

Response of Chickpea (*Cicer arietinum* L.) to Applied Phosphorus in Black Cotton Soils

A Lalitha Kumari, K Veeraiah and V Rajeswari

Department of Soil science and Agricultural Chemistry, Agricultural College,
Bapatla 522101
Andhra Pradesh

ABSTRACT

A field experiment was conducted at RARS, Lam, Guntur to study the response of chick pea to applied P levels in black cotton soils during *rabi* 2008-09 and 2009-10 with variety JG 11 in randomized block design with five treatments replicated four times. The experimental soil was non saline, slightly alkaline, medium in organic C and avail. P_2O_5 , low in available N and high in available K_2O status.

The results of two years experimentation indicated that application of recommended dose of P (50 kg ha^{-1}) in the black cotton soils containing medium level of available P_2O_5 gave significantly higher mean yield (25.13 q ha^{-1}) yields than the absolute control (zero N and P) and zero P(N alone was given) treatments which recorded 20.26 and 21.32 q ha^{-1} , respectively. The mean yield (24.96 q ha^{-1}) obtained in the Soil Test Crop Response based P (76 kg ha^{-1}) application was on par with application of recommended dose of P treatment. Application of 70% recommended dose of P resulted in lower mean yield (22.33 q ha^{-1}) than other two P application treatments. P and K contents in shoot at flowering stage were significantly different in different treatments. Variations in soil nutrient status at flowering stage were non significant. At harvesting stage, P content and uptake in grain and available P_2O_5 in soil were significantly high in P applied plots when compared to control plots.

Key words : Chickpea, Cotton Soils, Phosphorus.