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Chromatrographic fingerprinting for food authentication

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Food authentication involves the confirmation of the stated specifications as true. This is a needed requirement because the authentication is bound to the truthfulness and food is considered authentic when it is not affected by any fraud. There are different strategies to perform food authentication. These strategies are dependent of the scientific-technical problem and the type of available analytical information. There are three analytical approaches to study food authentication: (i) to obtain the chemical composition of the food (chemical approach); (ii) to work about biomolecular level (biomolecular approach); (iii) to focus about stable isotopic composition of certain atoms (isotopic approach). Chemical approach are divided in different methodologies: (a) analytical data, which represent the chemical species and chemical markers; (b) compositional profiles, which describes constituents and it gives specific information on particular chemical components; (c) instrumental fingerprints, which contain unspecific and non evident information which should be extracted by chemometric tools. The fingerprinting methodology is based on treating the entire or a part of the instrumental signal as a whole, without identifying or quantifying each compound. There is a great benefit which is the decreasing in time of analysis but it requires the use of chemometrics tool, are essential to extract behaviours, trends or significant information from the data.

The aim of this communication is to explain the use of chromatographic fingerprinting for food authentication with different chromatography techniques and the advantages of this methodology.

Biography

Valverde-Som and Jimenez-Carvelo are PhD students in Analytical Chemistry; González-Casado is currently Tenured Professor of the Department of Analytical Chemistry; Ruiz-Samblás is PhD and researcher hired by the University of Granada; Cuadros-Rodríguez is Full Professor of the Department of Analytical Chemistry. They work in the same research group "Analysis in Food and Environment". The members of the research group have published more than 150 papers and they work in different projects about virgin olive oil.

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