

A study on factors associated with nutrient use in paddy production in the districts of Anuradhapura, Polonnaruwa and Ampara in Sri Lanka

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Paddy is the main crop cultivated in the districts of Ampara, Anuradhapura and Polonnaruwa using major irrigation systems. A profitable production requires efficient use of fertilizer. Hence, application of a proper nutrient amount to the paddy plant is essential. Though several studies have been conducted to identify the factors associated with paddy production, nutrient use in paddy cultivation is not well understood. This study was carried out to identify the factors associated with nutrient consumption in the three districts. Data were obtained from a survey conducted by the Hector Kobbekaduwa Agrarian Research and Training Institute in 2015. Variables that are associated with the response variables were identified using correlation analysis, and then multiple linear regression (MLR) analysis was carried out. MLR models revealed that the district, farmer's satisfaction on availability of paddy lands and knowledge in fertilizer application were significantly associated with all four responses, namely, nitrogen, phosphate, potash and total nutrient consumption. In addition, nitrogen consumption was significantly associated with farmer's satisfaction on availability of highlands and hired labour man-days; phosphate consumption with farmer's age, potash consumption and hired labour man-days; potash consumption with agricultural experience in years, receive of extension services by agricultural officials, phosphate consumption, yield and price gained per 1 kg of paddy; and total nutrient consumption with agricultural loans obtained, fertilizer cost and the yield. Residual analyses were performed for each MLR and no assumptions were violated. Based on the results, farmers must be encouraged to perform soil tests to identify the best fertilizer recommendation instead of using a recommendation to the district. Expansion of extension services through agricultural officers is a must in implementing this procedure. It is advised to encourage organic fertilizer production, and thereby reduce importation of chemical fertilizers. It is also suggested to conduct similar surveys often, to update the information for policy decisions.

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