the NATURAL FARMER

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The Beginning of Things:

Acknowledging the Origins of Common Gardening Techniques

By Christa Núñez

Ecological Gardening & Knowledge Sharing
Have you ever been out working in your fields or kitchen garden and been disappointed in what you are seeing? Perhaps your wheat or squash has been less and less productive each year or your newly planted saplings dried out. You share what you're noticing with a friend and ask them for their advice. They tell you a cool trick or technique that could help - maybe rotate your crops so you don't deplete the soil of the same nutrients year after year, or water newly planted trees enough during the dry season for the first three years. You try their ideas and they work! That friend is pretty darn cool.

Likely, your friend didn't make up the technique but participated in the age-old practice of sharing knowledge - something we all do - out of love, a desire for each other to succeed and something farmers rely on for success and to build our community. (Maybe your friend is also hoping for some of that squash when you succeed at growing it!) Sharing knowledge, while commonplace, is also an opportunity for us each to dig deep into the information we're sharing - especially when we're sharing something widely and attributing credit to originators of the knowledge.

An Ongoing Phenomenon: Cultural Erasure of Customs and Agricultural Traditions of Black, Indigenous, and People of Color
There are practices that are so common, like composting or CSAs, it's rare we think about - or care about - where they were first practiced. If we do think about their origin, most of us assume or are told these practices were started by the folks dictating the practices widely in use on farms all around us - white men - but, it's rarely true. The fact that these two examples and so many practices are so visible from day to day has led us to take them for granted, both the technique itself and the stories of how they came to be so commonplace and so successful.

Why History and Story Matter
At *The Natural Farmer*, we are making an attempt to address the faultiness of not giving credit where credit is due - of the Western practice of cultural erasure. We hope we can take part in exposing the vast sphere of knowledge and influence that Indigenous communities and People of Color have had on agriculture as we know it today and from which we benefit. These groups, from around the world, originally wrestled with these challenges, spent wakeful hours thinking of solutions, tested hypotheses in the fields and forests, did happy dances when their theories worked and created tools and language to teach community members their knowledge.

As a member of TNF's Advisory Committee, I personally hope this paper further supports the NOFA community to have curiosity about the history of land theft, displacement, dispossession, farmworker human trafficking, labor theft, wage theft, and cultural erasure that inform the agricultural and food systems all around us - that we depend on. We know too well that getting to know the land we tend and grow things on makes us more successful as farmers and land stewards. Likewise, if we don't develop our ability to learn the history of the origination of practice, we risk erasing cultures, of undervaluing contributions, of losing ancestral stories of thought, ritual, and practice, of repeating historical atrocities, and not cultivating an environment of accountability to the history that shapes today.

Here, we explore a fundamental step to uplift truth and reconciliation in ways that benefit us all. We express gratitude to the originators of the cultivation techniques that we use today, and of the knowledge and practices that have historically been used and appropriated without proper acknowledgment. The techniques listed here merely scratch the surface of the multitude of ancient techniques that are still in use widely today. This work is just the beginning. Beginning is the only way to start.

Original Peoples
We acknowledge the lands of the First Nations of each region of Turtle Island, what is now called the United States of America.

Here, where I am, in what is now known as Ithaca, NY, we acknowledge the Gayogo̱hó:nǫ' people (erroneously known as the Cayuga) of the Haudenosaunee Confederacy (erroneously known as the Iroquois because these were the names colonizers gave these people). On this unceded land, gardens and farms have employed a multitude of techniques that have yielded harvest after harvest.

The Origins of Common Gardening Techniques

Technique: Biochar

Biochar. Image Source: Harley Soltes, SFgate.com

Origin: Western Hemisphere Indigenous Peoples (those residing in the Amazon region)
What is it? Charcoal is used as a soil amendment for both carbon sequestration and soil health benefits. Biochar is a stable solid, rich in carbon, and can endure in soil for thousands of years.
Examples: Controlled burning within agriculture fields to enhance soil productivity in future plantings.

Technique: Irrigation

Ditch irrigation used for peanuts in India. Photo by Seratobikiba/Wikimedia Commons

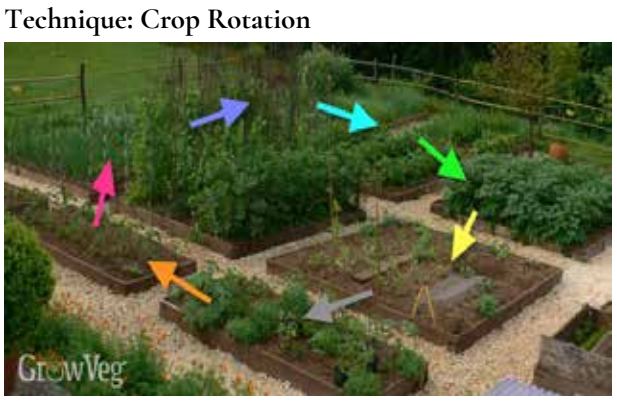
Origin: Africa (Egypt)
What is it? The use of conduits to bring water from one place to an area where plants are growing. It protects from famine and helps in economic development. Irrigation water improves water conditions in the soil, increases the water content of plant fibers, dissolves nutrients & makes them available to plants.
Examples: The earliest known systems of irrigation began in 6000 BC in Egypt and Mesopotamia where the Nile flooded for a few months each year, and the waters were diverted to ag fields.

Technique: Companion Planting

Three Sisters. Image Source: Wikipedia

Origin: First Peoples of Turtle Island (America)
What is it? Planting diverse plant species next to one another in a garden space to reap harvest-time benefits. It boosts growth, repels pests, and improves flavor for each other, uses garden space more efficiently, letting you harvest more, and is also good for pollinators, wildlife, and soil health.
Examples: An example of this intentional use of this type of agricultural symbiosis is the three sisters: corn, beans and squash grown commonly among indigenous tribes throughout the Northeast.

Technique: Crop Rotation



Crop rotation beds. Image Source: growveg.com

Origin: Asia (Ancient Middle Eastern farmers practiced crop rotation in 6000 BC)
What is it? Planting crops in different plots each growing season. It increases soil fertility, increases crop yield, increases soil nutrients, reduces soil erosion, limits the concentration of pests and diseases, reduces the stress of weeds, improves the soil structure, and reduces pollution.
Examples: The sequence of four crops (wheat, turnips, barley and clover), included a fodder crop and a grazing crop, allowing livestock to be bred year-round.

Technique: Water Storage / Rainwater Catchment

Rainwater tank. Image Source: NRCS

Origin: Middle East (Bedouins) / Indigenous Peoples of Turtle Island (America)

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In This Issue

SECTION A

Cover Photo Credits: *Some examples of stress and wellbeing on the farm. A barn fire at Shelterbelt Farm, NY (top left), a community gathering sharing joy and food at Mumbets Freedom Farm, MA (top right), taking a break for a swim in the pond at Whole Systems Design, VT (bottom left), Covid-19 - packing carrots wearing a mask in Maine (bottom left, image source Maine Farmland Trust).*

SECTION B

Special Focus - *Farmer Stress & Wellbeing*

THE NATURAL FARMER
NEWSPAPER OF THE NORTHEAST ORGANIC FARMING ASSOCIATION

The Natural Farmer covers news of the organic movement nationally and internationally and features stories about farmers, homesteaders and gardeners, especially those from the 7 NOFA member states, Connecticut, Rhode Island, Massachusetts, New Hampshire, New York, New Jersey, and Vermont. TNF is provided to direct subscribers and as a perk to NOFA members and is mailed quarterly to over 6000 homes.

