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# Insect Pests of Home Lawns

Patches of dead brown grass are invading your once-lush lawn. Or maybe the entire lawn looks sickly and yellow. You suspect insect damage.

Before dashing off to the garden center for an insecticide to control the problem, make sure an insect is indeed the culprit. Drought, disease and improper application of fertilizers or pesticides are among many factors that can also damage lawns.

It's also important to identify *which* of the three major home lawn insect pests is causing the problem in order to select the right control product and apply it at the right time. Use pesticides as a last resort and only in accordance with label directions.

Healthy lawns cut at two inches or higher can tolerate a lot of insect feeding without showing injury. Lawn pests don't have to be controlled every year unless damage is visible or significant.

## **Shoreland lawns and lawns above shallow wells**

New Hampshire's Shoreland Protection Act prohibits application of any fertilizers but limestone, slow-release nitrogen and low-phosphorus products within 250 feet of surface waters. State law also prohibits use of all pesticides and all fertilizers but limestone within 25 feet of shore.

Although state law doesn't regulate use of pesticides and fertilizers on lawns and landscapes that drain into shallow (dug) wells on private property, UNH Cooperative Extension urges home gardeners to err on the side of safety in protecting their drinking water supply. Even environmentally-friendly products may pose health risks to humans and domestic animals if the product drains into drinking water.

As a rule of thumb, we suggest applying no pesticides and limiting fertilizers to agricultural lime and slow-release nitrogen within 75 feet of a shallow well.

## **White grubs**

White grubs are the larval stage of several species of beetles and chafers. The most common in New Hampshire are the Japanese beetle and our newest invader, the European chafer. (Another, the Asiatic garden beetle looks like a small European chafer, flies to light at night and can become a nuisance. The adult feeds on a wide variety of foliage and flowers and the larvae feed on grass roots. It is not considered a serious lawn pest because it is so small that it requires a very large number to injure lawns.)

All these beetle larvae are C-shaped and can be found feeding among the roots of grass. They are typically cream-colored with a brown head and a dark area at the posterior end of the grub, where the body contents show through the skin. Japanese beetles and European chafers complete their development in one year, although June beetles require two or three years.

Japanese beetles lay their eggs in July and August and the European chafers in late June. The eggs hatch and the young grubs begin feeding on grass roots within one or two weeks. They feed until fall when they burrow deep into the ground to overwinter. In the spring, the grubs burrow upwards to the grass root level and resume feeding

until late May when they transform to the pupal stage. Peak emergence for European chafers occurs about the first week of July, Japanese beetles about two weeks earlier.

Patches of dead grass are evidence of white grub infestation. Usually the dead, dry grass will pull out by the handful or roll back like a rug to reveal the grubs feeding on the roots.

Bird, mole, or skunk damage in the lawn can also signal a large population of grubs. (Be forewarned: treating for grubs rarely controls mole populations. Moles are carnivores that eat earthworms and many other soil insects and worms.)

To determine if grubs are causing the damage, dig a spadeful of the dead area of your lawn. If grubs are to blame they'll be visible and numerous. (Grass can usually maintain a grub population of 10 grubs per square foot of ground before the grubs do significant damage.) If you do find a lot of grubs, place a couple of them in a sealed container and take them to your county Cooperative Extension office for identification. Chemical controls and the timing of application will vary with the different species of grubs.

No matter which type of grub you have in your lawn, the best time to apply a chemical control is summer while the grubs are still small and actively feeding. The fat, mature grubs of early spring are more difficult to control and are not eating much anyway, as they are nearly ready to pupate. After August 15, the grubs are large and more difficult to control.

Two relatively new and safe grub control chemicals, Merit (chemical name *Imidacloprid*) and Mach2 (chemical name: *Halofenozide*) are the best choices for homeowners.

Merit is a stomach poison that's effective against both types of grubs while they are young and active. For the most effective control of Japanese beetle grubs, apply Merit from July 1- July 30. European chafer hatches earlier. Therefore, for the most effective control of this pest, apply Merit June 15 – July 15. Applying Merit in late June will provide excellent control of European chafer and Japanese beetle.

Mach2, a hormone that interferes with normal development of some grubs, is extremely effective against Japanese beetle and has shown acceptable control against European chafer with the proper timing. For best control against the Japanese beetle, apply Mach2 from July 1- July 30. For best control of the European chafer, apply July 1- July 15.

