



SOLUTIONS WITH SPECTROSCOPY

Comprehensive Feed Quality Control

Feed safety and quality assurance by combining the power of FT-NIR and XRF technology made by Bruker.

Animal feed quality is not only a vital matter of animal welfare. It is also essential for food quality and safety – being the key to growth and health, and thus to the economic success of the entire agricultural industry. Bruker offers the most comprehensive range of analytical solutions for quality control and formulation adjustments, enabling the animal feed industry to monitor the quality of animal feed and pet food rapidly and efficiently.

Two complimentary, non-destructive techniques offered by Bruker allow comprehensive composition analysis for organic and inorganic constituents: near infrared (FT-NIR) and X-ray fluorescence (XRF). Both techniques are easy to use and require no to little sample preparation. This makes Bruker's solutions optimal analytical assets for production sites. Beside composition other aspects like material ID, conformity as well as detection of contaminants and fraud are part of the Bruker solution.

Feed, Ingredients & Premixes

FT-NIR for Organics

Composition analysis of ingredients and finished feeds

- Moisture, Fat, Protein, Fiber, Ash, NDF, ADF, and other parameters

Conformity testing

- Check for product conformity and uniformity
- Screening of organic contaminants

Material ID for ingredients and premixes

- Identification of pure materials
- Verification of components in solid, semi-solid and liquid ingredients



Grinding



NIR & XRF: Powder Analysis

XRF for Inorganics

Mineral nutrients composition

- Ingredients, premixes, and finished formulations, e.g. Na, Ca and P in feed, ash content

Premixes and additives

- Material ID
- Fe, Zn, and Co analysis

Contaminants

- Toxic metals taken up by plant in local soils e.g., As, Cd, and Pb
- Detection of fraud

Foreign Body Analysis

- Analyzing foreign materials in production

An overview of the complementary applications of FT-NIR and XRF technology for feed, ingredients and premix analysis.

Analysis of Animal Feed & Ingredients by FT-NIR

To maintain an optimum balance between feed costs and productivity, all feed ingredients should be analyzed for main constituents and micronutrient concentration since these values are essential to formulate the rations and required supplements. The finished feeds are analyzed as well to verify if the products are right according to the formulation.

Especially the raw materials for animal feed vary widely in composition, due to origin, seasonal changes, or year. FT-NIR spectroscopy offers a rapid, accurate and non-destructive tool for the analysis of solid and liquid samples for the main organic constituents including moisture, fat, protein, fiber, and ash as well as other more specialized parameters like starch, sugars, digestibility, and amino acids. Our comprehensive calibration packages for feed and ingredients are developed following the ISO 12099 guideline. These calibrations help you to achieve a superior quality control, allowing optimized formulations for animal wellbeing and productivity.



With the MPA II, you have a complete FT-NIR solution at hand for your daily QA/QC work in the feed producing industry, for liquid as well as solid samples.



The TANGO FT-NIR spectrometer combines Bruker's proven technology with an easy-to-use touch screen operation and a small footprint, perfect for those laboratories with limited space.

Analysis of Animal Feed with XRF Spectrometry

X-ray fluorescence (XRF) enables fast and nondestructive analysis of macro-, micro- and trace mineral nutrients from starting materials to end products. Equally important is its ability to screen for toxic metals and to monitor elemental process indicators such as P, Ca, and Fe in feed manufacture. Bruker's Elemental Analyzer portfolio includes high-throughput lab-based XRF instruments and point-and-shoot handheld XRF analyzers. Even other technologies like TXRF spectrometers for ultra-trace analysis are available.

Foreign Body Analysis with XRF and FT-IR

Foreign bodies found in feed products need to be identified to be able to determine their source for taking corrective action. XRF and FT-IR quickly identify these small physical contaminant materials on the production floor or in the lab. Whereas XRF spectroscopy is ideal for metals, ceramics, stones and glass, the complementary FT-IR technology works best for plastics, rubbers, and other organic materials.

The S2 PUMA Series 2 is designed to deliver precise and accurate elemental concentrations for major, minor and trace elements (ppm-100%) in raw materials, feed and agri products.



The TRACER 5 Handheld XRF spectrometer can be taken to the sample's location, including the loading dock or production floor. It can also be operated remotely in a test stand for lab analysis.



Bruker Optics is continually improving its products and reserves the right to change specifications without notice.
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