MULTI-YEAR RESIDUAL ACTIVITY OF ARBORJET'S IMA-JET (IMIDACLOPRID 5% SL) AGAINST EMERALD ASH BORER [*AGRILUS PLANIPENNIS* FAIREMAIRE (COLEOPTERA: BUPRESTIDAE)] IN GREEN ASH (*FRAXINUS PENNSYLVANICA* MARSH) IN TROY, MI.

Joseph J. Doccola, Peter M. Wild, Eric J. Bristol, Joseph Lojko and Xin Li

ABSTRACT

In cooperative university studies, IMA-jet treated green ash were effectively protected for 2 years to date in Troy, MI against emerald ash borer (EAB). Trees were infested at the time of treatment, exhibiting epicormic sprouting and thinning canopies. Twenty trees were injected with IMA-jet alone or with a diluent to aid uptake and translocation within the vascular tissues. Using Arborjet's Tree I.V., the 5 percent formulation of imidacloprid was delivered into the sapwood at a rate of 8mL/DBH for trees 12-23 inches in diameter. In the spring 2004 study, Onyx and BotaniGard treatments were applied as sprays. The other systemic insecticide treatments were either orthene (AceCap) or imidacloprid (Merit 75 drench or Mauget Imicide). AceCap is applied as a trunk implant, and Imicide as a stem microinjection. Extent of larval mortality and galleries were based on assessments of bark scraping three 5 cm caliper limbs per tree. Treatment means were separated by ANOVA LSD at $P < 0.05$. Six treatments had a density of new galleries significantly less than the controls. Of these, the two Arborjet treatments had the lowest density of new galleries (0–1.2/ m^2). The Arborjet IMA-jet trunk injection treatments provided a high level of control (92 –100%), suggesting efficacy against 2nd-year as well as 1st-year larvae. Canopy assessments were conducted in the fall 2005, 495 days after treatment. Control trees or other treatments had intact canopies of between 0-20 percent. Arborjet treated IMA-jet trees had mean canopy densities of 80 percent suggesting multiyear residual activity. Larval mortality and gallery densities are presently being evaluated for year two efficacy. The diluent is now incorporated into IMA-jet's formulation to enhance uptake.