

National Organic Standards Board
Certification, Accreditation, Compliance Subcommittee (CACS)
Oversight to Deter Fraud: Residue Testing in a Global Supply Chain
Discussion Document
August 8, 2023

Background:

Residue testing is an essential tool for ensuring compliance with organic regulations. Preharvest residue testing can support evaluating an organic producer's efforts to prevent contamination, provide objective data when prohibited substance use is suspected, and monitor unavoidable residual environmental contamination levels. Postharvest residue testing can support the evaluation of contamination prevention in postharvest handling activities and across supply chains and provide objective data when prohibited substance use or when commingling or substituting conventional products is suspected. Residue testing does not substitute for the certification process and verification of compliance through an organic system plan review and annual inspection. However, it can support this process with objective results related to the presence of prohibited substances or the use of excluded methods.

The Organic Foods Production Act (OFPA) and USDA organic regulations include apparent authority and guidelines for accredited certification agencies (ACAs) to collect residue samples and to respond to results from those samples. These regulations are outlined at 7 CFR 205.670 and 7 CFR 205.671, and they are further clarified by NOP Handbook documents NOP 2610, NOP 2611, NOP 2611-1, NOP 2613, and NOP 2613-1.

On January 1, 2013, USDA finalized the Organic Periodic Residue Testing rule, which clarified that ACAs must conduct residue testing on a minimum of 5% of their certified clients and clarified that tests might include collection and testing of soil, water, waste, seeds, plant tissue, and plant-animal and processed products samples. Since the finalization of this rule, ACAs have effectively utilized residue sampling to bolster compliance with organic regulations, deter fraud, and prevent contaminated organic products from entering the marketplace.

In the past ten years, the U.S. organic industry retail sales has more than doubled from \$28B in 2012 to over \$60B in 2022. Organic products are being shipped from across the globe through increasingly complex supply chains, and the organic certification structure is undergoing dramatic changes through the finalization of the Strengthening Organic Enforcement (SOE) rule in response to this growth in scale and complexity.

Discussion Document Goals

The CACS is considering whether updates to periodic residue testing programs will augment ACA's ability to verify compliance, deter fraud, and prevent contaminated products from entering the organic marketplace. The goal of this discussion document is to:

1. Gather stakeholder feedback on a proposed framework to evaluate the risk that prohibited substances, which are not typical targets for residue testing, pose to organic integrity.
2. Identify accepted testing and sampling methodologies to detect and quantify these prohibited substances.
3. Recommend necessary updates to guidance or regulation that may be necessary to ensure that ACAs have the authority and sufficient guidance to respond to positive results they may find.

Challenge

The National Organic Program (NOP) is in the Strengthening of Organic Enforcement Rule (SOE) implementation process. This incredible accomplishment will propel the industry to increase oversight as a global industry. The SOE will provide the supply chain transparency that is needed in a growing organic global economy, which will solidify the foundation upon which the organic market is built

CACS is considering whether verification of a global supply chain through testing is the next chapter in continuous improvement that needs to be embraced as an encore to the SOE. Of particular interest to the CACS, is the new requirement in SOE for operations importing products to the United States to ensure their shipments have not had contact with prohibited substances or exposure to ionizing radiation and to have a documented organic control system to conduct this verification. Since the current landscape of residue testing only partially covers the concerns related to imported products, CACS believes building out this area will be beneficial for importers and for certifiers verifying compliance to the new regulations. Testing can complement the organic program post-SOE and assist certifiers in validating compliance while providing the ability to rapidly detect evidence of commingling/contamination in operations deemed to be high risk. The NOP has well-established parameters for GMO testing and residue testing of pesticides. To continue to assist certifiers and inspectors, clear testing levels and parameters are needed for solvents, fumigants, and other prohibited substances that may pose a risk to organic product integrity. As a starting place, CACS is working to develop a framework by which substances are evaluated for testing protocols and seeks to apply this framework initially by looking at synthetic solvents used for oilseed extraction and volatile fumigants used on bulk shipments at ports of entry.

