



BEYOND PESTICIDES

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October 2, 2014

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: Sunset 2016: Hydrogen chloride

These comments to the National Organic Standards Board (NOSB) on its Fall 2014 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 groups around the world.

Beyond Pesticides supports the relisting of hydrogen chloride in recognition of the lack of alternatives of organic cotton growers. However, in view of the extreme hazard posed by gaseous hydrogen chloride, we ask the NOSB to put its voice behind support for research and development of alternative methods of delinting cotton seed in preparation for planting.

From a procedural viewpoint, we are disappointed that the Crops Subcommittee has not published an updated checklist that would give the public more substance for its comments during this first meeting to discuss Sunset 2016 materials. We attach our updated checklist for your review, and to information the discussion at the NOSB meeting.

1. Hydrogen chloride poses hazards for humans and the environment.

Hydrogen chloride, the gaseous form of hydrochloric acid, is extremely corrosive, with the ability to kill any cell it contacts. According to the Agency for Toxic Substances and Disease Registry, "People working in occupations in which hydrogen chloride is used have the highest risk of being exposed to this compound. . . Exposure to high levels can result in corrosive damage to the eyes, skin, and respiratory tissues, and could lead to pulmonary edema and even death in extreme cases." The fact that the risk accrues to workers other than organic farmers should not cause us to ignore the extreme danger of working with hydrogen chloride.

Hydrogen chloride also has the potential to cause damage to the soil and other organisms in the case of a spill.

2. Hydrogen chloride is not compatible with organic and sustainable agriculture.

Since it is a by-product of the formation of chlorinated and fluorinated organic compounds, the use of hydrogen chloride supports the chlorine chemical industry, which is responsible for pollution by some of the most toxic chemicals known, including dioxins and PCBs. The use of a dangerous chemical, which poses extreme hazards to workers, is incompatible with organic and sustainable practices and we should be aggressively moving to phase it out of organic systems.

3. Unfortunately, hydrogen chloride is at this point in time essential for organic cotton production in the United States.

It is our understanding, from conversations with a representative of the Texas Organic Cotton Marketing Cooperative, that organic cotton growers in the U.S. currently do not have a lot of choice about how their seed is prepared for planting. U.S. organic cotton production is small and concentrated in west Texas. Cotton growers are limited to using the technology available in that area. There is, however, on-going research into the development of mechanical delinting mechanisms that would eliminate the need for hydrogen chloride. The NOSB should support these alternatives by making alternatives to hydrogen chloride a research priority.

This is the kind of “minor” use that deserves special support. It appears to us that there are alternative technologies ripe for development, and that very little is needed to move them into the stage of being able to meet the demand of organic cotton growers. Hopefully, cotton growers will be able to fill in the details.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Terry Shistar".

Terry Shistar, Ph.D.
Board of Directors

**National Organic Standards Board
Crops or Livestock Subcommittee
Petitioned Material Checklist
Hydrogen Chloride**

[Date of Vote]

Summary of Proposed Action:

[Insert narrative describing vote, review of material, discussion, etc.]

Evaluation Criteria (see attached checklist for criteria in each category)

	Criteria Satisfied?
1. Impact on Humans and Environment N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. Essential & Availability Criteria N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3. Compatibility & Consistency N/A	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

Substance Fails Criteria Category: [] Comments:

Subcommittee Action & Vote, including classification proposal (state actual motion):

Classification Motion: Move to classify [substance] as [synthetic, nonsynthetic, agricultural]

Motion by:

Seconded by:

Yes: # No: # Absent: # Abstain: # Recuse: #

Listing Motion: Move to list [substance] on section **205.6xx** of the National List [with the annotation]

Motion by:

Seconded by:

Yes: # No: # Absent: # Abstain: # Recuse: #

Proposed Annotation (if any):

Basis for annotation: To meet criteria above Other regulatory criteria Citation

Notes:

