

INTISARI

RANI WIJAYANTI, 2026, PENGARUH VARIASI KONSENTRASI CARBOPOL 940 TERHADAP KARAKTERISTIK FISIK DAN STABILITAS SEDIAAN GEL PANTHENOL, KARYA TULIS ILMIAH, PROGRAM STUDI D-III FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI. Dibimbing oleh apt. Siti Aisiyah, S.Farm., M.Sc.

Kulit kering merupakan permasalahan yang sering terjadi di wilayah tropis, termasuk Indonesia, akibat terganggunya fungsi sawar kulit yang meningkatkan *transepidermal water loss* dan menurunkan kelembapan stratum korneum. Panthenol dapat digunakan sebagai agen pelembap dan diformulasikan dalam bentuk gel menggunakan carbopol 940 sebagai *gelling agent*. Penelitian ini bertujuan untuk mengevaluasi pengaruh variasi konsentrasi carbopol 940 terhadap karakteristik fisik, stabilitas, dan tingkat kesukaan gel panthenol serta menentukan formula terbaik.

Penelitian ini bersifat eksperimental dengan menggunakan panthenol 5% yang diformulasikan menjadi tiga formula dengan variasi konsentrasi carbopol 940 sebesar 0,5%, 1%, dan 1,5%. Evaluasi meliputi uji organoleptis, homogenitas, pH, viskositas, daya sebar, dan daya lekat. Uji stabilitas dilakukan menggunakan metode *cycling test* selama enam siklus, sedangkan uji hedonik dilakukan menggunakan kuesioner. Data dianalisis menggunakan program SPSS sesuai karakteristik data yang diperoleh.

Hasil penelitian menunjukkan bahwa peningkatan konsentrasi carbopol 940 dapat meningkatkan viskositas dan daya lekat, sedangkan pH dan daya sebar menurun. Seluruh formula stabil pada parameter organoleptis, homogenitas, dan pH, sedangkan viskositas dan daya sebar mengalami ketidakstabilan. Formula 1 juga menunjukkan stabilitas daya lekat yang baik dan memperoleh tingkat kesukaan panelis tertinggi. Berdasarkan karakteristik fisik, stabilitas, dan uji hedonik, formula 1 dengan konsentrasi carbopol 940 sebesar 0,5% ditetapkan sebagai formula terbaik.

Kata kunci: Gel panthenol, carbopol 940, karakteristik fisik, stabilitas, hedonik

ABSTRACT

RANI WIJAYANTI, 2026, THE EFFECT OF VARIATIONS IN CARBOPOL 940 CONCENTRATION ON THE PHYSICAL CHARACTERISTICS AND STABILITY OF PANTHENOL GEL PREPARATIONS, SCIENTIFIC PAPER, DIPLOMA III PHARMACY STUDY PROGRAM, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY. Supervised by apt. Siti Aisiyah, S.Farm., M.Sc.

Dry skin is a common problem in tropical regions, including Indonesia, due to a disruption in the skin barrier function, which increases transepidermal water loss and reduces the moisture content of the stratum corneum. Panthenol can be used as a moisturizing agent and formulated into a gel using carbopol 940 as a gelling agent. This study aims to evaluate the effect of varying carbopol 940 concentrations on the physical characteristics, stability, and acceptability of panthenol gels, as well as to determine the optimal formulation.

This experimental study used 5% panthenol formulated into three formulations with carbopol 940 concentrations of 0,5%, 1%, and 1,5%. The evaluation included organoleptic testing, homogeneity, pH, viscosity, spreadability, and tackiness. Stability testing was conducted using a cycling test over six cycles, while hedonic testing was performed using a questionnaire. Data were analyzed using SPSS software according to the characteristics of the data obtained.

The results of the study show that increasing the concentration of carbopol 940 can increase viscosity and adhesion, while pH and spreadability decrease. All formulations were stable in terms of organoleptic properties, homogeneity, and pH, while viscosity and spreadability exhibited instability. Formulation 1 also demonstrated good adhesion stability and received the highest level of panelist preference. Based on physical characteristics, stability, and hedonic testing, formula 1 with a carbopol 940 concentration of 0,5% was determined to be the best formula.

Keywords: Panthenol gel, carbopol 940, physical characteristics, stability, hedonic