

Japanese Beetle

Popillia japonica

Description:

The adult beetle is a broadly oval insect nearly 1/2-inch long and about 1/4-inch wide. The body is a bright metallic green; the legs a darker green. The wing covers are a coppery brown and extend almost to the tip of the abdomen. There are two small tufts of white hairs just behind the wing covers and five patches along each side. The larva (grub) resembles those of many other beetles which feed on plant roots. It is white, from 1/16 to 1/4-inch long with three pairs of legs.



Japanese Beetle adult (left) and trap (right)

History and Economic Importance

The Japanese beetle is not a serious invasive pest in Japan where there are few large grassy areas favorable for its reproduction and development. The environment and the action of predators, parasites and pathogens keep the beetle numbers low. In the U.S., however, favorable climate, large areas of permanent turf for reproducing and numerous plants for the adults to feed on, and ineffectual natural enemies allow beetle numbers to increase dramatically. Like a number of other introduced pests (e.g., gypsy moth), its numbers and range have steadily increased over the years. The biggest threat of introduction of Japanese beetle in California is via hitchhiking beetles on aircraft. Each year, California Department of Food and Agriculture inspectors intercept hundreds of these beetles on aircraft originating from airports in infested states. High risk trap grids placed around airports have detected Japanese beetles, indicating they can successfully fly from aircraft and are capable of colonization in California after their trip from the east.

Distribution:

The Japanese beetle is native to the main island of Japan. It was first found in the United States in 1916 at a nursery near Riverton, New Jersey. The beetle is currently found in coastal and adjacent states from Maine to Alabama with small infestations westward beyond the Mississippi River. Three infestations of this pest have been eradicated from California.

Life Cycle:

There is usually one generation per year, although larvae can take up to two years to develop in wet, damp soils. The adults emerge from May to September and feed on foliage, flowers and fruit. The exact timing of emergence depends upon geographical location and weather. During the flight season of the beetle, the California Department of Food and Agriculture uses traps throughout the state to detect the presence of Japanese beetle.

Hosts and Damage:

A wide range of plants are attacked in the United States by the adult beetles. Hosts include small fruits, tree fruits, truck and garden crops, ornamental shrubs, vines and trees. Feeding studies show a host range in excess of 300 plants in 79 plant families. Preferred plants are grape, early apples, cherry, peach, plum, raspberry, rose, zinnia, linden and corn. The beetles injure corn seriously by eating the silk, which interferes with formation of kernels. Soft fruit such as grapes, berries and stone fruits may be completely consumed. The larvae eat the roots of a number of plants, but grasses are particularly favored. Medium to high densities of larvae will cause patches of dead grass under which larvae can be found. Important California crops which would be attacked include alfalfa, pome fruits, turf, strawberries, and numerous ornamental plants. This beetle could cause a loss of export markets and cause damage to crops, nursery stock, ornamental plantings, and the environment.