



October 4, 2018

Ms. Michelle Arsenault  
National Organic Standards Board  
USDA-AMS-NOP  
1400 Independence Avenue, SW  
Room 2648-So., Ag Stop 0268  
Washington, DC 20250-0268

**Docket:** AMS-NOP-18-0029

**RE: Crops Subcommittee – 2020 Sunset Reviews**

Dear Ms. Arsenault:

Thank you for this opportunity to provide comment to the National Organic Standards Board (NOSB) on its 2020 Sunset Review.

The Organic Trade Association (OTA) is the membership-based business association for organic agriculture and products in North America. OTA is the leading voice for the organic trade in the United States, representing over 9,500 organic businesses across 50 states. Our members include growers, shippers, processors, certifiers, farmers' associations, distributors, importers, exporters, consultants, retailers and others. OTA's mission is to promote and protect organic with a unifying voice that serves and engages its diverse members from farm to marketplace.

OTA thanks NOSB for carefully considering each crop production material scheduled for review as part of the 2020 Sunset Review cycle. Materials placed on the National List for use in organic crop production should remain on the National List if: 1) they are consistent with organic farming; 2) they are still necessary to the production of the agricultural product because of the unavailability of wholly natural substitute products in organic production; and 3) no new information has been submitted demonstrating adverse impacts on humans or the environment (OFPA SEC. 2118 [7 U.S.C. 6517] National List). Furthermore, decisions must be transparent, non-arbitrary, and based on the best current information and in the interest of the organic sector and public at-large. It's critical that NOSB hear from certified farmers on whether these inputs are consistent with and necessary for organic production, or whether there are other effective natural or organic alternatives available.

#### **About OTA Sunset Surveys**

OTA is submitting results to our Sunset Surveys created for each input under review as part of the 2020 Sunset Review cycle. These electronic surveys include 7-10 questions addressing the **necessity (crop and livestock) or essentiality (handling)** of each input. See Appendix A for a sample survey. Our surveys do not address information regarding the impacts on human health or the environment.

The surveys are open to any NOP certified organic operation. The names of the companies submitting the information are confidential (not disclosed to OTA). To ensure wide distribution of the surveys beyond OTA membership, OTA worked with Accredited Certifying Agencies (ACAs) and the Organic Materials Review Institute (OMRI) to distribute the survey to all of their clients as well as to targeted clients they

know are using the inputs under review. OTA also worked through its Farmers Advisory Council<sup>1</sup> to help assist in distribution to NOP certified farmers.

### Results of OTA Sunset Surveys

OTA has received **50** responses on our 2020 Crops Sunset Surveys. Below is a summary of the feedback received via OTA’s Sunset Surveys to date. New responses received since the spring 2018 meeting are highlighted and marketed as “new”. Because most of the 2020 Sunset materials were recently reviewed under the 2017 Sunset cycle, we have included the comments we received at that time as well.

### Synthetic Substances Allowed for Use in Organic Crop Production (§ 205.601)

Substance	Survey Information
Alcohols: Ethanol & Isopropanol	<p><b>2020 Sunset (4 responses):</b>  <b>Producer Comment (new):</b> As a disinfectant for specialty crop propagation, seed sanitation, and as a general disinfectant for production.  <b>Producer Comment:</b> We use it to disinfect pruning shears during cane pruning. Bleach is ok, but is more hazardous to workers.  <b>Producer Comment:</b> Sterilization and disinfection of tools. Alternatives have lower availability, higher cost, less universal efficacy, and more handling precautions (e.g. hydrogen peroxide).  <b>Producer Comment:</b> Disinfection of floor, tables, and tools used for the grafting process.</p> <p><b>2017 Sunset:</b>  <b>Specific comments describing the use of this substance on organic farms:</b>            For sanitizing hands and equipment to comply with food safety rules            Food safety. Hand sanitation</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b>            I can't think of any alternatives for hand sanitation; equipment could be sanitized with chlorine materials. I do not see that as any more environmentally friendly, however.            Less effective</p>
Sodium carbonate peroxyhydrate	<p><b>2020 Sunset (2 responses):</b>  <b>Producer Comment (new):</b> Algae control. Superior algae growth whereas copper sulfate only reduces blooms. Although there are concerns that this material can reduce oxygen concentrations in fresh water and negatively impact fish and aquatic life.  <b>Producer Comment (new):</b> Sanitizers.</p>
Newspaper or other recycled paper,	<p><b>2020 Sunset (7 responses):</b></p>

<sup>1</sup> OTA’s Farmers Advisory Council was established in 2013 to formalize two-way communication between OTA and member producers as well as regional organic producer organizations across the United States. Through dialog and input, FAC gives organic farmers a voice to directly influence OTA’s policy and provides an avenue for OTA to share information and advocacy work with this stakeholder group.

