OMRI Materials REVIEW

News and Information for the Organic Community

Winter 2013

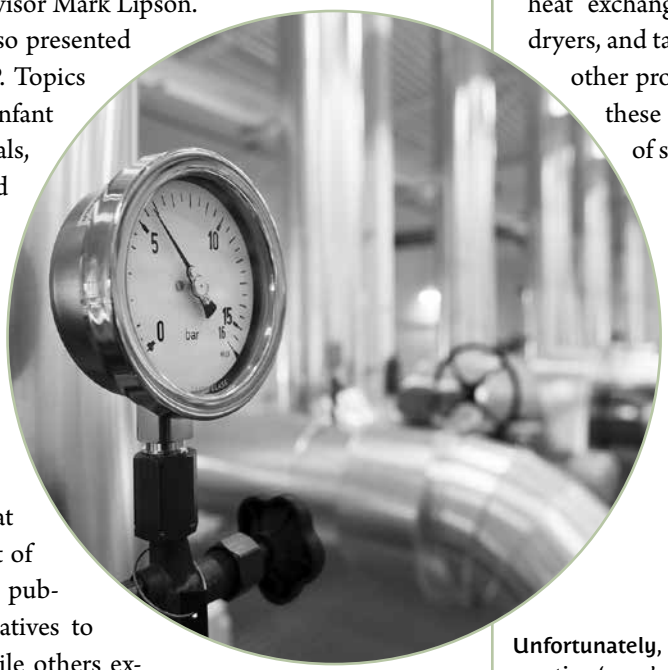
IN THIS ISSUE

NOSB Meeting Materials Report

October 15-18, 2012, Providence, RI

By Lindsay Fernandez-Salvador

This National Organic Standards Board (NOSB) meeting was marked by the USDA National Organic Program's (NOP) 10-year anniversary. The celebration included presentations by USDA Deputy Secretary of Agriculture Kathleen Merrigan (via video), and Organic and Sustainable Agriculture Policy Advisor Mark Lipson. Miles McEvoy, NOP Deputy Administrator, also presented on the progress and achievements of the NOP. Topics on the docket included materials for organic infant formulas and several crop production materials, including biodegradable plastic mulch films and rotenone.



Livestock Subcommittee

The subcommittee presented a discussion document about omnivore diets and discussed several petitioned materials. The discussion document focused on whether organic omnivore animals (i.e., chickens, turkeys and pigs) should be allowed to eat organic meat scraps as a means to obtain a more natural diet of various amino acids such as methionine. Some public comments supported finding viable alternatives to synthetic amino acids such as methionine, while others expressed concern that feeding slaughter by-products to animals may harm the organic label. The livestock subcommittee will take into account public comments and will recommend further action at the next NOSB meeting.

After the Spring 2012 NOSB meeting, it was clear to the subcommittee that a working group was needed to help inform the decision about GMO vaccines used in organic livestock production. Members from the Animal and Plant Health Inspection Service (APHIS), the NOSB, and the NOP are working together to gather more information about GMO vaccines and to create another NOSB recommendation in the future.

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Boiler Water Additives

How steam is used in a food processing plant

By Richard Theuer, Ph.D.

A typical dairy operation may use steam for CIP (Clean-In-Place) heat exchangers, pasteurizers, whey dryers, and tank heating, as well as for other processes. Relatively few of these applications involve use of steam "in or on food."

The technical term for steam used "in or on food" is "culinary steam." There are two main uses of culinary steam in a food plant:

- Food contact surface sanitation or sterilization, including packaging sterilization.
- Direct steam injection, including creating a vacuum by injecting steam into the headspace of a container immediately prior to sealing it.

Unfortunately, creating 'pure' steam is not as easy as you might think.

Packaging sterilization is required as part of good manufacturing practices in certain food processing applications. For example, passage through a steam tunnel sterilizes bottle caps just

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Expanding OMRI's Reach

By Peggy Miars

Regular readers of this column have followed OMRI's success in improving our efficiency, implementing a strengthened ongoing compliance program to ensure the continued integrity of OMRI Listed products, and providing leadership in regulatory and technical matters for the organic community.

