

Managing insect pests

BECOMING AN EXPERT in identifying pests, determining their life cycles, and managing the insect population are valuable skills for turf managers.

Detecting the presence of an insect is the first step in good pest control. Insect management begins once the early signs of injury or significant numbers of insects are observed. If the turf looks damaged, wilted, and water-starved, then an insect may be involved. Since some insects can only be controlled at certain times during their life cycles, it is essential to identify three key factors: type of insect; the insect's life cycle; and the level of infestation.

TOP PEST OFFENDERS

Various regions of the country experience unique pests. However, there are some fairly widespread turf pests that affect large areas of the United States. Some of the top offenders nationwide include white grub, chinch bugs and leather-jackets.



White grub. These small, plump, white larvae live below the soil and viciously chew on grass roots. Once the grass roots are destroyed, the turf will appear yellow in patches, just as if the lawn is dying out. The damage looks quite similar to symptoms of dryness, and many mistakenly assume that the turf needs only water to restore a lush, green appearance.

Other symptoms to watch for include animals such as skunks and raccoons dig-

ging up the turf and birds feeding on grubs, leaving pencil-sized holes. Often, damaged turf will roll back like a carpet. Serious damage can occur in the spring, summer and fall; and if the problem is ignored, the patches will get larger. The damaged areas will then fill in with weeds or crabgrass, so the best time to treat grubs is preventively rather than curatively.



Chinch bugs. These small insects live in and feed on grasses and can destroy turf with little warning. They live above the soil and feed on living grass plants by means of a piercing mouthpart called a stylet—sucking the juices out of the plant. The damage looks quite similar to drought symptoms and, again, many mistakenly assume that turf needs only water to restore its lush green appearance. Look out for suspicious brown patches starting to appear in the turf and, unlike fungal disease, the patches will not be symmetrical. If you determine the brown patches are due to lack of water, you can correct irrigating procedures.

Chinch bugs survive the winter and come out of hiding in the spring. Here they will mate and the females will seek a hot dry location in which to lay their eggs, which will hatch in about 3 weeks. The eggs are laid very close together so that

Mountain Pine Beetle

By Ken Kukorowski

THE MOUNTAIN PINE BEETLE (MPB) is a species of bark beetles native to western North America. The host range for MPB includes ponderosa, lodgepole, scotch and limber pine trees. Female MPB find large diameter, living trees to attack; there they produce pheromones to attract other beetles (especially males), mate, then bore into the host tree where eggs (could be as many as 75 per clutch) are deposited just under the bark.

As an adult, MPB is a small (<1/2 inch long) black beetle. Adults can appear as early as mid-June and continue to be present even through September, but in most locations adults emerging from lodgepole pines occur in late July and those emerging from ponderosa pines occur in mid-August.

As adults bore into the host trees, healthy trees produce pitch in the bored holes which often traps the adults and prevents successful attack. Within 2 weeks of egg deposit, the eggs hatch and the larvae tunnel through the phloem disrupting nutrient movement down the tree. With severe attacks, the larvae can cut off all nutrient and water flow movement and cause the tree to starve to death. These MPB larvae overwinter in a dormant state in the tree (under the bark) but resume feeding in the spring. They metamorphose into pupae in late spring, early summer (approx. June, depending on host attacked), then emerge as adults, to continue the next generation.

MPB is an effective vector of bluestain fungus, harbored near the mouthparts of MPB; when introduced to healthy pine trees, it blocks the trees defense response to produce pitch to entrap the boring MPB. Bluestain fungus also interferes with water and nutrient movement within the tree; further causing the tree to starve to death.

Since MPB has one generation per year, a spray of Sevin SL at a rate of 5 oz per gallon of water applied before adult emergence in June or July will provide preventative control of adult beetles before they bore into the new host.

This application should be made evenly over the entire circumference of the main trunk from the ground up until the diameter is 5 inches. One (1) gallon of finished spray will treat 50 sq. ft. of bark. ■

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when they hatch the young begin feeding and small patches of small grass begin to appear. If the problem is ignored, the patches get bigger.



