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National Organic Standards Board
USDA-AMS-NOP
1400 Independence Ave. SW
Room 2648-S, Mail Stop 0268
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Docket ID # AMS-NOP-24-0023

Re. CS: Sunset materials

These comments to the National Organic Standards Board (NOSB) on its Fall 2024 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.

Hydrogen peroxide

205.601(a)(4) - As algicide, disinfectants, and sanitizer, including irrigation system cleaning systems.

205.601(i)(5) - As plant disease control.

Hydrogen peroxide is relatively nontoxic in low concentrations, though it is a powerful oxidizer and may damage soil biota. Repeated exposure to vapor is harmful. It breaks down quickly to oxygen and water, and therefore does not have a residual effect. EPA has approved it for use in DfE disinfectant products.[1]

Conclusion

Beyond Pesticides supports the relisting of hydrogen peroxide. Although concentrated hydrogen peroxide is a powerful oxidizer, the advantage of hydrogen peroxide is its nontoxic residue. Hydrogen peroxide has been identified as a “safer” sanitizer by EPA’s Design for the Environment Program (aka Safer Choice Program).

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[1] http://www.epa.gov/pesticides/regulating/labels/design-dfe-pilot.html.

Soaps, ammonium

205.601(d) As animal repellents—Soaps, ammonium—for use as a large animal repellant only, no contact with soil or edible portion of crop.

Ammonium soaps do not meet any of the three OFPA criteria of absence of harm to humans and the environment, essentiality, and compatibility with organic practices.

Ammonium soaps pose ecological hazards.

Ammonium soaps are typically sprayed, which allows drift.[2] Drift may damage plants and kill insects. It may affect insects and earthworms.[3] Drift into aquatic environments may harm aquatic invertebrates. Impacts on soil organisms have not been fully investigated.[4]

Ammonium soaps are not necessary

Alternative materials include area repellents, including tankage (putrified meat scraps), bone tar oil, blood meal, human hair, and bar soap –which should be applied close to or on the plants needing protection– and contact repellents that work by taste and are applied directly to plants, including putrescent egg solids and hot pepper sauce. Other methods include habitat modification, hunting, shooting, fencing/exclusion, encouraging predators.[5]

Ammonium soaps are not compatible with organic production.

There are many alternatives that are not synthetic chemicals.

Conclusion

Ammonium soaps should be allowed to sunset because they do not meet the criteria for listing on the National List. The CS ignored our Spring comment when it said, "Many public comments supported relisting, and there were no comments supporting removal."

Oils, horticultural (Narrow range oils)

205.601(e)(7) - As insecticides (including acaricides or mite control). —narrow range oils as dormant, suffocating, and summer oils.

205.601(i)(7) As plant disease control. –narrow range oils as dormant, suffocating, and summer oils.

The 2019 Technical Review (TR) offers insights into the hazards of horticultural oils and their alternatives.

A number of health and environmental hazards are associated with the manufacture and use of horticultural oils.

Every step of the manufacturing process pollutes air, land, and water. The TR summarizes these well-known impacts.[6]

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[2] Label: http://www.pestproducts.com/ropel.htm.

[3] Ammonium soaps TR, 2019. Lines 394-400; 429-431.

[4] Ammonium soaps TR, 2019. Lines 402-403.

[5] North Carolina State University, Vertebrate Management. http://ipm.ncsu.edu/apple/orchardguide/Vertebrate.pdf.

[6] Narrow range oils TR, 2019. Lines 620-697.

As an aerosol of petroleum, horticultural oils may produce lipid pneumonitis by those inhaling the mist.[7] It is an irritant to skin, eyes, and mucous membranes.[8] The toxicology of horticultural oils is complicated by the wide range of chemicals falling under the definition. When ingested by rodents, the oils concentrate in the liver.[9] The TR states, "The International Agency for Research on Cancer (IARC) found sufficient evidence to support the conclusion that untreated and mildly treated mineral oils are carcinogenic to humans (IARC Group 2). They concluded from the same body of evidence that highly refined oils are not classifiable as to their carcinogenicity to humans (Group 3) (IARC 2012)…. Repeated exposure of animals and humans to untreated or mildly treated mineral oil mixtures is associated with increased incidence of bladder, scrotal, skin, and stomach cancers (IARC 2012)."[10] The TR also says, "Despite the longstanding conclusion of low or non-toxicity, there is a growing concern about the health effects from the ingestion of mineral oil hydrocarbons through direct use as a food additive as well as from multiple sources of environmental contamination (EFSA 2012). Specifically, mineral oils have been linked to lipogranulomas in human livers (Dincsoy, Weesner, and Macgee 1982), though the causality has been questioned (Nash et al. 1996). Exposure to mineral oil hydrocarbons in food is greater than was once expected, requiring dietary intake as a direct food additive to be reconsidered (Grob 2018). …The complex aliphatic chains are not easily metabolized and/or bioavailable. What little gets absorbed in the digestive process accumulates in the liver, spleen, lymph nodes, and body fat (Nash et al. 1996). Some fat-soluble contaminants may be incorporated in aliphatic hydrocarbons."[11] Thus, the oils may also facilitate the absorption of lipophilic toxic chemicals.

