

## INTISARI

Gambir merupakan produk ekspor asal Sumatera yang dapat dipurifikasi sehingga bisa dimanfaatkan dalam sediaan kosmetika. Kandungan senyawa fenolik dan flavonoid gambir terpurifikasi berpotensi melindungi kulit dari sinar UV. Kandungan senyawa ekstrak erat kaitannya dengan polaritas pelarut sehingga penelitian ini bertujuan untuk menganalisis pengaruh konsentrasi etanol sebagai pelarut dalam purifikasi gambir terhadap kandungan fenolik, flavonoid dan nilai SPF-nya. Konsentrasi etanol yang digunakan yaitu 0%, 25%, 50%, 75% dan 96%. Gambir terpurifikasi dengan nilai SPF tertinggi dibuat dalam sediaan gel dan diuji sifat fisiknya.

Kandungan fenolik dan flavonoid total dianalisis dengan metode kolorimetri. Nilai SPF-nya diukur menggunakan spektrofotometri UV dan dihitung sesuai persamaan Mansur *et al.*, (1986). Analisis statistik dilakukan dengan *one-way* ANOVA pada taraf kepercayaan 95%.

Konsentrasi etanol berpengaruh secara signifikan terhadap kandungan fenolik, flavonoid dan nilai SPF. Kandungan fenolik tertinggi diperoleh pada purifikasi gambir menggunakan pelarut etanol 50% dengan nilai  $757,2 \pm 13,1$  mg GAE/g sedangkan kandungan flavonoid tertinggi dicapai pada pelarut etanol 96% sebesar  $5,18 \pm 0,21$  mg QE/g. Nilai SPF tertinggi didapatkan dari purifikasi dengan penyari etanol 96% yaitu  $27,07 \pm 0,33$  pada konsentrasi gambir 2 mg/mL. Sediaan gel gambir terpurifikasi dengan dosis gambir 0,2% memiliki nilai SPF  $6,60 \pm 0,58$  pada pengenceran gel hingga konsentrasinya 100 mg/mL. Hasil uji sifat fisik meliputi homogenitas, viskositas, pH dan tekstur memenuhi syarat SNI Tabir Surya (1996), daya lekat memenuhi persyaratan Lieberman (1996) tetapi daya sebarannya tidak memenuhi syarat menurut SNI sediaan kosmetik (1996). Gel mengalami perubahan stabilitas setelah uji stabilitas dipercepat selama 4 minggu.

**Kata kunci: fenolik, gambir, konsentrasi etanol, SPF**

## ***ABSTRACT***

Gambir is an exported product from Sumatra that can be purified for use in cosmetic formulations. The purified phenolic and flavonoid compounds in gambir have the potential to protect the skin from UV radiation. The chemical content of the extract is closely related to the polarity of the solvent, so this study aims to analyze the effect of ethanol concentration as a solvent in the purification of gambir on the phenolic content, flavonoid content, and sun protection factor (SPF) value. The ethanol concentrations used were 0%, 25%, 50%, 75%, and 96%. The purified gambir with the highest SPF value was formulated into a gel preparation and tested for its physical properties.

The total phenolic and flavonoid contents were analyzed using colorimetric methods. The SPF value was measured using UV spectrophotometry and calculated according to the equation by Mansur et al. (1986). Statistical analysis was performed using a one-way ANOVA at a confidence level of 95%.

Ethanol concentration significantly affected the phenolic content, flavonoid content, and SPF value. The highest phenolic content was obtained from purified gambir using 50% ethanol solvent with a value of  $757.2 \pm 13.1$  mg GAE/g, while the highest flavonoid content was achieved with 96% ethanol solvent at  $5.18 \pm 0.21$  mg QE/g. The highest SPF value was obtained from purification using 96% ethanol solvent, which was  $27.07 \pm 0.33$  at a gambir concentration of 2 mg/mL. The gel formulation of purified gambir with a gambir dose of 0.2% had an SPF value of  $6.60 \pm 0.58$  when diluted to a gel concentration of 100 mg/mL. The results of the physical property tests, including homogeneity, viscosity, pH, and texture, met the requirements of the Indonesian National Standard for Sunscreens (1996), and the adhesion met the requirements of Lieberman (1996), but the spreadability did not meet the requirements according to the Indonesian National Standard for Cosmetic Formulations (1996). The gel experienced stability changes after undergoing accelerated stability testing for 4 weeks.

**Keywords:** gambir, ethanol concentration, phenolic content, SPF