

FOR TREES AND SHRUBS

# DIEHARD™ Root Dip



**“The Industry's First Complete Bare Root Treatment”**

**DIEHARD™ Root Dip** is formulated as a bare root mycorrhizal inoculant treatment with live beneficial mycorrhizal fungi to inoculate the roots of bare root plants before planting. It contains highly selected species of low host specificity endo- and ectomycorrhizal fungi that will quickly colonize the roots of bare root plants to provide the best possible conditions for the roots to become as effective during and after planting. The mycorrhizal inoculants are combined with humic acids, biostimulants, beneficial bacteria, soluble sea kelp, and yucca plant extracts, to promote rapid root development. The mycorrhizal inoculant is managed with Horta-Sorb® SM which also protects the roots from drying out. The results are better survival and growth rates and less watering for all transplants.

## Product Benefits

### IMPROVES

Survival  
Rooting  
Water Absorption  
Nutrient Availability  
Yields and Production  
Client Satisfaction  
& Goodwill

### REDUCES

Plant Losses  
Need Of Pesticides  
Heat Stress Damage  
Irrigation Frequency  
Losses From Drought  
Conditions

## Directions For Use

Mix contents of bag with water to form a mixture the consistency of thick gravy. Let stand for 15-20 minutes. Dip or spray roots and plant, or package seedlings for shipment or storage. Adjust thickness of mixture to insure that the gel adheres to the roots when dipping.

Pkg. Size	Water To Mix	No. of Seedlings*
3 oz.	2 ½ gallons	Up to 550
15 oz.	10 gallons	Up to 3,000

\*Depends on the root mass and the size of plants. A 5' bare root whip with a 2' root system would require as much as 10 times as much as a one year old forest seedling.

## Storage & Handling

Store in a cool, dry place. Avoid high temperatures and direct sunlight. Product shelf life is up to 24 months. Ok to sit overnight but use up within 24-36 hours.

## Non Plant Food Ingredients

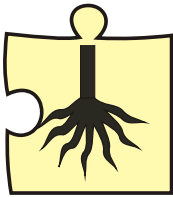
<i>Endomycorrhizal Fungi</i>	127 Propagules per gram centimeter Glomus mosseae, Glomus intraradices, Glomus claroideum, Glomus etunicatum, Glomus clarum, Glomus deserticola, Glomus microaggregatum.
<i>Ectomycorrhizal Fungi</i>	660,793 Spores per gram centimeter to include: <i>Pisolithus tinctorius</i> (568,282), <i>Rhizopogon</i> (92,511).
<i>Bacillus, Pseudomonas &amp; Streptomyces Species</i>	12,230,396 CFU's per gram <b>Genus Bacillus:</b> <i>B. megaterium</i> , <i>B. subtilis</i> , <i>B. amyloliquefaciens</i> , <i>B. azotoformans</i> , <i>B. licheniformis</i> , <i>B. pumilus</i> , <i>B. Firmus</i> , <i>B. coagulans</i> , <i>Geobacillus stearothermophilus</i> , and <i>Paenibacillus polymyxa</i> . <b>Genus Pseudomonas:</b> <i>P. putida</i> , <i>P. fluorescences</i> , <i>P. aureofaceans</i> , <i>P. Durum</i> . <b>Genus Streptomyces:</b> <i>S. lydicus</i> , <i>S. griseus</i> , <i>S. coelicolor</i> .
<i>Trichoderma</i>	79,956 CFU's per gram <i>Trichoderma: Trichoderma hamatum</i> , <i>Trichoderma harzianum</i> , <i>Trichoderma viride</i> , <i>Trichoderma reesei</i> .
Humic Acids	1% Derived from <i>Leonardite</i>
Sea Kelp Extract	1% <i>Ascophyllum nodosum</i>
Yucca Plant Extract	1% <i>Yucca schidigera</i>
Root Promoting Vitamin	B, B2, B3, B6, B7, B12, C, K, Biotin, Fulvic Acid
Amino Acids (Protein)	Animal and plant proteins
Horta-Sorb® SM Water Gel	Minimum 55%
Particle Size	0.3 mm to 0.8 mm
Percent Soluble	less than 0.05%
Absorption Rate	300-400 times in distilled water

## Compatibility

**Species:** All plants and shrubs. Rhododendrons, Azaleas, Heather, Blueberries, and Laurels associate with ericoid mycorrhiza but are compatible with ingredients contained in this product.

