



PT/A003

HOW PENE-TURF WORKS IN THE SOIL

Pene-Turf, a soil-amending agent, effects changes in the surface tension of the hygroscopic (bound) water in the soil, similar to the way a wetting agent acts upon surface water, but with dramatically different results. The ionic nature of soils, particularly clays, and the polarized molecular structure of water results in very strongly bonded (hygroscopic) water in the soil system. It is the strength of this soil-water adhesion which leads to soil compaction, resulting in poor water infiltration, low overall water-holding capacity, reduced soil aeration, and high soil shear strength. By penetrating to vertical depths of three to four feet, and by acting upon the bound water (unlike wetting agents which act on surface water), Pene-Turf demonstrates long-lasting improvements in each of these soil properties.

One of the most readily observed results of application of Pene-Turf is an improved water infiltration rate. By breaking down the adhesion that creates compaction of soil into rigid structures, particularly into a hardpan layer, Pene-Turf readies the soil for much deeper and faster influx of water. The increased penetration of water results in reduced run-off, evaporation, and standing water in previously wet areas.

A related benefit of Pene-Turf application is an increase in water-holding capacity. By releasing a portion of the bound water to move as free water in the soil, the total water available for turf use is increased. Thus, water efficiency is increased and the requirements for irrigation, both in amount and frequency, are reduced.

Further removed from immediate view, the breakdown of adhesion in soil structures produces a more open, better-aerated soil profile. As a consequence, the treated soil is more oxygenated and sustains an increased biological community. These benefits are observed as increased fertilizer efficiency and humus develops.

Lastly, the breakup of compaction in soils results in a reduction in soil shear strength. The forces required for turf roots to penetrate the soil are thereby decreased, resulting in deeper and more uniform growth. Resistance to heat and foot traffic stress is enhanced.

In summary, Pene-Turf addresses a range of problems resulting from soil compaction. Because the soil itself is altered, results are much longer lasting than those obtained via surface water surfactants. Benefit is evidenced at first watering or rainfall, and can persist for up to fourteen months before additional application is required. The immediate and long-lasting benefits of Pene-Turf make application both economical and effective as part of a successful turf and grounds program.



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