

THE CULTIVATOR

NEWS FROM THE CORNUCOPIA INSTITUTE

FALL 2019

Bird by Bird

Researching America's Most Popular Meat

BY MARIE BURCHAM, JD

How are organic chicken and turkey different than their conventional counterparts? And what considerations do consumers need to be aware of when choosing organic poultry brands?

The Cornucopia Institute will answer these questions in a comprehensive report slated for publishing later this year. Along with the report, Cornucopia will release a scorecard rating organic poultry brands according to the best practices in organic farming.

Chicken is the most popular and accessible organic meat. According to USDA's Economic Research Service (ERS), in 2016 more than 19 million certified organic broilers were produced, with sales exceeding \$749 million. Turkey is also popular, though it has a much smaller organic market share—sales reached approximately \$83 million in 2016.

Organic chicken and turkey differ from their conventional counterparts in the following ways:

- 1) All poultry must have year-round access to the outdoors, with some exceptions, and are “free-range,” meaning they are never confined to cages.
- 2) Organic poultry is raised without pesticides and synthetic fertilizers; all agricultural components of the feed, including kelp and supplement carriers, must be 100% certified organic.



PHOTO: ADOBE STOCK

- 3) The use of synthetic internal parasiticides on a routine basis is not allowed.
- 4) Aside from vaccinations, no medication is allowed in the absence of illness.
- 5) No re-feeding manure or feeding urea is allowed in organic poultry production.

Chicken is considered a “gateway meat” into organics, because it is generally affordable and available across the U.S. The Agricultural Marketing Resource Center notes that organic chicken is purchased by more than seven in 10 shoppers.

Organic chicken dominates the market due to its relatively short production cycle, low price premium, and integrated production (when compared to beef or pork). “Integrated

production” refers to a system in which one company owns and controls multiple stages of production, including the breeder flocks, hatchery, grow-out flocks, processing plant, feed mill, and marketing.

Unfortunately, the organic poultry industry has become dominated by a few factory-style producers who have invested heavily in their current

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Import Fraud

Director of International Policy Looks Back

BY ANNE ROSS, JD

Just over two-and-a-half years ago, I stood on the floor of the La Crosse Center arena at the MOSES conference in Wisconsin. It was my first day as a member of the Cornucopia team.

In La Crosse, I met John Bobbe and Oren Holle. At the time, John Bobbe was the executive director of OFARM, the largest organic grain cooperative in the country. Oren Holle is the president of OFARM's Board of Directors.

Sometime later, I'd get to know Merle Kramer, an organic grain marketer for Midwest Farmers Cooperative.

When I met these champions of organic grain farmers, they were tackling a mounting crisis facing the organic sector—the flow of fraudulent organic grain into the U.S. from overseas.

I remember Kramer telling me then that farmers were becoming disenchanted, feeling like they no longer lived in a free market relative to organic grain trading, and were increasingly despondent about what they perceived as the passive attitude of government regulators.

The stories and insights that Kramer and the others shared would go on to inform Cornucopia's investigation into organic grain fraud.

Brought together by our efforts to rectify a problem that had too long gone unresolved, we worked to find solutions

that would stop fraudulent organic grain imports from crossing U.S. borders.

Over the past two years, Cornucopia filed a citizen's petition, calling on the USDA to close regulatory loopholes exploited by unscrupulous participants in international supply chains.

We publicized the identities of specific foreign companies and their certifiers, calling upon the USDA to investigate the integrity of these supply chains.

We tracked vessels, notified authorities of questionable incoming shipments, and testified at NOSB meetings to impress upon the USDA the urgent need to act.

We've also celebrated the hard work of organic grain farmers across the U.S. We've called attention to their ongoing struggle to compete with documented cases of import fraud and with incoming shipments with unverified authenticity.

We've repeatedly warned that the failure to curtail fraudulent imports risks erosion of consumer confidence in organic food production, the system we know to be healthier for people and the planet.

Since my introduction to those organic grain champions two-and-a-half years ago, I'm often asked, as are they, where things stand and if anything has changed.

The USDA reports that progress is being made to address import fraud. The agency indicates that it intends

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Professor, Columbia University
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New York, NY

cornucopia.org
cultivate@cornucopia.org
608-637-8278

Jennifer Taylor, PhD

Professor, Florida A&M University
Organic Farmer, Former NOSB Member
Tallahassee, FL

Frederick Kirschenmann, PhD
Professor, Iowa State University
Organic Farmer, Former NOSB Member
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to publish a proposed rule, expected this fall, that would enhance supply chain traceability.

