



» **TREES DEVASTATED BY EAB** show apparent signs of decline (left), but those trees that have been treated continue to thrive (right). Photo courtesy of ArborSystems

Kentucky, West Virginia, Pennsylvania and Washington, D.C., said Jim Rollins, Midwest regional sales representative at Mauget.

“It continues to spread in all directions,” said Rollins. “One trend I’ve noticed is that it tends to follow the major highways, which tells me that it is catching a ride on cars or trucks, or being spread via firewood or on nursery stock.”

“EAB has the ability to survive in dead wood — notably firewood — for an extended period of time,” said Rob Gorden, director of national sales for Arborjet. “This dormancy, known as estivation, typically occurs from late fall through early spring, when it can be easily spread in firewood.”

Said Bernick, “Forecasting how quickly EAB will spread into a given area is challenging, because it is virtually impossible to predict where and when infested firewood will be transported to the next new location.”

According to Gorden, many states are actively searching for EAB using traps and trained early detectors. Most new finds continue to show evidence of being in the trees for several years before discovery. New finds increase each year during adult flight, when the insects are both more visible, and more likely to become entangled in traps.

“EAB tends to move in waves,” said Doolittle. “Pests infest a region, and when all the ash are dead or treated, [EABs] move on or die out. If you treat trees proactively, or even when early signs of infestations are noticed, you can protect and save the trees.”

According to Bernick, research continues to be aimed at better understanding the biology and life-cycle behaviors of EAB. In addition, several research projects are being conducted to develop improved detection and surveying methods, and better understand the impacts of EAB on different ash species.

“While not all insecticides labeled for EAB have shown acceptable levels of protection, scientists have found that when specific management protocols are followed, multiple insecticide options are available that can be used to protect and preserve high-value ash trees,” said Bernick.

Rise from the Ash

New management options and strategies are leading the charge against Emerald Ash Borer

GREEN INDUSTRY PROFESSIONALS, homeowners and municipalities faced with Emerald Ash Borer (EAB) infestation have not only had to battle the pest, but also misinformation. In many cases, people have thought that nothing could be done to control the pest; or they have thrown good money after bad by not understanding the pest, community policies or both. However, effective and predictable management strategies have emerged as scientists have continued to refine application techniques and treatment protocols.

When insecticides are applied according to these newer protocols, results demonstrate that several products can effectively protect ash trees even when subjected to peak EAB populations. These new management options and informed control strategies are showing that treatments work, and are a viable option for preserving the economic and environmental benefits that trees provide. Depending on the situation for municipalities, treatment of

high-value trees can be as, or more, cost-effective than tree removal. Working with a reputable tree health care distributor, and developing a proper plan can meet the needs of your clients and the community as a whole.

THE CURRENT STATE OF EAB

“Emerald Ash Borer continues its spread throughout states currently infested with EAB, and was also recently detected in Iowa — raising the total number of states with confirmed infestations to 13,” said Shawn Bernick, director of research and technical support at Rainbow Treecare Scientific Advancements.

According to Chip Doolittle, president of ArborSystems, the outbreaks in Iowa are more sporadic due to the fact that EAB is now moving into the plains states, and there are a lot of cornfields and open spaces between groves of ash trees.

This past year, EAB has been identified in the Minneapolis-St. Paul area, as well as in southern Wisconsin, Missouri, north-central

TREATING PREVENTATIVELY

“Preventative maintenance is the key,” said Dr. Joe Chamberlin, field development manager, southeast, for Valent Professional Products. “How preventative? Nobody can tell.”

“Upon entering a tree, EAB begins to feed and damage the vascular system undetected,” said Gorden. “Its damage is often invisible for two or more years. By the time that damage is evident, the pest is well on its way to killing the tree. Experience has demonstrated that preventative treatments afford the greatest chance of reducing damage and saving the tree.”

According to Chamberlin, it is recommended that once EAB is spotted within 10 to 15 miles that you should begin preventative treatments. “However, just because it was spotted within 10 to 15 miles, does not mean that your tree is not already infested with EAB,” he added.

Bernick points out that one of the biggest challenges to managing EAB is determining exactly where EAB is located.

“EAB is extremely difficult to detect when its population levels are low,” said Bernick. “We also know that the likelihood for success with insecticides increases significantly if trees are treated prior to being infested. Given these two challenges, it makes it difficult to recommend treatments solely based on a specific distance to a known infestation. Fifteen to 20 miles from the nearest infestation is good guideline, but it is only a guideline.”

“Make sure that you are well educated as to what to look for in terms of damage,” said Rollins. “When you are out and about, keep an eye on ash trees. If you see anything that looks like damage, investigate further, and then it might be time to begin preventative treatments.”

Bernick recommends determining the value of the tree to the client or city. “The value of the tree must then be weighed against the relative risk of the tree being infested with EAB and the cost of doing the treatments,” he said. “The closer you are to an infestation, the

greater your risk is to losing a tree from EAB.

“Not all trees can or should be treated, so it is important to work with clients to identify which trees provide the most benefit to them,” he added. “A municipality must prioritize candidate trees for treatment as well.”

APPLICATION METHODS

“Research has improved our ability to effectively manage EAB,” said Bernick. “EAB insecticide recommendations continue to change as new research comes in. Soil-applied insecticides are commonly used by professionals to manage many key pests, and can be effective against EAB when used correctly.”

According to Gorden, applicators should be aware that soil-applied products may require several weeks for absorption from the soil into the roots for effective protection within the tree. “Trunk-injected treatments aren’t introduced slowly to a tree, as they are placed and sealed directly into the trunk through the tree’s vascular system,” Gorden added.

