

EVALUATION OF RHIZOBACTERIA FOR THEIR GROWTH PROMOTING ACTIVITY IN MAIZE

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ABSTRACT

Thirty eight rhizobacteria were isolated from the maize rhizosphere soil and were evaluated on the basis of their ability to produce auxins (IAA-equivalents) in vitro. The eleven isolates were selected, studied for various morphological and physiological characters and were identified as different strains of pseudomonads. Maize seeds were inoculated with these rhizobacteria and seedling root and shoot growth was studied in petri dishes. Yield and its parameters were studied under field conditions. Data revealed that maize seedling growth and yield were significantly promoted in response to inoculation with selected isolates of rhizobacteria. Seedling root and shoot weight were increased upto 68.4 and 42.6%, respectively over control. Both +ve and -ve response was observed on root shoot ratio which ranged from 20.0% decrease to 22.8% increase compared to control. Maize grain yield was increased upto 18.9%, while cob weight, cob length, 1000-grain weight and straw weight were significantly promoted upto 20.8, 17.2, 11.6 and 27.1%, respectively in response to inoculation. Out of eleven selected isolates, J2, J7, J11, J24 and J30 were more consistent in improving maize growth and these could be used as plant growth-promoting rhizobacteria.