

# An effective combination storage technology to prolong storability, preserve high nutrients and antioxidant ability of astringent persimmon

Jialei Zhang, Jingwei Lu, Nitin Mantri, Li Jiang, Shangjiao Ying, Shaoning Chen, Xiaoyan Feng, Yingzhi Cao, Zhaocai Chen, Lichao Ren and Hongfei Lu

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## Abstract

‘Fangshan’ persimmon is one of the most important astringent persimmon cultivars. The combined use of postharvest treatments, 5% CO<sub>2</sub> and 1-methylcyclopropene (1-MCP), at two storage temperatures (1 °C and 20 °C) was evaluated to determine the change rules of persimmon nutritional quality during storage and a best storage method on astringent persimmon. Results show that Total phenols, soluble tannins and total flavonoids were significantly positively correlated to the DPPH ( $0.502 \leq r \leq 0.617$ ,  $P < 0.01$ ) and ABTS ( $0.604 \leq r \leq 0.646$ ,  $P < 0.01$ ) radical scavenging ability. Sucrose was significantly negatively correlated with fructose and glucose with  $r$  of  $-0.466$  ( $P < 0.01$ ),  $-0.290$  ( $P < 0.05$ ), respectively. Glucose was significantly positively correlated with fructose with  $r$  of  $0.708$  ( $P < 0.01$ ). At the end of storage, the treatment with combined use of 1-MCP, 1 °C and 5% CO<sub>2</sub> resulted in higher nutrient content (except for sugars) compared to other treatments. And in this treatment, persimmon can be stored up to 4 months. Therefore, using the combination storage technology of 1-MCP, 1 °C and 5% CO<sub>2</sub> is the most effective way to prolong astringent persimmon storability and preserve high nutrients and high antioxidant ability.