

## SherrillTree Spotlight : Emerald Ash Borer

The Emerald Ash Borer (*Agrilus planipennis*), or EAB has recently become one of the most dangerous and lethal insects to North America's trees. This pest kills 100% of Ash Trees that it comes in contact with, and spreads quickly. First found in the US in Michigan in 2002, the EAB has spread and worked its way steadily south, nearly reaching North Carolina and Georgia. Currently, 17 states are in a federal Emerald Ash Borer quarantine zone. These states include MN, WI, IA, KS, MO, IL, IN, MI, OH, KY, TN, WV, VA, PA, MD, NY, and MA. These states have suffered billions of dollars of costs to their cities and forests, losing tens of millions of trees with many more on the chopping block. States in the quarantine zone have been taking steps to prevent the spread of the EAB, including a total prohibition on transporting firewood from Ash trees. Tree loss has been great in rural, urban and forested areas alike, but the greatest economic damage has been to cities, many of which planted massive numbers of Ash trees to line their streets because of their resilient nature. Without treatment, these areas will lose their Ash trees, increasing property damage and air pollution, and lowering the property value and overall aesthetics of the city. In many urban forest areas, Ash trees represent 10-40% of the overall canopy cover.

The Emerald Ash Borer is a green, bullet shaped beetle that works by boring through the bark of the tree, feeding on the phloem, and laying eggs inside the tree. When the eggs hatch, the larvae eat the tree from underneath the bark, leaving a pattern of tunnels. Eventually, the larvae reach adult stage, emerge from the tree, and fly to a new Ash tree to feed and reproduce. The exit hole from the tree is shaped like a D, and is very characteristic of this type of insect.

Initially, conventional wisdom was to remove and destroy the tree, and that would stop the spread of the insect. This strategy resulted only in a significant loss of trees, and money. The EAB continued to spread because by the time symptoms were noticed, the pest had already spread through the area. Removal actually made the spread worse because the infected wood was moved to areas that were previously uninfected. Independent research has shown that treating the Ash trees with insecticides is more effective at controlling EAB than removal, and much, much cheaper.

Because the damage to the Ash tree is done almost all internally, only a systemic insecticide can be effective at controlling the EAB. A contact insecticide applied in a spray will do absolutely nothing to stop the EAB, and will likely kill every other beneficial insect in the area. Strong, systemic insecticides applied by injection systems provide the fastest, safest and most environmentally responsible treatments. By injecting the chemicals directly into the xylem of the tree, negative consequences such as drift, non-target species destruction, water contamination and human exposure are prevented.

For smaller Ash trees, less than 6 inches in diameter, a soil drench is the best option. The soil drench has been shown to be extremely effective on small trees that have minimal damage before treatment. Soil drenches on large trees have been shown to be somewhat effective, but the percentage of trees saved depends on the damage suffered before treatment. Larger trees have had inconsistent results using soil drenches.

Note: while Sherrill Tree EAB products can kill the pest and save the tree from death, it is unlikely that the tree will regenerate any parts that are already dead. Treatment generally preserves whatever of the tree is left in good condition. If the tree has already lost more than 50% canopy, chances of saving it drastically decrease. Using a soil drench on trees starting with 50% canopy loss, you can expect to save about half the trees. Trees with more than 50% damage will have an even lower success rate. After 6 years of EAB infestation, almost all untreated trees will be dead.

**TREATING TREES BEFORE SYMPTOMS SHOW IS KEY IN SAVING ASH TREES. IF YOU HAVE EAB IN YOUR AREA, YOUR TREE IS PROBABLY ALREADY INFECTED. SYMPTOMS DON'T SHOW FOR UP TO 3 YEARS.**

\*Do not transport firewood from trees infected with EAB. This is how the pest spreads.

## METHODS FOR TREATING EMERALD ASH BORER

TREE-age

IMA-jet

XYTECT

Merit

Transtect 70WSP

### TREE-age [insecticide]

TREE-age Insecticide can be delivered through the **Arborjet system** to deliver this top of the line pesticide straight into the vascular system of the tree. Independent university studies have shown TREE-age to be the most effective and long-lasting treatment for the Emerald Ash Borer in Ash trees. TREE-age has shown to give constant control of insects for two years, reducing the time and money in multiple treatments. This product is the only EAB treatment recommended for both preventative and therapeutic treatment of Ash trees. Studies have found that 2 years after treatment there were virtually no EAB larvae present, compared to hundreds of larvae in untreated trees. **This means TREE-age is nearly 100% effective.** Unlike other EAB treatments, TREE-age can be applied at any time in the year when leaves are present, and stays in the tree at high volume. In addition to Emerald Ash Borer, TREE-age has been shown to be effective against Mountain Pine Beetles, Tent Caterpillars, Pine Coneworm, and more. The active ingredient in this product is emamectin benzoate and is applied only through tree injection. The applicator: **Arborjet Tree IV kit**, is sold separately.