According to the USDA, its enhanced enforcement efforts in recent months have resulted in the decertification of non-compliant operations in the Black Sea Region and the de-accreditation of many of their certifiers.

The USDA National Organic Program's (NOP) Deputy Administrator Dr. Jennifer Tucker recently announced that the USDA has enlisted the Office of Inspector General to address concerns that certain foreign actors are engaged in criminal activity, a concern Cornucopia documented early on in our investigation.

The USDA also reports increased coordination with other governmental agencies at U.S. borders and ports to identify high-risk shipments for inspections.

While these measures are commendable, the work is far from done. After years of delay, and the resulting critical damage to domestic organic grain farmers, it is vital to ensure that these measures are effective and implementation is immediate.

Kramer is one of many people who worry that recent USDA efforts are lip service to what has become an endemic problem—an ongoing, free flow of fraudulent organic grain in the U.S. market.

“I talk to farmers almost every day that are appalled and angry at the USDA-NOP, organic certification agencies, legislators, and corporate (conventional) agribusiness and food companies who are rapidly boxing organic agriculture into conventional farming and business models, and doing it by cheating. The free market aspects of sustainable agriculture began to erode years ago as the NOP stood silent while one of the largest consumer-fraud scams in U.S. history was underway,” says Kramer.

The reality is we live in an interconnected global market and there's a lot at stake. To make sure organic production thrives, everybody needs to play fair. There's been some progress, but there's more to do. We believe in organics. That means we keep doing the work however long it takes. You can count on that.” — Oren Holle, OFARM Board President

He is right. Bad actors, incentivized by the prospect of ill-gained profits, are not deterred when the chance of getting caught is low and penalties are weak. Vigilant enforcement is crucial to holding the individuals and corporations that have perpetrated fraud accountable—both civilly and criminally.

Because the USDA cites limited resources and insufficient evidence to conduct routine inspections of incoming vessels, organizations like Cornucopia and individuals like Bobbe will continue to keep a close eye on imported products and traders.

We continue that work today. Even with limited resources that pale in comparison to those of the government, we have identified suspicious shipments, as well as companies and their supply chains, deserving of enhanced scrutiny.

Bobbe recently told me, “I won't stop filing complaints with the USDA until the day I'm confident that the grain aboard these vessels is legitimately organic and part of a verifiable supply chain. That day has not yet come.”

Bobbe's point about verifiable supply chains applies equally to all imported organic products, not just grain.

Trade statistics underscore the importance of ensuring the organic integrity of all imports. The dollar value of U.S. imports far outweighs the value of organic food that the U.S. exports. In 2016, U.S. organic imports represented \$1.7 billion, compared to organic exports which totaled nearly \$548 million.

To safeguard the integrity of an organic market comprised largely

of imports also requires verification of organic authenticity once a product reaches the border, not just throughout the supply chain.

Fumigants, some of which are prohibited in organic production, are applied to fruits and vegetables at the border when pests are found, or simply as a condition of entry, depending on the country of origin.

The USDA reports that it is working with other government agencies to improve oversight at the border to flag organic products that have been treated with prohibited fumigants. Products treated with prohibited fumigants should never bear the organic seal.

A robust organic market in the U.S. depends upon the integrity of imported products. Consumer confidence in the integrity of organic imports promotes consumption and production of organic food generally, including organic food produced in the U.S.

Likewise, domestic farmers are incentivized to convert conventional land to organic production when they are confident they won't be competing with cheaper imports of questionable organic authenticity.

When considering where we stand now in addressing organic grain fraud, I think Holle put it best:

“The reality is we live in an interconnected global market and there's a lot at stake. To make sure organic production thrives, everybody needs to play fair. There's been some progress, but there's more to do. We believe in organics. That means we keep doing the work however long it takes. You can count on that.”

Conventional Soy Damages the Environment

And Possibly Our Health

BY MARIE BURCHAM, JD AND ANNE ROSS, JD

The environmental and health impacts of any agricultural product depend not only on the product itself, but how it was grown or produced, sourced, and processed. Soy is no exception.

Conventional soy is a booming crop, with more acres dedicated to the legume every year. But the environmental impact of a diet that incorporates soy, as well as the relationship between soy and animal products, are important for consumers to consider.

Many people associate the consumption of soy with vegetarian and vegan food. But 70% of the soybeans grown in the U.S., and between 80% and 90% of the soy grown globally, is used for animal feed.

That means that the majority of soy is actually consumed indirectly through a diet of chicken, pork, beef, and farmed fish, as well as eggs, milk, cheese, and yogurt.

