

STRUKTUR KOMPOSISI DAN BIOFISIK TANAH KEBUN CAMPUR DURIAN PADA AGROFORESTRI TEGALAN DAN PEKARANGAN DI DESA PATUK, KECAMATAN PATUK, KABUPATEN GUNUNGKIDUL

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INTISARI

Sistem agroforestri dijadikan sebagai solusi pemanfaatan lahan di wilayah pedesaan. Agroforestri dengan pola kebun campuran sudah diterapkan di Desa Patuk pada lahan tegalan dan pekarangan dengan salah satu komoditas utama yakni jenis durian. Penelitian ini bertujuan untuk: (1) mengetahui struktur komposisi, (2) mengetahui karakteristik biofisik tanah, dan (3) mengetahui karakteristik tanaman durian pada lahan tegalan dan pekarangan.

Penentuan plot pengamatan dilakukan secara *purposive sampling* pada 10 lahan tegalan dan 10 lahan pekarangan. Pengambilan data vegetasi dilakukan dengan metode sensus pada semua tingkat hidup pohon. Data vegetasi komposisi jenis dianalisis dengan Indeks Kekayaan Margalef (R) dan Indeks Nilai Penting. Data struktur tegakan dianalisis dengan visualisasi ruang vertikal dan horizontal menggunakan *software* SexI-FS. Analisis tanah dan pengamatan profil tanah dilakukan secara kualitatif pada parameter warna, tekstur, dan struktur serta secara kuantitatif untuk parameter pH dan kandungan bahan organik (%). Untuk mengetahui perbedaan karakteristik tanaman durian, dilakukan analisis statistik uji beda dengan *t-Test* pada variabel diameter, tinggi, tbbc, tebal tajuk, dan lebar tajuk serta pengamatan morfologi organ vegetatif.

Hasil analisis vegetasi menunjukkan bahwa kebun campuran di lahan tegalan dan pekarangan Desa Patuk tersusun atas tanaman penghasil kayu, MPTS, dan tanaman pertanian. Pada lahan tegalan terdapat 24 jenis (6 jenis tanaman kayu dan 18 jenis tanaman MPTS), sedangkan pada pekarangan terdapat 34 jenis (4 jenis tanaman kayu dan 30 jenis MPTS). Jenis yang mendominasi pada kedua lahan yakni durian, mahoni, dan sonokeling. Struktur vertikal pada lahan tegalan terdapat 5 strata sedangkan pada pekarangan hanya terdapat 4 strata. Hasil analisis tanah pada kedua lahan relatif sama yakni tidak terdapat lapisan *top soil*, berwarna coklat, bertekstur lempung pasir dengan struktur gumpal, pH netral dan kandungan bahan organik tergolong rendah. Karakteristik tanaman durian pada kedua lahan tidak menunjukkan perbedaan yang signifikan pada variabel diameter, tinggi, tebal tajuk, dan lebar tajuk. Namun terdapat perbedaan yang signifikan pada variabel tbbc.

Kata kunci: struktur komposisi, tegalan, pekarangan, biofisik tanah, durian

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COMPOSITION STRUCTURE AND BIOPHYSICAL SOIL OF DURIAN MIXED GARDEN IN AGROFORESTRY DRY LAND AND HOMEGARDEN IN THE PATUK VILLAGE, PATUK DISTRICT, GUNUNGKIDUL REGENCY

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ABSTRACT

Agroforestry system has been a solution for soil utilization in the countryside. Agroforestry with mixed garden pattern has been applied on dry land and homegarden in the Patuk Village with durian as the main commodity. This study aims to determine: (1) the structure and composition; (2) soil's biophysical characteristics; and (3) characteristics of durian vegetation in the dry land and homegarden.

The sampling was decided with purposive sampling in 10 dry land and 10 homegarden. Vegetation data were collected using the census method in the all tree life stages. Vegetation data were analyzed with Margalef Richness Index (R) and Importance Value Index. Stands structure were visualized vertically and horizontally using SexI-FS. Soil analysis and soil profile observation were done in qualitative using color, texture, and structure, along with quantitative using acidity and soil organic matters as the parameter. Determining the difference on durian characteristic statistically were done using t-Test with diameter, height, bole height, crown height, and crown width as variables, along with observation on morphology of vegetation organs.

The result of vegetation analysis showed mixed garden in the Patuk Village were composed of wood-producing plants, Multipurpose Tree Species (MPTS), and seasonal crops. On the dry land, there were 24 species including 6 species of wood-producing plants and 18 species of MPTS. Whereas there were 34 species including 4 species of wood-producing plants and 30 species of MPTS in the homegarden. The dominating species are durian, mahogany, and rosewood. Vertical structure on the dry land was composed by 5 strata and homegarden was composed by 4 strata. The results of soil analysis showed both lands are relatively the same, which have no layer of top soil, brown colored, sandy loam texture, blocky structure, neutral pH, and low organic matters. The characteristic of durian in both lands showed insignificant difference on diameter, height, crown height, and crown width variables. However, there is a significant difference on the bole height.

Keywords: *composition structure, dry land, homegarden, soil's biophysical, durian.*

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