Gomal Univ.J.Res.(A) 13(2): 113-120, 1993 [Printed in Dec. 1996] ISSN 1019-8180

EFFECT OF PHOSPHORUS AND NITROGEN ALONE AND IN COMBINATION ON YIELD AND YIELD COMPONENTS OF GRAM

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ABSTRACT

Effects of phosphorus and Nitrogen were studied on C44 variety of gram (*Cicer arietinum* L) at Malakandher farm of the N.W.F.P. Agricultural university Peshawar and agricultural Research station, Ratta Kulachi, Dera Ismail Khan during the year 1981-82. All possible combinations of 0, 20, and 40 kg Nitrogen and 0, 25, 50, 75, and 100 kg P_2O_5 per hectare were studied in the experiment. The experiment was laid out in randomized complete block design with four replications. A plot size of 9 m^2, having 6 rows 5 m long with 30 cm space between rows was used. Field was thoroughly prepared by ploughing and planking after pre-sowing irrigation. Calculated quantities of fertilizer i.e., all of the Nitrogen and phosphorus were broadcasted and incorporated in the soil in the respective plots according to the design. From the results obtained in field studies, it can be concluded that addition of phosphorus positively influenced all the yield components of gram. its application increased the yield up to 75 kg per hectare. Similarly, nitrogen alone increased the yield over control. However, for getting the maximum yield a combination of 40 kg per hectare of N and 75 kg per hectare of P_2O_5 should be applied to gram crop in N.W.F.P.

INTRODUCTION

Gram also known as chickpea is a principal grain legumes crop in Pakistan and is planted in winter season mainly as a rainfed crop. Gram is the most important pulse crop of the N.W.F.P, especially in Karak, Bannu, Lakki Marwat and D.I.Khan districts. Yield per unit area in our country and province is low as compared to other advanced countries of the world. There is a great need to increase gram production in Pakistan because like other food deficient countries the limited quantity and poor quality of the dietary protein is a major nutritional problem and this problem can be met by vegetable proteins derived from chickpea and other pulses.

Production increases may be obtained by increasing yield per hectare for which use of fertilizers is the most effective factor. Aeschlimanna (1979) reported that a basic