INTRODUCTION

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Maize (*Zea mays*, L.) is one of the most important cereal crops in Egypt and the world. It ranks the third among the world cereal crops, surpassed only by wheat and rice. The grown maize area in Egypt was 2,067,764[1] feddan in 1991 with an average production of 17.69 ardab/feddan and the total production was 5,121,709 tons. However, the total production is not sufficient for local consumption due to low productivity per unit area. Shortage in the production of cereal, as in Egypt, is generally considered as an economic and social problem.

Therefore, efforts are focused on increasing the productivity of this crop by growing high yielding new varieties under the most favourable cultural treatments.

Irrigation is one of the most important factors, which has always played the greatest role in crop production, that determines the growth, availability of plant nutrients and ultimately crop yields.

At last two decades, several investigators reported good response of different field crops for micronutrients fertil-

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1: Statistical Department, Ministry of Agric, Egypt.

ization in Egypt, this is mainly due to the construction of High Dam at Aswan which prevent a lot amount of micronutrients to arrive to the valley and the Delta.

The aim of the present investigation is to study the effect of soil moisture stress, foliar application of zinc and maize varieties on growth, yield, yield components, chemical composition of maize grains and the water relations of maize plant.