Approved by Subcommittee Chair to Transmit to NOSB

Name , Subcommittee Chair

Date

**NOSB Evaluation Criteria for Substances Added To the National List
Crops or Livestock**

**Category 1. Adverse impacts on humans or the environment?
Hydrogen Chloride**

Substance:

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is there a probability of environmental contamination during use or misuse? [§6518(m)(3)]	X			“Misusing hydrochloric acid could have drastic effects on the environment.” Extremely corrosive. TAP, p. 11
2. Is there a probability of environmental contamination during, manufacture or disposal? [§6518(m)(3)]	X			“People working in occupations in which hydrogen chloride is used have the highest risk of being exposed to this compound. ...Exposure to high levels can result in corrosive damage to the eyes, skin, and respiratory tissues, and could lead to pulmonary edema and even death in extreme cases.” ¹ “The largest volume production of hydrochloric acid is a by-product of the formation of chlorinated and fluorinated organic compounds, chloroacetic acid, and PVC.” ²
3. Are there any adverse impacts on biodiversity? (§205.200)	X			“HCl has the potential to damage soil” It will dissolve carbonate-based particles found in soil TAP p 8, 15; soil pH will drop TAP p 12; not expected when processing cotton seeds
4. Does the substance contain inerts classified by EPA as ‘inerts of toxicological concern’? [§6517 (c)(1)(B)(ii)]			X	
5. Is there potential for detrimental chemical interaction with other	X			Hydrogen chloride is incompatible with sodium hydroxide (an approved

¹ Agency for Toxic Substances and Disease Registry, 2002. Hydrogen chloride ToxFAQs, p. 1.

² <http://www.reagentchemical.com/production-methods.html>

materials used in organic farming systems? [§6518(m)(1)]				material) TAP p 8; HCl is a strong, relatively reactive acid and can react with or catalyze reactions with many materials used in organic farming TAP p 11; not expected when processing cotton seeds if GMP are followed
6. Is there a toxic or other adverse action of the material or its breakdown products? [§6518(m)(2)]	X			HCl is extremely corrosive with the ability to kill any cell that it contacts; carbon dioxide (a byproduct) can exclude oxygen in a confined air space TAP pp 11, 13; Hazardous by-products form upon decomposition – hydrogen chloride, chlorine, CO, CO2 and hydrogen gas.
7. Is there persistence or concentration of the material or breakdown products in the environment? [§6518(m)(2)]		X		HCl is not persistent. A by-product, CO2 can exclude O2 in a confined air space TAP pp 11, 13
8. Would the use of the substance be harmful to human health or the environment? [§6517 (c)(1)(A)(i); §6517 (c)(2)(A)(i); §6518(m)(4)]	X			HCl is extremely corrosive; can kill any cell that it contacts; CO2 (a by-product) can exclude O2 in a confined air space TAP pg 11, 13; Hydrogen chloride is irritating and corrosive to any tissue it contacts. Brief exposure to low levels causes throat irritation. Exposure to higher levels can result in rapid breathing, narrowing of the bronchioles, blue coloring of the skin, accumulation of fluid in the lungs, and even death. Exposure to even higher levels can cause swelling and spasm of the throat and suffocation. Some people may develop an inflammatory reaction to hydrogen chloride. This condition is called reactive airways dysfunction syndrome (RADS), a type of asthma caused by some irritating or corrosive substances. ³ “People working in occupations in which hydrogen chloride is used have the highest risk of being exposed to this compound.
9. Are there adverse biological and chemical interactions in the agro-ecosystem? [§6518(m)(5)]	X			Hydrogen chloride is incompatible with sodium hydroxide (an approved material) TAP p 8; HCl is a strong, relatively reactive acid and can react with or catalyze reactions with many materials used in organic farming TAP

³ Agency for Toxic Substances and Disease Registry, 2002. Hydrogen chloride ToxFAQs, p. 1.

