Food and Agriculture Organization of the United Nations

European Bank for Reconstruction and Development

MAIN INNOVATIONS ADOPTED IN PRODUCT CONTROL, CONSUMABLES, AND PACKAGING

30th March 2026

Dr. Lorenzo LUNETTI QC-R&D Mng - Monini S.p.A


INTRODUCING MONINI
Spoleto - Umbria - Italy
A history that began over 100 years ago in Spoleto, Umbria
- the “Green heart of Italy” –
DAL 1920
MONINI
UNA SPREMUTA DI OLIVE

INTRODUCI

Spoleto - U

An history that began over 10
- the “Green h

DAL 1920
MONINI
UNA SPREMUTA DI OLIVE

Monini today:

€ 257 million
consolidated
turnover 2024

> 23 million
litres produced
in 2024

84%
turnover
from extra virgin olive oil

50%
turnover 2024
abroad

61
countries where
Monini is distributed

96%
turnover generated by
Monini branded products

146
our people
in Italy and abroad

DAL 1920
MONINI
UNA SPREMUTA DI OLIVE

THE STEPS and EVOLUTION OF SUSTAINABILITY

In December 2019 strongly linked with ONU agenda for a sustainable development, UE presented the "GREEN DEAL" and in 2020 was presented The FARM to FORK strategy, marking a key step for the practical implementation of the European Green Deal in the agri-food sector.

The Farm to Fork strategy is the heart of the European Green Deal and represents the European Union's action plan to make food systems fair, healthy and environmentally friendly.

Farm to Fork is not just a list of prohibitions, but a systemic vision that connects people's health to that of the planet and the economy, in line with the UN Sustainable Development Goals.

The strategy aims to reduce the ecological impact of food production, Binding targets for 2030 include:

- **50% reduction in the use and risks of chemical pesticides**
- **Increase organic farming to cover at least 25% of EU agricultural land**
- **50% reduction in sales of antimicrobials for farmed animals and aquaculture.**

THE STEPS and EVOLUTION OF SUSTAINABILITY

As consequence of GREEN DEAL and FARM TO FORK in October 2020 UE presented the CHEMICALS STRATEGY FOR SUSTAINABILITY: a pillar of the Green Deal aiming for a "toxic-free environment". It is the most ambitious reform in the European chemicals sector in the last 20 years.

Europe with CHEMICALS STRATEGY FOR SUSTAINABILITY has adopted a stricter approach based on the precautionary principle, which has led to:

- Revision of the REACH Regulation: The largest regulatory update is underway to ban the most harmful substances (carcinogenic, mutagenic, or toxic to reproduction) in consumer products.
- Focus on endocrine disruptors: Studies on substances that alter the hormone system have increased, leading to new identification and classification criteria.
- Restriction of "groups" of substances: Instead of studying one molecule at a time (a very slow process), the ECHA (European Chemicals Agency) is now evaluating entire chemical families (such as PFAS); EFSA is evaluating the toxicity for MOSH and MOAH.
- Assessment of the "cocktail effect": For the first time, how a mixture of different chemicals at low doses affects human health is being seriously studied, overcoming the old concept of safety based on a single substance.

MOSH-MOAH (MOH) CONTAMINATION:

MOSH (Mineral Oil Saturated Hydrocarbons) and MOAH (Mineral Oil Aromatic Hydrocarbons) represents a serious heath-risk.
MOAH represents the main risk due to their potential mutagenicity and genotoxicity. They have been studied by EFSA since 2012

Contamination can occur at various stages of the supply chain:

- Packaging: This is the main source. They often come from recycled paper and cardboard printed with mineral oil-based inks that migrate into food (especially dry foods like pasta and rice).
- Production: Lubricants used in agricultural or industrial machinery, dust-removing agents, or release agents.

In 2022, the European Commission "SCOPAFF" issued a recommendation establishing alert limits for MOAH in food. If a product exceeds these thresholds, Member States must investigate the causes and, if necessary, withdraw the product from the market.

the Commission applied the ALARA (As Low As Reasonably Achievable) principle, that is, the "lowest reasonably achievable" limit

ALARA is a precautionary principle, and a fundamental criterion used by health authorities to manage risks associated with hazardous substances for which it is not possible to establish a safe threshold, such as carcinogenic or genotoxic contaminants.

