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## Integrated effect of plant growth promoting rhizobacteria, phosphate solubilizing bacteria and chemical fertilizers on growth of maize

**Zahid Abbas**

Nanjing Agricultural University, China

Integrated effect of PGPR and PSB along with chemical fertilizers has great significance for the improvement of soil fertility as well as to increase the plant growth and its biomass. The present study was conducted in order to test the effect of PGPR and PSB along with recommended doses of chemical fertilizer to evaluate the performance of different plant parameters under various chemical and biological treatments. The bacterial strains were isolated from root rhizosphere of maize II, SF and WC was characterized on the basis of their morphological, physiological and biochemical traits. The shape, size and structure of isolates were determined through microscopic analysis. The selected PGPR isolates produced reasonable quantity of IAA (ranging 0.11-0.83 µg/ml). The PSB strain showed highest solubilization index (0.88%). The co-inoculation of PGPR and PSB with 25% less N and recommended P and K fertilizers showed maximum plant height (88.7 cm) at vegetative stage, chlorophyll contents (50.1 mg/g), leaves/plant (12.7) and root dry biomass (19.93 g). While the maximum plant heights at maturity (114.5 cm) shoot dry biomass (31.2 g), root length (8.8 cm) were recorded on PGPR, PSB and recommended NPK. The highest plant phosphorous contents (0.29) were observed in treatment having the combination of Iple Iple (II) + PSB + recommended K +  $\frac{3}{4}$  N +  $\frac{3}{4}$  P. The PGPR, PSB and chemical fertilizer have showed very promising results on different parameters and vigorous growth of maize plants.

2017201091@njau.edu.cn

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