

LARVACIDE EFFECT OF ETHANOL EXTRACT OF PIPERIS NIGRI FRUCTUS AGAINST AEDES AEGYPTI LINN. LARVA

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Abstract : Five concentration of ethanol extract of *Piperis nigri* Fructus (Black pepper), i.e. 1.3, 5, 7 and 9 ppm were investigated their activity against *Aedes aegypti* Linn. larva. Temephos 2 ppm and tap water were used as the positive and negative control respectively. All treatments were done in five times replication. The number of dead larvae after 24 hours exposure was then calculated. The data were analysed using Probit analysis. It can be concluded that there was significant difference on the ability between the negative control and all five concentration of ethanol extract tested against the larva. However there was no any significant difference of ethanol extract 9 ppm compared to that of positive control. LC₉₀ (Lethal Concentration 90%) is 8.374 PPM

Key words: Larvacide, *Aedes aegypti* Linn. *Piperis nigri* Fructus

INTRODUCTION

Dengue Haemorrhagic Fever (DHF) represent one of infection disease which is caused by arbovirus and spreaded through mosquito *Aedes intercession*. Generally in South East Asia as well as in Indonesia epidemic Dengue Haemorrhagic Fever related to the distribution of *Aedes aegypti* Linn., considering that this mosquito especially multiplies indoor, antropophilic and take blood of human being as its food [1]

Data of Case of DHF in Indonesia in the year of 2003 showing improvement of about 24% compared to that in the year 2002. This phenomenon needs special attention and also the maximum effort to overcome and degrade fatality [2]. The best to do to stay away of dengue is precaution from the infection. One of program of prevention based on disconnection of enchain infection is by controlling the infection vector, i.e. mosquito of *Aedes aegypti* Linn.

Eradication of Mosquito which is at most conducted by the use of synthetic chemical insecticide in short-range is very effective because it can reduce population of mosquito quickly, practicaliy, relatively cheap and is acceptable by the society [3]. However since the larvae are still a life, new mosquito will be born again and later on they can cause this disease to arise. The number of *Aedes* in Indonesia is controlled by using insecticide, in the form of adulticide, larvacide, synthetic chemical larvacide used occasionally is temephos [2]

Usage of synthetic chemical insecticide can worry and menace environmental balance. In this time the use of plant as insecticide has been observed, for example tobacco and pyrethrum [4] which are more beneficial because they are biodegradable. Among plants having insecticide activity, fruit (fructus) of *Piper nigrum* L. (Black pepper) have high insecticidal effect and superior against crop pest and other insects such as mosquito [5].

Fruit (fructus) of *Piper nigrum* L. (Black pepper) contain 1%-2.5% of essential oil; (consists of terpen hydrocarbon: phelandren, kariofilen, antoksilin, dipentene, limonene); 4%-10% khavisin; 5%-9% piperine; piperidine; piperic acid; 7% lipid; 36% amyllum and 12% water [6,7] These compounds have been expected to be able to kill larva of *Aedes aegypti*