EFSA StaDG-ER meeting
8-9 nov 2023

EuroCommerce
Retail & Wholesale

Who we are, what we do

We stand for:
Fair, competitive & **sustainable** retail and wholesale in Europe.

through

1. EU advocacy and Intelligence
2. Research, learnings and thought leadership
3. Exchange and networking
4. Positive communication and sector reputation

Our affiliated federations

Our company members

Membership in July 2022

EuroCommerce
Retail & Wholesale

EuroCommerce in numbers

Retail and wholesale is a huge economic and social contributor in the EU, accounting for:

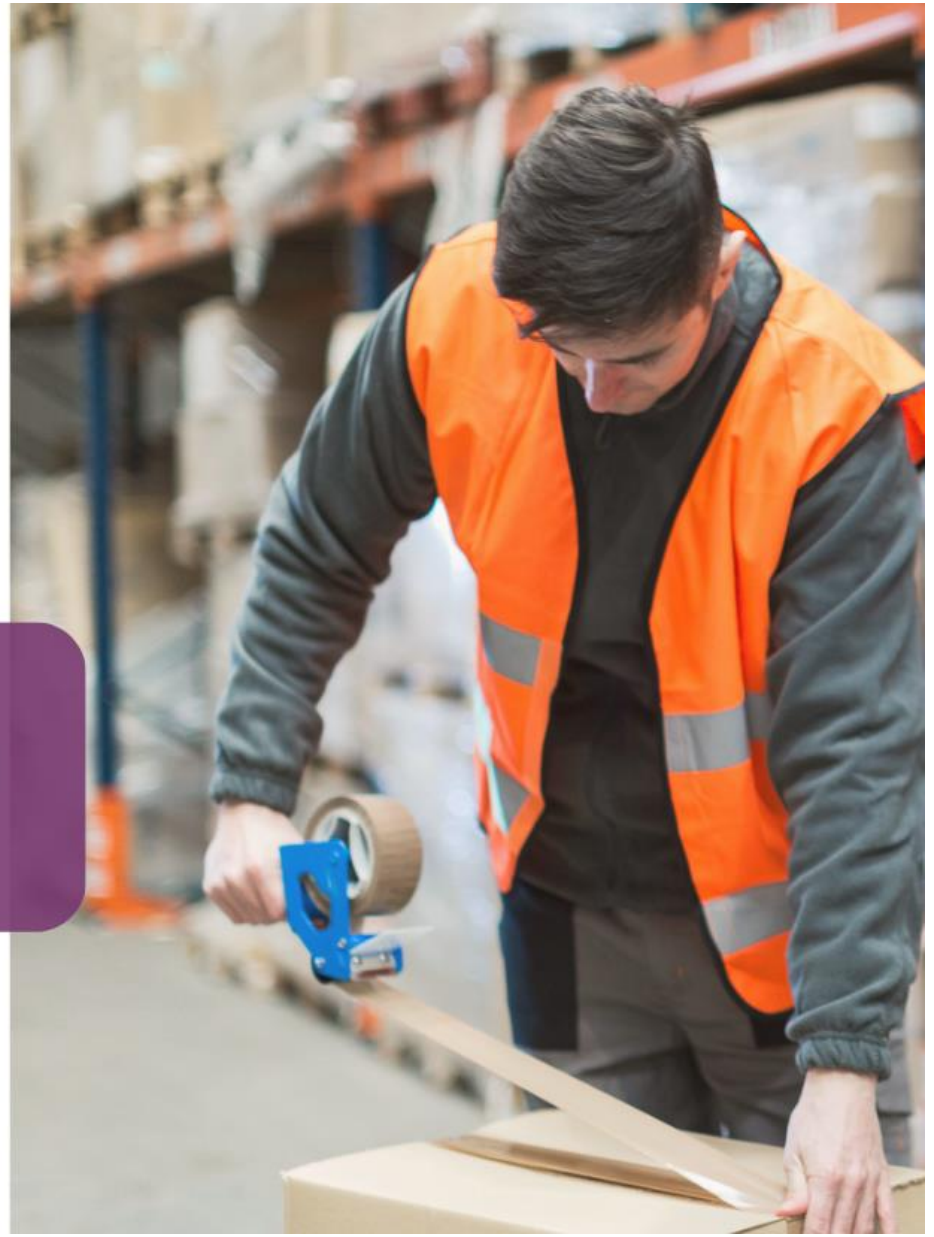
5 million
businesses
(large and SMEs)

