



Entomological Notes

Department of Entomology

JAPANESE BEETLE ON ORNAMENTAL PLANTS

Popillia japonica Newman

The Japanese beetle causes extensive damage to ornamental trees, shrubs, and flowers throughout eastern United States. Strategies to manage the larval and adult stages in the United States are estimated to cost more than \$460 million a year. A native of Japan, this species was first found in the United States in 1916 near Riverton, New Jersey.

DESCRIPTION

Eggs hatch into white grubs with distinct brown heads and three pairs of thoracic legs. Adults are metallic green or greenish-bronze beetles, about 13 mm long with well-developed copperish front wings (Fig.1). They have two patches of white hairs at the tip of their abdomen and five tufts of white hairs on both sides of their abdomen.

LIFE HISTORY

This species overwinters as larvae (grubs) in the soil. With the approach of warm spring temperatures, they move toward the soil surface and continue feeding on grass roots. Larvae mature from late May through June and molt to pupae in the soil. Adults emerge from the soil from late June through July. In Pennsylvania adults start to appear about June 20 in the southern areas. They emerge 7-10 days later in other areas of the state. Beetles are most abundant during July and the first two weeks of August.

After mating females live 30-45 days and lay 40-60 eggs in the soil. Larvae hatch from the eggs in 10-12 days. They feed on grass roots until late September when cool soil temperatures cause larvae to move downward into the soil to overwinter. They complete their development the next spring. One generation occurs each year.

DAMAGE

Adults feed on nearly 300 different host plants. Some of the more common ornamental plants include: roses,

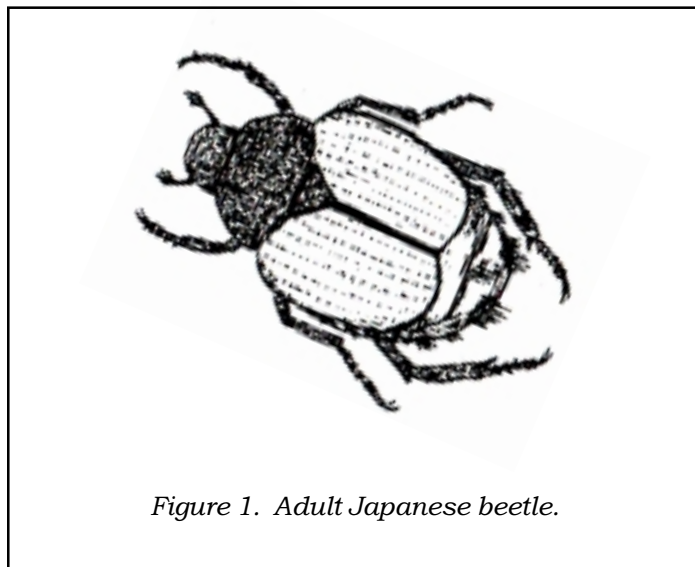


Figure 1. Adult Japanese beetle.

Rosa spp.; flowering cherry, *Prunus spp.*; flowering crabapple, *Malus spp.*; zinnias, *Zinnia spp.*; Virginia creeper, *Parthenocissus quinquefolia*; Boston ivy, *P. tricuspidata*; linden, *Tilia spp.*; birch, *Betula spp.*; canna, *Canna spp.*; elm, *Ulmus spp.*; and marigolds, *Tagetes spp.* Adults feed during the day, favoring hot weather and plants growing with full exposure to the sun. Adults also consume flowers and foliage of many other host plants. Damaged leaf tissue takes on a skeletonized appearance since they feed between the leaf veins.

MANAGEMENT

A registered insecticide should be applied according to label directions from late June through July when adults first appear and before damage occurs. If repeat applications are needed, read and follow label directions.

Use of Traps to Catch Adult Beetles: Two types of Japanese beetle traps are available as monitoring tools. One type of trap utilizes a floral lure as an attractant. The other trap employs a dual attractant of a floral lure plus a synthetic sex attractant. Be sure to place traps away from susceptible host plants; otherwise, they will attract even more Japanese beetles to the host plants that you wish to protect.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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