

Ensuring Organic Integrity

Periodic Residue Sampling



FOR WEBINAR AUDIO
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Welcome!

Presenter



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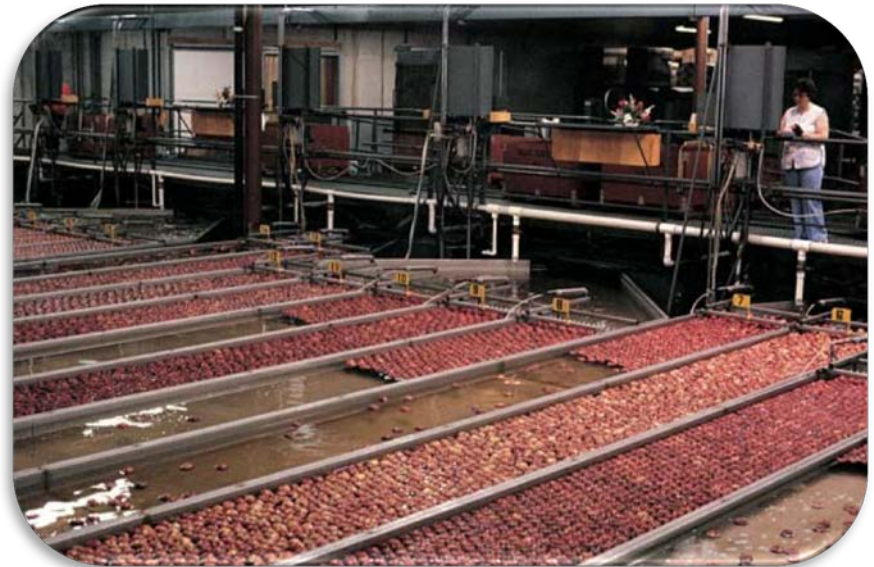
Objectives

- ✓ Why is sampling an important certification tool?
- ✓ Where and how does an inspector target and collect meaningful samples?
- ✓ How does a certifier respond to sample results?



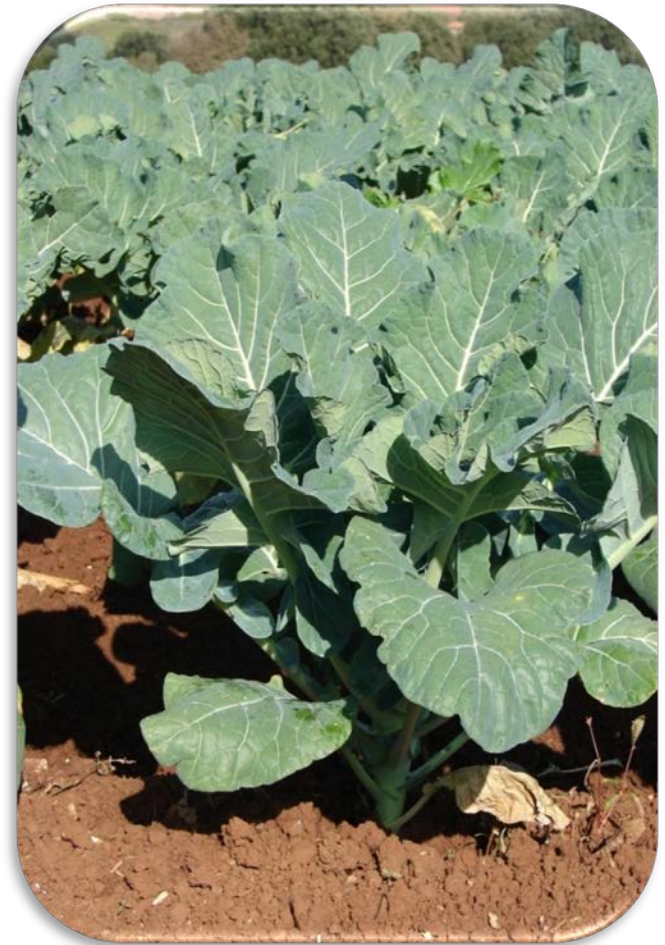
Agenda

- USDA Organic Regulations
- Reference documents
- How to take a sample
- Responding to results
- Compliance determinations
- Follow-up



Why Sample?

