

Also, improper pH or nutrient levels can make a turfgrass stand more susceptible to attack by fungus diseases such as brown patch, leaf spot or dollar spot.

However, many other factors affect turf appearance and growth besides nutrient levels. Salt accumulation, insects and diseases, poor drainage, compaction, shallow rooting depth, drought and weed competition all have significant impacts on field performance. For example, poorly drained or compacted soils contain little oxygen, which reduces potassium uptake even when the level of the nutrient is sufficient in the soil. Drainage or compaction problems will not be evident in the samples sent to the lab but should be considered as possible sources of problems when observed in the field.

Many people ask why the Rutgers Soil Testing Laboratory doesn't routinely test for nitrogen. Nitrogen exists in the soil in different, rapidly interchangeable chemical states, and the nitrate form is easily leached from soil. These facts limit the value of nitrogen analysis because the levels of various forms of nitrogen in the field may have changed by the time the results are available.

Turf managers should keep the plant disease triangle in mind. One corner of the triangle represents the disease organism, which is always present. Turf managers can not do anything about that. Another corner of the triangle is the environment. While the turf manager can not affect the weather, he or she can certainly affect the soil environment, especially when new fields are being built. Managers can adversely affect the soil environment through improper turf maintenance practices. The remaining corner of the disease triangle is the host plant. Soil testing is an inexpensive and relatively simple way to maintain the health, color and density of the host plant - in this case, the appropriate turfgrass for a particular field. This is the corner of the disease triangle in which athletic field managers can have immediate and significant impact.

For more information on soil sampling and soil testing see the RCE - Soil Testing website www.rce.rutgers.edu/soiltestinglab/

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Murphy's Law

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Question: Can "frost seeding" work to rejuvenate a worn sports turf?

Answer: Frost seeding refers to the practice of scattering seed on the surface of soil during late season (late fall and winter) and relying on freezing and thawing to incorporate the seed.

Placement of seed is one important principle of both overseeding and seeding. Frost action is often suggested as a means to incorporate (place) seed into the soil. Unfortunately, "frost seeding" is very unreliable and will most often result in very poor establishment or re-establishment of turf. The reasons are due to the seed laying exposed and unprotected at the surface of the soil for an extended period of time. The exposed seed washes into low spots with rain, blows off the bare soil with the wind, and can

be eaten by birds. Moreover, the freezing and thawing that "opens" the soil surface does not provide sufficiently deep voids for the seed to be adequately incorporated into the soil. All of these contribute to poor distribution and placement of seed. Thus, uneven emergence of seedlings is typically the best one can expect from a late season seeding that is not placed into the soil.

Thus, those that must perform late season overseeding and seeding should do so with techniques that place the seed into the soil. Seed to soil contact is essential for success; without it you will have disappointing results. Slice-seeders and aerifiers are essential tools that a turf manager needs for successful placement of seed regardless of the time of season. ♦



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