A Study of Applied Research Methods and Techniques for Landscape Arthropods: the Crape Myrtle Aphid *Tinocallis kahawaluokalani* (Kirkaldy) (Hemiptera: Aphididae), in Texas

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**ABSTRACT** Laboratory trials were conducted on crape myrtle aphid *Tinocallis kahawaluokalani* (Kirkaldy) to assess the effectiveness and mode of action of one experimental *Chenopodium*-based botanical (QRD 400 *Chenopodium ambrosioides* var. *ambrosioides*) and retail insecticide products for the control of this insect pest and the effect of these products on different life stages of the multicolored Asian lady beetle *Harmonia axyridis* Pallas. For monitoring aphid densities, two sampling techniques were compared: 1) aphids per 2-cm diameter circular leaf sampling area; and 2) aphid-infested leaves per 5-leaf sample. In both techniques, pre- and post-treatment counts were conducted. Data obtained from both pre- and post-treatment analysis were pooled to provide an average number including analysis of variance with the means separated using Tukey’s Honest Significant Difference, at $P \leq 0.05$ level. A linear regression, with 95% mean prediction interval was performed on data assessing various treatment rates of QRD 400.

**KEY WORDS** crape myrtle aphid, insecticides, sampling techniques, *Tinocallis kahawaluokalani*, *Harmonia axyridis*

Crape myrtle, *Lagerstroemia indica* L., is valued as a landscape plant for its prolific summer flowers, heat and drought tolerance, and year-round landscape interest. Flowering begins as early as May in some cultivars and continues into the fall. Each cluster of flowers (or panicle) develops on the tips of new growth and is composed of hundreds of 1- to 2-inch flowers. Color ranges include shades of purple, lavender, white, pink and red, including “true” red, a relatively recent development. Some cultivars have bicolor flowers (two colors on each petal), some cultivars have flower colors that fade with age or certain environmental conditions, and other cultivars have panicles composed of a mix of flower colors.

The crape myrtle aphid (CMA) *Tinocallis kahawaluokalani* (Kirkaldy) (Hemiptera: Aphididae) is the major arthropod pest of crape myrtles, and was apparently introduced into the United States with crape myrtle, its host plant (Mizell & Schiffhauer 1987). CMA is pale yellow in color with winged adults.