



Olive-oil screening

Comprehensive quality check with NIR spectroscopy

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maxfry[®]
good for food

Quality under control



Your advantage

- Fast, low-cost quality control
- Comprehensive assessment of numerous analytical parameters
- Analytical results with a statistical probability of more than 90%
- Globally unique proof of adulterations, misuse and irregularities in the supply chain (examination of batch identity)
-

Sounds interesting?

Please get in touch with us and take advantage of Maxfry® advanced olive oil screening: info@maxfry.de or +49 (0) 2331 - 39 69 71 0.
We look forward to receiving your enquiry!

Maxfry® GmbH
Grabenstraße 3 | 58095 Hagen
Germany

Fon +49 (0) 2331 - 39 69 71 0
Fax +49 (0) 2331 - 39 69 71 2
Mail info@maxfry.de
Web www.maxfry.com



Olive oil – a trend food

Olive oil is an expensive food product with a steadily growing market. Adulterations and fraudulent labelling are common practice. Therefore the assessment of the authenticity and geographic origin of extra virgin olive oils plays a vital part for producers,

regulatory authorities, oil suppliers and consumers. The adulterations most frequently detected in extra virgin olive oil are blends with olive oils of inferior quality, refined (deodorized) olive oils or even other types of oil.

Blunt analytical tools

The EC regulation 2568/91 proposed a number of methods for qualitative and quantitative analysis, in order to classify olive oils and identify falsifications. The restriction of standard methods to the identification of individual markers as indicators of falsification tempts forgers to simply remove these markers (stigmastadiene, alkyl ester, ECN42, trans-fatty acids, various sterols or fatty acids) and to create clever blends which

comply with the limit values. Another major deficiency in quality control is the fact that these standard methods have so far never been updated to the present state of the art. The official standard methods are unable to ensure sufficient authentication and characterisation of olive oils. Adulterations and false statements of origin thus cannot be recognized effectively or even detected at all.



Maxfry® uses innovative instrumental analytics

Rapid technological progress in the fields of statistical tools and instrument technology has produced tools which offer quick, reliable access to the information necessary for effective and comprehensive quality control. Spectrometric processes such as NIR spectrometry (near-infrared spectrometry) enable the identification of numerous analytical parameters using just a single measurement.

Since 2011, Maxfry® GmbH works in scientific projects to substitute the commonly used olive oil analytics by more meaningful and cost effective methods. Some 5,000 samples were tested using standard analysis procedures over a wide range of parameters, including sensory panel tests, fatty-acid and triacylglycerol distribution, K-values, peroxide value, monomeric oxidized TAGs, anisidine value, free fatty-acid content, 1,2- to 1,3-diacylglycerol ratio and pyropheophytine A, in order to establish a

total of some 100,000 analytical results. The results were used as reference parameters to develop more than 30 new NIR methods. These include checking the fruity, bitter and spicy sensory profile, detection of sensory defects, determination of oxidation stability, biological age, detection of adulteration through blending with other types of vegetable oils down to a share of 10%, recognition of soft-deodorized olive oils and identification of the geographic origin within Europe with a high probability of 95 to 100%. The NIR-spectrometric method of analysis developed by Maxfry® is the only method worldwide which is capable of detecting adulterated olive oils with a correctness of more than 95%, and of classifying the quality of olive oil including its sensory profile and its defects. Just one measurement procedure (in triplicate) which takes less than two minutes is necessary to obtain all required analytical information.



Olive-oil screening with NIR

Maxfry® NIR olive-oil screening is a fast, efficient and reliable method of quality assurance for olive-oil distributors and producers. As a customer of our service, you will receive detailed information about the characteristics, authenticity, quality and geographic origin of the sample submitted at minimal expense in terms of time and

money. Normally, within 48 hours of our receipt of an original, sealed sales package (or other suitable sample container with a minimum content of 50 ml), you will receive a detailed written evaluation in the form of a standardised protocol first via email, then as an original printout.

The analysis protocol includes the following information:

Organisational details
(date of receipt, sample declaration of ingredients, key figures, type of packaging, etc.)

Aroma profile (fruitiness, bitterness, spiciness, harmoniousness)

Information about sensory defects, if any

Information about adulterations, if any

Information about quality based on analytical key figures and relevant limit values

Details of fatty-acid distribution for the nutrition table

Determination of the geographic origin by the use of 4 different chemometric methods

Information about the age and residual shelf life of the olive oil based on analytical key figures (best before date)

