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Mycorrhizal fungi for landscape use

Mycorrhizal fungi (MF) are an integral component of the soil-plant root environment (the "rhizosphere") and have co-evolved with many plant types in beneficial symbiotic relationship. The absence of these organisms in an ecosystem can seriously threaten or degrade its viability. Bacteria exist that can limit the ability of MF to flourish and provide benefit, however, some exist that can promote MF establishment.

Conversely, the reintroduction of MF to soil-plant systems that have been stressed or impacted due to overuse or manipulation resulting in a decline or elimination of the organisms can be beneficial in restoration efforts.

Benefits of MF include:

1. Enhanced moisture and nutrient absorption, particularly of phosphorous.
2. Increased potential for successful establishment in the landscape and growth rate.
3. Compensates for low fertility soils (NOTE: minimum nutrient levels must be established before MF benefits can be realized) and contributes to a more sustainable system.
4. Increase plant health through reduction of soil-borne pathogens.
5. Can mitigate plant stress resulting from drought, heat, and heavy metals.
6. Can contribute to improved soil structure.
7. Can contribute to restoration of viable plant communities in disturbed soils and impacted sites.
8. Can reduce chemical (fertilizer) input requirements.

In horticultural production (pre-transplant), MF inoculation also appears to:

- Reduce plant mortality during acclimatization
- Increase plant development and productivity (after transplant)

Further study of competition and interaction with native soil microorganisms following transplant is ongoing.

Use of MF can benefit bioremediation of polluted soils.

- Reduces planting/transplanting losses
- Formulated for low-moisture environments
- Complete, all-in-one planting aid



Available in 4 oz. foil packs, and in a plastic pail with 27 lbs. of product. A scoop is provided with the pail

Specifications

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Transplant 1-Step™ contains everything you need to ensure survival of valuable trees, shrubs and flowers.

- Water-holding gel - to decrease the risk of drought-related stress and yield losses.
- Mycorrhizae - the species includes cold-weather tolerant *Rhizopogon*, to provide broad spectrum applications for increased nutrient uptake and enhanced root systems.
- ROOTS organic-based materials - to enhance root growth and increase stress tolerance.

Guaranteed Analysis:

Total Nitrogen (N)	2.0%
1.4% Water-Insoluble Nitrogen*	
0.6% Water Soluble Nitrogen	
Available Phosphate (P ₂ O ₅)	2.0%
Soluble Potash (K ₂ O)	2.0%

*1.4% slowly available nitrogen from feather meal.

Derived From: Diammonium phosphate, feather meal, sulfate of potash

Also contains the following ingredients:

7.35% Mycorrhizae (number of viable organisms/gram)			
<i>Pisolithus tinctorius</i>	75,000	<i>Glomus intraradices</i>	2.98
<i>Rhizopogon amylopogon</i>	3,750	<i>Glomus aggregatum</i>	2.64
<i>Rhizopogon villosuli</i>	3,750	<i>Glomus mosseae</i>	2.64
<i>Rhizopogon fulvigleba</i>	3,750	<i>Glomus clarum</i>	0.34
<i>Rhizopogon luteolus</i>	3,750	<i>Glomus monosporum</i>	0.34
<i>Scleroderma citrinum</i>	1,875	<i>Glomus deserticola</i>	0.34
<i>Scleroderma cepa</i>	1,875	<i>Glomus etunicatum</i>	0.34
<i>Laccaria laccata</i>	750	<i>Glomus brasilianum</i>	0.34
<i>Laccaria bicolor</i>	750	<i>Gigaspora margarita</i>	0.34
12.0% Cross linked polyacrylamide copolymer (water-holding gel)			
7.0% Humic Acids			
7.5% Cold Water Kelp Extracts			

Applications

General Directions for Use:

Transplant 1-Step™ is used right from the bag, sprinkled on every plant as you put it into the ground. It can be used on growing plants, in the same quantities as shown for planting, worked into soil or medium.

Balled & burlapped trees and shrubs - Use 4 ounces (1 packet) per inch of trunk diameter when planting or transplanting

Roses and other shrubs - Use 2-3 ounces per plant (2 tablespoons per ounce) when planting or transplanting.

Container plants - Use 1 tablespoon per gallon (ex., for a 2 gallon container use 2 tablespoons) when planting or transplanting.

Urban and stressed trees - Extend the life, resist stress and delays senescence for all trees. Make cuts or holes around the drip line of the tree and pour in Transplant 1-step at the rate of 4 ounces per inch diameter of the tree.

Potting mixes and beds - Work Transplant 1-Step into the soil or medium, at the rate of 8 ounces per 10 linear feet, 5 pounds per 100 square feet, or five pounds per cubic yard.

Arborist & Landscape
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