

Emerald Ash Borer



DELAWARE DEPARTMENT OF
AGRICULTURE

Quick Take

What:

The Emerald Ash Borer is a destructive wood-boring pest of all North American ash trees. This small, green beetle belongs to a large family of beetles known as buprestids, or metallic wood boring beetles.

Significance:

In 2016, Delaware found a single introduction of EAB in New Castle County. The state began to find larger populations of EAB in 2018, including Sussex County.

The overall impact is expected to be minimal, as ash trees make up two percent of Delaware's tree stock and the state has been preparing for more than a decade. Communities where ash is considered to be a nice looking, large street tree will likely be impacted.

Trees attacked die within a few years of colonization.



What is Emerald Ash Borer?

The emerald ash borer (EAB), *Agrilus planipennis* Fairmaire, is a small, green exotic beetle that belongs to a large family of beetles known as the buprestids, or metallic wood boring beetles.

They can travel to new areas by natural means, as well as on firewood, timber and nursery stock. The emerald ash borer feed under ash tree bark during its larval stage, which damages and eventually kills the trees. Adult EABs emerge in the spring and mate shortly thereafter, with each female laying 60 to 90 eggs in a lifetime. In the spring, pupae transform into adults and emerge through "D"-shaped exit holes.

Native to Asia, EAB was unknown in North America until its discovery in southeast Michigan in 2002. Since then, EAB has killed millions of ash trees, with numbers rising every year. The potential for damage is very high. In Delaware, ash are relatively minor components of the native forest, found mainly in streamside areas and flood plains. In some urban areas, ash is the predominant large street tree.



Emerald ash borer larva creating galleries under the bark of an ash tree.
(David Cappaert, Bugwood.org)

What can homeowners do?

As a homeowner, you should:

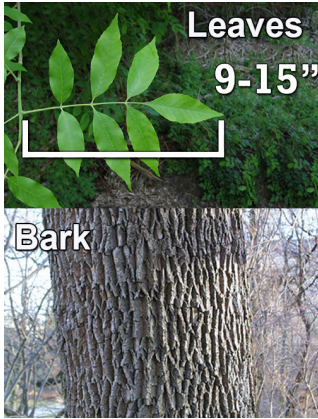
- Find out if you have an ash tree on your property and monitor trees for signs of poor health or damage according to this fact sheet on EAB.
- If your property is within 10-15 miles of a known EAB infestation, your trees are probably at risk.
- Treating trees beyond 15 miles will likely provide little or no benefit to the trees and will result in unnecessary exposure to pesticides in the environment.
- If you have ash trees on your property, we encourage property owners to consult a certified arborist for a tree health inspection.

Visit www.isa-arbor.com to search for one near you. Trees that look fine or do not have EAB might have other health issues.

- Do not plant ash trees if you are considering a new tree for your property. Consult the list included at the end of this fact sheet for an ash alternative.
- Stay up-to-date on EAB in your area by checking out the following websites: de.gov/ashtrees, emeraldashborer.info, and hungrypests.com.

de.gov/ashtrees

Signs and Symptoms of EAB



Symptoms of an emerald ash borer infestation may not be apparent immediately, with damage taking up to three years to be visible. Symptoms can include extensive branch dieback in the upper crown, sparse foliage, vertical bark splits, mushrooms on the trunk or branches, small shoots (epicormic branching) on the trunk, as well as woodpecker damage.

Proper tree identification is important when looking for ash trees to monitor for signs of emerald ash borer.

How Do I Treat My Trees?

Early infestation of EAB is often hard to detect; therefore, if you live within 10-15 miles of a known detection, you should consider treatment. Trees already infested with EAB are treatable if the damage is not severe. If you have large ash trees on your property or ash trees in your community, we suggest you contact a certified arborist to care for your trees. If you decide to treat your ash trees, there are three main pesticide applications:

Soil drench or soil-applied granules (Property owner)

- Applied around the trunk for uptake through the roots.
- May not be evenly distributed in large trees or in unhealthy trees, resulting in inadequate control.
- Exposes soil to pesticide creating potential for contamination of water resources (lakes, streams, wells, groundwater, etc.)

Trunk injections (Professional application)

- Trunk injections typically have less negative effects on non-target organisms and the environment because the insecticide is contained within the tree.
- Proper application requires skill to limit internal damage.
- Placed in holes drilled around the trunk.
- Cumulative effects of trunk damage is a concern.

Foliar spray (Professional application)

- Very difficult to achieve good spray coverage, especially on large trees where the canopy is far from the ground.
- Multiple applications in a season are needed.
- Spray drift is possible. This exposes the environment to pesticides and can possibly kill beneficial insects.

Most of the pesticides used to treat EAB are broad spectrum, meaning they are toxic to many organisms, including humans, if not handled properly. Always read the pesticide label.

Treatment Alternatives

Removing an ash tree and planting another species recommended by the Delaware Forest Service is an alternative to chemical treatments. Immediate removal is not necessary as long as the tree is in good health. Trees outside of an infested area may live for many years. As you look to replace trees, make sure to diversify your selection. Trees that should not be planted because they are invasive and can displace native vegetation include Norway maple; tree of heaven (ailanthus); paulownia; mimosa; white mulberry; Bradford pear; and Chinese elm.

Ash Alternatives

Many broadleaf trees are available as replacements for ash:

LARGE TREES

Basswood
Beech
Blackgum
Buckeye
Catalpa
Chestnut Oak
Ginkgo
Hackberry
Hickory
Horse-chestnut
Kentucky Coffeetree
Littleleaf Linden
Pecan
Post Oak
Red Maple
River Birch
Silver Maple
Sugar Maple
White Oak
Willow Oak
Yellow Poplar

SMALL TO MEDIUM TREES

American Hornbeam
Black Birch
Honeylocust
Kousa Dogwood
Persimmon
Redwood
Serviceberry
Sassafras
Sweetbay Magnolia
Washington Hawthorn

EVERGREEN

American Holly
Eastern Red Cedar
Norway Spruce
White Pine
Loblolly Pine
Yew