



What's UP?

Merit 2-08

News from the Bayer Environmental Science Development Team

Managing Emerald Ash Borer

Emerald ash borer (EAB) was first discovered in southeastern Michigan in 2002. Since then it has spread to 10 states and has killed an estimated 40 million large ash trees. Although the bright green adults are the most noticeable life stage, it's the larvae that damage and kill the trees. Larvae feed on the vascular tissue just inside the bark, affecting the tree's ability to transport water and nutrients.

Canopy dieback may appear the year following initial infestation. Reinfestation of afflicted trees occurs each spring, with the population of larvae in the tree increasing each year. Because native North American ash trees have no resistance to EAB, the infestation can kill the tree in as little as three to four years.

Treatment Options

Systemic insecticides are the most effective EAB management tools. Merit® insecticide (imidacloprid) is the product that has been most extensively tested by independent university researchers. The performance of the product is excellent when properly applied. Merit also is the most widely used product by commercial arborists for EAB control.



Basal soil application of Merit to a green ash tree. (Photo by Nate Royalty)

An annual soil treatment with Merit can protect the tree from an initial infestation and eliminate existing infestations (up to 50 percent dieback). Merit is applied by simply mixing the insecticide with water, and then applying to the soil by a subsurface soil injection or as a soil drench around the base of the tree. Both



Dieback of canopy

EAB larvae tunneling

(Left) Visual symptoms of emerald ash borer include dieback of the upper canopy and splitting of the bark on the limbs. (Right) EAB larvae create S-shaped galleries by tunneling under bark. (Photos by Nate Royalty)

methods work very well, although soil injection allows the arborist to place the product below the soil surface, next to the fine absorptive roots of the tree. Because of the long residual control Merit provides, only one application per year is necessary.

Application Information

- Make one application annually. Merit treatments can be made in spring from April through June, or in fall from September through October
- Soil inject Merit 6-24 inches out from and around the base of the tree at a depth of 3-6 inches
- For optimum control keep the treated area moist for 7-10 days



The adult emerald ash borer. (Photo by Jodie Ellis, Purdue University)

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- ALWAYS use the highest labeled dose of Merit for EAB:
 - 6 ml/inch of trunk diameter at breast height (DBH) of Merit 2F
 - 1.4 tsp/inch DBH of Merit 75 WP
 - 24 cumulative inches DBH/1.6 oz Solupak of Merit 75 WSP
- As with any product, always read and follow label directions

Because of the rapidity at which EAB can kill even the largest ash trees, preventive treatments are the best way to manage emerald ash borer. However, research data conclusively show that a single annual application of Merit will protect trees even after they begin to show the dieback symptoms characteristic of EAB feeding. Treatment guidelines, based on university data, are as follows:

Uninfested trees

- Begin annual soil applications if EAB has been detected within 20-30 miles
- Monitor treated trees for dieback
- Maintain treatments as long as EAB-infested trees are found in the area

Infested trees (less than 16" DBH)

- Begin soil-injection treatments with Merit
- Continue treatment for 2-3 years. Existing larvae in the tree will be eliminated, and the tree will be protected from new attacks.
- Data suggest that trees can have up to 50 per cent dieback and still recover. This recovery may take several years.

Trees greater than 16" DBH

- Since there is only limited data on the efficacy of Merit on large infested trees, it is always best to treat large trees preventively.
- For large infested trees, a trunk injection treatment in the first year (to eliminate larvae in



Treatments at Bay Pointe Golf Club in Michigan show a dramatic difference between treated and untreated ash trees. (Photo by Nate Royalty)

the tree), coupled with annual soil applications of Merit, is a good management strategy.

When beginning a treatment program on a tree with visible dieback, monitor the tree each year. If dieback remains steady or improves, continue treatments. If dieback worsens significantly, it may make sense to remove the tree.

University research data and real-world use by arborists show that Merit is a very effective management tool for emerald ash borer, and that even heavily infested trees can recover from the deleterious effects of EAB. While there are other treatment methods available, an annual soil application of Merit is the easiest and most economical way to manage EAB effectively. Always read and follow label directions.

For the latest information on emerald ash borer, visit www.emeraldashborer.info.

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