

CUTT

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Managing White Grub Infestations

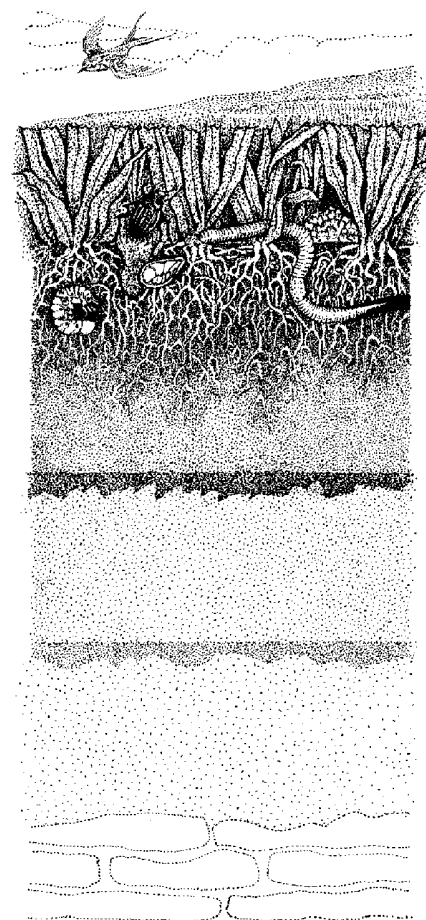
White grubs found in turfgrass are the immature forms of several kinds of scarab beetles. In high populations they can cause serious damage to lawns and golf courses. Late summer scouting for grubs in the soil below turf is the best way to determine where treatment is necessary. Treatment can be done while the grubs are small and susceptible to management, before heavy feeding begins in late September. Japanese beetle and European chafer grubs are the most important turf insect pest in New York State. Both species have life cycles that are similar in terms of basic biology and time window of sensitivity to biological and chemical controls. ■

Japanese beetle grubs overwinter as a third instar larva in the soil below the frost line. In spring, they move up in the soil to feed on roots, then pupate for one to three weeks within the cast skin of the grub. As the insect matures the cover splits and the adult beetle is ready to emerge. Japanese beetle adults crawl out of the ground in late June and early July. They can fly as much as a half a mile a day. The adults feed on the foliage of over 300 different species of plants. The beetles mate, and females are ready to lay eggs about one week after emergence. The female beetles lay 40 to 60 eggs in the soil over a two to three week period. Eggs hatch within two weeks into first instar and feed on roots for three to four weeks. These grubs molt and become second instars that feed for three to four weeks. The grubs molt again to become third instars by the middle of September. They continue to feed until

they reach full size before winter. As temperatures drop in the autumn, the grubs migrate down in the soil.

European chafer grubs have an annual life cycle similar to Japanese beetles except that they feed later into the fall and start feeding again during warm spells in the winter. European chafer adults usually emerge slightly earlier in the spring than Japanese beetles. European chafer adults emerge at dusk and are attracted to lights and vertical objects in the landscape, often forming large swarms around small trees. Adult European chafers do not feed, staying above ground just long enough to mate. Mating pairs of European chafers fall from the trees and crawl back into the turf where females lay several dozen eggs over several days.

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