

Title Physicochemical and sensory responses of peach ('Changhowon Hwangdo') following long-term storage at low temperatures

Author Eun-Jin Lee, Yoon-Pyo Hong, Dae-Sung Jung, and Chai-Il Lim

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Abstract

Firm-ripe peaches (*Prunus persica* cv. 'Changhowon Hwangdo') were stored at 0, 5, and 8°C for 7 weeks and weekly samples were removed and held at 20°C for 3 days for ripening. Quality attributes of weight loss, flesh firmness, juiciness, total soluble solids (TSS), titratable acidity (TA), chilling injury (CI), CO₂ and C₂H₄ production, and taste were monitored. Storage at 0°C produced a beneficial effect on peaches by maintaining flesh firmness and juiciness, as well as reducing weight loss and CI. Peaches at 0°C were less susceptible to CI than those at 5 and 8°C during storage periods and remained free from CI for up to 4 weeks. Woolly fruits showed a reduction in CO₂ and C₂H₄ emission and an increase in malondialdehyde content. Longer storage periods and lower temperatures resulted in less sweet fruit. Following low temperature storage reduced sweetness was correlated significantly with decreases of total sugars, sucrose, sorbitol, and citric acid contents, as well as an increase of malic acid content. However, TSS/TA ratio, TA, TSS, pH, fructose, and glucose were not correlated with the sensory perception of sweetness. Physicochemical and sensory responses in 'Changhowon Hwangdo' peach may differ according to respective storage temperatures.