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PENGARUH METODE SOKLETASI DAN MASERASI TERHADAP AKTIVITAS ANTIOKSIDAN EKSTRAK ETANOL 70% BEKATUL PADI (*Oryza sativa* L.)

ABSTRAK

Latar Belakang : Bekatul merupakan produk dari padi yang mengandung metabolit sekunder seperti alkaloid, flavonoid, saponin, tanin, dan steroid yang berperan sebagai antioksidan alami. Kandungan antioksidan dalam bekatul padi berpotensi sebagai bahan dalam pembuatan produk kosmetik. Tujuan penelitian ini yaitu menganalisis pengaruh metode sokletasi dan maserasi terhadap kandungan metabolit sekunder bekatul padi secara kualitatif dan kuantitatif serta aktivitas antioksidan ekstrak bekatul padi (*Oryza sativa* L.).
Metode : Jenis penelitian ini adalah penelitian eksperimental. Bekatul padi diberikan perlakukan ekstraksi berbeda yaitu sokletasi dan maserasi. Skrining fitokimia ekstrak dilakukan secara kualitatif dengan pengujian alkaloid, flavonoid, tanin, saponin, steroid/triterpenoid berdasarkan reaksi warna dan kuantitatif dengan pengujian flavonoid total. Aktivitas antioksidan diuji menggunakan Spektrofotometer UV-Vis dengan metode ABTS dan nilai IC_{50} sebagai parameter untuk di analisis SPSS Uji Parametrik *One Way ANOVA.*
Hasil : Ekstrak bekatul padi metode maserasi dan sokletasi positif mengandung alkaloid, flavonoid, dan steroid. Nilai rata-rata flavonoid total metode sokletasi lebih besar yaitu 2,879 ± 0,003 mgQE/g dibandingkan ekstrak maserasi sebesar 2,737 ± 0,006 mgQE/g. Uji aktivitas antioksidan metode maserasi memiliki nilai IC_{50} sebesar 423,611 ± 1,163 ppm sedangkan metode sokletasi sebesar 434,776 ± 3,777 ppm yang termasuk kategori antioksidan sangat lemah. Dari hasil analisis SPSS terdapat perbedaan yang signifikan antara kedua metode ekstraksi tersebut.
Kesimpulan : Ekstrak bekatul padi metode maserasi maupun sokletasi mengandung alkaloid, flavonoid dan steroid. Metode maserasi dan sokletasi memiliki perbedaan yang signifikan berdasarkan nilai IC_{50}. Aktivitas antioksidan ekstrak bekatul padi metode maserasi maupun sokletasi memiliki kategori sangat lemah.

Kata Kunci : Bekatul padi, sokletasi, maserasi, ABTS

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THE EFFECT OF SOXHLET AND MACERATION METHODS ON THE ANTIOXIDANT ACTIVITY OF 70% ETHANOL EXTRACT OF RICE BRAN (*Oryza sativa* L.)

ABSTRACT

Background : Rice bran is a by-product of bran that contains various secondary metabolites, including alkaloids, flavonoids, saponins, tannins, and steroids, which function as natural antioxidants. Due to its antioxidant properties, rice bran has potential as a raw material in cosmetic product formulation. This study aims to investigate the effect of hot and cold extraction methods on the qualitative and quantitative content of secondary metabolites in rice bran, as well as to evaluate the antioxidant activity of the resulting extracts.
Methods : This type of research is experimental research. Rice bran was given different extraction treatments, namely maceration and soxhletation. Phytochemical screening of the extract was carried out qualitatively by testing alkaloids, flavonoids, tannins, saponins, steroids/triterpenoids based on color reactions and quantitatively by testing total flavonoids. Antioxidant activity was tested using a UV-Vis Spectrophotometer with the ABTS method and the IC_{50} value as a parameter to be analyzed by SPSS Parametric One Way Anova Test.
Result : Rice bran extract using the maceration and soxhletation methods positively contained alkaloids, flavonoids, and steroid. The average total flavonoid content of the soxhlet extract was higher, at 2,879 ± 0,003 mgQE/g, compared to the maceration extract, which was 2,737 ± 0,006 mgQE/g.. The antioxidant activity test of the maceration method had an IC_{50}value of 423,611 ± 1,163 ppm while the soxhletation method was 434,776 ± 3,777 ppm. Based on SPSS analysis, there was a statistically significant difference between the two extraction methods.
Conclusion : Rice bran extracts obtained through both maceration and Soxhlet extraction methods contain alkaloids, flavonoids, and steroids. A significant difference in antioxidant activity was observed between the two methods based on IC_{50} values. The antioxidant activity of rice bran extracts from both maceration and soxhlet methods falls into the very weak category.

Keywords : Rice bran, soxhlet, maceration, ABTS