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**EFEKTIVITAS EKSTRAK DAUN KEMANGI (*Ocimum sanctum*) DALAM
MEMBUNUH LARVA INSTAR III *Aedes aegypti* SEBAGAI VEKTOR
DEMAM BERDARAH *DENGUE***

xv + 40 halaman, 6 tabel, 11 gambar, 10 Lampiran

ABSTRAK

Aedes aegypti merupakan vektor utama penularan penyakit Demam Berdarah Dengue (DBD). Penggunaan larvasida kimia seperti abate dapat menimbulkan dampak negatif terhadap lingkungan serta menyebabkan resistensi pada nyamuk. Oleh karena itu, dibutuhkan alternatif larvasida alami yang lebih ramah lingkungan, salah satunya adalah daun kemangi (*Ocimum sanctum*) yang mengandung senyawa aktif seperti flavonoid, eugenol, dan saponin. Penelitian ini bertujuan untuk mengetahui efektivitas ekstrak daun kemangi terhadap kematian larva instar III *Aedes aegypti* berdasarkan variasi konsentrasi dan waktu paparan. Metode penelitian menggunakan desain eksperimental post test only control group dengan perlakuan konsentrasi ekstrak sebesar 1%, 2%, 3%, 4%, dan 5% serta waktu paparan 2, 4, 6, 8, 10, dan 12 jam. Abate digunakan sebagai kontrol positif dan aquadest sebagai kontrol negatif. Hasil uji ANOVA menunjukkan perbedaan signifikan antar kelompok konsentrasi ($p = 0,029$), dengan rata-rata kematian larva tertinggi pada konsentrasi 5% yaitu 69,15%. Hasil uji *Repeated Measures ANOVA* juga menunjukkan bahwa waktu paparan berpengaruh signifikan ($p = 0,000$), dengan efektivitas tertinggi pada jam ke-12. Meskipun ekstrak kemangi memerlukan waktu lebih lama dibandingkan abate, hasil penelitian ini menunjukkan bahwa ekstrak daun kemangi efektif digunakan sebagai larvasida alami terhadap larva *Aedes aegypti*.

Kata Kunci : *Aedes aegypti*, Daun Kemangi, Larvasida Alami, Larva Instar III ,
Demam Berdarah *Dengue*
Referensi : 40 (2010-2024)

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**THE EFFECTIVENESS OF BASIL (*Ocimum sanctum*) LEAF EXTRACT IN
KILLING THIRD-INSTAR LARVAE OF *Aedes aegypti* AS A VECTOR OF
DENGUE HEMORRHAGIC FEVER**

xv + 40 pages, 6 tables, 11 figures, 10 attachments

ABSTRACT

Aedes aegypti is the primary vector responsible for the transmission of Dengue Hemorrhagic Fever (DHF). The excessive use of chemical larvicides such as abate has raised concerns due to environmental side effects and increasing resistance among mosquito populations. Therefore, natural alternatives like basil (*Ocimum sanctum*) leaf extract, which contains active compounds such as flavonoids, eugenol, and saponins, are being explored. This study aimed to evaluate the effectiveness of basil leaf extract on third-instar *Aedes aegypti* larvae mortality based on various concentrations and exposure durations. This laboratory experimental research employed a post-test only control group design. The treatments included extract concentrations of 1%, 2%, 3%, 4%, and 5%, with exposure times of 2, 4, 6, 8, 10, and 12 hours. Abate served as the positive control and distilled water as the negative control. ANOVA analysis revealed significant differences among concentration groups ($p = 0.029$), with the highest larval mortality rate observed at 5% concentration (69.15%). Repeated Measures ANOVA also indicated that exposure time had a significant effect ($p = 0.000$), with the highest mortality occurring at the 12-hour mark. Although the basil extract required longer exposure compared to abate, it demonstrated effectiveness as a natural larvicide against *Aedes aegypti* larvae.

Keywords : *Aedes aegypti*, *Ocimum sanctum*, Natural Larvicide, Third-
Instar Larvae, Dengue Hemorrhagic Fever
Reference : 40 (2010-2024)