Title: NUTRIENT MANAGEMENT FOR IMPROVING LOWLAND RICE PRODUCTIVITY AND SUSTAINABILITY

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Interpretive Summary:

Technical Abstract: Rice (Oryza sativa L.) is an important food crop for a large proportion of the world¿s population. Total rice production will need to increase to feed a rapidly growing world population. Rice is produced under both upland and lowland ecosystems with about 76 percent of the global rice produced from irrigated-lowland rice systems. The anaerobic soil environment created by flood-irrigation of lowland rice creates a unique and challenging environment for the efficient management of soil and fertilizer nutrients. Supplying essential nutrients in adequate rates, sources, application methods, and application times are important factors that influence the productivity and sustainability of rice. This review emphasizes our current, research-based knowledge of N, P, K, Ca, Mg, S, B, Fe, Mn and Zn management in regards to the efficiency and sustainability of lowland rice production and identifies where additional research is needed to bridge information gaps. Our goal is to provide a comprehensive review describing the nutritional problems, nutrient use efficiencies, and the production strategies used for efficient nutrient use and production of lowland rice. While the soils, climatic environments, cultivars, and degree of mechanization may vary considerably among the rice producing regions of the world, the basic principles governing efficient nutrient use by flood-irrigated rice are relatively constant. A summation of best management practices should help scientists develop practical, integrated recommendations that improve nutrient use efficiency in lowland rice production systems.

In present research work two rice verities (Fakhre Malakand and JP-5) were evaluated against five treatments (T0 = Control, T1 = 120 N - 0 P2O5-0 K2O -0 Zn kg ha-1, T2 = 120 N - 60 P2O5-0 K2O -0 Zn kg ha-1, T3 = 120 N - 60. P2O5-50 K2O -0 Zn kg ha-1, and T4 = 120 N - 60 P2O5- 50 K2O - 20 Zn kg ha-1) to select suitable concentration /combination of fertilizers for improving rice productivity. The experiment was laid out in Randomized Complete Block Design (RCBD with split plot arrangement using three replications. Plot size was kept 6m × 4m. The present study aimed at evaluating the effect of P fertilizers on rice productivity in Rwandan marshlands. It was conducted in Rwasave marshland. Integrated Nutrient Management in Rice–Wheat Cropping System: An Evidence on Sustainability in the Indian Subcontinent through Meta-Analysis. by Sheetal Sharma 1,*, Rajeev Padbhushan 2 and Upendra Kumar 3. 1. Therefore, this paper was synthesized to quantify the impact and role of INM in improving crop productivity and sustainability of the RWCS in the context of the Indian subcontinent through meta-analysis using 338 paired data during the period of 1989–2016. The meta-analysis of the whole data for rice and wheat showed a positive increase in the grain yield of both crops with the use of INM over inorganic fertilizers only (IORA), organic fertilizers only (ORA), and control (no fertilizers; CO) treatments. Red rice has met the concepts of productivity and quality that emerged to supply the demands for products that improve the eating pattern of its consuming population. Red rice is based on food industries especially for nutrition-based food products and baby food products. For the case on Malaysia, limited domestic supplies of red rice have led to full dependency on imported red rice supplies in the country. N. K. Fageria, N. A. Slaton, and V. C. Baligar, “Nutrient management for improving lowland rice productivity and sustainability,” Advances in Agronomy, vol. 80, pp. 63–152, 2003. View at: Publisher Site | Google Scholar. Los Baños, Philippines. Direct Seeding of Rice and Weed Management. in the Irrigated Rice-Wheat Cropping System. of the Indo-Gangetic Plains. Trends in area production and productivity The productivity of rice and wheat, which constitute 80% of total food grains, has been nearly stagnant for the last few years (Figs. 1, 2, and 3). Wheat yields have been oscillating around 2.0 t ha–1 and rice at 2.7 t ha–1. This suggests a tremendous scope for improving yield with improved crop management by increasing input use and its use efficiency to close the yield gap. Swaminathan (2003) has considered this untapped production reservoir existing on our farms a major potential economic asset. Crop establishment—delayed planting of rice and wheat. @article{Palanivell2015ImprovingLR, title={Improving Lowland Rice (O. sativa L. cv. MR219) Plant Growth Variables, Nutrients Uptake, and Nutrients Recovery Using Crude Humic Substances}, author={Perumal Palanivell

and O. H. Ahmed and Nik Muhamad Ab Majid and M. Jalloh and K. Susilawati}, journal={The Scientific World Journal}, year={2015}, volume={2015} }. High cation exchange capacity and organic matter content of crude humic substances from compost could be exploited to reduce ammonia loss from urea and to as well improve rice growth and soil chemical properties for efficient nutrients utilization in lowland rice cultivation. Close-dynamic air flow system was used to determine the effects of crude humic substances on ammonia volatilization.