

The Integrity Standard

A Blueprint for Navigating Organic Certification and Global Markets

Authoritative Scope

USDA NOP (7 CFR 205) • COR (Canada) • EU 2018/848

Operational Target

Primary Producers, Food Processors & Supply Chain Handlers

Enforcement Alignment

Full Strengthening Organic Enforcement (SOE) Harmonization

Executive Manifesto

The Architecture of Organic Integrity

Organic certification is neither a marketing trend nor an informal farming technique. It is a legally codified, audited, and strictly enforced system of chain-of-custody process standards. In an increasingly interconnected agrifood market, the organic seal represents a legally binding covenant of transparency, ecological stewardship, and traceability between producers, processors, certifiers, retailers, and consumers.

Navigating this regulatory environment requires an operational shift. In conventional food manufacturing and commercial agriculture, operations are measured by physical output: yield per hectare, processing speed, and unit cost minimization. In the certified organic sector, operational viability is indivisible from **regulatory verifiability**. A crop grown without synthetic inputs cannot be sold as organic if the land history lacks verifiable documentation. A pristine food formulation loses its organic status the instant an unapproved processing aid or non-compliant sanitizer contacts the food-contact surface.

PILLAR 01

Agronomic Excellence

Biological nutrient cycles, non-synthetic crop protection, humane animal husbandry, and preventative soil regeneration.

PILLAR 02

Systems Integrity

The Organic System Plan (OSP), robust physical buffers, contamination prevention, and cleanout standard operating procedures.

PILLAR 03

Documentary Custody

Forensic mass-balance reconciliation, 100% traceback transparency, lot integrity, and global electronic import certificates.

PART I

Foundations of the Organic Movement

Chapter 1: Philosophy and Evolution

1.1 The Historical Arc: From Agrarian Philosophy to Codified Law

Modern organic regulatory frameworks are the product of over a century of development. What began as a scientific and philosophical critique of industrial agriculture transformed into a grassroots cultural movement and ultimately matured into a multi-billion-dollar global industry backed by state enforcement.

The theoretical foundation was laid in the early 20th century, largely as a response to the rapid industrialization of crop production and the advent of synthetic fertilizers via the Haber-Bosch process:

- **Sir Albert Howard (1873–1947):** A British agronomist working in Indore, India, Howard documented traditional Indian agricultural practices, systematized the Indore composting process, and published *An Agricultural Testament* in 1940. Howard argued that healthy, biologically active soil is the primary determinant of plant resilience, animal health, and human well-being, positing that water-soluble synthetic inputs disrupt natural soil microbial cycles.
- **Rudolf Steiner (1861–1925):** In 1924, Steiner delivered his "Agricultural Course" in Koberwitz, establishing *biodynamic agriculture*. Steiner viewed the farm as a self-contained living organism and prohibited synthetic inputs, introducing biological preparations and astronomical planting rhythms.
- **Lady Eve Balfour (1898–1990):** In 1939, Balfour launched the *Haughley Experiment* in England—the first long-term, scientific comparative study of organic and chemical farming. Her 1943 book, *The Living Soil*, led to the founding of the Soil Association in 1946.
- **J.I. Rodale (1898–1971):** In the United States, Jerome Irving Rodale popularized these concepts by founding the Rodale Institute and publishing *Organic Gardening and Farming* in 1942, establishing the core maxim: "*Healthy Soil = Healthy Food = Healthy People.*"

Throughout the 1970s, organic farming expanded via regional grassroots organizations (e.g., CCOF in California, Oregon Tilth). However, disparate regional standards created market confusion, deceptive labeling, and trade barriers. This friction led to direct government intervention. In the United States, Congress passed the **Organic Foods Production Act (OFPA) of 1990**, which established the National Organic Program (NOP) under the USDA (codified under 7 CFR Part 205). Concurrently, the European Union implemented Regulation (EEC) No 2092/91, and Canada established the Canada Organic Regime (COR) in 2009.

