

DETEKSI RESISTENSI NYAMUK *Aedes aegypti* TERHADAP INSEKTISIDA SIPERMETRIN DI DAERAH ENDEMIS DEMAM BERDARAH DENGUE (DBD) DI KOTA MEDAN

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INTISARI

Latar belakang : Penyakit Demam Berdarah Dengue (DBD) merupakan masalah kesehatan di Kota Medan. Kelurahan Tanjungrejo dan Kelurahan Gedung Johor merupakan daerah endemis DBD. Pengendalian vektor DBD menggunakan insektisida sipermetrin dalam beberapa tahun terakhir dapat menimbulkan resistensi *Ae. aegypti*.

Tujuan : Monitoring status resistensi *Ae. aegypti* terhadap insektisida sipermetrin

Metode : Telur *Ae. aegypti* dikumpulkan menggunakan 600 ovitrap (*indoor dan outdoor*) di Kel. Tanjungrejo (Lk. 19 dan 22) dan Kel. Gedung Johor Lk. 13. Status resistensi *Ae. aegypti* terhadap insektisida sipermetrin ditetapkan dengan metode *CDC bottle bioassay*.

Hasil : Persentase kelumpuhan (*knockdown*) *Ae. aegypti* pada Kel. Tanjungrejo Lk. 19 sebesar 76,67, Kel. Tanjungrejo Lk. 22 sebesar 97,67 dan Kel. Gedung Johor Lk. 13 sebesar 91,33 setelah dipaparkan insektisida sipermetrin dosis diagnostik (10µg/ml) selama 30 menit waktu diagnostik. Waktu *knockdown* (KT₉₉) *Ae. aegypti* Kel. Tanjungrejo Lk. 19 adalah 79,64 menit dan Kel. Tanjungrejo Lk. 22 adalah 40,54 menit dan Kel. Gedung Johor Lk. 13 adalah 50,17 menit, sedangkan KT₉₉ nyamuk kontrol adalah 35,14 menit. Nilai resisten ratio (RR₉₉) *Ae. aegypti* Kel. Tanjungrejo Lk. 19 sebesar 2,27, Kel. Tanjungrejo Lk. 22 sebesar 1,15 dan Kel. Gedung Johor Lk. 13 sebesar 1,43.

Simpulan : *Ae. aegypti* dari Kel. Tanjungrejo Lk. 19 telah resisten sedangkan *Ae. aegypti* dari Kel. Tanjungrejo Lk. 22 dan Kel. Gedung Johor Lk. 13 toleran terhadap insektisida sipermetrin.

Kata kunci : *Aedes aegypti*, resistensi, siperrmetrin.

DETECTION OF RESISTANCE *Aedes aegypti* MOSQUITO TOWARD CYPERMETHRIN INSECTICIDES IN DENGUE ENDEMIC AREA IN MEDAN CITY, NORTH SUMATERA PROVINCE, INDONESIA

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ABSTRACT

Background : Dengue is a health problem in Medan. Tanjungrejo Village and Gedung Johor Village are dengue endemic areas. Cypermethrin has been used in dengue vector control in for recent years. The frequency of insecticide applications for a long time can cause resistance.

Objective : Monitoring the resistance status of *Ae. aegypti* toward cypermethrin insecticide.

Method : Eggs *Ae. aegypti* was collected using 600 ovitraps (indoor and outdoor) in Kel. Tanjungrejo (Lk. 19 and 22) and Kel. Gedung Johor Lk. 13.

Resistance status of *Ae. aegypti* toward insecticide cypermethrin was determined based on diagnostic doses according to *CDC bottle bioassay* method.

Results : Knockdown percentage of *Ae. aegypti* from Kel. Tanjungrejo Lk. 19 was 76.67%, Kel. Tanjungrejo Lk. 22 was 97.67%, Kel. Gedung Johor Lk. 13 was 91.33% after exposure to diagnostic dose (10µg/ml) of cypermethrin insecticide for 30 minutes at diagnostic time. Knockdown time (KT₉₉) of *Ae. aegypti* from Kel. Tanjungrejo Lk. 19 was 79.64 minutes, Kel. Tanjungrejo Lk. 22 was 40.54 minutes and Kel. Gedung Johor Lk.13 was 50.17 minutes respectively, whereas KT₉₉ of *Ae. aegypti* control was 35.14 minutes respectively. Resistance ratio (RR₉₉) of *Ae. aegypti* from Kel. Tanjungrejo Lk. 19 was 2.27, Kel. Tanjungrejo Lk. 22 was 1.15 and Kel. Gedung Johor Lk.13 was 1.43 respectively.

Conclusion : *Ae. aegypti* from Kel. Tanjungrejo Lk. 19 have been resistant whereas *Ae. aegypti* from Kel. Tanjungrejo Lk. 22 and Kel. Gedung Johor Lk. 13 tolerant to insecticide cypermethrin.

Keywords : *Aedes aegypti*, resistance, cypermethrin.