

FORMULASI KRIM BERBASIS MINYAK TAMANU DENGAN VARIASI KONSENTRASI EKSTRAK LICORICE SERTA UJI STABILITAS FISIK, AKTIVITAS ANTIOKSIDAN DAN PERLINDUNGAN UV

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INTISARI

Telah dilakukan penelitian mengenai formulasi krim berbasis minyak tamanu dengan variasi konsentrasi ekstrak licorice serta uji stabilitas fisik, aktivitas antioksidan, dan perlindungan UV. Tujuan penelitian ini adalah membuat dan melakukan karakterisasi sediaan krim berbahan dasar minyak tamanu, mempelajari pengaruh variasi penambahan ekstrak licorice terhadap stabilitas fisik sediaan krim, serta mengetahui aktivitas antioksidan dan nilai SPF dalam krim berbahan dasar minyak tamanu dengan variasi penambahan ekstrak licorice. Penelitian ini diawali dengan uji karakteristik minyak tamanu meliputi kadar air, asam lemak bebas, dan bilangan peroksida. Sediaan krim dibuat tanpa ekstrak licorice dan dengan penambahan ekstrak licorice konsentrasi 1%, 2%, dan 3%. Parameter uji stabilitas fisik sediaan krim meliputi uji organoleptis, pH, homogenitas, daya sebar, pemisahan fase, ukuran droplet, dan tipe emulsi. Uji aktivitas antioksidan dan nilai *Sun Protection Factor* (SPF) dilakukan menggunakan spektrofotometer UV-Vis.

Hasil penelitian menunjukkan bahwa penambahan ekstrak licorice memengaruhi stabilitas fisik krim. Peningkatan konsentrasi ekstrak licorice menurunkan nilai pH, daya sebar, serta ukuran droplet sediaan krim. Sedangkan aktivitas antioksidan dan nilai SPF krim semakin meningkat. Formulasi dengan kandungan ekstrak licorice 3% menghasilkan aktivitas antioksidan terkuat dengan nilai IC_{50} sebesar 91,21 ppm (kategori kuat) dan nilai SPF tertinggi sebesar 12,63 (kategori proteksi maksimal).

Kata kunci: antioksidan, krim, licorice, minyak tamanu, SPF.

FORMULATION OF TAMANU OIL-BASED CREAM WITH VARIATIONS OF LICORICE EXTRACT CONCENTRATION AND TESTS OF PHYSICAL STABILITY, ANTIOXIDANT ACTIVITY, AND UV PROTECTION

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ABSTRACT

Research has been conducted on the formulation of tamanu oil-based creams with varying concentrations of licorice extract, along with tests on physical stability, antioxidant activity, and UV protection. The objectives of this study were to formulate and characterize tamanu oil-based cream preparations, investigate the effect of varying licorice extract concentrations on the physical stability of the cream, and determine the antioxidant activity and Sun Protection Factor (SPF) values of tamanu oil-based creams with different licorice extract concentrations. The study began with an analysis of tamanu oil characteristics, including moisture content, free fatty acids, and peroxide value. Cream formulations were prepared without licorice extract and with the addition of licorice extract at concentrations of 1%, 2%, and 3%. The physical stability parameters of the cream formulations included organoleptic tests, pH, homogeneity, spreadability, phase separation, droplet size, and emulsion type. Antioxidant activity and SPF values were measured using UV-Vis spectrophotometry.

The results showed that the addition of licorice extract influenced the physical stability of the cream. Increasing the licorice extract concentration decreased the pH, spreadability, and droplet size of the cream formulations. Meanwhile, the antioxidant activity and SPF values of the cream increased. The formulation containing 3% licorice extract exhibited the strongest antioxidant activity, with an IC_{50} value of 91.21 ppm (classified as strong), and the highest SPF value of 12.63 (classified as maximum protection).

Keywords: antioxidant, cream, licorice, tamanu oil, SPF.