Bronze Birch Borer

INSECT ANSWERS • EB1380E

The bronze birch borer, Agrilus Anxius Gory, is becoming a serious pest of birch (*Betula* spp.) in portions of eastern Washington. This native insect can be found wherever birch is grown as an ornamental. Because of an increase in plantings of birch as a shade tree, the insect is greatly expanding its range in eastern Washington. Birch is the primary host of the borer.

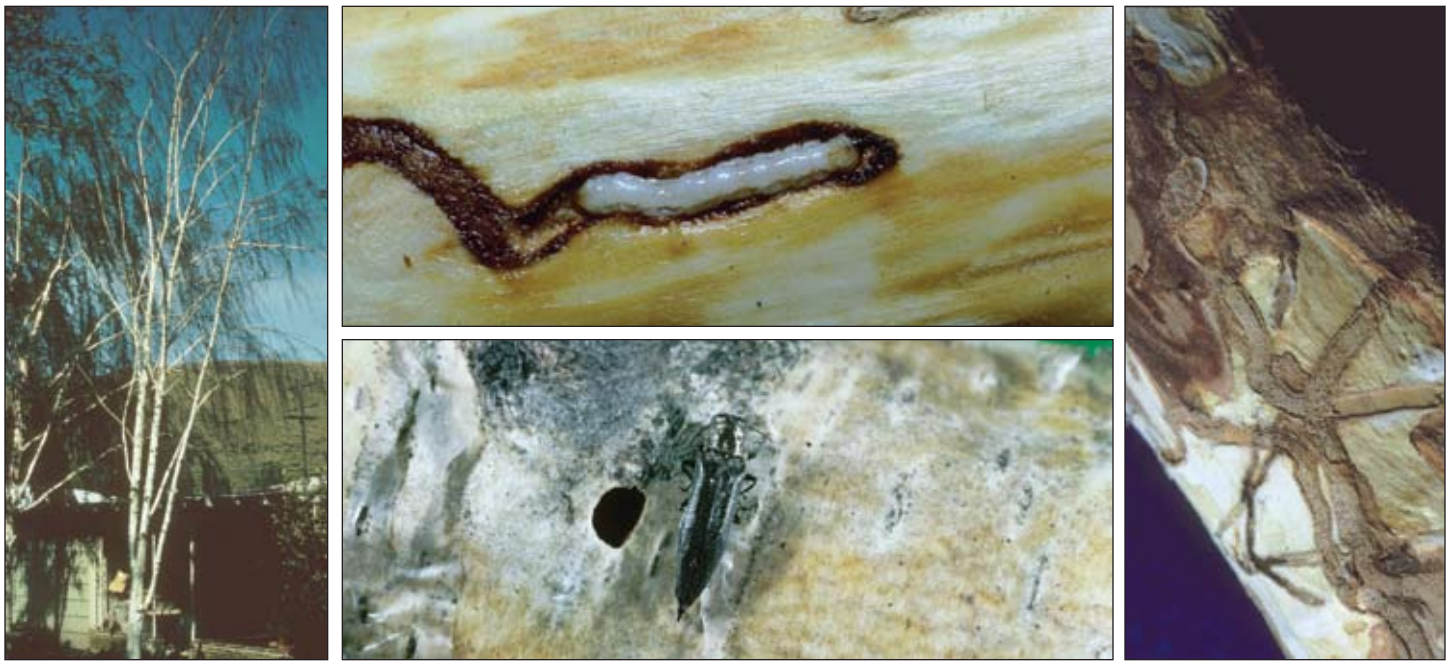
Symptoms

Damage by this insect is characteristic, but often mistaken for heavy feeding by aphids, or for problems related to stress or disease. Chlorotic leaves and sparse upper branches are the first symptoms that homeowners usually notice. Close examination will reveal lumpy bark and half moon-shaped beetle exit holes. Feeding galleries, filled with sawdust and excrement, wind under the bark. These tunnels girdle twigs or branches and interfere with normal transport of food materials, eventually killing the girdled portion of the tree.

Bronze birch borer larvae only attack trees which have been weakened by prior insect attack, adverse weather, old age, or by growing on a less than ideal site. Unchecked, beetle attacks will often kill a tree within a few years. However, healthy trees remain safe from beetle attack.

Description and Life History

The bronze birch borer passes through four distinct life stages. During July and August, adults deposit EGGS singly or in small groups under bark on sunny portions of the host tree. In about two weeks, LARVAE emerge and bore directly into the cambium area, excavating galleries between the bark and wood. These galleries wind back and forth across the grain. When fully grown, larvae are milky white, slender, and about 1 inch long. As the



Damaged and undamaged trees show severity of pest problem, left. Bronze birch borer larva excavates gallery, center above. Bronze birch borer adult and characteristic D-shaped emergence hole, center below. Galleries riddle ornamental birch, right.

weather turns cold, mature larvae construct cells in thick bark and overwinter.

In spring the larvae are transformed into PUPAE, they then emerge as ADULT beetles during June and July. Adults are deep green-bronze and between ¼ and ½ inch long. They feed on leaves for about three weeks, but cause insignificant damage. Mating and egg-laying occur during July and August, and the cycle begins again. One generation occurs each year in eastern Washington.

Natural/Cultural Control

Woodpeckers and certain parasitic wasps are major natural control agents of the bronze birch borer. However, these birds and insects are usually ineffective in controlling the beetle in urban or suburban settings.

Weakened birch trees are extremely susceptible to attack. The most effective way to prevent beetle infestations is to keep trees healthy by following a regular schedule for fertilization and watering. Other cultural controls for prevention of bronze birch borer follow.

- Control aphids which reduce tree vigor.
- Avoid mechanical injury (for example, from a lawn mower).
- Immediately prune out any sick or dying limbs.
- If tree removal becomes necessary, burn all wood. This will keep borers from emerging and infesting other trees.
- Plant borer-resistant varieties such as paper birch, *Betula papyrifera*; Monarch birch, *Betula maximowicziana*; or Whitespire, *Betula platyphylla japonica*.
- Plant these trees in areas where they will thrive; avoid sites with poor soil or where sunscald or drought is a problem.
- Use caution when applying herbicides around birch trees for weed control. Such chemicals can damage trees by reducing their vigor, and thus their resistance to insect attack.

Chemical Control

Time any insecticide applications carefully in order to control emerging adults before they lay eggs. Apply registered material available to homeowners for borer control during June and July to kill emerging adult beetles. Currently registered materials can be found on WSU's HortSense web site at *http://pep.wsu.edu/hortsense/*. Three applications are recommended at 2- to 3-week intervals to cover the extended emergence period. Effective control is possible only if all homeowners growing ornamental birch in a several block area follow these procedures. If trees are extremely large, a pest control operator may need to be called. Licensed operators use high-pressure sprayers to direct insecticides into tree tops. Thorough coverage results in better control. Injection techniques for systemic insecticides may also be used.

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