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Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Ave. SW.,
Room 2648-S, Mail Stop 0268
Washington, DC 20250-0268

Re. HS: Sunset Materials on §205.605

These comments to the National Organic Standards Board (NOSB) on its Fall 2017 agenda are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

These comments address handling materials on §205.605(a) and §205.605(a) due to sunset in 2019. Please use the outline panel on the left for easy navigation.

§205.605(a)

Technical information for most of these materials is in need of updating. In particular, the need for these materials and alternatives should be examined.

Attapulgite

Reference: 205.605(a) – as a processing aid in the handling of plant and animal oils.

In 2015, only one commenter (Aurora Dairy) submitted written comments in support of attapulgite, and gave no reasons for including it on a list of materials it supported. OTA reported, “Based on survey results and/or feedback received directly by members, this material does not meet the essentiality criteria listed by OTA.” The NOSB, in considering attapulgite in 2015, also found no arguments in favor of relisting, except the following: “However, many of the limited number of comments we received note that there was no negative reason to remove it from the list. In subcommittee, we had voted to leave it on the list. I would still suggest that there's no real reason to take it off the list with a negative reason that it may be being used out there and we simply have not identified that person, or that organization, or it may be being used in combination with some of the other filter aids, which are sometimes used together since attapulgite, bentonite, and kaolin are very similar in the manner in which they have been used.” Those who use attapulgite have now had two more years to come forward, so this is an inadequate reason to continue the listing, given the statutorily established review criteria for materials on the National List.

Mining and use do pose air quality hazards that are likely similar for other mineral powders, including bentonite and diatomaceous earth.

Conclusion

Given the lack of interest, attapulgite should be allowed to sunset.

Bentonite

Reference: 205.605(a)

In 2015, supporters gave the following reasons to relist bentonite:

- It is essential for filtering orange juice.
- Bentonite is a natural substance that is mined from the earth.
- It is an important filtering aid that is used to filter organic oils.
- Bentonite is especially useful in removing protein impurities.
- It is often used in conjunction with diatomaceous earth.
- Bentonite is essential to the wine industry as a processing aid added to clarify wine. Consumers expect a clear wine without cloudiness or sediment, and agricultural alternatives do not perform the same essential function.
- Bentonite is used by organic body care producers to absorb oil from skin.
- There are no alternatives to bentonite or kaolin clay for personal care products.

Like other mineral powders, the mining creates environmental damage and dust that is hazardous to workers.

Conclusion

Beyond Pesticides does not oppose the relisting of bentonite.

Diatomaceous earth

Reference: 205.605(a) - food filtering aid only.

Supporters of the relisting of diatomaceous earth in 2015 gave the following reasons:

- Diatomaceous earth is a natural substance that is mined from the earth.
- It is an extremely important filtering aid that is used to filter organic products.
- It is the primary filtering aid and a bleaching agent used for many organic oils.
- Diatomaceous earth is used to remove insolubles and impurities in solutions.
- It improves the quality, flavor and appearance of ingredients without leaving a residual in the ingredient.
- Applications include processing of vinegar, sugar, and maple syrup processing.

Like other mineral powders, the mining creates environmental damage and dust that is hazardous to workers.

Conclusion

Beyond Pesticides does not oppose the relisting of diatomaceous earth.

Nitrogen

Reference: 205.605(a) - oil-free grades.

In 2015, supporters gave the following reasons supporting the relisting of nitrogen:

- It is an oxygen barrier for storage of refined oil.
- Nitrogen is an inert atmospheric gas that we breathe in with every breath. It is perfectly safe.
- Many organic food manufacturers use nitrogen flush to displace the oxygen that can oxidize food, making it rancid and reducing the shelf-life of packaged foods.
- Nitrogen is used to displace oxygen in many organic oils and seeds packaged in bottles and gusseted bags, respectively.
- Liquid nitrogen is used in cryogenic cooling/freezing in the frozen food industry. The nitrogen dissipates into the air after freezing and does not remain in the food product.

MOSA said, "We might benefit from more education regarding the oil-free restriction."

Molecular nitrogen (N_2) is relatively inert and is not a greenhouse gas.

Conclusion

Beyond Pesticides supports the relisting of nitrogen for the reasons given above.

