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## Larvicidal Activity Of *Curcuma heyneana* Val. & v. Zijp Rhizome Against *Aedes Aegypti* Larvae.

Ferry Ferdiansyah Sofian\*, Lamora Tamba, Yasmiwar Susilawati, Dudi Runadi, Ami Tjitraresmi, Zelika Mega Ramadhania, Moelyono Moekti Wardojo

Department of Pharmaceutical Biology, Faculty of Pharmacy, Universitas Padjadjaran, Jl. Raya Bandung - Sumedang KM 21, Jatinangor 45363, Indonesia

### ABSTRACT

Dengue Hemorrhagic Fever (DHF) caused by *Aedes aegypti* mosquito is an acute disease. Many people commonly use larvicide from the hazardous synthetic materials for preventing this disease. The aim of this study was to investigate the larvicidal activity of ethanol extract and essential oil from *Curcuma heyneana* Val & v. Zijp rhizome against *Aedes aegypti* larvae. Larvicidal test was demonstrated by observing the larvae mortality after 24 hours of treatment. The larvicidal test data was evaluated using probit analysis in order to determine the values of LC<sub>50</sub> and LC<sub>90</sub>. The essential oil compounds from *Curcuma heyneana* were evaluated by using GCMS (gas chromatography-mass spectroscopy). The results demonstrated that the extract from *Curcuma heyneana* revealed no significant activity against *Aedes aegypti* larvae, whereas the essential oil tested demonstrated significantly larvicidal activity with LC<sub>50</sub> and LC<sub>90</sub> values of 35.33 µg/ml and 86.02 µg/ml, respectively (LC<sub>50</sub><100 µg/ml). The analysis of essential oil from *Curcuma heyneana* rhizome using GC-MS showed at least 84 compounds separated and 3 major compounds were 11H-[1]Benzopyrano[4,3-b]indol-6-one type 1 (11.47%), 11H-[1]Benzopyrano[4,3-b]indol-6-one type 3 (8.11%) and Isocurcumenol type 1 (7.68%). It was observed that the isolated essential oil from *Curcuma heyneana* possessed remarkable larvicidal properties.

**Keywords:** *Curcuma heyneana* Val & v. Zijp., Larvicidal, *Aedes aegypti*, essential oil

\*Corresponding author