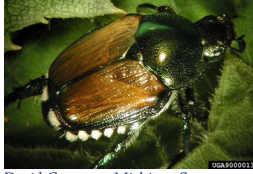


Japanese Beetle

Popillia japonica

Colorado Dept. of Agriculture
 Division of Plant Industry
 Nursery Program
 700 Kipling Street
 Suite 4000
 Lakewood, CO 80215
 303-239-4140



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DESCRIPTION

Japanese beetle is a scarab beetle, approximately one-half inch long with a metallic green body and copper-colored covers on its wings. Close examination with a hand lens will reveal 12 tufts of white hairs bordering the margin of the wing covers. Larvae, or grubs, reside in the soil. They are about an inch long when fully grown and lie in a curled or “C” shaped position. Close examination of the grubs will reveal a v-shaped series of bristles on the tip of the abdomen.

The insect feeds on roots, leaves and flowers of many landscape ornamental and agricultural plants including:

Host Common Name	Latin Name	Insect stage
Grape	<i>Vitis</i> spp.	adult
Rose	<i>Rosa</i> spp.	adult
Hollyhock	<i>Althea rosea</i>	adult
Rose-of-Sharon	<i>Hibiscus syriacus</i>	adult
Black Walnut	<i>Juglans nigra</i>	adult
Apple, Crabapple	<i>Malus</i> spp.	adult
Cherry, plum, peach	<i>Prunus</i> spp.	adult
American linden	<i>Tilia americana</i>	adult
American mountain-ash	<i>Sorbus americana</i>	adult
Lombardy poplar	<i>Populus nigra italica</i>	adult
Turfgrass	<i>Poa, Festuca</i>	larvae

BASIC PRACTICE GUIDELINES

General Information and History

- Originally detected in Colorado in 1995, the first established population was documented in 2003 in the Palisade area on the West Slope. Seven years later, efforts to eradicate the population appear to have been successful.
- More recently (2005), Japanese beetle has been discovered around golf courses in the southern Denver Metro area and (2009) Pueblo. Japanese beetle appears to be more difficult to eradicate along the Front Range due to the nature of urbanization and irrigation.
- Japanese beetle is the target of quarantines restricting interstate shipment of nursery stock and soil TO California, Nevada, Utah, Oregon, Washington, New Mexico, Arizona, Idaho, Montana, Colorado and British Columbia. Several Western States restrict movement of nursery stock and soil FROM Colorado.
- New sightings of Japanese Beetle should be reported to the local Colorado State University Extension Office, <http://www.ext.colostate.edu/cedirectory/countylist.cfm> , or your County Pest Inspector.
- Historically, this insect is a target for large amounts of insecticide use.

Integrated Pest Management (IPM)/Plant Health Care (PHC)

Use of a variety of integrated pest management (IPM)/Plant Health Care (PHC) approaches, which combine multiple management tools, is highly encouraged. Management of Japanese beetle is complicated because adults and grubs (larvae) are very different from one another and cause injury to a variety of hosts. Control of just one life stage will not necessarily guarantee control of the other.

Key References

- Cranshaw, W. Japanese Beetle. Colorado State University Extension Fact Sheet 5.201. June 2007
- Krishik, V. and Maser D. Japanese Beetle Management in Minnesota. University of Minnesota Extension. FO-07664 June 2001
- Potter, D.A. and D.W. Held. Biology and Management of the Japanese Beetle. Annu. Rev. Entomol. 2002. 47:175-205

Quarantine

6. Colorado's Japanese Beetle Quarantine, effective January 1, 2010, dictates that all nursery plant material with a root ball of 12 inches in diameter or larger, be certified free of Japanese beetle by the regulatory agency in the exporting State. There are no exceptions to this quarantine! Any person or business importing trees, shrubs, perennials and ornamental grasses into Colorado in pots or with root balls larger than 12 inches in diameter must have the plants certified by the quarantined State prior to shipment. States not under quarantine include: CA, WY, ID, MT, UT, WA, and OR. For more information contact the Colorado Department of Agriculture at 303-239-4153

Monitoring/trapping

7. Conduct a survey to find out if Japanese beetle is present in your area. Inexpensive traps that detect adult Japanese beetle are available from a number of vendors. Survey during adult flight months of June through September. Trapping is not a control method it is just a monitoring method. It tells you whether the beetle is present or not – nothing more.

Integrated controls

8. Maintain a dry lawn. Adult females seek moist turfgrass sites for egg laying. This strategy will make lawns and other turfgrass less attractive and will discourage egg-laying and reduce survival of newly hatched grubs.
9. Many biological controls for Japanese beetle have been researched. Currently, the use of entomopathogenic nematodes (microscopic round worms, parasites only on insects) has been shown to be somewhat effective for controlling grubs in turf and potted nursery stock. Cost of implementation is high and results are inconsistent when compared to conventional controls. Available in many garden centers or by mail order, *Steinernema glaseri* and *Heterorhabditis bacteriophora* may be effective controls if attention to pre and post treatment irrigation is noted.
10. Insecticide treatment of turf to control larvae (grubs) has been the most common and largely the most effective management strategy employed against Japanese beetle. Timing of insecticide applications is critical. Use insecticides for grub control in early summer, for control of adults apply when feeding and damage is observed. Always read and follow pesticide label directions.

Table 1. Insecticides labeled to control Japanese beetle grubs and adults. Use for grubs in early summer. Use for adults when feeding and damage is observed on ornamentals.

common name	trade name	use for	class	comment/cautions
chloroantraniliprole	Acelepryn	grubs	anthranilic diamide	Toxic to aquatic invertebrates, oysters and shrimp; do not apply directly to water. Surface and groundwater advisories.
bifenthrin	Talstar	adults	pyrethroid	High toxicity to honeybees, birds, fish. Do not use nearer than 150 yards from water.
carbaryl	Sevin	grubs, adults	carbamate	Toxicity to bees, earthworms; moderately toxic to birds, fish. Do not use adjacent to water. Available for homeowner use.
cyfluthrin	Tempo	adults	pyrethroid	High toxicity to birds, fish. Do not use adjacent to water. Available for homeowner use.
deltamethrin	DeltaGard	adults	pyrethroid	High toxicity to birds, fish. Do not use adjacent to water.
halofenozide	Mach2, GrubEX	grubs	diacylhydrazine	Low toxicity to birds, fish. Insect growth regulator. Available for homeowner use.
imidacloprid	Merit, Marathon	grubs	chloronicotinyl	Low toxicity to birds, fish. Do not use after August 15. Available for homeowner use.
lambda-cyhalothrin	Scimitar, Battle	grubs	pyrethroid	High toxicity to fish.
permethrin	Astro	grubs, adults	pyrethroid	High toxicity to fish, bees.
trichlorfon	Dylox	grubs	organophosphate	High toxicity to birds, fish. Do not use nearer than 100 yards from water. Available for homeowner use.

Use pesticides judiciously and always follow label directions. The label is the law!