

Labelling of plant-based seafood substitutes

Scope and issues at stake

Bertrand LE GALLIC (University of Brest. UBO / UMR AMURE)

Presentation for the Market Advisory Council.

17 September 2025. Las Palmas

Introduction

- The plant-based seafood substitutes market has developed worldwide since the end of the 2010s, and especially in 2022/2023
→ **recent phenomenon** → **new attention required**
- Objective of the study:
 - Provide a snapshot of the **current state of play** in the development of plant-based substitutes for fisheries and aquaculture products;
 - Discuss potentially misleading **labelling practices** in the EU market as regards plant-based substitutes for fisheries and aquaculture products;
 - Review the **EU legal framework for labelling** of plant-based substitutes for fisheries and aquaculture products.

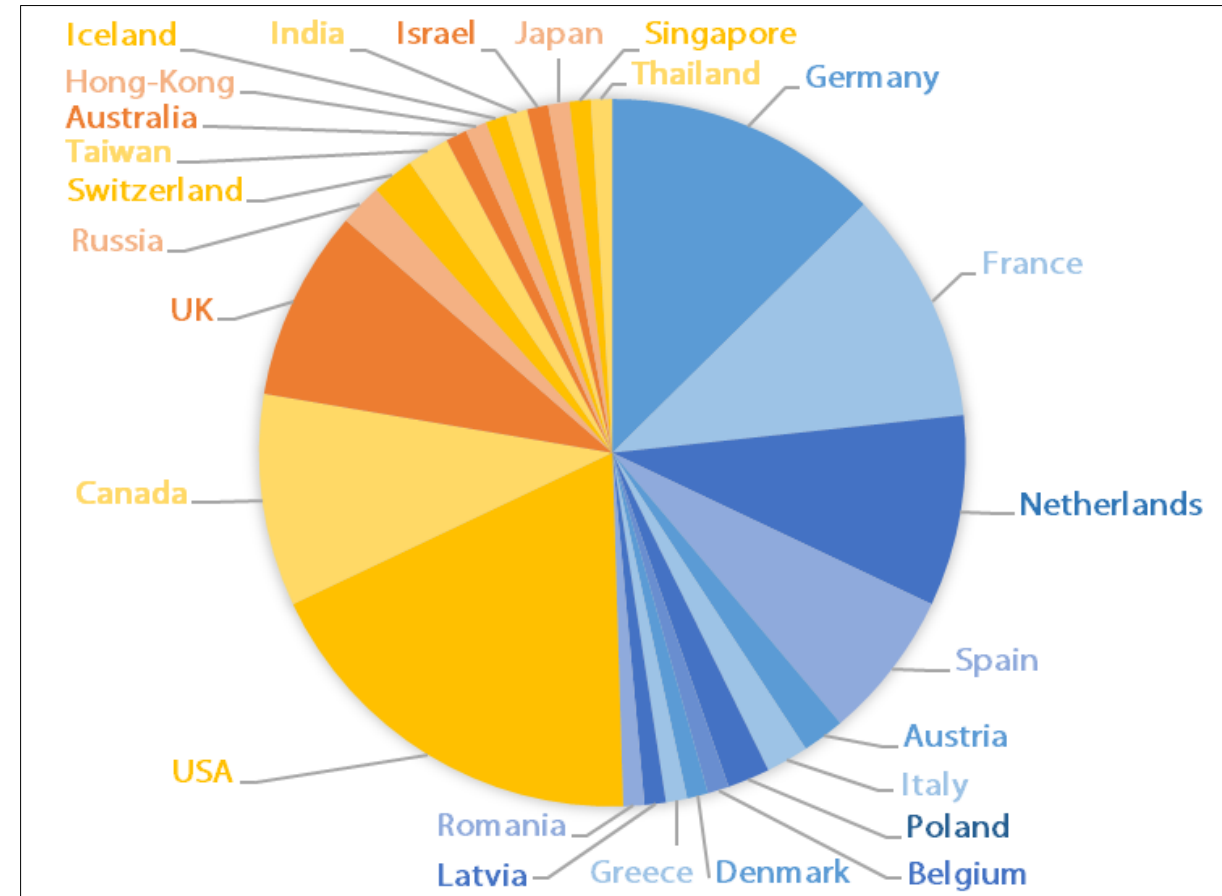
Methodology

- The primary aim was to document the progressive entry of firms into the plant-based seafood substitutes' market, using a three steps approach:
 - Analysis of peer-reviewed articles, institutional documents and reports,
 - Exploration of the World Intellectual Property Organization (WIPO) database <--> novel product < patents
 - Web scrapping → language issue <--> Colleagues
- This approach enabled the development of a database that fully describes the products supplied by each of the firms identified.

