

ABSTRAK

EFEKTIVITAS JAMUR ENTOMOPATOGEN *Metarhizium anisopliae* (Metchnikoff) Sorokin SEBAGAI BIOLARVASIDA *Anopheles* sp. VEKTOR MALARIA DI DESA HANURA, KABUPATEN PESAWARAN, LAMPUNG

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Malaria masih menjadi masalah kesehatan masyarakat di Indonesia, termasuk di Kabupaten Pesawaran, Lampung. Pengendalian vektor yang masih didominasi insektisida kimia berisiko menimbulkan resistensi dan dampak lingkungan, diperlukan alternatif pengendalian yang lebih ramah lingkungan. Jamur entomopatogen *Metarhizium anisopliae* berpotensi dikembangkan sebagai biolarvasida. Penelitian ini bertujuan untuk mengetahui efektivitas *Metarhizium anisopliae* terhadap mortalitas larva instar III *Anopheles* sp., menentukan nilai LC₅₀, serta mengamati kerusakan morfologi larva akibat infeksi jamur. Penelitian dilakukan secara eksperimental di laboratorium menggunakan Rancangan Acak Lengkap (RAL) dengan tujuh perlakuan, terdiri atas enam pengenceran suspensi konidia *M. anisopliae* (10^{-1} - 10^{-6}) dan satu kontrol negatif, masing-masing tiga ulangan. Jamur dikultur pada media PDA dan konsentrasi konidia dihitung menggunakan hemocytometer. Larva instar III *Anopheles* sp. berasal dari habitat di Desa Hanura. Mortalitas larva diamati selama 72 jam dan dianalisis menggunakan ANOVA, uji Tukey, serta analisis probit. Hasil penelitian menunjukkan bahwa *M. anisopliae* berpengaruh sangat nyata terhadap mortalitas larva ($p < 0,001$). Mortalitas tertinggi terjadi pada konsentrasi 10^{-6} dengan rerata kematian 76,66%, sedangkan kontrol tidak menunjukkan kematian. Analisis probit menunjukkan nilai LC₅₀ sebesar $5,33 \times 10^5$ spora/mL pada 72 jam paparan. Secara morfologis, larva instar III *Anopheles* sp. terinfeksi dan mengalami kerusakan secara sistemik (hemolimfa, pencernaan dan pernapasan).

Kata kunci: *Metarhizium anisopliae*, biolarvasida, *Anopheles* sp., mortalitas larva, Hanura, probit.

ABSTRACT

EFFECTIVENESS OF THE ENTOMOPATHOGENIC FUNGUS *Metarhizium anisopliae* (Metchnikoff) Sorokin AS A BIOLARVICIDE FOR *Anopheles* sp. MALARIA VECTORS IN HANURA VILLAGE, PESAWARAN REGENCY, LAMPUNG

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Malaria remains a public health problem in Indonesia, including in Pesawaran Regency, Lampung. Vector control, which is still dominated by chemical insecticides, carries the risk of resistance and environmental impacts. More environmentally friendly control alternatives are needed. The entomopathogenic fungus *Metarhizium anisopliae* has the potential to be developed as a biolarvicide. This study aimed to determine the effectiveness of *Metarhizium anisopliae* on the mortality of third-instar larvae of *Anopheles* sp., determine the LC₅₀ value, and observe the morphological damage to larvae caused by fungal infection. The study was conducted experimentally in the laboratory using a Completely Randomized Design (CRD) with seven treatments, consisting of six dilutions of *M. anisopliae* conidial suspension (10⁻¹ - 10⁻⁶) and one negative control, each with three replications. The fungus was cultured on PDA media and the concentration of conidia was calculated using a hemocytometer. Instar III larvae of *Anopheles* sp. came from the habitat in Hanura Village. Larval mortality was observed for 72 hours and analyzed using ANOVA, Tukey's test, and probit analysis. The results showed that *M. anisopliae* had a very significant effect on larval mortality ($p < 0.001$). The highest mortality occurred at a concentration of 10⁻⁶ with an average mortality of 76.66%, while the control showed no mortality. Probit analysis showed an LC₅₀ value of 5.33×10^5 spores/mL at 72 hours of exposure. Morphologically, instar III larvae of *Anopheles* sp. infected and suffer systemic damage (hemolymph, digestive, and respiratory).

Keywords: *Metarhizium anisopliae*, biolarvicidal, *Anopheles* sp., mortality larvae, Hanura, probit.