EFEKTIVITAS BIOLARVASIDA EKSTRAK DAGING BUAH PALA (*Myristica fragrans* Houttuyn) TERHADAP *Aedes aegypti* (Linnaeus, 1762) DARI KOLONGAN SATU, KOTA TOMOHON

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INTISARI

Aedes aegypti, nyamuk dari famili Culicidae ordo Diptera, merupakan vektor utama Demam Berdarah Dengue (DBD). Metabolit sekunder dari tumbuhan menawarkan alternatif yang menjanjikan dan ramah lingkungan untuk pengendalian vektor. Penelitian ini menganalisis kerapatan larva *Aedes aegypti* di Kelurahan Kolongan Satu serta mengevaluasi potensi ekstrak daging buah pala (*Myristica fragrans* Houtt.) sebagai biolarvasida. Indeks Kerapatan Larva digunakan untuk mengukur kerapatan *Aedes aegypti* di Kolongan Satu. Hasil pengukuran menunjukkan nilai *House Index* (7), *Container Index* (8), *Breteau Index* (7), dan *Larvae-Free Index* (43%), yang mengindikasikan risiko tinggi penularan DBD. Analisis morfometri menunjukkan peningkatan ukuran karakter larva, termasuk panjang antena, panjang dan lebar; kepala, toraks, abdomen, sifon, dan papila anal, yang mengindikasikan pertumbuhan bertahap dari instar awal hingga lanjut. Komposisi kimia ekstrak n-heksana dan ekstrak etanol 96% daging buah pala dianalisis menggunakan GC-MS, yang mengidentifikasi senyawa dengan potensi larvasida, termasuk α-pinene, sabinene, β-pinene, γ-terpinene, linalool, eugenol, metil eugenol, miristisin, safrole, elemisin, dan isoeugenol. Efektivitas ekstrak diuji melalui uji larvasida pada lima konsentrasi (0,5, 1%, 1.5%, 2%, 2,5%) ekstrak etanol daging buah pala, yang menunjukkan mortalitas bergantung dosis dan efektif seiring waktu, dengan nilai LC_{50} dan LC_{90} masing-masing sebesar 1,82% dan 3,13% setelah 6 jam, 0,84% dan 1,59% setelah 12 jam dan 0,53% dan 1,03% setelah 24 jam secara berurutan, sebagaimana ditentukan melalui analisis probit.

Kata kunci: *Aedes aegypti*, Biolarvasida, DBD, Daging Buah Pala (*Myristica fragrans* Houtt.), Kelurahan Kolongan Satu

BIOLARVICIDE EFFECTIVITY OF *Myristica fragans* Houttuyn FLESH EXTRACT ON *Aedes aegypti* (Linnaeus, 1762) FROM KOLONGAN SATU, TOMOHON CITY

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ABSTRACT

Aedes aegypti, a mosquito of the family Culicidae in the order Diptera, is the primary vector of Dengue Hemorrhagic Fever (DHF). Plant-derived secondary metabolites offer a promising and eco-friendly alternative for vector control. This study analyzed the larval density of *Aedes aegypti* in Kolongan Satu Subdistrict and evaluated the biolarvicidal potential of nutmeg (*Myristica fragrans* Houtt.) flesh extract. The Larval Density Index was used to measure the density of *Aedes aegypti* in Kolongan Satu. The results showed a House Index of 7, a Container Index of 8, a Breteau Index of 7, and a Larvae-Free Index of 43%, indicating a high risk of DHF transmission. The morphometric analysis revealed an increase in larval character dimensions, including antenna length, length and width of; head, thorax, abdomen, siphon, and anal papilla, indicating a gradual growth progression from early to late instars. The chemical composition of the n-hexane and 96% ethanolic extract was analyzed using GC-MS, which identified compounds with potential larvicidal properties, including α-pinene, sabinene, β-pinene, γ-terpinene, linalool, eugenol, methyl eugenol, myristicin, safrole, elemicin, and isoeugenol. The extract's effectiveness was assessed through larvicidal assays at five concentrations (0.5%, 1%, 1.5%, 2%, and 2.5%) of nutmeg flesh ethanolic extract, demonstrating dose-dependent and time-dependent mortality. Probit analysis determined LC_{50} and LC_{90} values of 1.82% and 3.13% after 6 hours, 0.84% and 1.59% after 12 hours, and 0.53% and 1.03% after 24 hours, respectively.

Keywords: *Aedes aegypti*, Biolarvicide, DHF, Nutmeg (*Myristica fragrans* Houtt.) Flesh, Kolongan Satu Subdistrict