FIELD RELEASE OF SPATHIUS AGRILI YANG (BRACONIDAE): MONITORING NON-TARGET WOOD BORERS

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ABSTRACT

Before the identification of emerald ash borer (EAB) (*Agrilis planipennis* [Coleoptera: Buprestidae]) in Michigan in 2002, *Spathius agrili* Yang (Hymenoptera: Braconidae) was discovered attacking this buprestid in its native range in China. Subsequent laboratory host specificity testing with North American wood borers and olfactometer testing of various tree volatiles, including those from ash, suggest that *S. agrili* will not have a significant impact on native North American wood borer fauna.

To determine the ability of *S. agrili* to establish in Michigan and to monitor non-target impacts, field releases were made at three sites in Michigan in late summer 2007. Three wood borers native to North America are being monitored: the redheaded ash borer (*Neoclytus acuminatus* [Say]), the twolined chestnut borer (*Agrilus bilineatus* [Weber]), and the bronze birch borer (*Agrilus anxius* Gory).

Redheaded ash borers were brought to the release sites as larvae feeding in 1-m-long ash logs. Three logs were brought to each release site as well as three ash logs infested with EAB larvae. Pairs of redheaded ash borer- and EAB-infested logs were strapped 1 m above ground to the trunks of EAB-infested trees in the immediate area of the planned *S. agrili* release sites. In late winter 2008, the ash logs will be placed in individual rearing tubes and monitored for *Spathius* emergence.

Host trees (d.b.h. ~ 15 cm) for the non-target *Agrilus* species were moved to the release sites during early summer 2007: pin oak (*Quercus palustris*) for the twolined chestnut borer and European paper birch (*Betula pendula*) for the bronze birch borer. In the laboratory, bolts of host trees infested with these species were placed in rearing tubes and adults were collected upon emergence. Adults were held for 10 days, fed with foliage and honey: water, and then released into containment cages around the trunks of the oak and birch trees, where it was anticipated that they would lay eggs. The cages also included a sapling of the host tree with foliage and small twigs of foliage with their stems in a moist bag. Cages were removed 2 weeks after the beetles were confined. The trees will be cut into sections in early 2008 after a sufficient cold period. A subset of the wood will be debarked to confirm the presence of nontarget *Agrilus* species and any possible parasitism. The remaining logs will be placed in tubes, and emerging beetles and parasitoids will be collected and identified.