

Abstrak
FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI SEDIAAN GEL
HAND SANITIZER MINYAK ATSIRI SERAI DAPUR
(*Cymbopogon citratus* DC) TERHADAP *Staphylococcus aureus*

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Latar Belakang: Minyak atsiri serai dapur memiliki kandungan sitral yang berfungsi sebagai antibakteri, diantaranya terhadap *Staphylococcus aureus*. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi minyak atsiri serai dapur terhadap sifat fisik dan stabilitas fisik sediaan gel *hand sanitizer* serta mengetahui aktivitas antibakterinya terhadap bakteri *S.aureus*.

Metodologi: Sediaan gel *hand sanitizer* dibuat dengan variasi konsentrasi minyak atsiri serai dapur, yaitu 10% (F1), 15% (F2) dan 20% (F3). Pengujian organoleptis, homogenitas, uji *freeze-thaw* diamati secara visual dan datanya dianalisis secara deskriptif. Selain itu, dilakukan uji pH, viskositas, daya lekat, dan daya sebar dengan membandingkan hasil uji dengan literatur, kemudian data dianalisis secara statistik menggunakan uji *one way* ANOVA dan dilanjutkan uji *Least Significant Differences* (LSD) pada taraf kepercayaan 95%. Hasil uji aktivitas antibakteri menggunakan metode difusi sumuran menghasilkan diameter zona hambat yang dianalisis secara statistik dibandingkan dengan kontrol negatif dan kontrol positif.

Hasil Penelitian: Hasil penelitian menunjukkan bahwa semua formula sediaan gel *hand sanitizer* minyak atsiri serai dapur memenuhi kriteria yang baik pada parameter organoleptis, homogenitas, viskositas, pH, daya sebar, daya lekat dan uji stabilitas *freeze-thaw*. Formula sediaan gel *hand sanitizer* minyak atsiri serai dapur pada konsentrasi 10%, 15%, dan 20% memiliki aktivitas antibakteri terhadap *Staphylococcus aureus* dengan diameter zona hambat berturut-turut 10,66; 12; dan 14,33 mm.

Kesimpulan: Semua formula gel *hand sanitizer* yang mengandung minyak atsiri serai dapur memenuhi persyaratan uji dan pada konsentrasi 20% (F3) menunjukkan aktivitas antibakteri paling tinggi. Peningkatan variasi konsentrasi minyak atsiri serai dapur dapat meningkatkan nilai viskositas dan daya lekat, serta menurunkan nilai daya sebar gel *hand sanitizer* minyak atsiri serai dapur.

Kata kunci: *Cymbopogon citratus* DC, Gel *hand sanitizer*, HPMC, Serai dapur, *Staphylococcus aureus*

Abstract
**FORMULATION AND TESTING OF ANTIBACTERIAL
ACTIVITY OF HAND SANITIZER GEL LEMONGRAS
ESSENTIAL OIL (*Cymbopogon citratus* DC) AGAINST
*Staphylococcus aureus***

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Background: Lemongrass essential oil contains citral which acts an antibacterial, including against *Staphylococcus aureus*. The purposes of this study were to determine the effect of concentrations variation of lemongrass essential oil on the physical properties and physical stability of hand sanitizer gel and to determine the antibacterial activity of lemongrass essential oil hand sanitizer gel against *Staphylococcus aureus*.

Research Methodology: Hand sanitizer gel prepared with concentrations variation of lemongrass essential oil (F1), 15% (F2) dan 20% (F3). The results of organoleptic, homogeneity, and physical stability test (freeze-thaw) observed visually and the date were analyzed descriptively. The test data for pH, viscosity, adhesion, and dispersibility by compering the test results with the literature, then analyzed using the one way ANOVA test and followed by the Least Significant Differences (LSD) test with a 95% confidence level. The results of antibacterial activity test using the well diffusion method analyzed by compared to negative control and positive control.

Result: The results were shoewed all of the hand sanitizer gel formulations of lemongrass essential oil have good criteria on organoleptic paramaters, homogeneity, viscosity, pH, dispersion, adhesion and freeze-thaw stability tests. Lemongrass essential oil hand sanitizer gel formulations at concentration of 10%, 15%, and 20% had antibacterial against *S. aureus* with inhibition zone diameter 10,66; 12; dan 14,33 mm.

Conclusion: All hand sanitizer gel formulas meet the test requirements. The *Cymbopogon citratus* DC essential oil hand sanitizer gel at concentration of 20% had higher antibacterial activity against *S. aureus*. Increasing of concentrations variation of *Cymbopogon citratus* DC could increase the value of viscosity and adhesion, but could decrease the dispersion value of the lemongrass essential oil hand sanitizer gel.

Key words: *Cymbopogon citratus* DC, HPMC, Hand sanitizer gel, *Staphylococcus aureus*