

# **BIOLARVACIDAL EFFECTIVITIES of ETHANOL EXTRACT of DISTILLING WASTE of VETIVER OIL (*Vetiveria zizanoides*) to *Aedes aegypti*, *Culex sp.*, and *Anopheles sundaicus* MOSQUITOS LARVAES**

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## **ABSTRACT**

Mosquitos biolarvacidal activity to larvaes of *Aedes aegypti*, *Culex sp.*, and *Anopheles sundaicus*, phytochemical screening, and chemical compound analysis by GC-MS of ethanol extract of distilling waste of vetiver oil (*Vetiveria zizanoides*) have been studied. Biolarvacidal effect on 3<sup>rd</sup> and 4<sup>th</sup> instar larvaes of mosquito species *Aedes aegypti*, *Culex sp.*, and *Anopheles sundaicus* have been investigated in a concentration dependent manner (500, 1000, 2000, 3000, dan 4000 ppm) for 24 h. With 1000 ppm concentration of ethanol extract of distilling waste of vetiver oil exposure of the larvaes *Aedes aegypti*, *Culex sp.*, and *Anopheles sundaicus* led to 56, 50, and 100 % mortality with LC<sub>50</sub> 1373.6, 7095.4, and 482.7, respectively. LT<sub>50</sub> in 4000 ppm concentration for *Aedes aegypti*, *Culex sp.*, and *Anopheles sundaicus* larvaes are 353,3; 1351,6; dan 168,4 minutes, respectively. Presence of terpenoids, flavonoids, and saponin have also been observed in ethanol extract and GC-MS analysis indicated 10 components with main component is isokhusenic acid.

**Keywords:** *Vetiveria zizanoides*, biolarvacidal, *Aedes aegypti*, *Culex sp.*, *Anopheles sundaicus*