Title Post-harvest heat treatments modify cell wall composition of strawberry (*Fragaria* × *ananassa* Duch.) fruit

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Abstract

'Pájaro' strawberry fruit were treated at 45 °C by hot air or hot water prior to storage at 3 °C for 10 days. Control fruit were stored without treatment. Modifications in cell wall composition and fruit quality caused by heat treatment were assessed after removal of fruit from storage. Treatment with hot water improved fruit resistance to fungal infection, but caused external damage, which rendered fruit commercially unacceptable. Hot air treatment did not affect external appearance, improved resistance to fungal infection and preserved firmness. Heat treatments did not affect cell wall yields obtained, but caused alterations in solubility of the different cell wall polysaccharide fractions. Higher yields for CDTA- and KOH-soluble fractions were observed as a consequence of treatment, suggesting decreased solubilization of cell wall polymers in treated fruit, even though no apparent relationship to fruit firmness was found. Higher degrees of esterification as well as total sugar contents in both CDTA- and KOH-soluble fractions were also found in heated fruit.