



BEYOND PESTICIDES

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Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
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Room 2648-S, Mail Stop 0268
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Docket ID # AMS-NOP-19-0095

Re. HS: Sunset 605

These comments to the National Organic Standards Board (NOSB) on its Spring 2020 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.

Kaolin

Reference: 205.605(a)

Kaolin is a fine clay, consisting primarily of hydrous aluminum silicate. Because of the small particle size, it has a high surface-to-volume ratio, making it a highly absorptive material. Although the TAP review identifies it as an anticaking agent and a processing aid that is not present in the final product, there is no annotation to limit its use. Kaolin is also produced in nano-sized particles.¹ Kaolin should be annotated to specify allowed uses and prohibit the use of nano-kaolin.

Sodium bicarbonate

Reference: 205.605(a)

Baking soda is the kind of material that was envisioned as populating the National List—a nontoxic natural material used in home kitchens as a leavening agent.

¹ <https://www.researchgate.net/publication/297841906> The properties of Nano-kaolin mixed with kaolin.

Waxes –wood rosin

Reference: 205.605(a) Waxes—nonsynthetic (Wood resin).

There is a possibility that wood rosin extracted by a processor who is not certified may have been extracted using volatile synthetic solvents. There is also a possibility that some certifiers or materials review organizations may permit formulation using ancillary substances that are not permitted in organic products. Finally, consumers should be informed of the presence of nonorganic waxes—organic fruits and vegetables are generally assumed to be 100% organic. Therefore, the listing for wood rosin should be annotated with, “Not extracted using volatile synthetic solvents; contains only ancillary substances approved for organic production; presence must be labeled on individual items.”

Ammonium bicarbonate

Reference: 205.605(b)—for use only as a leavening agent.

Ammonium bicarbonate and ammonium carbonate (together ammonium carbonates) are produced from ammonia, a toxic gas, and carbon dioxide. According to the TAP review, the ammonium carbonates are the only leavening agents that are completely eliminated through the baking process. This is achieved by the emission of ammonia and carbon dioxide. It was the original intention of OFPA that synthetic food additives be prohibited in organic food. Since natural means of leavening are available ammonium bicarbonate should not be relisted.

Ammonium carbonate

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Calcium phosphates: monobasic, dibasic, tribasic

Reference: 205.605(b)

Calcium phosphates are used as leavening agents, dough conditioners, and yeast food. Monobasic is also used as a buffer, sequestrant, and firming agent. Tribasic is also used as an anti-caking agent and a buffer.

Phosphate refining releases heavy metals and radioactivity. Phosphates have a number of impacts when used as food additives. According to the TAP review for sodium phosphate, “The

toxicity of sodium phosphates is generally related to the sequestration of calcium and the subsequent reduction of ionized calcium. It is an irritant, and ingestion may injure the mouth, throat, and gastrointestinal tract, resulting in nausea, vomiting, cramps, and diarrhea.”

More recent studies have shown that inorganic forms of phosphate, such as calcium and 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.”² This is an important line of research.

In Fall 2016, the HS issued a discussion document on phosphates, which made these points:

- Outside the US and Canada, the only phosphate additive allowed in organic processed food is monocalcium phosphate, and only as a leavening agent.
- During the 2015 Sunset review, the NOSB received comments including new research that indicates potential serious human health impacts from the cumulative effects of phosphates which are added to processed foods.
- The NOSB may recommend increased restrictions through annotations or removal of phosphate food additives.
- Because the health effect comes from the cumulative impact, rather than any specific phosphate alone, the NOSB was reluctant to remove any one phosphate from the National List.

Since it can be concluded that phosphates other than monocalcium phosphate as a leavening agent are unnecessary, they should be phased out. Presumably, this would greatly reduce the phosphate exposure to organic consumers. Alternatives to monocalcium phosphate should also be explored, but the action of removing other phosphates would reduce the likelihood of problems arising from use of monocalcium phosphate as a leavening agent.

Ozone

Reference: 205.605(b)

Ozone is a strong oxidizer. It is generated on-site. Its principal advantage is that it does not leave toxic residues. However, if there are leaks in the system, it can be very hazardous to workers:

During water treatment ozone gas is transferred to water. In treating recycled irrigation water, ozone that is not transferred to the water is released as off gas. The concentration of ozone in the off gas of these systems is above the concentration fatal to humans and may contain as much as 3,000 ppm ozone (US EPA, 1999). Off gas containing ozone should be captured and converted to oxygen before release into the

² 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.

atmosphere. Ozone systems that inject directly into the irrigation lines use much lower concentrations of ozone and do not treat off gas.³

In crops, it is used for cleaning irrigation systems, but there are no restrictions on its use in handling. It may be used in cleaning produce or in levels of 1-2 ppm to produce an atmosphere for storage of produce that inhibits the growth of mold and bacteria. Although low, these concentrations are ten times the allowable limits in the workplace. Low levels of ozone in the atmosphere can trigger asthma attacks. The subcommittees should determine how much ozone escapes during its use and to what levels workers are exposed.

Ozone should be reviewed in the context of all sanitizers and their needed uses.

Sodium hydroxide

Reference: 205.605(b)—prohibited for use in lye peeling of fruits and vegetables.

Sodium hydroxide is a hazardous substance that has many uses. In contrast to the OFPA requirement that National List materials be listed “by specific use or application,” the annotation for sodium hydroxide states only prohibited uses. The HS and NOSB should investigate the essentiality of sodium hydroxide for its various uses and annotate the listing to limit its use to those essential uses.

Thank you for your consideration of these comments.

Sincerely,



Terry Shistar, Ph.D.
Board of Directors

³ Crops TAP 2002, lines 285-289.