

ABSTRAK

APLIKASI PUPUK ORGANIK DIPERKAYA MIKROBA DAN BIOCHAR PADA BERBAGAI SISTEM PENGOLAHAN TANAH TERHADAP TINGKAT KEKERASAN TANAH DI PERTANAMAN NANAS, LAMPUNG TENGAH

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Produksi nanas mengalami penurunan hal ini diakibatkan karena kesuburan tanah rendah rentan terjadi pemadatan. Upaya yang dilakukan untuk menurunkan kekerasan tanah dilakukan pengolahan tanah dan pemberian pupuk organik diperkaya mikroba dan biochar. Penelitian ini bertujuan mengetahui pengaruh pengolahan tanah dan pupuk organik diperkaya mikroba serta biochar terhadap kekerasan tanah. Penelitian dilakukan di lokasi 32C PT. GGP dan di Laboratorium Ilmu Tanah Universitas Lampung. Penelitian menggunakan rancangan split plot, dengan petak utama T_1 = bajak kedalaman 30 cm + cacah seresah tanaman nanas 1x, T_2 = bajak kedalaman 40 cm + cacah seresah tanaman nanas 2x dan anak petak P_1 = Pupuk Organik GGP 50 ton/ha, P_2 = Pupuk Organik GGP 40 ton/ha + Biochar 10 ton/ha, P_3 = Pupuk Organik Premium GGP 50 ton/ha dan P_4 = Pupuk Organik Premium GGP 50 ton/ha + Mikroba LOB 40 L/ha. Hasil penelitian menunjukkan bahwa tanah bajak kedalaman 40 cm + cacah seresah nanas 2x mampu menurunkan kekerasan tanah hingga umur 9 BST dan pemberian Pupuk Organik premium GGP mampu menurunkan kekerasan tanah dan meningkatkan kemantapan agregat tanah dibandingkan pemberian Pupuk Organik premium GGP + Mikroba LOB. Perlakuan T_2P_2 efektif menurunkan kekerasan pada umur 3 BST, sedangkan T_2P_3 menurunkan kekerasan tanah yang signifikan signifikan pada 6 dan 9 BST. Meskipun pengolahan tanah tidak berpengaruh signifikan terhadap pertumbuhan tanaman, namun aplikasi pupuk organik + biochar (P_2) berpengaruh terhadap berat tanaman pada umur 9 BST.

Kata Kunci: Manajemen Lahan, Mikroba, Kemantapan Agregat, Kekerasan Tanah, Pupuk Organik

ABSTRACT

APPLICATION OF MICROBE-ENRICHED ORGANIC FERTILIZER AND BIOCHAR IN VARIOUS SOIL TILLAGE SYSTEMS ON SOIL HARDNESS IN PINEAPPLE PLANTATION, CENTRAL LAMPUNG

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Pineapple production has experienced a decline due to low soil fertility which is prone to compaction. Efforts to reduce soil hardness include soil cultivation and the application of organic fertilizers enriched with microbes and biochar. This research aims to determine the impact of soil cultivation and organic fertilizers enriched with microbes as well as biochar on soil hardness. The study was conducted at location 32C PT. GGP and in the Soil Science Laboratory of the University of Lampung. The research employed a split plot design, with the main plots T_1 = plowing to a depth of 30 cm + shredded pineapple plant residue once, T_2 = plowing to a depth of 40 cm + shredded pineapple plant residue twice, and subplots P_1 = GGP Organic Fertilizer 50 tons/ha, P_2 = GGP Organic Fertilizer 40 tons/ha + Biochar 10 tons/ha, P_3 = GGP Premium Organic Fertilizer 50 tons/ha, and P_4 = GGP Premium Organic Fertilizer 50 tons/ha + Microbe LOB 40 L/ha. The research results show that plowing soil to a depth of 40 cm combined with shredding pineapple residues twice can reduce soil hardness up to 9 MAP, and the application of premium organic fertilizer GGP can reduce soil hardness and increase soil aggregate stability compared to the application of premium organic fertilizer GGP + LOB microbes. The treatment T_2P_2 effectively reduces hardness at 3 MAP, while T_2P_3 significantly reduces soil hardness at 6 and 9 MAP. Although soil cultivation does not significantly affect plant growth, the application of organic fertilizer + biochar (P_2) has an effect on plant weight at 9 MAP.

Keywords: Land Management, Microbes, Aggregate Stability, Soil Hardness, Organic Fertilizer.