Plastic particle ingestion by farmed European sea bass (Dicentrarchus labrax)

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Abstract

The presence of microplastics (MPs) in the marine environment is a concerning topic due to the ecotoxicological effects and possible seafood contamination. Data is needed to evaluate human exposure and assess risks, in the context of a healthy and beneficial seafood consumption. While microplastic ingestion by wild fish has been reported since the early 70's, farmed fish are rarely investigated. Here, for the first time the presence of microplastics in fish cultivated in the coastal water of Tenerife (Canary Island, Spain) was evaluated. From 83 examined individuals, 65% displayed microplastics in their gastrointestinal tracts, with averages between 0.6 ± 0.8 (SD) and 2.7 ± 1.85 (SD) particles per fish. The total number of microplastics detected was 119. Fibres (81%) and fragments (12%) were the predominant shapes. FTIR analysis showed that fibres were mostly composed by Cellulose (55%) and Nylon (27%), whereas fragments by PE (25%) and PP (25%).

Keywords: Pollution, Plastic, Microparticles, Aquaculture, Seafood, Fish, Canary Islands

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