INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pupuk kandang dan arang sekam terhadap beberapa sifat kimia tanah, serapan hara Fosfor, dan sifat agronomis serta hasil tanaman kedelai pada tanah Vertisol Bayat, Klaten. Pengambilan sampel tanah dilakukan pada awal sebelum perlakuan dan pada saat panen vegetatif. Pengambilan sampel tanaman dilakukan pada masa vegetatif maksimum yaitu pada 7 MST. Penelitian ini dilakukan di *Greenhouse* sederhana yang terletak di Kecamatan Bayat, Kabupaten Klaten serta Laboratorium Departemen Tanah pada bulan Februari-Juli 2024. Perlakuan yang diberikan adalah pemberian kombinasi pupuk kandang 0 ton/ha, 10 ton/ha, dan 20 ton/ha dengan arang sekam padi 0 ton/ha, 10 ton/ha, dan 20 ton/ha. Hasil penelitian menunjukkan bahwa perlakuan kombinasi pupuk kandang dan arang sekam berpengaruh dalam meningkatkan bahan organik, C-Organik, Kapasitas Pertukaran Kation, Fosfor tersedia tanah serta menurunkan pH tanah. Kemudian pemberian perlakuan mampu meningkatkan serapan P, pertumbuhan, dan hasil tanaman kedelai. Perlakuan pupuk kandang 20 ton/ha dan arang sekam padi 10 ton/ha memberikan nilai tertinggi pada serapan P dan berat biji. Sementara, perlakuan pupuk kandang 20 ton/ha dan arang sekam padi 20 ton/ha memberikan nilai tertinggi pada P tersedia tanah.

Kata kunci: arang sekam, fosfor, kedelai, pupuk kandang, Vertisol

ABSTRACT

This research aims to determine the effect of applying manure and husk charcoal on increasing and improving soil chemical properties, Phosphorus nutrient uptake, vegetative growth, and yield of soybean plants on Vertisol soil of Bayat, Klaten. Soil samples were taken at the beginning before treatment and at vegetative harvest period. Plant samples were taken during the maximum vegetative period, namely 7 MST . This research was conducted in the simple greenhouse that located in Bayat, Klaten and the Laboratory of Soil Science Department in February 2023 – July 2023. The treatment applied was a combination of 0 ton/ha, 10 ton/ha, and 20 ton/ha manure. with rice husk charcoal 0 ton/ha, 10 ton/ha, and 20 ton/ha on soybean plants. cation exchange capacity, phosphorus availability in the soil and reducing soil pH.Afterwards the treatment was able to increase phosphorus uptake, growth, and yield of soybean plants. The treatment of 20 tons/ha manure and 10 tons/ha rice husk charcoal provide the highest value of phosphorus uptake and soybean seed weight. Meanwhile, the treatment of 20 tons/ha manure and 20 tons/ha rice husk charcoal provide the highest value of phosphorus availability.

Keywords: husk charcoal, phosphorus, soybean, manure, vertisol