

ABSTRAK

PENGARUH METODE PENGERINGAN TERHADAP KADAR RENDEMEN DAN KOMPOSISI KIMIA MINYAK ATSIRI DAUN CENGKEH (*Syzygium aromaticum* L.)

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Latar belakang: Indonesia memiliki keanekaragaman hayati yang tinggi, termasuk tanaman penghasil minyak atsiri seperti cengkeh (*Syzygium aromaticum* L.). Selain bunga dan tangkai, daun cengkeh juga mengandung minyak atsiri, terutama eugenol dan β -kariofilen, sehingga berpotensi dimanfaatkan sebagai bahan baku alternatif yang lebih ekonomis. Namun, kualitas minyak atsiri sangat dipengaruhi oleh proses pengolahan, khususnya metode pengeringan. Pemilihan metode pengeringan yang tepat penting untuk menjaga rendemen dan komposisi kimia minyak cengkeh.

Tujuan: Mengetahui pengaruh metode pengeringan terhadap kadar rendemen dan komposisi kimia minyak atsiri daun cengkeh.

Metode: Daun cengkeh dikeringkan dengan matahari (tertutup kain hitam), AC (25°C), dan dehidrator (50°C). Minyak diperoleh melalui destilasi uap-air dan dianalisis menggunakan KLT dan GC-MS. Data dianalisis dengan *One Way* ANOVA.

Hasil: Seluruh simplisia mengandung alkaloid, tanin, saponin, terpenoid, dan flavonoid. Pengeringan matahari menghasilkan rendemen tertinggi (3,69% \pm 0,04) dan 49 senyawa pada GC-MS. Terdapat perbedaan signifikan antar metode pengeringan ($p = 0,000$).

Kesimpulan: Metode pengeringan tidak memengaruhi profil fitokimia simplisia, tetapi berpengaruh terhadap rendemen dan komposisi kimia minyak atsiri.

Kata kunci: Minyak atsiri, daun cengkeh, pengeringan, dehidrator, rendemen, KLT

ABSTRACT

EFFECT OF DRYING METHODS ON YIELD AND CHEMICAL COMPOSITION OF CLOVE LEAF ESSENTIAL OIL (*Syzygium aromaticum* L.)

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Background: Indonesia is rich in biodiversity, including various essential oil-producing plants such as clove (*Syzygium aromaticum* L.). In addition to the flower buds and stems, clove leaves also contain essential oils, primarily eugenol and β -caryophyllene, making them a potential and more economical alternative raw material. However, the quality of essential oils is greatly influenced by processing methods, particularly the drying technique. Selecting an appropriate drying method is crucial to preserve both the yield and chemical composition of clove leaf oil. Therefore, this study was conducted to evaluate the effect of different drying methods on the yield and chemical composition of clove leaf essential oil.

Objective: To determine the effect of drying methods on the yield and chemical composition of clove leaf essential oil.

Methods: Clove leaves were dried using three methods: sunlight (covered with black cloth), air conditioner (25°C), and dehydrator (50°C). The essential oil was extracted using steam distillation and analyzed using Thin Layer Chromatography (TLC) and Gas Chromatography–Mass Spectrometry (GC-MS). Data were analyzed using One-Way ANOVA.

Results: All samples contained alkaloids, tannins, saponins, terpenoids, and flavonoids. Sun drying produced the highest yield (3.69% \pm 0.04) and identified 49 compounds in GC-MS analysis. There were significant differences among the drying methods ($p = 0.000$).

Conclusion: Drying methods did not affect the phytochemical profile of the crude drug but did influence the yield and chemical composition of the essential oil.

Keywords: Essential oil, clove leaves, drying, dehydrator, yield, TLC