MOSH-MOAH (MOH) CONTAMINATION:

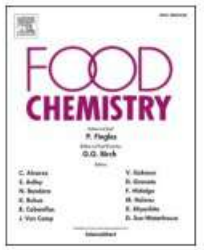
MONINI has been monitoring MOH since 2017, and in 2018, its QC laboratory was equipped with the appropriate instrumentation to quantify MOSH-MOAH following the first standardized method EN 16995:2017.
In the 2020-2021 olive oil campaign, it participated in a major trial organized by the two national bottling federations and coordinated by the University of Udine, Prof. Sabrina Moret, one of the leading MOSH-MOAH experts in Europe.
The trial involved 17 olive supply chains.

Food Chemistry 406 (2023) 135032

Contents lists available at ScienceDirect

Food Chemistry

journal homepage: www.elsevier.com/locate/foodchem



A study on the impact of harvesting operations on the mineral oil contamination of olive oils

Luca Menegoz Ursol [a,*], Chiara Conchione [a], Daniela Peroni [b], Andrea Carretta [b], Sabrina Moret [a]

[a] Department of Agri-Food, Environmental and Animal Sciences, University of Udine, Udine, Italy
[b] SRA Instruments SpA, Cernusco sul Naviglio, Milano, Italy

MOSH-MOAH (MOH) CONTAMINATION:

Studying every step from olive harvesting to pressing and packaging, the results showed that all the contaminations detected by MOH (7 out of 17) were attributable to the mechanical harvest, which involved the oils and/or lubricants present in the machines. Of note is the fact that if the olives are contaminated, the MOH migrate completely into the resulting extra virgin olive oil, creating an "amplifier effect," increasing their content to at least five times their value in the olives.

