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EFFECT OF NPK FERTILIZERS ON THE GROWTH AND YIELD OF POTATO (*SOLANUM TUBEROSUM* L.) CV. CARDINAL UNDER THE AGRO-CLIMATIC CONDITIONS OF D.I.KHAN.

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ABSTRACT

Nutritional study on Potato Cv. Cardinal was conducted to observe th effect of different levels of N,P and K on the growth and yield of tubers under the agro-climatic conditions of Dera Ismail Khan. The results indicated that all the fertilizer traetments increased the yield considerably over unfertilized treatments. Germination percentage increased with the aplication of N alone and in diferent combinations with P and K. Maximum spread and bushy types of plants were produced with the combined application of N and P i.e. 489.13 g N, 535.71 g P_2O_5. Maximum No. of leaves per plant were recorded in case of combined application of N,P and K i.e. 489.13 g N + 535.71 g P_2O_5 + 225.00 g K_2O. The effect of various treatments on the height of plant , no. of tubers, no. of branches and weight of tubers was not significant.

INTRODUCTION

Potato (*Solanum tuberosum* L.) belongs to the family Solanaceae and is extensively grown in Pakistan. It is considered an important vegetable and cash crop. It has high nutritive value and is high energy producing food.

There are many factors which contribute towards enhancing the production of a crop. Out of which fertilizer application play a pivotal role in increasing yield and improving the quality. Response of fertilizer depends on variety, soil comparatively better yields and returns. Fertilizer application beyond this level did not improve the yield significantly.

The present study was undertaken to evaluate the effect of N alone and in combination with P and K on the growth and yield of potato cv. Cardinal under the agro-climatic conditions of D.I.Khan.

MATERIALS AND METHODS

The experiment was carried out in the Faculty of Agriculture, Gomal University during the Spring 1990. A composite soil sample was collected from the selected area before sowing and was analyzed for physio-chemical characteristics (Table 1). The experiment was laid out in RCB design with the three replications and ten treatments. Each plot had an area of 5 x 3 m^2. Four rows of each plot were sown with 56 tubers at the rate of 14 tubers per row.

Nitrogen was used at the rate of 0, 50, 100 and 150 kg/ha whereas P_2O_5 and K_2O were used at the rate of 0, 25, 50 and 75 kg/ha in all possible combinations.

Cut pieces of potato tubers each about 40 g with atleast two eye buds were planted on January 31,1990. Row to row and plant to plant distances