

Adulticidal susceptibility evaluation of an arbovirus vector *Aedes albopictus skuse* (Diptera: Culicidae) on Penang Island, Malaysia

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Insecticide based vector control approaches are facing challenges due to the development of resistance in vector mosquitoes. Therefore, a proper resistance surveillance programme using baseline lethal concentrations is crucial for the resistance management strategies. Currently, the World Health Organization's (WHO) diagnostic doses established for *Aedes aegypti* and *Anopheles* are being used to study the resistance status of *Aedes albopictus*. In this study we established the diagnostic doses for permethrin, deltamethrin and malathion using a known susceptible reference strain and 5 field collected populations were

screened against these doses following the WHO protocol. This study established the diagnostic dose of malathion 3.4%, permethrin 0.45% and deltamethrin 0.08%, that differs from the WHO doses. Among the insecticides tested on 5 wild populations, only deltamethrin showed high effectiveness. While, different susceptibility and resistance patterns were observed against permethrin, malathion and DDT 4%. This study may facilitate the health authorities in future to improve chemical based vector control operations in the dengue endemic areas.

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