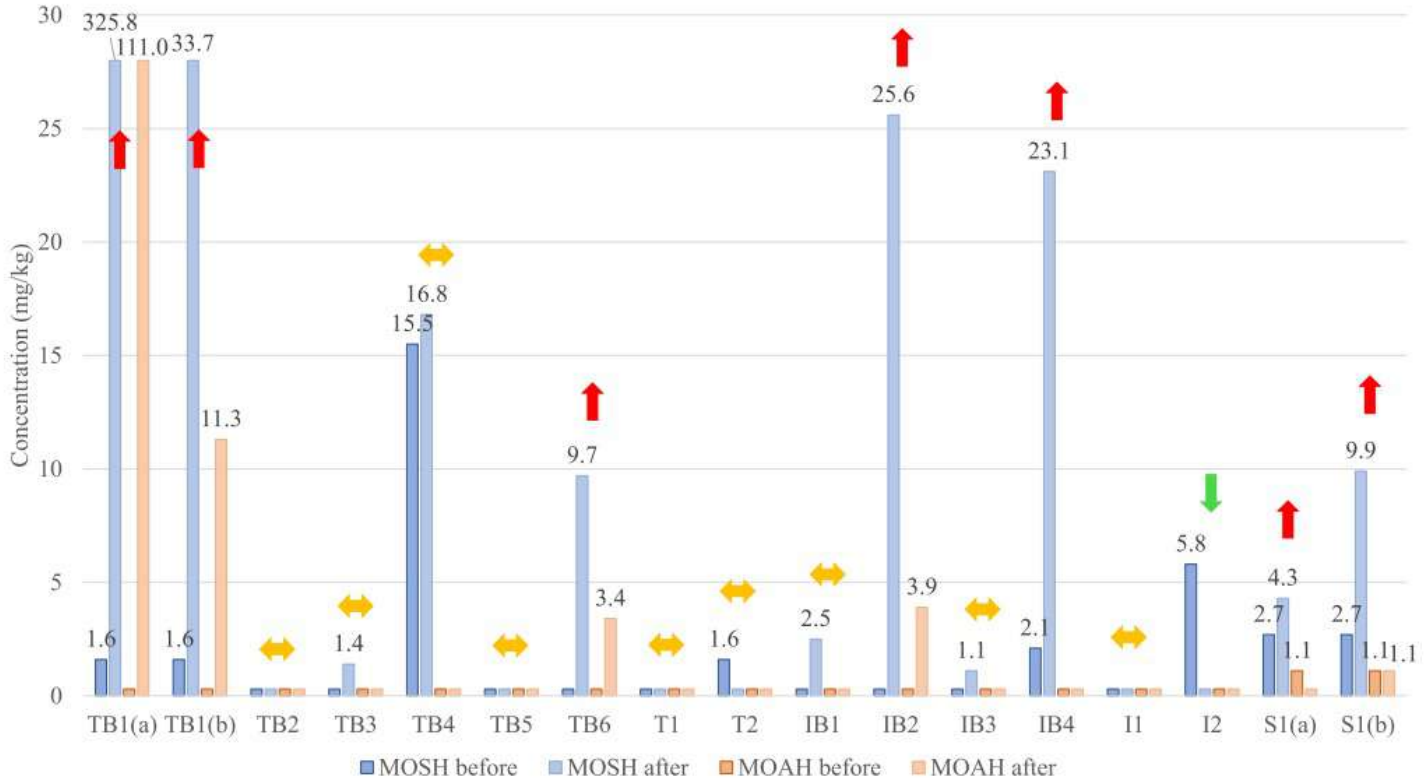


Fig. 1. MOSH and MOAH concentrations of EVOOs from olives sampled before (hand-picked from the trees) and after harvesting operations. Absence of data labels indicates levels below the LOQ (1.0 mg/kg for MOSH and 0.5 mg/kg for MOAH).

MOSH-MOAH (MOH) CONTAMINATION:

MONINI actions:

- In 2022, all agricultural machinery oils and lubricants in MONINI olive groves were replaced with certified MOSH-MOAH-free oils and lubricants.

- Extend MOH's internal monitoring of incoming raw materials to all arrivals. (from 2020 to 2025 the analysis of MOH incrementing from 143 to 1231).

- Provide direct training/sharing to olive growers to raise awareness of the problem and implement appropriate solutions/good practices.

In extra virgin olive oils, the MOH problem can only be solved through prevention, using the right products, starting with the harvest.

CEQ
CONSORZIO EXTRAVERGINE DI QUALITÀ

Conciliare la sostenibilità e la qualità CEQ nella filiera olivicola del futuro

Dialogo e confronto tra portatori di interesse

Fasano, 3 ottobre 2024
Via case sparse snc, ss16 km 867
72015, Speziale di Fasano (BR)

ORARIO	RELATORE	TITOLO INTERVENTO
8.45		Registrazione partecipanti
9.15	**Mauro Meloni** *CEQ*	Introduzione e iniziative CEQ
9.45	**Vincenzo Verdoliva** *L'Officina GBS - Pantaleo Agricoltura - Nicola Pantaleo Spa*	Il modello di sostenibilità della filiera Pantaleo: esperienze e soluzioni
10.15	**Giulia Gervasi** *Segretario Governance della Sostenibilità Monini*	Il modello di sostenibilità della filiera Monini
1045	COFFEE BREAK	
11.00	**Simona Canzanelli** *Ambiente Italia*	Sicurezza alimentare, cambiamenti climatici e sostenibilità: dove sta andando l'olivicoltura
11.30	**Prof. Franco Nigro** *Di.S.S.P.A. Università di Bari*	Protezione integrata e biologica dell'oliveto: situazione attuale e prospettive
12.00	**Prof.ssa Sabrina Moret** *DI4A Università di Udine*	Contaminanti da oli minerali nella filiera dell'olio di oliva: prospettive legislative e buone pratiche agricole per minimizzare la contaminazione

PFAS CONTAMINATION:

PFAS in food have been officially regulated in the European Union since January 1, 2023 (EU) 2022/2388, now incorporated into the Regulation (EU) 2023/915. Limits have been set for particularly exposed animal products, such as eggs, meat (beef, pork, poultry), fish, crustaceans, and bivalve molluscs.

In packaging, the ban on PFAS was officially established by the new Regulation (EU) 2025/40 on packaging and packaging waste (PPWR) definitively adopted in 2024 and in August 2026 the ban on placing on the market packaging in contact with food that contains PFAS in concentrations above specific technical thresholds will come into force.

MONINI actions:

- Internal controls: monitoring of products packaged in various types of packaging.
- Advance request for new Declarations of Conformity (with analytical evidence) from all packaging suppliers who already comply with the PPWR regulation.

PACKAGING INNOVATION-EVOLUTION:

2024 RESULT	TARGET 2028	TARGET 2030
59% recycled glass in Monini UVAG and GREEN 1l and 750ml bottles (average post-consumer value)	80% recycled glass in Monini UVAG and GREEN 1L and 750ML bottles (average post-consumer value)	100% recycled glass in all bottles Monini UVAG and VERDE
93% PET capsules with35% recycled material	100% PET capsules with 50% recycled material	100% PET capsules in our bottles with 100% recycled material
50% recycled PET in bottles MONINI branded Squeeze (post-consumer value)	100% recycled PET in bottles MONINI-branded squeeze bottle (post-consumer value).	100% recycled PET in all Monini-branded plastic bottles
65% recycled cardboard in packaging used	80% recycled cardboard in the packaging used	100% recycled cardboard in the packaging used

LAST UPDATE:

