Effect of Some Preharvest Treatments on Quality and Ripening of “Canino” Apricot Fruits

I. Applications at Pit Hardening.

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Abstract

This study was conducted during two successive seasons 2007 and 2008 by using "Canino" apricot cultivar (Prunus armeniaca L.) grafted on Balady apricot rootstock. Trees were sprayed with a hand sprayer to the run off. Treatments included water as the control, Ethephon at 200 ppm alone or in a combination with either CaCl2 or oleic acid, in addition to oleic acid at 400 ppm, CaCl2 (2 % w/v), The nonionic surfactant Tween 80 at 0.1% (v/v) was added to all treatments which were applied once at pit hardening (8th, 2nd May during 2007 and 2008 respectively). This study aimed to mitigating the adverse effects of ethephon on apricot fruits by incorporating CaCl2 or oleic acid into the applied solution and investigating the possibility of using oleic acid as a natural coloring and ripening agent of apricot fruits. Ethephon-treated fruits resulted in decreased fruit firmness, fruit size, stone weight, chlorophyll a and acidity, while, increased flesh/stone ratio, carotenes, total sugars, reducing sugars, TSS and TSS/ acidity ratio. Ethephon treatment had no consistent influence on fruit
weight, flesh weight, and chlorophyll b. On the other hand, ethephon did not cause a significant change on fruit diameter and fruit length at harvest in both seasons when compared with the control. The incorporation of CaCl2 with ethephon mitigated the adverse effect of ethephon on fruit firmness, however, the incorporation of CaCl2 with ethephon decreased fruit size, fruit diameter, fruit weight, flesh weight, chlorophyll a and acidity, while, increased carotenes, reducing sugars, TSS and TSS/ acidity ratio. Meanwhile, the incorporation of oleic acid with ethephon mitigated the adverse effect of ethephon on fruit firmness and caused a significant increase in fruit size, fruit weight, flesh weight, carotenes, total sugars, reducing sugars, TSS and TSS/ acidity ratio, while, decreased chlorophyll b and acidity. The incorporation of oleic acid with ethephon had no consistent influence on chlorophyll a, fruit diameter, fruit length, flesh/stone ratio, and non-reducing sugars. On the other hand, formulating oleic acid with ethephon did not cause a significant change in stone weight as compared with the control. Furthermore, oleic acid-treated fruits at 400 ppm increased fruit size, fruit diameter, fruit length, fruit weight, flesh weight, flesh/stone ratio, carotenes, reducing sugars and TSS. oleic acid-treated had no consistent influence on fruit firmness, chlorophyll b, acidity and TSS/ acidity ratio.

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Phenolic compounds are part of the synthetic pathway of anthocyanins. Thus, this research was conducted to investigate the effect some of these compounds on enhancing coloration of "Crimson" seedless grapes. This study was conducted during two successive seasons 2009 and 2010 by using "Crimson" seedless table grapes. Vines were grown at Bader district, Beheira, Egypt. Vines were sprayed in two application times with a hand sprayer to the run off. The treatments included water as the control, p-coumaric acid at 500, 1000 ppm; benzoic acid at 500, 1000 ppm and all applied at veraison, while the second application followed first one by five days. The non-ionic surfactant Tween-80 was added to all treatments at 0.05% (v/v). It was found that, non of the treatments affected physical characteristics such as berry weight, berry size, juice volume, berry diameter and length. However, all treatments resulted in a significant reduction of green berries percentage and acidity compared with the control. Using coumaric acid in both
concentrations caused a reduction of chlorophyll a, b contents in berries skin, were the best in increasing red berries percentage, the intensity of carotene, TSS and TSS/acidity ratio. Coumaric acid at 1000 ppm resulted in the highest anthocyanin content compared with control.

**Key words:** "Crimson" seedless, Table grapes, phenolic compounds, p-coumaric acid, benzoic acid, Anthocyanin, coloration

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Fruit Characteristics Evaluation of Four new loquat genotypes grown in Egypt
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ABSTRACT

The pomological specifications of four of new loquat genotypes grown in Egypt were determined during two successive seasons 2011 and 2012. Emanwil and Yahoda cultivars had the highest fruit weight in both seasons however the lowest was that of Akka cultivar. Emanwil had the highest fruit length in both seasons. The highest fruit width was achieved by Yahoda cultivar however the lowest one was that of Akka in both seasons. L/D ratio of both Emanwil and Akka cultivars were higher than that of other genotypes. Yahoda cultivar had the highest number of seeds in both seasons. However Akka had the lowest number of seeds in both seasons. Seed weight/fruit weight ratio was highest in Zekeim in both seasons; however the lowest was found in both of Emanwil and Akka in both seasons. This means that the highest edible portion was that of Emanwil and Akka cultivars. Emanwil had the highest pulp thickness in the first season however Akka had the highest pulp
thickness in the second one. Zekeim had the highest (TSS %) in both seasons; however the lowest was that of Akka in the first season and the Yahoda in the second one. Vitamin C had not constant trend in both seasons. The highest peel thickness was that of Emanwil fruits in both seasons. The highest juice volume resulted from Emanwil cultivar in both seasons; however the lowest volume was that of Akka. Emanwil cultivar had the highest Leaf length, leaf width and leaf length leaf width, the lowest was that of Zekeim in both seasons.

**Key words:** Loquat, *Eriobotrya japonica*, Fruit characteristics, cultivars, Egypt

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