

TURFGRASS TRENDS

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DISEASES

Genetic resistance to snow mold fungi in bentgrass

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Winter diseases of turfgrass, collectively referred to as snow molds, are a major problem on golf courses and other turf areas in Wisconsin and similar regions. Golf course greens, fairways and tees are of primary concern because of their high dollar value. Nearly all golf course superintendents spray putting greens with fungicides to inhibit snow mold fungi. Most superintendents also spray tee boxes, while many also spray their fairways.

This control method is highly expensive, it has limited effectiveness and it may adversely affect the environment. In addition, some fungal pathogens have developed resistance to fungicides after years of repeated applications.

Our objective was to determine if existing cultivars of creeping bentgrass (*Agrostis palustris* L.); colonial bentgrass (*Agrostis tenuis* Sibth.); creeping red fescue (*Festuca rubra* L.); and Chewings fescue (*Festuca rubra* L. *commutata* Gaud.) differ in snow mold reaction. In addition, our goal was to determine if snow mold resistance is genetically inherited in creeping bentgrass.

Creeping bentgrass is a highly desirable species for golf courses, but most cultivars are generally considered to be highly susceptible to various snow mold pathogens.

Snow mold fungi

Snow mold fungi are facultative parasites, capable of surviving and growing on necrotic tissue, becoming particularly serious when susceptible hosts are compromised either through injury or stress. These pathogens are most active at temperatures ranging from 32 to 55°F and are favored by extended snow cover. Disease symptoms begin as small, round patches (2 to 4 in. in diameter) with a

water-soaked appearance. As the pathogen grows, the turf foliage dies, leaving brown patches that coalesce into extensive areas of severely damaged turf. In Wisconsin, areas of golf courses that routinely receive severe snow mold damage will have a low population of perennial turf grasses and a high population of annual-type *Poa annua* that regenerates in late spring from the soil seed banks.

There are four common snow mold fungi in Wisconsin. Pink snow mold is caused by *Microdochium nivale* and occurs throughout the state. Gray snow mold is caused by *Typhula*

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