

FACULTY OF MEDICINE AND HEALTH SCIENCES

UNIVERSITY OF MUHAMMADIYAH MAKASSAR

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**LARVICIDAL ACTIVITY OF A COMBINED EXTRACT OF COCOA BEAN
HULLS (*Theobroma cacao* L) AND PAPAYA SEEDS (*Carica
papaya* L) AGAINST *Aedes aegypti* LARVAE**

ABSTRACT

Background : Dengue Hemorrhagic Fever (DHF) is an infectious disease that remains a public health problem in Indonesia. This disease is caused by the dengue virus, which is transmitted by the *Aedes aegypti* mosquito. The continuous use of synthetic larvicides such as temephos (Abate®) can lead to resistance in mosquito larvae and have adverse effects on health and the environment. Therefore, safer plant-based larvicide alternatives are needed. The husks of cocoa beans (*Theobroma cacao* L) and papaya seeds (*Carica papaya* L) are known to contain secondary metabolites such as flavonoids, alkaloids, saponins, and tannins that have potential as natural larvicides.

Methods : This study is a laboratory-based experimental study with a control group and experimental group design. Extracts were obtained using the maceration method with 70% ethanol as the solvent, followed by phytochemical screening and larvicidal activity testing against *Aedes aegypti* larvae. Observations were conducted over a 24-hour period using five treatment groups with different extract ratios (positive control, negative control, 1:1, 1:2, and 2:1).

Results : The results of the study show that a combination of cocoa bean husk extract (*Theobroma cacao* L) and papaya seed extract (*Carica papaya* L) exhibits larvicidal activity against *Aedes aegypti* larvae, as indicated by an increase in the larval mortality rate 24 hours after treatment. Larval mortality after 24 hours showed that the extract combination with a 1:2 ratio exhibited the highest larvicidal activity, with 24 out of 30 test larvae dying, an average of 8 deaths, and a mortality rate of 80%, indicating better activity compared to other ratio combinations.

Keywords : *Aedes aegypti*, cocoa seed husk, papaya seeds.