Nitric acid treated phosphate fertilizer from Eppawala apatite in Sri Lanka

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Abstract

A method is described for the production of phosphate fertilizer from a high quality fraction of the apatite ore at Eppawala in Sri Lanka.

Apatite is acidulated with nitric acid (70%) at approximately the stoichiometric level needed to generate dicalcium phosphate. The reaction product when mixed with ground ammonium sulphate yields a dry nonhydroscopic solid containing almost all phosphorus in the "available" form (i.e. ~80% water soluble and ~90%, 2% citric acid soluble). The product can be stored in polythene or gunny bags. Reversion is negligible, as demonstrated by a decrease in water soluble P_2O_5 of less than 1% after 6 months' storage.