

# **INTRODUCTION**

## I- INTRODUCTION

One of the keys to the profit of horticultural crops is an efficient propagation. Citrus is the most important fruit crops in Egypt as for as acreage, production and exportation potentialities are concerned.

Citrus fruits have higher nutritional value since they contain higher amounts of sugars, vitamins, minerals, organic acids, plant pigments, essential amino acids and pectins as for as using in different industrial purposes to curing people from different diseases (Hulme, 1971).

In Egypt, most of the new reclaimed areas are planted with Valencia orange trees and the most of this area is sandy solis, so we must choise the best rootstock for this soil which characterized by poor fertility and low water holding capacity.

In Egypt, citrus orchards occupy 451547 fed. according to the Ministry of Agriculture and Reclamation land statistics in (2009) year.

**Khamis *et al.*, (1984)** compared the growth of five citrus rootstocks i.e., Balady, Brazilian and Spinsh Sour orange as well as Rough lemon and Cleopatra mandarin. They found that these rootstocks varied greatly in their growth.

**El-Ezaby (1994)** stated that *citrus volkmeriana* or *citrus aurantium* had significant effect on most parameters of valencia scion growth, total dry weight of Valencia scions on Volkamer lemon was greater than those on Sour orange. Also, **Hassan *et al.*, (2000)** studied growth of young Balady mandarin and Valencia orange trees budded on four citrus rootstocks, namely Sour orange, Volkmer lemon, Cleopatra mandarin and Rangpur lime. They found that Volmamer lemon rootstock promoted number of shoots/tree, shoot length and number of leaves/shoot.

Olive production plays an important role in the economy of many countries. It increases not only the land value where the soil was unsuitable for other crops, but also it contributes to soil conervation, especially in arid and semi arid.

In Egypt, a great part of deserts was cultivated by olive trees which considered as an important crop can be grown under difficult conditions especially salinity and drought. It considered the suitable fruit species for plantation in desert and new reclaimed soils including many cultivars which used for either oil extraction, pickling or for the double purposes. According to the latest statistics of Ministry of Agriculture (2009) the olive area occupied (158058 fed.).

Environmental condition, cultivars play an important role for the propagation success. **Bakry (1998)** reported that Taymour mango cuttings planted in May and June, significantly contained the highest value of total indole and the lowest level of total phenols as compared with any other collection dates (March and October). **Khabou and Drira (2000)** working on leafy stem cuttings which were taken during autumn, winter and spring from trees of 29 clones of cv., chemlali desfax and 21 oil and table olive cultivars, they concluded that date of cutting collection had a significant effect on rooting ability and winter (December) collection gave the best results. On the other hand, **Hegazy (2003)** working on Manzenello and Picual olive cultivars, he reported with that, Manzenello cuttings had the highest value of total indoles compared that of Pecual cv. Moreover, June collected cuttings significantly contained the highest value of total indoles as compared with other collection times (October and February). In addition, he added that, cuttings taken from shaded mother trees had the highest level of total indoles in comparison with that of unshaded mother trees.

The main target in the first part of this investigation is to study the effect of three citrus rootstocks i.e., Sour orange, Volkamer lemon and Balady lime on vegetative growth of Valencia orange scion and nutritional status. On the other hand, anatomical studies on budding zone for each rootstock and valencia was investigated.

However, the second experiment which carried out on olive, the main target is showing the best time for grafting Kalamata on Chemalali olive rootstock and the grafting zone also was anatomically investigated.