



Trunk Borers

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Time of Concern

Pink bud through August



Pink



Figure 1. Dogwood borer, larva. Reprinted with permission from Dogwood Borer, 1985, A. Seaman, H. Riedl, and J. Cummins, © NYS IPM Program and Cornell University.



Figure 2. American plum borer. Left, larva; right, adult moth. Photos reprinted with permission from American Plum Borer, 1997, D. Kain and A. Agnello, © NYS IPM Program and Cornell Univ.



Figure 3. Flatheaded appletree borer. Left, larva; right, adult beetle. Photos reprinted with permission from Apple-boring Beetles, 1999, A. Agnello, © NYS IPM Program and Cornell Univ.

Pest Cycle

Four types of borer insects are commonly found in apple trees, especially in “low spray” situations: dogwood borer (Figure 1), American plum borer (Figure 2), flatheaded appletree borer (Figure 3), and roundheaded appletree borer (Figure 4). American plum borers are not usually a problem unless apples are planted next to neglected stone fruit orchards. Flatheaded and roundheaded appletree borers are usually problems in “low spray” orchards.

Adults of these species lay eggs on trunks early in the summer. Borers (moth larvae or beetle larvae) that emerge from these eggs enter trunks, roots, or branches especially in low-spray or unsprayed orchards. These larvae (depending on the species) spend as little as 1 year or as long as 3 years tunneling just under the bark, in the cambium, before they emerge as adults. Tunneling in trunks, rootstocks and branches can result in girdling, which can lead to death of the tree. One sign of infestation by dogwood and American plum borer is the reddish “sawdust” (which is insect excrement, or frass) coming out of the rootstock and burr knots (Figure 6).

Leopard moth larvae are yellow with black spots while the adult moth is white with black spots (Figure 5). Leopard moth larvae can also kill the shoots and the main trunk high in the tree. This is a moth that will use many tree species to raise their larvae. The eggs hatch and float to younger apple trees on the edge of the woods where they bore into a young stem at the leaf axil. The larvae will move from stem to stem, hollowing out the pith of the shoot, killing the shoot (Figure 7). They grow to 2” in length in 2 years, then pupate, and emerge as adult moths to repeat the cycle. There is only 1 generation per year.



Figure 4. Roundheaded appletree borer. Left, larva; right, adult beetle. Photos reprinted with permission from *Apple-boring Beetles*, 1999, A. Agnello, © NYS IPM Program and Cornell Univ.



Figure 5. Leopard moth. Left, larva; right, adult moth. Photo: J. Pedro Mansilla Vazquez, EIFC.

Damage



Figure 6. Borer frass on trunk – reddish sawdust around holes in trunk.



Figure 7. Leopard moth damage.



Figure 8. Burr knot. Photo: S. Hoying, Cornell University.

IPM Steps for Beginners

1. Rootstocks with lots of burr knots (Figure 8) are attractive to borers—keep trunks in full sun and weed-free to decrease burrknot growth.
2. Paint the trunks below the scaffold branches with latex paint (diluted 50% with water) to reduce winter injury bark cracking.
3. DO NOT use trunk wraps that cling to the trees (Figure 9). They provide attractive egg-laying territory for female borers. This is contrary to many older fact sheets!

Ready for More Precision?

Install mating disruption pheromones for dogwood borer in orchards larger than 5 acres. Pheromones can be used to confuse mating of dogwood borer in apples, as well as reducing lesser peachtree borers in peaches.

A coarse trunk spray of chlorpyrifos between $\frac{1}{2}$ inch green and petal fall is an option. Note: only 1 spray of chlorpyrifos is allowed per year. Assail can be used between pink bud and mid-June. Refer to the most current version of *Cornell Tree Fruit Guidelines*.



Figure 9. Trunk wrap.