

ABSTRAK

PENGARUH APLIKASI KOMPOS KOTORAN SAPI DAN PUPUK PREMIUM TERHADAP BIOMASSA KARBON MIKROORGANISME TANAH PADA PERTANAMAN NANAS *RATOON*, LAMPUNG TENGAH

Oleh

ULIA KARLISMAYANI

Biomassa karbon mikroorganisme (C-mik) tanah merupakan indikator kesuburan tanah yang dipengaruhi oleh penggunaan pupuk di dalam tanah. Pupuk premium pada penelitian ini merupakan produksi PT Great Giant Pineapple (GGP) yang di dalamnya terkandung campuran bahan organik dan amelioran. Tujuan penelitian ini adalah untuk mempelajari pengaruh pemberian pupuk premium terhadap C-mik tanah pada pertanaman nanas. Penelitian dilakukan di PT GGP kemudian analisis tanah dilakukan di Laboratorium Bioteknologi, Universitas Lampung. Penelitian ini dirancang menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 4 perlakuan dengan 4 ulangan. Perlakuan pertama yaitu P_1 = standar budidaya tanaman, P_2 = kompos kotoran sapi (50 ton ha^{-1}), P_3 = pupuk premium A (kompos kotoran sapi 77,6%, batubara muda 9,8%, zeolit 9,8%, LOB 1,8%, vermikompos 1%) dan P_4 = pupuk premium B (kompos kotoran sapi 72,7%, batubara muda 14,7%, zeolit 9,8%, LOB 1,8%, vermikompos 1%). Data yang diperoleh diuji homogenitas ragam dengan uji Bartlett dan aditifitas data dengan uji Tukey kemudian dilakukan uji analisis ragam taraf 5%. Kemudian, data diuji lanjut menggunakan uji Ortogonal Kontras. Hasil penelitian menunjukkan bahwa pemberian kompos kotoran sapi dan pupuk premium tidak berpengaruh terhadap C-mik tanah. Pemberian pupuk premium B menunjukkan nilai C-mik tertinggi dibandingkan dengan perlakuan lainnya yaitu sebesar $13,68 \text{ mg C-CO}_2 \text{ kg tanah}^{-1} \text{ 10 hari}^{-1}$. Uji korelasi menunjukkan adanya korelasi positif antara respirasi tanah, c-organik dan pH tanah dengan C-mik tanah.

Kata kunci: Biomassa karbon mikroorganisme (C-mik) tanah, pupuk premium, tanaman nanas.

ABSTRACT

EFFECT OF COW DUNG COMPOST AND PREMIUM FERTILIZER APPLICATION ON SOIL MICROBIAL BIOMASS CARBON IN RATOON PINEAPPLE PLANTATION, CENTRAL LAMPUNG

By

ULIA KARLISMAYANI

Soil microbial biomass carbon (C-mic) is an indicator of soil fertility which is influenced by the use of fertilizers in the soil. The premium fertilizer that used in this research was produced by PT Great Giant Pineapple (GGP) which contains a mixture of organic materials and ameliorants. The purpose of this research was to study the effect of premium fertilizer application on soil C-mic in pineapple plantations. This research was conducted at PT GGP and soil analysis were carried out at the Laboratory of Biotechnology, University of Lampung. This research was designed using a Randomized Block Design (RBD) consisting of 4 treatments with 4 replicates. The first treatment is P₁ = standard crop cultivation, P₂ = cow dung compost (50 tons ha⁻¹), P₃ = premium fertilizer A (cow dung compost 77,6%, lignite 9,8%, zeolite 9,8%, LOB 1,8%, vermicompost 1%) and P₄ = premium fertilizer B (cow dung compost 72,7%, lignite 14,7%, zeolite 9,8%, LOB 1,8%, vermicompost 1%). The data obtained were tested for homogeneity of variance with Bartlett's test and additivity of data with Tukey's test and then subjected to analysis of variance at the 5% level. Then, the data were further tested using the Orthogonal Contrast test. The results showed that the application of premium fertilizer had no effect on soil C-mic. The application of premium B fertilizer showed the highest value of soil C-mic compared to other treatments, namely 13,68 mg C-CO₂ kg soil⁻¹ 10 day⁻¹. The correlation test shows that there is a positive correlation between soil respiration, c-organic and soil pH with soil C-mic.

Keywords: Carbon biomass of soil microorganism (C-mic), premium fertilizer, pineapple plant.