

RESEARCH ARTICLE :

Screening of maize rhizosperic phosphate solubilizing isolates for plant growth promoting characteristics

■ S. VINOD BABU, S. TRIVENI, R. SUBHASH REDDY AND J. SATHYANARAYANA

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SUMMARY : Maize forms a major part of cereal crops consumed by man and serve as a source of dietary carbohydrates. It is used for livestock feed and it is the cheapest and palatable livestock feed for animals such as pig, cattle, sheep, poultry and it is also a source of raw materials for the production of corn sugar, corn starch, corn syrup and corn oil. In the present study twenty four (24) phosphate solubilizing bacteria (*i.e.*, sixteen *Bacillus* and eight *Pseudomonas*) isolated from Maize research station and college farm, Rajendranagar, PJTSAU, Telangana and characterised by their Plant Growth Promoting Properties (PGPR) under *in vitro* conditions such as P, Zn and K solubilization. The isolate PSB 6 showed maximum Phosphate solubilization zone of 15.50 mm and the solubilization efficiency (%) is 258.33 %. The isolates both PSB 6 and PSB 19 showed maximum Zinc solubilization zone *i.e.*, 14.00 mm and the solubilization efficiency (%) maximum for PSB 6 *i.e.*, 233.30 %. The isolate PSB 11 showed maximum Potassium solubilization zone of 14.00 mm with the solubilization efficiency (%) of 280.00 %. Apart from these all (24) isolates were screened for IAA production, exopolysaccharide production, siderophore production and HCN production also. All the isolates responded positively to the IAA production except PSB 5, PSB 15 and PSB 22 were negative. All the isolates (24) were positive to the exopolysaccharide production except PSB 10 and PSB 17. All the isolates (24) were positive to the siderophore production except PSB 2, PSB 9, PSB 13 and PSB 19. All the isolates (24) were positive to the HCN production except PSB 11, PSB 17 and PSB 24.

Author for correspondence :

S. VINOD BABU

Department of
Agricultural
Microbiology and
Bioenergy, College of
Agriculture Professor
Jayashankar Telangana
State Agricultural
University,
Rajendranagar,
HYDERABAD
(TELANGANA) INDIA

See end of the article for
authors' affiliations

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