



CENTER FOR  
FOOD SAFETY

October 8, 2015

National Organic Standards Board  
Attn: Ms. Michelle Arsenault, Special Assistant  
1400 Independence Ave. SW, Room 2648ES  
Washington, DC 20250

**Docket: AMS-NOP-15-0037-0001**

### **Center for Food Safety Comments to the National Organic Standards Board**

Center for Food Safety (CFS) is a non-profit membership organization that works to protect human health and the environment by curbing the proliferation of harmful food production technologies and by promoting organic and sustainable agriculture. Our membership has rapidly grown to include over seven hundred thousand people across the country that support organic food and farming, grow organic food, and regularly purchase organic products.

As a public interest organization committed to upholding the integrity of the Organic Foods Production Act (OFPA), CFS hereby submits comments to the National Organic Standards Board (NOSB) on the following issues:

- **Handling Subcommittee:** nonorganically produced agricultural substances, fish oil, nutrient vitamins and minerals, and chlorine.
- **Livestock Subcommittee:** synthetic methionine and parasiticides (Fenbendazole, Ivermectin, and Moxidectin)
- **Crops Subcommittee:** arsenic, eliminating incentives to convert native ecosystems, copper products, biodegradable bioplastic mulch, hydroponics, and inerts.
- **Materials Subcommittee:** GE contamination prevention and research priorities.
- **Policy Development Subcommittee:** Policy and Procedures Manual (PPM) changes and disclosure of Conflicts of Interest (COI).

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## Handling Subcommittee

### **Nonorganically Produced Agricultural Substances**

A number of handling substances listed under §205.606 (nonorganically produced agricultural products allowed as ingredients in or on processed products labeled as “organic”) are available in organically produced forms in sufficient supply that justifies their removal from the National List (NL). CFS strongly urges the NOSB to remove the substances listed below and require producers to source organic forms. In addition, CFS supports the more detailed comments submitted to the docket by Beyond Pesticides.

- **Colors:** Black/Purple carrot juice color; Blueberry juice color; Carrot juice color; Cherry juice color; Chokeberry—Aronia juice color; Elderberry juice color; Grape juice color; Grape skin extract color; Purple potato juice; Red radish extract color; Saffron extract color; Turmeric extract color; Paprika color. CFS supports the Subcommittee’s proposal to remove the above 13 colors from the NL because they are commercially available in a sufficient supply in an organic form. As the Subcommittee notes: “For all of the listed colorants, organically grown (as opposed to conventionally-grown) vegetables and fruits can be used as an alternative source for the colorant.”<sup>1</sup> **CFS supports their removal from the NL.**
- **Colors:** CFS strongly urges the NOSB to remove **Beet juice extract color, Blackcurrant juice color, Pumpkin juice color, and Red Cabbage extract color from the NL.** According to the Organic Trade Association (OTA), high quality organic beet just is available in a sufficient supply to warrant its removal from the NL and organic sources must now be required.<sup>2</sup> While some concern has been expressed about the availability of the other three colors, we agree with the Subcommittee that: “Given the expansion in the production of certified organic fruits and vegetables it would appear that most if not all colors should be available commercially in organic form.”<sup>3</sup> **CFS supports their removal from the NL.**
- **Whey protein concentrate:** CFS supports the Subcommittee’s proposal to delist whey protein powder. In addition to the commercial availability of organic whey protein

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<sup>1</sup> NOSB Handling Subcommittee. (2015). “Sunset 2017 Review, Meeting 2 – Review, Handling Substances §205.606, Colors (proposed removals),” *National Organic Standards Board Proposals & Discussion Documents* (October): pp. 165-168, at 167.

<sup>2</sup> Organic Trade Association. (2015). Comments to NOSB Handling Subcommittee (April 7). Available at: <http://www.regulations.gov/#!docketDetail;D=AMS-NOP-15-0002>.

<sup>3</sup> NOSB Handling Subcommittee (2015), *supra* note 1, at 169.

powder, non-organic whey comes from cows that may have been treated with antibiotics, hormones, or other animal drugs. Conventionally-raised dairy cows are fed diets largely comprised of corn and soybeans, which are produced using chemically intensive agricultural methods. The pesticides and herbicides applied to these crops often pollute waterways, and harm wildlife, pollinators, and workers in the field. These feed inputs are most likely genetically engineered since GE soybean adoption rates have reached 94 percent and GE corn accounts for 92 percent of corn acreage in the United States.<sup>4</sup> The adverse human, animal, and environmental health effects of non-organic dairy production makes non-organic whey protein concentrate wholly incompatible with organic. **CFS supports its removal from the NL.**

- **Peppers (Chipotle chile):** Surveys by OTA reported that: “We have been able to source and are currently using Organic Chipotle in all of our products. The continued listing of non-organic chipotle is not essential to our organic products/operation.”<sup>5</sup> **CFS supports its removal from the NL.**
- **Chia:** OTA reported that a supplier of organic chia seeds stated that it sells enough organic chia seeds to supply all the quality, quantity, and forms demanded. The continued listing of chia seeds is not essential because there is a sufficient supply of organic.<sup>6</sup> **CFS supports its removal from the NL.**
- **Lemongrass:** Smucker Natural Foods and OTA have reported that organic lemongrass is available and,<sup>7</sup> as such, **CFS supports its removal from the NL.**
- **Turkish bay leaves:** According to Amy’s Kitchen, who originally petitioned Turkish bay leaves be added to the NL in 2006, the company has found a supplier to meet its needs.<sup>8</sup> A “concern” – not a demonstrated demand or need — has been expressed by some about the consistency of Turkish bay leaf supplies. However, an internet search for “wholesale Turkish bay leaf” has revealed multiple, bulk suppliers of this commonly available herb from *Spicely Organic*, *Monterey Bay Spice Company*, and *Starwest Botanicals*, to name a few. **CFS supports its removal from the NL.**

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<sup>4</sup> Fernandez-Cornejo, J., & S.J. Wechsler. (2015). “Adoption of Genetically Engineered Crops in the U.S.: Recent Trends in GE Adoption,” USDA Economic Research Service (last updated July 9). Available at: <http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx>.

<sup>5</sup> Organic Trade Association (2015), *supra* note 2.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

## **Fish oil**

While fish oil is currently allowed for use in processed foods labeled “organic” because the ingredient is not commercially available in an organic form (section 205.606), CFS does not support its renewal on the NL. Fish oil production is unsustainable because it uses the same forage fish relied upon by so many fish, seabirds, and marine mammals for their survival. Moreover, as an ingredient in processed foods, its health benefit claims remain unsupported by scientific research, but its health risks pose concerns for consumers.

**Given the unsustainable nature of fish oil production and its incompatibility with the principles of organic, CFS supports the Handling Committee’s recommendation to remove fish oil from section 205.606 of the NL.**

### **Production of Fish Oil is Unsustainable**

It has been well documented that the harvest rate of species used for the production of fish oil have reached or exceeded the rates at which the fisheries can naturally replenish.<sup>9</sup> While many different species are used for fish oil, small, pelagic, forage fish are most common, due to their high oil content. According to the Food and Agriculture Organization (FAO), most of the global pelagic fish stocks, are considered either fully fished or overfished.<sup>10</sup> Peruvian anchoveta, Japanese anchovy, and Atlantic herring are the most common pelagic species harvested, with primary stocks in the Southeast Pacific, Northwest Pacific, and Northeast and Northwest Atlantic, respectively. Back in 2010, all stocks were already reported as either fully exploited or depleted.<sup>11</sup> In the Mediterranean, stocks of sardines and anchovies also have been assessed as “fully fished.”<sup>12</sup>

A 2014 fish stocks assessment report by FAO has concluded that targeting pelagic species removes “one ecosystem component without considering cascading effects on the dependent species.”<sup>13</sup> It further warns that, “[c]oncerns about the impacts of harvest strategies that fail to consider trophic relationships in a given ecosystem have been recognized for decades, and

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<sup>9</sup> Pittenger, R. et al. (2007). *Sustainable Marine Aquaculture: Fulfilling the Promise; Managing the Risks*. Takoma Park, MD: Woods Hole Oceanographic Institute (January). Available at: <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/sustainable20marine20aquaculturepdf.pdf>.

<sup>10</sup> Food and Agriculture Organization of the United Nations Fisheries and Aquaculture Department. (2014). *The State of the World Fisheries and Aquaculture*, Rome, Italy: FAO, at 39. Available at: <http://www.fao.org/3/a-i3720e.pdf>.

<sup>11</sup> Food and Agriculture Organization of the United Nations Fisheries and Aquaculture Department. (2010). *The State of the World Fisheries and Aquaculture*, Rome, Italy: FAO, at 35. Available at: <http://www.fao.org/docrep/013/i1820e/i1820e.pdf>.

<sup>12</sup> FAO Fisheries and Aquaculture Department (2014), *supra* note 10, at 40.

<sup>13</sup> *Id.*, at 136.

abundant scientific literature exists underpinning its possible negative impacts on the structure and functioning of aquatic ecosystems.”<sup>14</sup> Sardines, anchovies, and herring play a key ecological role in the survival of larger predatory fish, mammals, and seabirds. They serve as an important link in the transfer of food energy from plankton to larger species in the marine food web, some of which may be endangered.<sup>15</sup> Further exploitation is not an option, particularly for organic, because the unsustainable practice of allowing a non-essential fish-based ingredient in organic food to endanger the food supply of marine life is wholly incompatible with organic systems of production.

### **Fish Oil Consumption Poses Health Risks to Consumers**

Contaminants in the ocean environment present health risks to consumers who eat organic processed foods that contain fish oil as an ingredient. Pollutants such as PCBs, mercury, and radiation are ubiquitous in our oceans and may remain present in the oils of wild-caught fish, particularly the lipophilic pollutants. Researchers have documented that aquaculture feeds composed of wild-caught fish oil contain high levels of PCBs, leading to the bioaccumulation of these chemicals in the fatty tissue of farmed salmon.<sup>16</sup> The European Commission found that animal feeds made of fishmeal contained the highest levels of PCBs of all feed sampled.<sup>17</sup> Human health studies have linked PCB exposure to reproductive disruption, neurobehavioral and developmental deficits in children, and an increased risk of cancers such as non-Hodgkin’s lymphoma.<sup>18</sup> Further, some common pelagic species, such as Japanese anchovy, are located in areas affected by the radiation plume from the recent Fukushima nuclear disaster where they can absorb radionuclides in their tissues from the ambient waters.<sup>19</sup>

EPA acknowledges that fish consumption dominates all other pathways of human exposure to mercury.<sup>20</sup> The U.S. Food and Drug Administration (FDA) has indicated that fish and shellfish are

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<sup>14</sup> *Id.*

<sup>15</sup> *Id.*, at 137.

<sup>16</sup> Berntssen, M.H.G. et al. (2010). “Chemical contaminants in aquafeeds and Atlantic salmon (*Salmo salar*) following the use of traditional versus alternative feed ingredients,” *Chemosphere*, 78(6) (February): pp. 637-646; Hites, R.A. et al. (2004). “Global Assessment of Organic Contaminants in Farmed Salmon,” *Science*, 303 (January 9): pp. 226-229.

