INTISARI

Empat puluh tahun terakhir, insektisida digunakan dalam pengendalian vektor Demam Berdarah Dengue (DBD) di Indonesia. Sebagai akibatnya, *Ae. aegypti* di beberapa daerah Indonesia, menjadi resisten terhadap insektisida. Enzim esterase memegang peran pendetoksifikasian insektisida sehingga semua insektisida yang masuk akan dihidrolisis menjadi senyawa yang kurang beracun .

Tujuan penelitian ini adalah mengetahui profil esterase non-spesifik nyamuk *Ae. aegypti* (subjek penelitian) dari Simpang III Sipin (daerah endemis DBD) dan Sijenjang (daerah non-endemis DBD), dengan metode elektroforesis. Penelitian ini termasuk penelitian non-eksperimental dengan rancangan deskriptif dan analitik.

Zymogram dianalisis secara kualitatif, yaitu dengan membandingkan intensitas warna pola pita zymogram nyamuk subjek penelitian dengan kontrol, menghitung kecepatan gerak (jarak) esterase non-spesifik dalam medan listrik (Rf) dan analisis menggunakan *Chi-square* ($p < 0,05$).

Dari analisis menggunakan *Chi-square* ($p < 0,05$), menunjukkan adanya perbedaan aktivitas esterase non spesifik nyamuk dari Sijenjang dengan Simpang III Sipin. Untuk hasil perhitungan Rf pita 1, 2 dan 3, antara nyamuk dari Sijenjang dengan Simpang III Sipin dan kontrol hanya pita 3 yang terdapat perbedaan, namun ketiganya tidak menunjukkan perubahan yang berarti pada komposisi protein penyusun esterase non-spesifik pada nyamuk perlakuan maupun kontrol. Hasil analisis kualitatif diperoleh intensitas warna pola pita nyamuk *Ae. aegypti* dari Simpang III Sipin lebih pekat dan Sijenjang intensitas warnanya lebih terang dibandingkan kontrol.

Kata kunci : Demam Berdarah Dengue, *Aedes aegypti*, resistensi insektisida, profil isoenzim esterase non-spesifik, elektroforesis.

ABSTRACT

The use of insecticide to control Dengue Haemorrhagic Fever (DHF) vector in Indonesia during the last 40 years resulted in the resistency of the insect toward insecticides, including *Ae. aegypti* in some areas in Indonesia. Esterase enzyme has its main part in this insecticide detoxification became untoxic substance.

This study was aimed to the profile description of non-specific esterase of *Ae. aegypti* (research subject) from Simpang III Sipin (DHF endemic area) and Sijenjang (DHF non-endemic area) by using electrophoresis method. This study was non experimental research with descriptive and analytical design.

Zymogram was analyzed qualitative. The former was carried out by comparing the stained intensity the banding pattern of zymogram between the research subject mosquito and the controlled ones, by calculating the moving speed (distance) of esterase in electric current (Rf), and analyzed by *Chi-square* ($p < 0.05$).

Ae. aegypti from Simpang III Sipin and Sijenjang had different activities of esterase based on the used of *Chi-square* ($p<0.05$). The result of Rf calculation on the first, second and third band between Sijenjang with Simpang III Sipin mosquito and the controlled mosquito, only on the third band showed difference, but it was proof that there was no change on the composition of the protein in non-specific esterase both to the treated mosquito and the controlled ones. The banding pattern of *Ae. aegypti* from Simpang III Sipin showed high intensity and from Sijenjang showed low intensity, if its compared to the control.

Keywords : Dengue Haemorrhagic Fever, *Aedes aegypti*, insecticide resistance, non-specific esterase isoenzyme profile, electrophoresis