



DATA SHEET #1

FOR TREES AND SHRUBS DIEHARD™ Transplant



“The Industry's First Complete Transplant Inoculant”

DIEHARD™ Transplant "naturalizes" the plant and ground with beneficial organisms that all plants have evolved with but generally are void of when produced in a commercial nursery. Nursery grown plants are manipulated in every way the nurserymen has at his/her disposal to produce plants in the fastest, most efficient, way. The result is that the plants, although looking great, and meeting the buyers specifications (i.e., right size, looking great, etc.), are very fragile because they are missing many of the natural systems that they will need when planted in the landscape. The product is formulated as a transplant amendment to inoculate landscape trees and shrubs when planted with live beneficial mycorrhizal fungi, which nursery plants do not have, and nearly one hundred other ingredients to "complete" the plant and the ground in which the transplant is planted. It contains highly selected endo and ectomycorrhizal fungi that will quickly colonize the roots of new transplants to provide the best possible conditions for the roots to become as effective as possible during the establishment period and beyond. Both endo and ectomycorrhizal inoculants are combined with humic acids, *Trichoderma*, stimulants, beneficial bacteria, soluble sea kelp, yucca plant extracts, to promote rapid root development. . The formulation Horta-Sorb® water management gel is added to reduce transplant stress and watering maintenance, and to manage all soluble components. The results are better survival and growth rates and less watering for all transplants.

Product Benefits

IMPROVES

Survival

Rooting

Flowering

Water Absorption

Nutrient Availability

Yields and Production

Client Satisfaction

& Goodwill

REDUCES

Plant Losses

Fertilizer Use

Need Of Pesticides

Heat Stress Damage

Irrigation Frequency

Losses From Drought

Conditions

Directions For Use

Mix product with backfill in the top 8-10 inches of planting hole making sure product is in contact with the root ball. Each 8 oz. bag will treat a 2" caliper tree. (See chart on back of page.)

Storage & Handling

Store in a cool, dry place. Avoid high temperatures and direct sunlight. Product shelf life is up to 18 months..

Non Plant Food Ingredients

GUARANTEED ANALYSIS

Endomycorrhizal	11 Propagules per cubic centimeter <i>Glomus mosseae</i> (2), <i>Glomus intraradices</i> (2), <i>Glomus fasciculatum</i> (2), <i>Glomus dussii</i> (1), <i>Glomus clarum</i> (1), <i>Glomus deserticola</i> (1.5), <i>Glomus microaggregatum</i> (1.5).
Ectomycorrhizal	180,000 spores per cubic centimeter to include: <i>Pisolithus tinctorius</i> (154,800), <i>Rhizopogon</i> (25,200).
Nitrogen Fixing, Phosphate Solubilizing and Growth Promoting Bacteria	800,000 Colony forming units per cubic centimeter of <i>Genus Bacillus</i> (32 species), <i>Genus Pseudomonas</i> (2 species), <i>Genus Streptomyces</i> (2 species).
<i>Trichoderma</i>	6,600 CFU's per cubic centimeter <i>Genus Trichoderma</i> (6 species), <i>Gliocladium virens</i> (2 strains), <i>Trichoderma Harzianum</i> (2 strains), <i>Trichoderma viride</i> (2 strains).
Sea Kelp Extract	11% <i>Ascophyllum nodosum</i>
Yucca Plant Extract	7% <i>Yucca schidigera</i>
Humic Acids	22% Derived from <i>Leonardite</i>
Horta-Sorb® MD Water Gel	Minimum 29% Particle Size 0.8 mm to 2.0 mm Percent Soluble less than 0.05% Absorption Rate 300-400 times in distilled water

OTHER INGREDIENTS

Root Promoting Vitamin	B, B2, B3, B6, B7, B12, C, K, Biotin, Fulvic Acid
Amino Acids (Protein)	Animal and plant proteins

Compatibility

Species: All plants and shrub species except Rhododendrons, Azaleas, Heather, Blueberries, and Laurels. (These associate with ericoidmycorrhizae.)

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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FOR TREES, SHRUBS, FLOWER BEDS and TURF

DIEHARD™ Transplant



“Stimulates root growth naturally”

Application Rates

Size of Plant Material	Amount of DIEHARD	Size of Plant Material	Amount of DIEHARD
1 Gallon	1 oz.	2' Height	2 oz.
2 Gallon	2 oz.	3' Height	3 oz.
3 Gallon	2 oz.	4' Height	4 oz.
5 Gallon	3 oz.	5' Height	6 oz.
7 Gallon	4 oz.	6' Height	8 oz.
10 Gallon	4 oz.	8' Height	8 oz.
15 Gallon	6 oz.	10' Height	12 oz.
20 Gallon	8 oz.	24" Spade	4 oz.
30 Gallon	12 oz.	30" Spade	8 oz.
50 Gallon	16 oz.	36" Spade	12 oz.
65 Gallon	20 oz.	44" Spade	16 oz.
100 Gallon	24 oz.	52" Spade	24 oz.
200 Gallon	30 oz.	60" Spade	32 oz.
400 Gallon	32 oz.	80" Spade	48 oz.
1" Caliper	4 oz.	20" Box	8 oz.
2" Caliper	8 oz.	24" Box	12 oz.
3" Caliper	12 oz.	30" Box	16 oz.
4" Caliper	16 oz.	36" Box	24 oz.
5" Caliper	20 oz.	42" Box	36 oz.
6" Caliper	24 oz.	48" Box	40 oz.
7" Caliper	28 oz.	60" Box	48 oz.
8" Caliper	32 oz.	72" Box	60 oz.

Health & Safety

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

DIEHARD™ Inoculants

DIEHARD™ Palm

Endomycorrhizae, beneficial bacteria, plus all the "goodies" for palms. Formulated by some of the top palm experts in the country.

DIEHARD™ Flower Bed

Endomycorrhizae, beneficial bacteria, plus a light portion of Horta-Sorb® MD to slow release the soluble components of the formulation.

DIEHARD™ Root Dips

Endo and ectomycorrhizae, beneficial bacteria, soluble sea kelp, yucca plant extracts and Horta-Sorb® SM water management gel to protect the roots, slow release all soluble components of the formulation, and boost survival. Available with endo and ecto or ectomycorrhizae alone.

DIEHARD™ Root Reviver

Endo and ectomycorrhizae, beneficial bacteria, plus a light portion of Horta-Sorb® MD to slow release the soluble components of the formulation. For use as a vertimulch application for trees and shrubs in decline and as a soil amendment for plantings, turf, and propagation mixes.

DIEHARD™ Injectables

Endo and ectomycorrhizae, beneficial bacteria, soluble sea kelp, yucca plant extracts, *Trichoderma* to treat established trees and tree and shrubs held in the nursery prior to shipment to the landscape. Available with endo and ecto or ectomycorrhizae alone.

DIEHARD™ BioRush®

A dry, water soluble root containing humic acid extracts, soluble sea kelp, yucca plant extracts, amino acids and nitrogen fixing, phosphate solubilizing and growth promoting bacteria to "energize" the microbial activity in the ground and promote cell division and lateral bud development as well as delay the aging process of plant tissue.

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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