RESPONS PERTUMBUHAN DAN HASIL TANAMAN KACANG PANJANG (*Vigna sinensis* L.) DENGAN MENGGUNAKAN BERBAGAI KONSENTRASI PUPUK FOSFAT DAN DOSIS PUPUK HAYATI MIKORIZA

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ABSTRAK

Kacang panjang memiliki banyak kandungan gizi dan vitamin. Produksi kacang panjang yang menurun dapat diatasi dengan pupuk fosfat dan pupuk hayati mikoriza. Tujuan penelitian ini adalah mendapatkan konsentrasi pupuk fosfat dan dosis pupuk hayati mikoriza terbaik bagi pertumbuhan dan hasil tanaman kacang panjang. Metode penelitian menggunakan percobaan lapangan dalam Rancangan Acak Kelompok Lengkap (RAKL) faktorial. Faktor pertama adalah konsentrasi pupuk fosfat 50% (2,25 g/l), 75% (3,37 g/l), dan 100% (4,5 g/l). Faktor kedua adalah dosis pupuk hayati mikoriza 0 g/tanaman, 7,5 g/tanaman, 15 g/tanaman dan 22,5 g/tanaman. Data hasil penelitian dianalisis menggunakan ANOVA taraf 5%, dilanjutkan uji DMRT taraf 5%. Hasil penelitian menunjukkan terdapat interaksi pada konsentrasi pupuk fosfat 75% (3,37 g/l) dan dosis pupuk hayati mikoriza 22,5 g/tanaman terhadap jumlah polong per tanaman, panjang polong per tanaman, bobot polong segar per tanaman, bobot polong segar per petak, dan bobot polong segar per hektar. Konsentrasi pupuk fosfat 75 % (3,37 g/l) memberikan hasil paling baik pada parameter luas daun, bobot kering tajuk tanaman, bobot kering akar tanaman, dan umur berbunga. Dosis pupuk hayati mikoriza 15 g/tanaman memberikan hasil paling baik pada luas daun, bobot kering tajuk tanaman, bobot kering akar tanaman, dan bintil akar efektif.

Kata kunci : Kacang panjang, pupuk fosfat, pupuk hayati mikoriza.

GROWTH AND YIELD RESPONSES OF LONG BEAN (Vigna sinensis L.) PLANTS BY USING VARIOUS CONCENTRATIONS OF PHOSPHATE FERTILIZER AND DOSAGE OF MYCORRHIZAL BIOFERTILIZER

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ABSTRACT

Longs beans have many nutrients and vitamins. Declining production of long bean can be overcome with phosphate fertilizer and mycorrhizal biofertilizer. The purpose of this study was to get the best phosphate fertilizer concentration and mycorrhizal biofertilizer dosage for the growth and yield of long bean plants. The research method used a field experiment in a randomized complete block design (RAKL) factorial. The first factor was 50% phosphate fertilizer concentration (2.25 g/l), 75% (3.37 g/l), and 100% (4.5 g/l). The second factor was the dose of biological fertilizer mycorrhiza 0 g/plant, 7.5 g/plant, 15 g/plant and 22.5 g/plant. Data results were analyzed using ANOVA at 5% level, followed by DMRT test at 5% level. The results showed that there was an interaction at the concentration of 75% phosphate fertilizer (3.37 g/l) and the dose of mycorrhizal biofertilizer 22.5 g/plant on the number of pods per plant, pod length per plant, fresh pod weight per plant, fresh pod weight per plot, and fresh pod weight per hectare. Phosphate fertilizer concentration of 75% (3.37 g/l) gave the best results on leaf area parameters, plant crown dry weight, root dry weight of plants, and flowering age. Mycorrhizal biofertilizer dosage of 15 g/plant gave the best results on leaf area, plant crown dry weight, plant root dry weight, and effective root nodules.

Keywords: *Long bean, phosphate fertilizer, mycorrhizal biofertilizer*