



Biodethatching using fungal laccases

Excessive organic matter accumulation on greens is a serious problem. Current mechanical and biologic dethatching methods often cause considerable damage, are time intensive and may not be sufficiently effective.

The biodegradation of organic matter is limited by its high lignin content. Laccases are enzymes produced by white-rot fungi and are effective in degrading lignin in the paper industry. The objective of this

research is to determine whether laccases can degrade organic matter accumulation in greens without having adverse effects on the turf. Greenhouse and field experiments will be used to meet the objectives. If proven effective, laccases will provide a powerful tool for managing organic matter on greens. This research is part of the GCSAA Chapter Cooperative Research program. The Georgia Golf Environmental Foundation and The Environmental Institute for Golf are providing funding. — **Qingguo Huang, Ph.D. (qhuang@uga.edu), University of Georgia**

Degradation of fungicides in the absence of snow cover

Microdochium patch is the most common low-temperature disease of turfgrasses and is best controlled by a preventive fungicide application before the onset of snow cover. Acceptable control of microdochium patch depends on the concentration of fungicide on the leaf blades. Fungicides degrade during winter, and superintendents cannot decide to make additional fungicide applications without knowing the degradation rate and at what fungicide concentration disease symptoms begin to develop. The objectives of this research are to determine the degradation rates of

chlorothalonil and iprodione in the presence and absence of snow cover and to correlate fungicide concentrations on leaf blades with levels of disease symptoms. Results of this research will provide a clearer picture of fungicide breakdown in winter and provide guidelines for re-treating for microdochium patch control. This research is part of the GCSAA Chapter Cooperative Research program. The Wisconsin GCSA and The Environmental Institute for Golf are providing funding. — **Paul Koch; John Stier, Ph.D.; and Craig Grau, Ph.D. (Cg6@plantpath.wisc.edu), University of Wisconsin-Madison**



Photo by Q. Huang



Photo by M. Olsen

Evaluating perennial ryegrass varieties for tolerance to rapid blight

Rapid blight is a chronic problem on overseeded cool-season turfgrasses irrigated with high-salinity water. It is a problem in both seedling and established overseeded perennial ryegrasses, but information on the tolerance of perennial ryegrass varieties to rapid blight at different growth stages is very limited. The objectives of this research are to determine the tolerance of perennial ryegrass varieties to rapid blight and determine whether varietal blends can provide season-long disease avoidance. Laboratory and field trials will be used to test the correlation of varietal salinity tolerance to rapid blight tolerance and determine whether laboratory assays are a useful screening tool. Results will help superintendents select varieties of perennial ryegrass for overseeding that will minimize the need for rapid blight control measures. This research is part of the GCSAA Chapter Cooperative Research program. The Golf and Environmental Foundation of Arizona and The Environmental Institute for Golf are providing funding. — **Mary Olsen, Ph.D. (molsen@ag.arizona.edu), University of Arizona**

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Clark Throssell (cthrossell@gcsaa.org) is GCSAA's director of research.

Clark Throssell, Ph.D.