

Increase Nutrient Absorption

from **biofilm**
crop protection

Myco-gro® VA Mycorrhiza



Mz Mycorrhiza
biofilm™
crop protection

- ✓ Improves plant water use efficiency
- ✓ Increases nutrient absorption from the soil solution
- ✓ Aids in plant establishment
- ✓ Improves soil aggregation



VA Mycorrhizal Fungi What are they?

Vesicular Arbuscular Mycorrhizae (VAM) are ubiquitous in natural and agricultural ecosystems. VAM fungi grow as minute filaments (hyphae) attaching and penetrating the roots of most plants. VAM can improve nutrient uptake by plants, enhance drought tolerance and improve disease control. VAM also assist in the maintenance of soil structure, plant community structure and diversity.

What do they do?

- The principal function of Mycorrhizae is to increase the soil volume explored for nutrient uptake and to enhance the efficiency of nutrient absorption from the soil solution.
- The fungi form an association with the plant and creates an extensive filament system (mycelium) within the soil that is invisible to the naked eye, and many times larger than the plant root system.
- The thin filaments absorb water and nutrients from the soil and deliver them to the plant. In return the plant provides essential sugars and other nutrients to the fungus.
- VAM fungi excrete compounds that stimulate the plant to produce additional roots on which the fungi can grow, which in turn supports improved plant growth. The intensively growing mycelium can bind and aggregate soil particles which can be important to improving physical soil conditions. In addition, water infiltration is increased, surface run-off decreased, and water holding capacity of the soil increased.

Improved uptake of water and nutrients

- Numerous studies demonstrate that VA Mycorrhizal fungi improve a plant’s ability to tolerate and recover from water stress (Allen et.al.1991; Amaranthus 1993; Koske et.al 1995).
- The association of VAM with plant roots facilitates the uptake of nutrients such as phosphorus and trace minerals. By extending beyond the depletion zone of phosphorus around the root, the mycelium improves absorption.
- VAM associated roots can transport phosphate at a rate 4 times that that of non-associated roots (Nye & Tinker, 1977).
- These extraction processes are particularly important in plant nutrition and partly explain why mycorrhizal symbiosis improves plant growth (Gemma and Koske 1989; Sylvia and Burks 1988; Hall et. al. 1984).

Application

Myco-Gro® inoculant must come into contact with the growing root to be effective.

Myco-Gro® can be applied as a dry powder, mixed with water and sprayed onto soil around the plant, coated onto the seed, or by water injection. Soil surface application needs to be watered into the root zone.

Vegetables:

In an 18 to 30 millilitre cell-seedling tray, apply to seed or the potting mix before germination at one gram of powder per 10 to 12 seedling cells (198 cell tray requires 20 grams of powder). Product can be mixed with water and evenly watered over the tray or mixed with the potting mix prior to planting.

Mix into Bulk Potting Mixes:

Mixing into planting soil before potting – 50 grams per 25 litre bag of potting mix. For commercial applications to seedlings, aim to apply 10 to 20 spores per individual germinating plant. Product contains 200 spores / gram.

Strawberries and Tomatoes:

For freshly transplanted small plants apply greater than 25 spores per plant.

Seed coating for broad-acre application:

Mix the fine powder directly over seed at a rate to apply between 350 grams and one kilo per hectare. Dampen seed with a fine mist of 10% sugar solution before or while mixing in the powder. Apply no more than 3 litres of solution per ton of seed for large size seed (grain legumes, cereals) and up to 1 litre per 100 kg for small seed (clover, lucerne, ryegrass). Do not wet the seed so it sticks together.

Seed Coating	Potting Mix	Soil Application
1g of powder per 10 - 12 seedling cells	50g per 25L bag of potting mix	1 - 2Kg per Ha