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Abundance and characteristics of microplastics in shellfish from Jiaozhou Bay, China

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As an emerging pollutant, the presence of microplastics in marine organisms has been concerned increasingly. Shellfish, which are both economically and ecologically important, are of particular concern. In this study, we investigated the microplastic pollution in wild and farmed oysters (*Crassostrea gigas*) and clams (*Ruditapes philippinarum*) in the Jiaozhou Bay, China, for the first time. We found the microplastic pollution in shellfish in Jiaozhou Bay was at a moderate level. The abundance of microplastics in shellfish ranged from 0.16 to 12.09 items/g (wet weight, ww) or 1 to 9 items/ind. The average abundance of the ingested microplastics was 1.21 items/g (or 2.17 items/ind.) in all shellfish, 1.51 items/g (or 2.00 items/ ind.) in clams and 0.92 items/g (or 2.34 items/ind.) in oysters. The abundance of microplastics in clams was significantly higher than that in oysters. Most microplastics (92.97%) were fibers, followed by fragments. The predominant color of the microplastics was black (42.97%), followed by blue, transparent, and red. Cellophane and polyethylene terephthalate (PET) dominated the microplastic composition. According to shellfish consumption, it can be inferred that the average microplastic consumption through Chinese diet is 1.27×10^3 items per capita per year.