However, homeowners are limited to purchasing soil drench products, applied once annually, said Gorden. Research indicates that once EAB begins to attack, a second annual soil application is required to save their trees. When this point is reached, the only legal way to treat by soil drenching is to contact a certified applicator to make these treatments, he stated.

According to Doolittle, trunk injection that does not require drilling to apply the chemical is beneficial option — especially when treating already infested trees.

According to Chamberlin, some chemicals for control of EAB are now labeled for basal bark application, which is a more holistic approach to tree care. The chemical is applied from soil level up to breast height up to the point of runoff around the circumference of the tree. It works out to a couple fluid ounces of product per inch of diameter at breast height. The highly soluble molecules absorb quickly into the xylem for uptake.

“The speed of uptake with basal bark spray

is comparable to soil injection or trunk injection treatments, but the applicator does not need specialized equipment and can visibly monitor the proper amount of product to apply,” said Chamberlin.

In terms of safety, all of these product labels have been reviewed by the EPA and exposure and toxicity determine risk, Chamberlin added. In the case of basal bark application, it is equivalent to any chemicals you might apply to your lawn on a regular basis. There are huge safety margins built in.

According to Gorden, when selecting an application method, considerations should include ease of application, proximity to environmentally sensitive areas, available soil areas, insecticide runoff potential, effective residuals, and length of control of the product.

“There are certain philosophies or strategies for preventative treatments, and other strategies for when the pest is firmly entrenched in the area,” said Rollins. “It also depends on the size of the tree being treated. Treatments are different for small trees versus larger, more established trees.”

According to Rollins, there is a lot of good information available on the Internet, through local extension services, and through local ISA chapters.

“Get all of that information, and make your decisions based on the data, the type of trees you are dealing with, and the level of infestation in your area,” he said.

Doolittle said that the message is that, “Emerald Ash Borers are not the end of the world. EAB can be managed without the drastic measure of cutting down trees that resulted in tens of thousands of healthy trees being cut down unnecessarily. These pests can be controlled, and ash trees can be saved, both preventatively and curatively, with proper chemical treatment.”

According to Gorden, since EAB only feeds and reproduces on ash trees, scientists believe that as the EAB wave reaches a city, it will kill all unprotected trees while protected trees remain untouched.

“When the unprotected trees begin to die, they are no longer suitable for EAB reproduction, and the EAB population will begin to fall, reaching significantly lower levels in the community,” said Gorden. “Treatment will not be required at intense

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and frequent levels indefinitely.”

Municipalities should create an EAB management plan, and revisit the plan as new research comes in so that the necessary changes can be made. Also, municipalities should identify how the city will pay for management of EAB (limited Federal and State funding is available to local governments for the management of EAB).

“Treatments are effective when applied according to specific protocols,” said Bernick. He added that, “The economics of treating municipal trees have changed dramatically over the past four years. Treatment can be a cost-effective option for a city and result in preserving the economic and environmental benefits that urban trees provide communities.”

Gorden agrees; “Treatment is now an effective means of protecting trees, and is far less costly — even in the long run — than removing trees. Even without adding in all the indirect costs associated with tree loss, treatment will effectively preserve tree while costing less.

According to Chamberlin, for municipalities it is often a matter of economics, but for homeowners, saving an ash tree might have personal meaning. “Perhaps they grew up with that tree, used to swing from that tree, etc.,” he said. “For a municipality, it is a different dynamic economically. A standard street tree out in the open might only cost a few hundred dollars to remove, but a tree near a house, power lines or other structure can be much more expensive.”

“Systematic and preemptive removal of these urban trees will not solve the problem, but instead, create a new set of problems including increases in heating and cooling costs, storm water runoff, and urban flooding, as well as neighborhood and property value decreases,” Gorden added.

But according to Bernick, an effective municipal EAB management strategy *will* utilize a variety of practices including tree removal, replacement with non-ash species, insecticide treatment and, in some cases, letting nature take its course.

“Prioritize which trees will receive treatment and recognize that not all trees are good candidates for treatment,” he said.

Rollins tells homeowners and municipalities to be proactive and have plans in place

and ready to implement. “You don’t want to wait until that tree is half dead before you begin a treatment program,” he said.

THE “TAKE-HOME” MESSAGE

“The take-home message is that you can’t assume that if the tree isn’t showing symptoms that it isn’t infested,” said Chamberlin. “Once the tree reaches 40 percent dieback, about the only option is to cut it down.”

Said Doolittle, “I think the main take-home is that [professionals] need to be aware that usually when they find the larvae, the insect has already been there for at least two years. That means they should be preventing this well in advance of the wave.”

According to Bernick, diagnosis of EAB can be challenging, especially in the earliest stages of an infestation.

“Symptoms of EAB can easily be confused with drought or other abiotic stress and damage from native wood borers,” he said. “Also D-shaped exit holes are not readily apparent at eye level on trees that are in the earliest stages of infestation. University Extension services and state and federal government agencies have produced great EAB fact sheets to help practitioners diagnose the signs and symptoms of EAB. Reference these and have them handy when you are in the field.”

Bernick also urges professionals to follow the proper application protocols. “Ensure that products are applied at the proper time, using the correct dosage rate and application technique,” he said. “Treating trees before they are infested and showing visible symptoms will increase your likelihood for success.”

“Be proactive,” said Gorden. “Preventative and early treatment of trees infested with EAB provides the best results for saving the tree.”

According to Gorden, if a tree is undersized, physically damaged, or infested beyond treatment options, plan for its removal and replacement. However, as stated earlier, the cost of citywide removal is financially and environmentally devastating to the community as well. ■

John Kmita is editor of *Arbor Age* and *Landscape & Irrigation*, sister publications to *SportsTurf*.



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