

European Chafer

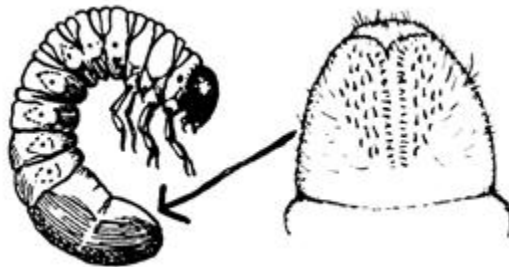
Rhizotrogus majalis (Razoumowsky); Family: Scarabaeidae

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Adult (actual size is approximately 1/2 inch)



C-shaped grub, and a closeup of the underside of the end of the abdomen, showing "Y" shaped anal slit and parallel rows of spines.

Injury

The grub stage of this beetle is very destructive to turf. The grubs feed on the roots of grasses during the summer and again the following spring, chewing them off and killing the grass plants. Dead and dying spots in lawns where adult European chafer flights have been observed the previous June should be suspect. Injury is usually visible by late summer.

Description

The European chafer is a small, golden tan to light brown, June beetle. It is oval in shape, and about 1/2 inch long. The larva or grub is found in the soil. It is "C"-shaped, about 3/4 inch long, grayish white with a brown head, with a strong set of jaws and 6 strong legs. The grubs may be recognized from other white grubs by the "Y"-shaped anal slit, and the parallel rows of spines on the raster (the underside of the tip of the abdomen). A 10x magnifying glass may be needed to see this pattern.

Life History

During June and July, adult beetles emerge from the ground at about 8:30-8:45 p.m. EDT and take off in mating flights. The mating flights consist of many individuals and have been described "to sound and look like a swarm of bees." The flights occur at sunset -- enormous numbers of beetles swarm about a tree or tall shrub, or even sometimes a chimney, for about 30 minutes, and then settle down on the foliage where mating occurs. The adult beetles do not feed, and they do not bite or sting. They may, however, tear plant foliage as they attempt to hold on with their spiny legs.

The following day females will burrow into the soil a few inches and deposit eggs in earthen cells. Generally they lay 20-30 eggs, depositing them singly in cells. In two to three weeks, the eggs hatch and the tiny grubs begin feeding. By fall the grubs are in the 3rd instar stage. The following spring, as soils begin to warm, the grubs again come toward the surface and feed. The pupal stage occurs during late May and early June. During this stage the insects do not feed. Most European chafers have a 1-year life cycle, but some may take 2 years to complete development.

Management

Control measures are aimed at the grub stage. Attempts at adult control have not proven effective. Before treatment of a lawn or turf area, ask the following questions:

1. Is the damage definitely caused by grubs?
2. Are the grubs still present?
3. What species is causing the damage?
4. When is the best time to treat for grubs?
(Treat when grubs are young and actively feeding close to the soil surface: mid-August to late September in upstate New York; early August to mid-September in southeastern New York.)
5. Are there enough grubs to warrant treatment?
(Rule of thumb: if there are more than 8 grubs per square foot, consider treatment.)
6. Are alternatives to synthetic soil insecticides available? (see **Note**, below)

Registered insecticides for chafer grubs include carbaryl (Sevin), trichlorfon (Dylox), and imidacloprid (which is **not** registered for homeowner use in the New York and Long Island counties of Kings, Queens, Nassau, and Suffolk). Treatment should be made during the month of August to mid-September if a damaging population is confirmed. Treat when soil is moist, and water in immediately following treatment.

Note: Parasitic nematode products designed for soil grubs, containing *Heterorhabditis bacteriophora* nematodes, may effectively control European chafer grubs if applied during August or early September. Apply to moist soil in the evening; water lawn after application.

For additional information on sampling see: "Grubs in Your Lawn" at nysipm.cornell.edu

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This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. *READ THE LABEL BEFORE APPLYING ANY PESTICIDE.*