

Evaluation of Nutrients Enriched Biofertilizer Pellets on Growth and Yield Performance of Rice (*Oryza Sativa* L.) under Field Conditions

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Rice (*Oryza sativa* L.) is the staple food for over half of the world's population. The most significant agronomic practice in paddy cultivation is fertilizer application. Excessive applications of inorganic fertilizers lead to numerous negative environmental consequences. Adapting eco-friendly techniques, like the use of nutrients enriched biofertilizers, has identified as the best possible solution to overcome the above problems. Generally, the nutrient content of biofertilizers is low compared to inorganic fertilizers. This research was conducted to produce nutrients enriched biofertilizer pellets with different amendments and to investigate their performance on the growth and yield of the Bg 251 rice variety. Fish tonic, Eppawala Rock Phosphate, Potassium Feldspar and Dolomite were used as amendments to enrich biofertilizer. The experiment was arranged in a randomised complete block design with six treatments and four replicates. Plant height, number of leaves, number of tillers, flag leaf length, number of panicles per bush, number of seeds per panicle, and seed weight were taken from five randomly selected clusters in every plot. Statistically significant difference was observed in the number of seeds per panicle over the control. The number of tillers per bush and the number of panicles per bush were significantly different, while no fertilizer treatment (T_0) showed the lowest and fish tonic enriched pellets (T_5) showed the highest values. The mean yield per bush was between 16.8 g (T_0) and 30.3 g (T_5). A significantly higher vegetative and reproductive growth performance of rice was observed with nutrients enriched biofertilizer pellets over the control. Findings of the study reveal that the nutrients enriched biofertilizer pellets have influenced the growth and yield performances of paddy. This research concludes that the biofertilizer can be used for pelletizing after enrichment of nutrients, and it has potential to enhance the performance of the Bg 251 rice variety.

Keywords: Biofertilizer, Enrichment, Organic amendments, *Oryza sativa* L., Pellets
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