

ABSTRAK

Penyakit degeneratif menjadi masalah kesehatan yang paling serius karena menjadi penyebab kematian paling besar di Indonesia. Hal ini terjadi karena adanya stres oksidatif yang dapat menyebabkan patofisiologi penuaan dan beberapa penyakit degeneratif seperti kanker, diabetes melitus dan komplikasinya. 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 Daun Pedada Merah (*Sonneratia caseolaris*). 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 Daun Pedada Merah. 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 Daun Pedada Merah, didapatkan kadar fenol total sebesar 2,192%; kadar flavonoid total 0,811%; dan nilai IC₅₀ sebesar 46,058 µg/mL. Pada fermentasi SCOBY Daun Pedada Merah, didapatkan kadar fenol total sebesar 2,423%; kadar flavonoid total 0,853%; dan nilai IC₅₀ sebesar 45,615 µg/mL.

Kata Kunci: *Sonneratia caseolaris*, SCOBY, Fermentasi, Kadar Fenol Total, Kadar Flavonoid Total, Antioksidan

ABSTRACT

Degenerative diseases are the most serious health problems because they are the biggest cause of death in Indonesia. This occurs due to oxidative stress which can cause the pathophysiology of aging and several degenerative diseases such as cancer, diabetes mellitus and its complications. Antioxidants are substances or compounds that can protect body cells from damage by warding off free radicals. Antioxidants can be obtained from plants which is often correlated with their phenolic compound content. One of the plants that has a high content of phenolic compounds is Red Pedada Leaf (*Sonneratia caseolaris*). SCOBY (Symbiotic Culture of Bacteria and Yeast) can increase the nutritional content and secondary metabolite compounds in fermented products. This study aims to determine whether SCOBY fermentation of Gerga orange peel infusion affects the levels of total phenols, total flavonoids and antioxidant activity. In this research, SCOBY fermentation will be carried out from Red Pedada Leaf 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 the infusion of Red Pedada Leaves, a total phenol content of 2.192% was obtained; total flavonoid content 0.811%; and the IC₅₀ value was 46.058 µg/mL. In the fermentation of Red Pedada Leaf SCOBY, a total phenol content of 2.423% was obtained; total flavonoid content 0.853%; and the IC₅₀ value was 45.615 µg/mL.

Keywords: *Sonneratia caseolaris*, SCOBY, Fermentation, Total Phenol Content, Total Flavonoid Content, Antioxidant.