

Title Relationship between texture and pectin composition of two apple cultivars during storage
Author Ludivine Billy, Emira Mehinagic, Gaëlle Royer, Catherine M.G.C. Renard, Gaëlle Arvisenet, Carole Prost and Frédérique Jourjon
Citation Postharvest Biology and Technology, Volume 47, Issue 3, March 2008, Pages 315-324
Keywords Apple; *Malus domestica* Borkh; Texture; Cell wall; Mechanical properties; Sensory analysis

Abstract

The texture of two apple cultivars was characterised by sensory and instrumental methods for five different storage periods. The aim of this study was to explain the changes in apple texture during storage by different physical (penetrometry, compression) and chemical measurements (extraction and analysis of pectin composition). The emphasis was on determining the most relevant biochemical markers in relation to different sensory properties of apple texture.

Contrary to 'Fuji', 'Golden Delicious' fruit softened easily during storage, became mealy and had higher neutral sugar concentrations in their alcohol-insoluble residues (AIR) and more galacturonic acid in the water-soluble pectin extracts (WSP). The most relevant biochemical marker linked to texture change was the galacturonic acid content in the water-soluble pectin extracts. High and positive correlation coefficients were observed between sensory *mealiness* ($R = 0.84$) and galacturonic acid content in the WSP while, sensory *crunchiness* and instrumentally measured firmness were negatively correlated with this component. The total neutral sugar content in the alcohol-insoluble residues and in the water-soluble pectin fractions also changed with apple texture properties.