



Texture analysis in an apple progeny through instrumental, sensory and histological phenotyping

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Auteur	Gálvez-López, Didiana [1], Laurens, François [2], Devaux, Marie Françoise [3], Lahaye, Marc [4]
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Résumé en anglais	<p>Phenotypic analysis of texture traits was performed in an apple progeny by three complementary approaches: two classical instrumental measurements (compression and penetrometry), sensory assessment and histological screening. The progeny was composed of 141 individuals harvested over 2 years. Sensory and instrumental texture were assessed at harvest and after 2 and 4 months of cold storage. Histological screening was performed by combining macro-vision of outer parenchyma sections and image analysis on fruits after 2 months storage. Harvest year was observed to have a major impact on texture phenotypes followed by storage and genetic factors. Principal component analysis of data from the instrumental texture evaluations showed that the two methods complemented each other in characterizing the texture of the apple progeny. Compression parameters correlated better than penetrometry variables with sensory descriptors related to crispness, firmness, and graininess. Cell size distribution differentiated individuals in the apple progeny. It correlated with instrumental texture analyses and with juiciness perception. All measured texture related traits showed that they were all under genetic control with high heritability values. Higher values were obtained for fruits after 2 months storage. These results provide ground for future search of new apple texture QTLs.</p>
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