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A Letter from the Editor

As you may know, this issue on Farmer Stress & Well-being was supposed to be published in September 2022. I'm not sure if the best word to describe why it's coming out so late is paradoxical, ironic, coincidental, beshert or just happenstance - but, here we are - it's February 2023 and finally, you have this paper in your hands. I'm so relieved!

The delay occurred because while I was on our annual vacation in the Adirondacks in early August - our farm left in the capable hands of our single employee - with my partner Steve and son Aydin, and 32 weeks pregnant with our daughter, I ended up being ambulanced to a hospital in Westchester, having an emergency C-section and sitting with my baby girl for 3 weeks at her hospital bedside. Would my baby be okay? When could I hold her? How would my two-and-a-half-year-old cope with his mama being gone for weeks? When could she go home? I needed to be with her but Aydin was terrified - he needed me too.

Steve had his own set of questions to struggle with in addition to my questions. Will my wife be okay? How can I be with my wife and daughter in Westchester when my son (and farm) need me in Trumansburg? Our farm employee had agreed to care for things for a week, but several weeks was too big of an ask. While we could let some things go - the seaberries were enjoyed by the birds and the chicken tractor didn't need to move every single day - the chickens still needed food, we had sheep to move to new paddocks, and mushrooms to harvest and deliver. These were some of our external concerns - about other people and other things - but there were also our own personal feelings, our own traumas, and our own recoveries. Those had to come later.

We started our farm in 2011. In 2012, we built a yurt as our primary residence, which at the time, was one of the more stressful things we had done. My partner still says it wasn't until we built the yurt together that he believed we were ready to be married because we proved we could get through adversity. What we didn't know was what kind of adversity we would need to overcome together - since 2015, I've had four surgeries, three of them emergency.

When I was diagnosed with cancer in the summer of 2015 and had my first emergency surgery, followed by 6 months of chemotherapy and two more "procedures", we took stock of our "to-do's". We were in a state of upheaval. We hadn't prepared for these life events - who does, especially at 35 years old?
We were juggling a farm, caring for two dogs, being accountable to off-farm jobs, making plans to build a house and many other obligations and had no system to handle and manage the stress, let alone care for my health and each other. Our plans to build a house that year halted immediately. Our plans to start a family halted immediately. Our plans to expand the farm halted immediately.

Fortunately, we had a strong network and family and friends who supported us during that time with everything from meal delivery to labor on the farm to offering us their insulated home for the winter. We also had other privileges afforded to us: good health insurance through Steve's employer, I started seeing a therapist (also covered by insurance), got regular massages and acupuncture treatments, my physician father found me the best oncologist and colorectal surgeon in the region, and my naturopath sister-in-law provided me with individualized nutrition and supplement guidance to ease the chemo's side effects and strengthen my immune system.

Despite a strong support system which we were (and remain) endlessly grateful for, once we were out of the thick of this hard time, we knew we needed a long-term strategy - one of preparation and forethought, one of anticipating unexpected emergencies - that would prepare us.

Elizabeth and her family, October 2022. Image privided by author.

In 2016, near the end of my treatment, I attended a weekend-long Holistic Management (HM) Workshop in Naples, NY with some incredibly inspiring farmers (Klaas Martens was there, and Petra-Page Mann, Elizabeth Henderson, and Erin Bullock just to name-drop a few). Years prior I had read the Holistic Management Handbook and was curious to learn more and apply it to our farm. What I didn't

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Letters to the Editor

Dear TNF,

NOFA vs. Corporate Capture: Many thanks to Edith Couchman, a NOFA-NH board member, for her letter in the Winter 2022 issue of *The Natural Farmer* titled "Defending the US Organic Movement Against Corporate Capture". Her portrayal of how "corporate interests have managed to co-opt and distort the meaning of the USDA organic label" is right on! And her depictions of how Concentrated Animal Feeding Operations (CAFOs) and the National Organic Program's (NOP) allowance of hydroponic operations to qualify for the Organic Label underscore how consumers are being fraudulently deceived in the marketplace by the US Department of Agriculture.

Addressing the erosion of Organic Integrity has always been Job One for NOFA from the early days of the label in the 1990s when we led the regional charge against USDA's inclusion of GMOs, sewage sludge, irradiation, etc in their first iteration of the organic rule. For a deeper dive into our constant grassroots struggle against Big Ag's ongoing attempts at usurping organic please see "Getting Real About Organic Integrity" on NOFA's policy pages: nofa.org/2019/12/23/getting-real-about-organic-integrity/

Edith transitions from providing legitimate context for concerns over the integrity of the NOP to a list of 18 questions that she feels our Interstate Council (IC) and the NOFA 7 state Chapters should be asking – and rating – ourselves in order to remain vigilant against an inferred threat of corporate capture of our very own organizations. These are important questions to keep at the forefront of our work. While we at NOFA have tremendous strengths protecting us against corporate capture, these questions help us recognize when and where our structure might be vulnerable. However, it's also important to note a complexity that lies within NOFA - we are not a one-size-fits-all organization and these questions could promote one–size–fits–all assumptions of how our NOFA organizations are or should be governed.

NOFA's strengths are exemplified throughout our stellar 51-year history of successful grassroots organizing as one of the oldest organic groups in the country. Necessarily addressing the specific conditions in their own states, the Chapters have successfully undergone many social, political and self-governance iterations over the years to meet the challenge of the times. The Chapters, as well as the IC, are fully independent fiscal and organizational entities with their own outlook, purview and capacity. What works well for NOFA-VT, for instance, may not be at all effective in neighboring NOFA-NH.

In reality, rather than being susceptible to a takeover through organizational weakness, NOFA continues to strongly serve as a bulwark against the corporate capture of the organic label. Our Chapters have earned a respected voice in their states while our "NOFA Nation" has a greater impact with our regional Congressional delegation of 14 Senators and 59 representatives. As a nimble grassroots advocacy organization, NOFA's deep strength lies in our structural resilience and decentralized adaptability. Our diversified nature is why we're still going strong at 50+ years.

On behalf of the NOFA-IC Policy Committee,
Steve Gilman, Interstate NOFA Policy Coordinator

Dear Steve,

As you know, we've been having a similar conversation internally since Edith's article was published. I"m glad you brought the topic up here in a more public forum and welcome thoughts from readers and members.

It's an important point that although we all work under a similar vision of "interconnected healthy communities… grounded in organic care of the land", the NOFA coalition of 7 state Chapters (plus the IC and TNF) approach this work in various and unique ways. In my opinion, this is exactly as it should be because the priorities of each state and region are unique. And, it must be mostly working because, as you also say, "NOFA's strength runs deep."