Horticultural oils kill mostly by smothering, and may kill predatory mites, soft-bodied predaceous insects.[12] The TR summarizes studies performed on a number of predaceous and parasitic insects, with mixed results.[13] It is a medium hazard to honeybees.[14]

Horticultural oils may damage plants. Some plants are sensitive to them.[15] Oils of low molecular weight or containing polycyclic aromatic hydrocarbons (PAHs), aromatic rings, and cyclic alkene (naphthene) elements have the greatest ecological impact.[16]

Research shows negative impacts of petroleum on soil organisms but is not specific to horticultural oils. Some soil organisms can degrade some horticultural oils, but those containing

[7] HSDB, Mineral oil. http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+192.
[8] TAP, p. 6.
[9] Narrow range oils TR, 2019. Lines 570-571.
[10] Narrow range oils TR, 2019. Lines 576-579.
[11] Narrow range oils TR, 2019. Lines 838-850.
[12] Colorado State Extension, Pest and disease control using horticultural oils. http://www.colostate.edu/Dept/CoopExt/4dmg/PHC/hortoil.htm.
[13] Narrow range oils TR, 2019. Lines 742-792.
[14] UC Davis, Horticultural Oil. http://www.ipm.ucdavis.edu/TOOLS/PNAI/pnaishow.php?id=39.
[15] UC Davis, Horticultural Oil. http://www.ipm.ucdavis.edu/TOOLS/PNAI/pnaishow.php?id=39.
[16] Narrow range oils TR, 2019. Lines 799-802.

polycyclic aromatic hydrocarbons (PAHs), aromatic rings, and cyclic alkene (naphthene) elements are more resistant to biodegradation.[17]

Drift into aquatic environments can have detrimental impacts. Although considered practically nontoxic to fish and birds, it is toxic to aquatic invertebrates, who are an important part of aquatic food webs.[18]

Horticultural oils can interfere with biological control of insects and mites.

In addition to their action on plant diseases, horticultural oils are broad-spectrum insecticides/miticides. In some agroecosystems, they kill predators and parasitoids along with pests, thus disrupting the agroecosystem and creating a dependence on pesticides.[19] For this reason, they are incompatible with organic production if used when such predators and parasites are present.

Horticultural oils may be unnecessary.

The TR outlines a range of practices and natural materials that can be used in place of horticultural oils. Several vegetable oils have been tested and found as effective as or more effective than petroleum-based horticultural oils. Biological and other natural pesticides are also available.[20] As always, use of any synthetic material should be limited to those cases when preventive practices, such as those outlined in the TR, are not effective.[21]

In view of the wide range of uses of horticultural oils and the fact that their use may prevent the use of more hazardous materials, the Crops Subcommittee should seek input on the question of whether there are specific uses for which horticultural oils are essential. If such uses are verified, then the listing should be annotated to limit the use of horticultural oil to those cases.

Conclusion

The conclusion of the TR is worth repeating here:

> Since the energy crisis of the 1970s and the on-set of peak oil, there is a recognition that agriculture needs to develop sustainable alternatives to petroleum (Rosset and Altieri 1997; Youngquist 1999; Peters et al. 2009). Research has focused on developing sustainable alternative fuels for mechanized farm equipment and transportation of food to market. However, the analyses also recognize the need to replace petrochemical inputs with agroecological techniques (Rosset and Altieri 1997).

The listing for horticultural oils should be annotated in a way that limits use to essential situations and protects workers from inhalation hazards, and nontarget arthropods from harm. In the short-term, if this is not possible, horticultural oils should be delisted. Above all, our goal in organic production and processing must be to phase out all uses of petroleum-based materials in its leadership role to confront the health, biodiversity, and climate crises of our

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[17] Narrow range oils TR, 2019. Lines 728-740; 804-810.
[18] Narrow range oils TR, 2019. Lines 818-821.
[19] Narrow range oils TR, 2019. Lines 742-792.
[20] Narrow range oils TR, 2019. Lines 879-1044.
[21] Narrow range oils TR, 2019. Lines 1049-1091.

time. In this context, we must begin to phase out horticultural oils and begin to incorporate all the alternative methods and products available for organic production.

