Entry No. IRRC-0540

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Nutrient management
Keyword 2	: Decision support tools
Keyword 3	: Soil and soil health
Title of Entry	: SPATIAL VARIABILITY OF AVAILABLE SOIL PHOSPHOROUS OF PADDY FIELDS AT FOUR MAJOR RICE PRODUCING DISTRICTS IN SRI LANKA
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Considerable amount of fertilizers are being applied to paddy fields in Sri Lanka to maximize rice production. Application of fertilizer without considering nutrient requirement is a waste of resources and it can pollute the environment as well. Over use of Triple Supper Phosphate enhances the accumulation of Phosphorous in soil and eutrophication of water reservoirs. Soil Test Based Fertilizer recommendation has been introduced by the Department of Agriculture to enhance efficient utilization of phosphate fertilizer. Since soil testing of soil from each paddy field is difficult and time consuming, soil fertility maps have been

identified as the best alternative to take decision on fertilizer requirement. Therefore, this study was conducted to prepare thematic maps of available soil Phosphorous to identify the soil Phosphorous status in four major rice producing districts (Kurunegala, Puttalam, Anuradhapura and Polonnaruwa). 1:50,000 maps were used as the base maps. Two composite soil samples from depth of 0-15 cm were collected from both upper and lower positions of the paddy track for one paddock or grid sized 2.5 km by 2.5 km and geo positioned by Global Positioning System. Collected soil samples were analyzed for available soil Phosphorous by Olsen P method and developed maps using ArcView GIS 10.5 software. Soil Phosphorous values were classified as less than 5, 5 - 10 and more than 10 mg P kg-1. Available soil Phosphorous maps of Puttalam, Kurunegala, Polonnaruwa and Anuradhapura districts showed that 17%, 37%, 10% and 0.4% of the land extent are covered by less than 5 mg kg -1 of Phosphorous, 74%, 55%, 32% and 20% of them are covered by 5 - 10 mg kg -1 of Phosphorous which is the optimum level for rice cultivation and 9%, 8%, 58% and 80% of land are having Phosphorous content more than 10 mg kg-1 at which no need to apply Phosphorous fertilizer. Therefore, usage of Triple Supper Phosphate fertilizer in Puttalam, Kurunegala, Polonnaruwa and Anuradhapura districts can be reduced by about 10%, 33%, 72% and 88% respectively.

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