

Intisari

Penelitian ini dilakukan di Inceptisol Cangkringan, Sleman dengan tujuan mengetahui pengaruh biochar sekam padi, pupuk organik cair dan mikoriza terhadap serapan fosfor dan hasil jagung berdasarkan perlakuan konversi sistem pertanian konvensional ke organik. Desain penelitian yang digunakan adalah Rancangan Acak kelompok Lengkap (RAKL) dengan dua jenis pupuk yaitu biochar sekam padi dan pupuk organik cair, dosis (0, 5 ton/ha, 10 ton/ha, 5l/ha serta 10l/ha), mikoriza dan tanpa mikoriza. Pengambilan sampel tanah dilakukan sebanyak dua kali, yaitu awal tanam dan vegetatif maksimal, sedangkan pengambilan sampel tanaman pada fase vegetatif maksimal. Hasil penelitian menunjukkan pemberian biochar sekam padi dan pupuk organik cair dengan dosis 0, 5 ton/ha, 10 ton/ha, 5l/ha dan 10l/ha serta pemberian mikoriza berpengaruh nyata pH aktual dan pH potensial tanah, P tersedia dan P total tanah serta serapan P tanaman jagung. Hasil pertumbuhan dan produksi jagung tertinggi didapat pada perlakuan biochar 5ton/ha+mikoriza dengan berat 8,59 ton/ha jagung. Hasil serapan P tanaman jagung juga menunjukkan bahwa pemberian biochar dan mikoriza berpengaruh terhadap serapan unsur P. Pada perlakuan biochar 5 ton/ha+mikoriza sebesar 82,39 mg/tanaman dan terendah pada perlakuan kontrol+tanpa mikoriza sebesar 65,07 mg/tanaman.

Kata kunci : biochar sekam padi, pupuk organik cair, jagung, serapan P, mikoriza, Inceptisol

Abstract

This research was conducted in Inceptisol Cangkringan, Sleman with the aim of knowing the effect of rice husk of biochar, liquid organic fertilizer and mycorrhiza on phosphorus uptake and yield of corn based treatment conversion of conventional to organic farming systems. Design experiment used is Complete Random Design Group (RAKL) with rice husk of biochar, liquid organic fertilizer, dosage (0, 5 ton/ha, 10 ton/ha, 5l/ha, 10l/ha), mycorrhizae and without mycorrhizae. Soil sampling was taken two at the beginning of planting and vegetative phase, and the plant sampling was taken at vegetative phase. The results showed that rice husk of biochar and liquid organic with doses of 0, 5 ton/ha, 10 ton/ha, 5l/ha and 10l/ha and the provision of mycorrhiza significantly affect to pH actual and pH potential, available P and P total soil and P uptake of corn plants. The highest results of growth and corn production obtained in the treatment rice husk of biochar 5 ton/ha + mycorrhizae with a weight is 8,59 ton/ha of corn. The results of P uptake in maize tissue also showed that treatment of mycorrhiza and biochar affect the absorption element P. In the treatment rice husk of biochar 5 ton /ha + mycorrhiza amounted to 82,39 mg/plant and the lowest in treatment of control + without mycorrhiza amounted to 65,07 mg/plant.

Key words : rice husk of biochar, liquid organic fertilizer, corn, P uptake, mycorrhiza, Inceptisol