Sodium carbonate

Reference: 205.605(a)

In 2015, supporters of relisting of sodium carbonate offered the following reasons:

- Sodium carbonate is used as a pH control agent in the production of organic starches where other pH control agents, such as hydrochloric acid, sulfuric acid, and sodium hydroxide are not approved.
- It is used in conjunction with alginates to help sequester calcium, it allows the alginate to work more effectively during gelling and thus helps to limit the usage of alginates.
- It is naturally occurring in our environment.

On the other hand, sodium carbonate is caustic and corrosive, presenting a hazard of serious eye damage, acute toxicity through inhalation, and respiratory tract irritation.

We question the listing of sodium carbonate on §205.605(a) without an annotation. Sodium carbonate may be produced from mined deposits or by chemical reaction (Solvay process). The latter would be classified as synthetic. Estimates of the proportion of the world's sodium carbonate produced by the Solvay process vary from 41-75%.[1] If the NOSB intends to allow only the nonsynthetic version, it should annotate the listing, "produced from mined deposits." If the NOSB intends to also allow synthetic sodium carbonate, then it should also be listed on §205.605(a) with the annotation, "produced using Solvay process."

The Handling Subcommittee has not received a technical review that examines alternatives.

Conclusion

The Handling Subcommittee should propose an annotation clarifying the classification of sodium carbonate. Since the HS has not proposed an annotation at this meeting, we urge that consideration of an annotation to the listing be placed on the HS work agenda.

§205.605(b)

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[1] **75%:** TOXNET, citing Kirk-Othmer Encyclopedia of Chemical Technology. 4th ed. Volumes 1: New York, NY. John Wiley and Sons, 1991-Present., p. V1: 1025. https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@rn+@rel+497-19-8 **41%:** http://www.essentialchemicalindustry.org/chemicals/sodium-carbonate.html.

Chlorine Compounds including Acidified Sodium Chlorite

205.605(b) Acidified sodium chlorite —Secondary direct antimicrobial food treatment and indirect food contact surface sanitizing. Acidified with citric acid only.
205.605(b) Chlorine materials –disinfecting and sanitizing food contact surfaces, *Except,* That, residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act (Calcium hypochlorite; Chlorine dioxide; and Sodium hypochlorite).

In our Spring 2017 comments, we included general remarks about when the use of sanitizers and disinfectants is appropriate. Please review those comments. We began with defining some terms, discussing what we believe to be mistaken translations of NOSB recommendations into regulation, discussing some relevant issues of microbial ecology, looking at chlorine-based chemicals, and finally concluding that the NOSB must undertake a much deeper investigation before allowing the use of chlorine-based materials for another five years.

Often we see the NOSB *assuming* a need for strong chemicals as cleaners or disinfectants when none may be needed. We have seen this in our own investigations with personal care products using the biocide triclosan.[2] Research has shown that washing with ordinary soap and water is as effective as using soap containing triclosan. Furthermore, as pointed out by a 2010 report of EPA's Office of Inspector General (OIG), this problem is widespread —the OIG found that approximately 40% of all antimicrobial products have not been tested for efficacy, and one third of all products tested each year fail, without notification of users.[3] We need research into effective means of cleaning food contact surfaces and food containers with organic and natural cleaning methods, such as hot water or steam or materials more compatible with organic processing, including hydrogen peroxide or organic acids.

We need research on organic systems, including growing, harvesting, storing, and transporting crops in ways that avoid the need for rinsing in highly chlorinated water. However, it is very likely that we currently have all the non-chlorine tools we need. We need to do all this because organic, to the extent possible, should become chlorine-free, given the human health and environmental hazards associated with its production, transportation, storage, use, and disposal.

The NOSB and NOP need to clarify whether chlorine is required by other statutes. Some have said that other laws require the use of chlorine in higher concentrations than those listed on the National List. If other laws specifically require the use of chlorine, then it must be allowed under the organic program. If it is required, the use should be included on the National List with specific citations for the requirements.

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[2] http://www.beyondpesticides.org/antibacterial/triclosan.php.

[3] U.S. EPA Office of Inspector General, 2010. EPA Needs to Assure Effectiveness of Antimicrobial Pesticide Products, http://www.epa.gov/oig/reports/2011/20101215-11-P-0029.pdf.

