

RESPONSE OF FABA BEAN YIELD TO INORGANIC, ORGANIC-N FERTILIZERS AND THEIR COMBINATION WITH SOME COMPOUNDS AS FOLIAR APPLICATIONS ON GROWTH, YIELD AND MINERAL COMPOSITION.

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ABSTRACT

Two field experiments were conducted at Qalabshu, Agriculture Research Station, during two successive seasons of 2006/2007 and 2007/2008. The work aimed to study the response of faba bean plant to inorganic & organic-N and its combined fertilizers with some compounds as foliar applications on growth, yield and mineral composition.

It was found that :-

- 1- The foliar application of (N, P and K) gave the highest mean values for yield with mixed plots (25% of mineral + 25% of FYM both of recommended doses), but the effect of inorganic & organic-N and their combined gave the equal mean values of phytic acid concentrations with N, P and K foliar application treatment.
- 2- The inorganic-N Fertilization (100% mineral of recommended dose , 8 kg N/fed) gave the highest mean values of N and K - uptake, but the combined Fertilization gave the highest mean values of P-uptake with N,P and K foliar application treatment.
- 3- The inorganic-N fertilizer gave the highest mean values for Fe-uptake, but the organic-N fertilization (100% of FYM of recommended dose , 10 ton/Fed) gave the highest mean values for Zn, Mo and Co- uptake, in contrast, the combined Fertilizers gave the highest mean values for Mn- uptake, obtained with N.P and K foliar application treatment, except Co-uptake for the B, Mo and Co foliar applications treatment.

From these discussion , it could be concluded that the inorganic & organic-N and the combined Fertilization with the (N,P,K) treatments as foliar application are important for obtaining a high and good quality in yield and its components, while, decreased phytic acid in seeds as the result of using yeast as fertilizer .

INTRODUCTION

In most developing countries legumes are often an integral part of agricultural ecosystems. Faba bean (*Vicia Faba L.*) is one of the most important legumes in Mediterranean agricultural area (Buttery *et al.*, 1992). In Egypt, it consumed in huge quantities as human food or animal feed, since its dry seeds contain about 30% protein and 65% carbohydrates as main components (Omer *et al.*, 1990). However, faba bean cultivated in Egypt are subjected to some problems such as high concentration of phytic acid.

Concerning the effect of foliar nutrition, several investigators reported that growth, total yield and mineral content of crops were markedly increased (Abd El-Hadi *et al.*, 1986, Abd El-Hameed *et al.*, 2003 and Sherif, 2003). Foliar nutrition of soya bean with NPK during early vegetative stages could result in increasing growth and higher yield (Hag and Mallarino, 1998) .