<p>without glossy or colored inks, as mulch and compost feedstock</p>	<p><b>Producer Comment (new):</b> Some small growers use newspaper or other recycled paper as a weed barrier although it is not appropriate for all production systems.</p> <p><b>Producer Comment (new):</b> We use the paper pot transplanter which uses paper as its potting material.</p> <p><b>Producer Comment:</b> Shredded newspaper used for red worm bedding for vermin compost. Nothing quite works like newspaper.</p> <p><b>Producer Comment:</b> We use the paper pot transplanter system to transplant various baby greens in high tunnels. This allows us to keep our tomatoes in our tunnels longer before removing them for winter greens. In our short, short summer VT season, it is essential we get those extra couple of weeks. (It would be too time-consuming to transplant by hand.) I am not aware of any alternatives for the paper pot transplanter.</p> <p><b>Producer Comment:</b> We routinely use pots made of manila paper to grow transplants for setting out. The paper pots break down in the soil adding to our organic matter. There are currently no substitutes for my operation that are OMRI listed.</p> <p><b>Producer Comment:</b> Used for soil heath and weed control. No alternatives currently available.</p> <p><b>Producer Comment:</b> We use the paper pot chains for transplanting vegetables. The paper chain containers are vital to using this system and contain the same ingredients as cardboard for use as a mulch or compost material, and they are incorporated into the soil the same as the paper pot chains would be. I think their application should be added as a transplanting method. This system saves me hours of labor in transplanting and seeding. It is also a system that is better for the body ergonomically and would allow older farmers to continue to farm without the strain on their back and body. These pots are made in Japan and I am not aware of an alternative on the market for the manufacture of the paper chain pots.</p> <p><b>NOSB Questions:</b></p> <p><b>To what extent have newspapers shifted to soy ink?</b>        All I know of; No idea and can't really care relative to the diesel exhaust of my tractors; I am not sure on newspaper</p> <p><b>What pigments are used in colored newspaper inks, and how does their toxicity compare with carbon black, the pigment used in black ink?</b>        Don't know; No Idea; I am not sure on this</p> <p><b>Does the diversion of newspaper to mulch significantly reduce the supply of recycled newsprint?</b>        No; Who cares?</p> <p><b><u>2017 Sunset:</u></b></p> <p><b>Specific comments describing the use of this substance on organic farms:</b>        I use a no-till method in my garden. Layering cardboard and newspaper on fallow ground (old hay field) I can add compost and mulch to the top and smother the weeds (sheet mulching). This is the only non-mechanical organic way to kill</p>
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	<p>existing grasses and weeds and convert it to garden without destructive plowing and tilling on my steep sloping land.</p> <p>Shredded paper is used to make my fungal-based compost. I compost a lot of grass clippings and need a large base of carbon materials to keep my compost fungal-based</p> <p>Weed suppression</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b> None</p> <p>Cultivation requires increased fuel consumption and soil compaction</p> <p>Do not have enough "brown " materials when I have a lot of grass clippings to compost</p>
<p>Plastic mulch and covers (petroleum-based other than polyvinyl chloride (PVC)) as mulch</p>	<p><b><u>2020 Sunset (3 responses):</u></b></p> <p><b>Producer Comment:</b> Used to cover forage.</p> <p><b>Producer Comment:</b> Used in market garden over drip tape for mixed veg production. Reduces need for hand weeding by 90%. Nothing works like this material.</p> <p><b>Producer Comment:</b> Used to cover randomly occurring noxious weed patches (bindweed). Weed patches are covered to not allow sunlight during the growing season. Weeds die to the root from the extreme heat, lack of sunlight and lack of moisture. There are very few options for controlling field bindweed in our fields that are effective. We have tried several OMRI approved weed killers with only minimal effect.</p> <p><b><u>2017 Sunset:</u></b></p> <p><b>Specific comments describing the use of this substance on organic farms:</b></p> <p>We always use black plastic mulch when we establish a vineyard. We do not irrigate and the black plastic mulch is critical to us getting the baby vines growing well over their first three years in the ground. We always take the black plastic up after it has been in for 4-5 years.</p> <p>We use this to cover the soil in the spring. It is stretched over raised beds and warms the soil. Without this product, my business would not be able to exist</p> <p>We use it for lots of long-season crops for weed control, soil warming, moisture retention. In Vermont, without plastic mulch, lots of cucurbit crops, peppers, tomatoes would not be possible in our cool short-growing season</p> <p>Warm the soil</p> <p>Hops are perennial plants so I need to control weeds without tilling. This is a cheap and effective way to control weeds.</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b></p> <p>If we could not use black plastic mulch, we would have to invest heavily in irrigation.</p> <p>There are none. There is no other way to warm the soil enough to be able to get the growing conditions we need here in Vermont.</p> <p>There is none except paper, which is a disaster. Would love to be able to use biotello/bio360</p>

