

## Larvicidal Activity of Aedes Aegypti from a Simple Preparation of Cashew (Anacardium occidentale L.) Nut Shell Extract for Community Level Use.

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### Abstract:

Dengue fever is a major risk to public health due to the recent worldwide spread. Chemical vector control are usually considered, therefore, negative consequences are commonly occurred due to chemical resistance and environmental effects. Volume of cashew nut shell is become increasing as by-product after nut processing. This study was aimed to evaluate larvicidal activity and toxicity of cashew shell extract with simple preparation for community use. Fresh cashew nut shell was dried and grinded in powder form. Material was immersed in water tank for 72 h and ratio of flavor and material and water ratio was 100 g/L (10% W/V). The supernatant of stock solution was diluted to 1:5, 1:10, 1:20, 1:50 and 1:100 of larvicidal solution for phenolic content measurement, analysis of alkyl phenols by gas chromatography-mass spectrometry (GC/MS) and larvicidal activity test. Larvicidal activity was effective at  $LC_{50} = 3.8$  mg of GAE/ml;  $LC_{90} = 11.5$  mg of gallic acid equivalent (GAE) /ml. The solution was contained five alkyl phenols, which included saturated cardol, monounsaturated cardol, anacardic acid, diunsaturated cardanol and monounsaturated cardanol. Anacardic acid was major active compound, which was correlated to mass spectra. This larvicidal solution preparation was simple and cost effectiveness, which may useful in community level especially in cashew cultivating area. Field application and public training on this study will be conduct on controlling of mosquito-borne diseases.

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