ABSTRAK

PRAMUGUNAWAN,A.G., 2024. UJI AKTIVITAS ANTIBAKTERI *CLAY MASK* EKSTRAK ETANOL DAUN KELOR (*Moringa oleifera*) TERHADAP BAKTERI *Staphylococcus aureus*, PROPOSAL, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI SURAKARTA. Dibimbing oleh Dr. Ana Indrayati, M.Si. dan apt. Dewi Ekowati, S.Si., M.Sc.

Produksi sebum berlebih merupakan penyebab jerawat di Indonesia. Penggunaan antibakteri yang sangat tinggi terhadap jerawat menyebabkan resistensi. Daun kelor yang tinggi flavonoid dapat menjadi alternatif antibakteri. *Clay mask* dapat menjadi sediaan yang menguntungkan karena mudah diaplikasikan dan mudah menembus kulit. Tujuan dari penelitian ini menguji aktivitas antibakteri ekstrak daun kelor sebagai *clay mask* terhadap *Staphylococcus aureus* dengan memvariasikan kaolin dan xanthan gum.

Ekstrak etanol daun kelor diperoleh melalui metode ultrasonik dengan menggunakan pelarut etanol 96%. Konsentrasi ekstrak dalam *clay mask* yang digunakan adalah 10%. Ekstrak daun kelor diformulasikan menjadi masker wajah (*clay mask*) dengan variasi kadar kaolin sebesar 27; 24; dan 21%, serta xanthan gum sebesar 1; 1,5; dan 2%. Masker wajah yang dihasilkan kemudian diuji terhadap kualitas fisik, stabilitas, serta aktivitas antibakterinya menggunakan metode difusi cakram. Data hasil pengujian dianalisis secara statistik menggunakan program SPSS.

Masker *clay* dengan tambahan serbuk kelor dibuat 3 formulasi dengan perbedaan kaolin dan xanthan gum. Hasil evaluasi organoleptis menunjukkan bahwa warna sediaan berkisar kecoklatan dengan bau mawar dan tekstur semipadat. Nilai pH berkisar 6,38 hingga 6,77. Viskositas Masker *clay* memiliki rentang 3900 – 18213 Cpas. Daya lekat tertinggi F6 sebesar 4,04 detik. Daya sebar teringgi pada F1 dengan diameter 6,06 cm. Formula masker *clay* dengan penambahan kaolin 21% dan 2% xanthan gum dapat menghasilkan mutu fisik dan stabilitas sediaan *clay mask* yang paling baik berdasarkan uji pH, homogenitas, daya sebar, daya lekat dan waktu kering yang sesuai persyaratan masker *clay* dengan aktivitas antibakteri 11,33 mm.

Kata kunci : Daun kelor, *Clay mask*, Jerawat, Kaolin , *Staphylococcus aureus*

ABSTRACT

PRAMUGUNAWAN,A.G., 2022. ANTIBACTERIAL ACTIVITY TEST OF *CLAY MASK* MORINGA LEAF ETANOL EXTRACT (*Moringa oleifera)* AGAINST BACTERIA *Staphylococcus aureus*, PROPOSAL, FACULTY OF PHARMACY, SETIA BUDI SURAKARTA UNIVERSITY Supervised by Dr. Ana Indrayati, M.Si. and apt. Dewi Ekowati, S.Si., M.Sc.

The overproduction of sebum is a major cause of acne in Indonesia. The excessive use of antibacterial agents for acne treatment has led to bacterial resistance. Moringa leaves, which are rich in flavonoids, have the potential to serve as an alternative antibacterial agent. *Clay masks* offer a beneficial formulation due to their ease of application and ability to penetrate the skin. This study aims to evaluate the antibacterial activity of Moringa leaf extract formulated as a *clay* mask against *Staphylococcus aureus* by varying kaolin and xanthan gum concentrations.

Ethanolic extracts of Moringa leaves were obtained using an ultrasonic-assisted extraction method with 96%. The extract concentration in the *clay mask* used is 10%. The Moringa leaf extract was then formulated into a *clay mask* with varying kaolin concentrations of 27; 24; and 21%, as well as xanthan gum concentrations of 1; 1.5; and 2%. The formulated *clay masks* were evaluated for their physical quality, stability, and antibacterial activity using the disk diffusion method. The obtained data were statistically analyzed using SPSS software.

Three *clay mask* formulations containing Moringa leaf powder were developed, differing in kaolin and xanthan gum concentrations. Organoleptic evaluations revealed that the formulations had a brownish color, a rose-like scent, and a semi-solid texture. The pH values ranged from 6.38 to 6.77. The viscosity of the *clay masks* varied between 3,900 - 18,213 cP. The highest adhesion time was observed in formulation F6 at 4.04 seconds, while the highest spreadability was recorded in formulation F1 with a diameter of 6.06 cm. The *clay mask* formula with the addition of 21% kaolin and 2% xanthan gum can produce the best physical quality and stability of the *clay mask* preparation based on pH, homogeneity, spreadability, stickiness and dry time tests which meet the requirements for a *clay mask* with an antibacterial activity of 11,33 mm.

Kata kunci : Moringa leaf, *Clay mask*, acnes, Kaolin , *Staphylococcus aureus*