INTISARI

Penelitian tentang optimasi proses pencampuran krim anti *Androgenetic alopecia* ekstrak Saw Palmeto (*Serenoa repens*) dengan perbandingan kecepatan putar dan lama pencampuran pada proses pencampuran ini bertujuan untuk menentukan proses pencampuran optimum dari formula optimum, mengetahui faktor dominan antara kecepatan putar, lama pencampuran, dan interaksi keduanya pada sifat fisik dan stabilitas fisik krim, serta menentukan area optimum pada proses pencampuran.

Penelitian ini merupakan rancangan eksperimental dengan variabel eksperimental ganda (desain faktorial) dengan dua faktor yaitu kecepatan putar - lama pencampuran dan dua level yaitu level tinggi – level rendah. Proses pencampuran dioptimalkan pada sifat fisik (daya sebar, viskositas) dan stabilitas fisik (pergeseran viskositas setelah satu bulan penyimpanan, ukuran droplet, pergeseran ukuran droplet setelah satu bulan penyimpanan, dan persen pemisahan setelah satu bulan penyimpanan). Data diteliti secara statistik mempergunakan *Yate's treatment* dengan taraf kepercayaan 95%.

Hasil kecepatan putar dan lama pencampuran diperoleh melalui uji sifat fisik dan stabilitas fisik krim. Lama pencampuran merupakan efek dominan pada daya sebar dan ukuran droplet, sementara interaksi antara kecepatan putar dan lama pencampuran adalah dominan pada viskositas dan pergeseran viskositas. Pada superimposed contour plot dapat ditemukan area optimum dari daya sebar, viskositas, dan pergeseran viskositas. Area ini sebagai proses pencampuran yang optimum dari krim anti *Androgenetic alopecia* yang dipelajari.

Kata kunci: kecepatan putar, lama pencampuran, krim anti *Androgenetic alopecia*, Saw Palmetto, dan desain faktorial.

ABSTRACT

The study of mixing process optimization of Saw Palmetto (*Serenoa repens*) extract anti *Androegentic alopecia* cream with mixing rate and mixing time as the mixing process were to determine the optimum mixing process from the optimum formula, to determine the dominant factor among mixing rate, mixing time, and its interaction on the physical properties and physical stabilities of cream, and to determine the optimum mixing process area of mixing processes.

This study was experimental research with double experimental design (factorial design) with two factor mixing time - mixing rate and two level which are high level-low level. The mixing processes was optimized on their physical properties (spreadability, viscosity) and their physical stabilities (viscosity shift over one month storage, globule size, globule size shift over one month storage, and the degree of coalescence over one month storage). The data were analyzed statistically using Yate's treatment with 95% level of confidence.

The results show that the mixing rate and mixing time influence cream's physical properties and physical stabilities. Mixing time was dominant on determining spreadability and globule size, while the interaction between mixing rate and mixing time were dominant on determining viscosity and viscosity shift. The superimposed contour plot finded the optimum area of spreadability, viscosity, and viscosity shift. The area was estimated as optimum mixing processes of anti *Androgenetic alopecia* cream on the level studied.

Keywords : mixing rate, mixing time, anti *Androgenetic alopecia* cream, Saw Palmetto, and factorial design