

ABSTRAK

PRODUKSI JAGUNG, PERILAKU JERAPAN FOSFOR (LANGMUIR), FOSFOR DAN KALIUM TERANGKUT AKIBAT PERLAKUAN BIOCHAR DAN PEMUPUKAN FOSFOR DI TANAH ULTISOL GEDONG MENENG

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Jagung sebagai sumber kebutuhan akan pangan mengalami peningkatan diiringi dengan bertambahnya jumlah penduduk. Namun, produksi jagung mengalami penurunan yang diakibatkan dari permasalahan tanah ultisol berupa kesuburan tanah. Usaha untuk memperbaiki kesuburan tanah ultisol yaitu dengan pemupukan P dan penambahan biochar. Penelitian ini dilakukan untuk mengetahui produksi jagung, perilaku jerapan fosfor (Langmuir), fosfor dan kalium terangkut akibat perlakuan biochar dan pemupukan fosfor. Penelitian dirancang menggunakan Rancangan Acak Kelompok (RAK) dengan 2 faktor dan 3 ulangan. Faktor pertama adalah berbagai jenis biochar (B) dengan 4 taraf yaitu Tanpa biochar (B0), Biochar sekam padi (B1), Biochar tongkol jagung (B2), dan Biochar batang singkong (B3). Faktor kedua adalah pemupukan fosfat (P) dengan 2 taraf yaitu Tanpa pupuk P (P0), dan pupuk P (P1). Penanaman jagung dilaksanakan di Laboratorium Lapangan Terpadu, Fakultas Pertanian, Universitas Lampung. Hasil penelitian, produksi jagung menunjukkan pada perlakuan biochar batang singkong dan pupuk P berbeda nyata tertinggi dibandingkan perlakuan lainnya. Jerapan P maksimum tanah yang diberi perlakuan biochar batang singkong dan P lebih rendah dibandingkan tanah komposit (sebelum tanam) dan perlakuan lainnya. Jerapan P maksimum (X_{max}) sebelum tanam tidak berkorelasi terhadap sifat kimia tanah. Jerapan P maksimum (X_{max}) setelah panen berkorelasi terhadap P-potensial dan N-total.

Kata kunci: Biochar, Langmuir, fosfor terangkut jagung, Kalium terangkut jagung, Pupuk fosfat.

ABSTRACT

PRODUCTION OF CORN, EXCHANGE OF PHOSPHOR IN THE SOIL (LANGMUIR), AND TRANSPORTED OF PHOSPHORUS AND POTASSIUM DUE TO THE TREATMENT OF BIOCHAR AND PHOSPHORUS FERTILIZER IN ULTISOL GEDONG MENENG

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Corn as a source of staple foods has experienced an increase accompanied by the growing population. However, corn production has decreased due to soil ultisol fertility. Efforts to improve ultisol soil fertility include phosphorus fertilization and the addition of biochar. This research was conducted to determine corn production, phosphorus sorption behavior (Langmuir), and the harvested of phosphorus and potassium due to biochar treatment and phosphorus fertilization. The study used a randomized block design (RBD) with 2 factors and 3 replications. The first factor was various types of biochar (B), namely without biochar (B0), rice husk biochar (B1), corncob biochar (B2), and cassava stem biochar (B3). The second factor was phosphate (P) fertilization with 2 levels, namely without P fertilizer (P0) and P fertilizer (P1). Corn was planted at the Integrated Field Laboratory, Faculty of Agriculture, University of Lampung. The research results indicate that corn production shows a significantly higher difference in the treatment of cassava stem biochar and phosphorus fertilizer compared to other treatments. The maximum P adsorption of soil treated with cassava stem biochar and P was lower than composite soil (before planting) and other treatments. Maximum P adsorption (X_{max}) before planting does not correlate with soil chemical properties. Maximum P adsorbed (X_{max}) after harvest is correlated with potential P and total N.

Keywords: Biochar, Langmuir, Phosphor transported by corn, Potassium transported by corn, Fertilizer Phosphate.