



April 3, 2024

Docket Number: AMS–NOP–23–0075

These comments, made on behalf of OrganicEye and our members around the country, are submitted for consideration by the National Organic Standards Board (NOSB) members in preparation for their deliberations during the April 2024 semiannual meeting.

OrganicEye is a tax-exempt public charity engaged in research and educational activities benefiting all organic stakeholders (farmers, ethical businesspeople, and consumers). OrganicEye is best known as an organic industry watchdog.

In addition to the few select materials and issues we would like to comment on (below), we defer to, and thoroughly endorse, the formal comments from Beyond Pesticides. They were prepared by Terry Shistar, Ph.D., one of the few eminently qualified scientists in the organic industry who does not have an economic interest in any of the matters before the board.

COMPOST

Compost should be exclusively comprised of organic materials free from the potential of contamination with synthetic compounds or heavy metals. The risk of bioaccumulation in the soil, harm to microorganisms that break down organic matter, and potential uptake by plants of contaminants are of paramount concern.

DL METHIONINE

As with many substances on the national list, the experts that have testified over the years on the necessity of methionine in the diets of poultry have virtually exclusively had backgrounds in the conventional livestock industry.

The essentiality of methionine is seriously open to debate.

Like “spiked” fertilizer, which was once illegally approved for use in organic agriculture, methionine is a production enhancer. The obvious incentive to use the material is to enhance profitability.

However, rather than highlighting its utility as a production tool, the argument that has been made over and over again is that without this material the poultry will be stressed and attack and injure their flock mates.

The reality is that the current production models for organic poultry, both broilers and laying hens, are principally in confinement (most from operations housing 20,000-200,000 birds per building), with little, if any, legitimate access to the outdoors.

If the spirit and letter of the law were enforced, including requiring birds be provided with the opportunity to express their natural instinctive behaviors outdoors, the amount of stress and associated feather pecking would be reduced exponentially.

CELERY POWER

The use of celery powder as a **“synthetic nitrogen/nitrate delivery system.”**

Marketers have long desired to remove sodium nitrate from their food labels because of its association with serious health risks, including cancer. Consumers Union (Consumer Reports) has suggested that using celery powder while calling products “uncured” is misleading and disingenuous.

Let’s be clear: Based on how it is bred, grown, and processed, this work-around is intended to deliver the same synthetic compound used as a preservative, albeit under a more innocuous name.

This is not your grandmother’s garden celery. These plants are not only produced under conventional management — they are grown using high applications of synthetic nitrogen fertilizers which celery is very adept at uptaking.

This includes a last application of nitrogen just before harvest.

Research is being conducted to ascertain whether these plants can be grown under organic management. This is profoundly disingenuous, as it will result in investing and developing a “certified organic carcinogen.” It is also a dubious proposition because organic farmers know that, compared to what is available in the conventional field, there are no high-nitrogen sources of fertilizer that can legally be used (at least not since the NOP cracked down on the “organic” fertilizer fraud/scandal in California).

If the development of a certified organic alternative were to be successful, conventional celery powder would no longer need to be reviewed by the NOSB. However, under the law, OrganicEye would petition to have it banned as a “prohibited natural.”

The law is clear in making risks to human health a priority in excluding dangerous materials from organic growing and processing.

I. Nitrates, Nitrites, and Cancer

Many research studies and independent public interest organizations have found that nitrates and nitrites are likely carcinogens. See, e.g., the Agency for Toxic Substance and Disease Registry (ATSDR) *Case Studies in Environmental Medicine Nitrate/Nitrite Toxicity* (2013) which raises the concerns that excessive ingestion of nitrates and nitrites increases the risks of developing methemoglobinemia, hypotension, pregnancy complications, a number of reproductive effects, and cancer, among others. In this report the ATSDR states:

...Some study results have raised concern about the cancer-causing potential of nitrates and nitrites used as preservatives and color-enhancing agents in meats [Norat et al. 2005; Tricker and Preussmann 1991]. Nitrates can react with amino acids to form nitrosamines, which have been reported to cause cancer in animals [Bruning-Fann and Kaneene 1993]. Elevated risk of non-Hodgkin's lymphoma [Ward et al. 1996] and cancers of the esophagus, nasopharynx, bladder, colon, prostate and thyroid have been reported [Cantor 1997; Eichholzer and Gutzwiller 1998; Barrett et al. 1998; Ward et al. 2010].

