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Effect of inoculation with phosphate solubilizing fungus on growth and nutrient uptake of wheat and mungbean plants fertilized with tri-calcium phosphate in alkaline soilsRachana Jain¹, Jyoti Saxena², Vinay Sharma³ and S N Naik¹¹Indian Institute of Technology, India²BT Kumaon Institute of Technology, India³Banasthali University, India

Thirty-two isolates were recovered from farmland soil samples of the Banasthali region, Rajasthan, India, out of which 16 showed phosphate solubilizing potential. These microorganisms were further screened based on solubilization efficiency of inorganic phosphate sources in Pikovskaya agar and broth media containing tricalcium phosphate as an insoluble source of phosphorus. Isolates S33 showed the highest phosphate solubilizing potential, and later identified as *Aspergillus tubingensis*, was selected for further work. This isolate could solubilize other inorganic forms of phosphorus (P) viz. dicalcium phosphate, ferric phosphate and Udaipur rock phosphate. The efficiency of *Aspergillus tubingensis* S33 was further studied in semi-arid soils in a pot experiment to evaluate the effects of this fungus on the enhancement of P uptake by plants, available P status in the soil, dry matter production and grain yield of wheat (*Triticum aestivum* L.) and mung bean (*Vigna radiata*). Inoculation of *A. tubingensis* S33 significantly improved dry matter and grain yield in both crops. In general, there was a significant improvement in P uptake by plants and extractable P status in the soil. The results suggested that *A. tubingensis* S33 can play an important role in wheat and mungbean growth promotion and increase in soil available P.

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