Montana Organic Association
Newsletter

Organic Matters

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Hydroponics Debates: Where have they been, and where might they go?

In a recent letter to Secretary Tom Vilsack, Frances Thicke and more than 40 prominent farmers and former NOSB members, implored the USDA to address multiple concerns about state of the National Organic Program (NOP).

He quotes the 2010 NOSB recommendation against certifying hydroponics: "systems of crop production that eliminate soil from the system, such as hydroponics or aeroponics, can not be considered as examples of acceptable organic farming practices. Hydroponics, the production of plants in nutrient rich solutions or moist inert material, or aeroponics, a variation in which plant roots are suspended in air and continually misted with nutrient solution, have their place in production agriculture, but certainly cannot be classified as certified organic growing methods due to their exclusion of the soil-plant ecology intrinsic to organic farming systems and USDA/NOP regulations governing them."

At the same time, the MOA Policy Committee, and the Organic Farmers Association Governing Council have been reviewing the hydroponics debates, and visiting with Senator Jon Tester, ready to consider new strategies to tackle this thorny issue. In that context MOA Chair and OFA Governing Council Advisor Becky Weed writes this update for both MOA and OFA newsletters.

In 2010, the National Organic Standards Board (NOSB) recommended against allowing the organic certification of hydroponics. In 2014, the National Organic Program (NOP) officially permitted it, essentially ignoring the NOSB. Reaction to that discrepancy has variously festered, shuffled, and raged ever since. After more than ten years of debate, the vast majority of Organic Farmers Association (OFA) members consider this to be a high-priority issue. Over the same ten years, the hydroponics industry has grown to be a $1+ billion industry. It's time for distillation of the issues; an update on actions and arguments since 2010 that may inform choices; a look at why the debates still matter; and a plan.

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The Issues

Reasons for opposing the organic certification of hydroponics are compelling, heartfelt, and diverse. What follows is an analysis of the major reasons that there should be no USDA organic certification for hydroponic growing operations from the point of view of farmers who obtain and maintain USDA organic certification. By obtaining USDA organic certification, these farmers are vested in the integrity of the USDA organic label and in essence sustain NOP regulators.

Soil

The primary, foundational reason for excluding hydroponics from organics is that farming without soil cannot fully encompass the principles of organic farming and cannot yield the same outcomes as soil-based farming. The organic management of soils is a perpetual effort to improve soil health as well as the health of the crops and biological communities that soil hosts and interacts with. The traditional language of organic farming's founders and subsequent practitioners, as well as the language of the NOP, have framed this using terms like fertility, moisture storage, microflora, and parent materials. Collectively these traits also connect the soil to the broader farm environment—its water, biodiversity, susceptibility to erosion, and neighbors. At both small and large scales, these traits have been at the heart of organic requirements and inspections for certified organic farms. Historically and to this day, some farmers frame this collection of traits in visceral or even religious terms: "growing in soil is the way God intended farming to be." Some farmers may not be inclined to use that language in an argument with a regulator, but nevertheless humbly and vocally embrace the complexity of soil and grasp that we (both farmers and scientists) cannot fully disentangle the variables and thereby mimic the effects of soil by engineering an aqueous system.

Nutritional Qualities of Food

The second major reason for excluding hydroponics from organics is soil, and its interactions, drive nutrient density. It is difficult to enter the scientific literature on soil, crops, livestock, or human health these days without encountering the burgeoning research on the microbiome—in all of those settings. In contemporary scientific terms, this means that considerations of crop and weed diversity, interacting roots and microbial communities, phytochemical signaling sometimes mediated by microbes, biochemical resilience enhanced by the cation exchange capacity of soils, and subtle micronutrients made available by mineral-microbe interactions, etc. are all relevant to crop growth and nutritional content. Do organic farmers claim to fully understand all this? No one does, but our understanding is growing increasingly sophisticated. It is telling us that our grandmothers' assessment that we are what we eat still holds, whether we are a tomato or a child. It defies logic that an engineered aqueous system injecting a set of selected chemicals in a simplified environment is growing nutritionally equivalent food, despite substantial similarities in appearance and composition.

