THE GATEKEEPERS OF ORGANIC INTEGRITY

Guide to Organic Certifiers

CORNUCOPIA INSTITUTE

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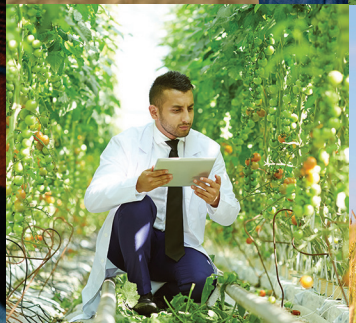

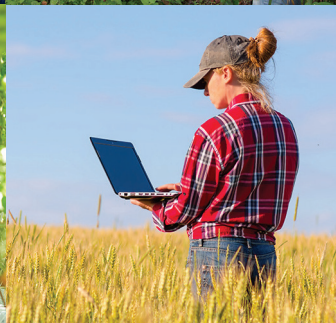

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The Cornucopia Institute is chartered as a tax-exempt public charity focusing on research and education. Cornucopia aims to empower organic producers, consumers, and wholesale buyers to make discerning marketplace decisions, protecting the credibility of the organic food and farming movement and the value it delivers to society.

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Page 11: Oregon Tilth-Certified Egg Operation image by Cornucopia
Page 12: Herbruck's Egg Operation image by Cornucopia
Page 15: Chicken image courtesy of Clean Food Farm in Washington; Grazing Cow image courtesy of Meeting Place Pastures in Vermont

CONTENTS

THE ORGANIC CERTIFIER GUIDE

ACCREDITED CERTIFYING AGENTS (ACAS), also known as "certifiers," are agents of the USDA's National Organic Program (NOP) and occupy one of the most important roles in the organic movement.[1]

Farmers, processors, and handlers hire ACAs to ensure that their practices comply with organic regulations. Certification is a legal requirement under federal law for commodities or food products to be labeled "organic." Because certifiers often exercise discretion in interpreting and applying organic regulations, their credibility and commitment to organic principles is crucial in maintaining organic authenticity and trust in the organic label.

Every decision certifiers make cumulatively determines the working definition of organics and whether this definition embodies the spirit and letter of the law or simply caters to corporations who want to use the organic label for marketing purposes.

When Congress passed the Organic Foods Production Act of 1990 (OFPA), part of its intent was to create a minimum uniform standard for organic production. Instead, the USDA has created an uneven playing field with wide variation in certifiers interpreting the regulations, which has competitively disadvantaged and damaged ethical industry participants.

Given the important role certifiers play in ensuring compliance with the organic regulations and in safeguarding consumer confidence in the organic label, The Cornucopia Institute recognized the desire of both producers and consumers for comprehensive informational materials setting forth the varying policies and procedures adopted by ACAs.

This guide is designed to help producers choose certifiers with values that align with their own and to help educate consumers about the ACAs that certify the organic products they purchase. Now, more than ever, the varying polices ACAs have adopted reveal those that are committed to preserving and promoting longstanding organic principles and those that are incentivized by profit and corporate influence.

HISTORY AND BACKGROUND: ORGANIC CERTIFIER ADMINISTRATION

Certifiers are chosen from the USDA's accredited list. Each establishes its own fee schedule as either a flat rate or a sliding fee based on the operation's gross income. Many longtime organic farmers or businesses renew with their previous certifiers, given the amount of initial work it takes to change certifiers (including an investment in current inventories of printed labels and packaging that are required to identify the certifier). Some farmers operate on the misconception that they are obligated to patronize certain certifiers that are dominant in specific states, including the state governments that operate certification programs.

While many producers choose the cheapest option, others are choosing certifiers based on their reputation and practices. Some operations are becoming aware that some certifiers, playing fast and loose with enforcement, are hurting their bottom lines and the reputation of the organic label.

Just one step removed, consumers are also invested in the credibility of certifiers. Just as producers have an option when it comes to choosing certifiers, consumers can look for the certifiers on product packaging.

Several issues have emerged in recent years that illustrate the divergent paths ACAs are taking. The willingness to certify hydroponics (soil-less growing), large confinement dairies in desert conditions, and industrial hen houses with small porches substituting for required outdoor access has been most controversial. These issues strike at the heart of a certifier's commitment to organic regulations and foundational principles.

Many certifiers are members of the Organic Trade Association (OTA)[2], a prominent and controversial industry lobby group. The OTA primarily represents the interests of corporate agribusiness, oftentimes at the expense of the core values held by farmers, consumers, and the founding leaders of the organic movement.

The OTA pushed the USDA's NOP to approve hydroponic production of certified fruits and vegetables, despite the requirement that soil stewardship is a prerequisite for organic certification.

The primary certifier of hydroponic operations is CCOF, the U.S.'s largest certifier. One of CCOF's hydroponic clients is the giant berry producer, Driscoll's.

CCOF has also been listed as one of the largest donors to the OTA and has been active at OTA's public events.

Corporate members of the OTA have included "factory farms" that USDA investigators have found to be "willfully" in violation of the law. The OTA has aggressively lobbied to include a myriad of potentially dangerous additives in organic food, including genetically mutated algal oil (DHA) and carrageenan, a food coagulant and documented inflammatory agent.

Cornucopia holds the position that conflicts of interest threaten organic integrity when clear boundaries between certifiers, their clients, the OTA, and the NOP are not defined and enforced.

The certification system is rife for fraud because certifiers are paid by the corporate clients they monitor. Certifiers then collaborate with, and financially contribute to, lobbying organizations that advance the interests of these same corporate agribusinesses.

The potential for fraud is amplified when former NOP employees move, unfettered, through the proverbial "revolving door" to work for certifiers and lobby the NOP on their behalf.

These relationships must be closely monitored and regulated to ensure that conflicts of interest do not undermine the interests of high-integrity organic farmers and the founding entrepreneurs of the organic industry.

To learn which certifiers are members of the OTA, consult Cornucopia's ratings.

In 2005, without public notice or opportunity for comment, the USDA unilaterally began allowing the certification of hydroponic (soil-less) operations, bypassing the National Organic Standards Board's (NOSB) input. Instead the USDA stated that they are leaving the decision up to the ACAs. Many organic industry stakeholders and longtime observers have questioned the legality of this decision.

Unlike other approved organic management systems, the NOSB and NOP have never adopted any rules or guidelines for hydroponic production.

Some ACAs already certify hydroponic systems, apparently because of the corporate-friendly USDA posture. Others have decided not to certify hydroponics based on the clear language in the law that identifies *"improving and maintaining soil fertility"* as a prerequisite.

In addition to a commitment to soil health and all of its associated benefits, the best certifiers are also paying attention to animal welfare. Under the USDA's organic regulations, *"all"* livestock *"must"* have *"outdoor access,"* where animals get direct sunlight, fresh air, shelter and shade, and clean drinking water.

However, many organic egg producers do not provide hens with access to outdoor space, or even sunlight, in windowless buildings holding as many as 200,000 birds each. Industrial-scale producers managed to convince the USDA to substitute small porches—commonly with concrete floors—in place of legitimate outdoor access.

