

Calibration transfer between miniature NIR spectrometers used in the assessment of intact peach and melon soluble solids content

COLIN.V.GREENSILL* and KERRY.B.WALSH

Plant Sciences Group, Primary Industries Research Centre, Central Queensland University, Rockhampton, 4702, Australia

The transfer of predictive models using various chemometric techniques has been reported for FTNIR and scanning-grating based NIR instruments with respect relatively dry samples (<10% water). Some of the currently used transfer techniques include slope and bias correction (SBC), direct standardisation (DS), piecewise direct standardisation (PDS), orthogonal signal correction (OSC), finite impulse transform (FIR) and wavelet transform (WT) and application of neural networks. In a previous study (Greensill et al., 2001) on calibration transfer for wet samples (intact melons) across silicon diode array instrumentation, we reported on the performance of various techniques (SBC, DS, PDS, double window PDS (DWPDS), OSC, FIR, WT, a simple photometric response correction and wavelength interpolative method and a model updating method) in terms of RMSEP and Fearn's criterion for comparison of RMSEP. In the current study, we compare these melon transfer results to a similar study employing pairs of spectrometers for non-invasive prediction of soluble solid content of peaches.

Reference:

Greensill, C.V., Wolfs, P.J., Spiegelman, C.H and Walsh, K.B. (2001) Calibration transfer between NIR spectrometers in the NIR assessment of melon soluble solids content. *Applied Spectroscopy* **55** (in press).