	<p>Straw and wood mulch are much more expensive and need to be bought yearly. I use these as well as another layer of barrier directly around the plants</p>
<p>Aqueous potassium silicate</p>	<p><b>2020 Sunset (1 response)</b>  <b>Producer comment (new):</b> Does not use potassium silicate.</p>
<p>Elemental Sulfur</p>	<p><b>2020 Sunset (6 responses):</b>  <b>Producer comment (new):</b> Fertilizer and plant disease control  <b>Producer comment (new):</b> Used for disease control in a spray solution allowing for correct application rates. We support an annotation requiring the use of a wettable form to reduce inhalation, dust drift, and improve disease control. Stylet (mineral oil) is used to supplement the use of sulfur, but in the event of high pressure from powdery mildew, nothing replaces its efficacy. Also, for many growers, cost effectiveness is a consideration, and sulfur is the most effective and cost efficient product available. With the cost of labor going up, farmers need help with cost containment for materials to allow them to remain profitable organic farmers.  <b>Producer comment (new):</b> Sulfur is used as a deterrent to powdery mildew and is the longest used and most effective fungicide on the market today.  <b>Producer Comment:</b> Used for soil acidification for blueberries to lower pH also used for dusting for powder mildew. No alternatives available that are naturally mined and lower pH.  <b>Producer Comment:</b> Used to correct sulfur deficiencies in the soil, and also applied as a foliar feed at flag leaf of wheat to increase protein and plant health. I do not know of any other sulfur only products.  <b>Producer Comment:</b> Used with electric sulfur evaporators to prevent powdery mildew in cucurbits. This is a critical material in my production.</p> <p><b>2017 Sunset:</b>  <b>Specific comments describing the use of this substance on organic farms:</b>      Necessary to manage soil pH to create a favorable soil to cranberries that in addition aids in suppression of legume weeds      For organic blueberries as the only organic soil amendment available in high pH soil here.      Control mites      It is used to lower the pH of my soil to create a better environment for my blueberry plants.      It is used as a fungicide on fruit, primarily apples      Need to keep the pH of the blueberries in an acid state      To acidify alkaline soils      I use Kumulus DF or Microthiol Disperss every 10 days during the growing season from April through color change in early August. This spray is the foundation for my Powdery Mildew control.      Elemental Sulphur is burned during the kilning process to reduce the bacteria presence on the grain kernels      To acidify soil for blueberries      Mildew control wine grapes</p>

