

**Title** Hot water treatment maintains postharvest quality of persimmon fruit cv. Karaj during cold storage

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### **Abstract**

There is not enough information about effects of hot water treatments on astringent type persimmons. Therefore in this study, the astringent type persimmon cv. 'Karaj' was harvested at mature stage and treated with hot water at 45°C and 50°C for 10, 20 and 30 min, along with control fruit treated at 25°C for 20 min, then the fruits were stored at 1°C for 4 months and some fruit traits were monitored monthly. Results showed that colour properties ( $a^*$ ,  $b^*$ ,  $L^*$ ) of fruit decreased significantly during storage but the decrease in color properties in hot water treatment of 50°C for 20 and 30 min was lower than that of others and the highest decrease was recorded in control fruits. Disease incidence at control fruits increased significantly during storage, while in hot water treated fruits no noticeable disease symptoms was recorded. After hot water treatments, there was no detectable browning disorder on the fruits, but during storage, browning index in fruit treated with hot water at 50°C for 20 and 30 min increased significantly, in contrast with other treatments. Applied hot water treatments, in comparison to control, decreased fruit softening during storage, and between them, treated with hot water at 50°C for 20 and 30 min maintained fruit firmness better than that of other treatments. Total soluble solids of control fruits, in contrast with total soluble solids of hot water treated fruits, which increased slightly, showed noticeable increase during storage. Generally, according to this study, hot water treatments of 45°C for 10, 20 and 30 min and 50°C for 10 min controlled fruit softening, browning, disease incidence and coloring of 'Karaj' persimmon without any negative effects, and therefore they can be recommended for increasing postharvest life of this cultivar in combination with cold storage.