

Forest Pest Bulletin



**SOUTH DAKOTA
DEPARTMENT OF AGRICULTURE
DIVISION OF RESOURCE
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PONDEROSA PINE SAWFLY

CAUSAL AGENT

The insect *Neodiprion fulviceps*. The sawflies are closely related to wasps and bees.

HOSTS

The ponderosa pine sawfly's most common host is ponderosa pine (*Pinus ponderosa*). It will also infest other western pines including Jeffrey (*P. jeffreyi*), sugar (*P. lambertiana*), and western white pine (*P. monticola*). The predominant host in the Black Hills is the ponderosa pine, though occasionally ornamental and windbreak pines such as Austrian (*P. nigra*) are attacked.



SYMPTOMS

The first symptom of an infestation is the thinning or defoliation of the trees in late spring, usually late May or early June. Upon closer examination of the foliage, small worms can be found feeding in colonies on the needles. These worms are the larvae of the sawfly. They differ from most other worms that are called caterpillars by having 6 or more prolegs. The prolegs are leg-like appendages on the abdomen. Caterpillars will have 2 to 5 prolegs.

Trees attacked in previous seasons will have tufts of dry, straw-like needles or only stubs of needles. Trees attacked in the previous year are especially vulnerable to new attacks.

LIFE CYCLE

The sawfly receives its name from the adult female's means of laying eggs in the needles. The adult female is about 1/3-inch long, brown, and wasp-like in appearance. She "saws" small slits in the needles in October. These eggs are visible to the eye during the winter and early spring and appear as light spots along the margin of the needles. Needles typically will have 6 or more eggs laid along them. The eggs hatch in late spring and the new larvae begin feeding on the previous year's needles. The larvae are a solid green at first, but develop light green longitudinal stripes as they mature. Sawfly larvae feed in colonies and when a predator disturbs a colony,

they will all rear up in unison to form a characteristic “S” shape. This is thought to be a means of defense, apparently to surprise the predator. The larvae feed for several weeks and then drop to the ground to form the resting stage, the pupae. Just before dropping, the larvae turn brown. These brown larvae are no longer feeding. The pupae



remain in the soil beneath the tree until September or October before emerging as adults. There is only one generation per year.

The ponderosa pine sawfly is a cyclical insect. While found in small numbers throughout the Black Hills every year, the population usually expands into an outbreak stage about every eight or so years. We are currently experiencing an outbreak (2008) in the southern Black Hills. The previous outbreak occurred in the mid-90s in the northern Hills with the one prior to that in the late 80s,

also occurring in the northern Hills. Outbreaks typically last several years.

CONTROL

The larvae are relatively easy to control with pesticides. The most common pesticides used for control of sawflies contain the active ingredient acephate or carbaryl. Insecticidal soap can also be used for control. Regardless of which pesticide is used, the application should be applied as soon as the larvae are seen feeding on the foliage, preferable before the insects are more than 1/2-inch long. It is a simple task to determine whether a pine will be infested by examining the foliage in May to look for the characteristic egg slits. If no egg slits are found, the tree will not be infested that spring and no control is necessary. If egg slits are found on the needles, then the need for control should be anticipated.

The ponderosa pine sawfly attacks before the new needles form so it can only feed on the older foliage. The new foliage is the most important to the pine in regards to manufacturing food, so the loss of most of the older foliage will not result in tree mortality. The loss of this older foliage does detract from the appearance of the tree, and if the tree has already been subject to other stresses, such as drought or a previous year's defoliation, then the defoliation by the sawfly can be a contributing factor to the death of the tree.

Due to numerous pesticide labels and/or label changes, be sure the product label includes the intended use prior to purchase or use. Please read and follow all pesticide label instructions and wear the protective equipment required. Spraying pesticides overhead increases the risk of exposure to the applicator and increases the likelihood of drift to non-target areas. Consider the use of a commercial applicator when spraying large trees due to the added risk of exposure and equipment needs. The mention of a specific product name does not constitute endorsement of that product by the South Dakota Department of Agriculture.

For further information contact your nearest South Dakota Division of Resource Conservation and Forestry office. Hot Springs 605-745-5820; Huron 605-353-7187; Lead 605-584-2300; Mitchell 605-995-8189; Pierre 605-773-3623; Rapid City 605-394-2395; Sioux Falls 605-362-2830; Watertown 605-882-5367.

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