Title Comparison of 1-MCP and hot water treatment in maintaining postharvest quality of pomegranate fruits

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Abstract

In this experiment, 1-MCP at 1 uL L^{-1} and hot water dipping at 50°C for 4 min and the combination of these two treatments were applied on the pomegranate fruit cv. Malas Saveh. Untreated fruits were used as control. Treated fruits were stored at 13°C for 45 days and thereafter, fruits were placed at 20°C for 7 days as a simulated shelf life. Fruit firmness, color parameters and skin-shriveling index were evaluated at end of storage and also after shelf life, but fruit quality characteristics were determined only after shelf life. Results showed that the fruit firmness of 1-MCP treatment was higher than that of other treatments after storage, but after shelf life, they were not significantly different among the treatments. Control fruits had higher L* compared to other treatments at both after storage and after shelf life but a* and b* were not significantly different among all treatments. Skin-shriveling index of 1-MCP treated fruits was lower than that of others after storage and after shelf life, whereas the skin-shriveling index of hot water and combination treatment was lower than that of control after shelf life. The skin -shrivelling index after storage were not significantly different between them. Fruit treated with 1-MCP had the highest titratable acidity and the lowest total soluble solids compared to other treatments. Titratable acidity of control fruits was lower than that of hot water and combination treatment, but there were no significant differences between control and hot water and combination treatments in total soluble solids. The lowest anthocyanin content and the highest aril moisture were detected respectively at control and 1-MCP treatments. Overall, 1-MCP treatment was more effective than hot water treatment in maintaining postharvest quality of pomegranate fruit during storage and shelf life.