

**PENGARUH BESI TERHADAP KUALITAS MINYAK NILAM
MENGUNAKAN DESTILASI WATER BUBBLE**

INTISARI

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Telah dilakukan penelitian pengaruh besi terhadap kualitas minyak nilam menggunakan destilasi *water bubble*. Tujuan penelitian ini adalah mengetahui pengaruh kadar ion besi terhadap rendemen, kadar patchouli alkohol, dan mutu dari minyak nilam menggunakan destilasi *water bubble*. Tanaman nilam yang digunakan berasal dari Dusun Kembangan, Kecamatan Ngaglik, Sleman, Yogyakarta. Daun dan batang nilam yang digunakan sebanyak 800 gram dengan perbandingan daun : batang = 3 : 1. Daun dan batang nilam difermentasi selama 10 jam sebelum didestilasi menggunakan destilasi *water bubble* dengan penambahan besi pada air destilasi dengan variasi 0 ppm, 10 ppm, 20 ppm. Minyak nilam yang dihasilkan dikarakterisasi dan dibandingkan dengan SNI 06-2385-2006 minyak nilam. Hasil penelitian menunjukkan bahwa sifat fisik dan kimia minyak nilam hasil destilasi dengan teknik *water bubble* memenuhi syarat SNI kecuali indeks bias. Kadar patchouli alkohol diketahui dari luas puncak kromatogram minyak nilam. Persen kenaikan kadar patchouli alkohol dibandingkan dengan yang tanpa besi, sebesar 84,13% untuk 10 ppm Fe dan 144,41% untuk 20 ppm Fe. Komponen utama yang didapatkan dalam minyak nilam ini adalah δ -*guaiene*, α -*guaiene*, *seychellene*, *Trans-Caryophyllene*, dan β -*Patchoulene*. Penambahan besi hingga konsentrasi 20 ppm dalam air destilasi dapat menaikkan kadar patchouli alkohol secara signifikan.

Kata kunci : Ion besi, *water bubble*, patchouli alkohol, δ -*guaiene*, α -*guaiene*, *seychellene*, *Trans-Caryophyllene*, β -*Patchoulene*

THE INFLUENCE OF IRON FOR THE QUALITY OF PATCHOULI OIL FROM WATER BUBBLE DISTILLATION

ABSTRACT

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The influence of iron for the quality of patchouli oil from water bubble distillation has been investigated. The purpose of this study was to know an influence of iron ion concentration toward yields, patchouli alcohol concentration, and patchouli oil quality using water bubble distillation. The raw materials were Patchouli plants from Kembangan village, Ngaglik district, Sleman, Yogyakarta. An 800 gram of leaf and stem by ratio 3 : 1 was fermented for 10 hours before distillation with water bubble distillation and iron ion solution was added to distillation water with variant concentration of iron ion are 0 ppm, 10 ppm and 20 ppm. The results of patchouli oil were characterized and compared with quality standard of patchouli oil SNI 06-2385-2006. Except refractive index of patchouli oil, all physics and chemichal character were qualified compare with SNI 06-2385-2006. Patchouli alcohol concentration has been known from chromatograms area of patchouli oil with 0 ppm, 10 ppm, and 20 ppm irons variation. The increasing percentage of patchouli alcohol concentration compared with ironless for 10 ppm and 20 ppm variation were 84,13% and 144,41% respectively. The mayor constituent obtained in patchouli oil were δ -guaiene, α -guaiene, seychellene, Trans-Caryophyllene, dan β -Patchoulene. Addition of iron till 20 ppm in concentration in distillation water could significantly increase patchouli alcohol concentration.

Keyword : Iron ion, water bubble, patchouli alcohol, δ -guaiene, α -guaiene, seychellene, Trans-Caryophyllene, β -Patchoulene