The crux of why Edith's questions are so provocative is that no matter how successful we are in achieving our collective NOFA vision, we can always do better. (Similarly, no matter how productive our farm is, we can always build more soil, reduce off-farm inputs, work a little smarter, etc.). Edith's questions offer one approach *to a system of organizational accountability at NOFA. Chapters probably have their own systems in place - we'd love to hear more about them, if so.*

With this thought in mind, I highlight a few of Edith's questions again here, slightly abbreviated:

- *Are gardeners, and actual organic farmers well represented among the membership, staff, and board?*
- *How involved is membership in the work?*
- *Can members contribute to NOFA's direction and governance? How?*
- *Are low-income, youth, elders, small-scale farmers, BIPOC, LGBTIA and the (Dis) Abled included when we commit resources?*
- *How committed is NOFA staff to the broad social/planetary implications of the organic movement? How?*
- *Does pay equity exist between Executive salaries and entry-level staff? Is everyone guaranteed a living wage and benefits? Are non-commodified benefits offered?*
- *Is the board a dynamic partner together with the membership and staff?'*
- *What is the power dynamic between the board's executive, staff, the ED, and the membership?*
- *Is decision-making consensual and transparent? Do members and staff feel heard?*
- *Who are the principal partner organizations?*
- *What recourse does the membership have if NOFA is not perceived as pursuing the mission?*
- *Is the organizational atmosphere collegial, directed, collaborative - and in general, enjoyable and fun?*

Let's keep the conversation going.
Elizabeth, TNF Editor

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(from A-1)

What is it? Storing water from rainfall. Uses are: Drinking and cooking, rainwater as high-quality water for human consumption, bathing and laundry, flushing toilets, watering lawns, gardens and houseplants, composting, water for wildlife, pets or livestock, outdoor ponds and water features, rinsing vegetables.
Examples: Indigenous peoples use the natural flow of mountain rainwater runoff to collect and use throughout villages.

Technique: Broad Forking

Broadfork. Image Source: Wikipedia.

Origin: Africa. The broad fork traces its origins to similar tools which date back to ancient Egypt.
What is it? The use of a large hand-held implement with tines to aerate the soil and improve drainage. The broadfork or grelinette is a simple yet powerful gardening tool that serves the purpose of efficiently loosening soil without flipping it upside down or, thereby, damaging the soil's internal beneficial organisms.
Examples: For new beds, use it by hopping onto it like a step and wiggling it side to side to break open the crust of the soil.

Technique: Cover Cropping

Red clover growing in wheat. Image Credit: Frith Farms.

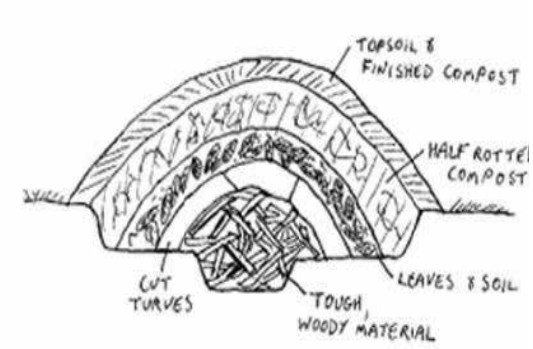
Origin: East Africa (Ethiopia)
What is it? Cover crops may be an off-season crop planted after harvesting the cash crop. A cover crop is planted to manage soil erosion, soil fertility, soil quality, water, weeds, pests, diseases, biodiversity and wildlife in an agroecosystem—an ecological system managed and shaped by humans.
Examples of cover crops are annual ryegrass, crimson clover, oats, oil-seed radishes, and cereal rye.

Sheet mulching. Image Source: Oregon Extension

Technique: Sheet Mulching / Lasagna Composting

Origin: Asia (Ancient Syria)
What is it? Sheet mulching is an agricultural no-dig/no-till gardening technique that attempts to mimic the natural soil-building process in forests. Nowadays, folks stack cardboard or newspaper, wetting layers and then put high-quality composted soil on top and plant in that. When used properly, it can generate healthy, productive, and low-maintenance ag ecosystems.
Examples: Applying cardboard with mulch on top to a lawn, a dirt lot full of perennial weeds, an area with poor soil, or even pavement or a rooftop.

Technique: Mounding, Hügelkultur



Hugelkulture cross section. Image credit Unknown author, permaculture.wikia.com

Origin: Europe (Indigenous German and Eastern European peoples)
What is it? Hügelkultur is a horticultural technique where a mound constructed from decaying wood debris and other compostable biomass plant materials is planted as a raised bed. It helps to improve soil fertility, water retention, and soil warming, thus benefiting plants grown on or near such mounds.
Examples: A common application of hilling is for potatoes to prevent chlorophyll and solanine that are present if exposed to light (green potatoes).

Technique: Leaf Litter

Leaf Litter in Garden. Image Source Smithsonian Institue

Origin: First Peoples of Turtle Island (America), Asia
What is it? Cultivating plants in beds of fallen leaves. Soil and leaf litter organisms help decompose organic material, spreading it around and releasing nutrients for new growth. The leaf litter layer is vital for protecting the underlying soil from erosion, maintaining good soil structure and fertility, and aiding moisture retention.
Examples: Agroforest operations in Bangladesh use leaf litter as the main and fastest source of adding organic matter and nutrient to the soil through microbial decomposition.

Technique: Agroforestry / Integrating perennials into vegetable landscapes

Forest garden. Image Source: Whole Systems Design.

Origin: Asia (India, Bhutan), Africa (Congo)
What is it?Planting a garden in a forest setting, creating perennially based, polycultural stacked food systems that conserve energy and create beneficial inter-species connections between plants.
Examples: Alley cropping of mixed coffee and cacao crops and lower storey crops, annuals or perennials, where trees are planted to provide nutrients for those crops is a common example of agroforestry in Latin America.

Technique: Heirloom Varieties

Heirloom Tomatoes. Image Source: Fruition Seeds

Origin: Africa, Asia, Europe, Indigenous Peoples-throughout the Western Hemisphere
What is it? Letting some crops go to seed applies whenever a gardener wishes to do less work and enable a species to gain generational knowledge of its soil conditions and environment and proliferate.
Examples: tomatoes, wheat, corn, beans

Conclusion

What has been shared here is again, but a scratching of the surface of a complex, evolving, ancient practice of relationality between soil, plants, and the people who cultivate and steward them. Many of these practices were begun many thousands of years ago by peoples scattered and migrated to various regions across the Earth. Thus, it can be challenging to accurately trace these origins. Complicating this further is the fact that strengths of traditional anthropological study are weakened by realities like white supremacy, erasure, bias, and the cultural insensitivities of its methods that are intrinsic to its practice. The acknowledgement of these facts and the work of arresting their practice will help us as we apply ourselves to gaining a better understanding and acknowledgement of the truths of international agriculture and the origins of its practices. Through this maturing of our knowledge and practices, let us also increase the application of humility through the acknowledgement of indigenous ways of feeding communities, and of communal practices of land stewardship that have ensured our human existence for milenia. In these ways, we may yet see ourselves into a brighter, more respectful, habitable, mutually-uplifting, and well-sustained future.

Resources:

Penniman, Leah. *Farming While Black*. Chelsea Green Publishing, 2018.

M. Kat Anderson. *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources*.

Christa Núñez (she/her) is a member of TNF's Advisory Committee. She is the founder and Director of CAN Cooperative Media, the Learning Farm, and Khuba International. She has over 20 years of filmmaking and storytelling experience, as well as 12 years of experience in nature, farm and garden-based, equity-focused education. Through her organizations, as well as with community organizations such as Black Farmers United, Christa prioritizes increasing equitable access to food, land, and nature for displaced youth and families and sharing stories that center BIPOC people in dignity-affirming ways. She can be reached at khubainternational@gmail.com.

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Happy 80th Birthday Elizabeth Henderson!

I'm not sure when I first met Elizabeth – it seems like she's always been part of my NOFA life. Her repute certainly preceded her: a dynamic political activist and budding farmer over in Massachusetts in the later 1970s and a founder of NOFA/Mass in 1982 when the CT and NY NOFA Chapters also got their start. But it must have been at one of the earlier VT or NH NOFA Summer Conferences where our paths first crossed.

