

## **Abstract**

Strawberry (*Fragaria × ananassa* Duch.) is a highly perishable fruit, and storage life may be less than a week. In this work, chemical changes to cell wall polymers were characterised in calcium-treated strawberry fruit 1 day after removal from storage at 3 °C for 10 days. Cell walls were extracted sequentially in order to fractionate soluble, ionically-bound (CDTA-soluble), covalently-bound (Na<sub>2</sub>CO<sub>3</sub>-soluble), and matrix (KOH-soluble) polysaccharides. Calcium treatments delayed fruit ripening only slightly, but improved resistance to fungal attack without being detrimental to external appearance. Application of calcium helped retain higher levels of ionically-bound pectins and contributed to maintaining structural integrity of cell walls, probably as a consequence of calcium deposition in pectin polysaccharides. Preservation of cell wall and middle lamella structure by applied calcium was related to higher uronic acid and sugar contents in the CDTA-soluble fraction, reflecting slowed down dissolution of cell walls and lengthened commercial life for treated fruit.