Since organic practices depend on having a healthy balance of microbes, rather than eliminating all of them, growers, certifiers, the NOSB, and NOP all need to be clear about when sanitizing is necessary and when cleaning is sufficient. Removal of all microbial life leaves surfaces available for colonization by spoilage or pathogenic organisms. If strong residual sanitizers are used, strong selection pressure is applied for the development of resistance to materials that may be needed in emergency medical situations.

Current NOP guidance for handling is inconsistent with both the NOSB recommendation and the regulations at §205.605(b) –because it allows use of chlorine for purposes not allowed by the recommendations and food contact with chlorine above the SDWA limits. Thus, regardless of the improvements we would like to see through a thorough investigation of sanitizers, disinfectants, and cleansers, the current listing should be corrected to:

> **[Handling, corrected] §205.605(b) Chlorine materials—disinfecting and sanitizing food contact surfaces, *Except,* That, residual chlorine levels in the water for wash water in direct crop or food contact and in flush water from cleaning equipment and surfaces that is applied to crops or fields shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act (Calcium hypochlorite; Chlorine dioxide; and Sodium hypochlorite).**

Microbial Ecology and Implications for Use of Sanitizers Post-Harvest

The true phyllosphere (plant surface) microbiome associated with a plant is the microbial community present on or in plants growing in the field. However, from the viewpoint of consumer safety, the microbial populations present at the point of sale or consumption are more relevant. Many of these bacteria are likely to be plant symbionts or pathogens, but some are human pathogens.[4] Research looking at the microbiota in the field and post-harvest has found that the post-harvest phyllosphere microbial community shifts in the relative abundance of different species, becoming less diverse and containing species that do well under storage conditions. [5, 6]

Post-harvest handling operations can cause disturbances in the microbiota and select for microbes that survive under storage conditions. Washed post-harvest produce has higher risks than unwashed and pre-harvest organic produce, as measured by indicator organisms. Although adding a sanitizer to rinse water resulted in produce with no significant difference from pre-harvest samples, it did not decrease indicator microbes.[7] Storage temperature affects

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[4] Jackson, C. R., Stone, B. W., & Tyler, H. L. (2015). Emerging perspectives on the natural microbiome of fresh produce vegetables. *Agriculture*, *5*(2), 170-187.
[5] Jackson, C. R., Stone, B. W., & Tyler, H. L. (2015). Emerging perspectives on the natural microbiome of fresh produce vegetables. *Agriculture*, *5*(2), 170-187.
[6] Leff, J. W., & Fierer, N. (2013). Bacterial communities associated with the surfaces of fresh fruits and vegetables. *PLoS One*, *8*(3), e59310.
[7] Xu, A. (2014). Microbiological assessment of organic produce pre-and post-harvest on Maryland farms and impact of growing and handling methods on epiphytic bacteria. MS thesis, University of Maryland, College Park.

the microbial community, selecting for cold tolerant species [8, 9] and reducing the diversity and richness of the phyllosphere community, with larger changes at colder temperatures.[10] Another handling measure that affects the microbial community on post-harvest produce is enclosure in air-tight packages. Commercially pre-bagged, refrigerated lettuce samples showed evidence of the presence of additional bacterial populations, including *Pseudomonas libaniensis*.[11] Herbs packaged in plastic containers sealed with polymer contained a high proportion of anaerobic microbes.[12] Thus, research on microbial communities suggests that we may prevent disease better by preserving or augmenting natural microbial communities. An ecological approach to microbiota in humans and plants calls into question the routine use of antimicrobial soaps, as well as sanitizers in food handling, to attempt to exterminate microbes. (Please see our Spring 2017 comments for more details.)

Chlorine materials are hazardous to humans and the environment during manufacture and use.

