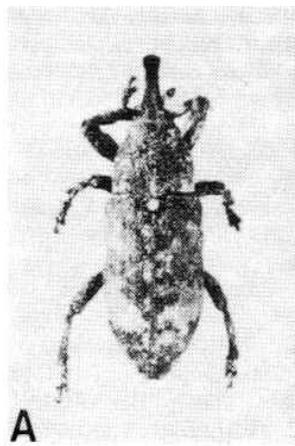


WHITE PINE WEEVIL



A

White pine weevil (*Pissodes strobi*): A) Adult, 4.5 mm long, rough-surfaced, brown-black with white, yellow, or brown scales. (Furniss and Carolin, 1977).

The white pine weevil, *Pissodes strobi*, is a concern of nurserymen and landscapers in the Willamette Valley. Hosts for this insect pest include: *Picea engelmanni*, *P. sitchensis*, *P. pungens*, and *Pinus contorta*. This weevil is known to infest many pines, Norway spruce (*Picea abies*), and occasionally even Douglas fir (Johnson, 1976).

Colorado blue spruce (*Picea pungens*) is a highly susceptible host Benyus, 1983). The death of the terminal leader can delay harvest of the spruce by 1 to 3 years. If this damage occurs late in the production rotation, the tree may not have enough time to recover and develop into a marketable product. In urban landscapes, an infestation will deform and degrade trees, thereby destroying their aesthetic quality.

Life History

Adults: The white pine weevil overwinters as an adult in the litter on the ground. In April and May the adults make feeding punctures on terminal growth from the preceding year. In the spring, adult weevils inhabit the terminal growth of a suitable tree. The adult is a typical weevil: Oval-shaped, brown with light flecks that form a band across the wing covers, and about 1/4 inch long with a prominent curved peak. After mating in May and June, the females deposit eggs in small holes they have excavated in the bark.

Larvae: During the summer, the emerging larvae initially feed in the bark of the terminal. The larvae are up to 1/4 inch long, curled, white, and legless. The larvae soon bore into the wood of the terminal branch and pupate in woody chip cocoons. New adults exit the cocoons from August on into the fall. These adults will then do some feeding on the bark of the terminals before dropping to ground where they overwinter. There is one generation per year with overlapping of broods (Furniss, 1977).

Damage

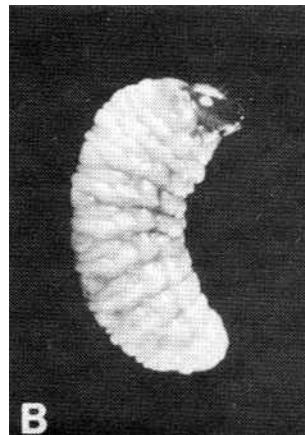
The larvae of the white pine weevil feed on the living tissue of the terminal shoot. **The stem is gradually girdled:** The current years growth will elongate normally until summer when the

entire leader, including the 2 or 3 of the top branch whorls, turns off-color, wilts, and dies. Feeding by the adults causes little damage if any.

Control

White pine weevil infestations are best controlled with a good pest management program. Components of the program include (1) monitoring pest populations, (2) cultural and sanitation methods, and (3) chemical treatments. The timing for all of the control methods is very critical.

B) Larvae attack terminals of young pines and spruce (this is in contrast to other weevils whose larvae attack the roots and root collar). (Furnics and Carolin, 1977).



B

Monitoring for the pest begins in late March. Adult weevils are difficult to locate on the host, but pitch flow from the bark cavity where the adult weevil is breeding or laying eggs is evident.

June through August is the time to watch for terminal leaders that turn off-color and wilt.



C

C) Pupal cells ("chip cocoons") are oval in outline and lined with excelsior-like shreds of wood fiber; the cells are formed at the end of larval mines, partly in the bark, but mostly in the sapwood. (Furnics and Carolin, 1977).

The current season's shoot will often curl into the shape of a shepherd's crook. Exit holes are visible on the leader stem after the new adults leave the cocoon. A field map is a useful tool for keeping track of the weevil throughout a rotation.

Sanitation: Terminal leaders that are already infested should be pruned out and destroyed by burning. It is important to note that this must be done before the new adults emerge, i.e. before August. The bark on suspect terminal

leaders should be examined for signs of egg laying cavities. Opening the bark to look for larvae may be necessary. The leader must be pruned below the larvae infested area. At the same time, prune the tree to encourage single stem/leader development. Removing the ground litter around susceptible hosts may reduce the overwintering sites available for adult weevils.

Chemical sprays are suggested when weevil infestations are likely to cause threshold levels of economic and/or aesthetic damage. Two materials recommended in the 1985 Pacific Northwest Insect Control Handbook for control of white pine weevil are Metasystox-R and lindane. Spray terminal shoots with Metasystox-R in early May and again in early June to protect new growth from egg deposition and development. Spray lindane in late April or early May when buds begin to swell. Thoroughly apply either spray to the upper portions of the tree.

REMEMBER, WHEN USING PESTICIDES, ALWAYS READ AND FOLLOW THE LABEL.

REFERENCES

- Benyus, J.M. 1983. Christmas Tree Pest Manual. USDA. p 68.
- Furniss, R.L., V.M. Carolin. 1977. Western Forest Insects. USDA 1339; 330-333.
- Johnson, W.T., H.H. Lyon. 1976. Insects That Feed On Trees and (Shrubs: An Illustrated Practical Guide. Cornell University Press. p 54-55.

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