

## ABSTRAK

Kementerian Kesehatan RI  
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Intan Malamatiyah

### STATUS KERENTANAN *Aedes aegypti* TERHADAP CYPERMETHRIN DI DAERAH ENDEMIS DBD KOTA SURABAYA (Studi di Wilayah Kerja Puskesmas Sememi)

Kasus DBD di Puskesmas Sememi tahun 2020 terdapat 14 kasus, berikutnya mengalami kenaikan menjadi 17 kasus di tahun 2021. Kasus DBD di tahun 2022 melonjak tinggi menjadi 82 kasus, kemudian di tahun 2023 kasus terjadi sebanyak 26 kasus. Salah satu cara pengendalian vektor DBD yaitu dengan fogging. Malathion merupakan insektisida fogging yang digunakan sejak tahun 1972 dan terbukti resisten pada banyak daerah di Indonesia, sehingga dibutuhkan insektisida yang rentan pada nyamuk *Aedes aegypti*. Salah satu insektisida yang masih rentan yaitu *Cypermethrin*. Tujuan penelitian menganalisis status kerentanan nyamuk *Aedes aegypti* di wilayah endemis di Kota Surabaya terhadap insektisida *Cypermethrin* menggunakan metode CDC bottle.

Penelitian ini termasuk eksperimen semu, menggunakan rancangan *post test only, with control group design*. Penelitian menggunakan teknik *purposive sampling*. Pengumpulan data menggunakan observasi jumlah kematian nyamuk. Variabel yang diteliti adalah konsentrasi *Cypermethrin* 1% dan kematian nyamuk *Aedes aegypti*. Objek penelitian yaitu nyamuk *Aedes aegypti*.

Hasil penelitian menunjukkan mortalitas nyamuk *Aedes aegypti* yang dipaparkan insektisida *Cypermethrin* selama 60 menit adalah sebanyak 40 ekor. Pada kelompok kontrol yang dipaparkan dengan *ethanol* sebanyak 1ml, menghasilkan persentase kematian sebesar 0%. Status resistensi nyamuk *Aedes aegypti* dari wilayah kerja Puskesmas Sememi terhadap *Cypermethrin* adalah rentan menurut standar WHO, dikarenakan memiliki persentase kematian  $\geq 98\%$ .

Kesimpulan penelitian yaitu, nyamuk *Aedes aegypti* pada kelompok perlakuan mati secara keseluruhan pada menit ke-60, sementara pada kelompok kontrol tidak ditemukan adanya kematian nyamuk. Persentase kematian nyamuk pada kelompok perlakuan adalah 100%, dengan kategori rentan menurut standar WHO. Disarankan untuk menjadikan *Cypermethrin* sebagai pilihan insektisida fogging pengganti malathion.

Kata kunci: CDC bottle, Penyakit DBD, *Cypermethrin*, Insektisida

## ABSTRACT

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Intan Malamatiyah

### SUSCEPTIBILITY STATUS OF *Aedes aegypti* TO CYPERMETHRIN IN DHF ENDEMIC AREAS OF SURABAYA CITY (Study in Sememi Health Center Working Area)

There were 14 cases of dengue fever at the Sememi Health Center in 2020, then increased to 17 cases in 2021. Dengue cases in 2022 soared to 82 cases, then in 2023 cases occurred as many as 26 cases. One way to control dengue vectors is by fogging. Malathion is a fogging insecticide that has been used since 1972 and has been proven to be resistant in many areas in Indonesia, so an insecticide that is susceptible to *Aedes aegypti* mosquitoes is needed. One of the insecticides that is still susceptible is Cypermethrin. The study aims to analyze the susceptibility status of *Aedes aegypti* mosquitoes in endemic areas in Surabaya City to Cypermethrin using CDC Bottle method.

This research included a pseudo-experiment, with a post-test only, with a control group design. The research uses a purposive sampling technique. Data collection was carried out by observing the number of mosquito deaths. The variables studied were the concentration of Cypermethrin 1% and the death of *Aedes aegypti* mosquitoes. The object of this research is the *Aedes aegypti* mosquito.

The study results showed that the number of deaths of *Aedes aegypti* mosquitoes exposed to the insecticide Cypermethrin within 60 minutes was as many as 40 animals. In the control group exposed to 1ml of ethanol, it resulted in a mortality percentage of 0%. The resistance status of *Aedes aegypti* mosquitoes originating from the working area of the Sememi Health Center to Cypermethrin is vulnerable according to WHO standards because it has a mortality percentage of  $\geq 98\%$ .

This study concluded that the *Aedes aegypti* mosquitoes in the treatment group died overall at 60 minutes, while in the control group, there was no mosquito death. The percentage of mosquito mortality in the treatment group was 100%, with the vulnerable category according to WHO standards. It is recommended to make Cypermethrin as a fogging insecticide option in place of malathion.

Keywords: CDC bottle, DHF disease, *Cypermethrin*, *Insecticide*