



Pst e-alerts



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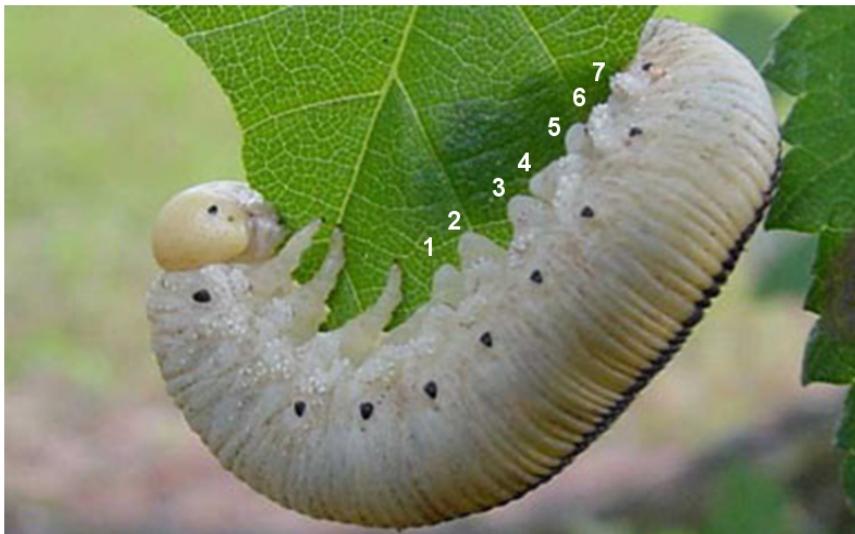
Pine Sawfly Activity Reported Across the State

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We've received several inquiries from across Oklahoma about "caterpillars" consuming the foliage of pines. Very few species of caterpillar (i.e., larvae of butterflies, moths, and skippers)



feed on pine needles in Oklahoma, and images sent to the OSU Plant Disease and Insect Diagnostic Laboratory confirm that these insects are actually pine sawfly larvae. Sawflies aren't true flies but are a specialized group of wasps, and the larvae closely resemble caterpillars.



The simplest way to distinguish the two groups is to count the number of pairs of prolegs, those fleshy appendages located on the abdomen that enable the immature insect to grip plant surfaces. Caterpillars always have five or less pairs of prolegs, while sawfly larvae always have six or more pairs (Fig. 1).

Fig 1. True caterpillars have five or less pairs of prolegs (A) and sawfly larvae have six or more pairs (B). Photo credit: (A) Bev Wigney, magickcanoe.com/blog/2007/03/22/finding-caterpillars/; (B) Herbert A. "Joe" Pase III, Texas Forest Service, www.insectimages.org

Description: Adult pine sawflies, *Neodiprion* spp., are wasps but do not have the narrow waist found in other wasps like mud daubers. Females are reddish brown with dark brown, black, or bluish black markings, while males are mostly black. Adults measure about 1/2 inch long. Pine sawfly larvae are caterpillar-like and have eight pairs of abdominal prolegs. Three species commonly occur in Oklahoma and are described below.

Redheaded pine sawfly, *Neodiprion lecontei* (Fitch) - Larvae are yellowish white with six rows of black spots running down the body. The head is reddish orange (Fig. 2A).

Blackheaded pine sawfly, *Neodiprion excitans* Rohwer - Larvae are dull or olive green with a series of elongate spots running down each side of the body and a large spot on the top of the last segment. The head is black (Fig. 2B).

Loblolly pine sawfly, *Neodiprion taedae linearis* Ross - Larvae are dull or olive green with a black stripe running down each side of the body. The dark spot on the last segment is absent or has a lighter central area. The head is reddish brown to dark brown (Fig. 2C).



Fig 2. Redheaded pine sawfly (A), loblolly pine sawfly (B), and blackheaded pine sawfly (C). Photo credits: (A) John A. Weidhass, Virginia Polytechnic Institute and State University, www.insectimages.org; (B) W.H. Bennett, USDA Forest Service, www.insectimages.org; (C) Arnold T. Drooz, USDA Forest Service, www.insectimages.org

Distribution: The redheaded pine sawfly is found throughout the entire eastern United States and southeastern Canada, while the blackheaded pine and loblolly pine sawflies are found in the southeastern United States. In Oklahoma, all three species typically are found in the eastern edge of the state where pines are native.

Life Cycle: Pine sawflies overwinter as cocoons in the soil or duff, mostly under pine trees. Adults emerge in May or early June and mate. Females have a saw-like ovipositor, hence the common name, sawfly. The ovipositor is used to cut slits into pine needles, in which eggs are laid. The yellowish-white oviposition scars and eggs are characteristic signs of attack (Fig. 3). Larvae feed on the needles for three to five weeks before leaving the trees to pupate. In Oklahoma, the loblolly pine sawfly has only one generation per year, while the blackheaded pine sawfly probably has two generations per year and the redheaded pine sawfly appears to have three generations per year.



Fig 3. Redheaded pine sawfly female laying eggs in pine needles. Note characteristic yellowish-white oviposition scars and eggs. Photo credit: Lacy L. Hyche, Auburn University, www.insectimages.org

Hosts: The redheaded pine sawfly prefers young trees of jack, red, shortleaf, loblolly, slash, longleaf, pitch, and Swiss Mountain pine. It will also feed on white pine, larch, deodar cedar, and Norway spruce. The blackheaded pine sawfly prefers older trees of loblolly and shortleaf pine and will also feed on slash, longleaf, pond, and sondregger pines. The loblolly pine sawfly feeds on loblolly, shortleaf, and longleaf pines, but it prefers feeding on older loblolly pines.

Damage: Sawflies damage pine trees by feeding on the needles. They are present to some extent in eastern Oklahoma every year but only occasionally become common enough to cause much damage to forest or landscape trees. They are more likely to damage one or several trees in an ornamental situation. Complete defoliation can occur if infestations are heavy.

Defoliation usually does not kill a tree but does cause considerable growth loss, reduces the attractiveness of ornamental trees, and weakens trees so they are more susceptible to other insects and diseases.

The redheaded pine sawfly is usually found in nurseries or young plantings while the blackheaded and loblolly sawflies are more likely to occur on older trees in forest situations. They may occasionally appear in large numbers over large areas. The largest outbreak in recent years was in 1971 when two generations of blackheaded pine sawfly defoliated pines over parts of seven counties in southeastern Oklahoma.

Inspection and Control: Pine sawfly larvae are attacked by a number of different parasites, including parasitic wasps and tachinid flies that parasitize the larvae and emerge from the cocoons. They usually keep infestations low in Oklahoma and help cause the decline of occasionally heavy infestations.

Larvae are most likely to damage pines during May and June, but damage can also occur in July and August. Inspect trees for signs of needle damage and clusters of larvae during this period. Ornamental or nursery trees can be treated with a variety of contact insecticides, including carbaryl (Sevin). Insecticidal soap and spinosad (Conserve) can be used to control pine sawfly larvae, but other biorational products, especially Bacillus thuringiensis, are not effective.

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