

EFFECTIVENESS OF BAY LEAF (*SYZYGIUM POLYANTHUM*) EXTRACT LOTION AS A REPELLENT AGAINST *Aedes Aegypti* MOSQUITOES

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) remains a major public health problem in Indonesia. The continuous use of chemical-based repellents may pose risks to human health and the environment, highlighting the need for safer natural alternatives. Bay leaf (*Syzygium polyanthum*) contains bioactive compounds with potential repellent activity against *Aedes aegypti* mosquitoes.

Objective: To determine the effect of different concentrations of bay leaf (*Syzygium polyanthum*) extract formulated as a lotion on the repellency against *Aedes aegypti* and the acceptability of the lotion.

Methods: This study employs a quasi experimental method using a pretest-posttest *control group design*. The treatments consist of bay leaf extract concentrations of 4%, 8%, 12%, and 15%, with a control lotion without extract. The observed parameters include repellency, organoleptic characteristics, and absorption capacity of the lotion. Data will be analyzed using One-Way ANOVA after fulfilling the normality assumption.

Results: The study demonstrated that variations in the concentration of bay leaf (*Syzygium polyanthum*) extract in the lotion formulation affected both the repellent activity against *Aedes aegypti* mosquitoes and the acceptability of the lotion. Increasing the extract concentration resulted in higher repellent effectiveness. The 15% extract concentration exhibited the highest repellent activity, with a repellency rate of **80.8%**, meeting the criteria for an effective repellent. Furthermore, the 15% formulation showed the best organoleptic characteristics and skin absorption properties in terms of color, aroma, texture, homogeneity, absorption time, stickiness, oiliness, and skin dryness.

Conclusion: Bay leaf (*Syzygium polyanthum*) extract is expected to have the potential to be developed as an effective, safe, and environmentally friendly natural repellent in lotion formulation for the prevention of *Aedes aegypti* bites.

Keywords: *Aedes aegypti*, bay leaf, lotion, repellent, *Syzygium polyanthum*.

UJI LOTION EKSTRAK DAUN SALAM (*SYZYGIUM POLYANTHUM*) SEBAGAI REPELLENT NYAMUK *AEDES AEGYPTI*

ABSTRAK

Latar Belakang: Demam Berdarah Dengue (DBD) masih menjadi masalah kesehatan masyarakat di Indonesia. Penggunaan repellent berbahan kimia secara terus-menerus berpotensi menimbulkan dampak terhadap kesehatan dan lingkungan, sehingga diperlukan alternatif berbahan alami. Daun salam (*Syzygium polyanthum*) mengandung senyawa bioaktif yang berpotensi sebagai repellent terhadap nyamuk *Aedes aegypti*.

Tujuan: Mengetahui perbedaan pengaruh variasi konsentrasi ekstrak daun salam (*Syzygium polyanthum*) dalam sediaan *lotion* terhadap daya repelensi nyamuk *Aedes aegypti* serta daya terima *lotion*.

Metode: Penelitian ini merupakan penelitian eksperimen semu (*quasi experimental*) dengan rancangan *pretest-posttest control group design*. Perlakuan menggunakan variasi konsentrasi ekstrak daun salam sebesar 4%, 8%, 12%, dan 15% serta kontrol berupa *lotion* tanpa ekstrak. Parameter yang diamati meliputi daya repelensi, karakteristik organoleptik, dan daya serap *lotion*. Analisis data direncanakan menggunakan uji *One Way ANOVA* setelah memenuhi uji normalitas.

Hasil: Penelitian menunjukkan bahwa variasi konsentrasi ekstrak daun salam (*Syzygium polyanthum*) dalam *lotion* memengaruhi daya repelensi terhadap nyamuk *Aedes aegypti* serta daya terima *lotion*. Semakin tinggi konsentrasi ekstrak, semakin tinggi daya repelensi yang dihasilkan. Konsentrasi ekstrak 15% memberikan daya repelensi paling efektif dengan persentase daya tolak sebesar 80,8% sehingga memenuhi kategori repelen yang baik. Selain itu, konsentrasi 15% juga memiliki karakteristik organoleptik dan daya serap terbaik berdasarkan warna, aroma, tekstur, homogenitas, waktu serap, tingkat lengket, sensasi berminyak, dan tingkat kekeringan.

Kesimpulan: Penelitian ini diharapkan dapat membuktikan bahwa ekstrak daun salam (*Syzygium polyanthum*) berpotensi dikembangkan sebagai bahan aktif repellent alami dalam sediaan *lotion* yang efektif, aman, dan ramah lingkungan sebagai alternatif pengendalian vektor DBD.

Kata Kunci: *Aedes aegypti*, daun salam, *lotion*, repellent, *Syzygium polyanthum*.

