ABSTRAK

OPTIMASI FORMULA SEDIAAN LOTION EKSTRAK BANGLE (*Zingiber purpureum*) DENGAN VARIASI KONSENTRASI ASAM STEARAT DAN TRIETANOLAMIN SEBAGAI EMULGATOR

Tanaman Bangle mengandung minyak atsiri yang terdiri dari berbagai macam senyawa kimia yang berpotensi sebagai bahan untuk menjaga dan merawat kesehatan tubuh, sehingga produk kosmetik topikal sediaan lotion yang memiliki zat aktif ekstrak tanaman perlu dikembangkan. Tujuan penelitian ini adalah menentukan formula optimum sediaan lotion ekstrak bangle (*zingiber purpureum*) dengan variasi konsentrasi asam stearat dan trietanolamin (TEA) sebagai emulgator. Metode ekstraksi yang digunakan yaitu maserasi dengan pelarut etanol 96%. Rendemen yang diperoleh yaitu 10,22%. Optimasi formula dilakukan menggunakan *software Design Expert* dengan metode *Simplex Lattice Design* dengan jumlah formula sebanyak 8 formula. Hasil optimasi menunjukkan formula optimum lotion diperoleh pada formula 1 (ekstrak bangle 2 gram, setil alkohol 3 gram, asam sterate 5 gram, TEA 1 ml, metilparaben 0,02 gram, propilparaben 0,20 gram, gliserin 3 ml. Hasil uji sifat fisik formula optimum yaitu memiliki warna kuning cerah, bau khas bangle, konsistensi yang kental, nilai pH 8, viskositas 19500 cP, daya sebar 5,53 cm, daya lekat 5,58 detik.

Kata kunci: Bangle, *design expert,* lotion, *simplex lattice design*

ABSTRACT

OPTIMIZATION FORMULA OF BANGLE EXTRACT (*Zingiber purpureum*) LOTION WITH VARYING CONCENTRATION STEARIC ACID AND TRIETANOLAMIN AS AN EMULSIFIER

Bangle plant contains essential oils which consist of various chemical compounds that have the potential as ingredients to maintain and care for the body's health so topical cosmetic products in the form of lotions that have active substances in plant extracts need to be developed. The purpose of this study was to determine the optimum formula for bangle extract lotion (*zingiber purpureum*) with varying concentrations of stearic acid and triethanolamine (TEA) as emulsifiers. The extraction method used was maceration with 96% ethanol solvent. The yield obtained was 10.22%. Formula optimization was carried out using Design Expert software with the Simplex Lattice Design method with a total of 8 formulas. The optimization results showed that the optimum lotion formula was obtained at concentrations of stearic acid and TEA of 5% and 1%, respectively. The test results for the physical properties of the optimum formula had a bright yellow color, a distinctive bangle odor, a thick consistency, a pH value of 8, a viscosity of 19500 cP, a spreading power of 5.53 cm, an adhesive power of 5.58 seconds.

Keywords*: Bangle, *design expert*, lotion, *simplex lattice design