

NEAR INFRARED REFLECTANCE SPECTROSCOPY AS A TOOL TO PREDICT QUALITATIVE AND QUANTITATIVE MEAT AND BONE MEAL PRESENCE IN COMPOUND FEEDS

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The Bovine Spongiform Encephalopathy (BSE) is one of the more important problems that have affected the economy of European cattle and the Public Safety. Their transmission is mainly through the digestive system, and the compound feeds made with animal proteins are one source of infection for healthy cows.

Nowadays the official method for meat and bone meal (MBM) detection in compound feeds is a microscopy technique. However, this methodology is subjective, and that alters the fact to make one exhaustive quantitative analysis and one differentiation between mammalian and poultry bones. In addition, the separation of the different fractions in a sample by density before the analysis, requires the use of organochloride products as CCl_4 , which produce serious damages in the atmosphere ozone content.

NIR methodology is another possible way to confirm and identify animal ingredients in compound feeds. Its capabilities for quantitative and qualitative analysis of foods and feeds has been enough demonstrated.

The objective of this work was to use NIR as a tool to make a qualitative and quantitative analysis and a prediction of the meat and bone meal presence in compound feeds from North Spain cattle farms.

Using a global population of compound feeds, we made three different groups depending of MBM percentage presence (0, 0-100, 100), to build and validate one calibration equation to determine MBM content and make one discriminant analysis between these three groups. The preliminary data obtained with other different samples of known composition showed promising results.