

ABSTRAK

Lisna P.J. Tamba, 4212520008 (2026). Pengaruh Konsentrasi dan Interval Waktu Pemberian *Plant Growth Promoting Rhizobacteria* (PGPR) Akar Bambu Duri (*Bambusa blumeana*) Terhadap Pertumbuhan dan Hasil Tanaman Cabai Rawit (*Capsicum frutescens* L.)

Permintaan cabai rawit yang merata sepanjang tahun mendorong petani melakukan penanaman secara berkelanjutan tanpa mempertimbangkan faktor lingkungan sehingga menurunkan hasil produksi cabai rawit. Penurunan ini disebabkan oleh rendahnya tingkat kesuburan tanah akibat penggunaan pupuk kimia secara berlebihan. Salah satu pendekatan yang ramah lingkungan adalah penggunaan *Plant Growth Promoting Rhizobacteria* (PGPR) Akar Bambu Duri (*Bambusa blumeana*). Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi dan interval waktu pemberian PGPR serta interaksi keduanya terhadap pertumbuhan dan hasil tanaman cabai rawit. Penelitian menggunakan Rancangan Acak Kelompok (RAK) dua faktor, yaitu konsentrasi (K0:0 ml/L, K1: 10 ml/L, K2: 20 ml/L, K3: 30 ml/L, K4: 40 ml/L) dan interval waktu (I1: 7 hari sekali, I2: 14 hari sekali). Data hasil penelitian dianalisis dengan uji *Two-Way ANOVA* kemudian dilanjutkan dengan Uji BNT. Hasil penelitian menunjukkan konsentrasi PGPR berpengaruh nyata ($p \leq 0,05$) terhadap semua parameter yaitu tinggi tanaman, jumlah daun, diameter batang, jumlah bunga, jumlah buah dan berat basah, sedangkan interval waktu hanya berpengaruh nyata terhadap diameter batang dan interaksi keduanya tidak berpengaruh nyata ($p > 0,05$) pada semua perlakuan. Konsentrasi 40 ml/L (K4) merupakan konsentrasi terbaik dengan rata-rata tinggi tanaman 63,66 cm, jumlah daun 23,66 helai, diameter batang 12,86 mm, jumlah bunga 16,66, jumlah buah 17,16, dan berat basah 20,73 gram. Interval waktu 14 hari sekali (I2) merupakan interval waktu terbaik pada diameter batang dengan rata-rata 4,58 mm.

Kata kunci: Bambu duri, cabai rawit, interval waktu, konsentrasi, PGPR

ABSTRACT

Lisna P.J. Tamba, 4212520008 (2026). The Effect of Concentration and Application Interval of Plant Growth-Promoting Rhizobacteria (PGPR) from Thorny Bamboo Roots (*Bambusa blumeana*) on the Growth and Yield of Chili Pepper (*Capsicum frutescens* L.)

The steady demand for chili pepper throughout the year encourages farmers to plant continuously without considering environmental factors, thereby reducing chili pepper production. This decline is caused by low soil fertility due to excessive use of chemical fertilizers. One environmentally friendly approach is the use of Plant Growth Promoting Rhizobacteria (PGPR) Thorny Bamboo Roots (*Bambusa blumeana*). This study aims to determine the effect of PGPR concentration and application interval, as well as their interaction, on the growth and yield of chili pepper plants. The study used a two-factor Randomized Block Design (RBD), namely concentration (K0: 0 ml/L, K1: 10 ml/L, K2: 20 ml/L, K3: 30 ml/L, K4: 40 ml/L) and time interval (I1: once every 7 days, I2: once every 14 days). The research data were analyzed using a Two-Way ANOVA test and then continued with the BNT test. The results showed that the PGPR concentration had a significant effect ($p \leq 0.05$) on all parameters, namely plant height, number of leaves, stem diameter, number of flowers, number of fruits, and wet weight, while the time interval only had a significant effect on stem diameter, and the interaction between the two factors did not significantly affect ($p > 0.05$) in all treatments. A concentration of 40 ml/L (K4) was the best concentration, with an average plant height of 63.66 cm, number of leaves of 23.66, stem diameter of 12.86 mm, number of flowers of 16.66, number of fruits of 17.16, and wet weight of 20.73 grams. The 14-day interval (I2) was the optimal interval for stem diameter, with an average of 4.58 mm.

Keywords: Thorny bamboo, chili pepper, time interval, concentration, PGPR