In organic dairy production, operations with thousands of cows in the desert are theoretically meeting grazing requirements on ridiculously small acreages, and industrial-scale dairies are allowed to buy conventionally raised replacement heifers, sometimes raised with antibiotics, and "convert" them to organic on an ongoing basis.

These practices place legitimate organic dairy farmers, who raise their own organic replacement animals from birth, at an extreme economic disadvantage. This has facilitated the rapid growth of organic milk production; the resulting surplus is now poised to drive farmers out of business from coast to coast.

Although the USDA has done nothing to stamp out abuses in produce or livestock production, some of the best certifiers have consistently adhered to the spirit and letter of the law of their own accord—placing these ACAs at a competitive disadvantage as well. Poor enforcement by the USDA has also encouraged industrial "organics" to grow and invest hundreds of millions of dollars into infrastructure.

An inspector looks over grower's records.

INSPECTOR QUALIFICATIONS

Certifiers hire inspectors to review an operation seeking initial organic certification and to conduct subsequent annual inspections. Qualified and well-trained organic inspectors are an important link in ensuring organic integrity.

A well-trained inspector will make unbiased observations and then provide inspection reports to the certifiers they work for. In the report, the inspector records on-site observations and audits relevant documentation to help the certifier verify whether the operation's practices are consistent with the organic regulations and the Organic System Plan (OSP) prepared by the operator.

Some organic inspectors are independent contractors and others are employed directly by certifiers. The organic regulations do not include specific training or experience requirements to become an organic inspector, other than specifying the inspector must be "qualified." This leaves certifiers considerable discretion to determine whether an inspector is suitable for hire.

Although not all certifiers require inspectors to successfully complete formal training, many do. Some certifiers require inspectors to complete courses conducted by the International Organic Inspectors Association (IOIA). For aspiring inspectors, IOIA training includes an initial test to determine if a candidate's background, knowledge of organic techniques of farming, and perception of the role of an organic inspector are sufficient to proceed with a course in one of three areas of inspector training: crops, livestock, or handling.

IOIA courses include presentations, field trips, mock inspections on real farms or processing plants, written tests, and an individually-drafted inspection report. An IOIA trainee is also expected to apprentice. The apprenticeship involves participating in site inspections accompanied by an experienced inspector.

Certifiers also have discretion in determining the continuing education and ongoing training required of inspectors.

HOW CORNUCOPIA EVALUATES THE CERTIFIERS

ACAs were asked to provide information about whether they certify hydroponic operations and details on if they certify factory-style "farms."

These topics—along with the certifier transparency—were evaluated and synthesized to create three rating categories:

EXEMPLARY (GREENLIGHTED)

Certifiers showing an exemplary commitment to organic principles, transparency, and regulatory a dherence.

FAIR TO EXCELLENT (EXERCISE CAUTION)

Certifiers that did not fully share and/or formally confirm their policies in writing but have a positive track record and we found some information indicating they are operating in an ethical manner.

DOCUMENTED UNETHICAL BEHAVIOR (STOP SUPPORTING)

These ACAs are certifying dairy CAFOs, chicken houses with porches, and/or hydroponic operations. They may have been implicated in other improprieties, like certifying products with non-organic/synthetic ingredients not included on the National List.

CERTIFYING HYDROPONICS

INTRODUCTION: WHAT IS HYDROPONICS?

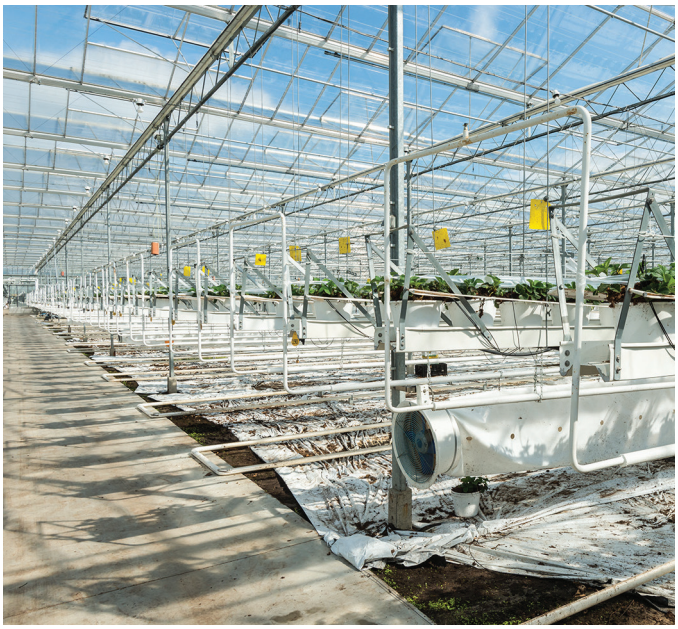
HYDROPONICS IS A TECHNOLOGY for growing terrestrial plants with the roots in nutrient solutions, i.e., water with dissolved fertilizers, rather than soil. Although interest in hydroponics began in the early 1900s, it was not widely adopted commercially until recently. The advent of cheap plastics in the 1970s coupled with the present-day availability of cheap oil for plastic containers, tubing, and greenhouse covers currently allows hydroponics to be a financially viable production method.[3]

Hydroponic systems depend entirely on purchased fertilizers, rather than naturally cycling nutrients in soil, therefore hydroponics is not mentioned in the OFPA. When the NOSB first sought to define the term "organic," they did not consider the concept of growing organic crops without soil because maintaining soil fertility is foundational to organic farming.[4] Good "soil stewardship" is a foundational precept of the organic farming movement, predating the attempts of the USDA and NOSB to codify the term.

HYDROPONICS: INCOMPATIBLE WITH ORGANIC PRINCIPLES

Most stakeholders within the organic community understand that the most important (and challenging) aspect of organic farming is ensuring that organic matter and fertility in the soil is maintained or increased. This is accomplished by costly but environmentally critical practices that prevent nutrient run-off, capture carbon in the soil, and provide a humane life for farm animals. These practices are solutions to the biggest environmental issues of our time: climate change, erosion, declining aquifers, and eutrophication. In fact, carbon is sequestered from the atmosphere and stored in soils by the interactions between plant roots and soil microorganisms.[5]

The economic survival of *authentic* organic farmers depends on the enforcement of organic law, which requires maintaining or improving soil fertility. Without this requirement, environmentally responsible farms face the serious risk of being outcompeted by agribusinesses using less expensive and unsustainable production practices under the same organic label. Rather than cycling nutrients on the farm, hydroponic operations use nutrient-free ("inert") growing media and apply a continuous supply of liquid fertilizers. These fertilizers are commonly sourced from hydrolyzed, conventionally-grown soybeans, wild caught[6] fish emulsion, or even byproducts of composting conventional grocery store waste.



All nutrients fed to these hydroponic strawberries are generated off-site.

