PERFLUOROALKYLATED COMPOUNDS IN FISH AND FISH PRODUCTS FROM THE CZECH AND NORWEGIAN RETAIL MARKET

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Perfluoroalkylated compounds (PFCs), a wide group of anthropogenic substances, have become "emerging" food and environmental contaminants, since they have been found until now in various types of abiotic and biotic matrices including human tissues and fluids.

In May 2009, PFOS and its salts were together with other 11 new halogenated persistent organic pollutants (POPs) included in the list of Stockholm convention on purpose to limit production, usage and emission release of mentioned chemicals to the environment. Moreover, with regards to associated dietary intake and since only limited information are available on their occurrence in food and environment, European Food Safety Authority (EFSA) recommended that further data on PFCs levels in food and in humans would be desirable, particularly with a respect to the human exposure assessment. Therefore, an additional monitoring focused not only on PFOS and PFOA but also on other PFCs is needed.

Since fish seems to be, according to EFSA document, an important source of human dietary exposure to PFOS and PFOA, the main aim of this study was to evaluate the levels and profiles of 19 PFCs in fresh fish and canned fish products currently available on retail market in the Czech Republic and Norway. Within the experiments various fish species (tuna, sardines, mackerel, cod liver, herring etc.) both in oil and brine from several countries of origin (Poland, Latvia, Spain, Thailand, Philippines, Morocco etc.) were examined. Nine from all target PFCs were detected with majority of PFOS and PFOA, approaching levels up to 13 and 18 μg/kg, respectively. The most contaminated samples originated from the locality of Baltic Sea, a potential source of PFCs contamination. In selected products liquid (oil/brine) and solid (fish liver/muscle) part was further analysed separately to evaluate the distribution of PCFs in consumers' products.

Key words: PFCs, PFOS, fish

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