



Effect of vermicompost, diammonium phosphate and zinc sulphate on growth, yield attributes and yield of chickpea (*Cicer arietinum* L.)

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Abstract : To know the effect of vermicompost, diammonium phosphate and zinc sulphate on the growth, yield attributes and yield of chickpea (*Cicer arietinum* L.), the field experiment was carried out during *Rabi* season of the year 2009-10 at the College Agronomy Farm, B. A. College of Agriculture, Anand. Twelve treatment combinations comprising two levels of vermicompost (0 and 1.25 t/ha), three levels of diammonium phosphate (0, 50 and 100 kg/ha) and two levels of zinc sulphate (0 and 25 kg/ha) were tested in a factorial randomized block design with four replications. Application of 1.25 t vermicompost/ha recorded significantly higher seed yield over control. Higher dose of 100 kg DAP/ha gave significantly higher no. of nodules, pods/plant, seed wt. /plant over lower level of 50 kg DAP/ha and 0 kg DAP/ha and being at par with 50 kg DAP/ha, gave significantly higher seed yield over 0 kg DAP/ha. The number of pods/plant were significantly higher in 25 kg ZnSO₄/ha but, it did not affect the yield of chickpea. The treatment combination of 1.25 t vermicompost/ha + 100 kg DAP/ha + 25 kg ZnSO₄/ha recorded significantly higher seed yield than other treatment combinations, but was at par with treatment combinations V₁P₁Zn₀.

Key Words : Vermicompost, Zinc sulphate, Chickpea, Diammonium phosphate

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INTRODUCTION

Pulses have an inherent capacity to fix atmospheric nitrogen and adaptability to a wide range of agro-ecological situations and variable management practices. Pulses are also considered as a vegetarian diet with the cheapest source of protein. As per looking the demand of the crop, there is a possibility of raising the production per unit area by efficient and judicious use of nutrients. Vermicompost, DAP and zinc sulphate are potential nutrient sources, which enhances the macro and micro plant nutrients, growth enhancing substances such as auxins and gibberellins and number of beneficial microorganisms like nitrogen fixing, P-solubilizing and cellulose decomposing organism and also supplies most required nutrients like nitrogen and phosphorus.

MATERIALS AND METHODS

Twelve treatment combinations comprising two levels of vermicompost (0 and 1.25 t/ha), three levels of diammonium phosphate (0, 50 and 100 kg/ha) and two levels of zinc sulphate (0 and 25 kg/ha) were tested in a Factorial Randomized Block Design with four replications. The crop was sown at a spacing of 30cm x 10cm on 3rd December, 2009 during *Rabi* season of the year 2009-10 at the College Agronomy Farm, B. A. College of Agriculture, Anand Agricultural University, Anand having the loamy sand soil in texture, low in organic carbon and nitrogen, medium in available phosphorus, and high in available potassium.

The observation of fresh weight of root nodules/plant (mg) was taken at 45 days after sowing from three randomly selected plants in each net plot. The root nodules were oven

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