

## NEBRASKA FOREST SERVICE

# Emerald Ash Borer

## Guidelines for Nebraska Homeowners



**Laurie Stepanek, Forest Health Assistant**

Emerald ash borer (EAB) is a serious threat to valuable ash trees found in home landscapes. Because of the aggressive nature of EAB, trees in infested areas that are to be saved will likely require treatment throughout their lives.

The cost of treatments can be considerable. This publication provides guidelines to help you evaluate your tree, discusses options for treatment, and provides information on replacing ash trees with other species.



*Ash trees provide shade, autumn color, and many other benefits that enhance the value of a home.*

### Should My Tree Be Treated?

Consider the following factors when deciding whether to treat your tree for EAB.

#### Proximity to EAB

- Treatment is recommended when EAB is known to be within **15 miles** of your location.
- Treating trees beyond 15 miles will likely provide little or no benefit to the trees and will result in unnecessary exposure of the environment to pesticides.
- State and federal agencies monitor EAB infestations and will provide updates on infestations in Nebraska.
- Visit the Nebraska Forest Service for information about when to begin treatments ([www.nfs.unl.edu/EAB.asp](http://www.nfs.unl.edu/EAB.asp)).

#### Infested with EAB

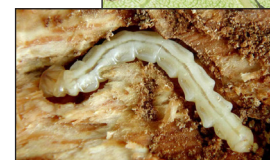
- Trees already infested with EAB are treatable if the damage is not severe.
- Trees with more than 50% canopy loss will likely not recover.
- In some communities, removing infested trees may be mandatory.



*Tree dying from emerald ash borer.*



David Cappaert  
Michigan State Univ.  
Bugwood.org



David Cappaert  
Michigan State Univ.  
Bugwood.org

*EAB adult (top) and larva.*

## Tree Health

- Trees not infested with EAB may still have other health issues.
- Look for extensive branch dieback, sparse foliage, conks (mushrooms) on the trunk or branches, or severe trunk injuries.
- These trees are not good candidates for treatment and may need to be removed for safety reasons.



Trees in poor health are generally not suitable for treatment. Left: Extensive dieback; Right: Decay around pruning cut.

## Site Issues

- Trees growing too close to buildings, fences or sidewalks or under electrical wires may eventually damage these structures or interfere with their functioning.
- These trees should be removed rather than treated for EAB.



These poorly sited trees will eventually interfere with the sidewalk (above) or the overhead wires (right).

## Tree Value

- A well-placed tree may provide shade for the home, screen an undesirable view, block wind or reduce noise.
- Trees increase property values, improve air quality, and slow stormwater runoff.
- Some trees have high sentimental or historical value.
- The annual economic value of a tree can be a guide to the amount a homeowner might be willing to spend each year on tree care, including pest control (see table below).

### Estimated Annual Economic Value of a Green Ash Tree\*

Trunk Diameter (inches)	Western & Central Nebraska	Eastern Nebraska
5	\$101	\$34
10	\$182	\$88
20	\$250	\$201
30	\$219	\$306

\*Based on the National Tree Benefit Calculator: [treebenefits.com](http://treebenefits.com). Values based on single-family residential property. Values for white ash are similar. Diameter = Cross-sectional distance through the trunk.

## Tree Size

- Very small trees are generally easier to treat successfully, but the treatments will cost more over time than removing and replanting with a tree that is resistant to EAB (see page 4).
- Large trees can be more difficult and expensive to treat, but they typically provide more benefits than a small tree.
- Removal and replanting is still an option with large trees, but the cost of removal may be high, and the benefits lost are not quickly regained by the newly planted tree.

## Environmental Effects

- Many insecticides are used to treat for EAB, and each has a different impact on the environment.
- Most are broad-spectrum pesticides, toxic to many organisms, including humans. Check pesticide labels for more information.
- Trunk injections and implants typically have less effect on non-target organisms and the environment compared to soil treatments and foliar sprays because the insecticide is contained within the tree.

