

Overseeding and Disease -Interactions?

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Overseeding dormant warm-season turfs in the south improves the appearance and playability of putting greens and other athletic fields during the winter. Besides the aesthetic influence, the damage to the dormant turf from wear is minimized by overseeding.

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The primary cool-season turfgrass used for overseeding is perennial ryegrass whether in blends or single cultivars. These grasses are applied at very high seeding rates and remain juvenile throughout the winter period under proper mowing heights for fine quality turf. It is a general belief that the new seedlings are highly vulnerable to diseases during establishment of the overseeding. However, fungicide dressings and more resistant cultivars have been able to minimize initial problems.

Current ideas about the interaction of overseeding and plant disease organisms led to the belief that the overseeding positively influenced the casual organisms involved in the disease. This would mean an increased chance of the disease becoming a serious problem on the dormant and actively growing turf. This increased disease incident is also linked to the aggressive nature of the overseeded grasses and base grasses resulting in an accumulation of thatch that would directly relate to increased disease incidence. However, contemporary putting green maintenance practices, including light and frequent topdressing, light vertical mowing, judicious use of nitrogen can help keep thatch to a minimum and alleviate many of the disease problems.

A study at the University of Florida, Gainesville documented disease organism population dynamics under overseeding conditions. Basically, the research was attempting to answer the question of whether or not the fungal disease organisms were increasing during overseeding. Specifically the study investigated the population dynamics of *Pythium* spp., *Helminthosporium-Curvularia* spp., and *Rhizoctonia* spp. during the overseeding period (October-June) beneath swards of 'Tifgreen' bermudagrass overseeded with a blend of 'Marvelgreen Supreme' perennial ryegrass.

The research data yielded some interesting facts concerning the distribution and dynamics of fungal populations. Overseeding has little affect on the distribution of the fungal population vertically in the soil profile from a depth of 0 to 5 cm. The greatest numbers of fungal propagules were recorded from the top 2.5 cm where the thatch layer is present. There was a 10x difference in the fungal population from the 0 to 2.5 cm soil depth for *Rhizoctonia* spp.

Numbers of fungal propagules did vary between species and seasonally. The least number was detected for *Rhizoctonia* spp., regardless of whether they were pathogenic or saprophytic. *Pythium* spp. had intermediate numbers while the *Helminthosporium-Curvularia* complex had the highest counts. Increases in fungal populations is more noted in late winter and early spring necessitating more scrutiny by turf managers for detecting disease outbreaks.

Disease incidence was independent of overseeding vs. nonoverseeding indicating other factors are more important in prompting disease outbreaks. A well prepared plan of dethatching and monitoring for disease conditions including a thorough understanding of environmental conditions which may initiate a disease outbreak is vital to prevent problems. ■