Grub Damage Season Arrives



Source: www.TurfMagazine.com

Be on the lookout for signs of lawn damage caused by hungry white grubs on your clients' properties. It's the time of the year when the eggs of turfgrass-destroying beetles begin to hatch and their tiny larvae (grubs) turn into eating machines.

What they eat is mostly the fine roots of turfgrass plants in your clients' lawns. Fortunately, you have good products to deal with grubs, even those that emerge midway through the growing season.

More on that later: Let's talk about the pests themselves. If you don't know the pest, you won't know how to control it.

The Japanese beetle is the most notorious white grub pest in the United States. The U.S. Department of Agriculture says that it causes an estimated \$235 million annually in turf damage – \$78 million for control costs and an additional \$156 million for replacement of damaged turf.

As an adult, it feeds on and damages more than 200 plant species, including many ornamentals that beautify our landscapes. In its larval (grub) stage it's fond of turfgrass roots. It is found mostly east of the Mississippi and in much of the South.

The Japanese beetle grub is just one of several species of white grubs that can create problems in your customers' lawns. Other turf-damaging root feeders include European and masked chafers, black turfgrass ataenius, Oriental beetle, green June beetle and Asiatic garden beetle.

As a turfgrass professional, homeowners expect you to prevent damage to their lawns by making a preventative application of a chemical insecticide. Or, reflecting this late-summer season, they count on you to control (i.e., kill) grubs that are presently damaging their lawns. This damage usually becomes apparent any time from July through October just after beetle eggs hatch and tiny first-instar grubs (larvae) begin feeding. In other words, when it comes to dealing with grubs in customers' lawns, you (more correctly, *they*) have two options: Either preventative or curative with turf damage control.

Game-changing products

The release of the neonicotinoid insecticides into the turf market in the mid-1990s was a game changer. For the first time, you could put down a product (late spring to early summer) prior to the hatch of beetle eggs and give clients essentially season-long protection from grub damage.

Today, you have a choice of several excellent products to use to prevent grub infestations and damage. They include chlorantraniliproe (Acelepryn), clothianidin (Arena), imidachlorprid (Merit), halofenozide (MACH2) and thiamethoxam (Meridian).

But not all lawns suffer from grubs, at least not in sufficient numbers to cause observable lawn damage. While some lawns are historically more prone to grub damage than others (and clients' are glad to pay for a preventative chemical application), infestations that result in lawn damage in many cases can be unpredictable and sporadic. They can also be severe, killing large sections of customers' lawns.

This is especially the case as fall approaches. This is usually when lawn damage, especially damage caused by grubs, is most noticeable. This is also the time when you must take a curative approach: Kill the grubs and stop the damage they are doing.

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Japanaese and several other beetle species typically emerge as adults in late May in the South and in July in the North where cool-season turfgrass is common. After beetles mate, they lay their eggs just below the soil surface so that when they emerge as first-instar grubs their dinner (turfgrass roots) is waiting for them.

Key to your success will be the proper application of an effective insecticide at the most opportune time to kill them — when they're smallest and least mature. This is just after egg hatch, which typically occurs July to September, depending upon regional conditions.

Keep your eyes open for signs of grub damage. Sometimes damage is very easy to spot, especially when skunks, raccoons or birds discover they are in the turf and start tearing up the lawn to get to the tasty white grubs.

Understand their life cycle

The first step in treating for grubs is to understand their life cycles. Fortunately, most turf-damaging white grubs have an annual life cycle, which makes the timing of your curative applications somewhat less daunting. Adult beetles emerge from their pupa stage in the soil and beging seeking mates anytime from late May to August. You will see them flying or feeding on plants. The adult female beetles lay eggs just beneath the soil surface from late June to early August, depending on regional conditions. They prefer to deposit their eggs in moist soils. Several weeks later the eggs hatch into first-instar larvae (grubs).

These tiny eating machines immediately begin feeding on turfgrass roots and other organic matter in the top several inches of the soil.

This first-instar stage is the best time for curative control of grubs. The longer that grubs are allowed to feed, the larger they become, the more lawn damage they do and the more difficult they become to kill.

From first-instar grubs, they molt (shed their skins) and emerge as larger second-instar larvae within several weeks. As they grow, their appetites grow. They molt again in late summer or early fall to become larger, more robust third-instar grubs. At this stage of their development regardless of product you select and use, grubs are very difficult to control.

Then, as cooler fall weather causes soil temperatures to fall, these thirdinstar grubs quit feeding and burrow deeper into the soil. Spring and warmer soil temperatures cause them to work their way toward the surface of the soil and begin feeding again. Within a few weeks they pupate, the final stage before emerging as adults in summer.

Even though these large third-instar grubs are feeding on turfgrass roots in the spring, the grass (especially cool-season grass) is usually growing so fast that it "outgrows" the damage. Also, as previously mentioned, thirdinstar grubs are difficult to control.

But, back to the matter at hand: controlling grubs yet this summer and early fall.

Product choices

Older chemistries such as trichlorfon (Dylox) and carbaryl (Sevin) have been the standard treatment for grubs for decades. These products are still available, along with a much newer chemistry, clothianidin (Arena). All three of them effectively kill immature grubs, especially at the first-instar and into their second-instar development.

Dylox and Sevin have short residual effects, generally less than 10 days. Arena, on the other hand, provides more latitude in treatment in that it has both preventative and curative action. In terms of efficacy, university research suggests that all three provide curative control in the 70 to 75 percent range.

These products are available in both liquid and granular formulations. Which product and which formulation you select will depend on your product delivery system, cost and ease of use.

Granular products are easy to carry and store on a service truck. By using a

properly calibrated spreader, already present on most trucks, an applicator can easily treat an infested area.

Whether granular or liquid, be aware that you will need to thoroughly water these products into the soil (either via irrigation or rainfall) so the product reaches the grubs. The more thatch there is in the turf, the more difficult it is for the product to reach the grubs.

Customer communication, of course, is vital in educating homeowners about grubs and the damage they do in these cases.

Be precise when explaining your services and setting customer expectations, in particular when it comes to insect damage. Consider including language referring to both surface-feeding insects and white grubs. Clearly spell out your company's options especially when it comes to white grub control and lawn damage resulting from grubs.

One of the easiest ways to lose a customer is to surprise them with an unexpected service or charge. You want satisfied customers, even if you have to provide a free, one-time, small emergency treatment.

In the ultra-competitive commercial lawn care market, customer retention is the name of the game. It's a game you want to win by keeping satisfied customers.