



## Japanese Beetle Fact Sheet



Illinois Extension

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

The Japanese beetle was first discovered in the United States in a nursery in southern New Jersey in 1916. It quickly spread across the eastern U.S., arriving in Chicago in 1932 and into St. Louis in 1936. It was largely confined to urban Illinois until the late 1990s when as yet unknown factors allowed it to become a major pest in many rural areas.

### Damage Description

Japanese beetle adults and larvae (grubs) are destructive plant pests. Adults feed on the foliage and fruits of several hundred species of fruit and ornamental trees, shrubs, vines, and field and vegetable crops. Adult beetles prefer to feed on the upper surface of leaves, especially those in full sun. They leave behind skeletonized leaves and large, irregular holes in leaves.

Host plants include many of our garden annual and perennial flowers as well as shrubs and trees, including fruit plants. Hardest hit include roses, linden, birch, maple, viburnum, hibiscus, grapes, zinnia, canna, apples, blackberries, raspberries, peaches, and cherries.

### Life Cycle

The adult Japanese beetle is just under  $\frac{1}{2}$  inch long and has a shiny, metallic-green body and bronze-colored wing covers. There are six small tufts of white hairs along its side.

Japanese beetle adults emerge in June and are present for about six weeks, flying to new hosts every three days. They are strongly attracted to previously attacked foliage, particularly that damaged by Japanese beetles. Female beetles lay eggs in the soil during the day.



Larva hatch and begin feeding on grass and plant roots in late summer. They overwinter in the soil and resume feeding in the spring. The larva is a C-shaped grub that will be about 1 inch long at maturity and are usually found in a curled position. The grub will have a brown head and grayish-black rear end. The pattern of hairs on the last body segment (raster) will form a "V" shape just below the anal opening.

### Control

Season-long control of adult beetles is very difficult. Hand-picking in late afternoon and evening can be effective. Disturbed beetles will drop into a jar held under them. Add a couple of inches of rubbing alcohol or soapy water to the jar to kill captured beetles. Physically removing beetles from plants can be an effective control measure in small areas. By removing beetles, the pheromone they release to attract other beetles is removed as well. Smaller or more valuable plants can be protected with floating row covers.

Japanese beetle traps are generally not recommended because the pheromone tends to bring more Japanese beetles into the area than are captured. In rural areas, consider placing traps a quarter mile away from susceptible plantings. And if you do decide to use a trap, be prepared to change it very often. Commercial trap bags hold only about 4,000 beetles and traps have been known to collect 10,000 beetles in one day.

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Chemical control options are listed below by use site. Season long control involves at least three insecticide spray applications for most products. Controlling adults to reduce grub damage to turf or controlling grubs to reduce adult feeding damage is not effective because the adult beetles are very good fliers and will enter the landscape from other areas.

Whatever product you choose, make sure that Japanese beetle control and the use site is listed on the label. Some products may be available under trade names not included below. Read and follow all label directions. Do not apply chemicals at higher rates than listed on the label.

#### Non-Food Crops

Spray foliage. Repeat treatments if needed.

- Flowers: acetamiprid, befenthrin, carbaryl, cyfluthrin, imidacloprid, permethrin
- Trees and Shrubs: acephate, carbaryl, cyfluthrin, imidacloprid (applied as a soil drench before May for season long control), permethrin

#### Food Crops

No additional spray is needed if a season long spray schedule is already in place.

Apply at 2 week intervals until harvest-restriction date.

- Fruit Trees: permethrin, carbaryl, spinosad, or multipurpose fruit spray
- Grapes: carbaryl or multipurpose fruit spray
- Brambles: carbaryl

#### *Product Trade Names*

acephate (Bonide Systemic Insect Control, Orthene)

acetamiprid (Ortho Rose and Flower Insect Killer)

befenthrin (Ortho Bug-B-Gon Max)

carbaryl (Sevin, several Bonide products)

cyfluthrin (Bayer Advanced Vegetable and Garden Insect Spray),

imidacloprid (Merit, plus several Bayer Advanced, Bonide, Hi-Yield, and Ortho products),

multipurpose fruit spray (Fruit Guard, Fruit Tree Spray, Home Orchard Spray, etc.)

permethrin (several Bayer, Bonide, Hi-Yield, and Ortho products)

spinosad (Conserve and several Bonide, Gardens Alive, and Fertilome products)

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