

Title Effect of UV-C radiation and hot water on the calcium content and postharvest quality of apples

Author Hemmaty S., Moallemi N. and Naseri L.

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Abstract

To increase the storage shelf life of "Red Delicious" and "Golden Delicious" apples they were treated with UV-C irradiation at doses of 0, 5 and 15 min irradiation at $1.435 \times 10E-4$ W/square cm and with hot water containing 4% CaCl₂ at four levels (control, dipping at 25 deg C for 10 min, dipping at 38 deg C for 5 min and dipping in 54 deg C for 1 min) in a factorial design with 4 replicates. The results showed that UV-C irradiation and dipping of fruit in hot water increased the storage life and improved fruit quality factors in "Red Delicious" and "Golden Delicious" apples at the end of cold storage. Both UV-C and hot water treatments decreased pH and total soluble solids/titratable acids ratio and increased fruit titratable acids and firmness. UV-C and hot water treatment increased fruit Ca content during storage. The results showed that UV-C and hot water treatment can retard fruit ripening and maintain fruit quality in cold storage. These treatments can also increase Ca concentration of fruit flesh and thus increase the nutritional value of the apples.