PEMANFAATAN *BIOCHAR* SEKAM PADI DAN LIMBAH BUAH KELAPA MUDA TERHADAP SIFAT FISIKA ULTISOL DAN HASIL TANAMAN EDAMAME

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Abstrak

Salah satu cara untuk mengatasi permasalahan pada Ultisol adalah dengan pemberian bahan amelioran yaitu biochar sekam padi dan biochar limbah buah kelapa muda. Lahan yang digunakan pada penelitian ini sebelumnya telah diberikan perlakuan biochar sekam padi dan biochar limbah buah kelapa muda masing-masing 10 ton/ha yang ditanami dengan jagung pakan. Tujuan penelitian ini untuk mengetahui pengaruh penambahan biochar sekam padi dan limbah buah kelapa muda 10 ton/ha terhadap sifat fisika Ultisol dan produksi tanaman Edamame. Penelitian ini telah dilaksanakan dari bulan April sampai Agustus 2021 di Belimbing, Kecamatan Kuranji, Kota Padang dan Laboratorium Jurusan Tanah, Fakultas Pertanian, Universitas Andalas. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 3 perlakuan dan 4 ulangan. Perlakuan terdiri dari kontrol, penambahan 10 ton/ha biochar sekam padi dan 10 ton/ha biochar limbah buah kelapa muda. Hasil penelitian menunjukkan pemberian biochar limbah buah kelapa muda merupakan perlakuan terbaik. Bahan organik Ultisol meningkat sebesar 1,82%, berat volume menurun sebesar 0,1 g/cm^3, total ruang pori meningkat sebesar 3,42%, kadar air meningkat sebesar 9,27%, permeabilitas meningkat sebesar 3,18 cm/jam, stabilitas agregat meningkat sebesar 16,16%, tinggi tanaman meningkat sebesar 9,77 cm, berat kering 100 biji dan produksi polong meningkat masing-masing 2,46 g dan 1,25 ton/ha.

Kata kunci : biochar, edamame, limbah buah kelapa muda, sekam padi, Ultisol

UTILIZATION OF BIOCHAR DERIVED FROM RICE HUSK AND YOUNG COCONUT WASTE ON PHYSICAL PROPERTIES OF ULTISOLS AND EDAMAME PRODUCTION

Abstract

One way to overcome the problem of Ultisol is by giving ameliorant material, such as rice husk biochar and young coconut waste biochar. The land used in this study had previously been treated with 10 tons/ha rice husk and young coconut waste biochar for corn growth. The purpose of this study was to determine the effect of 10 tons/ha rice husk and young coconut waste biochar application on the physical properties of Ultisol and the production of Edamame. This research was carried out from April to August 2021 in Belimbing, Kuranji District, Padang City and the Laboratory of the Department of Soil, Faculty of Agriculture, Andalas University. This study used a Randomized Block Design (RAK) which consisted of 3 treatments and 4 replications. The treatments were without application of biochar as control, application of 10 tons/ha rice husk biochar and 10 tons/ha young coconut waste biochar. The results showed that giving biochar from young coconut waste was the best treatment. The organic matter content of Ultisol increased by 1.82%, bulk density decreased by 0.1 g/cm^3, total pore space increased by 3.42%, water content increased by 9.27%, permeability increased by 3.18 cm/h, aggregate stability increased by 16.16%, plant height increased by 9.77 cm, dry weight of 100 seeds and pod production increased by 2.46 g and 1.25 tons/ha, respectively.

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Keyword : biochar, edamame, young coconut waste, rice husk, Ultisol