Did you know that OMRI's expertise and impact can been seen at the highest levels of the organic industry in the United States and beyond? A year ago, the USDA National Organic Program (NOP) contracted with OMRI to produce a draft Permitted Substances List (PSL) for crop production. With that project successfully completed, the NOP has again contracted with OMRI for a second draft PSL – this time for livestock products. Our goal is to provide an outstanding deliverable so that the NOP will rely on OMRI's expertise to produce a draft PSL for processing inputs, assuming that their limited budget will allow. This would supply the NOP with a complete draft catalog of input materials permitted for organic crops, livestock, and processing.

At the same time, OMRI is one of three qualified contractors selected by the NOP to bid on providing Technical Reports (TRs). OMRI's agreement with the NOP allows us to bid on TRs as they request over the next five years. OMRI is honored to contribute and looks forward to providing critical technical information for use by the National Organic Standards Board (NOSB) and the NOP in making decisions about classification and compliance of materials allowed and prohibited in organic production and handling. OMRI is no stranger to conducting research work for the NOP, having written Technical Advisory Panel Reports from 1999 to 2002.

Although OMRI has yet to conduct any work on Technical Reviews, I thought it would be interesting to outline how OMRI will do the work if and when a contract is awarded. Each member of OMRI's Technical Review team, including a project manager, researchers, authors and technical advisors, has earned a Masters degree or higher in biology, agroecology, biochemistry, organic farming, microbiology or related fields, and has proven experience reviewing materials for the organic industry. After the initial scientific and regulatory research for the TR has been conducted, researchers will summarize their findings. The author will then assemble and format the data. One or more outside technical advisors with expertise in the field will review the draft before the project manager finalizes, approves and submits the draft TR. After receiving feedback from the NOP, the team will reconvene to conduct further research, writing and review before a final TR is submitted.

Now that OMRI has the capacity to expand our services and our reach, we are developing a sustainable staffing plan that will enable us to improve our technical outreach and education programs. OMRI partners with the International Organic Inspectors Association (IOIA) to produce six training webinars annually for inspectors and certifiers around the globe. Just as OMRI upholds transparency in our Review Program, we maintain a transparent education program. In fact, OMRI has provided training to competitors, because we believe that material review must be conducted consistently and accurately, whoever is doing it! We also provide customized contract research and training as requested, and we furnish technical presentations at events across the country. One of our strategic goals is to increase the education and resources that we deliver as part of our nonprofit mission. See this newsletter's back page for a list of upcoming OMRI presentations.

OMRI

OMRI is a 501(c)(3) nonprofit organization created to benefit the organic community and the general public. Its mission is to provide professional, independent, and transparent review of materials and processes to determine their suitability for producing, processing, and handling organic food and fiber.

OMRI Materials Review

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before they are put on juice bottles.

The most common form of direct steam injection is injecting a puff of steam into the headspace of a can or jar just before sealing. When the steam condenses to water, it creates a vacuum that keeps the jar lid on during processing and makes the "pop-up" safety feature of the lid operational.

Making steam is not so simple

We think of steam as being pure water in a gaseous state. Unfortunately, creating 'pure' steam is not as easy as you might think. Drinking water normally contains minerals like silica, iron, and the carbonates and bicarbonates of calcium and magnesium, and dissolved gases, like oxygen and carbon dioxide.

The minerals deposit on the surface of the boiler as scale. Scale is a problem. It acts as an insulator that reduces heat transfer, causing a decrease in boiler efficiency and excessive fuel consumption. More serious effects are overheating of tubes and potential tube failure (equipment damage). And yes, boilers do explode!

Scale formation can be prevented by boiler water additives that chelate the minerals and thus keep them soluble. Most boiler water additives used to prevent scale are not volatile, so they remain in the boiler water when steam is generated.

Oxygen dissolved in water becomes very aggressive when heated and will react with the boiler's internal metal surface to form corrosive components. Deaeration can remove most of the oxygen. Oxygen scavengers are added to remove the final traces. The most common oxygen scavenger is sodium sulfite. The sulfite ion combines with oxygen to form non-volatile sulfate ion, which remains behind in the boiler water.

Carbon dioxide is responsible for "acid attack," which can happen when the pH drops below 8.5. Alkali is added to boiler water to maintain the pH between 9 and 11.

Acid attack is much more of a problem in steam condensate lines because gaseous CO_2 is carried over in the steam. The CO_2 dissolves in the condensate to form carbonic acid (H_2CO_3). Volatile synthetic amines, referred to as "neutralizing amines," are commonly added to boiler water so that they pass into the steam to neutralize carbon dioxide in the condensate. Ammonium hydroxide also is an effective neutralizing agent.