	<p>We use Elemental Sulfur as an insecticide and a fungicide. With the pressure of Powdery mildew in certain varieties, it is imperative to have many tools to control it. Critical control for mildew</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b> Not many products available. Others are far too costly and ineffective. None. Peat moss is one possible alternative. It would take significant more peat moss to lower pH to the extent sulfur can. We use many approaches to fungal diseases and sulfur is one option for us in situations that have high fungal disease pressure. Some weather conditions and fruits have more fungal pressure, and sulfur is a limited but important part of our disease control Do not know what else to use There is no substitute available There really are none. Not aware of any substitutes None that I know of Compost tea made on farm from ORMI compost effective for some varieties, more protective of beneficial insects. There are few alternatives available but to save the few we have there needs to be a rotation of all to prevent resistance to any one substance Easy to use, cheap and effective on all stages of mildew life cycle</p>
<p>Lime Sulfur – including calcium polysulfide</p>	<p><b>2020 Sunset (3 comments):</b> <b>Producer comment (new):</b> It is used in many ways, mildew and disease control but most importantly for blossom thinning. The product is readily available and very effective. There are NO alternatives for this product <b>Producer comments (new):</b> It isn't perfect for blossom thinning but it is all we have and we use it for mildew control also. Organic labeled product is readily available. <b>Producer Comment:</b> Lime sulfur is the ONLY product that we have to blossom thin. Without it we revert to alternate bearing years and hand labor to thin. It isn't perfect for blossom thinning but it is all we have and we use it for mildew control also. Organic labeled product is readily available.</p> <p><b>How has the removal of fire blight control antibiotics impacted your use of Lime Sulfur?</b> Lime sulfur is used to help in fire blight control but isn't very effective We usually spray an extra lime sulfur spray in the early spring to help with fire blight.</p> <p><b>Has the importance of lime sulfur in your organic farm system plan increased or decreased during the current Sunset Review cycle?</b> Increased Increased. It is very critical to our success as organic growers.</p> <p><b>2017 Sunset:</b></p>

	<p><b>Specific comments describing the use of this substance on organic farms:</b>          Lime Sulfur is our "Dormant Spray." We only use it once a year and it is a critical spray for us. It keeps the Willamette Mites off our vineyard and also helps kill off any over-wintering mildew spores.          We use Lime-Sulphur mixed with Crocker's Fish oil for a blossom thinner on Asian pears. If we do not use it, the thinning process by hand is extremely labor intensive.          Thinning, mildew, Fire blight at bloom          Been using this very important material since 1976. Essential thinning and scab control. There is no other material that comes close to taking care of scab          To control Fire blight</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b>          There are none.          We have not found any alternative that works          There is no alternative          There are some but with different modes of action</p>
Sucrose octanoate esters	<p><b>No comments received</b></p>
Hydrated Lime	<p><b>2020 Sunset (1 response):</b>  <b>Producer comment (new):</b> Disinfectant.</p> <p><b>2017 Sunset:</b>  <b>Specific comments describing the use of this substance on organic farms:</b>          This is used almost universally in mushroom casing for disease control. It is important to raise the pH of the casing material into a range that makes it less vulnerable to weed molds such as Trichoderma. Other pH adjusters require much larger quantities to do the same job and change the structure and texture of the casing material so that it is not suitable for production.          To control clubroot of cole crops when alternative management is not sufficient.  <b>Specific comments regarding the availability and efficacy of alternatives:</b>          There are no viable alternatives that I know of. As mentioned above, it is possible to adjust the pH with other materials, but doing so changes the nature of the casing material. This material has been used this way for many decades and it would be hard to find a better way.</p> <p>Clubroot can persist even when all management recommendations are followed: five-year rotation, sanitation between fields, and liming. Rotation is not fully effective because of the ability of weed species to perpetuate the disease. Complete sanitation between fields is impossible, and not all soils can be maintained at the recommended pH, nor would doing so benefit all crops in a healthy rotation. Fast acting lime (hydrated) is essential when clubroot persists even when following the above described cultural practices</p>

