Providing of Phosphate Solubilizing Bacteria (*Pseudomonas fluorescens*) to Growth and Production of Peanut (*Arachis hypogeal* L.)

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ABSTRACT

Peanut are plants that classified as secondary crops. However, the continuous application of inorganic P fertilizers can reduce soil quality, thereby decreasing peanut yield. The use of Pseudomonas fluorescens bacteria can enhance phosphate uptake in peanuts, thus reducing the required dose of inorganic P fertilizers. This study was conducted from August until November 2024, using a non-factorial Randomized Block Design (RBD) method with treatments involving different concentrations of P. fluorescens: control (no concentration), 20 ml/L, 30 ml/L, 40 ml/L, 50 ml/L, and 60 ml/L, along with a reduction of ¼ dose of SP-36 fertilizer. Observed parameters included plant height, dry biomass weight, fresh pod weight per sample, dry pod weight per sample, dry seed weight per plot, weight of 100 seeds, and the number of root nodules. The application of P. fluorescens at a concentration of 50 ml/L + 75 kg/ha resulted in a significant difference in fresh pod weight per sample, reaching 106.1 g, while a concentration of 30 ml/L + 75 kg/ha influenced dry pod weight (71.60 g), dry seed weight (648.8 g), the weight of 100 seeds (57.95 g), and the number of root nodules (24.21). For the parameters of plant height and dry biomass weight, the results were not significant.

Keywords: Peanuts, Pseudomonas fluorescens