

ABSTRAK

Khalila Nafeeza. 2026. Efektivitas Pupuk Kasgot dan *Plant Growth Promoting Rhizobacteria* (PGPR) Akar Bambu Terhadap Pertumbuhan dan Hasil Tanaman Buncis (*Phaseolus vulgaris* L.) Varietas Kenya. Dibawah bimbingan Yati Setiati Rachmawati dan Ahmad Taofik.

Budidaya buncis kenya masih bergantung pada pupuk kimia dan penggunaan yang terus menerus dapat menimbulkan masalah jangka panjang berupa menurunnya kualitas tanah, ketidakseimbangan unsur hara, meningkatnya keasaman tanah, tanah keras, dan penurunan porositas. Hal tersebut menjadi kendala karena ketersediaan hara menurun dan pertumbuhan serta produktivitas buncis kenya ikut terhambat. Salah satu upaya untuk mengatasi permasalahan tersebut adalah melalui penerapan sistem pertanian organik yang memanfaatkan bahan-bahan alami tanpa meninggalkan residu berbahaya, seperti penggunaan pupuk kasgot dan *Plant Growth Promoting Rhizobacteria* (PGPR) akar bambu sebagai sumber nutrisi alami. Penelitian ini bertujuan untuk mengetahui interaksi serta menentukan dosis pupuk kasgot dan PGPR akar bambu yang memberikan pengaruh terbaik terhadap pertumbuhan dan hasil tanaman buncis kenya. Metode yang digunakan dalam penelitian ini adalah Rancangan Acak Kelompok (RAK) Pola Faktorial yang terdiri atas dua faktor. Faktor pertama yaitu dosis pupuk kasgot dengan 4 taraf: tanpa pupuk kasgot, 4 t ha⁻¹, 8 t ha⁻¹, dan 10 t ha⁻¹. Faktor kedua yaitu dosis PGPR akar bambu dengan 3 taraf: tanpa PGPR akar bambu, 10 mL tanaman⁻¹, dan 20 mL tanaman⁻¹. Hasil penelitian menunjukkan terdapat interaksi antara pupuk kasgot dan PGPR akar bambu terhadap jumlah bunga, jumlah polong per tanaman, dan bobot polong segar per tanaman. Pemberian kasgot 4 t ha⁻¹ dan PGPR akar bambu 20 mL tanaman⁻¹ memberikan pengaruh terbaik dalam meningkatkan jumlah polong per tanaman dan bobot polong segar per tanaman.

Kata kunci: Buncis Kenya, Kasgot, PGPR Akar Bambu, Pertanian Organik.

ABSTRACT

Khalila Nafeeza. 2026. The Effectiveness of Kasgot Fertilizer and Plant Growth Promoting Rhizobacteria (PGPR) from Bamboo Roots on the Growth and Yield of Kenya Varieties of Green Beans (*Phaseolus vulgaris* L.). Under the supervision of Yati Setiati Rachmawati and Ahmad Taofik.

Kenya green bean cultivation still relies on chemical fertilizers, and their continuous use can lead to long term problems such as declining soil quality, nutrient imbalances, increased soil acidity, soil compaction, and reduced porosity. These issues pose a challenge because nutrient availability decreases, thereby hindering the growth and productivity of Kenya green beans. One effort to address these issues is through the implementation of an organic farming system that utilizes natural materials without leaving harmful residues, such as the use of kasgot fertilizer and Plant Growth Promoting Rhizobacteria (PGPR) from bamboo roots as natural nutrient sources. This study aims to investigate the interactions and determine the optimal application rates of kasgot fertilizer and bamboo root PGPR that provide the best effects on the growth and yield of Kenya green beans. The method used in this study was a Randomized Block Design (RBD) with a factorial pattern consisting of two factors. The first factor was the kasgot fertilizer rate, with four levels: no kasgot fertilizer, 4 t ha⁻¹, 8 t ha⁻¹, and 10 t ha⁻¹. The second factor was the bamboo root PGPR rate, with three levels: no bamboo root PGPR, 10 mL plant⁻¹, and 20 mL plant⁻¹. The results of the study indicate that there is an interaction between Kasgot fertilizer and PGPR applied to bamboo roots on the number of flowers, the number of pods per plant, and the fresh pod weight per plant. The application of 4 t ha⁻¹ of Kasgot and 20 mL plant⁻¹ of bamboo root PGPR had the most favorable effect on increasing the number of pods per plant and the fresh pod weight per plant.

Keywords: Bamboo Root PGPR, Kasgot, Kenya Green Beans, Organic Farming.