



In Food & Agriculture, We Set the Standard

Organic Authenticity Program

OVERVIEW

Over the past 140 years, AOAC INTERNATIONAL has served as a trusted standards development organization, supporting stakeholders in the food, infant formula, dietary supplement, agricultural, and related industries with reliable methods for formulation, nutritional content determination, and compliance testing. AOAC's credibility is derived from leveraging the expertise of its international pool of volunteer subject matter experts to address analytical challenges with reliable, fit-for-purpose, and validated methods.

BACKGROUND

Economically motivated fraud related to organic crop production and trade has been an increasing concern as the organic market has been growing both on a global scale and in the US. The USDA's Agricultural Marketing Service (AMS) published a new rule in 2023 called Strengthening Organic Enforcement, which includes several approaches meant to strengthen organic integrity and increase the confidence of the organic farmers and consumers in the organic systems, including those for organic product import. Existing certification systems and other tools are being utilized effectively to reduce the opportunity for fraud, however, there is a need for a set of standardized testing methods to verify the authenticity of certified organic crops and fertilizers allowed in organic production.

Developing authenticity testing standards and validated, fit-for-purpose methods is therefore necessary to maintain organic integrity. The aim of this initiative is to support manufacturers, regulatory bodies, field and border inspectors, and analytical service laboratories by providing standardized methodology for testing organic authenticity. The initiative will focus on authenticity of nutrients (not pesticides or other inputs) in terms of both organic crops and organic compliant fertilizers. This document covers rationale and framework for authenticity of organic crops and nitrogen (N) fertilizer suitable for organic production. Developing authenticity testing for other key plant nutrients (e.g. phosphorus and potassium) will be covered in separate documents.

The cost and difficulty of N management in organic cropping are the main causes of economically motivated fraud. Nitrogen is the most critical nutrient that limits crop production. Synchronizing N

release from fertilizers with crop demand for N is challenging. Sources of organic N are also limited to nonsynthetic (natural) sources and are expensive. On the other hand, synthetic N fertilizers are widely available at much lower prices and are also quickly available to be taken up by the plant, in contrast to organic N sources.

Because of the high cost and difficulty of N management in organic production, and ease of its adulteration using synthetic forms, N has been central in most fraud reports. Adulteration has been a concern, specifically in countries/regions with limited transparency, jurisdiction, and farming/processing technology. Notably, the literature on testing methodology for both organic crops and organic compliant fertilizers has been growing over the past decade.

In the context of crop nutrients, there are three main categories of organic violation:

- Manufacturing organic N fertilizers using synthetic N ingredients or producing organic N fertilizers utilizing non-complying processes.
- Violation that occurs in the field where partial supply of N comes from synthetic N fertilizers.
- Violation that occurs in the supply chain (post-harvest) where a non-organic product is misrepresented as organic.

The methodology for testing N fertilizer and fertilization fraud to some extent depends on the context, i.e. crop vs. fertilizer, but will have to be updated given technologies of farming and the rapidly growing fertilizer industry.

MOVING FORWARD WITH AOAC's Organic Authenticity Program

AOAC INTERNATIONAL is seeking financial support to launch the Organic Authenticity Program, which will be guided by an Advisory Panel comprised of funding organizations from government, NGO's, industry and academia to determine priorities and working group objectives. This panel will meet quarterly to review progress and consider additional objectives.

AOAC INTERNATIONAL is asking organizations to join this important program with an annual contribution of \$10,000. Other levels of contributions will be considered as well. Funding will support the following for each workstream:

- Project management support for convening the Advisory Panel and subsequent technical Working Groups,
- Oversight of the standard development process,
- Processes for drafting documents and consensus building,
- Publication of approved consensus documents,
- Call for methods,
- Establishment of Expert Review Panel(s) for methods considered for AOAC Official Method status,
- Oversight of the *Official Methods of Analysis* process,
- Publication of established official methods in *Official Methods of Analysis of AOAC INTERNATIONAL*SM (OMA),

- Facilitation of global alignment,
- External outreach and training events to publicize the work of the group as well as to attract additional scientists.

Advisory Panel Member Benefits

Joining the Advisory Panel for the Organic Authenticity Program is a unique opportunity to lead and influence the development of industry standards and methods that ensure the authenticity of organic and other crops as well as fertilizers. Advisory Panel members can:

- **Shape Method Standards:** Play a key role in developing internationally recognized performance standards that address current analytical gaps, paving the way for new *Official Methods of Analysis* or updates to existing methods for accurate organic authenticity in produce and other crops as well as fertilizers.
- **Advance Global Harmonization:** Collaborate with experts and global organizations to harmonize analytical approaches, supporting international consistency and simplifying trade and regulatory processes, analytical approaches, supporting international consistency and simplifying trade and regulatory processes.
- **Enhance Product Integrity:** Contribute to establishing reliable methods that improve product quality, enhance consumer trust, and meet evolving regulatory demands for organic authenticity.
- **Network with Industry Leaders:** Gain exclusive access to a community of scientific and industry experts, fostering connections and insights that support organizational and professional growth.
- **Stay Ahead of Regulatory Changes:** Be at the forefront of regulatory and scientific developments in organic authenticity, providing a competitive advantage in adapting to new requirements and scientific findings.

These benefits make the Advisory Panel an influential platform for advancing both organizational goals and industry standards.

Contact us at scienceprograms@aoac.org to get involved!