



BEYOND PESTICIDES

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September 17, 2018

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. CS: Ammonium citrate and ammonium glycinate

These comments to the National Organic Standards Board (NOSB) on its Fall 2018 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 petitioner has asked that two chelating agents be added to the National List – ammonium citrate and ammonium glycinate. The petitioner states that neither material would be used in organic production, but would be used in producing chelated minerals that would be used in crop production.

The wrong substances are petitioned.

The law and science suggest that the petitions are requesting allowance of the wrong substances and that board consideration of the petitions as submitted would fail to address OFPA criteria appropriately –perhaps leading to overemphasis of some hazards and neglect of others, as well as a neglect of the appropriate discussion of the necessity for the chelated minerals. If the materials are listed as petitioned, it will lead to unforeseen use associated with significant hazards.

The petitioner should be trying to modify:

§205.601(j)(6) Micronutrients—not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing.

(i) Soluble boron products.

(ii) Sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

To read:

(6) Micronutrients—not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing.

(i) Soluble boron products.

(ii) Sulfates, carbonates, oxides, or silicates, **citrates, or glycines** of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

Impacts of Ammonium Glycinate and Ammonium Citrate Applied to the Field

There is also a listing for a chelating agent on the National List:

§205.601(j) As plant or soil amendments.

(4) Lignin sulfonate—chelating agent, dust suppressant.

In addition, humic acids are also used as “chelating agents:”

§205.601(j) As plant or soil amendments.

(3) Humic acids—naturally occurring deposits, water and alkali extracts only.

The use of these materials involves the addition of lignin sulfonate or humic acid to the soil. Our understanding is that the application of ammonium glycinate (in particular) to the soil could have effects that are not anticipated by this petition. If the petition goes forward as is, we recommend that a technical review investigate these potential impacts of both chelating agents.

Micronutrient Glycines and Citrates

Because the petitions address ammonium citrate and ammonium glycinate and not the chelates that would actually be added to the crop, they do not address the impacts of adding metal glycines or citrates –desired or not. The bond of the chelating agent with the metal is described as “tight.” An example of a glycinate that forms a tight bond with micronutrient metals is the herbicide glyphosate. It is an effective herbicide because it blocks the availability of micronutrient metals to plants. Thus, another issue that should be addressed in considering the substances actually added to crop fields is whether the bonds with the metals are so strong that they make the chelate ineffective as a micronutrient source.

In our conversations with experts on glyphosate and glycinate chemistry and toxicology, we have also been warned of potential health effects of residues of glycines. We are warned that glycinate salts are neuroinhibitory, can affect immune function, and contribute to hyperoxaluria, including oxalate kidney stones.¹ The impacts of excessive concentrations of the micronutrients in food also need to be considered.

¹ Anthony Samsel, Research Scientist / Consultant, Samsel Environmental and Public Health Services, Deerfield, NH. Personal communication.

Therefore, regardless of whether the petition is refocused as we have proposed, we suggest that a technical review (TR) should be done to evaluate the effect of the glycinates and the chelates.

We agree with the petitioner that the NOSB should receive more information about chelating agents in general. This should include how natural adsorbing chelating agents differ in their chemistry and impacts from chemical chelating agents like glycinate and EDTA.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry Shistar". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

Terry Shistar, Ph.D.
Board of Directors