

P.33.- Detection of MBM in hydrolysed feather protein using Near Infra Red Spectroscopy (NIRS).

G. Geesink¹, S. van den Hoven², R. Margry³

¹ P.O. Box 107 5460 AC Veghel, The Netherlands (geert.geesink@ccl.nl)

² P.O. Box 107 5460 AC Veghel, The Netherlands (suzanne.van.den.hoven@ccl.nl)

³ P.O. Box 107 5460 AC Veghel, The Netherlands (rob.margry@ccl.nl)

At present, the use of hydrolysed feather protein (HFP) and meat- and bone meal (MBM) in animal feed is forbidden. It is anticipated that, under strict conditions, the use of HFP in animal feed will be allowed in the future. To prevent accidental or fraudulent contamination with meat- and bone meal, screening techniques are needed.

NIRS models are validated with eight commercial HFPs and four MBMs. All the materials are from different locations. The MBMs were added to the HFPs in concentrations ranging from 0 to 5% with 0.5% increments (328 samples in total). The spectra (1100 to 2500 nm) of these mixtures were collected using a Foss NIRSystem 6500. NIRS models were formulated for seven out of eight HFP and tested on the HFP not used for the model. Similarly, NIRS models were formulated using HFP contaminated with three out of four MBMs and tested on HFP contaminated with MBM not used for the model.

The results clearly show that the type of HFP has a large effect on the results. It is clear that for a reliable estimate a NIRS model should contain spectra of the HFP involved. The models appear to be less sensitive to the type of MBM.

NIRS can be used to detect accidental or fraudulent addition of MBM to HFP. A predictive model based on a number of HFPs and MBM can achieve estimations with an uncertainty of 2%.

Based on limited information, the detection limit is roughly 3% when an unknown MBM is the contaminant.

Keywords

NIRS, hydrolysed feather protein, HFP, MBM, fraude, contamination