Like many of us Back-to-the-Lander's at that time Elizabeth was learning and sharing all she could about the hands-on practicalities of organic farming. Knowing her then as someone so completely grounded in the complexities of working with the soil it would be a few years before I learned about the back story that got her there.

Born to radical parents in Manhattan, she was deeply steeped in racial, economic and social justice advocacy from the get-go. Academically, even after earning a doctorate and working as a university professor, she began searching out living off the land alternatives to the deadening academic hierarchy she was immersed in. Then her world suddenly changed when her husband died in a car accident. As a newly single mother very much concerned about the impact of the conventional food system on her young son she made the leap to homesteading with friends, finally finding the connectedness she was looking for.

Over the years her farming journey took her from that organic gardening start in Gill, Mass to a Rose Valley Farm partnership founding one of the first CSAs in NYS and then moving on to run her own Peacework Farm CSA for 30 years. Back in 1997 she also co-wrote the go-to food movement book "Sharing the Harvest: A Citizen's Guide to Community Supported Agriculture" and further produced a vastly expanded 2nd edition on her own in 2007 as well.

Along with farming -- food and justice policy is at her core. She was the one who brought me from growing produce into political activism, first on the NOFA-NY Policy Committee and then as Policy Coordinator since 2007 for the NOFA Interstate Council's Policy Committee, where she is Co-Chair. And I can't thank her enough for her editing talents helping my own work along the way.

Her hands-on policy involvement is prodigious. In 1999 she was instrumental in establishing the Agricultural Justice Project, utilizing a stakeholder process to develop standards for the fair and just treatment of the farmers and farm workers involved in organic and sustainable agriculture. Along the way, she has been highly active on the NOFA-NY board while also (still) serving on a wide range of organizations at the state, national and international levels. One of her more recent projects is working with the Disparity to Parity organization to tackle economic justice, environmental resilience and the many inequities in the food system. The list of all her involvements would take many pages. For samples of her many extraordinary writings go to The Natural Farmer, the Policy Pages at nofa.org and her blog at: https://thepryingmantis.wordpress.com/

So – let's all take this opportunity to CELEBRATE Elizabeth's January 13th Birthday -- all year long! NOFA is so blessed that at age 80 this woman is going strong!! Young and old, let us utilize this elder's milestone to underscore and empower our own tireless commitment to organic integrity along with social and economic justice activism!

Peace,
Steve Gilman

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Policy Update

Forever Yours - Forever Chemicals

By Steve Gilman

Although highly toxic PFAS products have been manufactured since the 1950's only now are they becoming subject to wide-ranging public attention and in-depth regulatory scrutiny. PFAS is an acronym for a class of toxic chemicals known as per- and polyfluoroalkyl substances. They are also often referred to as "forever chemicals" because their distinguishing fluorine-carbon backbone is difficult to degrade in the environment, causing them to bioaccumulate in water, soil and the food chain to negatively impact ecological and human health.

This persisting contamination also easily spreads throughout the environment, escaping into remote areas all over the world including the snows of Antarctica. There are more than 12,000 man-made PFAS chemical compounds used by a variety of industries for such things as electronics, oil and gas fracking, paints, pesticides and fire-fighting foams, as well as a long list of ubiquitous household products that comprise everything from cosmetics, sports clothing, dental floss, tampons, pizza boxes and food packaging to cleaning products, floor wax, carpeting, non-stick cookware and stain-resistant fabrics.

According to the Centers for Disease Control and Prevention, PFAS has been detected in the blood of over 97% of Americans, including the umbilical cords of newborns. Even at lower concentrations people and animals can be open to risk through toxic drinking water, polluted air, rainwater and contaminated soil, plants and crops as well as contact with commercial products made with PFAS compounds. Exposure to these hazardous chemicals increases the risk of developing a seemingly unrelated list of illnesses that are not easily traced including prostate, kidney and testicular cancers, immune deficiencies, thyroid disease, birth defects, endocrine disruption, liver damage, disrupted fetal development, high cholesterol and lowered vaccine efficacy.

While the industry has fully known about the toxicity of PFAS compounds from their 75 years of secretive research, the manufacturers have been largely successful in avoiding regulation, hazard designations or bans. But when some initial toxicology studies instituted in the 1990s started showing organ damage in lab rats along with human health problems, the U.S. government pressured the industry to replace its legacy PFOS and PFOA formulations. In the early 2000s chemical corporations began to phase out these initial compounds with new generations of so-called "safer" PFAS formulations. However, research is showing that the replacements are also exceptionally toxic as well as more mobile, more water-soluble and more readily taken up by plants.

Furthermore, due to industry-instigated loopholes, government regulators have to rely on voluntary manufacturer testing that is limited to investigating individual compounds one at a time instead of the overall category. Meanwhile, those discontinued PFOS and PFOA formulations are still being found at 70% of the Environmental Protection Agency's (EPA) newly established testing sites, sometimes in very high concentrations. For example, off-the-chart readings were detected at a Maryland creek near Washington, DC, that was nearly 70,000 times the EPA's advisory level.

Farmland Contamination and the Industrial Waste Stream

In 2016 the specter of a PFAS-contaminated food supply galvanized public concern when mounting media accounts began reporting about a Maine dairy farm whose milk tested for high levels of the forever chemicals, along with the farm's soil, well water, forage and feed. The century-old farm was shut down, the cows had to be slaughtered and the farmers were tested for high levels of PFAS in their blood along with increasing health problems. The culprit proved to be the sewage sludge that was spread as a fertilizer on the farm's fields starting in the 1980s. Unaware that the sludge contained toxic PFAS chemicals, the farmers are now engaged in lawsuits against the county wastewater treatment district as well as the PFAS manufacturers DuPont and 3M for the contaminated sewage sludge spread on their farm.

Processed sewage sludge has been successfully marketed as "biosolids" to farmers, gardeners, park managers, schools, golf courses and homeowners for decades as a safe and inexpensive fertilizer. But along with household sewage sources containing PFAS consumer products, it also includes the toxic chemical waste stream from dozens of industries – including the primary PFAS manufacturers – that are regularly discharged into public sewer systems. The land disposal of the overall waste stream was developed in the 1970s as a simplistic alternative to the uncontrolled long-term ocean dumping that was initially addressed by Congress in 1972 through the Clean Water Act and completely banned in 1988. Spreading biosolids on land became the cheapest go-to waste disposal "solution" rather than landfills or incinerators.

Despite mounting science-based warnings about the long-term environmental impacts, the practice accelerated throughout the nation in the 1980s and 1990s with farmland applications in Maine leading the way in the Northeast. Countering the growing opposition by environmental groups and under the guise of "recycling", the EPA stepped in as a promoter in the rebranding effort that renamed sewage sludge with a more appealing biosolids moniker. In 2018, however, the EPA Office of Inspector General identified more than 350 pollutants in sludge samples, including 61 that it classifies "as acutely hazardous, hazardous or priority pollutants". Even with multiple studies that have found that plants and vegetables readily take up PFAS and renewed calls for much stricter regulation of biosolids, there still are no federal standards in place.

Expanded well water testing in Maine revealed contamination on neighboring farms as well, causing great distress throughout the agricultural community. Even though the use of biosolids is totally prohibited under the USDA Organic label, PFAS contamination showed up in some organically certified farm soils as well. Even though organic certification standards require a history of land use along with a 36-month transition period away from conventional management practices to greatly minimize the chance of exposure to synthetic pesticides, fertilizers and other prohibited substances, the toxicity of these persistent "forever chemicals" presents a much more problematical situation. And land that is now in organic production may have been previously contaminated without the knowledge of the current landowner or the organic certifier of the operation.

