

Evaluation of Larvicidal Properties of Aqueous Extracts of Papaya Leaf, Fruit Peel and Seed against Aedes aegypti and Aedes albopictus

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Dengue Fever (DF) is an infection caused by the dengue virus, which is still a public health problem in Sri Lanka. Resistant populations have been produced by chemical insecticides such as larvicides used to control *Aedes aegypti* and *Aedes albopictus*. Higher dosages are therefore required, which naturally have harmful impacts on people, animals, and the environment. To combat insects as pests and vectors, researchers have thus turned their focus to naturally occurring plant-based compounds with insecticidal qualities. Because of its nutritional and medicinal significance, the papaya (*Carica papaya*), an herbaceous fruit crop in the Caricaceae family, has gained attention among academics. Therefore, the study was aimed to determine the larvicidal efficacy of aqueous extracts of papaya leaf, seed, and peel against *A. aegypti* and *A. albopictus*. For that aqueous extracts of leaf, seed and peel of *C. papaya* were prepared with distilled water and they were freeze dried. Obtained extracts were subjected to larvicidal assay and the results showed that the seed and peel extracts have a higher larvicidal activity against *A. aegypti* than leaf extracts with LC₉₀ at 1023.29 ppm and 954.99 ppm respectively. Also, the aqueous extracts were checked for Lethal Time (LT₉₀) and results obtained for seed and peel were 48.97 hr and 50.11 hr respectively. The results showed that papaya seed and peel extracts were effective in killing larvae of *A. albopictus* with Lethal Concentration (LC₉₀) 794.32 ppm and 870.96 ppm and Lethal Time resulted were (LT₉₀) at 42.65 hr and 47.86 hr respectively. Therefore, the utilization of *C. papaya* seed and peel aqueous extracts as environmental friendly vector control agent, particularly for *A. aegypti* and *A. albopictus*, can be considered as one of the potential sources for isolation of new larvicidal agents.

Key words: *Aedes aegypti*, *Aedes albopictus*, *Carica papaya*, Larvicidal activity