Jobs for
26 million
in the EU

10 %
of EU GDP

Entry into the labour market for
1 in 5 young Europeans

The sector supports millions of other jobs in the supply chain. Retailers and wholesalers are present in every city, region and county in Europe. **It makes our towns and villages attractive places to live and work.**



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Case Study - Recent findings on microplastics in aquaculture fish

Case Study:
Recent findings on microplastics in aquaculture fish

- As emerging contaminants, microplastics (MPs) have raised concerns within the aquaculture sector due to plastic pollution levels in aquatic environments and their presence in various stages of seafood production (FAO 2022)
- MPs are plastic particles smaller than 5000 μm (GESAMP, 2016) and can reach aquaculture systems from several exogenous and endogenous sources.
- Aquaculture: highly important for human nutrition (+50% of fish in markets).

Exogenous Sources	Endogenous Source
human activities and reservoir environments	weathering of plastic components used in aquaculture
Fish feed from contaminated ingredients (fishmeal)	fishing gear, tanks, and filters

Case Study:
Recent findings on microplastics in aquaculture fish

Recirculation aquaculture systems (RAS) provide an opportunity for seafood production to address environmental sustainability since it is based on the principles of nutrient recycling, reduced water usage and improvement of waste management (Belton et al., 2020; Naylor et al., 2021).

RAS might face some challenges due to the potential accumulation of contaminants, such as heavy metals, drug residues, and metabolites.

Source: https://www.wur.nl/

Microplastics in water, feed and tissues of European seabass reared in a recirculation aquaculture system (RAS)

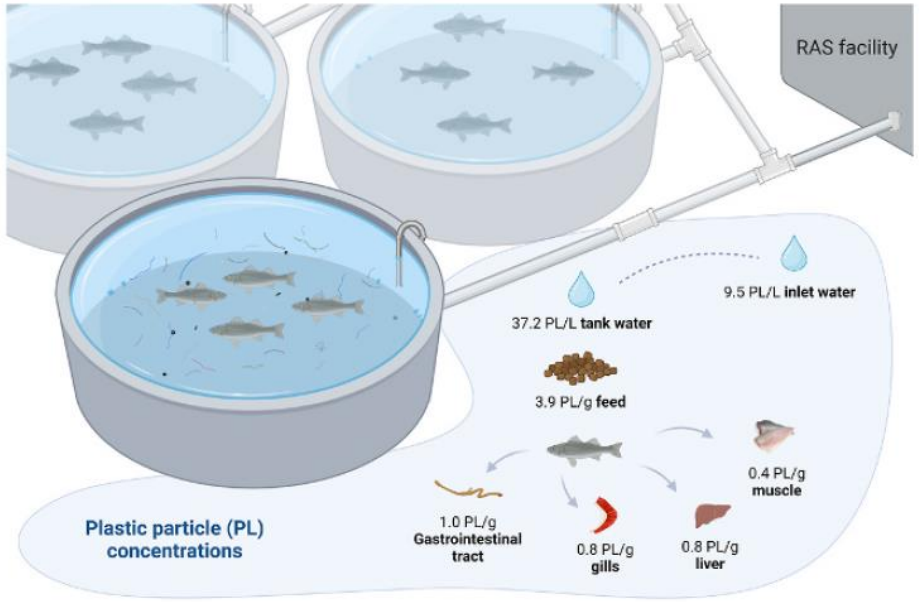
Ricardo S. Matias R. et al (2023)

This study investigated PL presence in water, fish feed and body sites of 55 European seabass produced in a recirculating aquaculture system (RAS).

HIGHLIGHTS

- All fish had plastic particles (PLs) in at least two body sites (0.7 ± 0.4 PL/g).
- Mean PL/g in gastrointestinal tract (GIT) was higher than liver, gills and muscle.
- PLs in GIT and gills were significantly larger than those found in internal organs.
- Man-made cellulose and PET were the most predominant polymer types.
- Polymers common in RAS components had low occurrence levels.

GRAPHICAL ABSTRACT



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Microplastics in water, feed and tissues of European seabass reared in a recirculation aquaculture system (RAS)

Matias R. et al (2023)

- European seabass juveniles were reared in a recirculation aquaculture system (RAS) pilot facility located in Portugal

- The RAS facility integrates several plastic components, such as: the tanks and tubing made of polyvinyl chloride (PVC); mechanical and biofilters, skimmer, and water deposits made of polypropylene (PP) and polyethylene (PE); and mesh filters made of PP and polyester, also referred to as polyethylene terephthalate (PET).

- The PL concentrations in tank water, feed, and seabass were transformed into comparable units, namely in tank water (PL/L), feed (PL/kg), and seabass (PL/kg). PL concentrations in tank water were adjusted considering the estimated water density of 1.01 g/cm3.

