

## **Insecticide Resistance Detection on Dengue Vector, *Aedes albopictus* Obtained from Kapit, Kuching and Sibul Districts in Sarawak State, Malaysia**

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**Abstract :** Recently, Sarawak state of Malaysia encounter an outbreak of dengue fever. *Aedes albopictus* has incriminated as one of the important vectors of dengue transmission. Without an effective vaccine, approaches to control or prevent dengue will be a focus on the vectors. The control of *Aedes* mosquitoes is still dependent on the use of chemical insecticides and insecticide resistance represents a threat to the effectiveness of vector control. This study was conducted to determine the resistance status of 11 active ingredients representing four major insecticide classes: DDT, dieldrin, malathion, fenitrothion, bendiocarb, propoxur, etofenprox, deltamethrin, lambda-cyhalothrin, cyfluthrin, and permethrin. Standard WHO test procedures were conducted to determine the insecticide susceptibility. *Aedes albopictus* collected from Kapit (resistance ratio, RR = 1.04-3.02), Kuching (RR = 1.17-4.61), and Sibul (RR = 1.06-3.59) exhibited low resistance toward all insecticides except dieldrin. This study revealed that dieldrin is still effective against *Ae. albopictus*, followed by fenitrothion, cyfluthrin, and deltamethrin. In conclusion, *Ae. albopictus* in Sarawak exhibited different resistance levels toward various insecticides and alternative solutions should be implemented to prevent further deterioration of the condition.

**Keywords :** *Aedes albopictus*, dengue, insecticide resistance, Malaysia

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