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Iowa Insect Information Notes

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Emerald Ash Borer FAQ

Frequently Asked Questions about the Emerald Ash Borer

(Additional information about the emerald ash borer is available [here](#) [1]).

1. **What is the emerald ash borer?** It is an insect that belongs to a group of metallic wood boring beetles. These insects normally serve to kill weakened trees, a part of the natural nutrient recycling scheme. However, emerald ash borers kill vigorously growing or weakened ash trees.
2. **What do emerald ash borers look like?** Adult [2] beetles are bright metallic green in color with very short antennae. Adults are ½ inch long and one-eighth inch wide. Larvae [3] are creamy white in color and have flattened, segmented bodies. Older larvae grow up to an inch long.
3. **Where did the emerald ash borer come from?** The natural range of this beetle is northern China, Korea, Japan, Mongolia and eastern Russia. Based on literature records, the emerald ash borer had never been found outside Asia. It is not considered a major pest of ash trees in its native region.
4. **How did emerald ash borer get to the United States?** Although no one knows exactly how the insect gained admittance to our country, it most likely arrived in solid wood packaging materials that originated from Asia. This could include ash wood used for crating, pallets, or stabilizing cargo in ships.
5. **What types of trees does the emerald ash borer attack?** In North America, it is only found in ash trees – green, white, black, blue, pumpkin, Marshall seedless, Autumn Purple and Summit are examples of susceptible species and cultivars. Ash trees in any setting (forest, landscape, woodlots, or fencerows) have been affected in infested areas. Branches as small as 1 inch diameter to trunks exceeding 2 feet in diameter have been colonized by this beetle.
6. **What happens to infested ash trees?** Tunnels excavated by feeding larvae destroy the water and nutrient conducting tissues under the bark; this effectively starves the ash tree. The canopy of heavily infested trees will begin to die, usually near the top and progressing downward. Sometimes, infested ash trees produce epicormic (“water”) sprouts on the trunk or branches below emerald ash borer activity. Adult feeding (removal of tissue along leaflet edges) can be seen on affected ash trees. The bark may crack directly over larval galleries. Adult beetles chew characteristic “D”-shaped exit holes as they leave former feeding sites below the bark. Woodpeckers often are found on infested ash tree trunks, feeding on larvae; this is most often noted during winter. Trees attacked by the emerald ash borer die within 1-3 years.
7. **Where is the emerald ash borer currently found?** Borers were first detected in in June 2002, though they most likely arrived there 10 to 12 years ago. Most of the Lower Peninsula of Michigan has active beetle populations. One park in the has also found emerald ash borer activity. Northeast

Indiana, central Indiana (Indianapolis area), northwest and central Ohio (Columbus area) have reported emerald ash borers. An infestation was discovered in north-central Illinois (Kane County) in June 2006. [Click to see the current distribution map \[4\]](#).

8. Has the emerald ash borer been found in Iowa? As of spring 2006, this insect has not been found in our state. This follows visual survey efforts in all 99 counties during 2004 and 2005. Residential areas, commercial landscaping, parks, sawmills, campgrounds, and ornamental nursery sites were visited and symptomatic ash trees were examined. Efforts during 2006 will center on federal, state, and county campgrounds, as well as wood processing sites and tree nurseries.

9. How does the emerald ash borer spread to new areas? On its own, the beetle moves slowly through the landscape, approximately one mile annually. However, humans can greatly accelerate the spread of this exotic insect by moving infested nursery stock, firewood and logs to un-infested areas. Emerald ash borer movement into parts of Michigan outside of the Detroit area, Ohio, and Indiana has been the direct result of moving these ash products.

10. What is being done to limit the spread to new areas? Federal and state quarantines are now in effect in Michigan, and state quarantines are in effect in Indiana and Ohio. These have been set up to limit artificial transport of emerald ash borer in ash trees or logs. Infested firewood is difficult to regulate, because of its size, portability, and accessibility. The Iowa Nursery and Landscape Association has requested its members honor a voluntary moratorium and not purchase any nursery stock from sources east of the Mississippi River.

11. What is the life cycle of the emerald ash borer? Adults are present from mid-May through late July, and feed on ash leaflets. Following mating, female beetles lay eggs (average 60 – 90 per female) in bark cracks. Tiny white larvae hatch from eggs within one week and then bore through the bark and into the cambium. Larvae feed under ash tree bark from mid-summer through the next spring, producing “S”-shaped tunnels. Pupation occurs in spring and the new generation of adults emerges shortly thereafter. It is generally considered that the emerald ash borer completes a generation in one year. However, reports of a generation requiring two years to complete development have been made when the host tree was vigorous and apparently healthy.

12. Are there native insect borers that help recycle dying ash trees? Yes, there are several types of borers commonly found in Iowa that serve this purpose. Exit holes from the native borers are generally round or oval and are larger ($\frac{1}{4}$ to $\frac{1}{2}$ inch diameter) than the “D”-shaped emerald ash borer exit holes ($\frac{1}{16}$ inch diameter). Common borers in Iowa include the redheaded ash borer, the ash/lilac borer, and the flatheaded apple tree borer.

13. Is there any known natural resistance in ash trees to the emerald ash borer? Unfortunately, no observations of host plant resistance in the ashes have been reported. In its native range, the emerald ash borer is considered a major pest of ash trees. Research in that compared American species/cultivars with Asian ash species observed fewer emerald ash borer larval tunnels on Asian species, but the results are preliminary. All of the trees had been damaged to some extent by this insect.

14. Are there any natural enemies of the emerald ash borer? Yes, scientists have observed parasitic wasps attacking the egg or larval stages of the emerald ash borer in its native land. Efforts are underway to determine if these wasps can be introduced to America to control these beetles. Unfortunately, this process is time-consuming and may not be available to current eradication and containment efforts. A fungus (*Beauveria bassiana*) has also been tested as an adult beetle “natural insecticide”; tentative results have showed moderate success.

15. How can I protect my ash tree? Since the emerald ash borer has not been found in Iowa or a neighboring state, spraying or injecting ash trees with an insecticide is not recommended at this time. Minimizing known stressors (parking vehicles on the tree's root zone, construction projects, excessive pruning, and mechanical damage by string trimmers or lawnmowers) should be practiced for ash, as well as other tree species. Providing water during very dry periods (1" water applied evenly over the soil/lawn under the tree canopy twice a month) is encouraged.

16. I want to have a new tree in my yard; should I plant ash tree? It is not advisable to plant any ash species at this time. Perhaps the emerald ash borer will be eradicated or resistant ash species will be found in the near future. For now, there are other trees you can choose to plant that are not susceptible to the emerald ash borer. Visit www.emeraldashborer.info [5] for ideas.

17. Be wary of sales gimmicks. If individuals or companies offer cures or preventive treatments for emerald ash borer, thank them for their interest and ask them to leave your property. If someone approaches you and claims that the state has ordered your ash trees to be removed and then offers to cut them down for a price, record the person's name and contact information and pass it on to the IDALS – State Entomologist Office at (515) 725-1465.

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