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April 10, 2025

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 ID # AMS-NOP-24-0081

Re. HS: Ethylene

These comments to the National Organic Standards Board (NOSB) on its Spring 2025 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 eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

Beyond Pesticides opposes the expansion of the use of ethylene in handling.

Ethylene gas is hazardous to humans and the environment.

Almost all the ethylene used will eventually end up in air; a small proportion will end up in water.[1] Worker safety is a concern.[2] It is volatile, flammable, can "cause temporary incapacitation or residual injury. . . . Moderate concentration in air causes drowsiness, dizziness, and unconsciousness. Overexposure causes headache, drowsiness, muscular weakness."[3]

Recent research finds "the most commonly used plastics produce two greenhouse gases, methane and ethylene, when exposed to ambient solar radiation."[4] [While this comment does not directly address plastic used in organic production, we request that the NOSB take note of this finding when examining plastic uses.] Although ethylene is not noted as one of the most potent greenhouse gases, an investigation of ethane and ethylene finds, "Chemical destruction of ethane and ethylene within the atmosphere leads to the production of carbon monoxide, formaldehyde, and other

[1] 1999 TAP, p. 2.
[2] Supplemental TR 2000, p. 3.
[3] https://cameochemicals.noaa.gov/chemical/8655.
[4] Royer S-J, Ferrón S, Wilson ST, Karl DM (2018) Production of methane and ethylene from plastic in the environment. PLoS ONE 13(8): e0200574. https://doi.org/10.1371/journal.pone.0200574.

products."[5] Carbon monoxide is short-lived in the atmosphere, but, "Carbon monoxide, a non-radiatively active species, enhances the greenhouse warming by raising the levels of methane and ozone."[6]

While the manufacturing process used by the petitioner may be less hazardous than bringing in compressed ethylene, there is nothing in a proposed listing to require that process.

Expanded use of ethylene is not essential for organic production.

Ethylene has not been needed so far to inhibit sprout production. The petition has not shown a need for the chemical. The 2025 Technical Review documents numerous alternative management methods and materials that are already available. It also states, "A USDA grant project underway at two universities is examining 200 different plant oils for anti-sprouting properties, specifically in organic crops. (Bull, 2023) Researchers have not published results as of this writing."[7] Approving the use of ethylene now would undercut the purpose of such research.

The use of ethylene gas is incompatible with organic production.

There is no category in OFPA §6517(c)(1)(B)(i) for synthetic growth regulators. As pointed out by Reviewer 3 in the TAP review, the use of such synthetic materials is contrary to consumer expectations.

Thank you for your consideration of these comments.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors

[5] Aikin, A.C., Herman, J.R., Maier, E.J., & McQuillan, C.J. (1982). Atmospheric chemistry of ethane and ethylene. Journal of Geophysical Research, 87, 3105-3118. https://agupubs.onlinelibrary.wiley.com/doi/10.1029/JC087iC04p03105.

[6] Global Climate Change Linkages: Acid Rain, Air Quality, and Stratospheric Ozone (James C. White, Editor. Elsevier (1989), p. 106).

[7] 2025 TR, lines 499-501.