Hidden PFAS in Pesticides and Fracking Waste

Further investigation is finding that numerous synthetic pesticide formulations are also a vector for PFAS contamination of farmland. Contradicting previous EPA statements that PFAS compounds are no longer used in registered pesticides, new independent research has found it at high levels in the so-called inert ingredients in 6 out of 10 tested pesticides. Used in this context "inert" is a deliberately deceptive legal term since the ingredient may well be chemically or biologically active but not labeled for purposes of attacking the targeted pest organism. As a sop to the industry, EPA only looks at the impact of the "active" ingredients listed on the label – paying no heed to the other chemical constituents even when they make up to 99% of the product. The fact is many inert ingredients are verifiable hazardous chemicals and studies have found that the combination of all the ingredients in a formulation can make the pesticide 1000 times more toxic than just the active ingredient alone.

PFAS is showing up at high levels as allowable and unregulated inert ingredients used as leaf coatings and shelf life extenders in insecticides, including malathion, one of the most commonly used pesticides on the planet. It is also being revealed as a hidden "trade secret" ingredient in pyrethroid mosquito control pesticides that are directly applied to community waterways by plane or truck. Overall it is unknown at this time how many other pesticides have this hidden PFAS content. The compounds easily infiltrate groundwater and are further taken up by plant roots to contaminate soil and enter the food supply long after such pesticide use has been discontinued.

In a further unidentified large-scale application, the PFAS formulation PTFE (Teflon) has been revealed as an undisclosed chemical used by the hydraulic fracturing industry to boost natural gas and petroleum production. Mixed with other "fracking" compounds it is injected under pressure with sand and water into underground rock formations, opening fissures and forcing trapped gas and crude oil to

(continued on A -9)

(Letter from the Editor - from A - 3)

realize was that the HM approach applies not only to a farm but to one's whole life! While this piece isn't intended to get into the nitty-gritty of what HM is (there's more on HM in this issue), simply stated, a holistic goal - one of the main tenets of HM - describes the quality of life desired, looks at what is blocking you from getting there, the forms of production you want to get there, and a list of future resources that are needed to achieve this goal. It isn't a business plan, but rather an end goal and the foundation from which you build. It allows you to consider everything you find important when making a decision so you don't inadvertently compromise something you value.

As I sat in the chemo-suite for the second-to-last time, Steve and I started our holistic goal-setting process by making a list of priorities we value and asking ourselves: What requires our attention the most and did we need and want to keep doing it? Where could we downsize? What resources did we have (or not have and need), and who could help us when we needed it? What did we need to do to get through the day, the season, and another emergency? We kept it simple. Our list of priorities from most important to least included 5 things: 1) me and Steve, 2) Sadie and Vida (the dogs), 3) the sheep (and at that time, the ducks), 4) the mushrooms because they bring in revenue, and then 5) everything else.

The three-part process of writing a holistic goal led us to realize a few major things: 1) that we didn't enjoy growing annual vegetables and would convert our 4,000 square foot garden space to be a fruit orchard, we would grow only the vegetables we thought were easy (garlic and potatoes) or wanted to preserve (tomatoes and cucumbers) or wanted to eat daily (lettuce and herbs) and instead, we would join one of the amazing CSAs in our area that grew vegetables really well, 2) that neither of us wanted to farm full-time, 3) that we needed a comfortable place to live with insulation and hot running water all year round, 4) that we wanted to feel more part of a community and figure out how to integrate more social justice into our life and farm, and 5) that we needed to regularly leave the land to socialize, take a hike or go to dinner, including that we needed to prioritize taking vacations 1-2 times a year - whether they are a short road trip and camping or a plane trip to a beach.

Over the next several years, we would revisit our holistic goal each winter, and adjust it as life evolved. Having it guided some major choices we would make including me taking a full-time job as an Executive Director (and only farm on weekends) so we could leverage my salary to get a loan to build a house, giving our duck flock away, hiring an employee instead of running an apprentice program, scheduling a week-long vacation in the middle of our CSA season, expanding mushroom production from log-grown shiitake to an entire indoor suite of mushrooms, growing more pick-and-eat veggies like peas and cherry tomatoes so Aydin can help himself, and eventually leaving that more than full-time job for this part-time TNF Editor position to enable more time with my kids and on the farm.

Back to August - our annual Adirondack trip - as I sat in the NICU holding Maiya's hand, I was terrified. My stress level was at an all-time high, and I couldn't help but recall the other times I had been in a hospital gown; how simultaneously resilient and weak I felt, how simultaneously strong and exhausted I felt, how simultaneously surrounded by people (nurses, doctors) and lonely I felt. And yet, I also felt so lucky. Maiya's lungs needed to develop and she was tiny, but she was completely stable - which wasn't true for some of the babies next to us. I also felt fortunate because I knew our insurance was good, and because I spoke English and could understand what the nurses and doctors were saying about my baby as they did morning rounds or throughout the day as I sat - which wasn't true for the Spanish-speaking family next to Maiya, who always needed to wait for an interpreter every time they arrived and only stayed long enough to answer some of their questions.

As we prepared for Maiya to come home, a month earlier than we even expected her to be born, we revisited the questions we asked when making our holistic goals: *What requires our attention the most and did we need and want to keep doing it? Where could we downsize? What resources did we have (or not have and need), and who could help us when we needed it? What did we need to do to get through the day, the season, and another emergency?*

- We would keep Aydin going to nursery school for half days, rather than full days as we had planned for in September, in hopes it would help him feel close to our new family and more grounded.
- We agreed to send the chickens to be processed instead of doing it ourselves on the farm and we asked a neighbor to drive them to the processing facility in trade for some meat. We wouldn't keep any as layers this year.
- Production was supposed to start for our fall mushroom CSA after our vacation, but we would cancel it and only continue to sell wholesale.
- We would hire a cleaner to clean our two on-farm rentals until I was 8 weeks post-surgery and could start again.
- We would ask our farm employee to work until the end of November, rather than October (she was thrilled!)
- We would see if our friends would continue bringing us food through the Mealtrain for another month (of course they said they would!)

Today, as we delight in Maiya gaining weight, giggling and starting to roll, we've settled into our new life as a family of four and gained some space from Maiya's birth. Sure, we all still have a lot of work to do to personally process the traumas, but there's no rush. We talk to Aydin about our stay at the Ronald Macdonald House and how scary that time was so he knows it's okay to talk about it, Steve and I each see a therapist biweekly, and we integrate rest and relaxation into our lives with daily walks on the land, weekly hikes, movie nights and the like. I'm still looking for a postpartum support group, gaining my physical strength back is taking a while, and we sometimes skip our weekly farm meeting, but we try to be kind to ourselves, and keep our holistic goal in mind: "Our life is a balance of work and recreation, where we support each other to learn new things, where we always improve our farm systems so they are more regenerative and less wasteful, and where we always make space to truly see each other and love ourselves and our kids deeply."

As you delve into this issue, I hope you honor the personal stories that are shared - I truly believe that hearing the stories of others who struggle can be a great way to find personal support and shed light on strategies that can help meet your challenges - and perhaps encourage you to share your own in a future issue. I hope you feel inspired by Holistic Management as you read a few different perspectives about and approaches to using it. I hope you recognize the severity of the farmer mental health crisis that is pervasive today and think about how you might support yourself and others - perhaps your farm employees - to get the support they need. And most of all, I hope the issue sparks us all to reach out to others and look toward each other, to not remain quiet about personal struggles, and to recognize we're not alone.

