

Sherdec Tree Service

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Bronze Birch Borer

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The wood boring beetle, Bronze birch borer is a very serious pest of birch trees in the Midwest. It can severely injure and kill all varieties of white birch. The bronze birch borer only attacks trees in a weakened condition. Most often birch become weak because of drought, nutrient deficiency, construction injury, or excessive heat. Age of the tree is also a significant factor in the tree's ability to defend itself against attack by this insect. Planting birch in unsuitable locations is the main reason for problems with bronze birch borer in our area.

Life Cycle

This insect overwinters as a larva in the tree. Adults begin emerging from the tree in late May to early June depending on the weather. Adult emergence can last up to six weeks. The emergence holes are the typical D-shape of flatheaded wood boring beetles. The adults lay eggs singly or in clutches under bark flaps or in bark cracks in the branches or trunks. When the eggs hatch the larvae bore directly into the wood to begin feeding and to mature into adults. The insect can mature in one year's time however, most take two years to reach adulthood.

Symptoms and Effects

The first sign of attack is usually a thinning or dieback of branches in the upper third of the tree's canopy. Leaves on infested branches may be stunted, yellow or show marginal browning in May or June. Larvae cause the damage by

feeding under the bark and girdling the branches, which prevents water and nutrients from reaching the branch above the attack site. Trees react to this feeding damage by forming wound reaction tissue over the gallery created by the larvae. This appears as a serpentine lump under the bark. Over time the damage progresses downward to lower branches and the trunk. Typically, borers kill trees in three to four years. Very weak trees may die in one year.

Prevention and Control

The best control is prevention. Be sure birch are not planted in hot sunny locations or on hills. Planting in semi-shade is the best. Also choose native varieties of trees. They are less susceptible to borer attacks. It is essential to keep existing trees healthy. Because birch have a fairly shallow root system, water them during droughty periods. Keep the soil around the birch cool by mulching the area with an organic mulch like shredded bark or cypress. Planting low-growing shrubs to shade the soil also reduces stress. Periodic multi-nutrient fertilization helps trees remain vigorous. Preventive insecticidal sprays are available to manage an infestation until cultural controls improve the vigor of the tree. Heavy infestations of other insects, particularly birch leaf miner, reduce tree vigor; these should also be controlled.

Treatments

As a general rule, if more than a third of the tree is infested saving the tree becomes less likely. If less than one third of the canopy is infested, saving the tree is possible but not always successful.

The first thing to remember is that the insect only attacks weakened trees. The larvae can not survive in a healthy tree. The most important first step in treating an infested tree is to improve the



Adult



Larva

growing conditions through proper watering, mulching, and fertilization.

The second step is to remove borer infected branches and any deadwood from the tree crown. This pruning should only be done August through April so that the adults will not be attracted to the wounds on the tree. To prevent the breeding and spread of adult bronze birch borers, remove or destroy dead and dying trees. Use all birch firewood before spring.

The final step is to chemically control the insect with an insecticide. There are currently two methods available. The first option for control is to use a systemic insecticide called Merit (imidacloprid). Merit is applied as a soil drench or injection. It is taken up through the roots and moved into the tree. The larvae are killed as they feed on the tissue that carries the insecticide. Merit is also very effective for controlling birch leaf miner; a pest that feeds inside the leaves, compounding stress on an already stressed tree.

The other option is to spray the tree two to three times in a season with a residual insecticide. Sprays are timed to coincide with the flight of the adults. It is recommended that the tree be treated for a minimum of three years as some larvae take up to two years to emerge from the tree. Spraying trees however can be very difficult and is the least desirable of the two options. Windy or rainy weather conditions may interfere with the ability to spray the tree at a time when the insects are most vulnerable to control thereby diminishing the effectiveness of the treatments.

Your Sherdec Arborist will recommend the best treatment process after assessing your site and the condition of your tree.