Another class of volatile amines is called "filming amines." Filming amines form a protective film on steam lines and condensate piping to protect them from both oxygen and acid attack. Filming amines are continuously injected into the steam flow leaving the boiler.

Organic processing and boiler water additives

In 1995, the National Organic Standards Board (NOSB) adopted a Board Final Recommendation that *"Residues of boiler water additives must be prevented from contacting organically produced food by the use of steam without entrained water, steam filtering, or other means."*

In 2001 and 2002, the NOSB approved three volatile amines "for use only as a boiler water additive for packaging." They were added to the National List in 2006. Two neutralizing amines are on the National List: cyclohexylamine and diethylaminoethanol. The third amine is octadecylamine, a filming amine.

At the NOSB meeting in October 2001, the NOSB recommended adding ammonium hydroxide to the National List with the annotation *"For use as boiler water additive only, removal from the list October 21, 2005."* Ammonium hydroxide never made it to the National List. In the 2006 Federal Register, the National Organic Program (NOP) explained that the expiration date recommended by the NOSB for the use of ammonium hydroxide had lapsed. The NOSB would have to submit a new recommendation in order for ammonium hydroxide to be considered for inclusion on the National List.

The dairy processor's dilemma

The National Organic Standards currently permit three volatile amines *"for use only as a boiler water additive for packaging":* cyclohexylamine, diethylaminoethanol, and octadecylamine. The Food and Drug Administration (FDA) permits these three volatile amines in steam, but *"excluding use of such steam in contact with milk and milk products."* The Pasteurized Milk Ordinance and USDA dairy plant inspection rules also forbid the only NOP-allowed volatile additives that can neutralize carbon dioxide in steam.

How the dairy processor manages

To remain in compliance with the organic regulation, dairy processors use measures that entail extra expense and extra effort that increase the cost of organic foods for the consumer. These measures include:

- Replacement of steam lines with stainless steel piping;
- Extensive water treatment of the feed water to soften, deionize, filter and otherwise purify it;
- Physical and chemical deaeration;
- Interruption of boiler water treatment prior to organic processing;
- "Bleed runs" [product flush and discard];
- More frequent "blow-downs" [removal and disposal of treated boiler water as waste water];
- Dismantling and cleaning the system prior to organic food handling;
- Steam-to-steam heat exchangers;
- Use of heat exchangers instead of direct steam injection for product heating;
- A separate secondary boiler to generate steam for direct food contact applications.

Each of these measures has economic, environmental, and/or safety downsides. For example, irregular boiler operation shortens the life of the boiler. Extensive water treatment increases the discharge of chemicals into the waste stream. "Bleed runs" can consign nutritious, expensive organic food to the sewer or dumpster.

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Glycerin

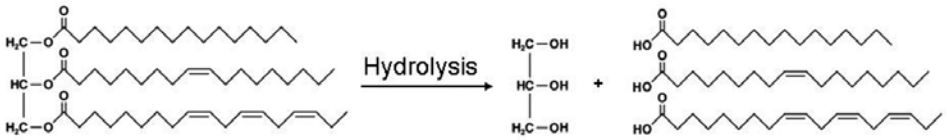
By Sam Schaefer-Joel

I know that glycerin is listed as an allowed synthetic for food processing, but I have also seen it in products used as crop inputs for organic agriculture—does glycerin have a nonsynthetic form?

Glycerin, also known as glycerol, is a small molecule with a large variety of uses. Its viscosity, polarity, solubility, and hygroscopic (water absorbing) properties give it a wide range of applications in agriculture, food processing, medicine, microbiology and industrial manufacturing.

Glycerin does not naturally occur in a free form; rather, it is chemically bound to three fatty acids as the backbone of a triglyceride molecule. Triglycerides are the primary constituents of plant and animal oils.

Glycerin is commonly created as a by-product of soap and biodiesel manufacture. During these processes, the bond between the fatty acids and the glycerin backbone is broken, usually by the addition of a strong alkaline base such as sodium or potassium hydroxide. When glycerin is produced through such a reaction, it is considered to be synthetic and is not allowed for use as a crop input in organic agriculture (with the exception of use as an inert ingredient in a formulated pesticide). However, there are several alternative methods to produce glycerin that have been determined to be nonsynthetic by the OMRI Review Panel.



