

NEW  
LOOK!

roots®

# PHC® Root Dip

## Preplant Root Dip

**ROOTS® PHC® Root Dip** is a mycorrhizal fungal inoculant formulated in a water-soluble gel. It contains a "cocktail" blend of endo and ectomycorrhizal fungi and rhizosphere bacteria selected for their beneficial activities in the rhizosphere of plants. Just add water to form the gel, dip the roots or small plugs, and plant.

**DIRECTIONS FOR USE:** Mix with water at a rate of 15 ounces (by weight) per 2.5 gallons of water. Use more or less water to achieve desired consistency of gel. Dip roots of bare root seedlings into gel just before planting. May also be used to dip small container plugs: remove from container and dip plug. 2.5 gallons of gel will treat about 500 bare root seedlings of 12 inch height or less. Larger seedlings will use more gel.

**SAFETY AND HANDLING:** Avoid contact with eyes. Do not ingest. Do not breathe dust or mist of product. Wash hands after handling.

**KEEP OUT OF REACH OF CHILDREN**

**STORAGE:** Store in a cool, dry location between 50° to 90° F. Keep tightly sealed.

### WARRANTY

**NOTE** To the extent consistent with applicable law, Buyer assumes all responsibility for safety and performance if this product is not used according to the directions.



**Five 15-oz Packs**  
**Net Wt. 4 lb 11 oz (2.13-kg)**

For technical assistance and information about our products visit [www.LebanonTurf.com](http://www.LebanonTurf.com)

Manufactured by: Lebanon Seaboard Corporation . 1600 E. Cumberland St. Lebanon, PA 17042 . Made in the USA . [www.LebanonTurf.com](http://www.LebanonTurf.com)

- Contains endo and ecto-mycorrhizal fungi and rhizosphere bacteria
- Add water to form gel and dip

### NOT A PLANT FOOD PRODUCT

### CONTAINS NON PLANT FOOD INGREDIENTS

#### GUARANTEED ANALYSIS

#### SOIL/PLANT AMENDING INGREDIENTS

#### Active Ingredients

**Ectomycorrhizal Fungi**..... 209,000 spores/g

188,100 spores/g *Pisolithus tinctorius*  
20,900 spores/g *Scleroderma citrinum*

**VA Endomycorrhizal (VAM) Fungi**..... 116 spores/g

29 spores/g *Entrophospora columbiana*  
29 spores/g *Glomus etunicatum*  
29 spores/g *Glomus clarum*  
29 spores/g *Glomus intraradices*

**Rhizosphere Bacteria**..... 6.2 Million cfu/g

1.4 Million cfu/g *Bacillus licheniformis*  
1.4 Million cfu/g *Bacillus megaterium*  
300,000 cfu/g *Bacillus polymyxa*  
1.4 Million cfu/g *Bacillus pumilus*  
1.4 Million cfu/g *Bacillus subtilis*  
300,000 cfu/g *Paenibacillus azotofixans*

**MICROBIAL NUTRIENTS** ..... 27.7%

25.9% Kelp meal (derived from *Ascophyllum nodosum*)  
0.8% Maltodextrin  
0.7% Citric Acid  
0.3% Yeast extract

Humic acids (derived from Leonardite) ..... 18.0%

Formononetin ..... 0.1%

**INERT INGREDIENTS** ..... 54.2%

26.0% Polyacrylate polymer gel  
12.0% Greensand  
8.0% Non Humic Acid components of Leonardite  
4.3% Kaolin clay  
3.5% Mineral Oil  
0.4% Talc

F699

Information regarding the contents and levels of metals in this product is available on the Internet at: <http://www.regulatory-info-lebsea.com>

Expiration Date:

LebanonTurf

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**SAFETY AND HANDLING:** Avoid contact with eyes. Do not ingest. Do not breathe dust or mist of product. Wash hands after handling.

**KEEP OUT OF REACH OF CHILDREN**

**STORAGE:** Store in a cool, dry location between 50° to 90° F. Keep tightly sealed.

## WARRANTY

**NOTE** To the extent consistent with applicable law, Buyer assumes all responsibility for safety and performance if this product is not used according to the directions.

**Net Wt. 15 oz (425-g)**

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Expiration Date:

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# ROOTS® PHC® Root Dip

**ROOTS® 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 six superior species of mycorrhizal fungi that will colonize the roots of nearly all tree and shrub species under a broad range of growing conditions. The microbes in Roots® PHC® Root Dip are mixed with seaweed meal and humic acids. It also contains six species of free-living rhizosphere bacteria that together fix nitrogen and solubilize phosphorus.

**ROOTS® PHC® Root Dip will help:**

- **Improve water and mineral absorption**
- **Minimize transplant shock**
- **Mitigate stresses of drought, salinity, and extremes of soil pH**

**DIRECTIONS FOR USE:**

Combine Roots® 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 week of rainfall.

**COMPATIBILITY:**

*Species:* Roots® 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 Roots® 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.

*Cuttings:* Roots must be present for product to be effective. Not recommended for unrooted cuttings.

**SAFETY AND HANDLING:** Avoid contact with eyes. Do not ingest. Do not breathe dust of product. Wash hands after handling.

**KEEP OUT OF REACH OF CHILDREN**

**STORAGE:** Store in a cool, dry place between 50° to 90° F. Keep tightly sealed. See expiration date on package.

**PACKAGING:** 5 X 15 oz. packs per box

**WARRANTY**

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**NOT A PLANT FOOD PRODUCT  
CONTAINS NON PLANT FOOD INGREDIENTS**

<b>GUARANTEED ANALYSIS</b>	
<b>SOIL/PLANT AMENDING INGREDIENTS</b>	
<b>Active Ingredients</b>	
<b>Ectomycorrhizal Fungi</b> .....	209,000 spores/g
188,100 spores/g <i>Pisolithus tinctorius</i>	
20,900 spores/g <i>Sclerotinia citrinum</i>	
<b>VA Endomycorrhizal (VAM)Fungi</b> .....	116 spores/g
29 spores/g <i>Entrophospora columbiana</i>	
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29 spores/g <i>Glomus clarum</i>	
29 spores/g <i>Glomus intraradices</i>	
<b>Rhizosphere Bacteria</b> .....	6.2 Million cfu/g
1.4 Million cfu/g <i>Bacillus licheniformis</i>	
1.4 Million cfu/g <i>Bacillus megaterium</i>	
300,000 cfu/g <i>Bacillus polymyxa</i>	
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1.4 Million cfu/g <i>Bacillus subtilis</i>	
300,000 cfu/g <i>Paenibacillus azotofixans</i>	
<b>MICROBIAL NUTRIENTS</b> .....	27.7%
25.9% Kelp meal (derived from <i>Ascophyllum nodosum</i> )	
0.8% Maltodextrin	
0.7% Citric Acid	
0.3% Yeast extract	
Humic acids (derived from Leonardite) .....	18.0%
Formononetin .....	0.1%
<b>INERT INGREDIENTS</b> .....	54.2%
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4.3% Kaolin clay	
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<b>APPLICATION RATES</b>		
<b>RATE PER PACKAGING SIZE</b>	<b>WATER VOLUME</b>	<b>AVERAGE 2-0 TREES</b>
15 OUNCE BAG	2.5 GALLONS	TREATS UP TO 500 SEEDLINGS

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