As global population increases, demand for these products keeps the soy market soaring, while presenting issues on a massive scale. Worldwide use of soy—the majority of which is conventionally grown—results in various environmental consequences.

Large-scale soybean cultivation is a significant agricultural contributor to deforestation, second only to beef cattle. Rainforests and other virgin land in South America are being cleared at an increasing rate, fueling the all-out destruction of biodiversity and habitat loss in some of the most valuable ecosystems in the world.

Equally problematic are the potentially adverse health consequences posed by soy. Over 90% of soy is now sprayed with chemicals—specifically glyphosate and dicamba.



PHOTO: ADOBE STOCK

Large-scale soybean cultivation is a significant agricultural contributor to deforestation, second only to beef cattle.

Conventionally grown soybeans have been found to contain high residues of glyphosate (the primary active ingredient in Roundup) and its toxic metabolites. These chemicals have been linked to cancers and other health risks.

The majority of non-organic soy is genetically engineered (GE) to resist herbicides. Chemical companies manufacture both the herbicide-resistant seeds and the herbicides themselves. These product lines are enormously profitable for the four companies that now control over 60% of global proprietary seed sales: Bayer/Monsanto, BASF, ChemChina, and Corteva.

Producers that drench their GE “Roundup-ready” soybean crops with glyphosate are driving the evolution of weeds that are resistant to the herbicide. Inevitably, these “superweeds” lead producers of GE soybeans to spray more glyphosate.

This cycle of battling herbicide-resistant weeds with more pesticide has been described as the “chemical treadmill.”

In contrast, organic crops are free from herbicides, including glyphosate and dicamba, and cannot be genetically modified. Organic livestock must be fed certified organic feed.

Certified organic farms are also prohibited from destroying native ecosystems prior to using the land for organic production, lessening the risk of habitat destruction from soy cultivation.

Organic soy production currently constitutes a very small fraction of soy grown globally. Options for organic meat alternatives and plant-based beverages are scarce. Change will only follow demand; those looking for more organic soy food options can make their voices heard by ditching conventional products and encouraging brands to switch to organic soybeans.

To learn more about soy and other plant-based beverages, check out Cornucopia’s Report “*Pouring Over Plant-Based Beverages*” and its accompanying scorecard at: cornucopia.org/scorecard/plant-based-beverages/.

Gatekeepers of Organic Integrity

Or Something Else Entirely?

BY MELODY MORRELL

USDA-Accredited Certifying Agents (ACAs) are the backbone of the organic marketplace. Without them, there would be no certified producers—and no food that bears the organic seal. The United States Department of Agriculture (USDA) administers the National Organic Program (NOP), including the accreditation of organic certifiers.

The ACAs, in turn, certify organic operations. In this system, farmers, processors, and handlers hire certifiers to perform inspections and ensure their compliance with organic regulations.

ACAs are paid by the operations they certify; they hire and train the inspectors who perform initial inspections and ensure that operations follow the terms and intent of the organic regulations.

Many ACAs work with great integrity, despite the inherent conflict of interest. Others appear more dedicated to keeping operations certified than ensuring competent oversight. After all, many ACAs are for-profit businesses.

The USDA issues sustained guidance to help ACAs interpret the organic rules and regulations, but decisions made by individual ACAs can lead to inconsistent application of the rules.

For example, the NOP allowed hydroponic operations to receive organic certification, yet failed to establish regulations or guidance documents governing hydroponics.

In this regulatory limbo, some ACAs began to certify hydroponics; others had already been doing so for years. Still others, notably One Cert and the Organic Crop Improvement Association, have continued to uphold authentic organic principles and require their farmers to grow crops in soil.

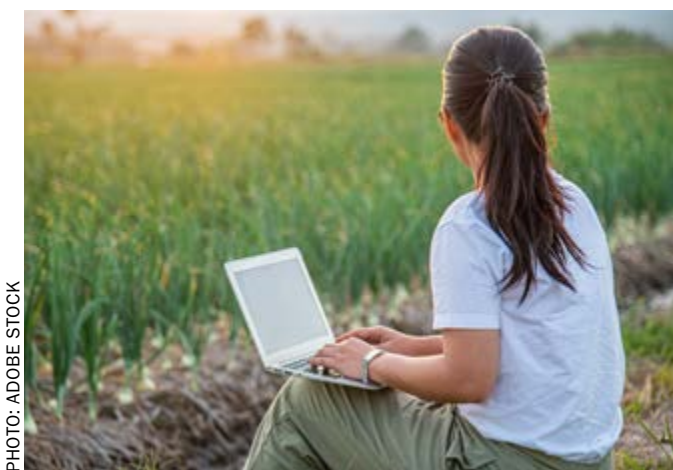


PHOTO: ADOBE STOCK

ACA commitment to organic principles is crucial to maintaining organic integrity and trust in the label.

