Title Prediction of physiological disorders in pears using non-invasive fluorescence techniques

Author R. Valcke

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Abstract

The determination of the physiological state of fruits using non-invasive techniques is very much in progress. Parameters which meet consumer expectations such as sugar content, acidity, flesh firmness, internal quality, etc., are traditionally determined with destructive techniques on a fruit sample which is conventionally considered representative of all the harvested fruit. Currently, non–destructive evaluation methods using near-infrared spectroscopy (NIRs), X-ray, acoustic methods and electronic noses are being tested on several fruit and vegetables, with the aim of identifying parameters which could estimate maturity more properly. A major challenge in fruit evaluation is the ability to detect physiological disorders, induced by abiotic and or biotic stresses, pre-symptomatic. The present study reports the application of non-invasive fluorescence techniques, including two-dimensional chlorophyll fluorescence imaging, to localise damages and disorders, externally as well as internally before visual symptoms occur.