

**EFEK SISA KOMPOS JERAMI PADI PLUS TITHONIA  
DAN PUPUK BUATAN UNTUK PERBAIKAN CIRI KIMIA  
INCEPTISOL SERTA PRODUKSI GANDUM  
(*Triticum aestivum* L.) DI ALAHAN PANJANG**

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# EFEK SISA KOMPOS JERAMI PADI PLUS TITHONIA DAN PUPUK BUATAN UNTUK PERBAIKAN CIRI KIMIA INCEPTISOL SERTA PRODUKSI GANDUM (*Triticum aestivum* L.) DI ALAHAN PANJANG

## ABSTRAK

Penelitian telah dilakukan di Alahan Panjang, Kabupaten Solok, Provinsi Sumatera Barat pada bulan Maret 2016 sampai Januari 2017. Tujuan penelitian ini adalah untuk mempelajari efek sisa pemberian kompos jerami padi plus tithonia dalam mengurangi penggunaan pupuk buatan dan produksi tanaman gandum pada musim tanam kedua. Penelitian dilaksanakan dalam bentuk percobaan lapangan dengan menggunakan Rancangan Acak Kelompok (RAK) yang terdiri dari 6 perlakuan dan 3 ulangan. Perlakuan terdiri dari A: tanpa kompos + pupuk buatan 1R, B: sisa 7,5 ton/ha kompos (jerami padi plus tithonia) + 0R, C: sisa 7,5 ton/ha kompos (jerami padi plus tithonia) + 0,25 R, D: sisa 7,5 ton/ha kompos (jerami padi plus tithonia) + 0,50 R, E: sisa 7,5 ton/ha kompos (jerami padi plus tithonia) + 0,75 R, F: sisa 7,5 ton/ha kompos (jerami padi plus tithonia) + 1R. Pengamatan tanah meliputi pH (H<sub>2</sub>O 1:2) dan pH KCl (1:2), C-organik. (Walkley and Black), N-total. (Kjeldahl), P-tersedia (Bray-II), Al-dd (Volumetrik), Kapasitas Tukar Kation (Leaching), K-dd, Ca-dd, Mg-dd, dan Na-dd (pencucian Ammonium Asetat 1 N pH 7). Pengamatan tanaman meliputi tinggi umur 85 Hari Setelah Tanam (HST), Jumlah Anakan Total (JAT), Angkutan Hara Tanaman (N, P, dan K), Bobot Kering Gabah (BKG), Bobot Kering Jerami (BKJ), dan Bobot 1000 Biji. Data dianalisis ragam, jika berbeda nyata dilanjutkan dengan uji BNJ taraf 5%. Hasil penelitian menunjukkan bahwa sisa kompos jerami padi plus tithonia (50% +50%) sebanyak 7,5 ton/ha mampu mempertahankan sifat kimia tanah dan pertumbuhan tanaman gandum pada musim tanam kedua dengan nilai pH 0,20 unit, C-organik (3,00%); N-total (0,07%); P-tersedia (5,20 ppm); K-dd (0,03 me/100g); Ca-dd (0,50 me/100g); Mg-dd (0,12 me/100g), Na-dd (0,08 me/100g), dan KTK (2,5 me/100). Dengan demikian efek sisa 7,5 ton/ha kompos jerami padi plus tithonia masih mampu mempertahankan sifat kimia tanah dalam mengurangi penggunaan pupuk buatan.

Kata kunci: *efek sisa, kompos jerami padi plus tithonia, sifat kimia tanah, tanaman gandum.*

**RESIDUE EFFECT OF WHEAT STRAW PLUS TITHONIA COMPOST  
AND SYNTHETIC FERTILIZER TO IMPROVE CHEMICAL  
CHARACTERISTICS OF INCEPTISOL AND PRODUCTION OF WHEAT  
(*Triticum aestivum* L.) IN ALAHAN PANJANG**

**ABSTRACT**

This research was conducted in Alahan Panjang, Solok Regency, West Sumatra Province from March 2016 to January 2017. The objective of this was aimed to determine the effect of wheat straw plus tithonia compost in reducing synthetic fertilizer application for producing wheat crop. The experimental design used was a randomized block design (RBD) consisting of 6 treatments and three replications. The treatments were A:0 ton compost/ha + 1 recommendation of synthetic fertilizer, B:7.5 ton compost/ha + 0 recommendation of synthetic fertilizer, C:7.5 ton compost/ha + 0.25 recommendation of synthetic fertilizer, D:7.5 ton compost/ha + 0.50 recommendation of synthetic fertilizer, E:7.5 ton compost/ha + 0.75 recommendation of synthetic fertilizer, F:7.5 ton compost/ha + 1 recommendation of synthetic fertilizer. Parameters of soil chemical characteristic analyzed were pH H<sub>2</sub>O (1:2) and pH KCl (1:2), Al-exchangeable (Volumetric), available P (Bray II), organic C (Walkley and Black), total N (Kjeldahl), CEC (Leaching), K-exch, Ca-exch, Mg-exch, Na-exch (Ammonium Acetate 1N pH 7). Plant growth analyses included the height of 85-day old plant, the number of total tillers, uptake of plant nutrients (N, P, and K), dry weight of grain, dry weight of straw, and the weight of 1000 seeds. The data were analyzed the variance using F-test and then continued using Tuckey's test at 5% level of significance if F-calculated > F-table. Based on the data resulted, residue of 7.5 ton compost/ha was able to keep soil chemical characteristics and plant growth at the second planting season. That dosage increased soil pH by 0.20 unit, organic C by 3.00 %, total N by 0.07 %, available P by 5.20 ppm, K-exch by 0.03 cmol/kg, Ca-exch by 0.50 cmol/kg, Mg-exch by 0.12 cmol/kg, Na-exch by 0.08 cmol/kg, and CEC by 2.5 cmol/kg. Therefore, the effect of 7.5 ton compost/ha was able to keep good soil chemical characteristics as well as to reduce synthetic fertilizer application until the second planting season.

Keyword: *residue effect, compost, soil chemical properties, wheat.*