



Turfgrass IPM Advisory

Quarterly Turfgrass Pest Update, USU Turfgrass Extension Vol. 13(1), Spring 2020

Turfgrass Integrated Pest Management

An integrative approach to the management of turfgrass insect pests, diseases and weeds is most effective. Prevention is the best strategy!

What to Watch For

Now that winter has passed in most parts of the state, the focus should be on recovery from damage due to winterkill and other turfgrass diseases, such as snow mold. Spring weeds are also on the horizon.

Letter from the Editor

Dear Readers,

I have never written to you personally before, but feel compelled to do so now given the situation that we currently face as a state, a nation, and a global population with COVID-19.

First, I would like to extend my apologies for the long hiatus of these advisories. I was on sabbatical leave from USU (from August 2018 through July 2019) and it's taken me a few months to regroup. During that sabbatical, I and my family were living outside the U.S., and maintaining many of my normal work tasks was not possible. Having said that, I put together this advisory—the first in more than a year—as one means of maintaining normalcy in my life and, *most hopefully, yours*.

As I work from home and occasionally gaze outside my window, I take comfort in the fact that while so many things are changing, the grass is indeed still growing. And like every year before, there will be insects and diseases and other maintenance challenges, and you will have questions about their management. I will continue to do my best to provide answers.

I would also like to share that USU Extension is rising to meet the challenges that we all now face in countless ways. I have never been prouder to be associated with this fine institution. Related, I would encourage you to access the resources available at USU Extension's [COVID-19 website](#), for answers to questions you may have.

Finally, whether you are a homeowner, a golf course superintendent, a sports field manager, or a landscape contractor, I commend you for your efforts in managing the turfgrass landscapes around us for play, sport and beauty. These places, that we grow and love, will provide the gathering places of our futures.

Please stay safe and stay healthy.

Wishing you all very well,

Kelly Kopp, Editor, Turfgrass IPM Advisories
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Winterkill of Turfgrasses

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



Figure 1. Winterkill symptoms in turfgrass.

Crown Hydration and Dessication

Crown hydration is of most concern during the warmer days of late winter/early spring when there is the potential for warm daytime temperatures followed by a hard freeze. Turfgrass 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.

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.

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.

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.

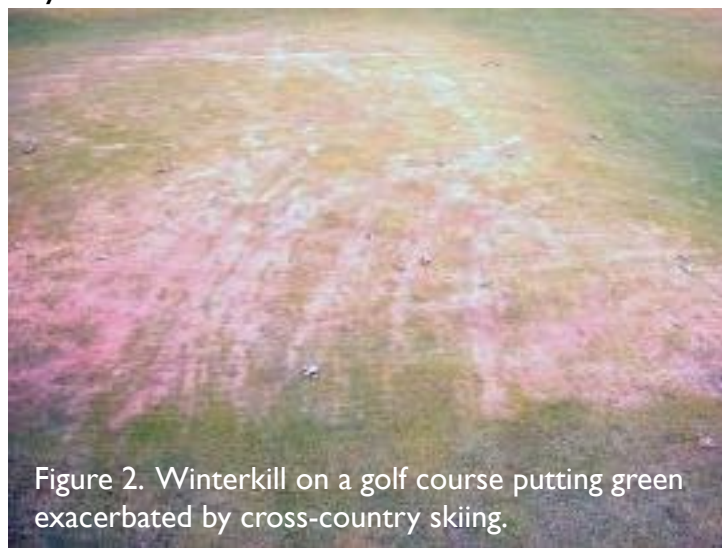


Figure 2. Winterkill on a golf course putting green exacerbated by cross-country skiing.

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

Weeds and Weed Control



In the case of grasses, maintaining a healthy, competitive turf is your best offensive play for controlling weeds. In fact, proper cultural practices can reduce weed populations by as much as 70% or more, without the use of herbicides, so these practices should be the focus of any turf weed control program.

The first step to weed management in turf areas is to properly identify the weeds you're trying to control. The common types of weeds in turf are grasses, broadleaf weeds, and sedges. Weeds can be further categorized by their life cycles.

Annual weeds germinate from seed, grow, mature and die in less than 12 months. *Winter annuals* germinate in the fall, overwinter as plants, mature in the spring, flower and set seed, then die during the summer months (ex. annual bluegrass, common chickweed). *Summer annuals* germinate in the spring, grow during the summer months, flower and set seed in late summer and die in the fall. These are the weeds that are of most concern in the spring (ex. crabgrass, prostrate spurge).

Biennials weeds reproduce from seed and complete their life cycle in 2 years. They form

rosettes and store food in their roots for one year, flowering the next year (ex. bull thistle).

Perennial weeds live for more than 2 years and may reproduce from either seed or vegetative structures such as roots, rhizomes, stolons, tubers, or bulbs. The ability to reproduce vegetatively is what makes perennial turf weeds more difficult to control. To complicate matters further, some perennials grow actively during cool weather, while others grow more actively during warm weather. *Simple perennials* overwinter by means of some vegetative structure, but reproduce mainly by seed (ex. dandelion). *Creeping perennials* can overwinter and produce new plants from vegetative structures (ex. bentgrass, nutsedge). Most perennials can also reproduce from seed.

