

Evidence Proforma  
Food Authenticity Centres of Expertise

**Food Forensics**

**What is your organisations particular area(s) of expertise in food authenticity testing?**

Stable Isotope Ratio Analysis (SIRA) in food, feed and beverage and interpretation of isotope ratio results for the purposes of determination of consistency with declared or claimed origin and/or production system

**Please highlight your organisations key skills and capabilities in this area and provide a justification as to why you feel it should be regarded as a Centre of Expertise? In particular you should focus on highlighting your key analytical skills and capabilities and any accreditation and how you ensure fitness for purpose testing. (250 words max)**

Food Forensics has a proven track record with commercial customers for the provision of stable isotope ratio analysis and interpretation for a variety of food, beverage and feed products. Food Forensics has UKAS ISO/IEC 17025 accreditation for the analysis of stable isotope ratios ( $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{34}\text{S}$ ,  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$ ) in food, food products, beverages and feed and for the interpretation of those results for the determination of consistency with claimed origin and/or production system.

The Food Forensics team shares expertise in animal nutrition, production systems, commercial food chains and supply chain risk management as well as forensic science, analytical chemistry, SIRA and statistical evaluation. This unique skill set means that Food Forensics are able to provide customers with high level support and follow up during sample testing. The combined scientific and food chain expertise of the Food Forensics team makes it a unique and proven centre of expertise for food authenticity testing.

Test methods used by Food Forensics are validated for fitness for purpose in accordance with ISO and Eurachem guidelines, including the use of recognised standard reference materials, inclusion of QC materials, QA analysis, participation in proficiency testing schemes and collaboration with external laboratories for inter laboratory validation.

One of the key considerations for SIRA analysis of food products is the quality of the reference datasets used for comparison. Food Forensics invests in authentic sample

collection, building and maintaining commercially representative datasets. This enables us to support customers wishing to develop their own datasets and authenticity tests.

**Briefly highlight your experience in method validation, data interpretation and evaluation and the reporting of analytical results? (150 words max)**

Isotope ratio analysis method validation was completed in-house by Food Forensics laboratory personnel in accordance with ISO and Eurachem guidelines. Where possible internationally accepted methods have been established (i.e. AOAC method 998.12 for % C4 in honey). Where these are not available, in-house methods have been established based on manufacturers guidelines, published methods and laboratory expertise and include evaluation of sensitivity, precision and measurement uncertainty and participation in inter-laboratory comparisons.

Statistical analysis and data interpretation is carried out by qualified personnel and statistical method used are validated using authentic samples of known origin. Food Forensics has worked closely with customers to ensure that test results are reported clear and understandable format and provide dedicated follow up support when required.

**Please provide brief details where possible, of your experience in dealing with complex technical authenticity challenges and evidence of your ability to provide solutions. (150 words max)**

Food Forensics provides a testing service for commercial customers covering the spectrum of the food supply chain including suppliers, pack houses, processing plants and major UK retailers. Food Forensics are committed to providing ongoing support to customers, particularly during the follow up of samples classified as “not consistent” with claims. This may include (but is not limited to), providing support on understanding of the results, the strengths and limitations of SIRA testing, questions to ask during follow up investigations and proposed next steps, such as, collecting authentic sub populations as follow-up, paperwork audits and ongoing surveillance. Food Forensics provided analysis and follow up support during the FSA authenticity study and have also provided analysis and interpretation for work undertaken by trading standards.

A key strength is our ability to communicate the science of SIRA to all levels and to support appropriate application of the science into commercial businesses.

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**Are you willing to provide advice on your areas of expertise and assist others through partnership working and sharing of information? Outline briefly your experience in collaborative working and how you could contribute to enhancing the UKs standing in the field of authenticity testing. (150 words max)**

Food Forensics is committed to improving the state of the art of Food Authenticity testing through collaboration and networks. Food Forensics has taken an active role in a number of government funded collaborative research projects including two Innovate UK projects focusing on method development of cross validation tests for food authenticity and is a member of the EU framework 7 Food Integrity project. Food Forensics is an institutional member of the Forensic Isotope Ratio Mass Spectrometry Network (FIRMS) and Dr Rob Posey (Laboratory Manager) is a member of the FIRMS steering group.

Food Forensic is also committed to building international collaboration and has played a key role in establishing a partner laboratory in China to help to develop testing in Asia. We have also supported laboratories in Northern Ireland and India as they establish SIRA testing capabilities.

**Please provide a brief statement of your capabilities to be included on the virtual food authenticity network portal ( 50 words max)**

Food Forensics provides authenticity testing for claimed origin and/or production system of food, beverages and feed stuff using stable isotope ratio analysis (SIRA). Our ISO/IEC 17025 accredited testing and interpretation can be used in support of supply chain traceability and authenticity; horizon scanning, risk monitoring/mitigation and due diligence testing.