COOPERATIVE EXTENSION SERVICE
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana - Champaign
Illinois Natural History Survey, Champaign

White grubs

White grub is a common name for the larvae of June beetles, chafers and Japanese beetles that feed on the roots of turfgrass. The grubs can be found in the first 8 inches of soil beneath turfgrass. They are white, C-shaped larvae, about 1 inch long and have 6 jointed legs attached close to their small brown head capsule. Excessive root feeding by white grubs can leave turfgrass poorly anchored to the soil and can result in brown patches in a lawn that can be pulled back like a rug. This can impact the aesthetics of a lawn and, in some cases, can make sports fields less safe for children and athletes.

White grub, Alton N. Sparks, Jr., University of Georgia, Bugwood.org.

Scouting is the most important step in determining whether a treatment is necessary or economical. August is the best time to scout for grubs because young grubs are hatching and beginning to feed on grass roots. To scout for grubs, choose a location in the turfgrass that is near pavement and away from trees. Cut a 1 sq.ft. patch of turfgrass and roll it back to expose the grubs below. If you find 10 – 12

grubs or more in those patches, you have enough insects to cause significant injury and can apply a treatment to the turfgrass.

White grub scouting, Phil Nixon, University of Illinois at Urbana-Champaign.

Chemical Controls:

Neonicotinoids (Merit, Arena, Meridian) are systemic insecticide, meaning they are taken up by and transported within the grass plants. When grubs feed on grass roots they take in the insecticide and are killed. These systemic insecticides can remain active within the turfgrass for up to 3 months. Because these products are transported within the plant, they have the potential to harm pollinators visiting treated plants. It is important to avoid applying neonicotinoids to flowering plants (including clover and weeds) to prevent pollinator exposure.

Trichlorfon (Dylox) is an effective and short acting treatment for white grubs. It can be purchased as a granular formulation that must be incorporated, watered-in to the turfgrass.

Chlorantraniliprole (Acelepryn) is a more selective insecticide that can provide control for white grubs and some caterpillars that feed on turfgrass but has a lower risk of harming pollinators like bees. It can be applied as either a spray or granular formulation.

If a treatment without synthetic active ingredients is preferred, biological or cultural controls can be used.

Biological Controls:

GrubGone!® is a microbial product that can be an effective option in controlling white grubs. The active ingredient, Bt galleriae (*Bacillus thuringiensis galleriea*), is a soil microbe that damages the gut of beetle larvae when it is consumed.

Cultural Controls:

Another strategy is to make turfgrass less attractive by reducing irrigation during late July and early Aug. At this time, adult beetles are actively mating and depositing eggs. Irrigated turfgrass is the most attractive location for egg-laying. This is the safest and cheapest option but may result in some browning from lack of water during the hottest part of the summer. This option may not be possible in locations like golf courses, where green grass is required

(Sarah Hughson)

Nimblewill Noticeable During Hot Dry Conditions

There have been a few recent calls about nimblewill (*Muhlenbergia schreberi*). With the hot, dry conditions we have had lately, our cool-season turfgrass growth has slowed, making warm-season nimblewill growth more noticeable. While cool-season turfgrasses are dormant, nimblewill is actively growing and enjoying the lack of competition. This unbalance can allow nimblewill to be a serious weed problem.

Typically, nimblewill is most obvious in early to mid-spring when lawns first green-up. While dormant, its appearance is that of very light tan-colored, “puffed up” patches (the patches look like buff-colored scouring pads). When nimblewill greens up to a grayish- or bluish-green in late spring, its appearance is more inconspicuous. It tends to go dormant fairly early in the fall as well and therefore may be noticed then too.

Nimblewill is a perennial grass that is fairly common in Illinois. Typically found growing in shady or wet lawns and landscapes, it creeps by aboveground, horizontal stems that can root at the nodes and readily form patches. Its leaves are smooth, quite narrow, and short compared to many grass species. Individual plants look almost wiry. In fact, another name for this grass is wire-grass. A closer look at this plant will reveal a very short, membranous, toothed ligule. The leaves are rolled in the bud. The flower is a fine, slender panicle.

In Illinois, Nimblewill may be confused with zoysiagrass which has a similar growth pattern. However, dormant zoysiagrass is more of a golden tan in color and unless planted it is very unlikely for it to suddenly appear as a weed.