An increased incidence of stomach cancer was observed in one group of workers with occupational exposures to nitrate fertilizer The International Agency for Research on Cancer (IARC) classifies nitrates and nitrites as "probably carcinogenic to humans" (Group 2A) under certain conditions (i.e., ingested nitrate or nitrite under conditions that result in endogenous nitrosation) which could lead to the formation of known carcinogens such as N-nitroso compounds [IARC 2010].

- ATSDR Case Studies in Environmental Medicine Nitrate/Nitrite Toxicity https://www.atsdr.cdc.gov/csem/nitrate_2013/docs/nitrite.pdf at page 56.

See Also the Citizen Petition submitted by Consumer Reports to the Food Safety and Inspection Services (FSIS) https://www.fsis.usda.gov/sites/default/files/media_file/2020-07/19-03-CSPI-082919.pdf that cited numerous studies that have come to similar conclusions regarding the carcinogenic properties of nitrates and nitrites. The following is an excerpt from an International Agency for Research on Cancer (IARC) study quoted in the Citizen Petition:

The International Agency for Research on Cancer (IARC), an agency of the World Health Organization (WHO), has evaluated the carcinogenicity of nitrate

and nitrite,¹ as well as consumption of processed meat.² IARC classifies ingested nitrate or nitrite under conditions that result in endogenous nitrosation—the formation of N-nitroso compounds in the body—as probably carcinogenic to humans (Group 2A), and classifies processed meat as carcinogenic to humans (Group 1). In its overall evaluation of nitrate and nitrite, IARC noted that there is an active endogenous nitrogen cycle in humans that involves nitrate and nitrite, which are interconvertible in the body.³ Ingested nitrate is excreted in the saliva and reduced to nitrite, mainly by oral bacteria.⁴ Under acidic conditions in the stomach, nitrite then reacts readily with nitrosatable compounds, especially secondary amines and alkyl amides (present in meat and other foods), to generate N-nitroso compounds. These nitrosating conditions are enhanced following ingestion of additional nitrate, nitrite, or nitrosatable compounds. Some of the N-nitroso compounds that could be formed in humans under these conditions are known carcinogens.⁵

The IARC has published other monographs on the carcinogenic effects of Nitrates and Nitrites. See, e.g. IARC report *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans VOLUME 94 Ingested Nitrate and Nitrite, and Cyanobacterial Peptide Toxins* <https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono94.pdf>. See Also the article by the American Institute for Cancer Research entitled, *Hot Dogs, Bacon, Celery Powder and Cancer Risk* <https://www.aicr.org/resources/blog/healthtalk-will-hot-dogs-and-bacon-preserved-with-celery-powder-still-increase-my-cancer-risk/#:~:text=Although%20natural%20ingredients%20like%20celery,of%20colorectal%20and%20stomach%20cancers> that states as follows:

...Although natural ingredients like celery powder may make processed meats sound much safer than conventional options, we don't have evidence to support that. Even small amounts of processed meats eaten regularly – such as having a daily hot dog — increase the risk of colorectal and stomach cancers. Whether you choose conventional or “natural” processed meats, until research becomes clearer, the best advice from many medical authorities is to minimize them all.

Clearly, based on the foregoing discussion, celery powder's presence as an ingredient in preserved foods *is not* at an insignificant level, it *does* have a technical or functional effect in that food, and *is harmful to human health or the environment*, in contravention of 7 U.S. Code § 6517.

II. Foods preserved with celery powder may contain higher levels of nitrates and nitrites than those preserved with artificially manufactured nitrates and nitrites.

¹ IARC Monograph on Ingested Nitrate and Nitrite https://www.ncbi.nlm.nih.gov/books/NBK326544/pdf/Bookshelf_NBK326544.pdf

² IARC Monograph on Processed Meat.

³ IARC Monograph on Ingested Nitrate and Nitrite at 325.

⁴ *Ibid* at 26.

⁵ *Ibid* at 325.

