122 W. Jefferson Street | P.O. Box 821 | Viroqua, WI 54665 PH 844-637-2526 | FAX 608-492-0470 | mosaorganic.org

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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

Submitted via Regulations.gov.

RE: Docket #AMS-NOP-21-0038

NOSB Proposal: Ammonia Extract - petitioned

Dear NOSB Members:

Thank you for the opportunity to provide comments on the Proposal: Ammonia Extract - petitioned. MOSA certifies approximately 2,050 organic operations throughout the United States, including approximately 1,810 crop operations. Almost all MOSA certified operations use some National List materials, though very few use materials on §205.602 as restricted nonsynthetic materials.

MOSA has not previously commented on this topic because we do not have an opinion on whether this material is allowed, prohibited, or restricted, though we agree with the *organic principle of enhancing soil biological processes*. We support the listing of natural materials as prohibited when materials of concern arise. Our general approach to crop fertility input review is that natural materials not listed as prohibited or restricted on §205.602 are allowed. All materials in use on organic operations must be applied *in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances*.

Currently, we have one OMRI listed input we've approved for use that lists ammonia nitrogen in the ingredients statement. We do not generally record ingredients for OMRI listed products, so there could be other OMRI listed ammonia extract products in use by our clients. We allow OMRI listed products to be used in accordance with OMRI's restrictions, if any. The one product we're aware of is in use by two clients and is proposed for use by one more client. One farm applies it to hay, and the other to vegetables in a high tunnel, and both farms use it as part of a robust fertility program with multiple inputs in use. This OMRI listed product also contains sodium nitrate and is reviewed and inspected in accordance with NOP Guidance 5012 regarding the approval of liquid fertilizers for use in organic crop production. MOSA requires OMRI listing for all high nitrogen liquid fertilizers (HNLF) in use by our clients. We do not have the capacity to ensure that fertility products meet the requirements of the NOP's HNLF Guidance.

We have a few clients using digestate materials, generally the solids, but we are aware of one manufacturer making a liquid product, in use by one of our operations as part of the total fertility package for their corn fields. This product is currently under re-review.

In general, we're not seeing a high rate of use of ammonia extract products that we are aware of. It seems that products would need to also meet the HNLF guidance and for MOSA this would require OMRI listing. We have not gauged the impact that the listing of ammonia extract products on §205.602 would have on our work. We find the first two motions for Stripped Ammonia and Concentrated Ammonia to be clear, though we have not yet verified inputs using this criteria.

> *Motion to add at §205.602, non-synthetic substances prohibited for use in organic crop production: Stripped Ammonia – created by separating, isolating and/or capturing ammonia or ammonium from an agricultural feedstock or other natural source using methods such as, but not limited to, steam stripping, pressurized air, heat, condensation, and/or distillation.*
>
> *Motion to add at §205.602, non-synthetic substances prohibited for use in organic crop production: Concentrated Ammonia – contains greater than 3% ammoniacal nitrogen and the total nitrogen content is predominately (i.e., >50%) in the ammonia or ammonium form.*

These two motions can stand alone, individually or as a package, and could help mitigate the concerns of stakeholders. The digestate material mentioned above would likely not be allowed. It would be unusual to allow the manure solids but not the natural liquid from the same source material. Ammonia materials produced through the Haber-Bosch process would be allowed. It is also hard to rationalize that natural nitrogen-containing materials would be prohibited, while other synthetic nitrogen containing materials are allowed.

The third motion does not have MOSA's support. This significant change needs further discussion. We recommend this be sent back to the subcommittee for further vetting and stakeholder input. We also feel that this motion is beyond the scope of the petition, which recommended addition of a single sub-category of materials to §205.602. This new motion is recommending regulation of a much larger macro-category of materials and is proposing complicated mathematical calculations be introduced to input review. MOSA has concerns about this motion.

