

**Title** Rapid and non-destructive analysis of apricot fruit quality using FT-near-infrared spectroscopy  
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### **Abstract**

A non-destructive optical method based on near-infrared spectroscopy has been used for the evaluation of apricot fruit quality. Diffuse reflectance measurements (800–2500 nm), physical, physiological and biochemical measurements were performed individually on 877 apricot fruits from eight contrasted cultivars harvested at different ripening stages. Relationships between spectral wavelengths and quality attributes were evaluated by application of chemometric techniques based on partial least squares (PLS) on fruit set divided randomly into two groups: 598 fruits for calibration and 279 for validation. Good prediction performance was obtained for soluble solids and titratable acidity with correlation coefficients of 0.92 and 0.89 respectively and root mean square errors of prediction of 0.98% Brix and 3.62 meq 100 g<sup>-1</sup> FW respectively. For the other quality traits such as firmness, ethylene, individual sugars and organic acids, the prediction models were not satisfactorily accurate due to the high error of calibration and prediction.