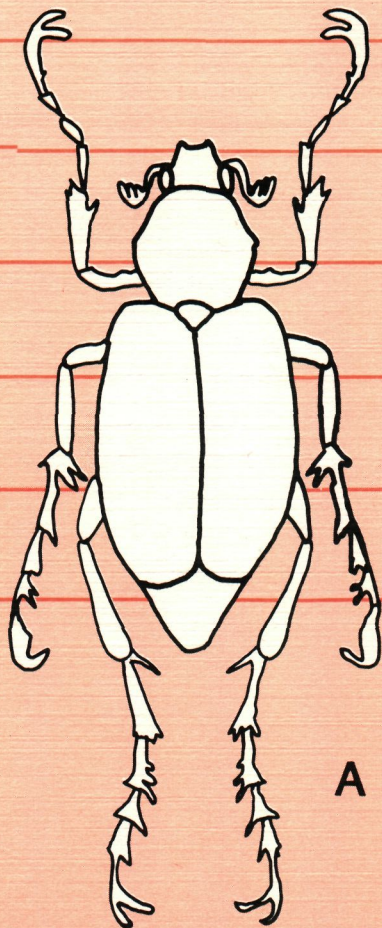


# Protecting Field And Forage Crops From Annual Grub Adults



**T**he large white grubs that live in the soil for three years and their adults, the large June bugs or May beetles, are familiar insects. Other grubs, called annual grub adults, resemble the June bugs but are smaller and live for only one year. Adult annual grub beetles occasionally feed on the leaves of field and forage crops.

The grubs (young) of these annual grub adults feed on the roots of established sods. The adult beetles emerge from the soil in June and can be found throughout the summer. They eat holes in or skeletonize the leaves of many plants. They are usually abundant only in areas of field and forage crops near old pasture fields or other sod areas. The adults lay their eggs in the sod during the summer. The grubs that hatch from these eggs feed on the roots of grasses during late summer and tunnel down to spend the winter deep in the soil. They come up to feed on the roots when the soils warm

up again in the spring. When they finish feeding in the spring, they transform to a pupal stage, or cocoon. The adults emerge from the pupae and come out of the soil to feed and mate.

Several species of annual grub adults occur. They are all rather large — about 1/2 inch long — hard-shelled beetles that are poor fliers and tend to tumble to the ground when disturbed. They have short antennae (feelers) with disks that are stacked like pancakes at their tips (you may need a magnifying glass to see these disks). They frequently gather into groups and you may spot clusters of them feeding on the same plant.

The *rose chafer* has long been a minor pest in Michigan. The rose chafer has a relatively slender body, is reddish brown in color and has long, spiny legs (Fig. A).

The *Japanese beetle* is relatively new in Michigan. It has been of concern up to now only in the southernmost



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counties but is increasing in numbers and range. It is a relatively stout beetle with metallic, reddish wings, a green body and white tufts of hairs along the sides of its abdomen (Fig. B).

Other species of annual grub adults occasionally feed on crops. They are also noticed at times tunneling into the soil to lay eggs. These other annual grub adults are usually dark brown to black with stout forms similar to that of the Japanese beetle. One species closely resembles the Japanese beetle but lacks the white tufts of hair along the sides of the abdomen. The disks at the tips of their antennae will identify them as annual grub adults. These other species have rarely posed a threat to crops in Michigan.

## CONTROL

Check fields for any threat from annual grub adults simply by looking for the insects themselves. They are generally found only in areas of a field, usually in margins close to old pasture or other sod. The adults can be very destructive to foliage and flowers in home gardens. Their grubs can ruin the roots of lawn grasses, with the Japanese beetle grub being the most troublesome. Be especially alert for these pests near the home and garden. An insecticide is recommended for control of annual grub adults in crops only if they have damaged about one-fourth or more of the foliage. Only the area where the insects are found and a 20-foot swath around it need be treated. These insects are active and will come in contact with the insecticide. Therefore, a low volume — about 10 gallons of mixed spray per acre, applied with ground equipment — is sufficient to control them.

The insecticides currently recommended for control of

annual grub adults are given in Extension bulletin E-1582, "Chemical Control of Insects and Nematodes in Field and Forage Crops." The insecticide carbaryl — sold under the brand names of Savit or Sevin — and methoxychlor — Marlata is a common brand name — are effective against them and can be used in corn, dry beans, grass hays, legume hays and soybeans. Apply carbaryl at 1 quart of the 4 lb/gal flowable formulation, or 1-1/4 lb 80 percent wettable powder, or 2 lb 50 percent wettable powder per acre. Apply methoxychlor at 3 quarts of the 2 lb/gal emulsifiable concentrate per acre.

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