## Understanding and Choosing Treatments by Professionals\*

Professional treatments for emerald ash borer have advantages and disadvantages. When choosing an arborist to treat your trees, look for a certified<sup>†</sup> arborist and discuss with them their treatment methods.

### Trunk Injection

- Involves pressure-injecting an insecticide into holes spaced around the lower trunk of the tree.
- Most methods require drilling the holes.
- Usually done in late spring to early summer before EAB eggs hatch.
- All injection methods cause some internal damage.
- Large, deep holes can cause extensive internal damage that may affect the long-term health of the tree, even if EAB is controlled.
- In general, the smaller the hole and amount of product injected, the less damage to the tree.

### Foliar or bark sprays

- Foliar sprays control adult beetles feeding on leaves.
- Bark sprays protect against branch and trunk attack by newly hatched larvae.
- Applied in late spring or early summer prior to emergence of adults. A second application may be required in midsummer.
- Pesticide exposure to non-target organisms is a concern.

### Soil treatment

- Applied as a drench or by injection into the soil.
- Taken up by the roots and carried throughout the tree.
- Distribution in large trees may be uneven, resulting in inadequate control.
- Exposes soil to insecticidal residues. Contamination of lakes, streams, groundwater, wells and other water resources is possible.
- The most commonly applied soil treatment contains imidacloprid, which typically requires 60 days or longer to distribute throughout the tree. Application is done in fall or early to mid-spring.

## Insecticide Treatments for Homeowners

A limited number of insecticides are available to homeowners. Because control of EAB can be difficult, consider a professional treatment for large trees.

### Soil drench or soil-applied granules

- Applied around the trunk for uptake through the roots.
- May not be evenly distributed in large trees, resulting in inadequate control.
- Exposes soil to pesticide. Potential for contamination of water resources: lakes, streams, wells, groundwater, etc.
- Example of a product: “*Tree & Shrub Insect Control*”<sup>‡</sup> (active ingredient: imidacloprid or dinotefuran).

### Trunk implants

- Placed in holes drilled around the trunk.
- Proper installation of implants requires skill to limit the internal damage that occurs.
- Cumulative effects of trunk damage is a concern.
- Example of a product: “*Acecap*”<sup>‡</sup> (active ingredient: acephate).

### Foliar spray

- Difficulty achieving good spray coverage of large trees.
- Multiple applications in a season are needed.
- Exposes environment to pesticide. Drift of spray possible.
- Example of a product: “*Borer, Bagworm, Tent Caterpillar & Leafminer Spray*”<sup>‡</sup> (active ingredient: spinosad).

\*For more details on treatment options, see publication FH13-2012: "Emerald Ash Borer Treatment Options"

† For information on how to hire a certified arborist, visit the Nebraska Forest Service: [www.nfs.unl.edu/EAB.asp](http://www.nfs.unl.edu/EAB.asp)

‡ Mention of product does not indicate endorsement. Read and follow pesticide label.

## Removing Ash Trees

Removing an ash tree and planting another species 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 many years.

Your community may provide guidelines for removing ash trees, such as designating an ash disposal site. Because of the severe nature of EAB, a quarantine will likely be placed on all ash material in and around the infested area. Do not save ash wood for firewood or other purposes and do not transport ash wood outside of quarantined areas.

## Ash Alternatives

Many broadleaf trees are available as replacements for ash. More than 60 species of medium to large trees are adapted to eastern Nebraska. At least 30 species can be grown successfully in the west.

Visit your local city park or arboretum to see a variety of trees growing under local conditions.



Northern catalpa flowers



Chinkapin oak leaves



Kentucky coffeetree in Alliance

### Medium to Large Trees Adapted across Nebraska

American linden	Bur oak
Littleleaf linden	Chinkapin oak
Hackberry	English oak
Honeylocust	Northern catalpa
Miyabe maple	Black walnut
Ohio buckeye	American elm
Kentucky coffeetree	<i>disease-resistant selections</i>

... and many others!

For more information, visit the Nebraska Statewide Arboretum: [arboretum.unl.edu](http://arboretum.unl.edu)