

EFFECT OF PLANT POPULATION AND NITROGEN ON THE YIELD OF POTATO

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ABSTRACT

An experiment was conducted on potato variety Cardinal on the farmers fields in Kharmato area of Kohat district. The parameters to study the effect of plant spacing and nitrogen dose on yield, height, number of small, medium and large size tubers were assessed. The trial was laid out on farmer's field at Kharmatho (Kohat) during autumn 1990 and 1991. Spacing of 15, 20 and 25 cm and nitrogen dose at 0, 100, 120 kg per hectare was applied. Phosphorous at 120 kg per hectare was applied. The height, number of small, medium and large size tubers were significantly affected by the increase in spacing and nitrogen level. The yield increased when the spacing and nitrogen levels were increased. The highest yield in both years was (13.30, 13.39 t/ha) in the spacing of 25 cm and nitrogen dose at 120 kg per hectare respectively. The 0 nitrogen and 15 cm spacing produced lowest yield of 8.650, 8.750 t/ha as compared to rest of the treatments. The number of large size tubers was 10870, 21620, 27490 in spacing of 25 cm and 120 kg per hectare nitrogen dose give highest number of large size tubers (27490) as compared to 10870 in 15 cm and 0 kg nitrogen level. These results indicate that for maximum yield and large size tubers spacing at 25 cm with 120 kg nitrogen per hectare seems to be optimum.

INTRODUCTION

Potato is the most important vegetable crop in the world because it is next to Wheat, Rice and Corn (Hortmann *et al.*, 1981). This crop is successfully cultivated throughout Pakistan, but Peshawar, Swat, Sialkot, Faisalabad, Okara, Multan, Pashin, Kalat and Nawab Shah are important. The varying climatic conditions of the country enable the planting of three crops a year i.e Autumn, spring and Summer crops. One crop in hill, where as two in plains. The total area in Pakistan during the year, 1991-92 was 0.756 million hectare, with the production of 8.598 million tones, where as the area under potato in NWFP during the same year, was 0.0799 million hectare, with the production of 0.813 million tones (Agri. Stat. of Pakistan 1991-92). Nitrogen is one of the important element commonly used to increase crop yield. It is necessary for the formation of proteins and chlorophyll. Keeping in view the appropriate use of nitrogenous fertilizer and optimum