

Microplastics in eviscerated flesh and excised organs of dried fish

ABSTRACT

There is a paucity of information about the occurrence of microplastics (MPs) in edible fish tissues. Here, we investigated the potential presence of MPs in the excised organs (viscera and gills) and eviscerated flesh (whole fish excluding the viscera and gills) of four commonly consumed dried fish species (n=30 per species). The MP chemical composition was then determined using micro-Raman spectroscopy and elemental analysis with energy-dispersive X-ray spectroscopy (EDX). Out of 61 isolated particles, 59.0% were plastic polymers, 21.3% were pigment particles, 6.55% were non-plastic items (i.e. cellulose or actinolite), while 13.1% remained unidentified. The level of heavy metals on MPs or pigment particles were below the detection limit. Surprisingly, in two species, the eviscerated flesh contained higher MP loads than the excised organs, which highlights that evisceration does not necessarily eliminate the risk of MP intake by consumers. Future studies are encouraged to quantify anthropogenic particle loads in edible fish tissues.