

Phosphate Solubilizing Potentiality of Fungi in Rhizosphere of *Camellia sinensis* (L.) O. Kuntze

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Abstract

The purpose of the present study was to isolate fungi from tea rhizosphere and to assess their phosphate solubilisation ability. Fungal species were first isolated on RBA (Rose Bengal Agar) plates following serial dilution method. Colonies formed were then transferred to PVK (Pikovskaya) plates and broths to isolate possible phosphate solubilisers. Factors like SI (Solubilisation index) in plates, final pH and quantity of phosphate solubilised in broths by these isolates were recorded. Relation between quantity of phosphate solubilised and final pH in broth were recorded. Isolated *Aspergillus* sp. and *Penicillium* sp. showed solubilisation index ranging from 1.7 to 1.2. Maximum phosphate solubilisation was recorded (2.79 mg P₂O₅/ml) in broth of *Aspergillus* sp.1 after 15 days. Highest drop in pH was recorded from broth of *Aspergillus* sp.2 (7.0-3.9). Pearson's correlation between final pH of broth and solubilisation of insoluble phosphates by isolates showed significant (P>0.01) negative relation (r = -.972**). Strains of phosphate solubilizing *Aspergillus* and *Penicillium* isolated in the present study represent potential bio-inoculum as biofertilizers for economic crop like tea.

Key words: Bio-fertilizers, Fungi, Phosphate.