Title An approach to invasive and non-invasive quality assessment on plums with edible coatings

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Abstract

The effects of edible coatings on the shelf life of plums (*Prunus salicina* Lindl. 'Sapphire') were studied using Semperfresh with/without 0.2% sorbitol as plasticizer. The plums were stored at 20°C and 85% relative humidity. Changes in mass loss, firmness, colour (L*, a* and hue angle), soluble solids content (SSC), pH, titratable acidity, ethylene, CO_2, malondialdehyde (MDA), and VIS/NIR reflectance spectra were recorded at 2-day intervals. Edible coating with Semperfresh was effective in delaying the increase of pH and MDA and the loss of titratable acidity and L*. The incorporation of sorbitol revealed beneficial effects on flesh firmness after 4 d of storage. However, no significant difference was found in mass loss, SSC, a*, ethylene and CO_2. Fruit ripening during the experimental period was measurable in the VIS (350-750 nm) and NIR (750-1400 nm) wavelength ranges due to decrease in the fruit chlorophyll content and also water loss, respectively. No differences in reflectance spectra of coated and uncoated plums were observed.