

**INSECTICIDAL POWER OF ESSENTIAL OILS OF ROSEMARY
(*Rosmarinus officinalis* L.) LEAVES AS BASIC MATERIAL OF
ELECTRIC LIQUID VAPORIZER AGAINST *Aedes aegypti***

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ABSTRACT

Background: *Aedes aegypti* is a vector that carries dengue fever which grow rapidly in tropical countries, including Indonesia. There are several vector control, like repellent. Most repellents using chemicals. The continuously use of chemicals can cause undesirable effects. Many researchers studied natural ingredients from natural plants as basic material of repellent.

Objective: To determine the insecticide power concentration of essential oils of rosemary leaves as basic material of electric liquid vaporizer against *Ae. aegypti*.

Methods: 2-5 days old adult female *Ae. aegypti* were divided into 5 groups that are differentiated on the basic material of liquid electric. Group A using olive oil as a negative control, group B, C, and D using essential oils of rosemary leaves sequentially concentration of 50%, 75% and 100%, and group E using transflutrin 12,38 g/l as a positive control. 25 mosquito in a cage and an electric mosquito repellent liquid alat inserted into a larger mosquito cage coated with plastic. During exposure for 60 minutes, recorded mortality of mosquitoes every 10 minutes and confirmed again after 24 hours. Replication is done 3 times.

Results: The percentage of mosquitoes that die/knockdown on 3 times replication in 24 hours in group A(olive oil)= 0%, B(essential oils of rosemary leaves concentration 50%)= 0%, C(essential oils of rosemary leaves concentration 75%)= 22,68%, D(essential oils of rosemary leaves concentration 100%)= 10,68%, and E(transflutrin 12,38 g/l)= 97,32%.

Conclusion: Essential oils of rosemary leaves as basic material of electric liquid vaporizer has an insecticide power at concentration 75% against *Ae. aegypti*.

Keywords: *Aedes aegypti*, rosemary, essential oils, electric liquid vaporizer

INTISARI

Latar Belakang: Nyamuk *Aedes aegypti* merupakan salah satu vektor yang membawa penyakit demam berdarah *dengue* yang dapat tumbuh pesat pada negara tropis, termasuk Indonesia. Sudah ada beberapa cara pengendalian vektor tersebut, salah satunya menggunakan obat nyamuk. Kebanyakan obat nyamuk yang beredar menggunakan bahan kimia. Penggunaan bahan kimia yang terus menerus dapat menyebabkan dampak yang tidak diinginkan. Oleh karena itu banyak peneliti yang meneliti bahan alami dari minyak atsiri dari tanaman alami sebagai bahan dasar obat nyamuk.

Tujuan: Mengetahui daya insektisida dan konsentrasi minyak atsiri daun rosemary (*rosmarinus officinalis*) sebagai obat nyamuk elektrik cair pada nyamuk *Ae. aegypti*.

Metode: Nyamuk *Ae. aegypti* dewasa betina yang berumur 2-5 hari yang dibagi dalam 5 kelompok yang dibedakan pada bahan dasar obat elektrik cairnya. Kelompok A menggunakan minyak zaitun sebagai kontrol negatif, kelompok B, C, dan D menggunakan minyak atsiri daun rosemary konsentrasi secara berurutan 50%, 75%, dan 100%, serta kelompok E menggunakan obat bahan aktif transflutrin 12,38 g/l sebagai kontrol positif. 25 nyamuk dimasukkan ke dalam sangkar dan bersama alat obat nyamuk elektrik cair dimasukkan ke sangkar nyamuk yang lebih besar yang dilapisi oleh plastik. Pemaparan obat selama 60 menit dan dicatat kematian nyamuk setiap 10 menit lalu dikonfirmasi lagi setelah 24 jam perlakuan. Replikasi dilakukan 3 kali.

Hasil: Persentase nyamuk yang mati/ *knockdown* pada 3 kali replikasi dalam 24 jam pada kelompok A (minyak zaitun)= 0%, B (minyak atsiri daun rosemary konsentrasi 50%)= 0%, C (minyak atsiri daun rosemary konsentrasi 75%)= 22,68%, D (minyak atsiri daun rosemary konsentrasi 100%) = 10,68%, dan E (transflutrin 12,38 g/l)= 97,32%.

Kesimpulan: Minyak atsiri daun rosemary (*Rosmarinus officinalis*) sebagai bahan dasar obat nyamuk elektrik cair memiliki daya insektisida pada konsentrasi 75% terhadap nyamuk *Ae. aegypti*.