



Japanese beetle (*Popillia japonica*)



Background

The Japanese beetle is native to Japan. It was introduced in North America, where it spread and became invasive in most of eastern North America, as well as Canada. In 2014 it was found in Italy, and in 2017 in Switzerland [[see distribution](#)].

Adult beetles are known as defoliators, but they can also feed on fruits, affecting many crops, fruit trees, ornamental plants, and environmentally important species. The larvae live and develop underground, feeding on plant roots, and are regarded as serious pests of lawns and turf.

Females lay egg masses in soil cavities. The larvae start hatching after mid-July, and feed until autumn, where they stay inactive over winter. In early spring, after feeding for a few weeks, pupation occurs. Adult beetles emerge from the soil in late June and start feeding on plants.

The beetles can disperse as larvae or adults in plant trade and adults can also hitchhike on non-host commodities or vehicles. Adults beetle can fly short distance on warm sunny days.

Symptoms

- Adult Japanese beetles are oval, 8 to 11 mm long, with females larger than males. They have metallic green thoraxes and heads, and bronze wing cases (elytra) (Fig 1a). In the abdomen, turfs of white setae form five lateral spots in each side and two posteriorly (Fig 1a), aiding species identification.
- Adult beetles are easily spotted on foliage and often gather in groups (Fig 1b). Adults feed between the veins leaving a vein skeleton, a symptom called skeletisation (Fig 2a, b, c). Leaves may become brown and fall, leading to significant defoliation (Fig 2d). The beetles can also damage flowers (Fig 3a, b) and fruits (Fig 3c).
- The larvae are C-shaped and have well developed legs and head capsule (Fig 4a). Larvae can be detected by visual examination of the roots, and because of the damage they cause to the roots (Fig 4b).

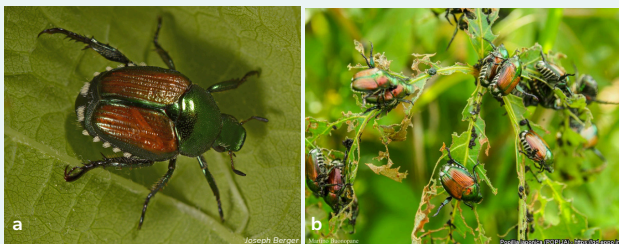


Fig 1. a) Adult Japanese beetle (*Popillia japonica*). b) Group of Japanese beetles.

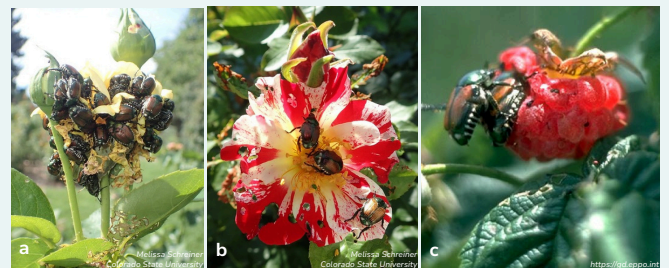


Fig 3. a, b) Roses being eaten by Japanese adult beetles. c) Raspberry fruit affected by Japanese adult beetles.

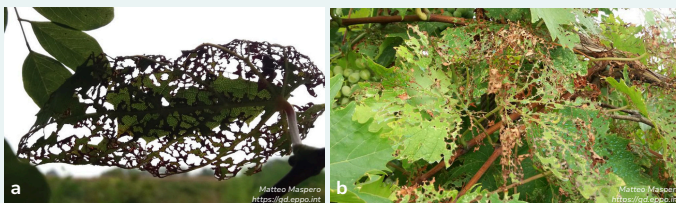


Fig 2. a, b, c) Skeletisation of leaves and b) defoliation caused by adult Japanese beetles.

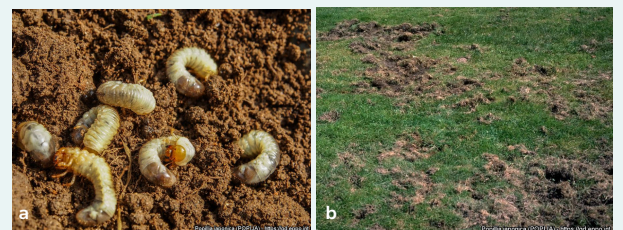
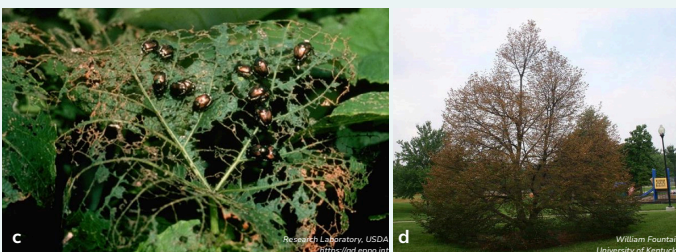


Fig 4. a) Larvae (grubs) of Japanese beetles (*Popillia japonica*). b) Grass turf damaged by Japanese beetle larvae.