



ABSTRACT

Title of Abstract : Environmentally Friendly Larvicides: Comparison of Eleutherine bulbosa and Allium sativum Extracts against Aedes aegypti mosquito larvae

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Background : Research has identified several plants that have potential larvicidal properties, notably Eleutherine bulbosa (Dayak onion) and Allium sativum (garlic), both of which are rich in flavonoids. Flavonoids are known insecticides, thus making these plants promising candidates to control mosquito populations and reduce the risk of dengue transmission.

Objective : This study aims to evaluate the larvicidal efficacy of extracts from Dayak onion and garlic in lethal ovitraps.

Research Methods/ Implementation Methods : This study used a true experimental design with a post-test only control group. The samples used were Aedes aegypti larvae. The independent variables were larvicidal concentrations of dayak onion and garlic (0.6%, 1.2%, 1.8%) and abate as positive control. The dependent variable was mosquito larvae mortality rate. The experiment was replicated four times. Mosquito larvae were monitored and examined at intervals of 10 minutes, 20 minutes, 30 minutes, 1 hour, and 24 hours.

Results : The average mortality of Aedes mosquito larvae on exposure to Dayak onion is not better than exposure to garlic, with an average mortality of Dayak onion 0.6% (71%), 1.2% (87%) and 1.8% (75%). Meanwhile, the effectiveness of garlic was almost the same in the three concentrations tested, which was around 99-100%.

Conclusion/Lesson Learned : The garlic used was highly effective in killing mosquito larvae, even at the lowest concentration (0.6%). These results show that garlic has the potential to be a stable and consistent larvicidal agent, effective at low doses without requiring an increase in concentration to increase effectiveness.

Keyword : Aedes aegypti; Bio Larvicide; Eleutherine bulbosa; Allium sativum,