

# Emerald Ash Borer: Homeowner Guide to Insecticide Selection, Use, and Environmental Protection



## Before Using an Insecticide Consider the Following

### ✓ Identify if EAB is Near

Start insecticide treatments only when your property is within 15 miles of an EAB infestation, or if you are within a county that is quarantined for EAB. Check [MDA's Interactive EAB Survey Map](#) for current infestations in Minnesota.

### ✓ Remove and Replace Ash Trees on Your Property

It may be more cost effective to replace a small or struggling ash tree than to pay the cost of ongoing treatments. In addition, trees in poor health are not likely to respond well to treatments. Do not treat trees showing more than 50 percent canopy decline; these ash trees are unlikely to recover even if treated.

### ✓ Treatment Requires a Long-Term Commitment

Once EAB arrives in an area, it will remain a constant threat to ash trees. It is likely that protective insecticide treatments will be needed for the rest of the tree's life at a potentially significant cost.

### ✓ Check Your Calendar – Timing is Everything

To ensure the insecticide is in the leaves by the time adults emerge to feed in early June, soil-applied insecticides available to homeowners are most effective when applied mid- to late spring or in mid-fall. Do not apply products when the soil is frozen. Refer to the table on page 2 for more information on the timing of different insecticide options. Weather conditions or other factors may alter these recommendations. Read pesticide labels carefully and consult a certified arborist or licensed professional pesticide applicator for more details.

### ✓ Contact a Certified Arborist or City Forester to Evaluate Treatment Options

When contacting a professional, consider the following:

- Your city or township may have requirements or prohibitions related to the treatment of EAB, especially for ash trees located on city property, which may include trees planted on or near boulevards or sidewalks. Check with your city's park and recreation or forestry departments.
- Many effective products are best administered by professionals. If hiring a professional, check to make sure that they are licensed in Minnesota as a Commercial Pesticide Applicator for category "E: Turf and Ornamentals."

### ✓ Have a Professional Treat Large Ash Trees

There are homeowner treatment options for small ash trees, though these require careful application to avoid unintended environmental impacts. Homeowners wishing to protect trees larger than 48 inches in circumference (as measured 4½ feet above ground level) should have their trees professionally treated.



## Insecticide Treatment Options

Professionals have access to some products that are not available to homeowners. This document does not endorse the listed insecticide products over other options.



### Products Marketed to Professionals and Arborists

Insecticide Active Ingredient	Examples of Products	Treatment Frequency and Timing	Application Methods	Environmental Profile
Emamectin benzoate	<ul style="list-style-type: none"> <li>TREE-äge</li> </ul> <p><i>Restricted Use Pesticide</i> Any person using this product is required to be a licensed or certified pesticide applicator.</p>	Every 2 years Early May to mid-June	Trunk injection	<ul style="list-style-type: none"> <li>Persistent in tree tissue, relatively immobile in the environment.</li> </ul>
Azadirachtin, (neem tree seed oil)	<ul style="list-style-type: none"> <li>TreeAzin</li> </ul>	Once per year Early May to mid-June	Trunk injection	<ul style="list-style-type: none"> <li>Classified as a biopesticide, minimal or no exposure or risk to non-target organisms, habitats or water.</li> </ul>
Dinotefuran	<ul style="list-style-type: none"> <li>Safari</li> <li>Transtect</li> </ul>	Once per year (bark spray) 1 – 2 times per year (other methods) Early May to mid-June	Bark spray, soil injection, soil-applied drench	<ul style="list-style-type: none"> <li>Strong potential to leach to shallow groundwater.</li> <li>Potential exposure to adjacent water bodies through spray drift and runoff events.</li> </ul>
Imidacloprid	<ul style="list-style-type: none"> <li>Merit products</li> <li>Xytect products (may also be marketed to homeowners)</li> <li>Ima-jet</li> </ul>	1 - 2 times per year Mid- to late spring and/or mid-fall	Trunk injection, soil injection, soil-applied drench	<ul style="list-style-type: none"> <li>Highly toxic to aquatic life.</li> <li>Potential to leach to shallow groundwater or be transported in runoff when using soil injection or drench.</li> </ul>

