ABSTRACT

The leaves of sweet potato (*Ipomoea batatas* L.) is widely used medicinal plant. Fractionation of the sweet potato leaves ethanol extract is needed to obtain high flavonoids. This study were aimed to determine the potential of ethanol extract (EE), ethyl acetate fraction (FEA), and water fraction (FA) of sweet potato leaves as anti-radical and to found out the most optimal solvent to extract flavonoid compounds contained in sweet potato leaves extract.

Sweet potato leaves were extracted with ethanol by maceration. Ethanol extract was fractionated with hexane, ethyl acetate, and water. Qualitative analysis of the EE, FEA, and FA with TLC method were needed to identification of flavonoids and anti-radical activity preliminary test. Anti-radical activity of EE, FEA, and FA were determined by radical scavenging assay using radical 2,2-diphenyl-1-picrylhydrazyl (DPPH), whereas the total flavonoid content were determined spectrophotometrically. The experimental data were analyzed statistically using the one-way ANOVA test and Pearson test at the level of 95%.

The results showed there were anti-radical activity in EE, FEA, and FA. Ethanol extract, FEA, and FA samples containing spots which were most probably flavonoids and had anti-radical activity at qualitative analysis. The anti-radical activity and total flavonoid content of the samples were significantly different ($p < 0,05$). FEA showed the anti-radical activity and total flavonoid content > EE > FA samples. The ethyl acetate fraction promoted both the strongest anti-radical activity (IC_{50}, 5,58±0,30 µg/mL) and the highest total flavonoid content (20,81±1,26 %w/w rutin equivalent). The results suggested that total flavonoid content correlated with anti-radical activity (R=-0,920).

Key words : *Ipomoea batatas*, Fractionation, Anti-radical, DPPH, Flavonoid

INTISARI

Daun ubi jalar (*Ipomoea batatas* L.) banyak digunakan sebagai tumbuhan obat karena mengandung senyawa flavonoid. Fraksinasi ekstrak etanol daun ubi jalar diperlukan untuk mendapatkan senyawa flavonoid yang lebih tinggi. Penelitian ini bertujuan untuk mengetahui potensi ekstrak etanol (EE), fraksi etil asetat (FEA), dan fraksi air (FA) daun ubi jalar sebagai antiradikal serta mengetahui pelarut yang paling optimal untuk menyari senyawa flavonoid yang terkandung dalam ekstrak daun ubi jalar.

Ekstrak etanol daun ubi jalar dibuat dengan cara maserasi. Ekstrak etanol difraksinasi dengan heksan, etil asetat, dan air. Dilakukan analisis kualitatif terhadap EE, FEA, dan FA dengan metode Kromatografi Lapis Tipis (KLT) untuk identifikasi senyawa flavonoid dan uji pendahuluan aktivitas antiradikal. Aktivitas antiradikal ditentukan melalui uji penangkapan radikal 2,2-diphenyl-1-picrylhydrazyl (DPPH). Kadar flavonoid total ditentukan dengan metode spektrofotometri UV-Vis. Data aktivitas antiradikal dan kadar flavonoid total dianalisis dengan metode ANOVA *one way* dan Pearson dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan terdapat aktivitas antiradikal pada EE, FA, dan FEA. Ekstrak etanol, FEA, dan FA mengandung bercak yang diperkirakan merupakan flavonoid dan memiliki aktivitas antiradikal pada analisis kualitatif. Aktivitas antiradikal dan kadar flavonoid total dari masing-masing sampel berbeda signifikan ($p<0,05$). Fraksi Etil Asetat memiliki aktivitas antiradikal dan kadar flavonoid total>EE>FA dengan nilai IC_{50} sebesar 5,58±0,30 µg/mL dan kadar flavonoid total sebesar 20,81±1,26 %b/b Ekuivalen Rutin (ER). Kadar flavonoid total memiliki korelasi dengan aktivitas antiradikal. Adapun besarnya nilai koefisien korelasi tersebut yakni -0,920.

Kata kunci : *Ipomoea batatas*, Fraksinasi, Antiradikal, DPPH, Flavonoid