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NIR spectroscopy for the early control of contaminants in feed: the example of melamine

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In recent years, food and feed safety has become an increased concern for consumers due to several important crises related directly or indirectly to human health. Many researches are undertaken in order to develop accurate and sensitive analytic techniques for the assessment of the quality and safety of feeding products. The main goal of this study is to present an effective and complete procedure based on Near Infrared (NIR) spectroscopy and multivariate calibration techniques including diagnostics, feature reduction/selection, modeling and validation for the detection and quantification of different contaminants in feed meal, which has been validated at laboratory level and adapted to be applied at the feed mills. In this study all the efforts have been put on the setting of some multivariate specifications for the Near Infrared spectroscopic characterization of pure

soybean meal. As example a complete study has been performed in order to create an early control system for the detection and quantification of melamine contamination in soybean meal, which could be extended to any other possible contaminant and feed ingredient.

Keywords feed;soybean meal;contaminant;melamine;NIR;chemometrics

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