GRAFTED YELLOW-POPLAR RAMETS DAMAGED BY BORERS

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Extensive damage and probable eventual loss of some grafted yellow-poplar ramets in seed orchards occur from the work of borers. Their feeding often go unnoticed until the damage has been done.

This was the case in the yellow-poplar seed orchards at the Tennessee State Forest Nursery at Pinson, Tennessee, during t e spring of 1966. The first symptoms of attack showed as apparent loss of vigor in fast growing stock which had grown to be about 1-inch in diameter. The leaves started to show pale-green and yellowing at about the same time of half-leaf in late-April. Closer examination of the affected ramets at the ground line revealed numerous small holes in the bark. Bits of frass and plant exudate were noted around the openings.

Flat and slightly darkened places were noted on the bark and often extended up the stem after the borers had been present long enough for the affected area above their tunnels to die.

The damage was done to the cambium, inner bark, and immediately adjacent tissues upon which the larva feed. When a knife was inserted into the tunnel, it was very often found that the larva were working in a chamber up to 2 square inches in size, and extending well below the ground line. As many as 10 larva were taken from one tree.

Immediately after discovery of the borers, several specimens were sent to Dr. Morris of the Research Center at Stoneville, Mississippi, and to the State Forest Entomologist at Knoxville. No definite identification has been made as yet. One cocoon was found which was sent to Dr. Morris to aid in the identification and classification effort.

Various insecticides were used in an effort to control the insect. A borer spray manufactured by Ortho Chemical Company, recommended for peach tree borers, was used. Also, a 50 percent wettable DDT powder was sprinkled on and around the root collar. A systemic, Thimet, was added to help control further infestation during the year. Three days after the various treatments had been applied, the borers were still found to be active. The next step was to make a tree to tree search and dig the larva out with a knife. This can be a tedious job. No more of the live bark should be removed than is absolutely necessary. Often the damage from four or five larva completely encircle the tree. If the borers are small and have not eaten the newly formed cortex, their feeding tunnel will be bridged over by fast growing trees and actual damage will be held to a mlnimum at that point.

The larva resemble the dogwood borers in appearance but not in their activity. There were no signs of borers in prunning wounds or points of contact between branches and stem as is characteristic of the dogwood borer. Also, the tunnels do not extend into the Xylem. (See figure 1 below).

A spray program using a 25 percent emulsified DDT solution was carried out on the live grafts through July and August to control potential damage from this and other insects.

Figure 1.--(A) This tree was almost completely gridled by borers. Not enough live tissue was left to keep the tree alive until the wounds could heal. (B) Narrow strips of live tissue was left between borer damage on this tree. Healing is good, and the wounds will soon be covered.