

## Larvicidal Effect of *Carica papaya* Leaf Extract Against *Aedes* Mosquitoes

R. R. Karunarathne<sup>1, 2\*</sup>, F. Noordeen<sup>2</sup>

<sup>1</sup>Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

<sup>2</sup>Department of Microbiology, Faculty of Medicine, University of Peradeniya,  
Sri Lanka

\* [ruchira.r.karunaratne@hotmail.com](mailto:ruchira.r.karunaratne@hotmail.com)

Dengue is an acute viral infection transmitted by infected *Aedes aegypti* and *Aedes albopictus* mosquitoes causing dengue fever or dengue haemorrhagic fever. Vector control is the most effective way to control dengue. Chemical larvicides are toxic to the environment and intense use leads to development of resistance. The best larvicides would be safe and eco-friendly bio-products. The objective of the present study was to test the anti-*Aedes* activity of *C. papaya* leaf extract against larvae of *Ae. aegypti* and *Ae. albopictus*. Fresh leaves of *C. papaya* were ground well without adding any water, squeezed and filtered to obtain a pure fresh leaf extract. Different amounts of distilled water were mixed with pure leaf extract to prepare different concentrations and tested against the fourth instar larvae of *Ae. aegypti* and *Ae. albopictus*. Following the treatment with *C. papaya* leaf extracts, number of dead larvae was recorded at every 12 hours for 48 hours. Percentage larval mortality and LC<sub>50</sub>, LC<sub>90</sub> values were calculated to evaluate the larvicidal activity at different concentrations of *C. papaya* leaf extract. Pure leaf extract of *C. papaya* showed a larvicidal activity against the fourth instar larvae of *Ae. aegypti* and *Ae. albopictus*. One hundred percent mortality was observed for the larvae of *Ae. aegypti* and *Ae. albopictus* within 12 hours at the highest concentration of *C. papaya* leaf extract treatment, 20% (v/v). For *Ae. aegypti*, the LC<sub>50</sub> and LC<sub>90</sub> values were 5.57% (v/v) and 10.29% (v/v), respectively. For *Ae. albopictus*, the LC<sub>50</sub> and LC<sub>90</sub> values were 5.53% (v/v) and 12.09% (v/v), respectively. In conclusion, *C. papaya* leaf extract showed larvicidal activity against the fourth instar larvae of, *Ae. aegypti* and *Ae. albopictus* at different concentrations.

**Key words:** Dengue, *C. papaya* leaf extract, Larvicidal activity