SOLUBILIZATION OF EPPAWELA APATITE BY MICROORGANISMS IN BROTH CULTURE

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Phosphate solubilizing microorganisms were isolated from three different soil localities. These isolates included bacteria and fungi. Muthurajawela peat soils and Matara acid soils harboured more phosphate solubilizing microorganisms than Eppawela alkaline soils. Laboratory experiments were conducted to determine their effect on solubilization of apatite which is an insoluble inorganic phosphorus source. The period of growth for maximum solubilization and amount of solubilization varied between the different isolates. The quantity of insoluble phosphorus solubilized varied from 14 to 23 percent among the isolates. Correlation studies with the pH changes in the growth medium and phosphorus solubilization showed a significant inverse relationship with pH. The efficiency of the apatite solubilization by microorganisms decreased with the increasing particle size. The relation between particle size of the apatite granules and solubility was tested using a penicillium isolate. While the uninocalated control did not show any increase in solubility with particle size, solubility through inoculation increased significantly with the reduction in particle size.