

## ABSTRAK

### **PENGARUH EMULGATOR TERHADAP KARAKTERISTIK DAN STABILITAS FISIK SEDIAAN KRIM *BODY SCRUB* EKSTRAK ETANOL DAUN MURBEI (*Morus alba* L.) (Oleh Dinda Fladina Aulia; Pembimbing Nur Rahmiati dan Dyera Forestryana ; 2024; 123 halaman)**

Ekstrak etanol 70% daun murbei (*Morus alba* L.) memiliki aktivitas antioksidan dengan nilai  $IC_{50}$  8,35  $\mu\text{g/ml}$  yang tergolong antioksidan sangat kuat sehingga dapat digunakan sebagai zat aktif dalam sediaan kosmetika perawatan kulit seperti krim *body scrub*. Krim *body scrub* merupakan sediaan setengah padat dengan komponen bahan penting penyusunnya adalah emulgator. Jenis dan konsentrasi emulgator dapat menjaga kestabilan sediaan krim selama penyimpanan. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh emulgator terhadap karakteristik dan stabilitas fisik sediaan krim *body scrub* ekstrak etanol daun murbei (*Morus alba* L.) dengan perbedaan konsentrasi asam stearat dan trietanolamin (TEA) sebagai emulgator. Ekstraksi daun murbei menggunakan metode maserasi dengan pelarut etanol 70%, dibuat menjadi suatu sediaan krim *body scrub* tipe M/A dengan perbedaan konsentrasi asam stearat (3%, 6%, 10%, 12%, 15%, 18%) dan TEA (2%, 3%, 4%, 4%, 3%, 2%). Sediaan krim *body scrub* ekstrak etanol daun murbei di evaluasi karakteristik fisiknya meliputi organoleptis, homogenitas, pH, viskositas, daya sebar, daya lekat dan stabilitas fisiknya menggunakan metode *freeze thaw cycling* selama 6 siklus dengan penyimpanan sediaan dalam kondisi ruang pada suhu kamar (25°C) dan suhu dingin (4°C). Hasil penelitian menunjukkan terdapat pengaruh sediaan krim *body scrub* dengan perbedaan peningkatan konsentrasi asam stearat dan penurunan TEA sebagai emulgator pada karakteristik fisik sediaan tiap formula yaitu penurunan nilai pH, peningkatan viskositas, penurunan diameter daya sebar dan peningkatan daya lekat serta diketahui bahwa formula 5 dengan konsentrasi asam stearat 15% dan TEA 3% merupakan formula optimum karena memenuhi parameter persyaratan evaluasi fisik dan stabil selama stabilitas.

**Kata kunci :** Daun Murbei (*Morus alba* L.), Krim *Body Scrub*, Emulgator

## ***ABSTRACT***

### **EFFECT OF EMULGATOR ON PHYSICAL CHARACTERISTICS AND STABILITY OF MURBEI LEAF ETHANOL EXTRACT BODY SCRUB CREAM PREPARATIONS (*Morus alba* L.) (By Dinda Fladina Aulia; Supervisor Nur Rahmiati dan Dyera Forestryana ; 2024; 123 pages)**

The 70% ethanol extract of mulberry leaves (*Morus alba* L.) has antioxidant activity with an IC<sub>50</sub> value of 8.35 µg/ml which is classified as a very strong antioxidant so it can be used as an active substance in skin care cosmetic preparations such as body scrub cream. Body scrub cream is a semi-solid preparation whose important component is an emulsifier. The type and concentration of emulsifier can maintain the stability of the cream preparation during storage. The aim of this research was to determine the effect of emulsifiers on the characteristics and physical stability of mulberry leaf (*Morus alba* L.) ethanol extract body scrub cream preparations with different concentrations of stearic acid and triethanolamine (TEA) as emulsifiers. Extraction of mulberry leaves using the maceration method with 70% ethanol solvent, made into an O/W type body scrub cream preparation with different concentrations of stearic acid (3%, 6%, 10%, 12%, 15%, 18%) and TEA (2%, 3%, 4%, 4%, 3%, 2%). The preparation of mulberry leaf ethanol extract body scrub cream was evaluated for its physical characteristics including organoleptic, homogeneity, pH, viscosity, spreadability, stickiness and physical stability using the freeze thaw cycling method for 6 cycles with storage of the preparation in room conditions at room temperature (25°C) and cold temperature (4°C). The results of the research show that there is an effect of body scrub cream preparations with differences in increasing the concentration of steric acid and decreasing TEA as an emulsifier on the physical characteristics of each formula, namely decreasing the pH value, increasing viscosity, decreasing the diameter of spreadability and increasing adhesive power. It is known that formula 5 with acid concentration 15% stearate and 3% TEA are the optimum formulas because they meet the physical evaluation requirements and are stable during stability.

**Keywords** : Mulberry Leaves (*Morus alba* L.), Body Scrub Cream, Emulgator