

# Hubungan antara Status Resistensi *Aedes aegypti* terhadap Malathion dengan Kejadian Demam Berdarah Dengue di Kabupaten Sleman, Yogyakarta

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## ABSTRAK

Bahwa resistensi nyamuk *Aedes* sebagai vektor utama demam berdarah dengue (DBD) terhadap insektisida dapat mempengaruhi efektifitas fogging. Fogging yang tidak efektif dapat menyebabkan jumlah kasus DBD tetap tinggi. Telah dilakukan studi tentang hubungan antara status resistensi nyamuk *Aedes* dengan kejadian DBD di Kabupaten Sleman, Yogyakarta. Penelitian ini merupakan studi epidemiologi dengan rancangan non eksperimental analitik.

Studi dilakukan di dua kecamatan daerah endemik di Kabupaten Sleman, yaitu Kecamatan Gamping dan Kecamatan Sleman dengan unit penelitian adalah pedukuhan. Ada 60 pedukuhan yang termasuk dalam penelitian ini. Kejadian DBD per pedukuhan dari tahun 2008-2013 didapatkan dari catatan di Dinas Kesehatan Kabupaten Sleman, kemudian dikategorikan menjadi tiga yaitu rendah (0-10), sedang (11-20) dan tinggi (>20). Masing-masing pedukuhan juga diambil sampel nyamuk *Aedes* untuk uji resistensi. Uji resistensi dilakukan dengan metode biokemis dengan penilaian secara visual (kuning = sensitif; biru muda = resisten rendah; biru kehijauan = resisten sedang; biru tua = resisten tinggi).

Hasil menunjukkan bahwa di tingkat pedukuhan, 10% kejadian DBD termasuk kategori tinggi, 13,33% sedang dan 76,67% rendah. Uji resistensi menunjukkan bahwa 26,67% pedukuhan memiliki resistensi tinggi, 41,67% resistensi sedang, 21,67% resistensi rendah dan 10% rentan. Uji korelasi non parametrik *Kendall's tau* menunjukkan bahwa terdapat korelasi yang signifikan ( $p < 0,007$ ) dengan arah positif antara tingkat resistensi dengan kejadian DBD dengan koefisien korelasi sebesar 0,315. Dapat disimpulkan bahwa terdapat hubungan yang bersifat positif dengan keeratan sedang antara tingkat resistensi nyamuk *Aedes aegypti* dengan kejadian DBD di Kabupaten Sleman.

Kata Kunci: Status resistensi, *Aedes aegypti*, kejadian DBD

# Relationship between Resistance Status of *Aedes aegypti* to Malathion and Dengue Hemorrhagic Fever in Sleman District, Yogyakarta

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## ABSTRACT

The *Aedes* mosquito resistance - as the main vector of dengue hemorrhagic fever (DHF) - to insecticides can affect the effectiveness of fogging. Ineffective fogging can lead to a high number of dengue cases. A study was conducted on the relationship between *Aedes* mosquito resistance status and dengue incidence in Sleman district, Yogyakarta. This study is an epidemiological study with non-experimental analytic design.

The study was conducted in two sub-districts of endemic areas in Sleman District, namely Gamping and Sleman with research units are hamlets. There are 60 hamlets included in this study. Dengue incidences of each hamlet from 2008-2013 were obtained from the records Sleman District Health Office. Then the dengue incidence data categorized into three i.e low (0-10), moderate (11-20) and high (> 20). Each of the hamlets was also sampled by *Aedes* mosquitoes for resistance test. The resistance test is performed by biochemical method with visual assessment. Yellow is sensitive, light blue is low resistant, turquoise blue is medium resistant and dark blue is high resistant.

The results showed that at the hamlet level, 10% of DHF incidence were high, 13.33% moderate, and 76.67% were low. Resistance tests showed that 26.67% of hamlets had high resistance, 41.67% medium resistance, 21.67% low resistance and 10% susceptible. Kendall's tau non-parametric correlation test showed that there was a significant correlation ( $p = 0.007$ ) with a positive direction between resistance level and DHF incidence with correlation coefficient of 0.315. It can be concluded that there is a positive relationship with moderate closeness between the resistance level of *Aedes aegypti* with the incidence of DHF in Sleman District.

Keywords: Status of resistance, *Aedes aegypti*, DHF incidence