Occurrence of microplastics in *Mytilus edulis* and *Arenicola marina* collected along the French-Belgian-Dutch coast

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**Introduction**

It is difficult to assess the relevance (risks of adverse effects) of laboratory observations concerning the ingestion of microplastics, since the exposure concentrations (range 1 000 – 50 000 mg.kg⁻¹ sediment) are over a thousand times higher than any concentration observed in the field (range <1 – 200 mg.kg⁻¹ sediment).

The aim of this project was to study the presence, and if present, the concentrations of microplastics in two marine species in the field: (i) the blue mussel *Mytilus edulis* and (ii) the lugworm *Arenicola marina*.

**Materials & Methods**

**Extracting microplastics from organisms**

- HNO₃
- Field organisms
- 2 hours
- 80°C

**Extracting microplastics from environmental media**

- Sodium iodide (high-density salt)
- Sediment
- Tap water

**Results & Discussion**

**Initial detection of particles**

'Suspicious' particles detected in lugworm tissue

**Identification using Raman-spectroscopy**

**Identification of particles**

- Identification scheme
- Microplastics present in all samples!!

**Microplastics in *M. edulis* and seawater**

- Microplastics present in all samples!!

**Microplastics in *A. marina* and sediment**

- Microplastics present in all samples!!

**Conclusion**

**Microplastics are present in marine organisms in the field.**

At each investigated sampling point, microplastics were present in the lugworm *Arenicola marina* (1 particle.g⁻¹ tissue) and in the mussel *Mytilus edulis* (1 particle.g⁻¹ tissue).

Acknowledgements: This research has been financially supported by the European Plastics Converters. The authors thank Emmy Pequeur, Colette Cooreman-Algoed and Bart De Bruycker for their experimental assistance.