				p 11; not expected when processing cotton seeds if GMP are followed
10. Are there detrimental physiological effects on soil organisms, crops, or livestock? [§6518(m)(5)]	X			“HCl has the potential to damage soil” It will dissolve carbonate-based particles found in soil TAP p 8, 15; soil pH will drop TAP p 12; not expected when processing cotton seeds

**NOSB Evaluation Criteria for Substances Added To the National List
Crops or Livestock**

Category 2. Is the Substance Essential for Organic Production? Substance:
Hydrogen Chloride

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is the substance agricultural? [§6502(1)]		X		
2. Is the substance formulated or manufactured by a chemical process? [§6502(21)]	X			"The largest volume production of hydrochloric acid is a by-product of the formation of chlorinated and fluorinated organic compounds, chloroacetic acid, and PVC." ⁴
3. Is the substance formulated or manufactured by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral sources? [§6502(21)]		X		
4. Is the substance created by naturally occurring biological processes? [§6502(21)]		X		
5. Is there a natural source of the substance? [§ 205.600(b)(1)]			X	
6. Is there an organic substitute? [§205.600(b)(1)]			X	
7. Is there a wholly natural substitute product? [§6517(c)(1)(A)(ii)]				
8. Are there any alternative substances? [§6518(m)(6)]	X			Lactic and acetic acid might possibly be used but it is not clear if they are efficacious or possibly are deleterious to the seed TAP pp 9, 10, 12, 16; "Both organic acids are weak acids and may have limited ability to weaken the cellulose structure of the lint and allow its easy removal from the seed." TAP pg. 14 Sulfuric acid is often used, though not on the NL for use in organic. (TR lines 61-82)
9. Are there other practices that would make the substance unnecessary? [§6518(m)(6)]	X			The Crops Committee found several patents for delinting equipment which had been submitted as recently as 2008 and appear to show promise. (2009 Recommendation) Small scale

⁴ <http://www.reagentchemical.com/production-methods.html>

				farmers in Africa have developed alternatives –natural substances to burn off linters and coatings. Machines have been developed to plant fuzzy seeds. Other methods are not currently available to US cotton growers. (TR lines 151-177.)
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**NOSB Evaluation Criteria for Substances Added To the National List
Crops or Livestock**

**Category 3. Is the substance compatible with organic production practices? Substance:
Hydrogen Chloride**

Question	Yes	No	N/A	Comments/Documentation (TAP; petition; regulatory agency; other)
1. Is the substance consistent with organic farming and handling? [§6517(c)(1)(A)(iii); 6517(c)(2)(A)(ii)]		X		The use of an extremely dangerous seed treatment that poses hazards to workers is not consistent with organic farming.
2. Is the substance compatible with a system of sustainable agriculture? [§6518(m)(7)]		X		More compatible alternatives have been mentioned but there is uncertainty about efficacy and seed quality TAP pp 10, 16 “The largest volume production of hydrochloric acid is a by-product of the formation of chlorinated and fluorinated organic compounds, chloroacetic acid, and PVC.” ⁵ Support of the organic chlorine industry is not sustainable.
3. If used in livestock feed or pet food, Is the nutritional quality of the food maintained with the substance? [§205.600(b)(3)]			X	
4. If used in livestock feed or pet food, Is the primary use as a preservative? [§205.600(b)(4)]			X	
5. If used in livestock feed or pet food, Is the primary use to recreate or improve flavors, colors, textures, or nutritive value lost in processing (except when required by law)? [§205.600(b)(4)]			X	
6. Is the substance used in production, and does it contain an active synthetic ingredient in the following categories: [§6517(c)(1)(B)(i); copper and sulfur compounds		X		
toxins derived from bacteria		X		
pheromones, soaps, horticultural oils, fish emulsions, treated seed,	X			This treatment removes the lint on cotton seed prior to planting.

⁵ <http://www.reagentchemical.com/production-methods.html>

vitamins and minerals				
livestock parasiticides and medicines		X		
production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleansers		X		