

Leaf species identity and their combination effect on oviposition choice and growth performance of Asian tiger mosquito, *Aedes albopictus* (Diptera: Culicidae)

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Resource diversity is one of the key determinants for the performances of many insect species. Thus, this study investigated the leaf species identity and their combination effect on oviposition choice and growth performances of the dengue vector mosquito *Aedes albopictus*.

This study was carried out at the premises of the University of Kelaniya. Four species of leaf matter "Neem" (*Azadirachta indica*), "Welan" (*Pterospermum canescens*), "Dawata" (*Carallia brachiata*) and "Mahogani" (*Swietenia macrophylla*) that are highly abundant in the University premises were used for the study. This was conducted as three experiments. In the first experiment, 1 g of air dried crushed leaf matter from each leaf species was allowed to decay separately in 250 ml plastic containers filled with 200 ml water with a wooden paddle for a varying time period from 0 day (1st day of adding leaf matter) up to 14 days in a screened cage 75cm x 45 cm x 45 cm. Gravid females of the test insects (n=30) were introduced separately into each cage. Eggs were counted after two days of mosquito introduction. In the second experiment, blended leaf matter were added to ovitraps separately and first instar larvae were introduced (n=20). In the third experiment, eleven combinations of leaf matter were used. First instar larvae (n=20) were introduced to each combination. Total larval duration, larval mortality, and pupal duration were measured. Adult fecundity was measured after rearing the adults from each treatment.

Statistical analyses were performed using MINITAB 14. Correlation, regression analysis, One-Way ANOVA and Tukey Kramer HSD tests were performed for the first experiment and One-way ANOVA was performed for the second experiment. MANOVA was performed manually for the last experiment.

First experiment revealed that females of gravid *Aedes albopictus* prefer highly decomposed leaf matter for oviposition. The results of the second experiment showed that larval and pupal growth performances were significantly varied with leaf species. Neem (*Azadirachta indica*) enhanced the larval mortality, larval and pupal duration and reduced the fecundity. This study further revealed that different leaf matter combinations vary significantly on the growth performance of *Aedes albopictus*. Highest larval mortality was recorded in "Neem-Dawata" leaf combination.