ABSTRAK

Radikal bebas merupakan suatu molekul yang memiliki elektron tidak berpasangan sehingga bersifat sangat reaktif dan dapat menyebabkan kerusakan sel akibat ketidakseimbangan ROS (*Reactive Oxigen Species*). Antioksidan adalah salah satu senyawa yang dapat menangkal aktivitas radikal bebas. Salah satu sumber antioksidan adalah senyawa fenolik yang biasanya terkandung dalam tanaman. Tanaman mata ikan (*Lemna minor* L.) diketahui memiliki aktivitas antioksidan. Dalam penelitian ini, tanaman mata ikan diektraksi dengan metode maserasi menggunakan pelarut etanol 96%. Penelitian ini bertujuan untuk mengetahui kadar fenolik total dan aktivitas antioksidan ekstrak tanaman mata ikan. Uji aktivitas antioksidan dilakukan dengan metode DPPH (*2,2-Diphenyl-1-Picrylhydraziyl*) dan penetapan kadar fenolik total dilakukan dengan metode Folin-Ciocalteu. Hasil uji aktivitas antioksidan dinyatakan dalam %I yang selanjutnya dianalisis dan dihitung sebagai nilai IC_{50} dengan menggunakan persamaan regresi linier sedangkan penetapan kadar fenolik total dinyatakan dengan hasil mg/g GAE. Hasil Penelitian menunjukkan kadar fenolik total ekstrak etanol tanaman mata ikan sebesar 0,389 ± 0,002 mg/g GAE dan nilai IC_{50} sebesar 338,515±9,839 µg/mL. Adanya perbedaan bermakna secara nyata (*p-value<,001*) antara ekstrak etanol tanaman mata ikan yang aktivitas antioksidan lemah dibandingkan dengen baku kuersetin yang memiliki aktivitas antioksidan sangat aktif.

Kata kunci : Radikal bebas, tanaman mata ikan (*Lemna minor* L.), antioksidan, fenolik total, DPPH, Folin-Ciocalteu, KLT, IC_{50}.

ABSTRACT

Free radicals are molecules that have unpaired electrons, making them highly reactive and capable of causing cell damage due to an imbalance of reactive oxygen species. Antioxidants are compounds that can counteract the activity of free radicals. One source of antioxidants is phenolic compounds typically found in plants. Duckweed (*Lemna minor* L.) is known to have antioxidant activity. In this study, duckweed was prepared in the form of a 96% ethanol extract using the maceration method. The aim of this research is to determine the total phenolic content and antioxidant activity of the duckweed extract. The antioxidant activity test was conducted using the DPPH method, and the determination of the total phenolic content was performed using the Folin-Ciocalteu method. The results of the antioxidant activity test are expressed as %inhibition (%I) and are further analyzed and calculated as the IC_{50} value using linear regression, while the determination of total phenolic content is expressed as milligrams of gallic acid equivalents per gram (mg/g GAE) of the extract. The research results indicate that the total phenolic content of ethanol extract from the fish eye plant is 0.389 ± 0.002 mg/g GAE, and the IC50 value is 338.515 ± 9.839 µg/mL. There is a significant difference (p-value < 0.001) between the ethanol extract of the fish eye plant, which has weak antioxidant activity, compared to the quercetin standard, which has highly active antioxidant activity.

Keywords: Free radicals, duckweed (*Lemna minor* L.), antioxidants, total phenolic, DPPH, Folin-Ciocalteu, TLC, IC_{50}.