<sup>17</sup> European Commission. (2000). *Opinion of the Scientific Committee on Animal Nutrition on Dioxin Contamination of Feedingstuffs and Their Contribution to the Contamination of Food of Animal Origin* (November 6). Available at: [http://ec.europa.eu/food/fs/sc/scan/out55\\_en.pdf](http://ec.europa.eu/food/fs/sc/scan/out55_en.pdf).

<sup>18</sup> U.S. EPA Factsheet. (no date). *Polychlorinated biphenyls (PCBs)*. Available at: <http://www.epa.gov/osw/hazard/wastemin/minimize/factshts/pcb-fs.pdf>.

<sup>19</sup> Environmental Monitoring & Support Laboratory. (1974). “Accumulation of Tritium in Various Species of Fish Reared in Tritiated Water,” *Environmental Monitoring Series, EPA-680/4/74/001*.

<sup>20</sup> U.S. EPA. (1997). “Characterization of Human Health and Wildlife Risks from Mercury Exposure in the United States,” *Report to Congress, Volume VII* (December), at 5-3. Available at: <http://www.epa.gov/ttn/oarpg/t3/reports/volume7.pdf>.

almost exclusively the source of mercury in U.S. diets.<sup>21</sup> Mercury bioaccumulates in the marine food chain and species at higher trophic levels, including humans, may ingest it from multiple sources of contaminated food. Although fish oil products are purified to reduce contaminants,<sup>22</sup> an analysis of 31 fish oil supplements found detectable levels of mercury in all samples, with levels between 2.9-6 parts per billion (ppb).<sup>23</sup> While these levels fall well below FDA's established tolerance of 1,000 ppb (1 part per million), they represent only one of many exposure routes to fish oil and persistent pollutants in food and supplements. And, the cumulative and synergistic effects of eating different foods containing persistent pollutants has yet to be studied. Similar tests of 13 over-the-counter children's fish oil supplements also found detectable levels of PCBs in all samples, with average levels of 9 ppb. International tolerances for PCBs in fish oil are set at 90 ppb by the Global Organization for EPA and DHA Omega-3.<sup>24</sup> This demonstrated inability to eradicate contaminants from fish oil supplements presents an unnecessary health risk for organic consumers and demonstrates the incompatibility of fish oil with certified organic products.

### **Health Benefit Claims of Fish Oils in Processed Foods are Questionable**

Fish oil fails to meet the essentiality criteria as outlined in OFPA since it is not an essential organic food ingredient. The most common organic products that may contain fish oil—organic milk and organic yogurt—can easily be made without it. Food manufacturers add fish oil to organic products so that they can make additional health claims on the package and differentiate their products in the marketplace. However, the benefits attributed to the consumption of processed foods that contain added fish oil are not supported by scientific evidence. While organic foods have numerous scientifically-defensible health benefits, the addition of fish oil is not one of them. Allowing manufacturers to add fish oil and make unsubstantiated and potentially false health claims threatens to undermine consumer trust in the organic label.

In its exploration about health claims of fish oil consumption, the Technical Review (TR) primarily cites studies that investigated diets with high fish consumption, not diets containing fish oil supplementation. According to a 2015 New York Times article: "From 2005 to 2012, at least two dozen rigorous studies of fish oil were published in leading medical journals, most of

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<sup>21</sup> Mahaffey, K., R.P. Cliffner, & C. Bodurow. (2004). "Blood Organic Mercury and Dietary Mercury Intake: National Health and Nutrition Examination Survey, 1999 and 2000," *Environmental Health Perspectives*, 112(5) (April): pp. 562-570.

<sup>22</sup> NOSB Handling Subcommittee. (2015). "Sunset 2017 Review, Meeting 2 – Review, Handling Substances §205.606, Fish oil," *National Organic Standards Board Proposals & Discussion Documents* (October): pp. 171-175, at 173.

<sup>23</sup> *Id.*

<sup>24</sup> *Id.* EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) are long-chain omega-3 fatty acids (O-3s).

which looked at whether fish oil could prevent cardiovascular events in high-risk populations...All but two of these studies found that compared with a placebo, fish oil showed no benefit.”<sup>25</sup>

The assumption that processed food containing extracted fish oil will confer the same health benefits as consuming fish oil via the direct source—fatty and oily fish—is unsupported. Increasing evidence demonstrates that dietary supplements, generally, do not confer comparable health benefits to the natural food sources. A study of diets high in fruits and vegetables containing beta-carotene, lycopene, and other carotenoids conducted by the University of Maryland Medical Center, concluded that such diets may reduce the risk of heart disease and stroke. However it further concluded that supplements containing these same nutrients do not reduce these risks.<sup>26</sup> Another study in the *Journal of the American Medical Association* found that women taking vitamin E supplements had no significant overall health benefits compared to women that do not take supplements.<sup>27</sup>

Consumption of a supplement can interact with other aspects of a person’s diet or health in a way that the natural food sources do not. For example, smokers taking beta-carotene supplements are at increased risk of lung cancer and mortality, but that is not the case with beta-carotene from foods.<sup>28</sup> Similarly, fish oil supplements can be hazardous to consumers when combined with aspirin or other blood thinners, making them more susceptible to nosebleeds and bruising.<sup>29</sup>

**CFS supports the Handling Subcommittee’s proposal to remove fish oil from the NL.**

## **Nutrient Vitamins and Minerals**

The Organic Foods Production Act (OFPA) requires that all synthetic substances are reviewed by NOSB before they are added to the NL. However, the aberrant listing and annotation for “nutrient vitamins and minerals,” as a broad category of substances, has illegally allowed

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<sup>25</sup> O’Connor, A. (2015). “Fish Oil Claims Not Supported by Research,” *New York Times* (March 30). Available at: [http://well.blogs.nytimes.com/2015/03/30/fish-oil-claims-not-supported-by-research/?\\_r=0](http://well.blogs.nytimes.com/2015/03/30/fish-oil-claims-not-supported-by-research/?_r=0).

<sup>26</sup> Simon, H., MD. (2013). “Vitamins,” *University of Maryland Medical Center Medical Reference Guide: In-Depth Patient Education Reports* (January 1). Available at: <http://umm.edu/health/medical/reports/articles/vitamins>.

<sup>27</sup> Lee, I-M et al. (2005). “Vitamin E in the Primary Prevention of Cardiovascular Disease and Cancer,” *The Journal of the American Medical Association*, 294(1) (July 6). Available at: <http://jama.jamanetwork.com/article.aspx?articleid=201172>.

<sup>28</sup> Simon (2013), *supra* note 26.

<sup>29</sup> O’Connor (2015), *supra* note 25.

synthetic and non-organic substances to be included in organic foods without being first petitioned and approved by NOSB.

**CFS opposes the relisting of “nutrient vitamins and minerals” with the current annotation, and urges NOSB to recommend that NOP issue clarification that all synthetic and non-organic substances must be individually petitioned and approved by NOSB in order to be included in organic food.**

Currently, the annotation that accompanies “nutrient vitamins and minerals” (hereafter referred to as “nutrient”) states that their addition to the NL is: “in accordance with FDA 21 CFR 104.20, Nutritional Quality Guidelines for Foods,” which contains a list of 21 vitamins and minerals that “may be added to food.” To date, NOP has interpreted this to mean that any synthetic “nutrient” is permitted without the need for a separate petition or NOSB review. But, annotations that directly reference FDA regulations must not cede authority to that agency for their regulation. As with all synthetic or non-organic substances, the allowance of any substance in organic production and processing must meet the strict criteria outlined in OFPA. To permit substances that do not meet this standard or that do not undergo the legally-mandated materials review process undermines organic integrity and consumer faith in the organic label.

In April 2010, USDA/NOP issued a memo acknowledging that its interpretation of 21 CFR 104.20 was incorrect and issued a proposed rule in January 2012 to correct the annotation. However, NOP decided not to implement its proposed changes.<sup>30</sup> Instead, in September 2012, the NOP renewed the categorical “nutrient vitamins and minerals” listing without any changes, arguing that it would not be able to evaluate and clarify the needed changes before the scheduled sunset date in October 2012. The NOP expressed concern that if the existing listing sunsetted before the agency could issue the changes, it would disrupt certain sectors of the organic industry since all nutrients not individually listed on the NL would no longer be permitted in organic products. Vitamins A and D, used to fortify milk, were noted as ingredients of particular concern.<sup>31</sup> As a result, the categorical annotation has been allowed to stand, despite widespread support for individual petitions from the wider organic community.

With the “nutrient vitamins and minerals” annotation still in place, food manufacturers can add synthetic and non-organic ingredients that do not appear on the NL, as long as they can be considered a “nutrient”—a substance that provides nourishment. Yet, the NOP has yet to

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<sup>30</sup> National Organic Program. (2012). “National Organic Program (NOP); Sunset Review (2012) for Nutrient Vitamins and Minerals,” 77 *Fed. Reg.* 59287, 59291 (September 27).

<sup>31</sup> *Id.*



amend or clarify the listing. FDA, on the other hand, has clarified that 21 CFR 104.20 does not apply to the addition of substances such as DHA and ARA oil, taurine, or sterols to infant formula, milk, pet food, or energy bars as nutrients. While this clarification should apply to the NOP's nutrients listing, substances like synthetic taurine have been detected in organic infant formula.

Even nutrients that have been individually petitioned and rejected by the NOSB continue to appear in organic foods, without penalty. For example, in fall 2012, NOSB rejected petitions for synthetic taurine, l-methionine, lycopene, lutein, l-carnitine, and nucleotides, but synthetic or nonorganic versions of these nutrients continue to appear in organic infant formula and organic baby foods.<sup>32</sup> As this example illustrates, the NOP's reliance on referencing other agencies' regulations, and its loose interpretation of those regulations, can undermine NOSB's ability to uphold strong organic standards when reviewing substances to add or remove from the NL.

**CFS strongly opposes the relisting of “nutrient vitamins and minerals” with the current broad category annotation. Allowing for categorical listings on the NL violates OFPA, which specifically requires that all synthetic substances used in organic production systems are reviewed by the NOSB before being added them to the NL.**

## Chlorine

CFS understands that chlorine serves as an effective sanitizer to control microbial pathogens on produce, equipment, surfaces, and in wastewater. However, there is a growing unease about the need to eliminate chlorine from organic disinfection processes because of “concerns about its efficacy on the produce and about the environmental and health risks associated with the formation of carcinogenic halogenated disinfection by-products.”<sup>33</sup>

For this reason, **CFS recommends that the NOSB pursue a two-fold strategy to achieve an overall reduction in the use of chlorine in organic systems:**

1. Promote alternative sanitizing practices and methods that eliminate the need for chlorine disinfectants, and

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<sup>32</sup> Vallaey, C. (2013). “How to Find the Safest Organic Infant Formula,” *Cornucopia News* (December 20). Available at: <http://www.cornucopia.org/2013/12/find-safest-organic-infant-formula/>.

<sup>33</sup> Gil, M.I. et al. (2009). “Fresh-cut product sanitation and wash water disinfection: Problems and solutions,” *International Journal of Food Microbiology*, 134(1): pp. 37-45.

2. Provide clarification for producers regarding when sanitizing is necessary and when cleaning is sufficient.

In addition, the use of chlorine on contact surfaces should be addressed separately from the use of dissolved chlorine in tanks, especially with regard to foods that can absorb some of the wash water.

