October 24, 2016

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Avenue, SW
Room 2648-So., Ag Stop 0268
Washington, DC 20250-0268

Docket: AMS-NOP-16-0049

RE: Handling Subcommittee – Cumulative Impact of Phosphates in Organic Processed Foods (Discussion Document)

Dear Ms. Arsenault:

Thank you for this opportunity to provide comment on the Handling Subcommittee's discussion document on the cumulative impact of phosphates in organic processed foods.

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 organic businesses across 50 states. Its members include growers, shippers, processors, certifiers, farmers' associations, distributors, importers, exporters, consultants, retailers and others. OTA's Board of Directors is democratically elected by its members. 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 of OTA's Position

OTA recognizes that high phosphorous intake may result in a spectrum of health problems for a small segment of the population, particularly for individuals with chronic kidney disease. There is insufficient evidence suggesting overconsumption of phosphates in the broader healthy population. The use of phosphate additives in organic food is actually quite limited and restricted compared to the use of phosphates in non-organic foods. From a health perspective, there is insufficient science indicating that the phosphate additives on the National List should be removed or phased out in the short term. More research is needed. Based on member feedback during the 2017 Sunset Review process (Appendix A) and during this comment period, we are unaware of any allowed alternative substances currently available that fulfill the same function as calcium phosphate (mono, di, and tri), potassium phosphate (for use in "made with organic" products only), sodium acid pyrophosphate (as a leavening agent only) and sodium phosphate (for use in dairy products only). However, as a matter of organic preference and principle, OTA members are interested in and committed to finding and/or developing natural and organic alternatives. OTA encourages NOSB to continue to review phosphates within their currently scheduled five-year Sunset Review process and make relisting determinations based on conclusive evidence supporting OFPA criteria: 1) the availability of alternatives; 2) whether they are harmful to human health and the environment; and 3) whether they are consistent with organic handling. OTA fully supports this process.

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The Handling Subcommittee is asking the following questions:

1. **If some brands of organic processed dairy products can be produced without use of phosphates, why not all of them? What are the alternatives?**

   In the large majority of the organic dairy products that we investigated, sodium phosphates were used only when they were essential and when there were no alternatives.

   The Technical Review states that, "Some companies produce the same or essentially the same organic product both with and without added phosphates. For example: Kraft Macaroni & Cheese Dinner™ is "organic" with added phosphate, and Kraft Organic Cheddar Macaroni & Cheese Dinner™ is produced without added phosphate." Our review of the various brands of Macaroni and Cheese products on the market shelves found this to be the case as well.

   There are several factors than can influence whether sodium phosphate is required. Examples include the type of cheese used (e.g. cheddar, asiago, Monterey jack), the type of equipment used and/or the type of mechanical processing (e.g. spray-drying) used at various stages in the process flow. Consistent with the results of our survey, member feedback expressed the lack of alternative ingredients and/or processing methods that will meet all circumstances. However, efforts to identify alternatives are underway and progress is being made.

   We also found that sodium phosphate is not needed for organic ultra-pasteurized half and half provided the manufacturer is employing a steam injection process. Our understanding is that the large majority of the organic Ultra Pasteurized (UP) half and half in the marketplace is processed using a steam injection process. Some processing facilities, however, may only be equipped with a tubular steam system (heat-exchange) instead of a steam injection system, or the facility may have a steam injection system but smaller runs dedicated to organic production will be run through the tubular system. Due to the high fat content of half and half, the tubular system tends to foul and/or plug the heat exchangers. Fouling is an issue because it reduces heat transfer efficiency and increases pressure drop. As a result of fouling, there is a possibility of deterioration in product quality because the process fluid cannot heat up to the required temperature (for pasteurization or sterilization). Also, the deposits dislodged by the flowing fluid can cause contamination. The di-sodium phosphate is used as a processing aid that prevents the fouling. In this application, if sodium phosphate were to be removed from the National List, organic manufacturers that do not have a steam injection system installed would need adequate time and resources to invest and transition.

