

## **CHELATION EFFECT ON PHOSPHATE SOLUBILIZING ACTIVITY BY *CITROBACTER FREUNDII* MTCC 6738**

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### **ABSTRACT**

Chelators are long known to enhance the phosphate solubilizing efficiency in soil. Production of organic acids is not the only mechanism of phosphate solubilization. As, soil is a good buffer medium, phosphate solubilization cannot occur only because of the production of acid and lowering of pH. Since the organic acids are known to bring about the solubilization of phosphorus either by lowering the pH or by chelating with calcium, the amount of phosphorus released can be considered to be largely due to the production of these acids. Thus apart from acidic environment the production of chelators like  $\alpha$  – ketogluconic acid seems to play a major role in P solubilization from Tricalcium phosphate (TCP) and Udaipur rock phosphate (URP). The previous experiments with lower initial pH values have failed to show efficient P solubilization. In the present study the solubilization efficiency of the organism *Citrobacter freundii* in presence of different concentrations of EDTA was studied in order to know the effect of chelators on solubilization. Two phosphate sources Udaipur Rock Phosphate and Tri-calcium phosphate were inoculated with the organism and different concentration of EDTA and the resulting solubilization was compared with the control un-inoculated with EDTA.

**KEYWORDS:** *Citrobacter Freundii*, Chelation, Phosphate Solubilization, TCP and URP