

ABSTRAK

Alopesia adalah suatu kondisi dimana terjadi kerontokan rambut atau bahkan kebotakan terutama pada bagian kepala. Obat yang telah disetujui oleh US *Food and Drug Administration* (FDA) untuk mengobati alopesia adalah minoxidil topikal dan finasteride oral, namun kedua obat tersebut dapat menimbulkan efek samping berupa dermatitis, alergi dan iritasi pada kulit kepala. Kulit buah kakao berpotensi sebagai alternatif pengobatan alopesia dan telah digunakan secara empiris untuk mengatasi kebotakan rambut. Penelitian ini bertujuan untuk mengetahui formula optimal gel ekstrak n-Heksana kulit buah kakao. Metode yang digunakan yaitu perancangan formula berdasarkan variasi carbopol 940 dan triethanolamine menggunakan *Design Expert*, formulasi dan evaluasi sediaan gel, pengolahan data dan optimasi formula dengan menggunakan perangkat lunak *Design Expert* serta analisis statistik menggunakan ANOVA . Berdasarkan hasil penelitian diketahui bahwa ekstrak n-Heksana kulit buah kakao dapat diformulasikan menjadi sediaan gel dan dapat memenuhi syarat sediaan gel yang baik. Sediaan gel tidak mengalami perubahan organoleptis dan homogenitas, serta tidak mengalami perubahan nilai daya sebar yang signifikan setelah diberi perlakuan *freeze-thaw*. Akan tetapi sediaan gel mengalami perubahan viskositas dan pH yang signifikan setelah diberi perlakuan *freeze-thaw*. Dihasilkan formula optimal sediaan gel ekstrak n-Heksana kulit buah kakao dengan kombinasi carbopol 940 sebesar 0,600% dan triethanolamine sebesar 0,900%. Berdasarkan prediksi dari perangkat lunak *Design Expert* diperoleh nilai evaluasi untuk formula optimal sediaan gel ekstrak n-Heksana kulit buah kakao, yaitu viskositas 30027,800 cps, pH 5,724, dan daya sebar 6,115 cm.

Kata Kunci: alopesia, kulit buah kakao, gel, *design expert*

ABSTRACT

Alopecia is a condition where there is hair loss or even baldness, especially on the head. Drugs that have been approved by the US Food and Drug Administration (FDA) to treat alopecia are topical minoxidil and oral finasteride, but have side effects such as dermatitis, allergies and scalp irritation. Cocoa pods have potential as an alternative treatment for alopecia and have been used empirically to treat hair baldness. The aim of this study was to determine the optimum formula for n-Hexane extract gel from cocoa pods. The method used is formula design based on variations of carbopol 940 and triethanolamine using Design Expert, formulation and evaluation of gel preparations, data processing and formula optimization using Design Expert software and statistical analysis using ANOVA. Based on the results of the study, it was found that the n-Hexane extract of cocoa pods could be formulated into a gel preparation and could meet the requirements of a good gel preparation. The gel preparation did not undergo organoleptic and homogeneity changes, and did not experience a significant change in the dispersion value after being given freeze-thaw treatment. However, the gel preparations experienced significant changes in viscosity and pH after being given freeze-thaw treatment. The optimum formula for n-hexane extract gel of cocoa pods was obtained with a combination of carbopol 940 of 0.60% and triethanolamine of 0.900%. Based on the predictions from the Design Expert software, an evaluation value was obtained for the optimal formula for the n-Hexane extract gel of cocoa pods, namely the viscosity of 30027.800 cps, pH of 5.724, and dispersion of 6.115 cm.

Keywords: *alopecia, cocoa pod skin, gel, design expert*