



USU TURFGRASS IPM Advisory

Quarterly Turfgrass Pest Update, USU Turfgrass Extension

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Turfgrass Management

Spring has definitely sprung around Utah and it came early this year. Despite the recent rains, we are warmer and drier than is typical for this time of year. Expect to see turfgrass damage due to common insect and disease pests earlier than normal.

What to Watch For

Now is the time to start monitoring for some insect pests of turf, so we're highlighting an article from last spring on billbugs (below). These pests of Kentucky bluegrass are currently becoming active around the state. Necrotic ring spot is also active in several areas around the state now.

Spring Billbug Monitoring in Turf

Billbugs, a complex of weevils in turf, have spent the winter primarily as adults. Insects are poikilotherms (or "cold-blooded"), meaning their body temperature fluctuates with ambient temperatures. Once the weather warms up, insect metabolic and enzymatic activity begins to speed up. As temperatures start to exceed 65°F, adult billbugs become active and make their way to turfgrass areas where they will feed and deposit eggs. Adult activity of billbug may be used to our advantage for monitoring weevils and better predicting when to manage them or if management is even needed.

Although it may be possible to use visual sampling to find adult billbugs on sidewalks as they make their way into turfgrass, it is not all that practical on a larger scale or in recreational areas. Billbug behavior, however, is somewhat unique in that the adults rarely fly and they "play possum" when disturbed. We

can use the former behavior for monitoring by utilizing pitfall traps. Pitfall traps can be as simple as digging a hole the size and height of a chosen container so that the container fits snugly and making sure there are no gaps between the soil and the container. Billbugs crawling into an area will drop into the cup without being able to escape. Pitfall traps are a useful monitoring tool but it is important to note that these traps are not an effective control method. In addition, pitfall traps collect ground active organisms (wolf spiders, millipedes, worms, and other insects), so identification at a basic level is needed to distinguish pests from non-pests. In turf, there is an abundant and diverse community of predatory ground beetles and spiders that are beneficial. Checking these traps regularly early in the spring will help to evaluate the start of billbug activity and increasing activity of adults as more are collected from week to week.

Spring Monitoring (cont'd)

Pitfall trapping can be paired with degree day (aka growing degree day) models that predict insect activity based on maximum and minimum temperatures and an insect's developmental temperature threshold. A model for bluegrass billbug was developed in Ohio and has been used elsewhere, but it has not been specifically validated in Utah. If you have not visited the Utah TRAPs website (<http://climate.usurf.usu.edu/traps.php>), this is a good way to follow and have calculated degree days.



Deli cups are good examples of pitfall containers. The rim of the container should be even with the soil surface, otherwise insects will bump into the rim and walk away.

On the site, select the closest weather station on the map to your location, then the growing degree day (GDD) model (base 50), and select a March 1 start date. According to the Ohio model, first activity of adults is typically recorded between 280 and 350 degree days, with 30% of first adult activity occurring between 560 and 624 degree days.

Combining these monitoring tools can be useful for making management decisions. Some have used these methods to target active and incoming billbugs with border treatments of pyrethroid or organophosphate products. Preventative products (e.g., Acelepryn, Arena,

Merit, and Meridian) are often used for turf insect management and target newly emerging larvae from eggs deposited in turf stems. Pairing these monitoring strategies with preventative applications is important for improving efficacy. Given the drastic differences in temperature and degree day accumulation from year to year for Utah, applications made too early will breakdown and will not be as effective when the majority of billbug larvae are feeding.

Alternatively, preventative applications made at peak adult billbug activity and afterwards may not be as effective since it takes time to move these products into the plant (Acelepryn, in particular, given its low water solubility) so that emerging billbug larvae can ingest the product as they begin feeding. As larvae become larger, they are less susceptible to these applications and how quickly they develop will be, in part, dependent on temperature.

Pitfall Trap Modifications

Add a sleeve insert to the trap for quick monitoring. This works well with deli cups where the rim of one cup is removed and slipped into the soil-bound, rimmed cup.

Poke small holes through the bottom of the container for water drainage.

Add a protective cover that sits above the trap to shelter from water.

Add a wire mesh cover so that small animals don't eat the trapped insects.

- Dr. Ricardo Ramirez
USU Extension Entomologist



Necrotic Ring Spot (*Ophiosphaerella korrae*)

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/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.

Relevant USU Extension Fact Sheets

Basic Turfgrass Care

- Mowing, fertilization, and irrigation

Turfgrass Cultivars for Utah

- Appropriate species and varieties for Utah

Billbugs

- Damage, diagnosis, and control options

Necrotic Ring Spot

- Symptoms, diagnosis, and management

***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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