

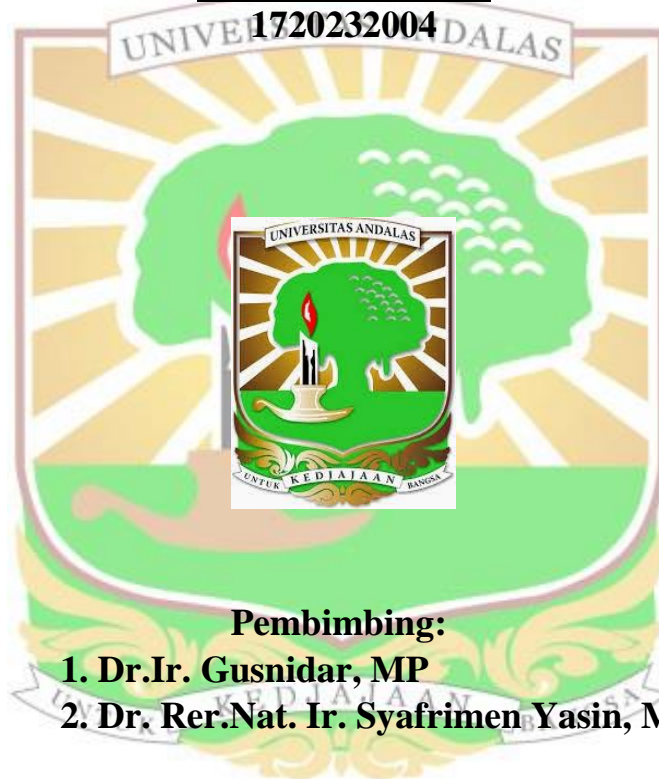
**GRANULASI KOMPOS JERAMI DAN TITONIA DENGAN BAHAN
PEREKAT TANAH LIAT DAN PENGARUHNYA TERHADAP CIRI
KIMIA REGOSOL SERTA PRODUKSI BAWANG MERAH
(*Allium ascalonicum*, L)**

TESIS

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Abstrak

Regosol adalah tanah suboptimal bertekstur pasir, aerasi dan drainase baik, kelembaban tanah rendah dan kandungan bahan organik (BO) rendah serta hara N,P,K rendah. Lahan ini berpotensi untuk lahan usaha tani, dengan meningkatkan kesuburannya, salah satunya dengan kompos jerami dan titonia bentuk granul dengan perekat liat. Tujuan penelitian untuk mempelajari mutu kompos granul dari berbagai komposisi perekat liat dan gugus fungsionalnya, beserta interaksi komposisi kompos granul dan dosis terhadap pertumbuhan serta produksi bawang merah. Penelitian dilaksanakan di Rumah Kawat dan Laboratorium Tanah Fakultas Pertanian, Universitas Andalas, Padang. Percobaan berbentuk Faktorial 3x4 dalam Rancangan Acak Lengkap (RAL) dengan 3 ulangan. Faktor utama adalah perbandingan kompos granul dengan perekat liat (10:0; 9:1; 8:2). Faktor kedua dosis kompos granul (0; 7,5; 15; 22,5) ton/ha. Hasil penelitian menunjukkan bahwa mutu kompos granul pada komposisi perekat liat 10:0 ; 9:1 dan 8:2 secara umum telah melewati standar minimal dari Permentan No. 70 tahun 2011. Karakteristik gugus fungsional kompos terbaik pada komposisi 9:1, menghasilkan bilangan gelombang OH $3320,22 \text{ cm}^{-1}$ -C≡C- $2172,14 \text{ cm}^{-1}$, ikatan C=C aromatik atau karboksil $1635,87 \text{ cm}^{-1}$ dan ikatan C=C-H $1043,03 \text{ cm}^{-1}$. Pemberian kompos granul dengan komposisi perekat liat 9:1 dan dosis 15 ton/ha dapat meningkatkan sifat kimia Regosol pH 6,01; P-tersedia 14,59 ppm; N-total 0,27%; K-dd 0,65 cmol/kg. Produksi bawang merah tertinggi pada dosis 22,5 ton/ha dengan bobot basah 51,76 g/polybag; bobot kering 44,96 g/polybag; angkutan N tanaman 4,21 mg/polybag; angkutan P 2,05 mg/polybag dan angkutan K 4,40 mg/polybag.

Kata Kunci: Bawang merah; Kompos granul jerami titonia; Regosol

**GRANULATION OF STRAW AND TITONIA COMPOST WITH CLAY
ADHESIVE AGENT AND THE IMPACT ON CHEMICAL
CHARACTERISTICS OF REGOSOL AND ONION PRODUCTION
(*Allium ascalonicum*, L)**

Abstract

Regosol is a suboptimal soil having sandy texture, good aeration and drainage, and low fertility, especially organic matter (OM), nitrogen, phosphorus, potassium and other macro nutrient. However, it can be potential for agriculture by increasing its fertility one of which was by granular compost with clay adhesive agent. The research was aimed to investigate the quality of granule compost derived from various compositions of clay adhesive agent and the functional groups, as well as the interaction between the compost composition and the dosage on onion production. The study was conducted in a Wire House and Soil Laboratory of Andalas University's Faculty of Agriculture in Padang. The experiment used Completely Randomized Factorial Design, with 2 factors and 3 replications. The first factor was a ratio between compost composition and clay agent 10:0; 9:1 and 8:2. The second factor was 4 levels of granule compost doses (0; 7,5; 15; 22,5 ton/ha). The results showed that the quality of granule compost with clay adhesive agent for all composition generally have passed the minimum standard of Permentan No. 70 of 2011. The characteristics of the functional groups of the best compost (at ratio 9:1), a wave number of O-H was $3320,22\text{ cm}^{-1}$, $\text{-C}\equiv\text{C-C}\equiv\text{N}$ was $2172,14\text{ cm}^{-1}$, aromatic or carboxyl C=C bonds was $1635,87\text{ cm}^{-1}$ and bond C=CH was $1043,03\text{ cm}^{-1}$. The type of granular compost 9:1 applied for 15 ton /ha could increase the chemical properties of Regosol especially the soil pH was 6,01; P-available was 14,59 ppm; N-total was 0,27%; K-dd was 0,65 cmol / kg. The highest onion production was found at a dose of 22,5 ton/ha with the fresh weight was 51,76 g/ polybag; dry weight was 44,96 g / polybag; N uptake plants was 4,21 mg polybag; P uptake was 2,05 mg/polybag and K uptake was 4,40 mg/polybag

Keywords: Granule compost rice straw titonia; Regosol; Onion