



Application of soil-drenching chemicals is likely to be ineffective because of the difficulty of locating larvae that have already burrowed into the soil.

For the most recent information on chemicals available for control of this pest and other defoliating insects, call the Health Canada, Pest Management Regulatory

Agency in Ottawa (toll-free) at 1-800-267-6315. Fact sheets and information on regulations is also available on the Internet: <http://www.hc-sc.gc.ca/ahc-asc/branch-dirigen/pmra-arla/index-eng.php>.

Chemical pesticides are toxic to humans, other animals, and beneficial insects. On windy days, aerial application of pesticides can result in drift to nontarget areas. Follow all instructions and precautions listed on the manufacturer's label.

Forestry Leaflet 37: Spiny ash sawfly

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Photographs: D.J.M. Williams (cluster and sawfly) and Canadian Forest Service (larva close-up)
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Cat. No. Fo29-31/37E-PDF

ISBN 978-1-100-16406-9

ISSN 1183-8655

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Edmonton, Alberta T6H 3S5

When referring to this publication, please cite: Williams, D.J.M. 2010. Spiny ash sawfly. Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, Alberta. For Leaflet 37.

Cette publication est également disponible en français sous le titre *Tenthrede épineuse du frêne*.

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Spiny ash sawfly



Eupareophora parca (Cresson, 1880)

Distribution and Hosts

The spiny ash sawfly, *Eupareophora parca* (Cresson, 1880), is native to North America. It is distributed across the continental United States and now occurs in Canada from Alberta to New Brunswick. This species has become increasingly common in urban areas in recent years because of the increased planting of ash species in parks and along boulevards. The spiny ash sawfly was unknown in Alberta until it was detected at two locations in Edmonton in 2003. It was detected at seven locations in 2004 and is now established in the city. In Canada, the larvae of this species feed on several ash species, primarily white, black, and green ash. Green ash is particularly favored by horticulturalists because of its resistance to drought and has been planted extensively during the past decade in urban settings outside of its natural range. Spiny ash sawfly is considered a pest only in urban areas, but it undoubtedly also occurs in natural forests containing ash trees, in the eastern parts of its range.

Symptoms and Damage

Defoliation damage to leaves becomes apparent in late May, when eggs hatch and larvae begin to feed. Damage first occurs in the form of small “shot holes” in the leaves, which are caused by small first-instar larvae feeding in the middle of the leaf surface. As feeding progresses and the larvae increase in size, these shot holes coalesce with one another and with damage from larvae feeding on the leaf margin. Eventually the entire leaf except for the major veins is consumed. The larvae prefer recently opened, tender leaves. Defoliation generally begins in the lower, shaded parts of the crown, where leaf development is slower. It tends to be clumped at first, with some branches being completely

stripped while others nearby remain untouched, but it may spread and proceed upward in the canopy over several years as the sawfly population increases.

Spiny ash sawfly does minimal damage to ash trees but may be of concern where defoliation of landscape trees results in loss of esthetic value. Defoliation occurs early in the season, before the leaves harden and turn waxy, so the level of defoliation is limited by time, and the trees may partially recover with a second flush of foliage. Severe defoliation of a tree is rare. This species does not seem to maintain outbreak populations for many years in succession and so is unlikely to cause long-term damage or result in the death of high-value trees. Its primary effect is likely to be as a nuisance.

Causal Agent

Adult spiny ash sawflies emerge from the soil around the bases of trees in early to mid May. They are small (4–5 mm), stout, black nonstinging wasps with clear wings. Males and females can be seen courting and mating on newly opening leaf buds, and females can be seen on young, tender leaves, laying their eggs. The eggs are usually deposited on one side of a leaf vein. Eggs are not visible, because the female injects them into the leaf tissue, but they are probably laid singly. Sites where eggs have been laid develop a distinctive, semicircular, reddish brown scar. Tiny, pale green larvae with black or dark brown heads begin to emerge and feed about 2 weeks after the first eggs are laid. First-instar larvae are smooth, but from the second instar to fifth instar, the larvae develop distinctive, fleshy spines all over the thorax and abdomen, which give this species its name. Some of these spines are forked or Y-shaped. This species is the only known spiny sawfly with larvae that feed on ash on the prairies. Fifth-instar larvae,

which are about 5–8 mm long, are found feeding in groups on the edges of leaves. From late June to early July, they begin to wander along the branches and bole of the tree, eventually finding their way to the soil, where they burrow down below the leaf litter and moult into smooth-bodied, sixth-instar prepupae. Each larva creates a pupal chamber in the soil near the tree base, where it remains until developing into an adult the following spring.

Prevention and Control

It is unlikely to be practical to prevent sawflies from attacking a tree. Because the majority of sawfly larvae overwinter in the soil within a meter of the base of the tree, spreading tarps or landscape fabric around the tree immediately after the snow melts in spring and sealing or weighting all edges securely may prevent emerging adults from reaching the crown. However, this measure will not prevent adults present on other trees from attacking treated trees. Given that defoliation is seldom severe or prolonged, it is probable that efforts would be better spent helping the tree to withstand attack. Keeping trees healthy by watering the roots in the fall, fertilizing in the spring, and watering during summer dry periods is likely the best approach.

Chemicals used in the control of defoliating insects may be applied with good effect to individual trees or small groups of trees in urban settings. Sprays should be applied several times in spring, between the time of bud break and early leaf expansion.

Use of chemicals later in the summer, once the larvae have burrowed into the soil, will be ineffective.

