

PHOSPHORUS AVAILABILITY OF PHOSPHOCOMPOST ENRICHED WITH EPPAWALA ROCK PHOSPHATE AND SULPHUR

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Phosphorus (P), an essential nutrient for plant growth is presently being supplied through importation of chemical fertilizers. However, only a limited quantity of Eppawala Rock Phosphate (ERP) is used in Sri Lankan agriculture at present, despite the huge demand. Hence, it is imperative to explore alternative uses of ERP as P source. Objectives of this study were to examine the phosphorus bio availability in phosphocompost and sulphur amended phosphocompost, prepared using ERP and, to determine the suitability of conjoint mixture of ERP and triple super phosphate (TSP). Compost, phosphocompost and sulphur amended phosphocompost were prepared using similar feed stocks and phosphocompost and sulphur amended phosphocompost were enriched with ERP and sulphur at 5% and 1%, respectively. Composting process was monitored and continued for 56 days for all heaps. Compost samples were drawn after the termination process and analyzed for physiochemical properties. A pot experiment was conducted in a plant house and the performance of capsicum was monitored under the supply of P from different phosphorus sources. The experimental design was a complete randomized design (CRD). Soil used for the experiment was low in phosphorus and all the treatments were supplied with 0.1275 g of total phosphorus in different forms except control. Treatments were TSP, ERP, phosphocompost, sulphur amended phosphocompost, sulphur mixed ERP, compost and ERP+TSP. Compost, ERP, phosphocompost and sulphur amended phosphocompost were analyzed for citrate soluble, formic acid soluble, and total P. Phosphorus reactivity was not influenced in phosphocompost or sulphur amended phosphocompost. Growth parameters monitored in capsicum showed that there was no improvement in the phosphorus supply due to the enrichment of composting feed stock with ERP. Amendment of sulphur to ERP enriched compost did not increase the P availability either. However, both TSP and ERP+TSP combinations were successful in providing P to capsicum.

Keywords: Eppawala rock phosphate, Phosphocompost, Phosphorus, Sulphur amended phosphocompost