

EU project OLEUM: Assuring the quality and authenticity of olive oil

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Over four years, the OLEUM project will develop new and improve existing analytical methods for detecting olive oil fraud, and improve technology sharing by establishing of a wide community of laboratories and institutions involved in quality control. Improvements in the quality, safety and authenticity of olive oils will boost consumer confidence and ultimately enhance the competitiveness of the EU olive oil market.

Olive oil adulteration

Europe is currently the largest producer of olive oil accounting for more than 70% of the world's production. Nevertheless, non-EU countries are expanding their domestic production, increasing the competitiveness of the global olive oil market. This increased competitiveness, combined with expanding markets and a lack of efficient and harmonised analytical methods for detecting olive oil fraud has led to significant weaknesses that can be exploited by counterfeiters. The high price of olive oil, the distinctive sensory profile, and its reputation as a healthy source of dietary fats also makes olive oil a target for adulteration or illegal blending with other vegetable oils or deliberate mislabelling of less expensive classes of olive oil. As a result, olive oil adulteration for the purpose of financial gain has become one of the biggest sources of agricultural fraud in the EU.

Aims of the OLEUM project

The overall objective of OLEUM is to better guarantee olive oil quality and authenticity by empowering detection and fostering prevention of olive oil fraud. This overall objective is supported by 3 strategic objectives:

1. To develop new and/or improved analytical methods for assuring the quality and authenticity of olive oil.
2. To develop the OLEUM databank - an online integrated quality assurance database of olive oil analytical methods and data related to chemical and organoleptic characteristics (e.g. related to the sensory experience such as taste, odour, texture).
3. To develop and support a worldwide community of proficient analytical laboratories involved in the analysis of olive oil, thus establishing a wide OLEUM Network.

Expected outcomes of OLEUM research

The consortium has identified four main areas of improvement that need to be addressed through research and development in the olive oil sector. OLEUM will carry out research activities and deliver outcomes in these four areas:

- **Legislative and regulatory:** Despite regular revisions, the existing regulatory framework is not exhaustive or adequately effective at preventing common and new types of fraud. OLEUM will develop an array of potential solutions to aid EU and international regulators and policy makers to improve regulatory standards.
- **Analytical:** OLEUM will revise existing analytical methods for verifying olive oil quality and detecting fraud by identifying drawbacks and improving performance and efficiency (e.g improved, sensitivity and usability, decreased time and cost of analysis). The project will enhance methodology for organoleptic assessment by improved reproducibility and developing a quantitative support procedure. OLEUM will also aim to identify novel analytical markers for detecting illegal blends, measuring olive oil freshness and best-before quality, and for monitoring compliance with labelled geographical origin.
- **Harmonisation and coordination:** OLEUM will suggest improvements to international regulations including potential new methods and reference materials and promote technology transfer to a wider analytical community. A web-access user-friendly OLEUM Databank will store consolidate information on existing and emerging fraudulent practice and research generated by OLEUM and from existing reliable but fragmented sources.
- **Consumer and market confidence:** OLEUM will improve consumer and market confidence in olive oil products by developing a simple, reliable and proactive multi-stakeholder dissemination strategy to help preserve the image of olive oil on a global scale. The strategy will address tailored communication to the public and transfer of knowledge and technical dissemination to industries, the scientific community and regulatory bodies.

About the consortium

OLEUM project started on 1st September 2016 and will run for four years. The project is coordinated by

Prof. Tullia Gallina Toschi of the Department of Agricultural and Food Sciences of the University of Bologna, Italy. Twenty partners covering fifteen countries, bring together competences from food analysis, food legislation, industrial equipment engineering, bioinformatics, communication and knowledge exchange.

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