AN AJSS
An Asian Journal of Soil Science
Volume 9 | Issue 2 | December, 2014 | 244-249 | e ISSN–0976–7231 ■ Visit us : www.researchjournal.co.in

Research Article

DOI : 10.15740/HAS/AJSS/9.2/244-249

Influence of phosphorus and sulphur levels on nodulation, growth parameters and yield of soybean (*Glycine max* L.) grown on Vertisol

■ SHUBHANGI J. DHAGE, V.D. PATIL AND A.L. DHAMAK

Received : 23.09.2014; **Revised :** 18.10.2014; **Accepted :** 05.11.2014

MEMBERS OF RESEARCH FORUM:

Corresponding author :
SHUBHANGI J. DHAGE, Department of Soil Science and Agricultural Chemistry, Vasantrao Naik Marathwada Krishi Vidyapeeth, PARBHANI (M.S.) INDIA

Co-authors :
V.D. PATIL AND A.L. DHAMIK, Department of Soil Science and Agricultural Chemistry, Vasantrao Naik Marathwada Krishi Vidyapeeth, PARBHANI (M.S.) INDIA

Summary

A field experiments were conducted for two consecutive years during 2009-10 and 2010-11to study the effect of phosphorus and sulphur levels on soybean (*Glycine max* L.) at Research Farm, Department of Soil Science and Agril. Chemistry, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani (M.S.) on Vertisol (Typic *Hapluster*) deficient in phosphorus and sulphur. The treatments consisted of four levels of sulphur (S_0, S_{20}, S_{40} and S_{60} kg ha^{-1}) and four levels of phosphorus (P_0, P_{30}, P_{60} and P_{90} kg P_2O_5 ha^{-1}) applied through elemental sulphur and DAP, respectively. Results revealed that due to increase in the phosphorus and sulphur levels, there was effective improvement in nodulation, fresh weight of nodules $plant^{-1}$ and growth parameters *viz.*, plant height, leaf area, root length, root dry weight $plant^{-1}$ and number of pods $plant^{-1}$ at various growth stages of soybean. The yield *i.e.* grain, straw and total biological yield of soybean increased significantly with increasing levels of both phosphorus and sulphur. Further, synergistic effect of phosphorus and sulphur interactions on straw and total biological yield was highest at 90 kg P_2O_5 + 60 kg S ha^{-1} followed by 90 kg P_2O_5 + 40 kg S ha^{-1}, 90 kg P_2O_5 + 20 kg S ha^{-1} and 60 kg P_2O_5 + 60 kg S ha^{-1} in straw yield and 90 kg P_2O_5 ha^{-1} with 60 or 40 kg S ha^{-1} produced significantly higher yield over S application with 30 and 0 kg P_2O_5 ha^{-1} in total biological yield.

Key words : Phosphorus, Sulphur, Soybean, Yield, Nodulation

How to cite this article : Dhage, Shubhangi J., Patil, V.D. and Dhamak, A.L. (2014). Influence of phosphorus and sulphur levels on nodulation, growth parameters and yield of soybean (*Glycine max* L.) grown on Vertisol. *Asian J. Soil Sci.*, **9**(2): 244-249.