Mike Amaranthus, Ph.D. is adjunct associate professor at Oregon State University and President, Mycorrhizal Applications, Inc. Dr. Amaranthus has authored over 60 scientific papers on mycorrhizal fungi and their uses. He has received the Department of Agriculture's highest honors for scientific achievement and been featured on several national television broadcasts.

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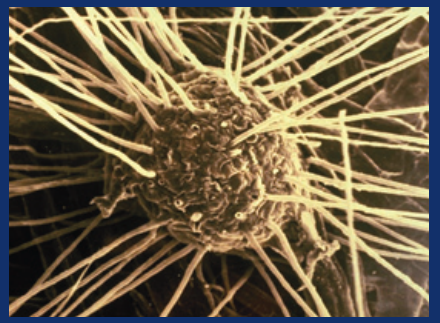

Mycorrhizae

Are they right for me?

Mycorrhizae: Are they right for me?

"Mycor" - "rhiza" literally means "fungus" - "root" and defines the mutually beneficial relationship between the plant and root fungus. These specialized fungi colonize plant roots and extend far into the soil. Mycorrhizal fungal filaments in the soil are truly extensions of root systems and are more effective in nutrient and water absorption than the roots themselves. More than 90 percent of plant species in natural areas form a symbiotic relationship with the beneficial mycorrhizal fungi.

What do they do for plants?

Benefits include:

- Improved nutrient and water uptake
- Improved root growth
- Improved plant growth and yield
- Reduced transplant shock
- Reduced drought stress

Mycorrhizal fungi increase the surface absorbing area of roots 100 to a 1,000 times, thereby greatly improving the ability of the plant to access soil resources. Several miles of fungal filaments can be present in less than a thimbleful of soil. Mycorrhizal fungi increase nutrient uptake not only by increasing the surface absorbing area of the roots, but also release powerful enzymes into the soil that dissolve hard-to-capture nutrients, such as organic nitrogen, phosphorus, iron and other "tightly bound" soil nutrients. This extraction process is particularly important in plant nutrition and explains why non-mycorrhizal plants require high levels of fertility to maintain their health. Mycorrhizal fungi form an intricate web that captures and assimilates nutrients, conserving the nutrient capital in soils.

What plants form specialized roots with Mycorrhizal fungi?

Over 90% of the world's plant species form with Endo or Ecto Mycorrhizae and require the association for optimum performance. A large amount (about 75 - 80%) of plant species, mainly green and leafy plants such as grasses, perrenials, annuals, and agricultural crops, form endomycorrhizal relationships. A smaller percent of the species form with Ecto Mycorrhizae. These plants mainly consist of conifers, oaks, and related species. Some plant species do not form relationships with either of these types of mycorrhizal fungi.

A more complete list is available at www.mycorrhizae.com.

Don't soils already contain Mycorrhizae?

Undisturbed soils are full of beneficial soil organisms including mycorrhizal fungi. Research indicates, however, many common practices can degrade the mycorrhizae-forming potential of soil. Tillage, certain pesticides, removal of topsoil, erosion, site preparation, compaction, fumigation, invasion of weeds and leaving soils fallow are some of the activities that can reduce or eliminate these beneficial soil fungi. Scientific studies indicate endo mycorrhizal fungal populations are slow to recolonize, unless there is close access to natural areas that can act as a source of mycorrhizal spores to repopulate the affected area. Reintroducing mycorrhizal fungi in areas where they have been lost can dramatically improve plant performance with less water and fertilizer and at a reduced cost.

Why Diversity is Important:

Natural areas generally contain an array of mycorrhizal fungal species. The proportions and abundance of mycorrhizal species often declines following any disturbance. Not all mycorrhizal fungi have the same capacities and tolerances. Some are better at imparting drought resistance, others are more important in protecting roots, still others are more adept at taking up nutrients. The diversity of mycorrhizal fungi formed by a given plant increase its ability to occupy diverse below ground niches and survive a range of chemical, biological and physical conditions.

MycoApply® mycorrhizal products contain the most diverse and effective strains of mycorrhizae available anywhere. By utilizing a robust mix of beneficial soil organisms, plants can survive and thrive the way nature intended.

How hardy are mycorrhizae?

Shelf life of our standard products are 2 years with a 10% decrease in viability every year thereafter. Cold temperature, even freezing, does not affect the viability of mycorrhizal propagules that are most commonly used as inoculum. High temperatures, above 140 degrees F, damage mycorrhizal propagules and should be avoided.

Once the propagules are mixed with the soil, they remain in a dormant state until there is root activity. Mycorrhizal propagules germinate in the presence of certain root exudates. Once the spores germinate and attach to the root system, the mycorrhiza will remain with the plant for the life-cycle of the plant. Plants growing on stressed sites or frequently disturbed sites may require several inoculations.

MycoApply® CERTIFIED

Incorporate the ***MycoApply® Certified*** logo on your packaging and assure your customers that you have selected only the highest quality mycorrhizae with the most diverse and effective strains available. The mycorrhizae in your products are backed by expert technical and scientific support from the leaders in the mycorrhiza industry, authoring over 100 technical papers and articles and accessing a research database of over 70,000 mycorrhiza studies from around the world.

The soil on the right was inoculated with mycorrhizal fungi.