Nimblewill is best controlled in the summer when it is actively growing. Controlling patches while they are smaller is recommended. Proper cultural practices can significantly aid in controlling lawn weeds. Be sure that watering, fertilizing, and cultivating are done properly and at the right time.

For optimal control when using post-emergent herbicides, nimblewill should be treated when it is young and actively growing in the late spring to early summer. Although we have missed this window for this year, we can add it to the spring to do list for next year. Late summer applications can be made but ideally, they should be done by August. It is recommended that you extend spray coverage beyond the immediate patches as creeping stems are prone to lurk in these areas. Stolons missed by applications may form subsequent patches.

Mesotrione and topramezone can be used to selectively control nimblewill growing in most cool-season turfgrasses. Be sure to carefully read and follow all label directions as the addition of a surfactant and multiple applications are needed. Yearly maximum use rates can be found on these labels. While both products can be applied postemergence, only mesotrione may be used preemergence. Additionally, mesotrione has good control of yellow nutsedge and both provide control of several broadleaf weeds as well. Treated, susceptible weeds will appear white in color. The whitening of turfgrass may last for several weeks which can be alarming to the uniformed. Be sure to prepare clients before using these products on their lawn.

Non-selective herbicides such as glyphosate can be used, but keep in mind that non-target desirable plants such as bluegrass may be seriously injured or killed if contacted by glyphosate.

Proper cultural practices can significantly aid in controlling lawn weeds. Be sure that watering, fertilizing, and cultivating are done properly and at the right time.

For up-to-date lawn weed control recommendations, consult with the University of Illinois Extension publication, "*Illinois Commercial Landscape & Turfgrass Pest Management Handbook*" as well as the "*Home Yard and Garden Pest Guide*."

(Michelle Wiesbrook) *(adapted from an article by Michelle Wiesbrook & Tom Voigt)*

Fire Blight

I have received a few reports and questions regarding fire blight on ornamental pears. Fire blight is a bacterial disease that infects approximately 75 different species of plants, all in the Rosaceae family. Apples, pears, crabapples, and ornamental pears are the most seriously affected species. Other rosaceous hosts include cotoneaster, hawthorn, quince, firethorn, and mountain-ash.
Affected trees have water-soaked or wilted new growth at the branch tip that quickly turns brown to black and remains attached to the stem (Photo 1 & Photo 2). Frequently, the tip of the blighted shoot bends over and forms a distinctive diagnostic feature that resembles a shepherd's crook (Photo 3).

Symptoms are similar to frost injury. Cankers also develop in the wood of infected stems and branches (Photo 4).

Fire blight is caused by a bacterium (*Erwinia amylovora*). The pathogen overwinters in living tissue at the margins of trunk and branch cankers that were formed by infections initiated in previous years. The disease can cause numerous cankers on a single tree. Not all cankers survive the winter, but few that persist produce millions of bacteria capable of causing new infections. Rain or insects may move the bacterium from cankers to open blossoms, vigorous shoot tips, and leaves. Fire Blight outbreaks sometimes occur following severe storms. Gusty winds and hail cause wound the trees creating an entry point for the pathogen. The bulk of the infections occur during flowering when temperatures are warm (optimal 76°F), and conditions are wet. These conditions also encourage rapid disease development.

No single method is adequate to effectively control fire blight. A combination of practices will be needed to reduce the severity of the disease. An important step to controlling this fire blight is avoiding highly susceptible cultivars. Before planting new trees, research and select plants and cultivars known to have good to excellent fire blight resistance. When selecting crabapples, also consider other common diseases such as apple scab and cedar rusts. For existing infections, prune out infected wood in the dormant season, if you can wait. If not, prune in an extended dry period and disinfect pruning tools after every cut. The bacterium may have extended down the stem ahead of the canker. Unfortunately, this means wood should be removed 8-10 inches below the edge of the visible canker. Chemical options are limited, especially for homeowners, and the timing of sprays is also critical. Commercial growers apply copper products in the dormant season and streptomycin at 4-5 day intervals throughout bloom. Fertilization and watering are not recommended. Such practices will promote lush growth, which is more susceptible to infection by the fire blight bacterium.

