



## Imported Willow Leaf Beetle

Coleoptera: Chrysomelidae, *Plagioder a versicolora* (Laicharting)

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**Description** Imported willow leaf beetle was identified in the United States in 1915. It likely arrived on landscape plants shipped from Europe, where it is native.

Adults are small, stout, shiny oval beetles measuring about 3 mm (0.125 inch) long. Their metallic color ranges from black to bluish-green. The bright yellow, spindle-shaped eggs are laid upright in clusters. Larvae are small, somewhat shiny grubs with a black head, thorax, and legs. The abdomen may appear somewhat greenish-yellow and has several parallel rows of black bumps. Larvae measure about 5–8 mm (about 0.25 inch) long when mature. The naked pupae are a mottled yellow-brown, with the wings, legs, and head clearly distinguishable, and are attached to the leaf by the tip of the abdomen.



Adult imported willow leaf beetles (*Plagioder a versicolora*). David Cappaert, Michigan State University, Bugwood.org



Imported willow leaf beetle larvae (*Plagioder a versicolora*) skeletonizing a willow leaf. Paul Weston, Cornell University, Bugwood.org

**Life Cycle** Imported willow leaf beetle has a complete life cycle of egg, larval, pupal, and adult stages. Adult beetles overwinter under loose bark or in leaf litter near their host trees and emerge in early spring to feed on new leaves. They chew holes in the leaves and notch the edges. Females lay clusters of yellow eggs on the underside of the leaves in May. Young larvae are small, greenish-black grubs that resemble the larvae of ladybird beetles. They remain clustered together while skeletonizing the undersides of leaves. Older larvae (6 mm or about 0.25 inch) are more solitary and begin feeding on the tops of leaves, sometimes chewing holes through them. Larvae pupate directly on leaves. Adults seek overwintering sites in late summer. Two or three generations may occur each year.

**Damage** Imported willow leaf beetle attacks willow, poplar, and cottonwood. Leaves with imported willow leaf beetle on them become heavily marked with frass (fecal matter) over time and look brown, dirty, and ragged. Leaves may roll as they dry out and drop prematurely. However, most trees can withstand total defoliation by imported willow leaf beetle as long as it doesn't occur every year. This is especially true if the weather is favorable and the tree is able to flush out with new foliage before fall. Treatment may be justified for heavy infestations on smaller or newly planted trees that are not well established.

**Habitat/Distribution** Northeastern United States to Virginia, west to Michigan.

**Control** Host trees with hairy leaves may be somewhat resistant to this pest. No biological control agents are commercially available for imported willow leaf beetle. Encourage generalist predators such as ladybugs and assassin bugs that feed on the eggs and larvae. Trees properly planted in good sites are less susceptible to stress from pest feeding than trees planted in poor sites.

See the Virginia Pest Management Guide for Home Grounds (PMG 018) for control recommendations for imported willow leaf beetle. Monitor host trees in May and June. Treatment can be applied when the yellow eggs are first seen on the undersides of the leaves. Be sure to direct the application to the underside of the foliage where eggs and young larvae are found. Continue to monitor trees through the summer, but successive treatments may not be required after the initial application against the first generation.

**Interesting Facts** Larvae of the imported willow leaf beetle possess a row of glands along the sides of their bodies. These glands readily secrete an aromatic compound to deter predators from attacking the otherwise defenseless larvae.