

EMERALD ASH BORER 2008

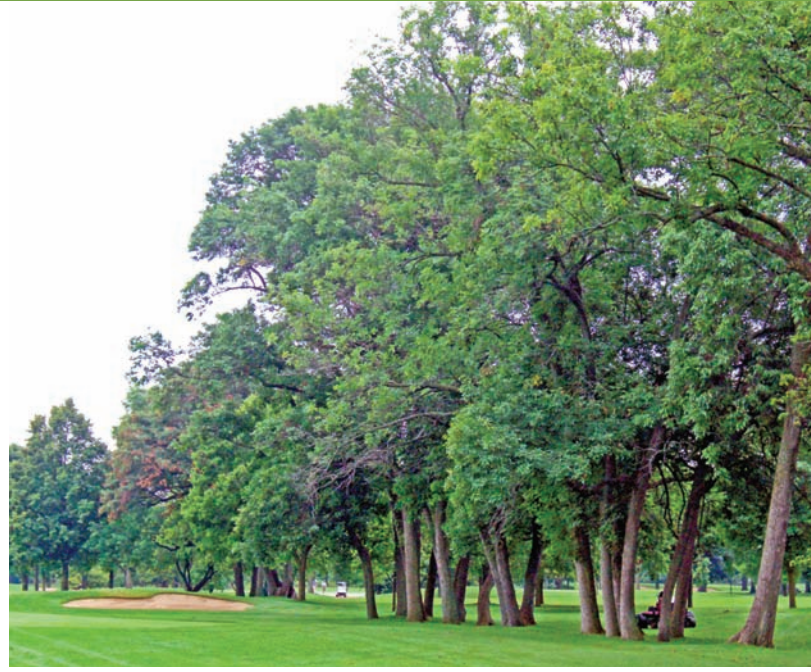


Photo Credit: Dan Dinelli

Because of the speed with which new information is dispersed in the Information Age, the content of this article may be old news before it arrives in print. Nonetheless, the nature of the news regarding Emerald Ash Borer (EAB) makes it worthy of a few words. My attendance at a seminar devoted entirely to EAB in mid-March provided a few startling facts about potential controls. It also left me largely convinced that, while we are going to lose a great number of trees in the years ahead, we may now have the tools to preserve key trees in the landscape.

The seminar was organized and emceed by Edith Makra, the Community Trees Advocate at the Morton Arboretum. It featured an impressive list of researchers and entomologists. First among the presenters was Dr. Deborah McCullough, Professor of Forest Entomology at Michigan State University, and someone who has been involved with the EAB phenomenon since the insect was first discovered. She reviewed the life cycle of the insect and discussed its spread. She offered an explanation of why an infestation may be present in a particular location while the appearance of the infested trees remains unchanged. Apparently, it takes three years for the population to reach critical numbers within an infested tree, and during the three "build-up" years, only bark-stripping will reveal the presence of the borer. However, in Year Four, the tree will decline and die quite rapidly. For this reason, we have, to this point, seen a relatively small number of trees actually succumb to the activity of EAB. This year will almost certainly change the situation, and we will likely witness the death of a significant number of trees.

Later in the day, Dr. McCullough was featured again, in tandem with another researcher, Dr. Leah Bauer of the USDA Forest Service. Biological controls, centering primarily on parasitic wasps, were discussed. Research results in this area, while potentially encouraging, are somewhat limited. Further, for the wasps

to play a significant role in controlling EAB, the populations would have to be multiplied many times, and this process takes time. At present, the most effective biological control appears to be woodpeckers, but the woodpecker population cannot possibly consume enough insects to markedly slow the spread.

From biological controls, the topic shifted to chemical treatments, and it is in this area that truly encouraging news is emerging. It has been known for at least two years that MERIT®2F (imidacloprid) is an effective pesticide. Most local tree-care companies are offering MERIT injections or soil drench applications as the approach to protecting key trees. Recent research has added some new compounds to the arsenal, including dinotefuron, marketed



as Safari® (Valent Chemical Co.), and the newest, emamectin benzoate, marketed as TREE-äge™ (Syngenta). Safari in combination with PentraBark™, a surfactant, has been approved as a trunk spray. Its systemic action has shown 94% effectiveness, both on larva and feeding adults. This spray combination can also be applied via injection or soil drench, but the most cost-effective and fastest method appears to be the trunk spray.

The other compound mentioned above, emamectin benzoate, has been labeled for use in several Midwest states, but not yet in Illinois, although approval is highly likely.

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Syngenta has licensed its application exclusively to Arborjet, using their microinjector, which makes it a bit cumbersome when attempting to treat large numbers of trees in a short time. However, the results are irrefutable: 100% control. While there is only one year of research results, the outcome was the same in every replication. Obviously, testing will continue in 2008, but it appears that TREE-äge could be as close to a “silver bullet” as anything we have seen to date. In fact, those are the words of Jim Bowes, the spokesman for Michigan’s EAB programs, and one of the people who has been involved in the evaluation of the compound.

The situation, then, is perhaps not as dire as we had been led to believe when we first learned of the impending invasion. We now appear to have the tools to chemically protect trees of particular importance. This will be an ongoing process, requiring annual or biennial applications. For professionals, who are familiar with regularly scheduled preventive spray or injection programs, this is a manageable scenario. Unfortunately, the great majority of our ash tree population is not under the management of professional arborists, so it is inevitable that we will experience the loss of thousands of trees in the coming years.

With that in mind, we as nurserymen are trying to anticipate what our list of ash replacements should include, without over-emphasizing one genus. Diversity has become the key word in any discussion of urban forestry, and to that end, we offer the following list of under-used species, as alternatives to ash:

BOTANIC NAME	COMMON NAME
<i>Acer miyabei</i> 'Morton'	State Street Maple
<i>Aesculus glabra</i>	Ohio Buckeye
<i>Catalpa speciosa</i>	Northern Catalpa
<i>Celtis occidentalis</i>	Common Hackberry
<i>Ginkgo biloba</i>	Ginkgo
<i>Gymnocladus dioica</i>	Kentucky Coffeetree
<i>Larix deciduas</i>	European Larch
<i>Ostrya virginiana</i>	Ironwood
<i>Quercus imbricaria</i>	Shingle Oak
<i>Quercus muehlenbergii</i>	Chinkapin Oak
<i>Taxodium distichum</i>	Bald Cypress
<i>Tilia tomentosa</i> 'Green Mountain'	Green Mountain Silver Linden
<i>Ulmus carpinifolia</i> 'Morton Glossy'	Triumph Smoothleaf Elm

Globalization has implications at every level of our life and culture. We are witnessing one of its most negative effects. The EAB ordeal will test our management skills, but the research community has made remarkable progress in a very short time. The ultimate outcome, while not exactly pleasant to contemplate, may not be the catastrophe we originally anticipated. -OC



Photo Credit: Dan Dinelli

The left image above shows the Arborjet system directly placing protectants into the tree.
The image on the right show an application being made to the trunk of an ash tree.

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