Occurrence of microplastics in three wild species of sea urchins (Paracentrotus lividus, Arbacia lixula and Diadema africanum) from the coastal area of Tenerife and La Palma (Canary Islands, Spain).

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Abstract

Sea urchins play a key role in the dynamics of the coastal ecosystems by organizing and structuring rocky macroalgae assemblages (1). These species that populate the marine coastline are susceptible to plastic pollution due to the presence of submarine outfalls and terrestrial runoff, which represent an important source of these pollutants in the vicinity of the coasts.

This study investigates the occurrence of microplastics in three species of wild sea urchins collected at coastal areas of the islands of Tenerife and La Palma (Canary Islands, Spain) between 2021 and 2022. Sea urchins were collected by scuba divers in different localities of these two islands at a depth between 3 and 11 meters. Once at the laboratory, from each sea urchin, digestive tracts and gonads were removed and digested with H2O2 (33%). After filtration of the digests, each filter was visualized under a stereomicroscope (2). Results revealed a similarity in the distribution pattern among the three sea urchin species in terms of size, shape, and colour, finding in all species mainly transparent fibres. Regarding their composition, most of them showed a cellulosic composition (natural and semisynthetic) though an important concentration of synthetic fibres were also found. These results agree with other studies previously carried out in the same biogeographic region (3).

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