Liquid Fish Products	<p><b>2020 Sunset (21 responses):</b></p> <p><b>Manufacturer comment (new):</b> hydrolysate liquid fish fertilizer; There are limited alternatives or substitutes for organic liquid fertilizers in general. Those that are available - dairy whey, plant extracts, liquid kelp, etc. - can have limited supply and/or greater economic costs.</p> <p><b>Producer comment (new):</b> Soil drench or injected. Provides great soil tilth and an amazing canopy</p> <p><b>Producer comment (new):</b> We use this substance as a main ingredient in our organic nutrient program. No availability/efficacy of alternatives at scale of our operation</p> <p><b>Producer comment (new):</b> Plant fertilizer</p> <p><b>Producer Comment:</b> Used as plant fertilizer. It is critical.</p> <p><b>Producer Comment:</b> We use liquid fish products to foliar feed both vegetables and pasture crops. It is necessary as a means to deliver crop nutrition naturally in season without the risks associated with compost production and application. There are very few alternatives that boast the same benefits as liquid fish as it relates to biological activity in soil. Other nutrient specific alternatives do not come close to enhancing the rhizosphere like liquid fish.</p> <p><b>Producer Comment:</b> Fish hydrolysate is critical to keeping soil microbes healthy in our soil. No alternatives noted for this type of use. Not having fish would result in 25% reduction in yields. It is critical to my operation.</p> <p><b>Producer Comment:</b> I use it for foliar application, drench, and fertigate. It is a necessary input because it's very nutritious and it economically feasible and so easy to apply. We as an organic operation could not function to the expectations of quality we have today without a fish emulsion product. We don't really have many other products that are as economical and as readily available. It is an easy product to use and it is a fast acting product. Fish emulsion goes hand and hand with a wholesome ecological friendly crop program because applying this input to your ground helps beneficial properties of your soil. It is critical.</p> <p><b>Producer Comment:</b> It is used as a starter, foliar spray, and sidedress. Used to enhance growth, yield and feed soil life. No replacement for enzymes in Fish Fertilizers.</p> <p><b>Producer Comment:</b> Used for foliar applications for times when nutrients might not be available in the soil due to temperature, moisture, etc. Alternatives are not nearly as effective, often more expensive, and not locally produced. It is critical for my operation.</p> <p><b>Producer Comment:</b> Used as a biostimulating source of macro and micronutrients in addition to amino acids and carbon. Plant-derived organic substitutes lack efficacy in some regards; no known direct replacements. This is highly critical for the success of my farm.</p> <p><b>Producer Comment:</b> Fantastic source of N. Wonderful microbial stimulant for fungi, probably the best fungal food. Fish has been the best product we have found for organic to deliver necessary N while stimulating natural soil biology.</p> <p><b>Producer Comment:</b> Used as a biological stimulant to increase microbial activity in the soil and to increase plant physiology. Increases healthy root growth, decreases need for "rescue chemistry products" by increasing soil health. Enhances efficiency</p>
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of other fertility inputs. Absolutely critical for organic farming operations and any goal of healthier soils. No other organic inputs come close to what good acid-stabilized fish hydrolysate can do for healthy soil building. Others have more N value but that is NOT what true organic production is about. The components in this type of fish products have no equal in biological performance.

**Producer Comment:** Fish hydrolysate is used as liquid fertilizer for our fruit trees. We run it through our micro-irrigation lines to target the roots of trees. Few companies sell the fish hydrolysate we like. We get it from Pacific Gro. An alternative source may not be as safe/healthy to put on our soil.

**Producer Comment:** Good source of plant-available nutrients, feeds biological soil life. It is critical on my farm.

**Producer Comment:** Fish is used to feed the microbes in the soil. I inject fish into the soil in the fall to keep the microbes alive and growing through the winter and also use it as a foliar spray on the plants. Nothing compares with cold-pressed fish hydrolysis. My land is soft and tilthy due to fish. My farm has earthworms and my soil is healthy from the use of fish. Fish is a vital product. The price is reasonable and the results are great. I do not believe there is a comparable product out there.

**Producer Comment:** Used on soil as main nitrogen source and soil biological inoculant. No alternatives.

**Producer Comment:** We use as a soil application to feed the soil microbes & as a foliar as a nitrogen source. Fish fertilizer is a major part of our fertility program. It would be difficult to replace it because of the combination of oils, proteins, amino acids and plant available minerals. I know of no other fertilizer that gives the fertility that fish does. Fish contributes to the soil environment and improves the soil.

**Producer Comment:** We use Fish Hydrolysate primarily as a supplement to our soil-building program but also benefit from the N. It is a great source of enzymes and amino acids for our soil biology and also provides a good source of complex carbohydrates. We have not found any other product that is able to provide all the benefits as the Hydrolysate.

**Manufacturer Comment:** Most customers use fish Hydrolysate pre-plant application and follow up with regular applications to keep the microorganisms active. This allows a organic grower to keep their soil healthy without the danger of hazardous run-off into creeks and streams. Most of our customers depend on our products as the base of their fertilizer programs. There are few alternatives for the Hydrolysate. This is a unique and vital product for our customers.

