

**PEMANFAATAN KOMPOS JERAMI PADI PLUS TITHONIA
DAN BIOCHAR UNTUK MEMPERBAIKI SIFAT KIMIA
INCEPTISOL DATARAN TINGGI SERTA MENINGKATKAN
PERTUMBUHAN TANAMAN KOPI ARABIKA
(*Coffea arabica L.*)**

SKRIPSI



Pembimbing I

Pembimbing II

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**PROGRAM STUDI ILMU TANAH
FAKULTAS PERTANIAN
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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh kompos jerami padi plus tithonia dan biochar terhadap perbaikan sifat kimia Inceptisol serta peningkatan pertumbuhan tanaman kopi Arabika (*Coffea arabica L.*). Penelitian ini dilaksanakan di Batu Bagirik Alahan Panjang, Kecamatan Lembah Gumanti, Kabupaten Solok, Sumatera Barat. Pada bulan November 2016 sampai Juli 2017. Menggunakan rancangan acak lengkap (RAL) yang terdiri dari 6 perlakuan dan 3 ulangan, yang terdiri dari A : kontrol; B : 100 % kompos; C : 75 % kompos + 25 % biochar; D : 50 % kompos + 50 % biochar; E : 25 % kompos + 75 % biochar; F : 100 % biochar. Hasil penelitian menunjukkan Pemberian bahan organik berupa pupuk kompos dan biochar pada formulasi 25 % kompos + 75 % biochar dapat memperbaiki sifat kimia Inceptisol sebesar 0,66 unit pH; 0,16 % N; 3,55 % C; 6,15 ppm P; 7,39 me/100g, dibandingkan dengan kontrol. Kombinasi pupuk kompos dan biochar memberikan pengaruh terhadap pertumbuhan tanaman kopi Arabika, dengan peningkatan tinggi tanaman (10,27 cm); lebar daun (1,87 cm); panjang daun (6,07 cm); dan jumlah daun (10,67 helai), angkutan hara N daun (1,86 g/tan; batang (0,43 g/tan); P daun (0,24 g/tan); batang (0,06 g/tan); K daun (2,09 g/tan); batang (4,21 g/tan) serta bobot kering daun (3,60 g/tan); bobot kering batang (0,92 g/tan), dibandingkan dengan kontrol.

Kata kunci: *Bahan organik, Biochar, Inceptisol, Kompos dan Tanaman kopi Arabika.*



**UTILIZATION OF COMPOST DERIVED FROM RICE
STRAW PLUS TITHONIA AND BIOCHAR FOR IMPROVING
CHEMICAL PROPERTIES OF HIGHLAND'S INCEPTISOL
AND GROWTH OF ARABICA COFFEE
(*Coffea arabica L.*) SEEDLINGS**

Abstract

This research was aimed to determine the influence of compost derived from rice straw plus tithonia and biochar to improve chemical properties of Inceptisol and growth of Arabica coffee (*Coffea arabica L.*) seedlings. The research was conducted in Batu Bagirik Alahan Panjang, Lembah Gumanti Subdistrict, Solok Regency, West Sumatera from November 2016 to July 2017. This field experiment consisted of six treatments, those were : A = control, B = 100 % compost, C = 75 % compost + 25 % biochar, D = 50 % compost + 50 % biochar, E = 25 % compost + 75 % biochar, F = 100 % biochar, with three replication. The results of the research showed that application of organic fertilizer (compost and biochar) in formulation of 25 % compost + 75 % biochar was able to improve the chemical properties of Inceptisol. It increased soil pH by 0.66 unit, total N by 0.16 %, organic C by 3.55 %, available P by 6.15 ppm, CEC by 7.39 cmol/kg, compared to control. Combination of 25 % compost and 75 % biochar increased the seedling growth of Arabica coffee, especially plant height by 10.3 cm, leaf width by 1.87 cm, leaf length by 6.07 cm, and leaf number by 10.6, N content of leaf by 1.86 g/crop and stem by 0.43 g/crop, P content of leaf by 0.24 g/crop and stem by 0.06 g/crop, K content of leaf by 2.09 g/crop and stem by 4.21 g/crop as well as biomass of leaf by 3.60 g/crop and stem by 0.92 g/crop, compared to control.

Key word: Organic material, Biochar, Inceptisol, Compost, Arabica coffee seedling

