

## PENGARUH KONDISI KESEGERAN DAUN DAN BAHAN PENGEKSTRAK TERHADAP KARAKTERISTIK DAN ANTIOKSIDAN EKSTRAK DAUN JATI

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### INTISARI

Daun jati telah dikembangkan sebagai salah satu pewarna alami jati (*Tectona grandis L.f.*). Pemanfaatan daun jati sebagai pewarna alami masih terbatas pada kondisi segar. Penelitian ini dilakukan untuk mengetahui pengaruh kondisi kesegaran dan bahan pengekstrak terhadap karakteristik ekstrak pewarna dan antioksidan yang dihasilkan.

Penelitian ini menggunakan model rancangan acak lengkap dengan dua faktor, yaitu kondisi daun dan bahan pelarut. Masing – masing faktor terdiri atas dua dan tiga aras dimana setiap aras terdiri atas tiga ulangan. Bahan yang digunakan dalam penelitian ini adalah daun jati dari Hutan Wanagama, Yogyakarta. Daun jati selanjutnya diekstrak dengan bahan pelarut air dingin, air panas, dan alkohol. Selanjutnya dilakukan pengujian karakteristik warna (identifikasi warna, intensitas warna, dan nilai keasaman atau pH), pengujian antosianin, pengujian flavonoid serta pengujian kadar antioksidan. Pengujian antioksidan menggunakan metode DPPH dan ditentukan nilai *Inhibitory Concentration* 50% ( $IC_{50}$ ) dari ekstrak daun jati yang dihasilkan.

Hasil penelitian ekstrak daun jati menunjukkan warna merah-kecoklatan, dengan intensitas warna antara 0,011 – 0,061 db, dan nilai keasaman atau pH antara 4,75 – 5,8. Rata-rata kandungan antosianin pada ekstrak daun jati antara 0,79 – 2,61 mg/100g. Kandungan antosianin pada ekstrak daun jati yang tertinggi pada kondisi segar dengan pelarut air panas yaitu 2,61 mg/100g. Rata-rata kadar flavonoid pada ekstrak daun jati berkisar antara 2,57 – 6,48 mg/100g. Kadar flavonoid yang paling tinggi terdapat pada ekstrak daun jati kondisi kering dengan pelarut alkohol yaitu 6,48 mg/100g. Rata-rata kadar antioksidan pada ekstrak daun jati berkisar antara 16,90 – 89,26% dengan  $IC_{50}$  berkisar pada 0,048 – 0,149 g/ml. Kadar antioksidan tertinggi terdapat pada ekstrak daun jati kondisi kering dengan pelarut alkohol pada konsentrasi 0,10 g/ml yaitu 89,26%. Nilai  $IC_{50}$  yang paling efektif terdapat pada ekstrak daun jati kering dengan pelarut alkohol dalam konsentrasi 0,048 g/ml.

**Kata kunci** : daun jati, karakteristik warna, antosianin, flavonoid, antioksidan

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## EFFECTS OF LEAVES CONDITIONS AND SOLVENTS ON CHARACTERISTIC AND ANTI-OXIDANT ACTIVITY OF TEAK LEAVES EXTRACT

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### ABSTRACT

Teak leaves have been developed as a natural dyes (*Tectona grandis L.f*). The utilization of teak leaves as natural dye is still limited to fresh condition. This study was conducted to analyze the leaves conditions and solvent extraction on characteristic and antioxidant of teak leaves extract.

A completely randomized design with two factors, namely leaves conditions and solvents extraction, were used whereas each factor consists of two and three levels. Each levels had three replications. Teak leaves were collected from Wanagama Forest, Yogyakarta. The leaves of Teak were extracted by cold water, hot water, and alcohol. This study were analyzed color extraction characteristic (color identification, color intensity, and acidity value/ pH) and antioxidant activity. Antioxidant activity were analyzed by DPPH method and Inhibitory Concentration 50% (IC<sub>50</sub>) of extract were calculated.

The results showed that teak leaves extract have red-brown color, with color intensity between 0.011 – 0.61 db, and the acidity value/ pH between 4.75 – 5.8. The anthocyanin value of teak leaves extract between 0.79 – 2.61 mg/100g. The highest anthocyanin were obtained from fresh teak leaves extract on hot water solvent with value of 2.61 mg/100g. The flavonoid value of teak leaves extract between 2.57 – 6.48 mg/100g, where highest flavonoid were obtained from dry teak leaves extract on alcohol solvent with value 6.48 mg/100g. The antioxidant activities of teak leaves extract between 16.90 – 89.26 % with IC<sub>50</sub> between 0.048 – 0.149 g/ml. The highest antioxidant percentage (89.26 %) were obtained from dry teak leaves extract on alcohol in 0.10 g/ml concentration. The most effective antioxidant activity was obtained from dry leaf extract by alcohol with IC<sub>50</sub> = 0.048 g/ml concentration.

**Keyword** : teak leaves, color character, anthocyanin, flavonoid, antioxidant

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