## Livestock Subcommittee

### **Methionine**

It is long overdue for the NOSB and the NOP to send a strong market signal to the organic poultry industry that synthetic methionine (DL-methionine) will no longer be allowed in organic production. Not only has the relisting of methionine been allowed based on false industry claims of its necessity and essentiality, but its presence on the NL has served to stall the development of non-synthetic alternatives. **CFS strongly supports the Livestock Subcommittee's proposal to remove methionine from the National List.**

### **Industry claims of adverse poultry health debunked**

In a report cited by the Livestock Subcommittee it states that, “[p]oultry feed made of corn and soybean does not supply enough methionine to prevent deficiency symptoms that include curled toes, bare spots, and improper feathering.”<sup>34</sup> However, this claim of methionine “deficiency” is misleading and mischaracterizes the reasons why the organic poultry industry has relied so heavily on synthetic methionine to date. If the goal is to provide birds with a healthy life, appropriate growth and development, and freedom from stress, then low levels of dietary methionine may be sufficient, as has been suggested in the published literature on the issue (see next section).<sup>35</sup> However, much of the literature shows that the methionine levels sought by producers, spur maximum growth and productivity.<sup>36</sup> This emphasis on unnatural,

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<sup>34</sup> NOSB Livestock Subcommittee. (2015). “Sunset 2017 Review, Meeting 2 – Review, Livestock Substances §205.603, §205.604, DL-Methionine,” *National Organic Standards Board Proposals & Discussion Documents* (October): pp. 281-284, at 281.

<sup>35</sup> See e.g., Sundrum, A. et al. (2005). *Possibilities and limitations of protein supply in organic poultry and pig production*. University of Kassel, Germany: Organic Research Group (August); Rodenburg, B. (2011). “Preventing feather pecking in laying hens,” *World Poultry* (29 March). Available at: <http://www.worldpoultry.net/Layers/Housing/2011/3/Preventing-feather-pecking-in-laying-hens-WP008683W/>.

<sup>36</sup> See e.g., Goldstein, W. (2014). Letter from Dr. Walter Goldstein, the Mandaamin Institute, to the USDA National Organic Program (November 26); Saki, A.A. et al. (2012). “Estimates of Methionine and Sulfur Amino Acid Requirements for Laying Hens using Different Models,” *Brazilian Journal of Poultry Science*, 14(3) (July-September): pp. 159-232; Yodseranee, R. & C. Bunchasak. (2012). “Effects of dietary methionine source on productive

feed-induced growth and development through the use of a growth-promoting feed additive is detrimental to animal health and wellbeing, incompatible with organic principles, and is blatantly illegal under OFPA because growth promoters are prohibited.

Contrary to poultry industry claims that cannibalistic and severe feather pecking behaviors are attributable to methionine “deficiencies,” they are more directly linked to the incredible stress and agitation chickens experience in crowded houses with severely curtailed outdoor time. Research demonstrates that increased feather pecking results from overcrowding, unnatural lighting, no room to escape from aggressors, over-stimulation, and the myriad of other stressors and abrupt transitions experienced by the birds in their living environment.<sup>37</sup> A strong body of evidence supports the argument that those detrimental behaviors emanate from hen house practices that inhibit birds from expressing their natural foraging and feeding behaviors as well.<sup>38</sup>

### **Methionine levels desired by producers promote growth and productivity**

There is an “ideal” amount of methionine in the food poultry eat, which allows them to develop in alignment with their natural growth cycle. A Methionine Task Force member acknowledged this in a statement to the NOSB, which quoted National Research Council (NRC) recommended levels as “the minimal levels that [are] required not to optimize growth, not to make the birds grow faster, just to maintain the general productive activities of the different types of poultry.”<sup>39</sup> NRC recommended levels, referenced often by the organic poultry industry, range from 0.20-0.50 percent depending on the stage of growth.<sup>40</sup> However, multiple studies have demonstrated that increasing methionine levels in poultry diets above roughly 0.30 percent primarily drives increases in productivity (e.g., feed intake, feed efficiency) and growth, rather than health. Saki, et al. (2012), for example, showed that 0.31 percent methionine was required for *maximum* body weight gain, egg production, and egg weight, and a minimum feed conversion ratio at 22 weeks of age. Levels required for maximum growth and productivity at

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performance, blood chemical, and hematological profiles in broiler chickens under tropical conditions,” *Trop Anim Health Prod*, 44: pp. 1957-1963.

<sup>37</sup> Sundrum (2005), *supra* note 35; Pickett, H. (2009). *Controlling Feather Pecking & Cannibalism in Laying Hens Without Beak Trimming*, Petersfield, UK: Compassion in World Farming (October).

<sup>38</sup> Sundrum (2005) *supra* note 35. Citing Martin, G. (1991); Rodenburg (2011), *supra* note 35; Trudelle-Schwarz, R. (no date). “Cannibalism: Chicken Little Meets Hannibal Lector?” *Stories of Applied Animal Behavior*. Launchberg, K., & L. Shipley, (eds). University of Idaho and Washington State University. Available at: [http://www.webpages.uidaho.edu/range556/appl\\_behave/projects/chicken\\_cannibalism.html](http://www.webpages.uidaho.edu/range556/appl_behave/projects/chicken_cannibalism.html).

<sup>39</sup> NOSB. (2009). *Meetings of the National Organic Standards Board*, Washington, DC: USDA (November 3), at 248. Statement by Mark McCay, Coleman Natural Foods, member of the Methionine Task Force.

<sup>40</sup> NOSB Livestock Subcommittee. (2015). “Synthetic Methionine (MET) in Organic Poultry Feed Proposal,” (Revised January 31): pp. 193-206, at 196.

36 weeks of age were 0.60 percent.<sup>41</sup> Yodseranee & Bunchasak (2012) fed chicks diets that contained 0.24 percent methionine from 1-21 days and 0.28 percent from 22-25 days without synthetic methionine. Despite industry claims of higher mortality with “deficient” methionine levels, these chicks had lower mortality rates when compared with two groups of chicks with synthetic methionine added to their diets.<sup>42</sup> Chicks fed DL-methionine had higher final body weights, greater overall body weight gain, and a greater average daily gain,<sup>43</sup> further illustrating that levels beyond 0.30 percent are not necessary for bird wellbeing. They, instead, confer growth benefits desired by producers. The addition of synthetic methionine allows producers to cheaply and easily formulate feeds with a methionine content that enhances fast growth. That is why the organic poultry industry has consistently and vehemently resisted moves to remove it from the NL.

According to Dr. Walter Goldstein of the Mandaamin Institute, “[f]eeding synthetic methionine diets promotes animal productivity mainly by stimulating the production of a natural growth hormone (IGF-1) and a growth hormone receptor.”<sup>44</sup> By stimulating IGF-1, methionine serves to improve performance and breast muscle growth.<sup>45</sup> IGF-1 in chickens has also been shown to be a factor in regulating ovulation and may play a role in egg production and egg weight.<sup>46</sup> Lu et al. (2009) found that a high methionine diet resulted in the up-regulation of IGF-I mRNA expression in the breast muscle of two breeds of chickens, finding also that different strains had different responses to diet formulations.<sup>47</sup> Kita et al. (2002) found that dietary methionine increased serum IGF and body weight gain in chickens compared to diets with reduced methionine.<sup>48</sup> Similarly, Carew et al. (2003) found that, while not considered statistically significant, plasma IGF-1 levels were consistently higher in chicks given feed with higher methionine levels.<sup>49</sup>

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<sup>41</sup> Saki (2012), *supra* note 36.

<sup>42</sup> Yodseranee & Bunchasak (2012), *supra* note 36, at 1959, & at 1960 table 2.

<sup>43</sup> *Id.*

<sup>44</sup> Goldstein (2014), *supra* note 36, at 2.

<sup>45</sup> Wen, C., et al. (2013). “Methionine improves the performance and breast muscle growth of broilers with lower hatching weight by altering the expression of genes associated with the insulin-like growth factor-I signaling pathway,” *British Journal of Nutrition*, 111: pp. 201-206.

<sup>46</sup> Kim, M.H., D.S. Seo, & Y. Ko. (2004). “Relationship between egg productivity and insulin-like growth factor-1 genotypes in Korean native Ogol chickens,” *Poultry Science*, 83: pp. 1203-1208.

<sup>47</sup> Lu, F. Z., et al. (2009). “Investigation of the Insulin-like Growth Factor System in Breast Muscle during Embryonic and Postnatal Development in Langshan and Arbor Acres Chickens Subjected to Different Feeding Regimens,” *Asian-Australasian Journal of Animal Sciences*, 22(4): pp. 471-482.

<sup>48</sup> Kazumi K., et al. (2002). “Insulin-Like Growth Factor Binding Protein-2 Gene Expression Can Be Regulated by Diet Manipulation in Several Tissues of Young Chickens,” *J. Nutr.*, 132(2) (February 1): pp. 145-151.

<sup>49</sup> Carew, L. B., J.P. McMurtry, & F.A. Alster. (2003). “Effects of methionine deficiencies on plasma levels of thyroid hormones, insulin-like growth factors-I and-II, liver and body weights, and feed intake in growing chickens,” *Poultry Science*, 82(12): pp. 1932-1938.

Research has shown that higher dietary methionine leads to higher IGF-1 levels in chickens overall. However, while it is known that IGF-1 is present in chicken eggs, there is little existing research into whether higher levels of dietary methionine lead to subsequent increases of IGF-1 in eggs. Consumption of increased IGF-1 by humans has been linked to significant health impacts, such as cancers and hormonal effects, such as early puberty.<sup>50</sup> Goldstein and others have drawn parallels between DL-Methionine and recombinant bovine growth hormone (rBGH) in dairy cows.<sup>51</sup> Treating cows with rBGH to increase milk yields increases levels of IGF-1 in the cows and their milk by two to five times the normal concentration.<sup>52</sup> These significant adverse health effects have led other countries to prohibit the use of rBGH, including Canada, Australia, New Zealand, Japan, Israel, and the European Union. The experience with rBGH suggests that higher levels of IGF-1 may be present in the eggs of chickens fed higher levels of dietary methionine.

### **Natural methionine sources are available for feeds that support natural growth rates**

Plant sources of methionine include rice, rapeseed, soybean meal, sunflower seeds, safflower seeds, sesame seeds, flax, alfalfa, grass, corn, wheat, and peas. Methionine is also found in animal proteins, such as insects, whey, and other dairy products. These natural sources of methionine have been opposed by the organic poultry industry, which claims that they do not provide adequate methionine compared to DL-methionine. It has challenged the suitability and methionine content of each natural ingredient individually, but they have failed to comment on a combined use of several natural sources. As CFS has previously stated, insect proteins represent a growing market in the animal feed industry and a potential avenue for adding natural dietary methionine to feed. A comprehensive study of poultry diets conducted by the Food and Agriculture Organization of the United Nations (FAO) found that black soldier flies, silkworm, grasshoppers, crickets, cockroaches, and termites provide a suitable alternative to fish, soy or meat meal for poultry.<sup>53</sup>

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<sup>50</sup> DiVall, S.A., et al. (2010). "Divergent roles of growth factors in the GnRH regulation of puberty in mice," *Journal of Clinical Investigation*, 120(8):2900-2909; Robbins, J. (2010). "Female Infants Growing Breasts: Another Disaster From Hormones in Milk Production," *Huffington Post* (August 10). Available at:

[http://www.huffingtonpost.com/john-robbins/female-infants-growing-br\\_b\\_676402.html](http://www.huffingtonpost.com/john-robbins/female-infants-growing-br_b_676402.html).