**Producer Comment:** Used as a nitrogen source pre-plant and foliar applied. Alternatives of compost or manure can only be applied effectively pre-plant. Liquid fish is the only source I know that can be a source for foliar applied Nitrogen. This material is critical.

**2017 Sunset:**

**Specific comments describing the use of this substance on organic farms:**

We use whole fish hydrolysate. It builds the soil and provides lots of trace minerals—sulfur, zinc, and copper plus lipids and other items. foliar spray, improve soil and plant health

Used as fertigation through my irrigation system. Liquids are utilized through the soil faster and more efficiently, leading to increase proficiency. The cost of equipment has been an investment. It provides needed micronutrients that improve soil biology and root systems. There are very limited organic liquid fertilizers available on the market and with fertigation that is important.

My trees struggle in clay soil. These bring vigor to the trees, helping them produce a crop. Will not use anything else. Nothing works as great as the fish fertilizer. Tried many other products.

1-foliar feeding of greenhouse starts for transplanting 2- added to drip-line irrigation in tomatoes and peppers grown in a greenhouse to supplement cover crop and soil incorporated fertilizer

We are using Dramm Liquid Fish fertilizer on our black currants, applied as a foliar spray three times during the growing season. We hope to not only provides nutrients for our current plants and improve the Brix in the fruit, but to also improve the health of the soil microbiome

We apply emulsified fish in furrows at planting in our row crops, and as a foliar fertilizer on small grains, hay. Emulsified fish provides an economical source of essential nutrients for delicious and nutritious certified organic food.

I rarely use it. I do not agree with the approved uses of synthetics in organic inputs. Foliar feeding, soil application—it is very good for soil biology for healthier plants and better fruit. Improved plant health that suppresses disease and insects

Our hay crop is sprayed two times a year with outstanding results—sweetest smelling hay around with very healthy cows and horses

We apply it foliarly. It improves crop yield and reduces both insect and disease pressure

We use it through fertigation, after conducting soil tests and plant tissue analysis. We especially depend on it to tweak fertility for our more valuable and finicky crops, like tomatoes, strawberries, raspberries, and high tunnel crops. In cold soil, this substance is more available to our crops than compost or manure inputs, which is invaluable to us

Seedling Soil Life Enhancer, Seedling Fertilizer Level Stabilizer, Foliar Feed, Emergency Fast-Acting Crop Nitrogen Supplement. Why? It is needed for stabilizing nutrition in the small 4" pot soil volume at seedling growth stage. It enhances diversity of life, and more varied inputs make more varied soil life. It fills the need for a liquid organic fertilizer Foliar feeding enhances foliar life, thus suppressing foliar diseases

**Specific comments regarding the availability and efficacy of alternatives:**

What alternative?

There are few if any available alternatives to liquid fish fertilizers that provide the necessary benefits. If unavailable, I would be forced to make my own liquid fish “tea.”

There is nothing we can use that delivers as much nitrogen for so little cost that the plants use totally and fully.

	<p>I used to purchase other products, but those companies had either dissolved or stopped carrying those products. I know the local district representative, so the whole process has been very convenient</p> <p>Very few alternatives. Liquid form means less product to get desired results</p> <p>Most chemicals used today kill or harm the necessary biology that uses the carbon or humus to feed the plants.</p> <p>Not aware of any alternatives</p> <p>There is none</p> <p>There are few alternatives for emulsified fish. These alternative fertilizers are more expensive and they are not as effective.</p> <p>I think fish products are a beneficial addition in organic crop production, but I do not understand how NOP can allow the use of synthetics to stabilize this product and still consider this an organic product. There are citric acid products available and other methods can be used to stabilize the fish product without the use of synthetics.</p> <p>There are few if any equivalent alternatives to liquid fish fertilizer. Where nutrient equivalents exist, they are not economically viable due to their high cost,</p> <p>No equivalents that supply so much.</p> <p>I do fine without</p> <p>Not aware of anything that would be equivalent</p> <p>Fewer and fewer products like this are available.</p> <p>None</p> <p>It is the only liquid nitrogen rich fertilizer available.</p> <p>Have not found any organic fertilizer that can compare to the results at near the cost where I'm located.</p> <p>There are few if any equivalent alternatives to liquid fish fertilizer. Equivalent products are typically cost-prohibitive.</p> <p>We do not have a comparable product.</p> <p>I am not aware of equivalent alternative products.</p> <p>I am not aware of good alternatives in liquid form that have the benefits of liquid fish. Liquid products have so much more flexibility in application.</p> <p>We generally use dry fertilizer because it is less expensive. Other liquid organic fertilizers are similarly or more expensively priced and typically more "manufactured."</p> <p>I don't know of any</p> <p>Rotted compost/aged manure. Time consuming. Expensive. Doesn't work like fish in the spring.</p> <p>Limited/Unstable</p> <p>I'm not aware of alternative products with the same benefits.</p> <p>There are no alternatives supplying the same level of benefits.</p> <p>I don't know of any.</p> <p>I could use soil amendments but it is good to have if I notice that the garlic has some nutritional problems after it is already planted.</p>
<p>Ethylene gas—for regulation of pineapple flowering</p>	<p><b><u>2020 Sunset (2 responses):</u></b></p> <p><b>Producer Comment:</b> It is used to induce flowering of pineapple plants. It is necessary to produce fruit when needed, in a uniform fashion, meeting quality</p>