Hydroponic growers extol their water efficiency and cheap produce, but rarely acknowledge the high costs in energy and plastic. Likewise, they ignore the organic mandate to steward soil.

With externalized costs, cheap “organic” hydroponic produce has supplanted many soil-grown fruits and vegetables in stores. Conventional-turned-organic hydroponic operations are profiting enormously, as are their ACAs.

Meanwhile, organic farmers who regenerate and steward the soil are at a deep disadvantage in the marketplace. Unfettered ACA decisions are wreaking havoc on ethical dairy farmers as well.

According to Freedom of Information Act disclosures, the Texas Department of Agriculture (TDA) failed to conduct any unannounced inspections in one year, followed by only two the next year. The Cornucopia Institute has filed several formal legal complaints against TDA and the industrial dairies it certifies.

One of the factory farms certified by TDA, Natural Prairie Dairy, was first flagged by Cornucopia in 2010. It was recently back in the news for allegations of animal abuse and continuing pasture rule non-compliance. At the time of writing, this dairy remains certified.

ACAs that certify industrial-scale operations enable the flood of cheap “organic” goods that undercuts prices in the marketplace. Cornucopia’s Certifier Guide helps farmers differentiate between ACAs that share their values and those that are ultimately putting authentic organic farmers out of business.

What can consumers do? Choosing only authentic organic food from producers with high integrity is a powerful marketplace force. Factory organic production relies on misinformation and marketing tactics. With a little homework, consumers can support the most ethical farms and sideline the most corrupt.

To learn more about ACAs, interested readers can find Cornucopia’s report, *The Gatekeepers of Organic Integrity*, on our website.

[cornucopia.org/
certifier-report/](http://cornucopia.org/certifier-report/)



Good Tilt

Organic Farms Foster Soil Health

BY JENNIFER HAYDEN, PHD

Right now, under my appreciative feet, there's a springy carpet of creeping thyme that makes its home among hay-scented ferns on this tiny slip of Maine coastline.

Below the thyme and ferns is an unseen world of plant allies providing nutrients and exchanging messages across the landscape.

The soil is teeming with earthworms, protozoa, nematodes, bacteria, algae, fungi, and more, each interacting with the others in ways that work to feed the plants and trees above, drag nutrients to storage further below, recycle old plant and animal material, and capture and filter water, all the while creating the sticky aggregates and holey passageways that mark the "good tilt" so essential for sustainably grown food.

Soil scientists call this the "skin of the earth." And our modern farming practices have been scalping, pocking, and bleeding it for too long now.

Healthy soil is a living system. Like the human body, the whole is greater than the sum of its parts. Soil health, like human health, or ecosystem health, is a truly complex amalgam, where interacting individuals, diffuse networks, and mysterious internal relationships act in concert with every shift in the environment.

While there are three main components of soil health—physical, chemical, and biological—the biological component drives the system. The complexity and abundance of soil biota is staggering: there are more than a billion bacteria, yards of fungal filaments, thousands



PHOTO: ADOBE STOCK

Healthy soil is a living system. Like the human body, the whole is greater than the sum of its parts.

of protozoa, and scores of nematodes in just one teaspoon of soil.

Soil is the most species-rich ecosystem known, and we have been making strides in understanding and appreciating the vitality and importance of this dark world.

Take the case of just one type of soil fungi: arbuscular mycorrhiza. They have relationships with almost all of our food crops, helping plants to root, improving nutrient cycling in the soil and to the plant, benefitting soil structure, and helping plants resist disease and pests.

The same fungal networks also improve plant growth and protect plant roots from pathogens. While the mycorrhizal fungi branch out from the plant roots through the soil, searching for phosphorus and other nutrients to feed the plant, the plant in turn feeds the fungi with carbon it captures through photosynthesis. This ancient symbiotic relationship improves yields naturally.

Arbuscular mycorrhizal fungi also aid in underground communication between plants. For instance, a tomato plant being attacked by a caterpillar sends chemical signals

through the fungal network to communicate the threat to neighboring tomato plants.

The neighbors then produce tailored defense enzymes to better prepare for and ward off damage from the caterpillar. In soil devoid of life, plants can't communicate like this and they often fail to thrive.