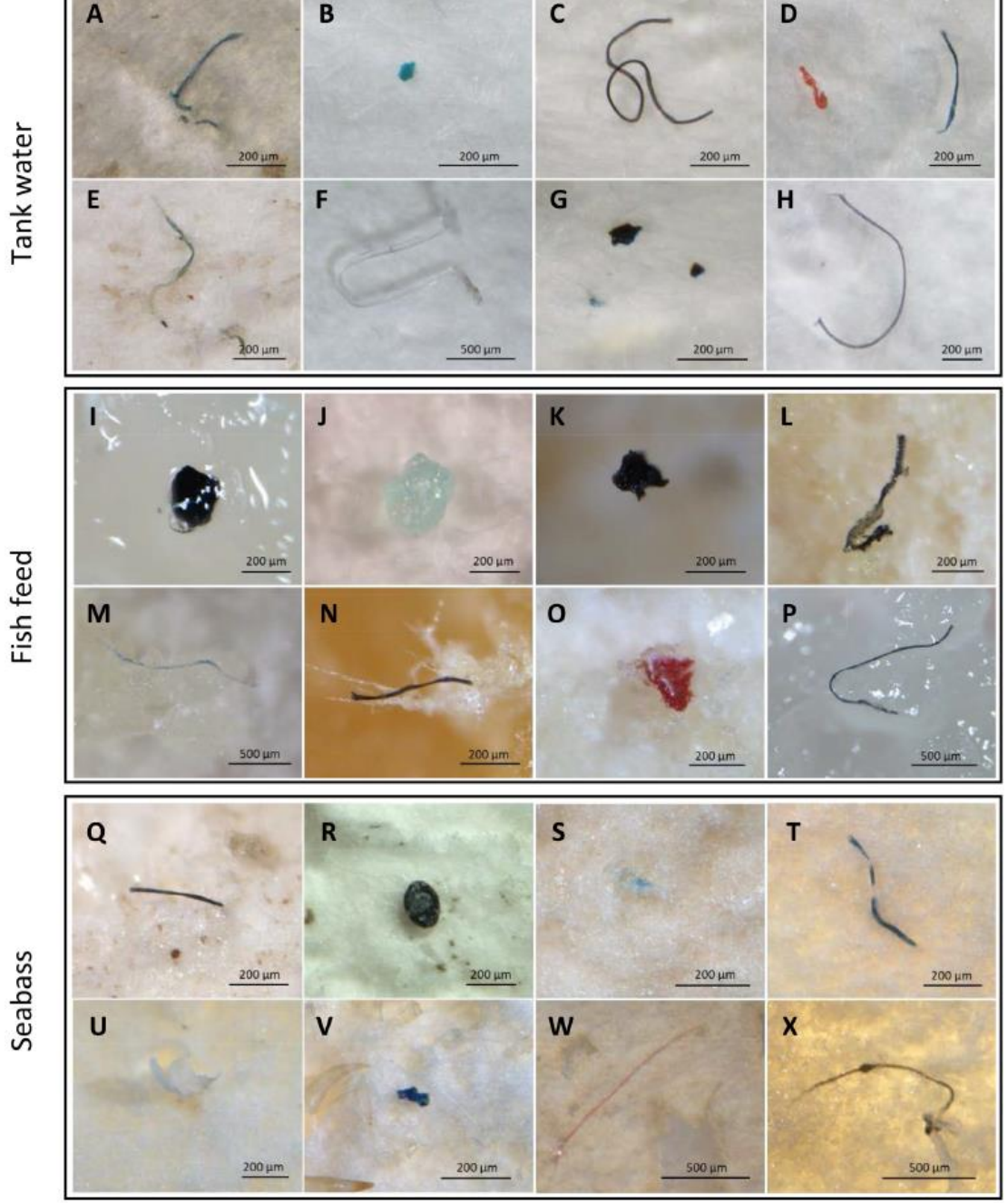


Fig. 1. Visual diversity of the plastic particles recovered from water, feed, and European seabass body sites produced in a recirculating aquaculture system (RAS). A, D (blue item), E, M, N, and T – man-made cellulose/rayon; B and U – polyvinyl chloride (PVC); C, D (red item), H, L, P, and X – polyethylene terephthalate (PET); F – polypropylene (PP); G, I and K – phenoxy resin; J and R – polyethylene (PE); V – polystyrene (PS); W – polyacrylonitrile (PAN); and O, Q, and S – unidentified anthropogenic particles. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Microplastics in water, feed and tissues of European seabass reared in a recirculation aquaculture system (RAS)

Matias R. et al (2023)

- **Black, blue, and transparent fibres made of man-made cellulose/rayon and polyethylene terephthalate** were the most common PLs in water and seabass
- Black fragments of **phenoxy resin** were the most common in feed.
- The levels of polymers linked to RAS components (**polyethylene, polypropylene, and polyvinyl chloride**) were low, suggesting a limited contribution to the overall PL levels found in water and/or fish.

