

**PROTECTION OF CORIANDER SEED OIL GEL (*Coriandrum sativum L.*)
IN Hidroksipropil Metilselulosa (HPMC) BASED AS *Aedes aegypti*
REPELLENT**

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ABSTRACT

DHF disease transmitted by *Aedes aegypti*. The process can be prevented by using a mosquito repellent. Extract of coriander seeds (*Coriandrum sativum L.*) was proven to provide protection power above 90% against *Aedes aegypti* bites in the first 2 hours. Coriander oil is volatile, making it less effective to use directly. The study aimed to analyze the effect of its effects on the activator of Hydroxypropyl Methylcellulose (HPMC) and the duration of protection against the protective power of coriander seed oil gel as a repellent against *Aedes aegypti* mosquitoes.

This type of research was a pure experiment with posttest only with a control group design. The treatment group was given coriander seed oil gel using HPMC concentrations of 7.5%, 10%, and 12.5% with 6 replications. The control group consisted of a positive control, namely pure coriander seed extract with a concentration of 60% in 96% ethanol and a negative control, namely the arm without any spread. Data analysis used the *Mann Whitney* and *Kruskal Wallis* test with a significance of $p = 0.05$ and a confidence level of 95%.

The *Aedes aegypti* mosquitoes that landed for at least 6 hours of observation were at 7.5% HPMC repellent gel concentration with an average perch of 3.2%. The temperature and humidity of the research room were homogeneous. The addition of HPMC increased protection and the protection duration against the *Aedes aegypti* mosquito. The HPMC concentration was 7.5% according to the standards of the Pesticide Commission (1995) with an average protective power of 97% for 6 hours. The suggestion for further research was to use additional gelling agents such as HPMC as an alternative to increase the protective power for 6 hours

Keyword: coriander seeds oil, HPMC, *Aedes aegypti* repellent

DAYA PROTEKSI GEL MINYAK BIJI KETUMBAR (*Coriandrum sativum* L.) DALAM BASIS *Hidroksipropil Metilselulosa* (HPMC) SEBAGAI REPELLENT NYAMUK *Aedes aegypti*

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ABSTRAK

DBD ditularkan oleh *Aedes aegypti*. Prosesnya dapat dicegah dengan menggunakan *repellent*. Ekstrak biji ketumbar (*Coriandrum sativum* L.) terbukti memberikan daya proteksi diatas 90% terhadap gigitan nyamuk *Aedes aegypti* pada 2 jam pertama. Minyak ketumbar mudah menguap sehingga kurang efektif digunakan secara langsung. Penelitian ini bertujuan untuk menganalisis pengaruh variasi konsentrasi *gelling agent Hidroksipropil Metilselulosa* (HPMC) dan lama waktu perlindungan terhadap daya proteksi gel minyak biji ketumbar sebagai *repellent* terhadap nyamuk *Aedes aegypti*.

Jenis penelitian ini adalah eksperimen murni dengan *posttest only with control group design*. Kelompok perlakuan diberi gel minyak biji ketumbar menggunakan konsentrasi HPMC 7,5%, 10%, dan 12,5% dengan 6 kali replikasi. Kelompok kontrol terdiri dari kontrol positif yaitu ekstrak biji ketumbar murni konsentrasi 60% dalam etanol 96% dan kontrol negatif yaitu lengan tanpa olesan apapun. Analisa data menggunakan uji *Mann Whitney* dan *Kruskal Wallis* dengan signifikasi $p=0,05$ dan taraf kepercayaan 95%.

Nyamuk *Aedes aegypti* yang hinggap paling sedikit selama 6 jam pengamatan yaitu pada gel repelan konsentrasi HPMC 7,5% dengan rerata hinggap 3,2%. Suhu dan kelembaban ruang penelitian homogen. Penambahan HPMC memberikan peningkatan daya proteksi dan lama perlindungan yang sebelumnya belum maksimal terhadap nyamuk *Aedes aegypti*. Konsentrasi HPMC 7,5% sesuai standart Komisi Pestisida (1995) dengan rerata daya proteksinya adalah 97% selama 6 jam. Saran untuk penelitian selanjutnya adalah menggunakan bahan tambahan *gelling agent* seperti HPMC sebagai alternatif meningkatkan daya proteksi selama 6 jam.

Kata Kunci: minyak biji ketumbar, HPMC, *repellent Aedes aegypti*