P39 Isolation and Characterization of a Salt-Tolerant Bacterial Community Isolated from Atriplex Rhizosphere

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Salinity is a form of water related stress which is responsible for crop losses, particularly in semiarid and irrigated agriculture. However, microorganisms have learned to adapt themselves to adverse environments. The group of Pseudomonas are most beneficial. The main aim of this study was to isolate and characterize salt-tolerant rhizobacteria, from Atriplex cultivated in saline soil and also to verity the presence of the nif genes. A total of 28 rhizobacteria strains isolated from the saline sites in Northeast of Brazil are able to tolerate 3.0 M NaCl. The most frequently isolated strains were characterized as different Pseudomonas spp. (including P. putida and P. mucidolens,) using fatty acid methyl ester analysis. A number of bacterial characteristics which might contribute to plant growth stimulation have been examined, including antagonistic activity towards phytopathogens and N2 fixation. All strains grew in nitrogen-free semi-solid medium and bear the nifH gene. Three P. putida strains showed a marked antagonistic effect towards Pythium aphanidermatum and Rhizoctonia solani.