Harmonization amongst International Certifiers

Europe, Canada, Mexico, and IFOAM (International Federation of Organic Agriculture Movements) all exclude hydroponics from organic certification, based on the premise that soil is fundamental to organic farming, by

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definition. The NOP has created a contradictory standard for U.S. Farmers without an adequate rationale by certifying hydroponics operations.

Inconsistent and Ambiguous Certification within the U.S.

Not only is the NOP inconsistent with the international norms, but its standards are also inconsistent and ambiguous within the U. S. In 2014 when the NOP officially announced that hydroponic operations could be certified, a small but growing contingent of farmers began to ask, "if the NOP is certifying various containerized hydroponic production technologies in greenhouses and elsewhere, what does that look like, and how are they translating a soil-based standard to these engineered aqueous schemes?" Farmers who had been rallying and writing in opposition to the USDA directive based on their knowledge of and passion for soil-based farming expanded their muckraking to include questions about land transition requirements for containerized growing regimes. The ambiguities they uncovered led to a USDA memo in June 2019 that tried and failed to provide written clarification. This, in turn, led to OFA collaborating with National Organic Coalition (NOC) and Accredited Certifiers Association, Inc (ACA) to conduct a "Three-Year Transition Survey," questioning 34 Certifiers on the protocols for a wide array of production technologies (see the timeline on page 27). The survey clearly demonstrated that standards for dozens of growing methods remain ambiguous and inconsistently certified across this country. In response, the ACA working group of over 30 certifiers met to remedy this inconsistency with guidance but could not agree without clarification from the NOP.

If failure to address the imperative for clarity and consistency was merely due to bureaucratic oversights and missteps, we could clean up the flaws and move on. *We find ourselves asking instead, is the drive to certify hydroponics as organic a misguided effort to drive a square peg into a round hole—to the detriment of the entire organic framework?*

An Update on other Concerns

While many, if not most, certified organic farmers oppose certification of hydroponics, we do not dismiss other concerns within the organic community that need to be addressed. We just do not want to water down organics as an easy "solution" to these systemic problems.

- Expand Organic: An aspiration to "Expand Organics" is admirable, but not if we do so at the expense of a meaningful organic benchmark. Asserting that we must expand organics at all costs is not so different from the troubled history of conventional farming in which powerful forces have driven a single-minded metric of high yield--at the expense of soil, crop, livestock health, and farm profitability, and thus human well-being. Pandemic 2020 has put an exclamation point on that peril.

- Increase Access to Organic Food: The vibrant and important field of urban farming offers much promise for access to nutritious food and urban engagement in the vital role of farming in human society, but it is a false premise that this demands hydroponics' certification. The task of ensuring healthy, clean soils at any scale in any setting is both a possible and vital aim of growing and learning about food. Indeed, this principle applies to any food desert, urban or rural.

- Too Late to Change: Some are asserting that "it would not be fair" for the NOP to change its policy, now that a billion-dollar hydroponics industry has grown with the assistance of the 2014 NOP's permission'. The irony

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A BRIEF HISTORY OF
HYDROPONICS & ORGANICS

Hydroponics has not always been allowed in organic certification. Here's a brief history of the controversy.

1990

Congress passed the **Organic Food Production Act (OFPA)** and created the **National Organic Program (NOP)** and the **National Organic Standards Board (NOSB)** to guide USDA on how organic eligibility should be defined and how to implement OFPA. OFPA 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."

1995

NOSB recommendations on organic standards mention hydroponics, "Hydroponic production in soilless media to be labeled organically produced shall be allowed, if all provisions of the OFPA have been met."

2001

National Organic Standards were published. NOSB passes a recommendation on greenhouse standards. **A proposal to permit hydroponic in organic is defeated.**

2010

NOSB passes another (more detailed) recommendation on greenhouse standards and **recommends USDA prohibit hydroponics from being certified organic.** USDA fails to move recommendations forward to rulemaking. Hydroponic greenhouse production labeled as organic is growing rapidly, primarily coming from Mexico and Holland (where it is not certifiable as organic). Certifying agencies are divided--some will certify hydro and some will not.

