

Title Combination of optical and non-destructive mechanical techniques for the measurement of maturity in peach

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Abstract

Increasing consumer dissatisfaction related with lack of ripeness in peach has been repeatedly reported since 1990 to the present day. There is thus, a great interest in improving the assessment of peach maturity, currently based on Magness Taylor firmness (destructive, highly variable, and time consuming) and colour (not reliable for highly coloured varieties). The present research studies as an alternative several non-destructive (ND) measurements, based on multispectral imaging, visible spectra, and low mass impact response. Their relationship with maturity, as well as the potential of their combination was studied. As a result, two rather independent ($R^2 = 0.3$) groups of non-destructive measurements, chlorophyll related optical indexes and low mass impact (LMI) measurements, were identified. Optical measurements showed the best behaviour for assessing maturity at harvest, while LMI measurements reflected handling incidences, showing a promising potential to be used to control transport and postharvest handling.