

Mycorrhizae fungi are beneficial soil organisms found in **healthy soil** which play a critical role in nutrient cycling, moisture uptake and retention, moisture translocation which mediates plant stress, disease resistance, superior stress tolerance and growth characteristics.

Mycorrhizae Mycelia extend into the surrounding soil, encouraging new root-like formations that greatly increase the absorptive capacity of the plants. **Mycorrhizal Filamentous** (root like systems) increase the absorbing capacity of roots 10 to 10,000 times, greatly improving the natural ability of plants to utilize moisture and other natural soil component resources far more efficiently.

Mycorrhiza fungi work in the soil to translocate hard to capture nutrients such as phosphorous, iron and other “tightly bound” soil nutrients. This extraction process is particularly important in plant nutrition. In non-mycorrhiza planting conditions much of this nutrient component cannot be utilized by the plant, simply because they don’t have the more fully developed fibrous root system to extract and gather the nutrients. (See exhibit 1.) The same extensive, adjunct network of fungal mycelial filaments is fundamental to improved water uptake and storage. In a recent study, true fir seedlings treated with mycorrhiza inoculum had 43% less plant moisture stress than non-treated control seedlings on a dry difficult-to-revegetate site. Tree vigor, color and needle retention were also notably improved in the inoculated plants.

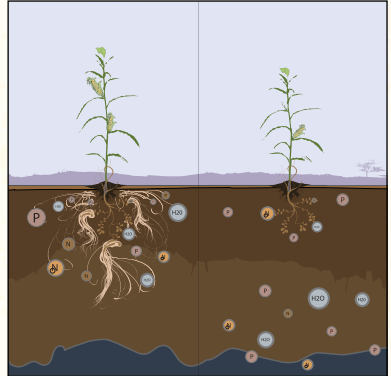


Exhibit 1: The mycorrhizal corn plant on the left can retain and absorb fertilizer compared to the non-mycorrhizal corn plant on the left.

You might ask, if Mycorrhizae are already found in soil, why do you need to add or supplement them? Unfortunately, most of our man-made environments are built using practices that destroy or dramatically degrade pro-biotic soil micro-flora and other beneficial soil micro-organisms and bacterium. Erosion, grading, topsoil removal, overgrazing, tillage, fertilization, paving and pollution completely eliminate or greatly reduce resident, indigenous mycorrhizae fungi populations. Additionally, because synthetic, chemical fertilizers most frequently stimulate top growth at the expense of root growth, they produce lush plants that are more susceptible to disease, drought and other stress related problems due to the lack of healthy, fibrous root structures.



In conclusion, just as plants invest tremendous resources in the form of energy to fuel below ground soil organisms, we too must “look below the surface” to better understand and learn how to more effectively utilize these beneficial fungal populations to our mutual advantage.

Taking time to harness the tremendous agronomic benefits mycorrhiza fungi can add to new or existing plantings will affect plant health and vigor for decades to come. The BioPlex Technical Support Team remains ready, willing, and able to discuss how ‘you too’ can best utilize and employ beneficial Endo-Ecto Mycorrhizae fungi in your next project.