PEMANFAATAN KOMPOS JERAMI GANDUM PLUS TITHONIA SEBAGAI SUBSTITUSI PUPUK BUATAN UNTUK MEMPERBAIKI SIFAT KIMIA INCEPTISOL DATARAN TINGGI SERTA PERTUMBUHAN DAN PRODUKSI TANAMAN GANDUM (*Triticum aestivum* L.)

ABSTRAK

Penelitian ini telah dilakukan di Alahan Panjang, Kabupaten Solok, Provinsi Sumatera Barat, mulai bulan Mei 2015 sampai Desember 2015. Analisis tanah dilakukan di Laboratorium Kimia Kesuburan Tanah Fakultas Pertanian Universitas Andalas, Padang. Penelitian bertujuan untuk mengkaji pengaruh kompos jerami gandum plus tithonia terhadap perbaikan sifat kimia tanah, pertumbuhan dan produksi tanaman gandum pada Inceptisol. Rancangan yang digunakan adalah Rancangan Acak Kelompok (RAK) yang terdiri dari 6 perlakuan dan 3 ulangan. Perlakuan terdiri dari A : 0 ton/Ha kompos + pupuk buatan 1 Rekomendasi, B : 7,5 ton/Ha kompos + 0 pupuk buatan, C : 7,5 ton/Ha kompos + pupuk buatan 0,25 Rekomendasi, D : 7,5 ton/ha kompos + pupuk buatan 0,50 Rekomendasi, E : 7,5 ton/ha kompos + pupuk buatan 0,75 Rekomendasi, dan F : 7,5 ton/ha kompos + pupuk buatan 1 Rekomendasi. Pengamatan tanah awal dan setelah inkubasi meliputi pH (H_2O 1:2) dan pH KCl (1:2), C_{-Org}.(Walkley and Black), $N_{-tot.}$ (Kjeldahl), P_{-ters}. (Bray-II), Al_{-dd} (Volumetrik), Kapasitas Tukar Kation (KTK), K_{-dd}, Ca_{-dd}, $Mg_{-dd,}$ dan Na_{-dd} (pencucian Ammonium Asetat 1 N pH 7). Pengamatan tanaman meliputi tinggi, jumlah anakan total (JAT), angkutan hara tanaman (N, P, dan K),bobot kering gabah (BKG), bobot kering jerami (BKJ), dan bobot 1000 biji. Data di analisis ragam, jika berbeda nyata dilanjutkan dengan uji BNJ taraf 5%. Hasil penelitian menunjukkan bahwa pemberian kompos jerami gandum plus tithonia (50% + 50%) sebanyak 7,5 ton/Ha pada tanah yang di kapur merupakan perlakuan terbaik dalam memperbaiki sifat kimia tanah, yaitu meningkatkan nilai pH tanah sebesar 0,45 unit; C_{-org}. (0,65%); $N_{-tot.}$ (0,16%); $P_{-ters.}$ (4,31 ppm); K_{-dd} (0,02 me/100g); Ca_{-dd} (0,18 me/100g); Mg_{-dd} (0,05 me/100g), Na_{-dd} (0,02 me/100g), dan KTK (0,74 me/100g); dibandingkan dengan pemberian kapur saja. Pada takaran tersebut dapat meningkatkan tinggi tanaman (4,73 cm); jumlah anakan total (1,6 anakan); angkutan hara N (3,05 kg/ha); angkutan hara P (1,42 kg/ha); angkutan hara K (2,17 kg/ha); bobot kering gabah (1,12 ton/ha); bobot kering jerami (2,12 ton/ha); dan bobot 1000 biji (10,7 g) serta dapat menghemat pupuk buatan 25 %.

Kata kunci: kapur, bahan organik, sifat kimia tanah, tanaman gandum.

ULTILIZATION OF WHEAT STRAW COMPOST PLUS TITHONIA SP AS COMMERCIAL FERTILIZER SUBSTITUTION TO IMPROVE SOIL CHEMICAL PROPERTIES OF INCEPTISOL IN UP LAND AND ON WHEAT PRODUCTION (*Triticum aestivum* L.)

ABSTRACT

A research about ultilization of organic matter (OM) on soil chemical cHaracteristics and wheat (*Triticum aestivum* L.) production was conducted in Alahan Panjang, West Sumatera. The study was carried from Mei 2015 until December 2015. The objective of the research was to find out the effect of OM on some soil chemical characteristics as well as the growth and yield of wheat. Soil samples were taken in Alahan Panjang and then analyzed at Soil Laboratory Andalas University, Padang. The experiment of study used a randomized block design with 6 treatments and 3 replications. The treatments were consist of A : 0 ton OM/Ha plus commercial fertilizer 1 recommendation, B : 7,5 ton OM/Ha plus commercial fertilizer 0 recommendation, C : 7,5 ton OM/Ha plus commercial fertilizer 0,25 recommendation, D : 7,5 ton OM/Ha plus commercial fertilizer 0,50 recommendation, E : 7,5 ton OM/Ha plus commercial fertilizer 0,75 recommendation, and F : 7,5 ton OM/Ha plus commercial fertilizer 1 recommendation. The data were analyzed the variancing using F-test and then continued using Tuckey's test at 5% level of significance if F-calculated > F-table. Based on the data result, it can be concluded that application of 7,5 ton OM/Ha at the limed soil was found to be the best dosage to improve soil chemical properties and wheat production in Alahan Panjang. That dosage increased soil pH by 0,45 unit, organic-C by 0,65%, total-N by 0,16%, available P by 4,31 ppm, K-exch by 0,02 me/100g, Ca-exch by 0,18 me/100g, Mg-exch by 0,05 me/100g, and CEC by 0,74 me/100g compared to lime usage only. Futhermore, application of 7,5 ton OM/Ha plus commercial fertilizer 0,75 recommendation increased dry matter yield by 1,12 ton/Ha and straw biomass by 2,12 ton/Ha compared than commercial fertilizer and can saved the use of commercial fertilizer an amount of 25%.

Keywords: Lime, organic matter (OM), soil chemical properties, wheat