

**ANALISIS METABOLIT SEKUNDER DARI UMBI DAN DAUN UBI
JALAR (*Ipomea batatas* L.) CILEMBU MENGGUNAKAN GC-MS**

SKRIPSI

diajukan sebagai salah satu syarat untuk memperoleh gelar Sarjana Sains
Program Studi Biologi Departemen Pendidikan Biologi



oleh

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Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Sarjana Sains pada Departemen Pendidikan Biologi Fakultas Pendidikan
Matematika dan Ilmu Pengetahuan Alam

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ANALISIS METABOLIT SEKUNDER DARI UMBI DAN DAUN UBI JALAR
(*Ipomea batatas* L.) CILEMBU MENGGUNAKAN GC-MS

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PERNYATAAN

Dengan ini saya menyatakan bahwa skripsi dengan judul “Analisis Metabolit Sekunder dari Umbi dan Daun Ubi Jalar (*Ipomea batatas* L.) Cilembu Menggunakan GC-MS” ini beserta seluruh isinya merupakan karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara – cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

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Pembuat Pernyataan



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ANALISIS METABOLIT SEKUNDER DARI UMBI DAN DAUN UBI JALAR (*Ipomea batatas* L.) CILEMBU MENGGUNAKAN GC-MS

ABSTRAK

Pemanfaatan ubi jalar (*Ipomea batatas* L.) terbatas pada umbinya, sedangkan daunnya seringkali tidak dimanfaatkan lebih lanjut. Penelitian ini bertujuan untuk menganalisis dan membandingkan kandungan metabolit sekunder pada umbi dan daun ubi Cilembu yang ditanaman di daerah asalnya yaitu Desa Cilembu, Kabupaten Sumedang, dengan ubi Cilembu yang ditanam di luar daerah asalnya yaitu Desa Patrolsari, Kabupaten Bandung, sehingga diharapkan mampu meningkatkan pemanfaatannya di Indonesia. Sampel diekstrak menggunakan metode maserasi dengan pelarut etanol 96%. Analisis kandungan metabolit sekunder dilakukan menggunakan GC-MS. Data hasil GC-MS diidentifikasi dengan melihat indeks kesamaannya pada pustaka *National Institute of Standards and Technology* (NIST). Hasil penelitian ini menunjukkan bahwa umbi ubi Cilembu yang ditanam di Kabupaten Sumedang mengandung 5 senyawa, sedangkan umbi ubi Cilembu yang ditanam di Kabupaten Bandung mengandung 6 senyawa. Senyawa dominan umbi ubi Cilembu di kedua tempat adalah 5-hidroksimetilfurfural (HMF) dan banyak mengandung senyawa golongan aldehida. Daun ubi Cilembu Sumedang mengandung 17 senyawa dengan senyawa dominan quinhidron, sedangkan daun ubi Cilembu Bandung mengandung 16 senyawa dengan senyawa dominan asam kuinat. Daun ubi Cilembu di kedua tempat banyak mengandung senyawa golongan fenolik. Terdapat 3 senyawa yang ditemukan di semua sampel dengan konsentrasi yang berbeda, yaitu HMF, DDMP, dan furfural alkohol. Kesimpulannya umbi dan daun ubi Cilembu yang ditanam di kedua tempat mengandung metabolit sekunder dengan jenis dan konsentrasi yang berbeda. Daun menghasilkan senyawa yang lebih banyak dibandingkan umbi. Sampel daun ubi Cilembu di Sumedang mengandung metabolit sekunder yang paling banyak. Berbagai senyawa pada umbi dan daun ubi Cilembu diketahui memiliki berbagai manfaat dan aktivitas biologis.

Kata kunci: metabolit sekunder, umbi, daun, ubi Cilembu, GC-MS

ANALYSIS OF SECONDARY METABOLITE FROM TUBULAR AND LEAVES OF UBI JALAR (*Ipomea batatas L.*) CILEMBU USING GC-MS

ABSTRACT

*The utilization of sweet potato (*Ipomea batatas L.*) is limited to the tuber, while the leaves are often not utilized further. This study aims to analyze and compare the content of secondary metabolites in the tubers and leaves of Cilembu sweet potato grown in their origin area, namely Cilembu Village, Sumedang Regency, with Cilembu sweet potato grown outside their origin area, namely Patrolsari Village, Bandung Regency, so that it is expected to increase its utilization in Indonesia. Samples were extracted using maceration method with 96% ethanol as solvent. Analysis of secondary metabolite content was carried out using GC-MS. The GC-MS data were identified by looking at the similarity index in the National Institute of Standards and Technology (NIST) literature. The results of this study showed that Cilembu sweet potato tubers grown in Sumedang Regency contained 5 compounds, while Cilembu sweet potato tubers grown in Bandung Regency contained 6 compounds. The dominant compound in Cilembu sweet potato tubers in the both places are 5-hydroxymethylfurfural (HMF) and contains a lot of aldehyde group compounds. Cilembu sweet potato leaves in Sumedang contained 17 compounds with quinydron as dominant compound, while Cilembu sweet potato leaves in Bandung contained 16 compounds with quinic acid as dominant compound. Cilembu sweet potato leaves in both places contains a lot of phenolic group compounds. There were 3 compounds found in all samples with different concentrations, namely HMF, DDMP, and furfuryl alcohol. In conclusion, the tubers and leaves of Cilembu sweet potato planted in both places contained secondary metabolites with different types and concentrations. Leaves produce more compounds than tubers. Leaf of Cilembu sweet potato grown in Sumedang contained the most abundant secondary metabolites. Various compounds in Cilembu sweet potato tubers and leaves are known to have various benefits and biological activities.*

Keywords: secondary metabolites, tubular, leaves, Cilembu sweet potato, GC-MS

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