



## Bronze Birch Borer

The bronze birch borer is a small slender beetle that is slightly less than 1/2-inch in length. Its larva is one of the most devastating pests of white-barked birches in Ohio. The larval stage feeds just under the bark of birch trees. When this larval feeding girdles a branch or tree, the result is sudden wilting and death. This native North American insect occurs on birch from Newfoundland to British Columbia and south to West Virginia, Ohio, Colorado, Idaho and Oregon.

### Plants Attacked

The larvae have been recovered from most birch species but European white birch, water birch, paper or canoe birch, and yellow birch seem to be the most preferred hosts.



### Damage

Initial damage is usually discovered when the top part of a birch tree suddenly wilts and dies. This happens when a larva girdles one of the upper branches. Careful examination of branches and the trunk usually reveals raised ridges or bumps, commonly referred to as "gouting" of the branches. These are ridges formed when a larval tunnel is closed in by callous tissue of the tree.

Often, D-shaped holes are found in the bark and these may be stained with rust colored sap. These holes are emergence holes made by adult beetles.

Heavy attacks and continued reinfestation results in most of the branches dying from the top down. Eventually the trunk is girdled and the entire tree dies.



### Description and Life Cycle

Adult bronze birch borers are rarely observed because of their secretive behavior and rapid flight ability. The adults are slender, dark olive-bronze in color with a bright green iridescence underneath the wing covers. Males are usually about 3/8-inch long, while females may reach 1/2-inch in length. Most adults have a short white colored dash on the sides of the wing covers.

The larva is atypical of most flat-headed borers in having the segment behind the head only slightly wider than the body. The slender, cream-colored larvae have two short spines at the tip of the abdomen. Newly hatched larvae are about 1/16-inch long while mature larvae may be 3/4 to 1 1/4-inch long and 3/32-inch wide.

Adults generally emerge from mid-May to mid-June in southern Ohio. In northern Ohio, adults may emerge into late June. Emerging adults leave characteristic D-shaped holes in the bark. The adults feed on leaf margins for several

days before eggs are laid. Mating and egg laying activity is usually located on the sunny side of trees. Mated females seek out crevices in the bark, especially around branch scars. Occasionally eggs are placed under loose flakes of outer bark or around wounded areas. The oval eggs are creamy white when new but turn yellowish with time. The hatching larvae burrow through the attached egg shell directly into the bark within 10 to 14 days. The larvae generally bore in the cambium area but occasionally move into sapwood. The larvae usually feed laterally around the branch and tunnel in a zigzag manner. Most larvae mature by late fall and form elongate pupation cells just beneath the bark. Farther north, many larvae over winter and take a second year before maturing. Pre-pupae rest over winter in the pupae cell in a doubled-up position. Pupation occurs in late April into May.

### **Control Hints**

As with most wood boring insects, the bronze birch borer is extremely difficult to control, especially if an infestation is established. This pest seems to prefer birches located in unsuitable habitats. Birches generally grow in shady, cool and moist wooded areas. Thus, when birches are planted as an accent plant in sunny, dry urban lawns, they are rapidly attacked.

**Strategy 1: Provide Proper Habitat for Birch Growth** – If a birch is deemed necessary for urban landscape planting, select shaded and semi-moist areas. Use the north and east sides of buildings. Proper fertilization and control of aphids and leaf miners will help keep the birch vigorous and better able to withstand borers.

**Strategy 2: Use Birches Less Susceptible to Borers** - Though they do not have pure white bark, river birch is quite resistant to attack and gray birch is moderately resistant. However, gray birch is very susceptible to leaf miners and river birch is attacked by leaf aphids. Probably the best species is the Monarch birch which has white bark on older trees and is only moderately susceptible to leaf miners and aphids.

**Strategy 3: Preventive or Protectant Insecticide Applications by Calendar Dates** - Susceptible birches are rapidly attacked in sunny areas and generally require regular annual protectant insecticide applications. Protectant surface sprays are applied to the tree bark so that residual insecticide is present to kill larvae hatching from eggs. This must be done before eggs are laid and reapplications are needed if adults lay eggs over extended periods. A thorough drenching of the larger branches (1 ½-inch diameter or larger) and trunk is needed to insure the formation of the insecticide barrier under loose bark and inside bark cavities – areas where eggs are usually attached. Systemic insecticides – sprayed, soil drenched, or injected – are applied to kill feeding adults and young larvae entering the cambium area.

**Strategy 4: Systemic Insecticide Application to Control Active Borers** - This technique may reduce damage but often considerable damage has already occurred. True phloem/xylem flowable systemics may be applied – sprayed, soil drenched, or injected.

Information obtained through the Ohio State Extension Factsheet HYG-20 18-95



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