

INTISARI

Radikal bebas berlebih di dalam tubuh dapat menyebabkan kerusakan pada DNA sehingga menimbulkan berbagai penyakit. Kerusakan tersebut dapat dicegah oleh antioksidan alami, salah satunya adalah daun benalu (*Macrosolen cochinchinensis* (L.) Tiegh). Penelitian yang dilakukan bertujuan untuk mengetahui pengaruh hidrolisis asam pada fraksi air daun benalu terhadap aktivitas antioksidan dalam uji penangkapan radikal DPPH dan β -carotene bleaching.

Ekstrak etanol daun benalu difraksinasi sehingga didapatkan fraksi etil asetat dan fraksi air. Fraksi air dihidrolisis selama 1 jam dan 3 jam. Ekstrak etanol, fraksi etil asetat, fraksi air, fraksi air terhidrolisis 1 jam dan fraksi air terhidrolisis 3 jam dilakukan uji KLT, kandungan fenolik dan flavonoid total. Uji aktivitas antioksidan dilakukan menggunakan metode penangkapan DPPH dan β -carotene bleaching untuk mendapatkan nilai IC_{50} dan dianalisis menggunakan uji *One-Way ANOVA*.

Hasil penelitian menunjukkan korelasi positif antara kandungan total fenolik dan flavonoid terhadap aktivitas antioksidan. Aktivitas penangkapan radikal DPPH terbesar dimiliki oleh fraksi etil asetat dengan nilai IC_{50} sebesar 6,63 μ g/mL diikuti oleh fraksi air terhidrolisis 3 jam (6,96 μ g/mL), fraksi air terhidrolisis 1 jam (9,90 μ g/mL), ekstrak etanol (20,69 μ g/mL), dan fraksi air (36,04 μ g/mL) sedangkan aktivitas penghambatan peroksidasi terbesar dimiliki oleh fraksi air terhidrolisis 3 jam dengan nilai IC_{50} sebesar 265,30 μ g/mL diikuti oleh fraksi air terhidrolisis 1 jam (359,51 μ g/mL), fraksi etil asetat (429,73 μ g/mL), ekstrak etanol (572,42 μ g/mL), dan fraksi air (971,21 μ g/mL). Berdasarkan uji statistik, hidrolisis asam memberikan pengaruh signifikan terhadap peningkatan aktivitas penangkapan radikal bebas.

Kata kunci : antioksidan, benalu, hidrolisis asam, *Macrosolen cochinchinensis* (L.) Tiegh.

ABSTRACT

The natural antioxidant such as mistletoe leaves (*Macrosolen cochinchinensis* (L.) Tiegh) plays a big role for attacked excess free radicals in the body which can lead to DNA damage. This research aims to determine the effect of acid hydrolysis on mistletoe leaf water fraction's antioxidant activity, observed through DPPH radical scavenging tests and β -carotene bleaching.

The ethanol extract was fractionated into ethyl acetate and water fractions. The water fraction was hydrolyzed for 1 and 3 hours. The ethanol extract, ethyl acetate fraction, water fraction, 1-hour hydrolysed water fraction, and 3-hour hydrolysed water fraction was carried out by TLC test, total phenolic and flavonoid content. The DPPH and β -carotene bleaching tests were performed to measure antioxidant activity and calculate IC_{50} values. Statistical analysis was conducted through One-Way ANOVA.

The findings of this study revealed a positive correlation between the total phenolic and flavonoid content and the antioxidant activity. Notably, the ethyl acetate fraction had the highest DPPH radical scavenging activity (IC_{50} value of 6.63 $\mu\text{g/mL}$) followed by 3-hour hydrolysed water fraction (6,96 $\mu\text{g/mL}$), 1-hour hydrolysed water fraction (9,90 $\mu\text{g/mL}$), ethanol extract (20,69 $\mu\text{g/mL}$), dan water fraction (36,04 $\mu\text{g/mL}$), while the 3-hour hydrolysed water fraction had the highest peroxidation inhibition activity (IC_{50} value of 265.30 $\mu\text{g/mL}$) followed by 1-hour hydrolysed water fraction (359,51 $\mu\text{g/mL}$), ethyl acetate fraction (429,73 $\mu\text{g/mL}$), ethanol extract (572,42 $\mu\text{g/mL}$), dan water fraction (971,21 $\mu\text{g/mL}$). Statistical analysis indicated that acid hydrolysis significantly increased free radical scavenging activity.

Key words: antioxidant, mistletoe, acid hydrolysis, *Macrosolen cochinchinensis* (L.) Tiegh.