ACCUMULATION OF PERFLUOROOCTANE SULFONATE IN MYSID SHRIMPS AND MUSSELS FROM THE SOUTHERN NORTH SEA AND THE WESTERN SCHELDT

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Production of perfluorinated alkylated chemicals (PFAS) first began around the early sixties. The replacement of carbon-hydrogen bonds by carbon-fluor bonds in PFAS such as the sulfonic acids, carboxylic acids and the sulfonamides, leads to stable and chemically inert products with interesting properties (e.g. stain- and water repelling). They are used extensively both as precursors and end products in a wide variety of applications in household and industrial products. Almost half a century later, these compounds are known as very persistent, hardly biodegradable and toxic contaminants. Recent studies have indicated the presence of alarmingly high levels of PFAS, and especially of perfluorooctane sulfonate (PFOS), in the aquatic and terrestrial environment.

Since little is known about the exposure of PFOS in marine and estuarine species and since one of the two biggest producers of PFOS is situated near the Scheldt in Antwerp, Belgium, we have characterised the PFOS levels in environmental compartments and in biota originating from the North Sea and the Western Scheldt Estuary.

The objective of this study is to determine the concentration of perfluorooctane sulfonic acid in different stages of the food chain to have a general impression on how these substances behave in the environment. More in detail, we have investigated if mysid shrimps (*Neomysis integer*) and mussels (*Mytilus edulis*) accumulate these compounds and how the concentrations are related to levels found in the water, the sediment and estuarine fish like the European Sea Bass (*Dicentrarchus labrax*).