

ISOLATION AND CHARACTERIZATION OF RHIZOBACTERIA FROM BANANA PLANT AS GROWTH PROMOTING AND BIOCONTROL AGENT AGAINST SOIL BORNE PATHOGEN

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The growth promoting bacteria (PGPR) are group of bacteria mainly found in the rhizosphere of plant, having capability to stimulate their health and growth and also defend them from different soil borne pathogens by different mechanisms. In current study, total thirty-four strains of PGPR were isolated from the rhizosphere of healthy banana plants and differentiated on the basis of morphological characteristics and biochemical tests. Phosphate solubilizing ability, capability of auxin production as well as siderophore competency of PGRP were also investigated for the stimulation of plant growth. Out of 34 isolated strains, six isolates were found positive with high siderophore producing activity, six strains were confirmed having the ability of production of indole acetic acid (IAA), and 17 isolates were found with excellent ability to solubilize the insoluble phosphate. As enzymatic production seemed to have a significant role in inhibition of different pathogens of plants, most of the isolates in current study were found positive for the production of amylases, oxidase, pectinases, proteases, lipases, catalases. Furthermore, seven PGPR isolates also showed the antifungal activity with maximum 51.59% and 50.48% growth inhibition of *Fusarium oxysporum* f.sp. *cubense* *in vitro*. Thus, these rhizosphere isolates might be used to endorse plant growth and a good biocontrol for pathogenic fungi in banana growing areas of Pakistan.

Biography

Ibrar Khan has completed his PhD from Ocean University of China. He is an Assistant Professor at Department of Microbiology, Abbottabad University of Science & Technology, Pakistan. He has published more than 20 papers in reputed journals.

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