

Occurrence of microplastics in brown shrimp on the Belgian part of the North Sea

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Marine microplastics can be described based on criteria such as colour, stage of erosion, shape (fiber, film, spherule and fragment) or polymer type (polyethylene, polystyrene, nylon,...). Synthetic fibers, mainly originated from degradation of plastic debris such as rope and packaging materials, and washing of synthetic clothing, form the most abundant type of microplastics in the marine environment.

Depending on the occurrence, bio fouling and characteristics, micro-debris could be ingested by marine benthic species when mistaken as food. Ingestion, accumulation and translocation of microscopic synthetic particles were demonstrated for diverse marine species such as plankton (zooplankton and phytoplankton), nematodes (*C. elegans*), deposit feeders (blue mussel, lugworm, and sea cucumbers) and crustacean (Norway lobster, amphipods, littoral crab and barnacles). This suggests the potential ability of microplastics to accumulate in higher trophic levels (fish, sea birds and whales) by feeding on plastic-contaminated seafood or plankton.

This research presents the occurrence of synthetic fibres in brown shrimp (*Crangon crangon*) and plastic benthic litter (beam trawl), caught on the Belgian part of the North Sea during spring 2013. The extraction of microplastics from the shrimp tissues was performed using an acid destruction with a mixture of nitric acid and perchloric acid $\text{HNO}_3:\text{HClO}_4$ (4:1 v:v). For an optimal digestion of the tissues 500ml acid mixture was used to digest 100g tissue. The acid digest was filtered over a 15µm Whatman filter and the fibres were visualized under a stereo microscope. Each plastic fragment was verified as plastic with a hot needle. Synthetic polymer types were not identified. The results will be presented and discussed during the conference.

Keywords: ingestion; synthetic fibres; microplastics; *Crangon crangon*.