CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Items 5.1, 5.3, 10

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON METHODS OF ANALYSIS AND SAMPLING

Forty-fifth Session

Budapest, Hungary

9-13 March 2026

COMMENTS OF UNITED KINGDOM

Agenda items 5.1 and 5.3: Fruit juices and sugars and honey workable package

Food Authenticity Database Search Tool

Food Authenticity is defined as refers to the situation where the actual characteristics of a food product match the claims made about that product [1]:

- Characteristics: the real properties of the food (e.g., composition, ingredients, origin, production method, processing, certifications).
- Claims: any explicit or implicit statement that the product has certain characteristics (e.g., “extra virgin olive oil”, “Italian origin”, “organic”).
- A food is authentic when these claims accurately reflect the product’s true characteristics.

The issue

Methods for food authenticity have been raised at CCMAS45 in relation to fruit juice and honey. It is within CCMAS’ remit to guide Codex committees to robust analytical methods, some of which contain specifications for conformity. However, in the case of the majority of food authenticity testing methods, specifications are not available. In such cases, CCMAS can point to reference data where they are known to exist but the role of setting authenticity specifications should rest with the commodity committees. In reality, due to the enormity of the task, Codex committees will have to rely on externally curated reference data.

To determine whether a food is ‘authentic’, you need to compare test results to a reference database or dataset of its characteristics. The reference data must be continuously updated for season, variety, etc. to ensure it remains relevant and interpretations made against it are fit for purpose. This is not an insignificant task though good practice information exists[2,3,4]. The majority of authenticity databases are proprietary and not publicly available. This lack of data availability is a barrier to the uptake of food authenticity testing methods. This may trigger concerns surrounding proprietary methods in section 218 – 219 of the procedural manual.

Next steps:

The UK delegation:

1. Offers information on the Food Authenticity Network and it’s Food Authenticity Database Tool for CCMAS members to be aware.
2. Requests members to inform FAN (Secretary@foodauthenticity.global) of other known curated food authenticity databases or data sets.
3. Would like to table an item for discussion at CCMAS 46 “Define the role of CCMAS with regard to food authenticity assessments”. Prior to this discussion, the UK would be willing to give a presentation on the Food Authenticity Network (open access and free to join - Refer to Annex 1 for further information).

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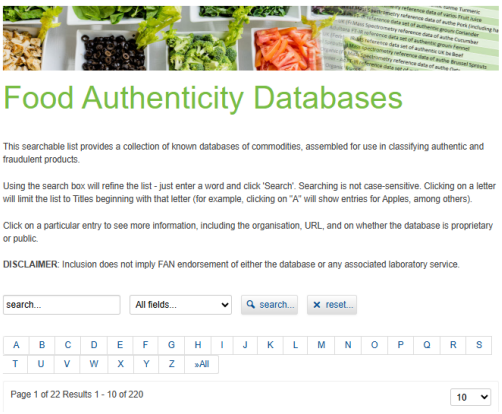
[1] BS EN 17972:2024 Food authenticity. Food authenticity and fraud. Concepts, terms and definitions
[2] Sampling guidelines for building and curating food authenticity databases - ScienceDirect
[3] Protocol for the Collection of Honey Reference Samples update - GOV.UK
[4] https://www.gov.uk/government/news/framework-for-interrogation-of-honey-authenticity-databases

Annex 1: The Food Authenticity Network (www.foodauthenticity.global)

There is little visibility of where food authenticity data exists. For this reason, the Food Authenticity Network (FAN) created a Food Authenticity Database Search Tool which includes 220 public and commercial databases.



It can be searched by commodity or test to identify what data exists and who owns it. Currently, funded by public partnership, further data is being added to this tool.

The Food Authenticity Network (FAN) is a globally recognised ***open-access*** hub bringing together curated expertise, food authenticity testing approaches and food fraud prevention tools to strengthen trust and resilience across food supply chains. FAN's 2025–2027 strategy is focused on accelerating global collaboration, sharing practical good practice and ensuring that trusted, open-access resources remain available to all stakeholders working to prevent food fraud and protect consumers.

