

“OPTIMASI EKSTRAKSI RENDEMEN DAN *INHIBITOR CONCENTRATION* (IC₅₀) DAUN MENGGUDU (*Morinda Citrifolia* L.) DENGAN VARIASI LAMA, SUHU, DAN PERBANDINGAN JUMLAH PELARUT”



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PADANG
2019**

Optimasi Ekstrak Rendemen dan *Inhibitor Concentration* (IC_{50}) Daun Mengkudu (*Morinda citrifolia*, L.) dengan Variasi Lama, Suhu dan Perbandingan Jumlah Pelarut

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui kondisi optimum variabel lama, suhu dan perbandingan jumlah pelarut ekstraksi rendemen dan aktivitas antioksidan (IC_{50}) mengkudu terhadap kualitas ekstrak yang diperoleh. Penelitian ini menggunakan metode Response Surface Methodology (RSM). Variabel faktor yang dianalisis yaitu lama ekstraksi 3,81; 10; 20; 30; 36,82 menit, suhu ekstraksi 28,18; 35; 45; 55; 61,82°C dan perbandingan jumlah pelarut 31,82; 100; 200; 300; 368,18 ml. Parameter respon yang diamati adalah rendemen dan aktivitas antioksidan. Perbedaan kombinasi dari lama, suhu dan perbandingan jumlah pelarut dalam ekstraksi rendemen dan aktivitas antioksidan (IC_{50}) daun mengkudu memberikan pengaruh nyata terhadap rendemen dan IC_{50} . Solusi optimum yang direkomendasikan untuk kedua respon adalah dengan kombinasi lama ekstraksi 28,13 menit, suhu 47,09°C dan perbandingan jumlah pelarut 300%. Nilai respon terhadap rendemen 53,83% dan IC_{50} 64,87 ppm dengan nilai desirability 0,944

Kata kunci: antioksidan, lama ekstraksi, perbandingan jumlah pelarut, RSM, suhu ekstraksi



Optimization Extract Yield and *Inhibitor Concentration* (IC₅₀) of Noni Leaves (*Morinda citrifolia*, L.) with Variations of Extraction Time, Temperature and Ratio of The Amount of Solvent

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ABSTRACT

This research was aimed to determine the optimum condition variable of extraction time, temperature and ratio of the amount of solvent extraction yield extract and activity antioxidant of noni leaves with obtained of quality extract. This study used Response Surface Methodology (RSM). Variable factors analysis were extraction time 3,81; 10; 20; 30; 36,82 minute, temperature 28,18; 35; 45; 55; 61,82⁰C and the ratio of the amount of solvent 31,82; 100; 200; 300; 368,18 ml. The observation of response parameters extract was yield analysis and antioxidant activity. The difference between the combination of time extraction, temperature and ratio of the amount of solvent on extraction yield extract and activity antioxidant (IC₅₀) of noni leaves gave significantly affect to yield analysis and IC₅₀. The recommended the optimal solution for the response were 28,13 minute for the extraction time, 47,09⁰C for the temperature and 300% for the ratio of the amount of solvent. The response values to the yield analysis 53,83% and IC₅₀ 64,87 ppm with the value of desirability in the amount of 0,944.

Keywords: antioxidant, extraction time, ratio of amount of solvent, RSM, temperature

