

ARTIFICIAL EGGING SUBSTRATE FOR REARING ASIAN LONGHORNED BEETLE

D.R. Lance¹, B.S. Holske¹, and K.E. Zylstra²

¹USDA APHIS, PPQ, Otis Laboratory, Bldg. 1398, Otis ANGB, MA 02542

²USDA APHIS, PPQ, Otis Laboratory, Syracuse Work Station,
374 Northern Lights Dr., North Syracuse, NY 13212

ABSTRACT

Artificial diets are available for rearing larvae of Asian longhorned beetles (*Anoplophora glabripennis* Motschulsky), but recently harvested plant material is still used for adult feeding (maple twigs) and oviposition (maple logs). Obtaining these materials on a regular basis can pose logistical problems, and field-collected materials can inadvertently introduce pathogens, mites, or other undesirable organisms into areas where colonies are maintained. In addition, peeling logs to remove eggs is time consuming and exposes workers to potential injury. Over several years, we tried a variety of alternative oviposition substrates with little success.

In tests last year, we offered female *A. glabripennis* artificial oviposition substrates consisting of pieces of florist's foam or rolls of corrugated cardboard (ca. 15 cm long by 15 cm in circumference) wrapped in several layers of cotton cheesecloth. In some cases, a wrap of synthetic cheesecloth was used beneath the cotton.

Unlike the previous artificial substrates we had tried, females accepted the cheesecloth-covered materials for oviposition. In fact, numbers of eggs per female with either artificial substrate were comparable to numbers deposited on our standard oviposition substrate, a bolt of striped maple (*Acer pensylvanicum* L). In contrast (and perhaps surprisingly), the mean percentage of eggs that hatched was significantly lower for females with maple bolts (~50%) than with artificial substrates (~70% with either substrate; $F = 16.4$; d.f. = 2, 32; $P < 0.001$; Tukey's HSD test). Reasons for the higher hatch rates with the artificial substrates are not clear. Oviposition substrate had no apparent effect on survival of larvae after hatch.

Although our results have to be viewed as preliminary at this point, we believe that cheesecloth-wrapped foam or cardboard provides a potentially useful alternative to logs as an egging substrate for laboratory colonies of *A. glabripennis*.