 minutes into a slurry with the 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 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 to 0 Trees
3 ounce bag	1 gallon	Treats up to 200 seedlings
15 ounce bag	5 gallons	Treats up to 1,000 seedlings

## COMPATIBILITY

**Species:** Ectomycorrhizae benefits conifers and hardwoods, such as: *Pine, Beech, Spruce, Birch, Hemlock, Hickory, Basswood, Pecan, Larch, Willow, Cypress, Oak, Eucalyptus, Cedar, Chestnut and Fir.*

**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 8.

**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 of 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.

## ECTOMYCORRHIZAL FUNGAL INOCULANT FOR TREE SEEDLINGS

### GUARANTEED ANALYSIS OF SOIL/PLANT AMENDING INGREDIENTS

**Ectomycorrhizal Fungi**.....209 Million spores/Lb  
 190 Million spores/Lb *Pisolithus tinctorius*  
 19 Million spores/Lb *Scleroderma citrinum*

**Rhizosphere *Bacillus spp***.....6 Billion cfu/Lb  
 1 Billion cfu/Lb *Bacillus licheniformis*  
 1 Billion cfu/Lb *Bacillus megaterium*  
 1 Billion cfu/Lb *Bacillus polymyxa*  
 1 Billion cfu/Lb *Bacillus subtilis*  
 1 Billion cfu/Lb *Bacillus thuringiensis*  
 1 Billion cfu/Lb *Paenibacillus azotofixans*

**SOIL/PLANT AMENDING INGREDIENTS**.....% by Weight  
 Polyacrylate polymer .....53.6%  
 Humates (derived from Leonardite) .....37.5%  
 24% Humic acids

**MICROBIAL NUTRIENTS** .....6.5%  
 3.2% Seaweed Extract (derived from *Ascophyllum nodosum*)  
 2.6% Maltodextrin  
 0.6% Yeast extract  
 0.1% Yucca plant powder (derived from *Yucca schidigera*)

**INERT INGREDIENTS** .....2.4%  
 1.4% Citric acid  
 1% USP Mineral Oil

## 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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