

**APPLICATIONS OF LEGUME INOCULANT DOSAGE AND TIME OF
PHOTOSYNTHETIC BACTERIA ON PLANT GROWTH AND YIELD OF
SOYBEAN (*Glycine max* (L.) Merrill) IN PADDY FIELD**

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ABSTRACT

An effort to increase soil fertility is to do utilization of cultivation technology with Rhizobium inoculation and photosynthetic bacteria. This study aimed to determine the applications of legume inoculant dosage and time of photosynthetic bacteria (PSB) on plant growth and yield of soybean. Field experiments using with Completely Randomized Block Design (CRBD) with using 2 factors. The first factor was legin concentration, which varied 10 g/kg seed, 15 g/kg seed and 20 g/kg seed. The second factor was the time applications of PSB at 08 a.m, 12 p.m, 16 p.m. The analysis used a range of 5% variance and a further Duncan's Multiple Range Test (DMRT) a range of 5%. Then to compare the settings with the controls, the Orthogonal Contrast Test was performed. The result showed the treatment combinations gave the best results than control for parameters flowering age, weight of nodule, number of pods per plant, and dry seed weight per plant. The treatment combinations legin dose 15 g/kg seed and time applications of PSB at 12.00 p.m. The treatment combinations legin dose 15 g/kg and time applications of PSB at 12 p.m have interact on the parameter of plant height 35 DAP, flowering age, number of nodules, number of pods per plant, weight of seed per plant. Legin dose 15 g/kg gave better results on the parameter of plant height 15 DAP, stem diameter, number of branches, number of nodules 35 DAP, number of leaves 15, 21, 35 DAP, shoot dry weight, shoot/root ratio. Time of PSB at 12 p.m gave better results on the parameter of height 15, 21, 28 DAP, stem diameter, number of branches, number of nodules 35 DAP, number of leaves 15,28,35 DAP, shoot dry weight, and root dry weight.

Keywords : Soybean, Legume Inoculant, Photosynthetic Bacteria, and Paddy Field.