PENGARUH PEMBERIAN PUPUK ORGANIK KOTORAN SAPI TERHADAP PERTUMBUHAN DAN SERAPAN HARA N, P, K TANAMAN CAISIM (*Brassica juncea* L.) PADA ULTISOL

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Abstrak

Tanah Ultisol memiliki banyak masalah dalam hal kesuburan tanah dan pertumbuhan tanaman, namun dapat diperbaiki dengan pupuk organik seperti yang berasal dari kotoran sapi (POKS). Penelitian ini bertujuan untuk mengetahui dosis POKS yang optimal terhadap perbaikan sifat kimia tanah dan pertumbuhan serta serapan hara N, P, K oleh tanaman Caisim (*Brassica juncea* L.) pada Ultisol. Penelitian ini dilakukan secara eksperimen dengan 5 perlakuan yaitu 0 ton/ha sebagai kontrol, 5 ton/ha, 10 ton/ha, 15 ton/ha dan 20 ton/ha dengan 3 kali pengulangan. Parameter yang diuji adalah pH H2O, Al-tersedia, C-organik, N total, C/N Rasio, P-tersedia, KTK, Ca-dapat tukar, Mg-dapat tukar, K-dapat tukar, Na-dapat tukar, dan kejenuhan basa. Hasil penelitian menunjukkan bahwa pemberian pupuk kandang sapi organik sebanyak 15 ton/ha merupakan dosis yang optimal untuk memperbaiki sifat kimia Ultisol. Hal ini ditunjukkan dengan nilai pH 4,79, Al-dapat ditukar 1,30 cmol+/kg, C-organik 1,93%, N total 0,26%, rasio C/N 8,47, P-tersedia 4,79 ppm, kapasitas tukar kation 19,63 cmol+/kg, Ca-dd 1,773 cmol+/kg, Mg-dd 0,149 cmol+/kg, K-dd 0,143 cmol+/kg, Na-dd 0,049 cmol+/kg, dan kejenuhan basa 10,78%. Dosis tersebut memberikan pertumbuhan terbaik untuk Caisim. Tinggi tanaman 19,83 cm, berat segar 16,05, berat kering 1,80, serapan N 5,10 g/polibag, serapan P 0,46 g/polibag, dan serapan K 0,474 g/polibag.

Kata kunci: *Brassica juncea* L, Pupuk organik kotoran sapi, Ultisol

THE EFFECT OF ORGANIC FERTILIZER DERIVED FROM COW MANURE ON THE GROWTH AND N, P, K ABSORPTION OF CAISIM (*Brassica juncea* L.) IN ULTISOLS

Abstract

Ultisols have many problems in terms of soil fertility and crop growth, but it can be improved with organic fertilizer such as derived from cow manure (POKS). This study was aimed to determine the optimal dose of POKS on improving soil chemical properties and the growth and absorption of N, P, K nutrients by Caisim plants (*Brassica juncea* L.) at Ultisol. This study was conducted experimentally having 5 treatments (0 ton / ha as a control, 5 ton / ha, 10 ton/ha, 15 ton / ha and 20 ton/ha) and 3 replicates. The parameters tested were pH H2O, Al-exch, organic-C, total-N, C/N Ratio, P-available, CEC, Ca- exch, Mg- exch, K- exch, Na- exch and base saturation. The results showed that aplication that of 15 tons/ha organic cow manure was the optimal dose to improve the chemical properties of Ultisol. It was indicated by the soil pH value was 4.79, Al-exchangeable was 1.30 cmol+/kg, organic-C was 1. 93%, total-N was 0.26%, C/N ratio was 8.47, P-available was 4.79 ppm, cation exchange capacity was 19.63 cmol+/kg, Ca-exch was 1.773 cmol+/kg, Mg-exch was 0.149 cmol+/kg, K-exch was 0.143 cmol+/kg, Na-exch was 0.049 cmol+/kg and base saturation was 10.78%. The dose also gave the best growth of Caisim. The plant height was 19,83 cm, fresh weight was 16,05, dry weight was 1,80, N uptake was 5.10 g/polybag, P uptake was of 0.46 g/polybag, and K uptake was 0.474 g/polybag.

Keywords: *Brassica juncea* L, Organic cow manure fertilizer, Ultisol