Non-Destructive Techniques For Fruit Quality Assessment

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Abstract

Quality decides the price and the shelf-life of fruit, therefore the quality assessment and evaluation of raw produce have a vital role in their postprocessing, transportation, and storage period. Nowadays, rapid, non-destructive and pollution-free analysis of internal organic compounds of fruit is an important and promising technology. Non-destructive optical methods based on visible and near infrared reflectance spectroscopy (Vis/NIRS) have been used for estimation of physiological properties of batches of fruit and vegetable products. The application of Vis/NIRS in three research paper is measuring the quality characteristics of a single tomato variety (Heatwave) and multi- types of grape. Besides, Vis/NIRS combined with a swarm intelligence optimization method for rapid and non-destructive analysis of soluble solid content (SSC) in orange. The result of three research papers indicated that the measurement method using with near infrared spectroscopy (NIRS) technology was non-destructive and fast. Therefore, NIRS technology has more advantages than the traditional laboratory measurement method.

Keywords : Visible/NIR spectroscopy ; Non-destructive technique ; Soluble solid content (SSC)

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