

**PENGARUH KONDISI EKSTRAKSI MENGGUNAKAN
PELARUT KOLIN KLORIDA – SUKROSA TERHADAP
KADAR TOTAL FLAVONOID DAN DAYA ANTIOKSIDAN
EKSTRAK DAUN SIRIH MERAH (*Piper crocatum* Ruiz & Pav)**

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ABSTRAK

Latar belakang: Daun sirih merah memiliki senyawa metabolit sekunder dengan kemampuan antioksidan seperti flavonoid. Kondisi ekstraksi berupa suhu dan waktu ekstraksi mempengaruhi ekstraksi daun sirih merah, terutama dengan metode ultrasonik. Penelitian ini dilakukan menggunakan pelarut ramah lingkungan berupa NADES terhadap rendemen, kadar flavonoid, dan daya antioksidan

Tujuan: Mengetahui pengaruh kondisi ekstraksi berupa suhu dan waktu yang optimal dalam proses ekstraksi daun sirih merah berbantu ultrasonik menggunakan pelarut NADES kolin klorida – sukrosa terhadap rendemen, kadar flavonoid, dan daya antioksidan.

Metode: Penelitian ini merupakan penelitian eksperimental dengan dua variabel bebas berupa suhu dan waktu pada prosedur ekstraksi. Ekstraksi menggunakan bantuan ultrasonik dengan pelarut NADES kolin klorida – sukrosa. Analisis data menggunakan design expert untuk menentukan suhu dan waktu yang optimal.

Hasil: Hasil penelitian diperoleh rendemen tertinggi pada run 1, dan terendah pada run 7. Kadar flavonoid tertinggi pada run 9, dan terendah pada run 3. Daya inhibisi yang diperoleh paling besar pada run 9 (63,50%) dan terendah pada run 3 (35,67%).

Kesimpulan: Optimasi ekstraksi daun sirih merah menggunakan pelarut NADES Kolin Klorida-Sukrosa diperoleh suhu optimal yaitu 30°C dan waktu yang optimal yaitu 10 menit.

Kata kunci: Daun sirih merah (*Piper crocatum* Ruiz & Pav), Antioksidan, NADES, Total flavonoid.

THE EFFECT OF EXTRACTION CONDITIONS USING SOLVENTS CHOLINE CHLORIDE – SUCROSE ON TOTAL FLAVONOID LEVELS AND ANTIOXIDANT POWER OF RED BETEL LEAF EXTRACT (*Piper crocatum* Ruiz & Pav)

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ABSTRACT

Background: Red betel leaves have secondary metabolite compounds with antioxidant properties such as flavonoids. Extraction conditions such as temperature and extraction time affect the extraction of red betel leaves, especially with the ultrasonic method. This study was conducted using environmentally friendly solvents in the form of NADES on yield, flavonoid content, and antioxidant power.

Objectives: To determine the effect of extraction conditions in the form of optimal temperature and time in the ultrasonic-assisted red betel leaf extraction process using NADES choline chloride - sucrose solvent on yield, flavonoid content, and antioxidant power.

Methods: This study is an experimental study with two independent variables, namely temperature and time in the extraction procedure. Extraction using ultrasonic assistance with NADES choline chloride - sucrose solvent. Data analysis using expert design to determine the optimal temperature and time.

Results: The results of the study showed that the highest yield was obtained in run 1, and the lowest in run 7. The highest flavonoid content was in run 9, and the lowest in run 3. The highest inhibition power obtained was in run 9 (63.50%) and the lowest in run 3 (35.67%).

Conclusion: Optimization of red betel leaf extraction using NADES Choline Chloride-Sucrose solvent obtained the optimum temperature of 30°C and the optimal time is 10 minutes.

Keywords: Red betel leaf (*Piper crocatum* Ruiz & Pav), Antioxidants, NADES, Total flavonoids.