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Effect of medicinal plant pesticide and microbial insecticides for the control of Dengue vector, *Aedes aegypti* (Insecta: Diptera: Culicidae)

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Mosquitoes can transmit more diseases than any other group of arthropods and affect millions of people throughout the world. Dengue is an acute viral infection with potentially fatal complications. Dengue fever is spread by the bite of infected *Aedes* mosquitoes. *Aedes aegypti* mosquito is the principal vector of the viruses responsible for urban yellow fever, dengue, dengue hemorrhagic fever, as well as Zika and Chikungunya in Brazil. To prevent the proliferation of mosquito-borne diseases and to improve the quality of the environment and public health, mosquito control is essential. Biopesticides provide an alternative to synthetic pesticides because of their generally low environmental pollution, low toxicity to humans and other advantages. Many herbal products have been used as natural insecticides before the discovery of synthetic organic insecticides and also some of the biological control agents have been evaluated against larval stages of mosquitoes, of which the most successful ones comprise bacteria such as *Bacillus megaterium*. The purpose of this investigation is to determine the larvicidal and pupicidal activity of *Justicia adhatoda* and microbial insecticide, *Bacillus megaterium* on dengue vector, *Aedes aegypti*. Lethal dose concentrations (LC50 and LC90) were calculated for different larval instars and pupal stages. Field trials were conducted at the breeding sites of the *A. aegypti* and the mortality was observed after 72 hours of treatment.

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