EPPAWELA APATITE-MUTHURAJAWELA PEAT MIXTURE AS A P-FERTILIZER

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A peat reserve of nearly 50 million tons occurs at Muthurajawela. Since this material is acidic it is of interest to investigate the nature of this peat especially in view of its possible use as a raw material to produce a P-fertilizer from Eppawela apatite.

Peat samples were removed from three different locations at the Muthurajawela deposit and their pH, mositure content measurements and chemical anayysis for C, S, N, P, K, Na, Fe, Ca, Mg and Zn have been made. Powdered Eppawela rock phosphate was mixed with peat at different ratios and the available P_2O_5 contents of these mixtures have been estimated at regular intervals up to 3 months.

pH of peat samples were in the range 4-5 while their total C was 26-29%. Acidity is mainly attributed to the presence of humic acid. Total N and S contents were 0.9 and 4.5% respectively. Its total P was 0.1% of which only obout 1-6 ppm was in the available form. It also contains other plant nutrients in small quantities. Reaction of apatite with peat in the weight ratios 1:1 and 2:1 has been investigated. The reaction of 1:1 weight ratio was found to be fairly rapid initially, and after 8 weeks conversion is rather slow. Percentage conversion doubles in 8 weeks and then increases very slowly resulting in the formation of a fertilizer containing about 12% availble P_2O_5, 2% sulphur, 0.5% Nitrogen.

It is apparent from these studies that a P-fertilizer containing small amounts Of N, S, K, Mg, Zn andFe can be conveniently made by mixing apatite with peat and allowing the mixture to cure for 2-3 months. This product could easily be substituted for imported rock phosphate, which contain 10-12% available P_2O_5.

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