



2525 SE 3rd Street | Corvallis, OR 97333 | [www.tilth.org](http://www.tilth.org) | PH 503.378.0690 | FX 541.753.4924 | [organic@tilth.org](mailto:organic@tilth.org)

October 26, 2016

Ms. Michelle Arsenault, Advisory Committee Specialist  
National Organic Standards Board  
USDA-AMS-NOP  
1400 Independence Ave. SW.  
Room 2642-S, Mail Stop 0268  
Washington, DC 20250-0268

RE: Docket: AMS-NOP-16-0049

**Crops Subcommittee: Hydroponic/Aquaponic/Bioponics Proposal**

**Dear Ms. Arsenault,**

Oregon Tilth Certified Organic (OTCO) would like to thank both the NOP Hydro/Aqua Task Force and the Crops Subcommittee for the time committed to evaluating whether bioponic systems are compatible with the organic standards. We agree with the Task Force report that bioponic agriculture is distinct from synthetic hydroponic production, as also delineated in 2010 NOSB recommendation, and urge the Crops Subcommittee to reconsider the recommendation to prohibit non-soil systems.

**Bioponic Advantages**

The Subcommittee proposal accurately describes the many advantages of bioponic agriculture. OTCO has been certifying aquaponics, self-contained production of plants and fish in recirculating systems, for the past 9 years. These systems can provide a way for producers with limited access to soil and water to provide fresh produce for their local communities, rather than importing soil-grown product from long distances away. In an ideal world, all producers would have access to fertile soil and ample water to farm. Unfortunately, due to climate change, drought, soil degradation, and urban expansion, many would-be organic producers do not have access and cannot meet the requirements for soil-based farming on a scale required to be financially sustainable. OTCO would encourage the Subcommittee to leave this door open for innovation and experimentation in organics. We have seen firsthand that aquaponic systems require very minimal inputs other than fish feed, and can meet every part of the organic Rule.

**A Complementary Method**

Rather than viewing bioponics as oppositional to soil-based production, we see it as a tool that can be complementary. Many OTCO-certified producers employ both bioponic and soil-based farming methods. One of our oldest small farms in Louisiana grows lettuce aquaponically, but also utilizes additional fish waste byproduct to fertilize in-soil vegetable production<sup>1</sup>. This whole-farm recycling of resources is a type of permaculture farming that truly fulfills the spirit of the organic standards.

Many aquaponic producers are eagerly anticipating the introduction of the aquaculture standards, which will allow them to produce both organic fish and plants in a self-contained system.

### **Regulating Fertility Delivery**

Plant roots primarily take up nutrients dissolved as ionic salts in water, whether in fertile soil, coco coir, or mixed media<sup>2</sup>. As the Subcommittee's proposal acknowledges, in sandy soils many producers fertigate frequently with amended water. The current Rules specifically allow for fertigation with extracted seaweed and fish emulsion, and do not distinguish between modes of delivery. In addition, aquaponic systems are not adding additional soluble nutrients. Solid feed is provided to fish whose waste is then broken down into constituent nutrient components by active biology. Trying to delineate in the Rules between nutrients dissolved in water and nutrients in soil is a difficult, and perhaps impossible, task.

### **Managing Natural Resources**

We agree with the Subcommittee's concerns about the degradation of natural resources by paving over fertile soil or through effluent runoff, although we feel that these risks also present themselves in more traditional farming systems. OTCO would support adding greenhouse/bioponic specific examples to the Appendix of the NOP 5020 Natural Resources and biodiversity guidance. This would help ensure that natural resources on all types of organic operations are maintained or improved as required by the standards.

### **Conclusion**

Oregon Tilth sees bioponic methods as a tool that can increase access to organic products while also sustainably maintaining natural resources. It is one innovation pathway of many that are needed to ensure the continued expansion of organics in a resource-limited world. We encourage the Crops Subcommittee to reconsider their recommendation and further explore how bioponic systems can remain a key part of the organic industry.

Respectfully submitted,  
Oregon Tilth

*Oregon Tilth is a leading certifier, educator and advocate for organic agriculture and products since 1974. Our mission to make our food system and agriculture biologically sound and socially equitable requires us to find practical ways to tackle big challenges. We advance this mission to balance the needs of people and planet through focus on core areas of certification, conservation, public health, policy and the marketplace.*

1. Costello, Ryan. "Super Natural Results: Q&A with an Aquaponics Advocate". In *Good Tilth*. Summer 2015, Volume 26, number 1. pp. 36-37.

2. Tisdale, Samuel L., Werner L. Nelson, and James D. Beaton. *Soil fertility and fertilizers*. Collier Macmillan Publishers, 1993. pp. 96.