May/June beetles

Phyllophaga species
Order Coleoptera, Family Scarabaeidae; scarab beetles
Native pest

Pest information: Turfgrasses, root-feeding grub; adults feed on foliage of many species of plants, including cottonwood and wheat

Description: All species of *Phyllophaga* are called May or June beetles. Adults are about 1 inch long and a chestnut brown color and fly to lights in the early summer. The adult scarab beetle feeds on foliage and deposits eggs in the turf in early summer (May beetles) and summer (June beetles). The grubs are whitish with brown heads and are usually found curled in a "C" shape and range from 15–25 mm long. These are the largest grubs found in turf.

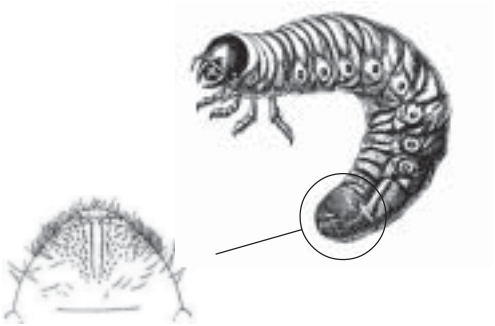
Life history: The adult scarab beetle feeds on foliage and lays eggs in the turf in early summer (May beetles) and summer (June beetles). Most species have a three year life cycle.

Overwintering: Grubs or prepupae in soil.

Damage symptoms: Grubs feed on the roots of the grass and heavy infestations will loosen the sod so that it can be rolled back. The damage will appear as irregular patches of yellowed or dead grass. In Minnesota, May/June beetle grubs feed on grass roots for three years before becoming adults. The first year grubs grow up to 13 mm long and produce little damage. The second year, they are 20 mm long, and damage becomes more apparent. This second year is the best time to control grubs since damage usually is not extensive, and an insecticide will be effective. Control for grubs is desirable when there are more than 4 grubs/sq. ft. The third year, the grubs grow to 25 mm long and damage becomes very apparent, particularly in July and August.

Monitoring: Grub populations between 7 and 15 grubs/sq. ft. can cause significant damage to non-irrigated turf. Irrigated turf can withstand a higher grub count because the increase in water compensates for the roots chewed off by the grub. Grubs chew off grass roots and they reduce the ability of grass to take up enough water to withstand the stresses of hot, dry weather. As a result, large dead patches of grass develop in the grub-infested areas. The sod on these dead patches can be rolled back like a carpet to expose the grubs and lack of turf roots. Early recognition of the problem can prevent this destruction. When grubs are close to the surface, starlings and crows as well as moles, shrews, and skunks may be seen digging up grubs and damaging turf.

Cultural control: Maintain healthy grass by fertilizing in the spring and fall and watering during periods of drought.



Raster of May or June beetle grub. The hindend of the grub is called the raster. It contains sutures and hairs used to identify the grub species.

May/June beetle adult. (458)
Photo: John Davidson

Chemical control: Halofenozide and imidacloprid are not fast acting and are often used in areas that experienced high damage the previous year; apply from mid May until early August. Do not use broad spectrum insecticides routinely without scouting for pest presence, as they will do more harm than good and will kill the beneficial insects that live in the turf, which can cause pest outbreaks.

Biological control: Carabid ground beetles, staphylinid rove beetles, ants, spiders.

Plant mortality risk: High, if threshold is reached.

Biorational pesticides: halofenozide

Conventional pesticides: carbaryl, deltamethrin, imidacloprid, lambda-cyhalothrin, trichlorfon