

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh urea, pupuk kandang ayam, dan biochar sekam padi terhadap sifat kimia tanah, sifat agronomis tanaman, serapan N, serta efisiensi serapan N dan efisiensi agronomis tanaman pakcoy yang di tanam di Entisol Samas, Bantul. Sampel tanaman pakcoy di panen pada akhir masa pertumbuhan vegetatif tanaman yaitu pada umur 35 hari setelah tanam. Penelitian ini dilaksanakan di Rumah Kaca Departemen Tanah UGM dan dilanjutkan dengan analisis di Laboratorium Tanah UGM. Perlakuan yang diterapkan ialah urea dengan dosis 0; 200 dan 400 kg/ha, pupuk kandang ayam dengan dosis 0 dan 20 ton/ha, serta biochar sekam padi dengan dosis 0 dan 25 ton/ha. Selanjutnya faktor dan taraf tersebut dikombinasikan menjadi 12 kombinasi perlakuan yang diulang sebanyak 3 kali sehingga didapatkan 36 sampel percobaan. Hasil Penelitian menunjukkan bahwa kombinasi urea, pupuk kandang ayam dan biochar sekam padi memberikan pengaruh beda nyata terhadap peningkatan pH H₂O, pH KCl, N-Total tanah, berat segar dan kering tajuk, biomassa total basah dan kering tanaman, kadar N tajuk; akar; dan total tanaman, serta serapan N tajuk dan total tanaman. Kombinasi urea, pupuk kandang ayam, dan biochar sekam padi memberikan pengaruh beda nyata terhadap efisiensi agronomis, namun tidak berbeda nyata pada efisiensi serapan N tanaman Pakcoy. Berdasarkan pertimbangan hasil tanaman, serapan N, efisiensi agronomis dan efisiensi serapan hara N yang telah didapatkan, kombinasi urea 400 kg/ha + pupuk kandang ayam 0 ton/ha + biochar sekam padi 25 ton/ha merupakan dosis yang direkomendasikan untuk digunakan dalam upaya meningkatkan pertumbuhan dan serapan hara N pakcoy.

Kata kunci: Urea, Pupuk Kandang Ayam, Biochar Sekam Padi, Nitrogen, Entisol.

ABSTRACT

This research aims to determine the effect of urea (N fertilizer), chicken manure, and rice husk biochar on soil chemical properties, plant agronomic properties, Nitrogen (N) uptake, as well as N uptake efficiency and agronomic efficiency of pak choy planted in Entisol Samas, Bantul. Pak choy plant samples were harvested at the end of the vegetative plant growth period, namely 35 days after planting. This research was carried out in the Greenhouse of the Soil Science Department and continued with analysis at the Soil Science Laboratory, UGM. The treatment applied was urea at a dose of 0; 200 and 400 kg/ha, chicken manure at doses of 0 and 20 tons/ha, and rice husk biochar at doses of 0 and 25 tons/ha. These factors and levels were combined into 12 treatment combinations which were repeated 3 times to obtain 36 experimental samples. The research results showed that the combination of urea, chicken manure and rice husk biochar had a significantly different effect on increasing and decreasing soil pH, increasing Soil Total-N, shoot fresh and dry weight, total wet and dry plant biomass, N content on shoot; root; and total plants, as well as N uptake on shoot and total plants. The combination of urea, chicken manure, and rice husk biochar show a significant effect on the agronomic efficiency but not on the N uptake efficiency of Pak choy. However, based on consideration of plant yield, N uptake, agronomic efficiency and N uptake efficiency that had been obtained, the combination of urea 400 kg/ha + chicken manure 0 tons/ha + rice husk biochar 25 tons/ha is the recommended dose to be used to increase the growth and N uptake of pak choy.

Keywords: Urea, Chicken Manure, Rice Husk Biochar, Nitrogen, Entisol.