

Pest Bulletin



Japanese Beetle

Native to Japan, this small attractive beetle is not considered a pest in that country, where it is controlled naturally by native predators. It was introduced into the eastern United States early in the 20th century, and first found in Canada in Nova Scotia and Quebec in 1939. Like all invasive pests, it gradually spreads around its new environment without the native predators to control it. In the summer of 2017 it was found south of False Creek in Vancouver, in enough numbers to come to the attention of the BC Ministry of Agriculture, the Canadian Food Inspection Agency, and the nursery industry. If not controlled quickly, Japanese Beetle could spread quickly in the Fraser Valley farther afield. Ultimately, based on experiences elsewhere, it could become a serious pest problem in a wide variety of ornamentals, berry and tree fruit crops.

Identification Facts

- Latin name: *Popillia japonica*. In family of Scarab beetles (*Scarabaeidae*).
- Adult: a beetle, at maturity about 15 mm in length and about 10 mm in width. The wing cases are copper-coloured, and the thorax and head are green. Five patches of white hairs on each side of abdomen. This last feature distinguishes *P. japonica* from all other similar-looking beetles.
- Larva: a pale white "C"-shaped grub, with a yellowish head.

Life Cycle and Biology

The Japanese Beetle has the four typical life stages



of so many insects: egg, larva, pupa and adult. Eggs are laid in small groups near the surface of the soil, and in about two weeks hatch into larvae. In time the larvae become the typical "C"-shape, and feed on increasingly larger root and organic material. Larvae overwinter, after which they pupate, then hatch into the adult stage. Adults may live for about a month or so.

It can take one to two years to complete a life cycle, depending on the climate. It should be noted that until study is undertaken, we do not know yet how long a life cycle of Japanese Beetle will take to complete in the Fraser Valley or other parts of British Columbia. The number of cycles per year

depends on how cool or warm it is, and of course as average yearly accumulated heat is now increasing, this remains to be discovered.

Crop Damage

In eastern North America, Japanese Beetle is a significant pest of turf and grass crops, in which it is the larvae that cause damage. This means lawns, institutional turf, golf courses, hay fields and forage grass stands are potential crops that may experience damage. In nursery crops and ornamentals the adult beetles cause skeletonization of foliage, although they can also damage flowers and fruit.

Again, until the behavior of the Japanese Beetle in BC is studied by researchers, we won't know precisely how much damage and in which crops to expect it.

A partial list of known primary hosts includes maples, roses, pome and stone fruit, cane berries, grapes and corn. Note that although turf grass is known to be a secondary host, in 2002 one reference listed Japanese Beetle as the "... most widespread pest of turfgrass..." costing the American turf and ornamental industry approximately \$450 million a year to manage the pest in those crops.

Detection of Japanese Beetle in Your Field

Learn how to identify Japanese Beetle. Although it has not been found outside of Vancouver city, it behooves us all to be aware of all new invasive pest species and watch for them. Report any possible sightings to the BC Ministry of Agriculture, or to an Agronomist at TerraLink, or to your fruit packer or grower association.

If your field is already being monitored by a qualified scouting firm or agronomist, ask them to start to include monitoring for Japanese Beetle.

Controls

Management of Japanese Beetle should include cultural activities before resorting to chemical options. Before adding any new insecticides to your spraying routine, it is possible that something you already spray will already control any existing Japanese Beetles in your fields. Should this new pest be found more often in more locations, and quickly increase in numbers, it is likely more registrations may be added to the chemical tools you already have available for your use.

In the US, there are some biological controls already available for use against Japanese Beetle, specifically *Istocheta aldrichi* and *Tiphia vernalis*. Inquire with the Sales Desks at TerraLink if you are interested in pursuing a bio-control pest management program.

Other biological controls include predatory nematodes (entomopathogenic nematodes).



TerraLink has become the exclusive supplier for our German nematode supplier, E-Nema. Both *Steinernema* species as well as *Heterorhabditis bacteriophora* have been shown to be effective against Japanese Beetle grubs, and both types are available from TerraLink.

For organic producers, if the production area is small enough to warrant the cost, floating row cover is effective at providing a physical barrier to prevent the adults laying eggs within your field. Alternatively, kaolin (a silicate material) is apparently effective against the adults (active ingredient in Surround WP). Also, a soap-water spray mixture may be effective.

References

Precautions taken against Japanese Beetle. Mitham, Peter. *Country Life in BC*, July 2018

Hueppelsheuser, Tracy. BC Ministry of Agriculture. *Conversation*, July 11, 2018

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