



DATA SHEET #2A

Endomycorrhizal Palm Tree Inoculant

# DIEHARD™ Palm Transplant



**“The Industry's First Complete Palm Transplant Inoculant”**

DIEHARD™ Palm Transplant is formulated as a preparation to inoculate the roots of palm trees with live beneficial mycorrhizal fungi when planting to promote new feeder root and mycorrhizal development on newly planted palms. It contains highly selected endomycorrhizal fungi that will quickly colonize the roots of palms to provide the best possible conditions for the roots to grow and extract from the root zone water and nutrients. The mycorrhizal fungi are combined with humic acids, biostimulants, beneficial bacteria, soluble sea kelp, yucca plant extracts, fulvic acid, nitrogen, phosphorous, potassium, and chelated magnesium, manganese, iron and zinc, to promote rapid root development. DIEHARD™ Palm Transplant is packaged in 8 oz. bags that will treat a 10 - 12 foot palm.

## GUARANTEED NUTRIENT ANALYSIS 3-1-3

Total Nitrogen (N) .....	6%
1.3% Urea Nitrogen	
2.1% Water Soluble Nitrogen	
2.6% Water Insoluble Nitrogen	
Available Phosphate (P205) .....	1%
Soluble Potash (K20).....	3%
Total Magnesium (Mg) .....	2%
2.0% Water Soluble Magnesium (Mg)	
Total Manganese (Mn).....	4%
4.0% Water Soluble Manganese (Mn)	
Total Zinc (Zn) .....	1.5%
1.5% Soluble Zinc (Zn)	
Total Iron (Fe).....	1%
1% Soluble Iron as (Fe)	

Derived from KELP (*Ascophyllum Nodosum*), Manganese Sulfate, Zinc Sulfate, Iron Sulfate, Magnesium Sulfate, Superphosphate, Urea, and Potassium Sulfate.

## Product Benefits

<b>IMPROVES</b>	<b>REDUCES</b>
Survival	Plant Losses
Rooting	Fertilizer Use
Flowering	Need Of Pesticides
Water Absorption	Heat Stress Damage
Nutrient Availability	Irrigation Frequency
Yields and Production	Losses From Drought
Client Satisfaction	Conditions
& Goodwill	

## Compatibility

**Species:** All palms

**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.

## Also contains NONPLANT FOOD INGREDIENTS:

Endomycorrhizal Fungi	9.6 Propagules per cubic centimeter <i>Glomus mosseae</i> (1.9), <i>Glomus intraradices</i> (1.9), <i>Glomus fasciculatum</i> (1.9), <i>Glomus dussii</i> (0.975), <i>Glomus clarum</i> (0.975), <i>Glomus deserticola</i> (0.975), <i>Glomus microaggregatum</i> (0.975).
Nitrogen Fixing, Phosphate Solubilizing and Growth Promoting Bacteria.	780,000 CFU's per cc to include <b>GENUS BACILLUS: (32 SPECIES)</b> <i>Bacillus azotofixans</i> (2 strains) <i>Bacillus azotoformans</i> (3 strains) <i>Bacillus polymyza</i> (5 strains) <i>Bacillus thuringiensis</i> (2 strains) <i>Bacillus licheniformis</i> (6 strains) <i>Bacillus pumilus</i> (2 strains) <i>Bacillus subtilis</i> (10 strains) <i>Bacillus megaterium</i> (2 strains) <b>GENUS PSUEDOMONAS: (2 SPECIES)</b> <i>Pseudomonas aureofaceans</i> (2 strains) <b>GENUS STREPTOMYCES (2 SPECIES)</b> <i>Streptomyces lydicus</i> (2 strains)
<i>Trichoderma</i>	1,170,000 CFU's <i>Genus Trichoderma</i> (6 species), <i>Gliocladium virens</i> (2 strains), <i>Trichoderma harzianum</i> (2 strains), <i>Trichoderma viride</i> (2 strains).
Root Promoting Vitamin	B, B2, B3, B6, B7, B12, C, K, Biotin, Fulvic Acid.
Amino Acids (Protein)	Animal and plant proteins

8% Humic Acid Derived from *Leonardite*  
4% Sea Kelp Extract (*Ascophyllum Nodosum*)  
1% Yucca Plant Extract (*Yucca Schidigera*)  
25% Co-Polymer (Crossed linked acrylamide and potassium acrylate)



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*“Stimulates root growth naturally”*

## Directions For Use

**Transplants:** Each 8 oz. bag will treat one 10-12 foot high palm when transplanting. Plant palm as usual and mix contents of bag around the palm root ball IN THE TOP 10 INCHES of planting hole. DO NOT PUT INTO THE BOTTOM OF THE PLANTING HOLE.

PRODUCT IS NOT TO BE USED AS A TOP DRESS.

## Storage & Handling

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

## 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™ Transplant

Contains live spores of endo and ectomycorrhizal fungus combined with humic acids, stimulants, nitrogen fixing, phosphorus solubilizing and growth promoting beneficial bacteria, soluble sea kelp, natural surfactant from yucca plant extracts, and Horta-Sorb® MD. This is a complete transplant preparation to inoculate landscape trees and shrubs with live beneficial mycorrhizae fungi, "energize" the soil, and provide natural nutrients to trees and shrubs when planting.

### DIEHARD™ Palm

A maintenance product specifically for palms containing Endomycorrhizae, beneficial bacteria, plus all the "goodies" for palms. Formulated by some of the top palm experts in the country. Can be used to treat newly PLANTED palms.

### DIEHARD™ Root Dips

Endo and ectomycorrhizae, stimulants, 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. Also available with just endo or ectomycorrhizae.

### DIEHARD™ Root Reviver

Endo and ectomycorrhizae, stimulants, 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, stimulants, beneficial bacteria, soluble sea kelp, yucca plant extracts and a slight amount of Horta-Sorb® SM gel to slow release all soluble components of the formulation. Also available with just endo or ectomycorrhizae.

### DIEHARD™ BioRush®

A dry, water soluble root growth stimulant 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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