ORGANIC RULES REQUIRE SOIL

The Federal Trade Commission (FTC) was the first government entity to officially define "organic." Having banned the use of the word organic in 1974 so as not to condemn conventional agriculture, four years later the FTC reversed its stance due to overwhelming consumer demand. The 1978 definition read as follows:

> *Organically grown food is produced on* ***humus-rich soil*** *whose fertility has been maintained with organic materials and natural mineral fertilizers. No pesticides, artificial fertilizers or synthetic additives are used in the production of organic foods. [emphasis added]*[7]

Later, in 1995, the USDA's National Organic Standards Board defined organic agriculture as:

Healthy soil is the foundation of authentic organic production.

> *...an ecological production management system that promotes and enhances biodiversity, biological cycles, and* ***soil biological activity.*** *It is based on* ***minimal use of off-farm inputs*** *and on management practices that restore, maintain, and enhance ecological harmony [emphasis added].*

OFPA also makes it clear that maintaining soil fertility is foundational to organic farming through its soil fertility and crop nutrient management practice standard.[8]

For example, part of this OFPA standard requires that *"The producer must select and implement tillage and cultivation practices that maintain or improve the physical, chemical, and biological condition of soil and minimize soil erosion."*[9]

This OFPA rule goes on to lay out various management standards, all applying to how a producer must manage their soil. This includes language regarding manure application, soil fertility, compost, crop rotation, and other principles that cannot be translated into hydroponic production.

Given these definitions, can the term organic be applied to soil-less systems, such as hydroponic crop production?

The NOP has stated that *"Organic hydroponic production is allowed."* However, this statement is in direct contradiction to published federal regulations, the enabling legislation, and the NOSB's historic recommendations.

Strictly speaking, the 1995 definition of organic (and earlier definitions) would not only prohibit hydroponics, it would also prohibit organic certification of aquaculture and aquaponics because soil is not involved.

Later definitions of organic by the NOP removed the reference to soil. In 2002, the NOP defined organic agriculture in CFR §205.2: *"Organic production [is] a production system that...respond[s] to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biological diversity."* *

The NOP website currently describes "organic" as:

> *a labeling term that indicates that the food or other agricultural product has been produced through approved methods. The organic standards describe the specific requirements that must be verified by a USDA-accredited certifying agent before products can be labeled USDA organic. Overall, organic operations must demonstrate that they are protecting natural resources, conserving biodiversity, and using only approved substances.*[10]

The site previously included the verbiage that organic production systems must *"integrate cultural, biological, and mechanical practices that* ***foster cycling of resources****, promote ecological balance, and conserve biodiversity" [emphasis added].* Since hydroponic systems do not cycle nutrients, this requirement was also removed from the definition of organic.

In fact, hydroponic systems largely rely on nutrients derived from conventional agriculture, rather than cycling nutrient back into the soil. These changes to the website

USDA Secretary Sonny Perdue tours a hydroponic operation in New Hampshire in 2017.

* Aquaculture is the production of aquatic plants (algae) and animals (fish, crustaceans) in their natural environment, water. *Aquaponics* refers only to the production of crop plants in nutrient solutions produced from aquaculture.

were made by the same USDA bureaucrats that, despite the clear articulation of the law, unilaterally decided that organic hydroponic production was "legal."

Whether organic agriculture is considered a "production system" or merely defined by the USDA as a "labeling term," it is clear in OFPA that organic agriculture is more than input substitution (the substitution of approved "organic" materials for synthetic chemicals). Organic agriculture is also farming in concert with ecological cycles.

It is also clear that the USDA has redefined organic on their website, removing language that relates to soil and the cycling of resources to intentionally allow soil-less production systems that completely depend on off-farm inputs, including approved fertilizers.

DESCRIPTION OF "CONTAINER" (HYDROPONIC) OPERATIONS AND THE CERTIFIERS ALLOWING THEM

Various terms describe whether plant roots are in a solid substrate, whether the nutrient solution is recycled, and whether fish are part of the system. "Aggregate systems," also called "medium culture," allow plants to be rooted in coco coir, peat moss, sand, gravel, vermiculite, rock wool, or other nutrient-free substances, while continuously fertilizing the plant as it grows. These mediums are often described in the industry as "inert" materials. Aggregate systems are commonly referred to by the industry as "container" systems, although all hydroponic systems are in some type of container.

In the fall of 2017, the NOSB Crops Subcommittee put forth a proposal that would define hydroponics and limit the amount of fertility that could be applied to a container-grown crop.

The motion stated that:

> *...for container production to be certified organic, a limit of 20% of the plants' nitrogen requirement can be supplied by liquid feeding, and a limit of 50% of the plants' nitrogen requirement can be added to the container after the crop has been planted. For perennials, the nitrogen feeding limit is calculated on an annual basis. Transplants, ornamentals, herbs, sprouts, fodder, and aquatic plants are exempted from these requirements.*[11]

Many certified organic farmers testified at the 2017 NOSB meeting that the organic standards require "in-the-soil, in-the-ground" growing to be compliant, given requirements for cover cropping, soil fertility, and biodiversity. Many were the pioneering, family-scale farmers who have farmed, in the soil, for as many as 40 years and helped build the organic industry.

The term "container growing" was coined by the industry in an attempt to differentiate the practice from traditional hydroponic production. Container growing employs an inert substrate, like coconut coir, to hold the plant's roots and all nutrients are supplied via liquid fertilizer, as pictured here. Container growing is a form of hydroponic production.

Despite compelling testimony, the proposal to limit liquid feeding for container-grown crops failed in a seven-to-eight vote. By this time, NOP leadership had already quietly allowed the certification of hydroponic container operations for several years—without NOSB approval and with nothing to codify hydroponic production in organic regulations. It could thus be argued that the NOP forced the NOSB to vote on a *ban* of organic hydroponics, rather than on a proposal to *allow* certification.

Since a supermajority of at least ten out of 15 board members is required for a decisive vote, a proposal to allow hydroponics would have likely failed eight-to-seven, and the organic farmers would have gone home victorious. Instead, as it was worded, the proposal to ban hydroponics failed, seven-to-eight, and the hydroponic industry won.

USDA leadership was able to ensure the hydroponic industry would prevail in organics. They ultimately succeeded by illegally allowing hydroponic certification without NOSB approval or regulatory standards govern-

ing its production and stacking the board with agribusiness representatives.*

At the same 2017 meeting the NOSB voted unanimously to prohibit aeroponic production (i.e., feeding with liquid fertilizer through a fine mist). The difference between aeroponic and hydroponic systems essentially comes down to the droplet size used to deliver liquid fertility. This contradiction, allowing hydroponics but not aeroponics, is likely due to the fact that there is no aeroponic industry lobby in the organic sector—yet.

ORGANIC CERTIFIER RESPONSE TO NOP POSITION ON HYDROPONICS

The NOP has not issued a proposed rule or established regulations governing hydroponics based on the NOSB's recommendation, nor has the NOP issued guidance to certifiers on how to inspect hydroponic farms.[12] This means certifiers must interpret the regulations on their own. Some ACAs have chosen not to certify hydroponic systems as organic and others accept applications to certify organic hydroponic systems.

