

## I- INTRODUCTION

Pear is one of the most important deciduous fruit in Egypt. For that, in recent years there has been a steady increase in the area cultivated with pear to meet the continuous rise in demand for pear fruits for local consumption in Egyptian markets.

Undoubtedly, the expansion of agricultural land need amounts of suitable irrigation water which already is not sufficient to meet all the expected demands in this respect. In addition to that, the limited amounts of water is an evergrowing crisis that may face us in Egypt in future due to the natural aridity in the region, the increasing population and land reclamation projects which represented a very important sector in the agricultural development programmes for increasing the cultivated area.

Salinity is one of the most serious and oldest environmental problems affecting approximately one third of earth's irrigation land. There are many factors affecting the salinity yield relationship such as the physical and chemical conditions of the soil, climate and farming practices.

The possibility of using saline water for irrigation, especially underground water is considered as a limiting factor and great value for the success of the projects of new land reclamation, which it is still very limited source until now, however many problems are expected to arise. These problems would be related to the excessive accumulation of saline salts in the soil because this water

contains a considerable amounts of harmful salts as an actual limiting factors for growth and productivity of fruit transplants and trees.

There is a little of available information for fruit growers about the possibility of some pear rootstocks to grow under conditions of new reclaimed lands and probability of these rootstocks to tolerate irrigation with saline water.

Therefore, the main objectives of the present investigation was planned and carried out to study the influence of irrigation with prepared salinized water at different concentrations of salts at (2000, 4000 and 6000 ppm) combined with two levels of both sodium adsorption ratio (SAR 3 & 6) and chloride: sulphate ratio (low & high) on some vegetative growth measurements leaf, physiological characteristics and leaf chemical analysis i.e., (leaf pigments contents and minerals composition) of two pear rootstocks (*Pyrus communis* and *P. betulaefolia*) with the hope to solve those problems of irrigation with saline water solutions through using some growth regulators such as (Benzyladenin, Pachlobetrazol and Cycocel) as foliar spray solutions.