In addition to being a likely carcinogen, celery powder may contain even more nitrates and nitrites than foods preserved with synthetically manufactured versions of the same preservatives, thus increasing the attendant risks of developing the various diseases discussed in the above referenced ATSDR report and Consumer Reports Citizen petition. See, e.g., *Ingredients in Meat Products: Properties, Functionality and Applications*, pp 398-399:

...Celery powder prepared from celery juice has been shown to have a nitrate content of approximately 2.75%. When using juice powder added at 0.2%, 0.35%, or 0.4% (on a total formulation basis), and assuming 100% nitrate-to-nitrite conversion, ingoing nitrite concentrations of approximately 69, 120, and 139 ppm (based on meat block), respectively, could be expected. As the amount of celery juice powder in the formulation increases, higher amounts of generated nitrite can be expected. ...From these results it was determined an uncured product with nitrite replaced with a source containing naturally occurring nitrate could result in a product with higher levels of residual nitrite than one in which nitrite was originally and intentionally added.

III. Labeling processed foods as “uncured” when in fact they contain celery powder with the same, if not more, amount of nitrates and nitrites than conventionally preserved food is inherently false and misleading.

The above cited *Consumer Reports* petition was directed at the Food Safety and Inspection Service (FSIS), urging them to change the labeling requirements, pointing out that labeling practices as they stand now allow processed meat manufacturers to state that their products are uncured when in fact, due to the addition of celery salt, they may have more nitrates and nitrites than processed meats that are cured with synthetic nitrites. Currently regulations also permit an item to be labeled as uncured, even when celery powder is used as the curing agent, as long as there is a disclaimer in fine print stating that the only nitrates and nitrites that may nonetheless be present are as they naturally appear in the celery powder.

In the words of the Consumer Reports petition,

...Both synthetic and non-synthetic nitrates and nitrites may cause cancer, and product testing results released today by Consumer Reports show that processed meats made with celery powder and other non-synthetic sources of nitrates and nitrites can contain residues of these substances, just as do meats that use synthetic sources.² Consumer Reports is also releasing survey data today showing that consumers are confused by the “No Nitrate or Nitrite Added* ” statements, which are currently accompanied by a fine-print disclaimer on product labels identifying the non-synthetic source of nitrates or nitrites (e.g., “* Except those naturally occurring in celery powder”).

We therefore urge the agency to stop requiring, and instead prohibit, the “No Nitrate or Nitrite Added” claim on processed meat, except when no nitrate or nitrite is added from any source. In its place, we ask that the

agency require a front-of-package declaration and clear ingredient labeling whenever nitrates or nitrites are used in meats, regardless of the source. We also urge the agency to take additional steps to minimize levels of residual nitrates, nitrites, and nitrosamines in these products.

As of the date of this petition, it appears as though the FSIS intends to partially grant the Consumer Reports request. An article dated December 17, 2020 in *Food Safety News*, <https://www.foodsafetynews.com/2020/12/csfi-cr-request-to-prohibit-nitrate-statements-put-on-track-for-approval/#:~:text=The%20two%20consumer%20groups%20by,sources%2C%20such%20as%20celery%20powder>, states:

“After careful consideration of your petition and the 17 public comments submitted to regulations.gov in response to your petition, we have decided to partially grant your request,” FSIS said in its response posted Tuesday on the agency’s website.

“FSIS intends to conduct a rulemaking to propose to prohibit the statements, “No Nitrate or Nitrite Added” and “Uncured,” on products that have been processed using any source of nitrates or nitrites,” it continued. “FSIS also intends to approve non-synthetic sources of nitrates or nitrites as curing agents. However, rather than requiring disclosure statements about the use of nitrate or nitrites on labels of meat and poultry products, as requested in the petition, FSIS intends to propose to amend and clarify its meat and poultry labeling regulations to establish new definitions for “Cured” and “Uncured.” The basis for these proposed changes would be discussed in detail in the proposed rule, which is listed in the Fall 2020 Semiannual Regulatory Agenda,1 with a tentative publication date of May 2021.”

Shortly after the Consumer Reports petition was filed, several public interest organizations and individuals filed 17 comments with the FSIS which are located here: <https://www.regulations.gov/docket/FSIS-2019-0022/comments>. These commenters included the American Cancer Society Cancer Action Network (ACS CAN), the Public Justice Food Project (PJ Food Project), and the Animal Legal Defense Fund (ALDF). Comments filed in support of the petition can be accessed here: [file:///C:/Users/User/Downloads/FSIS-2019-0022-0011_attachment_1%20\(1\).pdf](file:///C:/Users/User/Downloads/FSIS-2019-0022-0011_attachment_1%20(1).pdf) and here: [file:///C:/Users/17086/Downloads/FSIS-2019-0022-0010_attachment_1%20\(1\).pdf](file:///C:/Users/17086/Downloads/FSIS-2019-0022-0010_attachment_1%20(1).pdf), respectively.

