PURDUE UNIVERSITY

PURDUE EXTENSION

BP-101-W

Turfgrass Disease Profiles

Gray Snow Mold

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Gray snow mold affects all cool season turfgrass species in areas where there are extended periods of snow cover. The disease is caused by either of two *Typhula* species: *Typhula incarnata* and *Typhula ishikariensis*. *T. ishikariensis* infections may progress down into the crown, resulting in plant death or more severe and lasting damage. *T. incarnata* outbreaks are normally less severe, and infected patches tend to recover more quickly in the spring. In areas without prolonged snow cover, gray snow mold damage to turf is largely cosmetic.

Disease Characteristics and Symptom Expression

On turf maintained at heights of 3/4 inch or less, gray snow mold infections result in nearly circular patches that are typically 6 to 12 inches in diameter (Figure 1). On taller mown turf, patches may be larger, but not as well defined. Figure 2 shows damage on taller mown bluegrass surrounding a green.

Gray snow mold patches enlarge by radial expansion of mycelium under the snow. The mycelium may be evident in the days during and after snow melt. Both *Typhula* species survive in the form of sclerotia. These small survival structures often are found embedded in dead leaf tissue (Figure 3). *T. ishikariensis* sclerotia are dark brown or black (Figure 4, top), while *T. incarnata* sclerotia tend to be red-brown or tan (Figure 4, bottom).

Gray snow mold requires snow cover for infection and patch development. Some pathogen activity occurs in the fall during periods of cool, wet weather. The extent of actual infection in fall is not clear. Since

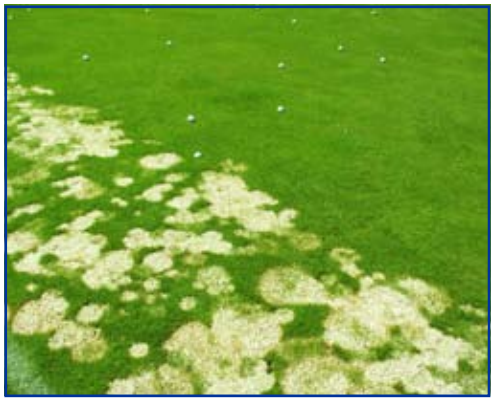

Figure 1

Figure 2

Figure 3

turf damage associated with infection and disease progress is favored by cold (32°F to 36°F), wet conditions, extended periods of snow cover provide ideal conditions for snow mold establishment and spread. On taller mown turf, matted grass blades may provide a similar insulating environment, but outbreaks normally are not severe without prolonged snow cover.

For golf course turf there is a rule of thumb to estimate the severity of gray snow mold outbreaks. Mild symptoms (a few small patches) can be expected after 40 to 60 days of snow cover, moderate levels of disease occur after 60 to 90 days of snow cover, and severe outbreaks threaten when there are more than 90 days of snow cover. Figure 5 shows snow mold damage to turf adjacent to a sidewalk where snow was piled for more than 120 days. For taller mown turf, some less conspicuous symptoms may occur after 40 days of snow cover.

Figure 4

Figure 5

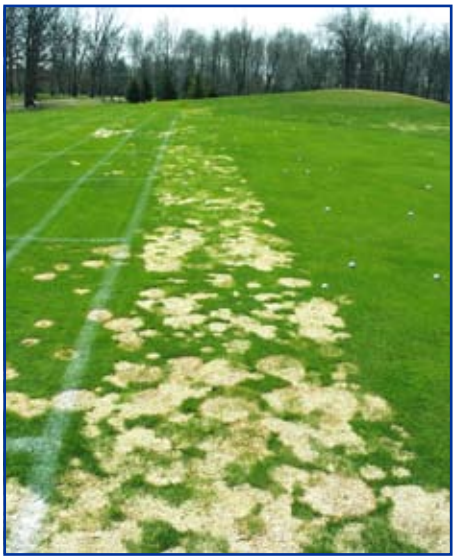

Figure 6

Disease Control Options

Cultural Control Options

Cool season turfgrass species appear to be uniformly susceptible to gray snow mold, so using resistant varieties is not an option at this time. Cultural management practices are aimed at limiting conditions for infection and patch development in winter, and hastening turf recovery in spring. Continued mowing of lawns, landscapes, sports fields, and golf course roughs to a height of 2 1/2 inches into the dormant period will decrease the risk that matted turf will provide favorable conditions for disease development. Snow management (such as strategically removing snow and using snow fences) will limit the opportunities for extended periods of snow cover in locations where quality turf is a high priority. Turf areas damaged and thinned by gray snow mold can be repaired by raking and overseeding as soon as possible in the spring.

Control with Fungicides

Since snow cover is essential for infection and disease development, it is important to have fungicide protection in place prior to initial snowfall. Under conditions favorable for gray snow mold development, unprotected turf can suffer severe damage (Figure 6, center) compared to turf protected with effective fungicides (Figure 6, right).

In northern and central Indiana, most golf course superintendents apply a contact fungicide between the Thanksgiving and Christmas holidays for protection against gray and pink snow molds. For putting greens, green surrounds, and tees, a variety of fungicide mixtures that include two or three different products can be quite effective. A DMI fungicide should be one component of the mixture. Other components that have been used successfully include dicarboximides, strobilurins, and fludioxanil (Medallion®). Recent research shows that combination products, such as Instrata®, also may be effective. For fairways and athletic fields, PCNB remains the economical product of choice.

Creeping bentgrass must be dormant (or approaching dormancy) at the time of PCNB application because the fungicide is toxic to actively growing bentgrass at rates effective for snow mold control. In some cases where gray snow mold is a more serious threat, penetrant fungicides (DMI fungicides, strobilurins, and dicarboximides) are applied in late fall to offer some protection against early pathogen activity.

Home Lawn Help

Fungicides are not recommended for use against gray snow mold on home lawns. Lasting damage can be avoided by careful attention to cultural control options. Also, in almost all cases, affected turf will recover in spring with moderate maintenance. Cultural control options include appropriate mowing until the turf enters dormancy in late fall, raking to remove piles of leaves, and avoiding the accumulation of snow in piles along driveways and sidewalks. Recovery of turf from affected patches may be hastened by raking the matted turfgrass, which facilitates air movement within the turf canopy.

For other Turfgrass Disease Profiles, visit www.agry.purdue.edu/turf/publicat.htm#BP.

All photos by Richard Latin.

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