

MOSQUITOCIDAL POTENTIAL AND CHEMICAL COMPOSITION OF ESSENTIAL OIL AND ETHANOLIC EXTRACT OF *LITSEA PETIOLATA* HOOK.F. (LAURACEAE) FROM NORTHERN THAILAND AGAINST *Aedes Aegypti* (DIPTERA: CULICIDAE)

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Abstract. In an on-going process of screening for insecticides derived from Thai medicinal plants, extracts of *Litsea petiolata* (“Thummang” in Thai) leaves demonstrated promising larvicidal activity against *Aedes aegypti*, a dengue vector. Qualitative analysis of chemical composition using gas chromatography coupled with mass spectrometry revealed that principal constituents present in *L. petiolata* leaf essential oil (EO) were 7-octen-2-one (44.19%) and 2-undecanone (23.29%), together with (Z,E)-farnesol (8.52%), β -caryophyllene (7.46%) and 12-tridecen-2-one (4.85%); while those of ethanol extract (EE) were 7-octen-2-one (23.22%), bis (2-ethylhexyl) phthalate (20.92%) and 2-undecanone (11.50%), together with 12-tridecen-2-one (9.32%), α -tocopherol (8.16%) and propylparaben (6.82%). After a 24-hour treatment period, EO and EE demonstrated a 50% lethal dose against *Ae. aegypti* larvae of 27.7 and 188 mg/l, respectively and against adult stage of 2.40 and 10 μ g/mg female mosquito, respectively. EO provided 100% repellent protection for 15 minutes against *Ae. aegypti* but EE showed no repellent activity. This study provides data favorable for developing essential oil from *L. petiolata* leaves as an alternative or supplementary natural product insecticide for inclusion in a mosquito control management program.

Keywords: *Aedes aegypti*, *Litsea petiolata*, essential oil, ethanolic extract, mosquito-tocide, repellent

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