Proposed Framework

CACS is proposing to evaluate potential updates to the periodic residue sampling framework on a substance or class of substances basis. Each substance or class of substances would be evaluated based on what organic regulation testing can support, whether other federal regulations govern the use of the substances, whether there are accepted testing methodologies that provide reliable and quantifiable results, whether there is clarity around how ACAs might respond to a positive result, and what additional research, guidance, or rulemaking may be needed to close any gaps identified in the evaluation.

CACS proposes the following evaluation of testing for synthetic solvents used in the extraction of oils as an illustration of this draft framework:

Synthetic Solvents (e.g., hexane or methanol)

1. **Compliance Verification:** *How would testing for these substances support compliance verification of the organic standards?*

Synthetic solvents are used to extract oil from seed meals in conventional markets, which are typically used as livestock feed. No synthetic solvents are allowed for use at 7 CFR 205.605 to extract oils from seed meals in organic processing, and such substances would be prohibited. Synthetic solvents are also often used to extract flavors and other herb and spice extracts, a process prohibited in organic processing. Testing for these residues in organic supply chains would help to support compliance verification in 7 CFR 205.105 (Use of prohibited substances), 7 CFR 205.272 (comingling/contamination prevention), and 7 CFR 205.273 (Imports to the United States).

2. **Oversight:** *What additional federal oversight exists over the use and residues of this substance?*

FDA regulates the use of hexane to extract spice oleoresins and hop extracts 21 CFR 173.270 with residue limits. American Association of Feed Control Officers (AAFCO) includes a definition for “solvent extracted” when used on feed labels.

3. **Testing:** *Can reliable, quantifiable, and widely accepted testing methodologies provide certifiers with objective test results to support compliance verification?*

Synthetic solvent residues can be detected in food and feed using methods accepted by ISO-accredited labs. Levels can be quantified. American Oil Chemists Society (AOCS) maintains extensive testing methodologies to detect and quantify synthetic solvent residues in agricultural products.

4. **Responding to Positive Results:** *Are there clear guidelines and regulatory authorities to exclude organic products from the organic supply chain contaminated with this substance?*

Current regulations allow ACAs to collect samples and test for any prohibited substances encompassing synthetic substances. There are only published residue limits for hexane in spice resins and hop extracts. Test results quantifying synthetic solvents in organic products can be used as evidence that the product was contaminated or exposed to prohibited substances and could be used as evidence that conventional product was fraudulently represented as organic. However, the current regulations need clear language regarding thresholds of synthetic solvents in organic products and when these products must be excluded from the organic marketplace.

Summary:

CACS supports continuous improvement in oversight and enforcement to build on the foundation of the SOE. Testing is an important tool that can assist in compliance verification for organic regulations. Ensuring the framework is developed so that there is consistent enforcement by certifiers. CACS looks forward to stakeholder comments and engagement on this discussion document.

Questions for Stakeholders

1. Certifiers: Describe your experience with prohibited residue testing in extended supply chains and describe challenges that you have encountered
2. Certifiers: How do you evaluate the risk of your certified clients, and how do you determine which operations to target for periodic residue sampling?
3. Inspectors: Describe challenges with residue sampling on farms and handling facilities when sampling imported, processed, or aggregated products.
4. Testing Labs: What tests are available for synthetic solvents and fumigants, and what issues do you encounter when conducting residue tests submitted by organic certifiers, organic inspectors, and other organic stakeholders?
5. Substances for NOSB focus: NOSB intends to evaluate testing options for organic solvents and fumigants. Are there additional substances NOSB should evaluate that are not currently encompassed by periodic residue sampling guidance and practices?
6. Comments on proposed evaluation framework: Do stakeholders have recommendations for refining the proposed framework within which we will evaluate prohibited substance residue testing?
7. What else should the NOSB consider to strengthen periodic residue sampling as an organic compliance verification tool?

Subcommittee Vote:

Motion to accept the discussion document on Residue Testing in a Global Supply Chain

Motion by: Nate Lewis

Seconded by: Nate Powell-Palm

Yes: 7 No: 0 Abstain: 0 Recuse: 0 Absent: 2