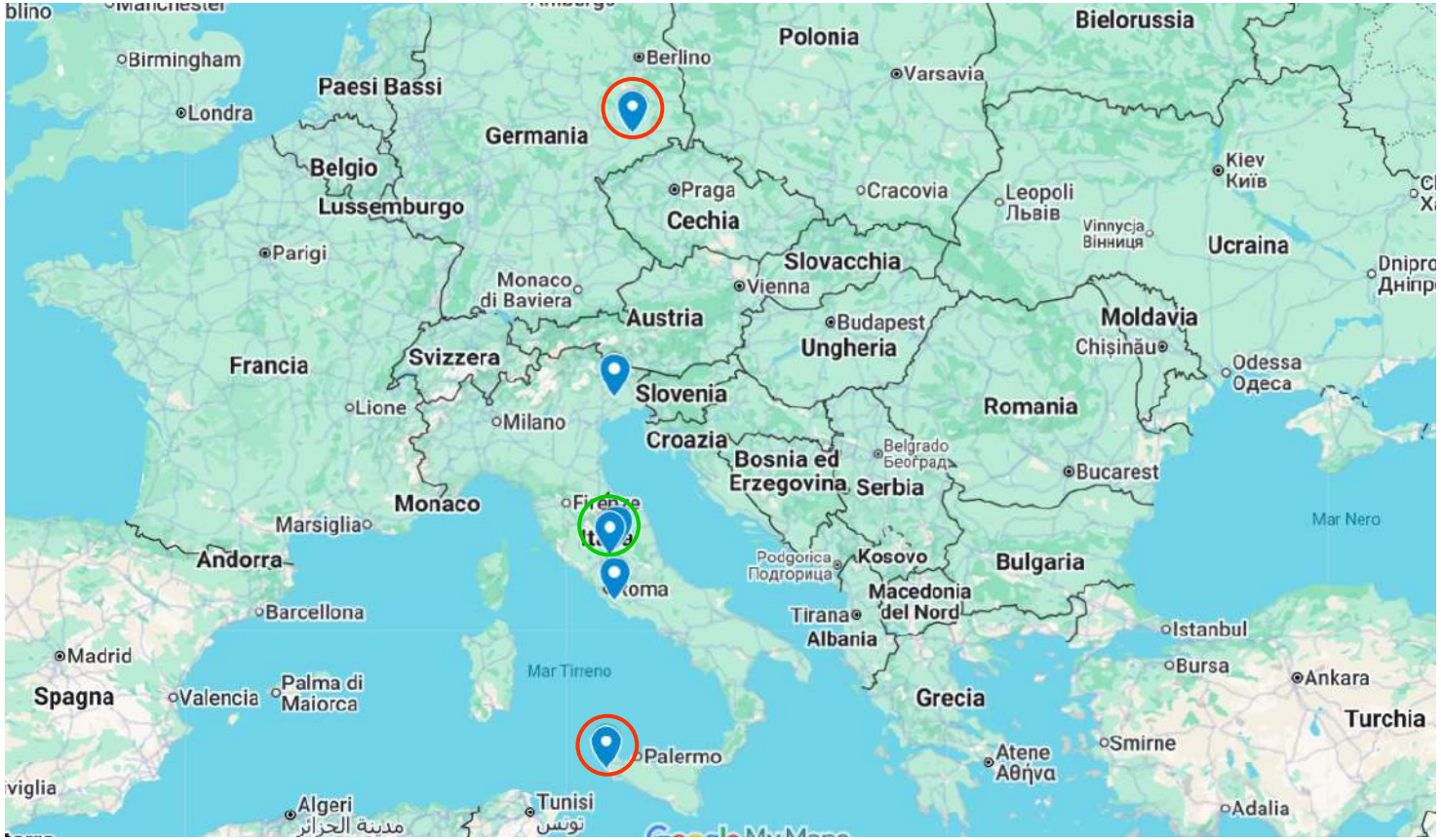
- **Second half 2025: MONINI reach the 100% recycled PET for MONINI squeezable**
- **Second half 2026: MONINI will reach 100% recycled glass for UVAG bottles.**

Recycled Glass: Case history

For MONINI the GLASS is the most important packaging material (in 2025 35 M bottles)

We could have reached the 100% recycled target earlier, but we are pursuing an effective sustainability policy and not just one dictated by claims.

Obtaining a 100% recycled product, but at a great distance from MONINI, would have meant a significant increase in transportation costs, resulting in CO_2 emissions. We worked with the main supplier to eliminate the most distant locations and prepare the closest ones for our production.



Grazie!

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