
Abstract

Background: Dengue Hemorrhagic Fever (DHF) is an endemic disease transmitted by *Aedes aegypti* which is supposed to be demolished by using the Larvicidal activity. However, there are some *Ae. aegypti* larvae which are found resistant against the temephos in some provinces in Indonesia. Thus, this has been one of the biggest concern of The Ministry of Health Republic Indonesia. Apart from the resistance effect caused, temephos has been reported causing a water pollution which triggers the decreasing standard of human health and immune system. These factors have created a need for search of a new and natural larvicide, which one of it can be gained from *Averrhoa*. This research is aimed at comparing the effectiveness between the extract *Averrhoa bilimbi* and *Averrhoa carambola* towards the *Ae. aegypti* larvae's mortality.

Method: An experimental laboratory research involving the design of post test-only control group. Twenty five larvae *Ae. aegypti* third instar were carried out at 5 different concentrations (0%, 1%, 1.6%, 2.6%, 3.4%, and 4%). The larva demolition is counted within 24 hours. The mortality data is then analysed with the probit analysis.

Results: The extract of *Averrhoa bilimbi* and *Averrhoa carambola* can cause the mortality of the *Ae. aegypti* larvae. LC₉₉ 24 hours from *Averrhoa bilimbi* was recorded = 1.47% (1.20-2.04%), whereas LC₉₉ 24 hours was recorded from *Averrhoa carambola* = 8.96% (7.59-11.31%). The major loses appeared is the stretchy necks and injured appendices. The bioactive substances which are predicted to be the causes of the mortality in this research are saponin glycoside and flavonoid.

Conclusion: The extract of *Averrhoa bilimbi* produces the strongest and the most effective larvicide which will be potentially developed as a new larvicide.

Keywords: *Natural larvicide, Aedes aegypti, Averrhoa bilimbi, Averrhoa carambola*