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Grubs got your lawn? *Before you act, please read this!*

Grubs—the white, immature, C-shaped form of beetles, most notably Japanese beetles and European chafers—feed on the roots of grass and cause browning, which is noticeable in the spring when some parts of lawns start to turn green and others stay yellow and brown. This "spring" damage is a result of grubs that have been feeding since last summer. As they emerge from the winter, these very large and mature grubs are not easily controlled. They are, however, tasty morsels that attract skunks, raccoons, crows and seagulls—creatures that cause additional damage to lawns.

Unfortunately no realistic option for control of these mature grubs is currently available. To prevent continued damage from grubs and/or vertebrates, the best options include:

- watering deeply every 3 to 5 days;
- using noisemakers or visual scare devices (fake owls, colored foil tape, etc.); and
- live trapping and relocating the offending wildlife.

Do not be tempted to apply a pesticide to try and kill these leftover grubs. Applying pesticides to kill them in their mature stages will not work and is a waste of time and money.

Use grub-control products properly

In areas where grubs have been a perennial problem, plan the timing of control tactics to kill them just as they begin hatching from their eggs. Adult beetles lay eggs in June, July and August, however, that is not necessarily the time to apply products. Many of the new grub-control products require a few weeks to work their way into the soil and root systems so they can effectively kill the young grubs as they begin to feed.

The less toxic control methods are best timed to coincide with the early developmental stages of the grubs. Knowing the grub species is critical to your success. The highly destructive European chafers tend to develop two weeks earlier than the other species and egg hatch will vary by two to three weeks depending upon where in the state you are located. Once the new grubs are in their first growth stage, or instar, you can apply insect parasitic Hb nematodes (https://www.maine.gov/dacf/php/gotpests/bugs/documents/nematodes-for-grub-control-maine.pdf) or do heavy core aeration on the area to reduce the potential grub population below damaging levels.

If you decide that using a insecticide is a more desirable method, you must time the application of each individual product based on the active ingredient and how long it takes that ingredient to be in place just as the eggs hatch.

To be most effective, the preventative grub-control product chlorantraniliprole (Acelepryn™ and GrubEx1™) must be applied as a preventative 60–90 days prior to egg hatch or no later than July 15. One insecticide, trichlorfon (Dylox™), may be applied only by licensed professionals, and can be applied as a curative a few days following egg hatch. The neonicoinoid insecticides dinotefuran, clothianidin, imidacloprid, and thiamethoxam are no longer available to Maine homeowners for grub control.

Be sure that grubs are the problem

Browning lawns can also be caused by drought, poor soil, disease or other organisms. You must pull back the dead sod and see if any fat grubs are lurking underneath (see next page).

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If grubs have been eating the root system, patches of turf will come up easily from the soil surface, like pulling up a corner of carpeting, and the soil will be full of grubs.

It is important to identify the type of grub in your lawn. Above, left to right: Japanese beetle, European chafer and June beetle larvae.

If grubs are positively identified, are they in sufficient numbers to cause significant damage?

It is best to have the grubs identified by a professional or the local Cooperative Extension office. Knowing the species of grub is essential (https://www.maine.gov/dacf/php/gotpests/bugs/documents/Ohio-State-grub-ID.pdf). Then you will know the best timing for management measures and whether the grubs are likely to return next season. Sometimes, reseeding the dead, brown patches is all that can be done.

Action thresholds for non-irrigated turf (grubs/sq. ft.) are listed below; these levels may be increased by 30% with irrigation. The average date for egg hatch in Maine is also listed. Northern and coastal Maine may be a week or two behind these dates.

- European chafer: 4 to 6/sq. ft. Egg hatch July 1
- Japanese beetle: 6 to 12/sq. ft. Egg hatch July 15
- Oriental beetle: 6 to 12/sq. ft. Egg hatch July 15
- Asiatic garden beetle: 10 to 20/sq. ft. Egg hatch July 15

Water-water-water

Once you notice damaged areas in your lawn, the best thing you can do is irrigate. If rainfall is inadequate, apply 1–1½ inches of water every 3–4 days. If you can keep the grass crowns alive until the grubs stop feeding in late May through early June they will reestablish a root system.

Know the grub's life cycle

From beetles emerging from the ground in early summer, through three distinct stages of grubs ending in the fall, keeping track of grubs can be difficult. The lawn damage you see in the early spring is actually the result of late summer, fall and winter feeding. When the grubs are fully grown in the spring, with the largest appetites, they continue to add to the fall-feeding damage, but it is usually far less noticeable.

Read the label

If you decide a pesticide is needed, read the label! Be sure the pest (e.g., Japanese beetle grubs) and the site (e.g., lawn) are listed. Use the correct amount, and wear all the personal protection equipment (PPE) listed on the label. If no PPE is listed, wear, as a minimum, long sleeves, long pants, closed shoes and socks, and a pair of unlined nitrile gloves.

Repairing grub damage

If a lawn is damaged directly by grubs, by animals or birds feeding on grubs, or both, the lawn can be reseeded or sodded. The best time do this is in late May, after the majority of the grub damage is done.

Rake the damaged area to remove dead sod. Uniformly broadcast a good quality lawn seed. Ensure that the seed is in contact with the soil by raking it in. Spread topsoil or compost over the seeded area. A light rolling will help firm the seed bed and insure the seeds are in contact with the soil. The seedbed should be kept moist until the seeds have germinated and the seedlings are well established. This may require a light sprinkling several times a day. Once the seedlings are established, routine mowing and lawn maintenance can resume. Over-seeding again in late August will also help.

For help with your grub problem, contact the University of Maine, Pest Management Office (PMO) at 800-287-0279. The PMO also maintains an excellent website with a wealth of information, https://extension.umaine.edu/home-and-garden-ipm/. Another resource for information on grubs is the *Got Pests?* website, http://www.gotpests.org.