9.	WO/2025/034831 SURFACTANTS FOR CLEANING PRODUCTS	WO - 13.02.2025
Int.Class	C11D 1/82 ⓘ	Appl.No PCT/US2024/041249 Applicant ADVANSIX RESINS & CHEMICALS LLC Inventor ASIRVATHAM, Edward
<p>Surfactants for use in the formulation of detergents, foaming agents, emulsifiers, and degreasers. Some aspects of the disclosure include formulations suitable for cleaning and/or condition fabrics including upholstery. Some formulations are suitable for in home or commercial dry cleaning. Some of the formulations may be suitable for cleaning hard surfaces including plastic surfaces and surfaces with food contact. Certain of the other formulations may be suitable for cleaning surfaces used in food processing, food stuff themselves, and in surfaces of healthcare settings.</p>		

State of play

- Countries involved; species imitated; ingredients used; production methods
- The study has identified **102 companies**, supplying **228 different products**.
- These companies are based in **26 countries**, including **12 EU Member States**, which account for around **47% of the firms** listed.



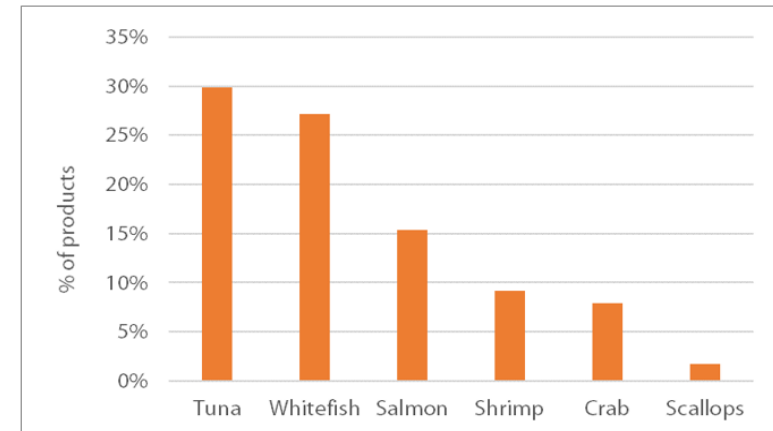
State of play

- Companies involved: key trends
- **Large agrofood companies** have recently entered the market (this includes for instance Nestlé, Birdeye, Unilever, Gardein)
- While initially the products were mainly distributed in specialised shops and online, they are now **supplied by major retailers**, whether in North America (e.g. with Tesco) or in the EU (e.g. Carrefour, Aldi, Spar, Auchan / Alcampo, Delhaize)
- **Seafood processing companies** are progressively diversifying their supply with the development of plant-based products (e.g. Thai Union with John West and Petit navire; Insuperabile; Karavela)

State of play

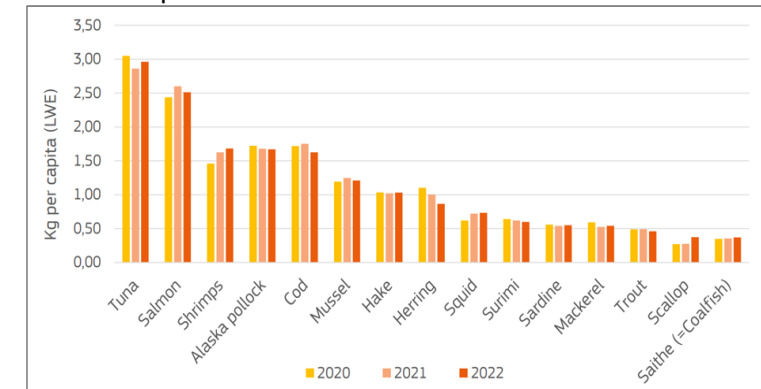
- Main species imitated
- The main species imitated are **tuna, whitefish** (for fish finger-like products), **salmon, shrimp and crab** (with crab cake and similar products mostly sold in the North American market), which account for around 78% of the 228 products listed in our database.
- These **most-imitated species** are also the **most-consumed species** in the EU. This finding shows that the production of plant-based substitutes mirrors the actual consumption of genuine seafood products → **competition**