1.2 The Core IFOAM Principles

Every national organic standard traces its regulatory philosophy to the four foundational principles established by **IFOAM – Organics International**:

PRINCIPLE 01

Health

Organic Agriculture should sustain and enhance the health of soil, plant, animal, human, and planet as one and indivisible.

PRINCIPLE 02

Ecology

Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them, and help sustain them.

PRINCIPLE 03

Fairness

Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

PRINCIPLE 04

Care

Organic Agriculture should be managed in a precautionary and responsible manner to protect future generations and the ecosystem.

Chapter 2: Decoding the Regulatory Landscape

2.1 Major Global Governance Frameworks

REGIME	GOVERNING BODY & CODE	KEY ATTRIBUTES & ENFORCEMENT
USDA NOP (United States)	USDA AMS 7 CFR Part 205	Direct accreditation of third-party certifiers; mandatory electronic NOP Import Certificates; comprehensive Strengthening Organic Enforcement (SOE) rule.
COR (Canada)	CFIA / SFCR Part 13 CAN/CGSB 32.310 & 32.311	Regulated via designated Conformity Verification Bodies (CVBs) that oversee private Certification Bodies (CBs). Mandatory Permitted Substances Lists.
EU Organic (European Union)	European Commission Regulation (EU) 2018/848	Enforced via TRACES electronic certificates of inspection (COIs); stringent limits on Producer Group size/turnover; tight continuous outdoor access mandates.

2.2 International Equivalence Arrangements and Trans-Border Trade

Global organic trade functions via **Equivalence Arrangements**—bilateral, government-level treaties establishing that two sovereign systems of organic standards and conformity assessment yield equivalent outcomes. When technical differences cannot be harmonized, agreements require specific *Critical Variances* to be verified and documented on export certificates:

TRADE CORRIDOR	EXPORT DIRECTION	MANDATORY CRITICAL VARIANCES (ATTESTATIONS)
US ⇄ Canada	US to Canada (NOP → COR)	• Agricultural products produced without Chilean nitrate (sodium nitrate). • Hydroponic/aeroponic crops cannot be sold as organic in Canada. • Livestock stocking density must meet COR baselines.
US ⇄ Canada	Canada to US (COR → NOP)	• Ruminants must meet NOP pasture rules (min. 30% DMI from pasture). • Antibiotics prohibited across all dairy stock without exception.
US ⇄ EU	US to EU (NOP → EU)	• Zero antibiotic applications for fire blight (streptomycin or oxytetracycline). • Mandatory TRACES electronic Certificate of Inspection (COI).

PART II

Preparing for Compliance

Chapter 3: The Transition Period (The 36-Month Rule)

3.1 Managing Land History & Calculating the Timeline

Under 7 CFR § 205.202(b) and CAN/CGSB-32.310 Clause 5.1, any parcel intended for organic crop production must be free from applications of prohibited synthetic substances for a minimum of **36 consecutive months** immediately preceding harvest.

STATUTORY HARVEST ELIGIBILITY EQUATION

Eligible Organic Harvest Date = Date of Last Prohibited Application + 36 Full Months

Critical Transition Rule

The transition clock begins on the exact calendar day *after* the last synthetic application—not when the land is purchased or when the certification application is submitted. If a crop is harvested on Month 35 and Day 29, the entire harvest must be sold as conventional.

3.2 Parallel Production vs. Split Operations

Operations managing both organic and non-organic products face significant audit scrutiny. A **Split Operation** grows visually distinct species (e.g., Organic Blueberries and Conventional Apples). A **Parallel Operation** produces the *exact same botanical variety* in both organic and non-organic units (e.g., Organic Gala Apples alongside Conventional Gala Apples).

VULNERABILITY AREA	RISK PROFILE	MANDATORY CONTROL MEASURE
Shared Machinery	Chemical residues & conventional grain mixing inside combines/sprayers.	Documented physical cleanouts, 4-tank sprayer flushes, and recorded sacrificial purge runs downgraded to conventional.
Storage & Staging	Commingling in bins, silos, or walk-in coolers.	Dedicated physical bays, permanent signage, lockout tags, and real-time inventory software tracking.
Invoicing & Sales	Conventional products mislabeled as organic.	Forensic mass-balance reconciliation: Yield per acre × Acreage = Exact maximum saleable organic volume.

