

Flash gas chromatography electronic nose as a potential tool for rapid sensory screening of virgin olive oils

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Innovative, rapid and environmentally friendly analytical methods are highly desirable in the quality control of the olive oils, thus a growing interest in their deep investigation exists.

In this research, a wide set of virgin olive oils was sensory assessed (EU Reg. 1227/2016) by six sensory panels, resulting in different commercial categories (extra virgin, virgin and lampante). The headspace volatile profiles of both this set and of training IOC standard references was analyzed by flash gas chromatography electronic nose (FGC E-nose) and the results were subsequently elaborated by multivariate data analysis. The aim of this study was to set-up a screening method by building a reliable predictive model for a rapid discrimination of samples, in particular between “extra virgin” and “non extra virgin” olive oils. Such approach could represent a promising tool for supporting the sensory evaluation of virgin olive oils and reducing, especially within large control laboratories, the number of samples to be subjected to the Panel Test.

This work was developed in the context of 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).