One certifier, Oregon Tilth Certified Organic (OTCO), previously posted FAQs on their website, which have since been removed.[13] The FAQs provided information about the types of hydroponic systems that are being certified. Since these systems is typically based on sterile water, rather than fertile soil, hydroponic farmers are concerned about obtaining a source of plant nutrients. OTCO addressed the problem as follows:

> *Can synthetic micronutrients be applied? What is required to document deficiency? Synthetic micronutrients can be used in a hydroponic system. Most hydroponic systems are obviously deficient of micronutrients, however deficiency must still be documented (205.601(j)(6)). Documentation of deficiency could include water or tissue tests, notes of visual observations, extension or advisor recommendations, etc.*

According to this interpretation, farmers can simply grow plants in water plus micronutrients in a system that does not integrate biological practices, foster cycling of nutrients, or promote ecological balance. In other words, this interpretation would allow hydroponic farmers to grow certified organic crops in a system that does not meet the NOP's own definition of organic.

This is ironic because soil-based growers have to illustrate the need for applications of synthetic plant nutrients based on deficiencies documented through soil testing.

Despite this previous interpretation, OTCO then produced comments for the Fall 2017 NOSB meeting that supported prohibiting hydroponic and aeroponic production methods:[14]

> *We agree with the Subcommittee's findings that hydroponic and aeroponic systems, as defined in this proposal, do not comply with the National Organic Standards (NOS). These systems are input-dependent, relying on large volumes of soluble fertilizers with little nutrient cycling. Prohibition of hydroponic and aeroponic production methods clarifies how and why certain systems are consistent with NOS. In addition, it ends inconsistency between certifiers, while increasing consumer confidence in products adhering to organic production standards.*
>
> *However, we urge the Subcommittee to reconsider their proposed prohibition of aquaponic plant production. Aquaponics offers environmental and socio-economic benefits, and Oregon Tilth believes that these systems can be managed in compliance with the organic standard and should be eligible for certification.*

OTCO's policies and reasoning are not unique among certifiers. What remains is a state of confusion, where individual certifiers are allowed to decide for themselves whether hydroponic producers meet USDA organic standards. These decisions are based on the current regulations, previous NOSB recommendations, and conflicting messages from the NOP.

* The USDA Secretary is mandated to collaborate with the NOSB on implementing the federal law governing organics. The NOSB has no authority to overrule or amend OFPA which clearly requires soil stewardship (and thus soil) to qualify for organic certification.

CERTIFIER APPROACHES TO VARIOUS LIVESTOCK MANAGEMENT PRACTICES

INTRODUCTION

LIVESTOCK IS AN ESSENTIAL PART of the organic program. Many consumers choose livestock-derived products, such as milk, as their first foray into the organic marketplace. The organic livestock sector has faced the same competitive pressures as other areas of the organic industry. Investors backing industrial-scale production have a foothold in the dairy, poultry, pork, and beef markets. In many cases, this agribusiness foothold is supported by the actions of certifiers that are unwilling to hold to the intent of organic law. The money that changes hands between certifier and agribusiness is an economic conflict of interest that the USDA's organic program is designed to mitigate.

There are several areas in organic livestock production where industrial organic players, and the certifiers that enable them, push the intent of the organic law in a direction that was never intended. The most egregious examples include:

- The use of tiny porches instead of true outdoor access for laying hens
- *Fantasy* management parameters written into OSPs by giant factory farms milking "organic" cattle three to four times a day, 10 head per acre, in desert-like conditions
- Cycling young conventional cattle onto organic dairies

These abusive practices represent some of the ways industrial interests take advantage of or create loopholes in the organic regulations. These practices are aided by the support of some certifiers.

As with giant hydroponic operations, it is much more remunerative for ACAs to certify these grotesquely large livestock factories than small family-scale operations.

LEGAL BACKGROUND FOR LIVESTOCK IN ORGANICS

Part of Congress' broad dictate to the USDA is that consumers must be assured that the organic label meets a consistent standard. In fact, section 6501 of OFPA requires the USDA:

1. *To establish national standards governing the marketing of certain agricultural products as organically produced products;*
2. *To assure consumers that organically produced products meet a consistent standard; and*
3. *To facilitate interstate commerce in fresh and processed food that is organically produced. (7 U.S. Code ∬ 6501 – Purposes)*

OFPA has one section that dictates animal production practices and materials.[15] This section lays out the broad requirements for inputs allowed in livestock production (including the prohibition of antibiotics and growth hormones) and general production practices.

CHICKEN PORCHES AND THE CERTIFIERS THAT ENABLE THEIR ILLEGITIMATE USE

Since its inception the organic farming movement asked for strict oversight. It is this federal regulatory supervision that makes the organic label one consumers seek out and trust more than other labels. One reason consumers choose organic over conventional livestock products is that the organic label provides higher welfare for animals.

Organic industrial-scale production has been built on exploiting or creating perceived loopholes or weaknesses in the organic standards. Some certifiers have lent their "good names and reputations" to industrial-scale "organic" operations, endorsing practices that insult organic regulations and ideals. As a result, these egg factories now dominate the marketplace.

Most of the largest producers do not provide hens with any access to outdoor vegetated space (despite its mandate in the law).

Their hens are confined in large agricultural buildings with as many as 190,000 birds each. In some of these situations, small enclosed porches serve as "outdoor access." These porches are typically walled-in areas with a roof, hard floors, and screening on one side. In spite of the fact that the law clearly illustrates that *all* organic livestock must have access to the outdoors, the porches usually do

Some certifiers allow these enclosed porches to substitute for true outdoor access.

not provide access for more than a tiny fraction of the birds in the barn.

The NOSB has debated whether legal organic egg production actually requires meaningful outdoor access for hens (meaning access to vegetated outdoor runs, the soil, and/or rotated pasture) for many years.

The NOSB issued a recommendation in 2002 stating that surfaces other than soil should not count as "outdoor access."[16] At that time, the NOSB clarified that outdoor access for poultry should include access to open air, direct sunlight, and soil. Their recommendation also stated that bare surfaces other than soil do not meet the intent of the national organic standards. The issue resurfaced in 2009 and again in 2011, when the NOSB's Livestock Subcommittee included similar language in a set of recommendations aimed at strengthening animal welfare in organic food production.

