



BEYOND PESTICIDES

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March 28, 2022

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

Docket # AMS-NOP-21-0087

Re. HS: Phosphoric acid

These comments to the National Organic Standards Board (NOSB) on its Spring 2022 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.

The petition asks that phosphoric acid be allowed to adjust the pH in the extraction of substances from members of the mint family (Lamiaceae). Phosphoric acid poses health and environmental hazards, is not necessary, and is incompatible with organic practices.

Health and Environmental Impacts

According to the TAP review for sodium phosphates, the manufacture of food grade phosphoric acid involves the removal of heavy metals and radioactive waste.¹ This creates a hazardous waste stream. A primary environmental concern of sodium phosphates is their release into water, though this is only likely to be a problem with this use in the case of a spill. When heated to decomposition, it emits toxic fumes.

The 2021 Technical Review identifies additional environmental concerns. The thermal process of production of phosphoric acid is energy intensive and may contribute to elevated levels of carbon dioxide and results in release of polluting particles of phosphoric acid and

¹ Sodium Phosphates TAP review, 2001. Line 303.

phosphorous oxide. The wet process may result in release of toxic fluorine compounds and gypsum.²

In addition, phosphoric acid may contain heavy metal residues that may be carried over to food.³

Essentiality

Both the petition and the TR identify several currently available alternatives to phosphoric acid for extracting targeted substances from plants in the mint (Lamiaceae) family.⁴ Increasing the temperature of the solvent is an alternative. There are also several acids available for adjusting the pH of the solvent solution, including natural citric and lactic acids and synthetic ascorbic acid, as well as wine and vinegar. The petition and TR do not address ethanol extraction as an alternative.

Compatibility

Phosphoric acid is a synthetic chemical that is not essential for organic processing and whose manufacture creates a hazardous waste stream. It should therefore be viewed as incompatible with organic production and handling.

Ancillary Substances

The ancillary substances associated with this material must be reviewed. This is an important piece that needs to be incorporated into the review of every material during sunset.

Conclusion

Phosphoric acid is a synthetic chemical that is not essential for organic processing and whose manufacture creates a hazardous waste stream, posing environmental hazards in manufacture and disposal, and health risks during use.

Thank you for your consideration of these comments.

Sincerely,



Terry Shistar, Ph.D.
Board of Directors

² Technical Evaluation Report, 2021. Phosphoric acid. Lines 571-594.

³ Technical Evaluation Report, 2021. Phosphoric acid. Lines 552-555; Table 3.

⁴ Technical Evaluation Report, 2021. Phosphoric acid. Lines 613-659.

<https://www.ams.usda.gov/sites/default/files/media/USDAHandlingPhosphoricAcid.pdf>.