#### Application: tree injection

**\*Note: TREE-age is a Restricted Use Pesticide. Customers must have a valid RUP license on file with SherrillTree before purchases can be complete. TREE-age is only available in certain states.**

### IMA-jet (imidicloprid 5%)

IMA-jet insecticide contains imidicloprid, one of the most common and effective insecticides on the market. This pesticide is injected using the **Arborjet system** allowing it to be delivered directly into the xylem of the tree, where it will be distributed throughout all the tree's tissues. This will kill the vast majority of EAB larvae, controlling EAB in the tree for one year. Imidicloprid is mainly recommended as a preventative measure, although it can be used therapeutically. Higher concentrations of imidicloprid have been shown to be more effective for EAB than lower doses, so the highest dosage rate allowed by label is recommended. The application system; **Arborjet Tree IV kit**, is sold separately. IMA-jet should be applied to trees in the spring.

#### Application: tree injection

### Xylect Inf/Xylect 2F(imidicloprid 5% / 21%)

Xylect contains Imidicloprid, one of the most common and effective insecticides on the market. This product can be applied in a variety of ways, including soil injection, soil drench, or tree injection. Imidicloprid is mainly recommended as a preventative measure for the EAB, but can be used therapeutically. The method of application makes little difference, so we recommend the tree injection, which minimizes environmental impacts and has the fastest uptake. The soil applications are easy to apply and relatively harmless to the environment when done correctly. Soil drenches should not be used in soil close to streams, rivers, lakes or shallow groundwater sources, or on severely sloped land where runoff might occur. Imidicloprid has been shown to be very effective at treating Emerald Ash Borers for up to 1 year. Higher concentrations of imidicloprid have been shown to be more effective on EAB than lower doses, so the highest dosage rate allowed by label is recommended. Imidicloprid has been proven to be extremely toxic to honeybees. When injecting this is not a problem, but care should be taken with the soil applications to avoid other plants/flowers that might come in contact with honeybees. This product can be applied in the spring or the fall.

#### Application: tree injection, soil injection, soil drench

### Merit (imidicloprid 17%)

This easy to apply microinjectable capsule contains one of the most common and effective systemic insecticides, imidicloprid. Studies have shown this chemical to be very effective against Emerald Ash Borer, with results lasting up to one year. Imidicloprid is mainly used as a preventative treatment, but can be used therapeutically. These microinjectables can be applied by homeowners or professional arborists with minimal tools and no training. Capsules are injected into tree every 4 to 6 inches around the tree's circumference, and the chemicals go straight into the xylem of the tree, where they can be carried throughout the tree's tissues, killing all insects feeding on the tree. Capsules should not be left in trees uncovered or unattended.

#### Application: microinjectable capsule

### **Transtect 70WSP (Dinotefuran 70%)**

This insecticide is one of the three treatments that the EPA has registered as an effective treatment for Emerald Ash Borer, along with Emamectin Benzoate and Imidicloprid. This treatment is used as a soil drench or soil injection, and has been shown to be effective in killing Emerald Ash Borer, and stalling the decline of Ash tree health. This product is mainly effective as a preventative measure. The advantage of this product is the ease of use, with the soil drench being the easiest method for applying insecticides. The soil applications are easy to apply and relatively harmless to the environment when done correctly. Soil drenches should not be used in soil close to streams, rivers, lakes or shallow groundwater sources, or on severely sloped land where runoff might occur. A bark spray is also a fairly easy to apply, if safety precautions are taken. For bark spraying, we recommend an adjuvant called **Pentra-Bark**, which allows the tree to take in the chemical much easier. The bark spray is applied to the lower 5 feet of the tree using only a garden sprayer, and when applied correctly, doesn't enter the soil at all. Like all chemical pesticides, this product should be used carefully with proper personal protective equipment, and every care should be taken to prevent environmental contamination, especially into water sources, or areas with non-target species. This product has been shown to be extremely hazardous to honeybees.

**Application: soil injection, soil drench, bark spray**