Microplastics in Seafood From the Coastal Areas in Semarang, Indonesia

MICROPLASTICS IN SEAFOOD FROM COASTAL AREAS IN SEMARANG, INDONESIA

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Microplastics have been found in blood cockles, green mussels, and milkfish from the coastal areas of Semarang, Central Java, Indonesia. Green mussels had the highest concentration of microplastics compared to the other seafood species.

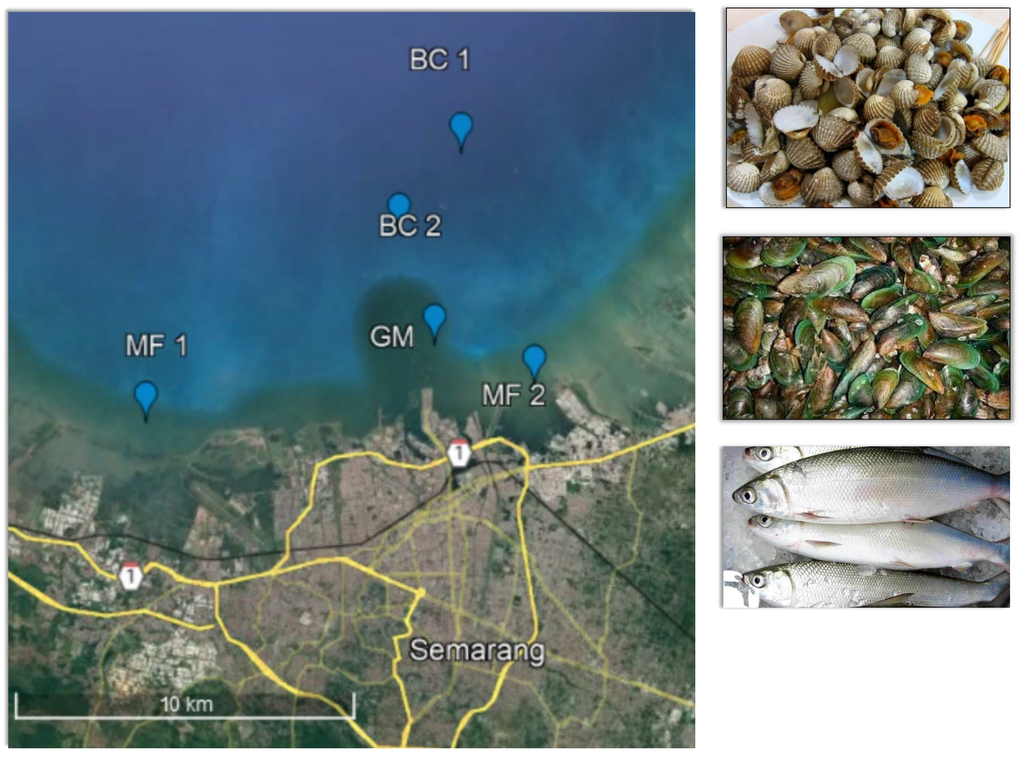
BACKGROUND

- Indonesia has been indicated as the 2nd largest contributor of mismanaged plastic waste ending up in the ocean.
- Java, as the most populated island of Indonesia, contributes 0.116 – 0.145 million tons of plastics waste per year, which can lead to the massive accumulation of microplastics (MPs) in the coastal areas.

OBJECTIVES

- to investigate the microplastics contamination level in various seafoods from coastal areas in Semarang, Indonesia
- to characterize the detected microplastic particles

METHODS



Note: Blood cockles (BC 1 & BC 2), green mussels (GM, and milkfish (MF 1 & MF 2)

Figure 1. Sampling locations for seafood in coastal areas in Semarang

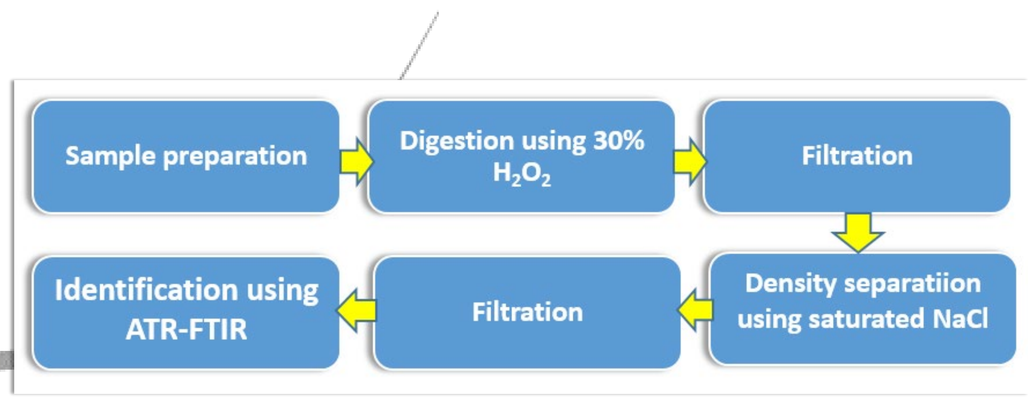


Figure 2. Microplastics analysis in seafood samples

RESULTS

Table 1. The concentration of MPs in seafood (particles/g ww)

Seafood	Contaminated samples (%)	Particles suspected as MPs (particles/g ww)
Blood cockles (N = 60)	100	14.5 ± 6.02
Milkfish (N = 60)	98.5	0.81 ± 0.60
Green mussels (N = 50)	100	33.21 ± 22.29

