SULFURYL FLUORIDE AS A QUARANTINE TREATMENT FOR THE EMERALD ASH BORER IN FIREWOOD

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The emerald ash borer (EAB), *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae), is an important exotic pest of ash trees (*Fraxinus* spp.) in Illinois, Indiana, Maryland, Michigan, Ohio, Pennsylvania, Virginia and West Virginia, where quarantines are in effect preventing movement of any potentially infested ash trees, logs, and firewood to areas where the EAB does not occur. The EAB was most likely introduced from China to the U.S. in wood packaging material.

Officials with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine (USDA-APHIS PPQ) are working to find quarantine treatment alternatives to chipping and heat when treating EAB-infested and quarantined wood. Beginning in 2006, Dow AgroSciences began working with USDA-APHIS PPQ to evaluate the gas fumigant, sulfuryl fluoride (SF), specifically ProFume® gas fumigant, as a quarantine treatment alternative. Confirmatory SF doses were calculated after initial 432-L chamber fumigation trials using EAB-infested ash logs revealed 100% control of all life stages. During spring and fall 2007, confirmatory SF doses were tested at two different temperatures and exposure times (15.6°C for 24 and 48 hrs; 21.1°C for 24 and 48 hrs). As a result, SF was effective in eliminating 100% of all temperature-acclimated larvae (typically the most tolerant stage) of the EAB inside infested ash tree logs using each SF dose at both temperatures and exposure times during chamber fumigation trials. In 2008, these SF doses applied in 24 and 48 hr commercial fumigations of hardwood logs with inserted infested EAB ash logs were 100% successful. These results strengthen the argument to add SF to the APHIS treatment schedule as a recommendation for quarantine treatment of ash trees from the affected areas and/or ash tree lumber entering the U.S.