October 11, 2017

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Avenue, SW
Room 2642-So., Ag Stop 0268
Washington, DC 20250-0268

Docket: AMS-NOP-17-0024

RE: Crops Subcommittee – Hydroponics and Container-Growing Recommendations (Proposal)

Dear Ms. Arsenault:

Thank you for this opportunity to provide comment on the Crops Subcommittee's Proposal on Hydroponics and Container-Growing Recommendations.

The Organic Trade Association (OTA) is the membership-based business association for organic agriculture and products in North America. OTA is the leading voice for the organic trade in the United States, representing over 9,500 organic businesses across 50 states. Our members include growers, shippers, processors, certifiers, farmers' associations, distributors, importers, exporters, consultants, retailers and others. OTA's mission is to promote and protect organic with a unifying voice that serves and engages its diverse members from farm to marketplace.

Summary

The Organic Trade Association supported NOSB's 2010 recommendation on Production Standards for Terrestrial Plants in Containers and Enclosures when it was passed, and we have consistently maintained that position ever since. We supported NOSB's view that entirely water-based systems (hydroponics and aeroponics) should be prohibited in organic, and that organic container production should meet strict and appropriate production standards. We agreed with NOSB in 2010 that container production must implement practices that ensure a "natural and diverse soil ecology" is supported in the container, and that broader organic concepts such as maintaining and improving biodiversity and soil and water quality must be implemented on these types of farms.

We support this approach because it focuses on the outcomes of an organic management system rather than on restricting the use of inputs. In addition, it recognizes that while organic regulations must be flexible enough to accommodate site-specific conditions, all organic production requirements must be met on each operation, not just the use of allowed inputs. We also support the approach outlined in the 2010 NOSB Recommendation because it includes a comprehensive set of requirements for container producers to ensure these production systems adhere to the full suite of organic practices, rather than focus narrowly on a single aspect. This position has not changed, and we remain committed to ensuring that the ongoing work on this issue build upon the 2010 NOSB recommendation and utilize clear and consistent definitions for each type of production system under consideration.

The Crops Subcommittee (CS) has presented two views on how to clarify the 2010 NOSB

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recommendation on Production Standards for Terrestrial Plants in Containers and Enclosures. The majority proposal and minority view align on a number of issues and demonstrate consensus in some areas:

- Container systems should be allowed in organic, with appropriate production standards established for these types of operations.
- Products from entirely water-based systems (i.e. hydroponics and aeroponics) should not be allowed to be labeled "organic."

OTA is encouraged to see NOSB developing consensus around certain areas of this issue, and we applaud both the majority and minority of the CS for putting forward substantive suggestions to further refine production standards for container producers. The majority proposal includes numerical guidelines for how and when nitrogen-based fertilizers can be added to organic container systems, and it re-defines "hydroponics" as any type of soil-less production that does not meet the proposed requirements for container systems. The minority view builds on the 2010 NOSB recommendation, adds requirements to ensure organic container systems foster a diverse soil ecology, and retains the original 2010 definition for "hydroponics." Both the majority recommendation and the minority view include concepts and approaches which are new to organic stakeholders, and this is the first open comment period for the public to provide feedback on a number of new provisions in the recommendation.

To remain consistent with our previous positions on this topic, the Organic Trade Association does not support the entirety of the recommendation passed by the CS. The definition proposed for "hydroponics" is a stark departure from previous definitions for this term, and we believe that defining a term based on what *it is not* does not lay solid groundwork for rulemaking. Instead, OTA suggests CS retain the definition accepted by NOSB in 2010. Additionally, it is not clear that the CS majority recommendation on container production guidelines ensures that these operations will "support a natural and diverse soil ecology," which was a hallmark of the 2010 NOSB recommendation, and one that OTA continues to believe is an essential feature of organic container production.