The arbuscular mycorrhizal fungi also team up with, maybe even recruit, rhizobacteria and other beneficial microorganisms that provide a host of plant and ecosystem services. Some

directly produce nutrients for plants or suppress plant predators; others metabolize heavy metals or break down pesticides. All aid in the creation of healthy soil that enables plants to be resilient in the face of environmental stressors like drought or climate change.

But the abundance of soil life is affected by how land is managed. For instance, arbuscular mycorrhizal root colonization is inhibited by the most widely used agricultural herbicide: glyphosate, the active ingredient in Monsanto/Bayer's Roundup.

Glyphosate residue accumulates in soil that hasn't been tilled (no-till). So for all their supposed soil-health promoting attributes, conventional no-till systems are actually worse for arbuscular mycorrhizal fungi than an organic system using tillage.

Another example of how management affects soil life is found in the fate of everyone's favorite soil builder: the humble earthworm.

Earthworms are culled with regular tillage, and rebound with less frequent tillage. However, when subject to the second most widely

used pesticide in the US, atrazine, the very DNA of earthworms is weakened and populations decline.

Generally, soil health is improved by reducing tillage, lengthening and making rotations more complex, and adding crop residue, animal manure, and other composts, while reducing or eliminating synthetic pesticides and fertilizers.

Certified organic farmers are required to employ these soil health promoting practices. The Organic Foods Production Act of 1990, the written policy that delineates what qualifies a farm for organic certification, states: “An organic plan shall contain provisions designed to foster soil fertility, primarily through the management of the organic content of the soil through proper tillage, crop rotation, and manuring.”

While some certifiers have chosen to ignore this vital component of the law by allowing soil-less container production (hydroponics), authentic organic farmers diligently work to improve the soil base every day.

Unfortunately, there is no such policy for conventional agriculture. While nearly all farmers are concerned with the soil (at the very least with erosion control and water infiltration), it is true that most of our country’s cropland is locked in a chemically intensive, corn-soybean rotation that has destroyed soil health.

This destruction is especially devastating given our climate crisis, because healthy soil is rich in organic matter, and soil organic matter is comprised in large part of carbon.

In essence, plants remove carbon dioxide from the atmosphere and transport it into their bodies and into the soil, where microbial life conspires to lock it in place. Glomalin, a protein coexisting with arbuscular mycorrhizal fungi, is responsible for creating long-lasting aggregates that lock carbon in soil for decades, persisting even after the fungi die.

The Intergovernmental Panel on Climate Change cites soil carbon sequestration as integral to addressing climate change immediately, as well

as recognizing that it has the co-benefits of improving biodiversity and food security.

Since we know how to build soil health using inexpensive, basic organic farming practices, increased support for soil carbon sequestration is one of the great hopes for seeing our way to a livable climate and food future.

But we give up this opportunity when we allow “organic” food to be grown in pots, in warehouses, or on black plastic sheeting covering fields recently sprayed with glyphosate. These hydroponic production facilities are not aiding soil life; they are sidestepping the foundation of life altogether.

Luckily, we can choose to support strict regulation of the organic label we already have, we can buy certified organic food from reputable farms. We can use organic methods on our farms and gardens to build soil health and soil carbon stocks. When we support organic farming—as it was intended—we are supporting healthy communities, under ground and above.

Passing the Torch

The Cornucopia Institute would like to extend its deepest gratitude to Dr. Barry Flamm for serving on its Board of Directors for nearly four years. Flamm left at the end of last year to focus on writing his memoir, a collection of essays and reflections on lessons learned in conservation.

Flamm has always had a deep passion for the natural world. He decided at a young age to dedicate his life to protecting the environment. On his 18th birthday, he packed his bags, left his hometown of Cincinnati, Ohio, and headed west to the Rocky Mountains.

What followed was a long and successful career dedicated to natural resource conservation and environmental policy. Flamm earned his master’s degree in public policy administration and, eventually, his doctorate in biodiversity conservation.

His list of accolades is long. Flamm worked around the U.S., including in Washington, D.C. He helped facilitate the passage and implementation of the National Environmental Policy Act (the first major environmental law in the U.S.),

then oversaw public lands and agriculture for the Council on Environmental Quality (CEQ). Flamm would later return to the USDA as director of the CEQ.

Internationally, Flamm managed a USAID forestry project in Nepal, then returned home to Flathead Lake, where he began farming—converting an existing orchard into the first certified organic sweet cherry orchard in Montana. During his time as a member of the NOSB (2008-2013), he chaired several committees and was regarded for being a strict interpreter of the intent of the organic law. He was also well-known for his extraordinary ability to bring people together to achieve compromise in the world of organic public policy administration.

