

Sherdec Tree Service

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Conifer Sawflies

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Sawflies are relatives of wasps and bees. Instead of having a stinger, they have a "saw" which they use to cut holes in plant tissues in which to lay their eggs. Sawflies are generally host-specific; for example, a pine sawfly will only feed on pines, not on spruce trees.

It is the larvae that consumes the needles that does the most severe damage to trees. Fullgrown larvae are about one inch in length and resemble caterpillars. The larvae have three pairs of true legs behind the head and six or more pairs of false legs (prolegs) on the remaining segments. This differentiates them from caterpillars, which have five or fewer pairs of legs.

Life Cycle and Description

The following life cycle is typical of most conifer sawflies: winter is spent in a cocoon spun on the ground under host trees. Pupation is completed in the spring and the adults emerge a few weeks later. However, some pupae take two to three years to transform into adults.

Females deposit more than 100 eggs in rows of slits in the edges of several needles. Larvae hatch in about a month (usually late April to May) and begin feeding. The larvae feed for about a month (generally until about mid-June) and then drop to the ground to spin their cocoons. The weather controls adult emergence, egg hatch, and larvae development so timing of each stage is slightly different every year. There is only one generation per year in this area, although a second generation may occur with the introduced pine sawfly.

Most are a similar green to the needles on which they are feeding, making them difficult to find when they are small. However, they tend to be gregarious, feeding in large colonies. They will move in unison when startled, making them a little easier to spot.

Pine Sawfly

The pine sawfly species in our area include: European pine sawfly, redheaded pine sawfly, white pine sawfly and introduced pine sawfly. In early to mid-May, the first indication of an infestation is often identified by the strawcolored appearance of needle clusters where young larvae have consumed only the outer surface of the needles. These needles eventually drop from the tree. Larvae also feed on the bark of young shoots, which results in shoot death or deformation. As the larvae mature they begin feeding on the entire needle often leaving a small piece attached to the stem. These small pieces are good indicators that sawflies are the culprit for the missing needles and not disease. Only the previous year's foliage is consumed. The current year's needles develop normally, resulting in a tufted appearance. In large colonies sawflies may move to the current year's growth when all of the older needles have been consumed.

Several years of moderate to intensive defoliation results in severely decreased tree growth, as well as increased susceptibility to attack by disease and other insects.

Yellow-Headed Spruce Sawfly

The Yellow-headed spruce sawfly is the most common spruce sawfly we see. Damage occurs on the succulent new growth. A small tree can be heavily damaged in a day or two. Although the damage looks quite severe, the buds are not damaged and next year's new growth will come out normally. However, consecutive years of damage can cause branches to die.

Control

Birds, rodents and beneficial insects feed on the larvae and cocoons, providing minimal control. Work is in progress involving a parasitic wasp which attacks the larval and cocoon stages,

as well as a virus specific to European pine sawfly which kills the larvae. If the colonies are identified soon after the larvae hatch, the population can be reduced by using a forceful spray of water from a garden hose to knock them off the tree.

Chemical control may be warranted to protect the vigor of trees that have suffered several consecutive years of defoliation. An alternative to spraying is to treat the trees with the systemic insecticide Merit (imidacloprid). Merit is applied either as a soil injection or soil drench. The tree takes up the insecticide through the root system and moves it through the tree into the needles. The larvae are killed as they begin feeding on the needles, minimizing the damage that occurs. Merit is applied in the late summer or fall to protect the tree the following spring. The main advantage to using Merit over a sprayed insecticide is that windy or rainy weather conditions may hamper the ability to spray insecticides at a time when the insect is most vulnerable.

If spraying an insecticide is the treatment of choice it is important to choose a product that is labeled for the control of sawflies. Control measures are most effective when applied close to the time of hatching.

After assessing your site and plant health your Sherdec Arborist can make specific recommendations regarding treatment for your important landscape plants.