2. **If European, Japanese, CODEX and IFOAM standards limit phosphates to only monocalcium phosphate and only as a leavening agent, why are all the other phosphates necessary in U.S. organic food processing?**

   By and large, the type of phosphate most commonly used in organic products is mono-calcium phosphate. This form is allowed in the U.S., Canada, Europe, Japan, IFOAM, Mexico, Taiwan, and South Korea.

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The necessity of other phosphates in the United States is likely due to the cultural differences in food choices and consumer demand. It should be noted that phosphates have had little to no impact on current equivalency arrangements. Phosphates, individually or as a group, have not been singled out as *critical variances. Therefore, they are currently deemed as equivalent under all existing equivalency arrangements (EU, Canada, Korea, Japan, Swiss).

*Critical Variance: Terms that are not accepted under an equivalency arrangement. Under the U.S./EU Equivalency Agreement for example, the EU recognizes the USDA National Organic Program (NOP) as equivalent to the EU Organic Program and allows products produced and certified as meeting USDA NOP standards to be marketed as organic in the EU. Likewise, the U.S. allows European products produced and certified under the EU Organic Program to be marketed as organic in the U.S. provided antibiotics have not been administered to animals. EU organic producers and processors are required to attest that each shipment meets the terms of the arrangement.

3. **Should phosphate food additives in processed organic foods be phased out, and if so, should just some of them be phased out or should it be allowed in only some products?**

From a health perspective and considering available alternatives, there is insufficient information indicating that any of the phosphate additives on the National List should be removed or phased out in the short term. More research and time are needed. In the long term, OTA supports all efforts to replace allowed synthetic phosphate additives with natural or organic alternatives and/or new processing technologies.

It appears that overconsumption of phosphorous is a food choice issue that results from choosing a diet rich in processed foods, soda and processed meat. From this perspective, it could be expected that phosphorus intake, as a result of the phosphate that is ***added*** to organic food, would be lower in an organic diet because of the fewer number of phosphate additives allowed under the organic regulations and the narrow allowance that is placed on sodium phosphate, sodium acid pyrophosphate and potassium phosphate. For example, the sodium phosphates are commonly used in processed meat products. However, under the organic regulations, they are allowed in dairy products only, so added phosphates are not permitted in any prepared organic meat products. As mentioned earlier, member feedback indicates that efforts are being made to move away from the use of sodium phosphate in dairy products.

Sodium acid pyrophosphate (SAPP), which is allowed only as a leavening agent, presents a much greater challenge with respect to available alternatives. SAPP is distinctly different from the other phosphate-leavening agents on the National List because it is “slow-acting.” The only substances on the National List that are ***slow-acting*** leavening agents are yeast and sodium acid pyrophosphate. Yeast, however, is extremely slow and not appropriate for quick bread applications. Monocalcium phosphate is a fast-acting leavening agent and when used in baking powder, the leavening reaction occurs at room temperature. A slow-acting leavening agent such as SAPP will not activate until baking (heating) occurs. Therefore, if an organic handler wants to make a refrigerated or frozen prepared cereal-based product such as a frozen waffle or a canned refrigerated biscuit dough (both of which require the use of a slow acting leavening agent), the only allowed option available that will work is sodium acid pyrophosphate. Conventional food manufacturers often use sodium aluminum phosphate as a slow-acting leavening agent. However, there are health concerns over aluminum consumption, and sodium aluminum phosphate is not on

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the National List.

While we recognize there are studies that link high phosphorous intake to health problems for a small segment of the population, particularly for individuals with chronic kidney disease, there is insufficient evidence suggesting overconsumption of phosphates in the broader healthy population as a result of added phosphates. There is also a lack of research that looks at phosphorous intake as result of the added phosphates in organic food.

