

**PENENTUAN KANDUNGAN FENOLIK TOTAL DAN FLAVONOID
TOTAL EKSTRAK ETANOL DAUN SUNGKAI (*Peronema canescens*
Jack) SERTA PENGELOMPOKANNYA SECARA KEMOMETRIK
BERBASIS SPEKTRUM FTIR**

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INTISARI

PENENTUAN KANDUNGAN FENOLIK TOTAL DAN FLAVONOID TOTAL EKSTRAK ETANOL DAUN SUNGKAI (*Peronema canescens* Jack) SERTA PENGELOMPOKANNYA SECARA KEMOMETRIK BERBASIS SPEKTRUM FTIR

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Peronema canescens Jack biasa di kenal dengan nama sungkai merupakan tumbuhan obat dengan beragam manfaat. Penelitian ini bertujuan untuk mengelompokkan ekstrak etanol daun sungkai dengan berbagai konsentrasi berdasarkan spektrum (FTIR) serta menentukan kandungan fenolik dan flavonoid total. Pengelompokan ekstrak etanol daun sungkai ditentukan dengan metode *Principal Component Analysis* (PCA). Kandungan fenolik dan flavonoid total diuji dengan metode *Folin-Ciocalteu* dan $AlCl_3$ serta gugus fungsi ditentukan menggunakan (FTIR). Sampel diekstraksi dengan pelarut etanol air, 30%, 50%, 70% dan p.a. Spektrum FTIR ekstrak berbagai konsentrasi menunjukkan pola spektrum yang hampir mirip. Hasil PCA ekstrak etanol 30%, 50% dan 70% berada pada kuadran yang sama yang menandakan komponen metabolit yang terekstrak memiliki kandungan yang mirip. Kandungan fenolik total lebih tinggi terdapat pada ekstrak etanol 30%, 50%, dan 70% sebesar 50,749 ; 50,533 ; 53,087 mg GAE/g ekstrak kering dan kandungan flavonoid total tertinggi terdapat pada ekstrak etanol p.a yaitu sebesar 49,341 mg QE/g ekstrak kering

Kata kunci : *Peronema canescens* Jack, Flavonoid, Fenolik, FTIR, PCA

ABSTRACT

DETERMINATION OF TOTAL PHENOLIC CONTENT AND TOTAL FLAVONOID OF LEAF ETHANOL EXTRACT (*Peronema canescens* Jack) AND THEIR GROUPING CHEMOMETRIC BASED ON FTIR SPECTRUM

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Peronema canescens Jack or commonly known as Sungkai is one of the medicinal plants with various benefits. This study aims to classify the ethanol extract of sungkai leaf with various concentrations of ethanol based on the Fourier Transform Infrared (FTIR) spectrum and determine the total phenolic content and total flavonoid content of the ethanol extract of the sungkai leaf. The grouping of the ethanol extract of sungkai leaves was determined by the Principal Component Analysis (PCA) method. The total phenolic content was tested by the Folin-Ciocalteu method and the total flavonoid content was tested by the $AlCl_3$ method and the functional groups of the extract components were determined using (FTIR). Sungkai leaf samples were extracted with water, 30%, 50%, 70% and p.a ethanol as solvents. The FTIR spectrum profile of the ethanol extract of sungkai leaves with various concentrations showed that the samples had almost similar spectral patterns. The PCA data showed that 30%, 50% and 70% ethanol extracts had adjacent groups and were in the same quadrant which indicated that the extracted metabolite components had similar contents. The higher total phenolic content was found in 30%, 50%, and 70% ethanol extracts, namely 50,749 mg GAE/g dry extract, 50,533 mg GAE/g dry extract, 53,087 mg GAE/g dry extract and the highest total flavonoid content was found in p.a ethanol extract, which is 49,341 mg QE/g dry extract.

Key words : *Peronema canescens* Jack, Flavonoid, Phenolic, FTIR, PCA