



Turfgrass Pest Management

An integrative approach to the management of turfgrass insect pests and diseases is most effective. Oftentimes, prevention is the best strategy. Cultural practices can help grasses to resist and recover from pest damage.

News/What to Watch For

We have had an unusually warm and dry winter. As a result, snow mold pressure has been reduced. However, the warmer temperatures and early spring mean that other diseases and insects may become active sooner. Necrotic ring spot, billbugs, and white grubs may be active at this time of year.

Focus On: Preventive Treatments for Turfgrass Insects

A fast transition from winter to spring appears to have pushed turf insect activity earlier this year. Several insects attack turf in Utah including billbugs, white grubs (May and June beetles), and sod webworms. So what to do about these potential pests? For spring, the options for management include proper turf health, the use of pest tolerant turfgrasses, and chemical management.

Turf that is “stressed” can be more susceptible to pest attack. Therefore starting out with proper irrigation and fertilization are key. Overwatering, drought, and over fertilizing are factors that can cause plant stress, but these are factors that can be managed.

For a more proactive approach, there are endophyte enhanced turfgrasses used for insect management. Endophytes are beneficial fungi that can live in turf

plants and contribute to the production of defensive chemicals that can be toxic to insects or deter insect feeding. Endophyte enhanced turf is limited to fescues and perennial ryegrass, but Kentucky bluegrass can be protected when seeded or mixed together with these enhanced grasses. Check turfgrass seed labels for this attribute.

Chemical products for turf insect control are broken into two broad groups, preventative and curative products. If your turf is consistently targeted by insect pests, preventive products should be considered. Some preventive active ingredients include chlorantraniliprole (Acelepryn®), imidacloprid (Merit®), or clothianidin (Arena®, Aloft®). Check the pesticide labels for these ingredients. These products are applied in spring in anticipation of the damaging insect larval stages that feed on turfgrass stems, crowns, and/or roots.

Preventive products have to be ingested to work most effectively and work best against young larval stages just after they emerge from the egg and begin feeding. These products are systemic (absorbed or moved through the plant), have a long residual life in the soil, and have very low toxicity to vertebrates. Chlorantraniliprole is less water soluble and requires more time to move down the soil profile and into plants, so now is the time to apply this product. Application of clothianidin and imidacloprid, however, can be delayed until May.

Ricardo Ramirez- Extension Entomologist



Sod Webworm (*multiple species*)

Life Cycle: two generations per year for the most part, though one to four are possible depending on species.

Sod webworm (SW) damage is inflicted by the larvae of the moths which feed on turfgrass blades. General thinning may be followed by brown patches in the area. Heavy infestations can kill grass, with peak damage occurring in summer and early fall.

Cultural Practices

Overly irrigating and/or fertilizing will predispose the grass to insect outbreaks.

Resistant Turfgrass Varieties

Endophyte enhanced perennial ryegrasses and fescues show some resistance to SW.

*Insecticidal Products**

Spinosad (Conserve®), *Bacillus thuringiensis* (Bt®), Deliver®, *Steinernema carpocapsae* (Biosafe®, Biovector®, Exhibit®), azadirachtin (Ornazin®).



White Grubs (*multiple species*)

Life Cycle: Masked chafers have one generation per year, May/June beetles have one generation every three years.

White grubs (WG) are the larvae of one of several different beetles in Utah. Damage occurs when the roots of the grass plant are chewed off just below the soil surface or thatch layer. Grass can feel spongy and will easily pull away from the soil surface.

Cultural Practices

Overly irrigating and/or fertilizing will make the lawn more attractive to white grub adults.

Resistant Turfgrass Varieties

The fine and tall fescues are less susceptible to WG damage than Kentucky bluegrass.

*Insecticidal Products**

Imidacloprid (Merit®), *Bacillus thuringiensis* (Bt®), Deliver®, *Steinernema carpocapsae* (Biosafe®, Biovector®, Exhibit®), azadirachtin (Ornazin®).



Billbug (*Sphenophorus* spp.)

Life Cycle: one generation per year for the most part, overwintering in the adult stage.

Billbug (BB) damage is inflicted by the larvae of the bugs which feed on turfgrass stems, crowns and roots. Initial damage resembles drought stress and may include small brown patches. Blades of grass infested with BB can easily be pulled away from the crown.

