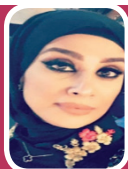


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Possible effects of Microplastic pellets on marine fish

Marine debris are found floating at the sea surface, on seafloor and on shorelines. Plastics that represents 60–80% of all marine debris are starting to replace images of sewage as a leading cause of pollution particularly in the ocean.

Microplastics considered as plastic debris pollution that constitute a major threat to marine life due to their persistence, ubiquity and vector for transferring persistence bioaccumulative toxins in the environment. Microplastics are small plastic debris less than 5 mm in size and can pose threat to marine organism. Small plastic pellets used for manufacture of plastic products end up in the marine environment through accidental spillage during transport. Owing to their small size and their occurrence in both pelagic and benthic ecosystems, microplastics have the potential to be ingested by marine biota such as zooplankton, mussels, fish, seabirds and whales. Plastic particles accumulating in the intestine of marine organisms can clog the digestive system and cause false sense of satiation leading to less food consumption. Ingestion of contaminated microplastics represents a unique exposure route of highly toxic chemical pollutants into the food web. Microplastics can act as a vector for the transport of sorbed contaminants and chemical additives when ingested by the living organisms. Ingesting microplastics can facilitate the transport of chemical contaminants to the organism. Recently, a study reported, for the first time, that some aged plastics could release estrogenic compounds in marine environment. Contaminants can incorporate into the marine plastic pellets by two possible mechanisms. The first possible mechanism is the adsorption of hydrophobic chemicals into the surface of the plastic resin pellets from seawater and second possible source is the synthetic chemicals contained in the plastic resin pellets as additives. In general, the microplastics ingestion by fish can interfere with biological processes and might cause health hazards.

Biography

Noura Al-Jandal has completed her PhD on 2011 from the University of Exeter, UK. She is an Associate Research Scientist in the Environmental and Life Sciences Research Center at the Kuwait Institute for Scientific Research working on endocrine disrupting chemicals effect on marine biota. She lead several client funded project and published the work in peer-reviewed journals. She is a member in the Associate of the Higher Education Academy (AHEA) and a qualified British Sub-Aqua Club (BSAC) Diving License Holder. She presented her work in several international conferences as a speaker. Currently she is working on projects of a high global significance such as microplastics assessment in Kuwait marine environment and submitted new proposal on microplastic pellets effect on fish to the client for funding and awaiting the funding approval.

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