Triglyceride

Glycerin +3 Fatty Acids

Nonsynthetic glycerin may be produced through fermentation of sugars by yeast. This process was developed by the German biochemist Carl Neuberg during World War I when a British naval blockade prevented the importation of vegetable oils. Glycerin (made from these oils) is essential for the production of nitroglycerin which is used to make a variety of explosives and propellants. Neuberg discovered a technique to block the yeast's metabolic process that ferments sugars into ethanol, forcing them to produce glycerin by an alternative metabolic process. This method of production is probably the least common in modern times, as growing biodiesel production has increased the amount of cheap glycerin by-product in the marketplace.

Glycerin may also be produced by steam hydrolysis. During steam hydrolysis, water and oils are mixed under high temperature and pressure in an industrial pressure cooker. These conditions allow the water molecules to break the bonds between the fatty acids and the glycerin backbone. Because this process uses physical methods instead of the addition of synthetic chemicals, the OMRI Review Panel has determined this process to be nonsynthetic. Additionally, there is precedent for allowing steam hydrolysis in the production of common soil amendments such as feather meal and bone meal.

Although synthetic glycerin is allowed for processed products at §205.605(b), this allowance does not extend to its use in livestock or crop production. Glycerin may only be used in crop inputs if it is produced by a nonsynthetic process such as fermentation or steam hydrolysis as described here. Organic farmers should check with their certifiers before using glycerin as an input.

The final decision as to whether a specific use or application of any given input is permitted on a particular operation is the responsibility of the accredited certification agent.

Metal Protein

By Amber Lippert

How do the National Organic Standards apply to metal proteinates in livestock feed?

A metal proteinate is a mixture of a mineral, such as zinc sulfate, with a protein carrier such as hydrolyzed soy protein meal. During mixing, the metal compound (mineral) and ligand (protein source) bond together and create a chelate complex with more than one binding site. The chelated trace mineral is stable and protected dur-

Yeast in Processing

By Corinne Kolm

Do the recent National List changes mean that nonorganic yeast may no longer be used in organic processing?

Nonorganic yeast may still be used in organic processing under certain conditions. In October, the National Organic Program (NOP) rules for the use of yeast in processed goods changed to include a commercial availability clause, specifically if the yeast is used in a product for human consumption. This change means that organic yeast must be used in human food products unless organic yeast is not "commercially available," defined as *"the ability to obtain a production input in an appropriate form, quality or quantity to fulfill an essential function in a system of organic production or handling, as determined by the certifying agent in the course of reviewing the organic plan."* Thus, nonorganic yeast may be used if organic yeast is not commercially available, or if it is used for a purpose other than for human consumption (such as in dog treats). Per NOP Guidance 5014 (which can be found in the NOP Handbook), yeast is eligible for organic certification if it is grown on certified organic feedstocks.

To reflect this change, all of the *OMRI Generic Materials List*© categories for yeast were updated to an Allowed with Restrictions status that reflects the requirement to use organic yeast for human consumption unless it is not commercially available. Nonorganic yeast may be OMRI Listed® in these categories as long the following conditions are met: 1) it is not grown on petrochemical substrate or sulfite waste liquor, 2) any growth media or ingredients remaining in the final yeast product are organic or on the National List, 3) the yeast and other ingredients are not produced using excluded methods (i.e. genetically modified) and 4) smoked yeast is produced using a nonsynthetic smoke flavoring process. Certified organic yeast will be denoted as organic in the *OMRI Products List*© with a special symbol. As always, final allowance to use any input is at the discretion of the certifier.

ates

ing digestion from chemical reactions that would render the mineral unavailable to the animal. OMRI does not consider chelation itself a synthetic process; nonsynthetic chelaters are common (humates are an example). Nor is the metal (i.e., elemental zinc) itself synthetic. It is the soluble trace mineral, metal salt (i.e., zinc sulfate) that is considered synthetic due to synthetic reactions that occur during manufacture.

Per the National Organic Standards at §205.603(d)(2), synthetic trace minerals are allowed as feed supplements when FDA or Association of American Feed Control Officials (AAFCO) approved, as long as the producer does not use feed supplements or additives in amounts above those needed for adequate nutrition and health maintenance for the species at its specific stage of life (i.e., should not be used to stimulate growth). Metal proteinates, including those made with calcium, cobalt, copper, iron, magnesium, manganese, and zinc are listed in the AAFCO manual under trace minerals, and are recognized by the FDA. Proteinates made with these metals comply with the National Organic Standards, and are the common proteinates used in livestock health care products.

