Title	Optical matching of near infrared reflectance monochromator instruments for the analysis of ground and whole wheat
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Citation	J. Near Infrared Spectrosc. 7, 167-178 (1999)
Keywords	monochromator; NIR; reflectance; standardisation; calibration transfer; wheat; whole grain

Abstract

Eight near infrared (NIR) reflectance monochromator instruments in Australia have been optically matched (standardised) in order that reflectance spectra can be obtained when the same sample is measured on any of the instruments which are as similar as reflectance spectra obtained by re-pacing the same sample on one instrument. This means that data from the different instruments can be merged to produce calibrations based on a larger number of more diverse samples than would be available to any one laboratory, without the need for the actual samples to be moved around the country. In turn, the resulting spectral library and calibrations can be shared. Two methods of standardization of this type of instrument have been previously reported for ground samples. One method utilizes 30 sealed powdered samples of diverse types in order to correct for both slope and bias while the other requires only a single sealed sample to correct for bias. The results of standardization, using the set of 30 samples and using a single ground wheat, confirms hat the single sample standardisation works as well as that performed using the 30 samples. In addition, an extension of the single sample method using whole grain samples is reported. The results confirm that the single sample method can be successfully used to optically match NIR reflectance monochromator instruments of the same brand.