

1-INTRODUCTION

Common bean (*Phaseolus vulgaris* L.) is one of the most important legume crops grown in Egypt not only for local consumption but also for export purposes. It is mainly grown for its green pods and dry seeds.

Dry seeds of beans are a good source of proteins, which is commonly required for human nutrition. The cultivated area of dry seed bean was 27923 feddan in 1999 produced 33183 tons with an average of 1.19 tons per feddan. The fertilizer requirements of common bean especially phosphorus plays an important role in plant nutrition as well as seed yield and its quality. Phosphorus is one of the essential elements needed for plant photosynthesis (*Repka, 1979*), it is a component of many vital compounds (*Bidwell, 1979 & Edmond et al, 1981*), it is important in enzymatic systems and plays a role in division and development of meristemic tissues (*Bieleski, 1973*). Phosphorus is also essential for root development and fruit ripening as well as plays a direct role as an energy carrier through ATP and ADP.

The problem of P-nutrition in Egypt due to the high pH value of soil in which phosphate is easily fixed or converted to unavailable form such $\text{Ca}_3(\text{PO}_4)_2$.

This work is an attempt to study the effect of levels of phosphorus fertilizer within different sources or different times of P-application on growth, dry seed yield and quality of common bean. Trials included superphosphate (SP) which contains P in the form of calcium phosphate, monoammonium phosphate (MAP) and diammonium phosphate (DAP) which contains phosphorus and NH_4^+ in a compound fertilizer.

Herein we try to find the most favourable level, source and time of P-fertilizer for common bean plant grown under Kaliobya field condition in the summer season in order to get the maximum dry seed yield with the best quality.