Metal proteinates for use in organic production must not be produced using excluded methods (GMOs) or slaughter by-products per §205.105(g) and §205.237 respectively, of the National Organic Standards.

Minerals are also chelated with synthetic amino acids or polysaccharides. Synthetic amino acids are allowed for this use, but they cannot be fed to organic livestock as stand alone feed ingredients unless they are on the National List at §205.603.

Producers should always check with their certifying agent prior to using any new substance.

Material	Motions	Result
Livestock Subcommittee petitioned materials		
Nonanoic acid (pelargonic acid)	Motion to classify as synthetic	Nonanoic acid is synthetic.
	Motion to add to 205.603 as acaricide	Nonanoic acid not added to 205.603
Pet food amino acids	Tabled until next NOSB meeting	N/A
Crops Subcommittee petitioned materials		
Ferric Phosphate	Motion to remove from 205.601 as slug and snail bait	Ferric phosphate will remain on 205.601 for slug and snail bait
Oxidized lignite (hydrogen peroxide extracted humic acid)	Motion to classify as synthetic	Oxidized lignite is classified as synthetic.
	Motion to change the listing in 205.601 to Humic acids – naturally occurring deposits, water, alkali and hydrogen peroxide extracts only, to expire on 6/27/2017.	Oxidized lignite will not be added to the existing annotation for humic acids.
Propylene Glycol Monolaurate (PGML)	Motion to classify as synthetic	Propylene glycol monolaurate is synthetic.
	Motion to add to 205.601 as an acaricide	Propylene glycol monolaurate not added to 205.601.
Rotenone (not petitioned)	Motion to classify as nonsynthetic	Rotenone is nonsynthetic.
	Motion to add to 205.602 Rotenone – effective 1/1/2016.	Rotenone will be added to 205.602 with annotation: effective 1/1/2016.
Sulfuric acid	Motion to classify as synthetic	Sulfuric acid is synthetic
	Motion to add to 205.601with annotation	Sulfuric acid not added to 205.601
Biodegradable plastic mulches	Motion to classify as synthetic	Biodegradable plastic mulches are synthetic
	Motion to add to 205.601(b)(2) with the annotation[1]	Biodegradable plastic mulches added to 205.601(b)(2) with new annotation[1]
Handling Subcommittee petitioned materials		
Ascorbyl Palmitate	Motion to classify as synthetic	Ascorbyl palmitate is synthetic
	Motion to add to 205.605(b) for use as a preservative in infant formula	Ascorbyl palmitate will not be added to 205.605(b)
Beta-carotene	Motion to classify as synthetic	Beta-carotene (as petitioned)[2] is synthetic
	Motion to add to 205.605(b) for use in infant formula	Beta-carotene not added to 205.605(b)
Lutein	Motion to classify as synthetic	Lutein is synthetic
	Motion to add to 205.605(b) For use in infant formula only using approved organic delivery ingredients	Lutein not added to 205.605(b)
Lycopene (crystalline)	Motion to classify as synthetic	Lycopene is synthetic
	Motion to add to 205.605(b) for use in infant formula	Lycopene not added to 205.605(b)
L-Carnitine	Motion to classify as synthetic	L-Carnitine is synthetic
	Motion to add to 205.605(b) for use in infant formula only.	L-Carnitine not added to 205.605(b)
L-Methionine	Motion to classify as synthetic	L-methionine is synthetic
	Motion to add to 205.605(b) for use only in infant formula made with soy-based protein	L-methionine will be added to 205.605(b) for use only in infant formula made with soy-based protein.
Nucleotides (and their salts)	Motion to classify as synthetic	Nucleotides (and salts) are synthetic
	Motion to add to 205.605(b) as allowed for infant formulas	Nucleotides (and salts) not added to 205.605(b)
Taurine	Motion to classify as synthetic	Taurine is synthetic
	Motion to add to 205.605(b) for use in infant formula only	Taurine will not be added to 205.605(b).

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Crops Subcommittee

The crops subcommittee had a number of petitioned substances on the docket, both for removal from and for addition to the National List.

The subcommittee presented a recommendation to add rotenone (a botanical pesticide) to 205.602 as a prohibited nonsynthetic, although the NOSB did not receive a petition to do so. The NOSB remains concerned about its health affects on farm workers, so they passed a final recommendation to prohibit rotenone, effective on January 1, 2016. The subcommittee expects that an effective date set in the future will give time to those operators using rotenone to explore alternatives.

