

Research Paper

ADVANCE RESEARCH JOURNAL OF
C R P
IMPROVEMENT
Volume 4 | Issue 1 | June, 2013 | 14-20
.....

Effect of different phosphorus sources and seed priming on growth, yield parameters and yield of chickpea

■ P.S. PATTAR, C.P. MANSUR¹, S.C. ALAGUNDAGI¹, P.M. SALIMATH¹ AND MANJUNATH HEBBARA¹

AUTHORS' INFO

Associated Co-author :

¹Department of Agronomy, Extension Education Unit, Krishi Vigyan Kendra Campus, BAGALKOT (KARNATAKA) INDIA

Author for correspondence :

P.S. PATTAR

Department of Agronomy, Extension Education Unit, Krishi Vigyan Kendra Campus, BAGALKOT (KARNATAKA) INDIA
Email : pattarps_2010@rediffmail.com

ABSTRACT : Field experiment was conducted during *Rabi* seasons of 2005-06 and 2006-07 at Agricultural Research Station, Gangavati, Karnataka, India, to study the effect of phosphorus sources and seed priming on growth and yield of chickpea. The pooled results of two seasons indicated that application of phosphorus through FYM cured DAP (P₅) recorded significantly higher grain yield (1581 kg/ha) than other sources of phosphorus, while the lowest grain yield of 1167 kg/ha was recorded with application of recommended phosphorus in the form of FYM. Seed priming with 2 % SSP (S₃, 1500 kg/ha), 2 % CaCl₂ (S₂, 1477 kg/ha.), 5 % cow urine (S₆, 1401 kg/ha) recorded significantly higher grain yield which were at par with each other. Interaction of recommended dose of phosphorus through FYM cured DAP and seed priming with 2% SSP (P₅S₃) recorded higher grain yield of 1705 kg/ha which was significantly superior over other interactions. Similar trend was also observed with respect to yield and growth parameters.

Key Words : Chickpea, FYM cured DAP, Seed priming

How to cite this paper : Pattar, P.S., Mansur, C.P., Alagundagi, S.C., Salimath, P.M. and Hebbara, Manjunath (2013). Effect of different phosphorus sources and seed priming on growth, yield parameters and yield of chickpea, *Adv. Res. J. Crop Improv.*, 4 (1) : 14-20.

Paper History : Received : 20.04.2013; Revised : 05.03.2013; Accepted : 06.04.2013

The pulses are known to improve the physical properties of soil through their tap root system and add leaf litter to the soil apart from fixing atmospheric nitrogen through biological nitrogen fixation (BNF). Pulse has special significance in the diet of the predominantly vegetarian population of India as it contains more protein which is complimentary with cereals in amino acid profile. About 90 per cent of world's chickpea is grown under rain fed conditions where the crop grows and matures on a progressively depleting soil moisture and generally experience terminal drought (Kumar *et al.*, 1996). Terminal drought is therefore, one of the major production constraints in limiting chickpea productivity and yield stability.

Chickpea production remained static for the last three decades due to number of biotic and abiotic stresses. In India, chickpea cultivation is restricted mainly to rainfed areas or cultivated under residual soil moisture, lack of nutrient input, inadequate management practices, higher incidence of pests and diseases and unscientific management of these pests are the some constraints in its cultivation which led to instability of yield and low harvest index. Among these, major constraints are lack of nutrient management/ imbalanced nutrition, unscientific management of pests and diseases and soil moisture stress, perceived as a marginal farmers crop laden

with high risk and poor yields. This perception discourages farmers to invest on requisite inputs which are vital for its successful cultivation.

RESEARCH PROCEDURE

A field experiment was conducted at Agricultural Research Station, Gangavati, Karnataka India, during *Rabi* seasons of 2005-2006 and 2006-07 to study the effect of phosphorus sources and seed priming on growth and yield of chickpea. The details of the materials used and techniques adopted during the course of investigations are presented.

The soil of the experimental site was medium deep black (vertisols) with clay texture, low in nitrogen (237 kg/ha), low in phosphorus (25.2 kg/ha) and medium in potassium (422 kg/ha). The experiment consisted of different phosphorus sources as main plots and different seed priming treatments as sub plots.

Main plots: (Phosphorus sources) P₁: Entire P through DAP, P₂:75% P through DAP + 25% through FYM, P₃:50% P through DAP + 50% P through FYM, P₄: Entire P through FYM and P₅: FYM Cured DAP (DAP : FYM 1:5 ratio, FYM was sprinkled with water and DAP fertilizer mixed with FYM then