The effect of pre-harvest applications of Gibberellic acid and calcium on physical and chemical characteristics of Zaghloul and Samani dates during storage

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Abstract:

The study was conducted during two consecutive seasons of 2007 and 2008 on Zaghloul and Samani date palm cultivars grown at the fruit research orchard - Faculty of Agriculture - Assiut University. The fruits were sprayed twice, one during Kimri stage and other one during Khalal stage, with 100 ppm Gibberellic acid and 400 ppm chelated calcium. Following the harvest, fruits were stored under cold storage (6°C) or under room temperature (20-25°C). The results indicated that the maximum period of cold storage reached 21 days for spraying treatments compared to untreated fruits, while it was 14 days for the fruits stored at room temperature (20-25°C) for spraying treatments and 7 days for untreated ones. These periods calculated upon the fruits reached 50% softening. The results showed a gradual decrease in the fruit weight from one week to another one during the period of storage for all treatments in both cultivars and seasons. There was a gradual decrease in the percentage of total soluble solids during the periods of cold storage in both seasons and cultivars for all the treatments. While the results of storage under room temperature contrary to the trend of cold storage where there was a slight increase in the percentage of total soluble solids after a week of storage. There was a gradual decline of acidity from a week to another one of Zaghloul cultivar and this decline was larger in the fruits stored under cold storage compared with those stored in the room while the decline of acidity percentage in Samani cultivar was slight. Generally, the results of the total sugars percentage took the same trend of the percentage of total soluble solids either under cold storage or at room temperature. There was a gradual decrease in the percentage of reducing sugars in all treatments in both seasons and cultivars.

Keywords:

Key words: Cold storage; date palm; GA3; post-harvest; Phoenix dactylifera

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