(Travis Cleveland)

Photo 1. Blighted leaves on Callery pear infected with Fire Blight

Photo 2. Blighted leaves on Korean mountainash infected with Fire Blight

Photo 3. Shepherd's crook Fire Blight symptom on crabapple

Photo 4. Fire blight canker on the branch of a Callery pear.

Bacterial Leaf Scorch – New Molecular Service Available

It's the time of the year that we start seeing bacterial leaf scorch symptoms develop in central Illinois, and several samples have been submitted that appear to be infected in the last few weeks. We are now offering a molecular test for this pathogen, which will reduce the turnaround time, and because it's more sensitive than the previous ELISA test, ca be used any time during the growing season when symptoms appear.

Bacterial Leaf Scorch (BLS) is a serious infectious disease with a wide host range of trees and shrubs. The disease causes the slow decline of the host, resulting in host death. It is caused by the bacterium *Xylella fastidiosa* which is also responsible for Pierce's Disease in grapes and is currently causing widespread damage to the Italian olive industry.

In Illinois, it affects a wide number of trees. The most common hosts in our state are oak (red oak group), elm, sycamore, London plane, sweetgum, hackberry, ginkgo, and maple (sugar and red). Many other woody and herbaceous plants can be susceptible to the pathogen. The bacteria is found only in the xylem (water-conducting) tissue of the plants, and is spread from host to host by root grafts. Xylem-feeding leafhoppers, treehoppers, and spittlebugs are also thought to act as vectors for the pathogen. The disease does not spread quickly between hosts.

Red oak leaves from a tree infected with BLS. Photo credit: Travis Cleveland / University of Illinois Plant Clinic

Scorch symptoms appear on leaves in early to midsummer, and gradually intensify as the season progresses. Affected leaves may turn a yellow/green color and then turn brown, usually from the margin of the leaf inwards (see picture). Older leaves are often affected first, and an individual branch or section of branches usually become discolored at the same time. Symptoms are generally not scattered throughout the crown. Branches will leaf out the following spring, but symptoms will re-appear and slowly spread through the crown of the tree over the course of subsequent seasons. Except in oaks, leaves generally do not drop until autumn.

Oak tree infected with BLS. Photo credit: Nancy Pataky / University of Illinois Plant Clinic

The symptoms are easily confused with drought stress, cultural problems, cankers, and, in oak trees, oak wilt. It can also be confused with Verticillium wilt in some trees. Submitting a sample to a plant diagnostic laboratory is the only way to definitively diagnose the disease. At the University of Illinois Plant Clinic, we use an antibody test to determine the presence or absence of the pathogen in symptomatic tissue. Testing is performed once a year, in late August or early September. This is because the population of bacteria within the affected tissue increases as the season progresses, so testing in late summer is most accurate due to the increased pathogen numbers. A test conducted in spring or early summer may result in a false negative due to the population of bacteria being too low.

If you suspect that a tree or shrub is affected by BLS, you may submit a sample to the University of Illinois Plant Clinic. Previously, we would store samples and test samples using an ELISA test in batches. With the new molecular test, we can run samples individually without having to batch them, resulting in reduced turnaround time for results. We used to wait until later in the season to test for BLS because

the ELISA needed a high bacterial population for a strong positive. Because the molecular test is more sensitive than the ELISA, we can now test for this pathogen at any point during the growing season once symptoms appear.

Samples should consist of symptomatic leaves complete with the petiole (the structure that attaches the leaf to the branch). Ideally, at least a few of the leaves would be transitioning from green to brown. There is a $30 fee for this test. To download a sample submission form, please visit the Plant Clinic's website at www.web.extension.illinois.edu/plantclinic and click on the "Sample Forms" tab. Please indicate that you wish the sample to be tested for BLS.

Management for trees affected with BLS consists of increasing tree vitality by mulching the base of the tree to retain moisture, watering during periods of dryness lasting more than two weeks, pruning out dead branches, and fertilizing when appropriate. While trunk injections with antibiotics have been shown to be effective at delaying symptom development, they do not cure the tree, and the injection sites open new paths of entry for organisms that decay wood. Over time, repeated treatments can severely weaken the tree. Choosing non-susceptible hosts to plant near affected trees is also recommended to prevent the spread of disease.

(Diane Plewa and Travis Cleveland)