Pheromones

205.601(f) - as insect management.

Pheromones may have adverse impacts on human health and the environment.

The technical review (TR) points out that the effects of pheromones on human health depend on the application method, "inerts," and retrieval/disposal.[22] "However, it is important to note that only a small fraction of known insect pheromones (which have effects that are mimicked by commercially available synthetic pheromones) have been thoroughly examined for their toxic or other pharmacological effects on non-target (including mammalian) species."[23]

Pheromones as used in pest management are synthetic analogs of parts of the pheromones found in nature. Because they lack the complexity of natural pheromones, they also lack the specificity of those pheromones. Thus, some pheromone products designed to disrupt the mating of pest insects can affect the behavior of many non-pests. In addition, microencapsulated pheromones may be a hazard to honey bees.

Pheromones are an important part of many organic pest management systems.

Despite the lack of specificity, pheromone products have permitted growers to avoid the use of more toxic controls. They can be used in a way that complements alternative pest management methods suggested by the TR: biological controls, traps, repellents, soil management, sanitation, other cultural practices, physical barriers, hand removal.[24]

Conclusion

In the spring of 2011, the CS and NOSB struggled with an annotation describing a group of pheromones that they felt comfortable approving as a class. Lacking a technical review at the time, the board ended up approving the simple listing. Although EPA standards are not the same as the standards of OFPA, the EPA conditions for pheromone products that are exempt from regulation under FIFRA come close to describing products that could be allowed in organic production without further examination, and **we support the following listing, which we believe captures the sense of the conditions for exempting pheromone products from regulation—with the caveat that "substantially similar" must be defined in a way that prohibits toxic chemicals or those that affect nontarget insects:**

> **§205.601(f) As insect management. Pheromones, provided that they are identical to or substantially similar to natural pheromones as defined in 40 CFR 152.25(b), in passive dispensers, without added toxicants, and with only approved inert ingredients.**

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[22] Pheromones TR, 2012. Lines 490-519, 554-564, 663-703.

[23] Pheromones TR, 2012. Lines 468-470.

[24] Pheromones TR, 2012. Lines 832-873.

Ferric phosphate

Beyond Pesticides continues to oppose the relisting of ferric phosphate because ferric phosphate alone is not essential—because it is not effective—and ferric phosphate in combination with EDTA (ethylenediaminetetraacetic acid) poses risks to soil organisms, uses highly toxic materials in manufacture, and is not compatible with organic agriculture. It is time for the NOSB address this material in the context of the law and give it the hearing it deserves. It is also critical that the NOSB recognizes its statutory responsibility to look at complete formulations in which listed substances are used. The NOSB really has two choices. One, it must either consider ferric phosphate alone—in which case, it may be found to lack efficacy or essentiality. Or, two, it must consider ferric phosphate as complexed with EDTA, in which case it should be found to pose environmental hazards that require evaluation. Considering these two required approaches to review, the NOSB's review effectively contravenes the intent of the Organic Foods Production Act (OFPA) and circumvents the holistic evaluation required under OFPA.

Ferric phosphate is not essential.

The patent cited on the product label says that neither ferric phosphate nor EDTA alone is effective in killing snails and slugs, but the combination, when used either as a compound (e.g., sodium ferric hydroxyl EDTA) or together in a bait where they react within the gut of the mollusk), is effective. Therefore, if the listing is for ferric phosphate alone, then it is not essential because it is not effective. Furthermore, the Technical Review (TR)[25] cites cultural practices that eliminate the need for a snail and slug bait, as well as alternative control measures. A limited scope TR requested by the CS describes many nonsynthetic alternative materials and control methods.

Ferric phosphate with EDTA poses hazards for soil organisms and humans.

An important issue has been whether EDTA is a necessary part of the formulation, or whether it should be considered separately as an "inert." USDA's Agricultural Research Service (ARS), in reviewing a supplemental technical review (STR),[26] calls EDTA a "synergist." The patent indicates that neither ferric phosphate nor EDTA alone is effective in killing snails and slugs, but the combination, when used either as a compound (e.g., sodium ferric hydroxyl EDTA) or together in a bait where they react within the gut of the mollusk), is effective. Ferric phosphate with EDTA has negative impacts on earthworms and other soil organisms, as documented in the TR and STR. Sodium cyanide and formaldehyde are used in making EDTA. EDTA can result in the detrimental movement of metals in soils and river sediments and has been detected in the ocean, with unknown effects.

