# VALIDATION OF IMMUNOASSAYS FOR THE DETECTION OF PROCESSED RUMINANT PROTEINS IN NON-RUMINANT PROTEINS

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The consumption of food products of animal origin is an inevitable part of our daily diet. As a result of the production of meat, milk and egg products approximately 17 Million Ton of waste animal by-products are produced in the European Union each year. These by-products could be a highly valuable source of nutrients, especially proteins, except for the situation that the consumption by farmed animals is generally prohibited for avoiding mad cow disease
Due to a growing aquaculture industry the demand for high quality proteins for aquafeeds is increasing. Non-ruminant processed animal proteins (PAPs) have shown great potential for this purpose. A 2% tolerance limit for the presence of ruminant PAP in non-ruminant PAP is shown to have negligible impact on the risk of additional BSE cases. Therefore, for a safe re-introduction of non-ruminant PAPs in aqua feed methods are needed that are able to discriminate between ruminant and non-ruminant PAPs at this tolerance level.
The performance of MELISA-TEK™ Ruminant in combination with the MELISA-TEK high Sensitivity Sample Extraction kit was evaluated in an intralaboratory study. The results showed an overall specificity of 99%, which indicates no cross-reaction with non-ruminant PAPs. The sensitivity was sufficient from a contamination level of 0.5% up, although depending on the processing temperature. These results were sufficient to start a large interlaboratory validation study, in which Melisa-Tek was compared with Reveal.
The study comprised a training phase, an entrance test and the final validation experiment. Samples were spiked at 0.5%, 1.0% and 2.0%. Fourteen participants passed the test and investigated the samples. For both Melisa-Tek and Reveal specificity and sensitivity were at 97% or higher. Concordance and accordance were also at good levels. The study complied with AOAC guidelines as far as possible for a qualitative study.
• Immunoassays for the detection of ruminant PAP (Melisa-Tek and Reveal) are validated at 0.5% and higher with non-ruminant PAP as matrix.
• The design of the study can be used as guideline for future studies with qualitative results.
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