

Isolation and Characterization of Halophilic PGPRs

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Abstract—High soil salinity adversely affects plant growth through osmotic effects, toxicity of salt ions and changes in physical and chemical properties of soil. There are many plant growth promoting bacteria which are known to benefit plant growth by their various inherent metabolic processes. Ability to grow in high saline conditions is one such characteristic feature which can be greatly utilized. With rising emphasis on sustainable agriculture, environmental protection and food security, exploitation of such beneficial soil microbiota has become imperative. The screening of salt tolerant lines/cultivars has been attempted by many researchers on various plant species at seedling growth stage. In this study, two moderately halophilic bacteria were isolated from the brine samples of Chilika salt lake, Odisha (India). The isolates form yellow, raised and circular colonies and are non-motile, diplococcal, Gram positive, aerobic, catalase- and oxidase- positive. They failed to utilize citrate as sole carbon source. The isolates grew in presence of 2-18% (w/v), with optimum growth at 6% (w/v) NaCl in 72 hours. These isolates are being tested on wheat and tomato crops under salt stress conditions for the process of bioremediation and alleviation of stress to improve productivity.