PERBANDINGAN METABOLIT DAUN KOPI ARABIKA (*Coffea arabica*) DAN ROBUSTA (*Coffea canephora*) DENGAN POSISI BERBEDA PADA CABANG

SKRIPSI

Diajukan untuk memenuhi sebagian syarat memperoleh gelar Sarjana Sains
Program Studi Biologi

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UNIVERSITAS PENDIDIKAN INDONESIA

2024

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LEMBAR PERNYATAAN

Dengan ini saya menyatakan bahwa skripsi dengan judul **"Perbandingan Metabolit Daun Kopi Arabika (*Coffea arabica*) dan Robusta (*Coffea canephora*) dengan Posisi Berbeda pada Cabang"** 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 risiko/sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

Bandung, Agustus 2024

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UCAPAN TERIMA KASIH

Segala puji bagi Allah Subhanahu Wa Ta'ala yang senantiasa melimpahkan rahmat, petunjuk, dan karunia-Nya yang begitu besar sehingga penulis dapat menyelesaikan tugas akhir dan penulisan skripsi yang berjudul **"Perbandingan Metabolit Daun Kopi Arabika (*Coffea arabica*) dan Robusta (*Coffea canephora*) dengan Posisi Berbeda pada Cabang"**.

Dalam penyusunan skripsi ini tentunya tidak terlepas dari bantuan dan bimbingan dari berbagai pihak. Oleh karena itu, pada kesempatan ini penulis ingin menyampaikan terima kasih yang sebesar-besarnya kepada:

1. Ibu Dr. R. Kusdianti, M.Si. selaku dosen pembimbing I yang selalu bersedia meluangkan waktunya untuk memberikan arahan, bimbingan, dan masukan yang positif selama proses penelitian dan penyusunan skripsi ini.
2. Ibu Tina Safaria Nilawati, S.Si., M.Si. selaku dosen pembimbing II dan dosen wali yang telah memberikan arahan dan bimbingan dalam pelaksanaan penelitian serta penulisan skripsi ini.
3. Bapak Dr. Wahyu Surakusumah, M.T. selaku ketua Program Studi Biologi FPMIPA UPI.
4. Seluruh dosen Program Studi Biologi FPMIPA UPI atas segala ilmu, bimbingan, pengalaman, serta motivasi yang diberikan selama masa perkuliahan.
5. Seluruh Pranata Laboratorium Program Studi Biologi FPMIPA UPI atas segala bantuan dan bimbingannya selama proses penelitian.
6. Bapak Tulus selaku pemilik Kebun Kopi Kadatuan beserta seluruh petani Kebun Kadatuan yang telah memberikan kesempatan serta banyak bantuan dalam pelaksanaan penelitian ini.
7. Bapak Taslim Maulana selaku Pemeriksa Muda Bidang Kimia Forensik Puslabfor Bareskrim Polri Bogor yang telah membantu selama penelitian.
8. Kedua orang tua, adik, dan seluruh keluarga besar yang telah memberikan banyak motivasi, dukungan, serta doa yang tiada henti.

9. Rinrin Sakinah dan Zaki Fahreza sebagai rekan penelitian yang telah berjuang bersama, saling berdiskusi, serta menyemangati dalam menyelesaikan skripsi ini.
10. Kepada Teh Zahra Apriyani Pratiwi yang telah membantu selama proses penyusunan skripsi.
11. Teman-teman kelas Biologi C 2020 yang telah berjuang bersama-sama dari awal masa perkuliahan hingga akhirnya lulus.

Penulis juga mengucapkan terima kasih kepada seluruh pihak yang turut terlibat dalam penulisan skripsi ini yang tidak dapat disebutkan satu persatu. Semoga Allah SWT senantiasa membalas seluruh kebaikan yang telah diberikan. Penulis menyadari bahwa masih terdapat banyak kekurangan dalam penelitian ini sehingga penulis sangat terbuka terhadap saran dan kritik yang bersifat membangun agar bisa menjadi lebih baik lagi. Semoga penelitian ini dapat memberikan manfaat khususnya bagi penulis dan umumnya bagi seluruh pembaca.

