

Sustainability in Olive Oil Processing and Commercialization: The Growing Role of Regulation and Certification

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Food sector definition

A production chain is a series of processing operations that can be separated from each other and **linked technically**. These operations give rise to a set of economic and commercial relations, which themselves lead to strategies on the part of the actors in the sector (Morvan 1991)





Food sector organisation: case of olive oil sector



Material and information flow.

Requirements flow.

Basic concerns regarding food safety for olive oil consumers

Microbiological hazards

1

Natural chemical pollutants

4

Pesticide residues

2

Falsification

5

Classic contaminants

3

Emerging contaminants

6



Client and consumer expectations and perceptions for olive oil

Classic aspects:

- Food safety
- Product physicochemical and organoleptic properties



Emerging aspects:

- Emerging food safety aspects
- Transparency and authenticity
- Sustainability

Translation of client and consumer expectations and perceptions onto markets

Domestic market context vs international markets context:

Turkish legislation is similar to EU legislation



Turkish consumer behavior:

- Purchasing olive oil directly from mills
- Specific organoleptic requirements

Legislation of the destination country

Requirements of retailers



Translation of client and consumer expectations and perceptions onto markets

International legal requirements

- In the future international legal requirements will be focused on both **food safety and sustainability**
- The severity, details, and application delay of requirements are influenced by each country and market.

Translation of client expectations and perceptions for OO onto the markets

International market requirements



In the future retailers' requirements will be more focused on food safety, sustainability and especially how to transmit these requirements along the food value chain



Main retailers

Specifications

100% of the specifications pressure



Is the Turkish olive oil sector ready for these challenges?

Short-term food safety challenges

International legal requirements: case of EU

Challenges

European legislation on Mineral Oil Saturated Hydrocarbons (MOSH) and Mineral Oil Aromatic Hydrocarbons (MOAH)* in olive oil is changing, **new limits will be applied from 1 January 2027**

(Regulation (EU) 2023/915)

* Recent research : MOAH is mainly caused by harvest phase.

Actual situation

- Limited analytical testing on the Turkish market: not always accessible for small producers
- Lack of visibility on the presence of these contaminants in Turkish olive oil
- Application of GMPs is not systematically ensured along the olive oil value chain

Short-term challenges related to sustainability

International retailers' legal requirements



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Challenges

- Food safety culture requirement
- Digitalisation and traceability
- Food defense and food fraud reinforcement
- Enhanced risk-based approach with Integration of **new risks**: allergens, **supply chain and migration (packaging)**

Actual situation

- There is a limited number of companies certified according to GFSI standards (based on available data)
- Limited use of digitalisation and traceability techniques (blockchain, digital batch records, geolocation data, etc.)
- Lack of visibility related to the supply chain and food safety in the packaging of olive oil value chains

Short-term challenges related to sustainability

International retailers' legal requirements.



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Challenges

Increased Supply Chain Requirements:

- Supplier Qualification
- Enhancing Upstream / Downstream traceability
- More frequent supplier audits
- **Increased pressure across the entire value chain**

Turkish olive oil sector needs to be prepared for these challenges across the entire value chain

Short-term challenges related to food safety

Progressive application of new per- and polyfluoroalkyl substances (PFAS) regulation

Over 10,000 synthetic chemical compounds. Highly persistent, they have been used for over 60 years for their waterproofing, stain-resistance and non-stick properties



Medium-term challenges related to sustainability

Progressive application of new recyclability of PET Plastic Bottles

Implementing rules: 2026
Application: January 1, 2030

30% minimum recycled content for PET Plastic Bottles

Need to engage with packaging suppliers



Key Trends in the International Olive Oil Market

➤ Food safety

The olive oil sector is evolving from a compliance-based mindset toward a model driven by:

- strong corporate culture
- real-time risk management
- transparency and full traceability

➤ Sustainability

The sector is progressively transitioning toward more sustainable practices across the entire value chain. Key trends include:

- reduced water and energy consumption during extraction
- waste valorisation and pomace recovery
- implementation of additional sustainability certifications

In conclusion

- For olive oil processing, packaging, and commercialisation, market conditions depend on the **specific context of each country**
- Based on our visits and interviews, we conclude that the Turkish olive oil sector:
 - is primarily oriented toward the domestic market, while showing a strong ambition to expand into export markets in the near future, **particularly through private label brands**
 - consists of companies of different sizes and capabilities, with varying levels of resources and industrial maturity
 - still has limited analytical and technical infrastructure to fully support the sector's transition and strengthen its positioning in international markets