UNIVERSITAS
GADJAH MADA
A REVIEW ON THE RESISTANCE STATUS OF THE Aedes aegypti (DIPTERA: CULICIDAE) DENGUE VECTOR TO MALATHION
DIAJENG RAHMA AULIA, Prof. dr. Tri Baskoro Tunggul Satoto, M.Sc., Ph.D; dr. Tridjoko Hadianto. DTM & H., M
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

ABSTRACT

Background: Dengue Hemorrhagic Fever is the major cause of illness in Indonesia and as of now, the estimated number of DHF cases reported in Yogyakarta is still high. One of the methods to control the vector and prevent the disease is through fogging using the insecticide malathion, yet the insecticide itself is a contributing element that cause the resistance of the vector which are *Aedes aegypti* mosquitoes.

Aim: To study the resistance status of *Aedes* aegypti dengue vector to malathion insecticide

Method: This study used systematic review method by obtaining relevant articles and journals that meet the inclusion criteria. The data will be downloaded from Pubmed and Google Scholar. The results will be presented in a table

Results: There were 39 studies that were examined. However, according to the inclusion and exclusion criteria, only a total of 20 studies met the conditions and are included in this review. There are 6 studies located in South America, 5 studies located in South Asia, 4 studies each located in North America and Southeast Asia, and 1 study located in West Africa. The resistance status of *Ae. aegypti* varies in many countries. Resistance through detoxification is significantly associated with Ae. aegypti developing resistance to malathion. Surveillance, encouraging community involvement, nation-wide collaboration when doing interventions is recommended.

Conclusion: The resistance status of *Ae. aegypti* varies in many countries with many factors in each locations affecting it, and routine surveillance with comprehensive system is needed in order to improve this situation.

Keywords: *Aedes aegypti*, resistance, malathion, insecticide

UNIVERSITAS
GADJAH MADA
A REVIEW ON THE RESISTANCE STATUS OF THE Aedes aegypti (DIPTERA: CULICIDAE) DENGUE VECTOR TO MALATHION
DIAJENG RAHMA AULIA, Prof. dr. Tri Baskoro Tunggul Satoto, M.Sc., Ph.D; dr. Tridjoko Hadianto. DTM & H., M
Universitas Gadjah Mada, 2022 | Diunduh dari http://etd.repository.ugm.ac.id/

INTISARI

Latar belakang: Demam Berdarah Dengue merupakan penyebab utama penyakit di Indonesia dan sampai saat ini perkiraan jumlah kasus DBD yang dilaporkan di Yogyakarta masih tinggi. Salah satu cara untuk mengendalikan vector dan mencegah penyakit tersebut adalah melalui *fogging* menggunakan insektisida malathion, padahal insektisida itu sendiri merupakan salah satu unsur penyebab resistensi vector yaitu nyamuk *Aedes aegypti*

Tujuan: Mengetahui status resistensi vector DBD *Aedes aegypti* terhadap insektisida malathion

Metode: Penelitian ini menggunakan metode telaah sistematis dengan mendapatkan artikel dan jurnal relevan yang memenuhi kriteria inklusi. Data akan diunduh dari Pubmed dan Google Scholar. Hasilnya akan disajikan dalam tabel

Hasil: Terdapat 39 penelitian yang diteliti. Namun, menurut kriteria inklusi dan eksklusi, hanya total 20 penelitian yang memenuhi syarat dan termasuk dalam telaah ini. Terdapat enam penelitian berlokasi di Amerika Selatan, lima penelitian berlokasi di Asia Selatan, lima penelitian berlokasi di Asia Selatan, empat penelitian masing-masing berlokasi di Afrika Barat. Status resistensi *Ae. aegypti* bervariasi di banyak negara. Resistensi melalui detoksifikasi secara signifikan terkait dengan *Ae. aegypti* yang mengembangkan resistensi terhadap malathion. Pengawasan, mendorong keterlibatan masyarakat, kolaborasi nasional saat melakukan intervensi direkomendasikan.

Kesimpulan: Status resistensi *Ae. aegypti* bervariasi di banyak negara dengan banyak faktor di setiap lokasi yang memengaruhinya, dan diperlukan surveilans rutin dengan sistem yang komprehensif untuk memperbaiki keadaan ini.

Kata kunci: *Aedes aegypti,* resistensi, malathion, insektisida