



ABSTRACT

RESISTANCE DETECTION ON *AEDES AEGYPTI* LARVAE FROM SEKIP AGAINST TEMEPHOS

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Background. Lately, patients who suffered from Dengue Hemorrhagic Fever (DHF) in Indonesia has increased. This condition might be caused by several factors, one of them is caused by resistance of mosquito vector to an insecticide like temephos. Temephos has been used widely as an insecticide to eradicate the vector of dengue virus such as *Ae. aegypti* larvae. Long term use and incorrect way of using temephos can cause resistance of larvae to temephos. Research proved that many resistances of temephos has occurs in many areas. Therefore, it needs to be done a research on resistance status of *Ae. aegypti* larvae to temephos in each area.

Objective. To investigate the resistance status of *Ae. aegypti* larvae against temephos in Sekip, Sleman

Method. Descriptive study with bioassay method. The subject is *Ae. aegypti* larvae instar III taken from *TK Ikip* and *SD Percobaan 2*. The subject has been cultivated in Parasitology Laboratory, Faculty of Medicine Public Health and Nursing Universitas Gadjah Mada. This study also using susceptible strain larvae from Malaysia as negative control to later on being compared with the result of this study and 3 times replications was done. The result of this study is shown as mortality percentage of *Ae. aegypti* larvae. Classification of resistance status is based on WHO classification 2013.

Result. Mortality percentage of *Ae. aegypti* larvae from Sekip, Sleman after being exposed with diagnostic dose of temephos is 100%, as well as the susceptible strain which also shows 100% of larval mortality.

Conclusion. Sample of *Ae. aegypti* larva from Sekip, Sleman is considered susceptible against temephos.

Keywords. Resistance, *Aedes aegypti*, temephos, Sekip.



INTISARI

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Latar Belakang. Akhir-akhir ini, pasien penderita demam berdarah dengue (DBD) meningkat. Kondisi ini dapat disebabkan oleh beberapa faktor, salah satunya adalah resistensi vector nyamuk terhadap insektisida seperti temephos. Temephos telah digunakan secara luas sebagai larvasida untuk membasmi vektor virus dengue seperti larva *Ae. aegypti*. Penggunaan temephos dalam jangka waktu panjang dan dengan cara yang salah dapat menyebabkan resistensi larva terhadap temephos. Penelitian membuktikan bahwa banyak resistensi temephos telah terjadi beberapa daerah. Oleh karena itu, perlu dilakukan penelitian tentang status resistensi larva *Ae. aegypti* terhadap temephos di masing-masing daerah.

Tujuan. Menyelidiki status resistensi larva *Ae. aegypti* terhadap temephos di Sekip, Sleman.

Metode. Penelitian deskriptif dengan metode bioassay. Subjeknya adalah larva instar III *Ae. aegypti* diambil dari TK Ikip dan SD Percobaa 2. Subjek telah dibudidayakan di Laboratorium Parasitologi, Fakultas Kedokteran Kesehatan Masyarakat dan Keperawatan Universitas Gadjah Mada. Penelitian ini juga menggunakan larva strain rentan dari Malaysia sebagai kontrol negatif yang hasilnya kemudian digunakan sebagai pembanding dari hasil penelitian ini dan juga dilakukan 3 kali pengulangan. Hasil penelitian ini ditunjukkan sebagai persentase kematian larva *Ae. aegypti*. Klasifikasi status resistensi berdasarkan klasifikasi WHO 2013.

Hasil. Presentase kematian larva *Ae. aegypti* dari Sekip, Sleman setelah terpapar dengan dosis diagnosis dari temephos adalah sebesar 100%, begitu juga dengan hasil dari larva strain rentan dari Malaysia yang menunjukkan 100% kematian larva.

Kesimpulan. Sampel larva *Ae. aegypti* dari Sekip, Sleman adalah rentan terhadap temephos.

Kata kunci. Resistensi, *Ae. aegypti*, temephos, Sekip.