OTA has worked with our membership to develop comments on both the majority proposal and the minority view, and we offer the following more detailed comments:

MAJORITY PROPOSAL

Definitions

OTA's previous comments to NOSB on this topic have highlighted the need to first develop clear, accurate, and consistent definitions for each type of production system being considered. This need is underscored by recent rhetoric that has attempted to label container production systems as "hydroponic" based on an unclear definition for the term. Our view is that the definitions proposed in the 2010 NOSB recommendation adequately describe the various types of soil-less systems currently under organic management and should remain as a baseline when developing recommendations.

Hydroponics: The CS majority proposal includes a new definition for "hydroponics" in this recommendation:

> ***Hydroponics.*** Any container production system that does not meet the standard of a limit of 20% of the plants' nitrogen requirement being supplied by liquid feeding, and a limit of

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> 50% of the plants' nitrogen requirement added to the container after the crop has been planted.

OTA appreciates the challenge facing NOSB in accurately defining types of operations along the soil-less growing spectrum. We recognize that inconsistent use of terms, due to a lack of final definitions, has led to confusion and further controversy in this discussion. However, we do not support defining a particular type of production by what it is not, particularly when NOSB is also proposing to prohibit that type of production. Instead, OTA suggests CS retain the definition accepted by NOSB in 2010:

> ***Hydroponics.*** The production of normally terrestrial, vascular plants in nutrient rich solutions or in an inert, porous, solid matrix bathed in nutrient rich solutions.

Retaining the original definition would align the majority and minority proposals and allow forward progress on motions to clarify which types of production are and are not allowed in organic.

Soil: The CS has retained the definition for "soil" drawn from the Soil Science Society of America Glossary in this recommendation. OTA understands the need to have soil defined in the organic regulations for this recommendation. However, we remind CS that "soil" became a defined term in 7 CFR 205.2 with the release of the Organic Livestock and Poultry Practices Final Rule in January 2017 (scheduled to go into effect November 14, 2017). We strongly encourage CS to craft its future recommendations on hydroponics and containers using the current regulatory definition for "soil:"

> ***Soil.*** The outermost layer of earth comprised of minerals, water, air, organic matter, fungi, and bacteria in which plants may grow roots.

Motions to Prohibit

CS brings forward three separate motions to prohibit "aeroponics," "aquaponics," and "hydroponics." It has been OTA's consistent position since 2010 that "aeroponics" and "hydroponics," as defined in the 2010 NOSB Recommendation, be prohibited in organic production. OTA has not changed that position.

- We do not take exception to CS recommendation to prohibit "aeroponics." This motion reaffirms NOSB's 2010 recommendation that also recommended prohibiting "aeroponics."
- We cannot support CS proposal to prohibit "hydroponics," since CS has proposed a new definition that we do not believe accurately describes "hydroponic" operations. OTA would not have taken exception to the proposal to prohibit "hydroponics" had CS retained the 2010 definition.
- OTA does not take a position on CS proposal to prohibit "aquaponics."

Recommendation for Container Systems

CS has proposed new guidelines for container systems, specifically CS recommends that no more than 20% of the crop's total nitrogen requirement be delivered through liquid feeding, and that no more than 50% of the crop's total annual nitrogen requirement be added to the system after the crop is planted. OTA does not support this approach, as CS has not adequately justified that limitations on how and when nitrogen is added to a container system will achieve an outcome that ensures a "natural and diverse soil ecology."

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20% Limit on Liquid Feeding – It appears that CS justifies its recommendation to limit liquid feeding to 20% of the crop's total nitrogen requirement by comparing all classes of liquid organic fertilizers to sodium nitrate. In this justification, CS assumes that all liquid fertilizers are comprised of immediately plant-available soluble mineral salts (i.e. Nitrate, Nitrite and Ammonium). We do not believe this assumption to be true, as most liquid organic fertilizers do not contain significant levels of plant-available soluble mineral salts, but rather contain plant nutrients that are mostly tied up in more complicated amino acid and carbon-based molecules. In contrast, sodium nitrate dissolves immediately into solution as a plant-available nitrate, and restrictions on its use are justified. **Since we do not believe this recommendation is based on a full understanding of how organic liquid fertilizers behave in container systems, we cannot support it as a requirement.**

