

ABSTRAK

UJI DAYA PROTEKSI EKSTRAK ETANOL BATANG SERAI DAPUR (*Cymbopogon citratus*) SEBAGAI REPELAN TERHADAP NYAMUK *Aedes aegypti* MENGGUNAKAN METODE SPRAY

Oleh

Lutfi Nur Khoirunnissa

Demam Berdarah Dengue (DBD) masih menjadi salah satu masalah kesehatan masyarakat utama di Indonesia karena meningkatnya jumlah kasus dan angka kematian setiap tahunnya. Upaya pencegahan yang umum dilakukan masyarakat adalah penggunaan repelan berbahan kimia sintesis seperti DEET (N,N-diethyl-metoluamid) yang bersifat korosif dan dapat menimbulkan iritasi kulit. Serai dapur (*Cymbopogon citratus*) diketahui mengandung senyawa aktif seperti sitronelal, geraniol, flavonoid, tanin, dan saponin yang bersifat toksik bagi serangga serta berpotensi sebagai penolak nyamuk. Penelitian ini bertujuan untuk mengetahui kandungan fitokimia, sifat fisik, efek iritasi, serta daya proteksi ekstrak etanol batang serai dapur sebagai repelan nyamuk *Aedes aegypti* dalam sediaan spray. Penelitian dilakukan secara eksperimental menggunakan Rancangan Acak Lengkap (RAL) dengan empat perlakuan konsentrasi, yaitu 0%, 10%, 15%, dan 20%, serta empat kali pengulangan. Data daya proteksi dianalisis menggunakan One Way ANOVA pada taraf signifikansi 5% dan dilanjutkan dengan uji LSD. Hasil uji fitokimia menunjukkan bahwa ekstrak etanol serai dapur mengandung senyawa metabolit sekunder berupa flavonoid, tanin, saponin, terpenoid, dan fenolik. Uji organoleptik menunjukkan bahwa sediaan spray konsentrasi 0% berwarna bening dan tidak beraroma, pada konsentrasi 10%, 15%, dan 20% berwarna kuning kecokelatan hingga cokelat pekat. Uji homogenitas bersifat homogen dan tidak menimbulkan efek iritasi pada kulit. Hasil analisis menunjukkan adanya perbedaan daya proteksi yang signifikan antar konsentrasi dengan aktivitas repelan diperoleh pada konsentrasi 20% dengan daya proteksi sebesar 75,83%. Kesimpulan spray ekstrak etanol batang serai dapur konsentrasi 20% menunjukkan daya proteksi tertinggi sebagai repelan nyamuk *Ae. aegypti*

Kata kunci: DBD, *Aedes aegypti*, Serai Dapur, Repelan alami, Spray.

ABSTRACT

TESTING THE PROTECTIVE EFFECTIVENESS OF LEMONGRASS (*Cymbopogon citratus*) ETHANOL EXTRACT AS A REPELLENT AGAINST *Aedes aegypti* MOSQUITOES USING THE SPRAY METHOD

Lutfi Nur Khoirunnissa

Dengue Hemorrhagic Fever (DHF) remains one of the major public health problems in Indonesia due to the increasing number of cases and mortality rates each year. Common prevention efforts undertaken by the community include the use of synthetic chemical repellents such as DEET (N,N-diethyl-meta-toluamide), which is corrosive and can cause skin irritation. Lemongrass (*Cymbopogon citratus*) is known to contain active compounds such as citronellal, geraniol, flavonoids, tannins, and saponins, which are toxic to insects and have the potential to repel mosquitoes. This study aims to determine the phytochemical content, physical properties, irritation effects, and protective power of lemongrass stem ethanol extract as a repellent for *Aedes aegypti* mosquitoes in spray preparations. The study was conducted experimentally using a completely randomized design (CRD) with four concentration treatments, namely 0%, 10%, 15%, and 20%, and four replicates. The protection data were analyzed using One Way ANOVA at a significance level of 5% and followed by LSD test. The phytochemical test results show that lemongrass ethanol extract contains secondary metabolites in the form of flavonoids, tannins, saponins, terpenoids, and phenolics. Organoleptic tests showed that the 0% concentration spray preparation was clear and odorless, while the 10%, 15%, and 20% concentrations were yellowish brown to dark brown. The homogeneity test was homogeneous and did not cause skin irritation. The analysis results showed a significant difference in protective power between concentrations, with repellent activity obtained at a concentration of 20% with a protective power of 75.83%. In conclusion, the 20% concentration of lemongrass stem ethanol extract spray showed the highest protective power as a repellent against *Ae. aegypti* mosquitoes.

Keywords: DBD, *Aedes aegypti*, Lemongrass, Natural repellent, Spray