ABSTRAK

PENGARUH KOMBINASI PUPUK KIMIA DAN PUPUK HAYATI CAIR TERHADAP PERUBAHAN SIFAT KIMIA TANAH, PERTUMBUHAN SERTA PRODUKSI TANAMAN PADI SAWAH VARIETAS SUPADI DI TRIMURJO, LAMPUNG TENGAH

Oleh

ANISA MIFTAKHUL JANNAH

Penggunaan pupuk kimia secara terus-menerus dan berlebihan dapat menyebabkan dampak negatif terhadap lingkungan tanah, sehingga menurunkan produktivitas lahan pertanian. Tujuan dari penelitian ini adalah untuk mengetahui bahwa pemberian kombinasi pupuk kimia dan pupuk hayati cair dapat meningkatkan sifat kimia tanah, pertumbuhan dan produksi padi sawah dibandingkan dengan hanya pemberian pupuk kimia (kontrol). Penelitian ini dilakukan di lahan sawah Desa Pujoasri, Trimurjo, Lampung Tengah. Analisis tanah dilakukan di Laboratorium *Cogen* PT. Great Giant Pineapple, Lampung Tengah, pada bulan Oktober 2020 - Maret 2021. Penelitian disusun dengan Rancangan Acak Kelompok (RAK), terdiri dari 4 perlakuan yaitu P_0 (Pupuk kimia 100%), P_1 (pupuk kimia 100% + pupuk hayati cair 100%), P_2 (pupuk kimia 75% + pupuk hayati cair 100%), P_3 (pupuk kimia 50% + pupuk hayati cair 100%) dan masing-masing perlakuan diambil sampel (tanah pada -7 HST, 50 HST dan 100 HST dan tanaman pada 5 HST, 20 HST, 35 HST, 50 HST dan 100 HST) secara diagonal sebanyak 5 titik. Setiap perlakuan diulang sebanyak 3 kali sebagai kelompok. Data yang diperoleh diuji dengan uji Bartlett dan uji Tukey. Kemudian dilakukan analisis ragam dengan taraf 5% dan dilakukan uji *Duncan Multiple Range Test* (DMRT) taraf 5% untuk mengetahui perbedaan antar perlakuan. Hasil menunjukkan bahwa pH dan P-tersedia tanah menunjukkan hasil yang lebih tinggi pada perlakuan P_3. C-organik tanah menunjukkan hasil yang lebih tinggi pada perlakuan P_0. N-total tanah menunjukkan hasil yang lebih tinggi pada perlakuan P_2, P_1 dan P_0. Tinggi tanaman dan jumlah anakan menunjukkan hasil yang lebih tinggi pada perlakuan P_1 dan P_2. Bobot basah dan kering brangkasan menunjukkan hasil yang lebih tinggi pada perlakuan P_1. Bobot gabah, bobot 1000 butir dan bobot produksi padi menunjukkan hasil yang lebih tinggi pada perlakuan P_3.

Kata kunci: pupuk kimia, pupuk hayati cair, padi

ABSTRACT

THE EFFECT COMBINATION OF CHEMICAL FERTILIZER AND LIQUID BIOFERTILIZER ON THE CHANGES IN SOIL CHEMICAL PROPERTIES, GROWTH AND YIELDS SUPADI VARIETY OF PADDY RICE IN TRIMURJO, CENTRAL LAMPUNG

By

ANISA MIFTAKHUL JANNAH

The continuous and excessive use of chemical fertilizers can have a negative impact on the soil environment, thereby reducing the productivity of agricultural land. The purpose of this study was to find out that the application of a combination of chemical fertilizers and liquid biofertilizers can improve soil chemical properties, growth and yields of lowland rice compared to chemical fertilizers only (control). This research was conducted in the rice fields of Pujoasri Village, Trimurjo, Central Lampung. Soil analysis was carried out at the Cogen Laboratory of PT. Great Giant Pineapple, Central Lampung, in October 2020 - March 2021. The study was arranged in a Randomized Block Design, consisting of 4 treatments, namely P_0 (100% chemical fertilizer), P_1 (100% chemical fertilizer + 100% liquid biofertilizer), P_2 (75% chemical fertilizer + 100% liquid biofertilizer), P_3 (50% chemical fertilizer + 100% liquid biofertilizer) and each treatment was sampled (soil at -7 DAP, 50 DAP and 100 DAP and plants at 5 DAP, 20 DAP, 35 DAP, 50 DAP and 100 DAP) diagonally as much as 5 points. Each treatment was repeated 3 times as a group. The data obtained were tested by the Bartlett test and Tukey's test. Then the analysis of variance with a level of 5% was carried out and a Duncan Multiple Range Test (DMRT) was carried out at a level of 5% to determine the differences between treatments. The results showed that the soil pH and available P showed higher yields in the P_3 treatment. Soil organic C showed higher yields in the P_0 treatment. N-total soil showed higher yields in the P_2, P_1 and P_0 treatments. Plant height and number of tillers showed higher yields in P_1 and P_2 treatments. The wet and dry weights of the stover showed higher yields in the P_1 treatment. Grain weight, 1000 grain weight and rice production weight showed higher yields in P_3 treatment.

Key words: chemical fertilizer, liquid biological fertilizer, rice