An especially interesting topic discussed was the petition to add biodegradable plastic mulch films to the National List. For this material, public comment focused on everything from the technical aspects of verifying the proposed annotation, to the use of GMOs and nanotechnology in the manufacture of these mulches, to farmer support for the material. After public comment, the subcommittee changed a few details in the annotation, clarifying the use of GMOs and nanotechnology in the mulches, and recommended the material for addition to the National List.

Chart Footnotes

Crops

1. (iii) Biodegradable biobased mulch films to be reviewed and meet the following criteria:

(a) Completely biodegradable as shown by:

(1) meeting the requirements of ASTM Standard D6400 or D6868 specifications, or of other international standard specifications with essentially identical criteria, i.e. EN 13432, EN 14995, ISO 17088; and

(2) showing at least 90% biodegradation absolute or relative to microcrystalline cellulose in less than two years, in soil, tested according to ISO 17556 or ASTM 5988

(b) must be biobased with content determined using the ASTM D6866 method;

(c) must be produced without organisms and/or feedstocks derived from excluded methods;

(d) grower must take appropriate actions to ensure complete degradation.

Handling

2. Beta-carotene also appears in 205.606, as an agricultural nonsynthetic color, derived from carrots.

The crops subcommittee adopted a procedure to review EPA List 4 inert ingredients used in pesticide formulations in groups (only those inert ingredients that do not appear on the 25(b) list). Starting at the next meeting, the NOSB will request a Technical Report on each group and will begin reviewing these groups of inert substances for inclusion on the National List.

At a recent meeting, the NOSB voted to change the annotation for antibiotics (tetracycline and streptomycin sulfate) used in tree fruit to expire in 2014. In order to facilitate research into alternatives to these substances, the NOSB urged the NOP to provide grant funds to researchers. Dr. David Granatstein from Washington State University presented the latest progress toward finding alternatives to these antibiotics. The group found that there are effective alternative treatments; however, the efficacy must be explored further. The group is also researching the use of resistant rootstocks.

Handling Subcommittee

The handling subcommittee reviewed an aggressive docket with a number of petitioned substances for use in organic infant formula. The NOP invited guest speakers from the Food and Drug Administration (FDA) and the American Academy of Pediatrics (AAP) to provide additional information on the various materials. The discussion and questions centered on whether these materials are required by the FDA in infant formulas and whether they are essential to organic processing. Since infant formulas have more stringent regulatory requirements, it was important for the NOSB to understand the implications of their votes in relation to FDA regulations as well.

The subcommittee also presented the discussion document on "other ingredients" that are components of substances on 205.605 and 205.606. There were a great number of comments on this document with a range of support for the various options presented. Many comments indicated that there is a need for attorneys to interpret the language in OFPA for "ingredients" to determine next steps as well. The subcommittee will take into account the public comment and will present a recommendation at the next meeting.

Boiler Water continued from page 3

Is there a better solution?

Ammonium hydroxide has several advantages. Unlike the three volatile amines, ammonium hydroxide is a "direct food substance affirmed by FDA as Generally Recognized As Safe" (GRAS) permitted by FDA and USDA for use as a boiler water additive in dairy plants. Ammonium carbonate, formed when ammonium hydroxide reacts with carbon dioxide, is already on the National List.

Dr. Theuer is a member of the OMRI Processing Review Panel and the OMRI Advisory Council. In 2001, he was asked by the NOSB Processing Committee to review the Technical Advisory Panel (TAP) Reviews for five petitioned volatile boiler additives for their fairness and accuracy. This experience taught him that ammonium hydroxide would be a better alternative than the currently listed substances. His pro bono petition to add ammonium hydroxide as a boiler water additive is currently available on the NOP website at www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5101201.

OMRI does not advocate for or against permitting specific materials. OMRI's role is to provide research and education regarding input materials.

