

TUESDAY, November 3, 2015

9:00–13:00
Leo hall

WORKSHOP on Vibrational spectroscopy and chemometrics for monitoring of food and feed products and contaminants' detection

Chairs:

Juan-Antonio Fernández Pierna & Vincent Baeten

Walloon Agricultural Research Centre (CRA–W), Gembloux, Belgium



Vibrational spectroscopy, as Near infrared (NIR) or Raman, is the most widely used non-destructive technology in the food and feed industries for the daily determination and quantification of qualitative parameters of the materials. The high throughput of the method, the capacity to determine in one single analysis panoply of parameters, the possibility to build a network of spectrometers together with its potential use both on-line and at-line in a production plant made this technique even more attractive. These techniques provide real-time analyses with an increased sample throughput. Moreover, more recent areas as hyperspectral imaging allow collection of spectroscopic images at different levels from single kernel or particle levels to satellite. This is of great interest for laboratories that control feed compound or cereals. Other decisive advantages of spectroscopic methods are the ability to determine simultaneously different parameters and criteria, no use of reagents and reduced sample preparation.

The combination of these techniques with appropriate data treatment or chemometric tools should help to solve the deep and rapid changes that the agro-food sector is facing with increasing consumer concerns about food and feed safety and quality issues. These concerns arise in part from previous safety crises (e.g. dioxin, BSE, melamine) and in part from the health impact of food and feed. The main outcome of these consumer demands is an increased need for appropriate techniques and methods to help producers, retailers and processors to control and to track their products. Infrared and Raman spectroscopy combined with chemometric should allow to build strategies that can be applied to check (on-line, at-line and at the laboratory level) the quality of food and feed materials, to detect non conformity and subsequently to identify targeted or untargeted adulterants and contaminants among others.

8:30–9:00 Registration for the workshop

9:00–10:00 BASICS OF VIBRATIONAL SPECTROSCOPY

Vincent Baeten, Walloon Agricultural Research Centre (CRA–W), Gembloux, Belgium

10:00–11:00 BASICS OF CHEMOMETRICS

Juan-Antonio Fernández Pierna, Walloon Agricultural Research Centre (CRA–W), Gembloux, Belgium

11:00–11:30 Coffee break

11:30–11:50 APPLICATION - DIFFERENTIATION OF COCCIDIOSTATS-CONTAINING FEED ADDITIVES BY MID AND NEAR INFRA-RED MICROSCOPY

Jone Omar, EC–JRC–Institute for Reference Materials and Measurements (IRMM), Geel, Belgium

11:50–12:10 APPLICATION - DETECTION OF PLANT AND ANIMAL CONTAMINANTS: ADVANTAGES OF SPECTROSCOPIC METHODS

Pascal Veys, Walloon Agricultural Research Centre (CRA–W), Gembloux, Belgium

12:10–12:30 SAMPLING ISSUES AND INDUSTRIAL CASE CONTAMINATION STUDY

Vincent Baeten & Juan-Antonio Fernández Pierna, Walloon Agricultural Research Centre (CRA–W), Gembloux, Belgium

12:30–13:00 Discussion & Conclusion of the workshop