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 (Haack et al. 2002). Established populations of EAB were first discovered in Michigan and Ontario in 2002. Smaller populations, which resulted from human-assisted movement of infested host material, were found in Ohio, Maryland, and Virginia in 2003. As of November 2003, EAB has only been found to attack ash (*Fraxinus*) trees in North America. Ash is the only host listed for EAB in China, and ash is also listed as a host in Japan. In Japan, ash, elm (*Ulmus*), walnut (*Juglans*) and wingnut (*Pterocarya*) are reported as hosts, while elm is listed as a host in Korea (Haack et al. 2002).

In 2003, 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 spring and early summer 2003, using young foliage primarily from nursery stock that was maintained in a greenhouse, we gave foliage of a single plant species to EAB adult males and females until their death. For males, results showed that adults given no food and low humidity lived an average of 6 days, while males given no food but high humidity lived 9 days. Male longevity was 17 to 21 days on black ash (*F. nigra*), green ash (*F. pennsylvanica*), evergreen ash (*F. uhdei*), and velvet ash (*F. velutina*). Males lived an average of 20 days on privet (*Ligustrum*) and 13 days on swamp privet (*Forestiera*). Average male longevity was only 6 to 8 days on Chinese elm, Siberian elm, hackberry, butternut, black walnut, forsythia, and lilac.

In 48-hour no-choice tests using fully-expanded foliage, 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 ash family, such as forsythia, fringe tree, lilac, privet, and swamp privet. There was almost no feeding on elm, hackberry, hickory, and walnut. Two-choice tests were also conducted using green ash as the "standard," although the data from have not been fully analyzed yet. Further testing of EAB host range will be conducted both indoors and outdoors in 2004.

Haack R.A., E. Jendek, H. Liu, K.R. Marchant, T.R. Petrice, T.M. Poland, and H. Ye. 2002. The emerald ash borer: a new exotic pest in North America. *Newsletter of the Michigan Entomological Society* 47(3-4): 1-5.