

THE EUROPEAN CHAFER

Pam Charbonneau
O.M.A.F. Turf Specialist

European chafer (*Rhizotrogus majalis*) is in a family of insects called the Scarab beetles. Other turf pests in this family include the Japanese beetle, June beetle and Black Turfgrass Ataenius. The larvae of these insects are called grubs and are the stage most destructive to turfgrasses. Because of the extensive damage experienced last season the focus here will be on the European chafer.

Description:

Mature adult European chafers are a medium sized, fawn coloured beetle. They are slightly smaller than the June beetle and they can be distinguished from the adult June beetle by the absence of a distinct tooth on their tarsal (foot) claw.

The grubs of European chafers have a brown hardened head capsule with three pair of true legs and the body is bent in a characteristic C-shape. They can be distinguished from the other Scarab beetles by looking at the spines on the raster (hind end) (Fig. 1). The spines on the raster of the European chafer are parallel, diverging to a V-shape toward the far end.

Damage:

Adults of European chafers are short-lived and do not feed to any great extent. Grubs of European chafers feed on the roots of all common species of turfgrass. Patches of grass turn brown and die as a result of grub feeding. The dead grass can be easily pulled out by the crowns because of the absence of roots. On a non-irrigated turf 5 - 10 grubs per sq. ft. can be tolerated and as many as 20 per sq. ft. on irrigated turf. Secondary damage caused by skunks, birds and other small mammals digging for the grubs is often more extensive than the feeding damage caused by the grubs.

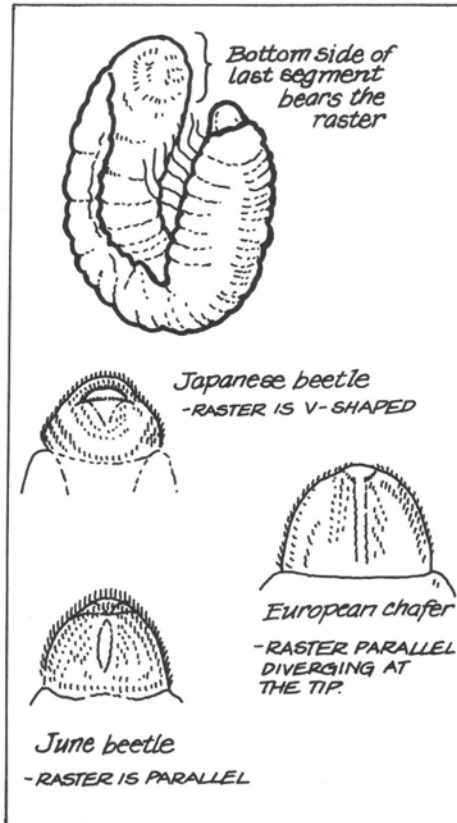


Fig. 1

Life Cycle:

The European chafer has a single generation per year. Mature grubs (3rd instar) overwinter in the soil down below the frost line. During the larval stage, grubs pass through three molts. The stage between molting is referred to as an instar. In April to mid-May they move up to the soil/thatch interface and feed until they pupate in mid-May. In mid to late June the adults emerge with peak flight activity in late June. Females congregate at night in large numbers on broad leaf trees to mate. After mating females lay eggs in the soil, usually on the south-west side of large trees, with each female being able to lay 25 - 50

eggs. Small larvae (1st instar) hatch in roughly two weeks and feed continuously until late fall when they migrate below the soil frost line to overwinter.

Control:

A few points should be kept in mind when planning your control strategy. The first step is to monitor for the grubs. Once you have established that you have grubs, you must correctly identify them. Knowing their life cycle will allow you to determine the time for control based on their vulnerable stage.

Monitoring for the presence of European chafer grubs should take place 1 - 2 weeks after observation of swarms of adult beetles on trees surrounding the turf areas. Control of early larval stages with an insecticide should begin in late July and may continue throughout the fall. A spring treatment after monitoring for the presence of the grubs at the soil/thatch interface may be warranted in early April to mid-May, however, late summer to fall treatment is preferred. First instar grubs move up and down in the soil seeking moisture. During a drought, they will be down several inches and insecticide treatments will not reach them. Consult *O.M.A.F. Publication 384, Recommendations for Turfgrass Management* for current insecticide recommendations.

When insecticidal control is warranted, it is preferable to apply it to turf that has been watered and it is very important to water the insecticide in after treatment to a depth of 2 - 4 cm., depending on the amount of thatch.

The best defence against grubs is to maintain healthy turf with a good root system. Insuring adequate aeration, proper mowing, fertilization and irrigation will greatly enhance the turfs ability to withstand grub feeding.