1. INTRODUCTION

Since a few years, sugar beet *(Beta vulgaris* L.) has become an important cash crop in the Egypt. It was introduced to Egypt as a sugar crop to overcome the gap of sugar production which amounted 0.6 million ton/year **(Osman, 2005).** The area under cultivation increased from 17.000 fed in 1982 to 241288 fed in 2007.

It is preferable to increase the area of sugar beet in Egypt due to its short duration, more tolerant to salinity of soil and requires less water to produce the same amount of sugar as compared with sugar can. Most of the area cultivated with sugar beet is located at Kafr EL-Sheikh Governorate and at the northern cost near Alexandria at Noubaria region. There are some studies to establish new sugar factories in Noubaria area, duo to the recent expansion of sugar beet cultivation in the newly sandy soil and calcareous soils.

The use of fertilizers is a factor of great importance among the different cultural practices in sugar beet

production. In general, it is well known that potassium acts balance the effect nitrogen and enhances of crops and slow down the efflux of photosynthesis products from leaves to roots. In addition, there is a close correlation between potassium content and growth rate in plants. Zinc and boron are also two major essential plant nutrients needed for sugar beet production, and they are considered as a limiting factor for obtaining high yield in such newly cultivated calcareous soils of Noubaria.

The current work was carried out to study response of sugar beet yield and quality to different applied levels of K, Zn and B fertilizers as well as their interactions. Applied methods of such nutritive elements will be also a matter of concern in this work.