- Certified client and consumer expectation.
- Tool to test certified operation's records and system for preventing contamination and commingling.
 - adequate buffers
 - adequate equipment cleanout
 - accurate application records
- Tool to determine accuracy of organic claim after non-willful incident (flood, fire, drift).



7 CFR 205.670 & 205.671

205.670 (Residue Testing) final rule published November 2012

- Requires certifiers sample 5% of all certified operations
- Clarifies that any part of a certified operation may be sampled (not limited to the final product)
- Guidance clarifies that all types of residue sampling can be used as tools to assess compliance (gmo, heavy metals, pathogens, pesticides)

205.671 Exclusion from organic sale

- Stipulates thresholds for residues on crops labeled “organic”



Sample Collection

General Monitoring

- 5% of operations ***must*** be sampled
- Certifiers may target operations for periodic testing based on widely varying criteria: random, risk based, combination

Investigative

- Suspicion of a prohibited material application or pesticide drift



Sample Collection

- Grouping samples reduces test costs with lab
- Easily incorporated into a full time inspector schedule?
- Designated staff inspector person for sampling
- Crop and season appropriate – allows enough time to analyze and respond to results prior to harvest or marketing
- Not always ideal



Types of Sampling

Spot Samples: samples taken from a defined area. Periodic residue samples should be taken from within a certified organic site – not a buffer.



Types of Sampling

Gradient Samples: samples taken as part of an investigation of drift or application of prohibited material. Several samples are taken to determine the amount of contamination over a given area.



Types of Sampling

Handler/Processor

- Samples may be taken anywhere in the production process.
 - Fruit from packed boxes and storage bins
 - Raw agricultural commodities at feed mills
 - Single ingredient processed products or ingredients
- Samples most commonly obtained in the receiving area or the finished product area.
- Multi-ingredient processed products have inherent limitations as a periodic residue testing target.



Sample Equipment

- Sample box
- Ice packs
- Sealable plastic bags
- Sample seals or tape (*if required by lab*)
- Sampling gloves
- Permanent marker
- Pen
- Sample Report Form
- Tools with cleaner (ethanol) depending on crop



Sample Equipment



Sampling Steps

- Preparation:
 - Shipping timing? Must get to the lab before the weekend
 - Equipment and supplies (cold ice packs!)
 - Determine where to sample
- Put on gloves and obtain sample
- Place sample in sealable plastic bag – seal tightly
- Place seal or tape on plastic bag and label (if required)
- Fill out sample form which should be provided by lab and certifier
- Place in sample cooler with ice packs (if perishable)
- Send package to lab via USPS or private courier
 - Chain of custody documentation must accompany samples to ensure sample integrity and the validity of sample results.



Sample Collection Report

11-071-005
OG 4421
Washington State Department of Agriculture
Organic Food Program
PO Box 42560
Olympia WA 98504-2560
(360) 902-1805

WSDA **SAMPLE COLLECTION REPORT**

DATE SAMPLED: 3 Jun 11

CAR NUMBER: _____

SAMPLE OF (NAME OF PRODUCT): Organic Cherries

IDENTIFICATION (LABELING): Sunset Rd

FROM LOT OF: MA

CONSISTED OF: About 2 lbs

PREPARED BY: _____

DELIVERED TO: UPS Bus U.S. Mail, for State Lab

SAMPLE DELIVERY DATE: 7 Jun 11

DELIVERY METHOD: In Person Campus Mail Sealing Frozen ID.

REASON FOR COLLECTION: Surveillance Compliance Consumer Complaint Other (explain)

MANUFACTURER/DISTRIBUTOR/GROWER NAME: _____

SAMPLE OBTAINED FROM (NAME) OR CHECK BOX AT RIGHT IF SAME NAME/ADDRESS AS ABOVE: Same as above

ADDRESS: _____

TELEPHONE: Please sample for OC's + UPS
Return box to organic food program

COUNTY: _____

COST OF SAMPLE: \$ _____

INSPECTOR: S. Colby

DEALER: _____ TITLE: _____

LABORATORY USE ONLY

DATE RECEIVED: 6/8/11

RECEIVED BY: JV

RECEIVED VIA: UPS Bus Mail Person

SEAL OK? Yes No

DISTRIBUTION: White Green Canaru-Lab Fork-Columbia Office Goldenroot-Fla

ACR 100-2018 (01/07/11)



FAQs

Where to Sample

Periodic sampling or investigative sampling?

Borders and buffers at risk?

Adequate equipment clean out?

