

CONTROL OF MOSQUITO VECTORS OF TROPICAL INFECTIOUS DISEASES: (3) SUSCEPTIBILITY OF *Aedes Aegypti* TO PYRETHROID AND MOSQUITO COILS

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Abstract. We collected 11 groups of *Aedes aegypti* mosquitoes from various locations of Thailand. After rearing in the laboratory, the colonies were tested for KT_{50} values to *dl,d-T80*-allethrin 0.5% mosquito coils in a 25 m³ room semi-field test and KD_{50} and LD_{50} values to *dl,d-T80*-allethrin by a topical application method. Two groups of mosquitoes were susceptible to allethrin similar to a SS (known allethrin sensitive) group, and other 9 groups showed various levels of lower susceptibility to allethrin; of these 6 had susceptibilities similar to a BS (known allethrin resistant) group with extremely low susceptibility, while the remaining 3 groups had susceptibilities to allethrin between the SS and BS groups. The KD_{50} values with the topical application were found to correlate highly with the KT_{50} values in the 25 m³ room semi-field test, providing a useful test method for insect susceptibility evaluation. The allethrin mosquito coils, even at higher concentrations, had no activity against the 6 decreased susceptibility groups, similar to the BS group. With the 25 m³ room semi-field test, mosquito coils with *d,d-T*-prallethrin at concentrations of 0.1 to 0.15% plus a synergist and those with methoxymethyl-tetrafluorobenzyl tetramethylcyclopropane carboxylate (K-3050) at a concentration of 0.1% plus a synergist were found to be highly effective against these mosquito groups. These two pyrethroids had smaller KD_{50} and LD_{50} values for topical application, and were more effective than *dl,d-T80*-allethrin, having the potential to control *Ae. aegypti* mosquitoes with low allethrin susceptibility.

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