

FRI eNews provides updates on research and events at FRI and UW-Madison and other current food safety news.

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In the News



Cheddar cheese made from **raw milk** by RAW FARM, LLC of Fresno, Calif., has been associated with an ***E. coli* O157:H7 outbreak** in the U.S. that has sickened at least 11 people so far in the last month. **Five of those sickened have been hospitalized and two have developed hemolytic uremic syndrome.** An investigation is underway. The outbreak strain has not yet been found in product samples, but nearly all of those sickened (seven of nine interviewed) reporting eating the cheese during the week before they became ill.

No new cases have been reported in the last month in the ***Listeria monocytogenes* outbreak linked to queso fresco and cotija cheeses produced by Rizo Lopez, Inc.**, of Modesto, Calif., despite the expanding number of dairy products that are being recalled. The large number of recalled products, (over 100), the variety of recalled products (salads, dips, meal kits, salad dressings, sandwiches, meat and cheese products), and the large number of brands and food service vendors that used the Rizo Lopez cheese in products has caused confusion, with **some brands sold to consumers in grocery stores being incorrectly cited as being part of the outbreak** in erroneous news reports.



Back in 2016–2017, a ***L. monocytogenes* outbreak associated with raw milk cheese** from **Vulto Creamery** in Walton, N.Y. resulted in six hospitalizations and two deaths. Last week, the company and its owner, Johannes Vulto, pleaded guilty to a misdemeanor count of introducing adulterated food into interstate commerce. The plea agreement described how **environmental swabs that the**

company took from the facility on at least 20 occasions between 2014 and 2017 repeatedly tested positive for *Listeria* spp. while the company continued to sell cheese. Vulto acknowledged to FDA following the outbreak that **he did not understand the significance of the environmental sampling results that tested positive for *Listeria* spp.** Sentencing for Vulto is scheduled for July 9, with Vulto potentially facing a



The discovery that **ground cinnamon** (believed to be contaminated through economically motivated intentional adulteration) was the source of the **lead and chromium found in cinnamon apple puree and applesauce products** that led to increased ($>3.5 \mu\text{g/dL}$, or $\sim 0.04 \text{ ppm}$) blood lead levels in 499 people (and 90 adverse event reports) prompted FDA to **initiate a targeted survey of discount ground cinnamon sold in retail stores.** This

survey of 75 samples resulted in recalls of six brands of cinnamon due to the presence of lead. The lead levels in these cinnamon products were between 2 and 3.4 ppm, which is three orders of magnitude lower than the lead found in the cinnamon apple products (2,270 to 5,110 ppm). **No action level has been established by FDA for lead in food products,** and FDA has asserted that it doesn't need an action level to take action when the level of a contaminant is unsafe and that **"it is industry's responsibility to take the necessary steps to ensure that the food they produce is safe."**

Other recent outbreaks around the world include the following:

- In **Tanzania**, **eight children and one adult died, with 78 others hospitalized, from chelonitoxism poisoning after eating sea turtle meat.**

Chelonitoxism is caused by toxins produced by **cyanobacteria** (blue-green algae) that certain types of turtles may consume. Similar to **ciguatera fish poisoning**, the symptoms of chelonitoxism include pain, itching, and ulcers in the mouth followed by potential neurological problems such as confusion, seizures, paralysis, and death. The high mortality of chelonitoxism poisoning may result from reluctance in seeking medical treatment because of fear of prosecution due to the protected status of sea turtles as an endangered species.



- In **Poland**, one person died and two more became seriously ill after eating pork jelly from traveling sellers. Testing of the pork jelly samples found that **sodium nitrite** was present at more than 16,000 mg/kg (around 200 times the permissible standard).





