

Emerald Ash Borer

The Emerald Ash Borer (EAB) is an exotic, invasive insect that has infested and killed an estimated 8-10 million ash trees since its accidental importation from Asia. It was established in Michigan, Canada and Indiana and has now been found in several areas in Illinois, including Kane & DuPage counties.

Identification:

Adult beetles are 7.5-13.5 mm (1/8-1/4 inch) long and are brassy or golden green overall, with darker, metallic, emerald green wing covers. Adult beetles emerge from infested trees in late May through early August (peak emergence mid-late June). As they emerge they leave a 1/8 inch "D" shaped exit hole.

When larvae hatch, they tunnel inside the tree, where they feed and excavate "s" shaped galleries which disrupt the flow of nutrients and water between the tree canopy and roots. This causes canopy thinning and dieback and ultimately tree death.

Detection:

It is difficult to detect Emerald Ash Borer in newly infested trees. Jagged holes excavated by woodpeckers feeding on larvae may be the first sign. When a tree has been infested for at least one year, the "D" shaped exit holes left by emerging adults will be present on the branches and trunk. Bark may split vertically above larval feeding galleries.

Treatment:

EAB has now been found in both DuPage and Kane counties. My best recommendation is to treat your ash trees that are valuable to you. Waiting for visible symptoms to appear will likely reduce the chances of survival. The best method of treatment is by professional systemic injection (or soil drench for trees too small to inject) of insecticide labeled for Emerald Ash Borer. Systemic injection allows the tree to take up the material through the entire tree and does not adversely affect the root system or soil biology around the tree. This is best done on a preventative basis. Waiting until a tree is known to be infested or shows canopy decline may be too late!

The cost for treatment depends on the size of the tree and how much material is required for treatment. We would be happy to measure your tree(s) to let you know what the cost would be.



Figure 1. Adult beetle

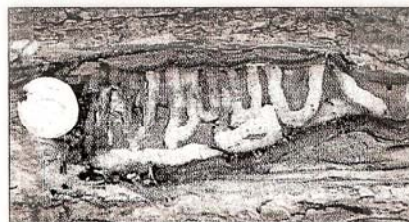


Figure 4. Larval gallery

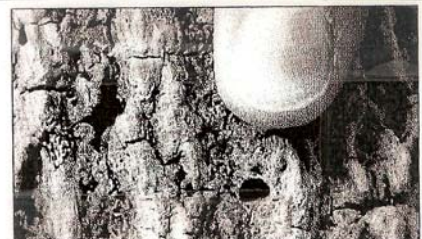


Figure 5. D-shaped exit hole

Emerald Ash Borer

By Nate Royalty, Ph.D.

What does it look like?

Emerald Ash Borer (EAB), *Agrilus planipennis* Fairmaire, adults are bright-green, metallic beetles, approximately three-eighths to five-eighths inch long. They are identified by their flat backs, green wing covers and rounded, purple abdomens. Larvae are creamy-white in color, flattened and segmented. They reach a length of approximately one inch.

Host material and range

This pest was transported from Asia to the United States in wood packing material. It was first discovered in southeastern Michigan near Detroit in the summer of 2002. Since its introduction, EAB has killed nearly every ash tree in southeastern Michigan. EAB has spread to 40,000 square miles across Ohio, Indiana and southwestern Ontario, and has been detected in northeast Illinois, Maryland, western Pennsylvania and West Virginia.

Adults emerge in May through July, leaving distinctive "D"-shaped holes in the outer bark and branches. The adults feed on the foliage of ash trees, and lay eggs on the bark. Damage is caused by the larvae, which bore into the trees and feed on the vascular tissue of ash trees, disrupting the tree's ability to transport water and nutrients. Their feeding creates serpentine galleries in the phloem just below the bark of the tree.

Current threat

Unlike ash trees in Asia, the 16 native American ash varieties have no host-plant resistance to EAB. As a result, ash trees can be killed by EAB within a few years of the initial infestation. EAB has killed more than 20 million ash trees in the Midwest and has wiped out virtually all street trees in hundreds of towns and cities. This outbreak is costing municipalities, property owners, nursery operators and forest product industries tens of millions of dollars.

Costly efforts to eradicate local infestations of the pest by quarantine and cutting down trees in infested areas have been, and will continue to be, unsuccessful.

Prevention tips

Once EAB has moved into an area, there is no way to prevent it from attacking ash trees. However, extensive university research has



Photos courtesy of Bayer Environmental Science.

demonstrated that professionally applied insecticides are the only method of protecting trees from damage and death.

The most cost-effective method of chemical control is application of imidacloprid. Annual applications of imidacloprid to uninfested trees will prevent borers from becoming established in the trees, and will enable infested and damaged trees to recover (provided that the amount of damage is not too severe at the beginning of the treatment program).

Treatment tips

The most comprehensive trials on chemical control of EAB are two four-year research studies done by Michigan State University Extension, done from 2004-2007 on heavily-infested ash trees. The results of this research show that imidacloprid, when applied at the high labeled dose to trees with less than a 50 percent dieback at the time of application, is an effective treatment of EAB, regardless of the size of the trees.

Multiyear studies also are ongoing in Illinois, Indiana and Ohio. Most research has been done on the efficacy of spring applications; initial results from trials describing the efficacy of fall applications are ongoing. To date, the results of these studies suggest that fall treatments also will provide good control.

On infested trees, the first insecticide treatment will slow the level of injury of the existing infestation in the tree. Continued annual applications will reduce or eliminate additional EAB attacks, and the tree will eventually recover.

What can you do?

Moving infested wood products is a major cause of the spread of EAB, so do not transport firewood from areas of known infestation.

Become familiar with the appearance of EAB and the telltale signs of damage. If you believe you have seen a borer, contact a local city forester, certified arborist or local cooperative extension office. If EAB has been detected within 20 to 30 miles of your area, don't wait — begin annual applications of insecticide.

Nate Royalty, Ph.D. is product development manager — insecticides, Bayer Environmental Science.

Info@Save-A-Tree.net

P: (630) 790-1973