ABSTRAK

APLIKASI PUPUK ORGANIK DIPERKAYA MIKROBA DAN *BIOCHAR* PADA BERBAGAI SISTEM PENGOLAHAN TANAH DALAM MEMPENGARUHI NISBAH DISPERSI DI PERTANAMAN NANAS, LAMPUNG TENGAH

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Penurunan produksi nanas di Lampung Tengah berkaitan erat dengan menurunnya kualitas fisik tanah akibat pengolahan tanah yang terlalu intensif dan rendahnya kandungan bahan organik. Tujuan dilakukan penelitian ini untuk mengetahui pengaruh aplikasi pengolahan tanah serta aplikasi pupuk organik berupa kompos terhadap nisbah dispersi tanah pada pertanaman nanas. Penelitian dilakukan di PT Great Giant Pineapple dan analisis tanah dilakukan di Laboratorium Ilmu Tanah Universitas Lampung. Penelitian ini menggunakan metode rancangan split plot dengan 8 perlakuan. Data dianalisis menggunakan uji homogenitas (Bartlett) dan aditivitas (Tukey). Jika asumsi terpenuhi, dilakukan analisis ragam dan dilanjutkan dengan uji DMRT pada taraf 5%. Hubungan antara mikroagregat, tekstur tanah, dan C-organik dengan nisbah dispersi dianalisis menggunakan uji korelasi. Hasil penelitian menunjukkan bahwa nilai nisbah dispersi tanah secara umum berada dalam kategori terdispersi sedang pada seluruh fase pengamatan kecuali pada fase pengamatan 3 BST di perlakuan T_1P_2. Meskipun tidak terdapat interaksi nyata antara pengolahan tanah dan jenis pupuk terhadap nisbah dispersi, perlakuan T_1P_2 (bajak dalam 30 cm dan pencacahan satu kali dengan kompos GGP 40 Ton ha^{-1} + *biochar* 10 Ton ha^{-1} di lapang) menunjukkan kecenderungan paling konsisten dalam menurunkan nilai nisbah dispersi dari fase awal hingga akhir. Uji korelasi menunjukkan bahwa distribusi mikroagregat memiliki hubungan negatif signifikan terhadap nisbah dispersi, khususnya pada fase 6 BST, sementara C-organik tidak menunjukkan korelasi yang signifikan.

Kata kunci: Nisbah Dispersi, Pengolahan Tanah, Kompos GGP, *Biochar*, Tanaman Nanas.

ABSTRACT

APPLICATION OF MICROBE-ENRICHED ORGANIC FERTILIZER AND BIOCHAR UNDER VARIOUS SOIL TILLAGE SYSTEMS AFFECTING DISPERSION RATIO IN PINEAPPLE PLANTATION, CENTRAL LAMPUNG

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The decline in pineapple production in Central Lampung is closely related to the deterioration of soil physical quality due to intensive tillage and low organic matter content. This study aimed to evaluate the effects of soil tillage systems and the application of organic fertilizers in the form of compost on the soil dispersion ratio in a pineapple plantation. The research was conducted at PT Great Giant Pineapple, and soil analysis was performed at the Soil Science Laboratory, University of Lampung. A split-plot design with 8 treatments was used. Data were analyzed using Bartlett's test for homogeneity and Tukey's test for additivity. If assumptions were met, analysis of variance (ANOVA) was conducted, followed by DMRT at a 5% significance level. The relationships between microaggregate distribution, soil texture, organic carbon content, and dispersion ratio were analyzed using correlation tests. The results showed that the soil dispersion ratio generally fell into the moderately dispersed category throughout all observation phases, except for the 3 BST phase in the T_1P_2 treatment. Although no significant interaction was observed between tillage systems and fertilizer types on the dispersion ratio, the T_1P_2 treatment (deep plowing at 30 cm and single chopping with GGP compost at 40 tons ha^{-1} + biochar at 10 tons ha^{-1} applied in the field) demonstrated the most consistent trend in reducing the dispersion ratio from the initial to the final phase. Correlation analysis revealed a significantly negative relationship between microaggregate distribution and dispersion ratio, particularly in the 6 BST phase, while organic carbon showed no significant correlation.

Keywords: Dispersion Ratio, Soil Tillage, GGP Compost, Biochar, Pineapple Plan