



AOAC PROSPECTUS FOR

# Food Authenticity Methods



*The Scientific Association Dedicated to Analytical Excellence®*

## BACKGROUND

---

Food fraud encompasses a wide range of deliberate fraudulent acts. The focus of this AOAC initiative is to better locate and characterize the intentional and Economically Motivated Adulteration (EMA) of foods. This includes the fraudulent addition of nonauthentic substances, or the removal or replacement of authentic substances without the purchaser's knowledge for economic gain of the seller.

The three main types of economically motivated adulteration are:

- Sale of food which is unfit and potentially harmful, such as: – recycling of animal by-products back into the food chain; packing and selling of meat with unknown origin; knowingly selling goods past their 'use-by' date.
- Deliberate mislabeling of food, such as: products substituted with a cheaper alternative, e.g. farmed salmon sold as wild, or Basmati rice adulterated with cheaper varieties; false statements about the source of ingredients, i.e. their geographic, plant or animal origin.
- Counterfeiting (fraudulently passing off inferior goods as established and reputable brands), product tampering, theft, smuggling, document fraud, and product diversions.

The top 10 most adulterated foods in the United States in 2013 were: (1) olive oil, (2) milk, (3) honey, (4) saffron, (5) orange juice, (6) coffee, (7) apple juice, (8) grape wine, (9 tie) vanilla extract, and (9 tie) maple syrup. Worldwide, the list of commonly adulterated foods also includes: alcohol, milk powder, truffle oil, meat, fish, and seafood.

### Analytical surveillance

Once the adulteration risks have been characterized for a given matrix material, and a set of analytical control criteria defined, a surveillance plan should be established. The surveillance plan should include appropriate analytical methods for the verification of authenticity. There are 2 approaches:

- Targeted analyses (linked to parameters specified in raw material specifications); and
- Untargeted techniques (fingerprinting) that assess the raw material integrity against adulteration.

## PROPOSAL

---

Two AOAC working groups will be created and working in parallel to improve the surveillance options for EMA.

The first working group, the Targeted Testing (TT) Working Group, will develop a series of *Standard Method Performance Requirements* (SMPRs) for targeted testing of potential food fraud matrices. Proposed foods of interest are listed in the background section of this proposal.

The scope of work for the TT Working Group includes:

1. Identify ingredients that are most commonly tested for EMA with the associated targeted adulterants.
2. Identify existing methodologies for food fraud targeted testing and their (AOAC) status.
3. Identify reference materials and Proficiency Testing (PT) programs.
4. Identify needs, and where applicable, prioritize actions for the development of AOAC standards in support of food fraud targeted testing.
5. Recommend an adapted (urgent response review) process for AOAC standards development and review, in the context of a major international food fraud incident, requiring mobilization of resources including those of AOAC INTERNATIONAL.
6. Conduct a gap analysis of current methods used to test for food fraud and develop SMPRs to validate TT methods.
7. Support the development of standards leading to Codex Type II methods for dispute resolution in international trade.
8. Prioritize actions (adulterants and commodities of interest) and suggest an expedited approach for method validation in cases of international widespread adulteration (e.g., the melamine and the horsemeat scandal in the UK.)

The second working group will concentrate on developing standards for Non-Targeted Testing (NTT) of foods.





## TIMETABLE FOR TT AND NTT WORKING GROUPS

- **January 2019:** AOAC will identify renowned subject matter experts to participate in the working groups and a working group chair for each.
- **March 2019:** The working group chairs will present a 'launch presentation' to the stakeholders.
- **March 2019 to Sept 2019:** The working groups will meet by teleconferences to draft SMPRs, recommendations, and guidance documents.
- **September 2019:** The working group chairs will present draft SMPRs for approval during the 2019 AOAC Annual Meeting.
- **October 2019:** Issue a Call for Methods.
- **March 2020:** AOAC Expert Review Panel to review methods.

## BENEFITS TO YOU

**If you are a method developer,** the Working Groups will develop standards for the development of targeted and non-targeted testing methods. These standards will be used by AOAC Expert Review Panels to evaluate your candidate methods for possible adoption as AOAC Official Methods®.

**If you are a food manufacturer or food distributor,** you can participate in the development of standards for targeted and non-targeted testing methods. These standards will then be used by method developers to develop methods, and by AOAC for method evaluation so that OMA adopted methods best meet your analytical needs.

Confidence in methods that detect food fraud will improve the quality and safety of our food supply while maintaining the reputation of products.

**For all:** This project will create reference methods that do not exist now that will result in reliable data for an effective compliance-driven quality control of food materials and products. It will support the development of standards leading to Codex Type II methods for dispute resolution in international trade.

## WHAT AOAC IS ASKING OF YOU

Abbott Nutrition, Bruker, The Coca-Cola Company, Danone, SGS North America, Eurofins, Herbalife, Mars, Mérieux NutriSciences, Neogen Corporation, SCIEX, Tentamus Global Center for Food Fraud (TCF2), Thermo Fisher Scientific, and Waters Corporation have provided seed funding for the project to develop standards, methods, and guidance documents for targeted and non-targeted testing methods in selected food ingredient and food matrices. **AOAC continues to accept additional partners to co-fund the project.**

Support for the working group on targeted and non-targeted testing methods in selected food ingredient and food matrices by contributing \$10K to develop standards for targeted and non-targeted testing methods in selected food ingredients and food matrices as prioritized by you the contributor. The initiative will begin at the AOAC 2019 Mid-Year Meeting in Gaithersburg, MD, USA.

As a contributor, you would have a standing working group of international experts that would develop standards as needed, and, as a contributing member, you would have a voice in the prioritization of standards to be developed.

## DEADLINE

The deadline for this initial contribution of \$10K is **January 31, 2019.**

## CONTACT INFORMATION

If interested in this project and to partner with AOAC, please contact:

**Palmer A. Orlandi, Jr., Ph. D.**  
AOAC INTERNATIONAL  
2275 Research Blvd., Suite 300  
Rockville, MD 20850  
Tel: 301-924-7077; ext. 163  
porlandi@aoac.org  
www.aoac.org

