

**PENGARUH PEMBERIAN MIKORIZA TRICHODERMA DAN  
PENGURANGAN PUPUK SINTETIK NPK PADA KANGKUNG  
DARAT (*Ipomoea reptans* Poir) TERHADAP BEBERAPA  
SIFAT FISIK TANAH**

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**ABSTRAK**

Penelitian ini bertujuan untuk mengetahui pengaruh dosis pupuk hayati mikoriza trichoderma dan pengurangan dosis anjuran pupuk NPK optimal terhadap beberapa sifat fisik tanah dan produksi tanaman kangkung serta mengetahui pengaruh dari interaksi antara pengurangan dosis pupuk hayati mikoriza trichoderma terhadap beberapa sifat fisik tanah dan produksi tanaman. Penelitian dilaksanakan di lahan Desa Kaliori, Kabupaten Banyumas dan analisis sifat fisik tanah dilakukan di Laboratorium Ilmu Tanah, Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto. Penelitian dilaksanakan pada bulan Mei 2019 sampai dengan bulan Juni 2019. Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor. Faktor pertama yaitu pemberian pupuk mikoriza trichoderma dengan dosis 10 gr mikoriza + 10 gr trichoderma (M1), 30 gr mikoriza + 30 gr trichoderma (M2), 50 gr mikoriza + 50 gr trichoderma (M3). Faktor kedua yaitu pengurangan anjuran dosis pupuk NPK yang terdiri dari 3 dosis pengurangan yaitu 0% (S1), 25% (S2), 50% (S3). Variabel pengamatan meliputi berat jenis isi (BJI), berat jenis partikel (BJP), porositas, batas cair (BC), batas lekat (BL), batas gulung (BG), batas berubah warna (BBW), jangka olah, tinggi tanaman, bobot tanaman segar, bobot petak efektif segar, bobot tanaman kering. Data dianalisis dengan ragam (uji F) pada taraf kesalahan 5% dan jika terdapat perbedaan (signifikan) dilanjutkan Uji Faktorial Regresi dengan taraf 95%. Hasil penelitian menunjukkan bahwa pemberian pupuk mikoriza trichoderma berpengaruh nyata terhadap tinggi tanaman, batas cair, batas lekat, berat jenis isi, dan porositas. Pengaruh pengurangan anjuran dosis pupuk Nitrogen, Fospat, dan Kalium berpengaruh nyata terhadap berat jenis isi, batas lekat, batas cair, porositas, tinggi tanaman, bobot tanaman segar, bobot petak efektif segar, dan bobot tanaman kering. Interaksi antara pemberian pupuk mikoriza trichoderma dengan pengurangan anjuran dosis pupuk Nitrogen, Fospat, dan Kalium berpengaruh nyata terhadap berat jenis isi, batas cair, porositas, bobot tanaman kering dan bobot tanaman segar.

Kata Kunci: Kangkung Darat, Sifat Fisik Tanah, Mikoriza Trichoderma, NPK, Pertumbuhan, Hasil

**THE EFFECT OF TRICHODERMA MYCORRHIZA AND REDUCTION  
OF NPK SYNTHETIC FERTILIZER IN GROUND SPINACH  
(*Ipomoea reptans* Poir) TO SOIL  
PHYSICAL PROPERTIES**

**ABSTRACT**

*This study aims to determine the effect of trichoderma mycorrhizal biofertilizer dosage and optimal NPK fertilizer dosage reduction on several soil physical properties and ground spinach plant production and determine the effect of the interaction between the reduction of trichoderma mycorrhizal biofertilizer fertilizer dosage on several soil physical properties and crop production. The research was carried out in the Kaliori village land, Banyumas Regency and analysis of soil physical properties was carried out at the Soil Science Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto. This study used a Complete Group Random Design (CGRD) with two factors. The first factor is the administration of trichoderma mycorrhizal fertilizer with a dose of 10 gr mycorrhiza + 10 gr trichoderma (M1), 30 gr mycorrhiza + 30 gr trichoderma (M2), 50 gr mycorrhiza + 50 gr trichoderma (M3). The second factor is the reduction in the recommended dosage of NPK fertilizer consisting of 3 reduction doses, namely 0% (S1), 25% (S2), 50% (S3). Observation variables include density of contents, particle density, porosity, liquid limit, adhesive boundary, rolling boundary, color change limit, processing period, plant height, fresh weight of sample plants, effective plot wet weight, dry weight of sample plants. Data were analyzed by variance (F test) at 5% error level and if there were (significant) differences followed by Factorial Regression Test with 95% level. The results showed that the application of trichoderma mycorrhizal fertilizer proved significantly to plant height, liquid limit, sticky boundary, density of contents, and porosity. Effect of dosage of Nitrogen, phosphate, and potassium fertilizer on fertilizer type weight, boundary limit, liquid limit, porosity, plant height, fresh plant weight, effective fresh plot weight, and plant dry weight. The acceleration of trichoderma mycorrhizal fertilizer application with the help of the recommended dosage of Nitrogen, Phosphate, and Potassium fertilizers increases the amount of fill weight, liquid limit, porosity, dry plant weight, and fresh plant weight.*

*Keywords: Ground Spinach, Soil Physical Properties, Trichoderma Mycorrhiza, NPK, Growth, Yield*