2013

Without action from NOP on to codify greenhouse standards through rule-making, **hydroponic greenhouse production labeled as organic grows**, primarily imported from Mexico and Holland. Certifying agencies are divided on whether they will certify hydroponic production. **Farmers circulate petitions calling on the NOP to act on the 2010 NOSB recommendation.**

2014

NOP Director releases statement that hydroponic is allowed.

2015

NOP establishes the Hydroponics and Aquaponics Task Force, composed of majority hydroponic growers. Results in a divided report.

2016

USDA & NOSB receive **letter calling for a moratorium on new hydroponic certification,** signed by 41 organizations (representing over 2 million people) and 15 former NOSB members.

2017

NOSB failed to pass a recommendation to prohibit hydroponics. It failed to pass a recommendation to prohibit aquaponics. It did pass a recommendation to prohibit aeroponics. No reason was given why aeroponics should be prohibited while hydroponics should be allowed. **With the failure to pass a new recommendation, the 2010 recommendation continued as the standing NOSB recommendation to prohibit hydroponics.**

2018

The NOP released a statement that hydroponic production has always been allowed and will continue to be so. Many farmers and certification agencies disagreed with this statement and questioned the NOP's ability to make such a claim without substantiating the decision. **This lack of clarity and controversy has left a continued distrust of the NOP and inconsistent and unclear organic standards for organic farmers nationwide.**

2019

The NOP issued a Memo that clarified some aspects of container production but raised more questions. Center for Food Safety sued USDA over allowing organic hydroponics.

2021

Center for Food Safety (with other plaintiffs from the organic community) **lost a lawsuit against USDA that would have demonstrated the certification of organic hydroponic was unlawful under the OFPA.**

Timeline courtesy Organic Farmers Association, Organic Voice, June 2021.

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of this claim is not lost on those in the NOSB and organic community who warned that hydroponics' certification was problematic at its inception and would be challenged. Nor is it lost on the hundreds of soil-based organic and fruit and vegetable farmers whose livelihood is threatened (or already wrecked) by the tilted playing field that helps an industrial "organic" hydroponics industry to thrive under much less stringent standards.

• The Organic Label is Valuable: Some organic community members expressed concern that by criticizing the entire USDA organic label, the hydroponics "fight" was inadvertently undermining organic producers not directly vulnerable to hydroponic competition. This includes the small grains growers of the Great Plains and their food manufacturing partners, for example, as well as the diverse livestock-based organic sector and others. Members and leadership of the Real Organic Project (ROP) listened to these concerns and clarified its language to differentiate between its critiques of the NOP and its respect for a wide array of farmers who have come to rely on its organic program.

• Organic Integrity Cuts Across Commodity: Loss of integrity in the organic standard in any sector threatens the integrity and reputation in all sectors. Anyone who doubts that all organic farmers and consumers have a stake in the fate of organic integrity need only look to the current issues revolving around fraudulent organic grain imports, delays and limitations in reforming animal welfare provisions by the NOP, and corporate adoption of the regenerative farming rhetoric without rigorous safeguards against greenwashing. We misinterpret internal debates at our own peril and at the peril of an organic future for food and land. The ostensible "benefits" of pseudo-organic accrue only to those who live by quarterly reports. Natural systems are the ultimate arbiter.

We do not seek a permanent alphabet soup of auxiliary labels. Consumers do not have the stomach, the budget, or the bandwidth to throw themselves into such a morass. Together with eaters, we seek instead to work with the USDA to reestablish an organic benchmark that is, at a minimum, honest and defensible and structured to seek continuous improvement. Individual farms and farm and consumer groups will continue to strive for and market innovations "Beyond Organic," but this only works if the foundation is solid.

MOA will continue its collaborations with other organizations to pursue exposure and practical modifications of existing policies to protect the fundamentals of organic farming. The next couple of years offer a crucial opportunity, with dynamic pressures on USDA, with Senator Jon Tester in the Capitol, MOA representation on the OFA Governing Council and the NOSB, as well as on the IFOAM North America Board, and a societal awakening to the coupling of healthy food, ecosystems, and economies.

-Becky Weed, MOA Chair

*For more information about the OFA Greenhouse Survey, contact OFA at 202-643-5363 or info@OrganicFarmersAssociation.org