European fishmeal health and safety in relation to PFA contamination

22nd March 2023

EFFOP workshop

09:30 – 17:00

On Monday 23rd January 2023, DTU food released its public report showing high PFA contamination in the Danish organic egg industry. The investigation correlated the high PFA profile to high levels found in fishmeal, a crucial ingredient in livestock feed. The report had important repercussions for the whole feed industry where there is an urgent need for technical information and guidance for feed and animal producers alike.

The aim of the workshop was to bring together academic, political, and industrial stakeholders to share their experiences with PFA contamination and their potential solutions going forward.

Welcome and overview of workshop/PFA contamination in Denmark by Anne Mette Bæk, director of Marine Ingredients Denmark and EFFOP

EFFOP presented the organisation and its work. 40% of raw material received is from trimming (leftovers form the human consumption). Sourcing stems from blue whiting, sand eel, sprat, capelin, Norway pout and by-products. End products go to aquaculture. She recalled the low carbon footprint of this production, the little impact of it (pelagic fishing), and the high quality testing and PFAs surveillance.
She gave more context for this workshop: in early January there had been a warning from Danish food agency about risks of high levels of PFAS in eggs. The DTU aqua published its study which triggered high media interest. PFAs are a systemic problem in society and present everywhere.
The workshop would show show the differences in fishmeal depending on sourcing but also highlight the importance of knowledge exchange rather than panic in such scenarios.

Fishmeal: The golden standard in animal feed by Dr. James Hinchcliffe, researcher at University of Gothenburg and EFFOP

He recalled that fishmeal is a source of protein, lipid, amino acids, omega 3, micronutrient and others. Amino acids' presence is the main difference with plant-based ingredients like soy. In addition to the presence of these nutrients, other characteristics were to be taken into account like digestibility, appeal to the animal, interference with the metabolism, etc.
He continued by explaining that according to the first information coming in the high PFA sample seem to be coming from fish meal from Baltic origins. He reminded that there was still no regulatory level or threshold of PFA in animal feed. He explained that PFA seemed to be less of an issue in fish oil. Levels of PFA are regulated in human food. The EU regulates the 4 main ones. There were some issues of comparability when it comes to dry or wet food.

PFAs, what are they? Where do they come from and how did we get here? Overview of limits set by the EU and levels in fish Dr. Ulrike Pabel, researcher at German federal institute for risk assessment

Per and Polyfluoroalkyl Substances are manmade and don't deteriorate easily they can travel in the environment. Shorter carbon chain PFAs travel even better.
Toxicokinetics show that half-life of PFAs vary depending on the type of PFAs but also on the animal with longer half lives in humans and shorters in smaller ones like rats.
The health risk was related to liver issues and others. Food and drinking are critical exposure for humans. EFSA has established threshold levels, tolerable weekly intake and max levels in EU foodstuff (from 1st January 2023). Part of the EU population exceeds the tolerable weekly intake. PFAs levels in humans vary with diet. Not necessarily more in vegans.
Occurrence in fish depends a lot on species and levels of PFAs in the environment of the fish, its age, its behaviour.

Study on PFA levels in Danish organic eggs by Professor Kit Granby, DTU FOOD

She explained that the DTU study confirmed that fishmeal was the source of contamination of the eggs. There were mainly sprat and sandeel form the North Sea in the sample from the study. PFAS levels were similar in organic eggs across DK. Preliminary results show that after 2 months without fish meal the PFAS levels were back to very low. She stressed that PFAS in fishmeal varies a lot from product to product.

The future of fishmeal in feed for organic hens: Costs and impacts by Jørgen Nygaard Larsen, Sector manager at Danske Æg

He explained the fast reaction of Danish egg producers to the study on the PFA levels and gave the perspective of the fish meal buyers.

Livestock production: Food safety & risk analysis by Jan Dahl, chief consultant at Danish Agricultural Council

Aquaculture production: Fishmeal usage and PFA contamination, Norwegian Institute of Marine Research

Processing factors might play a role in the PFAs concentration of raw material put into the feed.

The issue of unknown PFAs was also raised and difficulty to measure them.

Future limits of PFAS in animal feeds, Frans Verstraete, Deputy head of unit DG Sante

He explained the work ongoing at the Commission level to assess the need for a regulation of PFA levels in animal feed.