

INTISARI

Penelitian ini bertujuan untuk mengetahui status kerentanan nyamuk *Ae. aegypti* terhadap insektisida organofosfat serta mengetahui adanya perbedaan status kerentanan dari berbagai kelompok pemaparan dan hubungan antara status kerentanan dengan lama dan frekuensi aplikasi temefos.

Penelitian ini bersifat observasional, dilaksanakan dengan pendekatan *cross sectional study*. Tahapan penelitian meliputi kegiatan pengambilan sampel uji larva instar 3 atau 4 *Ae. aegypti* dari lapangan, kolonisasi di laboratorium dan uji biokemis dengan menggunakan metode uji noda kertas saring.

status kerentanan ini dideteksi dari aktivitas enzim esterase (α -naphthyl acetate) yaitu dengan terjadinya reaksi perubahan warna homogenat subyek uji pada kertas saring, dari tidak berwarna bergeser menuju biru tua, sesuai dengan tingkatan resistensinya dari sangat sensitive/rentan (SS) menuju ke arah resisten (RR).

Hasil penelitian menunjukkan *Ae. aegypti* di Kabupaten Bantul 83,1 % telah resisten, sedangkan status kerentanan jika dilihat perdesa, yang paling resisten adalah desa Segoroyoso, dengan rerata skor 3,0 dan yang paling rentan adalah desa Baturetno, dengan rerata skor 1,8. Hasil analisa statistik dengan *One Way Anova* program PC-stat, menunjukkan adanya perbedaan status kerentanan yang signifikan ($CL=0,05$) dari 5 kelompok pemaparan. Demikian pula hasil uji regresi linier, memperlihatkan hubungan yang bermakna dengan nilai koefisien korelasi 0,83. Hasil analisis probit adalah dengan frekuensi aplikasi temefos 4 kali selama 1 tahun akan berakibat 50 % populasi *Ae.aegypti* di Kabupaten Bantul menjadi resisten.

Kata-kata kunci : *Aedes aegypti* – resistensi insektisida – organofosfat – esterase non spesifik – uji biokemis

ABSTRACT

Detection of Insecticide Resistance to Organophosphate By Filter Paper Spot Technique in *Aedes aegypti* Collected in Bantul District, Yogyakarta Special Region

The aim of this research is to investigate the resistance status of *Ae. aegypti* to organophosphate insecticide in different subdistricts. This research was observational and cross sectional. The activity of research includes collecting instar third and fourth larvae instar of *Ae. aegypti* from water containers in different villages of different subdistricts, colonized in laboratory and tested its biochemical resistance by using the Filter Paper Spot Technique .

The resistance status was detected from the esterase enzyme activity (a-naphthyl acetate) showing a change of colour reaction happening to the homogenate subject test to *filter paper* spot, from uncoloured to deep blue. Its resistance level was ranked from sensitive (SS) to resistance (RR). Results of the study revealed that 83,3 % of *Ae. aegypti* larvae sampled in Bantul district were resistant OP insecticide due to elevated esterase hydrolyzing a-naphthyl acetate. The village showing highest resistance status of *Ae. aegypti* was Segoroyoso (colour eyescore 3,0), while that most susceptible one was village Baturetno (colour eyescore 1,8).

Due to most of *Ae. aegypti* mosquito population in Bantul district were resistant to temephos so the use of organophosphate insecticide is not recommended. Alternative control like source reduction and other environmental management, biological control by larvivarous fish and Mesocyclops are encouraged and recommended.

Key words: *Aedes aegypti* – insecticide resistance – organophosphate – non specific esterase – biochemical test