Title Reducing postharvest decay of 'Interdonato' lemons by use of hot water and ultraviolet-C (UV-C)

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Abstract

The use of a hot water dip, UV-C and a hot water dip + UV-C combination were found to be a promising alternative methods to fungicides for controlling of postharvest decay of 'Interdonato' lemons during long term storage. Harvested fruit were divided into four treatment groups. The first group of lemons was dipped in 53°C hot water for 3 min. The second group of lemons was subjected to UV-C irradiation at 1.5 $k.J.m^{-2}$. The third group of fruit was first dipped in hot water (53°C for 3 min.) and then UV-C irradiated (1.5 $k.J.m^{-2}$). Non-treated fruit served as the control. After UV-C and hot water dip treatments, fruit were stored at 10°C and 85-90% RH for 5 months. Weight loss (%), juice yield (%), titratable acidity (%), total soluble solids (%), ascorbic acid (mg/100 ml) and decay incidence (%) were determined on the lemons removed at monthly intervals. During storage, there were no significant differences of weight loss and juice yield among treatments. However, titratable acidity and total soluble solids were higher in all treated fruits than in control fruits. The highest level of ascorbic acid was obtained from the combination treatment during storage. All treatments reduced decay incidence of lemon fruit significantly with the most effective treatment for controlling decay being the hot water treatment.