

Title Estimation of inner quality factors of citrus fruits with nondestructive quality evaluation technology

Author Choi YH, An HJ, Lee DH, Yun SH and Lim DS

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Abstract

Nondestructive near-infrared (NIR) spectroscopic methods were carried out to estimate inner quality factors of citrus such as soluble solid contents (SSC), titratable acidity, and organic compounds. Reflectance and transmittance spectra with a wide wavelength range between 300 and 1700 nm using a photometer (Delphi-1) was measured to provide the optimized wavelengths. The transmittance and reflectance mode provided relatively accurate estimation of SSC, titratable acidity that research especially focused on measurements of organic compound at harvest and handling days. It was observed that the estimated values of SSC and titratable acidity have strong correlation with fruit size. It was proved that successful estimation of inner quality factors can be done with transmittance methods of Delphi-1 Photometer.