



Japanese Beetle Management for Homeowners in South Dakota

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Japanese beetle (*Popillia japonica*) is a serious pest of lawns and many ornamental plants. This Asian insect was introduced into New Jersey in 1916 and has slowly spread westward. It has recently been found in Minnesota and South Dakota where local populations exist in communities from Vermillion to Rapid City. There has been a recent report of container nursery stock shipped in from out of state containing the larvae of the Japanese beetles.

Consumers should check any container nursery stock for the larvae of the beetles and report any findings to the South Dakota Department of Agriculture at dale.anderson@state.sd.us or john.ball@sdstate.edu. Since the insects are established in some South Dakota communities, some gardeners may notice the insect or its damage on their lawn or plants. The larvae feed on lawns while the adults feed on the foliage of ornamental plants.

Japanese beetle larvae

Japanese beetle larvae are stout, creamy white, C-shaped larvae about one inch long with three short pairs of legs. They are similar to other white grubs such as the masked chafer and the May/June beetles that are very common in South Dakota. The Japanese beetle larvae have a short V shaped ridge of hairs at the end of its abdomen. This will separate it from other species' larvae, although, a microscope may be required to see the ridges.



Japanese Beetle Larvae

The larvae feed on grass roots so are commonly found in lawns. Since the grubs feed on the roots, the infested grass generally turns brown and dry from the lack of water. The damage usually first appears during hot summer weather when the lawn is under stress. Without the roots, infested turf can often be rolled back almost like a carpet. The turf may also be dug up by predators searching for the larvae.

Insecticide treatments for reducing Japanese beetle larvae populations should be initiated when damage to the lawn is first noted. The following two active ingredients can be found in commonly available insecticides. Both are very effective but have some cautions.

Imidacloprid has low toxicity to mammals but is toxic to bees and should not be applied adjacent to flowering plants.

Trichlorfon is toxic to fish and should not be used within 100 yards of water.

Japanese beetle adults

Japanese beetle adults are about 3/8-inch long with a dark metallic green head and dark coppery-brown wing covers. They have white tufts of hairs protruding along the side of abdomen along the wing covers.

The adults begin appearing in June or early July and are active for about two months. The adults feed on the leaves of apple, birch, buckeye, crabapple, cherry, grape, hollyhock, mountain-ash, and plum trees and bushes. Roses and lindens tend to be particularly attractive to the beetles.



Adult Japanese Beetle

The feeding usually results in a lace-like appearance to the leaves as only the veins remain. The adults prefer sun so their feeding is concentrated on the top of plants and those plants in sunny locations. The beetles also release a pheromone to attract other beetles to a location so usually many adults can be found on a plant.

Insecticide treatments for reducing Japanese beetle adult populations should be initiated as soon as damage is first noticed. The following active ingredients are found in commonly available insecticides for managing adult populations. All are very effective against the adult beetles, however each has some cautions.

Carbaryl is highly toxic to bees and should not be sprayed on any plants that are in bloom.

Lambda-cyhalothrin is highly toxic to fish and should not be used adjacent to water.

Permethrin is highly toxic to fish and bees. Do not use adjacent to water or on plants that are in bloom.

Traps are not useful for managing established adult Japanese beetle infestations. They can draw beetles in from a quarter-mile or more but most do not go directly to the trap, but instead to nearby plants. However, traps can be useful in detecting new infestations since there are lower numbers of adult beetles in those areas.

The bacterium Milky Spore disease (*Bacillus popilliae*) is available in the eastern part of the United States to kills the larvae. However, it is not recommended for use on the Northern Plains as the spores are cold-sensitive and are only effective with high populations of larvae.

Identification of new infestation is an important means of limiting the spread of this invasive insect. If you find a larvae in the soil or a container from the nursery, please contact Dale Anderson at dale.anderson@state.sd.us or John Ball at john.ball@sdstate.edu. They may request a picture of the insect for identification as there are several other larvae that appear similar. If adult beetle are found on chewing on roses or other plants, please also send a picture for positive identification.