<sup>51</sup> Carew (2003), *supra* note 49; Goldstein (2014), *supra* note 36.

<sup>52</sup> European Commission. (1999). *Report on Public Health Aspects of the Use of Bovine Somatotropin*, European Commission Scientific Committee on Veterinary Measures related to Public Health (issued March 15-16). Available at: [http://ec.europa.eu/food/fs/sc/scv/out19\\_en.html](http://ec.europa.eu/food/fs/sc/scv/out19_en.html).

<sup>53</sup> Van Huis, A. et al. (2013). "Insects as animal feed," in *Edible insects: future prospects for food and feed security*. Rome, Italy: United Nations Food and Agriculture Organization. Available at: <http://www.fao.org/docrep/018/i3253e/i3253e00.pdf>.

### **Alleged problems associated with the protein content of a natural methionine feeds**

The Livestock Subcommittee's proposal states, "...natural methionine can be obtained from high-methionine foods; however, these foods are also high in protein. High protein diets are not physiologically healthy for birds due to excess excretion of uric acid, which is broken down into water and ammonia in the environment."<sup>54</sup> While natural methionine sources in feeds may result in diets that are high in protein, CFS suspects that one reason behind the high protein content is that producers are still seeking methionine levels designed for maximum growth promotion rather than maintaining basic health and wellbeing. This is yet another example of where additional research is needed to assess feed formulations that use combinations of natural plant and insect sources of methionine that at the same time reduce overall crude protein content.

The organic poultry industry has consistently argued at the NOSB that waste management and pollution issues that arise from high protein diets necessitate the use of DL-methionine. However, this masks the real issue of organic poultry producers' failure to allow sufficient space per bird. This results in high levels of concentrated waste in hen houses, regardless of whether they are eating a high protein diet. CFS agrees with the Livestock Subcommittee's suggestion that other solutions to waste management that emerge with higher protein feeds "include lower animal densities; more frequent rotations; better manure storage, handling, and application techniques; use of enzymes; improved processing of the feed; and selection of more appropriate land and locations to graze and shelter animals."<sup>55</sup> Many of the strategies listed by the Subcommittee—particularly, lower stocking densities, frequent rotations, better manure management, and appropriate selection of land and locations—all embody the values, principles, and strong standards expected of organic poultry operations that have yet to be realized since the passage of OFPA. They are also some of the same management practices many large organic poultry producers have resisted and camouflaged with their introduction of "porches" instead of pasture and low profile doors that intentionally limit bird access to the outdoors.

### **Conclusion**

Removing DL-Methionine from the NL will create the much-needed drive to test and develop optimal non-synthetic feed formulations, as desired by many organic poultry producers that CFS has spoken with and who regret the unavailability of such feed. CFS strongly recommends prioritizing further research into ascertaining the ideal level of methionine required to maintain bird health and vitality. We also support further research into assessing the viability of using

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<sup>54</sup> NOSB Livestock Subcommittee. (2015), *supra* note 34, at 281.

<sup>55</sup> *Id.*, at 281-282.

insect magmeal as a protein source in organic poultry feeds by conducting feeding trials and scientifically testing feed formulations of combined natural ingredients to ascertain the optimum amino acid content needed.

**CFS strongly supports the Livestock Subcommittee’s proposal to remove methionine from the National List. This will send a strong market signal to organic poultry producers of the need to test and demand feeding trials to determine optimum sources and levels of natural, methionine in organic feeds.**

### **Parasiticides (Fenbendazole, Ivermectin, Moxidectin)**

Parasites can pose a greater challenge for livestock raised organically than those kept in confinement because pastured animals have more opportunities for exposure to parasites. But, at the same time, organic’s emphasis on holistic whole-herd health management provides a strong prophylaxis against a range of animal health problems. Such practices prioritize animal health, disease prevention, animal welfare, and sound nutrition, all of which help build animal vitality and greatly reduce susceptibility to illnesses and the subsequent need for parasiticides to control harmful organisms. On the other hand, the routine use of parasiticides may actually increase resistance to harmful organisms and potentially harm non-target, beneficial species.<sup>56</sup>

**CFS urges the NOSB to restrict the use of parasiticides in organic animal production to emergency use only, after all other strategies have been proven ineffective. We further recommend the removal of ivermectin from the NL due to its adverse environmental impacts.**

### **Parasiticides—a Last Resort**

The use of parasiticides should be allowed only as a last resort. As intended by the organic regulations, this restriction encourages animal producers to implement rigorous, whole-herd husbandry practices that substantially decrease their likelihood of contracting a debilitating illness or infection. A healthy animal can resist a worm infestation far better than animals that are poorly managed, stressed, and/or malnourished.

The regulations state that parasiticides are “allowed in emergency treatment for dairy and breeder stock when organic system plan-approved preventative management does not prevent infestation.”<sup>57</sup> However, they do not clearly define when emergency treatment with

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<sup>56</sup> Singh, A.V.. Ph.D. (no date). *Managing Internal Parasites in Organic Livestock*, Nova Scotia, Canada: Dalhousie University Organic Agriculture Centre of Canada. Available at:

[http://www.organiccentre.ca/NewspaperArticles/na\\_mgt\\_parasites.asp](http://www.organiccentre.ca/NewspaperArticles/na_mgt_parasites.asp).

<sup>57</sup> 7 CFR 205.603(a)(18).

parasiticides is acceptable. More guidance is needed to explain what constitutes “emergency treatment” and to discuss the range of available preventative and natural curative options.

CODEX Alimentarius, International Federation of Organic Agriculture Movements (IFOAM) and European, Japanese, standards, specify that parasiticides may be used when preventive practices have not been effective *and* when natural remedies have been used and found ineffective.<sup>58</sup> This clarification, while minimal, establishes the clear requirement that producers utilize natural remedies to address the infestation before resorting to parasiticides. These standards also establish that the period between ending treatment and marketing products from the treated animal must be twice the time required on the drug label in order for the products to be sold or labeled as organic.<sup>59</sup>

The Canadian Organic Standard requires emergency use to be determined under veterinary supervision,<sup>60</sup> but in the U.S. regulations only Fenbendazole requires veterinary oversight. The use of any parasiticides should be done under the recommendation and guidance of a veterinarian after obtaining fecal samples. This will ensure that producers are utilizing synthetic parasiticides only when absolutely necessary.

Strong guidance is also needed to ensure that, when producers implement the emergency use of parasiticides in a herd, certifiers require them to identify the necessary changes in their Organic System Plan (OSP) that would likely prevent their need in the future.

### **Guidance Needed for Individual Species, Preventative Practices and Natural Treatments**

Research is needed to identify species-specific susceptibility to emergency-level infestations, preventative strategies, and natural remedies in the following areas:

- **Grazing practices** that can positively affect the extent to which parasitic infestations occur. For example, preventative grazing strategies include planting legumes like alfalfa and birdsfoot trefoil or forbs like chicory in pastures rather than having grass-dominant pastures.<sup>61</sup> Young and small livestock pose greater challenges for controlling stomach worms, but good grazing management and attention to appropriate rations play a strong role in helping animals resist infestation.

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<sup>58</sup> NOSB Livestock Subcommittee. (2015). “Sunset 2017 Review, Meeting 2 – Review, Livestock Substances §205.603, §205.604, Parasiticides, Fenbendazole,” *National Organic Standards Board Proposals & Discussion Documents* (October): pp. 251-255, at 253.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*, at 252.

<sup>61</sup> Singh, *supra* note 56.



- **Animal density management** on pasture can serve to decrease exposure to parasites by reducing manure loading in a given area. Overloading grazing land with manure is directly correlated with an increase in parasites.
- **Maintenance of higher grazing heights** that result from optimum stocking rates reduces an animal's exposure to potentially harmful organisms.<sup>62</sup> Eighty percent of parasites live in in the first 5 centimeters (cm) above ground and lower grazing intensity serves to maintain forages at heights above 5cm.<sup>63</sup>
- **Minimization of animal contact with manure** allows animals to better resist or tolerate parasites.<sup>64</sup>
- **Natural and botanical alternatives to synthetic parasiticides** including cayenne, garlic, diatomaceous earth, wormwood, wild ginger, goosefoot, conifers (pine, spruce, fir), mustard, squash and pumpkin seeds, carrot and fennel seeds, and pyrethrum aid in the resistance to parasites.<sup>65</sup> The efficacy of these and other natural alternatives has not been sufficiently documented.

#### **Ivermectin should be removed from the NL**

Of the three approved parasticides, Ivermectin is considered to be the most harmful to soil life.<sup>66</sup> It is toxic to dung beetle larvae in manure, which are needed for efficient decomposition. As such, Ivermectin, does not meet the rigorous OFPA criteria of minimizing environmental impacts. Ivermectin is also in the same class as Moxidectin, which has been approved for emergency use in organic animal husbandry as a less toxic substitute to Ivermectin. Additionally, Moxidectin can effectively destroy heavy infestations of external parasites, such as lice, horn flies, cattle grubs, and mange mites, which are currently addressed with Ivermectin in emergency situations. The removal of Ivermectin from the NL must coincide with amending Moxidectin's current listing to add the allowance of external as well internal use for parasite control.

Treating infections with more than one antimicrobial in the same class, such as Ivermectin and Moxidectin, increases resistance to all drugs in that class. Therefore, when a producer has previously treated an infestation with a parasiticide in a certain class, a drug in a different class

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<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> Karreman, H.J., V.M.D. (2012). *Your Organic Dairy Herd Health Toolbox*. eXtension eOrganic Webinar (July 16)

<sup>66</sup> Livestock Subcommittee (2015), *supra* note 58, at 258.

must be used in a subsequent emergency as a way to prevent the development of resistance. If Ivermectin and Moxidectin are both listed, producers may use them back-to-back, posing significant risks to animals, the environment, and human health when common parasites develop resistance to this class of drug. CFS strongly recommends that only one parasiticide in a particular class is listed. Given Ivermectin's greater environmental concerns, it should be removed from the NL.

### **Conclusion**

A "zero tolerance" policy for parasites is not desirable because the presence of *some* parasites is beneficial in animals to help them build immunities.<sup>67</sup> Therefore, the objective of any healthy organic animal herd management strategy should be to manage them when needed rather than completely eradicate them, which is not likely to be possible over time.

**CFS urges the NOSB to restrict the use of parasiticides in organic animal production to emergency situations after all other strategies have been proven ineffective. We further urge the NOSB to remove Ivermectin from the NL and to clarify that Fenbendazole and Moxidectin use is restricted to emergency use only.**

## **Crops Subcommittee**

### **Arsenic**

Arsenic is on the NL as a prohibited non-synthetic substance in both crop and livestock production. **Due to the significant environmental and human health concerns associated with agricultural uses of arsenic, it is imperative that the NOSB vote to retain it on the NL as a prohibited non-synthetic.**

Because arsenic is an element, it neither degrades nor disappears. It is only redistributed in the environment in its various forms. The U.S. Environmental Protection Agency (EPA) has taken significant steps to withdraw approvals for most uses of arsenic-based pesticides in order to reduce public exposure. In the early 2000s, EPA released multiple risk assessments for arsenical pesticides determining that the use of arsenic pesticides contributed to increased arsenic levels in drinking water.<sup>68</sup> Their presence in drinking water "results in a variety of adverse health effects including diabetes mellitus, cardiovascular disease, renal disease, vascular skin lesions

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<sup>67</sup> Singh, *supra* note 56.