In March of 2010, the USDA Office of Inspector General released an audit report, Oversight of the National Organic Program, which asked the NOP to effectively improve their oversight of program operations with respect to certifier consistency.[17] One of the deficiencies specifically identified was that some certifiers developed minimum outdoor dimension requirements for poultry based on organic industry standards while others did not. The report also recommended the NOP develop *specific* criteria for outdoor access for poultry.*

The USDA never adopted any of the NOSB's or the Office of Inspector General's recommendations as regulations or guidance.**

DEFINING "OUTDOOR ACCESS" AND THE LEGAL LIMITS OF CHICKEN WELFARE

Under the USDA's organic requirements, organic livestock must have "outdoor access" where they have shelter and shade and get direct sunlight, fresh air, and clean drinking water.[18]

Unfortunately, the organic standards do not specify the minimum to meet outdoor access requirements. Instead, the responsibility for determining whether outdoor access is adequate has been left to the certifiers.[19]

According to the USDA organic regulation 7 CFR ∫ 205.239, the operator must provide year round access to the outdoors, including:

- Shade
- Shelter
- Exercise areas
- Fresh air
- Clean water for drinking
- Direct sunlight suitable to the species, its stage of life, the climate, and the environment

Porches stretch the legal intent of these standards, particularly the term "outdoors," to unreasonable bounds. Despite these specifics, chicken porches are still used under some certifiers in industrial-scale organics. In some instances, certifiers grant permanent exemptions from the requirements for outdoor access.***

* In October, 2010 the NOP published notice requested for public comment on draft guidance that indicated that the use of outdoor runs and pasture were ways to meet outdoor access regulation for poultry, but left unclear whether porches would comply with the outdoor access requirements [Outdoor Access for Organic Poultry (NOP 5024)].

** The Organic Livestock and Poultry Practices (OLPP) was scheduled to go into effect on May 14, 2018, in its fifth "final" version, the OLPP rule would have increased federal regulation of livestock and poultry for certified organic producers and handlers. The OLPP was intended to bring organic dairy, eggs, and meat production into line with consumer expectations of higher animal welfare by explicitly prohibiting some practices used by industrial organic operations (particularly in the layer industry). USDA has announced the decision to withdraw the OLPP final rule published on January 19, 2017. The withdrawal becomes effective May 13, 2018. More information on the OLPP final rule is available in the March 12, 2018, Federal Register.

*** In one documented case of birds being continuously confined, the certifier Oregon Tilth allowed Petaluma Farms in California to confine their chickens because of a purported risk of avian influenza (no other farmers or certifiers in the state felt the need for this exemption). The Cornucopia Institute. December, 2015. "Scrambled Eggs: Separating Factory Farm Egg Production from Authentic Organic Agriculture." The Cornucopia Institute. https://www.cornucopia.org/egg-report/scrambledeggs.pdf

RECOMMENDATIONS AND ATTEMPTS TO CURE THE POULTRY PORCH "LOOPHOLE"

Over the years, the NOSB has made many recommendations with respect to the compliance problems in the poultry industry. The NOSB has asserted many times that housing must allow animals to perform natural instinctive behaviors and have access to the outdoors. In May 2002, specific recommendations were made to the NOP to clarify the rule regarding access to the outdoors for poultry,[20] stating, *"surfaces other than soil do not meet the intent of the organic standards."* These recommendations specifically prohibited the use of porches to meet the requirement for outdoor access.[21]

The USDA Office of the Inspector General identified inconsistencies in certification practices in 2010. Inconsistencies in how poultry were housed were a chief concern. In response to these findings, the NOP issued a draft guidance, based on recommendations the NOSB made in 2002.

In 2017 an addition to the regulations was proposed by USDA officials. The Organic Livestock and Poultry Practices (OLPP) draft rulemaking sought to strengthen standards for organic livestock and poultry production.[22] In particular, the proposal would have made the use of chicken porches explicitly illegal. Most commenters on each successive iteration of the OLPP were in support of these changes.*

Despite the near-consensus support of the OLPP in the organic industry, industrial egg businesses were not pleased with the proposed benchmarks. These businesses include the largest, vertically-integrated, conventional egg producers with only a small percentage of their production in organics. With the turnover of administrations in 2017, and bipartisan support to undermine the rule in the Senate agriculture committee, the egg industry saw their chance to get the proposed protections for poultry thrown out.

The Trump administration's USDA supported the industrial egg producers' contention that the OLPP would harm all organic businesses, despite support from the industry as a whole for the passage of the OLPP. The USDA received over 40,000 comments supporting the implementation of the OLPP, while only 28 commenters supported its withdrawal.[23] On December 18, 2017 the USDA published a notice in the Federal Register requesting public comments on its intent to withdraw the OLPP final rule, just as it was poised to go into effect.

Oregon Tilth certifies these two-story henhouses with multiple tier aviary systems. Buildings have small screened porches along each side that a small fraction of birds can access. Note semi-trailers in foreground for scale of operation.

Industrial interests in "organic" egg production were fully aware that the current standards *required outdoor access*. It was no secret that tougher enforcement provisions had been in consideration since 2002. Instead of aligning their management plans to these requirements, they invested in infrastructure that could not meet existing or proposed regulations. USDA Secretary Sonny Perdue asserted that giving the NOP the tools to enforce the standards would be injurious to farmers. It was a specious argument in favor of killing the OLPP. Real farmers supported the rule and factory interests did not.

THE ALLEGED THREAT OF DISEASE AS AN EXCUSE TO KEEP BIRDS INDOORS

One of the primary justifications industrial organics cites for the use of porches is a perceived risk to the birds' health. They argue that the porches keep the hens safe by protecting them from wild birds that theoretically could spread disease, predators, and vermin.[24] However, better indicators for bird health are enough space, fresh air, exercise, and low stress. Essentially, the root of the bird flu is confinement conditions, not exposure to wild birds and the natural world.[25]

With respect to salmonella, the FDA had issued rules in 2009 ordering farms to keep all mice, rats, and wild birds out of chicken houses.[26] The rules now apply to all farms with more than 3,000 laying hens.

Some industrial-scale (both conventional and organic) producers—including Herbruck's Poultry Ranch in Michigan, whose representatives have testified numer-

* Although the research of The Cornucopia Institute and aggressive organizing on the issue likely resulted in the draft OLPP, Cornucopia did not support the recommendations for anemic minimum outdoor standards for poultry (for example, prominent animal welfare certification programs require 108 ft.^{2}).

ous times before the NOSB—express that their birds are healthier indoors and that they create safer eggs. If Herbruck's and others want to market these perceived advantages directly to consumers and label their eggs "produced with organic feed," rather than erroneously carrying the organic label, more power to them.

One of Herbruck's "organic" egg operations in Saranac, Michigan. Note semi-trailers in foreground for scale of operation.

Guidance on the topic of avian influenza states that organic producers can *temporarily* confine birds:

> *During avian influenza outbreaks poultry may be confined per the instructions of a state's public health bureau. This is typically allowed. Normally the certifying agent will be aware of these outbreaks. Farmers should contact their certifying agent when concerned about the potential of an avian influenza outbreak.*[27]

This guidance builds on a perceived loophole in the regulations that scale operators and some certifiers take advantage of. This regulation allows organic egg producers to temporarily confine or shelter "...an animal because of conditions under which the health, safety, or well-being of the animal could be jeopardized."[28] Some producers, backed by their certifiers, claim the threat of disease is constant.

