

AGRONOMIC EFFECTIVENESS OF DIFFERENT TYPES OF EPPAWALA
PHOSPHATE TO RICE ON SOME SELECTED SOILS OF SRI LANKA.

K. de Silva, P. Deturck,
K. Dehanayake and K. Tennakone,
Institute of Fundamental Studies, Kandy.

The agronomic effectiveness of different types of Eppawala phosphate to rice in comparison with TSP on different soils was evaluated in a greenhouse study. The different phosphate types were; (i) finely ground apatite rock (ERP), (ii) finely ground selectively mined pure apatite crystals, (iii) (i) and (ii) retrieved after burial in the sulfuric acid rich zones of Muthurajawela peat for 9 and 26 days, (iv) apatite rock (ERP) treated with HCL and $(\text{NH}_4)_2\text{SO}_4$. Three different soils used were; an alfisol from Maha Illuppallama and two ultisols from Kandy and Matara.

No significant yield response was observed from any of these phosphorus sources on Kandy and Matara soils. The ERP mixture treated with HCL and $(\text{NH}_4)_2\text{SO}_4$ however gave a significant yield increment over the control on Maha Illuppallama soil. This fertilizer was 17% more effective than the TSP. Phosphorus uptake data also confirmed that this fertilizer was as effective as the TSP on all three soils. The selectively mined apatite crystals retrieved after burial in the Muthurajawela peat also showed higher uptake values than the control on these soils. This peat treated apatite fertilizer was inferior to TSP on the Maha Illuppallama and Matara soils and was comparable to TSP on the Kandy soil. All other phosphate types also gave a significant response in phosphorus uptake only on the Matara soil although they were inferior to TSP.