

Site Specific Nutrient Management Need in India Now

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Abstract : Agricultural production system is an outcome of a complex interaction of seed, soil, water and agro-chemicals (including fertilizers). Therefore, judicious management of all the inputs is essential for the sustainability of such a complex system. Precision agriculture gives farmers the ability to use crop inputs more effectively including fertilizers, pesticides, tillage and irrigation water. More effective use of inputs means greater crop yield and/or quality, without polluting the environment the focus on enhancing the productivity during the Green Revolution coupled with total disregard of proper management of inputs and without considering the ecological impacts, has resulted into environmental degradation. To evaluate a new approach for site-specific nutrient management (SSNM). Large variation in initial soil fertility characteristics and indigenous supply of N, P, and K was observed among Field- and season-specific NPK applications were calculated by accounting for the indigenous nutrient supply, yield targets, and nutrient demand as a function of the interactions between N, P, and K. Nitrogen applications were fine-tuned based on season-specific rules and field-specific monitoring of crop N status. The performance of SSNM did not differ significantly between high-yielding and low-yielding climatic seasons, but improved over time with larger benefits observed in the second year Future, strategies for nutrient management in intensive rice systems must become more site-specific and dynamic to manage spatially and temporally variable resources based on a quantitative understanding of the congruence between nutrient supply and crop demand. The SSNM concept has demonstrated promising agronomic and economic potential. It can be used for managing plant nutrients at any scale, i.e., ranging from a general recommendation for homogenous management of a larger domain to true management of between-field variability. Assessment of pest profiles in FFP and SSNM plots suggests that SSNM may also reduce pest incidence, particularly diseases that are often associated with excessive N use or unbalanced plant nutrition.

Keywords : nutrient, pesticide, crop, yield

Conference Title : ICAFAS 2015 : International Conference on Agricultural, Food and Animal Sciences

Conference Location : Zurich, Switzerland

Conference Dates : July 29-30, 2015