Tenacious at building allies, Flamm is looking forward to seeing Cornucopia evolve, strengthening its impact on the ethical organic marketplace. *If you are interested in joining the movement to advocate for authentic, family-scale farmers in a leadership role, please contact us today to inquire about open board positions.*



POULTRY REPORT continued from page 1

infrastructure. Both the conventional and organic agricultural standards fall short when it comes to protecting and promoting the welfare of poultry.

For example, the federal protections afforded to livestock through the Animal Welfare Act exclude birds. The current administration withdrew the Organic Livestock and Poultry Practices Rule, which would have added standards for poultry.

Chickens and turkeys are not protected by the same organic requirements provided to other livestock, such as minimum feeding areas without crowding or food competition.

In addition, organic standards do not govern the type, or breeds, of poultry allowed, nor do they set limits on the minimum age for slaughter. As a result, the majority of birds raised for food are fast-growing strains that reach market weight in only a few weeks.

These strains are the same as, or similar to, those used in the conventional poultry industry, preferred by consumers and producers

alike because of their larger breasts and cheaper end product. Fast-growing strains also tend to be sluggish and not motivated to move away from their feed.

Sometimes these chickens are only given outdoor access for the last week of their lives. Even then, the “outdoor access” is insufficient to accommodate all of the birds. These issues are swept under the USDA regulatory rug by rules allowing for “temporary confinement” or confinement due to “stage of life.”

But it's not all bad news for consumers. Cornucopia's upcoming report will detail the methods used by chicken and turkey producers who are committed to authentic organic principles and raise birds more ethically.

Many producers encourage their chickens and turkeys to forage outdoors and are dedicated to giving the birds true outdoor access from as young an age as possible. The very best producers meet labeling requirements for “pasture-raised” as well as organic.

Housing methods vary among top-rated producers. Moveable houses,

aka “chicken tractors,” provide safety from predators, as well as access to grass, insects, and other forage.

Tractors are typically rotated daily to provide fresh forage and distribute manure evenly. Temporary fencing and other innovative setups also offer commendable living conditions.

Healthier, happier birds tend to be more productive and produce higher-quality food. And consumers are often willing to pay greater premiums to support these high-welfare systems.

Cornucopia's imminent report and scorecard will empower consumers and wholesale buyers to support farmers with the highest integrity and avoid products from corrupt, industrial-organic operations. Brands will be rated on adherence to organic principles and standards, including quality of outdoor access, stocking density, and the transparency of the operation.

Consumers can support these farmers while simultaneously sending a message to a \$52 billion industry by purchasing the most ethical brands bearing the organic label, answering the question: “What's for dinner?”

Staff Spotlight

Michele Marchetti is a mother, storyteller, and lover of central Pennsylvania food. A seasoned communications professional with roots in the local food and farming world, she specializes in empowering people to engage with their food systems through storytelling and philanthropy.

Her work has appeared in a variety of national and regional publications, including *Parents*, *Fortune*, and *Provisions*. She served as chair of the board of directors of a local food cooperative, which operated an online farmers market funded in part by a \$92K USDA Local Food Promotion grant.

Marchetti lives in State College, Pennsylvania with her husband and two children, plans her schedule around the farmers markets, and teaches a weekly yoga class attended by members of her local food

community—where she makes it a point to remind folks to sit down while eating their local food.



PHOTO: COURTESY OF MATT FERN

In addition to more than 20 years of magazine writing, Marchetti previously directed communications for TriYoga of Central Pennsylvania and Penn State's Stuckeman School of Architecture and Landscape Architecture. As the new director of development and communications with The Cornucopia Institute, she is thrilled to steward existing relationships, while cultivating new connections with farmers, eaters, and foundations that support the movement for ethical, organic food.

Through managing events, publications, marketing, and social media, Marchetti looks forward to sharing more stories about the organic farmers and producers who work hard to feed us food that's good for our families and the planet.

Toxins Found in Conventional Milk

Organic May Be the Only Way to Avoid Contaminants

BY MARIE BURCHAM, JD

The Cornucopia Institute is an organic watchdog—we research brands and investigate farms to identify authentic organic foods. The farms that have earned our top ratings of *four-* and *five-cows* on our Organic Dairy Scorecard demonstrate a strong commitment to real organic practices, their animals, environmental stewardship, and human health. They need your support.

This begs the question: if you can only find a brand rated *one-cow* by Cornucopia, should you just buy conventional milk? Absolutely not.

