شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

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التوثيق الإلكتروني والميكروفيلم

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شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

SOME PHYSIOLOGICAL STUDIES ON CITRUS

BY

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Thesis

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ABSTRACT

In two field experiments during 1996 – 1997, and 1997 – 1998, Valencia orange trees were treated with calcium (42 , 84 and 126 ppm) or ethrel (100, 200 and 300 ppm) or combination of both calcium and ethrel. Calcium treatments were applied at three spraying dates (November the 15th February the 15th and two equal split doses at November the 15th and February the 15th). Ethrel treatments were applied on March the 15th. Also the internal branch of some trees were bruned (open-heart treatment).

The obtained results showed that fruit pull force, firmness, rind chlorophyll and juice acidity increased due to application of calcium, while these treatments decreased the number of dropped fruits per tree. On the other hand, ethrel application decrease fruit pull force, firmness, and rind chlorophyll and increased T.S.S., rind carotenoids and the number of dropped fruits. In combination treatment of both calcium and ethrel, foliar application of calcium reduced the effect of ethrel in decreasing fruit pull force and firmness and number of fruit dropped. Open heart treatment caused improvement of rind colour in Valencia orange.

Key Words:- Valencia orange, Regreening, Ethrel, Calcium, Fruit pull force, Fruit firmness, Chlorophyll, Colouring, T.S.S , Acidity, Open heart

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Use Other Side if Necessary

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INTRODUCTION

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Citrus industry is considered one of the most important fruit crops in Egypt. Citrus orchard total feddans are planted with Valencia orange. The total production of citrus fruit , in general, during 1998 was about (2,152,256) tons out of this tonnage about (266,940) were Valencia orange*

Valencia orange is known in Egypt as summer fruit crop as it appears in markets during summer time and as one of the most popular citrus cultivars for both local consumption and export. Valencia orange trees bloom in spring and the fruit is harvested between the following spring and summer. During winter, before maturity chlorophyll content of the rind decreases and carotenoids accumulate in the fruit which attains its maximum colour. During late spring and summer rind carotenoids decrease and rind chlorophyll increase causes gradual peel regreening particularly around the stem end. Regreening in Valencia orange rind differs from one year to another as the magnitude of regreening depends on the environmental conditions and cultural practices . Regreening in Valencia orange is considered a problem for marketing in orange as regreening makes the fruit no applealing to the fresh fruit market, although its still palatable. In view of the importance of studying regreening phenomenon degreening of Valencia orange fruits, is an important task for this work. Thus, the aim of the present work is to study the effect of ethrel

* According to the latest statistics of Ministry of Agriculture, A.R.E. (1998)

in degreening as well as of calcium in maintanining fruit properties as pull force, firmness and abscission caused by ethrel treatment. Also the study includes some physiological and horticultural considerations.

REVIEW OF LITERATURE