



WHITE PINE WEEVIL

Pissodes strobi (Peck)

The white pine weevil is considered the most destructive insect pest of eastern white pine in North America. This species kills the terminal leader primarily of eastern white pine. Colorado blue spruce, Norway spruce, Scots, red, pitch, jack, and Austrian pines, and occasionally Douglas-fir are also attacked. Trees become susceptible to injury when they reach a height of about three feet. The white pine weevil prefers to attack trees exposed to direct sunlight.

DESCRIPTION

The adult is a small rust-colored weevil that is about 4-6 mm long (Fig. 1). It has irregularly shaped patches of brown and white scales on the front wings. Near the apex of the front wings is a large white patch. Like most weevils, the adult has a long snout-like beak from which small antennae arise. The larval stage, which lives beneath the bark, is white with a distinct brown head. When mature, the larva is approximately 7 mm long, legless, and slightly C-shaped.

LIFE HISTORY

Adults spend the winter in the leaf litter under or near host trees. On warm spring days they fly or crawl to the leaders of suitable hosts usually during the period from mid-March through April. Most feeding by adults is done within 25 cm of the terminal buds. From mid-April through early May, females mate and each deposits one to five eggs in feeding wounds. Hundreds of eggs may be deposited in one terminal leader. The eggs hatch in about seven days. When the terminal is heavily infested larvae feed side by side in a ring encircling the stem. They feed downward on the inner bark of the leader. Larvae reach maturity in mid- to late July and pupate in the infested terminal. The pupal chambers called "chip cocoons" are filled with shredded wood and can be found inside the terminal at this time. Adults emerge in 10 to 15 days through small holes at the base of the dead terminal of the host plant usually in late July and August. During this time feeding by adults is not considered important since little is done before they enter the leaf litter to overwinter. The white pine weevil has one generation per year.

DAMAGE

The first symptom evident from attack by the white pine weevil

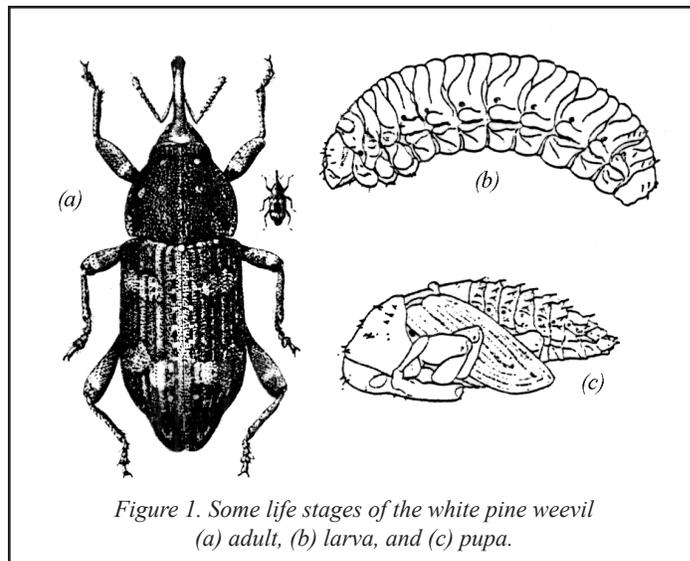


Figure 1. Some life stages of the white pine weevil (a) adult, (b) larva, and (c) pupa.

is glistening droplets of resin on terminal leaders in late March and April. This is the result of punctures made by adults in the process of feeding and cutting egg-laying sites.

Injury to eastern white pine and spruce is usually confined to the previous year's terminal leader. Damage on Scots pine often extends downward through two or three year's growth. Infested trees are seldom killed.

Most damage is done by the larval stage. Larvae are found just under the bark of infested terminals from May through July. Larvae chew and burrow completely around the stem causing the current year's growth to wilt, droop, and eventually die. One or more side branches (laterals) may then bend upward to take over as the terminal leader. At this point the tree is now permanently crooked. For several years after successful attack by this pest, a few more laterals may grow as leaders. This condition may result in a forked tree.

MANAGEMENT

Eastern white pine is most attractive to this pest when trees are less than 20 feet in height. In July look for curled, dead, or dying terminal leaders that may have the appearance of a "shepherd's crook." The infested leaders should be pruned and burned before mid-July to destroy life stages of this pest. Cut back all but one live lateral shoot just below the damaged terminal. This should promote single stem dominance on the affected host plant.

Observations of resin droplets on the leader in early spring may be an indication that adults are feeding. Application of a registered formulation of an insecticide should be made from late March through April when droplets of resin are first detected. Only the terminal leader needs to be sprayed. Insect parasitoids and predators as well as birds feed on this pest. The effect of these natural enemies is not significant enough to prevent damage.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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