



Turfgrass Management

At this time of year, your thoughts may be turning to the potential effects of winter conditions on your turf. “Winterkill” is the general term describing turf loss that may occur as a result of winter conditions. This issue will discuss the actual causes of winterkill and how they may be prevented.

News/What to Watch For

During winter, most turfgrass diseases and insects are relatively inactive. However, one disease complex, the snow molds, may be at work despite recent low temperatures.

Focus on: Winterkill

When turfgrasses die over the winter months, it may generally be described as “winterkill” (Figs. 1 and 2). The term covers a multitude of actual causes of turfgrass death in the winter, which may include snow mold, low temperatures, ice sheets, desiccation and crown hydration.

Crown Hydration

Crown hydration is of most concern during the warmer days of late winter or early spring when there is the potential for a day or two of warm daytime temperatures followed by a hard freeze. Turfgrass plants may start to take up water as temperatures warm and then re-freeze rapidly. As a result, ice crystals may form in the crown of the plant, rupturing cells and causing death.

Of the commonly-used cool-season turfgrass species, annual bluegrass and creeping bentgrass are most susceptible to crown hydration problems, though annual bluegrass is the more susceptible of the two because it emerges from dormancy earlier.

Desiccation

During the winter when turfgrass plants are dormant or semi-dormant, drying of the leaves or plants (desiccation) may cause death. Desiccation is typically only a factor on elevated or extremely exposed or windy sites, and areas where surface runoff is rapid.



Figure 1. Winterkill symptoms in turfgrass.

Low-Temperature Kill

Different turfgrass species are naturally more or less hardy in cold temperatures. In addition, the rates of freezing and thawing, the number of times frozen, and post-thawing treatment of the turf also affect low-temperature injury to grasses. Of greater concern than air temperature for low-temperature kill of turf is soil temperature, since the crowns of the plants reside within the soil.

Ice Sheets

Ice sheets may be identified as the cause of winterkill in turf. However, it is more often the cycle of crown hydration and refreezing that actually kills turf. This is an understandable mistake, since ice sheets may be created as snow melts and refreezes and they are very visible. Oftentimes, ice sheets will occur in low-lying or poorly drained areas where crown hydration may be facilitated because of the standing water. The damage closely aligns with the location of the ice sheet, causing confusion as to the actual cause of death (Fig. 3).

Snow Mold

The two turfgrass diseases that are active in the winter include pink and gray snow mold (see page 3). While gray snow mold requires extended periods of snow cover, pink snow mold can occur with or without snow cover.

Recovery from Winterkill

Confirmation of winterkill is necessary before going to the trouble and expense of reestablishment. If you suspect winterkill, take samples of the damaged area and place them in a warm area to see if the turf greens up. Allow two weeks of recovery time before deciding on reestablishment practices.

If reestablishment is indeed warranted, seeding or sodding may be necessary to facilitate recovery. Well-defined areas of damage may be stripped of dead turf and re-sodded. Areas of more scattered damage may be more easily reestablished by seeding. It will also be critical to divert traffic from newly seeded or sodded areas, and to provide light fertilizer applications to stimulate growth. Appropriate irrigation during the reestablishment period will also ensure that the seedbed or sod stays moist.



Figure 2. Winterkill on a golf course putting green exacerbated by cross-country skiing.



Figure 3. Areas prone to collecting water may form ice sheets.

Low-Temperature Hardiness	Turfgrass Species
Excellent	Rough bluegrass
	Creeping bentgrass
Good	Kentucky bluegrass
	Colonial bentgrass
Medium	Annual bluegrass
	Tall fescue
	Red fescue
Poor	Perennial ryegrass

-Adapted from Michigan State University's Fact Sheet [Winterkill of Turfgrass \(E0019TURF\)](#) by Dr. Kevin Frank

It's not too early to think about....

Pink Snow Mold (*Microdochium nivale*)



Favorable Conditions: cool (40-60°F) and moist conditions, neutral to alkaline soils, high N applications in the fall.

Pink snow mold (PSM) can affect all cool-season turfgrasses, but damages bentgrass and annual bluegrass most severely. Snow cover is not necessary for PSM to occur, so it may be seen in the fall, but is more prevalent in the spring. Where recurrence is severe, preventative fungicide applications may be made in the fall. Symptoms include well-defined, circular patch clusters and white-pink mycelium on infected leaf blades. Patches of dead, matted leaf blades may also be visible.

Cultural Practices

Recovery from PSM damage in the spring will be quickened by raking and/or mowing to aerate the matted turf.

Resistant Turfgrass Varieties

Perennial ryegrass: Delray; Chewings fescue: Atlanta, Ruby; Red fescue: Dawson.

*Fungicide Options**

Tetrachloroisophthalonitrile (Daconil®), azoxystrobin (Heritage®), PCNB, or combination products (Instrata®).

Gray Snow Mold (*Typhula incarnata*)



Favorable conditions: cool (50-75°F) and moist conditions, shade, heavy thatch, high N applications in the fall.

Gray snow mold (GSM) primarily affects tall fescue, bentgrass, and annual bluegrass. Circular patches of matted gray, tan or white grass may range from a few inches to several feet in diameter. Pin head-sized black or rust-colored dots may also be seen on the grass blades near patch edges.

Cultural Practices

Avoid heavy, late season nitrogen applications. Improve air and soil drainage. Remove excess thatch and prevent soil compaction with aeration. Rake and remove tree leaves from lawn before snowfall.

Resistant Turfgrass Varieties

Kentucky bluegrass: Adelphi, Baron, Bonnieblue, Galaxie, Glade, and Monopoly. In general, the fine fescues are more resistant to GSM than Kentucky bluegrass and bentgrass.

*Fungicide Options**

Fungicides are rarely needed to control GSM. However, if the disease has occurred repeatedly in the same areas over a number of years, a fungicide may be warranted. Banner®, Bayleton®, Rubigan®, azoxystrobin (Heritage®), or PCNB.

Recent USU Extension Fact Sheets

Chinch Bugs

They may not currently be active, but chinch bugs have proved to be a formidable pest here in Utah over the past two growing seasons. Learn what symptoms to look for, how to monitor for chinch bugs, and how best to control them in this recent USU Extension fact sheet.



Simple Sprinkler Performance Testing...Everywhere!

County Extension faculty from around the state have collaborated with campus faculty to bring you a series of fact sheets to help you evaluate the efficiency and uniformity of your sprinkler irrigation system. Recommended irrigation schedules for every part of the state are included, so download the version most appropriate to your location and get to work evaluating your irrigation system!



Upcoming Spring Management Practices

Spring is an ideal time to aerate lawns if the soil is compacted or there is a significant layer of thatch beneath the grass. If the thatch underneath the lawn is more than 1/2 inch thick, consider core aeration to stimulate the natural decomposition process. Likewise, if you have a very fine-textured soil, compaction may occur, particularly in high traffic areas. Core aeration will help to alleviate this compaction. A potential drawback to aeration in the spring is that open aeration holes may allow annual weeds to germinate more easily if they have not closed by late spring. Consider a pre-emergent herbicide, if this is the case.

***Precautionary Statement:** All pesticides have benefits and risks, however, following the label instructions will minimize the risk and maximize the benefit. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

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