THE POTENTIAL OF *Acalypha indica L.* LEAF EXTRACT AS A REPELLENT AGAINST *Aedes aegypti* MOSQUITOES

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ABSTRACT

Number one of the issues in controlling *Aedes aegypti mosquitoes* is the limitations of using chemical repellents, which often have harmful side effects on humans and the environment. A solution to this problem is using natural materials, such as *Acalypha indica L*. This study aims to inform the results of analyzing the potential of leaf extract *Acalypha indica* in repelling *Aedes aegypti* mosquitoes.

The type of research is a pure experiment with a post-test only with a control group design. The subjects of the study are leaf extracts of *Acalypha indica* at concentrations of 10%, 15%, and 20%. The object is 2-5 days old female *Aedes aegypti* mosquitoes, totaling 675 individuals with 9 replications. The research variables were the number of mosquitoes landing and the protective efficacy. Data were collected through measurements and observations. Then, it was calculated using the *Kruskal-Wallis* statistical test.

At the 6th hour of testing, the protective efficacy for concentrations of 10%, 15%, and 20% was 75%, 70%, and 90%, respectively. Statistical analysis showed significant differences in protective efficacy among the treatment groups ($p \leq 0.05$). The 20% concentration proved effective as a repellent for *Aedes aegypti* mosquitoes, with 90% protective efficacy up to the 6th hour of testing, meeting the standards set by the Indonesian Pesticide Commission.

The recommendation for future research is to increase the concentration of the repellent for more optimal results, conduct physical stability tests (organoleptic, pH, viscosity), irritation tests, and test the repellent on other mosquito species.

Keywords: *Aedes aegypti*, Repellent, Protective Efficacy, *Acalypha indica*
Reading List: 46 journals, 16 books

POTENSI EKSTRAK DAUN ANTING-ANTING (*Acalypha indica L.*) SEBAGAI *REPELLENT* NYAMUK *Aedes aegypti*

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ABSTRAK

Masalah utama dalam upaya pengendalian nyamuk *Aedes aegypti* adalah keterbatasan dalam penggunaan *repellent* sintetis yang seringkali memiliki efek samping merugikan bagi manusia dan lingkungan. Solusi dari permasalahan tersebut adalah penggunaan bahan alami seperti anting-anting (*Acalypha indica L.*). Tujuan penelitian ini untuk menganalisis potensi ekstrak daun anting-anting sebagai *repellent* nyamuk *Aedes aegypti*.

Jenis penelitian ini adalah eksperimen murni dengan *post test only with control group design*. Subjek penelitian adalah ekstrak daun anting-anting konsentrasi 10%, 15% dan 20%. Objek penelitian adalah nyamuk *Aedes aegypti* dewasa betina umur 2-5 hari sebanyak 675 ekor dengan 9 kali replikasi. Variabel penelitian meliputi jumlah nyamuk yang hinggap dan daya proteksi. Data dikumpulkan melalui pengukuran dan pengamatan, dan dianalisis menggunakan uji *Kruskal-Wallis*.

Hasil penelitian menunjukkan bahwa pada jam ke-6 pengujian, daya proteksi konsentrasi 10%, 15% dan 20% secara berurutan sebesar 75%, 70% dan 90%. Hasil analisis statistik menunjukkan daya proteksi antar kelompok perlakuan berbeda secara signifikan ($p<0,05$). Konsentrasi 20% terbukti berpotensi sebagai *repellent*, dengan daya proteksinya sebesar 90% hingga jam ke-6 pengujian, sesuai standar yang ditetapkan oleh Komisi Pestisida Indonesia.

Saran untuk penelitian selanjutnya adalah meningkatkan konsentrasi *repellent* untuk hasil yang lebih optimal, melakukan uji stabilitas fisik (organoleptis, pH, viskositas) dan uji iritasi, serta menguji *repellent* pada jenis nyamuk lainnya.

Kata kunci : *Aedes aegypti*, *Repellent*, Daya Proteksi, Anting-Anting
Daftar Bacaan : 46 jurnal, 16 buku