

Abstrak

FORMULASI LOSION ANTINYAMUK MINYAK ATSIRI CENGKEH (*Syzygium aromaticum*) MENGGUNAKAN KOMBINASI TWEEN 80 DAN SPAN 80 SEBAGAI EMULGATOR

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Latar Belakang: Tanaman cengkeh (*Syzygium aromaticum*) memiliki kandungan eugenol yang merupakan kandungan utama minyak atsiri cengkeh dan memiliki aktivitas antinyamuk. Sediaan losion minyak atsiri cengkeh dapat digunakan sebagai alternatif sediaan repelan. Dalam memformulasi losion minyak atsiri cengkeh ini digunakan tween 80 dan span 80 sebagai emulgator untuk menjaga stabilitas sediaan losion. Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi kombinasi tween 80 dan span 80 terhadap sifat fisik dan stabilitas sediaan losion antinyamuk minyak atsiri cengkeh.

Metodologi: Formula sediaan losion dibuat dengan memvariasikan konsentrasi emulgator tween 80-span 80 yang digunakan yaitu 3, 5, dan 7%. Hasil pengamatan organoleptis, homogenitas, dan stabilitas *freeze-thaw* dianalisis secara deskriptif. Data pH, viskositas, daya lekat dan daya sebar dianalisis menggunakan Anova satu arah dengan taraf kepercayaan 95% dan dilanjutkan dengan uji LSD apabila data yang diperoleh berbeda secara signifikan. Formula terbaik yang memenuhi syarat uji sifat fisik dan stabilitas selama penyimpanan 28 hari.

Hasil Penelitian: Hasil penelitian menunjukkan ketiga formula stabil dan memenuhi persyaratan viskositas, daya sebar, daya lekat, pH yang dipersyaratkan. Peningkatan konsentrasi tween 80 - span 80 akan meningkatkan viskositas, pH dan daya lekat, serta menurunkan daya sebar. Formula I (tween 80 - span 80 3%) merupakan formula terbaik dengan nilai viskositas sebesar 19.666,67-22.533.33 cPs, daya sebar 8,00-10,43 cm, daya lekat 1,33-5.00 detik, pH 4.9-5.033, dan stabil selama penyimpanan.

Kesimpulan: Formula I dengan konsentrasi tween 80 - span 80 3% merupakan formula terbaik dan peningkatan variasi konsentrasi tween 80 dan span 80 menyebabkan peningkatan viskositas dan daya lekat sediaan, sedangkan daya sebar semakin menurun..

Kata kunci: Antinyamuk, minyak atsiri cengkeh, losion, tween 80, span 80

Abstract

FORMULATION OF CLOVE ESSENTIAL OIL AS MOSQUITO REPELLENT LOTION USING TWEEN 80 AND SPAN 80 COMBINATION AS EMULGATOR

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Background: Clove plant (*Syzygium aromaticum*) contains eugenol which is the main ingredient in clove essential oil and has activity as a mosquito repellent. Clove essential oil lotion can be used as an alternative repellent preparations. Tween 80 and Span 80 were used as emulsifiers to maintain the stability of the clove essential oil lotion preparation. This study aims to determine the effect of variations in the concentration of the combination of tween 80 and span 80 on the physical properties and stability of the mosquito repellent lotion preparation of clove essential oil.

Methods: The lotion preparation formula was prepared by varying the tween 80-span 80 emulgator concentration, 3, 5, and 7%. Organoleptic, homogeneity, and freeze-thaw stability test were analyzed descriptively. pH, viscosity, adhesion and spreadability test data were analyzed using one-way ANOVA at 95% confidence level and continued with the LSD test if the data obtained were significantly different. The best formula is selected based on a formula that meets the physical properties and stability test requirements during 28 days of storage.

Results: The results showed that all formulas were stable and met viscosity, spreadability, adhesion, and pH requirements. The increase in the variation in the concentration of the combination of span 80 and tween 80 caused an increase in viscosity and adhesion of the preparation, while the spreadability decreased.

Formula I (tween 80 - span 80 3%) was chosen as the best formula with viscosity value 19.666,67-22.533.33 cPs, spreadability 8.00-10.43 cm, adhesion 1,33-5.00 seconds and pH 4.9-5.033.

Conclusion: Formula I with a concentration of Tween 80 - span 80 3% is the best formula and an increase in the variation of the concentration of tween 80 and span 80 will cause an increase in viscosity and adhesion of the preparation, while the spreadability decreased.

Keywords: mosquito repellent, clove oil essential oil, lotion, tween 80, span 80