EFEKTIVITAS EKSTRAK JAHE MERAH (Zingiber officinale var. rubrum) TERHADAP KEMATIAN LARVA AEDES AEGYPTI

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ABSTRAK

Demam Berdarah Dengue (DBD) masih menjadi permasalahan kesehatan masyarakat yang utama, sehingga diperlukan alternatif pengendalian larva *Aedes aegypti* yang efektif sekaligus ramah lingkungan. Jahe merah (*Zingiber officinale var. rubrum*) mengandung senyawa bioaktif seperti flavonoid, saponin, dan minyak atsiri yang berpotensi menjadi *larvicide* alami. Penelitian ini bertujuan mengetahui efektivitas ekstrak rimpang jahe merah terhadap kematian larva *Aedes aegypti* serta menganalisis perbedaan rerata kematian larva pada berbagai konsentrasi. Penelitian memakai metode *true experimental* dengan rancangan *posttest only control group design*. Perlakuan meliputi ekstrak konsentrasi 3%, 5%, 7%, dan 9%, kontrol positif, serta kontrol negatif, dengan tiap kelompok berisi 25 larva dan empat kali pengulangan. Pengamatan dilaksanakan pada 6, 12, 18, dan 24 jam. Hasil penelitian menunjukkan bahwa kematian larva meningkat seiring bertambahnya konsentrasi dan lama paparan. Konsentrasi 9% menghasilkan kematian tertinggi sebesar 100% setelah 24 jam, sedangkan kontrol negatif tidak menyebabkan kematian. Uji *Mann-Whitney* menghasilkan nilai p=0,023 (p<0,05). Ekstrak rimpang jahe merah berpotensi sebagai larvasida alami terhadap *Aedes aegypti*.

Kata Kunci: Jahe merah; *Zingiber officinale* var. *Rubrum*; *Aedes aegypti*; larvasida alami; mortalitas larva

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ABSTRACT (10 pt)

Dengue Hemorrhagic Fever (DHF) remains a public health concern, signaling the need for effective yet environmentally friendly alternatives for managing Aedes aegypti larvae. Red ginger (Zingiber officinale var. rubrum) carries bioactive compounds such as flavonoids, saponins, and essential oils with potential as natural larvicides. This study set out to establish how red ginger rhizome extract affects the mortality of Aedes aegypti larvae and to compare larval mortality across extract concentrations. A true experimental method with a posttest-only control group design was adopted. The treatments covered red ginger rhizome extract at 3%, 5%, 7%, and 9%, plus positive and negative controls. Each group held 25 larvae with four replications. Mortality was recorded at 6, 12, 18, and 24 hours. Mortality rose as extract concentration and exposure time increased. The 9% concentration recorded the highest mortality, reaching 100% after 24 hours, whereas the negative control caused no mortality. The Mann-Whitney test yielded a p-value of 0.023 (p<0.05). Red ginger rhizome extract thus shows promise as a natural larvicide against Aedes aegypti.

Keywords: *Red ginger; Zingiber officinale var. Rubrum; Aedes aegypti; natural larvicide; larval mortality*

REFERENSI

Amrin, A., Bandi, S., Lingakari, M., & Maddala, M. (2024). Evaluation of larvicidal properties of *Zingiber officinale* rhizome and *Allium sativum* bulbs against *Aedes aegypti*. *Uttar Pradesh Journal of Zoology, 45*(18), 570–576.

Gomes, P. R. B., Silva, A. L. S., Pinheiro, H. A., Carvalho, L. L., Lima, H. S., Silva, E. F., Silva, R. P., Louzeiro, C. H., Oliveira, M. B., & Mouchrek Filho, V. E. M. (2016). Avaliação da atividade larvicida do óleo essencial do *Zingiber officinale* Roscoe (gengibre) frente ao mosquito *Aedes aegypti*. *Revista Brasileira de Plantas Medicinais, 18*(2 Suppl. 1), 597–604. doi:10.1590/1983-084X/15_214

Hillary, V. E., Ceasar, S. A., & Ignacimuthu, S. (2024). Efficacy of plant products in controlling disease vector mosquitoes: A review. *Entomologia Experimentalis et Applicata, 172*(3), 195–214.

Qatrinida, Q., Norfai, N., & Kasman, K. (2021). Potensi ekstrak rimpang jahe merah (*Zingiber officinale* var. *rubrum*) sebagai larvasida alami *Aedes albopictus*. *An-Nadaa: Jurnal Kesehatan Masyarakat (e-Journal), 8*(2), 106–113.

Rahman, M. M., Islam, M. T., & Hasan, M. A. (2023). Phytochemical screening and larvicidal activity of

Rahmayanti, R., Hadijah, S., & Putri, S. K. (2025). Evaluasi kemampuan ekstrak jahe (*Zingiber officinale* Roscoe) sebagai larvasida alami terhadap nyamuk *Aedes aegypti*. *Jurnal SAGO Gizi dan Kesehatan, 6*(1), 143–151.

Sari, D., & Nasuha, A. (2021). Kandungan zat gizi, fitokimia, dan aktivitas farmakologis jahe (*Zingiber officinale* Rosc.). *Tropical Bioscience: Journal of Biological Science, 1*(2), 11–18.

Siregar, P. N. B., Pedha, K. I. T., Resmanto, K. F. W., Chandra, N., Maharani, V. N., & Riswanto, F. D. O. (2022). Kandungan kimia jahe merah (*Zingiber officinale* var. *rubrum*) dan pembuktian *in silico* sebagai inhibitor SARS-CoV-2. *Jurnal Pharmascience, 9*(2), 185–200.

Wahono, T., Widjayanto, D., & Poerwanto, S. H. (2024). Karakteristik habitat larva nyamuk dan kepadatan nyamuk dewasa (Diptera: Culicidae) di Kabupaten Jembrana, Provinsi Bali. *Aspirator: Journal of Vector-Borne Disease Studies, 14*(1).

Wahyuni, D., Sari, W., Jasril, J., & Syahri, J. (2025). Red ginger essential oil (*Zingiber officinale* var. *rubrum*) as a biolarvicide in the control of *Aedes aegypti* mosquitoes. *KEMAS: Jurnal Kesehatan Masyarakat, 20*(4), 731–743. doi:10.15294/kemas.v20i4.1558

Zingiber officinale against *Aedes aegypti* larvae. *Journal of Tropical Medicine, 2023*, 1–8.