Regulatory News

Per- and polyfluoroalkyl substances (PFAS) are a hot topic these days:

- While FDA has not actually banned the use of **PFAS on grease-proofing materials** on food packaging (microwave popcorn or pet food bags, for example), FDA announced that manufacturers have now completed their voluntary phase-out (begun in 2020) of the sale of these PFAS-containing materials in the U.S. PFAS continues to be used in other food contact applications such as in **non-stick pans, manufacturing aids**, etc., from which **only negligible amounts of PFAS have been shown to migrate to foods**.
- In 2024–2025, FDA will be continuing to test foods from the general food supply (with targeting testing of seafood), with a goal of **accurately estimating U.S. consumers' exposure to PFAS from foods**. Past testing detected no PFAS in 97% of fresh and processed foods in the U.S., but PFAS was detected in 44% and 74% of seafood samples in recent FDA surveys.
- California may soon be joining Maine and Minnesota by proposing legislation that will **greatly restrict the intentional use of any PFAS in other products**, including cookware, food processing equipment, fabrics, fire-fighting foams, and more. These broad proposed bans have been targeted to take effect in 2030 or later.
- **For more about state laws regarding PFAS, see here or use this state PFAS law tracker.**



As discussed in last month's eNews, the trend of **individual states banning various food ingredients** or processing aids seems likely to continue, circumventing FDA (and sometimes scientific assessments) while creating headaches for food manufacturers. A recent example: Proposed legislation in **Indiana** seeks to ban the **use of high-fructose corn syrup** in foods and beverages.

In response to a petition from Danone, FDA has announced that



the consumption of yogurt and a reduced risk of type 2 diabetes. FDA found credible evidence related to the claims that eating at least two cups of yogurt per week was associated with a reduced risk of Type 2 diabetes but requires that health claims state that the **evidence is limited**. The claim is based on yogurt as a food, regardless of fat or sugar content.



FDA responded to Superbrewed Food's GRAS notice for its dried, heat-killed *Clostridium tyrobutyricum* cell protein food ingredient with a "no questions" letter, which will allow the **bacterial biomass protein product** to be used in foods for the first time in the U.S. The ingredient, which is said to have a neutral taste and good functional properties, is >85% protein and is being touted as a "whole food ingredient"

rather than a protein isolate.

Two new FDA guidances have been published recently:

- FDA announced the availability of a final guidance for industry, "**Dietary Supplements: New Dietary Ingredient Notification Procedures and Timeframes: Guidance for Industry**." This guidance is intended to help manufacturers and distributors of new dietary ingredients and dietary supplements prepare and submit new dietary ingredient notifications to FDA.
- FDA issued a guidance for industry that describes how firms can **voluntarily engage with the FDA before marketing food from genome-edited plants**.



FDA Deputy Commissioner Jim Jones recently reported that the **reorganization of its human foods program** is moving along and is expected to be completed by **Sept. 30, 2024** (later than the June 2024 date anticipated previously).



Does **community water fluoridation**, which reduces tooth decay by 25% in children and adults, represent an unreasonable risk? The **chemical toxicity of fluoride** is the subject of a case being heard now in a federal district court. An unpublished, draft assessment by the federal National Toxicology Program concluded that fluoride, at levels at least twice those used in drinking water, is linked to **reduced IQ in children**. Despite many experts saying the association is

weak, some leading advocacy groups want fluoride to be regulated under the EPA's Toxic Substances Control Act.

Happy Pi Day! It's fitting that today, FDA announced it is revoking the standards of identity and quality for frozen cherry pie. FDA said that the standards are no longer necessary to ensure that these products meet consumer expectations. *(Photo: FRI outreach specialist Lindsey Jahn's 2024 Pi Day creation)*



Disruption of the oral microbiota is associated with **hypertension**, and **oral nitrite therapy can reduce blood pressure** and provide other health benefits by nitrite to nitric oxide (NO) conversion in the host circulation and tissues. Nitrite can be produced from dietary nitrate (such as beet juice) by mouth bacteria, but the effectiveness of oral nitrate varies considerably between individuals. Using novel *in vitro* microbiota model systems using saliva from individuals, researchers demonstrated that **nitrate addition expanded nitrate-reducing microbial taxa** and was associated with **increased nitrate reductase activity as well as nitrite levels in the oral microbiota**. The models may help design tailored nitrate-reducing probiotic and prebiotic nitrate supplementation combinations for individuals to optimize health benefits.