Chlorine is a strong oxidizer and hence does not occur naturally in its pure (gaseous) form. The high oxidizing potential of chlorine leads to its use for bleaching, biocides, and as a chemical reagent in manufacturing processes. Because of its reactivity, chlorine and many of its compounds bind with organic matter. When used as a disinfectant, chlorine reacts with microorganisms and other organic matter. Similarly, the toxicity of chlorine to other organisms comes from its power to oxidize cells. Chlorine has toxic effects on beneficial soil organisms.[13]

In addition to the purposeful production of toxic chlorine compounds, the manufacture and use of chlorine compounds results in the unintended production of other toxic chemicals. Disinfection with chlorine, hypochlorite, or chloramines results in the formation of carcinogenic trihalomethanes, haloacetic acids, and other toxic byproducts.[14] Disinfection with chlorine dioxide produces undesirable inorganic byproducts, chlorite and chlorate. Industrial production of chlorine compounds, use of chlorine bleach in paper production, and burning of chlorine compounds releases dioxins and other persistent toxic chemicals into the environment.[15]

There are alternatives to chlorine materials.

Again, the uses of chlorine materials allowed under §205.605 are more limited than NOP guidance permits. The technical review of sodium dodecylbenzene sulfonate identifies

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[8] Leff, J. W., & Fierer, N. (2013). Bacterial communities associated with the surfaces of fresh fruits and vegetables. *PLoS One*, *8*(3), e59310.

[9] Jackson, C. R., Stone, B. W., & Tyler, H. L. (2015). Emerging perspectives on the natural microbiome of fresh produce vegetables. *Agriculture*, *5*(2), 170-187.

[10] Jackson, C. R., Stone, B. W., & Tyler, H. L. (2015). Emerging perspectives on the natural microbiome of fresh produce vegetables. *Agriculture*, *5*(2), 170-187.

[11] http://www.tgw1916.net/Pseudomonas/libanensis.html.

[12] Jackson, C. R., Stone, B. W., & Tyler, H. L. (2015). Emerging perspectives on the natural microbiome of fresh produce vegetables. *Agriculture*, *5*(2), 170-187.

[13] 2011 Crops TR.

[14] Alexander G. Schauss, 1996. Chloride – Chlorine, What's the difference? P. 4. http://www.mineralresourcesint.com/docs/research/chlorine-chloride.pdf

[15] ATSDR, 1998. Toxicological Profile for Chlorinated Dibenzo-p-Dioxins. Pp. 369 ff. http://www.atsdr.cdc.gov/toxprofiles/tp104.pdf

many alternative substances and practices. Alternative materials include: hydrogen peroxide, ozone, essential oils, grapefruit seed extract, salt (sodium chloride), organic acids (including ascorbic acid, citric acid, lactic acid, lactates, tartaric acid, malic acid and vinegar (acetic acid)), egg white lysozyme, high temperatures, and biocontrols.[16] Most importantly, the TR stresses, "However, it is much easier to prevent contamination of products from the first steps of the food production process than to remove contamination later in the process or at the point of use."[17]

Chlorine materials are not compatible with organic production.

The fact that use of chlorine is so universally associated with the production of persistent toxic chemicals has led some environmental groups to seek a ban on chlorine-based chemicals. We believe that organic production should, for the same reasons, avoid the use of chlorine as much as possible. The allowance of chlorine in the rule reflects the fact that many organic growers –like most of the rest of us– depend on water sources that have been treated with chlorine.

Conclusion

We do not believe that organic producers should have to filter chlorine out of the tap water they use for irrigating, cleaning equipment, washing vegetables, or cleaning food-contact surfaces. But they should not be adding more chlorine. Organic production and handling should be, to the extent possible, chlorine-free.[18]

Carbon dioxide

Reference: 205.605(b)

In 2015, several commenters supported the use of carbon dioxide for pest control, carbonation, and chilling of food. Reasons given for relisting are:

- Under §205.271 (Facility pest management practice standard) a producer must use management practices to prevent or control pests. If management practices prove ineffective, a material on the National List may be used to prevent or control the pests. Further, listed materials must be used before using a pest control material that is not on the National List (NOP Regulations §205.271). Carbon dioxide is a pest control material that can be applied in a confined space and can come in contact with certified organic product.
- There are two materials listed in §205.605(b) that are often overlooked for use as pest fumigants: ozone and carbon dioxide. Both work by displacing or reducing available oxygen, essentially suffocating pests.

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[16] 2017 TR on Sodium Dodecylbenzene Sulfonate (SDBS). Lines 354-520.

[17] 2017 TR on SDBS. Lines 364-366.

