

ABSTRAK

KEANEKARAGAMAN MAKROFAUNA TANAH PADA LAHAN AGROFORESTRI DAN LAHAN KOPI MONOKULTUR DI DESA PENINDAIAN KABUPATEN MUARA ENIM SUMATERA SELATAN

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Desa Penindaian terletak di Kecamatan Semende Darat Laut Sumatera Selatan, memiliki dua sistem penggunaan lahan, yaitu agroforestri dan lahan monokultur. Penggunaan lahan agroforestri sistem penggunaan terbagi menjadi agroforestri kompleks suatu sistem pertanian yang melibatkan banyak jenis tanaman pohon tumbuh secara alami pada sebidang lahan dan dikelola petani mengikuti pola tanam dan ekosistem menyerupai hutan, agroforestri sederhana suatu sistem pertanian dimana pepohonan ditanam secara tumpang-sari dengan satu atau lebih jenis tanaman semusim. Sedangkan lahan monokultur hanya terdiri atas satu jenis tanaman dalam satu lahan. Perbedaan struktur vegetasi pada ketiga sistem memengaruhi keberadaan serta keanekaragaman makrofauna tanah, sehingga penelitian ini bertujuan untuk menganalisis komposisi vegetasi, keanekaragaman makrofauna tanah, serta pengaruh faktor lingkungan pada masing-masing sistem lahan. Metode penelitian menggunakan pendekatan survei lapangan melalui pembuatan plot, pengambilan sampel makrofauna dengan *pitfall trap* dan metode *monolith*, serta pengukuran faktor fisik lingkungan. Data dianalisis menggunakan indeks keanekaragaman Shannon-Wiener (H'), indeks dominansi (C), dan indeks kemerataan (E). Hasil penelitian menunjukkan bahwa agroforestri kompleks memiliki komposisi vegetasi tertinggi dengan 21 jenis tanaman, diikuti agroforestri sederhana sebanyak 10 jenis dan monokultur satu jenis tanaman. Keanekaragaman makrofauna tanah tertinggi terdapat pada agroforestri kompleks dengan 17 spesies dan nilai H' sebesar 2,07, kemudian agroforestri sederhana ($H'=1,69$) dan monokultur ($H'=1,51$). Nilai kemerataan berturut-turut 0,81; 0,76; dan 0,78, sedangkan dominansi 0,15; 0,23; dan 0,27. Kelimpahan individu tertinggi terdapat pada agroforestri kompleks (664 individu) dengan kondisi lingkungan lebih stabil, ditandai bahan organik tinggi dan pH mendekati netral.

Kata Kunci : Agroforestri, Biodiversitas, Kopi Monokultur, Makrofauna Tanah.

ABSTRAK

DIVERSITY OF SOIL MACROFAUNA IN AGROFORESTRY PLOTS AND COFFEE MONOCULTURE PLOTS IN PENINDAIAN VILLAGE, MUARA ENIM REGENCY, SOUTH SUMATERA

By

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Penindaian Village is located in Semende Darat Laut District, South Sumatra, and has two land use systems: agroforestry and monoculture. Land use in agroforestry systems is divided into complex agroforestry an agricultural system involving many types of trees growing naturally on a plot of land and managed by farmers following planting patterns and an ecosystem resembling a forest and simple agroforestry an agricultural system where trees are intercropped with one or more types of annual crops. In contrast, monoculture land consists of only one type of crop on a single plot. Differences in vegetation structure across the three systems influence the presence and diversity of soil macrofauna; therefore, this study aims to analyze vegetation composition, soil macrofauna diversity, and the influence of environmental factors on each land system. The research method employed a field survey approach through plot establishment, collection of macrofauna samples using pitfall traps and the monolith method, as well as measurement of physical environmental factors. The data were analyzed using the Shannon-Wiener diversity index (H'), the dominance index (C), and the evenness index (E). The results showed that complex agroforestry had the highest vegetation composition with 21 plant species, followed by simple agroforestry with 10 species and monoculture with a single plant species. The highest soil macrofauna diversity was found in complex agroforestry with 17 species and an H' value of 2.07, followed by simple agroforestry ($H'=1.69$) and monoculture ($H'=1.51$). The evenness indices were 0.81, 0.76, and 0.78, respectively, while the dominance indices were 0.15, 0.23, and 0.27. The highest individual abundance was found in complex agroforestry (664 individuals) with more stable environmental conditions, characterized by high organic matter and a pH close to neutral.

Keyword : Agroforestry, Biodiversity, Monoculture, Soil Macrofauna.