PENGARUH PEMBERIAN BIOCHAR SEKAM PADI PADA SAWAH TRADISIONAL TERHADAP DISTRIBUSI VERTIKAL UNSUR HARA

ABSTRAK

Untuk melihat distribusi vertikal unsur hara tanah sawah tradisional akibat pemberian berbagai takaran *biochar* sekam padi telah dilakukan penelitian dari bulan Mei sampai Agustus 2015 di Jorong Air Hangat Nagari Tanjung Betung Kecamatan Rao Selatan Kabupaten Pasaman Sumatera Barat. Penelitian menggunakan Rancangan Acak Lengkap dengan 6 perlakuan dan 3 ulangan. Perlakuan *biochar* sekam padi yang digunakan yaitu perlakuan A=0 ton/ha, B=5 ton/ha, C=10 ton/ha, D=15 ton/ha, E=20 ton/ha dan F=25 ton/ha. Sampel tanah diambil menggunakan bor tanah pada kedalaman 0-10 cm, 10-20 cm, 20-30 cm, 30-40 cm, dan 40-50 cm. Analisis tanah dan tanaman dilakukan di Laboratorium Jurusan Tanah Fakultas Pertanian Universitas Andalas Padang. Data hasil analisis tanah dan tanaman diuji secara statistik berdasarkan uji T pada taraf 5%. Hasil penelitian menunjukkan pemberian *biochar* sekam padi mempengaruhi sifat tanah serta distribusi vertikal unsur hara tanah sawah. Pemberian *biochar* sekam padi dengan takaran 25 ton/ha mampu meningkatkan kandungan hara pada kedalaman 0-10 cm menjadi 27.98 ton C-organik/ha; 14.45 ton N-total/ha; 53.80 ton P_20_5/ha; 0.32 ton SiO_2/ha; 76.04 me/100g KTK; dan 1,45 ton CaO/ha. Untuk total hara dalam profil pada takaran 25 ton/ha menjadi 67.11 ton C-organik/ha; 16.18 ton N-total/ha; 53.80 ton P_20_5/ha; 1.62 ton SiO_2/ha; 235 me/100g KTK; dan 0.42 ton MgO/ha. Pola penyebaran unsur hara yang tidak merata terjadi pada setiap kedalaman yang diamati. Produksi padi pada tanah tanpa perlakuan *biochar* menunjukkan nilai yang lebih rendah dibandingkan dengan tanah yang diberi *biochar* sekam padi.

Kata kunci: *biochar* sekam padi, sawah tradisional, Pasaman.

RICE HUSK BIOCHAR APPLICATION IN TRADITIONAL PADDY SOIL AND ITS EFFECT OF NUTRIENTS VERTICAL DISTRIBUTION

ABSTRACT

A research to investigate nutrients vertical distribution at traditional paddy soil system and to determine various doses of rice hulk biochar, was conducted from May to August 2015 at Jorong Air Hangat Nagari Tanjung Betung, Pasaman Regency, District of Sumatera Barat. The experiment was designed on Completely Randomized Design (CRD) with 6 treatments and 3 replications. The treatments consist of A= 0 ton/ha, B= 5 ton/ ha, C= 10 ton/ha, D= 15 ton/ha, E= 20 ton/ha and F= 25 ton/ha. Soil samples were collected using soil arger from the depth of 0-10 cm, 10-20 cm, 20-30 cm, 30-40 cm and 40-50 cm. Soil and plant analysis carried out in the Laboratory of Soil, Faculty of Agriculture, Andalas University, Padang. Data from the analysis were statistically tested with T test at 5% level. The results showed that rice hulk biochar application influence the soil properties as well as the vertical distribution of soil nutrients. Biochar with a rate of 25 ton/ha were able to increase organic C at 27.98 ton/ha; total N at 14.45 ton/ha, P_20_5 at 53.80 ton/ha; SiO_2 at 0.32 ton/ha; CEC at 26.82 me/100g; and CaO at1.45 ton/ha. Soil nutrients after treatments with 25 ton/ha are, organic C at 67.11 ton/ha; total N at 16.18 ton/ha; P_20_5 at 53.80 ton/ha; SiO_2 at 1.62 ton/ha; and MgO at 0.42 ton/ha. It can be assumed that the application of biochar enhance soil fertility and rice production in paddy soil.

Keywords: rice husks biochar, traditional paddy soil, Pasaman.