EFFECT OF NITROGEN APPLICATION AND PLANTING DENSITY ON THE YIELD OF AUTUMN MAIZE

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To assess the effect of nitrogen application rates and planting density on the yield of maize cv. "Sunehri" a field experiment was conducted during 1989. Four nitrogen levels (0, 100, 150 and 200 kg N ha^{-1}) and three planting densities (111111, 83333 and 66666 plants ha^{-1}) with 60 x 15, 60 x 20 and 60 x 25 cm spacings were tried. There was progressive increase in the number of days taken to maturity with increasing levels of nitrogen. Increase in plant population delayed the maturity. Grain yield in all fertilizer treatments increased over control and the increase was in the range of 43.9 to 51.1%. Highest grain yield was recorded in plots fertilized at the rate of 200 kg N ha^{-1}. Nitrogen application increased the number of grains per cob and cob length. Maximum thousand grain weight was recorded with 200 kg N ha^{-1} and plant spacing of 60 x 20 and 60 x 25 cm. Higher nutrient grain ratio of 1:20.1 was noted with 100 kg N ha^{-1}.

INTRODUCTION

Maize (*Zea mays* L.) is one of the important cereal crops of Pakistan. It contributes a lot to Pakistan's economy as it is not only a source of food, feed and fodder but is also utilized for the production of industrial by-products like corn oil, corn flakes, custard, glucose, jelly etc.

Maize has high yield potential but its average yield per hectare in Pakistan is very low as compared to other maize growing countries of the world. Factors responsible for limiting its yield include poor soil fertility and low plant population per unit area.

sisted of four nitrogen levels (0, 100, 150 and 200 kg ha^{-1}) and three planting densities (111111, 83333 and 66666 ha^{-1}) with 60 x 15, 60 x 20 and 60 x 25 cm spacing. Spilt plot design of lay-out with 4 replications was used with net plot size 4.8 x 6 m^2. Fertilizer treatments were placed in main plots and plant spacing in sub-plots.

Phosphorus and potash were applied at the rate of 100 kg P_2O_5 and 92 K_2O kg ha^{-1}, as a basal dressing. All phosphorus, potash and half of nitrogen was incorporated at sowing while remaining half of nitrogen was side dressed when the crop plants attained a height of about 80 cm. The crop was thinned at 3-4 leaf stage in order to