CO-11

Ambient mass spectrometry of food without sampling preparation using high resolution, exact mass tof detector

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Abstract
Ambient mass spectrometry is an innovative technique to record mass spectra directly from samples skipping preparative steps and front-end separations like LC and GC shortening analysis time from minutes to seconds. Ions generate outside the mass spectrometer from the sample "as it is" and transferred inside the spectrometer through the atmospheric pressure inlet. An optimized system is needed to achieve best results, coupling high analytical speed, sensitivity and intra-spectrum linearity as provided by modern Trap-Time of Flight spectrometer with a Direct Sample Analysis ion source able to generate ions from solid, liquid and gas samples. Food samples are suitable for direct analysis using ambient mass spectrometry and the speech, after an introduction explaining system design and operations, will report several examples of spectra from olive oil, fruit juices, vegetables and grain and other food products showing both natural products and trace contaminants.

CO-12

New analytical methodologies for geographical and varietal traceability of oenological products

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Abstract
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CO-13

$\delta^{18}O$ of wine ethanol for fraud detection

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Abstract
In the last 10 years the demand for alcoholic products (wine and distillates) has increased by around 8.6 % (source: VINEXPO 2011). Price increases and difficult access to raw materials have encouraged sophistication in the oenological field (source: "Alto Commissario per la lotta alla contraffazione" – 2008 Report). Since 1986, the European Union and the Organisation Internationale de la Vigna et du Vin (OIV) have established some official isotopic analytical methods in order to detect the illegal addition of sugar and water to wine and to enable geographical traceability (OIV MA-AS-311-05, OIV MA-AS2-12, OIV MA-AS-312-06). Recently a new isotopic method for improving the detection of water added to orange juice has been proposed (Jamin et al., 2003; Monsallier-Bitea et al., 2006). The method is based on determining the $^{18}O/^{16}O$ isotope ratio of ethanol derived from sugar fermentation using a pyrolyser coupled to an IRMS. In this study we apply this method in order to identify the origin of ethanol from grapes (N=60), cereals and fruit (N=60) and synthetic products (N=5). The $\delta^{18}O$ values ranged from +26 to +36 ‰ in wine, +17 to +26‰ in cereal distillates and from -2 to +12‰ in synthetic ethanol.