Turfgrass IPM Advisory

Seasonal Turfgrass Pest Update, Utah State University Extension, Spring 2014

Turfgrass Management

As the snow thaws and warmer weather begins, turf damage due to disease or other pest damage may become apparent.

News/What to Watch For

Summer annual weeds will start to become active at this time of the year and pre-emergent herbicide use may be warranted where they have been persistent. Your turf may also be emerging from winter with snow mold and/or vole damage.

Focus On: Weeds and Weed Control

You've likely heard the expression, "The best defense is a good offense," and this certainly applies to weed control in managed turfgrass areas. 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. Doing so will help you to choose the most appropriate control options. 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 at this time of the year (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.

Weeds and Weed Control (cont'd)

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, efficient irrigation, and insect and disease control.

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.

One of the most common causes of weed invasion is improper mowing. Mowing turfgrasses too short results in a weakened condition that invites weed encroachment due to the negative impact on turf roots. Improper irrigation will also invite weed encroachment. Frequent, shallow irrigation encourages shallow turf rooting which weakens turf and 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 preermergence herbicide activity should be avoided. Siduron is the only preemergence herbicide that may be safely used near seeding times.

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

The timing of preemergence herbicide application is critical to achieve good 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.

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

Voles

Signs of vole damage are found mostly above ground. Surface runways (1-2 in wide) along the ground may lead to tunnel entrance holes (1 ½ in diameter) and turf areas may be heavily damaged by these tunnels and runways.

Preventing initial damage is far more cost effective than population control, and an integrated pest management strategy should be considered. Eliminating weeds, ground covers, and plant litter around ornamental trees and turf areas will reduce suitable vole habitat. Mow turf areas regularly and remove turf at least 3 feet away from tree bases. Aerification will destroy vole runways and may kill voles outright (if your timing is right). Remove piles of brush, branches, and other plant litter to further eliminate vole habitat.

Trapping may be effective for small numbers of voles and may be accomplished with small, snap-type mouse traps baited with fruit or peanut butter. Place traps at right angles to runs and deeper into tunnel runs where possible. Use a minimum of ten traps in an area the size of a typical yard, and always wear protective gloves when handling dead voles to prevent the spread of disease.

Bait station constructed of PVC. Image courtesy of Charles Lee, Kansas State University.

The EPA has approved two vole repellents, thiram (a fungicide) or capsaicin. Both products work by making plants taste unpalatable to voles, and while they may provide some temporary protection, the effects are generally short-lived.

The EPA has also approved of two rodenticides* for vole control, zinc phosphide (2%) and anticoagulants. Using appropriate personal protective equipment and hand-placing baits in burrows and runways reduces the risk to non-target species.

Image courtesy of Charles Lee, Kansas State University.

Anticoagulant baits, commonly used for mouse and rat control, are also effective for reducing vole populations and like zinc phosphide, anticoagulants may be broadcast or hand-placed in burrows and runs. Anticoagulants are also toxic to humans, so every precaution should be taken to prevent human contact, particularly for children.

In areas where children and pets play, vole control efforts should focus on cultural practices and trapping to avoid accidental poisonings. Keep in mind that vole activity is cyclical (every 2-5 years), and the problem may resolve itself.

For more information, contact your local USU county Extension office and see the resources listed below.

-Dr. Terry Messmer, USU Extension Wildlife Specialist

Pink Snow Mold (*Microdochium nivale*)

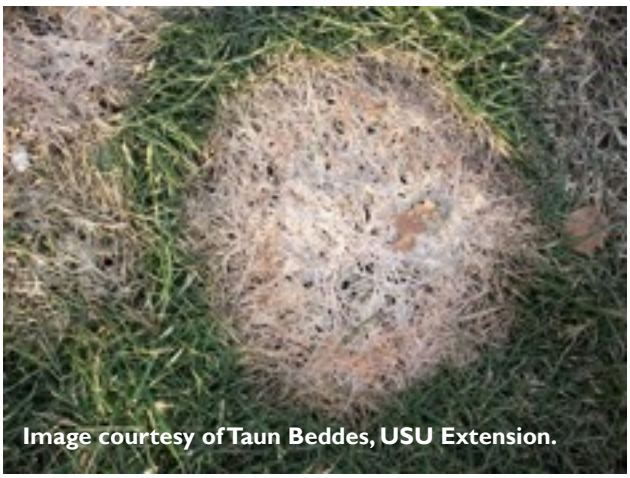

Image courtesy of Taun Beddes, USU Extension.

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*)

Image courtesy of Claudia Nischwitz, USU Extension.

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.

Necrotic Ring Spot (*Ophiosphaerella korrae*)

Favorable Conditions: cool (40-60°F) and moist conditions, may be compounded by drought and compaction.

Necrotic ring spot (NRS) primarily infects Kentucky bluegrass, though it may also be seen in annual bluegrass and tall fescue. The disease damages the roots and crowns of the grass plants and the first symptoms are small, light green patches of turf that get larger over time. Frequently the turf will survive the infection and re-grow in the center of the patches, giving them a ring-like ("frog eye") appearance.

Maintain the highest mowing height possible and prevent drought stress. Core aerate once annually to reduce thatch and avoid over application of N fertilizers. Also consider overseeding or renovating affected areas with resistant varieties of Kentucky bluegrass (America, Midnight, SR2100).

*Fungicide Options**

Several fungicides are labeled for treatment of NRS including Azoxystrobin (Heritage), myclobutanil (Eagle), propiconazole (Banner MAXX, Propiconazole Pro, Fertilome Liquid Systemic Fungicide), and azoxystrobin + propiconazole (Headway), though a commercial applicator's license may be required. Keep in mind, also, that the effectiveness of fungicides for NRS control has been inconsistent and correct timing of application is critical. First applications should be made when soil temperatures reach 65° F at 2" depth. A second application should be made one month later. If damage is severe, a third application may be warranted one month later. Lightly water the fungicide into the lawn (less than 1/4" water), but do not saturate the lawn and soil.

Recommended Cultural Practices for Spring

Seeding/Overseeding

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 ½ 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.

Relevant USU Extension Fact Sheets

Turfgrass Management

http://extension.usu.edu/files/publications/publication/HG_517.pdf

http://extension.usu.edu/files/publications/publication/HG_Grass_2004_01.pdf

http://extension.usu.edu/files/publications/publication/Horticulture_Turfgrass_2012c-02pr.pdf

Voles

http://www.wildlifeconflicts.org/pdf/voles.pdf

Diseases

http://extension.usu.edu/files/publications/factsheet/snowmold-turf08.pdf

http://extension.usu.edu/files/publications/factsheet/turf-ringspot-patch.pdf

***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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