

KARAKTERISTIK TEMPAT PERINDUKAN DAN STATUS RESISTENSI NYAMUK *Aedes* spp. TERHADAP INSEKTISIDA SIPERMETRIN DI KELURAHAN PANDEYAN, KECAMATAN UMBULHARJO, DAERAH ISTIMEWA YOGYAKARTA

Nila Qudsiyati
17/414119/BI/09929

INTISARI

Dengue merupakan penyakit infeksius endemik di negara tropis yang ditularkan oleh nyamuk *Aedes* betina yang terinfeksi virus dengue. Nyamuk *Aedes* memiliki tempat perindukan berupa genangan air di wadah bukan genangan air di tanah. Pengendalian menggunakan insektisida di Yogyakarta dapat menyebabkan resistensi. Salah satu daerah endemik demam berdarah dengue (DBD) di Indonesia yaitu Kecamatan Umbulharjo, Kota Yogyakarta. Penelitian ini bertujuan untuk menganalisis karakteristik tempat perindukan, kepadatan, dan menentukan status resistensi *Aedes* spp. terhadap insektisida sipermetrin di Kelurahan Pandeyan. Metode penelitian yang digunakan survei karakteristik tempat perindukan di 100 rumah, uji biokimia status resistensi larva *Aedes* spp., dan uji CDC *Bottle Bioassay*. Hasil penelitian karakteristik tempat perindukan nyamuk *Aedes* spp. yaitu kontainer berada di dalam atau di luar rumah, genangan air bersih tidak mengalir, terbuka, jarang terkuras (terabaikan) atau saat dikuras tidak digosok, tidak terkena sinar matahari secara langsung, tidak terdapat predator alami (ikan), durasi tidak dilakukan PSN (Pemberantasan Sarang Nyamuk) >1 bulan, memiliki suhu air 26-28 °C dan derajat keasaman (pH) air antara 6-7. Kepadatan *Aedes* spp. berdasarkan parameter entomologi diperoleh nilai CI (*Container Index*) 18,54%, HI (*House Index*) 32%, dan BI (*Breteau Index*) 38% dikategorikan risiko tinggi terhadap penularan kasus DBD. Hasil uji biokimia secara kuantitatif menunjukkan RW 5 (Rukun Warga) 5 yaitu 75% larva resisten. Hasil uji biokimia secara kualitatif menunjukkan terjadinya peningkatan aktivitas enzim monooksigenase yaitu RW 5 resisten, RW 8 toleran, dan RW 4, 6, 9 menunjukkan rentan didukung oleh hasil uji CDC *Bottle Bioassay*, RW 5 menunjukkan *Aedes* spp. resisten terhadap sipermetrin dengan mortalitas 69% sedangkan RW 4, 6, 8, dan 9 menunjukkan terduga resisten.

Kata Kunci: *Aedes* spp., kepadatan, resisten, sipermetrin, tempat perindukan

**CHARACTERISTICS OF BREEDING SITES AND RESISTANCE
STATUS OF *Aedes* spp. MOSQUITOES TO CYPERMETHRIN
INSECTICIDE IN PANDEYAN, UMBULHARJO SUB-DISTRICT,
DAERAH ISTIMEWA YOGYAKARTA**

Nila Qudsiyati
17/414119/BI/09929

ABSTRACT

Dengue is an endemic infectious disease in tropical country that is transmitted by female *Aedes* mosquitoes infected by dengue virus. *Aedes* mosquito's breeding sites is stagnant water in container but not stagnant water in the soil. Management using insecticides in Yogyakarta can cause resistance. One of the endemic areas of Dengue Hemorrhagic Fever (DHF) in Indonesia is Umbulharjo sub-district, Yogyakarta City. This study aims to analyze the characteristic of breeding sites, density, and determine resistance status of *Aedes* spp. toward cypermethrin insecticide in Pandeyan urban village. The research method used characteristics survey of breeding sites in 100 houses, biochemical test for status resistance of larvae *Aedes* spp., and CDC Bottle Bioassay test. The research result on the characteristics of *Aedes* spp. mosquito's breeding sites were the container in the inside or outside of the house, the stagnant of clean water, open place, rarely drained, no direct sunlight, no natural predator (fish), the duration of not cleaning the breeding sites >1 month, the temperature is about 26-28 °C and pH is around 6-7. The density of *Aedes* spp. according entomology parameters were CI (*Container Index*) value of 18,54%, HI (*House Index*) value of 32%, and BI (*Breteau Index*) value of 38% were categorized as high risk for dengue transmission. The result of quantitative biochemical test showed that RW (hamlet) 5 was 75% resistance larvae. The qualitative biochemical test showed an increase of monooxygenase enzyme that RW (hamlet) 5 was resistance, RW 8 was tolerant, and susceptible toward cypermethrin in RW 4, 6, and 9. It was supported by the CDC bottle bioassay test in RW 5 showed *Aedes* spp. resistance to cypermethrin with a mortality of 69% and RW 4, 6, 8, and 9 showed suspected resistance.

Keywords: *Aedes* spp., breeding sites, cypermethrin, density, resistance.