

Pengaruh Jenis Tanaman dan Lama Penyimpanan Bahan terhadap Rendemen, Kualitas dan Antioksidan Minyak Atsiri Fuli dan Minyak Lemak Biji Pala

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INTISARI

Pala memiliki banyak manfaat diantaranya sebagai bumbu, bahan baku industri minuman, obat-obatan dan kosmetik. Maluku merupakan salah satu daerah penghasil pala di Indonesia, namun pemanfaatannya belum optimal. Di Pulau Seram, Maluku pengolahan minyak atsiri fuli dan minyak lemak biji pala belum dilakukan. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh jenis tanaman dan lama penyimpanan bahan terhadap rendemen, komposisi kimia dan sifat fisiko-kimia minyak atsiri fuli dan minyak lemak biji pala serta mengetahui kandungan antioksidan minyak atsiri fuli dan minyak lemak biji pala.

Sampel penelitian berupa fuli dan biji pala yang di ambil dari Pulau Seram, Maluku pada bulan Oktober (bulan pertama) , November (bulan kedua) dan Desember (bulan ketiga) 2021. Sampel yang digunakan dengan lama penyimpanan satu bulan, dua bulan dan tiga bulan. Fuli diekstraksi dengan cara distilasi air dan biji pala menggunakan pengepresan mekanik. Distilasi dilakukan selama 7 jam dan pengepresan dilakukan selama 10 menit. Parameter yang diamati dalam penelitian ini berupa rendemen, kualitas minyak menggunakan alat GC-MS, sifat fisiko-kimia dan kandungan antioksidan dari dua jenis pala yaitu *Myristica fragans* Houtt dan *Myristica argantea* Warb untuk minyak atsiri fuli dan minyak lemak biji pala.

Hasil penelitian menunjukkan bahwa interaksi jenis tanaman dan lama penyimpanan bahan hanya berpengaruh terhadap rendemen dan indeks bias minyak atsiri fuli. Rendemen minyak atsiri fuli *Myristica fragans* Houtt lebih tinggi dibandingkan *Myristica argantea* Warb. Komponen utama *Myristica fragans* Houtt yaitu senyawa *Myristicin* dan *Myristica argantea* Warb yaitu *Safrole*. Interaksi jenis tanaman dan lama penyimpanan bahan hanya berpengaruh terhadap bilangan asam dan bilangan penyabunan minyak lemak biji pala. Rendemen minyak lemak biji pala *Myristica argantea* Warb lebih tinggi dibandingkan *Myristica fragans* Houtt. Komponen utama asam lemak kedua jenis pala sama yaitu *Myristic acid*. Minyak atsiri fuli dan minyak lemak biji pala jenis *Myristica fragans* Houtt dan *Myristica argantea* Warb memiliki kandungan antioksidan yang berbeda pada konsentrasi 0,01 mg/ml, 0,02 mg/ml dan 0,03 mg/ml.

Kata kunci: Biji, fuli, pala, kualitas, antioksidan

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Effect of Species and Material Storage Time on Yield, Quality and Antioxidants of Mace Essential Oil and Nutmeg Fixed Oil

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ABSTRACT

Nutmeg has many benefits including as a spice, raw materials for the beverage, pharmaceutical and cosmetic industries. Maluku is one of the nutmeg producing regions in Indonesia, but its utilization has not been optimal. On the Seram Island, Maluku, the processing of mace essential oil and nutmeg fixed oil has not been carried out. The aim of this study was to determine the effect of plant species and storage time on the yield, chemical composition and physico-chemical properties of mace essential oil and nutmeg essential oil and to determine the antioxidant content of mace essential oil and nutmeg fixed oil.

Sample research in the form of mace and nutmeg seeds were taken from Seram Island, Maluku in October (first month), November (second month) and December (third month) 2021. The samples used were stored for one month, two months and three months. Mace extracted by water distillation and nutmeg using mechanical pressing. Distillation was carried out for 7 hours and pressing was carried out for 10 minutes. The parameters observed in this study were yield, oil quality using the GC-MS tool, physico-chemical properties and antioxidant content of two types of nutmeg, namely *Myristica fragans* Houtt and *Myristica argantea* Warb for mace essential oil and nutmeg fixed oil.

The results showed that the interaction between plant species and storage time only had an effect on the yield and refractive index of mace essential oil. The yield of mace essential oil of *Myristica fragans* Houtt was higher than that of *Myristica argantea* Warb. The main components of *Myristica fragans* Houtt are *Myristicin* and *Myristica argantea* Warb compounds, namely *Safrole*. The interaction between plant species and storage time of the material only affects the acid value and saponification value of nutmeg fixed oil. The yield of nutmeg fixed oil from *Myristica argantea* Warb was higher than *Myristica fragans* Houtt. The main fatty acid component of the two types of nutmeg is the same, namely *myristic acid*. Mace essential oil and nutmeg fixed oil of *Myristica fragans* Houtt and *Myristica argantea* Warb have different antioxidant content at a concentration of 0.01 mg/ml, 0.02 mg/ml dan 0.03 mg/ml.

Keywords: Seed, mace, nutmeg, quality, antioxidants

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