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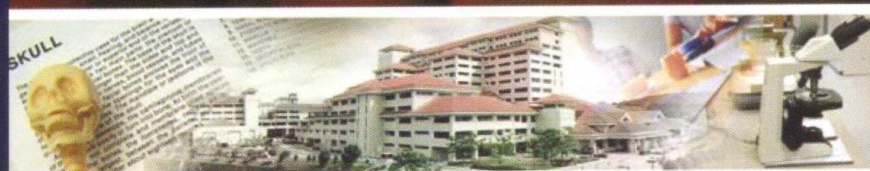
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## LARVICIDE SUSCEPTIBILITY STATUS OF *CULEX QUINQUEFASCIATUS* SAY OBTAINED FROM KLANG VALLEY AND EAST COAST, PENINSULAR MALAYSIA

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### Background:

*Culex quinquefasciatus* Say is an urban vector of filariasis and it is the most common nuisance mosquito in all living premises. Insecticide application is the most widely used strategy to control the mosquito populations. However, repeated use of the same insecticide could contribute to the development of insecticide resistance due to the selection pressure. Therefore, the aim of this study is to determine the susceptibility status of *Cx. quinquefasciatus* populations obtained from the Klang Valley (Shah Alam, Selangor and Kepong, Kuala Lumpur) and East Coast (Kuala Terengganu, Terengganu) against DDT, propoxur, malathion and permethrin.

### Materials and Methods:

Mosquito larvae were collected from high organic stagnant water in Kuala Lumpur (Kepong), Selangor (Shah Alam) and Terengganu (Kuala Terengganu) by dipping method. Larval bioassay was conducted according to WHO standard procedures for insecticide susceptibility test. A total of five concentrations of each insecticide were tested against third instar larvae. Larval mortality was recorded after 24 hours of exposure period. Bioassay results were subjected to probit analysis to obtain 50% lethal concentration (LC<sub>50</sub>) values, and resistance ratio (RR) was also determined by the LC<sub>50</sub> of field strain to the LC<sub>50</sub> of laboratory susceptible strain.

### Results:

Malathion resistance was detected in *Cx. quinquefasciatus* collected from Klang Valley by 12 folds, compared to laboratory susceptible strain. This finding indicated that malathion no longer effective to control the mosquito populations Klang Valley. In addition, our study also found that *Cx. quinquefasciatus* collected from Klang Valley showed the tendency in resistance development toward DDT, propoxur and permethrin, with resistance ratio ranged from 1.77 to 3.00. However, it is interesting to note that no resistance were detected in Terengganu against all groups of insecticides, with resistance ratio less than one, suggesting that these insecticides are still able to control mosquito populations effectively in Terengganu.

### Conclusion:

This study provides baseline information for the vector control management and insecticide resistance programme should be monitored from time to time to update the current susceptibility status of vector against various insecticides.

**Keywords:**

*Culex quinquefasciatus*, larval bioassay, insecticide resistance, Malaysia