

Emerald Ash Borer

TREE DOCTOR TIPS

Emerald Ash Borer

DESCRIPTION:

Emerald ash borer (EAB) is an Asian beetle that threatens the existence of ash trees throughout North America. These insect pests have killed millions of ash trees in urban areas, woodlots and nurseries, spreading via infested nursery stock and firewood. Regulatory quarantines rely on public cooperation and can be difficult to enforce. They can slow the spread of EAB, but cannot stop it.

Adults are elongated, metallic green and 3/8 to 5/8 inches long. They feed on foliage, leaving jagged edges, but doing little damage, if any, to trees. Damage occurs in the grub-like larval stage. Larvae are cream-colored, flattened and 1 to 1¼ inches long when mature.

HOSTS:

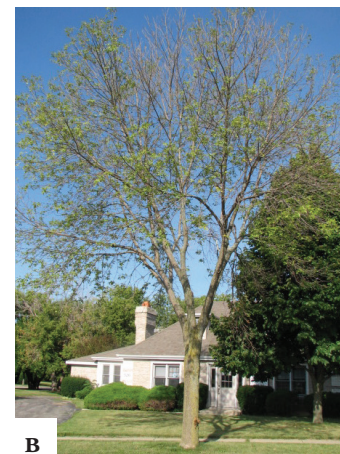
All native species of ash (green, white, blue and black), as well as their horticultural cultivars, are susceptible to attack. Since its discovery in 2002, EAB continues to spread wherever ash trees grow.

BIOLOGY AND SYMPTOMS:

EAB belongs to a group of wood boring beetles known as metallic wood borers or flatheaded borers. EAB usually completes its life cycle in one year, although some larvae can remain in trees for two years. EAB overwinters as mature larvae under tree bark, or in small chambers in the outer sapwood. In early spring, the larvae transform into pupae, still in the chambers. In late May or June, adult beetles chew out and emerge, leaving D-shaped holes in the bark. These 1/8-inch holes are positive indicators of EAB infestation.



A



B



C



D



E

FIGURE A. EAB TUNNELING UNDER BARK

FIGURE B. EMERALD ASH BORER DAMAGE, NO SPROUTS

FIGURE C. EAB D-SHAPED EXIT HOLES IN TRUNK

FIGURE D. PUPA AND LARVA, EMERALD ASH BORER

FIGURE E. ADULT, EMERALD ASH BORER

(Steven Katovich, USDA Forest Service, Bugwood.org)

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*The scientists at **The Davey Institute** laboratory and research facility support our arborists and technicians in diagnosing and prescribing based on the latest arboricultural science. For specific treatment and application details, your arborist may consult **The Davey Institute's Plant Health Care Book**.*



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Heavy woodpecker activity is also a symptom of EAB infestation. Woodpeckers eat EAB larvae just beneath the bark, especially in winter, when other food sources are scarce. EAB infested trees may have numerous holes drilled in their trunks.

The D-shaped emergence holes and S-shaped larval tunnels under the bark are the most reliable indicators of EAB presence. Trees under attack will also show varying degrees of canopy thinning, branch dieback and longitudinal bark splitting. Usually, symptoms appear first in the portions of the upper canopy and progress downward over several years. Intense tunneling may cause trees to lose 30% to 50% of their canopies during the first year. Trees often die within two or three years after infestation.

Unfortunately, crown thinning, dieback and trunk sprouts can be present on ash trees with other problems besides EAB, so these symptoms should not be relied upon to positively identify EAB infestations.

MANAGEMENT:

Cultural practices that help improve tree health (proper watering, mulching and fertilization) cannot be relied upon solely to protect trees from EAB. EAB attacks healthy trees as well as stressed ones. Cultural practices can help trees tolerate and recover from EAB injury when combined with other management practices.

Insecticidal treatments are available to help protect high value trees, although not every tree is a good candidate. It may be better to remove, rather than treat, trees with poor form or structure, in poor health or with existing EAB damage.

University research shows insecticidal treatments applied to the soil or trunk, or injected directly into the trunk, can be effective against EAB. The best choice of treatment varies, depending on the property and environment.

No one treatment is suitable for every scenario. To be effective, insecticidal treatments should be started before trees fall under attack. It is important to remember that not every treated tree will survive.

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