ABSTRAK

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Judul : Perbandingan Aktivitas Antioksidan Flavonoid Total Ekstrak Etanol Rimpang Kencur Aksesi Purbalingga Hasil Ekstraksi Metode Maserasi Dan UAE

Radikal bebas merupakan molekul reaktif yang dapat menyebabkan stres oksidatif dan memicu berbagai penyakit degeneratif. Senyawa antioksidan berperan menetralisir radikal bebas dengan mendonorkan elektron atau atom hidrogen. *Kaempferia galanga* L. (kencur) diketahui mengandung flavonoid yang berpotensi sebagai antioksidan. Penelitian ini bertujuan untuk membandingkan metode maserasi dan *Ultrasound-Assisted Extraction* (UAE) terhadap rendemen, kadar flavonoid total, dan aktivitas antioksidan ekstrak etanol rimpang kencur aksesi Purbalingga menggunakan metode DPPH. Hasil penelitian menunjukkan bahwa maserasi menghasilkan rendemen lebih tinggi (20,08%) dibandingkan UAE (18,32%). Skrining fitokimia mengidentifikasi adanya flavonoid, steroid, dan triterpenoid pada kedua ekstrak. Kadar flavonoid total tertinggi diperoleh pada UAE (6,107 mgQE/g), sedangkan maserasi sebesar (2,815 mgQE/g). Namun, aktivitas antioksidan ekstrak maserasi lebih kuat (IC_{50} 8,31 ± 2,14 µg/mL) dibandingkan UAE (IC_{50} 92,52 ± 1,99 µg/mL). Berdasarkan hasil tersebut, metode ekstraksi memengaruhi rendemen, kadar flavonoid total, dan aktivitas antioksidan ekstrak rimpang kencur. Sehingga dapat disimpulkan bahwa meskipun UAE menghasilkan kadar flavonoid lebih tinggi, aktivitas antioksidan tertinggi terdapat pada ekstrak rimpang kencur yang dihasilkan dari metode maserasi dan masuk dalam kategori sangat kuat.

Kata kunci : Antioksidan, DPPH, *Kaempferia galanga* L, Skrining Fitokimia

ABSTRACT

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Title : *Comparison of Total Flavonoid Antioxidant Activity of Extracts Ethanol Extract of Galangal Rhizomes from Purbalingga Accession Using Maceration and UAE Methods*

Free radicals are reactive molecules that can cause oxidative stress and trigger various degenerative diseases. Antioxidants play a role in neutralizing free radicals by donating electrons or hydrogen atoms. Kaempferia galanga L. (kencur) is known to contain flavonoids with potential antioxidant activity. This study aimed to compare the maceration method and Ultrasound-Assisted Extraction (UAE) in terms of yield, total flavonoid content, and antioxidant activity of ethanol extract of Purbalingga accession kencur rhizome using the DPPH method. The results showed that maceration produced a higher yield (20.08%) compared to UAE (18.32%). Phytochemical screening identified the presence of flavonoids, steroids, and triterpenoids in both extracts. The highest total flavonoid content was obtained from UAE (6.107 mgQE/g), while maceration yielded 2.815 mgQE/g. However, the antioxidant activity of the maceration extract was stronger (IC_{50} 8.31 ± 2.14 µg/mL) than that of UAE (IC_{50} 92.52 ± 1.99 µg/mL). In conclusion, the extraction method influences yield, total flavonoid content, and antioxidant activity of kencur rhizome extract. Although UAE produced a higher total flavonoid content, the strongest antioxidant activity was observed in the maceration extract, which was categorized as very strong.

Keywords : Antioxidant, DPPH*, Kaempferia galanga* L.*, Phytochemical Screening*