

**PEMANFAATAN VERMIKOMPOS DAN BIOCHAR TULANG SAPI
TERHADAP KETERSEDIAAN HARA ULTISOL DAN PRODUKSI
KEDELAI (*Glycine max*)**

SKRIPSI



**FAKULTAS PERTANIAN
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ABSTRAK

Pemanfaatan vermikompos dan biochar tulang sapi digunakan sebagai penyedia hara bagi Ultisol dan produksi kedelai. Penelitian dilaksanakan pada bulan Januari – Juni 2017 di Rumah Kawat dan Laboratorium Jurusan Tanah Fakultas Pertanian Universitas Andalas. Tujuannya adalah mengetahui interaksi dan pengaruh utama vermikompos dan biochar tulang sapi terhadap ketersediaan hara Ultisol dan produksi kedelai (*Glycine max*). Penelitian berbentuk faktorial 4x3 dengan 3 kali ulangan dalam Rancangan Acak Lengkap (RAL). Faktor pertama dari vermikompos yaitu VC₀ = vermikompos 0 ton/ha, VC₁ = vermikompos 5 ton/ha, VC₂ = vermikompos 10 ton/ha dan VC₃ = vermikompos 15 ton/ha dan Faktor kedua dari biochar tulang yaitu BT₀ = biochar tulang 0 kg/ha, BT₁ = biochar tulang 400 kg/ha dan BT₂ = biochar tulang 800 kg/ha. Dari hasil yang didapatkan, pemberian vermikompos dan biochar tulang sapi dapat meningkatkan kejenuhan basa Ca-dd 3,37 me/100g ke 5,19 me/100g, Mg-dd 1,10 me/100 g ke 1,71 me/100g dan K-dd 0,60 me/100g ke 0,92 me/100g, pH 4,83 ke 5,02, C-organik 1,07 % ke 1,83%, P-tersedia 11,78 ppm ke 31,97 ppm, N-total 0,08 % ke 0,20 %, Kapasitas Tukar Kation 9,49 me/100 g ke 37,87 me/100 g, dan menurunkan Al-dd tanah 2,40 me/100 g ke 0,13 me/100g. Dosis terbaik Vc₃ BT₂ diperoleh produksi tanaman 1,16 ton/ha. Pemberian vermikompos dan biochar tulang dapat meningkatkan ketersediaan hara dan produksi kedelai di Ultisol.

Kata kunci : *Biochar tulang sapi, kedelai, ultisol, vermikompos*

UTILIZATION OF VERMICOMPOST AND BONE MEAL BIOCHAR FOR SOYBEAN (*Glycine max*) YIELDS AND NUTRIENT AVAILABILITY IN ULTISOL

ABSTRACT

An experiment of the utilization vermicompost and bone meal biochar to improve the nutrient availability and soybean yield in Ultisol has been conducted. The experiment was conducted from January to June 2017 in the experimental field of Andalas University. The aim of the study was to know the interaction and the effects of vermicompost and bone meal biochar to nutrient availability and soybean yield in Ultisol. A factorial experiment in Randomized Complete Design with two factors and three replications was used. Experimental factor I was vermicompost which were VC₀ = vermicompost 0 ton/ha, VC₁ = vermicompost 5 ton/ha, VC₂ = vermicompost 10 ton/ha, VC₃ = vermicompost 15 ton/ha and experimental factor II was biochar doses which were BT₀ = bone meal biochar 0 kg/ha, BT₁ = bone meal biochar 400 kg/ha and BT₂ = bone meal biochar 800 kg/ha. Results showed the application of vermicompost and bone meal biochar can relatively improve the exchangeable cations Ca-dd from 3,37 me/100g to 5,19 me/100g, Mg-dd from 1,10 me/100g to 1,71 me/100g, K-dd from 0,60 me/100g to 0,92 me/100g, pH from 4,83 to 5,02, organic carbon from 1,07% to 1,83%, available phosphorus from 11,78 ppm to 31,97 ppm, total nitrogen from 0,08% to 0,20%, cation exchange capacity (CEC) from 9,49 me/100g to 37,87 me/100g and decreased the exchangeable aluminum from 2,40 me/100g to 0,13 me/100g. The best dose of treatment was Vc₃ BT₂ to obtain 1,16 yield. However, both vermicompost and bone meal biochar treatments can increase the nutrients availability and plant yield in Ultisol each self.



Keyword: *bone meal biochar, soybean, ultisol, vermicompost*