PENGARUH VARIASI WAKTU EKSTRAKSI TERHADAP AKTIVITAS PEREDAMAN RADIKAL BEBAS DPPH EKSTRAK BIJI KOPI ROBUSTA LAMPUNG BARAT

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INTISARI

Latar belakang: Kopi Robusta (*Coffea canephora*) telah dibudidayakan di Indonesia khususnya daerah Lampung Barat. Kopi Robusta mengandung metabolit sekunder yang berperan sebagai antioksidan yaitu asam klorogenat dan komponen fenolik lain. Cara ntuk mendapatkan metabolit sekunder tersebut dapat menggunakan teknik ekstraksi. Ekstraksi dengan metode *Ultrasound Assisted Extraction* (UAE) diketahui lebih efektif dari metode ekstraksi lain. Salah satu faktor yang mempengaruhi ekstraksi UAE adalah variasi waktu ekstraksi.
Tujuan penelitian: Mengetahui pengaruh variasi waktu ekstraksi terhadap aktivitas peredaman radikal bebas DPPH ekstrak biji kopi Robusta Lampung Barat.
Metode penelitian: Biji kopi robusta diekstraksi dengan metode UAE menggunakan pelarut etanol 70% (1:100). Variasi waktu ekstraksi yaitu 10, 20, dan 30 menit. Ekstrak biji kopi robusta dilakukan uji organoleptis, skrining fitokimia, dan peredaman radikal bebas DPPH.
Hasil penelitian: Hasil rendemen pada variasi waktu 10, 20 dan 30 menit ekstrak biji kopi robusta sebesar 24,04%; 35,71%; 20,15%. Hasil uji organoleptis ekstrak menghasilkan tekstur kental, warna coklat dan aroma yang khas. Hasil skrining fitokimia ekstrak mengandung alkaloid, fenolik, tanin, dan flavonoid. Nilai IC_{50} pada variasi waktu 10, 20 dan 30 dan kuersetin adalah 29,97 ± 2,737 ppm; 30,5 ± 1,745 ppm; 23,31 ± 4,638 ppm dan 1,42 ± 0,440 ppm secara berturut-turut yang berbeda signifikan.
Kesimpulan: Variasi waktu ekstraksi mempengaruhi aktivitas peredaman radikal bebas DPPH dengan waktu ekstraksi 30 menit menghasilkan aktivitas peredaman radikal bebas DPPH paling optimal.
Kata kunci: Biji kopi robusta, DPPH, Lampung Barat, UAE, Waktu ekstraksi.

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THE EFFECT OF EXTRACTION TIME VARIATION ON DPPH FREE RADICAL SCAVENGERING ACTIVITY FROM WEST LAMPUNG ROBUSTA COFFEE BEAN EXTRACT

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ABSTRACT

Background: Robusta Coffee (*Coffea canephora*) has been cultivated in Indonesia, especially in the West Lampung area. Robusta coffee contains secondary metabolites that act as antioxidants, namely chlorogenic acid and other phenolic components. The way to obtain these secondary metabolites can be using extraction techniques. Extraction by *the Ultrasound Assisted Extraction* (UAE) method is known to be more effective than other extraction methods. One of the factors affecting UAE extraction is the variation in extraction time.
Research objective: To determine the effect of variation in extraction time on the free radical reduction activity of DPPH from West Lampung Robusta coffee bean extract.
Research method: Robusta coffee beans were extracted by the UAE method using a 70% ethanol solvent (1:100). The variation in extraction time is 10, 20, and 30 minutes. Robusta coffee bean extract was subjected to organoleptic tests, phytochemical screening, and DPPH free radical scavenging.
Research results: The yield results at 10, 20 and 30 minutes of robusta coffee bean extract were 24.04%; 35.71%; 20.15%. The results of the organoleptis test of the extract produce a thick texture, brown color and distinctive aroma. The results of the phytochemical screening of the extract contain alkaloids, phenolics, tannins, and flavonoids. The IC_{50} values at the time variations of 10, 20 and 30 and quercetin were 29.97 ± 2.737 ppm; 30.5 ± 1.745 ppm; 23.31 ± 4.638 ppm and 1.42 ± 0.440 ppm respectively, which were significantly different.
Conclusion: The variation in extraction time affects the free radical reduction activity of DPPH with an extraction time of 30 minutes resulting in the most optimal free radical reduction activity of DPPH.
Keywords: Robusta coffee beans, DPPH, West Lampung, UAE, Extraction time.

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