



[Acta Horticulturae Home](#)

[Login](#)
[Logout](#)
[Status](#)

[Help](#)

[ISHS Home](#)

[ISHS Contact](#)

[Consultation statistics index](#)

[Search](#)

ISHS Acta Horticulturae 934: XXVIII International Horticultural Congress on Science and Horticulture for People (IHC2010): International Symposium on Postharvest Technology in the Global Market

INFLUENCE OF CELL WALL CALCIUM CONTENT IN FRUIT FIRMNESS DURING THE RIPENING OF PLUMS (*PRUNUS DOMESTICA* L.)

Authors: A.E. Rato, C. Nunes, A.C. Agulheiro-Santos, J.M. Barroso, F. Riquelme, M.A. Coimbra

Keywords: plums, polysaccharides, calcium, cell wall, firmness

Abstract:

'Rainha Claudia Verde' is a regional cultivar of *Prunus domestica* L. well adapted to a specific region in the south of Portugal. In order to understand the postharvest behavior of this cultivar produced in different orchards, cell wall poly-saccharides and cell wall calcium fruit content were studied during ripening in two consecutive years. During harvest period pectic fractions soluble in water, carbonate and KOH were prepared from alcohol-insoluble residue (AIR) of plums. Galacturonic and neutral sugars contents were measured during fruit ripening and fruit firmness was also evaluated. The calcium fruit level was determined in the AIR during harvest season as well as in dry matter. Fruit firmness was significantly higher in the second year and was probably related with calcium fruit content and pectic polysaccharides. There was a significant difference in calcium fruit content between orchards, and this might influence the overall fruit texture during the postharvest period. During fruit ripening water soluble pectic polysaccharides did not change significantly, which corresponded with the small decrease in tissue firmness. The occurrence in the supernatant of the cellulosic residue of highly branched polysaccharides might be the consequence of matrix material associated with microfibrillar phase. Depolymerization of the hemicellulosic fraction was not evident during plum ripening. The loss of fruit firmness is a consequence of many cellular events which are influenced by external factors. The knowledge of calcium content in the cell wall and the pectic poly-saccharides could be of great importance to local farmers to predict fruit texture.

► [Full Text](#) (PDF format, 154934 bytes)

► [Citation](#)

► [Translate](#)

Selecione o idioma

Powered by Google Tradutor

[Download Adobe Acrobat Reader](#) (free software to read PDF files)

