RESPON PERTUMBUHAN DAN HASIL TANAMAN TOMAT (*Solanum lycopersicum* L.) PADA APLIKASI KONSENTRASI PGPR DAN DOSIS PUPUK HAYATI MIKORIZA

Oleh: Helga Nuria Nareswari
Dibimbing oleh: Endah Budi Irawati

ABSTRAK

Tomat komoditas hortikultura bernilai ekonomi tinggi, namun produktivitasnya di Indonesia rendah akibat menurunnya kesuburan tanah dan rendahnya efisiensi penyerapan unsur hara. Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi PGPR dan dosis pupuk hayati mikoriza serta interaksi keduanya terhadap tanaman tomat. Penelitian dilaksanakan pada bulan Februari hingga Mei 2026. Metode yang digunakan yaitu Rancangan Acak Kelompok Lengkap (RAKL) faktorial, yaitu konsentrasi PGPR (15, 30, 45 ml/liter) dan dosis pupuk hayati mikoriza (10, 15, 20 g/tanaman), serta tanaman kontrol. Data dianalisis menggunakan ANOVA taraf 5%, uji kontras orthogonal, dan dilanjutkan dengan uji DMRT taraf 5%. Hasil penelitian menunjukkan terdapat interaksi antara PGPR dan pupuk hayati mikoriza terhadap parameter volume akar dan bobot kering akar. Terdapat beda nyata antara kombinasi perlakuan dengan kontrol pada parameter volume akar, bobot kering tajuk, bobot kering akar, jumlah buah per tanaman, diameter buah, bobot buah per tanaman, bobot buah per unit percobaan, dan bobot buah per hektar. Aplikasi PGPR konsentrasi 30 ml/liter memberikan hasil terbaik pada parameter jumlah buah per tanaman, bobot buah per tanaman, bobot buah per unit percobaan, dan bobot buah per hektar. Aplikasi pupuk hayati mikoriza dosis 15 g/tanaman memberikan hasil terbaik pada parameter waktu muncul bunga, diameter buah, dan bobot buah per tanaman.

Kata kunci: tomat, PGPR, pupuk hayati mikoriza

GROWTH AND YIELD RESPONSE OF TOMATO PLANTS (*Solanum lycopersicum* L.) WITH THE APPLICATION OF PGPR CONCENTRATION AND MYCORRHZAL BIODEFERTILIZER DOSAGE

By: Helga Nuria Nareswari
Superviced: Endah Budi Irawati

ABSTRACT

Tomatoes are a horticultural commodity with high economic value, but their productivity in Indonesia is low due to declining soil fertility and low nutrient absorption efficiency. This study aims to determine the effect of PGPR concentration and mycorrhizal biofertilizer dosage and their interaction on tomato plants. The study was conducted from February to May 2026. The method used was a factorial Randomized Complete Block Design (RCBD), namely PGPR concentration (15, 30, 45 ml/liter) and mycorrhizal biofertilizer dosage (10, 15, 20 g/plant), as well as control plants. Data were analyzed using ANOVA at a 5% level, orthogonal contrast test, and continued with DMRT test at a 5% level. The results showed an interaction between PGPR and mycorrhizal biofertilizer on root volume and root dry weight parameters. There were significant differences between the treatment combination and the control in the parameters of root volume, shoot dry weight, root dry weight, number of fruits per plant, fruit diameter, fruit weight per plant, fruit weight per experimental unit, and fruit weight per hectare. Application of PGPR at a concentration of 30 ml/liter produced the best results in terms of fruit number per plant, fruit weight per plant, fruit weight per experimental unit, and fruit weight per hectare. Application of mycorrhizal biofertilizer at a dose of 15 g/plant produced the best results in terms of flowering time, fruit diameter, and fruit weight per plant.

Keywords: tomatoes, PGPR, mycorrhizal biofertilizer