Bandung, Agustus 2024

Penulis,

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PERBANDINGAN METABOLIT DAUN KOPI ARABIKA (*Coffea arabica*) DAN ROBUSTA (*Coffea canephora*) DENGAN POSISI BERBEDA PADA CABANG

ABSTRAK

Kopi arabika (*Coffea* arabica) dan robusta (*Coffea canephora*) menjadi jenis tanaman kopi yang paling banyak dibudidayakan, termasuk di wilayah produsen kopi terbesar di Jawa Barat yaitu Kabupaten Bandung. Pemanfaatan dan komersialisasi tanaman kopi hingga saat ini terpaku pada bagian biji kopi saja, sedangkan bagian lain seperti daun kopi masih belum termanfaatkan dengan baik. Penelitian ini bertujuan untuk membandingkan profil metabolit yang terkandung pada daun kopi arabika dan robusta dengan posisi yang berbeda pada cabang. Pengambilan daun dilakukan di Kebun Kopi Kadatuan, Kabupaten Bandung. Daun yang digunakan yaitu daun kopi arabika posisi ke 3-4 (A 3-4) dan ke 5-6 (A 5-6), serta robusta posisi ke 3-4 (R 3-4) dan ke 5-6 (R 5-6) dari pucuk. Daun dikeringkan, dihaluskan, dan diekstrak dengan metode maserasi menggunakan pelarut etanol 70% p.a. Kandungan metabolit daun kopi dianalisis menggunakan instrumen *Gas Chromatography–Mass Spectrometry* (GC-MS) dan diidentifikasi berdasarkan indeks kesamaannya dengan pustaka *National Institute of Standards and Technology* (NIST). Hasil penelitian menunjukkan daun kopi A 3-4 mengandung 14 senyawa, sedangkan A 5-6 mengandung 24 senyawa. Daun kopi R 3-4 mengandung 17 senyawa, sedangkan daun R 5-6 mengandung 18 senyawa. Keempat ekstrak daun kopi mengandung 11 senyawa yang sama, dua senyawa diantaranya yang mendominasi yaitu senyawa kafeina dan fitol. Penelitian ini menunjukkan adanya keragaman jenis dan jumlah kandungan metabolit pada daun kopi dengan posisi yang berbeda.

Kata kunci: Daun kopi, *Gas Chromatography–Mass Spectrometry* (GC-MS), metabolit, posisi daun.

COMPARISON OF ARABICA (Coffea arabica) AND ROBUSTA (Coffea canephora) COFFEE LEAF METABOLITE WITH DIFFERENT POSITIONS ON BRANCHES

ABSTRACT

Arabica (Coffea arabica) and Robusta (Coffea canephora) coffee are the most widely cultivated types of coffee plants, including in Bandung Regency as the largest coffee producing region in West Java. The utilization and commercialization of coffee plants are still focused on coffee beans, while other parts such as coffee leaves have not been well utilized. This study aims to compare the metabolite profile contained in arabica and robusta coffee leaves at different leaf positions. Leaves was taken from Kebun Kopi Kadatuan, Bandung Regency. Leaves used were arabica at 3-4th position (A 3-4) and 5-6th position (A 5-6), robusta at 3-4th position (R 3-4), and 5-6th position (R 5-6) from the shoots on branches. Coffee leaf were dried, pulverized, and extracted using the maceration method with ethanol solvent p.a. 70%. Metabolite content of coffee leaves was analyzed using Gas Chromatography-Mass Spectrometry (GC-MS) instrument and identified based on the similarity index with National Institute of Standards and Technology (NIST) library. The results showed that A 3-4 contained 14 compounds, while A 5-6 contained 24 compounds. R 3-4 coffee leaves contain 17 compounds, while R 5-6 contain 18 compounds. There are 11 metabolite compounds found in all coffee leaf extracts, which two dominating compounds were caffeine and phytol. This study shows the diversity of types and amounts of metabolite content in coffee leaves with different leaf positions.

Keywords: Coffee leaf, Gas Chromatography–Mass Spectrometry (GC-MS), metabolite, leaf position

DAFTAR ISI

DAFTAR GAMBAR

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DAFTAR LAMPIRAN

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