

Agronomic Response, Nutrient Uptake, and Profitability of PSB Rc18 Lowland Rice Under Organic Production Systems

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Despite its popularity, organic farming is supported by relatively limited scientific data as compared to conventional farming. Our study was conducted to evaluate the changes in soil characteristics, growth, grain yield, nutrient uptake, and profitability of lowland rice PSB Rc18 grown in organic production systems. The experiment was laid out in RCBD with four replications and three treatments. The application of organic materials favorably affected the soil through the increase in microbial population and N mineralization. Rice grown under T1 exhibited vigorous growth, high yield (5.6 ton ha⁻¹), but late maturing. On the other hand, rice grown under T2 had earliest heading and maturation. Though rice grown in T2 were less vigorous, it resulted in acceptable grain yield (4.8 ton ha⁻¹) and comparable to those grown under T1 and T3 (synthetic fertilizer treatment). Nutrient uptake is similar for T1 and T3, while lowest in T2 which received less inputs. Organic production systems (T1 and T2) gain lesser profit/benefit if the price of ordinary palay is followed but incurs more profit/benefit if sold at premium price. Both T1 and T2 are profitable but T2 incurs less production cost and requires less input than T1, hence, T2 might further be optimized in order to gain higher grain yield. Ultimately, adoption of organic production practices in rice might be stimulated with the establishment of organic certification standards and (fixed) price premium for organic rice.

Keywords: organic production, palay, profitability, soil microbial population, yield