

**UJI MUTU FISIK FORMULASI SABUN CAIR KOMBINASI EKSTRAK DAUN
SIRIH HIJAU (*Piper Betle L*) DAN MINYAK KELAPA (*Virgin Coconut Oil*)
TERHADAP AKTIVITAS ANTIBAKTERI *Pseudomonas aeruginosa***

ABSTRAK

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Infeksi kulit oleh *Pseudomonas aeruginosa* menjadi masalah yang signifikan, mendorong perlunya alternatif antibakteri dari bahan alam. Penelitian ini bertujuan untuk memformulasi dan mengevaluasi sabun cair dari kombinasi ekstrak daun sirih hijau (*Piper betle L.*) dan *Virgin Coconut Oil* (VCO) serta menguji mutu fisik dan aktivitas antibakterinya terhadap *P. aeruginosa*. Metode penelitian ini adalah eksperimental laboratorium. Ekstrak daun sirih hijau diperoleh melalui maserasi dengan etanol 70 % selama 3x24 jam dan diformulasikan menjadi tiga sediaan sabun cair dengan konsentrasi ekstrak 20% (F1), 25% (F2) dan 30% (F3). Evaluasi meliputi uji mutu fisik (organoleptis, pH, viskositas, dll.) dan uji daya hambat antibakteri dengan metode difusi sumuran. Hasil skrining fitokimia menunjukkan ekstrak mengandung flavonoid, alkaloid, saponin, steroid dan tanin. Semua formula sabun memenuhi standar mutu fisik SNI. Hasil uji antibakteri menunjukkan semua formula efektif menghambat *P. aeruginosa*, dengan zona hambat F1 (10,53 mm), F2 (15,93 mm) dan F3 (18,54 mm). Analisis statistik (ANOVA & Tukey HSD) menunjukkan formula F3 memiliki daya hambat paling kuat dan tidak berbeda signifikan ($p>0,05$) dengan kontrol positif detol. Kombinasi ekstrak daun sirih hijau dan VCO berpotensi sebagai sabun antiseptik yang efektif.

Kata Kunci: Sabun Cair, Daun Sirih Hijau, *Virgin Coconut Oil*, Antibakteri, *Pseudomonas aeruginosa*.

Physical Quality Test of Liquid Soap Formulation Combining Green Betel Leaf (Piper betle L.) Extract and Virgin Coconut Oil on Antibacterial Activity Against Pseudomonas aeruginosa

ABSTRACT

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Skin infections caused by Pseudomonas aeruginosa are a significant problem, prompting the need for antibacterial alternatives from natural ingredients. This study aimed to formulate and evaluate a liquid soap from a combination of green betel leaf (Piper betle L.) extract and Virgin Coconut Oil (VCO) and to test its physical quality and antibacterial activity against P. aeruginosa. This research method was a laboratory experiment. Green betel leaf extract was obtained through maceration with 70% ethanol for 3x24 hours and formulated into three liquid soap preparations with extract concentrations of 20% (F1), 25% (F2), and 30% (F3). Evaluations included physical quality tests (organoleptic, pH, viscosity, etc.) and antibacterial inhibition tests using the well diffusion method. Phytochemical screening results showed the extract contained flavonoids, alkaloids, saponins, steroids and tannins. All soap formulas met SNI physical quality standards. The antibacterial test results showed that all formulas were effective in inhibiting P. aeruginosa, with inhibition zones for F1 (10.53 mm), F2 (15.93 mm) and F3 (18.54 mm). Statistical analysis (ANOVA & Tukey HSD) showed that formula F3 had the strongest inhibitory power and was not significantly different ($p>0.05$) from the positive control detol. The combination of green betel leaf extract and VCO has potential as an effective antiseptic soap.

Keywords: *Liquid Soap, Green Betel Leaf, Virgin Coconut Oil, Antibacterial, Pseudomonas aeruginosa.*