For maximum effect, be sure your lawn receives one-quarter to one-half an inch of water (either natural rainfall or irrigation water) after you've applied either of these grub controls. The dates for treatment listed here are based on UNH research trials and will vary slightly from year to year. Applications made significantly earlier or later than these time periods may give poorer control. Be aware that 70% control of grubs in a home lawn is often all that is needed to prevent damage. Therefore, applications made outside the recommended time period may provide acceptable control, depending on the circumstances. When grub populations are high, turf may show significant damage by August 15, so don't delay applications.

### **Hairy chinch bug**

The most destructive pest of home lawns, chinch bugs damage grass by piercing the blades with their needle-like mouthparts and sucking plant juices. The adults are 1/16" long and black, with white wings and red legs. The small nymphs are wingless and appear completely red.

Rainy weather hinders chinch bug development, so damage is less likely during wet periods. Chinch bugs prefer to feed on bluegrass and fescues. They prefer sunny areas and lawns with thatch.

The overwintering adults emerge from sheltered areas in early spring and seek grass plants. Females lay eggs when temperatures reach 70°F, generally in May. The eggs hatch into young nymphs, which cause the greatest damage.

Damage to turf is first observed in late June. This begins as yellowish areas that soon become dead patches. During warm weather the damage spreads quickly as the bug population multiplies. New adults will appear in July, producing a second generation in August. As soon as damage appears, apply a chemical treatment, such as carbaryl (Sevin), or any of the pyrethroids (cyfluthrin, bifenthrin, deltamethrin, tralomethrin). Before you buy a chemical, read the label to ensure it is meant for lawn insect pests. If necessary, make another application in August for the second generation. In the fall, large numbers of adults may collect around building foundations.

Chinch bug damage appears quickly in hot weather and is often confused with drought damage. If you suspect chinch bugs, try one of these methods of identification:

Get down on your hands and knees and search the crown of the grass next to the damaged area. Chinch bugs are most active and visible during the heat of the day. Remove both ends of a can and press it into the ground. Fill the can with water. Stir up the grass with your hand. The bugs should float to the top.

### **Sod webworm**

The webworm is the caterpillar stage of a small 1-inch long, tan moth, often seen flying about the lawn in jerky, short flight. The caterpillars are 3/4-inch long when full grown, brown or gray and spotted. They construct silk-lined tunnels in the soil and come out to feed on grass at night. Damage first appears as small, irregular brown patches. Flocks of birds seen on the turf are one indication of the presence of sod webworm. Birds make probing holes into the turf as they search for the caterpillars, often causing much damage to lawns in the process.

When the weather warms in spring, the overwintering caterpillars resume feeding on the grass. Damage is first observed in late June or July. Adults or moths can appear in July, mate and lay eggs. The larvae of these moths will cause damage in August. Apply a chemical treatment as soon as damage is observed. As with chinch bug, carbaryl and the pyrethroids (cyfluthrin, bifenthrin, tralomethrin, deltamethrin), are very effective. Read the label to ensure you are purchasing a product for lawn insect pests.

***Stop!** This publication contains pesticide recommendations that are subject to change at any time. UNH Cooperative Extension provides these recommendations only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Because of constantly changing labels and product registration, some of the recommendations offered in this publication may be outdated by the time you read them.*

*Contact the NH Division of Pesticide Control at (603) 271-3550 to check registration status. If any information in these recommendations disagrees with the label, you must disregard the recommendations and follow the label directions. No endorsement is intended for products mentioned, nor criticism intended for products not mentioned.*

*Store pesticides in their original containers in a locked cabinet or shed away from food. Dispose of unused pesticides or empty containers safely, according to NH regulations. If you suspect pesticide poisoning, call the New Hampshire Poison Control Center at 1-800-562-8236.*

*Any reference to commercial products, trade or brand names is for information only, and no endorsement or approval is intended. Cooperative Extension does not guarantee or warrant the standard of any product referenced or imply approval of the product to the exclusion of others that may be available.*

**UNH Extension Entomologist Dr. Stanley Swier reviewed this fact sheet for technical accuracy and provided pesticide recommendations.**

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