

## INTISARI

### PENGARUH JARAK TANAM DAN APLIKASI *Trichoderma* sp. TERHADAP PERTUMBUHAN DAN HASIL BENIH KACANG PANJANG (*Vigna unguiculata* subsp. *sesquipedalis* (L.) Verdc.) ‘KP 22’

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Kacang panjang (*Vigna unguiculata* subsp. *sesquipedalis*) merupakan komoditas hortikultura yang banyak dibudidayakan di Indonesia. Namun Indonesia masih ketergantungan impor pangan dan benih, sehingga perlu dilakukan upaya peningkatan produksi benih nasional. Penelitian ini bertujuan untuk mengevaluasi pengaruh jarak tanam dan aplikasi *Trichoderma* sp. serta interaksinya terhadap pertumbuhan dan hasil benih kacang panjang varietas KP 22. Penelitian ini dilaksanakan pada Oktober 2024 hingga Maret 2025 di PT. BISI International, Tbk., Farm Karangploso, Malang, Jawa Timur. Penelitian ini dilaksanakan dengan menggunakan kacang panjang KP22 dari PT. BISI. Rancangan yang digunakan adalah Rancangan Acak Kelompok Lengkap (RAKL) Faktorial yang terdiri dari 2 faktor: jarak tanam (50 cm x 60 cm; 40 cm x 60 cm; 30 cm x 60) dan kadar *Trichoderma* sp., (2 g/l (T1); 4 g/l (T2); 6 g/l (T3) sehingga menghasilkan 9 kombinasi perlakuan. Data yang diperoleh dianalisis dengan analisis ragam (ANOVA) taraf kepercayaan 95% dan uji lanjut Tukey. Interaksi yang signifikan terjadi pada variabel indeks vigor ( $p=0.01502$ ), laju asimilasi bersih ( $p=0.0323$ ), dan bobot daun khas ( $p=0.00601$ ). Secara independen perlakuan jarak tanam 50 cm x 60 cm berpengaruh signifikan dalam meningkatkan jumlah polong pertanaman (67.22;  $p=0.00439$ ), bobot biji pertanaman (79.92;  $p=0.00109$ ), dan laju asimilasi bersih (0.0048 g/cm<sup>2</sup>/minggu;  $p=0.0112$ ). Pengaplikasian *Trichoderma* sp. tidak menunjukkan pengaruh signifikan yang dapat disebabkan karena kolonisasi yang tidak memadai. Dapat disimpulkan bahwa perlakuan jarak tanam 50 cm x 60 cm direkomendasikan untuk meningkatkan proses fisiologis dan hasil benih dari kacang panjang KP 22.

**Kata kunci:** hasil benih, jarak tanam, kacang panjang, pertumbuhan, *Trichoderma* sp.

## ABSTRACT

### THE EFFECT OF PLANTING DISTANCE AND *Trichoderma* sp. APPLICATION ON THE GROWTH AND SEED YIELD OF LONG BEAN (*Vigna unguiculata* subsp. *sesquipedalis* (L.) Verdc.) 'KP 22'

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Long bean (*Vigna unguiculata* subsp. *sesquipedalis*) is widely cultivated horticultural crop in Indonesia. However, the country remains dependent on food and seed imports, highlighting the need to enhance domestic seed production.. This study aimed evaluate the effects of planting distance and *Trichoderma* sp. application, as well as their interaction, on the growth and seed yield of the long bean variety KP 22.. The experiment was conducted from October 2024 to March 2025 at PT. BISI International, Tbk., Karangploso Farm, Malang, East Java. A factorial Complete Randomized Block Design (CRBD) was employed, consisting of two factors: planting distance (50 cm × 60 cm; 40 cm × 60 cm; 30 cm × 60 cm) and *Trichoderma* sp. concentration (2 g/L; 4 g/L; 6 g/L), yielding nine treatment combinations. Data were analyzed using analysis of variance (ANOVA) at a 95% confidence level, followed by Tukey's test. Significant interactions occurred for the vigor index (p=0.01502), net assimilation rate (p=0.0323), and specific leaf weight (p=0.00601). Independently, the 50 cm x 60 cm planting distance significantly increased the number of pods per plant (67.22; p=0.00439), seed weight per plant (79.92 g; p=0.00109), and net assimilation rate (0.0048 g/cm<sup>2</sup>/week; p=0.0112). The application of *Trichoderma* sp., however, showed no significant effect, likely due to insufficient colonization. In conclusion, a planting distance of 50 cm × 60 cm is recommended to enhance physiological performance and seed yield of long bean KP 22.

**Keywords:** long bean, planting distance, *Trichoderma* sp., plant growth, seed yield