1-INTRODUCTION

The peach (***Prunus persica*** L.) is known as a species of Prunus native to China that bears an edible juicy fruit also called a peach. It is classified with the almond in the subgenus Amygdalus within the genus Prunus, distinguished from the other subgenera by the corrugated seed shell. However, apricot (***Prunus armeniaca*** L.) is a species of Prunus, classified with the plum in the subgenus Prunus.

Peach and apricot cultivation are mainly concentrated in the Delta of the Nile valley which is very expensive and limited. The horizontal extension of either peach or apricot is required to get out of the narrow valley. The reclaimed soil grower suffer from low available water, and nutrients, as well as salinity problems. They overcome these problems by establishing artisan wells, increasing nutrient applications, and finding out strains of rootstocks that are tolerant to drought and salinity stresses which is very expensive and time consuming. Stone fruits trees are sensitive to drought and salinity stresses. The term drought often conjures up visions of low rainfall areas, dust bowls and scared plants **(Kaufmann, 1981).** Saline soils termed as those having high amounts of soluble salts (Na^{+}, Ca^{++}, Mg^{++}, SO_4^{--}, Cl^{-} and HCO_3^{-}). However, saline water is that water which contain sodium chloride as predominant salt, but all salts are present in

variable proportions and combinations that have been called brackish water **(Gupta, 1979).**

Peach and apricot are commonly propagated by grafting. Different rootstocks for both of peach and apricot are available that include new introductions. These rootstocks are variable in their characteristics *i.e.*, tolerance to drought, salinity, diseases and nematode. Evaluation of most of these rootstocks, specially those newly introduced is recommended to categorize and identify them according to their aim of use. Evaluation of these rootstocks in relation to tolerance of some stresses which was achieved by using traditional methods may be misleading as results of the interaction of different natural stresses (Environment, soil and plant factors) with those studied stresses. Evaluation should be done under aseptic and controlled conditions to reflect the exact symptoms of the stress. *In vitro* evaluation technique is valuable in this respect. Moreover, establishing of new rootstocks efficient in tolerating drought and salinity are of great interest. This can be achieved by establishing a breeding program and preparation of different genetic constituents through inducing somaclonal variations.

Salinity affects trees performance in two ways. **First**, the plants must acclimatize themselves to a saline environment for overcoming the problem of available water. **Second**, chloride, sodium, and boron can reduce yield because of specific ion

toxicity. Sensitive trees can accumulate large concentrations of these elements in leaves, causing leaf burn. The two processes can operate simultaneously and can reduce crop yield.

Some trees can tolerate salts in the root zone without harm. The maximum amount of salts that plant can tolerated in the root zone without reduction in growth or yield is called the "salinity threshold." Beyond this level crop yields are reduced in proportion to the salt concentration in the root zone.

There are parts of the world that have limited supplies of good quality water, which contain less than 1000 mg/L of dissolved salts, and so it is desirable to irrigate with water that contain higher salt concentrations; these areas are often in the arid and semi arid zones.

Identification of genetic variabilities require specific cytological procedures. The important technique in this concern is the Fingerprinting techniques. This technique is valuable in determining the genetic information about the tested plants. Fingerprinting is the mostly used technique for keeping local and international strains from losses and changes.

The ultimate goals of this investigation are to establish *in vitro* protocols for indirect regeneration as well as evaluation and induction of both salinity and drought stresses tolerance through using direct and indirect regeneration (somaclonal

variation) techniques of the peach rootstocks (Nemagaurd & Okinawa) and Amar apricot rootstock (Balady). Also, finding out the possibilities of the changes occurred in genetic behavior of the resultant plants which showed a pronounced stress tolerance in either salinity or drought or in both stresses through using finger print.