

**PRELIMINARY STUDY ON INSECTICIDE SUSCEPTIBILITY STATUS OF  
THE BLACK FLY, *SIMULIUM (SIMULIUM) VANLUNI* (DIPTERA:  
SIMULIIDAE) IN MALAYSIA**

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**ABSTRACT**

Susceptibility status of *Simulium (Simulium) vanluni* (Diptera: Simuliidae) adults obtained from Pahang, Malaysia was evaluated against 11 adulticides representing four major insecticide classes: organochlorines (DDT and dieldrin), organophosphates (malathion and fenitrothion), carbamates (bendiocarb and propoxur) and pyrethroids (etofenprox, deltamethrin, lambda-cyhalothrin, permethrin and cyfluthrin). The adult bioassay was conducted according to WHO standard protocol to determine the insecticide susceptibility. Mortality at 24 h post treatment was used as indicator for susceptibility status. *Simulium vanluni* populations in Pahang exhibited different levels of resistance against 11 adulticides with mortality ranged from 60.00 to 100.00%. *Simulium vanluni* was susceptible to propoxur, cyfluthrin and bendiocarb with 100% mortality, but resistant to other adulticides with <98% mortality. The susceptibility status of *S. vanluni* in descending order was propoxur, cyfluthrin > bendiocarb > deltamethrin > lambda-cyhalothrin > permethrin > etofenprox > DDT > malathion > fenitrothion > dieldrin. Regular surveys should be conducted to monitor the susceptibility status of this insect vector to prevent further development of resistance.

**Keywords:** Black fly, *Simulium*, insecticide resistance.