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**EFEKTIVITAS ANTIBAKTERI SERUM GEL MINYAK DAUN ADAS
(*FOENICULUM VULGARE MILL*) TERHADAP BAKTERI
*STAPHYLOCOCCUS AUREUS***

ABSTRAK

Latar belakang: Bakteri *Staphylococcus aureus* salah satu bakteri penyebab penyakit pada kulit. Penggunaan bahan alam seperti minyak daun adas yang mengandung flavonoid, fenolik, dan steroid. Bentuk serum gel dipilih karena daya serapnya baik dan nyaman digunakan.

Tujuan Penelitian: Mengevaluasi karakteristik fisik seperti pH, viskositas, daya lekat, daya sebar serta efektivitas antibakteri *Staphylococcus aureus* dengan variasi konsentrasi minyak daun adas.

Metode Penelitian: Penelitian eksperimental dengan 3 variasi konsentrasi minyak daun adas dalam serum gel. Uji antibakteri menggunakan metode difusi sumuran pada media *Nutrient Agar*. Data dianalisis dengan uji *One Way ANOVA* dan *Kruskal Wallis*.

Hasil Penelitian: Seluruh formula memenuhi persyaratan fisik sediaan topikal. Tidak terdapat perbedaan signifikan pada nilai viskositas, pH, daya sebar, dan efektivitas antibakteri. Pada uji daya lekat menunjukkan perbedaan signifikan

($p = 0,001 < 0,05$). Seluruh formula mampu menghambat *Staphylococcus aureus*, dengan Konsentrasi tertinggi yaitu formulasi 3 menghasilkan zona hambat terbesar (rata-rata $\pm$ SD 12,25 $\pm$ 1,91 mm) yang termasuk kategori sedang.

Kesimpulan: Serum gel minyak daun adas efektif sebagai antibakteri terhadap *Staphylococcus aureus*. Peningkatan konsentrasi minyak berpengaruh terhadap aktivitas antibakteri dan karakteristik fisik sediaan.

Kata kunci: Minyak, Daun adas, Serum gel, Antibakteri, *Staphylococcus aureus*.

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**ANTI-BACTERIAL EFFECTIVENESS OF FENNEL LEAF OIL GEL SERUM
(FOENICULUM VULGARE MILL) AGAINST STAPHYLOCOCCUS AUREUS
BACTERIA**

ABSTRACT

Background: *Staphylococcus aureus* is one of the bacteria that causes skin disease. Use natural ingredients such as fennel leaf oil which contains flavonoids, phenolics and steroids. The gel serum form was chosen because it has good absorption and is comfortable to use.

Research Objective: To evaluate physical characteristics such as pH, viscosity, adhesive power, spreadability and antibacterial effectiveness of *Staphylococcus aureus* with varying concentrations of fennel leaf oil.

Research Method: Experimental research with 3 variations in the concentration of fennel leaf oil in serum gel. The antibacterial test used the well diffusion method on Nutrient Agar media. Data were analyzed using One Way ANOVA and Kruskal Wallis tests.

Research Results: All formulas meet the physical requirements of topical preparations. There were no significant differences in viscosity, pH, spreadability and antibacterial effectiveness values. The adhesion test showed a significant difference ($p = 0.001 < 0.05$). All formulas were able to inhibit *Staphylococcus aureus*, with the highest concentration, namely formulation 3, producing the largest inhibition zone (mean $\pm$ SD 12.25 ± 1.91 mm) which was included in the medium category.

Conclusion: Fennel leaf oil gel serum is effective as an antibacterial against *Staphylococcus aureus*. Increasing the oil concentration affects the antibacterial activity and physical characteristics of the preparation.

Key words: Oil, Fennel leaves, Serum gel, Antibacterial, *Staphylococcus aureus*.