



White Pine Weevil

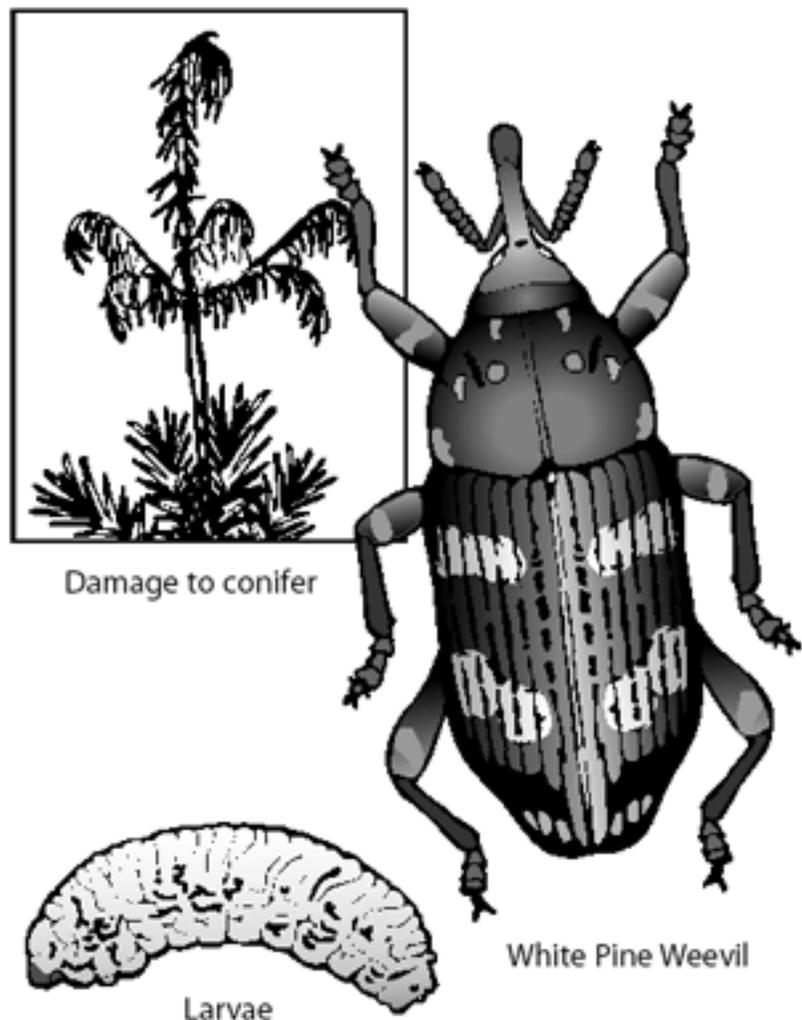
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Distribution and Hosts: The white pine weevil (WPW) (Coleoptera: Curculionidae, *Pissodes strobi* (Peck)) is found throughout Virginia. Its preferred hosts are eastern white pine and Norway spruce, but it can attack Scotch and other pines as well.

Description of Damage: 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.

Identification: The immature stage found in the leader is a small, creamy-white, legless grub with a dark brown head. The adult is a small brown weevil 1/4 inch to 3/8 inch long. It is covered with irregular shaped patches of brown and white scales. Near the end of each wing cover are a large white patch and a brown patch.

Life History: One generation of



WPW occurs per year. Adults remain hidden and overwinter in the litter on the ground or other protected places after emerging from infested terminal shoots in July. When the weather warms in March, they become active and fly to the upright leaders of the host trees. Adults feed for seven to ten days by chewing tiny holes in the bark. They then begin to deposit eggs individually in their feeding punctures. Within several days, the eggs hatch and the tiny larvae begin feeding under the bark, within the shoot, and down the stem. During this time, terminal buds open and new shoots develop normally. As the larvae become larger and the tunneling more extensive, the new growth wilts, droops, and by early July turns brown. By the end of June or early July, the larvae enter the pupal stage and transform to adults that chew their way out of the stem. Adults may fly in summer and fall, but they usually seek hibernation sites in the ground litter. They do little if any feeding until the following spring.

Control for Homeowners and Backyard Situations: Remove and destroy the infested top of the tree in the late spring before weevils emerge and seek hiding sites. In early March, treat the top sections of the tree with an insecticide such as permethrin. This will interrupt the egg laying by the adults and establishment of larvae.

Control for Commercial Production

Scouting: Look for resinous bleeding in late March or early April to find when adult females are feeding and laying eggs. Also check trees in June to determine which tops are actively infested with WPW. Check for a final time in the fall to determine the percent of trees that are infested.

Threshold for Christmas Tree Farms and Forestry Plantations: If fall surveys indicate that more than 5 percent of the trees were infested with WPW the previous season, plan on treating the whole plantation or block.

Mechanical Control: Prune out and destroy infested tops in late June. Make sure stems are cut below where weevils are feeding. Tops must be cut before the weevils make exit holes and leave.

Cultural Control: Remove all old unattended stands of white pine and Norway spruce that may be harboring populations of WPW.

Chemical Control: Treat the terminal leader with a registered insecticide before the buds open. Do not treat the lateral shoots, as they are not the infestation points. Apply the insecticide no later than late March or early April. For valuable specimen trees it may be necessary to treat each year. Consult the latest Horticultural and Forest Crops Pest Management Guide, Virginia Cooperative Extension publication 456-017, for current labeled insecticides.

Remarks: Repeated terminal dieback caused by WPW can give trees an asymmetrical crooked appearance that is aesthetically pleasing to some people. Often the nice old gnarly pine tree has been given its appearance by repeated attacks of WPW.