

**PENGARUH PERBEDAAN WAKTU EKSTRAKSI MENGGUNAKAN
MAE (*MICROWAVE ASSISTED EXTRACTION*) TERHADAP
KARAKTERISTIK *OLEORESIN* KAYU MANIS YANG DIHASILKAN**

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh perbedaan waktu ekstraksi menggunakan metode *Microwave Assisted Extraction* (MAE) terhadap karakteristik oleoresin kulit kayu manis (*Cinnamomum burmannii*), mengetahui analisis *break event point* (BEP), serta aplikasinya pada produk sirup. Rancangan penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan lima taraf waktu ekstraksi (4, 8, 12, 16, dan 20 menit) dan tiga ulangan. Parameter yang dianalisis meliputi rendemen, kadar resin, kadar sisa pelarut, indeks bias, berat jenis, kadar *cinnamaldehyde*, kandungan minyak atsiri, analisis ekonomi (*Break Even Point*), dan uji organoleptik pada sirup. Hasil penelitian menunjukkan bahwa perbedaan waktu ekstraksi berpengaruh nyata ($p < 0,05$) terhadap seluruh parameter yang diuji. Waktu ekstraksi 20 menit menghasilkan rendemen tertinggi (26,50%), kadar resin terendah (57,65%), kadar sisa pelarut terendah (0,12%), indeks bias 1,55, berat jenis 1,06 g/ml, kadar *cinnamaldehyde* sebesar 22,54%, dan profil minyak atsiri sebesar . Aplikasi oleoresin pada sirup menunjukkan tingkat penerimaan panelis masuk dalam kategori suka. BEP berdasarkan unit oleoresin adalah 532,8 prosuk, sedangkan berdasarkan rupiah adalah Rp 41.450.000. Dengan demikian, perlakuan ekstraksi 20 menit menggunakan MAE direkomendasikan sebagai kondisi optimal untuk menghasilkan oleoresin kayu manis dengan mutu terbaik serta potensi aplikatif pada industri pangan.

Kata kunci: oleoresin, MAE, waktu ekstraksi, karakteristik, sirup.

"EFFECT OF DIFFERENT EXTRACTION TIMES USING MICROWAVE ASSISTED EXTRACTION (MAE) ON THE CHARACTERISTICS OF CINNAMOMUM BURMANNII OLEORESIN PRODUCED"

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ABSTRACT

This study aimed to determine the effect of different extraction times using the Microwave Assisted Extraction (MAE) method on the characteristics of cinnamon bark (Cinnamomum burmannii) oleoresin, to conduct a Break Even Point (BEP) analysis, and to evaluate its application in syrup products. A Completely Randomized Design (CRD) was applied with five extraction time levels (4, 8, 12, 16, and 20 minutes) and three replications. The analyzed parameters included yield, resin content, residual solvent content, refractive index, specific gravity, cinnamaldehyde content, essential oil content, economic analysis (BEP), and sensory evaluation of syrup. The results showed that extraction time had a significant effect ($p < 0.05$) on all tested parameters. The 20-minute extraction produced the highest yield (26.50%), the lowest resin content (57.65%), the lowest residual solvent content (0.12%), a refractive index of 1.55, a specific gravity of 1.06 g/mL, a cinnamaldehyde content of 22.54%, and an essential oil content of [insert data]. The application of oleoresin in syrup showed a panelist acceptance level categorized as "like." The BEP based on oleoresin units was 532.8 products, while in monetary terms it was IDR 41,450,000. Therefore, a 20-minute extraction using MAE is recommended as the optimal condition to produce high-quality cinnamon oleoresin with promising potential for application in the food industry.

Keywords: oleoresin, MAE, extraction time, characteristics, syrup.