Today, FAN connects a community of more than 6,400 members across 121 countries, and in 2025 alone, over 66,000 unique users from 177 countries accessed the platform, demonstrating both the reach and the appetite for independent, practical guidance in this space.

Anyone in the world can become a ***member of FAN for free*** - very quick & easy through the link or QR code below:

Link for joining - free

Every member gets the FAN Monthly bulletin of global food authenticity / food fraud developments, which serves as a horizon scanning tool:

MONTHLY SUMMARY

January 2026

Food Authenticity Network

FOOD FRAUD PREVENTION TOOLS & GUIDES • CENTRES OF EXPERTISE • RESEARCH & METHODS
TRAINING • FOOD SECURITY RESOURCE BASE • DISCUSSION FORUMS • EVENTS

NEW THIS MONTH

Regulation and Guidance

1. New guidance: food supplements – Online guidance
2. EU Forced Labour Ban & Implications for Supply Chain Mapping - Regulation
3. Sample Preparation and Reference Scales for Stable Isotope Ratio Analysis (SIRA) - Guideline

Fraud Incidence / Prevention

1. BSI PAS 96 Protecting and defending food and drink from deliberate attack - Guide: Comments invited
2. UK National Food Crime Unit - Industry Update e-mail Bulletin - Newsletter
3. Species Authenticity of Dairy Products from Greek Supermarkets - Survey

Analytical Methods and Research

1. Using SIRA to Verify the Origin of Cocoa in Finished Chocolate - Proof of Concept
2. Authenticity of Herbal Infusions on sale in Portugal - Survey and Method Comparison
3. Rapid Meat Species Verification using Spectrophotometry of Protein Extracts – Proof of Concept
4. Buffalo Ricotta Authenticity based on Water Soluble Peptides – Classification Model
5. pH as a Screening Threshold for Authentic Scotch Whisky - Research
6. Extra Virgin Olive Oil authenticity using DART-MS - Method
7. Profiling of Six Austrian Red Wine Varieties from 20 Vintages Based on Phenolic Compounds - Research
8. Workflow for Differentiating Fresh from Frozen Lamb – Proof of Concept

Please feel free to share this information widely within your countries so stakeholders can benefit from the open access resources on FAN.

Agenda item 10: Other business and future work

Information on methods for the characterisation of microplastics to reduce microplastic pollution

Agenda Item 10: Other business and future work; An AOB item on microplastics was raised by the Korean delegation.

The UK delegation would like to bring to the attention of CCMAS 45, the work of the National Measurement Laboratory (NML), at LGC in the UK, on microplastics.

As the UK's Designated Institute for chemical and biological measurement, the NML provides measurement research and services to improve accuracy, traceability and standardisation of chemical and biological measurements, helping to foster innovation and promote productivity and economic growth.

Over 400 million tonnes of plastic waste[5] are produced globally each year, out of which two-thirds is released into the environment. In the environment large plastics fragment into smaller 'micro' plastics, which can enter our food chain. Analysis of microplastics in food and the environment are challenging due to complexity of the matrix, lack of harmonised measurement methods and reference materials.

The NML and the UK Government Chemist is addressing these complex measurement challenges by developing reliable sample preparation strategies, representative test materials and accurate measurement methods. Refer to Annex 1 for two recent publications:

1. Multimethod Platform Based on Dynamic Image Analysis and spICP-MS for Number-Based Quantification of Microplastics.
2. A guide for testing laboratories on the application of LD-IR for microplastics.

In addition, LGC Standards offers a range of microplastic reference materials (featuring polyethylene (PE) and polypropylene (PP) standards in five different sizes, as well as nylon (N66) and polyester (PET) fibres) certified to ISO/IEC 17025.

Reference materials and validated and harmonised methods will enable comparability of the results across various monitoring agencies and testing laboratories and contribute to the reduction of microplastics pollution.

