

**Abstract:**

An experiment was conducted for two seasons (1991/92 and 1992/93) in order to study the effects of nitrogen and phosphorus fertilization on yield and yield components of irrigated maize (*Zea mays* L.) in the Demonstration Farm of the Faculty of Agriculture, Shambat. The experimental design used was a randomized complete block with four replications. Three N treatments (0N, 40 kg N/ha and 80 kg N/ha) and three P treatments (0P, 50 kg P<sub>2</sub>O<sub>5</sub>/ha and 100 kg P<sub>2</sub>O<sub>5</sub>/ha) were used. Urea (46% N) and triplesuperphosphate (48% P<sub>2</sub>O<sub>5</sub>) were used as sources of N and P, respectively. All fertilizers were applied at sowing. The results showed that N had significant effects on cob number/m<sup>2</sup>, number of rows and number and weight of seeds/cob, 1000-seed weight and final seed yield. On the other hand, P affected most of the parameters studied but the effect was not significant. However, N and P had significant interaction on seed yield and seed weight/cob.