



Pine engraver

Ips pini

Order Coleoptera, Family Scolytidae;
bark or engraver beetles
Native pest

Host plants: Most pine and spruce, particularly if under stress

Description: Adult beetles are brown and 3–6 mm in length. There is a posterior indentation in the hind wing covers which is spined on the lateral margins. Larvae are 4–5 mm long when mature, white with brown heads, C-shaped and legless.

Life history: In early spring, adult males chew entrance holes through bark, which they extend into nuptial chambers large enough for two or more females. Females are mated in the nuptial chambers. Each of the females construct egg galleries from the nuptial chamber. Larvae consume phloem and scour sapwood as they mature. There are three or more generations a year.

Colonizing bark beetles attack living trees and emit specialized chemicals called pheromones. Pheromones combined with plant volatiles released from the host attract a large number of beetles that then overcome the tree's defenses, construct galleries, and deposit eggs. Bark beetle predators and parasites use these chemical cues to locate bark beetles. These predators rarely control bark beetle numbers. Healthy trees respond to beetle attack by exuding copious amounts of pitch or sap from the entrance holes that harden on the bark surface to form pitch or resin tubes. Any chemical applications on the bark to kill adults must occur before the beetles enter the tree. This is difficult, since the most obvious symptoms of bark beetle attack, pitch tubes, occur after the beetles have already entered subcortical tissue.

Overwintering: Adults under bark and debris.

Damage symptoms: Sticky white pitch tubes are formed as adults bore into trees. Brown sawdust on the trunk or branches is an early indication of attack. Moderate infestations can kill small trees or the tops of larger ones. Tops will usually turn yellowish prior to their death and then they turn red. Pine engraver is a pest of stressed, old, and declining trees.

Monitoring: Adults emerge when Norway maple first blooms in mid to late April (Herms). Look in late spring for brown sawdust on bark or branches, or for white pitch tubes. Where dead or dying trees occur, check under the bark for galleries and/or larvae. Monitor tree tops for signs of yellowing that might indicate a serious infestation.

Physical control: Remove trees that are dead or dying and destroy them by chipping prior to the following spring.

Cultural control: Beetle infestations often begin on damaged or severely stressed trees. Odors emitted by trees struck by lightning, damaged by storms, mechanically injured by construction or harvesting equipment, or



Galleries in white pine caused by pine engraver. (223)
Photo: Robert L. Anderson, USDA Forest Service, The Bugwood Network, University of Georgia.



Newly initiated gallery with pine engraver adults. (192)
Photo: Scott Tunnock, USDA Forest Service, The Bugwood Network, University of Georgia.



Pine engraver adult. (192)
Photo: John Davidson



Pine engraver (continued)

severely stressed by heavy pruning attract bark beetles from other places. Pines under any kind of stress are susceptible to attack by bark beetles, particularly under beetle outbreak conditions. It is important to minimize tree stress by proper watering, fertilizing, mulching and pruning.

Chemical control: Sanitation, or the removal of heavily infested trees, can greatly improve your ability to manage this pest. Be sure to destroy all wood prior to April 15 to reduce the number of beetles that may be available to attack nearby trees. Apply a residual insecticide in mid April to kill beetles attempting to enter or leave remaining trees. Soil applied systemic insecticides (imidacloprid) have been shown to reduce injury from this pest.

Biological control: Many beneficial insects are present, but none can control bark beetle populations.

Plant mortality risk: High

Biorational pesticides: None

Conventional pesticides: carbaryl, chlorpyrifos (nursery only), permethrin