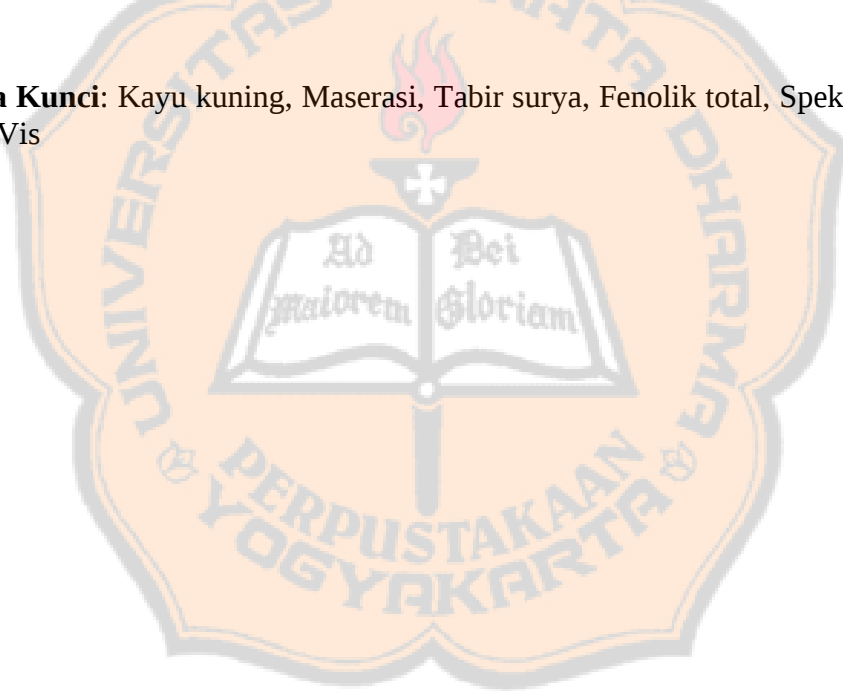


ABSTRAK

Radiasi sinar ultraviolet (UV) yang berlebih dapat mengakibatkan kerusakan jaringan kulit seperti, penuaan dini, *sunburn*, dan kanker kulit. Tabir surya berbahan alam berpotensi digunakan sebagai perlindungan kulit dari sinar UV. Senyawa fenolik yang terkandung dalam kayu kuning (*Arcangelisia flava* (L.) Merr) memiliki gugus kromofor yang dapat menyerap sinar UV sehingga dapat digunakan sebagai senyawa aktif tabir surya. Metode penelitian menggunakan ekstraksi maserasi dengan pelarut etanol 70% yang bersifat polar sehingga dapat mengekstraksi senyawa fenolik. Hasil penelitian kadar fenolik total tertinggi pada rasio 1:30 b/v dengan lama waktu 3 x 24 jam dengan rata-rata sebesar $77,93 \pm 0,12$ mg GAE/g. Nilai SPF didapatkan dengan rata-rata nilai tertinggi pada konsentrasi 100 mg/mL dengan waktu ekstraksi 3 x 24 jam dan rasio 1:30 b/v sebesar $5,31 \pm 0,06$. Hasil pengujian secara statistik menunjukkan bahwa variasi serbuk simplisia:pelarut dan lama waktu berpengaruh secara signifikan terhadap kadar fenolik total dan nilai SPF dari ekstrak batang kayu kuning.

Kata Kunci: Kayu kuning, Maserasi, Tabir surya, Fenolik total, Spektrofotometri UV-Vis



ABSTRACT

Excessive exposure to ultraviolet (UV) radiation may cause various adverse effects on the skin, including premature aging, sunburn, and skin cancer. The development of natural-based sunscreen agents has gained increasing attention due to their potential to provide safer and environmentally friendly alternatives for skin protection. The stem of *Arcangelisia flava* (L.) Merr contains phenolic compounds with chromophore groups capable of absorbing UV radiation, thereby exhibiting potential as a natural sunscreen agent. This study aimed to investigate the effect of the simplicia-to-solvent ratio and extraction time on the total phenolic content and Sun Protection Factor (SPF) value of yellow wood stem extract. The extraction process was carried out using the maceration method with 70% ethanol as a polar solvent to facilitate the extraction of phenolic compounds. The results showed that the highest total phenolic content was obtained at a simplicia:solvent ratio of 1:30 (w/v) and an extraction time of 3 x 24 h, with a value of 77.92 ± 0.12 mg GAE/g extract. The highest SPF value was achieved at an extract concentration of 100 mg/mL under the same extraction conditions, with an average SPF value of 5.31 ± 0.06 . Statistical analysis indicated that variations in the simplicia-to-solvent ratio and extraction time had a significant effect on both the total phenolic content and SPF value of the yellow wood stem extract.

Keyword: Yellow wood, *Arcangelisia flava* (L.) Merr, maceration extraction, sunscreen activity, total phenolic content, UV-Vis spectrophotometry.