

INSECTICIDES SUSCEPTIBILITY OF ANOPHELINE MOSQUITOES IN SELECTED AREAS OF PYIN OO LWIN DISTRICT

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Abstract

In Myanmar, the primary malaria vectors are *Anopheles dirus* and *Anopheles minimus*. Vector control is an effective way to reduce malaria transmission. The use of insecticide-treated bed nets and indoor residual spraying are the main malaria vector control methods. At present, pyrethroids are the main insecticides used in controlling malaria throughout the country. This study was performed on susceptibility of anopheline mosquitoes to different insecticides [0.75% permethrin, 0.05% deltamethrin, 4% dichlorodiphenyltrichloroethane (DDT)] in Pyin Oo Lwin (Myain Gyi village), Madaya (Chaung Thaphaw village) and Singu (Kouck Ko Ain village) townships of Pyin Oo Lwin district by using World Health Organization susceptibility test. Results indicated that the mortality rates 24hours after exposure were 100% for the *An. minimus* from different populations for three insecticides (deltamethrin, permethrin, DDT) tested. For *An. maculatus* in Kouck Ko Ain and Myain Gyi were susceptible to the three insecticides, except in Chaung Thaphaw where this species was investigated slightly increase in tolerance (mortality 95.65%) to DDT. The mortality rates 24hours after exposure of *An. annularis* were 100% with deltamethrin and permethrin but were reduced with DDT in Myain Gyi (mortality 94.43%) and Chaung Thaphaw (mortality 78.85%) respectively. The secondary vector, *An. annularis* in Myain Gyi was observed increase in tolerance to DDT. However, *An. annularis* in Chaung Thaphaw was resistant to DDT. Based on the results, the primary malaria vector *An. minimus* in the study areas is still susceptible to all the insecticides tested and the secondary vectors (*An. annularis* and *An. maculatus*) are also susceptible to pyrethroid insecticides.