

P.44.- Analysis of products of animal origin in feeds by determination of Carnosine and related dipeptides by High Performance Liquid Chromatography

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As the consequence of the increased appearance of bovine spongiforme encephalopathy the feeding of animal originated products, especially to ruminants was forbidden. The microscope examination is the only official method to prove animal originated adulterations of feeds. It's validated in collaboration studies and manifested in the European law. Unfortunately, the microscopic technique is an estimate method, is time consuming and requires experienced staff. We developed a High Performance Liquid Chromatography (HPLC) method for qualitative determination of animal originated parts in feeds. The evidence is made by the HPLC-determination of the dipeptide carnosine (b-alanyl-L-histidin) which is found in animal tissue exclusively, not in plants. Carnosine and related dipeptides (anserine, balenine) are present in in animal tissues like in heart muscle, kidney and liver but in particularly high concentration especially in muscle tissue. We show the dependence of contents of anserine, balenine and carnosine in compound feeds on content of meat meal in feeds. HPLC analyses will be favorable because it is a simple, less expensive technique and it is essential in most feed science laboratories. Compare to microscopy a much more bigger part of the sample can be investigated. The presented method can complete and confirm the result of the microscopic method for evidence parts of animal origin in feeds.

Keywords

Feeds – Meat meal – High Performance Liquid Chromatography (HPLC) – Solid-phase extraction (SPE) - Dipeptides - Carnosine –Anserine-Balenine