

EFFECT OF SOME PRUNING TREATMENTS ON OLINDA ORANGE

By

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B.Sc. Agric. Sci. (Pomolgy), Fac. Agric., Cairo Univ., Egypt, 2001

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ABSTRACT

The current study was carried out during two successive seasons (2011/12 and 2012 /13). Valencia orange cv. Olinda budded on Volkamerina rootstock. 8 years old trees growing in sandy soil under drip irrigation system at Wadi Elnaturon region, Behira governorate.

The present investigation aimed to study the effect of pruning severity and time of application on vegetative growth, flowering and fruiting of Valencia orange.

The study including three pruning levels (removing 15, 30 and 45% of tree canopy) the pruning was applied in March and July.

Pruning treatments improved vegetative growth, in both of spring, summer and autumn growth cycle compared with control treatment in both seasons. Leaf number was increased in spring and summer growth cycle with increasing pruning severity compared with the unpruned trees. Leaf area was significantly improved with all pruning treatment in the different growth cycles in both seasons. Pruning treatment at 30% resulted in the highest number of flowers and leafy inflorescence in both seasons. Fruit set was greatly improved with increasing pruning severity compared with the untreated trees. Also, fruit retention increased with increasing pruning severity in both seasons.

Pruning level at 15% reduced fruit drop in the first seasons while in the second seasons the severe pruning reduced fruit drop percentage pruning level at 15% during July resulted in the highest fruit yield (128.67 kg /tree) while in the 2nd season pruning level 30% in July produced the highest tree yield (134.7kg/tree) compared with control treatment (67.33 and 76.7 during both seasons respectively).

Keywords: Olinda orange, Pruning, Growth, Flowering, Yield.

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INTRODUCTION

Citrus is the leading fruit crop produced and occupies the first rank among economic fruit crops in Egypt as well as all over the world. The total citrus area and production in Egypt is about 414,261 feddan and 4,086,849 tons, respectively. The area planted by orange trees is about 284,875 feddans, which produced 2,886,015 tons, while the export quantity of total citrus was 607,740 tons (FAO, 2015).

Valencia orange is considered as one of the most important oranges in the world, which believed to be of Spanish origin the trees are medium size reaching 3m height, fruits are medium to large, globes seedless or might contain seed traces, hard to peel, with high juice content and sweet flavor (Manner *et al.*, 2006).

The total production of fresh Valencia orange fruits in Egypt is about 1,750,000 tons, while the export quantity 650,000 tons. Valencia oranges become very popular orange variety for growers especially in new cultivated area (FAO, 2015).

Pruning of fruit tree is well known for a long time, to improve fruit size and quality, prevents excessive fruiting, promotes vegetative growth, facilitates light penetration into the tree canopy, and extends the tree life span (Zegbe *et al.*, 1998). After trees attain maturity and suitable size, maintenance pruning may be carried out to insure a balance between vegetative growth vigor and fruit fullness needed for maximum production of high quality fruit (Reuther, 1973). According to Tucker *et al.* (1992), pruning depends on several factors including