

**Research Article**

DOI: 10.15740/HAS/AJSS/11.2/307-317

# Effect of phosphorus, sulphur and phosphate solubilizing bacteria on yield, nutrient uptake and soil fertility after harvest of mustard

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Received : 03.04.2016; Revised : 23.10.2016; Accepted : 18.11.2016

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**Summary**

A field experiment was conducted to evaluate the effect of phosphorus, sulphur and phosphate solubilizing bacteria on growth and nutrient uptake by mustard [*Brassica juncea* (L.) Czern and Cosson.] grown in loamy sand soil. The experimental soil has pH 7.60 and was deficient in available sulphur and nitrogen and medium in available phosphorus. The experiment was tested by Randomized Block Design with four replications. The treatments comprised of three levels each of phosphorus (0, 25, 50 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup>) and sulphur (0, 20, 40 kg S ha<sup>-1</sup>) and two levels of phosphate solubilizing bacteria (PSB) inoculation (no inoculation and inoculation with *Aspergillus niger* strain-1). The results of the experiment revealed that each successive increase in level of phosphorus significantly increased the crop growth and uptake of nutrients. Different levels of sulphur significantly improved the growth, yield as well as uptake of nutrients by seeds and straw of mustard. Seed inoculation with PSB (I<sub>1</sub>) significantly increased yield, uptake in seed and straw and availability of nutrients in soil. Combined effect of 50 kg P<sub>2</sub>O<sub>5</sub> ha<sup>-1</sup> and 40 kg S ha<sup>-1</sup> with seed inoculation with PSB gave higher seed and straw yield as well as nutrient content in seed and straw which resulted in higher nutrient uptake by mustard grown in loamy sand of North Gujarat.

**Key words :** Phosphorus, Sulphur, PSB, Yield, Uptake, Fertility mustard

**How to cite this article :** Jadav, N.J., Parmar, J.K., Gangwal, T.V. and Patel, M.V. (2016). Effect of phosphorus, sulphur and phosphate solubilizing bacteria on yield, nutrient uptake and soil fertility after harvest of mustard. *Asian J. Soil Sci.*, 11 (2) : 307-317 : DOI : 10.15740/HAS/AJSS/11.2/307-317.