The USDA has responded to concerns of outbreaks of Highly Pathogenic Avian Influenza (HPAI) and Low Pathogenic Avian Influenza (LPAI). In the NOP's policy memo, the NOP gives broad discretion to certifiers when working with their producers, stating:[29,30]

> *If it is determined that temporary confinement of birds is needed to protect the health, safety, and welfare of organic flocks, then producers and certifiers may work together to determine an appropriate method and duration of confinement of organic poultry flocks without a loss of organic certification.*

This memo explains actions that producers can take to protect poultry flocks from infectious disease while also maintaining organic certification. Some also argue it gives certifiers the ability to define "temporary confinement" however they choose. The memo is part of the "Guidance & Instructions for Accredited Certifying Agents & Certified Operations," also known as the NOP Handbook.

CERTIFIER IMPACT ON GRAZING DAIRY LIVESTOCK

The integrity of organic dairy means something to consumers and the farmers who care about the reputation of the industry. One of the struggles in the organic dairy industry, since its inception, has been ensuring cows are being legitimately grazed on pasture as the law requires.[31] Large dairies, pushing for high production, have historically tried to avoid grazing their lactating herd altogether, mimicking the worst of the conventional industry.

After many years of delaying tactics, the USDA published more precise organic livestock standards in 2010.[32] The updated livestock rule—more commonly known as the "pasture rule"—sets minimum benchmarks how much feed must be derived from fresh pasture.

When the new pasture requirements were finally enacted, the Secretary of Agriculture stated that that the rule "will give consumers confidence that organic milk or cheese comes from cows raised on pasture, and organic family farmers the assurance that there is one, consistent pasture standard that applies to dairy products."[33] The USDA confirmed that pasture was one of the fundamental foundations of organic dairy.

Unfortunately, the pasture standards controversy was far from settled by the rulemaking in 2010. The lack of judicious USDA enforcement has not been solved by establishing clear minimum benchmarks for pasturing. Some dairy brands continue to depend on operations that manipulate the organic regulations to fit their desire for higher production and lower costs. During the Obama administration, the USDA's efforts at enforcing the rules were virtually nonexistent and widely criticized—and widespread abuses continued.

Where large dairies previously tried to justify their lack of grazing and adequate pasture for lactating dairy cows, they now work to create the illusion of meeting the low standard set by the USDA. This illusion is made possible by a number of agreeable accredited organic certifying agents willing to collect large fees while accommodating the industrial-scale model of production. Some certifiers approve OSPs without determining whether a producer is meeting the minimum grazing requirements. Paperwork is easy to fudge, and most inspections are prearranged by appointment so that factory farms can easily ensure their herds are out on pasture when inspectors arrive.

Of course this behavior is facilitated by deficient oversight by the USDA.

THE ORIGIN OF ORGANIC DAIRY LIVESTOCK

When a dairy cow "ages out" or otherwise is removed from milk production, typically due to health or reproductive problems, both conventional and organic dairies need replacement cows if they want to maintain the same level of production.

Most family-scale organic dairies operate "closed herds," with the offspring of their lactating cows more than adequately filling the need for replacement heifers.

For many industrial-scale dairy operators, their replacement animals do not originate from organic sources. Instead of raising their own young calves, these operations are purchasing cheaper cattle raised on medicated milk replacer (instead of certified organic milk) that includes antibiotics and, potentially, other banned pharmaceuticals and substances. After weaning, these calves are typically fed conventional or genetically modified grains and hay treated with pesticides, herbicides, and synthetic fertilizer.

Essentially, these animals are being raised as any conventional animal would, up until their first birthday. For the second year of life, approximately one year before the calves start producing milk, they are switched to organic feed and management. These dairies are in "continuous transition" to organic with the replacements they bring in. Conventional cows transitioned in this manner are also typically used for expansion.

These practices have been legally questioned because it is a gross misreading of the purpose behind the language in both OFPA and the organic regulations.

Most family-scale farms raise their own replacement cows.

The current rule that applies to transitioning organic livestock went into effect with the adoption of the original standards in 2002.

The law is clear in this area, despite some bad actors taking advantage of a perceived "loophole." The preamble of the organic regulations shows that the regulations were not intended to allow the continuous transition of conventional animals. It states, *"Once an entire, distinct herd has been converted to organic production, all dairy animals shall be under organic management from the last third of gestation."*[34] This requirement is immortalized in the "origin of livestock" rule.[35]

While these regulations seem to be straightforward, the USDA and certain certifiers unilaterally decided that farmers could convert conventional cattle in perpetuity, well beyond the first transition from a conventional farm to an organic one. This move has been legally questioned because it is a gross misreading of the purpose behind the *"once an entire, distinct herd"* language.

This confusion, some certifiers and factory farm supporters within the USDA argue, is due to a passage in OFPA that states:

> *Except as provided in subparagraph (B), a dairy animal from which milk or milk products will be sold or labeled as organically produced shall be raised and handled in accordance with this chapter for not less than the 12-month period immediately prior to the sale of such milk and milk products. Section 6509(e)(2)(A)*

This 12-month conversion provision is supposed justification for converting organic cattle as long as they go through the 12-month transition. The USDA and some certifiers allow businesses to buy conventionally raised heifers and "convert" them to organic on an ongoing basis. This issue, often categorized as the problem of the "origin of livestock," is fundamental to differentiating industrial organic dairies from others.

The NOSB noted in a 2003 recommendation that the preamble and the regulatory language strongly support a "systems" approach to organic production, highlighting this language in the rule:

> *The conversion provision also rewards producers for raising their own replacement animals while still allowing for the introduction of animals from off the farm that were organically raised from the last third of gestation. This should protect existing markets for organically raised heifers while not discriminating against closed herd operations. Finally, the conversion provision cannot be used routinely to bring non-organically raised animals into an organic operation.*[36]

In addition to this evidence, the NOSB pointed out that the regulation at section §205.236(b)(1) clearly states

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that animals may not be rotated between organic and nonorganic production. Continuous introduction of conventional dairy replacement animals undermines the systems approach.

The NOSB was correct in its 2003 assessment of the rules. The rule as a whole makes it clear that §205.236(a)(2)(iii) applies to all animals once a herd is converted. The NOSB's recommendation to change the numbering of the "origin of livestock" section would have made it clear on the face of the regulation that every point applies to all organic dairies.

Unfortunately, the USDA never implemented the advice and direction from the NOSB. A guidance developed by the NOP would have strengthened certifier positions by acknowledging the rule was being misapplied during the G.W. Bush administration and making a blanket decree that the entire rule applied to all dairies. However, they chose not to clarify the rule with a statement or other guidance to certifiers. Instead, the question was left open for mega-dairies and their certifiers to respond to however they chose, leaving organic integrity open for interpretation.

ALLOWING INDUSTRIAL ORGANIC DAIRIES TO CHEAPEN THE DEFINITION OF ORGANIC

Why does bringing in conventional cattle and then transitioning them to organic management on a continuous basis matter? Besides the blatant disrespect to organic ideals and consumer perception, there are many practical reasons why transitioning in conventional calves is bad for the organic label and disadvantages organic dairy farmers who follow the spirit and letter of the law.

Real organic dairies raise their own replacements, feeding them organic milk from their herd. This is organic milk that could otherwise go to consumers, giving factory dairies an economic edge over family-scale farms (lower costs of factory farms create higher revenues by selling more milk).

