

**The Role of Troforte® M “Fert-O-Turf”
in the production of
Sustainable Sports Turf**



**“Biologically Coated Controlled Release Fertilisers”
Microbes - Minerals - Mulch**



LANGLEY FERTILIZERS



Troforte® MMM - The Answer to Practical Sustainability

"The Living soils for Sports Turf"

Langley's Troforte® MMM approach to turf grass fertilisation provides the correct combination of biology, chemistry and physics for fine grass growth with less chemicals, fewer diseases, less physical disruption, less management time and costs.

Troforte® M *Fert-O-Turf* and *Fert-O-Lawn* enables turf grass to maintain good colour, density and vigour, and to resist diseases, weeds and insects more successfully.

More and more research indicates that maintaining a healthy, active soil micro-organism population helps turf withstand all types of stress such as diseases, insects, heat, traffic, and drought.

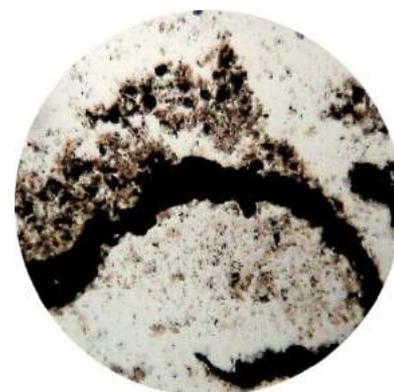
Langley's Troforte® M *Fert-O-Turf* and *Fert-O-Lawn* is specifically designed to help turf managers in managing both the biology and chemistry together, thus enhancing plant nutrition through beneficial soil biology. Troforte® contains a biologically coated, specifically engineered mineral base with up to 60 minerals that could be essential to the growth of turf grass. Organic coating on the mineral base contains a scientifically balanced blend of up to 24 strains of Australian cultured beneficial soil microbes that allow bacteria to remain protective and interact synergistically when exposed to a conducive environment, providing mineral nutrients through bio-mediated processes on natural ores and thus achieving sustainable living soils.



Δ Beneficial Bacteria



Δ Beneficial Fungi



Δ Microbial envelope
two hours after activation

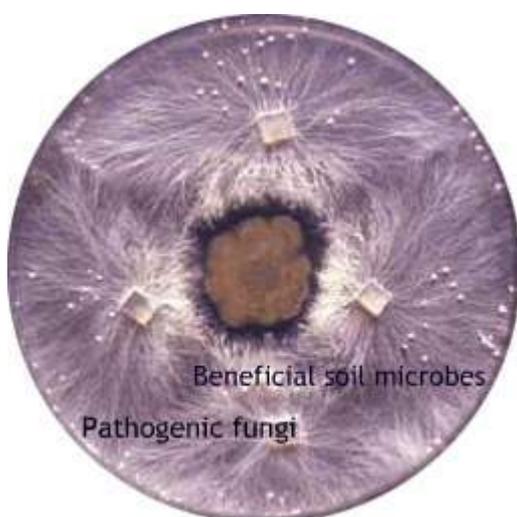
Some of the strains included are Azobactor, Azosprillum, Bacilli, cellulose fungi, Myxobacteria, Phosphobacteria, Pseudomonas, Rhizobium, Streptomyces, Sacchromyces, Tricoderma, VAM and Yarrowia. Soil begins improving immediately after application, as the beneficial bacteria multiply into billions around the root zone of the turf grass and begin performing the various jobs in creating the best possible environment for grass to grow. With over two thirds of nitrogen being in a water insoluble form, Troforte® M *Fert-O-Turf* and *Fert-O-Lawn* effectively and efficiently delivers organic feeding of energy rich carbon and nitrogen through microbial activity.

Troforte® M *Fert-O-Turf* and *Fert-O-Lawn* allow perennial grasses to grow in biologically active soil to benefit from natural defence mechanisms against disease, dry patch and thatch build up and inoculate turf grass roots with mycorrhizae to access nutrients and water.

