
EMERALD ASH BORER SURVIVAL IN FIREWOOD

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ABSTRACT

The emerald ash borer (EAB), *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae), is native to Asia and was first discovered in Michigan and Ontario in 2002. As of October 2004, EAB was only found to breed in ash (*Fraxinus*) trees in North America. EAB is spreading naturally through adult flight as well as artificially through movement of infested ash nursery stock, logs, and firewood. EAB larvae feed and develop in the cambial region of host trees during summer and fall, and then overwinter in the outer sapwood or outer bark. Because EAB adults are present throughout the summer, larval development is not highly synchronized, and therefore, EAB life stages can be found beneath the bark of infested trees throughout the year. As is typical for *Agrilus*, early larval stages require living hosts. Therefore, if infested trees are cut early during larval development, the host tissues should dry and thus reduce *Agrilus* survival.

In 2002, we felled and stacked EAB-infested firewood in Michigan at various intervals from July to October. The firewood was either placed in direct sunlight or in shade. Exit holes were counted on the firewood during summer 2003. EAB were able to survive and emerge from all treatment combinations. However, survival was significantly lower on logs that had been cut during July and August vs. September and October. Similarly, EAB survival was greater on logs that had been stored in shade vs. direct sunlight. Therefore, cutting infested trees early during larval development and placing the logs in full sunlight will dramatically lower EAB survival, but apparently not kill all larvae.

A larger study was initiated in 2003, which tracked the following treatment parameters: month of felling, sun vs. shade storage, split vs. whole bolts, and tarped vs. not tarped. Exit holes were counted in late summer 2004. Again, EAB were able to survive and emerge from all treatment combinations. However, survival was significantly lower on logs cut early during larval development (July and August) and lower on split wood, especially for wood cut and split in July. Direct sunlight reduced EAB survival, especially for the earliest cut logs. Tarping either had no apparent effect on EAB survival or enhanced it. Perhaps the tarps that we used reflected a great deal of sunlight and thus temperatures beneath the tarps did not reach lethal levels.

Results from these studies indicate that even converting infested trees to firewood in July is not early enough to stop all EAB larvae from completing development and emerging as

adults in the following year. We will monitor some of the firewood cut in 2003 to determine if any EAB adults emerge in 2005 (the second summer post-felling). If no adults emerge in 2005, this would indicate that firewood cut during summer of year 1 needs to be kept until at least the fall of year 2 before it could be safely moved.