

**PENGARUH LAMA PENYIMPANAN BAHAN DAN METODE  
EKSTRAKSI TERHADAP KUALITAS DAN SIFAT ANTIOKSIDAN  
MINYAK BUNGA CENGKEH (*Syzygium aromaticum*)**

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**INTISARI**

Indonesia merupakan penghasil cengkeh terbesar didunia namun di sisi lain sering mengalami fluktuasi sehingga perlu dibuat produk turunan seperti minyak atsiri untuk menjaga kestabilan harga. Masyarakat Desa Cacaban Lor, Kecamatan Bener, Kabupaten Purworejo memiliki kebiasaan menyimpan hasil panen cengkeh di suhu ruangan selama bertahun-tahun. Mereka percaya bahwa cengkeh disimpan semakin lama akan memiliki aroma yang lebih kuat. Penelitian dilakukan untuk mengetahui pengaruh lama penyimpanan bahan dan metode ekstraksi terhadap kualitas minyak atsiri cengkeh.

Penelitian menggunakan sampel bunga cengkeh kering dari Desa Cacaban Lor yang disimpan selama 0, 4, dan 8 tahun, kemudian diekstraksi dengan metode destilasi rebus dan destilasi kukus. Sampel dilakukan uji rendemen, sifat fisiko-kimia, analisis komponen kimia menggunakan GC-MS, dan sifat antioksidan metode DPPH. Hasil penelitian sifat fisiko kimia dibandingkan dengan SNI 4267-2021 minyak bunga cengkeh.

Dari hasil penelitian didapatkan rendemen minyak bunga cengkeh berkisar antara 7,70% - 8,56 %. Hasil analisis GC-MS menunjukkan bahwa komponen kimia utama minyak bunga cengkeh eugenol berkisar antara 84,14 % - 91,04 %. Dari hasil uji sifat fisiko kimia minyak bunga cengkeh memiliki warna kuning dan berbau khas cengkeh, memiliki rata-rata bobot jenis berkisar antara 1,037-1,089, memiliki rata-rata nilai indeks bias berkisar antara 1,524-1,530 dan semua sampel larut dalam ethanol 70% dengan perbandingan 1:2. Dari hasil uji sifat antioksidan metode DPPH didapatkan hasil persentase absorbansi berkisar antara 85,43% - 88,62%. Hasil tersebut menunjukkan bahwa lama penyimpanan dan metode ekstraksi tidak berpengaruh signifikan terhadap rendemen, sifat fisiko-kimia, dan sifat antioksidan namun berpengaruh pada kandungan eugenol. Persentase eugenol tertinggi, yaitu 91,04%, terdapat pada bunga cengkeh yang disimpan selama 0 tahun dan diekstraksi dengan metode destilasi kukus. Minyak bunga cengkeh yang paling baik berdasarkan SNI 4267-2021 yaitu dari bunga cengkeh yang disimpan selama 8 tahun dengan metode destilasi kukus.

**Kata Kunci:** Minyak atsiri, bunga cengkeh, lama penyimpanan, metode ekstraksi, kualitas

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EFFECT OF MATERIALS LONG STORAGE AND EXTRACTION  
METHODS ON QUALITY AND ANTIOXIDANT OF CLOVE (*Syzygium  
aromaticum*) BUDS OIL

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**ABSTRACT**

*Indonesia is the largest producer of cloves globally; however, it frequently experiences production fluctuations, which necessitate the development of derivative products such as essential oils to stabilize prices. The residents of Cacaban Lor Village, Bener Subdistrict, Purworejo Regency, traditionally store their harvested cloves at room temperature for several years, believing that extended storage enhances the aroma. This study aims to examine the effect of storage duration and extraction method on the quality of clove essential oil.*

*The study used samples of dried clove buds from Cacaban Lor Village, which had been stored for 0, 4, and 8 years, and extracted using hydro distillation and steam-hydro distillation methods. The samples were tested for yield, physicochemical properties, chemical component analysis using GC-MS, and antioxidant properties using the DPPH method. The physicochemical properties were compared with SNI 4267-2021 for clove bud oil.*

*The results indicated that the yield of clove bud oil ranged from 7.70% to 8.56%. GC-MS analysis demonstrated that the primary chemical component of clove bud oil, eugenol, ranged from 84.27% to 91.04%. Physicochemical testing revealed that the clove bud oil exhibited a yellow color and a characteristic clove aroma, with an average specific gravity between 1.037 and 1.089, an average refractive index between 1.524 and 1.530, and all samples dissolved in 70% ethanol at a 1:2 ratio. The antioxidant properties, evaluated using the DPPH method, revealed absorbance percentages ranging from 85.43% to 88.62%. These results indicate that storage duration and extraction method did not significantly affect the yield, physicochemical properties, or antioxidant properties but did influence the eugenol content. The highest eugenol percentage, 91.04%, was found in clove buds stored for 0 years and extracted using the steam-hydro distillation method. The best clove bud oil, according to SNI 4267-2021, came from clove buds stored for 8 years and extracted using the steam-hydro distillation method.*

*Keywords: essential oil, clove buds, storage duration, extraction method, quality*

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