



DATA SHEET #2

Endomycorrhizal Palm Tree Inoculant

DIEHARD™ Palm



“The Industry's First Complete Palm Inoculant”

DIEHARD™ Palm is formulated as a preparation to inoculate the roots of palm trees with live beneficial mycorrhizal fungi and microflora stimulants. 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, stimulants, 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. The product is used to promote new feeder root and mycorrhizal development on newly planted trees and shrubs.

**GUARANTEED NUTRIENT ANALYSIS
6-3-6**

Total Nitrogen (N)	6%
1.3% Urea Nitrogen	
2.1% Water Soluble Nitrogen	
2.6% Water Insoluble Nitrogen	
Available Phosphate (P205)	3%
Soluble Potash (K20).....	6%
Total Magnesium (Mg)	2.5%
2.5% 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).....	2.5%
2.5% Soluble Iron as (Fe)	
Derived from KELP (<i>Ascophyllum Nodosum</i>), Manganese Sulfate, Zinc Sulfate, Iron Sulfate, Manganese Sulfate, Superphosphate, Urea, and Potassium Sulfate.	

Product Benefits

IMPROVES	REDUCES
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	19 Propagules per cubic centimeter <i>Glomus mosseae</i> (3.75), <i>Glomus intraradices</i> (3.75), <i>Glomus fasciculatum</i> (3.75), <i>Glomus dussii</i> (1.9), <i>Glomus clarum</i> (1.9), <i>Glomus deserticola</i> (1.9) <i>Glomus microaggregatum</i> (1.9)
Nitrogen Fixing, Phosphate Solubilizing and Growth Promoting Bacteria.	1,000,000 CFU's per cc to include GENUS BACILLUS: <i>Bacillus amyloliquefaciens</i> , <i>Bacillus azotoformans</i> , <i>Bacillus polymyxa</i> , <i>Bacillus licheniformis</i> , <i>Bacillus pumilus</i> , <i>Bacillus subtilis</i> , <i>Bacillus megaterium</i> GENUS PSUEDOMONAS: <i>Pseudomonas fluorescence</i> , <i>Pseudomonas putida</i> , <i>Pseudomonas aureofaceans</i> , <i>Pseudomonas durum</i> GENUS STREPTOMYCES <i>Streptomyces lydicus</i> , <i>Streptomyces coelicolor</i> .
<i>Trichoderma</i>	96,000 CFU's per cc <i>Genus Trichoderma:</i> <i>Trichoderma hamatum</i> , <i>Trichoderma harzianum</i> , <i>Trichoderma viride</i> , <i>Trichoderma reesei</i> .
Root Promoting Vitamin	B, B2, B3, B6, B7, B12, C, K, Biotin, Fulvic Acid.
Amino Acids (Protein)	Animal and plant proteins
1% Humic Acid Derived from <i>Leonardite</i> 3% Sea Kelp Extract (<i>Ascophyllum Nodosum</i>) 1% Yucca Plant Extract (<i>Yucca Schidigera</i>) 2% Co-Polymer (Crossed linked acrylamide and potassium acrylate)	



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“Stimulates root growth naturally”

Directions For Use

Transplants: Apply 1 - 6 oz. scoop per 3 ft. gray wood of trunk or per 5 gallon container size and mix with backfill in the upper 8” of planting hole making sure inoculant is adjacent to the root ball.

Stress Recovery - Small and newly planted trees and shrubs: Punch holes around the root ball (4 holes per mature palm). Apply 6 oz. per hole (2” wide x 6-8” deep) and water in. Alternatively, with a broom handle, or soil probe, poke holes around the root ball and apply as follows:

Container Size/Gray Wood = No. of 6 oz. Scoops					
1 gal.	5 gal.	10 gal.	6' ft.	9' ft.	15'ft.
1/2	1	2	2	3	5

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.

Storage & Handling

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

DIEHARD™ Inoculants

DIEHARD™ Transplant

Contains live spores of endo and ectomycorrhizae 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 mycorrhiza fungi, "energize" the soil, and provide natural nutrients to trees and shrubs when planting.

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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