

## ABSTRAK

**Asep Saefulloh Badruzaman, 2026. Respons Pemberian Pupuk Kandang Ayam dengan *Plant Growth Promoting Rhizobacteria* (PGPR) Akar Alang-alang Terhadap Pertumbuhan dan Hasil Tanaman Buncis Tegak (*Phaseolus vulgaris* L.). Dibawah bimbingan Yati Setiati Rachmawati dan Cecep Hidayat.**

Penurunan produktivitas tanaman buncis tegak (*Phaseolus vulgaris* L.) disebabkan oleh penggunaan pupuk anorganik berlebih secara terus-menerus yang menyebabkan menurunnya kualitas dan kesuburan tanah. Pemberian pupuk organik dapat memperbaiki degradasi bahan organik sekaligus aktivitas mikroorganisme tanah, sehingga produktivitas tanaman dapat meningkat secara berkelanjutan. Penelitian ini bertujuan untuk mengetahui pengaruh dari pemberian kombinasi pupuk kandang ayam dengan *Plant Growth Promoting Rhizobacteria* (PGPR) akar alang-alang serta menentukan dosis aplikasi terbaik terhadap pertumbuhan dan hasil tanaman buncis tegak. Penelitian dilaksanakan di Lahan Kampus II dan Laboratorium Mikrobiologi Tanah, Universitas Islam Negeri Sunan Gunung Djati Bandung pada Desember 2025 sampai Mei 2026, menggunakan metode Rancangan Acak Kelompok (RAK) non faktorial dengan tujuh perlakuan dan empat ulangan, yaitu perlakuan A Kontrol (tanpa pupuk kandang ayam ataupun PGPR akar alang-alang), B (Pupuk kandang ayam 100%), C (PGPR akar alang-alang 100%), D (Pupuk kandang ayam 100% + PGPR akar alang-alang 100%), E (Pupuk kandang ayam 75% + PGPR akar alang-alang 25%), F (Pupuk kandang ayam 50% + PGPR akar alang-alang 50%) dan G (Pupuk kandang ayam 25% + PGPR akar alang-alang 75%). Hasil penelitian menunjukkan bahwa pemberian kombinasi pupuk kandang ayam dengan PGPR akar alang-alang berpengaruh terhadap pertumbuhan dan hasil tanaman, terutama pada tinggi tanaman, jumlah bunga, jumlah polong, bobot segar polong, dan indeks panen. Pemberian pupuk kandang ayam 100% ( $10 \text{ t ha}^{-1}$ ) merupakan dosis aplikasi terbaik yang mampu memberikan respons optimal pada pertumbuhan dan hasil tanaman buncis tegak.

Kata kunci: Buncis tegak, PGPR akar alang-alang, pupuk kandang ayam.

## ABSTRACT

**Asep Saefulloh Badruzaman, 2026. The Effect of Applying Chicken Manure with Plant Growth-Promoting Rhizobacteria (PGPR) from Cogongrass Roots on the Growth and Yield of Bush Beans (*Phaseolus vulgaris* L.). Supervised by Yati Setiati Rachmawati and Cecep Hidayat.**

The decline in the productivity of bush beans (*Phaseolus vulgaris* L.) is caused by the continuous overuse of inorganic fertilizers, which leads to a decline in soil quality and fertility. The application of organic fertilizer can reverse the degradation of organic matter and enhance the activity of soil microorganisms, thereby sustainably increasing crop productivity. This study aimed to determine the effect of applying a combination of chicken manure and Plant Growth Promoting Rhizobacteria (PGPR) from cogongrass roots, as well as to identify the optimal application rate for the growth and yield of upright bush beans. The study was conducted on the Campus II grounds and the Soil Microbiology Laboratory at Sunan Gunung Djati State Islamic University in Bandung from December 2025 to May 2026, using a non-factorial Randomized Block Design (RBD) with seven treatments and four replications, namely: A Control (without chicken manure or cogongrass root PGPR), B (100% chicken manure), C (100% PGPR from cogongrass roots), D (100% chicken manure + 100% PGPR from cogongrass roots), E (75% chicken manure + 25% PGPR from cogongrass roots), F (50% chicken manure + 50% PGPR from cogongrass roots), and G (25% chicken manure + 75% PGPR from cogongrass roots). The results of the study indicate that the application of a combination of chicken manure and PGPR from cogongrass roots affects plant growth and yield, particularly in terms of plant height, number of flowers, number of pods, fresh pod weight, and harvest index. The application of 100% chicken manure (10 t ha<sup>-1</sup>) was found to be the best application rate, yielding an optimal response in the growth and yield of upright bush beans.

**Keywords:** bush beans, chicken manure, PGPR from cogongrass roots.