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Predicting Grub Populations In Home Lawns

Scarab grubs are the major turfgrass pest in New York State and much of the Northeast. Landscape plants, including turfgrass are subject to intense feeding pressure from a number of grub species including the Japanese beetle (*Popillia japonica* Newman), the European chafer (*Rhizotrogus majalis* Razoumowsky), and the Oriental beetle (*Exomala orientalis*). Of these three species, the European chafer is considered the most difficult to control using traditional insecticides and biological control agents. Although not as widespread as the Japanese beetle, the European chafer grub is more damaging to turf in areas where both are found. Unfortunately, in upstate New York, European chafers are the most common grubs in home lawns and low maintenance turf. ■

European Chafer

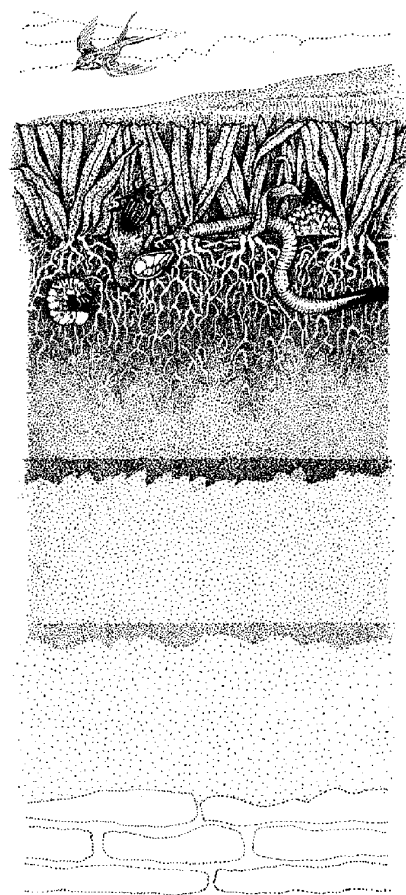
The European chafer is slightly larger than the Japanese beetle grub, it feeds later into the fall and starts feeding again earlier in the spring. European chafer grubs feed most heavily on grass roots from August to November and from April to June. Even during the winter months grubs may resume feeding during warm spells. Turf damage caused by grub feeding is most severe under drought conditions when water-stressed grass plants cannot grow new roots to replace injured ones. In heavily infested areas, entire lawns may turn brown and die during prolonged periods of dry weather in the fall or spring.

Traditionally, lawn care companies and homeowners manage chafer grubs by making one or more insecticide applications annually.

Turf managers seldom assess grub populations before making treatment decisions, despite the existence of damage thresholds. Insecticide applications are usually preventive or in direct response to turf damage. Our research indicates that most prophylactic applications of soil insecticides for European chafer control are wasted because most properties required no treatment. Insecticide applications for grub control could be greatly reduced if an efficient sampling plan and a reasonable set of rules for making treatment decisions (control decision rules) was available for turf managers.

We recently developed such a control decision rule for European chafer-infested residential turf sites. With this rule, mean density and

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