

# L.17.- Meat and bone meals in feed: Results from recent interlaboratory studies for the validation of methods and for the evaluation of the proficiency of laboratories

C. Von Holst<sup>1</sup>, A. Boix<sup>2</sup>

<sup>1</sup>European Commission DG Joint Research Centre IRMM. B-2440 Geel, [christoph.von-holst@cec.eu.int](mailto:christoph.von-holst@cec.eu.int)

<sup>2</sup>idem, [ana.boix-sanfeliu@cec.eu.int](mailto:ana.boix-sanfeliu@cec.eu.int)

Conducting intercomparison studies is an important means to obtain information about the performance of a method or the proficiency of the laboratory. In either cases laboratories analyse the same batch of samples but in the case of a method validation study the laboratories apply the same protocol, whereas in a proficiency test they can select a method of their choice. In the frame of the detection of meat and bone meal in feed we organised intercomparison studies for both purposes. Important method performance characteristics for the detection of meat and bone (MBM) are (1) the sensitivity expressed in terms of false negative results of feed samples containing traces of MBM and (2) the specificity expressed in terms of false positive results of samples without MBM. Microscopic allows for the detection of MBM in general, MBM from terrestrial animals and – under certain conditions- also MBM from mammals.

In the proficiency test carried out in 2003 we investigated the capability of European control laboratories of classifying correctly feed samples with unknown content of meat and processed animal proteins (PAPs) from other species. Although these laboratories utilised microscopy, quite different variants of this method were applied. The majority of the official laboratory detected 0.1 % MBM, but experienced problems when analysing samples that also contained fishmeal. However, a subset of the laboratories that applied a more harmonised variant of the method produced very good results. Also the experience of the laboratory turned out to be very important. In the same study other laboratories applied different methods such as immunoassays and polymerase chain reaction (PCR). Whilst PCR showed in general very poor results, immunoassays scored much better than PCR.

A validation study conducted by RIKILT Wageningen and focusing on the detection of meat and bone meal in feed in the presence of fishmeal showed that laboratories could detect 0.1% MBM if they applied a harmonised microscopic protocol and if they had enough experience of microscopic analysis.

In the validation study of the Stratfeed project the laboratories utilized the microscopic method as developed within the Stratfeed project. This method also complies with current protocol according to European legislation [1]. In addition, as sub-group of the laboratories applied the computer supported decision support system ARIES developed by the Stratfeed project. The results demonstrated that the detection of 0.1% MBM in feed in the presence of fishmeal is still a challenging task. Comparing these results with the results from the other showed that training of the laboratories would most likely lead to an improvement of the results. The use of ARIES helped significantly in detecting mammalian MBM in the presence of poultry and fishmeal.

Acknowledgement: I am extremely grateful to Gisèle Gizzi, Stefan Strathmann, Leo van Raamsdonk, Vincent Baeten and Gilbert Berben for their contributions to the various intercomparison studies conducted by the IRMM

[1] EC/2003/126 Commission Directive of 23 December 2003 on the analytical method for the determination of constituents of animal origin for the official control of feedingstuffs. Official Journal of the European Communities L 339, 24.12.2003, 78-84

## Keywords

*Validation, intercomparison study, meat and bone meal in feed*