

The OLEUM Project



Since September 2016, the OLEUM project develops new and improves existing analytical methods for detecting fraud and ensuring quality of olive oil.

Aims and objectives

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 three strategic objectives:

- To develop new and/or improved analytical methods for assuring the quality and authenticity of olive oil.
- To develop the OLEUM databank - an online integrated quality assurance database of olive oil analytical methods and data related to chemical and organoleptic characteristics.
- To develop and support a worldwide community of proficient analytical laboratories involved in the analysis of olive oil, therefore establishing a wide OLEUM Network.

The OLEUM consortium is comprised of 20 partner organizations, bringing together competences from food analysis, food legislation, industrial equipment engineering, bioinformatics, communication and knowledge exchange. The project is coordinated by Prof. Tullia Gallina Toschi of the Department of Agricultural and Food Sciences of the University of Bologna, Italy.

The research carried out by OLEUM will address all aspects of legislation, regulation, analysis, coordination, consumer and market confidence.

Legislation & Regulation

Despite regular revisions, the actual regulatory framework is not exhaustive and updated to effectively prevent common and new fraud and does not seem adequately protective towards consumers and market. An increasing demand for olive oil occurs from IOC (International Olive Council) non-member countries, therefore a complete harmonization among CODEX, IOC and EU regulations on trade standards and classification is required to avoid disturbance of the market. OLEUM will develop an array of potential solutions to aid EU and international regulators and policy makers to improve regulatory standards.

Analysis

Although many organoleptic, physical and chemical methods to detect olive fraud and assess its quality are available in CODEX, IOC and EU regulations, proper solutions for detecting illegal blends with soft deodorized olive oils and other vegetable oils have not yet been found. Drawbacks of current methods include a lack of performance and/or efficiency and an absence of markers for fighting specific and emerging types of fraud. The inherent complexity of sensory perception means that organoleptic assessment by tasting panels cannot be replaced by instrumental methods. Three main issues need to be solved:

- Reproducibility of results among different panels (lack of tailored, titrated, reference standards)
- Critical attribution of the category when, e.g., a defect is border line (near the threshold of perception)
- Costs (from eight to 12 assessors are required for each session) and assessors fatigue (four samples, at the most, can be evaluated in each session with a maximum of three sessions per day)

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 and health claims.

Harmonization & Coordination

There is an inadequate level of harmonization between analytical methods due to:

- a lack of reference materials (e.g. for organoleptic assessment) and interchangeable technical protocols
- a lack of international cooperation in terms of technical approach on quality and fraud issues
- a lack of standardized approaches and effective sharing of olive oil analytical data by the international scientific community

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 & Market Confidence

A lack of guarantee in quality and authenticity of olive oil is frequently reported all over the world. Concrete instances of olive oil fraud, combined with poor scientific communication can generate high-profile media scandals, both real and overstated. The scandals generate a lack

of consumer and market confidence, promoting the perception that olive oil is frequently inauthentic or worse, unsafe. Ultimately this increases the vulnerability of the olive sector, disturbs the market, and leads to a deterioration of the reputation of olive oil as a high quality product. Indirectly it can also damage the whole EU food supply chain and impact EU industrial competitiveness. 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.

Further information and contact

Dr. Tullia Gallina Toschi
Department of Agricultural and Food Sciences
University of Bologna, Italy
Tel: +39 051 20 9 6010

tullia.gallinatoschi@unibo.it

www.oleumproject.eu