

Sub-lethal effect of larvicide and adulticide on the reproductive parameters of Dengue vector in Mandalay

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Abstract

Dengue is a major public health problem globally and *Aedes aegypti* plays a major role in dengue transmission. Chemical control is an effective way to reduce vector population. Although pesticides are designed to kill pest populations, they are seldom 100% effective; a few individuals usually survive. Sub-lethal doses of insecticides can affect populations of insect in several ways. This study was aim to investigate the effect of sub-lethal exposure of larvicide and adulticide on the reproductive parameters of *Ae. aegypti*. Bioassays were conducted in both larval and adult stages following WHO standard procedures. Selection pressure were conducted five generation by using abate and deltamethrin in three different groups (larval, adult, larval and adult). Result revealed *Ae. aegypti* from Mandalay was resistant to deltamethrin 0.05%. For the gonotrophic cycles, larvicide(abate) treated strain observed the longest duration and combination of larvicide and adulticide (abate+deltamethrin) treated strain showed the shortest. Adulticide (deltamethrin) treated strain and combination of larvicide and adulticide (abate+deltamethrin) treated strain revealed much lower fecundity as compared to insecticide free strain. No oviposition and infertile eggs were observed in some females during third and fifth generation of insecticide treated strains. Therefore, it is an additional benefit on exposure to sub-lethal dose of insecticides.