Cultural Practices

As mentioned, cultural practices that increase the health and vigor of turf are going to discourage the incursion of weeds. These practices are generally intended to increase shade and crowding at the soil surface, preventing weed seedlings from germinating. Some cultural practices to consider include proper selection and establishment of grass species and varieties, proper fertilization, good mowing practices, and efficient irrigation.

Choosing grasses that are not well adapted to local environmental and use conditions results in a weak, thin stand that leaves openings for weeds to grow. Inadequate fertilization also results in decreased density. Consider [soil testing](#) to be certain you are applying the types and rates of fertilizers that you need. Nitrogen is particularly important for improving the color, quality and density of desirable turf species.

Weeds and Weed Control

One of the most common causes of weed invasion is improper mowing. Mowing turfgrasses too short results in weaker turf that invites weed encroachment due to the negative impact on turf roots. Frequent, shallow irrigation also encourages shallow turf rooting, which makes it susceptible to not only weed invasion, but insect and disease attacks as well. Irrigating to soil depths of 4-6” before signs of turf wilting will encourage deeper rooting and will help to prevent weed encroachment.

Chemical Control of Summer Annual Weeds

Summer annual grass weeds such as crabgrass are usually controlled with preemergence herbicides. A chemical barrier is formed in the soil prior to weed seed germination or emergence. The barrier prevents the weed seedlings from emerging and growing normally.

There are several factors to consider when choosing preemergence herbicides, but foremost is the safety of the chemical for the turfgrass species that are being treated. For examples, oxadiazon is generally safe for Kentucky bluegrass, ryegrass, and tall fescue, but it may damage fine fescues. Also keep in mind that new turfgrass seedlings may also be damaged by preemergence herbicides, and seeding during preemergence herbicide activity should be avoided. Siduron and Mesotrione are the only preemergence herbicides that may be safely used near seeding times.

The timing of preemergence herbicide application is critical to achieving good weed control. Generally, the best time to apply these materials is 10-14 days prior to the expected germination period in spring. Crabgrass will begin to germinate when soils are moist and the temperature in the upper inch of soil reaches 55-58° F at daybreak for 4-5 days.

Pre-emergent Herbicides* for Summer Annual Grass Control

Active Ingredient Name	Trade Name
Benefin	Balan DF
Benefin + trifluralin	Team
Bensulide	Bensumec
Dithiopyr	Dimension
Oxadiazon	Ronstar
Pendimethalin	Pendulum, Prowl
Prodiamine	Barricade
Siduron	Tupersan

Depending on the product, time of application and location, reapplication within 60 days may be required for season-long control. Consult product labels to determine if two applications are allowed or needed.

Goosegrass will germinate later than crabgrass, so preemergence applications of herbicides to control goosegrass should take place 3-4 weeks after the date of crabgrass control applications.

In all cases, the effectiveness of preemergence herbicides will depend on uniform application over the turf area at label-recommended rates. These herbicides will also be more effective if they are watered in within 2-3 days of application.

-Adapted from “Weed Management in Turf”, Pennsylvania State University, College of Agricultural Sciences, Agricultural Research and Cooperative Extension

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.

Recommended Cultural Practices for Spring

Seeding/Over-seeding

Spring provides the opportunity to seed new turfgrass areas or to over-seed areas that may have been damaged over the winter. The cool temperatures will promote germination and growth of cool season turf species such as Kentucky bluegrass, tall and fine fescues, and perennial ryegrass. Be aware, that there will be also be annual weed pressure at this time of year and consider your weed control options. Choose pest resistant or recommended turfgrass cultivars when possible.

Fertilization

Nitrogen is of primary concern in turfgrass fertilization. In the spring, apply 1 pound of slow release nitrogen (N) fertilizer per one thousand square feet of lawn area. This will help the grass to recover from winter damage and any stress that may have occurred. It will also be especially helpful for areas that have suffered damage due to diseases such as pink and gray snow mold. In a slow-release form, N fertilizer will provide a consistent source of nutrients as the growing season begins.

Aeration/Cultivation

Spring is also an ideal time to aerate your lawn if the soil is compacted or there is a significant layer of thatch beneath the grass. If the thatch underneath your lawn is more than 1/2 in. 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 compaction and will encourage turfgrass growth and recovery.

Timely USU Extension Fact Sheets

[Northern Utah Turfgrass Management Calendar](#)

- Recommended scheduling of turfgrass management practices

[Southeast Utah Turfgrass Management Calendar](#)

[Southwest Utah Turfgrass Management Calendar](#)

[St. George, Area Utah Turfgrass Management Calendar](#)

[Snow Mold in Turfgrass](#)

- Symptoms, diagnosis, and management

[Basic Turfgrass Management](#)

- Routine management practices

***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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