Advances for a Comprehensive Evaluation of Quality of Virgin Olive Oil: In the Search of Reference Materials

Diego Luis García González[1], Inmaculada Romero[1], Noelia Tena[1], Enrico Valli[2], Ole Winkelmann[3], Paul Brereton[4], Florence Lacoste[5], Alain Maquet[6], Stefania Vichi[7], Lanfranco Conte[8], Alessandra Bendini[2], Tullia Gallina Toschi[2]

[1]Instituto de la Grasa, Sevilla, Spain, [2]Alma Mater Studiorum - Università di Bologna, Bologna, Italy, [3]Eurofins Analytik GmbH, Hamburg, Germany, [4]Fera Science Ltd., York, UK, [5]Institut des Corps Gras, Pessac, France, [6]JRC-Joint Research Centre, Geel, Belgium, [7]University of Barcelona, Barcelona, Spain, [8]University of Udine, Udine, Italy.

Virgin olive oil is a highly appreciated food product whose sensory quality (aroma and taste) is protected by regulation. The current international regulations (e.g. norms from the International Olive Council) stablish the panel test as the standard method. Although this method has proven to be a useful tool to protect quality, different actors in the olive oil sector demand to study some improvements and to provide some alternative analytical tools to support the routine work of a panel test. Thus, there is a particular need for the standardization of a method to be used in the assessment of the organoleptic characteristics based on the existing knowledge on volatile compounds and the development of reference materials. This work is being addressed in the project OLEUM "*Advanced solutions for assuring authenticity and quality of olive oil at global scale*" funded by the European Commission within the Horizon 2020 Programme (2014–2020, grant agreement no. 635690). The starting point is the existing knowledge about the volatile compounds responsible for some of the most common sensory defects (e.g. winey-vinegary). These compounds are being evaluated according to their occurrence in olive oils characterized with sensory defects evidenced by panel test assessment. The frequency in which these compounds are identified in the defective samples and their sensory properties (attributes and odour thresholds) will serve to assign a degree of representativeness of the corresponding sensory defect and their suitability to be used in the formulation of reference materials. In addition to the analytical work, the potential usage of the reference materials is being analysed in order to define better their applicability and their contribution to a better quality control.