

Green June Beetle

Insect Pest of Turfgrass



Green June beetle, *Cotinis nitida*, is an insect pest native to the eastern United States and is widely distributed throughout most states east of the Mississippi River and portions of the Midwest. Green June beetle adults fly around during summer in massive numbers over both managed and unmanaged grassy areas. Green June beetles are known for their erratic flight and occasionally bump into people and objects. This publication provides information on the biology, damage, and management of the green June beetle.

Biology

Green June beetle adults are $\frac{3}{4}$ to 1 inch (19.0 to 25.4 mm) long, velvety green, and tinged with yellow-brown coloration. Green stripes with yellow-orange margins extend lengthwise on the front wings (Figures 1 and 2). The

underside of the body is shiny and metallic green or gold. Green June beetle adults are often misidentified as Japanese beetle, *Popillia japonica*, adults (Figure 3). However, green June beetle adults are larger than Japanese beetle adults.

In Kansas, green June beetle adults are usually present from June through August. The adults are active during the day and rest at night on plants, in thatch, or in compost. Green June beetle adults are attracted to outdoor lighting. When flying, adults produce a sound similar to bumble bees. Green June beetle males fly back and forth just above managed and/or unmanaged grassy areas where females are located. Females emit a pheromone, or odor, that attracts the males. Clusters of adult beetles can be seen on the soil surface or in grassy areas with several males attempting to mate with a single female. After mating, females tunnel



Figure 1. Green June Beetle Adult (Raymond Cloyd)



Figure 2. Green June Beetle Adult (Raymond Cloyd)



Figure 3. Japanese Beetle Adults (Raymond Cloyd)



Figure 4. Green June Beetle Larva (Raymond Cloyd)

2 to 5 inches (50.8 to 127 mm) into the soil and create a cavity where clusters of 10 to 30 eggs are laid. Females can lay between 60 and 75 eggs over a two-week period. Females prefer to lay eggs in moist soil with a high organic matter content.

Larvae emerge (eclose) from the eggs in approximately two weeks. Young larvae are $\frac{3}{8}$ of an inch (9.5 mm) long, and older larvae are 1½ to 2 inches (38.1 to 50.8 mm) in length (Figure 4). There are three larval instars (stages between each molt). Larvae feed near the soil surface in thatch or on grass clippings. Larvae crawl on their backs when moving around (Figure 5) and can be found in swimming pools, basements, and garages. Eventually, the larvae enter the soil and pupate in cavities. Green June beetle has a one-year life cycle and overwinters as a mature larva or grub in the soil.

Damage

Green June beetle adults feed on ripening fruit (Figure 6), corn tassels (Figure 7), and on the leaves of oak and maple trees. In addition, adults swarming over turfgrass during the summer can be a concern because homeowners and golfers may confuse them for bumble bees.

Green June beetle larvae or grubs cause less damage to turfgrass than other insect pests such as the Japanese beetle;

Southern masked chafer, *Cyclocephala lurida*; and/or May/June beetle, *Phyllophaga* spp. However, the larvae can cause damage to turfgrass when tunneling by creating soil mounds 2 to 3 inches (50 to 76.2 mm) across (Figure 8). Birds, moles, and skunks can damage turfgrass when foraging for green June beetle larvae.

Management

Proper watering, fertility, and dethatching turfgrass every year helps mitigate damage caused by green June beetle larvae. If necessary, insecticides can be applied to turfgrass to manage green June beetle larval populations. Water the turfgrass afterward to move the insecticide into the thatch or soil where green June beetle larvae are located. Applications made late in the day will be effective in managing green June beetle larval populations because the larvae feed near the soil surface at night.

Scolia dubia

The Scoliid wasp, *Scolia dubia*, is a naturally occurring parasitoid of green June beetle larvae or grubs located in the soil. *Scolia dubia* adults are approximately $\frac{3}{4}$ of an inch (19.0 mm) long with purple to black wings. The end of the abdomen is red-brown and there are two yellow spots on both sides of the third abdominal segment (Figure 9).



Figure 5. Green June Beetle Larva Crawling On Back (Raymond Cloyd)



Figure 6. Green June Beetle Adults Feeding On Apple Fruit (Raymond Cloyd)



Figure 7. Green June Beetle Adult Feeding On Corn Tassels (Raymond Cloyd)



Figure 8. Soil Mound Associated With Green June Beetle Larvae (Raymond Cloyd)

Sometimes parasitoid females can be observed flying in a figure-eight pattern just above turfgrass infested with green June beetle larvae. A female locates a green June beetle larva in the soil and uses her ovipositor (egg-laying device at the end of the abdomen) to paralyze the larva. The female then attaches an egg to the underside of the larva. A parasitoid larva emerges (ecloses) from the egg and then feeds on the paralyzed green June beetle larva. The parasitoid larva overwinters in a cocoon at the bottom of the tunnel and pupates in spring. Adult parasitoids emerge (eclose) from pupae from August through September and feed on flower nectar. Adult emergence depends on soil temperature and moisture content and usually coincides with the presence of green June beetle larvae.



Figure 9. *Scolia dubia* Adult Feeding On Flower Nectar (Raymond Cloyd)

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