[5] United Nations Environment Programme (UNEP). *Plastic Pollution*. Humanity produces more than 400 million tonnes of plastic each year.

Annex 1: Multimethod Platform Based on Dynamic Image Analysis and spICP-MS for Number-Based Quantification of Microplastics

analytical chemistry

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pubs.acs.org/ac Article

Multimethod Platform Based on Dynamic Image Analysis and spICP-MS for Number-Based Quantification of Microplastics

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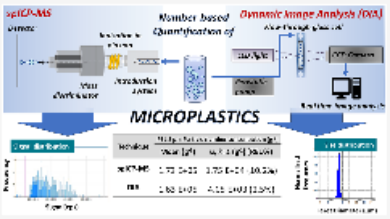
ABSTRACT: A multimethod platform based on the combination of dynamic image analysis (DIA) and single particle inductively coupled plasma mass spectrometry (spICP-MS) has been developed, validated, and applied for the first time to reliably determine the particle number concentration of small microplastics. The ability of the DIA/spICP-MS platform to reliably detect and quantify microplastics was carefully studied using polystyrene (PS) microparticles in the size range from 1 to 10 μm. Critical instrumental parameters affecting the accuracy of the number-concentration measurements were identified for both techniques. In the case of DIA, the detection threshold (DT) was found to be the most important, while for spICP-MS, both the calibration of the transport efficiency (TE) using the frequency method and the choice of sample introduction system were critical. Under optimal conditions, the number-concentration values obtained for 5 μm PS-Latex microspheres using DIA and spICP-MS methodologies agreed well within their associated uncertainty (u, $k = 1$ of approximately 2.5% for DIA and u, $k = 1$ of approximately 10.2% for spICP-MS). Main contributing factors to the overall measurement uncertainty were evaluated for methodology based on both techniques, being the variability in the number of detected particles for DIA and the number of detected particles and transport efficiency calibration for spICP-MS. These accounted for approximately 94% (DIA) and approximately 45% (spICP-MS) of the overall uncertainty budget, respectively.



INTRODUCTION

Plastics are increasingly present in today's world, with 395 million tonnes produced globally per annum, out of which two-thirds are released to the environment.[1] In the environment, plastics suffer complex physicochemical transformation processes such as aging, degradation, and fragmentation, breaking down into microplastics and becoming a persistent environmental pollutant and health hazard.[2,3] The potential risks to humans from exposure to smaller plastic particles are not fully understood. Particles with sizes at the lower end of the microscale are likely to bring an increased risk to human health,[4] as the result of relatively high surface area per volume or mass and ability to breach biological barriers, compared to particles with sizes in the upper range of the microscale. Moreover, it was reported that the nonspherical shape of such plastic particles is a major source of risk for humans.[5] To better understand environmental and health impact arising from microplastic pollution, as well as determine safe exposure limits, in particular for plastics at the lower end of the microscale, reliable methods for their quantification are needed.

The quantification of microplastics is challenging not only due to their shape irregularity and inherited polydispersity but most importantly due to the size limitations of typically used analytical techniques, especially at the lower end of the microscale.[6,7] Whilst, the upper limit of accessible size of techniques used for concentration measurements at the nanoscale such as particle tracking analysis (PTA), multiangle dynamic light scattering (MADLS), or even nanoflowcytometry (nFCM) is approximately about 1 μm, techniques typically used at the microscale, e.g., Fourier transform infrared (FT-IR) have been demonstrated to offer selective detection at sizes above 10 μm.[8] For this reason, selective detection as needed for accurate number-based quantification of small microplastics (SMPs, <10 μm) remains a challenge. In recent years, efforts have been made to combine chemical identification techniques, e.g., FT-IR[9] or Raman spectroscopy[10] with optical microscopy (OM), allowing the determination of particle number concentration down to a few micrometers.[7] However, such approaches require complex sample preparation strategies, involving sample filtration and deposition on a solid support prior to analysis, often affecting

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A guide for testing laboratories on the application of LD-IR for microplastics