Leatherjacket. These flies, which also resemble mosquitoes, are primarily in coastal areas and feed on roots of grass plants resulting in a yellow-colored and wilted turf. If heavy infestations occur, turf can become brown or, even worse, the turf can completely die. Adults emerge mid-July through early October and begin mating immediately. Eggs hatch within a couple of weeks and larvae begin feeding throughout the fall and spend the winter below the surface of the turf. By March and April, heavy feeding occurs as larvae reach maturity. Larvae continue feeding until about mid-July. At this time they begin to pupate, then later transform into adult crane flies. Leatherjacket larvae are more easily controlled in fall or early winter while they are still young. Spring treatments are the best to control this pest.

MANAGEMENT

When it comes to pest management, you must treat the issue immediately in order to restore the turf back to its original, healthy state and to prevent the problem from reoccurring.

Normally, nature creates a balance between insects, natural predators and food supply. But if something such as a change in the weather pattern happens to change that balance, then insect populations increase and may cause extensive damage.

In addition to a solid pest management program that may include preventive and curative strategies, aeration can help to establish a sound root foundation that will be better able to withstand unwanted pests.

Remember, pest management starts with overall plant/turf health. ■

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Annual Bluegrass Weevil

By Laurence Mudge and Rich Hanrahan

WHAT DOES IT LOOK LIKE?

The annual bluegrass weevil (ABW) has a long snout with an antenna that starts at the tip of the snout rather than the base. The blunt snout often causes the ABW to be mistaken for a turf-infesting billbug. ABWs typically measure 3 to 4mm long and their color differs between newly emerged adults and mature adults. Young adults, known as “callows” or “teneral,” are chestnut to brown in color, while the mature adults are darker ranging from gray to black. The body of an ABW is covered with thin, chestnut-colored hairs that shed with age, thus making the older adults appear shiny and black. These pests have rice-shaped eggs, about 1/32-inch long and gray. The larvae are cream colored with a C-shaped body and a distinct brown head. Young larvae are 1/32 inch and burrow and feed inside grass stems. After the larvae mature, they grow to be about 3/16 inch and feed externally.

ABW adults spend the winter protected near sites such as golf courses and other well manicured turf. In the EARLY spring, adults become active and migrate to shorter-cut turf where females lay eggs inside the leaf sheath of grass plants. By late May or early June, the damage becomes highly visible due to the larvae feeding on and killing stems. A single individual can injure up to 20 stems. The second-generation adults emerge in late June to early July and start the cycle again. This generation will reach the fifth instar by mid-July to early August. Damage from the second brood may become more severe if the first generation is left untreated.

The first recognized ABW to damage turf grass was reported in Connecticut in 1931. Since then, the insect has spread and is found most often in highly maintained turf in the Northeast and Mid-Atlantic. From 2006 to 2007, ABW was identified in Ohio, West Virginia and Virginia. And in 2008, the

first-ever report in North Carolina came from a golf course near Asheville. Although ABW has spread throughout many states in the US, it still causes the most damage in the New England.

Prevention tips. Cultural management recommendations include proper nutrition and irrigation, which often help avoid symptoms of ABW damage. Converting from a susceptible turf species to one that is tolerant to ABW is also an effective strategy. Overwintering adults often populate in tree litter. However, tree removal is not recommended as these sites are not actually preferred locations for ABW.

TREATMENT TIPS

Controlling ABW with insecticides is currently the most effective strategy. Applications should be timed to control adult weevils as they depart overwintering sites and move into grass areas. Insecticide with the active ingredient imidacloprid provides optimum control when applications are made before the egg hatch.

The most important strategy to effectively prevent, manage, and treat ABW is to maintain optimum timing and rate of treatment with your applications. Applications should not be made when grass areas are waterlogged or the soil is saturated with water. Due to the level of infestation and the nature of the crop, as well as fluctuating water dilution rates, rainfall, mowing and other factors that can affect control, it is important to follow insecticide label instructions or contact your state cooperative extension service for more detailed information concerning the application timing. ■

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