EFEK SISA KOMPOSISI KOMPOS GRANUL DAN SISA DOSISNYA TERHADAP SIFAT BIOLOGI REGOSOL DAN PRODUKSI TANAMAN CAISIM (*Brassica juncea L.*)

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Abstrak

Regosol memiliki permasalahan seperti kemampuan menyerap dan menyimpan air yang sangat rendah serta peka terhadap pencucian unsur hara. Tingginya pencucian unsur hara pada Regosol mengakibatkan pemupukan tidak efisien. Bahan organik mempunyai peran penting di dalam tanah yaitu sebagai sumber energi, hormon, vitamin dan senyawa perangsang tumbuh lainnya. Salah satu pemanfaatan bahan organik yang umum digunakan oleh petani adalah kompos. Jenis kompos berbahan jerami padi plus tithonia**.** Penelitian bertujuan untuk mengkaji pengaruh sisa granulasi kompos terhadap sifat biologi Regosol dan produksi tanaman caisim (*Brassica juncea L.*). Penelitian dilakukan di rumah kawat dan Laboratorium Tanah Fakultas Pertanian, Universitas Andalas. Percobaan berbentuk Faktorial dengan 3x4 ditempatkan dalam Rancangan Acak Lengkap (RAL) dengan 3 ulangan. Faktor pertama adalah perbandingan kompos granul dengan perekat liat (10:0; 9:1; 8:2) dan faktor kedua perbandingan dosis kompos granul (0; 7,5; 15; 22,5) ton/ha. Hasil penelitian menunjukkan bahwa terdapat interaksi terhadap sifat biologi Regosol pada Respirasi Mikroorganisme dan Biomassa C Mikroorganisme. Tidak terdapatnya interaksi dari sisa dosis kompos granul dan komposisinya terhadap produksi tanaman caisim setelah bera ±1 tahun. Terdapatnya pengaruh efek sisa dosis kompos terhadap aktivitas mikroorganisme pada Regosol, bobot segar terbaik terdapat pada dosis 22,5 ton/ha dan terhadap tinggi tanaman yang terbaik pada dosis 7,5 ton/ha yang relatif sama dengan dosis 22,5 ton /ha Komposisi kompos granul terbaik diperoleh pada komposisi 8:2 terhadap sifat biologi dan kimia Regosol. Komposisi kompos granul asal jerami padi dan tithonia dengan liat (8:2) dapat disarankan untuk digunakan.

Kata Kunci: caisim (Brassica juncea L), efek sisa granulasi kompos, mikroorganisme tanah, Regosol

Residual Effect of Compost Types and Dosages on Soil Biological Properties of Regosol and Production of Caisim

(*Brassica juncea L.)*

Abstract

Regosol could have some problems, such as having very low ability in absorbing water, and high sensibility on nutrient leaching. The high capability of leaching nutrients of Regosol will cause low fertilizer use efficiency by crops. This could be improved by organic matter application. One of the popular organic materials in farming communities is compost. The aim of this research was to examine the residual effect of granul compost on the biological properties of Regosol and the production of caisim (*Brassica juncea L.*) plants.The research was conducted at the wire house-plant nursery and at Soil Laboratory of the Faculty of Agriculture, Andalas University, West Sumatra, Indonesia. Experiment was in form of factorial (3 x 4) design with 3 replicates. The first factor was the ratio of granule compost with clay adhesive (10:0; 9:1; 8:2). The second factor was the dose of granule compost (0; 7.5; 15; 22,5) ton/ha. The experimental units were allocated based on completely randomixed design (CRD). Parameter analyzed were organic-C, total-N, available-P, pF, microorganism respiration, microorganism C biomassa, and total population of microorganisms. The results showed that there was an interaction between the biological properties of Regosol and microorganism respiration and microorganism C biomass at a dose of 7,5 tons/ha with 9:1 clay adhesive composition. There was no interaction between the remaining dose of granule compost and its composition on the production of caisim crops after ±1 year being fallowed. There was a residual effect of dose of compost on the activity of microorganisms in Regosol. The best fresh weight of caisim was found at a dose of 22.5 tons/ha and the best plant height at a dose of 7.5 tons/ha. It was relative the same at a dose of 22.5 tons/ha. The best composition of granule compost was obtained at the composition of 8:2 with respect to the biological and chemical properties of Regosol. Composition of granule compost from rice straw and tithonia with clay (8:2) can be recommended to be used.

Keywords: *caisim (Brassica juncea L), residual effect of compost granulation, soil microorganisms, Regosol*