Feel free to continue to submit articles, stories and photos about farmer stress and mental health and we will share them in upcoming issues.

With gratitude,

Elizabeth Gabriel
Editor

(Policy - from A -7)

flow through pipes into a wellhead at the surface. In combination with modernized steerable drilling bits and imaging equipment, this profitable technology has opened up vast oil and gas deposits in the US and other countries.

Thanks to a series of loopholes, together with the full-throated promotion of the oil and gas industry by then Vice President Dick Cheney in the G.W. Bush Administration, a 2005 law actually bans the federal government from requiring companies to disclose fracking chemicals. They can be partially regulated under state law, however, and by 2016 28 states have been able to require the disclosure of some of the compounds. But under the industry's "proprietary substance" loophole upwards of 11% of the chemical constituents remain legally unidentified. In addition to the direct contamination of groundwater, new information tabulating the PFAS-laden fracking waste dumped at just 8 well sites shows more than 21 million gallons of liquid waste and over 30,000 tons of solid waste have been generated since 2012 so far.

Assessing Food Safety
It has been known for many decades that PFAS buildup in the environment can be absorbed by plants and livestock through soil, water and air and move on to contaminate foods. Yet the scientific and technological advances needed to test for PFAS toxicity at very low concentrations (parts per trillion) in diverse types of food is in its infancy. And assessing the health concerns from dietary exposure to the PFAS levels found in those foods is also based on critically incomplete analysis.

Simultaneously involved in doing the research at the same time they're discovering the contamination, a handful of states have only recently set their own food safety thresholds for a few food items. While initial studies indicate that PFAS is less likely to accumulate in the fruit or grain of plants, for example, contaminated milk and leafy greens show extremely high levels. And while initial research indicates that eating food containing background PFAS levels does not necessarily constitute an immediate health risk, such trace levels can represent a long-term exposure concern.

As for regulating consumer products the FDA has monitored and approved the safety of certain PFAS compounds used in food packaging, food processing and non-stick cookware since the 1960s when health studies began to raise red flags. Although FDA staff regularly reviews new scientific information the agency's allowances are often based on research provided by the manufacturers and when potential safety concerns are identified they generally have to work with the industry to reach voluntary market phase-out agreements for risky food contact substances. Actually revoking food contact authorizations altogether is a laborious process via a lengthy rulemaking process that leans heavily on extensive manufacturer input.

Need for Effective Regulatory Action
The manufacturers' untouchable status is slowly beginning to change, however. A recent report by the National Academies of Sciences recommends that the Centers for Disease and Control and Prevention advise clinicians to offer PFAS blood testing to their patients who are likely to have a history of elevated exposure to the toxins and it urges state public health authorities to improve their PFAS exposure surveillance. The report says testing should be done for people with occupational exposure, as well as those who have lived in communities where contamination may have occurred – such as commercial airports, military bases, manufacturing and wastewater treatment plants, farms where biosolids were spread or landfills and incinerators that have received waste containing PFAS.

In 2021 EPA identified more than 120,000 locations around the country where the agency believed people may be exposed to differing PFAS compounds. The scope of the list underscored that virtually no part of America appears free from the risk of contamination. EPA has also established a Strategic Roadmap setting timelines for proposed actions and new regulations to protect public health and the environment along with holding polluters accountable. Regarded as too little too late, a number of communities, cities and states have been implementing their own regulations – leading to a patchwork of parameters for identifying presumptive PFAS sites with varying drinking water thresholds, leaving many municipalities with only cursory protections.

In May 2022 the Biden Administration announced a series of steps to try to speed up PFAS research along with cleaning up PFAS pollution sites. While there still is no enforceable federal limit, in August the EPA issued a proposed rule that would designate certain PFAS compounds, including PFOS and PFOA, as hazardous substances. This is not a ban, however. If the proposal successfully results in a final rule, PFAS manufacturers would be required to assess and report to the government when the chemicals leak into water or soil, potentially making the corporations responsible for cleanup costs under existing Superfund Laws.

The Maine Model for Grassroots Action
Thanks to the diligence of the Maine Farmers and Gardeners Association (MOFGA) in helping to uncover PFAS contamination while working with state agencies to assist impacted farmers, Maine is at the forefront of dealing with the PFAS pollution of farmland. With mounting concern, Maine agencies began wide-scale soil testing along with evaluating recent sewage sludge samples to develop an interim standard resulting in the first state ban on spreading PFAS-containing biosolids and the sale of biosolids-based compost. The state is also providing support for contaminated farms along with those that have voluntarily suspended their operations until safety levels can be determined.

The actions prompted by MOFGA are providing a blueprint for effective grassroots state and federal endeavors all around the country. They are working collaboratively with Maine's Departments of Environmental Protection and CDC Toxicology as well as the University of Maine Cooperative Extension to conduct on-farm research. With the Maine Farmland Trust, they've managed an emergency soil testing fund to support affected farms. Through their well-established farmer programs, MOFGA is providing individual consultations with concerned farmers to help them understand their risks and navigate available resources. And they are working directly with consumers who are concerned about the safety of the local food web.

This has produced a strong bipartisan response from Maine's state and federal officials alike. With the Governor's support, the legislature approved a $60 million program to monitor health outcomes, provide medical care and conduct soil, water and crop research. The program also directly supports impacted farmers with everything from income replacement and help to secure loan forgiveness to long-term health monitoring and buyouts. In collaboration with other farming and environmental groups, MOFGA is also prompting an investigation into the prevalence of PFAS-containing pesticides as well as promoting research on cleansing crops that can be grown to remediate soil contamination.

Meanwhile, in Congress, Maine's bipartisan delegation has introduced the Relief for Farmers Hit with PFAS Act. The legislation establishes a program authorizing state grants to provide financial assistance for impacted farmers as well as expanding PFAS monitoring, testing, medical treatment and clean-ups. It also expands research, including viable soil and water remediation on farms while creating a USDA task force to help bring federal resources to farmers through existing programs.

With MOFGA's expert counseling, NOFA is addressing the widespread contamination in our own region. The state Chapters are presenting input on the impacts of PFAS contamination on farmland, including the repercussions on dairy and the need to regulate biosolids. And along with California, Michigan, Minnesota and Ohio, the NOFA states of Vermont, New Hampshire, New York and New Jersey have sued PFAS manufacturers and distributers arguing they are threatening public health and the environment. Overall, thousands of lawsuits have been filed in federal court against the PFAS industry to determine who will pay the cleanup bills – potentially leading to billions of dollars in corporate liabilities.

Systematic Corporate Subterfuge
There's no question these forever chemicals are poisoning our citizens, our communities, our country and the planet. Often it takes years of unexplained localized sickness and death clusters before PFAS is exposed as the culprit, sometimes long after the corporations have left town or gone bankrupt. Towns and cities are left with contaminated water supplies, farmers are stranded on their poisoned land while the inhabitants continue to suffer serious health problems. And meanwhile, extensive public health studies are increasingly showing how most of us are carrying bodily traces of PFAS through chronic water, food and consumer product exposure.

Uncovered documents verify that the PFAS industry corporations not only knew these chemicals were hazardous from the onset in the 1950s but they also concealed the toxicity risks from the public and their employees for decades afterward. In a smoking gun timeline, the Environmental Working Group recently published corporate documents from DuPont and 3M's actual studies, memos and other materials definitively showing their deception. The surge of reports of corporate malfeasance are finally receiving significant national media coverage with the upshot that the widespread PFAS pollution is no longer a corporate secret.