An excerpt from the ACS CAN comment states as follows:

“...Concerns with synthetic nitrites arose approximately fifty years ago now, and, as a result, celery powder and other non-synthetic sources of nitrate or nitrite were developed in the 1990s to cure meats. Under current federal rules, meats processed with non-synthetic nitrates and nitrites must be labeled “uncured” and “no nitrates or nitrites added,” despite the

fact that these meats contain nitrates and nitrites. Consequently, these rules give consumers the false impression that these meats are not processed. ACS CAN objects to this misleading information, especially given that there is no science to demonstrate a lesser risk from non-synthetic nitrates and nitrites.

ACS CAN believes that consumers cannot reduce their cancer risk if they are not fully informed about whether or not meats are processed and calls for accurate labeling of meats processed with all nitrates or nitrites, natural or synthetic.”

Organic Eye believes that the weight of the evidence supports the conclusion that the use of nitrate-laden celery powder poses the same risks of cancer to the consumer as the use of artificially created and potentially carcinogenic nitrates and nitrites. For this reason, celery powder should be removed from the NOSB National List as an ancillary ingredient and added to the list of nonsynthetic substances prohibited for use in organic crop production because, contrary to the third bullet point of the NOSB policy listed above, it *is* present in significant levels, it *does* have a technical and functional effect on preserved foods, and it *is* harmful to human health under the provisions of 7 U.S.C. § 6517.

Furthermore, the FSIS’ acknowledgement that labeling meats as uncured, when in fact celery powder is added as a curative agent, is misleading and constitutes an implicit recognition that celery powder poses health risks that must be clearly disclosed to the consumer.

Bibliography

- 1) *ATSDR Case Studies in Environmental Medicine Nitrate/Nitrite Toxicity* https://www.atsdr.cdc.gov/csem/nitrate_2013/docs/nitrite.pdf, page 56.
- 2) *Citizen’s Petition submitted by Consumer Reports to the Food Safety and Inspection Services (FSIS)* https://www.fsis.usda.gov/sites/default/files/media_file/2020-07/19-03-CSPI-082919.pdf
- 3) IARC Monograph on Ingested Nitrate and Nitrite https://www.ncbi.nlm.nih.gov/books/NBK326544/pdf/Bookshelf_NBK326544.pdf (2010).
- 4) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans VOLUME 94 Ingested Nitrate and Nitrite, and Cyanobacterial Peptide Toxins* <https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono94.pdf>.

- 5) Collins, Karen, *Hot Dogs, Bacon, Celery Powder and Cancer Risk* <https://www.aicr.org/resources/blog/healthtalk-will-hot-dogs-and-bacon-preserved-with-celery-powder-still-increase-my-cancer-risk/#:~:text=Although%20natural%20ingredients%20like%20celery,of%20colorectal%20and%20stomach%20cancers>, American Institute for Cancer Research.
- 6) Nargi, Lela, *The USDA Might Finally Update the Definition of Natural Nitrites and Nitrates Used in Processed Meats*, Food Print, 1/11/21.
- 7) Haspel, Tamar, *The 'uncured' Bacon illusion: It's actually cured, and it's not better for you*, The Washington Post, April 2019.
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- 9) Flynn, Dan, *CSPI/CR Request to Prohibit Nitrate Statements put on Track for Approval* Food Safety News December 17, 2020.
- 10) *Food Safety News* <https://www.foodsafetynews.com/2020/12/cspi-cr-request-to-prohibit-nitrate-statements-put-on-track-for-approval/#:~:text=The%20two%20consumer%20groups%20by,sources%2C%20such%20as%20celery%20powder>.
- 11) The American Cancer Society Cancer Action Network (ACS CAN), Public Justice Food Project (PJ Food Project), and Animal Legal Defense Fund (ALDF) comments to the Consumer Reports Petition to the FSIS: [file:///C:/Users/User/Downloads/FSIS-2019-0022-0011_attachment_1%20\(1\).pdf](file:///C:/Users/User/Downloads/FSIS-2019-0022-0011_attachment_1%20(1).pdf) and [file:///C:/Users/17086/Downloads/FSIS-2019-0022-0010_attachment_1%20\(1\).pdf](file:///C:/Users/17086/Downloads/FSIS-2019-0022-0010_attachment_1%20(1).pdf), respectively.