A new report followed the fate of inoculated ***Salmonella enterica*** on a variety of minimally processed fresh vegetables (chard, broccoli, and red cabbage) at different temperatures (7 to 37°C) and relative humidity (RH) levels (15 to 95%) over six days. Higher temperatures and RH levels resulted in more *Salmonella* growth. The data were used to develop **models that can be used to predict**

***Salmonella* growth on fresh vegetables.**

Several new publications highlight **potential health concerns in humans related to ingestion of micro-(<5 mm) or nano- (<1 μm) plastics (MNPs)**. (Photo by Oregon State University via Flickr)



- A 204-patient prospective clinical study quantitated the levels of **MNPs present in excised carotid artery plaque from patients** with asymptomatic carotid artery disease. **The plaque from a majority (58%) of patients was found to contain polyethylene MNPs** (mean of 21 μg/mg); **polyvinyl chloride** particles were also detected in the plaque of 12% of patients. During the next three years, the patients who had **detectable MNPs in their plaque at baseline had a more than four-fold risk of having a serious cardiovascular event** (myocardial infarction, stroke, or death) than those who did not have detectable MNPs.
- Another report found that **microplastics (MPs) were often present in gallstones**, with high levels found in those from younger patients. **MPs were shown to form large cholesterol-microplastic aggregates**, while MP ingestion by mice hastened the onset of gallstones in mice and altered the gut microbiota of mice fed a high cholesterol diet.
- A new review summarizes **studies in which MPs were found in various human tissues**, the effects of MPs on **intestinal microflora**, and proposes a role for MPs in **liver damage**.



The only FDA-approved therapy for food allergies is an oral immunotherapy for peanut allergies. A **new food allergy treatment shows promise** for treating individuals with **multiple food allergies**. The treatment, **omalizumab**, is a monoclonal antibody against antibodies: Omalizumab recognizes the IgE antibodies produced in response to foreign proteins that appear to be a threat. Omalizumab is **already approved** for allergic asthma, chronic hives, and certain nasal polyps. In a new report, when omalizumab is administered by subcutaneous injection every 2–4 weeks over 16–20 weeks to patients who were severely allergic to peanuts and at least two other foods, the threshold of reactivity for these foods

accidental exposure. Additionally, the study found that when administered together with oral immunotherapy, the drug reduced the incidence and severity of adverse events associated with food allergy reactions and accelerated the efficacy of oral immunotherapy.

A [new report](#) summarizes data collected in the United States Pharmacopeial Conventions **Food Fraud Database** since 2012. Among the conclusions from the review of more than 15,000 entries in the database: Dairy, seafood, meat, herbs, and species are most vulnerable to food fraud, with **fluid cow's milk, extra virgin olive oil, honey, beef, and chili powder** generating the most records in the database. **Hazardous adulterants were found in 34–60% of records.**



Other News

IAFP is offering a new free webinar, “**Food Safety Culture PDG: Food Safety Culture – Yesterday, Today, Tomorrow,**” on Thursday, March 28 from 1 to 2 p.m. eastern time. More information is available [here](#).



Would you feel squeamish about using **a latrine that has its pit layered with tiger worms**? Such pit latrines [developed by Oxfam](#) are being used in Sierra Leone to **improve sanitation and prevent contamination of drinking water**. Using worms to consume the feces also minimizes latrine odors (and flies) and allows less frequent pit emptying. You can listen to a [podcast](#) (or [read the transcript](#)) of a civil engineer working to improve design of the “tiger worm toilets” and, importantly, to reduce human resistance to the idea of using a worm-lined latrine.

Are ultraprocessed foods really more addictive than your Grandma's home-baked cookies? For an interesting discussion of **food addiction** and the current dearth of data to support the idea that ultraprocessed food is uniquely addictive, read [here](#).



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