Microplastics in water, feed and tissues of European seabass reared in a recirculation aquaculture system (RAS)

Matias R. et al (2023)

- PLs seem to bioconcentrate in fish, but **not bioaccumulate in tissues**, indicating the PL low bio-accumulative potential in European seabass.
- No significant differences were observed in oxidative stress biomarkers between fish with low (<7) and high (≥7) total PL numbers.
- The low occurrence of polymers linked to the analysed RAS components (*e.g.*, **PE and PP**) suggests a **limited contribution** of the system to the PL levels found in tank water.

Detection of microplastics, polymers and additives in edible muscle of swordfish (Xiphias gladius) and bluefin tuna (Thunnus thynnus) caught in the Mediterranean Sea

Di Giacinto, F. et al (2023)

Abstract:

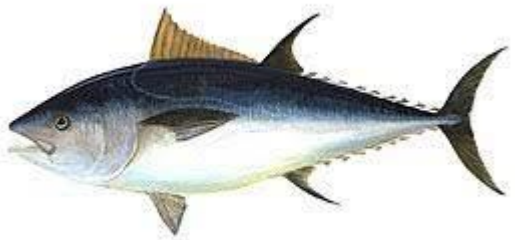
- The Mediterranean Sea endangered by microplastics (MPs), polymers, and additives.
- Aim of the study was to quantify MPs, **polyethylene terephthalate (PET), polycarbonate (PC), bisphenol A (BPA), and p-phthalic acid (PTA)** in the edible muscles of swordfish (Xiphias gladius) and bluefin tuna (Thunnus thynnus) caught in the Mediterranean Sea.
- The most frequent MP polymer was **polypropylene** in swordfish (33%) and in tuna (34.7%), while the most abundant pigments were PB115, PB116, PBr101/102.
- A similar level of plastic contamination was revealed in these two fish species with differences in shapes, colors, pigments and polymers of MPs.

Detection of microplastics, polymers and additives in edible muscle of swordfish (Xiphias gladius) and bluefin tuna (Thunnus thynnus) caught in the Mediterranean Sea

Di Giacinto, F. et al (2023)

- BPA is one of the most important globally produced additives.
- It's used for the production of polycarbonate (PC) and epoxy resin (monomeric compounds), both composing containers and protective coatings/linings of food and beverage.
- BPA is an endocrine disruptor chemical (Maffini et al., 2006; Kang et al., 2007).
- In scientific publications, BPA was detected in several species of fish (Errico et al., 2017; Barboza et al., 2020a; Barboza et al., 2020b), but mostly in canned food (Fattore et al., 2015; Al Ghoul et al., 2020).
- Given the uncertainties about some of the toxic effects of BPA identified by EFSA's scientists, the European Commission requested that EFSA re-evaluate the risks to public health from BPA in foodstuffs (EFSA, April 2023).

X. gladius



Thunnus thynnus

Detection of microplastics, polymers and additives in edible muscle of swordfish (Xiphias gladius) and bluefin tuna (Thunnus thynnus) caught in the Mediterranean Sea

Di Giacinto, F. et al (2023)

- In this specific research work:
  - **10 specimens** were collected (T. thynnus= 5; X. gladius=5)
  - PC was found in 8 samples, and PTA and PET were identified in all 10 samples.
  - **BPA was detected only in one specimen of each species:**
    - ✓ **Tuna:** 13 x 10^{-3} mg/kg
    - ✓ **Swordfish:** 43 x 10^{-3} mg/kg
  - No correlation between PET, PC, BPA, PTA and MPs.

X. gladius

Thunnus thynnus

EuroCommerce Retail & Wholesale

EuroCommerce's position on EU ban regarding the use of Bisphenol (BPA)

- Retailers ask the European Commission to urgently consider proportionate measures based on risk approach to regulate BPA for food contact materials outside the scope of the Plastics Regulation, and to encourage the development of safe alternatives should there is a genuine food safety risk.

ENSURE SCIENCE-BASED AND AVOID REGRETTABLE SUBSTITUTION

Thank you!

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