ABSTRAK

Minyak Sacha Inchi (*Plukenetia volubilis*) dan madu (*Apis mellifera*) dikenal memiliki manfaat dalam melembapkan dan menutrisi kulit bibir, berkat kandungan asam lemak esensial omega-3, omega-6, omega-9, serta vitamin E pada minyak Sacha Inchi, dan sifat humektan alami, vitamin, serta mineral pada madu. Untuk mendukung efektivitas bahan aktif tersebut, pemilihan dan optimasi *gelling agent* yang sesuai sangat penting dalam memastikan karakteristik fisik yang optimal pada formulasi *lip hydrating* gel. HPMC dan Karbopol 940 merupakan *gelling agent* yang banyak digunakan dalam formulasi sediaan topikal, namun kombinasi keduanya memerlukan optimasi untuk menghasilkan stabilitas dan sifat fisik yang ideal pada sediaan. Penelitian ini bertujuan untuk mengoptimasi konsentrasi *gelling agent* dalam formulasi *lip hydrating* gel kombinasi minyak sacha inchi dan madu serta mengetahui karakter fisik dan stabilitas fisik sediaan. Penelitian ini menggunakan metode eksperimental dengan menggabungkan variasi konsentrasi antara HPMC dan karbopol 940 pada sediaan *lip hydrating* gel menggunakan rancangan *simplex lattice design* (SLD) pada *software* Design-Expert versi 13. Formula optimal yang dihasilkan diverifikasi dan diuji sifat fisik serta stabilitasnya. Data yang diperoleh dianalisis secara statistik menggunakan *software* IBM SPSS *statistics* 30. Hasil penelitian menunjukkan bahwa formula optimal diperoleh dari kombinasi HPMC sebesar 0,897% dan karbopol sebesar 0,103%, dengan nilai pH 6,839, viskositas 7400 cPs, dan diameter sebar 4,57 cm. Namun, hasil uji stabilitas pada formula optimal menunjukkan ketidakstabilan pada pH, viskositas, daya lekat, serta diameter sebar sediaan.

Kata Kunci: *lip hydrating*, madu, minyak sacha inchi, gel

ABSTRACT

Sacha Inchi Oil (Plukenetia volubilis) and honey (Apis mellifera) are known for their benefits in moisturizing and nourishing the lips. These benefits are attributed to the essential fatty acids, including omega-3, omega-6, omega-9, and vitamin E found in Sacha Inchi oil, as well as the natural humectant properties, vitamins, and minerals in honey. To enhance the effectiveness of these active ingredients, selecting and optimizing appropriate gelling agents is crucial to ensuring the optimal physical characteristics of the lip hydrating gel formulation. HPMC and Carbopol 940 are widely used gelling agents in topical formulations; however, their combination requires optimization to achieve ideal stability and physical properties in the formulation. This study aimed to optimize the concentration of gelling agents in a lip hydrating gel formulation combining Sacha Inchi oil and honey and to evaluate the physical characteristics and stability of the formulation. An experimental method was employed by combining varying concentrations of HPMC and Carbopol 940 in the lip hydrating gel formulation using a simplex lattice design (SLD) approach with Design-Expert version 13 software. The optimal formula obtained was verified and evaluated for its physical properties and stability. The data collected were analyzed statistically using IBM SPSS Statistics 30 software. The results showed that the optimal formula consisted of 0.897% HPMC and 0.103% Carbopol 940, with a pH value of 6.839, viscosity of 7400 cPs, and a spreadability diameter of 4.57 cm. However, stability testing on the optimal formula indicated instability in pH, viscosity, adhesiveness, and spreadability, highlighting the need for further optimization to improve formulation stability.

Keywords: lip hydrating gel, honey, sacha inchi oil, gel