

INTISARI

ANALISIS SPASIAL STATUS KERENTANAN *Aedes aegypti* Linn TERHADAP INSEKTISIDA ORGANOFOSFAT & PIRETROID DI DAERAH SPORADIS DAN ENDEMIS DENGUE KABUPATEN MAGETAN

Latar belakang. Insidensi penyakit dengue masih menjadi masalah kesehatan di Indonesia, salah satunya di Kabupaten Magetan. Penanggulangan penyakit dengue masih ditujukan kepada pengendalian vektornya (*Ae. aegypti*) menggunakan insektisida organofosfat (malation dan temefos) dan piretroid (alfa sipermetrin). Di Kabupaten Magetan belum ada laporan mengenai status kerentanan nyamuk *Ae. aegypti* terhadap insektisida organofosfat dan piretroid maupun pemetaan tentang status kerentanan *Ae. aegypti* terhadap insektisida tersebut. Tujuan: penelitian ini adalah untuk mengetahui peta sebaran kasus DBD dan mengetahui status kerentanan nyamuk *Ae. aegypti* terhadap insektisida golongan organofosfat (temefos, malation) dan piretroid (Alfa sipermetrin) di 4 wilayah kerja Puskesmas di Kabupaten Magetan yaitu Candirejo dan Taji (endemis) serta Plaosan dan Ngujung (sporadis). Data ditampilkan dalam bentuk tabel dan peta dengan menggunakan aplikasi Arcgis. Penelitian ini menggunakan metode observasi dengan rancangan *cross sectional*. Pemasangan ovitrap untuk mendapatkan telur *Aedes* sp, dan pengambilan larva tempat perkembangbiakan nyamuk dilakukan secara purposive di empat wilayah puskesmas, yaitu Candirejo, Taji, Plaosan dan Ngujung. Telur dan larva yang diperoleh dipelihara di laboratorium untuk menghasilkan F1 untuk keperluan pengujian. *Bioassay* botol CDC digunakan untuk menentukan tingkat kerentanan nyamuk *Ae. aegypti* terhadap temefos, malation dan alfa sipermetrin. Berdasarkan hasil penelitian, populasi nyamuk *Ae. aegypti* di empat wilayah puskesmas menunjukkan resistensi terhadap temefos, dengan angka kematian sebesar 77% di daerah endemis Candirejo dan di Taji 87% sedangkan di daerah sporadis Plaosan sebesar 47% dan 92% di Ngujung sedangkan populasi nyamuk *Ae. aegypti* resisten terhadap malation, dengan angka kematian 25% di Ngujung, 52,5% di Plaosan, 48,33% di Candirejo, dan 78,17% di Taji. Sementara itu, resistensi terhadap alfa sipermetrin di Candirejo, Plaosan dan Ngujung, dengan tingkat kematian masing-masing 74,17%, 65% dan 68,33% serta toleran di Taji, dengan tingkat kematian 82,5%. Dapat disimpulkan bahwa telah terjadi resistensi terhadap insektisida organofosfat dan piretroid. Disarankan untuk mengganti kedua jenis insektisida tersebut di setiap daerah yang teridentifikasi resistensinya.

Kata Kunci : *Ae. aegypti*, analisis spasial, malation, , piretroid, temefos

ABSTRACT

SPATIAL ANALYSIS OF THE SUSCEPTIBLE STATUS OF *Aedes aegypti* Linn TO ORGANOPOSPHATE & PYRETHROID INSECTICIDES IN SPORADIC AND ENDEMIC DENGUE AREAS OF MAGETAN DISTRICT

Background. Dengue disease incidence is still a health problem in Indonesia, one of which is in Magetan Regency. Dengue disease management is still aimed at controlling the vector (*Ae. aegypti*) using organophosphate insecticides (malathion and temephos) and pyrethroids (alpha cypermethrin). In Magetan District, there are no reports on the susceptibility status of *Ae. aegypti* mosquitoes to organophosphate and pyrethroid insecticides or mapping the susceptibility status of *Ae. aegypti* to these insecticides. Objective: This study aimed to map the distribution of dengue cases and determine the susceptibility status of *Ae. aegypti* mosquitoes to organophosphate (malathion) and pyrethroid (alpha cypermethrin) insecticides in 4 Puskesmas working areas in Magetan District, namely Candirejo and Taji (endemic) and Plaosan and Ngujung (sporadic). Data were displayed in tables and maps using Arcgis application. This study used observation method with cross sectional design. Ovitrap installation to obtain *Aedes sp* eggs, and larval collection of mosquito breeding sites were carried out purposively in four health centre areas, namely Candirejo, Taji, Plaosan and Ngujung. Eggs and larvae obtained were reared in the laboratory to produce F1s for testing purposes. The CDC bottle bioassay was used to determine the level of susceptibility of *Ae. aegypti* mosquitoes to temephos, malathion and alpha cypermethrin. Based on the results, *Ae. aegypti* mosquito populations in the four health centre areas showed resistance to temephos, with a mortality rate of 77% in the endemic area of Candirejo and in Taji of 87% while in the sporadic area of Plaosan it was 47% and 92% in Ngujung while the population of *Ae. aegypti* mosquitoes resistance to malathion, with mortality rates of 25% in Ngujung, 52.5% in Plaosan, 48.33% in Candirejo, and 78.17% in Taji. Meanwhile, resistance to alpha sipermetrin in Candirejo, Plaosan and Ngujung, with mortality rates of 74.17%, 65% and 68.33% respectively and tolerant in Taji, with a mortality rate of 82.5%. It can be concluded that resistance to organophosphate and pyrethroid insecticides has occurred. It is recommended to replace these two types of insecticides in every area where resistance is identified.

Keywords: *Ae. aegypti*, spatial analysis, malathion, pyrethroid, temephos