RINGKASAN

Sonchus arvensis L. (tempuyung) merupakan tumbuhan dari famili Asteraceae yang banyak ditemukan di berbagai wilayah Indonesia dari dataran rendah hingga ketinggian 2.400 mdpl. Tumbuhan ini dikenal memiliki khasiat sebagai obat, khususnya untuk menghancurkan batu ginjal dan mengatasi berbagai masalah kesehatan seperti diuretik, pereda batuk, dan penurun kadar kolesterol. Daun tempuyung mengandung senyawa aktif seperti triterpenoid, flavonoid, inositol, dan manitol. Penelitian ini bertujuan untuk mengetahui kandungan senyawa metabolit sekunder ekstrak *S. arvensis* berdasarkan pelarut yang berbeda serta menentukan jenis pelarut yang efektif dalam mengikat senyawa metabolit sekunder.

Pengambilan sampel tumbuhan dilakukan secara *purposive sampling* di wilayah Purwokerto dan pengamatan metabolit sekunder dilakukan secara eksperimental. Variabel bebas penelitian ini terdiri dari jenis pelarut dan bagian organ tanaman tempuyung yakni akar dan daun tempuyung. Variabel terikat terdiri atas metabolit sekunder. Parameter penelitian terdiri atas uji kualitatif (flavonoid, polifenol dan alkaloid), Uji kuantitatif (total flavonoid, polifenol, dan alkaloid) yang terkandung pada ekstrak akar dan daun tempuyung. Data kualitatif diuji secara deskriptif sedangkan data kuantitatif diuji dengan menggunakan ANOVA dengan taraf kesalahan 5% dan 1%, terdapat pengaruh nyata maka dilanjutkan dengan DMRT 5%.

Berdasarkan hasil penelitian uji kualitatif menunjukkan bahwa sampel akar dan daun tempuyung positif mengandung flavonoid, polifenol dan alkaloid. Pelarut dan organ tempuyung tidak berpengaruh terhadap kadar senyawa flavonoid dan polifenol, sedangkan pada senyawa alkaloid berpengaruh nyata. Kadar senyawa flavonoid tertinggi sebesar 103,66 $\pm$ 57,50 mg QE/L dari organ akar dengan jenis pelarut etanol 50%. Kadar senyawa polifenol tertinggi sebesar 17,65 $\pm$ 6,24 mg GAE/L dari organ daun dengan jenis pelarut etanol 50%. Kadar senyawa alkaloid tertinggi sebesar 95,64 $\pm$ 73,50 mg QNE/L dari organ akar dengan jenis pelarut etanol 96%.

Kata kunci: *alkaloid, flavonoid, metabolit sekunder, polifenol, purposive sampling, tempuyung.*

SUMMARY

Sonchus arvensis L. (tempuyung) is a plant from the Asteraceae family that is widely found in various regions of Indonesia, from lowlands to an altitude of 2,400 meters above sea level. This plant is known to have medicinal properties, particularly for breaking down kidney stones and treating various health problems such as diuretics, cough suppressants, and cholesterol reduction. Tempuyung leaves contain active compounds such as triterpenoids, flavonoids, inositol, and mannitol. This study aims to determine the content of secondary metabolites in *S. arvensis* extracts based on different solvents and to identify the most effective solvent for binding secondary metabolites.

Plant samples were collected using purposive sampling in the Purwokerto area, and secondary metabolite observations were conducted experimentally. The independent variables in this study consisted of the type of solvent and the plant parts of tempuyung, namely the roots and leaves. The dependent variables consisted of secondary metabolites. The research parameters included qualitative tests (flavonoids, polyphenols, and alkaloids) and quantitative tests (total flavonoids, polyphenols, and alkaloids) contained in the root and leaf extracts of tempuyung. Qualitative data were analyzed descriptively, while quantitative data were analyzed using ANOVA at a significance level of 5% and 1%. If a significant effect was found, it was further analyzed using DMRT at 5%.

Based on the results of the qualitative tests, the root and leaf samples of tempuyung were found to contain flavonoids, polyphenols, and alkaloids. The solvent and tempuyung organ did not affect the levels of flavonoids and polyphenols, while the alkaloid levels showed a significant effect. The highest flavonoid level was 103.66 ± 57.50 mg QE/L from the root organ using 50% ethanol as the solvent. The highest polyphenol content was 17.65 ± 6.24 mg GAE/L from leaf organs using 50% ethanol as the solvent. The highest alkaloid content was 95.64 ± 73.50 mg QNE/L from root organs using 96% ethanol as the solvent.

Keywords: *alkaloids, flavonoids, secondary metabolites, polyphenols, purposive sampling, tempuyung.*