Beneficial soil microbes in Troforte® M have an enormous influence on plant-soil interactions crucial for maintaining healthy turf grass. Perhaps the most important of these interactions is the cycling of nutrients, especially nitrogen. Nitrogen is by far the most essential nutrient in turf grass management as it has a dramatic impact on turf grass colour, growth, density, tolerance to stress and recuperative power.

Researchers have suggested that as much as half of applied nitrogen fertilizer can be consumed by the microbial community within three days. This immobilized nitrogen is only temporarily unavailable to the plant and is

re-released, or mineralized over time depending on need of the plant. Microbial activity usually occurs during times when turf grass is actively growing and slows down when turf stops growing. Therefore, Troforte® M *Fert-O-Turf* and *Fert-O-Lawn* releases nitrogen only when turf grass can best utilize it. Both soluble and slow-release nitrogen incorporated in *Fert-O-Turf* and *Fert-O-Lawn* undergo several transformations between ammonium, nitrate and organic nitrogen before finally being absorbed by the plant.



The vigorously trialed and tested suite of beneficial soil microorganisms are the “behind-the-scenes” facilitators of nutrient immobilization, mineralization and transformations in the soil.

Thatch accumulation is another turf-management issue of particular concern to turf managers because of its significance on playing conditions. Soils lacking in organic matter, microbes, and earthworms tend to build up thatch quickly since roots and shoots preferentially grow near the surface where organic matter is accumulating. Sod that is laid over soil is especially susceptible to thatching if the new growth remains in the sod layer instead of the soil. Once again, the rate of thatch degradation and accumulation is dependent on the population and activity of the soil microbial community. It is well known that thatch is a part of foundation for healthy soil as dead grass degrades and releases nutrients and organic carbon, ensuring soil friability and therefore good drainage and oxygen transfer. This is essential to promoting fine grasses and increasing the Cation Exchange Capacity (CEC) and thus the nutrient holding capacity of the soil. Troforte® M *Fert-O Turf* and *Fert-O-Lawn* contains the soil fungi that can assist in degrading thatch, avoiding or minimizing the need for aggressive hollow coring.

Although Troforte® M *Fert-O Turf* and *Fert-O-Lawn* are a complete fertiliser, we highly recommend an analysis of the soil for CEC and base saturation as it is very easy and inexpensive to add calcium, magnesium and potassium in the correct ratios to ensure that the soil contains adequate base Cations instead of other common Cations such as hydrogen, aluminium and iron.

Key Features and Benefits of Troforte® M *Fert-O-Turf* and *Fert-O-Lawn*

Troforte® M combines slow release technology with unique and silicate based product, in a ready to use micro-granular (1.2 mm to 1.6 mm) formulation for ease of distribution with minimal leaching and no burning potential. Excellent physical characteristics of the product allow smooth application through conventional type of spreader and ensure that granules are not picked up by mowers.

Troforte® M *Fert-O-Turf* (20-1-1 + TE) and *Fert-O-Lawn* (18-1-4 + TE) feeds turf for 3 to 4 months effectively, by delivering organic feeding of energy rich carbon, nitrogen, phosphorous and potassium through microbial activities and can also assist in:

- Creating biological active living soils by maintaining micro flora and a higher bank of available nutrients in sand/soil profile.
- Improving moisture holding capacity of the soil.
- Preventing formation of dry patches and increased resistance to drought and frost.
- Degrading thatch and converting it into organic matter thus ensuring soil friability and reducing thatch accumulation through microbial activity.
- Enhancing Nutrient Use Efficiency by matching the nutrient needs of the grass plant and thus reducing fertiliser requirements significantly
- Reducing salinity significantly
- Enhancing natural defence mechanism and thus reducing pesticide and herbicide use significantly
- Sustainable development of living soils for turf through a series of bio-mediated processes on natural minerals.
- Reducing acidity and total soluble salt levels in the soil.

References for further reading

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