

SOIL FERTILITY STATUS AND MANAGEMENT IN VILLAGE TANK BASED PADDY FARMING

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Farmers often complain that, though fertilizer is applied continuously the yield increase is not significant. Therefore, this study was conducted to assess nutrient status of paddy soil and socio-economic aspects of farming community to determine the root causes of the problem. Study was conducted in Illuppukanniya a village located in the Mihintale Divisional Secretariat. The study included soil nutrient analysis and a socio-economic survey. Soil analysis reflected that, average yield has increased with increasing of available nitrogen, potassium, phosphorus and organic matter content in the soil. All three nutrients, nitrogen ($r^2 = 0.71$), phosphorus ($r^2 = 0.54$) and potassium ($r^2 = 0.64$) showed positive correlations between nutrient levels and rice yield. Majority of the soil samples showed less than 2% of OM content indicating low tendency to incorporate paddy straw into the soil by farmers. Survey results indicated that, farmers having sole ownership for their fields obtained higher yield ($5038.8 \text{ kg ha}^{-1}$) compared to the fields with other ownerships ($3902.6 \text{ kg ha}^{-1}$). Farmers having better education level (O/L or above) obtained average yield of $4890.6 \text{ kg ha}^{-1}$ when compared to the 4199 kg ha^{-1} obtained by less educated (below O/L) farmers in the village. Study concludes that, adding higher rate of nitrogen, phosphorus and potassium fertilizers may increase rice yield. Therefore, it is important to apply correct dosage of all three fertilizers recommended by the Department of Agriculture. It should be investigated that, whether farmers apply whole amount of fertilizer that they obtained at subsidized price for paddy farming. Any extension program to educate and mobilize farming community towards more intensive farming would be beneficial to enhance the productivity on long term basis.

Key words: Nutrient availability, Paddy cultivation, Socio-economic factors