

ABSTRACT

Background

Dengue hemorrhagic fever is a disease caused by dengue virus whose main vector was *Aedes aegypti*. Using natural chemical derived from basil (*Ocimum basilicum L.*) is one of ways to control dengue in larval stage.

Purpose

This study is to determine the effect of 70% ethanol extract of basil leaves against the third instar of *Ae. Aegypti* larvae and to determine the levels of LC₅₀ and LC₉₉.

Method

This experiment was done in 8 groups with different concentrations. Zero concentration was used as negative control. It was a mixture of aquades and Tween 20. The other concentrations are 0,2%; 0,3%; 0,4% ;0,5%; 0,75%; 1% and 2%. Each group contained 25 larvae in 100 ml solution of 70% ethanol extract of basil leaves was tested 4 times. Mortality rate was counted after 24 hours of observation. Data was then analyzed by *One Way ANOVA*, *LSD* dan *Probit* analysis to determine LC₅₀ and LC₉₉.

Result

Probit analysis showed that LC₅₀ was 0.763% and LC₉₉ was 1.513%. Based on *One Way ANOVA*, there were at least two groups of extract concentration of basil leaf (*Ocimum basilicum L.*) that caused significant difference of larvae mortality in groups test ($p < 0.05$). *LSD* test showed that there were 2 pairs of group that did not have significant difference. They were group I and II ($p = 1.000$) and group III and IV ($p = 0.067$).

Conclusion

In conclusion, The solution of 70% ethanol extract of basil leaves (*Ocimum basilicum L.*) has larvicidal effect against third instar larvae of *Aedes aegypti* with the LC₅₀ 0.763% and LC₉₉ 1.513%.

Keywords: larvicide, basil leaves (*Ocimum basilicum L.*), the third instar larvae of *Aedes aegypti*