### Products Marketed to Homeowners

Insecticide Active Ingredient	Examples of Products	Treatment Frequency and Timing	Application Methods	Environmental Profile
Dinotefuran	<ul style="list-style-type: none"> <li>Green Light Tree and Shrub Insect Control with Safari</li> </ul>	Once per year Early May to mid-June	Granular soil-applied product	<ul style="list-style-type: none"> <li>Strong potential to leach to shallow groundwater.</li> <li>Potential exposure to adjacent water bodies through runoff events.</li> </ul>
Imidacloprid	<ul style="list-style-type: none"> <li>Bayer Advanced Tree and Shrub Insect Control</li> <li>Bonide Tree and Shrub Insect Control</li> <li>Ferti-lome Systemic Insect Drench</li> <li>Ortho Max Tree and Shrub Insect Control</li> </ul>	Once per year <sup>1</sup> Mid- to late spring or mid-fall	Soil-applied drench	<ul style="list-style-type: none"> <li>Highly toxic to aquatic life.</li> <li>Potential to leach to shallow groundwater or be transported in runoff.</li> </ul>
Imidacloprid	<ul style="list-style-type: none"> <li>Bonide Systemic Insect Spray</li> </ul>	May not be practical for trees > 20-25 ft. in height <sup>2</sup> Check with an arborist	Insecticide spray to tree canopy or bark	<ul style="list-style-type: none"> <li>Highly toxic to aquatic life.</li> <li>Tree canopy (foliar) sprays can lead to drift, posing risks to surface water, children, pets and nearby flowering plants (with potentially toxic affects to bees and other pollinators).</li> </ul>

1. Recommended only for trees less than 48 inches in circumference (as measured 4½ feet above ground level)

2. Due to the chances of insecticide drift to other areas during a canopy or bark spray, they are best applied by professionals. Additionally, there is little research to support the efficacy of canopy spray products.

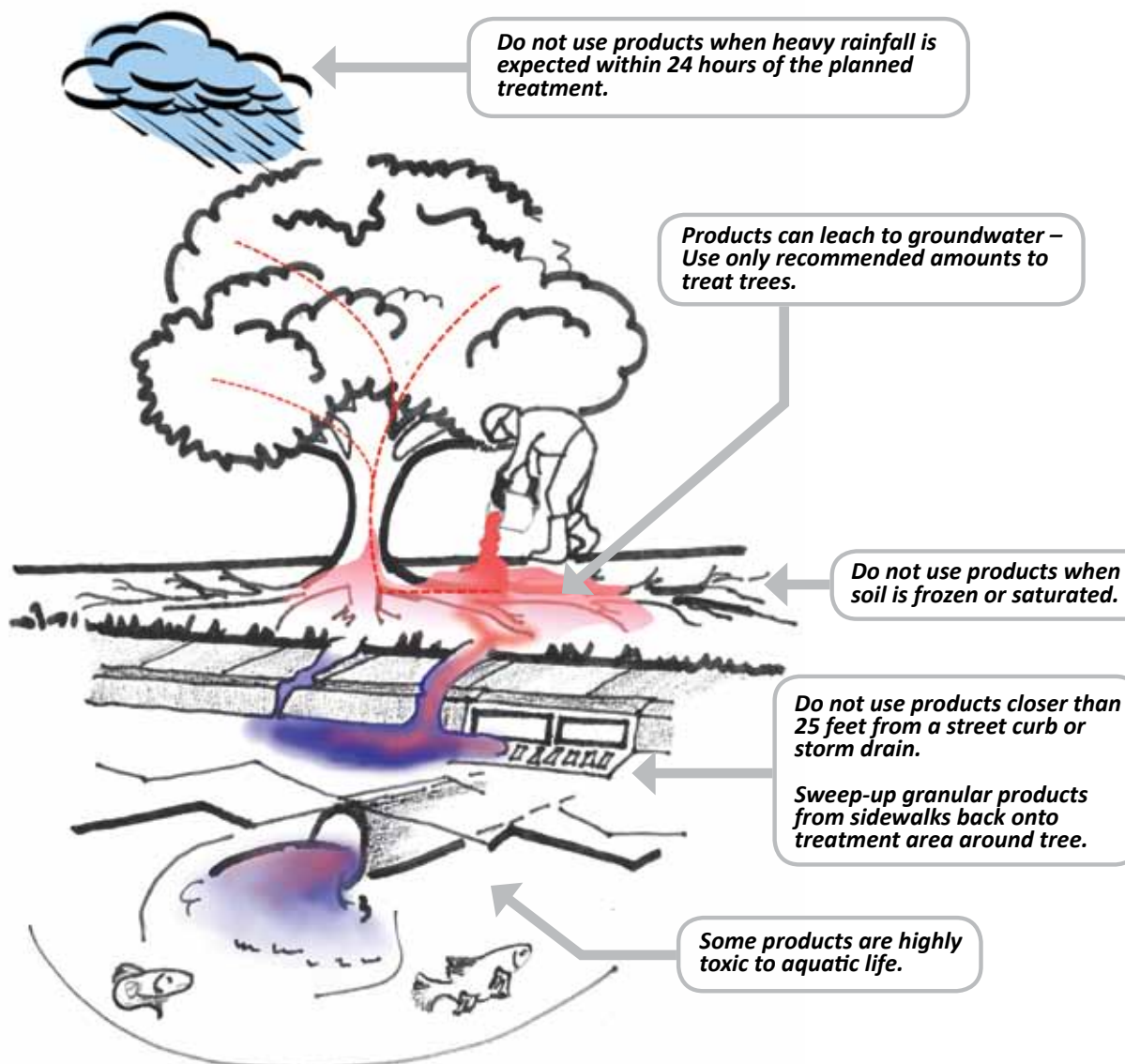
## Follow These Recommendations to Protect Water Quality

Generally, professionally applied tree injections have significantly fewer concerns for water quality.