Chapter 4: The Organic System Plan (OSP)

4.1 The Anatomy of an OSP

The Organic System Plan (OSP) is the primary legal agreement between the certified operator and the certifying agent (7 CFR § 205.201). It describes every operational practice, input, storage protocol, and chain of custody procedure implemented across the enterprise. Operating outside your approved OSP constitutes a direct statutory non-compliance.

4.2 Documenting Buffers, Boundaries, and Physical Drift

Under 7 CFR § 205.202(c), organic producers must establish and maintain physical boundaries and buffer zones adequate to prevent chemical drift from neighboring conventional land.

BUFFER PROFILE A

Standard Ground Risk

25 to 30 Feet: Physical separation with dense perennial vegetative hedgerow or windbreak to intercept mechanical ground-spray drift.

BUFFER PROFILE B

High Aerial / Air-Blast Risk

50 to 100+ Feet: Expanded buffer width required where neighboring orchards or fields utilize aerial or high-pressure sprayers.

BUFFER PROFILE C

GMO Cross-Pollination Risk

100 to 300+ Feet: Physical distance coupled with staggered planting dates to ensure divergent flowering times for corn or canola.

Buffer Crop Harvest Mandate

Crops planted within designated buffer zones may be grown using organic practices, but they **cannot be harvested, labeled, or sold as organic**. They must be logged and sold on the conventional market to verify yield segregation during the mass-balance audit.

Sector-Specific Compliance Pathways

Chapter 5: Crop Production and Wild Harvesting

5.1 The Seed and Planting Stock Hierarchy

Certified organic producers must use certified organic seeds and planting stock. Non-organic, untreated seeds are permitted only under strict commercial non-availability exemptions (7 CFR § 205.204).

COMPLIANCE PRIORITY	SOURCING TIER	EVIDENTIARY REQUIREMENT
Tier 1 (Mandatory Priority)	Certified Organic Seed / Planting Stock	Organic Certificate of supplier on file with matching lot number.
Tier 2 (Commercial Exemption)	Untreated, Non-GMO Conventional Seed	Proof of contacting ≥ 3 distinct commercial organic seed suppliers proving unavailability of equivalent variety in form, quality, or quantity (cost is not a valid exemption).
Prohibited Without Exception	Treated or Genetically Engineered Seed	Synthetic fungicides, neonicotinoid coatings, or GMO traits lead to an immediate 36-month land transition reset.

5.2 Soil Fertility and the National List Architecture

The National List of Allowed and Prohibited Substances (7 CFR §§ 205.601–205.606; CAN/CGSB-32.311) governs all inputs. Synthetic inputs are prohibited unless explicitly listed as allowed (e.g., copper sulfate, peracetic acid). Natural materials are allowed unless explicitly listed as prohibited (e.g., strychnine, arsenic, tobacco dust).

THE 90 / 120-DAY RAW MANURE RULE (7 CFR § 205.203)

Wait Interval

=

120 Days (Edible portion directly contacts soil: Greens, Root crops)

90 Days (Edible portion does NOT contact soil: Orchards, Corn)

Composting Thermophilic Parameters

To apply compost without harvest date restrictions, operations must maintain an initial C:N ratio between 25:1 and 40:1, and sustain temperatures between **131°F and 170°F (55°C to 77°C)** for 15 consecutive days with a minimum of 5 turns (windrow systems) or 3 consecutive days (in-vessel/static aerated pile).

5.3 The Three-Tier Crop Protection Hierarchy

LEVEL 01

Cultural & Preventive

Crop rotation, sanitation, selection of pest-resistant varieties, and mechanical weed cultivation.

LEVEL 02

Biological & Physical

Beneficial predator releases, pheromone mating disruption traps, and physical exclusionary barriers.

LEVEL 03

National List Substances

OMRI/WSDA listed botanical and mineral sprays (e.g., *Bacillus thuringiensis*, spinosad, neem, sulfur).

