Abstract

A large data base of near infrared and protein data was used o examine he utility of a data base regression technique know as LOCAL in the ISI International software package. A total of 2203 samples of wheat from five classes with protein values by combustion analysis comprised the data base. One half of the samples came from hard red spring and hard red winter wheats. The number of samples in the individual classes ranged from 235 for Durum to 694 for hard red spring. These samples were collected over a five year period and represented wheat in commercial trade. Calibrations were determined for each class, the entire data base as a "global" calibration, a data base regression which selected appropriate samples for a unique calibration for each sample and the standard equations of NIR spectroscopy regulatory analysis. Results will be reported which show data base regression technique to be as good as specific calibrations by partial leas squares regression for sub-classes of products and precise enough for use for regulatory purposes. The use of this data base regression technique over normal learning sets has other advantages, such as easier calibration up-data, easier transferability and he possibility to include authentication and classification as part of the model.