

# **ISOLATION AND BIOCHEMICAL POTENTIAL OF PHOSPHATE SOLUBILIZING BACTERIA ISOLATED FROM SOIL AND THEIR ROLE IN PLANTS.**

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**Summary:** The present investigation was carried out to study the occurrence of phosphate solubilizing bacteria. The isolated microbes were identified, screened and characterized. The bacterial isolates *Pseudomonas* sp and *Bacillus* sp., were identified as PSB. These strains used in this study might have the capacity to fix atmospheric nitrogen. It is also known that P availability in soils is important for the uptake of N from soils and its utilization in plant. Therefore the application of these phosphate solubilizing bacteria (PSB) could be considered as an appropriate substitute for chemical phosphorous fertilizer in organic and sustainable agriculture. The discovery of mutual relationship between plants and phosphate solubilizing bacteria (PSB), in which bacteria provide soluble phosphate and plants supply root borne carbon compounds (mainly sugars), that can be metabolized for bacterial growth, hence for biofertilization the use of PSB improves the crop yield. In short, results from all these experiments suggest that co-inoculation of PSB with different beneficial properties should be the future trends of bio-fertilizer application for sustainable crop production. Soil fertility management by bio- fertilizers (PSB) can become one of the basic components of sustainable agriculture.

## List of publications

- Morphological and Biochemical characterisation of the isolated phosphate solubilising bacteria. *International Journal of Advance Research in Science & Engineering*.201. 8<sup>th</sup> International conference on science, technology and management (ICSTM-16) on 21Oct 2016.
- “Isolation and screening of phosphate solubilizing bacteria from soil of different gardens”. *International Journal of Advance Research in Science & Engineering*.2016: 5(5). 3<sup>rd</sup> International conference on science, technology and management (ICSTM-16) on 15 MAY 2016.
- Role of phosphate solubilizing microorganism in plant growth promotion: A review (Accepted).