When to Sample

Time before harvest?

Typical use patterns of local conventional production materials (drift)?

Is the operation at risk of comingling?



FAQs

What to Sample

Leaf tissue, immature crop, mature crop, crop after harvest?

Soil, water?

Ingredients, finished products?

How Much to Sample

Lab requirements?

Cost to producer?

Sampling logistics and shipping cost?



FAQs

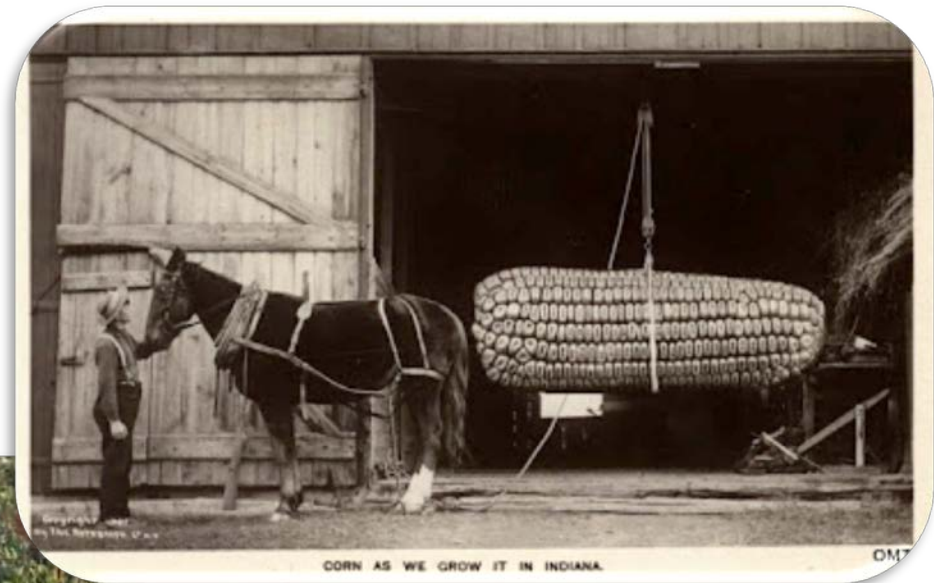
What information must be obtained for each sample?

- ✓ Location in field
- ✓ Lot number, invoice date, and organic certificate
- ✓ Operator's name and location
- ✓ Producer and handler name if taken at handling facility
- ✓ Identification of commodity/product including variety, brand name, etc
- ✓ Date, name of inspector, and signature
- ✓ **A RECEIPT MUST BE LEFT WITH OPERATOR!**



