

Nitrogen Fertilization and Brown Patch

By Michael Fidanza and P. Dernoeden

*1996 Interaction of Nitrogen Source, Application Timing
Fungicide on Rhizoconia Blight in Ryegrass.*

The goal of an Integrated Pest Management (IPM) program is to maximize plant health so that as stress and pest pressures increase the plant is able to maintain acceptable quality. Several questions arise from the examination of this goal. How do you know if your plant is healthy? Even if the plant is healthy, if pest pressure is severe, will the plant be attacked? And of course, what is acceptable quality?

Researchers at the University of Maryland, Dr. Michael Fidanza and Dr. Peter Dernoeden, investigated the interaction among nitrogen source, application timing and fungicide on Rhizoconia Blight (brown patch) on perennial ryegrass maintained at golf course fairway height. With the scarcity of information available regarding the influence of turfgrass nutrition on disease incidence and severity, this is important research. The research focused on spring vs. fall emphasized fertilization programs of Ringer's Lawn Restore (a slow release nitrogen source) and water soluble urea. The interesting aspect of the work was the fungicide treatment. Ipridione (Chipco 26019 among others) was applied at the recommended rate, but at 21-day

intervals as opposed to the 10-to 14-day interval on the label to determine if N fertilization influenced disease severity (i.e. will the brown patch kill the turf?).

In general, the plots not treated with the fungicide did not maintain acceptable quality as a result of severe brown patch infestation. In addition, spring N fertilization enhanced growth of the fungus during the initial infection periods from late June to late July in Maryland. However, there was a significant reduction in brown patch associated with the fall-emphasized program of Ringer's Lawn Restore as compared to the spring program with water soluble urea. While the reduction was significant, the turf quality was deemed unacceptable for golf course fairway turf.

These results support the work of our Dr. Eric Nelson, who observed reduced brown patch when using Lawn Restore back in 1990. Furthermore, the Maryland researchers concluded, "in regions where brown patch is not a chronic and severe disease problem, fungicide application frequency may not be as important as it was under conditions of this study." A conclusion that truly challenges us to practice IPM.



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