

Title Sensory analysis of individual strawberry fruit and comparison with instrumental analysis

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Citation Postharvest Biology and Technology, Volume 52, Issue 2, May 2009, Pages 164-172

Keywords Fruit-to-fruit variation; Flavour volatiles; Biophysical analysis; *Fragaria ananassa* Duch.; Variance components analysis; Sensory analysis

Abstract

A new method for measuring fruit-to-fruit variation in strawberries by both sensory and instrumental analyses was developed and applied. The method allowed quantification of fruit-to-fruit variation in sensory attributes and instrumental properties. Two commercial colour gradings (3/4 and 4/4 red) of strawberry commonly used at harvest were investigated. In the main experiment, one-half of a strawberry fruit was assessed for sensory characteristics by a trained panel while the other half was concurrently individually evaluated for soluble solids content (SSC), pH, titratable acidity (TA), firmness, and headspace volatile composition. The sensory evaluation was additionally performed on a bulk purée of fruit from the same harvest and the results were compared with the sensory evaluation on individual fruit. This study suggests that fruit-to-fruit variation is substantial in SSC, TA and fruit firmness and sensory characteristics such as 'fruity odour', 'sweet flavour' and 'flavour aftertaste', whereas other characteristics show similar variation among panellists for both individual fruit and bulk purée analyses. Further, individual fruit flavour characteristics were correlated with fruit biophysical properties. The results obtained are specific to this study and further investigations need to be undertaken to validate this method as a model for fruit-to-fruit variation in small fruit.