Ferric phosphate with EDTA is not compatible with organic agriculture.

EDTA has negative impacts on beneficial soil organisms. It can build up in the soil. It is the most abundant anthropomorphic chemical in some European surface waters. It can enhance the movement of metals in soil and river sediments.

[25] https://www.ams.usda.gov/sites/default/files/media/Ferric%20Phosphate%20to%20be%20removed%20TR.pdf.

[26] https://www.ams.usda.gov/sites/default/files/media/Ferric%20Phosphate%20to%20be%20removed%20Supplemental%20TR.pdf.

"Inerts"

In the spring of 2012, the Crops Subcommittee requested a supplementary TR (STR) on the role of EDTA in ferric phosphate products —in particular, whether the NOSB needed to consider the EDTA as an integral part of "ferric phosphate" and its active properties against the target pest, as claimed by the petitioner. The STR addressed four questions:

1. Is ferric phosphate alone an effective molluscicide? Can it be combined with other ingredients besides EDTA and still work, or are EDTA and related compounds the only ones that contribute to efficacy?

2. Are there reasons for concern about EDTA beyond what information goes into a tolerance exemption, such as effects on soil organisms or contamination in groundwater?

3. Does the EDTA as used with ferric phosphate pose the same concerns as the EDTA that was reviewed as part of the Sodium Ferric Hydroxyl EDTA?

4. Are there any unbiased studies that back up the findings of Edwards et al. (2009) as cited in the TR or with contrasting results? Does the Edwards et al. (2009) study seem biased?

The subcommittee received a supplemental TR addressing the above questions, along with a review of that document by the ARS, resulting in the following answers:

1. As stated by ARS in its review of the STR, ferric phosphate requires a chelating agent such as EDTA or EDDS synergist in order to make it an effective product. This "synergist" function separates EDTA from so-called "inert" ingredients, such as the wheat flour that makes up most of the actual product.
2. The ARS review confirmed the potential for widespread harm from the use of ferric phosphate-EDTA/EDDS baits noted in the original and supplemental TRs.
3. The ARS review found reasonable the conclusion of the STR that, "EDTA poses the same concerns whether used with ferric phosphate or as sodium hydroxyl EDTA." As summarized in the supplemental TR, these are:

...EDTA clearly has the potential to be harmful to the environment and can result in the detrimental movement of metals in soils and river sediments. Furthermore, the Crops Committee was concerned about EDTA's slow rate of biodegradation and its persistence in the environment. The EU Commission risk assessment on EDTA (EC, 2004) was cited as the reference for this conclusion. The potential harmful effects of EDTA on human health were also a concern to the Crops Committee. In particular, the Committee concluded that "EDTA is a very strong metal chelating agent, especially for calcium. It is poorly absorbed in mammalian GI tract and concerns have been raised that excessive usage in food could deplete the body of Ca and other minerals."

4. The ARS review finds that the principal study on which the TR relied in presenting hazards that iron phosphate baits containing EDTA and EDDS chelating agents are toxic to earthworms "is not likely to be biased."

Although we are clear about the fact that so-called "inert" ingredients are not biologically or chemically inert, the evidence that has been presented to the NOSB shows that without EDTA or related chemicals, ferric phosphate snail baits would not be a viable, or efficacious product. Furthermore, it was one thing to defer action on ferric phosphate + EDTA when it appeared that the NOSB would be acting soon to consider individual "inert" ingredients.

The new limited scope TR addresses alternatives and some aspects of ferric phosphate's ecological impacts. On the subject of alternatives, the TR included a long list of nonsynthetic materials, effective methods, and a few synthetic materials. Efficacy of ferric phosphate, even with EDTA, was much lower than some of the nonsynthetic materials, especially when combined strategically with other methods and biocontrols. Not all such strategies were judged suitable to every situation, but organic practices are not the same as chemical-intensive agriculture, where a single poison may be used everywhere. (A puzzling comment from the TR: "Unfortunately, the same habitat that encourages [predaceous] beetles also encourages slugs and snails." This sounds fortunate, not unfortunate.)

