

Title Precise near infrared spectral acquisition of intact tomatoes in interactance mode
Author Nafis Khuriyati, Takahisa Matsuoka and Sumio Kawano
Citation J. Near Infrared Spectrosc. 12, 391-395 (2004)
Keywords tomato; NIR; spectral acquisition

Abstract

To apply near infrared (NIR) spectroscopy for non-destructive quality control of intact hydroponic tomatoes, a search for precise spectral acquisition was performed. Along the equator of each fruit, six NIR spectra in the short wavelength region were acquired with a portable NIR instrument equipped with interactance fibres. Four types of spectra, which were averaged from 1, 2, 3 and 6 position(s), were calculated to be used as input vectors for dry matter calibration results suggested that the use of 1-position spectra was not always sufficiently accurate while the 2-position spectra was acceptable. To obtain a highly efficient and stable calibration equation, the 3- or 6-position spectra should be used. By using the 6-position averaged spectra, the calibration equation with the ratio of standard deviation of reference data in validation set to standard error of prediction (*RPD*) of 5.05 could be obtained.