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ABSTRACTS

POSTER SESSIONS



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10. *Effects of Delays to Cooling and Packaging on Strawberry Quality*

*J.F.Brecht, S A Sargent, University of Florida, USA and
A.M.M.B.Morais, M.C.N.Nunes, Escola Superior de
Biotecnologia, Portugal*

Strawberry is one of the most delicate and perishable fruits. It is usually harvested fully ripe, suffering rapid deterioration under inadequate conditions (4). Promptly removal of field heat and adequate packaging can slow down quality changes and increase its shelf-life (1, 2, 5). Packaging of fruits in polymeric films is often used to prevent moisture loss, to protect against mechanical damage, and to provide for better appearance (3). However, packaging strawberries with polymeric films immediately after harvest, is not a common technique, and water loss may be considerable during storage.

In this work, different times of delay to cooling were used to study the effects on strawberry quality, after harvest. The effect of a PVC film around the strawberries was also tested. Precooling with forced air was performed after 0, 6 and 8 hours delay. Strawberries were then stored at 1°C during one week. After conditioning strawberries at 20°C for one day, physical and chemical properties were measured.

No significant differences were noticed in pH for all times of delay. Delays in precooling result in darker, less red fruit. Decreases in soluble solids and sugars in strawberries packed and unpacked with PVC film were noticed. Increases in firmness of unpacked strawberries were related to moisture loss. This was confirmed by the decrease of firmness of packed strawberries. The most significant changes in appearance were related to greater water loss in unpacked strawberries.

Rapid precooling of fresh strawberries, and use of polymeric films immediately after harvest could be a useful practice in order to control deterioration.

References

1. Arifin, Buhri B.; K.V.Chau 1987. Forced-air cooling of strawberries. ASAE, paper 87-6004.
2. Boyette, M.D.; Wilson, L.G.; Estes, E.A. 1989. Postharvest cooling and handling of strawberries. AG. Raleigh: North Carolina Agricultural Extension Service.
3. Hening, Y.S.; S.G. Gilbert 1975. Computer analysis of the variables affecting respiration and quality of produce packaged in polymeric films. J.Food Science, 40: 1033-1035.

4. Luoto, L. 1984. Strawberry quality: effects of handling, packaging and storage on shelf-life. *Acta Horticulturae*, 157: 79-82.

5. Talbot, Michael T.; Khe V. Chau 1991. Precooling strawberries. Florida Cooperative Extension Service. Institute of Food and Agricultural Sciences. University of Florida. Circular 942.