Chapter 6: Livestock, Dairy, and Poultry

6.1 Feed Rations, Pasture Rules, and DMI Calculations

Livestock rations must be 100% certified organic. Ruminants must graze on certified organic pasture throughout the grazing season (minimum 120 days/year) and derive at least **30% of their Dry Matter Intake (DMI)** from grazing.

PASTURE DRY MATTER INTAKE EQUATION

Pasture DMI %

=

Total Estimated DMI - Stored Feed DM
Sourced

Total Daily Estimated DMI

× 100 ≥

30%

6.2 Veterinary Care and the "No Withholding" Mandate

Prophylactic antibiotics, synthetic hormones, and ionophores are strictly banned. However, organic standards place animal welfare above certification status:



Mandatory Medical Intervention (7 CFR § 205.238(c)(7))

An operator **must not withhold medical treatment** from a sick animal to preserve its organic status. When organic remedies fail, antibiotics or required therapies must be administered immediately. The treated animal is permanently removed from organic production, tagged, and sold on the conventional market.

Chapter 7: Processing, Handling, and Supply Chain Integrity

7.1 Product Classification and Labeling Categories

CATEGORY	% ORGANIC	PERMITTED SEAL USE	ALLOWABLE NON-ORGANIC CONTENT
"100% Organic"	100.0%	USDA / COR Seal Permitted	Zero non-organic ingredients or processing aids.
"Organic"	≥ 95%	USDA / COR Seal Permitted	Up to 5% non-organic ingredients from National List § 205.605/606.
"Made with Organic..."	≥ 70%	Certifier Seal Only (No USDA Seal)	Up to 30% non-organic agricultural ingredients / allowed synthetics.
Ingredient Panel Only	< 70%	No Seals Permitted	Can only identify organic items inside the ingredient statement.

STANDARD ORGANIC PERCENTAGE EQUATION

Organic %
=

Total Weight of Certified Organic Ingredients

Total Weight of All Ingredients (Excluding Water & Salt)

×

100

7.2 Facility Sanitation and the 3-Tier Protocol

Surface sanitizers must follow an audited protocol: **Tier 1:** Mechanical/Hot water cleaning; **Tier 2:** National List no-rinse sanitizers (peracetic acid, hydrogen peroxide); **Tier 3:** Synthetic cleaners (quaternary ammonia) requiring a documented, tested potable water rinse before organic contact.

PART IV

The Certification Lifecycle

Chapter 8: Choosing a Certifying Agent

Selecting an Accredited Certifying Agent (ACA) is a strategic business decision. Operators must assess accreditation scope (e.g., direct EU/COR accreditation), transaction fee structures (flat vs. % gross revenue), turn-around time for label approvals, and geographic presence.

Chapter 9: The Audit and Inspection Process

9.1 Forensic Mass-Balance Reconciliation

Inspectors calculate the mathematical relationship between inbound raw materials and outbound finished goods, factoring in shrink, yield loss, and ending inventory.

AUDIT STEP	DATA SOURCE & LEDGER ITEM	VOLUME (SAMPLE WHEAT AUDIT)
1. Beginning Inventory	Certified inventory on hand (Jan 1)	120,000 lbs
2. Harvested / Received	Scale tickets, Field harvest logs	+ 480,000 lbs
3. Total Available Stock	Beginning + Inbound	= 600,000 lbs
4. Outbound Sales	Bills of Lading, Sales Invoices	- 510,000 lbs
5. Documented Shrink (4.5%)	Milling waste logs, cleanout logs	- 27,000 lbs
6. Theoretical Balance	Available - (Sales + Shrink)	= 63,000 lbs
7. Physical Measurement	Bin measurement on inspection day	62,800 lbs (Variance: 0.03% - Compliant)

9.2 Traceback Exercises & Handling Non-Compliances

A traceback test requires tracing a finished product lot number completely backward to its farm field origin, harvest date, and input application records within 4 hours. When discrepancies arise, certifiers issue a **Notice of Noncompliance (NON)** requiring a documented 30-day Corrective Action Plan (CAP) detailing root cause analysis, containment, and systemic preventative measures.

