

Experience with Fatty Acid Methyl and Ethyl Esters to Assess the Quality of Extra Virgin Olive Oil

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Esters of fatty acids and short-chain alcohols in olive oil have been known for over 25 years. During the last few years, they came more into the focus of the general discussion as markers for the quality of virgin olive oils [1, 2]. Since April 1st 2011, the Commission Regulation (EU) No 61/2011 has applied. This regulation introduces the fatty acid methyl esters (FAMES) and fatty acid ethyl esters (FAEEs) as a new limited parameter to assess the quality of extra virgin olive oil (EVOO). The aim is to detect fraudulent mixtures of extra virgin olive oils with lower quality oils whether they are virgin, lampante or some deodorised oils.

In the period of time between December 2009 and August 2012, 587 EVOOs from the European market mainly produced from olives from Italy, Greece and Spain were analyzed for the content of FAMES and FAEEs in our laboratory.

Our results showed that FAMES and FAEEs are a suitable tool for assessing the quality of EVOOs. With the parameter FAMES and FAEEs, the European authorities have a powerful tool to control the quality of EVOO on the market. In future, lowering the limit could force manufacturers to improve their manufacturing practise and to optimize process steps which lead to alterations of the olive fruits.

References

- [1] Mariani & Fedeli (1986) Detection of extraction oils in pressure ones. Riv. Ital. Sostanze Grasse, 63, 3-17.
- [2] Pérez-Camino et al. (2008) Alkyl Esters of Fatty Acids a Useful Tool to Detect Soft Deodorized Olive Oils. J. Agric. Food Chem. 56(15), 6740-6744.