50% Limit on Nitrogen Additions after Planting Crop – CS is proposing to limit the amount of nitrogen fertilizer added to a container after the crop is planted to 50% of its annual fertilizer requirement. OTA understands CS's basis for this recommendation is largely around alignment with international standards and an assumption that plant nutrients delivered through additions of solid organic soil amendments and fertilizers will better achieve the outcome of ensuring a "natural and diverse soil ecology." We are also concerned that this requirement could create conflicts with other organic practice standards, including 7 CFR 205.203(c), which requires that organic producers manage their operations "in a manner that does not contribute to the contamination of crops, soil, or water by plant nutrients…"

- How does this requirement ensure that containers can support a "natural and diverse soil ecology?"
- Has CS evaluated whether this requirement could create situations where young plants cannot utilize nitrogen quickly enough, and leaching of plant nutrients occurs?

Due to these unanswered questions about this new proposal for container production, the Organic Trade Association cannot currently support this requirement.

MINORITY VIEW

OTA supports the minority view to build upon and clarify the 2010 NOSB recommendation on Production Standards for Terrestrial Plants in Containers and Enclosures. This is a logical approach to take, as the 2010 recommendation was passed nearly unanimously, and it established a set of definitions to describe the various types of soil-less production systems. Additionally, OTA has always supported establishing requirements that ensure organic container production can support a "natural and diverse soil ecosystem." OTA believes this outcome is what sets organic container producers apart from their conventional counterparts, and should be one of the defining features of a certified organic container system. The requirement that "4 trophic levels" be present in a container to demonstrate compliance with this outcome has merit because it focuses on the biology of the system as opposed to inputs, which is in line with organic principles, and we encourage NOSB to continue refining this concept into a full proposal for future discussion.

Our membership has shared that lab tests that can identify individual species and assess the overall diversity of soil organisms are readily available and relatively inexpensive. These lab tests combined with onsite observations of larger soil organisms like earthworms and arthropods could form the basis for a

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standard that certifiers can verify on an annual basis and that ensures the system is "capable of supporting natural and diverse soil ecology." We also support the requirement that growing media be 50% carbon-based material to ensure organic container producers are not utilizing 100% inert media sources in their systems.

Overall, OTA supports the trajectory that the minority has brought forward, and we encourage CS to incorporate its outcome-based approach in future proposals on hydroponics and containers.

OTHER CONSIDERATIONS

It is important that CS consider all crop production requirements when developing recommendations on soil-less growing systems. The majority proposal focuses squarely on the inputs used in these systems, and does not address how these systems should adhere to additional requirements such as crop rotation, natural resources, and biodiversity. We recommend CS consider suggestions from organic stakeholders and bring forward proposals to ensure these systems meet all of the organic crop production requirements. For example, the minority view builds upon the 2010 NOSB Recommendation that addresses the full suite of crop production requirements, and California Certified Organic Farmers has developed a comprehensive set of production requirements for crops grown in any type of these soil-less systems. As CS and NOSB continue towards a goal of compromise, consensus, and recommendations pertaining to how soil-less production systems should be regulated under the organic standards, recommendations should cover all crop production requirements and should not focus entirely on narrow restrictions on inputs.

CONCLUSION

The Organic Trade Association is encouraged to see that CS has arrived at some areas of consensus on a topic that has generated significant controversy. Specifically, CS reaffirms that container production should be allowed with appropriate guidelines, and that entirely water-based production be prohibited from organic production. This reaffirms the 2010 NOSB recommendation and the resolution passed by NOSB in 2016. While OTA does not support the guidelines for container production proposed by the CS majority proposal, we applaud CS for bringing forward substantive recommendations for the public to consider and on which to comment—we all should recognize this is a sign of progress.

On behalf of our members across the supply chain and the country, the Organic Trade Association thanks the National Organic Standards Board for the opportunity to comment, and for your commitment to furthering organic agriculture.

Respectfully submitted,

Nathaniel Lewis
Farm Policy Director
Organic Trade Association

cc: Laura Batcha
Executive Director/CEO, Organic Trade Association

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