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Zimmerman Pine Moth Control in South Dakota

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The Zimmerman pine moth is a serious pest of pines throughout the United States. There actually are three different species of insects referred to as Zimmerman pine moth: *Dioryctria zimmermani*, *D. tumicolella*, and *D. ponderosae*.

Dioryctria zimmermani and *D. tumicolella* are the two most common Zimmerman pine moths in South Dakota, particularly in the eastern half of the state. The two insects have a similar life cycle and appearance. The following information relates to these two insects, not to *D. ponderosae*.

Pine species affected

Zimmerman pine moths will attack most species of pine including all the pine species grown in South Dakota. **The preferred species are two of the two-needled pines, Scotch pine and Austrian pine;** however, ponderosa pines also may be attacked. There is some variability in Scotch pine susceptibility with shorter-needled varieties suffering less injury than longer-needled varieties. Scotch pine needles are about 2 to 3 inches long and bluish-green. Austrian pine needles are 5 to 6 inches long and dark green. Austrian pine needles also are very stiff.

Damage caused

The larvae often girdle and kill the terminal and lateral branches of the tree. Trees rarely are killed by this insect but are disfigured as branches die. Weakened branches are prone to break from heavy ice or snow loads.

Symptoms to look for . . .

- **Small, soft, reddish pitch masses on the trunk or the basal portion of the branches.** Pitch masses are common near the juncture of the branch and the main trunk. The pitch may not be noticeable until the tree is examined closely.
- **Discolored or broken branches or terminal.** Yellowing or browning needles are a possible indicator of Zimmerman pine moth activity. Examine the base of the affected branch or terminal to see if a pitch mass is visible.
- **Damage may be confused with snow breakage or the pitch nodule maker.** Damage by the pitch nodule maker will occur at the tips of lateral branches rather than at the base. Check for the characteristic pitch masses of Zimmerman pine moth.

Insect's life cycle

Zimmerman pine moth larvae overwinter under bark flakes. During that time, they are too small to be seen easily. In the spring, the larvae burrow into the inner bark and begin to feed. The pinkish-green, dark-spotted larvae can be found just beneath the bark from April to June. Look for them inside shoots with discolored needles or under pitch masses. Larvae pupate in early July, forming small (3/4 in.) brownish cocoons in the bark or under pitch masses.

Adults appear in July as small brownish moths and continue to fly through August. They lay their eggs on the trunk and branches of pines. The eggs hatch within

a week, and the young larvae burrow into the bark to overwinter.

Controlling the insect

Avoid pruning pines during August. Female Zimmerman pine moths are attracted to fresh cuts for egg laying.

Remove any pitch masses before August. The females also are attracted to pitch for egg laying.

Treat pine trunk and branches with an insecticide. Spray must be applied on the bark. Spray bark until it is wet. Be sure the application is heavy enough to do more than just wet the needles. It is especially important that the trunk area just beneath the branch whorls be treated thoroughly.

Timing of insecticide application is critical. Apply spray the first week in August. If this time period is missed, the second best time to spray is early May; however, control may not be as good with the spring application.

Currently, the best chemicals to use in South Dakota (Spring 1992) are Dursban or Lindane for the August application and Cygon or Orthene for the May application.

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