A recent study published in Public Health Nutrition by Emory University, in collaboration with The Organic Center, tested 69 samples of conventional and organic milk from store shelves across nine regions of the U.S. The samples underwent blind analysis to prevent bias.

Researchers found the majority of conventional milk samples contained pesticides, antibiotics, and synthetic growth hormone residues. All of the organic milk samples were free of these residues.

A disturbing majority of the conventional milk samples contained antibiotic residues, high levels of growth hormones, and contamination from controversial pesticides. Even antibiotics banned from use in lactating mammals were relatively common in these samples. In contrast, organic milk had no detectable levels of any of these worrisome contaminants.

The overuse of antibiotics in livestock is linked to antibiotic resistance. Bacteria repeatedly



PHOTO: ADOBE STOCK

Cornucopia's reports and scorecards give consumers the tools needed to support truly exceptional organic brands.

exposed to antibiotics can evolve to withstand antibiotic treatment, which threatens medical applications for human and animal health.

These residues pose an additional risk to individuals who are sensitive to antibiotics. Sulfa antibiotics—banned from use in milking cows, but present nonetheless—cumulate in milk and are a life-threatening allergen for many individuals.

The conventional milk sampled in this study also showed 20 times the growth hormone levels of organic milk samples. Growth hormone is produced naturally by cattle, but conventional dairy farmers routinely inject their cows with synthetic growth hormone to increase milk production.

This practice is linked to health problems in cattle and may cause them to produce more insulin-like growth factors (IGF-1). If elevated in the blood, IGF-1 hormones are thought to increase the risks of certain cancers in humans. Synthetic growth hormone, known as rBGH, is prohibited in organic production.

Pesticide residues linked to adverse health effects in humans were also found in a majority of the conventional

milk samples tested. Although the contamination was below FDA limits, research suggests that exposure to even low doses of some pesticides can have a wide variety of serious health impacts.

An especially concerning pesticide, chlorpyrifos, was found in 59% of the conventional milk samples. Significant evidence shows that even low-level

chlorpyrifos exposure in young children can lead to increased risk of learning disabilities, including reductions in IQ, developmental delay, autism, and ADHD.

Why has the FDA not acted to prevent this contamination? Unfortunately, the FDA only does simplistic testing of milk to ensure it is free from specific contaminants that exceed “allowed levels.” This bare-bones practice does not safeguard against chronic exposure to pesticides, antibiotics, or growth hormones in our food.

The Emory University study highlights serious problems in the conventional dairy marketplace. But you can protect yourself and your loved ones by purchasing organic milk.

While the USDA's National Organic Program has serious improvements to make in order to better steward human, animal, and soil health, this study shows that the organic certification process does at least assure consumers that the organic milk they buy is free from dangerous chemical residues.

Learn more about the importance of supporting legitimate organic dairy farms at cornucopia.org/dairy-crisis/.



THE CORNUCOPIA FARMER PROFILE

Co-creative Culture

An Agricultural Ethic at Eight Mile Creek Farm

BY RACHEL
ZEGERIUS

Pam Schreiber's tricolor Australian Shepherds, Cheyenne and Jenny, clamor in the background as she balances the phone on her shoulder, unloading her arms from the day's deliveries.

She is no stranger to multitasking. The sole owner and operator of Eight Mile Creek Farm, Schreiber oversees a farm store, CSA, and market stand that boast certified organic vegetables, chicken, eggs, pork, beef, and milk.

The dogs have their work cut out for them as well—chasing tractors, herding cows, and protecting the chickens from predators. They are part of the whole farm ecosystem at Eight Mile Creek Farm.

The farm ecosystem, an organism all to itself, is the sum total of all living and non-living things that interact and exchange energy on the farm: plants, animals, insects, soils, compost, and people.

Schreiber's customers, most of whom visit the farm weekly or see her at market, are also an integral part of the whole farm ecosystem. Customers contribute energy inputs:



PHOTO: COURTESY OF ALBANY TIMES UNION

Pam Schreiber (above) has a deep respect for her relationships with her customers and all of the animals on her farm.

Eight Mile's newest barn, for example, was financed through a no-interest personal loan from one of her customers.

Schreiber's relationships with her customers allow the farm to evolve into its individuality; a model of mutualism rooted in communication, cooperation, and trust. These connections, these relationships, coupled with a deep connection to the land, are what initially drew her career away from the health care industry and into farming.

A cardiorespiratory therapist and nutritionist, Schreiber previously worked in a critical care unit, helping to rehabilitate patients with cardiac and pulmonary illnesses.

