

RESPONSE OF GROUNDNUT TO DIFFERENT FERTILIZER LEVELS UNDER
RAINFED CONDITIONS.

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ABSTRACT

A field experiment was conducted to evaluate the response of three groundnut varieties; BARI-89, Chakori and BARI-188 to seven fertilizer levels viz. 0-0-0, 20-40-0, 20-60-0, 20-80-0, 20-80-20, 40-80-0 and 40-80-20 N, P₂O₅, K₂O kg ha⁻¹. The studies were carried out at Barani Agricultural Research Institute, Chakwal from 1991 to 1994. The pod yield, number of pods plant⁻¹, N and P uptake by pods of all the three varieties were highest at 40-80-20 N, P₂O₅, K₂O kg ha⁻¹, but statistically pod yield was found at par with fertilizer levels of 20-80-20 and 40-80-0 N, P₂O₅, K₂O kg ha⁻¹. Among varieties, Chakori at fertilizer level 40-80-20 showed higher pod yield, number of pods plant⁻¹, N and P uptake by pods compared with BARI-89 and BARI-188.

INTRODUCTION

Groundnut (*Arachis hypogaea* L.) is an important cash crop in rainfed area of Potohar. It is an excellent source of food energy as its kernels contain 25-28 % protein (Altschul, 1964) and 42-47 % oil content (Hannah *et al.*, 1988). Excessive N causes luxurious vegetative growth,

MATERIALS AND METHODS

A field experiment was conducted at Barani Agricultural Research Institute, Chakwal from 1991 to 1994, to evaluate the response of three groundnut varieties, BARI-89, Chakori and BARI-188 to seven fertilizer levels viz. 0-0-0, 20-40-0, 20-60-0, 20-80-0, 20-80-20, 40-80-0, and 40-80-20 N, P₂O₅, K₂O kg ha⁻¹. Composite soil samples were collected before sowing of groundnut each year which were air dried, ground, passed through 2 mm sieve and analysed for physical and chemical characteristics (Table 1) according to methods described by Black (1965).

Nitrogen, P₂O₅ and K₂O fertilizer doses in the form of nitrophos, single super phosphate and potassium sulphate respectively, were applied at sowing time. The crop was sown in first week of April each year, using split plot design replicated four times. Plot size measured 2.25 m x 5.0 m with plant and row spacings of 0.20 and 0.45 m respectively. The groundnut varieties and fertilizer levels were randomized in main and