ABSTRAK

FERA EGA SALSA BILLA, 2025, PENGARUH VARIASI KONSENTRASI ASAM STEARAT & TRIETANOLAMIN SEBAGAI EMULGATOR TERHADAP MUTU FISIK & STABILITAS *LOTION* MINYAK ATSIRI SEREH WANGI (*Cymbopogon nardus L.*), KARYA TULIS ILMIAH, PROGRAM STUDI D-III FARMASI, FAKULTAS FARMSI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh apt. Dewi Ekowati, M.Sc

Nyamuk sebagai vektor penyakit memerlukan langkah pencegahan, salah satunya melalui *lotion* anti-nyamuk berbahan alami. Minyak atsiri sereh wangi (*Cymbopogon nardus L.*) yang kaya senyawa sitronellal, geraniol, dan sitronellol efektif sebagai penolak nyamuk, tetapi sifatnya yang mudah menguap memerlukan formulasi berbasis *lotion* untuk meningkatkan stabilitas. Penelitian ini bertujuan untuk memformulasikan *lotion* sereh wangi dengan variasi konsentrasi asam stearat dan trietanolamin (TEA) sebagai emulgator untuk mengoptimalkan mutu fisik dan stabilitas.

Penelitian ini menggunakan 3 formula *lotion* dengan minyak atsiri sereh wangi berkonsentrasi 10% dan variasi asam stearat sebesar 3%, 4%, dan 5% dan TEA 3%, 2%, 1%. Mutu fisik *lotion* diuji melalui berbagai parameter, yaitu: organoleptis, homogenitas, tipe *lotion*, pH, viskositas, daya lekat, daya sebar, serta stabilitas. Data hasil pengujian dianalisis secara statistik dengan metode *one way* ANOVA. Apabila terdapat perbedaan yang signifikan, maka dilanjutkan dengan uji Tukey. Selanjutnya, uji stabilitas dianalisis menggunakan *paired t-test.*

Hasil penelitian menunjukkan variasi emulgator asam stearat dan TEA berpengaruh terhadap mutu fisik *lotion* minyak atsiri sereh wangi yang meliputi organoleptis, homogenitas, tipe *lotion*, pH, viskositas, daya lekat, daya sebar, serta stabilitas. Dari hasil data uji mutu fisik *lotion* menunjukkan seluruh formula memenuhi standar *lotion* yang baik namun tidak stabil pada uji stabilitas.

Kata kunci: *lotion*, minyak atsiri sereh wangi, *repellent*, asam stearat, TEA.

ABSTRACT

FERA EGA SALSA BILLA, 2025, THE EFFECT OF VARIATIONS IN STEARIC ACID AND TRIETHANOLAMINE CONCENTRATIONS AS EMULSIFIERS ON THE PHYSICAL QUALITY AND STABILITY OF CITRONELLA ESSENTIAL OIL LOTION (*Cymbopogon nardus L.*), SCIENTIFIC PAPER, DIPLOMA III PHARMACY STUDY PROGRAM, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Supervised by apt. Dewi Ekowati, M.Sc..

Mosquitoes, as disease vectors, required preventive measures, one of which was the use of natural-based mosquito repellent *lotion*. Citronella essential oil (*Cymbopogon nardus L.*), rich in citronellal, geraniol, and citronellol compounds, was effective as a mosquito repellent. However, its volatile nature required a *lotion*-based formulation to enhance stability. This study aimed to formulate a citronella *lotion* with varying concentrations of stearic acid & triethanolamine as an emulsifier to optimize physical quality and stability

This study used three lotion formulations containing 10% citronella essential oil, with variations in stearic acid concentrations of 3%, 4%, and 5%, and TEA concentrations of 3%, 2%, and 1%. The physical quality of the lotions was tested through various parameters, including organoleptic properties, homogeneity, lotion type, pH, viscosity, adhesiveness, spreadability, and stability. The test data were statistically analyzed using the one-way ANOVA method. If significant differences were found, the analysis was continued with a Tukey test. Furthermore, stability testing was analyzed using a paired t-test.

The results of the study showed that variations in the emulsifiers stearic acid and TEA affected the physical quality of the citronella essential oil lotion, including organoleptic properties, homogeneity, lotion type, pH, viscosity, adhesiveness, spreadability, and stability. The physical quality test data indicated that all formulations met the standards of a good lotion however, they were not stable in the stability test.

Keywords: lotion, citronella essential oil, repellent, stearic acid, triethanolamin