

WHITE GRUBS Coleoptera: Scarabaeidae *Phyllophaga* spp., *Polyphylla* spp., *Bothynus* spp.

DESCRIPTION

Adults are called "June beetles" or "May beetles" and are about 20 to 35 mm long. Adults are dull or metallic and the antennae end in a club with moveable plates. In the West, **tenlined June beetle**, *Polyphylla decimlineata* and **coastlined June beetle**, *Polyphylla crinita*, have the dorsum covered with yellowish and white scales arranged in longitudinal stripes on the head, pronotum, and wing covers. The **June beetle**, *Phyllophaga anxia*, is found in the northwest and is shiny reddish-brown and about 18 to 21 mm long. Larvae of the **carrot beetle**, *Bothynus gibbosus* also damages tubers. Larvae are called white grubs and are 25 to 50 mm long when mature. Larvae are "C-shaped" with a brown head and three pairs of prominent legs on the thorax.



Adult "June" beetle



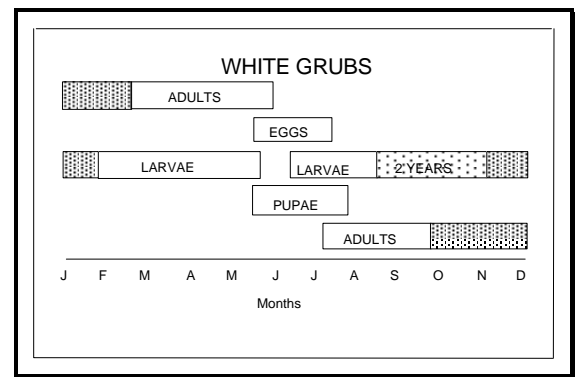
White grub larvae and damage on tubers

ECONOMIC IMPORTANCE

Larvae feed on roots of potatoes, grasses, corn, small fruits, and tree fruits as well as on ornamental plants such as rose, ash, elm, walnut, poplar, oak, and locust. Larval injury to tubers and roots severely weakens or kills the plant and reduces the economic value of tubers. Adults feed on the foliage of plants.

DISTRIBUTION AND LIFE HISTORY

White grubs are distributed throughout the western United States and British Columbia, but the species composition varies from one area to another. The life cycle usually takes three years to complete, although the carrot beetle completes its life cycle in one year. The general life cycle is as follows: eggs are laid in the soil and hatch into larvae in three to four weeks. Young larvae feed the first season on decaying and living vegetable matter in the soil. As winter approaches, they burrow 20 to 55 cm deep in the soil and remain inactive until spring when they return to near the surface and begin feeding on roots of plants. In the fall, larvae again burrow into the soil to overwinter, returning to near the surface in the spring, and feeding on plant roots until late May and June when pupation occurs. Adults are formed six to eight weeks later, but remain in the pupa cell until the following April and May when they emerge from the soil. Adults feed on plant foliage and lay eggs in the soil in June and early July.



MANAGEMENT AND CONTROL

Soil tillage in April or May or September may help reduce the population by exposing larvae to natural predators and parasites. When practical, rotation of crops less susceptible to injury such as clover may help reduce the population. Insecticides are registered to control white grubs on many crops. See the Pacific Northwest Insect Control Handbook for a list of registered insecticides and more detailed information for their use on specific crops.

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