Main species imitated



Source: Own elaboration from our database

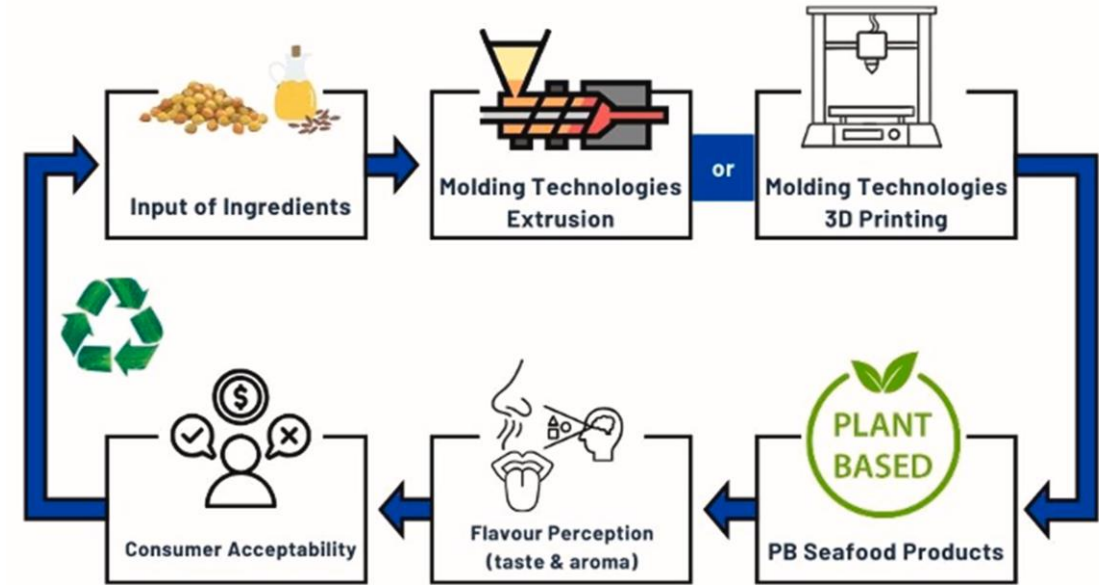
Main species consumed in the EU



Source: EUMOFA, 2024

State of play

- Main ingredients
- Soy, peas and **wheat** are the main sources of protein → allergens
- **Additives** are always needed, which can include salt, **fat** or other ingredients, which in general are **not in line with the characteristics of authentic seafood** products.
- Plant-based seafood substitutes are the result of a highly complex **industrial process**
 - several steps, including **extrusion**, electrospinning, wet spinning and **3D-printing**
 - environmental footprint associated with the transport of (mostly **imported**) ingredients (e.g. konjac for imitated shellfish) and high-energy consumption may **challenge** the organic or vegan nature of the products.



Main steps involved in the development of plant-based seafood alternatives (Abotsi et al. (2024))

Labelling issues

- Regulatory frameworks

Seafood products must abide by the **marketing and labelling rules** laid down under Article 35 of Regulation 1379/**2013** on the Common Market Organisation (the **CMO Regulation**) **AND** respect the rules laid down under the Regulation 1169/**2011** on Food Information to Consumers (the **FIC Regulation**).

Plant-based substitutes **only** have to comply with the **FIC Regulation**, except if made from seaweed or algae.

Prescriptions on fair information practices laid down under Article 7 of the FIC Regulation provide that “***Food information should not be misleading***”, inter alia, as to the **nature** and the **identity** of the food (Paragraph a) or **by suggesting, by means of the appearance**, the description or pictorial representations, the **presence of a particular food or an ingredient** which actually has been **substituted** with a different one.

Labelling issues

- Potential non-compliant practices



Labelling issues

- Examples of invented names

Aubergeel

Buñuelos Vacalao (tapas)

Cap Végétal - Emietté Mariné

Cap Végétal - Salade d'émietté végétale

Cavi-art® - kelp caviar

Crispy chili shrimpz

Crispy coconut shrimpz

Crispy lemon shrimpz

Delicias de Vegatun

Filet Atlantik Tofu aux algues de la mer

Filet XOXO

Fishless Fingers Quorn

Food·art® Seaweed pearls – Flavour pearls

F'sh filets Happy Tyuna

Kalamariz

Kiss kiss nuggets

Merlvza

Mini cr'b cakes Mini Hug Filets

Mini Hug Filets d'Onami Foods Not-fish

bouillons cubes

Ocean burger

Ocean Steaks

Omni tuna

Plain shrimpz

Plant Based Tunah

Plant Zalmon Sashimi

Labelling issues

- Potential non-compliant practices
- Based on our survey, **45%** of the products use **invented seafood-related names**, often with little information to provide a fully descriptive denomination.
- In **57%** of the cases, a direct reference to the name '**fish**' or '**fish species**' is made, with 13% of the cases referring to both invented name and fish species name.
- → Although the FIC Regulation might be considered sufficiently prescriptive to avoid misleading practices, **interpretations** and **actual controls** by national agencies may differ between Member States. This might call for **further clarification** regarding the labelling practices, as revealed by the current French and German initiatives, as well as the recent ECA special report about food labelling in general.

Policy recommendations

- In general, **forbidding the use of the commercial designation of aquatic species** for a product that does not contain seafood would clearly avoid misleading practices.
 - This recommendation would be in line with the 2017 judgement of the European Court of Justice that ruled against the use of dairy denominations for plant-based products.
- As for products using invented names, **additional information should be required** to fully comply with Article 36 of the FIC Regulation, especially when the ambiguity generated by the name is reinforced by the use of a picture imitating the genuine corresponding seafood product.
- A possibility to further facilitate both the marketing strategies of the producers and the consumers' choices could be to **impose the name of the main ingredient(s) used**, as suggested current marketing practices in the EU agrofood sector (see Fleury Michon's example).