[18] The Organic Foods Production Act, §6518(m), lists three criteria that directly pertain to chlorine: (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems; (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment; (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance.

- In the produce trade, carbon dioxide can be used safely and effectively for pest control in storage facilities. It is also useful in handling other types of products that are stored in silos, bins, or other enclosed areas and to control pests that may get into packaging materials.
- Carbon dioxide is a common gas in the environment. We use carbon dioxide to carbonate a number of organic beverages.
- Carbon dioxide is used both for freezing foods and also for accelerated cooling, a critical food safety procedure. The carbon dioxide dissipates into the air after the cooling/freezing is complete and does not remain in the food product. We do not currently use carbon dioxide in manufacture but would like to have this as an option in the future should we need additional cooling on new products.

If carbon dioxide used in organic processing is, according to the technical review, produced as a byproduct of other processes, then its use in organic processing results in delayed release into the atmosphere, rather than increased release.

Conclusion

Beyond Pesticides supports the relisting of carbon dioxide for the reasons listed above.

Magnesium chloride

Reference: 205.605(b) – derived from sea water.

According to the Petitioned Substances Database, magnesium chloride for use in crops is "classified as nonsynthetic when extracted from brine, seawater, and salt deposits." The 2016 TR describes both nonsynthetic and synthetic processes by which magnesium chloride is produced from sea water. It does not really make sense to list only the synthetic form. We suggest moving the listing to §205.605(a).

Conclusion

The HS should revisit the classification decision for magnesium chloride derived from sea water. If it is found to be nonsynthetic, then it should be petitioned for listing on §205.605(a) and removed from §205.605(b). The only use supported by comments is the use for tofu, so we support an annotation of the new listing, "as a coagulant in making tofu." Since the HS has not proposed an annotation at this meeting, we urge that consideration of an annotation to the listing be placed on the HS work agenda.

Potassium acid tartrate

Reference: 205.605(b)

FDA regulations require that "potassium acid tartrate" be obtained as a byproduct of wine manufacture.[19] As such, the impacts of its production are very similar to those of tartaric acid.

[19] Technical Review of Potassium Acid Tartrate, 2017. Lines 222-224.

Classification

The technical review (TR) questions the classification of potassium acid tartrate as synthetic, noting that it is an intermediary in the production of tartaric acid, which is classified as nonsynthetic.[20] The production process as outlined in the TR appears to be a nonsynthetic process, and therefore the NOSB should re-examine the classification of potassium acid tartrate. We also agree with the HS that under the final NOP classification of materials guidance, potassium acid tartrate appears to be agricultural.

Environmental and health impacts

Since potassium acid tartrate must be made from grape wine, the evaluation of tartaric acid must thus take into consideration the use of pesticides in the non-organic production of grapes and the availability of organic grape wine for this purpose, as well as the potential availability of potassium acid tartrate from organic grape wine if the demand existed. The following impacts are derived from the Beyond Pesticides web-based database *Eating with a Conscience*.[21]

Grapes

California Farmworker Poisonings, 1992–2010: 1,234 reported (CA acreage: 796,000). These poisoning incidents only represent the tip of the iceberg because they only reflect reported incidents in one state. It is widely recognized that pesticide incidents are underreported and often misdiagnosed.

Pesticide Tolerances —Health and Environmental Effects: The database shows that while grapes grown with toxic chemicals show low pesticide residues on the finished commodity, there are 124 pesticides with established tolerance for grapes, 38 are acutely toxic creating a hazardous environment for farmworkers, 108 are linked to chronic health problems (such as cancer), 20 contaminate streams or groundwater, and 99 are poisonous to wildlife.

Pollinator Impacts: In addition to habitat loss due to the expansion of agricultural and urban areas, the database shows that there are 34 pesticides used on grapes that are considered toxic to honey bees and other insect pollinators. For more information on how to protect pollinators from pesticides, see Beyond Pesticides' BEE Protective webpage.

- This crop is dependent on pollinators.
- This crop is foraged by pollinators.

Essentiality

Those who supported the relisting of potassium acid tartrate in 2015 said:

- Potassium acid tartrate, commonly known as potassium bitartrate and cream of tartar, is used by the wine industry to adjust acidity. Potassium bitartrate is a natural byproduct of the winemaking process, precipitating out of wine to produce tartrate crystals.

