

# THE EFFECTIVENESS TEST OF CORIANDER SEEDS EXTRACT (*Coriandrum sativum*) *Aedes aegypti* MOSQUITO'S REPELLENT

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## ABSTRACT

Dengue Hemorrhagic Fever (DHF) in Surabaya is increasing every year. one of the preventions to decrease the cases of Dengue Hemorrhagic Fever (DHF) is by using repellent. Repellent can be made from natural ingredients of (*Coriandrum sativum*) that has been extracted. Coriander (*Coriandrum sativum*) contains linalool which is known as a material that can prevent *Aedes aegypti* mosquito to bite human. The content of linalool at Coriander (*Coriandrum sativum*) is approximately 60-70%. The purpose of this study is to analyze the effectiveness of coriander seeds extract as a repellent against *Aedes aegypti* mosquito.

The type of this research is true experimental research with the design of Simple Experimental Design (posttest only control group design). The treatment group was treated with gradual doses. There were 5 treatments of coriander (*Coriandrum sativum*) extract repellent against *Aedes aegypti* mosquito those are 0%, 45%, 50%, 55% and 60% with the replication of 4 times. The conditions that controlled were s temperature, humidity and mosquito's characteristics. Data collection techniques were derived from the results of experimental observations and interviews. The data were then analyzed analytically using one-way ANOVA test and using probit analysis.

The smallest number of *aedes aegypti* mosquito which contact was one mosquito in 60% concentration. The room temperature and humidity were homogen. There is no difference number of mosquito contact between seed coriander extract concentration of 0%, 45%, 50%, 55%, and 60%. Probit analysis results showed that The most effective concentration was 60% concentration with percentage of rejection was 98% and two hours protective periode that match with WHO standard. The recommendation for next research is to increase the coriander concentration so the protection percentage can be 100%. Research can also be applied on other types of mosquitoes such as *Culex sp*, *Anopheles sp*, *Mansonia sp*, *Aedes albopictus*. Coriander extract also can be made as cream or gell to make it easier to apply.

Keywords: coriander extract, *Aedes aegypti* mosquito, and repellent

**UJI EFEKTIFITAS EKSTRAK BIJI KETUMBAR (*Coriandrum sativum*)  
SEBAGAI REPELLENT NYAMUK *Aedes aegypti***

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**ABSTRAK**

Penyakit Demam Berdarah Dengue (DBD) di Surabaya semakin meningkat setiap tahunnya. Salah satu pencegahan untuk menurunkan kasus penyakit Demam Berdarah *Dengue* (DBD) dengan menggunakan *repellent*. *Repellent* dapat dibuat dari bahan alami yaitu ketumbar (*Coriandrum sativum*) yang di ekstrak. Ketumbar (*Coriandrum sativum*) memiliki kandungan linalool yang terkenal sebagai bahan yang dapat mencegah nyamuk *Aedes aegypti* untuk menggigit. Kandungan linalool pada ketumbar (*Coriandrum sativum*) sebesar 60-70%. Tujuan penelitian ini yaitu untuk menganalisis efektifitas ekstrak biji ketumbar sebagai *repellent* terhadap nyamuk *Aedes aegypti*.

Jenis penelitian ini eksperimen murni dengan desain penelitian Rancangan Eksperimen Sederhana (*posttest only with control group design*). Kelompok perlakuan diberi perlakuan dengan dosis bertingkat. Terdapat 5 perlakuan *repellent* dari ekstrak ketumbar (*Coriandrum sativum*) terhadap nyamuk *Aedes aegypti* yaitu 0%, 45%, 50%, 55%, dan 60% dengan replikasi sebanyak 4 kali. Kondisi yang dikendalikan yaitu suhu, kelembaban dan karakteristik nyamuk. Teknik pengumpulan data diperoleh dari hasil observasi eksperimental dan wawancara. Data yang diperoleh selanjutnya dianalisis secara analitik menggunakan uji *One way ANOVA* dan menggunakan analisis probit.

Nyamuk *Aedes aegypti* yang kontak paling sedikit yaitu 1 ekor pada konsentrasi 60%. Suhu dan kelembaban ruang penelitian homogen. Tidak ada perbedaan jumlah nyamuk kontak pada konsentrasi ekstrak biji ketumbar 0%, 45%, 50%, 55%, dan 60%. Konsentrasi yang paling efektif dari hasil probit yaitu konsentrasi 60% dengan daya tolak sebesar 98% dan daya proteksi lama waktu yang memenuhi standar WHO selama 2 jam. Saran untuk peneliti selanjutnya agar meningkatkan konsentrasi untuk mendapatkan daya proteksi 100%. Penelitian terhadap jenis nyamuk yang lainnya seperti nyamuk *Culex sp*, *Anopheles sp*, *Mansonia sp* dan *Aedes albopictus*. Membuat *repellent* ekstrak biji ketumbar dalam bentuk krim atau gel.

Kata kunci : ekstrak ketumbar, nyamuk *Aedes aegypti*, dan *repellent*