



Technical Bulletin



Ascend™ NTC Nursery and Turf Concentrate VA-Mycorrhizal Soil and Root Inoculant

Mycorrhizal fungi are as old as plant life itself. It wasn't until the late 1800's that a symbiotic relationship was first discovered between certain species of fungi and plant roots. Horticulturists have touted the benefits of mycorrhizal fungi for decades, but no one had the technology to make it commercially available for growers and turf superintendents.

Ascend™ NTC (Nursery and Turf Concentrate) from BioScientific, Inc. is a liquid biological fertilizer that increases a plant's ability to utilize available nutrients and moisture in the soil.

Ascend NTC contains naturally occurring endomycorrhizal fungal spores that germinate and penetrate a plant's roots. The mycorrhizal fungi send out additional hyphae that act as a "**secondary root system**". These microscopic hyphae search out additional moisture and nutrients that a plant cannot find with its normal root system. This symbiotic relationship increases plant growth to create a plant that is more resistant to stress.

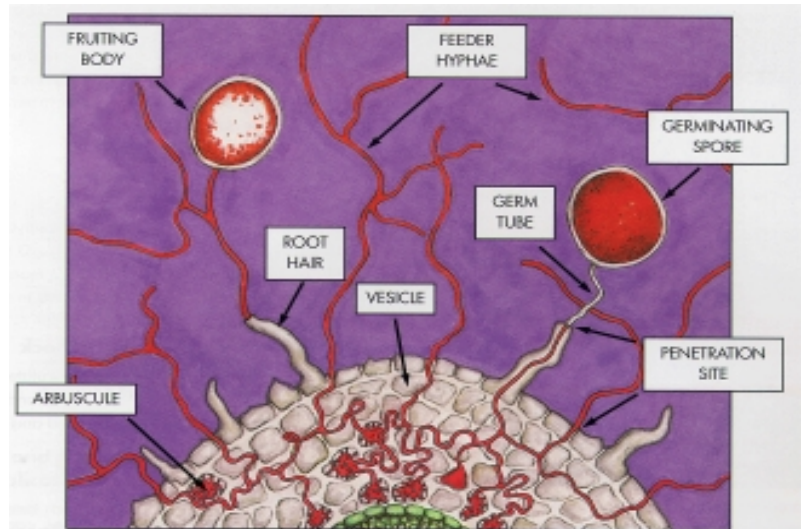


Illustration of the Ascend NTC fungi activity on a root.

Mycorrhizal fungi occur naturally in many soils, but their presence is often lacking where they are needed most. This includes sterile growing media, fumigated or pasteurized soil, sand greens, cut and fill construction, and flooded or fallow areas. The use of Ascend NTC puts mycorrhizal fungi into areas where it is absent or has been destroyed. This increases the inoculated plant's ability to survive and prosper in these induced stress conditions.

Owners and operators of ornamental nurseries, golf courses, agricultural production nurseries, land and tree care operations, municipal parks, and greenhouse operations are already discovering the economic and production advantages of using Ascend NTC. Increasing a plant's ability to absorb more nutrients can lead to many advantages for your operation.

Increased Plant Growth and Appearance

Plants inoculated with Ascend NTC will be more vigorous compared to plants that are lacking mycorrhizal fungi. This allows the plants to achieve more growth in a shorter period of time. The plant's appearance will be enhanced, since it is less likely to suffer from nutrient deficiencies and environmental stresses.

Better Developed Root System

The root mass of the plant will increase in size and longevity. The additional hyphae from the mycorrhizal fungi can increase the root surface area by 10 to 1000 times. This gives your

plants up to 1000 more opportunities to find additional water and nutrients in the soil.

Reduced Effects of Transplant Shock

Due to the additional root surface area, inoculated plants are more likely to survive the stress of transplanting. This increases "out-plant" survivability in the field and reduces losses in the greenhouse.

Reduced Effects of Stress

High soil pH and salt content conditions can tie up valuable nutrients and water, making them unavailable to the plant. The added root surface area that can be obtained from the use of Ascend NTC allows the plant to find more nutrients and moisture in these difficult conditions. Inoculated plants will also be more adaptive to surviving conditions of drought and compaction and better able to resist invading plant pathogens.

Increased Marketability of Your Plants

Your customers must have high quality plants that will endure the stress of transportation and transplanting. A mycorrhizal-inoculated plant will have the extra vigor to better withstand these stresses. Ascend NTC inoculated plants give you an advantage over a competitor's untreated plants.

Sustainable/Organic Product

Ascend NTC contains naturally occurring fungi that can be used safely in environmentally sensitive areas. Mycorrhizal fungi provided by Ascend NTC are a step in managing nutrient accumulation and runoff on golf courses and in nursery operations.

Rates and Methods of Application

The labeled rate for Ascend NTC is 5-15 gallons per acre. Placement accuracy will determine the specific rate. A greater placement accuracy into the root zone will allow a lower rate of application.

Ascend NTC can be applied through an irrigation system, as a soil drench, shank injection, or as a root dip. Since mycorrhizal fungi are UV light sensitive, it is important to keep inoculum off the soil surface to avoid degradation. When applying Ascend NTC by the drench method, apply sufficient water to carry the spores away from the soil surface and into the soil. Avoid using excess water that could move Ascend NTC away from the root zone.

Storage and Handling

Each package of Ascend NTC includes a container of nutrient liquid carrier and a Dry Concentrate packet. Store the DC packs in a cool place out of direct sunlight. Mix the two packages before applying.

BioScientific, Inc. has taken a leadership position with Ascend NTC, the first liquid formulation of mycorrhizal fungi available for turf and nursery operations.

Certified Disease Free

Each container of Ascend NTC is certified, by independent laboratories, as being free of plant pathogens. This ensures you are receiving beneficial fungi and not introducing a pathogen into your operation.

Economical

Ascend NTC is the most economical mycorrhizal fungal product on the market. It is often half the cost of other products and is backed by the technical expertise of BioScientific, Inc.

Extended Shelf Life

Mycorrhizal products are living organisms. Most mycorrhizal formulations are viable for only 30 to 90 days. Ascend NTC is guaranteed viable for six months. Each container is labeled with an expiration date to ensure its viability.

Application Flexibility

As a liquid, Ascend NTC has more application options than all other mycorrhizal products. Ascend NTC is the only mycorrhizal product that can be applied through an irrigation system, including drip tape and emitters. This allow the product to be used in, not only pre-plant, but post plant and post emergence applications.

High Concentration of Spores

Ascend NTC is specifically formulated for nursery and turf operations. The high concentration of spores will ensure colonization of your plants when used according to the label. Further, not only is there a guaranteed analysis on the label, but further these spores are certified as being viable.

ISO 9002

Ascend NTC is manufactured according to ISO 9002 standards, and is a tangible expression of a commitment to quality that is internationally understood and accepted.

Ascend NTC is widely distributed in South, Central and North America. Contact your local fertilizer or chemical supplier to learn how you can include Ascend NTC in your nursery or turf operation.