

ABSTRAK

Dimas Andhika, 2026. Evaluasi Ragam Metode Penentuan Dosis Pupuk N P Dan K Terhadap Pertumbuhan Dan Hasil Tanaman Kacang Panjang (*Vigna sinensis* L.). Dibawah bimbingan Budy Frassetya Taufik Qurrohman dan Liberty Chaidir.

Kacang panjang (*Vigna sinensis* L.) merupakan tanaman sayuran yang membutuhkan pemupukan secara tepat dan efisien untuk mendukung pertumbuhan dan hasil. Penelitian ini bertujuan untuk mengetahui pengaruh ragam metode perhitungan dosis pupuk N, P, dan K terhadap pertumbuhan dan hasil tanaman kacang panjang serta memperoleh metode perhitungan dosis pupuk terbaik. Penelitian dilaksanakan pada April–Juli 2026 di lahan percobaan Jurusan Agroteknologi, Kampus II UIN Sunan Gunung Djati Bandung. Penelitian menggunakan Rancangan Acak Kelompok (RAK) dengan enam perlakuan dan empat ulangan. Perlakuan terdiri atas metode perhitungan berdasarkan jumlah populasi tanaman dan metode berdasarkan bobot isi tanah, masing-masing dengan variasi dosis 25% lebih tinggi dan 25% lebih rendah dari dosis dasar. Data dianalisis menggunakan analisis ragam (ANOVA) dan dilanjutkan dengan uji Duncan taraf 5% apabila terdapat perbedaan nyata. Hasil penelitian menunjukkan bahwa ragam metode perhitungan dosis pupuk berpengaruh terhadap tinggi tanaman, umur mulai berbunga, jumlah polong per tanaman, dan panjang polong. Perlakuan 25% lebih rendah dari metode perhitungan berdasarkan jumlah populasi tanaman menghasilkan respons terbaik dan memiliki panjang polong tertinggi sebesar 51,63 cm serta jumlah polong sebesar 32,25 buah per tanaman. Sebaliknya, jumlah bunga, berat polong per tanaman, daya simpan, dan indeks panen tidak menunjukkan pengaruh nyata. Berdasarkan hasil penelitian, metode perhitungan dosis 25% lebih rendah berdasarkan jumlah populasi tanaman merupakan metode terbaik untuk mendukung pertumbuhan dan hasil tanaman kacang panjang.

Kata kunci: kacang panjang, pupuk N, P, dan K, metode perhitungan dosis, jumlah populasi, bobot isi tanah

ABSTRACT

Dimas Andhika, 2026. Evaluation of Various Methods for Determining N, P, and K Fertilizer Rates on the Growth and Yield of Long Bean (*Vigna sinensis* L.). Supervised by Budy Frasetya Taufik Qurrohman and Liberty Chaidir.

Long bean (*Vigna sinensis* L.) is a vegetable crop that requires appropriate and efficient fertilization to support growth and yield. This study aimed to determine the effects of various methods for calculating N, P, and K fertilizer rates on the growth and yield of long bean plants and to identify the most effective fertilizer rate calculation method. The research was conducted from April to July 2026 at the experimental field of the Agrotechnology Department, Campus II, UIN Sunan Gunung Djati Bandung. The study employed a Randomized Complete Block Design (RCBD) with six treatments and four replications. The treatments consisted of a fertilizer rate calculation method based on plant population and a method based on soil bulk density, each with variations of 25% higher and 25% lower than the basic fertilizer rate. The data were analyzed using analysis of variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at the 5% significance level when significant differences were detected. The results showed that the different methods of calculating fertilizer rates significantly affected plant height, days to first flowering, number of pods per plant, and pod length. The treatment using a fertilizer rate 25% lower than that calculated based on plant population produced the best response, with the highest pod length of 51.63 cm and 32.25 pods per plant. In contrast, the number of flowers, pod weight per plant, pod shelf life, and harvest index were not significantly affected. Based on the results, the fertilizer rate calculation method using a rate 25% lower than that based on plant population was considered the most effective method for supporting the growth and yield of long bean plants.

Keywords: fertilizer rate calculation method, long bean, N,P, and K fertilizers, plant population, soil bulk density.