

ABSTRAK

Antioksidan merupakan zat atau senyawa yang dapat melindungi sel tubuh dari kerusakan dengan menangkal radikal bebas. Antioksidan dapat diperoleh dari tumbuhan yang sering dikorelasikan dengan kandungan senyawa fenoliknya. Salah satu tumbuhan yang memiliki kandungan senyawa fenolik yang tinggi yaitu kulit jeruk gerga (*Citrus x aurantium* L.). SCOBY (*Symbiotic Culture of Bacteria and Yeast*) dapat meningkatkan kandungan nutrisi dan senyawa metabolit sekunder pada produk fermentasinya. Penelitian ini bertujuan untuk mengetahui apakah fermentasi SCOBY infusa kulit jeruk gerga berpengaruh terhadap kadar fenol total, flavonoid total, dan aktivitas antioksidan. Pada penelitian ini akan dilakukan fermentasi SCOBY dari infusa kulit jeruk gerga. Penetapan kadar fenol total dan penetapan kadar flavonoid total menggunakan spektrofotometer UV-Vis. Pengujian antioksidan dilakukan dengan metode DPPH (*1,1-Diphenyl-2-picrylhydrazyl*) menggunakan spektrofotometer UV-Vis pada panjang gelombang 517 nm dengan pembanding asam galat. Pada infusa kulit jeruk gerga, didapatkan kadar fenol total sebesar 2,63%; kadar flavonoid total 0,04%; dan nilai IC_{50} sebesar 11.964,077 $\mu\text{g/mL}$. Pada fermentasi SCOBY kulit jeruk gerga, didapatkan kadar fenol total sebesar 4,29%; kadar flavonoid total 3,27%; dan nilai IC_{50} sebesar 8.497,671 $\mu\text{g/mL}$.

Kata Kunci : Jeruk gerga, SCOBY, Fermentasi, Kadar Fenol Total, Kadar Flavonoid Total, Antioksidan

ABSTRACT

Antioxidants are substances or compounds that can protect body cells from damage by counteracting free radicals. Antioxidants can be obtained from plants which are often correlated with the content of phenolic compounds. One of the plants that has a high content of phenolic compounds is gerga orange peel (*Citrus x aurantium* L.). SCOBY (*Symbiotic Culture of Bacteria and Yeast*) can increase the nutritional content and secondary metabolite compounds in the fermented product. This study aims to determine whether the SCOBY fermentation of gerga orange peel has an effect on the levels of total phenols, total flavonoids, and antioxidant activity. In this research, SCOBY fermentation will be carried out from gerga orange peel infusion. Determination of total phenol content and determination of total flavonoid content using a UV-Vis spectrophotometer. Antioxidant testing was carried out using the DPPH (*1,1-Diphenyl-2-picrylhydrazyl*) method using a UV-Vis spectrophotometer at a wavelength of 517 nm with gallic acid as a comparison. In gerga orange peel infusion, the total phenol content was 2.63%; total flavonoid content 0.04%; and IC₅₀ value of 11,964.077 µg/mL. In the SCOBY fermentation of gerga orange peel, a total phenol content of 4.29% was obtained; total flavonoid content 3.27%; and IC₅₀ value of 8,497.671 µg/mL.

Keywords : Gerga orange, SCOBY, Fermentation, Total Phenol Content, Total Flavonoid Content, Antioxidant