It appears that the studies on earthworms cited in the TR do not add to our understanding of the impacts of ferric sulfate + EDTA baits. The study authors conjecture that the impacts are due to aversion rather than toxicity. Since earthworms are only a representative soil organism that is easily counted, more research is needed to document what OFPA requires—the absence of negative impacts on the environment.

Since EDTA is not complexed with ferric phosphate in the products under consideration—but is combined in the gut of the mollusk or other animal—baits in or on the soil can release EDTA. EDTA is persistent in the environment. While a single application may result in a small soil concentration, repeated applications will result in accumulated concentrations in the soil.[27]

In November 2007, the NOSB denied a petition for sodium ferric hydroxy EDTA because it "is not consistent with environmental and compatibility with organic farming (OFPA) criteria, primarily due to the behavior of EDTA in the environment and the toxic chemicals used to manufacture." In view of the STR and ARS review and the newest TR, ferric phosphate should not be relisted for the same reasons given by the Board for rejecting the sodium ferric hydroxy EDTA petition. Ferric phosphate with EDTA is the only ferric phosphate product in use, and it is dependent on the EDTA component, as the manufacturer's patent states.

Conclusion

Ferric phosphate should be allowed to sunset.

Potassium bicarbonate

205.601(i)(9) - As plant disease control.

[27]Oviedo, Claudia & Rodríguez, Jaime. (2003). EDTA: The chelating agent under environmental scrutiny. Química Nova. 26. 901-905. 10.1590/S0100-40422003000600020. Bloem E, Haneklaus S, Haensch R, Schnug E. EDTA application on agricultural soils affects microelement uptake of plants. Sci Total Environ. 2017 Jan 15;577:166-173. doi: 10.1016/j.scitotenv.2016.10.153. Epub 2016 Oct 27. PMID: 28327292.

Potassium bicarbonate has minor environmental and health impacts. It is useful for controlling a number of diseases that are difficult to control organically. Potassium bicarbonate in many situations may be more environmentally sound and safer for applicators and other farmworkers than the other synthetic alternatives.[28] It does not appear to interfere with biological control organisms. However, it does not fit into any of the categories in §6517(c)(1)(B)(i) of OFPA, which lists the limited types of synthetic materials that are allowed in organic production: copper and sulfur compounds; toxins derived from bacteria; pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals; livestock parasiticides and medicines and production aids.

The CS review says, "The EPA states that Potassium bicarbonate is a naturally occurring compound . . . [and] is ubiquitous in nature." While EPA does not use the same definitions of "natural" and "synthetic" as established under the rules implementing OFPA, if the NOSB has knowledge that natural (nonsynthetic under OFPA rules) potassium bicarbonate is available, then there is no need for the substance to be on the National List. However, if the NOSB cannot make this nonsynthetic determination, then it must fully evaluate that this substance meets the health, organic compatibility, and essentiality requirements of substance review.

Conclusion

The CS should investigate the possibility of the availability of nonsynthetic potassium bicarbonate and make a clear nonsynthetic determination. If, however, the substance is classified as synthetic under the law, then potassium bicarbonate should be removed because it does not fit into any of the categories of allowable synthetics in §6517(c)(1)(B)(i) of OFPA.

Magnesium sulfate

205.601(j)(5) As plant or soil amendments. - allowed with a documented soil deficiency.

Magnesium sulfate is allowed as a synthetic plant nutrient—generally applied to leaves—in the case of documented soil deficiency. Magnesium should not be deficient in biologically active soils. It is the central atom in chlorophyll, so any soils that have decayed leafy vegetation added as compost, mulch, cover crops, or crop residues will contain magnesium as a result of the decay of the organic matter. In addition, nonsynthetic magnesium is available as langbeinite and dolomite.

Synthetic magnesium sulfate should not be necessary in organic agriculture.

Magnesium deficiency should not occur in biologically active soils, and adding any one mineral risks unbalancing soil nutrients. Although nonsynthetic magnesium is available as langbeinite and dolomite, both of those forms add other macronutrients—potassium in the case of langbeinite and calcium in the case of dolomite— that may not be needed.[29] Foliarly-applied magnesium sulfate addresses an urgent need for a crucial macronutrient but is not acceptable as a general practice.

[28] 1999 TAP, p. 3

[29] TAP, p. 4. TR, lines 427-447.

Synthetic magnesium sulfate is not compatible with organic production.

Synthetic magnesium sulfate is a synthetic plant nutrient, and hence its use as a foliar spray is contrary to the organic philosophy of feeding the soil to feed the plants. Magnesium should be abundant in biologically active soils, so organic soil-building practices should be used to enrich soils with magnesium.

