

DEVELOPMENT OF SURVEY TOOLS FOR THE EMERALD ASH BORER

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Abstract

Currently, detection of the emerald ash borer, *Agrilus planipennis* (Coleoptera: Buprestidae) Fairmaire (EAB), consists of visual inspection and identification of characteristic damage or possibly beetles. The objective of this study is to develop a trap and a semiochemical lure system for EAB. An effective trapping system would improve the sensitivity and efficiency of EAB survey and aid the overall program in achieving its goals.

A four panel trap design was employed to test four colors simultaneously. Corrugated plastic panels (0.6 cm thick) were 37.5 cm x 60.0 cm, and were coated with Pestick insect trapping glue. Two sets of four colors [Black - Yellow - White - Purple and Red - Green - Navy - Silver] were tested at two heights [1.5 m and 7.0 m]. Over 500 beetles were caught in a 3-week period. More beetles were caught on purple traps than on any other color. Red and yellow traps caught significantly fewer beetles than any of the other colors. More beetles were caught on low traps than on high traps for all colors except black and yellow. More females were caught on purple and black traps than males. Later in the field season, we also deployed a third set of four colors [Brown - Orange - Teal - Light

Blue]. These colors, however, did not catch many beetles as the deployment occurred after the peak flight. Single color, three panel traps were also tested but placement was too late in the field season, and catch was low. We are currently developing single color traps to be tested in 2004.

Commercially available semiochemical lures were tested in conjunction with two trap designs [a single purple panel (37.5 cm x 60.0 cm) and the IPM Tech Intercept Panel Trap]. The single panel trap caught 34 beetles compared to zero for the IPM Tech trap. There was no significant difference in catch between the eight lures and the blanks, although traps baited with lures that contained ethanol as an ingredient accounted for 20 of the total beetles caught.

We began collecting volatiles from beetles and host material in 2003. We plan to continue this work in 2004. Using gas chromatography coupled with an electroantennographic detector (GC-EAD) we hope to identify antennally-active compounds which will then be tested in lab and field bioassays.