FORMULASI DAN EVALUASI MUTU FISIK DAN AKTIVITAS ANTIBAKTERI *HAND WASH* MINYAK BUNGA CENGKEH (*Syzygium aromaticum* L.) SEBAGAI ANTIBAKTERI

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ABSTRAK

Latar belakang : Infeksi kulit di Indonesia sering disebabkan oleh bakteri *Staphylococcus aureus*. Bunga cengkeh (*Syzygium aromaticum* L.) mengandung eugenol dan senyawa antibakteri lain, efektif menghambat bakteri. Tujuan penelitian ini mengevaluasi uji mutu fisik dan aktivitas antibakteri minyak bunga cengkeh terhadap bakteri *Staphylococcus aureus*

Metode : Jenis penelitian ini adalah eksperimental diawali pembuatan *hand wash* minyak bunga cengkeh dan pengujian mutu fisik sediaan *hand wash.* Kontrol positif menggunakan disk amoxicillin dan kontrol negatif DMSO. Uji aktivitas antibakteri menggunakan metode difusi cakram kertas. untuk analisis data menggunakan metode *One Way ANOVA* dan uji Tukey, apabila terdapat perbedaan.

Hasil : Hasil skrining fitokimia menunjukan adanya kandungan senyawa alkaloid, flavonoid, tanin dan saponin. Uji viskositas diperoleh rata-rata (36,00-256,00 cp). Uji pH diperoleh rata-rata (6,75-7,17). Uji tinggi busa diperoleh rata-rata (76,48-93,03%). Uji bobot jenis diperoleh rata-rata (1,02-1,04 g/mL). pengujian aktivitas antibakteri memiliki konsentrasi 0% <5 mm dan konsentrasi 2%, 3%, dan 4% antara 5-10 mm.

Kesimpulan: Hasil uji menunjukkan bahwa variasi konsentrasi 0%, 2%, 3% dan 4% minyak bunga cengkeh memperoleh perbedaan terhadap mutu fisik (organoleptis, pH, viskositas, kestabilan busa, bobot jenis) dan aktivitas antibakteri terhadap bakteri *Staphylococcus aureus*.

Kata kunci : *Syzygium aromaticum* L. , *hand wash*, *Staphylococcus aueus*

FORMULATION AND EVALUATION OF PHYSICAL QUALITY AND ANTIBACTERIAL ACTIVITY OF CLOVE FLOWER OIL (Syzygium aromaticum L.) HAND WASH AS AN ANTIBACTERIAL AGENT

ABSTRACT

Background: Skin infections in Indonesia are often caused by the bacterium *Staphylococcus aureus.* Clove flower (*Syzygium aromaticum* L.) contains eugenol and other antibacterial compounds, which are effective in inhibiting bacterial growth. This study aims to evaluate the physical quality and antibacterial activity of clove flower oil against *Staphylococcus aureus*.
Methods: This experimental study began with the preparation of clove flower oil hand wash and the testing of the physical quality of the hand wash formulation. Amoxicillin discs were used as the positive control, and DMSO was used as the negative control. The antibacterial activity was tested using the paper disc diffusion method. Data analysis was performed using One-Way ANOVA and Tukey's test to identify any significant differences.
Results: Phytochemical screening showed the presence of alkaloids, flavonoids, tannins, and saponins. The viscosity test results ranged from 36.00 to 256.00 cp. The pH test results ranged from 6.75 to 7.17. Foam height test results ranged from 76.48% to 93.03%. The specific gravity test results ranged from 1.02 to 1.04 g/mL. The antibacterial activity tests showed that the 0% concentration had an inhibition zone of <5 mm, while the 2%, 3%, and 4% concentrations had inhibition zones between 5-10 mm.
Conclusion: The results indicate that the variation in clove flower oil concentrations (0%, 2%, 3%, and 4%) affects the physical quality (organoleptic properties, pH, viscosity, foam stability, specific gravity) and antibacterial activity against *Staphylococcus aureus*.

Keywords: *Syzygium aromaticum* L., hand wash, *Staphylococcus aureus*