MYCORRHIZAE - IMPROVING UPTAKE OF NUTRIENTS

Endo Mycorrhizae or VAM – What do they do?

VA Mycorrhizae (VAM) are fungi that grow as minute filaments that attach and penetrate the roots of most plants. The thin filaments absorb from the soil and deliver to the plant water and nutrients. In return the plant provides essential sugars and other nutrients to the fungus. VAM also produce compounds that stimulate the plant to produce additional roots on which the fungi can grow.

VAM produce compounds that dissolve hard to absorb elements such as phosphorous, iron and other partially soluble soil nutrients. These extraction processors are particularly important in plant nutrition and explain why non-mycorrhizal plants require high levels of soil fertility to maintain their health. Over 90% of all plants have developed some form of symbiotic mycorrhizal association.

VAM form an extensive filament system within the soil that is many times larger than the plant root system. Numerous studies strongly indicate that VAM improves the plants ability to tolerate and recover from water deficits.

VAM actively work at improving soil structure with the filaments producing humic compounds and organic 'glues' that bind soil into aggregates and improve soil porosity. In sandy or compacted soil the ability of VAM fungi to promote soil structure may be the most important factor to improving long term plant performance.

Endo Mycorrhizae or VAM – Should I introduce them to my soil?
Soils in natural environs are full of beneficial microorganisms including mycorrhizae fungi. However research indicates that many agricultural practices significantly reduce the survival of mycorrhiza in soil. Activities such as cultivation, application of fertilizers, fumigation, removal of top soil, and leaving soil without vegetation for a period of time all reduce the population of mycorrhiza in soil.

Plants grown in most nurseries usually receive intensive watering and feeding with high levels of nutrients in pre-sterilized soil. Unfortunately high levels of nutrients and water and the lack of mycorrhiza discourages the plant to produce the extensive root system it will need for successful transplantation. An application of mycorrhiza during transplanting will encourage root development and set the plant on track to start feeding for itself.

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PRODUCT TECH SHEET

 Improving root development – 12 months after inoculation

Non - inoculated **Inoculated**

 Improvement in drought tolerance – lack of moisture

Cherry trees 6 months after planting out – no added moisture other than rainfall.

Non-inoculated **Inoculated**

 Improvement in establishment and growth - Tomatoes

Inoculated **Non-Inoculated**

 Turf (bent grass) planted into sand with standard fertilizer addition

Some commercially important plant groups that benefit from VA Mycorrhiza Inoculant

Acacia	Carrisa	Fountain Grass	Mountian Laurel	Saltbrush
Agapanthus	Carrot	Fushia	Nasturium	Sequoia
Alder	Cassara	Gardenia	Okra	Snapdragon
Almond	Ceanothus	Garlic	**Olive**	Sourwood
Apple	Cedar	Geranium	Olive Palm	**Soybean**
Apricot	Celary	Grape- raisin	Onion	Spengeri Fern
Arauceria	**Cherry**	Grape- table	Pacific Yew	Squash
Artichoke	Chinese Tallow	**Grape**- wine	Palms all	**Stawberry**
Ash	**Chrysanthemum**	Green Ash	Pampas Grass	Sudan Grass
Asparagus	**Citrus, all**	Guayule	Passion Fruit	Sugar Cane
Avocado	**Clover**	Hibiscus	Papaya	Sumac
Bamboo	Coconut	Holly	Paw Paw	Sunflower
Banana	Coffee	Impatiens	Peach	Sweet Gum
Barley	Coral Tree	Jojoba	Peanut	Sweet Potato
Bayberry	Corn	Juniper	Pecan	Sycamore
Bean	**Cotton**	Kiwi	Pepper	Taxus
Beech	Cottonwood	Leek	Pistachio	Tea
Begonia	Cowpea	**Lettuce**	Pittosporum	Tobacco
Black Cherry	Crab Tree	Ligustrum	Plum	**Tomato**
Blackberry	Creosote Bush	Magnolia	Podocarpus	**Wheat**
Black Locust	Cucumber	Mahonia	Poinsetta	Yam
Blue Gramma	Cerrant	Maiden Grass	**Potato**	Yucca
Box Elder	Cypress	Mango	Rephiolepis	
Boxwood	Dodwood	Maples, all	Raspberry	
Brazilian Rubber	Eggplant	Marigold	Redwood	
Bulbs, all	Euonymus	Mesquile	Rice	
Burning Bush	Fern	Millet	**Rose**	
Cacao	**Fescus**	Mimosa	Russian Olive	
Cactus	Fig	Mondo Grass	**Ryegrass**	
Camellia	Forsythia	Morning Glory	Sagebrush	

Some commercially important plant groups that do not benefit from VA Mycorrhiza

Arctostaphylos	Fir	Pine
Birch	Hemlock	Popular
Douglas-fir	Larch	Spruce
Oak/Beech	Walnut	
Beet	Heath	
Canola	Orchid	Protea
Carnation	Rush	Sedge
Hazelnut	Rhododendron	Azalea