ABSTRAK

Sun Protection Factor (SPF) merupakan parameter yang menjelaskan tingkat efektivitas suatu bahan dalam memberikan perlindungan terhadap paparan sinar ultraviolet (UV). Salah satu sumber senyawa fenolik yang berpotensi sebagai agen proteksi UV adalah batang bajakah kalalawit (*Uncaria gambir* (W.Hunter) Robx.)). Penelitian ini bertujuan untuk mengetahui pengaruh variasi rasio simplisia:pelarut (1:10, 1:20, 1:30 b/v) dan waktu ekstraksi sonikasi (30, 45, 60 menit) terhadap rendemen, kadar fenolik total, dan nilai SPF ekstrak etanol 70% batang bajakah kalalawit. Penelitian ini diawali dengan proses determinasi bajakah kalalawit kemudian penyiapan batang bajakah kalalawit, pembuatan serbuk, serta ekstraksi menggunakan metode sonikasi. Ekstrak yang diperoleh diuapkan hingga mencapai bobot tetap kemudian dilakukan perhitungan rendemen. Identifikasi kualitatif senyawa fenolik dilakukan menggunakan kromatografi lapis tipis (KLT), sedangkan analisis kuantitatif meliputi pengukuran kadar fenolik total dengan metode Folin–Ciocalteu dan penentuan nilai SPF menggunakan spektrofotometri UV-Vis berdasarkan persamaan Mansur. Data dianalisis menggunakan uji normalitas *Shapiro-Wilk*. Data berdistribusi normal dianalisis dengan ANOVA kemudian uji *Post-Hoc Bonferroni*. Data berdistribusi tidak normal dianalisis dengan uji *Kruskal-Wallis* dan *pairwise comparison*. Hasil penelitian ini adalah rasio simplisia:pelarut memengaruhi rendemen, kadar fenolik total, dan SPF, sedangkan waktu ekstraksi hanya memengaruhi rendemen dan kadar fenolik total.

Kata kunci: *Sun Protecting Factor* (SPF), Bajakah Kalalawit, Fenolik Total, Sonikasi, KLT.

ABSTRACT

Sun Protection Factor (SPF) is a parameter used to describe the effectiveness of a substance in providing protection against ultraviolet (UV) radiation. One potential source of phenolic compounds with UV-protective activity is the stem of bajakah kalalawit (*Uncaria gambir* (W. Hunter) Roxb.). This study aimed to determine the effect of different solid-to-solvent ratios (1:10, 1:20, and 1:30 w/v) and sonication extraction times (30, 45, and 60 minutes) on extraction yield, total phenolic content, and SPF value of 70% ethanol extract of bajakah kalalawit stem. The study began with the botanical identification of bajakah kalalawit, followed by sample preparation, powder production, and extraction using the sonication method. The obtained extracts were concentrated to a constant weight, and the extraction yield was calculated. Qualitative identification of phenolic compounds was performed using thin-layer chromatography (TLC), while quantitative analyses included determination of total phenolic content using the Folin–Ciocalteu method and SPF evaluation using UV–Visible spectrophotometry based on the Mansur equation. The data were analyzed using the Shapiro–Wilk normality test. Normally distributed data were analyzed using Analysis of Variance (ANOVA) followed by the Bonferroni Post Hoc test. Non-normally distributed data were analyzed using the Kruskal–Wallis test followed by pairwise comparisons. The results of this study showed that the solid-to-solvent ratio affected the extraction yield, total phenolic content, and SPF, whereas the extraction time only affected the extraction yield and total phenolic content.

Keywords: *Sun Protecting Factor* (SPF), Bajakah Kalalawit, Total Phenolic Content, Thin-Layer Chromatography (TLC).