

Title Future trends in non destructive techniques for quality evaluation of fruit and vegetables from a consumer's perspective

Author Bart Nicolai, Maarten Hertog, Wouter Saeys, Els Bobelyn, Thomas Vandendriessche and Jeroen Lammertyn

Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Fruit; vegetable; quality

Abstract

Internal quality attributes such as taste, aroma and texture determine to a large extent the consumer appreciation of fruit and vegetables. While most quality systems to date are mainly based on external attributes such as size, color and presence or absence of surface defects, the advent of novel nondestructive techniques to measure internal quality attributes has opened the door for quality systems which also take into account the latter. For obvious reasons it is essential that there is quantification in terms of the measured attributes. In this presentation we will give an overview of novel destructive techniques for measuring quality attributes of horticultural produce, including texture, soluble solids content and flavour, with special attention for high-throughput techniques. Acoustic and impact based techniques for firmness will be compared with Magness-Taylor penetrometry. Spectroscopic techniques to measure quality attributes such as soluble solids content and firmness of fruit and vegetables will be reviewed. Novel techniques such as time and spatially resolved spectroscopy for the estimation of light absorption and scattering properties of vegetable tissue, as well as NIR hyperspectral imaging and laser techniques will be discussed. Further, some recent developments in mass spectrometry based techniques for rapid measurement of aroma will be described. The relationships between measurements of quality attributes and sensory and consumer scores will be discussed for selected products.