<sup>68</sup> U.S. Environmental Protection Agency. (2001). *Re-Registration Eligibility Document for Sodium and Calcium Salts of Methanearsonic Acid (MSMA/DSMA/CAMA)*, Washington, DC: U.S. EPA (September 24). Available at: <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2006-0201-0010>.

and cancer, and lung, liver and bladder cancer.”<sup>69</sup> The assessment also found that herbicidal use of arsenicals “will contribute to background levels of arsenic over time...There, this constant contribution of arsenic could cause higher residues to be found not only in the registered crop, but also in crops that are rotated.”<sup>70</sup> In 2009, EPA terminated registrations for all remaining uses of the arsenicals calcium acid methanearsonate (CAMA), disodium methanearsonate (DSMA), and cacodylic acid and its sodium salt, as well as most uses for monosodium methanearsonate (MSMA).<sup>71</sup>

Arsenic is found in both organic and inorganic forms. The latter are classified as human carcinogens, but recent studies have found that organic forms of arsenic may also be toxic to humans.<sup>72</sup> Organic arsenic is converted to inorganic forms during digestion, which are readily absorbed from the gastrointestinal tract.<sup>73</sup> For adults not exposed to arsenic compounds in the workplace, ingestion via the diet is the main route of exposure.<sup>74</sup> Arsenic is particularly hazardous to children, infants, and fetuses, and studies have shown that exposure in utero can disrupt endocrine and reproductive organs. Long-term exposure has been associated with skin nodules, vessel disease, and heightened risk of high blood pressure, heart disease, and diabetes.<sup>75</sup> Chronic, low-level arsenic exposure has been associated with: skin cancer,<sup>76</sup> respiratory cancers,<sup>77</sup> bladder cancer,<sup>78</sup> increased mortality from hypertensive heart disease,

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<sup>69</sup> Locke, D. et al. (2006). *ORGANIC ARSENICALS: HED Combined Chapter of the Reregistration Eligibility Decision Document (RED)*, Washington, DC: U.S. EPA (March 29), at 38. Available at: <http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2006-0201-0004>.

<sup>70</sup> *Id.*, at 67.

<sup>71</sup> U.S. EPA. (2009). “Organic Arsenicals; Notice of Receipt of Requests to Voluntarily Cancel or to Amend to Terminate Uses of Certain Pesticide Registrations,” *74 Fed. Reg 32596, 32604* (July 8).

<sup>72</sup> Lasky, T. et al. (2004). “Mean Total Arsenic Concentrations in Chicken 1989-2000 and Estimated Exposures for Consumers of Chicken,” *Environmental Health Perspectives*, *112(1)* (January): pp. 18-21.

<sup>73</sup> Morgan, A. (ed.). (2001). *Chapter 3 Exposure and Health Effects*. Prepared by C. Abernathy, Office of Water, US Environmental Protection Agency (January).

<sup>74</sup> *Id.*

<sup>75</sup> National Research Council et al. (2001). *Arsenic in Drinking Water: 2001 Update*. Washington, DC: The National Academies Press. Available at: [http://www.nap.edu/catalog.php?record\\_id=10194](http://www.nap.edu/catalog.php?record_id=10194); Mead, M.N. (2005). “Arsenic: In Search of an Antidote to a Global Poison,” *Envtl. Health Persp.*, *113* (2005): pp. A378-A386.

<sup>76</sup> Hsueh, Y-M et al. (1995). “Incidence of Internal Cancers and Ingested Inorganic Arsenic: A Seven-Year Follow-up Study in Taiwan,” *Cancer Research*, *55* (March 15): pp. 1296-1300.

<sup>77</sup> Cantor, K.P. & J.H. Lubin. (2007). “Arsenic, Internal Cancers, and Issues of Inference from Studies of Low Level Exposures in Human Populations,” *Toxicol Appl Pharmacol.*, *222(3)* (August 1): pp. 252-257.

<sup>78</sup> Kurttio, P. et al. (1999). “Arsenic Concentrations in Well Water and Risk of Bladder and Kidney Cancer in Finland,” *Environmental Health Perspectives*, *107(9)* (September): pp. 705-710.

nephritis and nephrosis, prostate cancer,<sup>79</sup> late fetal mortality, neonatal mortality, post-natal mortality,<sup>80</sup> and cytogenetic damage.<sup>81</sup>

**CFS urges NOSB to retain arsenic on the NL as a prohibited non-synthetic substance.**

### **Eliminate the Incentive to Convert Native Ecosystems into Organic Cropland**

In order for land to be transitioned to organic, OFPA requires that synthetic pesticides not on the NL must not be applied for three years. Not surprisingly, land that has been fallow or not previously planted or plowed has become an easy target for those wanting to plant organic crops without having to wait the requisite three-year transition period. The problem with this strategy is that native ecosystems can be the target of these plant-quick schemes, which is not a desirable outcome of the organic transition regulations.

**CFS urges the NOSB to add the issue of eliminating incentives for converting native ecosystems into cropland for organic production to their work plan. We further urge the Board to collaborate with conservation experts in the development of guidance, leading to rulemaking, to prevent and discourage such practices from taking place on a wide-scale.**

### **Copper Products**

CFS appreciates the fact that copper has been used for centuries in agriculture and livestock rearing and that it still remains an important tool for organic farmers to prevent nutrient deficiencies in soil and to control common plant diseases. At the same time, we cannot lose sight of the fact that copper products are toxic and the breakdown product, elemental copper, persists in the environment. Excessive use of copper products poses a risk to non-target plants and animals. Copper can be toxic to wildlife, including birds and mammals,<sup>82</sup> aquatic life,<sup>83</sup> to

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<sup>79</sup> Lewis, D.R. et al. (1999). "Drinking Water Arsenic in Utah: A Cohort Mortality Study," *Environmental Health Perspectives*, 107(5) (May): pp. 359-365.

<sup>80</sup> Hopenhayn-Rich, C. et al. (2000). "Chronic Arsenic Exposure and Risk of Infant Mortality in Two Areas of Chile," *Environmental Health Perspectives*, 108(7) (July): pp. 667-673.

<sup>81</sup> Gonshebbatt, M.E. et al. (1997). "Cytogenetic effects in human exposure to arsenic," *Mutation Research*, 386: pp. 219-228; Lasky, *supra* note 72.

<sup>82</sup> Edwards, D. (2006). *Reregistration Eligibility Decision (RED) for Coppers*. U.S. Environmental Protection Agency, EPA 738-R-06-020 (July): pp. 48-52.

<sup>83</sup> Boyd, C.E. & L. Massaut. (1999). "Risks associated with the use of chemicals in pond aquaculture," *Aquacultural Engineering*, 20: pp. 113-132; Baldwin, D.H., J. Sandahl, J.S. Labenia & N.L. Scholz. (2003). "Sublethal Effects of Copper on Coho Salmon: Impact on Nonoverlapping Receptor Pathways in the Peripheral Olfactory Nervous System," *Environmental Toxicology and Chemistry*, 22(10): pp. 2266-2274. See also, literature review in: Kiaune, L.

the workers who apply them,<sup>84</sup> and to those who ingest, breathe or come into contact with copper.<sup>85</sup> When copper builds up to toxic levels in soils, it can be detrimental to earthworms and other beneficial soil organisms<sup>86</sup> and suppress nitrogen fixation rates by Rhizobium.<sup>87</sup>

Due to the toxicity of accumulated copper in soil and its aquatic toxicity, it is imperative that the NOSB support organic farmers in reducing its use and recommend that USDA allocate funds to assist in the development of alternative management practices. In this vein, **CFS supports the recommendation to relist copper with the caveat that a robust research strategy must be recommended by the NOSB to the NOP and that urgent funding is sought to ensure that the research is carried out.**

### **Limited copper use is necessary in the short-term**

Copper products can be less toxic than other types of disease control materials, when used properly. And, at this moment in time, they may be the only material available to organic growers to combat some serious crop diseases, such as late blight in tomatoes and potatoes, which can cause complete crop failure. However, since copper is an elemental product and cannot decompose, it can accumulate to toxic levels in the soil over time. In the long run, and in the spirit of continuous improvement that remains at the core of OFPA, alternatives must be found to avoid the long-lasting adverse effects caused from the application of copper for disease control. Given the need for the NOSB to evaluate and balance these concerns, CFS is mindful of the fact that at this time alternatives are not yet available to address the many combinations of diseases and affected crops for which copper may be the only control available.

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& N. Singhasemanon. (2011). "Pesticidal Copper (I) Oxide: Environmental Fate and Aquatic Toxicity," in: D.M. Whitacre (ed.), *Reviews of Environmental Contamination and Toxicology*, 213: pp. 1-26.

<sup>84</sup> Organic Materials Review Institute. (2001). "Direct hazards to applicators are the major concern," *Copper Sulfate* (September 21), at 5, line 243.

<sup>85</sup> Edwards (2006), *supra* note 82.

<sup>86</sup> Spurgeon, D.J., S.P. Hopkin, & D.T. Jones. (1992). "Effects of Cadmium, Copper, Lead and Zinc on Growth, Reproduction and Survival of the Earthworm *Eisenia fetida* (SAVIGNY): Assessing the Environmental Impact of Point-Source Metal Contamination in Terrestrial Ecosystems," *Environmental Pollution*, 84: pp. 123-130; Brandt, K.K. et al. (2006). "Decreased abundance and diversity of culturable *Pseudomonas* spp. Populations with increasing copper exposure in the sugar beet rhizosphere," *Federation of European Microbiological Societies*, 56: pp. 281-291; Van-Zweitan, L., G. Merrington, & M. Van-Zweitan. (2004). "Review of impacts on soil biota caused by copper residues from fungicide application," *SuperSoil 2004: 3<sup>rd</sup> Australian New Zealand Soils Conference*, University of Sydney, Australia (December 5-9).

<sup>87</sup> Obbard, J.P. & K.C. Jones. (2001). "Measurement of symbiotic nitrogen-fixation in leguminous host-plants 1320 grown in heavy metal-contaminated soils amended with sewage sludge," *Environmental Pollution*, 111: pp. 311-320.

### **Worker health and safety must be a priority**

Despite the NOSB's recommendation in 2011 that the NOP provide guidance for worker health and safety at organic operations where copper products are applied, this has not happened. We strongly urge the NOSB to remind the NOP of the need to produce guidance on this important issue of worker protection. In addition, we urge the NOSB to include language for protecting workers in its relisting of copper.

### **Proposed next steps**

As the next step in this Sunset process, we urge the NOSB, in conjunction with its technical reviewers, to document the combinations of crops and diseases for which organic farmers currently find copper to be a necessary part of their disease control systems. The outcome of that research should then provide a solid basis for discussion about alternative disease control strategies that do not rely on the use of copper products.

We also recommend that the Board survey the most recent published literature on the health and environmental effects of copper to assess particularly vulnerable communities and ecosystems that must be protected from exposure. In the absence of this information, it is impossible for the NOSB to make sound recommendations based upon the OFPA criteria of protecting human and environmental health.

