

Occurrence of synthetic fibres in brown shrimp on the Belgian part of the North Sea

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Marine microplastics can be described based on categories such as colour, stage of erosion, shape (fibre – film – spherule – fragment) or polymer type (polyethylene, polystyrene, nylon...). Synthetic fibres, originated by the degradation of plastic rope or packaging materials and the washing of synthetic clothing, are the most common type of microplastics in the marine environment. Depending on the occurrence, biofouling and characteristics, micro-debris could be ingested by marine benthic species when mistaken as food. Several scientific papers on laboratory trials describe the ingestion, accumulation or translocation of microscopic plastic fragments for numerous 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). Higher trophical species such as fish, sea birds and whales could also ingest microplastics indirectly 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 HNO₃:HClO₄ (4:1 v:v). For an optimal digestion of the tissues 500 ml acid mixture was used to digest 100 g tissue. The acid digest was filtered over a 15 μm 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*

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