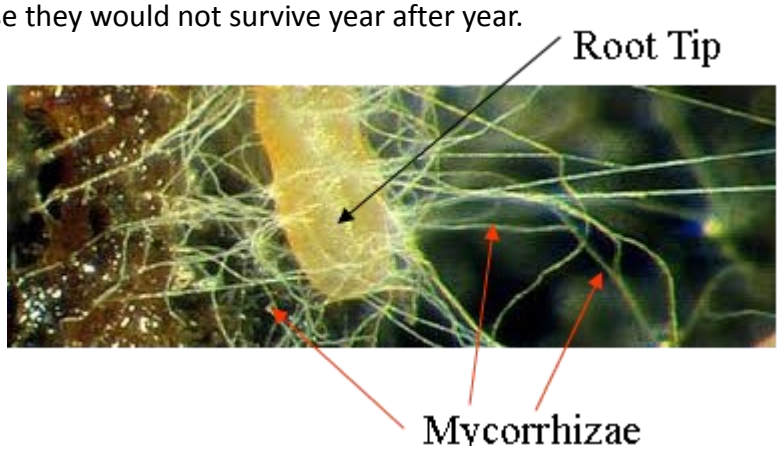
MYCORRHIZAL FUNGI FAQ'S

Mycorrhizae (my-co-rye'-zee) are one of the world's most important fungi (think mushrooms for example). The professional horticulture/nursery/turf and forestry industries have used mycorrhizae since the mid 1990's when the scientific community figured out how to make products with this incredibly beneficial fungus.

Mycorrhizae are a catch-all term for several fungi that form a mutually beneficial relationship at the plant root tips. The fungus acts as an extension of the root by spreading out into the soil. This results in a dramatically increased fungal surface area and much greater water and nutrient uptake that are moved to the plant. In return, the plant provides nutrients to help the fungus thrive. This is called a **symbiotic relationship.** Established trees, shrubs and perennials already have this relationship or else they would not survive year after year.



Where should mycorrhizae be used?

Prior to planting, any soils that are compacted, waterlogged or heavily disturbed due to construction should be amended to improve soil structure (compost for example) and inoculated with mycorrhizae at planting. New flower or garden beds and especially raised beds should always have mycorrhizae included at planting. As inexpensive insurance, mycorrhizae may also be used any time trees, shrubs, other perennials and even annuals are planted. The idea of overdosing with mycorrhizae is not an issue and can only help plant health.

How often should mycorrhizae be used?

Mycorrhizae are used at planting and mixed with the backfill near the outside of the plant where there is active root growth. Once the plant has developed the mycorrhizal relationship, which takes about 30 days when roots are growing, further treatments aren't needed unless the plant is disturbed or moved.

Can plants be inoculated after they are planted?

Ideally, mycorrhizae is used at planting. If plants were not inoculated then, mycorrhizae may still be used as long as the soil around the plant is loose to allow the fungus to move into the root zone. In general, mycorrhizae should be added no later than a week or two after planting before the soil settles.

Types of Mycorrhizal Plants

Endomycorrhizal Plants: 90% of Plants—Mostly Green, Leafy Plants and most Commercially Produced Plants. Shrubs and foliage plants ***except*** for Rhododendron, Azalea, and Heath; Berries ***except*** for blue-berries, cranberries and lingonberries; Nut trees ***except*** pecan, hazelnuts and filberts. Flowers, Vegetables ***except*** Brassica and beets, cultivated grasses ***except*** weedy grasses; Fruit trees including tropical fruits; many wetland/aquatic species ***except*** rushes and horsetails.

Some of the commercially important plant groups that benefit from **ENDO**-mycorrhizal fungi:

Acacia
Agapanthus
Alder (Endo/Ecto)
Alfalfa
Almond
Apple
Apricot
Artichoke
Ash
Asparagus
Aspen(Endo/Ecto)
Avocado
Bamboo
Banana
Barley
Basil
Bayberry
Beans, all
Beech
Begonia
Black Cherry
Blackberry
Black Locust
Blue Gramma
Box Elder
Boxwood
Buckeye
Bulbs, all
Cacao
Cactus
Camellia
Carrisa
Carrot
Cassava
Ceanothus
Cedar
Celery
Cherry
Chrysanthemum
Citrus, all
Clover
Coconut
Coffee
Coral Tree
Corn
Cotton
Cottonwood (Endo/Ecto)
Cowpea
Crab Tree
Creosote
Cryptomeria
Cucumber
Currant
Cypress
Dogwood
Eggplant
Elm
Eucalyptus
Euonymus
Fern
Fescue
Fig
Flax
Flowers, most all
Forsythia
Fuchsia
Gardenia
Garlic
Geranium
Grapes, all
Grasses, perennials
Green Ash
Guayule
Gum
Hackberry
Hawthorn
Hemp
Herbs, all
Hibiscus
Holly
Hostas
Impatiens
Jatropha
Jojoba
Juniper
Kiwi
Leek
Lettuce
Ligustrum
Lily
Locust
Lychee
Mahogany
Magnolia
Mahonia
Mango
Maples, all
Marigolds
Mesquite
Millet
Mimosa
Morning Glory
Mulberry
Myrtle
Nasturtium
Okra
Olive
Onion
Pacific Yew
Palms, all
Pampas Grass
Passion Fruit
Papaya
Paw Paw
Peas
Peach
Peanut
Pear
Peppers, all
Pistachio
Persimmon
Pittosporum
Plum
Podocarpus
Poinsettia
Poplar
Potato
Pumpkin
Raspberry
Redwood
Rice
Rose
Rubber
Ryegrass
Sagebrush
Saltbrush
Serviceberry
Sequoia
Shallot
Snapdragon
Sorghum
Sourwood
Soybean
Squash
Star Fruit
Strawberry
Succulents
Sudan Grass
Sugar Cane
Sumac
Sunflower
Sweet Gum
Sweet Potato
Sycamore
Taxus
Tea
Tobacco
Tomato
Violets
Walnut
Wheat
Yam
Yucca
Willow (Endo/Ecto)

Ectomycorrhizal Plants: 5% of Plants—Mainly Conifers & Oaks—more woody plants.

Some commercially important plant groups that benefit from **ECTO**-mycorrhizal fungi:

Alder (Endo/Ecto)
Arborvitae
Arctostaphylos
Aspen (Endo/Ecto)
Basswood
Beech
Birch
Chestnut
Chinquapin
Cottonwood (Endo/Ecto)
Douglas fir
Eucalyptus
Filbert
Fir
Hazelnut
Hickory
Hemlock
Larch
Linden
Madrone
Manzanita
Oak
Pecan
Pine
Poplar
Spruce
Willow (Endo/Ecto)

5% Form Other Relationship Types or are "Non-mycorrhizal"—The following Plants or Plant Groups **"do not"** respond to ENDO or ECTO Mycorrhizal fungi:

Brassica Family
- Broccoli
- Brussels
- Cabbage
- Cauliflower
- Collards
- Kale
- Rutabaga

Ericaceae Family
- Azalea
- Blueberry
- Cranberry
- Heath
- Huckleberry
- Lingonberries
- Rhododendron

Others
- Beet
- Carnation
- Mustard
- Orchids
- Protea
- Rush
- Sedge
- Spinach