For soil-applied products, bark sprays or sprays applied to tree canopies, the following considerations are important:

- Do not use within 25 feet of water bodies; such as, streams, lakes, ponds, wetlands or conduits to surface water or groundwater such as street curbs, storm drains, sumps, or well heads.
- Do not apply when heavy rainfall is expected within 24 hours of the planned treatment.
- Do not allow sprays to drift. Avoid spraying trees when there is wind. These sprays pose exposure risks to surface water, children, pets and nearby flowering plants (with potentially toxic affects to bees and other pollinators).

### Avoid situations that could cause insecticides to wash away or leach, potentially contaminating water resources



## Making Sense of EAB Insecticide Labels

**Read the Label!** It is your legal responsibility to read, clearly understand, and follow all current label directions for the specific insecticide product being used.

### Selecting an Insecticide:

- Look for products marketed to control emerald ash borer (see table in this guide).
- Read the *Environmental Hazard Statements* on the insecticide label. Products applied as a canopy spray are likely to result in a considerable amount of insecticide drift, even when conditions are ideal.

### Using an Insecticide:

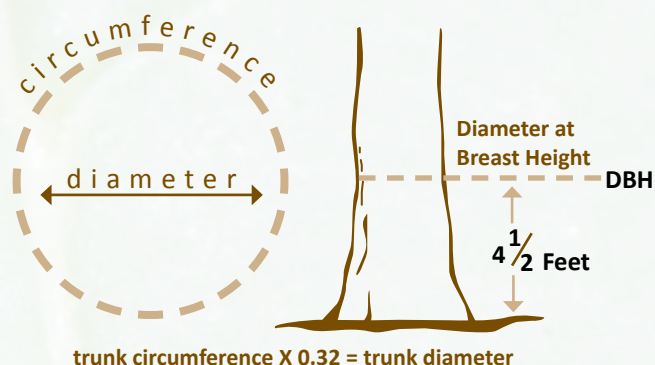
- To facilitate uptake, soil-applied insecticides should be applied when the soil is moist but not saturated or excessively dry.
- For soil drenches remove or rake any mulch or dead leaves, then pour the insecticide solution directly onto soil.
- Do not allow children and pets to re-enter treatment area until sprays or drenches have dried.
- Store insecticides where children cannot reach them.
- Many homeowner products only allow one soil drench application per year.



### Disposing an Insecticide:

- When using the last of a liquid insecticide container, triple-rinse before disposal, then apply the rinse water as you would apply the insecticide.
- Unusable and unwanted insecticides must be disposed of according to the label directions, or at a county household hazardous waste disposal event.
- It is illegal to bury or burn a insecticide.

## Measure your Ash Trees

Soil-applied insecticide treatments available to the general public are most effective on smaller trees, less than 48 inches in circumference.



CONVERSION TABLE	
Tree Measurements at 4½ Feet Above Ground Level	
Circumference – Inches	Diameter at Breast Height (DBH) – Inches
15	5
20	6
25	8
30	9.5
35	11
40	13
45	14
> 48 inches 	> 15 inches 
Large trees should be treated by a professional	

## Additional Resources

### Emerald Ash Borer Online Resources

- Minnesota Department of Agriculture – <http://www.mda.state.mn.us/eab>
- University of Minnesota Extension – [www.extension.umn.edu/issues/eab](http://www.extension.umn.edu/issues/eab)
- USDA-APHIS – [www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/emerald\\_ash\\_b](http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b)
- Minnesota Department of Natural Resources – [www.dnr.state.mn.us/invasives/terrestrialanimals/eab](http://www.dnr.state.mn.us/invasives/terrestrialanimals/eab)
- City of St. Paul – [www.stpaul.gov/index.aspx?NID=2495](http://www.stpaul.gov/index.aspx?NID=2495)
- Minneapolis Park and Recreation Board – [www.minneapolisparke.org/default.asp?PageID=1059](http://www.minneapolisparke.org/default.asp?PageID=1059)
- EAB Multi-State Site – [www.emeraldashborer.info](http://www.emeraldashborer.info)

### Pesticide Disposal

For more information about disposing of unusable or unwanted pesticides, visit MDA online at [www.mda.state.mn.us/chemicals/spills/wastepesticides/schedule.aspx](http://www.mda.state.mn.us/chemicals/spills/wastepesticides/schedule.aspx) or 651-201-6562.

### Reporting and Investigating Pesticide Spills and Misuse

Complaints can be reported to the Minnesota Duty Officer at 800-422-0798.

MDA staff will evaluate the information provided and if a pesticide misuse is suspected, an MDA inspector will be assigned. More information is available online at [www.mda.state.mn.us/chemicals/pesticides/complaints.aspx](http://www.mda.state.mn.us/chemicals/pesticides/complaints.aspx)