

Role of Compost derived from Rice Straw and Tithonia In Improving Chemical Fertility of Regosol on Onion Cultivation.

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ABSTRACT

Regosol, a suboptimal land, is rarely cultivated due to its low water retention and nutrient content. It is needed organic matter to improve the soil physical, chemical, and biological properties. A research conducted in glasshouse and soil laboratory was aimed to find out the best doses of compost derived from rice straw and tithonia to improve soil chemical properties of Regosol as well as onion production. There were 9 levels of compost doses (0; 2.5; 5.0; 7.5; 10.0; 12.5; 15.0; 17.5; and 20.0 tonha⁻¹) applied to soil with three replications. The experimental units were allocated based on Completely Randomized Design. Crop data resulted were statistically analyzed using F-test and then continued using Least Significance Difference (LSD) at 5% level of significance if F-calculated > F-table. The result showed that compost application up to 20 ton ha⁻¹ did not significantly affect chemical properties of Regosol as well as onion production. The highest weight of onion bulb was found at application of 7.5 t compost ha⁻¹, however the highest N, P, and K uptake was found at doses 20 t compost/ha⁻¹. Therefore, it was needed further study to determine the appropriate compost doses for optimal onion production in Regosol.

Keywords: compost, onion, Regosol