Emerald Ash Borer is Here!

By Andrea Dee

Resource: Emerald Ash Borer (EAB) FAQs for Kentuckians, by Lee Townsend, Extension Entomologist and Lynne Rieske-Kinney, Associate Professor, Forest Entomologist, University of Kentucky College of Agriculture

According to the Kentucky Division of Forestry, there are 130.9 million stems of white ash and 92.5 million stems of green ash in the Commonwealth. Ash component of Boone, Campbell, and Kenton counties is estimated at 14.5% of more than 56 million trees. For the past few years we have been warned of the possibility of Emerald Ash Borer (EAB) invading our forest and killing our beloved ash trees. The purple traps seen hanging in trees along some Kentucky roadways are designed to capture emerald ash borer adults within close distances. Recently, EAB infestations have been confirmed in Kenton, Campbell, Fayette, Franklin, Jefferson, Jessamine, and Shelby counties. Below you will find Frequently Asked Questions and website resource information.

Where did EAB come from?

The emerald ash borer (EAB) is an exotic beetle native to the Far East. It was first discovered in North America in June 2002 in southeast Michigan. EAB has been identified in 12 states and two Canadian provinces. It can kill an ash tree within two to three years of infestation.

How do infestations spread?

An EAB adult can fly at least 1/2 mile from the tree in which it developed so there is natural spread each year. Unfortunately, infestations expand further and more rapidly when people move infested ash nursery stock, logs, or firewood long distances into uninfested areas. Firewood has been a major means of transporting EAB, especially by hunters and campers.

What does quarantine accomplish?

A quarantine is a legal action taken to prevent movement of any living stage of a pest (egg, larva, pupa, or adult). It includes entire ash trees, limbs, branches, stumps, and importantly, firewood. Movement of ash logs and lumber with bark is prohibited, along with hardwood wood chips and bark chips larger than 1 inch in two dimensions. Because it is difficult to identify cut and split wood, all hardwood firewood with bark is included along with other specified objects or means of moving the insect.

What counties in Kentucky are currently quarantined?

The counties under quarantine are Boone, Bourbon, Campbell, Carroll, Fayette, Franklin, Gallatin, Grant, Harrison, Henry, Jefferson, Jessamine, Kenton, Oldham, Owen, Pendleton, Scott, Shelby, Trimble and Woodford. The quarantined area includes the seven counties where the emerald ash borer has been identified – Campbell, Fayette, Franklin, Jefferson, Jessamine, Kenton and Shelby – plus counties close to an infestation site and counties with a high density of ash trees. Call the EAB Hotline at 1-866-322-4512 for more information.

What trees do the EAB attack?

All species of ash (*Fraxinus*) in landscapes, forests, and woodlots in eastern North America are susceptible. EAB may prefer to lay eggs on stressed trees but healthy ones also can be infested. Size does not appear to be a constraint either, larval galleries have been found in trees or branches as small as 1 inch in diameter. Call the extension office at 859 356-3155 for help identifying if you have an ash tree .

What does the EAB do to ash trees?

As they feed under the bark, EAB larvae destroy the tree's water and nutrient conducting tissue, reducing water and nutrient flow to the canopy and causing thinning of the canopy of trees above infested portions of the trunk and major branches. Dieback in heavily infested trees usually starts at the top with one-third to one-half of the branches dying in one year; most of the canopy will die within 2 years of the first appearance of symptoms.

What are signs of an EAB infestation?

The following general characteristics may be caused by EAB, other borers, stress, or physical injury:

- ♦ D-shaped 1/8" exit holes are unique to this family (Figure 1).
- ♦ Serpentine-shaped tunnels under bark (Figure 2).
- ♦ Young sprout growth at base of tree.
- ♦ Woodpecker activity.
- ♦ Thinning of canopy.
- ♦ Vertical splits in bark.

Figure 1

Figure 2

Is the EAB easy to recognize?

The adult is a distinctive dark metallic green about 1/2 long and about 1/8 inch wide but the insect may not be seen unless it is very abundant in an area. However, it emerges from ash trees in June through a distinct D-shaped hole in the bark (Figure 1). The larval stage is most likely to be found tunneling under bark and fortunately, it can be distinguished from native ash borers.

Figure 3

Are insecticide applications worthwhile?

Treatments for EAB are expensive and products currently available must be applied every year. In addition, no products are 100% effective and trees in poor health are not likely to benefit from treatments. Treatments may be worthwhile to protect very valuable trees or to keep individual trees alive until non-susceptible replacement trees are large enough to provide satisfactory shade. If many nearby trees become heavily infested, control probably will be much less effective.

How do I treat for EAB?

Imidacloprid, sold as *Bayer Advanced Tree and Shrub Insect Control*, applied in the spring and fall, as a soil drench is most effective for trees with less that 30% dieback from infestation. For application information visit: http://www.emeraldashborer.info/files/E2955.pdf

What is the life cycle of this borer?

The EAB can have a one or two year life cycle, development time decreases and the number of borer larvae per tree increases. In Michigan adults begin emerging in mid to late May with peak emergence in late June. Females usually begin laying eggs about 2 weeks after emergence. Eggs hatch in 1-2 weeks, and the tiny larvae bore through the bark and into the cambium (the area between the bark and wood where nutrient levels are high). The larvae feed under the bark for several weeks, usually from late July or early August through October. The larvae typically pass through four stages, eventually reaching a size of roughly 1 to 1.25 inches long. Most EAB larvae spend the winter in small chambers in the outer bark or in the outer inch of wood. Pupation occurs in spring and the new generation of adults emerges in May or early June, to begin the cycle again.

Who do I call to get more information on the EAB or to report an infested tree?

An Emerald Ash Borer Hotline **866-322-4512** has been established by the Animal and Plant Health Inspection Service (APHIS), US Department of Agriculture. Collected information will be passed to the appropriate office for follow-up.

Web Sites:

Information for Kentuckians

http://pest.ca.uky.edu/EXT/EAB/welcome.html

General EAB information and national status

http://www.emeraldashborer.info/

Ash tree identification

http://www.emeraldashborer.info/files/E2942.pdf