analítica
Salvadoreña

LUMEX

FT-NIR by Lumex Instruments to maintain the high quality of food products

Instrument
FT-NIR analyzer InfraLUM FT-12

Region
North America

Industry
Food & beverages

Rapid quality testing provided by Lumex Instruments allows accurately measure key components – protein, moisture, and ash in wheat, flour, whole grain flour, and semolina using one FT-NIR analyzer InfraLUM FT-12.

THE CHALLENGE

Our client is one of the leading companies in the North American food production sector that offers a wide range of products such as pasta, noodles, sauces, tomatoes, bean products, cooking oils, and flour. The brand provides products for both retail and food service markets: restaurants, hotels, schools, and universities. The company is committed to delivering the highest quality products and maintaining its reputation as one of the most favored food service brands on the market. To achieve that, the company pays a lot of attention to quality control, that also has a significant economic effect in reducing possible losses and allowing the optimization of the manufacturing process. The customer needed to analyze their products via near-infrared (NIR) spectroscopy and they were looking for a replacement machine. The task for the instrument was to measure protein, moisture, and ash content in four types of products: wheat, flour, whole grain flour, and semolina. Analysis of the last one is crucial, because our client considers pasta made from durum semolina to be their main product.

THE SOLUTION

Protein, moisture, and ash content are the principle parameters which determine the quality of flour, grains, etc. They are commonly measured using conventional laboratory methods or NIR spectroscopy. For this, Lumex Instruments offered the high-tech multi-task Fourier transform near-infrared (FT-NIR) analyzer InfraLUM FT-12. Its wide range of applications includes quality control of flour and by-products at all milling stages, from grain grading to quality control after mixing.

The instrument managed to determine all necessary parameters in all samples required, these results made the instrument stand out from other devices considered by the company. The instrument is easy-to-use and does not require a laboratory with specially trained and/or qualified specialists. Unlike the conventional methods that usually time consuming and quite laborious, FT-NIR provides much faster results, does not alter the sample, and saves accurate quantification. With InfraLUM FT-12, the analysis does not call for the use of chemicals, grain grinding or other sample preparation. Moreover, simultaneous determination of all components in one sample does not exceed 80 seconds.

Lumex Instruments uses open calibration models with the possibility of extending existing calibrations. The user-friendly software SpectraLUM Pro and Parcel allow to develop, localize, and update any calibration models. With InfraLUM FT-12, enabled creating new calibrations for customer's tasks and customizing them to ensure the highest accuracy of analysis.

The last but not the least, it was important for the client that Lumex Instruments has an office in Canada and provides fast and quality service support.

THE RESULTS

The company compared several instruments and methods, and as a result, InfraLUM FT-12 turned to be the best solution for their tasks.

During the installation, Lumex Instruments' specialist installed ready-to-use calibrations of wheat, flour, and whole grain flour. The new calibration model for semolina was built using the standard samples provided by the client. After the necessary data was obtained, all calibrations were successfully installed, and the instrument was ready to work.

This case study demonstrates that the FT-NIR analyzer by Lumex Instruments provides a rapid cost-effective solution to simultaneously quantify the key components on one instrument and get highly accurate and reliable results. It is worth the investment for the users that need fast and precise analyses and makes it possible to optimize and maximize the production process.