**Title** Reduced effectiveness of the treatment for removing astringency in persimmon fruit when stored at 15 °C: Physiological and microstructural study

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**Abstract**

Persimmon cv. 'Rojo Brillante' is astringent at harvest. Treatment with 95% $CO_2$ for 24 h at 20 °C applied prior to storage has been adopted by the industry as the standard method to remove astringency. However, it may sometimes be useful to remove astringency of the fruit after storage. The present work has studied the effectiveness of this treatment applied after different periods of storage at 15 °C. The longer the fruit was in storage, the less effective was the treatment. The structural changes at the cell level that the fruit flesh undergoes during storage at 15 °C show that a progressive degradation takes place. The intercellular spaces are progressively occupied by soluble and non-soluble material. These structural changes could be related to a smaller increase of acetaldehyde after $CO_2$ treatment and this was the direct cause of the loss of effectiveness, since acetaldehyde is necessary for tannin polymerization.