

Entry No. IRRC-0215

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| Category | : International Rice Research Conference |
| Select Theme | : Sustainable and equitable farming systems |
| Endorsement email | : |
| Keyword 1 | : Nutrient management |
| Keyword 2 | : |
| Keyword 3 | : |
| Title of Entry | : Do the Variation of Soil Phosphorus and Potassium Is Sufficient to Adopt Site-Specific Nutrient Management of Paddy Cultivation in Tropical Ultisols and Alfisols? |
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| Select only one type of presentation | : 15 minute oral presentation |
| Abstract | : Inorganic fertilizer application for paddy cultivation in many countries is based on blanket fertilizer recommendations. Many studies have shown that this practice could lead to an over and under application of fertilizers, leading to imbalances of soil nutrients. This study assesses the degree of variability of initial soil Phosphorus (P) and Potassium (K) levels and yield response for added P and K in paddy growing environments of Sri Lanka in order to improve soil fertility through a site-specific nutrient management (SSNM) system. The experiment was conducted in three districts in Sri Lanka, representing two major paddy |

growing environments (Dry and Intermediate Zones) covering two major soil orders, Ultisols and Alfisols. Paddy (3 ½ months old variety) was cultivated in total of 28 experimental sites distributed in above three Districts under irrigated condition. Each site was 200 m² in extent and soil sample collection was done before the commencement of growing season. A composite sample was taken from each site and analyzed for initial soil P and K. Omission plot trials, with ample amounts of N, P, and K treatments, were established in each site (plot size = 3x8 m). The total yield of each plot was measured at the end of the season. According to the initial soil analysis, 14% of sites showed high soil P content (>10 ppm of Olsen P) and 43% of sites showed low soil P content (<5 ppm of Olsen P). Initial soil K level was high (80 ppm – 160 ppm) in 36% of sites and it was low (<40 ppm) in 14% of sites. The Coefficient of Variance (CV %) of the initial P and K levels were 93% and 47% respectively indicates potential of SSNM of P and K. However, results of omission plot trials did not show any significant yield response for applied P and K. Continuation of omission plot trials is needed to study residual effects of these nutrients on plant growth and yield parameters and ultimately to determine the actual potential of SSNM of P and K in paddy grown in tropical Ultisols and Alfisols.

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