

ABSTRAK

Kopi merupakan salah satu minuman komoditas yang terus mengalami perkembangan baik dari segi produksi hingga pengolahan, salah satunya *3rd wave coffee* yang mengamati dengan seksama profil rasa dan karakteristik unik dari biji *single origin*, tingkat sangrai, dan metode penyeduhan yang presisi. Evaluasi komparatif kandungan total fenol, total flavonoid, dan aktivitas antioksidan kopi arabika Gayo Aceh dan kopi arabika Bajawa Flores yang diseduh dengan metode V60 dan *cold brew* telah dilakukan. Sampel dari kedua jenis kopi arabika dipilih berdasarkan tingkat sangrai *light*, *medium*, dan *dark*. Kandungan fenol total kopi dianalisis menggunakan uji Folin-Ciocalteu; flavonoid total diukur secara spektrofotometri menggunakan ion reaksi kolorimetri dengan aluminium (III) klorida, dan aktivitas antioksidannya dengan metode DPPH. Dari penelitian yang telah dilakukan, total kandungan fenol, aktivitas antioksidan kopi arabika diamati mengalami penurunan seiring meningkatnya tingkat sangrai, sedangkan total flavonoid meningkat. Hal ini juga terjadi pada kopi yang diseduh dengan metode panas V60 yang menunjukkan senyawa fenol, flavonoid, dan aktivitas antioksidan yang lebih tinggi dibandingkan kopi *cold brew*. Penelitian menunjukkan kombinasi metode seduh V60 dan tingkat sangrai *light* menghasilkan kandungan fenol dan aktivitas antioksidan maksimal di kedua jenis kopi. Hasil penelitian menunjukkan total fenol tertinggi yang dinyatakan sebagai *gallic acid equivalent* (GAE) per g kopi paling tinggi dengan nilai $28,990 \pm 0,077$ mg GAE/g %BB terdapat pada sampel arabika Gayo Aceh dengan tingkat *light* dan penyeduhan V60, serta aktivitas antioksidan dengan nilai IC_{50} paling tinggi sebesar $40 \pm 2,12$ ppm %BB didapatkan pada sampel yang sama. Sedangkan kandungan total flavonoid dinyatakan sebagai *rutin equivalent* (RE) kandungan tertinggi pada tingkat sangrai *dark*, dengan nilai $3,503 \pm 0,016$ mg RE/g %BB didapatkan dari arabika Bajawa Flores. Analisis statistik ANOVA menunjukkan bahwa perbedaan total fenol, flavonoid, dan aktivitas antioksidan antara variasi metode penyeduhan dan tingkat sangrai kopi arabika Gayo Aceh dan Bajawa Flores tidak signifikan.

Kata kunci: Antioksidan, Fenol, Flavonoid, Kopi, Spektrofotometri

ABSTRACT

Coffee is one of the commodity drinks that continues to experience development, both in terms of production and processing, one of which is 3rd wave coffee, which closely observes the taste profile and unique characteristics of single origin beans, roast level, and precise brewing methods. Comparative evaluation of the total phenol content, total flavonoids, and antioxidant activity, in Gayo Aceh arabica coffee and Bajawa Flores arabica coffee brewed using the V60 method and cold brew has been carried out. Samples of both types of Arabica coffee were selected based on light, medium and dark roast levels. Total phenolic content in coffee was analyzed using the Folin-Ciocalteu test; Total flavonoids were measured spectrophotometrically using colorimetric ion reactions with aluminum (III) chloride, and their antioxidant activity using the DPPH method. From previous studies, the total phenol content, antioxidant activity of Arabica coffee was observed to decrease as the roast level increased, while the total flavonoids increased. This also happened to coffee brewed with the V60 hot method which showed higher phenolic compounds, flavonoids, and antioxidant activity compared to cold brew coffee. Research shows that the combination of the V60 brewing method and the light roast level produces maximum phenol content and antioxidant activity in both types of coffee. The results showed that the highest total phenol expressed as gallic acid equivalent (GAE) per g of coffee was the highest with a value of 28.990 ± 0.077 mg GAE/g %FW in the Gayo Aceh arabica sample with light level and V60 brewing, as well as antioxidant activity with IC50 value. The highest of 40 ± 2.12 ppm %FW was found in the same sample. While the total flavonoid content expressed as routine equivalent (RE) was highest at the dark roast level, namely 3.503 ± 0.016 mg RE/g %FW for Bajawa Flores arabica. ANOVA statistical analysis showed that the differences in total phenols, flavonoids, and antioxidant activity between the various brewing methods and roasting levels of Arabica coffee from Gayo Aceh and Bajawa Flores were not significant.

Keywords: Antioxidants, Phenolics, Flavonoids, Coffee, Spectrophotometry