We were unable to find any study that included data from direct comparisons of phosphate levels in organic and conventional (non-organic) products. While the study included in the 2016 Technical Review on Phosphates titled "The prevalence of phosphorus-containing food additives in top-selling foods in grocery stores" did include "additive-free" organic products in their comparisons, they were only represented in six out of the 56 comparisons. No organic products were included as representatives of products containing phosphorus additives, and data on phosphorus levels were not included for specific products. As such, it is impossible to determine the extent to which organic products without phosphate additives are available compared to comparable conventional products containing additives, the difference in total phosphorus levels in any organic and conventional products, and the extent to which phosphate levels differ among conventional and organic products that both contain phosphate additives.

*Leon, J. B., C. M. Sullivan, and A. R. Sehgal. 2013. "The prevalence of phosphorus-containing food additives in top-selling foods in grocery stores." *J Ren Nutr* No. 23 (4):265-270 e2. doi: 10.1053/j.jrn.2012.12.003.

OTA appreciates that this topic has been flagged as a Research Priority because we agree that there are important questions that can be asked that would help determine whether phosphate additives, as they are currently restricted on the National List and used in organic foods, are contributors to today's rising dietary consumption of phosphates and whether they are compatible with organic handling practices. Suggested research topics that might help shape the review of phosphates as we move forward include:

- Cumulative impact of phosphate levels in organic food products compared to non-organic food products;
- Contribution of added food phosphates to total phosphorous intake in an organic diet;
- Contribution of added food phosphates to total phosphorous intake in organic food compared to non-organic food;
- Consumer perception and preference of organic food products containing phosphate additives.

In the meantime, we encourage NOSB to continue to review phosphates within their fiv-year Sunset process and make determinations based on the availability of alternatives, impact to human health and the environment, and whether they are consistent with organic handling.

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

Respectfully submitted,

Gwendolyn Wyard
Vice President, Regulatory and Technical Affairs
Organic Trade Association

cc: Laura Batcha
Executive Director/CEO
Organic Trade Association

Appendix A – 2017 Sunset Survey Results

Calcium phosphates (mono, di & tri)	**Handler Comment:** Used in organic baked goods, specifically as an ingredient in baking powder. Certified for five years and selling products nationwide. Not aware of any alternatives. If this material is removed from the National List, we will no longer sell organic products. Critically essential to our organic products. No alternative. **Handler Comments:** Mono-calcium phosphate is a component of our baking powder, which is used in a wide range of products. There is no other more natural substitute for leavening when yeast is not appropriate. Critical to organic processing. **Handler Comment**: Used for nutrient fortification in gummy bears and other gummy confections.
Potassium phosphates	**Handler Comments:** Used in "Made with organic" nondairy beverages sold in 50 states and other countries. Certified for over 10 years. Buffering agent (pH control) to prevent precipitation and impaired mouth-feel. Tried alternatives but they do not work well. Loss of this material would result in impaired quality and marketability of products and loss of sales. Critically essential.

Sodium phosphates	**Handler Comments:** Used as an emulsifier in organic cheese products. Vital to the operation. No other alternatives are acceptable. We could not make the product without these emulsifiers. We would be unable to produce an organic cheese product. Critically essential. **Handler Comments:** Organic high protein smoothie. Certified for 32 years. The sodium phosphate ionizes in solution, which helps prevent excessive protein-protein interactions in the base that would result in curd formation (interrupts protein gel, stabilizing the texture of the product). No alternatives known. **Handler Comments:** Sodium phosphate Trisodium Phosphate Disodium Phosphate. Used as an emulsifier. We would be unable to produce an organic cheese product. No alternatives. These are vital to the operation
Sodium Acid Pyrophosphates	**Handler Comments:** Pancake mixes as a leavening agent. No alternatives known. Essential to our company. We make our own baking powder to avoid the non-organic (and sometimes non-GMO) pre-blended baking powder on the market. Eliminating this item would hurt us. **Handler Comment:** Cake mixes, cookies. Leavening agent. Other leavening agents don't

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	work as well. We do use cream of tartar and baking soda in certain products, but SAP works better in cake and cookie mixes. Essential to our products. **Handler Comment:** Crackers. Certified for 19 years. leavening agent. Have not explored alternatives

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