**Fungicides:** Non-systemic fungicides normally have no effect. Foliar applied fungicides normally have no effect. Systemic fungicides may be applied 2 weeks before or after use of product. Fungicide use according to label instructions do not extinguish mycorrhizae, they only inhibit development for a short period of time.

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INOCULANT FOR ALL PLANTS

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*“The Industry's First Complete Bare Root Treatment”*

## Plant Species and Type of Mycorrhizae

### Endomycorrhizae

Arborvitae	Cedar	Ginkgo	Morning Glory	Rose
Acacia	Celery	Grapes (all)	Mulberry	Russian Olive
Agapanthus	Cherry	Grass	Monkey Pod	Ryegrass
Ailanthus	Chokeberry	Gum	Nasturtium	Sassafras
Alder	Chrysanthemum	Hackberry	Okra	Sagebrush
Alfalfa	Citrus (all)	Hawthorn	Olive	Serviceberry
Almond	Clover	Hibiscus	Onion	Sequoia
Apple	Coconut	Holly	Pacific Yew	Silverbell
Apricot	Coffee	Hophornbeam	Palms (all)	Sourwood
Artichoke	Coral Tree	Hombear	Palmetto	Soybean
Ash	Corn	Horsechestnut	Pampas Grass	Squash
Asparagus	Cotton	Impatiens	Papaya	Strawberry
Avocado	Cottonwood	Jojoba	Passion Fruit	Sudan Grass
Bamboo	Crabapple	Juniper	Paulownia	Sugar Cane
Basil	Cryptomeria	Kiwi	Paw Paw	Sumac
Bayberry	Cucumber	Leek	Pea	Sunflower
Bean	Currant	Lettuce	Peach	Sweet Gum
Begonia	Cypress	Lily	Peanut	Sweet potato
Black Locust	Dogwood	Locust	Pear	Sycamore
Blackberry	Eggplant	London	Pecan	Tea
Box Elder	Elm	Planetree	Pepper	Tobacco
Buckeye	Eucalyptus	Macadamia	Pistachio	Tomato
Bulbs	Euonymus	Magnolia	Persimmon	Tree-of-heaven
Burning Bush	Fern	Mahogany	Pittosporum	Tupelo
Cacao	Fescue	Mahonia	Plum	Walnut
Cactus	Fig	Mango	Poinsettia	Wheat
Camellia	Forsythia	Maples (all)	Potato	Willow
Carrot	Fountain Grass	Marigold	Poplar	Yam
Casuarina	Fuchsia	Melons (all)	Raintree	Yellow poplar
Cassava	Gardenia	Mesquite	Raphiolepis	Yucca
Catalpa	Garlic	Millet	Raspberry	
Ceanothus	Geranium	Mimosa	Redbud	

All nut trees except Pecan, Chestnut, and Hazelnut.  
 All fruit trees, grapevines, grasses and many vegetables  
 All berries except blueberry, cranberry and lingonberry.  
 All shrubs and foliage except Laurel, Rhododendron, and Azalea

### Ectomycorrhizae

Alder	Birch	Hemlock	Madrone	Poplar
Aspen	Chestnut	Hickory	Oak	Spruce
Basswood	Chinquapin	Larch	Pecan	Willow
Beech	Fir	Linden	Pine	

### Both Endo and Ectomycorrhizae

Alder	Cottonwood	Poplar
Aspen	Eucalyptus	Willow

## Health & Safety

Inhalation	If dusty conditions exist, wear a dust mask.
Ingestion	Drink large amounts of water, induce vomiting, and seek medical attention.
Eyes	Flush with large amounts of water.
Safety	Product becomes very slippery when wet.

**Limited Warranty:** All information contained herein is offered in good faith. There are no warranties of merchantability of fitness for a particular purpose which extend beyond the information contained herein. Our liability is limited to replacement of any product which does not meet these specifications.

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