
HOST RANGE OF EMERALD ASH BORER

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ABSTRACT

The emerald ash borer (EAB), *Agrilus planipennis* Fairmaire, is native to China, Korea, Japan, Mongolia, Russia, and Taiwan. Established populations of EAB were first discovered in Michigan and Ontario in 2002, and since then additional infestations have been found in Indiana, Ohio, Maryland, and Virginia. As of October 2004, EAB has only been found to breed in ash (*Fraxinus*) trees in North America. Ash is the only host listed for EAB in China. Ash is also listed as a host in Japan, as well as elm (*Ulmus*), walnut (*Juglans*) and wingnut (*Pterocarya*). In Korea, elm is listed as a host of EAB.

In 2003 and 2004, we evaluated foliage of several trees and shrubs as food for EAB adults in a series of no-choice and choice tests that were conducted indoors in Michigan. We tested members of the olive family (Oleaceae: *Chionanthus*, *Forestiera*, *Forsythia*, *Fraxinus*, *Ligustrum*, *Syringa*), elm family (Ulmaceae: *Celtis*, *Ulmus*), and walnut family (Juglandaceae: *Carya*, *Juglans*).

In 48-hour no-choice tests in 2003, EAB adults fed readily on ash, although blue ash (*F. quadrangulata*) was the least preferred. There was some feeding on the other members of the olive family, such as forsythia, fringe tree, lilac, privet, and swamp privet. There was almost no feeding on elm, hackberry, hickory, and walnut. In two-choice tests, using green ash as the “standard,” EAB fed readily on the other ash species tested as well as the Oleaceae shrub species. There was significantly less feeding on the Juglandaceae and Ulmaceae species tested when in the presence of green ash.

In 2004, we conducted a series of multiple choice tests. In the first test, we used seven species of ash, including five native and two Asian species. Overall, EAB fed most on green and white ash and least on blue ash. Feeding on the two Asian ash species (*F. chinensis* subsp. *rhychophylla* and *F. mandshurica*) was intermediate. In the second test, we allowed EAB to choose among green ash and four shrub species in the Oleaceae. EAB preferred green ash over any of the four shrubs tested, including forsythia, fringetree, lilac, and privet. Of the four shrubs, forsythia was the least preferred. In the third test, we used green ash and four non-ash tree species. Overall, EAB fed almost exclusively on ash while in the presence of hackberry, slippery elm, shagbark hickory, and black walnut.