

ABSTRACT

Background: In December 2015, there were 5 cases of fever from Sultoni Kindergarten that located in Ploso Kuning IV, Minomartani. One of them is positive suffered Dengue Hemorrhagic Fever. Dengue Hemorrhagic Fever (DHF) is caused by dengue viruses that transmitted by *Aedes aegypti*. Temephos is one of the chemical prevention methods that widely used as larvicide. The usage of temephos continuously for an extended period may cause resistance of *Ae. aegypti* larvae.

Objective: The aim of this research is to investigate the susceptibility status of *Ae. aegypti* larvae from Minomartani, Sleman, D.I. Yogyakarta, Indonesia against temephos.

Method: This study is quasi-experimental with posttest only control group design. Subjects were taken from RT 20 RW 8 Ploso Kuning IV, Minomartani. The third generation of *Ae. aegypti* larvae at the level of instar 3-4 was included in this study. Susceptibility test of *Ae. aegypti* larvae to temephos was conducted in 3 replications and following the guideline from World Health Organization which the diagnostic dose is 0.02 ppm.

Result: Total mortality rate from first, second, and third replication were 96%, 92%, and 84%. The average from those three replications is 90,6%. Total mortality rate from the control is 0%.

Conclusion: *Aedes aegypti* larvae from RT 20 of Ploso Kuning IV, Minomartani, Sleman, D.I. Yogyakarta, Indonesia has proven tolerant against temephos.

Keyword: *Aedes aegypti*, temephos, susceptibility

INTISARI

Latar belakang: Pada bulan Desember 2015, terdapat 5 kasus demam dari Taman Kanak-Kanak Sultoni yang berlokasi di Ploso Kuning IV, Minomartani. Satu dari 5 kasus tersebut positif terkena Demam Berdarah Dengue (DBD). Demam Berdarah Dengue disebabkan oleh virus dengue yang ditransmisikan oleh *Ae. aegypti*. Temefos adalah salah satu metode pencegahan secara kimia yang paling banyak digunakan sebagai larvasida. Penggunaan temefos secara terus menerus dalam waktu lama dapat menyebabkan resistensi larva *Ae. aegypti*.

Tujuan: Penelitian ini bertujuan untuk menganalisis status kerentanan larva *Ae. aegypti* dari Minomartani, Sleman, D.I. Yogyakarta, Indonesia terhadap temefos.

Metode: Jenis penelitian ini adalah eksperimental dengan rancangan *posttest only control group design*. Subjek penelitian ini diambil dari RT 20 RW 8 Ploso Kuning IV, Minomartani. Larva instar 3-4 generasi ke 3 akan digunakan dalam penelitian. Uji kerentanan larva *Ae. aegypti* dilakukan dalam 3 replikasi dan menggunakan panduan dari *World Health Organization* dengan dosis diagnostic 0,02 ppm.

Hasil: Presentasi total kematian larva dari replikasi pertama, kedua, dan ketiga adalah 96%, 92%, dan 84%. Presentasi rata-rata dari 3 replikasi tersebut adalah 90,6%. Pada control kematian larvae 0%.

Kesimpulan: Larva *Ae. aegypti* dari RT 20 RW 8 Ploso Kuning IV, Minomartani, Ngaglik, Sleman, D.I. Yogyakarta, Indonesia toleran terhadap temefos.

Kata kunci: *Aedes aegypti*, temefos, kerentanan