Chapter 10: Maintaining and Scaling Your Certification

10.1 Supply Chain Fraud Prevention Plans (Under SOE)

Under the Strengthening Organic Enforcement (SOE) regulation, certified operations must implement an **Organic Fraud Prevention Plan (OFPP)** within their OSP:

OFPP STEP 01

Vulnerability Map

Identify supply chain blind spots, uncertified intermediaries, and high-risk international commodities.

OFPP STEP 02

Real-Time Verification

Verify supplier status on the USDA Organic Integrity Database (OID) before every shipment receipt.

OFPP STEP 03

Analytical Testing

Risk-based multi-residue screens, GMO PCR assays, and stable isotope origin testing protocols.

APPENDICES

Reference Tools & Audit Worksheets

Appendix A: Master OSP Audit Checklist

Interactive & Printable Pre-Audit Readiness Inspection Tool

Operational Verification Tasks

1. Administrative & Land History

- ☐ Prior Land Use Affidavits (PLUA) on file confirming 36-month prohibited substance moratorium.
- ☐ Field maps clearly indicate lot boundaries, acreage, storage silos, and neighboring land uses.
- ☐ Buffer zones (min. 25–30 ft) documented with conventional harvest disposition logs.

2. Seeds, Fertility & Inputs

- ☐ Seed search logs show ≥ 3 commercial organic searches for any untreated conventional seed used.
- ☐ OMRI / WSDA certificates verified for all fertility and pest management inputs.
- ☐ Raw manure applications comply with 90/120-day pre-harvest intervals.

3. Traceability & Split Operations

- ☐ Cleanout and purge logs maintained for all shared combines, sprayers, and conveyor belts.
- ☐ Mass-balance reconciliation demonstrates balanced harvest yields vs. outbound sales.
- ☐ Organic Fraud Prevention Plan (OFPP) audited and updated in accordance with SOE rules.

Appendix B: Global Equivalency & Trade Variances Matrix

REGULATORY SECTOR	USDA NOP (UNITED STATES)	COR (CANADA)	REGULATION (EU) 2018/848
Hydroponic / Container	Permitted if biological nutrient cycling standards are met.	Prohibited (Soil-less systems ineligible for COR).	Prohibited (Must be soil-bound production).
Sodium Nitrate (Chilean)	Allowed up to 20% of total crop nitrogen requirement.	Prohibited for crop production.	Prohibited across all applications.
Livestock Antibiotic Use	Prohibited across all dairy and meat production.	Prohibited across standard commercial production.	Prohibited (Emergency exceptions require 2× withdrawal period).
Export Documentation	Electronic NOP Import Certificate via USDA OID database.	COR Transaction Certificate / Attestation of Compliance.	Electronic TRACES Certificate of Inspection (COI).

Appendix C: Traceback & Mass-Balance Audit Worksheet

MASS-BALANCE INTEGRITY INDEX FORMULA

Mass Balance Index =

Total Finished Output + Recorded Shrink + Ending Inventory

Beginning Inventory + Total Inbound Harvest / Purchases

= 1.00 ± 0.015

FINISHED LOT #	PRODUCT SKU	INGREDIENT LOT #	SUPPLIER & ACA CODE	BOL / BILL OF LADING	CLEANOUT LOG #
ORG-2026-088	Oat Granola 500g	OAT-LOT-441	Prairie Mill (ACA #772)	BOL-9921	CLN-401
ORG-2026-088	Oat Granola 500g	HNY-LOT-990	Valley Apiary (ACA #104)	BOL-9884	CLN-401
ORG-2026-089	Flax Bar 100g	FLX-LOT-212	Northern Seed (ACA #339)	BOL-9940	CLN-402

Concluding Summary

Securing and maintaining organic certification is an ongoing commitment to transparency, biological stewardship, and continuous chain-of-custody control. By executing your Organic System Plan, enforcing clear physical buffers, training personnel on cleanouts, and maintaining auditable mass-balance ledgers, your enterprise will protect its certification status and access the full value of the global organic marketplace.