[20] TR lines 226-333.
[21] http://www.beyondpesticides.org/resources/eating-with-a-conscience/choose-a-crop?foodid=19.

Potassium bitartrate may be added to wines to adjust acidity to ensure that wine meets consumer expectations for flavor.

- It is a common, safe leavening agent. It is used in many organic baked goods.

However, the TR suggests that potassium acid tartrate from organic grapes should be available if the market existed for it:

> An alternative to potassium acid tartrate, currently classified as a synthetic nonagricultural substance, would be to isolate cream of tartar from organically grown grapes. Organically grown grapes were found to contain as much as or more tartaric acid than conventionally grown grapes (Henick-Kling 1995), depending on the degree of maturity of the grapes. Organic grapes used to produce wine consequently would be expected to create at least as much lees and argol during the winemaking process as conventionally grown grapes. Isolation of potassium acid tartrate from winemaking sediments can be accomplished using processes and substances permitted by the NOP regulations (e.g., water extraction; activated charcoal as filtering aid), thus raising the question of whether potassium acid tartrate could be eligible for organic certification.[22]

Use of potassium acid tartrate from organic wine would eliminate the impacts associated with chemical-intensive grape production.

Conclusion

Although cream of tartar (potassium acid tartrate) appears to be a useful ingredient that presents few hazards, it does not belong on §205.605(b). It is an ingredient in many recipes that seems to be absent in many kitchens, so cooks have learned to do without it.[23] Beyond Pesticides asks the HS to revisit the classification of potassium acid tartrate and to investigate the possibility of encouraging its production from organic grapes. Since the HS has not proposed an annotation at this meeting, we urge that consideration of an annotation to the listing be placed on the HS work agenda.

Sodium phosphates

Reference: 205.605(b) - for use only in dairy foods.

Sodium phosphates are used in dairy products as emulsifiers, stabilizers, preservatives, and to create certain textures. They can lead to imbalances in the calcium:phosphorus ratio in the body. Phosphate refining releases heavy metals and radioactivity, but some heavy metal contamination may remain in the sodium phosphate products.

The 2016 Technical Review of phosphates examines health impacts of an elevated phosphate load. Phosphate is much more rapidly assimilated from food additives than naturally

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[22] TR, lines 496-504.

[23] http://www.fitday.com/fitness-articles/nutrition/healthy-eating/substitutes-for-cream-of-tartar.html.

occurring phosphorus in food.[24] The TR examined the impacts of imbalances in calcium, phosphorus, potassium, and magnesium, and found that phosphate food additives contribute to an imbalance, concluding:

> Summary: The American diet provides very large amounts of phosphorus and sodium. The published phosphorus content is not based on analysis, so the amount of phosphorus consumed is understated. Half of the adult American population consumes less than the EAR of magnesium and essentially no one nowadays consumes the AI of potassium. A substantial proportion of Americans, almost 40%, consume less than the EAR of calcium (Fulgoni et al. 2011). Thus, the major mineral content of the adult American diet is severely imbalanced.[25]

More recent studies have shown that inorganic forms of phosphate, such as sodium phosphates, cause hormone-mediated harm to the cardiovascular system. A review found that they "may harm the health of persons with normal renal function. This judgment has been made on the basis of large-scale epidemiological studies and is supported by the latest findings of basic research."[26] Other research along these lines is reported in the TR.

Conclusion

The NOSB should seek to eliminate the addition of inorganic phosphates to organic food. The technical review addressed all phosphates, but sodium phosphates are especially problematic because they add both sodium and phosphate –both of which are oversupplied in American diets. If there are particular uses of sodium phosphate that are essential, then the Handling Subcommittee should propose an annotation limiting them to those uses. Since the HS has not proposed an annotation at this meeting, we urge that consideration of an annotation to the listing be placed on the HS work agenda.

Thank you for your consideration of these comments.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors

[24] TR, lines 586-591; 607-608.
[25] TR, lines 570-575.
[26] Ritz, E., Hahn, K., Ketteler, M., Kuhlmann, M. K., & Mann, J. (2012). Phosphate Additives in Food—a Health Risk. *Deutsches Ärzteblatt International*, *109*(4), 49–55.