

ABSTRAK

Radikal bebas berperan dalam kerusakan sel dan perkembangan penyakit degeneratif. Daun terubuk (*Saccharum spontaneum* var. *edulis* (Hassk.)) mengandung senyawa bioaktif seperti flavonoid, tanin, saponin, alkaloid, dan fenolik yang berpotensi sebagai antioksidan. Penelitian ini bertujuan mengevaluasi aktivitas antioksidan ekstrak etanol dan fraksi air dari fermentasi daun terubuk menggunakan *Aspergillus oryzae*, serta melakukan standarisasi terhadap ekstrak etanol. Fermentasi dilakukan selama 72 jam, dilanjutkan dengan fraksinasi, skrining fitokimia, uji aktivitas antioksidan metode DPPH, dan standarisasi berdasarkan parameter spesifik dan non-spesifik sesuai Farmakope Herbal Indonesia. Skrining fitokimia menunjukkan bahwa kedua sampel mengandung flavonoid, tanin, saponin, fenolik, dan alkaloid (positif dengan reagen Dragendorff). Hasil uji aktivitas antioksidan menunjukkan bahwa ekstrak etanol memiliki nilai IC_{50} sebesar 41,65 ppm (kategori sangat kuat), sedangkan fraksi air sebesar 72,97 ppm (kategori kuat). Hasil standarisasi menunjukkan bahwa ekstrak etanol belum memenuhi seluruh parameter mutu, baik spesifik maupun sebagian non-spesifik, kecuali kadar sari larut air yang telah memenuhi persyaratan. Ketidakesesuaian ini diduga disebabkan oleh sifat higroskopis simplisia hasil fermentasi dan proses pengeringan yang belum optimal. Meskipun demikian, daun terubuk menunjukkan potensi sebagai sumber antioksidan alami. Diperlukan optimasi lanjutan untuk meningkatkan mutu fisikokimia ekstrak agar sesuai standar yang berlaku.

Kata kunci: Daun terubuk, fermentasi, ekstrak etanol, standarisasi, antioksidan.

KARAWANG

ABSTRACT

Free radicals contribute to cellular damage and the progression of degenerative diseases. *Saccharum spontaneum* var. *edulis* (Hassk.) leaves contain bioactive compounds such as flavonoids, tannins, saponins, alkaloids, and phenolics, which have potential antioxidant properties. This study aimed to evaluate the antioxidant activity of ethanol extract and aqueous fraction from fermented *S. spontaneum* leaves using *Aspergillus oryzae*, as well as to standardize the ethanol extract. The fermentation was carried out for 72 hours, followed by fractionation, phytochemical screening, antioxidant activity assay using the DPPH method, and standardization based on specific and non-specific parameters according to the Indonesian Herbal Pharmacopoeia. Phytochemical screening revealed that both samples contained flavonoids, tannins, saponins, phenolics, and alkaloids (positive with Dragendorff's reagent). Antioxidant activity testing showed that the ethanol extract had an IC_{50} value of 41.65 ppm (very strong category), while the aqueous fraction showed 72.97 ppm (strong category). Standardization results indicated that the ethanol extract did not meet all required quality parameters, both specific and some non-specific, except for water content, which complied with the standard. These deviations were suspected to be due to the hygroscopic nature of the fermented simplicia and suboptimal drying conditions. Nevertheless, the findings demonstrate that *S. spontaneum* leaves possess potential as a natural antioxidant source. Further optimization is necessary to improve the physicochemical quality of the extract in accordance with established standards.

Keywords: Terubuk leaves, fermentation, ethanol extract, antioxidant, standardization.

KARAWANG