We urge the NOSB to review this information, once compiled, and to use these findings to craft more detailed annotations for copper sulfate and fixed coppers that include a limited list of acceptable uses. This research will have the added effect of aiding growers in identifying viable alternatives that can meet their needs and in developing plans to reduce or phase-out copper products in their operations. It will also help interested researchers in tailoring their research projects to better meet the needs of the organic farming community.

NOSB should clarify language in the annotations for copper products that supports farmers in using copper products in a manner that does not create a toxic build-up of copper in their soil. Identifying the products available that will control targeted pests with the least amount of elemental copper is essential. Margaret McGrath at Cornell, for example, has investigated different copper fungicides and analyzed the percentage of metallic copper contained.<sup>88</sup> These range from 1.8 percent to 75 percent. Research on alternative copper product formulations has been conducted in the EU as well.

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<sup>88</sup> McGrath, M. (2013). *Copper Fungicides for Organic Disease Management in Vegetables*. New York: Cornell Cooperative Extension. Available at: [http://cvp.cce.cornell.edu/submission.php?id=151&crumb=crops|crops|squash - summer|crop\\*31](http://cvp.cce.cornell.edu/submission.php?id=151&crumb=crops|crops|squash - summer|crop*31).

**CFS cautiously supports the relisting of copper, with the caveat that a robust research strategy must be recommended by the NOSB to the NOP and that urgent funding is sought to ensure that the research is carried out.**

## **Biodegradable Bioplastic Mulches**

CFS has previously expressed strong support for the NOP's Biodegradable Biobased Film Policy Memo (January 22, 2015), which states that, "[b]iodegradable mulch film that contains non-biobased synthetic polymer feedstocks, such as petrochemical resins, does not comply with USDA organic regulations."<sup>89</sup> Allowing anything less than a 100 percent renewable feedstock would undermine the intent of the NOSB recommendations.

In 2012, CFS opposed the NOSB recommendation to allow the use of biodegradable mulch film in organic production because our research indicated that no film on the market could meet the organic standard. CFS recommended at that time that, "the NOSB neither adopt the petition nor the proposed annotation until adequate research, data, and biodegradable mulch products exist to ensure that the use of the product is consistent with the spirit and intent of OFPA."<sup>90</sup> Nonetheless, the NOSB chose to recommend that the NOP promulgate rules governing biobased mulch, and the Program quickly followed suit in drafting and finalizing regulations.

The Organic Materials Review Institute's (OMRI) recent assessment of all available materials demonstrated that there are still no materials compliant with the NOP's rule because they all contain petrochemical-based feedstocks, which are not allowed in organic. At the April 2015 NOSB meeting in La Jolla, CA, the NOP Deputy Administrator suggested that the Board may want to revisit the biobased mulch issue in light of the unavailability of products that meet the standards. CFS is concerned about the objectives of such a revisit. Certainly, not every product or production system can meet the high bar of the U.S. organic program and it may take time for some production systems to find ways to become compliant with the organic standards. This is how it should be with respect to organic and no effort should be made to lower the standards so they comport with existing products or production systems. Since the biobased mulch rule has already been written and finalized to uphold the high standards of organic, any effort to change the rule to conform with the products that the Bioplastic Mulch Industry (BPI) currently produces for conventional farmers cannot be justified. It is incumbent upon the NOP

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<sup>89</sup> McEvoy, M.V. (2015). "Biodegradable Biobased Mulch Film," *USDA National Organic Program Policy Memorandum 15-1* (January 22). Available at: <http://www.ams.usda.gov/sites/default/files/media/NOP-PM-15-1-BiodegradableMulch.pdf>.

<sup>90</sup> Center for Food Safety. (2012). "Center for Food Safety Comments to the National Organic Standards Board," *Docket No. AMS-NOP-12-0040-0001* (September 24), at 10.

to facilitate research into the development of biobased mulch products that do meet the high bar set by the existing rule.

It is in this vein that CFS had requested NOP support for Dr. Lisa DeVetter's Organic Agriculture Research and Extension Initiative (OREI) planning grant proposal: *Compostable and Biodegradable Mulches in Organic Berry Production*. This Washington State University-based project would serve to advance our knowledge about the types of biobased mulches that can be used in organic farming systems, and to identify those that may already be in the developmental stages of production. It would also add invaluable knowledge about the biodegradation process in organic soils and what steps farmers need to take to ensure that their production systems comply with organic regulations on biodegradation when they use biobased mulch. This project would advance efforts to eliminate petrochemical plastics from organic berry production in particular, which would serve to further reduce the organic industry's ecological footprint. Unfortunately, that grant proposal was not funded, presumably because the needed for such research may have not been apparent in the absence of NOP support.

**CFS strongly supports the NOP's January 22<sup>nd</sup> Policy Memo which explains that the high bar established in the biodegradable biobased mulch rule. We urge the NOSB to reject efforts to revisit or reconsider the rule, even though no biobased mulch currently on the market meets the standard. Instead, we urge the NOSB to support the funding of research into the development of biobased, biodegradable mulch products that could meet the high bar of organic integrity.**

## Hydroponics

The original drafters of OFPA understood the importance and need for organic systems of production to promote ecological balance and conserve biodiversity.<sup>91</sup> Foundational to such agricultural systems is the management and enhancement of organic matter and the diverse populations of organisms that inhabit thriving soil ecosystems.

In contrast to the ecologically complex soil systems in which organic farming takes place, and as envisioned by the creators of OFPA, many soilless systems, such as hydroponics, reduce crop production to a simplified feeding system of "required" nutrients in an inert, soilless growing medium. By purposefully eliminating the ecological complexity of natural production systems,

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<sup>91</sup> 7 C.F.R. §205.2



hydroponic systems do not fit the definition of “organic production” set out in the organic regulations.<sup>92</sup>

Certification of hydroponic production systems, as currently sanctioned by the NOP, fails to take into account the essential functions of complex soil ecosystems in organic production and the role of organic farmers as stewards of soil ecology. Moreover, existing inconsistencies among certifiers with respect to certifying hydroponic systems diminishes the value of the organic label and reflects poorly on the organic industry as a whole. While some certify hydroponic systems that only use approved materials on the NL, other certifiers believe that the maintenance of ecological balance and biodiversity in soil is essential to a truly organic system of production. They do not certify hydroponics.

### **Hydroponic and Aquaponic Task Force Must Support NOSB Recommendation**

This year, the NOSB and the NOP established a Hydroponic and Aquaponic Task Force, intended to provide clarification regarding the original 2010 NOSB recommendation. CFS is deeply concerned that two-thirds of the members disagrees with the NOSB recommendation, even though much of the organic community supports it. The NOSB must ensure that the task force adheres to this objective of clarifying the recommendation. It is also incumbent upon the NOP to publicly disclose which issue(s) in the NOSB’s recommendation need further clarification. Additionally, the task force should be required to present a preliminary report of its findings at the NOSB meeting in Spring 2016 that explains the work they have been doing to clarify the original recommendation.

### **Conclusion**

**Until a clear definition and guidelines have been provided by the NOP, based on the NOSB’s 2010 recommendation, certifiers must not be allowed to certify hydroponic systems. CFS urges the NOP to write “NOP Instructions to Certifiers,” as an interim measure, leading to Rulemaking. The instruction should include clear criteria that follow the NOSB 2010 recommendation, and that adhere to the definition of organic production presented in the Rule.**

### **Inerts**

#### **Inerts Must be Reviewed by the NOSB**

As provided under OFPA, active ingredients in pesticide products allowed for use in organic production have been carefully screened to ensure that they meet the requirements of the law.

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<sup>92</sup> 7 C.F.R. §205.2

Due to the thorough NOSB evaluation and public scrutiny in written and oral comments, active ingredients allowed in organic agriculture present little hazards to people and ecosystems, from their manufacture, use, and disposal. **It is CFS's position that the NOSB must review "inerts" in the same transparent manner, according to OFPA criteria.**

So-called "inert" ingredients have not received the same level of scrutiny as active ingredients in pesticides to ensure that they meet OFPA criteria. Reliance on the pesticide registration process of inert ingredients by the U.S. Environmental Protection Agency (EPA) does not ensure that OFPA standards are met, particularly since the Agency's reviews and allowances under the are based on different and often incompatible standards. In addition, since most pesticide product formulations are composed mainly of "inert" ingredients—90 percent or more—the most hazardous ingredients in pesticides used in organic production may actually be the so-called "inert" ingredients.

CFS has supported the NOSB's plan to review inerts in clusters of related chemicals. However, we oppose the Crops Subcommittee's current proposal to replace an NOSB review of "inerts" with an EPA review under its Safer Chemical Ingredient List (SCIL), without any independent NOSB review.

CFS recommends that the NOSB immediately undertake to implement its unanimously adopted 2012 recommendation—to fully and transparently review synthetic materials identified as "inert" or "other ingredients" in pesticide products used in organic production systems, in accordance with OFPA criteria. This requires that the following steps are taken:

1. NOP and the Agricultural Marketing Service (AMS) issue a notification to manufacturers and users of pesticides with a request for information on current inert ingredients in use, as it publicly stated that it would do. (See NOSB of the October 2012 meeting, pages 454-459.)
2. Establish a strict timeline for review of "inerts," with expiration dates to ensure that the process keeps on track.
3. If a particular formulator anticipates that certain "inert" ingredients will not be listed, and considers those materials "essential," a case must be made to the NOSB and NOP and/or request a longer phase-out period in writing. Expiration dates are designed to move along the review process and they are expected to be replaced by their listing/delisting on the NL. Transparent conversations with manufacturers to prioritize review of those potentially allowable inerts should be encouraged.

4. The NOSB must immediately begin the review of known “inerts” used in organic production formerly listed on EPA’s List 4A and List 4B in conjunction with the EPA’s Safer Choice Program.
5. As materials are reviewed, they must be proposed for relisting, approved by the NOSB, and added to the NL via a Federal Register notice.

The intent of this review process is to identify and weed out those toxic chemicals that do not belong in organic production systems. Creating workable timeframes that do not leave organic farmers without necessary tools will incentivize this change.

**CFS opposes the Crops Subcommittee’s proposal to depend upon EPA’s SCIL instead of a legally-mandated, NOSB materials review process.**

**We support the Subcommittee’s proposal to remove nonylphenol ethoxylates (alkylphenol ethoxylates) or NPEs/APEs from the list of “inerts” allowed in organic production in light of their toxic and endocrine-disrupting effects.**

## **Materials Subcommittee**

### **GE Contamination Prevention**

CFS agrees with the NOSB Materials Subcommittee that “it is imperative that organic producers and handlers have strategies and plans to prevent GMO contamination.” But, there are three indisputable facts that make it impossible for contamination from genetically engineered (GE) seeds and crops to be prevented from organic side of the fence alone:

1. Trespass from organisms is oftentimes impossible to control or contain.
2. Transgenes cannot be recalled once released into the environment.<sup>93</sup>
3. GE crops and seeds can travel for miles, over and under fences, breaching property boundaries, and cross-pollinating with non-GE, wild, and organic crops.

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<sup>93</sup> Marvier, M. & R. C. Van Acker. (2005). “Can Transgenes be kept on a Leash?,” *Frontiers in Ecology and the Environment*, 3(2): pp. 96-106.; Altieri, M. A. (2005). “The Myth of Coexistence: Why Transgenic Crops are not Compatible with Agroecologically Based Systems of Production,” *Bulletin of Science, Technology & Society*, 25(4): pp. 361-371.

