Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh pupuk kandang sapi dan pupuk kandang ayam terhadap kelimpahan fauna tanah dan serapan N padi serta mengetahui dosis pupuk terbaik bagi tanaman berdasarkan perlakuan pada awal konversi pertanian konvensional ke organik. Pengambilan sampel tanah dilakukan sebanyak tiga kali yaitu sebelum tanam, vegetatif, dan generatif. Kelimpahan fauna tanah yang diamati yakni cacing tanah, nematoda parasit dan non-parasit, serta respirasi tanah. Kelimpahan populasi cacing tanah diamati dengan ring-sampel PVC, nematoda parasit dan non parasit dengan metode *Whitehead Tray Technique* yangdimodifikasi, respirasi tanah diamati dengan pengukuran CO_2 dalam botol tertutup. Kandungan N total tanah dianalisis menggunakan metode Kjeldahl, N tersedia tanah menggunakan metode Cottenie, dan N total jaringan menggunakan metode destruksi basah dengan asam sulfat dan asam peroksida. Hasil penelitian menunjukkan pemberian pupuk kandang sapi dan pupuk kandang ayam berpengaruh nyata terhadap Kapasitas Pertukaran Kation (KPK) tanah, N total tanah, kelimpahan cacing, kelimpahan nematoda non-parasit, respirasi tanah, serapan N trubus, dan produksi padi. Kombinasi jenis dan dosis pupuk berdasarkan serapan N fase vegetatif dan generatif serta tinggi tanaman dan jumlah anakan menunjukkan bahwa perlakuan kombinasi pupuk kandang sapi dan pupuk kandang ayam dosis 10 ton/ha (P_3D_3) merupakan dosis terbaik pada konversi sistem pertanian konvensional ke organik dengan produktivitas sebesar 2,04 ton/ha.

Kata kunci: pupuk kandang sapi, pupuk kandang ayam, serapan N, fauna tanah

Abstract

This research was aimed to determine the effect of cow manure and chicken manure on the abundance of worms and soil nematodes, and N uptake of rice as well as determine the best dose of fertilizer for plants based treatment in the early conversion of conventional to organic farming. Soil sampling was taken three times that is before planting, vegetative phase, and generative phase. The abundance of soil fauna was observed that earthworms, nematodes, parasitic and non-parasitic, and soil respiration. Earthworm population abundance is observed with ring-samples of PVC, parasitic and non-parasitic nematodes with Tray Technique Whitehead method has been modified, soil respiration was observed by measuring the CO_2 in sealed bottles. Total soil of N content was analyzed using the Kjeldahl method, available soil N using Cottenie method, and N total tissue using wet digestion with sulfuric acid and peroxide acid. The results of this research showed that cow manure and chicken manure significantly affectedto Cation Exchange Capacity (CEC) of soil, soil total N, abundance of worms, the abundance of non-parasitic nematodes, soil respiration, N uptake poster and rice production. The combination of the type and dose of manure based on N uptake of vegetative and generative phase as well as plant height and number of tillers showed that the combination treatment of cow manure and chicken manure dose of 10 tonnes/ha(P_3D_3) was the optimal dose in the beginning conversion of conventional to organic farming systems with the productivity is 2,04 tonnes/ha.

Keywords: cow manure, chicken manure, N uptake, soil fauna