

Intisari

Dalam meningkatkan produksi padi perlu dilakukan pelestarian lingkungan produksi, salah satunya dengan pemanfaatan pupuk organik. Penelitian ini bertujuan mengetahui perbedaan penggunaan jenis pupuk organik terhadap kelimpahan fauna tanah dan serapan nitrogen pada tanaman padi serta mengetahui besarnya pengaruh penambahan berbagai pupuk organik terhadap ketersediaan nitrogen dalam tanah. Rancangan penelitian yang digunakan adalah Rancangan Acak Kelompok Lengkap (RAKL) faktorial dengan faktor perlakuan yaitu pemberian pupuk kandang sapi, kompos mimba, dan kompos jerami dengan 3 ulangan sehingga total perlakuan berjumlah 14 dan satu kontrol. Masing – masing dosis pupuk yang diberikan yaitu sebesar 10 ton/ha dan 20 ton/ha. Parameter yang diamati meliputi pH(aktual dan potensial), KPK, bahan organik tanah, respirasi CO₂, N- tersedia, N- total, nematoda nonparasit, kelimpahan cacing tanah, pengamatan agronomi, berat segar dan berat kering tanaman, berat gabah, serta petak ubinan. Dalam setiap parameter pengukuran dilakukan pada dua fase yaitu vegetatif dan panen. Data hasil penelitian dianalisis dengan analisis sidik ragam (*Analysis of variance*) menggunakan software SAS 9.1. Apabila pengaruhnya beda nyata dilanjutkan dengan Uji Jarak Berganda Duncan (DMRT). Perbedaan jenis dan dosis pupuk organik berpengaruh nyata terhadap pH potensial (fase vegetatif), bahan organik tanah (fase generatif), KPK tanah (fase generatif), N- tersedia tanah (fase vegetatif dan generatif), N total tanah (fase vegetatif dan generatif), kadar N total jaringan pada tanaman (fase vegetatif dan generatif), serta serapan N jaringan pada tanaman (fase vegetatif dan generatif). Pada biologi tanah seperti respirasi tanah, kelimpahan cacing tanah, dan nematoda non parasit tidak memberikan pengaruh nyata terhadap jenis dan dosis pupuk organik yang diberikan. Kombinasi jenis dan pupuk berdasarkan serapan N fase vegetatif serta tinggi tanaman dan jumlah anakan menunjukkan bahwa perlakuan kompos mimba dosis 20 ton/ha merupakan takaran terbaik pada padi varietas Inpari 23 di sawah Inceptisol Berbah dengan produksi sebesar 4.6 ton/ha.

Kata kunci : pertanian organik, pupuk organik, kelimpahan fauna tanah, nitrogen.

Abstract

To increase rice production is necessary to the preservation of the production environment, one of them with the use of organic fertilizers. This study aims to determine the differences in use of organic fertilizers on the abundance of soil fauna and nitrogen uptake in rice plants as well as determine the influence of the addition of organic fertilizer to the availability of nitrogen in the soil. The design of the study is a *Randomized Complete Block Design (RCBD) factorial* treatment factors that manure, compost neem, and green manure with three replications so that the total treatment amounted to 14 and one control. Fertilizer dose given at 10 tonnes / ha and 20 ton / ha. The observed parameters pH (actual and potential), CEC, organic matters soil, soil respiration, available-N, total N in soil, total N and N-uptake in plant tissues, non parasites nematode, the abundance of earthworms, agronomic observations : fresh weight and dry weight of plant, grain weight, as well as plots of tile. In every parameter measurements were performed at two phases of the vegetative and harvesting. The data were analyzed by analysis of variance (analysis of variance) using SAS 9.1 software. If the real difference influence continued with Duncan Multiple Range Test (DMRT). The differences of type and doses organic fertilizer have a significant effect in potensial pH (vegetative phase), soil organic matter (generative phase), CEC (generative phase), available-N (vegetative and generative phase), total N in the soil (vegetative and generative phase), total N and N-uptake in plant tissues (vegetative and generative phase). In the soil biology such as soil respiration, abundance of earthworm, and non parasites nematode have significant effect on type and doses on organic fertilizer which have been applied. The combination of the type and fertilizer N-uptake by the vegetative phase, as well as plant height and number of tillers showed that neemcake dose of 20 ton / ha is the best measure for rice in the rice fields Inpari 23 on Inceptisol Berbah with the production of 4,6 tons / ha.

Keywords: organic farming, organic fertilizers, soil fauna abundance, nitrogen.