

FACT SHEET

Willow sawfly, *Nematus ventralis* Say

INTRODUCTION

Willow sawfly, *Nematus ventralis* Say, (Hymenoptera: Tenthredinidae, Subfamily Nematinae) is a common pest on willows (*Salix* spp.) and poplars (*Populus* spp.) in North America as well as Europe, South America and Australia. Willow sawfly is a non-stinging member of the wasp family. Willow sawfly larvae look similar to caterpillars and feed on young tender leaves throughout the summer, leaving only the midrib of each leaf. The first generation of larvae hatch in May and feed through June, and a second generation often appears in July and feeds through the end of the summer. Occasional dramatic defoliation events can quickly strip an entire plant. These events are not usually life threatening to an older plant, but can severely retard the growth of a young plant.

Willow sawfly larvae strip the leaf, leaving only the midrib, as seen here on S. viminalis x S. miyabeana 'Fabius'



BIOLOGY

Willow sawfly adults look similar to wasps and are related to bees and wasps, but lack the obvious constricted waist of common wasps. The non-stinging adult female has a protruding ovipositor with a jagged edge that is used to “saw” a slit where she lays her eggs in late spring. Eggs hatch in May and larvae begin feeding on young willow leaves. The willow sawfly larvae look very similar to caterpillars and cause the most damage to shrub willow foliage. They can be distinguished from a caterpillar by the number of prolegs (fleshy legs located behind the front three pairs of legs). Caterpillars have no more than four prolegs, whereas sawfly larvae have six or more. Fully grown larvae, approximately 18 mm (3/4”) long, have black or greenish-black bodies with large yellow spots along their sides and a black head. When disturbed, the larvae arch the lower half of their bodies away from the leaf forming a distinct S-shape. Mature larvae drop to the soil, pupate, and either produce a second generation in July or overwinter in the soil and re-emerge the following spring. This results in either having one or two generations per year.



Kim Cameron

Willow sawfly larvae feeding on young shrub willow

SUSCEPTIBILITY

Nematus ventralis larvae will feed on many varieties of shrub willow, but display a preference for *S. eriocephala*, *S. miyabeana*, *S. sachalinensis*, *S. purpurea* and their hybrids. Large outbreaks are rare, but when they do occur, they can cause major defoliation and severely reduce growth. They do not usually kill the plant. Another species of willow sawfly, *Nematus oligospilus*, is found on willow trees, such as *S. alba*, *S. nigra*, and *S. matsudana*. There are several other species of sawfly that attack willow; some produce galls on leaves and others bore into stems to lay their eggs. Other species of sawfly feed on specific groups of plants, such as the European apple sawfly that feeds on apple leaves and the pine sawfly that feeds on pine needles.

More information on sawflies can be found at <http://www.extension.umn.edu/distribution/horticulture/DG6703.html> and specific information on pine sawflies at <http://ccesuffolk.org/assets/Horticulture-Leaflets/Pine-Sawflies.pdf>. Cornell University Insect Diagnostic Lab provides fact sheets on other common pests at <http://www.entomology.cornell.edu/cals/entomology/extension/idl/idlfactsheetlist.cfm>. For more information on shrub willow, please visit <http://willow.cals.cornell.edu>, www.doubleawillow.com or www.esf.edu/willow.

References:

- Greenwood, P. 2000. *Pests & Diseases*. Dorling Kindersley, New York.
 Smith, DR. 2003. *Transactions Amer. Entomol. Soc.* **129**:1-45.
 Zinoviev, AG and Smith, DR. 2000. *Proc. Entomol. Soc. Wash.* **102**:974-990.
http://www.weeds.org.au/WoNS/willows/docs/Willow_Sawfly-Resource_Sheet3.pdf

Kimberly D. Cameron¹, Gregory M. Loeb², Lawrence P. Abrahamson³, Cullen White¹, and Lawrence B. Smart^{1*}

¹Dept. of Horticultural Sciences, ²Dept. of Entomology, Cornell University, NYS Agricultural Experiment Station, Geneva, NY 14456

³SUNY College of Environmental Science & Forestry, Syracuse, NY 13210

*Contact: lbs33@cornell.edu, 315-787-2490

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MANAGEMENT

An outbreak of leaf sawfly can seriously impair willow growth over a growing season, especially during the establishment year. The larvae will quickly strip a shrub of its young leaves and move to older leaves if no other food is available. Larvae often hatch in clusters, so it is very common to find many sawfly larvae feeding together along the margin of a leaf.

If weather conditions are conducive to growth, the second generation may be much larger than the first and should be controlled if possible. Willow sawfly overwinters as a pupa in the soil and localized populations can increase over successive years, if not managed. Populations of larvae should be monitored to avoid major localized outbreaks.

Larvae can be physically removed if populations are small. Insecticidal soaps are effective if sprayed directly on larvae. For large outbreaks, spinosad (Conserve), acephate (Orthene) and carbaryl (Sevin) have been effective in reducing populations of larvae. All three of these products are labeled for use on ornamental shrubs, but none are labeled specifically for willow bioenergy crops. Your local cooperative extension expert may provide more information for specific control in your area.

Complete defoliation of *Salix viminalis* x *S. miyabeana* 'Fabius' (left). Young sawfly larvae on willow leaf (right).

