

RESPONSE OF SOYBEAN TO NITROGEN,  
PHOSPHORUS AND POTASSIUM  
II- YIELD, YIELD COMPONENTS AND SEED CHEMICAL CONTENT

BY

El-Deepah, H.R.A. and Salwau, M.I.M.

Fac. Agric., Moshtohor, Zagazig Univ.

ABSTRACT

This study was carried out to determine the effect of the combination of three N levels (0, 40 and 80 kg N/fad.), three P levels (0, 16 and 32 kg  $P_2O_5$ /fad.) and two K-levels (0, 48 kg  $K_2O$ /fad.) on the yield, yield components and chemical analysis of soybean, clark cultivar. Nitrogen application significantly increased plant height, number of pods/plant, weight of pods/plant, 100-seed weight, seed yield/fad., protein yield/fad. and oil yield/fad. The maximum seed yield was obtained by applying 80 kg N/fad. On the other hand N, protein and oil contents in seeds of soybean were not significantly affected by applying N fertilizer levels. Nitrogen application significantly decreased P% and K%. Seed yield/fad. increased significantly by increasing phosphorus fertilizer rates up to 32 kg  $P_2O_5$ /fad. in one season only. Whereas, the yield components and chemical analysis in seeds of soybean were not significantly affected by P or K application.

INTRODUCTION

Yield of soybean was very closely correlated with the amount of nitrogen accumulated by the plant throughout the life cycle. Sharaf (1980); Ali (1981) and Hassanein (1987), found that nitrogen fertilizer increased significantly plant height, number of pods/plant, weight of pods, seeds/plant, seed index, yield of seeds and percentage of protein and oil in seeds of soybean. Nitrogen utilization decreased oil content and increased protein percentage, but this effect did not reach the significant level (Taira *et al.*, 1979 and Ali, 1981).

Sharaf (1980), reported that application of P-significantly increased the number of pods/plant, 100-seed weight, seed yield/fad., oil percentage and decreased crude protein percentage. On the other hand, El-Sherbeeney *et al.*, (1981)