INTRODUCTION

1. INTRODUCTION

Olive (***Olea europea L.)*** plays an important role in the agriculture products in many countries. Olive trees are considered oldest known cultivated trees in the world and it has been part of the Mediterranean civilization science before recorded history. Olive cultivation is concentrated in the Mediterranean basin and its surrounding **(Kiritsakis, 1993 and Ferguson *et al.*, 1994).**

Land reclamation projects in Egypt occupy a very important sector in the agricultural development programs for increasing the cultivated area. Beside, agricultural exception needs a great amount of suitable irrigation water which already is not sufficient to meet all the expected demand in this respect, as long as there is an obvious shortage in Nile water especially under the conditions of the new reclaimable areas, the projects of reclamation depend on another sources such as; wells, sanitary, drainage, diluted sea water ---etc. Generally, the problem of soil salinity and saline water used for irrigation is considered as a limiting factor for the success of such projects.

In addition, plant growth is adversely in saline soils by the presence of high concentration of soluble, sodium as well as certain soluble cations, due to increase in osmotic pressure and reduction in water availability to plants. The effect of soluble sodium on plant growth varies with the plant species as well as with the nature of sodium (**Richard, 1954**). Some fruit species (olive, guava and grape) were found to tolerant salinity levels

between 2000 to 9000 ppm. according to the treated species and cultivars, **(Khamis *et al.*, 1984)**. On the other hand, some investigators have reported that some fruit trees had not tolerance to the high salinity levels such as Hindi mango cultivars, **(El-Hefnawy, 1986)**.

Nowadays, the acreage of olive in Egypt reached 117886 feddans yielded about 336442 tons according to the Statistic of Ministry of Agric. in 2002. Most of the acreage is located in Matruh 18939 faddans, Fayoum 17263 faddans and Noubaria 16685 feddans.

Since the olive cultivars plantations may be located principally in the new reclaimed lands (arid and- semi- arid zones) their will arise some problems connected with salinity of soil or the sources of irrigation.

Generally, The present investigation was designed to study the growth behavior of three olive cultivars i.e. Aghizi chami, Manzanilo and Cronaiki under different salinity levels and two levels of sodium adsorption ratio (S.A.R.) with two levels of chloride (low and high) in water used for irrigation in order to get use of such characters in obtaining olive cultivars relatively tolerant to salinity.

Moreover, studying the effect of some nutrients foliar sprays (P, K and Zn), on salt stress and attempt to determine the physiological mechanism(s) by which this nutrients reduces salt stress in plants.