

***The Application of Goat Manure Fertilizer and Inorganik Fosfat Fertilizer on  
the Growth and Yield of Green Bean Plants (*Vigna radiata* L.)***

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***ABSTRACT***

*The solubility and availability of phosphate in the soil are relatively low, especially under conditions with low organic matter content. This study aimed to evaluate the effect of goat manure and inorganic phosphate fertilizer application on the growth and yield of mung bean plants. The research was conducted in Antirogo Village, Summersari, Jember, East Java, from June to September 2024. The study was designed using a factorial randomized complete block design (RCBD) with two treatment factors and three replications. The first factor was the dose of goat manure with four treatment levels: 0 tons/ha, 10 tons.ha<sup>-1</sup>, 20 tons.ha<sup>-1</sup>, and 30 tons.ha<sup>-1</sup>. The second factor was the dose of inorganic phosphate fertilizer with three treatment levels: 0 kg.ha<sup>-1</sup>, 100 kg.ha<sup>-1</sup>, and 200 kg.ha<sup>-1</sup>. The observed variables included plant height, number of productive branches, fresh pod weight per sample, dry seed weight per sample, dry seed weight per plot, 100-seed weight, shoot biomass, and root biomass. The results showed that the interaction between 20 tons.ha<sup>-1</sup> of goat manure and 200 kg.ha<sup>-1</sup> of inorganic phosphate fertilizer had a significant effect on dry seed weight per plot (565.67 g). Meanwhile, the interaction between 20 tons.ha<sup>-1</sup> of goat manure and 100 kg.ha<sup>-1</sup> of inorganic phosphate fertilizer significantly affected shoot biomass (8.75 g). In addition, the application of 20 tons.ha<sup>-1</sup> of goat manure had a significant effect on plant height (30.10 cm). This is presumed to be due to the increased availability of phosphate in the root zone, as the organic matter in the goat manure helped adsorb and mobilize phosphate, making nutrients more readily available for plant uptake*

*Keywords: Artificial fertilizer, Organik fertilizer, Phosphate availability*