

**Neutralized Newly Developed Eppawala
Superphosphate Fertilizer for Field Applications.**

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Abstract

Phosphorus plays an indispensable biochemical role in photosynthesis, respiration, energy storage and transfer, cell division, cell enlargement and several other processes in the living plant. In crop production, phosphorus is generally absorbed in the phosphate form, primarily the orthophosphate ion. When P is limiting, the most striking effects are a reduction in leaf expansion and leaf surface area, as well as the number of leaves. Phosphorus fixation can be done using phosphate fertilizers.

The beneficiation of rock phosphate is heavily dependent upon the use of sulphuric acid. But sulphuric acid becoming an expensive commodity in world market. Therefore alternative routes are devised for the beneficiation of apatite.

A research mainly focus on describe a method of neutralize a newly develop Eppawala superphosphate for field applications. Apatite is acidulated with HCl to the stoichiometric level needed to generating dicalcium phosphate. The reaction product mixed with ammonium sulphate sufficient to double decompose calcium chloride and dicalcium phosphate yield a nonhygroscopic product containing almost all phosphorus in the water soluble form. Lime mixed with the reaction product to neutralize the fertilizer.

The studies were carried out with the intention of utilizing the reserve of apatite mainly HERP (High grade Eppawala Rock phosphate) at Eppawala in Sri Lanka.

Key words – Eppawala rock phosphate, Dicalcium phosphate, Double decompose