ABSTRAK

Amelia Dwi Putri, NIM 4222510007 (2026). Skrining Fitokimia dan Uji Aktivitas Antioksidan Ekstrak Etanol Daun Telang (*Clitoria ternatea*) Muda dan Tua dengan Metode DPPH.

Daun telang (*Clitoria ternatea*) merupakan bagian tanaman yang mengandung berbagai senyawa metabolit sekunder dan berpotensi sebagai sumber antioksidan alami. Penelitian ini bertujuan untuk mengetahui kandungan fitokimia serta membandingkan aktivitas antioksidan ekstrak etanol daun telang muda dan tua menggunakan metode DPPH (2,2-diphenyl-1-picrylhydrazyl). Sampel daun telang muda dan tua diekstraksi menggunakan metode maserasi dengan pelarut etanol 96%. Pengujian fitokimia dilakukan secara kualitatif terhadap senyawa fenolik, flavonoid, tanin, alkaloid, saponin, steroid, dan triterpenoid. Uji aktivitas antioksidan dilakukan pada ekstrak daun telang muda dan tua dengan variasi konsentrasi 20, 40, 60, dan 80 µg/mL, sedangkan vitamin C digunakan sebagai pembanding dengan konsentrasi 2, 4, 6, dan 8 µg/mL. Hasil skrining fitokimia menunjukkan bahwa ekstrak etanol daun telang muda dan tua sama-sama positif mengandung fenolik, flavonoid, tanin, alkaloid, saponin, dan steroid, tetapi negatif terhadap triterpenoid. Hasil uji aktivitas antioksidan menunjukkan bahwa ekstrak daun telang tua memiliki nilai IC_{50} sebesar 58,023 µg/mL, sedangkan ekstrak daun telang muda memiliki nilai IC_{50} sebesar 80,408 µg/mL. Vitamin C sebagai pembanding memiliki nilai IC_{50} sebesar 5,655 µg/mL. Berdasarkan nilai IC_{50} tersebut, ekstrak daun telang muda dan tua tergolong memiliki aktivitas antioksidan kuat, sedangkan vitamin C tergolong sangat kuat. Ekstrak daun telang tua menunjukkan aktivitas antioksidan lebih tinggi dibandingkan daun telang muda karena memiliki nilai IC_{50} yang lebih rendah. Perbedaan ini diduga berkaitan dengan tingkat kematangan daun yang memengaruhi kandungan senyawa bioaktif, terutama fenolik, flavonoid, dan tanin.

Kata kunci: antioksidan, daun telang, DPPH, ekstrak etanol, skrining fitokimia

ABSTRACT

Amelia Dwi Putri, Student ID Number 4222510007 (2026). Phytochemical Screening and Antioxidant Activity Assay of Ethanolic Extracts of Young and

Butterfly pea leaves (*Clitoria ternatea*) contain various secondary metabolites and have potential as a natural source of antioxidants. This study aimed to determine the phytochemical content and compare the antioxidant activity of ethanolic extracts of young and mature butterfly pea leaves using the DPPH (2,2-diphenyl-1-picrylhydrazyl) method. Young and mature butterfly pea leaf samples were extracted by maceration using 96% ethanol as the solvent. Phytochemical screening was carried out qualitatively to detect phenolic compounds, flavonoids, tannins, alkaloids, saponins, steroids, and triterpenoids. Antioxidant activity was tested on young and mature butterfly pea leaf extracts at concentrations of 20, 40, 60, and 80 µg/mL, while vitamin C was used as a reference standard at concentrations of 2, 4, 6, and 8 µg/mL. The phytochemical screening results showed that both young and mature butterfly pea leaf ethanolic extracts were positive for phenolic compounds, flavonoids, tannins, alkaloids, saponins, and steroids, but negative for triterpenoids. The antioxidant activity assay showed that the mature leaf extract had an IC_{50} value of 58.023 µg/mL, while the young leaf extract had an IC_{50} value of 80.408 µg/mL. Vitamin C as the reference standard had an IC_{50} value of 5.655 µg/mL. Based on these IC_{50} values, both young and mature butterfly pea leaf extracts were classified as strong antioxidants, while vitamin C was classified as a very strong antioxidant. The mature leaf extract showed higher antioxidant activity than the young leaf extract because it had a lower IC_{50} value. This difference was presumed to be related to the maturity level of the leaves, which affects the content of bioactive compounds, particularly phenolics, flavonoids, and tannins.

Keywords: antioxidant, butterfly pea leaves, DPPH, ethanolic extract, phytochemical screening

THE Character Building UNIVERSITY