Feeling overwhelmed and frustrated by the long-term impacts of smoking and poor diets on her patients, Schreiber turned her life's work to disease prevention instead.

In 2005, she moved her three young children to Westerlo, New York and set out to build her own diversified agricultural business. Without any previous farming experience, she started raising organic vegetables and added something new each year, certifying each part of the operation organic as she went. When asked how she has learned so much, she shrugs and says, "I try to never make the same mistake twice."

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Eight Mile Creek Farm now produces more than 50 different kinds of certified organic fruits and vegetables, along with certified organic meat (beef, pork, and heritage chicken), cage-free certified organic eggs, and certified organic milk.

This rich diversity contributes to the resilience of the farm ecosystem—when one crop has a bad year, another yields an unusually productive harvest. The vibrant ecosystem provides for a kind of crop insurance, sustainable risk management.

By approaching farming in this way, creating the conditions for optimal soil, plant, and animal health, Schreiber is succeeding at what she set out to do: protect the public health, while minimizing the damages to animals and the environment that often accompany conventional agriculture.

With the help of her adult daughter, Schreiber works hard to maintain self-sustainability on the farm. She relies on few outside inputs—grows her own hay, starts plants from seeds, and rotates animals on pasture.

She avoids manufactured fertilizer inputs, opting instead to use manure to supplement soils. She also abstains from the use of pesticides; a robust diversity of plants and animals more closely mimics a natural ecosystem, guarding against pests.

Even with Schreiber's passion, organic farming isn't always easy; processes can be inconvenient, overhead expensive, and profit margins lean. Organic practices cannot be rushed. For example, conventional chicken is raised in 41 days, while an organic one takes three to four months to reach maturity.

Economies of scale and public policies can often work against small, diversified farms. When the USDA National Organic Program, and the certifiers charged as gatekeepers of the label, endorse industrial operations that skirt the intent of the law, family-scale farms like Eight Mile Creek suffer.

Some nights, Schreiber lies awake, wondering if she has made the right decision for her family's security and future. Yet she still believes that small farms can feed the population—without harming our health or the land.

She is a true advocate of the USDA organic label and the principles championed by pioneering organic farmers. She sees her participation in the National Organic Program as a form of advocacy for the things she cares about, a way to add her vision to the collective of ethical, family-scale farms fighting to maintain the integrity of organic certification.

As such, she believes in the work of The Cornucopia Institute and appreciates the work of fellow small farms. She participates in Cornucopia's consumer education work, helping to get the word out about the differences between authentic organic farming and faux-organic factory farms.

Schreiber recently submitted her survey in order to be included in Cornucopia's upcoming poultry scorecard. She is bound to receive a high rating, given her commitment to raising animals ethically.

"I do love what I do," she says, "and I believe in what I'm doing." There's a future, she believes, for a farm like hers. Authentic organic farmers add biodiversity to our whole planet and are a critical part of the global ecosystem.



Above: Laying hens at Eight Mile Creek Farm enjoy life without fences and wander wherever their hearts desire during daylight hours.



EIGHT MILE CREEK FARM





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Tell the USDA No Gene Editing in Organic Agriculture

PHOTO: COURTESY OF LYNDSEY STRADTNER



USDA Under Secretary Greg Ibach recently made comments before the House Agriculture Subcommittee suggesting it is time to discuss the possible allowance of particular gene editing methods within organic production.

While organic standards currently prohibit the use of genetic engineering (GE) and genetically modified organisms (GMOs), Ibach's words appear to test the waters for public acceptance of genetic engineering

in organic agriculture, and suggest the USDA is not universally opposed to changing an essential part of the organic label.

The biotech methods proposed for use in organic agriculture directly manipulate a plant's genome in lieu of selective plant breeding methods used by traditional breeders to address drought, pests, and other agricultural concerns. While the USDA considers opening the organic standards to biotechnology companies, selective plant breeding remains deeply underfunded in organic agriculture.

The track record of regulators in safeguarding the organic standards is not reassuring. In addition, biotechnology companies hold patents on their seeds, retaining all rights to the engineered traits. As a result, four seed companies now own more than 60% of global proprietary seed sales. Organic consumers do not want gene-edited food.

Please sign Cornucopia's petition to tell USDA and the House Agriculture Subcommittee we will not tolerate the intrusion of genetic engineering into organic production: tinyurl.com/organicisnotgmo. Cornucopia is also seeking organizational signatures from stakeholders, including non-profits, organic businesses and farms, and other groups. If your organization or business would like to sign the petition, please email cultivate@cornucopia.org.