

RESPONSE OF BLACK GRAM (*VIGNA MUNGO* L.) TO VARIOUS FERTILIZER LEVELS UNDER AGRO-CLIMATIC CONDITIONS OF CHAKWAL

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Response of black gram variety M-80 to five nitrogen (N) and phosphorus (P₂O₅) levels (0-0, 0-30, 0-60, 30-30 and 30-60, NP kg ha⁻¹) was evaluated during 1990 and 1991. The studies were carried out on sandy loam soil deficient in organic matter and available phosphorus under medium rainfall conditions of the Punjab. Significant differences were found among the fertilizer treatment means for seed yield and its components during both the years of study. On an average, 45.6 number of pods plant⁻¹, 47.8 g per 1000 seed weight, and 1051 kg seed yield ha⁻¹ were obtained from the treatment in which N and P was applied at 30-60 NP kg ha⁻¹. The top scorer fertilizer treatment has shown the ability to produce 22.9 percent more seed yield as compared with control (855 kg ha⁻¹). It was noted that the quality of seed had been improved by N and P application.

INTRODUCTION

Black gram (*Vigna mungo* L.) is a short duration leguminous kharif crop. Being rich source of protein (23-24%, 8) it can play an important role to overcome the protein shortages. According to an estimate (Anonymous 1990) Punjab barani tract contribute to area and production 81 and 70% respectively. The productivity of black gram per unit area is very low. This is mainly due to the adoption of traditional farming practices, use of marginal lands, minimal inputs, and lack of proper plant protection measures etc. Among various production factors, use of fertilizer is one of the factor that determines seed yield per unit area. The soils of rainfed areas are generally deficient in nitrogen and phosphorus and this deficiency can only be met with the application of appropriate rates of these

gram (*Phaseolus mungo* L.) were increased by applying 10 kg N, 12.5 kg P₂O₅ in two foliar sprays of N and P especially at flowering and pod formation stage. Subramanian *et al* (1981) reported that application of 12.5 kg N + 50 kg P₂O₅ at sowing and 12.5 kg N ha⁻¹ as foliar spray had a positive influence on various yield contributing factors like number of pods per plant, pod length, number of seeds per pod, 1000 seed weight and seed yield ha⁻¹ in black gram (*Phaseolus mungo* L.).

Keeping in view the importance of fertilizer applications, the present study was undertaken to find out most suitable combination of N and P capable of increasing seed yield significantly under the medium rainfall conditions of the Punjab.

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