ABSTRAK

TIARA DESY ANGGRAHINI, 2024, PERBANDINGAN AKTIVITAS ANTIOKSIDAN DALAM MINUMAN INSTAN JAHE MERAH MEREK A, B, DAN C MENGGUNAKAN METODE DPPH (*2,2-Diphenyl-1-picrylhydrazyl*), KARYA TULIS ILMIAH, PROGRAM STUDI D-III FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI. Dibimbing oleh apt. Fransiska Leviana, S. Farm. M. Sc.

Jahe merah (*Zingiber officinale* var. rubrum) dikenal memiliki aktivitas antioksidan yang tinggi dan sering dikonsumsi dalam bentuk minuman instan. Penelitian ini bertujuan untuk membandingkan aktivitas antioksidan minuman instan jahe merah dari tiga merek berbeda (A, B, dan C) yang tersedia di pasaran menggunakan metode DPPH (2,2-*diphenyl-1-picrylhydrazyl*).

Penelitian ini menggunakan sampel minuman instan jahe merah dari tiga merek yang berbeda, beserta pengukuran aktivitas antioksidannya. Larutan sampel dibuat dengan dilarutkan dalam metanol, disonikasi, dan disaring. Kemudian diuji aktivitas antioksidan dengan metode DPPH. % inhibisi dihitung berdasarkan absorbansi kontrol dan sampel. Kemudian dibuat regresi linear dari nilai % penghambatan terhadap konsentrasi larutan uji, dan dihitung nilai $IC_{50.}$ Nilai IC_{50} dilakukan uji ANOVA satu arah dan uji *post-hoc* Tukey HSD mengkonfirmasi adanya perbedaan signifikan aktivitas antioksidan.

Hasil penelitian terhadap ketiga sampel produk minuman instan jahe merah yang beredar di pasaran menunjukkan adanya aktivitas antioksidan. Ketiga sampel tersebut menunjukkan perbedaan signifikan pada nilai IC50, yaitu merek A, B, dan C dengan nilai berturut-turut 540,60 ppm; 684,78 ppm; dan 669,49 ppm. Dari hasil pengujian aktivitas antioksidan tersebut, dapat disimpulkan bahwa ketiga sampel termasuk dalam kategori sangat lemah.

Kata kunci: Jahe merah, aktivitas antioksidan, minuman instan, DPPH,

ABSTRACT

TIARA DESY ANGGRAHINI, 2024, COMPARISON OF ANTIOXIDANT ACTIVITY IN INSTANT DRINK OF RED JAHE BRANDS A, B, AND C USING DPPH (*2,2-Diphenyl-1-picrylhydrazyl*) METHOD, SCIENTIFIC PAPERS, THREE YEAR DIPLOMA IN PHARMACY, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Supervised by apt. Fransiska Leviana, S. Farm. M. Sc.

Red ginger (*Zingiber officanale* var. rubrum) is known to have high antioxidant activity and is often consumed in the form of instant drink. This study aims to compare the antioxidant activity of red ginger instant drink from three different brands (A, B, and C) available in the market using the DPPH (2,2-diphenyl-1-picrylhydrazyl) method.

This study uses samples of instant red ginger drinks from three different brands, along with measurements of their antioxidant activity. The sample solution was prepared by dissolving in methanol, sonicating, and filtering. Then the antioxidant activity was tested using the DPPH method. % inhibition was calculated based on the absorbance of the control and sample. Then a linear regression was made from the % inhibition value to the concentration of the test solution, and the IC_{50} value was calculated. The IC_{50} value was subjected to a one-way ANOVA test and the Tukey HSD post-hoc test confirmed the existence of significant differences in antioxidant activity.

The results of the study on the three samples of instant red ginger drink products available in the market indicate the presence of antioxidant activity. The three samples showed significant differences in IC50 values, namely brands A, B, and C with values of 540.60 ppm, 684.78 ppm, and 669.49 ppm, respectively. From the results of the antioxidant activity tests, it can be concluded that all three samples fall into the very weak category.

Key words: Red ginger, antioxidant activity, instant drink, DPPH