

# RESISTANCE OF *Aedes aegypti* (L.) LARVAE TO TEMEPHOS IN SURABAYA, INDONESIA

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**Abstract.** The resistance of *Aedes aegypti* mosquitoes to insecticides threatens dengue virus control efforts. In this study, *Ae. aegypti* larvae collected from 12 subdistricts in Surabaya, Indonesia, where dengue is endemic, were tested for resistance to the organophosphate, temephos. Susceptibility testing, performed according to World Health Organization (WHO) methods, showed all field strains were resistant to temephos at a dose of 0.012 mg/l, with mortality rates at 24 hours of 22% to 60%. Another susceptibility test to determine median lethal time (LT<sub>50</sub>) indicates resistance ratios ranging from 2.2 to 8.5. Although incipient resistance was detected at a dosage of 1 mg/l, as determined by the LT<sub>50</sub> mortalities higher than 80% within 24 hours were detected using the WHO method in nine subdistricts of Surabaya, indicating temephos at 1 mg/l is still effective in field conditions in these areas. In three subdistricts (Tambaksari, Gubeng and Sawahan), the mortality rates were under 80%, indicating possible resistance to temephos.

**Keywords:** *Aedes aegypti*, temephos, susceptibility test, Indonesia

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