

Insecticide Options for Managing Emerald Ash Borer (EAB)



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The emerald ash borer (EAB) is an invasive insect (beetle) that was first discovered in the Detroit, MI metropolitan area in June 2002. EAB is native to Asia and is thought to have been accidentally introduced into the United States via importation of EAB infested wood packing materials used to transport goods or products. To date, EAB has been found in Ohio, Pennsylvania, West Virginia, Maryland, Indiana, Ontario, Canada as well as in NE Illinois including Chicago. So far, EAB has not been detected in Wisconsin! Several detection methods including visual surveys, detection/trap trees, and adult traps have been employed in an effort to detect EAB. However, at low population densities or early stages of infestation, EAB is quite difficult to detect regardless of survey strategy. EAB larvae feed (mine) in the cambial area creating S-shaped/serpentine feeding galleries that are typically packed with frass (fecal matter and sawdust). This larval feeding activity disrupts the ability of trees to transport vital nutrients and water, thus resulting in tree decline and eventual death. Tree death can occur in less than two years at high population densities if left untreated, while some trees can survive up to five years at low population densities. Unlike the bronzed birch borer and the two-lined chestnut borer, two closely related boring insects that mainly attack stressed trees, EAB does not discriminate between healthy (vigorous) or stressed trees. In North America, EAB has only reported to attack ash (*Fraxinus spp.*) trees including green white, blue, black, velvet, pumpkin as well as other horticultural varieties. It is estimated that there are more than 730 million ash trees; about 5 million are horticultural varieties in Wisconsin. Consequently, EAB poses a serious to Wisconsin's ash resources.

So, what can you do to protect your ash trees from the eminent threat of EAB? Unfortunately, this question does not have a simple answer! There are numerous factors that can influence your decision making process. First and foremost, until EAB is found within 10-12 miles of your ash tree(s), there is NO need to begin treating your ash trees with insecticides. Secondly, due to the relatively high cost associated with treating multiple ash trees such as in woodlots or forested areas, high-value or specimen ash trees may be more likely considered for an insecticide treatment. In addition, insecticides are not always successful due to variability or inconsistent control nor is it fully



Adult Emerald Ash Borer.

understood if insecticides are enhancing tree survival or merely prolonging tree death. Since EAB was discovered, numerous research trials have investigated the performance (efficacy) of various insecticide treatments. Currently, there are several insecticides and application technologies that are suggested, they include: 1) imidacloprid (Merit) applied as a soil drench, soil injection or as a trunk injection using specialized application equipment such as the ArborJet Tree IV (IMA-Jet), Maguet (Imicide) and Wedgle (Pointer) application systems; 2) dinotefuran (Safari) + PentraBark applied as a bark spray to basal area of the trunk from the soil level up about 4.5 feet; 3) emamectin benzoate (Tree-age, NOT currently registered in Wisconsin) applied exclusively through the Arborjet Tree I.V. and QUIK-jet application systems; carbaryl (Sevin) applied as a trunk implant using the ACECAP 97 Systemic Insecticide Implants or Bonide Systemic Insecticide Bullets application technologies; and 4) bifenthrin (Onyx), cyfluthrin (Tempo), permethrin (Astro), or carbaryl (Sevin) applied as a foliar or bark spray application to control EAB adults and hatching larvae. Certified pesticide applicators are necessary for the application of the specialized application equipment such as the ArborJet Tree I.V. and QUIK-jet, Maguet, and Wedgle. ALWAYS read and follow label directions when using pesticides. For additional information regarding insecticide management options for EAB, visit www.emeraldashborer.info. 🌱