1/21/23, 11:19 AM HTML / Printer-friendly

**AgSURS - Reviewer 1 View**

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| **Abstract Title** | Estimation of phosphorus fixing capacity of potato and vegetable growing soils in Welimada area in Badulla district |
| **Abstract Body** | Long term chemical fertilizers on vegetable cultivation is common in Badulla Disrtict, resulting environmental issues. Phosphorus is an essential element for plant growth and development. Phosphorous fixation is common in soils treated with high doses of P fertilizers. The study was conducted to investigate the Phosphorus fixing capacity as affected by selected soil physiochemical properties in three regions of Welimada in Badulla district. Forty-eight soil samples were collected from Keppetipola, Bogahakumbura and Boralanda regions under the basis of “yaya” representing composite sample. The selected areas are mainly potato and vegetable growing regions of the upcountry intermediate Zone of Sri Lanka. Three undisturbed soil samples from each region and forty-five samples from farmer’s field were collected for the analysis. The collected soil samples were analyzed for pH, electrical conductivity (EC), cation exchange capacity (CEC), exchangeable K, available P, total phosphorus and phosphorus fixing capacity. Phosphorous fixing capacity was determined using the 100 ppm KH2PO4 solution. Then P fixing capacity was determined by subtracting added P from remaining P concentrations in the soil solutions. The simple correlations and multiple regressions were followed for the analyses of data. Results envisaged that soil pH ranged between 4.21-6.91, EC between 0.8-1.8 (Sm/cm), available P between 42.5-245 mg kg1, OM from 1.2 to 4.0 %, exchangeable K varied from 70 to610 mg kg-1, CEC between 10 -52 ( cmolc kg-1).and total phosphorus content from 186.4 to 5068.6 mg kg-1. However, P fixing capacity ranged from 7.85- 43.89%. The highest mean P fixation was reported in Boralanda (19.54%) regions. The lower P fixations mean was observed in Keppetipola (17.32 %) while at Bogahakumbura, it was reported between 18.45%. Undisturbed (natural forest) soils recorded the highest mean P fixing capacity, which was 59.97%. Results showed a negative significant correlation (p=0.016) between phosphorous fixing capacity and available P. However, regression analysis showed that the P fixation capacity has significantly increased with low pH and liming can then be recommended for the reclamation of acid soils in Badulla District. |
| **Key Words (5 Words)** | available phosphorus, Phosphorous fixing capacity, soil physiochemical properties |
| **Abstract ID** | AERM0101 |
| **Findings of this study (r1)** | ……………………………………………………………………………………………………………………………………..1. Make a significant contribution to existing knowledge
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| **Title of the abstract(r1)** | …………………………………………………………………………………………………………………………………….1. Is appropriate to the thematic area and descriptive
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| **If needs more improvements for****"Title" please specify here(r1)** |  |
| **The content of the abstract(r1)** | ………………………………………………………………………………………………………………………………………1. Is clear and concise
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| **Recommendation(r1)** | ………………………………………………………………………………………………………………………………………1. Accept in the present form with minor editorial corrections
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| **Please justify reasons for If rejection(r1)** |  |
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