

INTISARI

Penelitian ini bertujuan untuk mengetahui faktor dominan antara suhu pencampuran dan lama pencampuran yang menentukan sifat fisis dan stabilitas krim serta mengetahui area kondisi optimum krim yang memiliki sifat fisis dan stabilitas yang baik.

Rancangan penelitian yang dilakukan adalah kuasi-eksperimental dengan metode desain faktorial dua faktor : suhu dan lama pencampuran, masing-masing pada level rendah dan level tinggi. Krim *sunscreen* diuji sifat fisis dan stabilitasnya. Sifat fisis krim meliputi daya sebar dan viskositas, sedangkan stabilitas krim meliputi *index creaming*, pergeseran viskositas, ukuran droplet dan pergeseran ukuran droplet setelah satu bulan penyimpanan. Data hasil penelitian dianalisis secara statistik dengan menggunakan *yate's treatment* taraf kepercayaan 95%.

Hasil percobaan menunjukkan bahwa faktor suhu pencampuran dan lama pencampuran mempengaruhi sifat fisis dan stabilitas krim. Suhu pencampuran merupakan faktor yang dominan dalam menentukan sifat fisis daya sebar dan viskositas, sedangkan interaksi antara suhu pencampuran dan lama pencampuran dominan terhadap respon pergeseran viskositas. *Superimposed contour plot* menunjukkan area optimum dari daya sebar, viskositas, dan pergeseran viskositas yang diperkirakan sebagai proses pencampuran yang optimum krim *sunscreen* pada level yang diteliti.

Kata kunci : Optimasi proses pencampuran, ekstrak kering teh hijau, *sunscreen*, desain faktorial.

ABSTRACT

The aim of this research were to determine the dominant factor beetwen mixing temperature and duration temperature that influence on the physical properties and the cream stabilities and to determine the optimum condition of the mising process which has good physical properties and stabilities of cream.

The study was Quasi-experimental research with two factor of Factorial Design method which are mixing temperature and duration temperature at low and high levels. Sunscreen cream were tested for physical properties and physical stabilities. The physical properties such as spreadability, viscosity, and globule size, and the physical stabilities such as viscosity shift over one month storage, globule size shift over one month storage, and index creaming. The data were analyzed statistically using Yate's treatment with 95% level of confidence.

The result show that the mixing temperature and mixing duration influence cream's physical properties and physical stabilities. Mixing temperature was dominant on determining spreadability and viscosity, while interaction between mixing temperature and mixing duration was dominant on determining viscosity shift. The superimposed contour plot showed the optimum area of spreadability, viscosity, and viscosity shift. The area was estimated as optimum mixing process of sunscreen cream on the level studied.

Keywords : Mixing process optimization, green tea dry extract, sunscreen, factorial design