

Forensic application of stable isotope ratios analysis in official food control:

Activity carried out by the ICQRF-Laboratory

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Measurement of stable isotope ratios of H, C and O for foodstuff has been adopted as the official method by the European Union (EU) regulations, OIV (The International Organization of Vine and Wine) and AOAC International (association of analytical communities), in order to detect the illegal practices of watering, the addition of exogenous sugars and mislabelling (e.g. stating a different geographical origin).

According to Italian law, an illegal practice can be punished either as a crime or as an administrative penalty. In this work, a general overview of the fraudulent cases detected by stable isotope ratio analysis in the frame of ICQRF official quality control is reported. ICQRF, the Italian Law Enforcement Body, represents one of the major European agri-food control bodies, acting in several agriculture and food fields such as wine, oil, fruit juice, honey and sugars. Among these areas, wine plays the most relevant role.