

# DETECTION OF INSECTICIDES RESISTANCE IN ANOPHELINE MOSQUITOES IN SELECTED AREAS OF SELANGOR, MALAYSIA

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## **Abstract**

Vector control activities are important tools to control malaria in Malaysia. At present, chemical control using pyrethroid is a major method for malaria control. However, extensive use of insecticides for malaria control has selected *Anopheles* mosquitoes resistance to insecticides. It was experimental laboratory based study using controlled and studied mosquitoes to assess insecticides resistance. Expression of elevated oxidases and esterases were measured by micro-enzyme assay. Results indicated that the mean optical density value of oxidases activity was consistently elevated in *Anopheles hyrcanus* (Sungai Besi Camp) was  $0.78 \pm 0.26$  in compared to *An. hyrcanus* (Puchong) was  $0.52 \pm 0.24$ . The mean optical density of oxidases indicated statistically significant different between *An. hyrcanus* (Sungai Besi) and *An. hyrcanus* (Puchong) ( $p < 0.05$ ). The mean optical density value of oxidases in *An. maculatus* (laboratory strain) was  $0.48 \pm 0.21$  and that in *An. maculatus* (Jeram Kedah) was  $0.53 \pm 0.19$ . The intensity of oxidases was statistically different in enzymes expression between *An. maculatus* (laboratory stain) and *An. maculatus* (Jeram Kedah) ( $p < 0.05$ ). The mean optical density value of esterases in *An. maculatus* (laboratory strain) was  $0.13 \pm 0.02$  and that in *An. maculatus* (Jeram Kedah) was  $0.31 \pm 0.12$ . The mean optical density of esterases indicated statistically significant different between *An. maculatus* (laboratory stain) and *An. maculatus* (Jeram Kedah) ( $p < 0.05$ ). Based on resistance enzyme activities, Malaysian *An. maculatus* and *An. hyrcanus* exhibit resistance against chemical insecticides.

**Time of study: 2008-2009**