
Confirmation of microplastic contamination in muscle tissue of *Nephrops norvegicus* from the Adriatic Sea

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Abstract

The presence of microplastics (MPs) in species of commercial interest is well reported. This work is a follow up of that carried out by Martinelli et al 2021, in which among others 11 individuals of Norway lobster sampled in the *Off Ancona* study area (Adriatic Sea) were found to be contaminated by MPs in gut, hepatopancreas and muscular edible part (tail). In this new trial, 4 lobsters from the same study area were analysed considering 3 different anatomical compartments: hepatopancreas, tail and claw. To evaluate external contamination during samples preparation, procedural blanks were processed. The entire hepatopancreas was extracted from the animal in a protected environment. This time only a dissected portion of the tail muscle was used for the analysis (without exoskeleton), while one claw per individual was accurately washed with MillQ water before being processed (muscle together with exoskeleton). The analyses showed that the hepatopancreas of all individuals were contaminated by a total of 14 MP particles, in shape of both fibers and fragments, ranging from 50 to 300 μm and consisting in 4 different polymers (Polycaprolactone, Polyester, Polyethylene, Polypropylene). MPs ranging from 20 to 50 μm were found in all the 4 analysed portions of tail muscles: in total 7 fragments consisting in 5 different polymers (Polyvinylchloride, Polyester, Polyethylene terephthalate, Polypropylene and Polyurethane). In the claw samples, only 1 fragment of Polyester and 1 of Polyethylene were found in two different individuals among the 4 analysed. Concerning the hepatopancreas, the main difference with the previous study is a much lower incidence of MP fragments ranging from 50 to 100 μm . The results for tail muscles are not comparable between the two studies considering the different amount of tissue analysed, however MPs were found again in all the new samples, thus confirming their presence in edible tissues.

Keywords: *Nephrops norvegicus*, Plastic contamination, microplastic

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