> *Motion to add at §205.203(f): Nitrogen products with a C:N ratio of 3:1 or less, including those that are components of a blended fertilizer formulation, are limited to a cumulative total use of 20% of crop needs.*

The term "nitrogen products" is general and undefined and includes materials that are currently allowed. Of concern, guano is mentioned specifically. MOSA has at least eight inputs with guano listed as an ingredient in use by over 30 clients. We need a list of affected materials and further discussion about the impact of this proposal. Any nitrogen product with a C:N ratio of 3:1 or less is included in the motion, including nitrogen-containing ingredients in blended formulas. This means that not only would certifiers and clients need to know the C:N ratio of the entire

product, but also the C:N ratio for each ingredient, and ingredients within ingredients. If the final product has a ratio of 3:1 or less then does the ratio for each ingredient and sub-ingredients matter? From the C:N ratio range chart in the proposal, it seems if any of the materials at the top of the chart were combined, the C:N ratio of the product could be at or below 3:1. We often see manufacturers combine OMRI listed inputs to make a compliant blend.

Material	C:N ratio range
Sodium nitrate	0.02: 1
Sea bird guano	1.2 - 3.3: 1
Blood meal	3.1 - 3.8: 1
Fish powder	3.4 - 4.0: 1
Feather meal	3.5 - 3.8:1
Bone meal	3.6: 1
Liquid food-based fertilizer	4.6-5.2: 1
Liquid fish emulsion	5.2: 1
Cotton seed	5.5: 1

C:N ratios can also vary for a material depending on the production methods for the material. Is there a standard chart we would need to reference for assumptions, or would lab or third-party verification be required?

The NOSB document noted, *"Additionally, the effectiveness of a prohibition or limitation is dependent on an exact definition of ammonia extracts. If new products are developed that fall outside the definition, a future petition would have to be submitted to determine if they should or should not be allowed. This could create additional work loads and a perpetual cycle of review for each new product produced. It would seem prudent to set an additional limitation for these extracts that might fall outside the current definition, as well as for other highly soluble nitrogen materials. A limitation that would restrict the total use of highly soluble nitrogen fertilizers would prevent the "stacking" of multiple highly soluble fertilizer types. The NOSB should not have to be continually concerned about the introduction of different novel ammonia extracts or other novel non-synthetic nitrogen materials before a petition is submitted to restrict them"* [middle of page 45 of the 205 page meeting packet]. We do not support this approach. We feel it is more prudent for the NOSB to evaluate each material as our agricultural world progresses and developments are made, rather than to apply a strict limitation to a category of unknown inputs.

The second part of this proposal requires that *nitrogen products* be limited to a *cumulative total* use of 20% of the crop's needs. We ask, the crop's needs for what? We'd assume this refers to nitrogen, but this is not clear in the proposed language. We think clear words matter. Our understanding of this is that certifiers and clients would need to have a total quantity of each of the nitrogen-containing ingredients in any nitrogen product with a C:N of 3:1 or less, the Nitrogen analysis of the ingredient, and we would need to have the rate of application for each input, as well as the crop the input is applied to and the desired yield of the crop, be able to calculate the 20% measure. While we do already collect some of this information, we generally do not ask for submission of the quantity used of each ingredient in input blends or rates of input application per crop, nor for the guaranteed analysis for each ingredient. We verify the composition/content. Our experience with sodium nitrate shows us that blended products

would virtually never exceed the 20% limitation. Each crop would ideally need to have an established nitrogen requirement, and that can be variable depending on the yield desired (Corn can vary from 150-300 lbs of nitrogen per acre). Timing of applications and available nitrogen are not given any consideration with this restriction. There could be nitrogen available to the crop from the soil and other sources, but a *nitrogen product (with a C:N of 3:1 or less)* could still be applied at a rate of up to 20% of the crop's nitrogen needs. We would not be verifying what the crop is receiving, only what it is stated to need. There could be other ways to achieve the desired result, such as a nitrogen use mass balance audit, as mentioned in the ACA's comment.

In summary, MOSA encourages the NOSB to restrict the scope of this proposal to the petition received and if there is work to be taken up on the broader topic of highly soluble nitrogen fertilizers, then that should be added to the NOSB's work plan for future consideration. Thank you for your work.

Respectfully submitted,

The MOSA Certification Team