Title Cell wall disassembly during the melting phase of softening in 'Snow Queen' nectarines

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Abstract

Nectarine samples of the melting flesh 'Snow Queen' cultivar were harvested periodically around the commercial harvest date. A sharp decline in the ratio of insoluble to soluble cell wall materials preceded the melting-like decrease in fruit firmness, apparently arising from depolymerisation of polysaccharides bound tightly to the cell wall. Results suggest that part of the arabinose-rich side-chains removed from the pectic polymers remained linked transiently to the chelator-soluble fraction of the cell wall. Sugar analyses also suggest that cell wall disassembly was aided by previous elimination of galactan side-chains, which may have facilitated pectin solubilisation. Activity patterns of the cell wall-modifying enzymes considered were very similar, the highest levels being found immediately prior to commercial harvest, followed by some increase again in over-ripe fruit. No apparent relationship with the melting phase of fruit softening was observed, which suggests the presence of different isoforms contributing to the total activity levels measured.