Resources

- ✓ [NOP 2610](#)
- ✓ Codex sampling guidance



Agenda

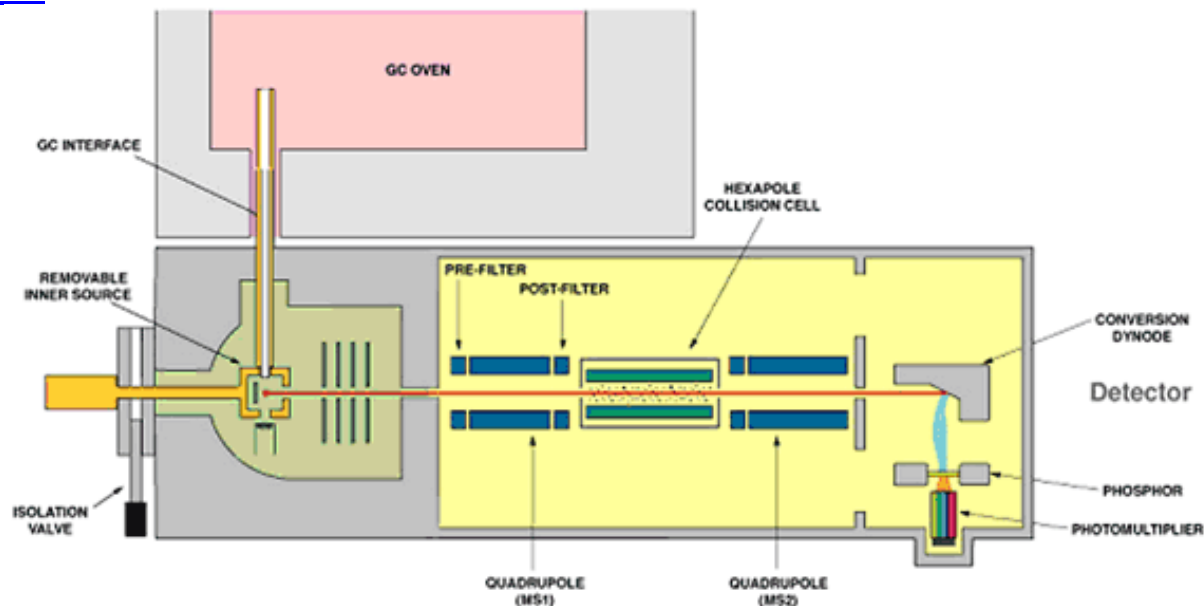


- ✓ Responding to results
- ✓ Compliance determinations
- ✓ Follow-up

Sampling Program

Samples sent to accredited lab.

- ISO/IEC 17025:2005 accredited by the American Association for Laboratory Accreditation.
- Use of methodology described in Official Methods of Analysis
- Use of QuEChERS Method
- [NOP 2611](#)

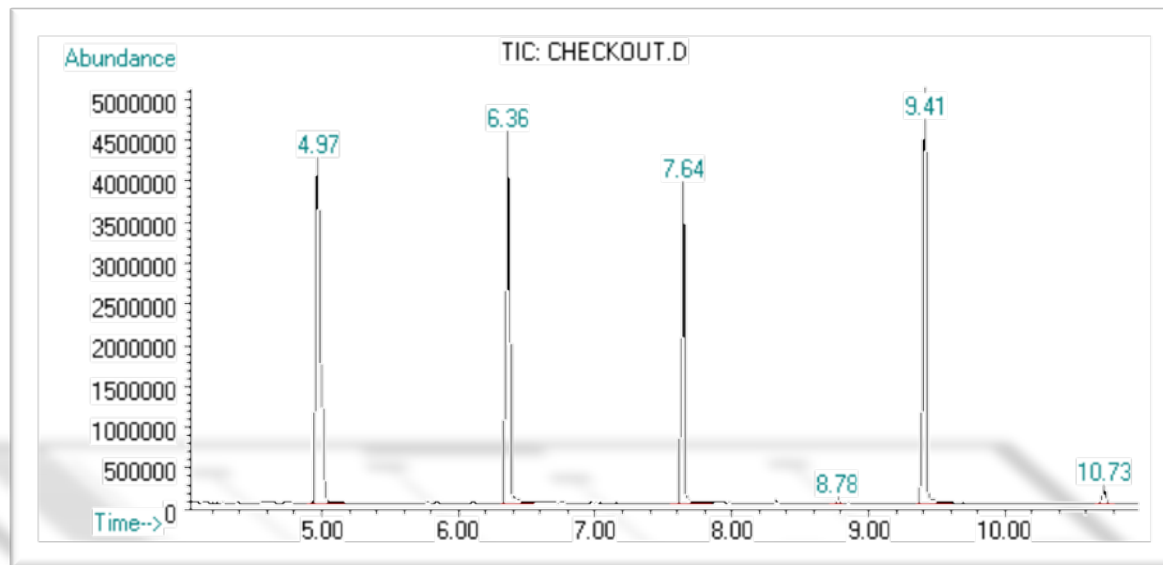


Sampling Program

Unless need for other screens are identified, samples screened for:

- ✓ **Organochlorines** (DDT, DDE, edosulfan, chlordane, etc.)
- ✓ **Organophosphates** (malathion, chlorpyrifos, etc.)
- ✓ **NOP 2611-1** (Prohibited Pesticides for NOP Residue Testing)

Testing methodology for **GMOs**, **heavy metals**, and **pathogens** **not** specified in USDA regulations



Evaluating Test Results

- NOP Guidance Documents: [NOP 2613](#)
- “The Pesticide Book,” George W. Ware



- State Pesticide Management Division
- Testing laboratories



Evaluating Test Results

Responding to Positive Results

Determine EPA Tolerance or FDA Action Level

- ❑ Find specific tolerances for substances (Title 40)
- ❑ Identify crop specific tolerance
- ❑ Above 5% of tolerance???