Cultural Practices

Properly irrigating and fertilizing turfgrass will help the grass to resist and recover from BB damage. Overly irrigating and/or fertilizing will predispose the grass to insect outbreaks.

Resistant Turfgrass Varieties

Endophyte-enhanced perennial ryegrasses and fescues show some resistance to BB.

*Insecticidal Products**

Imidacloprid (Merit®), *Steinernema carpocapsae* (Biosafe®, Biovector®, Exhibit®), *Beauveria bassiana* (Naturalis®).



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.

Cultural Practices

Maintain the highest mowing height possible and prevent drought stress. Core aerate once annually to reduce thatch and avoid over application of N fertilizers.

Resistant Turfgrass Varieties

Kentucky bluegrass: Adelphi, Alpine, Award, Kelly, Eclipse, Midnight, Mystic, Nugget, NewStar, Odyssey, Unique, Wabash and Washington.

*Fungicide Options**

Azoxystrobin (Heritage®), myclobutanil (Eagle®), propiconazole (Banner MAXX®, Propiconazole Pro®, Fertilome Liquid Systemic Fungicide®), and azoxystrobin + propiconazole (Headway®).

More on Endophytes and Turfgrasses....

As mentioned above, turfgrasses infected with endophytic fungi may help meet the increasing demands for reduced pesticide use and more sustainable, lower input turfgrasses. The original discovery of grasses infected with endophytes occurred when cattle that grazed on infected grasses developed negative symptoms such as delirium and “livestock swaggers”. For this reason, endophyte enhanced grasses should never be utilized in locations where livestock may ingest them. Despite this negative aspect, infection of turfgrasses with endophytic fungi has resulted in turfgrasses of increased vigor and insect resistance and their application in sustainable turf care programs.

When turfgrasses are infected with endophytic fungi, the fungus and the grass have a mutually beneficial relationship that enhances the success of each. Infected grasses produce greater numbers of tillers and roots making them more drought-tolerant, more able to recover from injury, competitive with weed species, and generally more vigorous. In return, the fungi (*Neotyphodium coenophialum* and *N. lolii*) have a host in the grass plant that facilitates their growth and reproduction.

Endophytic grasses have shown high resistance to foliar-feeding insects such as billbugs and sod webworms because of the presence of biologically active alkyloids. The insecticidal effects produced by these compounds are what deter insects from feeding, resulting in a decline in insect populations. Alkyloid levels in the roots are low, however, so root-feeding insects are not effected.

Improved cultivars of tall fescue (Constitution, Justice, Tuxedo), perennial ryegrass (Manhattan 4, Pennant II) and fine fescues (Jamestown II, Treasure, Jasper II) are available and are often marketed as low maintenance mixtures. Efforts to infect/enhance Kentucky bluegrass and bentgrass with endophytic fungi have been ineffective so far. Be aware that the amount of endophyte within a specific cultivar can vary from season to season depending on the conditions at the time of growth and harvest.

-Adapted from University of Massachusetts Extension, 2011

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.



IMSTMA 2012 SPRING FIELD DAY “REAL SOCCER FIELDS”

What: FREE tour of Reál Salt Lake’s Practice Facility

When: May 10, 2012

Schedule: Start with lunch at noon, tour, finish by 3PM.

Where: 75 West Sego Lily Drive, Sandy, UT

RSVP: Greg Graves (ggraves@jub.com) NO LATER THAN May 3, 2012

IMSTMA is sponsoring a Field Day to visit the Salt Lake Reál Soccer practice facility. We will meet at the facility, have lunch, speak with the designer and the owner’s representatives, tour the fields, and enjoy a couple of hours learning more about soccer field design and management. Lunch will be provided and our lunch sponsor is Hunter Industries (Justin Hamula). Please plan on attending and bring your people with you. Don’t forget to RSVP!

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

Diseases

<http://extension.usu.edu/files/publications/factsheet/necrotic-ring-spot08.pdf>

Insects

<http://extension.usu.edu/files/publications/factsheet/billbug07.pdf>

<http://extension.usu.edu/files/publications/factsheet/sod-webworm07.pdf>

<http://extension.usu.edu/files/publications/factsheet/white-grub07.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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Editor: Kelly Kopp, kelly.kopp@usu.edu
click here [<http://www.utahpests.usu.edu/ipm/>] for archived advisories.

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