



## White Pine Weevil

The white pine weevil, *Pissodes strobi* (Peck), occurs throughout the eastern United States. Its most common host is the eastern white pine, but it also attacks Norway spruce, Scotch pine, and pitch pine, among others. The WPW usually attacks only the upright terminal leader. The previous year's leader (first whorl) and the new growth both die from the attack. Damage is first evident in March or early April when overwintering females chew holes in the leader for feeding and egg laying. These holes, eight inches to ten inches below the terminal bud, produce resinous bleeding that eventually dries to a white crust. By late May or early June, the larval damage is evident as the current year's leader droops like a shepherd's crook, turns pale yellow and then brown. In July, the attacked shoot will have 1/8-inch diameter exit holes and tunnels and sawdust under the bark. A lateral shoot will eventually take over as the terminal leader but may have to be trained and have competing shoots removed. Trees of medium size, four feet to 40 feet, are most commonly attacked. WPW is a serious pest of forest plantations, Christmas tree farms, yard plantings, and landscapes.

### Plants Attacked

White pine weevils prefer eastern white pine and various spruces. They will occasionally attack other pines and rarely Douglas-fir.

**Description** - Adults are elongate, brownish weevils, 4 - 6 mm long, marked irregularly with gray-white patches. They look much like other *Pissodes* weevils, such as the deodar weevil. Larvae are creamy white, cylindrical, legless grubs.

**Damage** - Adults and larvae feed on terminal shoots. The first evidence of attack in the spring is excessive pitch flow from feeding punctures on the preceding year's terminal shoots. Later, new growth appears stunted, wilts and dies. Trees up to three feet tall may be killed. Dead terminals on older trees are usually replaced by one or more laterals, resulting in crooked or forked trees.



Weevil attacks cause four types of damage to occur: growth reduction, stem deformation, increased susceptibility to wood decay organisms, and tree mortality. Tree mortality is rare and only occurs in small trees (less than 1.3 m or 4 ft tall) growing very vigorously in full sunlight.

Each weevil attack reduces tree height growth by 40 to 60% in that year. Stem deformation is common because one or more laterals takes over terminal dominance of the attacked tree. If two or more laterals take over, a forked and often very bushy tree results (figure 7). If only one lateral gains dominance, the stem often maintains a crook for many years. Stem deformities may result in wood defects such as compression wood and bark-encased knots that reduce the value of sawn lumber. This reduction in wood quality is considered the major impact of white pine weevil. Finally, part of the dead leader usually persists for many years (figure 8) and may act as a point of entry for heart rot organisms such as *Phellinus pini* Ames, the major heart rot disease of older eastern white pines.

**Life History and Habits** - Adults overwinter in litter under the trees. They emerge in the spring (about March) and feed on the succulent trinal leaders. Eggs are laid in small punctures in the bark of the terminal and hatch in 7 to 10 days. Larvae bore downward side by side, feeding on inner bark and outer wood of the terminal. This feeding girdles and kills the leader. Mature larvae pupate in chambers formed in the wood. Adults normally emerge in about two weeks, although they may emerge throughout the summer. Emerging adults feed on old and mature new growth, Only one generation per year has been reported.

**Control** - In the spring, check new terminal growth closely for sign of injury. In areas of known infestation, apply control measures early (March and April) to protect new terminals from injury by emerging adults. Treatments may also be needed in late summer to early fall for newly emerging adults.



White pine weevil damaged tree with leader missing.



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