Conclusion

Magnesium sulfate is acceptable only under limited conditions. Those conditions should be stated in an annotation. Synthetic plant nutrients should not be taking the place of organic soil-building practices.

Hydrogen chloride

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.

We understand that this issue is complicated by a lack of availability of suitable organic cotton seed. Due to the small size of the industry, it has become very difficult to source organic cotton seed. Most growers must use conventional, untreated, non-GMO seed. Given current seed regulations, the delinting process used on conventional seeds (sulfuric acid) is allowed since the seeds themselves are untreated and non-GMO. Also, due to the consolidation of seed companies, organic growers have an increasingly hard time finding their desired varieties that have been available in the past. The push for genetically modified cotton varieties has also made seed sourcing for organic growers even more difficult.

We ask the NOSB to consult with organic cotton producers about the problem of accessing organic or untreated non-GMO cotton seed. Although we have concerns, as noted below, about the use of hydrogen chloride, we reluctantly support its relisting while the seed availability issue can be addressed. We urge the NOSB to support efforts and urge USDA leadership to make organic cotton seed and/or untreated non-GMO cotton seed available.

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.

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.

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—if organic cotton seed is available. 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. The NOSB should also recommend that USDA support the infrastructure needed to deliver mechanically delinted seed to organic cotton growers. A strong statement by the NOSB that this may not survive another sunset would go a long way toward incentivizing the alternative.

Ash from manure burning

§205.602 Nonsynthetic substances prohibited for use in organic crop production.
(a) Ash from manure burning.

In 2015, the CS gave the following background to this listing:

Ash from manure burning was placed on §205.602 based on its incompatibility with organic production: "Burning these materials is not an appropriate method to use to recycle organic wastes and would not be considered a proper method in a manuring program because burning removes the carbon from these wastes and thereby destroys the value of the materials for restoring soil organic content. Burning as a disposal method of these materials would therefore not be consistent with section 2114(b)(1) of the OFPA (7 U.S.C. 6513(b)(1))." (Preamble to proposed rule, December 16, 1997. 62 FR 241: 65874)

Burning a material that is central to maintaining soil fertility and tilth in organic soils would be incompatible with organic production systems. Carbon should be in the soil, not in the air.

Conclusion

Ash from manure burning should remain on §602.

Sodium fluoaluminate (cryolite)

§205.602 Nonsynthetic substances prohibited for use in organic crop production.
(f) Sodium fluoaluminate (mined).

Cryolite is harmful to human health and the environment. It is a nonselective pesticide, and there are alternative materials and management practices.

Cryolite is harmful to human health and the environment.

It is applied as a dust, so movement off the target plant is likely.[30] Natural cryolite is made into the product by crushing rocks, making powder that is likely to move in air, water, and soil. Workers engaged in crushing and refining cryolite were found to have silicosis, a sclerotic affection of bones, ligaments, and muscular attachments, probably due to the deposition of calcium-fluoride in the bones, corrosion of the mucous lining of the stomach, and a pronounced oligemia, found in 11 of the 30 workers in whom pathological changes in the bones were observed.[31] Dental fluorosis is also a problem.[32] Cryolite breaks down to sodium, fluoride, and aluminum, which may lead to increases of fluoride and aluminum in the soil.[33] Exposure to fluoride is in addition to that from fluoridated water, which is already excessive for some people.[34]

Cryolite is unnecessary in organic production.

Although cryolite is used on many nonorganic fruit and vegetable crops, there are alternative substances available that do not pose so many hazards.

Cryolite is incompatible with organic production systems.

Cryolite is a non-selective insecticide. Little is known about its non-target ecological effects, but use of a broadly toxic material is not compatible with organic methods. It does not "promote plant and animal health by enhancing soil physical, chemical, or biological properties."

Conclusion

Sodium fluoaluminate (cryolite) should remain on §602.

Thank you for your consideration of these comments.

Sincerely,

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[30] Cryolite RED. http://www.epa.gov/pesticides/reregistration/REDs/0087.pdf.

[31] PF Moller and SV Gudjonsson, 1932. **Massive Fluorosis of Bones and Ligaments,** Acta Radiologica, 13:269-294.

[32] http://www.icca-chem.org/Portal/SafetySummarySheets/634593802744407699_PSS%20Cryolite_V01.pdf.

[33] Cryolite RED. http://www.epa.gov/pesticides/reregistration/REDs/0087.pdf.

[34] http://www.fluoridealert.org/wp-content/uploads/10facts.pdf.

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