Objective

Evaluate the impact of a single preventive application, timing and fungicide rate on fairy ring control, and investigate the influence of irrigation timing and soil-surfactant tank mixtures on preventive fungicide performance.

Preventive fairy ring control on putting greens

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Summary

Fairy rings are a severe disease problem on golf courses. The most severe fairy ring leaves necrotic bands, which are most commonly an artifact of drought-stressed turf, caused by a combination of dense fungal mycelium and the production of organic acids that coat sand particles and render the underlying soil hydrophobic. Despite the problems associated with curative fungicide applications, a preventive fungicide program for fairy ring control has not been investigated fully.

Two field experiments were conducted at the Lake Wheeler Turfgrass Field Laboratory in Raleigh, N.C., on a Penn A-1 creeping bent-grass (Agrostis palustris Hud.) research green. A three-year experiment was initiated in 2007 to determine the optimal rate and soil temperature-based timing of triadimefon (Bayleton 50 DF, Bayer) and tebuconazole applications for fairy ring prevention. A two-year experiment was initiated in 2008 to examine the impact of irrigation timing and fungicide + surfactant tank mixtures on the performance of preventive DMI applications.

Results

- Plots treated with tebuconazole and Bayleton had lower disease severity in 2007 and 2008 compared with the untreated control. The study demonstrates the efficacy of using certain DMI fungicides for preventive fairy ring control. Proper timing of preventive applications is necessary to maximize the residual effectiveness of the fungicide and target a vulnerable portion of the pathogen’s life cycle. Applications were made before plant symptoms are evident and based upon environmental cues like soil temperature, but further study is necessary to confirm results based upon soil temperatures.
- Fungicide application methods may affect the efficacy and duration of preventive control. Other surfactant chemistries may respond differently, but data in this research suggest that tank-mixing a surfactant with a preventive fungicide does not increase disease control and may result in slight phytotoxicity.

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