ABSTRAK

IMAM SAFE'I, 2023, PENENTUAN NILAI *SUN PROTECTION FACTOR* (SPF) EKSTRAK DAN FRAKSI DAUN PECUT KUDA (*Stachytarpheta jamaicensis* L.Vahl) SEBAGAI TABIR SURYA SECARA *IN VITRO*, PROPOSAL SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA, Dibimbing oleh Hery Muhamad Ansory, S.Pd., M.Sc. dan apt. Fransiska Leviana, M.Sc.

Ekstrak etanol daun pecut kuda diketahui mempunyai senyawa flavonoid dan fenolik yang cukup besar. Hasil fraksi menunjukkan bahwa fraksi etil asetat memiliki kandungan flavonoid dan fenolik paling tinggi diantara yang lainnya. Belum ada kajian hubungan antara kadar flavonoid dan fenolik terhadap aktivitas tabir surya yang dimiliki oleh ekstrak daun pecut kuda.Tujuan dari penelitian ini yaitu mengetahui nilai *Sun Protection Factor* (SPF) ekstrak dan fraksi daun pecut kuda (*Stachytarpheta jamaicensis* L.Vahl) menggunakan metode *in vitro* dan mengatahui kadar flavonoid serta fenolik total dari ekstrak dan fraksi daun pecut kuda.

Ekstraksi daun pecut kuda dilakukan dengan metode maserasi menggunakan pelarut etanol 96%. Ekstrak yang didapatkan kemudian difraksinasi menggunakan pelarut *n*-heksan, etil asetat, dan air. Ekstrak dan fraksi daun pecut kuda selanjutnya dilakukan penetapan kadar flavonoid dan fenolik total mengunakan metode kolorimetri, serta dilakukan penentuan nilai SPF dengan menghitung luas area di bawah kurva (AUC) menggunakan Spektrofotometri Uv-*Vis.*

Hasil penelitian menunjukkan bahwa kadar flavonoid dan fenolik pada ekstrak sebesar 290,94 mg QE/g ekstrak dan 84,75 mg GAE/g ekstrak. Kadar flavonoid dan fenolik total terbesar terdapat pada fraksi etil asetat yaitu 351,767 mg QE/g ekstrak dan 151,431 mg GAE/g ekstrak. Hasil pengujian nilai SPF ekstrak diperoleh nilai SPF sebesar 24.02. Nilai SPF terbesar yaitu pada fraksi etil asetat sebesar 31,07 yang masuk dalam kategori *high.* Berdasarkan hasil tersebut dapat diketahui semakin meningkat kadar flavonoid dan fenolik dalam sampel, maka akan meningkatkan aktivitas tabir surya.

Kata kunci : Tabir surya, *Stachytarpheta jamaicensis* L.Vahl, Fraksinasi, Fenolik total, Flavonoid total, *AUC*

ABSTRACT

IMAM SAFE'I, 2023, DETERMINATION OF SUN PROTECTION FACTOR (SPF) VALUE OF EXTRACTS AND FRACTIONS OF HORSE PICTURES (Stachytarpheta jamaicensis L.Vahl) AS IN VITRO SUNSCREEN, THESIS PROPOSAL, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA, Supervised by Hery Muhamad Ansory, S.Pd., M.Sc. dan apt. Fransiska Leviana, M.Sc.

The ethanol extract of horsetail leaves is known to contain quite high levels of flavonoids and phenolic compounds. The fraction results showed that the ethyl acetate fraction had the highest flavonoid and phenolic content among the others. There has been no study of the relationship between flavonoid and phenolic levels on the sunscreen activity of horsetail leaf extract. The aim of this study was to determine the value of the Sun Protection Factor (SPF) of the extract and the fraction of horsetail leaves (Stachytarpheta jamaicensis L.Vahl) using this method. vitro and determine the levels of flavonoids and total phenolics from extracts and fractions of horse whip leaves.

The extraction of horse whip leaves was carried out by maceration method using 96% ethanol solvent. The extract obtained was then fractionated using n-hexane, ethyl acetate, and water as solvents. Extracts and fractions of horsetail leaves were then determined for total flavonoid and phenolic content using the colorimetric method, and the SPF value was determined by calculating the area under the curve (AUC) using Uv-Vis spectrophotometry.

The results showed that the levels of flavonoids and phenolics in the extract were 290,94 mg QE/g extract and 84,75 mg GAE/g extract. The highest levels of total flavonoids and phenolics were found in the ethyl acetate fraction, namely 351,767 mg QE/g extract and 151,431 mg GAE/g extract. The results of testing the SPF value of the extract obtained an SPF value of 24.02. The biggest SPF value is in the ethyl acetate fraction of 31.07 which is in the high category. Based on these results, it can be seen that the increasing levels of flavonoids and phenolics in the sample will increase the activity of sunscreen.

Keywords: Sunscreen, *Stachytarpheta jamaicensis* L.Vahl, Fractionation, Total Phenolic, Total Flavonoid, AUC