Bendiocarb	ND	0.003	0.003	M
Benoxacor	ND	0.01	0.01	M
Boscalid	0.016	0.003	0.003	M
Bromacil	ND	0.003	0.003	M
Buprofezin	ND	0.001	0.001	M
Carbaryl	0.009	0.003	0.003	M
Carbofuran	ND	0.003	0.003	M

Evaluating Test Results

Responding to Positive Results

Appropriate Adverse Action

- **Above EPA Tolerance/FDA Action Level or not registered for crop:**
 - Contact appropriate food safety authority
 - Notice of Noncompliance – crop/product **cannot be sold as organic**
- **Above 5% EPA Tolerance or FDA Action Level:**
 - Notice of Noncompliance – crop/product **cannot be sold as organic**
- **Below 5% EPA Tolerance or FDA Action Level:**
 - Notice of Noncompliance – crop/product **can be sold as organic**
- **Below 0.01 ppm (10 ppb):**
 - No adverse action – crop/product **can be sold as organic**

Evaluating Test Results

Responding to Positive Results

Organic Cherry Orchard



Year 1 – Positive Sample – NONC – Corrective Action – RNONC

Year 2 – Positive Sample (same compounds) – NONC – Corrective Action

Year 3 – Will sample for a third time this year and resolve only if sample results find that the corrective action has been effective.

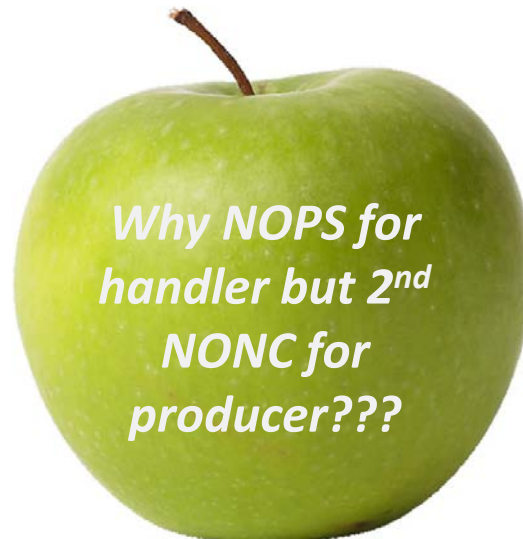
Evaluating Test Results

Responding to Positive Results

Apple Handler

Year 1 – Positive Samples (in facility - DPA) – NONC – Corrective Action – No Resolution

Year 2 – Positive Samples (same compound – same storage room) – NOPS



Evaluating Test Results

Responding to Positive Results

Unusual Results


- O-Phenylphenol
 - Paper bags
- Spinosad
- Endosulfan
- Carbendazin
- Glyphosate/Herbicides
 - Expensive
 - Limited enforcement

§ 180.364 Glyphosate; tolerances for residues.

(a) *General.* (1) Tolerances are established for residues of **glyphosate**, including its metabolites and degradates, in or on the commodities listed below resulting from the application of **glyphosate**, the isopropylamine salt of **glyphosate**, the ethanolamine salt of **glyphosate**, the dimethylamine salt of **glyphosate**, the ammonium salt of **glyphosate**, and the potassium salt of **glyphosate**. Compliance with the following tolerance levels is to be determined by measuring only **glyphosate** (*N*-(phosphonomethyl)glycine).

Sample Results

All positive results >0.01 ppm resulted in **Adverse Action**



Follow Up!

- Responses to Adverse Action notices identify sources of contamination and corrective action plan
- Resolution may occur after additional inspection verifies plan is implemented and an additional sample verifies plan is effective
- “Follow up” samples should be incorporated into inspectors’ yearly work plans



Sample Results

Reporting Results

Certified Organic Operations

“Must immediately notify certifier concerning any application, including drift, of a prohibited substance to any field...or product that is part of the operation.” (7 CFR 205.400(f)(1))



Accredited Certifying Agents

- All positive results reported to NOP through adverse action process
- All results must be made available to the NOP during accreditation audits
- Results must be made available to the public upon request
 - Could be problematic for certifiers whose clients are not expecting this level of disclosure

Liability Concerns

- Contract inspectors concerned about liability from positive samples resulting in adverse action
- Difference between liability from sampling and recording an observation?
- Sampling training
- Insurance premiums?



Ensuring Organic Integrity



**RISKS
AHEAD**

- Compliance verification based on records and inspector observations alone is vulnerable.
- Random and risk based sampling provides a tool to ensure consumer confidence and helps target weak points in organic systems.



Questions



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