The harsh consequences of these three facts are that planting GE crops can threaten livelihoods, affect critical food supply and demand, and impose an unfair financial burden on farmers seeking to satisfy discernible markets for organic seeds and food. In all instances, organic farmers and food producers are the big losers. They are neither legally entitled to receive a dime of compensation, nor do they have any immediate legal recourse available to them. Clearly, urgent action must be taken on the GE side of the fence to prevent GE contamination of organic and to preserve organic markets, integrity, and consumer confidence. CFS urges the NOSB to formally request that the NOP take a more proactive role in advocating on behalf of the burgeoning organic sector for the establishment of mandatory GE contamination prevention measures. To that end **CFS recommends that the Secretary of Agriculture and the NOP Deputy Administrator sign a Memorandum of Understanding (MOU) in which they jointly agree to require that GE growers and GE patent holders adopt mandatory contamination prevention measures.**

### **Organic Producers Unfairly Shoulder the Contamination Prevention Burden**

It is no secret that the organic sector continues to shoulder far more than its fair share of the burden to prevent GE contamination. As it stands, huge gaps exist in the regulatory framework for GE crop development, which allows the commercialization of GE crops even when notable agronomic, environmental, and socioeconomic risks are clearly present. This regulatory pitfall has been made it abundantly clear with the deregulation of both GE alfalfa and GE sugar beets because their well-known and anticipated promiscuity has already led to contamination incidents.

Organic farmers know all too well that their crops can become GE contaminated as pollen and seeds can be transported by humans, wildlife, and domesticated animals, or drift miles away from their original planting location. Entire shipments of organic food from the U.S. and elsewhere continue to be rejected around the world, due to unregulated GE contamination.<sup>94</sup> Lawsuits from Canada to Australia<sup>95</sup> demonstrate the seriousness of the contamination problem and the high stakes involved on all sides. But, this represents just the tip of the iceberg. Without mandatory GE contamination prevention measures in place, organic farmers

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<sup>94</sup> Greenpeace International & GeneWatch UK. (2014). GM Contamination Register. Available at: <http://www.gmcontaminationregister.org>.

<sup>95</sup> Coopes, A. (2014). "Closely-watched GM farm case begins in Australia," *Phys.org* (February 11); Goodman, A. (2010). "Percy Schmeiser vs Monsanto: The Story of a Canadian Farmer's Fight to Defend the Rights of Farmers and the Future of Seeds," *Democracy Now!* (September 17). Available at: [http://www.democracynow.org/2010/9/17/percy\\_schmeiser\\_vs\\_monsanto\\_the\\_story](http://www.democracynow.org/2010/9/17/percy_schmeiser_vs_monsanto_the_story).

face real-life economic risks with little recourse to protect their businesses.<sup>96</sup> Prospects of contamination threaten livelihoods, trading partnerships, farmer reputation, consumer trust, and the ability of farmers and food producers to confidently supply organic markets. Even USDA admits that is the case.<sup>97</sup>

As CFS and the NOSB agree, issues surrounding GE contamination of organic pivot around larger issues of fair farming for all that extend well beyond the purview of the Subcommittee, NOSB, and even the NOP. It is impossible to address all the issues that impinge upon GE contamination without addressing the larger agricultural context within which organic agriculture operates and organic policymaking is situated. As long as the NOP and NOSB fail to successfully engage the applicable USDA agencies and the Secretary of Agriculture on the need to confront GE contamination of organic, there is little else that organic producers can do to prevent contamination beyond the steps they are already taking. In the absence of mandatory regulations that require owners and growers of GE crops and seeds to prevent contamination, organic will continue to suffer losses and those losses are likely to increase over time and decrease consumer confidence in organic.

### **USDA’S So Called “Co-Existence Policy” Utterly Fails Organic Producers**

USDA’s toothless “coexistence” policy lies at the heart of the GE contamination problem for organic farmers. It is based upon the unfounded assumption that all forms of agriculture can be grown across the country, side by side, without any of them adversely affecting the others. That simply is not the case when it comes to GE agriculture. This *lasses-faire* “coexistence” policy has tacitly sanctioned GE seeds, pollen, and plants to contaminate our nation’s farms without restraint or recourse. It has exacerbated market problems for organic crop and seed producers and continues to threaten their livelihoods. USDA’s “coexistence” policy has served to further perpetuate and legitimize GE contamination by falsely naming it “coexistence.”

GE contamination of organic represents the utter failure of USDA’s “coexistence” strategy to protect all types of farming. Without USDA-imposed restrictions and limitations on GE, organic growers remain largely unprotected from GE contamination from crops and seeds that are being field-tested or that have been deregulated. This lack of protection ensues even despite the good faith efforts of organic farmers and the associated expenses they incur to protect the integrity of their crops. Moreover, because USDA has never mandated restrictions

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<sup>96</sup> Food & Water Watch. (2014). “Organic Farmers Pay the Price for GMO Contamination,” *Issue Brief* (March). Available at: <http://www.foodandwaterwatch.org/news/survey-organic-farmers-pay-price-gmo-contamination>.

<sup>97</sup> USDA Advisory Committee on Biotechnology and 21<sup>st</sup> Century Agriculture. (2012). *Enhancing Coexistence: A Report of the AC21 to the Secretary of Agriculture* (November 19). Available at:

on any GE crop, there is little empirical evidence upon which to base the best practices for preventing contamination.

The Secretary of Agriculture possesses expansive authority under the Plant Protection Act (PPA), to broadly assess economic, environmental, public health, agricultural, and other impacts of GE. USDA can require on-going regulation of GE crops if the impacts directly or indirectly cause injury or harm to other agricultural production systems and markets. It can also assign responsibility and liability for GE contamination prevention to the offending technology owners, where it belongs. As such, USDA authority exists to prevent GE contamination and to compensate contaminated farmers. Now, all that is needed is the will to do so and a comprehensive plan of action.

Unless and until GE contamination is demonstrably prevented through mandatory regulations, it is imperative that the USDA institute an immediate moratorium on the approval and planting of all new GE crops. For crops already in unrestricted commercial production, it is incumbent upon USDA to assess where contamination occurs, require restrictions to end the contamination, and assign liability to the GE patent holder. This would help ensure that those who choose to *not* use GE technology can freely do so without the threat of contamination or suffering market and livelihood losses. It would also go a long way in maintaining the integrity of the USDA organic seal and in assuring organic consumers that the government is receptive to their desire to eat organic food, free from GE contaminants.

CFS urges the NOSB take full advantage of its role as advisor to the USDA to communicate to the Secretary the urgent need to mandate field-based prevention practices and a mechanism to compensate organic operations when prevention measures fail. Such compensation must identify the liable parties and encompass social harms, economic harms and restitution costs. CFS supports the development of a compensation mechanism that allows contaminated farmers to recoup their losses from the transgenic pollution in strict accordance with the “polluter pay principle.” This must be the one of the first steps taken to protect organic growers along with mandating the establishment of a USDA-driven national *GE Pollution Prevention Plan*.

It is also incumbent upon the NOSB to explore how/if the USDA’s AC21 initiative can provide comprehensive data on the state of contamination of organic, including in seed, and to ascertain what how it plans to address this urgent issue of concern for organic growers.

### **USDA-Mandated GE Contamination Prevention Measures Urgently Needed**

The organic food industry already shoulders a large and unfair burden to prevent

contamination from a technology that provides them with no benefits and only costs. It is time for the USDA to step up to the plate and require those who profit from GE agriculture to demonstrate how contamination prevention is possible. To that end, **CFS recommends that the Secretary of Agriculture and the NOP Deputy Administrator sign a Memorandum of Understanding (MOU) in which they jointly agree to require that GE growers and GE patent holders adopt mandatory contamination prevention measures. Moreover, until mandatory GE contamination prevention measures are in place that demonstrate that GE contamination prevention is possible, CFS calls for a moratorium on the approval or deregulation of any new GE crops.**

USDA-mandated GE contamination prevention measures are essential to the continuing success of organic agriculture and to preserving biological diversity and food security. Anything short of pulling in the reins on GE agriculture is a disservice to the fair farming principles that the USDA is entrusted by the nation to uphold.

## **Research Priorities**

### **Organic Strawberry Nursery Research**

There is an urgent need for the establishment of commercial-scale organic strawberry nurseries to supply organic transplants to organic strawberry fruit growers. Currently, organic strawberry growers have had no other choice than to purchase transplants from conventional nurseries. Such nurseries fumigate their soils with the notorious, ozone-depleting chemical, methyl bromide, and other synthetic toxic chemicals such as various combinations of 1,3-dichloropropene (a carcinogen) and chloropicrin (a poisonous gas used in chemical warfare). Certainly, these are not the types of chemicals that either organic strawberry growers or organic consumers expect to be used in organic production systems, even at the nursery level.

Although methyl bromide has been outlawed for use by industrialized nations under the United Nation's Montreal Protocol since 2005, the U.S. has applied for critical use exemptions (CUE) for the past ten years on behalf of the strawberry industry. All other industrialized countries, with the exception of Canada and Australia, have completely abandoned its use. Within the next few years, CUEs for methyl bromide will cease to exist and organic solutions could provide a viable option for both organic and conventional strawberry growers.

Government-funded alternatives to methyl bromide have mostly focused on finding other toxic chemical replacements, with few exceptions. Yet, if the U.S. had prioritized the exploration of organic alternatives when it first signed the Montreal Protocol, we would not be in the situation we are today—stuck on the pesticide treadmill with no other options for organic farmers. Some

promising alternatives are being developed, however, beginning with fruit field applications but funding is sorely needed to support organic nursery production.

In conjunction with University of California, Santa Cruz, farmer-led field trials of a natural soil treatment process called anaerobic soil disinfestation (ASD) has been conducted to combat the soil-borne pathogens for which methyl bromide has traditionally been the solution. ASD creates anaerobic conditions that are toxic to pathogens by incorporating a carbon source like rice bran and/or molasses into topsoil, covering it with a tarp, and flooding plant beds with water. It has been effective in suppressing soil pathogens while maintaining yields comparable to those of fumigated strawberry fields.<sup>98</sup> An ASD nursery proposal to the California Strawberry Commission was denied, seemingly due to the failure of the Commission to understand the efficacy of the project. Funds are sorely needed to conduct field tests at the nursery level to help facilitate the development of organic transplants.

Also, for the past two and a half years, CFS has been bringing together organic strawberry stakeholders to collaboratively develop alternatives to toxic fumigation at nurseries, as a special project of its *Organic and Beyond Program*. Pioneer growers in the Santa Cruz and San Benito Counties teamed up with a nursery in Arroyo Grande, CA, to test four University of California strawberry varieties, during the fall 2014 planting season. The nursery grew plug plants in a soilless medium, grown from meristem, which organic fruit growers then planted in their fields. Field trial results of the organic transplants are currently being assessed and look promising. Unfortunately, the nursery producing the plug plants withdrew from the project, due to lack of funds.

**CFS urges the NOSB to recommend to the NOP and Secretary of Agriculture that requests for proposals (RFPs) are solicited to support the funding of field research on organic strawberry transplant production.**

### **Methionine**

CFS strongly recommends prioritizing research into ascertaining the ideal level of methionine required to maintain bird health and vitality. This necessitates assessing the viability of using the full range of available insects as a protein source in organic poultry feeds. Feeding trials and scientifically testing feed formulations of combined natural ingredients are essential to ascertaining the optimum amino acid content needed to maintain bird health and wellbeing.