These economically and politically powerful corporations are not standing still, however. They are well entrenched, know how to work the regulatory system and their PFAS production remains highly profitable. Ever since the State of Maine took action against the land application of sludge materials they have been doubling down with lobbying efforts and publicity blitzes touting the benefits of biosolids. They are also greenwashing a recent study featured in the journal Science that claims PFAS are not "forever" after all because a new way of chemically treating the molecules can break them down. While this study seems to hold up in the laboratory, such attempts to broadly apply this treatment process to the high levels of accumulated PFAS compounds in the wild is unachievable.

Now under duress, the industry is strongly resisting calls for strict regulations and outright bans. In a damning report, the Environmental Working Group identified 41,828 U.S. industrial and municipal sites that are still using poisonous PFAS compounds. There are also increasing demands from a growing number of cities, states, public health advocates, agricultural organizations and environmental groups that are calling for strictly curtailing PFAS production and even shutting it down altogether.

Achieving Real Regulatory Oversight
The only good news on this front these days is that the newly exposed damage of long-term toxic PFAS pollution and health effects is finally galvanizing widespread public attention, with increasing demands for stepped-up federal, state and legal action. Understandably, public anger is growing against the power of these corporations to pollute with impunity as well as their ability to hamstring the federal environmental and health oversight system despite widespread public support for verifiable protection. The question is: how to finally hold them responsible and put an end to their polluting practices?

It is well to remember the precedents where determined grassroots environmental action has led to bona fide protective legislation. A major bipartisan Congressional consensus was responsible for passing the landmark Clean Water Act of 1972, for instance, curbing long-entrenched national water pollution practices despite powerful industry pushback. The strong citizen backing prompted Congress to override President Nixon's veto by well over the required 2/3 majority. And in 1980 the Superfund toxic waste cleanup bill was also passed, albeit under narrower compromise legislation. Even during the Reagan Administration's hard-right shift to attacking governmental regulations and ramping up partisan fervor for dismantling pollution controls environmental and health protection advocates were still able to field a powerful political constituency. In 1987 when

(continued on A - 11)

Vegetable Seed Production Course and Mentorship Available to Growers Throughout the Northeast

By Crystal Stewart Courtens

Today's market gardener in the Northeast finds themselves a net user of seed, not a net producer. However, as we have seen a resurgence in local food supply in the last 40 years, we have also seen the beginning of a rebirth of regional seed. Many reasons to grow seed today are the same now as they were for our ancestors, for enslaved African people, for Indigenous communities and for previous generations of farmers: to ensure a reliable and trustworthy supply of seed of a needed or sacred variety, to increase one's food sovereignty, to offer something unique to the customer, to preserve and promote treasured heirlooms, and to grow a value-added product for a seed company or direct seed packet sales. Organic growers will find another benefit to seed growing: it helps the farmer meet the "seed rule" standards of organic seed usage, and helps reduce seed costs.

In order to increase the number of growers able to produce high-quality, regionally adapted seed in the northeast, a group of educators, experienced seed producers, and regional seed companies will be working together to offer training in seed production and a guaranteed market for specific seed crops during 2023 and 2024. This effort is funded through the generous support of a Northeast SARE Research and Education grant.

The effort to help 65 commercial growers produce a marketable seed crop will begin in January 2023. We will bring folks together for an in-person kickoff meeting (assuming in-person gatherings are safe). Everyone can then participate in the seed conference (part of the NOFA-NY winter conference), scheduled for February 2-5, followed by five weeks of online coursework developed and led by experienced seed producers and hosted by the Organic Seed Alliance. The course is designed to help growers determine whether seed production is a good choice for their farm first, and then to guide them in selecting an initial seed crop to try. During the course, folks will form learning cohorts of 5-10 growers who will work with a mentor throughout the 2023 growing season to successfully produce a marketable seed crop that various northeast seed companies have committed to purchase. The cohorts will have monthly group check-ins via Zoom, a forum where they can discuss questions and issues with each other, and one-on-one access to a grower mentor experienced in producing their chosen seed crop.

The grower mentors for this course bring substantial experience in seed production to the program and will help participants deepen their understanding of how to cultivate vegetables to produce the highest quality seed. One of the mentors, Amirah Mitchell, has worked in agriculture and food justice since 2007. She founded her business, Sistah Seeds in Emmaus, PA, to connect Back and Bown growers to culturally important seeds. She primarily grows vegetable, herb and grain seeds from across the African diaspora, with a focus on African American, Afro-Carribean, and West African cultural crops. Amirah graduated from Temple University with a B.S. in horticulture. She has a gift for helping others understand why plants do what they do and how this information can help us produce great seed. Her enthusiasm for the work, from a human and a horticultural perspective, is infectious.

Our other commercial mentor for this project, Heron Breen, owns and operates Fruits of our Labors Farm in Saint Albans, Maine. His experience has been as a market farmer who has become almost solely a seed grower. When he started his own operation 17 years ago, farmers markets were "filling up", and like many new farmers, direct retail was hard to access. At the same time, he was a home seed saver, and had discovered some amazing regional

Courtens seed garlic. Image provided by author.

heirlooms and classics with incredible flavor. When he realized these could be a market niche he focused on growing his own good seed. He had the added benefit of working for Fedco Seeds for his "day" job. For many years, he worked 40 hours at his day job and 40 hours on the farm. After 22 years in the seed trade, he is glad to be farming full-time, with a near-exclusive focus on seed growing. Like the market farmers of the past, he has also been breeding new things.

Besides the commercial component, this project also has an Indigenous seed-keeping component which is being directed by Tina Square of the Intertribal Ag Council. Tina has recruited 30 Indigenous seed keepers who would like to both study the horticultural aspects of seed growing through the online course and work with an Indigenous mentor to maintain seed quality while also maintaining the sacred aspects of seed keeping. Our primary Indigenous mentor is Angela Ferguson, Onondaga Nation and Eel Clan member. Angela has been stewarding Iroquois corn for much of her life and works tirelessly to increase her people's connection to their sacred foods and to increase food security for the Onondaga Nation by managing the Onondaga Nation's farm. Angela has also graciously agreed to teach workshops for the commercial seedkeeping track about the history of native seed appropriation and ways that we can all work to respect the unique integrity of native seeds essential to the culture of Native peoples.

Parallel to these education efforts, we are also conducting some initial research to determine whether growing seed in a controlled environment (caterpillar/high tunnels) will increase the quality or yield of seed crops. Our model crops are onions and lettuce, both of which are being grown in replicated trials this season and will be grown on daughter sites on farms next season. There are many research questions related to Northeast seed production, but this will be a starting point to help farmers understand where they might grow different seed crops for best results in this region with more frequent rains than traditional seed growing regions.

If you are interested in being a part of the next seed education cohort in 2024, please contact Crystal at *cls263@cornell.edu.*

Crystal Stewart Courtens, she/her/they, Cornell Cooperative Extension and Philia Farm, Johnstown, NY

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Remembering our Roots: Al Johnson's Odyssey Making the NOFA Film

By Sara Norton

With a borrowed camera and a list of people to track down, Al Johnson set out on an odyssey of 1,600 miles to make the NOFA history film: "Organic Roots: 50 years of the Northeast Organic Farming Association." Criss-crossing Vermont, New York, Massachusetts, New Hampshire, Rhode Island and New Jersey, he spent three months filming the people who shaped the organization and the organic farming movement. The result is a 70-minute film that gives us the faces and voices of many of NOFA's founders.