The abuse and poor enforcement of the "origin of livestock" problem would be most simply solved if certifiers disallowed what is obviously a loophole in conflict with the spirit and letter with the organic law and regulations.

Although some of the largest certifiers are allowing continuous conversion of organic dairy replacement animals, the most ethical certifiers do not permit the practice.

ILLEGAL INSPECTIONS OF PASTURED RUMINANTS

Certifiers are often culpable in the abuses found in the livestock industry. When an inspector is inexperienced, poorly organized, or downright fraudulent, it sets the stage for factory-organic dairies, egg producers, and others to get away with abuses. Organic inspections are suspect when:

- Inspectors have no prior experience in organic livestock production, agriculture, or inspections. They will not notice abuses experienced inspectors might uncover.
- Inspectors perform a ruminant livestock operation's annual inspection in the off-season. It is impossible to judge how well a dairy, for example, is grazing their animals if you cannot see the pastures and animals in question during the grazing season.
- Inspectors rely on paperwork provided by the producer over visual analysis of the operation.

For example, the Aurora dairy factory farm is certified by the State of Colorado. Interviews with the state's Department of Agriculture indicated that the personnel inspecting their facilities had no prior experience in organic livestock operations or inspections. Despite this, they inspected some of the largest and most sophisticated organic livestock operations in the country.

A front-page exposé in *The Washington Post* in mid-2017 presented strong evidence that Aurora—the largest organic milk producer in the United States—has been operating illegally.[37] What *The Washington Post* found when they visited the largest of Aurora Dairy's complexes, in Weld County, Colorado, was a giant feedlot where almost all of the 15,000 cows were confined to a feedlot, rather than being out on pasture as the organic law requires. Aurora claimed that their Organic Systems Plan, approved by their certifier, ended their grazing on September 30, even though the federal law clearly states that cows must have access to pasture during the entire grazing season.

On top of this, the Colorado Department of Agriculture's most recent inspection of this giant factory farm took place during the previous November, when no cows would be on pasture.

Clean Food Farm in Washington

WHAT THE BEST CERTIFIERS ARE DOING TO PROTECT ORGANIC LIVESTOCK PRODUCTION

The best ACAs follow both the letter and spirit of organic regulations. While guidelines produced by the USDA and NOSB are followed by most certifiers, there is more to policing organic production and handling.

Top certifiers of poultry operations:

- Do not allow porches to qualify as "outdoor access" for egg laying hens and require that birds have access to soil with vegetation of some form.
- Require operations to provide "direct sunlight," as specified in the standards, by ensuring birds have exposure to windows in the coop/building and open sky outdoors.
- Require outdoor access year-round, except when weather poses a danger to the health of the birds.
- Know there is no logic in providing "outdoor access" if the birds can't reach it! One small pop-hole door from the barn to the outside is not sufficient for thousands of birds.
- Scrutinize the minimum space available to birds inside and outdoors, and consider the cleanliness of the facility, air quality, the distribution of food and water, roosting areas, and other enhancements.*

Top certifiers of ruminants, including beef and dairy cattle:

- Look for reasonable stocking densities and good pasture management. Pasture cannot be overgrazed or in poor condition and still meet the legal definition of "pasture."
- Study animals' body condition, as that can say a lot about the quality of their feed and care.
- Inspect an operation's records to ensure livestock meet minimum pasture consumption requirements and days on pasture rules.
- Generally prohibit alterations like tail docking (cutting off the cows' tail to theoretically promote cleanliness).
- Expect closed herds (meaning the producer raises their own replacement cattle), except for planned upsizing or culling for health reasons. If a farm's attrition rate is high enough that they need to consistently bring in animals, whether or not they were raised organically from the last third of gestation, there's something amiss with farm management. The operator may be pressing for uncharacteristically high milk production at the expense of animal health.

All of these points, and more, are taken into account by top-tier organic certifiers.

Meeting Place Pastures in Vermont

* Top certifiers note they do not often see less than 1.5 ft^2 per bird allotted indoors for organic operations.

CERTIFIERS AND IMPORTED GOODS

FROM THE BEGINNING of the organic movement, organic grains (both food and feed grade) have been an important segment of the North American market.

Over the past decade imports of organic grains have soared. From 2013 to 2016 alone, imports of organic corn quadrupled from $36.6 million to $160.4 million. Imports of organic soybeans also increased dramatically, from $41.8 million in 2011 to $250.5 million in 2016.[38]

The shift to unreliable international sourcing was highlighted in 2009 when The Cornucopia Institute published its *Behind the Bean* report focusing on certification problems with organic soybeans being imported from China.[39]

In 2017, concerns about the authenticity of these imports were realized when an investigation by *The Washington Post* revealed massive shipments of fraudulent organic corn and soybeans had infiltrated U.S. borders.[40]

Organic corn and organic soybean farmers in the United States lost an estimated $400 million between 2015 and 2017 alone, as the increase in dubious organic grain imports skyrocketed.[41]

As U.S. farmers watched prices for their organic grain fall dramatically, suspicious organic grain was making its way across the United States from or through countries including Ukraine, Turkey, Russia, and other former Eastern Bloc countries.

In June 2018 Cornucopia released a comprehensive report chronicling how a small number of multibillion-dollar agribusinesses, predominantly based in Turkey, came to dominate the U.S. organic grain industry, following systemic failures of the USDA's NOP to curb the infiltration of questionable organic imports.[42]

In the wake of lax USDA enforcement and farmer pleas for action, some certifiers adopted policies to increase oversight of organic grain shipments imported by the operations they certify. These policies include additional control measures designed to identify fraud and stop fraudulent imports from entering the U.S.[43]

Some certifier policies emphasize that the certified operation must maintain specific documents to demonstrate complete audit trail trace-back and volume calculations.

Additional control measures were implemented by some certifiers, including requirements that the certified operation notify the certifier of incoming shipments of grain imported from high-risk countries like Kazakhstan, Moldova, Romania, Russia, Turkey, and Ukraine. The certifier might then require additional unannounced inspections of the operation and the imported grain.

Today there are 32 USDA-accredited certifiers based in foreign countries. Some of these, along with specific importers, have been banned from organic commerce in other countries, but the USDA has failed to take similar action. For example, ETKO, a Turkish certifier of organic products, was de-accredited by Canada and the European Union, meaning that ETKO-certified products are no longer accepted as organic in those countries.

The USDA proposed suspending ETKO's accreditation. However, ETKO appealed the USDA's decision and maintained its status after agreeing to take corrective action.[44]

Although international certifiers are not part of our study, domestic and international certifiers play key roles in evaluating the integrity of organic imports. Assurances of organic authenticity are highly dependent upon certifier integrity. Recently, the NOSB requested public comment in their efforts to establish criteria that contribute to a certifier's risk of fraudulent activity.

These factors include operating in an area or region known to have fraudulent activity and certifying a high number of operations exporting or importing to the United States from foreign markets.