CALENDAR

January 23-26 EcoFarm Conference, Pacific Grove, CA. This yearly event is the largest sustainable agriculture gathering in the West. It features dozens of prominent speakers and includes marketing strategies, research and other important food system issues. www.eco-farm.org

January 23-26 Southern Sustainable Agriculture Working Group Conference, Little Rock, AR. Featuring the theme "Practical Tools & Solutions for Sustaining Family Farms," this yearly event offers over 62 sessions on a broad range of topics, including information on organic and sustainable production and marketing for commercial horticultural and livestock producers, enterprise management and farm profitability, farm policy, and community food systems development. OMRI Product Review Coordinator Doug Currier will offer the presentation "Now That You're Organic, What Products and Materials Can You Use?" on January 25 from 1:30-3:00 pm. www.ssawg.org/january-2013-conference *

January 28-31 U.S. Composting Council Annual Conference & Tradeshow, Orlando, FL. The largest conference for the composting, wood waste and organics recycling industry. OMRI Product Review Coordinator Doug Currier will present on "New Technologies in Compost" during the panel "Compost Markets and Marketing" on January 30 from 2:15-3:45 pm. www.compostingcouncil.org *

January 31-February 3 Guelph Organic Conference Guelph, ON, Canada. "Organics…What's the Buzz?" is a 4-day conference that includes international speakers, seminars and intro workshops on key topics, including genetically engineered foods, organic production and certification, changing climates, eco-villages, earth buildings, farmland protection and food security, as well as an Organic Expo/Tasting Fair with 150+ exhibitors. OMRI Program Director Lindsay Fernandez Salvador will host a Meet and Greet on input review in Canada from 12-2 pm on February 2. www.guelphorganicconf.ca/faqs/about *

February 6-9 PASA Farming for the Future 22nd Annual Conference, State College, PA. This diverse event brings together an audience of over 2,000 farmers, processors, consumers, students, environmentalists, and business and community leaders. www.pasafarming.org

February 7-9 Organicology, Portland, OR. This bi-yearly conference created by four organic trade organizations offers curriculum designed to advance trade knowledge for seed producers, farmers, distributors and retailers, researchers and educators, chefs, and food policy activists. OMRI Program Director Lindsay Fernandez-Salvador will present on "Organic Inputs and Materials" from 11-12:30 on February 7. www.organicology.org *

February 7-9 Missouri Organic Association Annual Conference, Springfield, MO. Featuring the theme "Sustaining the Earth through Green Energy," this event will feature informative educational sessions, a vendor market and workshops on solar panels and bio-diesel fuel. OMRI Review Program Administrative Manager Corinne Kolm will offer the presentation "Determining Approved Organic Poultry Health Substances" from 4-5 pm on February 7. www.missouriorganic.org/MOAAnnualConference.aspx *

February 12-14 World Ag Expo, Tulare, CA. The world's largest annual agriculture exposition features over 1600 exhibitors on 2.5 million square feet of space. Average attendance reaches over 100,000 attendees. Don't miss this colossal event! www.worldagexpo.com *

February 13-16 Biofach 2013 World Organic Trade Fair and Congress, Nuremberg, Germany. This Congress runs in a parallel program alongside the Biofach Trade Fair and Vivaness, the Trade Fair for Natural Personal Care and Wellness. Visitors from over 121 countries meet yearly to discuss the latest trends and technology during this four-day marathon event. www.biofach.de/en *

February 16-17 Ohio Ecological Food & Farm Association Conference, Granville, OH. The 34th annual conference will feature the theme "Inspiring Farms, Sustaining Communities." This popular event for professionals involved in commercial-scale sustainable and organic agriculture features dozens of speakers who cover a wide range of subjects. OMRI Review Program Administrative Manager Corinne Kolm will offer two presentations on Saturday, February 16: "Livestock Inputs" from 9:30-10:25 am, and "What to Use on your Organic Farm or Garden?" from 2:50-3:45 pm. www.oeffa.org/news *

February 21-23 Upper Midwest Organic Farming Conference, La Crosse, WI. The 24th annual conference offers 70 informative workshops and features 150 exhibitors, locally-sourced organic food, live entertainment and inspirational keynote speakers. The OFC is celebrated as the largest educational and networking event in the organic farming community. www.mosesorganic.org/conference.html *

March 7-8 Natural Products Expo West, Anaheim, CA. This is the world's largest natural, organic, and healthy products trade show, expecting over 58,000 attendees this year. It is also co-located with Engredea, Nutracon, Healthy Baking Seminar, Beer Wine and Spirits Marketplace and Fresh Ideas Organic marketplace. OMRI Executive Director/CEO Peggy Miars will present on "What Retailers and Manufacturers Need to Know About Organic Products" from 2:30-3:30 pm on March 7. www.expowest.com *

* OMRI staff will attend, present, or exhibit at this event.
We welcome emails in advance to share our booth location and make meeting arrangements. Email to marketing@omri.org.