

Aktivitas Antioksidan dan Kandungan Total Flavonoid Seduhan Tongkol Jagung Ungu (*Zea mays var. ceratina kulesh*) dan Bunga Telang (*Clitoria ternatea L.*)

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ABSTRAK

Latar belakang: Asupan antioksidan dibutuhkan untuk menstabilkan jumlah ROS di dalam tubuh. Pemberian seduhan tongkol jagung ungu dan bunga telang yang mengandung flavonoid dapat bermanfaat untuk mencegah terjadinya penumpukan ROS yang dapat mengakibatkan kanker, diabetes melitus, dan penyakit kardiovaskular.

Tujuan: Menganalisis perbedaan aktivitas antioksidan dan kandungan total flavonoid pada setiap formulasi produk seduhan tongkol jagung ungu dan bunga telang.

Metode: Penelitian eksperimental dengan Rancangan Acak Lengkap dengan variasi perbandingan tongkol jagung ungu : bunga telang yaitu F0 (0%:100%), F1 (46%:54%), F2 (59%:41%), dan F3 (83%:17%). Aktivitas antioksidan diuji dengan metode DPPH (2,2-diphenyl-1-picrylhydrazyl) dan hasilnya dinyatakan dalam nilai IC₅₀, sedangkan analisis kandungan total flavonoid menggunakan metode kalorimetri aluminium klorida (AlCl₃). Analisis statistik menggunakan uji Kruskall Wallis dan Mann-Whitney.

Hasil: Terdapat perbedaan signifikan ($p < 0,05$) pada nilai IC₅₀ dan total flavonoid pada seduhan tongkol jagung ungu dan bunga telang. Nilai IC₅₀ pada penelitian ini berkisar antara 4913,49 – 7872,25 ppm. Sedangkan kandungan total flavonoid pada penelitian yang dilakukan berkisar antara 0,0346 – 0,0451%. Aktivitas antioksidan dan kandungan total flavonoid terendah terdapat pada formulasi F0 (7872,25 ppm dan 0,0346%) dan tertinggi pada formulasi F3 (4913,49 ppm dan 0,0451%).

Simpulan: Penambahan tongkol jagung ungu pada seduhan ini berbanding lurus dengan kemampuan menangkal radikal bebas dan total flavonoid. Semakin banyak tongkol jagung ungu yang ditambahkan, nilai IC₅₀ semakin rendah dan total flavonoid semakin tinggi.

Kata kunci: Seduhan, tongkol jagung ungu, bunga telang, antioksidan, flavonoid

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Antioxidant Activity and Total Flavonoid Content of Brewed Purple Corn Cob (*Zea mays var. ceratina kulesh*) and Butterfly Pea Flower (*Clitoria ternatea L.*)

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ABSTRACT

Background: Antioxidant is needed to stabilize the amount of Reactive Oxygen Species (ROS) of the body. Consuming brewed consist of purple corn cob and butterfly pea flower, which contain flavonoid, may help the body to prevent the accumulation of ROS that can lead to cancer, diabetes mellitus, and cardiovascular disease.

Objective: analysing the difference of antioxidant activity and total flavonoid content of every formulation of brewed Purple Corn Cob and Butterfly Pea Flower.

Methods: An experimental study with a Completely Randomized Design (CRD) was conducted with variations in the ratio of purple corn cob to butterfly pea flowers as follows: F0 (0%:100%), F1 (46%:54%), F2 (59%:41%), and F3 (83%:17%). Antioxidant activity was tested using the DPPH (2,2-diphenyl-1-picrylhydrazyl) method, while total flavonoid content analysis was performed using the aluminium chloride (AlCl₃) calorimetric method. Statistical analysis was conducted using the Kruskal-Wallis test and Mann-Whitney test.

Results: There is a significant difference ($p < 0,05$) in IC₅₀ values and total flavonoid content in the formulation of brewed purple corn cob and butterfly pea flower. The IC₅₀ values in this study ranged from 4913,49 – 7872,25 ppm. Beside, the total flavonoid content ranged from 0,0346 – 0,0451%. The lowest antioxidant activity and total flavonoid content were found in the F0 (7872,25 ppm and 0,0346%), while the highest were in the F3 (4913,49 ppm and 0,0451%).

Conclusion: The addition of purple corn cob inside the brewed is directly proportional to the ability to ward off free radicals. The more purple corn cob added, the lower the IC₅₀ value and the higher the total flavonoid.

Keywords: Brewed, purple corn cob, butterfly pea flower, antioxidant, flavonoid

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