Service Specification for Olive Oils Testing

Eurofins offers olive oil analyses in accordance with legal regulations and European standards as well as individual requirements and manufacturers- and suppliers-specific problems. The following analyses are an extract from the performance spectrum of the services in the olive oil sector.

Special Analyses for Olive Oil

Olive Oil Identity

Determining the identity of olive oil is used to clarify whether it is actually a pure olive oil. It is also possible to obtain first findings about the category of the olive oil submitted, such as, for instance, extra virgin olive oil.

- Fatty acid composition, including *trans* fatty acids
- Sterols composition, including erythrodiol and uvaol
- Triglyceride composition
- 2-glyceryl monopalmitate
- ECN 42

Olive Oil Quality

The quality parameters in olive oil analysis are used, among other things, to assess the degree of freshness and provide further information on the olive oil category (including thermal treatment, if applicable).

- Peroxide value
- Free fatty acids
- K-values (UV absorption at 232 and 268 nm)
- Ethyl ester (alkyl ester) including waxes
- Diacylglycerols
- Pyropheophytins
- Stigmasta-3,5-diene

Organoleptic Testing

The organoleptic testing is the essential part of olive oil assessment. Eurofins offers a diverse range of tests in this area:

- Eurofins panel with 8 – 12 testers as per regulation COI/T.20/Doc. No 15 (Eurofins internal)
- Hanseatic olive oil panel (HOP) with 8 – 12 testers as per regulation COI/T.20/Doc. No 15, including external testers
- Tester group with at least three testers (modified as per COI/T.20/Doc. No 15)

To take it beyond the regulation requirements, Eurofins also offers a harmony evaluation.

Authenticity

The olive oil origin can be determined by 1H-NMR spectroscopy. Currently, olive oil from the most important countries of origin Italy, Spain and Greece can be analysed. The method is accredited according to ISO 17025.

Residues and Contaminants

The following analysis parameters help to check contamination during production, processing and storage of olive oil:

- Organic contaminants
  - Polycyclic aromatic hydrocarbons (PAHs)
  - Plasticisers, such as phthalates and adipates
  - Mineral oil (MOSH/POSH/MOAH)
  - Solvent residues, such as VOC, BTEXS
  - Dioxins, furans, dioxin-like PCB
- Inorganic contaminants
  - Heavy metals, such as cadmium, lead, mercury
- Pesticides (e.g. pyrethroids, organochloro- and organophosphorus pesticides, poly-chlorinated biphenyls, nitrogen-containing pesticides)

Ingredients

Analyses of selected ingredients serve to clarify nutritional physiological aspects.

- Nutrients
- Biophenols (polyphenolic ingredients)
- Vitamin E

Other Services

- Labelling checks, including international
- Sensory and analytical testing of relevant storage
- Sensory, chemical and analytical testing of packaging materials
- Development of customer-specific testing methods

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