

Japanese Beetles: A Real Pain For Everybody



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Depending on your location, a sure sign of summer's arrival is the emergence of the Japanese beetle, *Popillia japonica* Newman. Japanese beetles are about 1/2 inch long with a metallic-green body with six small tufts of white hair along

each side, under the edges of its bronze-colored elytra (wing coverings). Females are usually slightly larger than the males.

Japanese beetles first appeared in North America early in the 20th century. They were officially discovered in the United States at a nursery in Riverton, New Jersey in 1916. Apparently, immature beetles were brought into the country as hitchhikers in a shipment of horticultural goods from Japan prior to 1912, when U.S. Customs instituted inspections. After their arrival, they steadily expanded their range westward; they now are common in states that border the western edge of the Mississippi River.

A typical Japanese beetle life cycle takes a full year, though beetles in colder regions may require two years to complete development. Female beetles burrow into the soil in grassy areas and lay eggs several inches below the surface throughout the summer months. The eggs hatch in 10 to 30 days, depending on soil temperature.

Larvae are C-shaped, whitish, and have a brown head capsule. Feeding on grass roots, they develop into 3rd instar larvae before winter arrives. These larvae then dig 6 to 8 inches deep into the soil and wait for spring. A cold winter has little effect on these larvae, since they will dig deeper if temperatures get too cold.

When soil temperatures moderate in the spring, the larvae resume their feeding activity. As the result of sufficient nourishment, favorable temperatures, proper day length and other factors, they will pupate in the soil and emerge as adults in May to July.

Japanese beetles are able to flourish by feed-

ing on more than 400 plant species. Feeding by immature beetles often goes unnoticed. But, you can detect their presence by a spongy, loose turf that is easily pulled from the underlying ground.

Adult feeding is typically seen as holes in plant leaves. "Skeletonized" leaves are created when the beetle eats all of the softer leaf tissue, leaving the tougher veins. Adults love to chew on rose, apple, stone fruits, grape, birch, basswood/linden, willow, elm and maples. They also will feed on corn and soybean.

Both adult and immature beetles can damage corn. Injury caused by grubs feeding on root hairs often goes unnoticed. Resultant nutrient deficiencies may cause the "purpling" of corn stems. Adults feed on silks, which can interfere with pollination and result in incomplete ear filling. Insecticidal treatment may be warranted if pollination is less than 50 percent complete and when there are three or more beetles per ear that are clipping the silks to 1/2 inch or less.

Soybean growers may consider treatment if Japanese beetles and other leaf feeders have defoliated more than 30 to 40 percent of the soybean plant before bloom, above 15 percent from bloom to pod fill and above 25 percent post pod fill. Research about Japanese beetle defoliation effects on soybean is currently underway, funded by the National Soybean Research Laboratory (<http://www.nsr1.uiuc.edu/>).

A question I am often asked is whether Japanese beetle traps provide control. Unfortunately, research has revealed that frequently many more beetles are attracted to a trap than are actually caught. So, using traps can have the effect of increasing your beetle problem, rather than eliminating it.

Because of their pheromones, Japanese beetles tend to be aggregated and as such tend to only cause localized rather than widespread damage. Presence of beetles encourages more beetles to arrive; conversely, absence or removal of beetles will tend to discourage new arrivals. Δ

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