When NOFA turned 50 years old, in the summer of 2021, there was a lot of talking and planning for the celebration of the anniversary of this unique organization with an exceptionally rich history. The Interstate Council formed a 50th-anniversary committee, and what emerged from all the meetings, thoughtful conversations and remembering were published articles, presentations at the 2021 Summer Conference, and very significantly, a film that tells the story of this revolutionary, grassroots movement. That film is Al Johnson's labor of love.

Al was involved in NOFA very early on. From 1979 when he volunteered to organize NOFA's education program, he has been active ever since running educational forums, organizing NOFA-New Jersey's certification program, serving as the president of the Interstate Council and now its treasurer. "NOFA became part of my life in the 70s and has continued to this day," he told me, "so I had a personal stake in NOFA's story and I knew it had to be told."

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Al began his search for the NOFA story in the archives of the University of Massachusetts. The late archivist, Robert Cox who died of COVID, had a special interest in the organic farming movement.

Cox clocked in many hours of interviews with NOFA's founders. He was fascinated with how the organic farming movement was intertwined with the activism of the 1960s and 1970s – the civil rights movement, the Viet Nam war protests, and the rise of the co-op movement.

Al Johnson, introducing Remembering our Roots. You can watch the entire film at nofa.org/nofa-50th/

"Listening to all these interviews in the UMass Archives, I got really inspired," Al told me. "It is a great story. So I went back to the committee and said, 'We've got to make a film. It's got to be done.' And they said, 'sure, but who will do it?' I had a flexible schedule; I'm an organic inspector and could push my work off for three months and just concentrate on this project. So I volunteered."

I still have a clear image in my mind of Al sitting at my living room table hunched over his computer struggling to grasp the intricacies of working a film editing program. With his cursor, he delicately inserts a minute of one person talking about NOFA starting the farmers' markets and then inserts another few sentences from another person keeping the narrative going. Each insert involves many clicks, highlights and saves. He had never made a film before. Everything was new: the camera, the sound, the lights, the editing. "I didn't know I had to charge the microphone," he said, "I learned the hard way discovering that there was no sound for the first 10 minutes of the first interview." Organizing all the footage and putting it into a cohesive narrative was daunting. There on the computer unfolded the construction of a narrative cobbled together from the words of the interviewees. "I wanted the story to be told in the words of the people who created the organization. I didn't want an overall narrator," Al said. "So I had to go out and find the story that was told in those people's words. Everyone was passionate about this and I wanted that passion to be captured on film."

Al came up to my Vermont homestead three weekends that spring and summer. Slowly the story emerged from all the footage. Or, I should say, "stories." For there are a number of stories that needed to be told for each era of NOFA's history. This comes out in the film: how as time goes on and the organization matures, there are new challenges to face. The history not only of an organization emerges but a history of a whole era of contributing to the organic farming movement. In the beginning, it was the basics: how do we farm organically, how can we network and help each other raise food and how can we market what we grow? Consumers in those days did not know about organic farming and the importance of buying local produce. It may be strange to us now to recall that there was actual opposition to farmers' markets in some towns as Howie Prussack, one of the organizers of the Brattleboro farmers market, tells us in the film. Joey Klein, one of the early organic farmers, says, "Back then, at the farmers' market, if you told people your beans or tomatoes were organic, it was a strike against selling them."

The film continues to trace NOFA's history showing us the challenges of starting new chapters, developing certification standards, farmland preservation and more recently, the vision of a culturally and racially diverse organization. And although each era of NOFA has its own story, the deep story of NOFA remains the same - it is the story of a vision for a different world than what conventional agriculture and economic systems offer us. It is people working together to build a sustainable and just world, and it is a story of farmers creating a healthy and intimate relationship with the land. The film concludes with a quote from Samuel Kaymen, the founder of NOFA, saying, "NOFA should have 200 million members. Everyone has to share in the care for the earth and the production of food. We are all members of the soil community."

Al began filming in the spring and on into the summer of 2021. The deadline was approaching. The film's debut was scheduled for the keynote presentation at the NOFA Summer Conference. "I was anxious to find a professional video editor to polish the film," said Al. "At last, I found a videographer who worked for NOFA New Hampshire, Chadley Kolb. He was wonderful. He put in archive photographs and music." It was down to the wire for the opening of the Conference on Friday, July 30th. Al spent the last week at Chadley's house in New Hampshire working on it until the afternoon before the viewing on Friday night. "I finished it Thursday afternoon and drove the thumb drive down to Essex Massachusetts and delivered it in person to the Conference committee."

I believe it is important to watch this film. It is available on each NOFA chapter's website and on the website of the NOFA Interstate Council. In the film, you have a rare view of NOFA's founders in their own contexts - sitting on their porches or in their farmyards with chickens or goats wandering in and out of the frame. Talking extemporaneously, they look back, amazed at what has been accomplished over the years. We get a clear sense of the hard work that so many people put in to make the movement happen. "How wonderfully crazy we all were," says Liz Henderson in the film, "to think that we could be doing this. We were setting out an alternative that despite all the evidence that said it was not going to happen, we did it anyway. And we are all a little bit odd because of that."

As we NOFA members think forward into the future, we also need a retrospective vision that grounds us in our roots, helps us to remember, to find meaning in what we do in the present and informs our vision for the years to come. As Al says, "We need to appreciate where we came from and the passion and dedication that was there from the beginning. This is so important because we still are a movement that is fueled by passion and volunteerism. We need this story in order to take our work on into the future."

I want to shout out a big "thank you" to Al Johnson for all the hard work making this film. He has provided us with a treasure for the NOFA archives for years to come that is accessible to everyone.

Sara Norton was the director of Vermont NOFA from 1980-1985

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(Policy from A - 9)

Reagan vetoed a significant bill instituting even stronger Clean Water Act revisions his veto was also firmly overridden by a major bipartisan Congressional vote.

In the absence of authoritative federal regulatory powers both the EPA and FDA have to rely on inadequate health advisories, action plans, cleanup guidance and new testing methods to try to assert and advance their authority. Thus far Congress has also only been working piecemeal through appropriations and other bills to fund a smattering of PFAS remediation and cleanup initiatives. In response to Congressional concerns about PFAS chemicals in food, a November 2022 Government Accountability Office (GAO) report concluded: "FDA doesn't have specific authority to require companies to provide the information that the agency may need for such reviews—so re-evaluation may not be possible. We recommend that FDA request this authority from Congress" – seemingly a tall order in today's polarized political climate.

Historically it has been left to the states to step into the breach using their localized permitting powers initially authorized by the Clean Water Act. Even though vastly increased testing is revealing widespread contamination, however, many states lack the political will and/or agency resources to deal with it. Protracted citizen advocacy is key for accelerating this process.

The grassroots Maine model is not only producing authoritative statewide regulations along with citizen support measures and PFAS producer-funded cleanup activity but is also prompting significant citizen action in other states and ramping up pressure for substantial Congressional involvement. Just as the original Clean Water Act negotiations engaged widespread political support for putting major protections in place for all Americans, PFAS contamination of our water, air, soil and food is not a partisan issue. Republican and Democratic legislators alike must swiftly be brought to awareness that the 97% of Americans with potentially poisonous PFAS in our blood serum surely includes them as well, along with their families and all of their constituents.

Further Reading:
I don't know how we'll survive': the farmers facing ruin in Maine's 'forever chemicals' crisis. theguardian.com/environment

Steve Gilman is the NOFA Interstate Council Policy Coordinator.

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