	<p>specifications, and organizing all agricultural practices including pest and disease control. There are no alternatives to this product. Other options such as the use of smoke or ice actually cause ethylene to be emitted by the plants as a result to these stress factors. These options are not effective and much more costly. There is currently no way to capture this naturally occurring gas from vegetative sources. This is a critically important material.</p> <p><b>Producer Comment:</b> Ethylene gas is used to induce the flowering in the pineapple crop. It's used once on each production cycle and applied five months before fruit harvest. Actually, for organic pineapple farming, there is no substitute for its use.</p> <p><b><u>2017 Sunset:</u></b> Three survey responses representing 2,140 acres of organic pineapple in Costa Rica.</p> <p><b>Specific comments describing the use of this substance on organic farms:</b> Ethylene gas is mixed with activated carbon and water and sprayed on pineapple fields to induce flowering. This is a highly effective method to cause the plants to uniformly begin the fruit production process, allowing programmed harvesting and fruit shipments. Ethylene gas is used for flower induction in any pineapple field to program harvest. I use it because is the only way to plan the production and to induce to flowers. I have 15 years' working in pineapple organic and I don't know another way to make this.</p> <p><b>Specific comments regarding the availability and efficacy of alternatives:</b> There are no alternative substances or practices that can effectively induce flowering in pineapples. There is no available alternative for this ethylene use. I don't know another alternative to induce flowers in pineapple. In Costa Rica, we have a lot of experience in organic pineapple production. Most of the pineapple in the world is from here, and we don't have alternatives.</p>
Sulfurous Acid	<b>No comments received.</b>
Microcrystalline Cheesewax	<b>No comments received.</b>
Potassium chloride	<b>No comments received.</b>

In closing, we thank the Board for its time and commitment. OTA is committed to collecting information from our broad membership and beyond to assist NOSB in determining whether or not a substance on the National List remains necessary in organic crop production.

Again, on behalf of our members across the supply chain and the country, OTA thanks NOSB for the opportunity to comment and for your commitment to furthering organic agriculture.

Respectfully submitted,



Johanna Mirinda  
Farm Policy Director  
Organic Trade Association

cc: Laura Batcha  
Executive Director/CEO  
Organic Trade Association

### Appendix A – Survey Questions (Example: Liquid Fish Products)

1. Please describe the types of crops produced on your operation:

2. How many acres do you have under certified organic management?

3. Where is your organic production located (state, region, country, etc):

4. With what frequency does your operation use this substance?

Never

Seldom

Occasionally

Routinely

**5. Describe how this substance is used in your operation and why it is necessary:**

**6. Describe the availability and efficacy of allowed alternatives for this substance:**

**7. Describe the effects to your operation should you no longer be allowed to use this substance:**

Agronomic effects (effects to health of crops):

Environmental effects (effects to environment if the substance was no longer allowed AND effects to environment from potential alternatives):

Economic effects (effects to economic health of your operation):

**8. Based on your answers to the four questions above, rate the necessity of this substance (i.e. how necessary is this substance to the continued success of your organic operation?):**

1 Less Necessary	2	3	4	5 More Necessary	6	7	8	9	10 Critical
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**9. Does your company intend on submitting comments directly to NOSB regarding the sunset review of this substance?**

- Yes
- No