

## **P.49.- Methods for species identification**

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In 2002 the Animal By-Product Regulation (EC) No. 1774/2002 was published, imposing a ban on feeding animals with proteins from the same species. The availability of an analytical technique for species identification would be helpful to lift the feed ban.

The suitability of immunochemical and PCR techniques is tested with different reference materials prepared in a dedicated 140 Litre steriliser under strict controls and conditions (133 and 159°C, pressure 3 bar and during 20 minutes).

As reference materials are prepared (both pre-pressure and post-pressure cooked):

- porcine soft material (100% large intestines (empty))
- porcine bone material (5% tails and 95% hind-legs)
- chicken soft material (100% digestive system)
- chicken bone material (40% heads and 60% shanks)
- bovine, ovine, porcine and avian bone material and bovine muscle, heated 133, 137, 141 and 145°C, are prepared by PDM Ltd (Doncaster, UK).

The following commercial available kits are tested:

- Food Expert ID, DNA chip technique (BioMérieux)
- SureFood Animal-ID, PCR-ELISA (Congen Biotechnologie GmbH)
- MELISA-TEK, ELISA (ELISA Technologies Inc.)
- AgriScreen, dipstick immunoassay (Neogen Corporation)
- FeedChek, lateral flow test (Strategic Diagnostics Inc.)

Also one ELISA assay and three PCR assays, which are still in development, of four different research institutes are compared.

The results (green when the result is okay and red when the result is wrong / no result) of the assays with the various reference materials are presented in a survey.

Most of the tested assays are more or less able to characterise the species identity of reference materials, even after heating for twenty minutes at the highest temperatures. However, often false positive and sometimes false negative results are found.

Dilemma: the current authorisation of the use of "non prohibited proteins" (including e.g. milk-products, egg-products) in feed will hamper the correct identification of the other tissues of that species which are banned by the intra-species recycling ban.

### **Keywords**

*Species identification, anti-cannibalism, PCR, ELISA, DNA chip, reference materials*