



THE IMPORTANCE OF MYCORRHIZAE

by Rich Hamilton

Mycorrhizal fungi are formed by more than 90 percent of plant species. They get their name from the Greek word *mukés*, meaning fungus, and *rhiza*, meaning roots. They have existed since plants first grew on dry land more than 450 million years ago.

Mycorrhizae form a network of filaments associated with plant roots, and draw nutrients from the soil for the plant that the root system would not otherwise be able to access. The relationship between the fungi and the plant is symbiotic. This means it is of mutual benefit to both parties. This beneficial relationship helps to stimulate plant growth and accelerate root development.

A single plant growing in a one-liter pot could have more than half a mile of fine filaments, known as the hyphae. The hyphae can squeeze past, under, around, and through all types of obstructions into the tightest of areas to access water and nutrients for the plant. It increases the surface area of the root zone. It essentially creates a large sponge of roots that can soak up an optimum amount of nutrition and water. Mycorrhizae also make the plant less sensitive to soil-borne pathogens, drought, and salinity.

The plant rewards the fungi with carbohydrates and other nutrients in return for their efforts. The fungi utilize these carbohydrates to grow, synthesize, and excrete the glycoprotein Glomalin. The release of this glycoprotein improves soil structure and increases the amount of organic matter present in the soil.

In soil that has been disturbed by agriculture or other human processes, the quantity of mycorrhizae decreases drastically. There is an insufficient presence to benefit plant growth and health significantly, hence the importance of compensating for this deficiency through commercially manufactured mycorrhizal inoculants.

The Benefits of Mycorrhizae for Plants

Depending on the plant species, growing practices, and conditions, mycorrhizae help to produce more robust and healthy plants. The benefits they provide include: Increasing establishment and survival at the seeding or transplanting stage.

- Increasing yields and crop quality.
- Improving tolerance to drought and soil salinity.
- Enhancing flowering and fruiting.
- Optimizing fertilizer use (especially phosphorus).
- Reducing the occurrence of disease.

The Benefits of Mycorrhizae on Soil Structure

Maintaining soil structure is of critical importance to preserving functions and fertility. Better soil results in:

- More effective water infiltration and water holding capacity.
- More air permeability (aeration).
- Better root development.
- Higher microbial activity and nutrient cycling.
- Better resistance to surface sealing (crusts).
- Better resistance to water or wind erosion.
- Better resistance to compaction.

CREATE THE UNDERGROUND CONNECTION



"Mycorrhizae is an excellent organic solution that is easy to use and will **improve the strength** and health of your roots."

How To Choose A Quality Mycorrhizal Inoculant

While mycorrhizae fungi occur naturally in the soil, they will be absent for seedlings in starter plugs or young plants in indoor growing systems. The popular mediums used for these growing methods, such as coco coir, will have no natural level of mycorrhizae present. You can purchase mycorrhizal inoculants in liquid and powder forms. They are easy to use and effective. Here are some tips on what you want to look for when buying a mycorrhizal inoculant.

• SPORES

Fungal spores are tiny biological particles that let fungi reproduce. You will find that spores per pound may vary between mycorrhizae products. If necessary, I would almost always go for a lower spore count from a quality manufacturer. However, the quality of manufacturing and the health of the spores are just as important. For example, if the product is packed in an inappropriate way, you will lose a lot of benefits.

• ENDO SPORES

It's not just spores in general that you are looking for, either. Precisely how many endo spores it contains is essential. This is because these spores are from endomycorrhizae. Endomycorrhizae connects with plants inside the root core, where the nutrient exchanges occur. This type of mycorrhizae establishes relationships with more than 85 percent of plant species, including herbs and edible plants.

• PROPAGULES

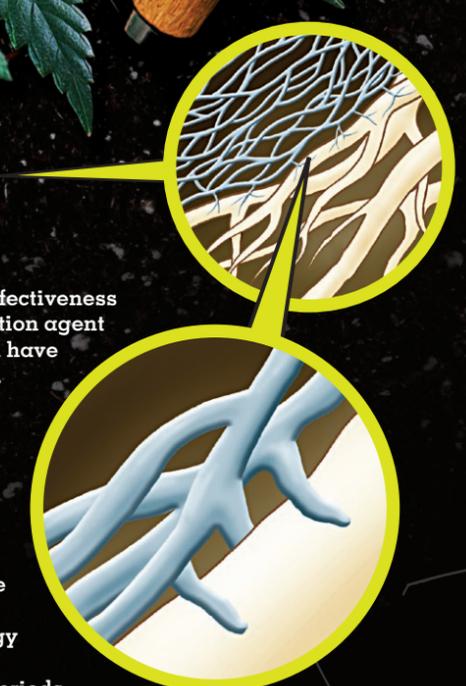
Propagules are defined as any part of the mycorrhizal fungi that can germinate and connect with the plant roots to establish a beneficial relationship. Propagules include intra- and extra-radical spores (resistant reproductive structures, reminiscent of tiny pearls), mycorrhizal root fragments, and the filaments that make up the mycorrhizal hyphae itself.

Hyphae lose their effectiveness quickly as a propagation agent as they are weak and have poor energy reserves. In this case, you should always look for products with a higher concentration of spores rather than propagules. Spores are much more resilient and effective than propagules. They have high energy reserves and can be stored for extended periods in the appropriate conditions.

How To Use Mycorrhizal Fungi

The symbiotic relationship materializes at the roots, so that's where you need to focus the application. You can do this at every repotting stage and even as early as seed sowing. When creating a healthy and robust root network, you cannot start too early. When you're repotting at later stages, sprinkle the mycorrhizal inoculant in your new medium before transferring your plant over.

Mycorrhizae is an excellent organic solution that is easy to use and will improve the strength and health of your roots. It is also impossible to apply too much mycorrhizae, so no need to be shy when you apply. Think of it as building a good solid foundation for your plants. After you have done that, anything is possible. 🍄



sponsored by



QUICKEST ROOT CONNECTION,
SHORTEST VEGETATIVE TIME
AND GREATEST FLOWERS

PERFECT COMBO.
MASSIVE ROOTS.



LEARN MORE AND CONNECT WITH US @PROMIX_CANNABIS

VISIT PTHORTICULTURE.COM/EN/CONNECT



The information in this document was up-to-date at the time of printing. Because of its continuous improvement policy, Premier Horticulture reserves the right to halt manufacturing, change products, or revise technical data and prices without further warning or liability. Product availability may vary depending on the territory. Premier Horticulture is not responsible of the use of its products in territories where cannabis is prohibited. © 2022 Premier Horticulture Ltd. All rights reserved. PRO-MIX® is a registered trademark of Premier Horticulture Ltd.