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<sup>98</sup> Shennan, C. et al. (2014). *Non-Fumigant Approaches for Controlling Fusarium Wilt and Charcoal Rot of Strawberry*, unpublished data from University of California, Santa Cruz.



Research is also needed to assess feed formulations that use combinations of natural plant and insect sources of methionine that at the same time reduce overall crude protein content.

### **Copper**

Widespread solicitation of agriculture scientists and extension agents with the appropriate expertise must be sought to conduct necessary copper-related farm research. To that end, CFS urges the NOP to inform Organic Agriculture Research and Extension Initiative (OREI) administrators of the urgent need to fund research on this topic and for USDA to circulate requests for proposal (RFP) that include the following research components (in no particular order) as well as other salient issues that arise during its Sunset investigations:

1. A comprehensive systems management-based approach to organic disease and lessening the need for copper use on a crop-by-crop basis.
2. Breeding plants that are resistant to the types of diseases for which copper is used – induced resistance.
3. Developing alternative formulations of pesticides and fungicides, such as smaller particles (not engineered nano products) of copper that facilitate coverage and thereby reduce the amount of copper that needs to be applied.
4. Assessing existing cultural practices such as crop rotations, sanitation practices, and the timing of irrigation relative to the climatic conditions in which the copper is being used to make crops less prone to disease.
5. Evaluating nutrition and soil fertility management approaches to mitigate the impacts of plant diseases on organic crops such as the use of plant extracts, beneficial microbes, and a host of other emerging tools and materials.
6. Determining more efficient methods for spreading copper on leaves or flowers.
7. Identifying the copper products that contain the least amount of elemental copper [see Margaret McGrath's work noted above], and investigating ways to reduce the amount of elemental copper in all products.

## **Policy Development Subcommittee**

### **Policy and Procedures Manual**

CFS strongly urges the NOSB and the NOP to clarify changes made to the NOSB's Policy and Procedures Manual (PPM) regarding the substance and purpose of the revisions. It is imperative that the public is fully informed about the context in which the new changes have been made so that they can submit meaningful comments. This will not only facilitate an engaged and transparent public participation process but also ensure that the NOP remains compliant with OFPA.

### **Context for Revisions to the PPM Must be Provided by the NOP**

The Policy Development Subcommittee (PDS) collaborated with NOP to draft revisions to the NOSB's PPM for the purposes of updating and streamlining the document. However, the format in which the document was issued for public review and comment failed to indicate where revisions were made and for what reasons. Without this context, it is extremely difficult to evaluate the particular improvements the revisions are designed to achieve. Moreover, some changes significantly impact the public's ability to fulfill its role of overseeing proper implementation of OFPA. In order for the public to have an opportunity to make informed comments on the updated PPM, CFS requests that the NOSB and the NOP provide the following:

1. A redlined version, such as one produced using "track changes";
2. An annotated table of contents that indicates which sections have been moved, changed, deleted, or added; and
3. An explanation and justification for areas where a change was made.

Transparency is a bedrock principle of the organic program. These simple additions would go a long way in better equipping the public and the NOSB to provide meaningful input on the changed PPM. To comply with that principle, the NOP should incorporate these changes into the document such that the revisions are apparent, thereby facilitating transparent public input.

### **NOP's Definition of "Nonpublic Information" Violates FACA**

The PPM update defines "nonpublic information" as "information that a board member gains by reason of participation in the NOSB that he/she knows, or reasonably should know, has not

been made available to the general public: e.g. is not on the NOP or other public websites, or is a draft document under development by an NOSB Subcommittee.” Yet, this definition of “nonpublic information” is both broad and ambiguous, and it encompasses information that would likely be publicly available under the Federal Advisory Committee Act (FACA). As such, the definition unlawfully limits the public’s access to information that should be rightfully available to them.

The standard for public access to information under FACA is not *whether* information has been made available to the general public, but rather that anything made “available to or prepared for or by each advisory committee” *must* be available for public inspection upon request, regardless of whether it previously has been made available.<sup>99</sup> Unless specifically exempt under the Freedom of Information Act (FOIA), all “records, reports, transcripts, minutes, appendixes, working papers, drafts, studies, agenda, or other documents which were made available to or prepared for or by each advisory committee shall be available for public inspection and copying . . .”<sup>100</sup>

In contrast, the NOP’s category of “nonpublic information” directly contravenes FACA. Section 10(b) of FACA explicitly states that “drafts” prepared “for or by each advisory committee shall be available for public inspection and copying.”<sup>101</sup> A draft document under development by an NOSB Subcommittee falls under this requirement as a draft document prepared for an advisory committee. Subcommittees are an extension of the NOSB, which aids them in the work the full NOSB performs.<sup>102</sup> It is deeply concerning that the NOP believes it can delegate tasks reserved for the NOSB to Subcommittees, and then make the assertion that drafts prepared by Subcommittees are nonpublic; whereas, if the draft was prepared by the NOSB itself, it would undoubtedly be public.

An important aspect of FACA is that it requires Congress and the public to be kept informed about activities of advisory committees.<sup>103</sup> Therefore, any attempt to label documents or information as “nonpublic” that should be public under FACA undermines the intended public oversight role embedded in the law.

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<sup>99</sup> 5 U.S.C. App. 2 § 10(b).

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> *See* 7 U.S.C. § 6518.

<sup>103</sup> 5 U.S.C. App. 2 § 2(b)(5).

CFS urges the NOP to redefine “nonpublic information” in a way that complies with FACA,<sup>104</sup> so that it affirms what information and documents the NOSB is required to provide for public inspection. The inclusion of an overarching statement claiming that all information not made available to the general public is “nonpublic” does not comport with FACA.

Finally, CFS strongly urges the NOP to remove the example used in the definition—“draft document under development by a Subcommittee”—because FACA makes it clear that any advisory committee draft must be made available for public inspection.

### **The NOP Must Not Limit Public Disclosure of the NOSB Materials to FOIA Requests**

While the PPM update provides for public access to documents and communications according to the provisions of FOIA, it fails to mention FACA’s stricter requirements. The PPM must describe FACA’s public inspection requirements rather than limit public disclosure to FOIA requests only. In contrast, FOIA agencies use a request and review procedure, which FACA does not, which grants agencies discretion to delay dissemination of materials.<sup>105</sup> In fact, FACA regulations explicitly prohibit an agency from using FOIA request and review procedures for all non-exempt documents, since the documents should be readily available for review.<sup>106</sup>

Under FACA, all records “shall be available for public inspection and copying at a single location in the offices of the advisory committee or the agency to which the advisory committee reports.”<sup>107</sup> FACA requires each agency to designate an Advisory Committee Management Officer (CMO) that assembles and maintains records.<sup>108</sup> The CMO is required to ensure that § 10(b) of FACA is implemented to provide for appropriate record keeping<sup>109</sup> FACA’s implementing regulations clearly state that the Act provides “for the contemporaneous availability of advisory committee records that, when taken in conjunction with the ability to attend committee meetings, provide a meaningful opportunity to comprehend the work undertaken by the advisory committee.”<sup>110</sup> In contrast to FOIA, which allows some records to be withheld, FACA regulations forbid an agency from using FOIA procedures for all materials that are not exempt under FOIA.

The PPM update mentions FACA, but not with respect to recordkeeping or public disclosure. The update specifically says “records shall be available for inspection and copying, subject to

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<sup>104</sup> *Cummock v. Gore*, 180 F.3d 282, 285 (D.C. Cir. 1999).

<sup>105</sup> See 5 U.S.C. § 552(a)(3).

<sup>106</sup> 41 C.F.R. § 102-3.170.

<sup>107</sup> 5 U.S.C. App.2 § 10(b).

<sup>108</sup> *Id.* § 8(b)(2)-(3).

<sup>109</sup> 41 C.F.R. § 102-3.115.

<sup>110</sup> *Id.* § 102-3.170.

the Freedom of Information Act, 5 U.S.C. 552.” The PPM then goes on to quote a full paragraph from the FOIA (5 U.S.C. 552):

“Freedom of Information Act (FOIA; 5 U.S.C. 552). Under this Act, the public may request documents and other information pertaining to USDA actions. NOSB communications with USDA are subject to these requests, with some exemptions. Some information is routinely exempt from disclosure in or otherwise protected from disclosure by statute, Executive Order or regulation; is designated confidential by the agency or program; or has not actually been disseminated to the general public and is not authorized to be made available to the public upon request. When there is a FOIA request for information, the USDA will review all relevant information and determine what qualifies for release, then provide it to the requestor.”

This is the full extent to which the updated PPM discusses public disclosure of documents. By limiting public disclosure to FOIA requests, the NOP is undermining FACA requirements and its implementing regulations.

Therefore, it is incumbent upon the NOP to describe FACA procedures in the PPM to ensure proper access to, and dissemination of, the NOSB materials. By limiting the discussion of public disclosure of documents to FOIA requests in the PPM, the NOP misleads the organic community about their rights to inspect and copy documents in a single location. Not only must the NOSB materials be made contemporaneously available, it is forbidden for the NOP to use FOIA review and request procedures for advisory committee materials. CFS urges the NOP to make a clear distinction between FOIA requests and FACA requirements in the PPM to assure the public of its statutory rights.

### **Conclusion**

**CFS strongly urges the NOP to make the revisions to the PPM as transparent as possible by explaining what changes were made and why by reissuing the document with these notations.** This will provide the organic community with the expected opportunity to meaningfully contribute to the public participation process, based upon fully transparent PPM changes. To that end, the **PPM must clearly distinguish between documents that are available under the FACA and those that must be requested through FOIA procedures to guarantee the proper disclosure of NOSB materials.** CFS further urges the NOP to define “nonpublic information” in way that complies with FACA to ensure that the public has an opportunity to stay informed about NOSB activities.

## **Conflict of Interest Disclosures Needed for TRs and TAPs**

It is incumbent upon the NOP and the NOSB to ensure that research conducted on their behalf is not inappropriately influenced by those with a conflict of interest (COI). The establishment of a highly transparent COI policy and set of procedures is essential to maintaining the objectivity, credibility, and transparency of all NOP and NOSB-related research.

Disclosures of possible COIs should occur when a contractor or contracting agency is first being considered to conduct a Technical Review (TR) or Technical Advisory Panel (TAP) review. Such COI disclosures must take place each time a contractor is being considered to review a new material or substance. This process will facilitate transparent and unbiased material reviews and maintain public confidence in organic policy-making.

The disclosure of a conflict does not necessarily disqualify a contractor from conducting the research at hand, but it does allow for an informed assessment of the extent to which such a conflict could create a bias in the research conducted. In light of the information disclosed, it is the role of the USDA/NOP to evaluate whether the conflict warrants recusal or continuation of the project.

In the spirit of minimizing COI and encouraging transparency at all stages of organic policy development, including technical and material assessments, **CFS recommends that the USDA/NOP require subcontractors and the subcontracting agency they represent, as applicable, to sign a COI form prior to signing their contract. We further recommend listing the name of the author writing the TR or TAP and the subcontracting agency they represent on the front page of the report.** This affords organic stakeholders full transparency when reading the reviews.

Thank you for the opportunity to provide comment.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Lisa J. Bunin", with a long horizontal flourish extending to the right.

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