

**EFEKTIVITAS PIRIPROKSIFEN DALAM UPAYA PENGENDALIAN
NYAMUK AEDES SP SEBAGAI VEKTOR DEMAM BERDARAH
DENGUE: SEBUAH TINJAUAN NARATIF**



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ABSTRACT

EFFECTIVENESS OF PYRIPROXYFEN IN CONTROLLING THE AEDES SP MOSQUITO AS A DENGUE FEVER VECTOR: A NARRATIVE REVIEW

By

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Vector control is still main effort to break the chain of transmission of Dengue Hemorrhagic Fever (DHF). Pyriproxyfen is recommended by WHO as an alternative insecticide because there are reports that Aedes sp mosquitoes are resistant to organophosphate and pyrethroid insecticides. This review is to determine the effectiveness of pyriproxyfen in controlling Aedes sp mosquito as a DHF vector.

The research method used is a narrative review that explores primary literature on the effectiveness of pyriproxyfen in controlling Aedes sp mosquito as a dengue vector through research article databases. Literature was selected based on the inclusion and exclusion criteria specified. Literature review results were extracted and grouped according to the study's specific objectives: percentage of inhibition of emergence, percentage of larval mortality, and dose of pyriproxyfen used.

A total of eighteen pieces of literature include in this narrative review. Literature review results showed that effectiveness of pyriproxyfen against Aedes sp mosquitoes was in range of 80 – 100%, assessed from percentage Inhibition of Emergence (%IE). Highest reported percentage of larval mortality was 33.91% on a laboratory research scale. Doses used in a wide range of 0.005 µg/L – 1 mg/L (0.005 – 1000 ppb). Majority used dose of 0.01 mg/L (10 ppb) for third instar larvae target.

Based on literature review results, pyriproxyfen effectively controls Aedes sp mosquito vectors on a laboratory scale to field conditions.

Keywords: *Aedes sp, effectiveness, insect growth regulator, pyriproxyfen, vector control*

ABSTRAK

EFEKTIVITAS PIRIPROKSIFEN DALAM UPAYA PENGENDALIAN NYAMUK *AEDES SP* SEBAGAI VEKTOR DEMAM BERDARAH DENGUE: SEBUAH TINJAUAN NARATIF

Oleh

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Pengendalian vektor masih menjadi upaya utama dalam memutus rantai penularan Demam Berdarah Dengue (DBD). Piriproksifen direkomendasikan oleh WHO sebagai insektisida alternatif karena terdapat laporan bahwa nyamuk *Aedes sp* mengalami resistensi terhadap insektisida golongan organofosfat dan piretroid. Tinjauan ini untuk mengetahui efektivitas piriproksifen dalam upaya pengendalian nyamuk *Aedes sp* sebagai vektor DBD.

Metode penelitian yang digunakan merupakan tinjauan naratif yang mendalami berbagai literatur primer mengenai efektivitas piriproksifen dalam upaya pengendalian nyamuk *Aedes sp* sebagai vektor DBD melalui berbagai basis data. Literatur diseleksi berdasarkan kriteria inklusi dan eksklusi yang ditetapkan. Hasil tinjauan diekstraksi dan dikelompokkan berdasarkan tujuan khusus penelitian yaitu persentase *inhibition of emergence*, persentase *larval mortality*, dan dosis piriproksifen yang digunakan.

Total delapan belas literatur yang ditinjau dalam tinjauan naratif ini. Hasil tinjauan literatur menunjukkan bahwa efektivitas piriproksifen terhadap nyamuk *Aedes sp* berada dalam rentang 80 – 100%, dinilai dari persentase *Inhibition of Emergence* (%IE). Persentase *larval mortality* dilaporkan tertinggi rata-rata 33,91% pada skala penelitian laboratorium. Dosis yang digunakan dalam rentang luas 0,005 µg/L – 1 mg/L (0,005 – 1000 ppb). Mayoritas menggunakan dosis 0,01 mg/L (10 ppb) pada target pemberian larva instar III.

Berdasarkan hasil tinjauan literatur ini, piriproksifen terbukti efektif dalam mengontrol vektor nyamuk *Aedes sp* pada skala laboratorium sampai kondisi lapangan.

Kata kunci: *Aedes sp*, efektivitas, *insect growth regulator*, pengendalian vektor, piriproksifen