

Abstrak

FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI SEDIAAN GEL HAND SANITIZER EKSTRAK ETANOL DAUN SALAM (*Syzygium polyanthum* (Wight) Walp.) DENGAN BASIS CARBOPOL 940

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Latar Belakang: *Staphylococcus aureus* merupakan bakteri yang paling banyak berada pada tangan dengan presentase sebanyak 44% dari patogen lainnya. Daun salam(*Syzygium polyanthum*) mengandung minyak atsiri 0,05% (sitril dan eugenol), tanin, dan flavonoid yang memiliki aktivitas antibakteri. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh variasi konsentrasi carbopol 940 terhadap sifat fisik dan stabilitas fisik sediaan gel dan mengetahui apakah formula terpilih sediaan gel *hand sanitizer* ekstrak etanol daun salam memiliki aktivitas antibakteri terhadap bakteri *S. aureus*.

Metodologi: Sediaan gel *hand sanitizer* dibuat dengan variasi konsentrasi carbopol 940 yaitu 0,5%, 0,75%, dan 2%. Hasil uji organoleptis, pH, homogenitas dan Freeze-thaw dianalisis secara deskriptif. Uji viskositas, daya lekat dan daya sebar dianalisis menggunakan one way ANOVA dan dilanjutkan dengan uji LSD. Formula terpilih diuji aktivitas antibakteri menggunakan metode difusi sumuran dibandingkan dengan kontrol negatif dan kontrol positif sediaan *hand sanitizer* yang ada di pasaran.

Hasil Penelitian: Hasil penelitian menunjukkan bahwa peningkatan variasi konsentrasi carbopol 940 dapat meningkatkan viskositas dan daya lekat, tetapi menurunkan daya sebar gel *hand sanitizer*. Formula terpilih adalah gel dengan konsentrasi carbopol 0,75% menghasilkan persentase daya hambat antibakteri terhadap *S. aureus* sebesar 60% dengan zona hambat sebesar 10,33 mm.

Kesimpulan: Formula terpilih pada konsentrasi carbopol 940 0,75% memiliki kemampuan antibakteri terhadap *S. aureus*.

Kata kunci: Daun Salam, Carbopol 940, *hand sanitizer*, Antibakteri, *S. aureus*

Abstract

FORMULATION AND ANTIBACTERIAL ACTIVITY TEST OF HAND SANITIZER GEL ETHANOL EXTRACT OF BAY LEAVES (*Syzygium polyanthum*(Wight) Walp.) WITH CARBOPOL AS BASE

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Background: *Staphylococcus aureus* is the most bacteria in the hands with a percentage of 44% from other pathogens. Bay leaves (*Syzygium polyanthum*) contain 0.05% essential oils (citral and eugenol), tannins, and flavonoids that have antibacterial activity. This study aims to determine the effect of variations in concentration of Carbopol 940 as gelling agents in physical properties and physical stability of gel forms and to determine whether the chosen formula of bay leaves herb extract gel has antibacterial activity against *S. aureus*.

Methodology: Gel hand sanitizer was made with various carbopol 940 concentration variations, 0.5%, 0.75%, and 2%. The result of organoleptic test, pH, homogeneity, and Freeze-thaw were examined in descriptive. Viscosity test, both adhesive and dispersive energy were examined using one way ANOVA and followed by LSD test. The selected formula was tested antibacterials activity used well diffusion method compared to negative and positive control of hand sanitizer dosage in markets.

Results: The results showed that increasing the variation of carbopol concentration can enhance the viscosity and the adhesive energy, nonetheless reduce the dispersive energy of hand sanitizer gel. The selected formula was gel with a concentration of 0.75% carbopol which is a stable formula during storage, meets the requirements of completely fulfill the physics character and the physics stability the dosage of gel, and had antibacterials resistor energy to *S. aureus* 60% with a inhibition zone of 10.33 mm.

Conclusion: The selected formula on Carbopol 940 concentration 0,75% had antibacterials ability to *S. aureus*.

Keywords: Bay leaves, Carbopol 940, hand sanitizer, antibacterial, *Staphylococcus aureus*