PENGARUH LAMA PENYIMPANAN DAUN DAN KEPADATAN ISI KETEL TERHADAP KUALITAS MINYAK KAYU PUTIH

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INTISARI

Minyak atsiri merupakan salah satu dari produk hasil hutan bukan kayu yang didapat dari proses ekstraksi berbagai bagian tumbuhan, seperti minyak kayu putih. Minyak kayu putih menjadi menjadi salah satu minyak atsiri unggulan Indonesia. Banyak faktor yang diketahui dapat mempengaruhi kualitas minyak kayu putih, seperti lama penyimpanan daun dan Kepadatan isi ketel. Penelitian ini bertujuan untuk mengetahui bagaimana lama penyimpanan daun dan Kepadatan isi ketel mempengaruhi rendemen, sifat fisiko-kimia, dan komponen kimia dari minyak kayu putih.

Penelitian ini menggunakan faktor lama penyimpanan daun kayu putih (1 hari, 3 hari, 5 hari) dan Kepadatan isi ketel (60%, 70%, 80%) dengan tiga ulangan melalui metode kukus untuk mengkaji pengaruhnya terhadap kualitas minyak kayu putih. Parameter yang diamati meliputi rendemen dan sifat fisikokimia sesuai SNI 3954:2024 (bau, warna, bobot jenis, indeks bias, putaran optik, dan kelarutan dalam etanol 80%), serta komponen kimia yang dianalisis menggunakan GC-MS (*Gas Chromatography-Mass Spectrometry*).

Hasil penelitian menunjukkan bahwa lama penyimpanan daun dan Kepadatan isi ketel berpengaruh nyata terhadap rendemen minyak kayu putih, dengan nilai tertinggi sebesar 0,90% pada lama penyimpanan daun 5 hari dan Kepadatan isi ketel 80%, meskipun interaksi keduanya tidak berpengaruh nyata. Kedua faktor tersebut juga memengaruhi kadar Sineol, dengan nilai tertinggi 58,85% pada lama penyimpanan daun 1 hari dan kepadatan 60% serta terendah 41,64% pada lama penyimpanan daun 5 hari dan Kepadatan isi ketel 80%. Seluruh parameter fisiko-kimia yang diuji memenuhi SNI 3954:2024, dengan bobot jenis dan indeks bias tidak berbeda nyata antar perlakuan, sedangkan putaran optik dipengaruhi oleh Kepadatan isi ketel. Minyak kayu putih yang dihasilkan larut dalam etanol 80% (1:1), berbau khas kayu putih, dan berwarna kehijauan.

Kata Kunci: minyak kayu putih, penyimpanan daun, Kepadatan isi ketel, kualitas, sifat fisiko-kimia, komponen kimia

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EFFECTS OF LEAF STORAGE TIME AND DISTILLATION TANK DENSITY ON CAJUPUT OIL QUALITY

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ABSTRACT

Essential oils are one of the non-timber forest products obtained from the extraction process of various parts of plants. Cajuput oil has become one of Indonesia's leading essential oils. Many factors are known to affect the quality of cajuput oil, such as the length of time the leaves are stored and the density of the tank. This study aims to determine how the duration of leaf storage and distillation tank density affect the yield, physicochemical properties, and chemical components of cajuput oil.

This study uses the factors of leaf storage duration and distillation tank density with three replicates through the steaming method to examine their effect on the quality of cajuputi oil. The parameters observed included yield, physicochemical properties according to SNI 3954:2024 (odour, color, specific gravity, refractive index, optical rotation, and solubility in 80% ethanol), and chemical components analyzed using GC-MS (Gas Chromatography-Mass Spectrometry).

The results showed that the duration of leaf storage and distillation tank density had a significant effect on the yield of cajuput oil, with the highest value of 0.90% at a leaf storage duration of 5 days and a distillation tank density of 80%, although the interaction between the two had no significant effect. Both factors also affected the cineole content, with the highest value of 58.85% at a leaf storage period of 1 day and a density of 60% and the lowest of 41.64% at a leaf storage period of 5 days and a distillation tank density of 80%. All physicochemical parameters tested met SNI 3954:2024 standards, with specific gravity and refractive index showing no significant differences between treatments, while optical rotation was influenced by kettle density. The resulting cajuput oil was soluble in 80% ethanol (1:1), had a characteristic cajuputi odour, and was greenish in color.

Keywords: Cajuput oil, storage time, distillation density, quality, yield, physicochemical, chemical component

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