ABSTRAK

Kitosan merupakan polisakarida alami yang memiliki aktivitas antibakteri dan antiinflamasi sehingga berpotensi digunakan sebagai bahan aktif dalam formulasi krim kitosan. Penelitian ini bertujuan untuk mengevaluasi stabilitas fisik sediaan krim kitosan dengan variasi konsentrasi kitosan menggunakan metode *Cycling Test*. Krim diformulasikan dalam tiga konsentrasi kitosan yang berbeda yaitu, 2,5gr,5 gr, dan 7,5 gr. Kemudian diuji stabilitas fisiknya melalui *Cycling Test* masing-masing selama 24 jam. Parameter uji meliputi perubahan organoleptik, homogenitas, pH, viskositas, daya lekat, dan daya sebar sebelum dan sesudah *Cycling Test*. Hasil penelitian menunjukkan bahwa seluruh formula tidak mengalami perubahan warna, bau, maupun pemisahan fase setelah pengujian, maupun setelah dilakukan *Cycling Test*. Nilai pH, daya lekat, dan daya sebar masih berada dalam rentang yang dapat diterima untuk sediaan topikal, meskipun terdapat perbedaan signifikan pada viskositas antar konsentrasi kitosan. Peningkatan konsentrasi kitosan cenderung meningkatkan viskositas dan daya lekat, namun menurunkan daya sebar. Secara keseluruhan, formula dengan konsentrasi kitosan sedang menunjukkan kestabilan fisik terbaik selama *Cycling Test*. Berdasarkan hasil tersebut, sediaan krim anti kitosan dapat memenuhi kriteria stabilitas fisik sesuai parameter yang diuji, dan konsentrasi kitosan berpengaruh terhadap sifat fisiknya.

Kata Kunci: kitosan, stabilitas fisik, krim, *Cycling Test*

ABSTRACT

Chitosan is a natural polysaccharide that has antibacterial and anti-inflammatory activity so it has the potential to be used as an active ingredient in chitosan cream formulations. This research aims to strengthen the physical stability of chitosan cream preparations with variations in chitosan concentration using the Cycling Test method. The cream was formulated in three different concentrations of chitosan, namely, 2.5 gr, 5 gr, and 7.5 gr. Then its physical stability was tested through a Cycling Test for 24 hours each. Test parameters include organoleptic changes, homogeneity, pH, viscosity, adhesive power, and spreadability before and after the cycle test. The research results showed that all formulas did not experience changes in color, odor, or phase rating after testing, or after a Cycling Test. The pH, adhesion and spreadability values were still within the acceptable range for topical preparations, although there were significant differences in viscosity between chitosan concentrations. Increasing chitosan concentration tends to increase viscosity and adhesion, but reduces spreadability. Overall, the formula with moderate chitosan concentration showed the best physical stability during Cycling Tests. Based on these results, the anti-chitosan cream preparation can meet the physical stability criteria according to the parameters tested, and the chitosan concentration influences its physical properties.

Keyword: *chitosan, physical stability, cream, Cycling Test.*