Because certifiers play such an important role in assuring the integrity of imports, Cornucopia requested copies of any certifier policies related to imports. A certifier that certifies operations involved in importing organic agricultural products receives a higher rating in this category if they have a policy outlining control measures designed to detect import fraud.

CONCLUSION

CERTIFIERS ARE AN ESSENTIAL PART of maintaining the integrity of the organic label and preserving a fair and level playing field for ethical industry participants. Unfortunately, how the USDA polices and guides certifiers in their duties can be lackluster. Inconsistent application of organic rules and regulations has led some certifiers to bend the existing rules to suit their largest clients and the growing industrialization of the organic marketplace.

The areas that are of most concern—hydroponics, consistent application of organic livestock management mandates, and how certifiers police imported goods—all effect the organic marketplace at large. Farmers and handlers choose their certifiers on a myriad of criteria, including a certifier's fee structure, reputation and service level, and membership in other organizations including the OTA.

Certifiers have enormous lobbying power with both the NOSB and the NOP and have always been quick to use that power to influence the direction of the organic marketplace—for the better and for the worse. The Cornucopia Institute sees the independence of certifiers as fundamentally important, like referees in sports. The optics of lobbying on behalf of the interests of their largest clients are off-putting, to say the least.

While it is ultimately up to the NOP to keep certifiers in line, there are some certifiers who voluntarily do excellent work. These certifiers stick to the spirit and the letter of organic law—because their heritage and leadership demand nothing less.

While it is ultimately up to the NOP to keep certifiers in line, there are some certifiers who voluntarily do excellent work. These certifiers stick to the spirit and the letter of organic law—because their heritage and leadership demand nothing less.

This means those certifiers refuse to certify operations attempting to exploit loopholes in enforcement or outright flout organic regulations, such as hydroponic operations and livestock factories.

While top certifiers may lose revenue by refusing to certify some of these enormous and lucrative operations, consumers, farmers, and businesses can reward their efforts in the marketplace. Organic farmers and businesses can use Cornucopia's Certifier Scorecard to choose ethical certifiers to oversee their operations, and consumers can shift their spending to support the products they certify.

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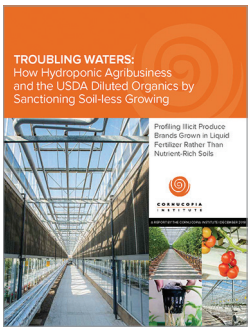
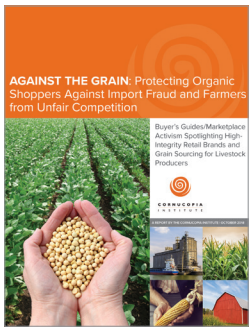
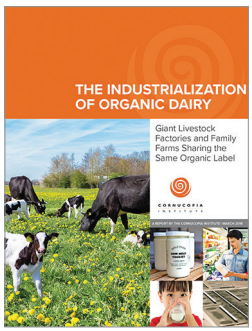


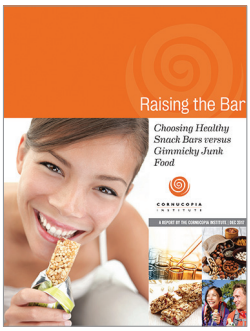
Troubling Waters: How Hydroponic Agribusiness and the USDA Diluted Organics by Sanctioning Soil-less Growing



Against the Grain: Protecting Organic Shoppers Against Import Fraud and Farmers from Unfair Competition

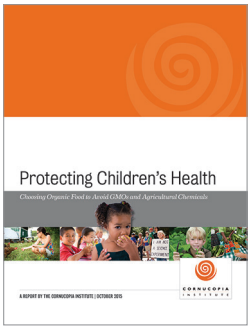


The Industrialization of Organic Dairy: Giant Livestock Factories and Family Farms Sharing the Same Organic Label

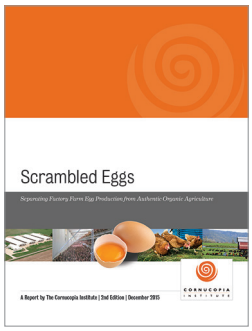


Raising the Bar: Choosing Healthy Snack Bars versus Gimmicky Junk Food

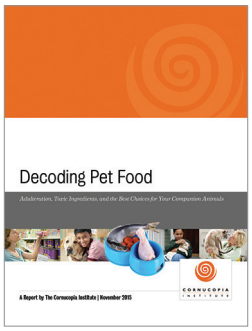
Behind the Dazzling Smile: Toxic Ingredients in Your Toothpaste?



Protecting Children's Health: Choosing Organic Food to Avoid GMOs and Agricultural Chemicals.

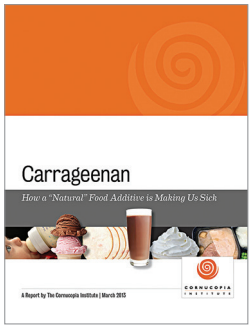


Scrambled Eggs: Separating Factory Farm Egg Production from Authentic Organic Agriculture, 2nd edition.

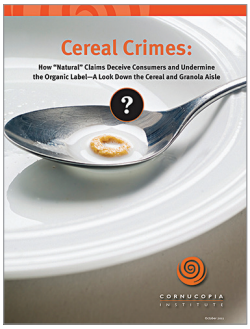


Decoding Pet Food: Adulteration, Toxic Ingredients, and the Best Choices for Your Companion Animals

Culture Wars: How the Food Giants Turned Yogurt, a Health Food, into Junk Food

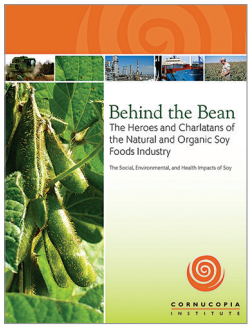


Carrageenan: How a "Natural" Food Additive is Making Us Sick



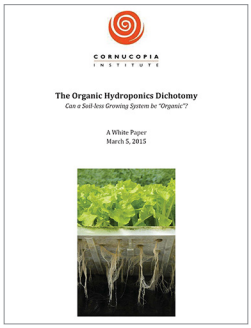
Cereal Crimes: How "Natural" Claims Deceive Consumers and Undermine the Organic Label—A Look Down the Cereal and Granola Aisle

Replacing Mother—Imitating Human Breast Milk in the Laboratory. Novel oils in infant formula and organic foods: Safe and valuable functional food or risky marketing gimmick?



Behind the Bean. The Heroes and Charlatans of the Natural and Organic Soy Foods Industry

Do It Yourself Organic Certification Guide and Video: Helps shoppers navigate their local markets when a certified organic farm vendor is not available



The Organic Hydroponics Dichotomy: Can a Soil-less Growing System be "Organic"?

CORNUCOPIA INSTITUTE

THE CORNUCOPIA INSTITUTE is engaged in research and educational activities supporting the ecological principles and economic wisdom underlying sustainable and organic agriculture. Through research and investigations on agricultural and food issues, The Cornucopia Institute provides needed information to family farmers, consumers, stakeholders involved in the good food movement, and the media.

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