

Dealing with Japanese Beetles



Japanese beetle adult, 8cms long, metallic green head and copper wings

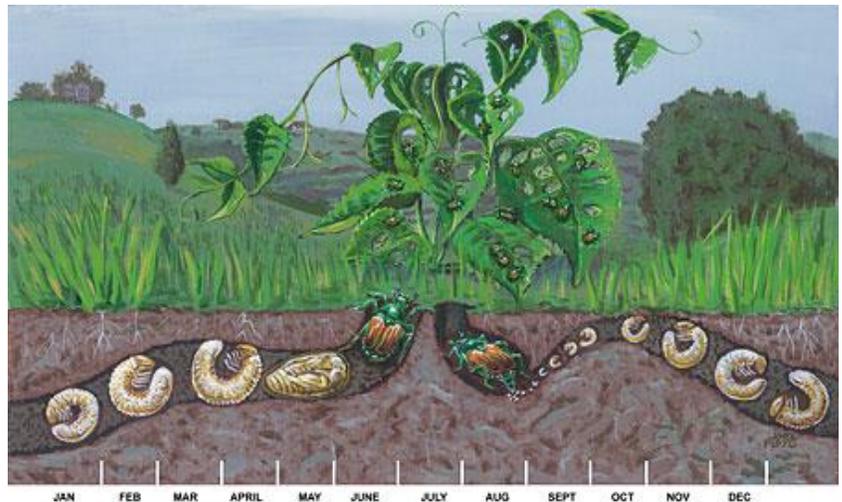
Japanese Beetles descended upon southern Ontario several years ago and the impact continues to increase. These voracious little pests are very destructive and costly to battle. Damage to fruit, flowers and foliage is impacting home gardeners, nurseries, and agricultural growers.

[OMAFRA Factsheet "Japanese Beetles in Nursery and Turf"](#)

Japanese Beetle Life Cycle

Beetles emerge from the soil in late June or early July, begin flying when the temperature is about 21°C, reach their peak in late July and August, then gradually disappear. Their normal life span is from 30 to 45 days.

- Spring & early summer – overwintered grubs become beetles, emerge from the soil and begin flying
- Late June / early July – adults do much foliage and flower damage while in mating stage
- Summer – beetles lay eggs, primarily in turf
- Late August to frost – young grubs hatch and eat roots of turf



Japanese Beetle (and grub) damage



Most foliar, fruit and flower damage is done from late June to late July. Damage can range from holes in a few leaves or petals to complete defoliation of a plant.

Turf damage occurs from late August until frost when the grubs burrow down to overwinter. Evidence of damage will be dying patches of grass where grubs have devoured roots.

When and where do beetles feed?

Feeding is most extensive on clear summer days when the temperature is between 21°C and 35°C, and the Relative Humidity is above 60%. There is little feeding on cloudy and windy days and no feeding on rainy days.

Beetles prefer to feed on plants exposed to the direct rays of the sun, beginning at the top, regardless of height, and working downward. They feed on the upper surface of the foliage of most plants, chewing the tissue between the veins, leaving a lace-like skeleton. During the first week to 10 days after emergence, feeding is confined to low growing plants, then progresses to fruit and shade trees. As leaves on trees become less attractive, the beetles leave the trees and become more abundant on flowers or in field crops such as corn and clover.

Beetles will eat more than 300 species of plants such as:

- Ornamentals – Roses, zinnia, hydrangea, corkscrew hazel, vines (esp porcelain vine and Virginia creeper)
- Fruits - grapes, peach, apple, apricot, cherry, plum, rose, zinnia, corn, asparagus, soybean, blueberries, raspberries and blackberries
- Trees - elm, maple, lindens, sassafras, Japanese maple, and purple-leaf plums

To reduce impact on your plants this year

- 1) Handpick daily (more than once per day if you can) by knocking or dropping them in soapy water. This is best done in early morning when beetles are more sluggish. Or if you have a lot of plants, try using your ShopVac!
- 2) Avoid beetle pheromone traps as research shows [these traps are generally ineffective in home gardens](#), and may attract more beetles to your plants.

To reduce the number of beetles next year:

Apply beneficial nematodes in late summer to attack beetles at their weakest.

Though they are harmless to humans, animals, plants, and healthy earthworms, beneficial nematodes aggressively pursue insects in the soil. Essentially they seek out their prey and 'infect' it with a bacterium (*Xenorhabdus* species) that kills fast; typically within 48 hours.

The bacteria are harmless to humans and other organisms and cannot live freely in nature. When the food source is gone, they migrate into the soil in search of a new host. When the pest population is eliminated, the beneficial nematodes die off and biodegrade.

Be prepared... Nematodes are relatively expensive and must be applied properly!

TIMING is very important. The best time to apply nematodes for grubs in southern Ontario is generally mid-August to early September. Controls applied in May-June will be less effective as the grubs are large and difficult to kill.

APPLICATION METHOD is equally important. Here are guidelines for best results:

- 1) Either apply after a good rainfall or irrigation of the area. Apply in the early morning or evening when soil temperatures and UV is lower (cloudy or rainy days are good too).
- 2) Put the contents of the nematodes in a bucket of water and stir to break up any lumps, and let the entire solution soak for a few minutes.
- 3) Use a watering-can or hose sprayer. Remove all sieves and ensure the sprayer nozzle is not too fine ($> 1/2$ mm) to ensure survival of the insects.
- 4) Evenly spread the spraying solutions over the ground area to be treated; continuously mixing to prevent the nematodes from sinking to the bottom.
- 5) After application, keep the soil moist during the first two weeks for the nematodes to get established.

6) Avoid fertilizers for 2 weeks prior to and after nematode application.

[Canadian Food Inspection Agency - Popillia Japonica \(Japanese Beetle\) - Fact Sheet](#)

Good luck battling these invaders!

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