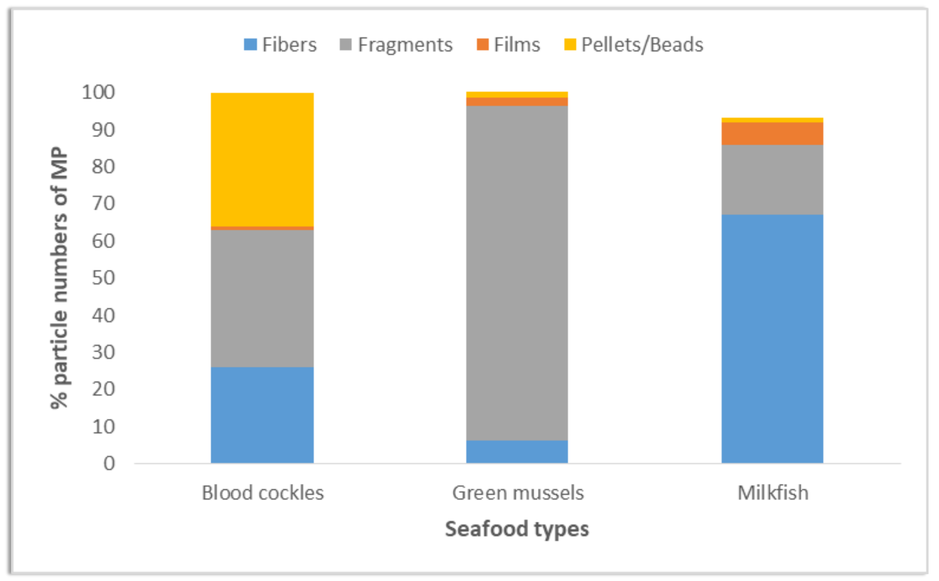


Figure 3. The size distribution of MPs in seafood

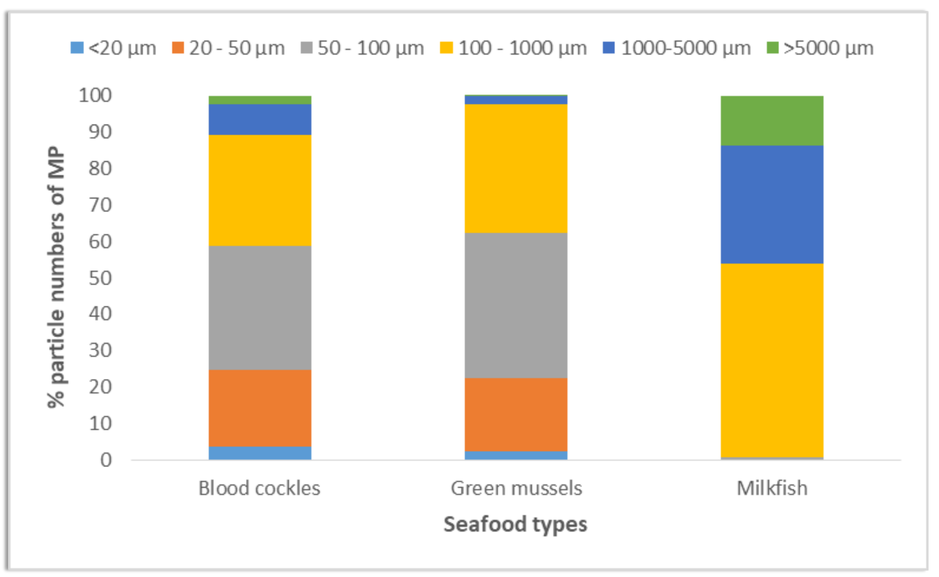


Figure 4. The distribution of MP morphotypes in seafood

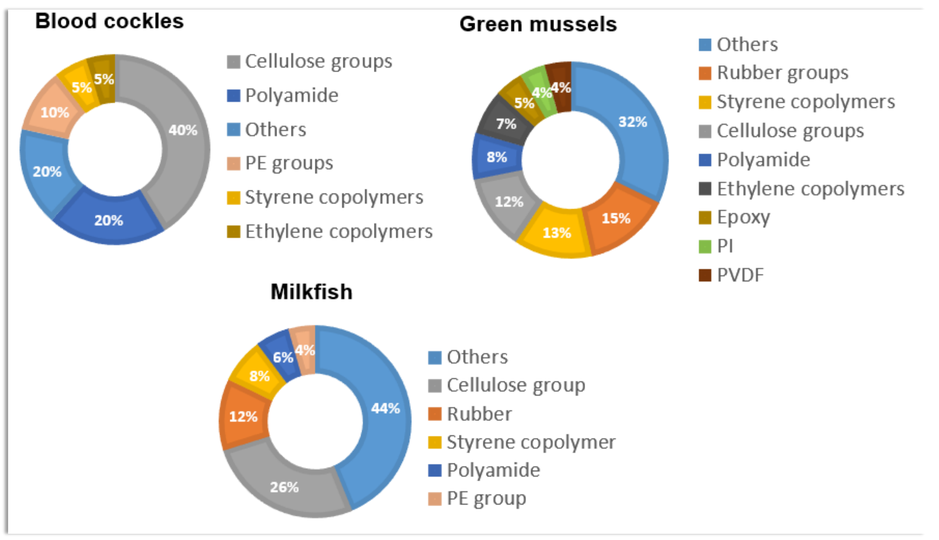


Figure 5. Polymer composition of MPs in seafood

CONCLUSIONS

- ❖ Seafood from the coastal areas of Semarang is contaminated with MPs.
- ❖ Bivalves, including green mussels and blood cockles accumulated more and smaller MPs than milkfish.
- ❖ Green mussels had the highest concentration of MPs among the investigated species.

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