

ABSTRAK

EVALUASI KEMANTAPAN AGREGAT TANAH SETELAH APLIKASI 50 TON HA⁻¹ KOMPOS PADA PERTANAMAN NANAS (*Ananas comosus* (L.) Merr.) DI LAMPUNG TENGAH

Oleh

Jeni Larasati

Penelitian ini mengevaluasi kemantapan agregat tanah setelah aplikasi kompos kotoran sapi dosis 50 ton ha⁻¹ pada pertanaman nanas. Penelitian dilakukan karena lahan kering masam di PT Great Giant Pineapple, Lampung Tengah, memiliki kesuburan tanah rendah yang ditandai oleh kandungan bahan organik rendah, pH masam, dan kemantapan agregat tanah yang buruk, sehingga berpotensi menurunkan produktivitas nanas. Penelitian dilaksanakan di lahan pertanaman nanas PT Great Giant Pineapple, Kabupaten Lampung Tengah, Provinsi Lampung. Pengambilan sampel tanah dilakukan pada empat umur tanaman, yaitu 0, 3, 5, dan 9 bulan setelah tanam (BST), selama periode November 2022 hingga Desember 2023. Metode yang digunakan adalah survei lapangan dengan pengambilan sampel tanah terganggu dan tidak terganggu. Analisis meliputi kemantapan agregat tanah (ayakan kering dan basah), tekstur tanah, ruang pori total, indeks dispersi, dan kandungan C-organik, yang dianalisis secara deskriptif dan dibandingkan dengan kriteria standar. Hasil penelitian menunjukkan bahwa aplikasi kompos 50 ton ha⁻¹ belum mampu meningkatkan kemantapan agregat tanah secara cepat pada umur 0–5 BST dengan klasifikasi dominan “tidak mantap”. Namun, pada umur 9 BST terjadi peningkatan kemantapan agregat hingga kategori “sangat mantap sekali” pada beberapa lokasi, seiring dengan meningkatnya kandungan C-organik dan ruang pori total tanah. Penelitian ini menyimpulkan bahwa perbaikan kemantapan agregat tanah akibat aplikasi kompos bersifat bertahap dan lebih nyata pada umur tanaman nanas lebih lanjut.

Kata kunci: Kompos Kotoran Sapi, Kemantapan Agregat, Sifat Fisik Tanah, Nanas, Bahan Organik.

ABSTRACT

EVALUATION OF SOIL AGGREGATE STABILITY AFTER APPLICATION OF 50 TONS HA⁻¹ OF COMPOST ON PINEAPPLE (*Ananas comosus* (L.) Merr.) PLANTATIONS IN CENTRAL LAMPUNG

By

Jeni Larasati

This study evaluated soil aggregate stability after the application of cattle manure compost at a rate of 50 tons ha⁻¹ in pineapple plantations. The study was conducted because acid dryland soils at PT Great Giant Pineapple, Central Lampung, exhibit low soil fertility, characterized by low organic matter content, acidic soil pH, and poor aggregate stability, which potentially reduce pineapple productivity. The research was carried out on pineapple plantation fields at PT Great Giant Pineapple, Central Lampung Regency, Lampung Province. Soil sampling was conducted at four plant ages, namely 0, 3, 5, and 9 months after planting (MAP), during the period from November 2022 to December 2023. The study employed a field survey method with the collection of disturbed and undisturbed soil samples. Analyses included soil aggregate stability (dry and wet sieving methods), soil texture, total pore space, dispersion index, and soil organic carbon, which were analyzed descriptively and compared with standard classification criteria. The results showed that the application of 50 tons ha⁻¹ of compost did not rapidly improve soil aggregate stability at 0–5 MAP, with the dominant classification being “unstable.” However, at 9 MAP, soil aggregate stability improved to the “very highly stable” category at several locations, in line with increases in soil organic carbon content and total pore space. This study concludes that improvements in soil aggregate stability following compost application occur gradually and become more pronounced at later stages of pineapple growth.

Keywords: Cattle Manure Compost, Aggregate Stability, Soil Physical Properties, Pineapple, Soil Organic Matter.