

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



A new (and recently expanded) **Salmonella** outbreak linked to **charcuterie meats** has resulted in at least 47 illnesses, ten of which required hospitalization. Interviews with 26 of those sickened found that 19 reported eating various charcuterie products, including Busseto brand Charcuterie Sampler from Sam's Club and Fratelli Beretta brand Antipasto Gran Beretta from Costco. The Minnesota Department of Agriculture found

Salmonella in a sample collected from an unopened package of Busseto Foods Charcuterie Sample that matched the outbreak strain. The implicated products have been recalled.

The **Salmonella spp.** outbreak associated with **cantaloupes** has been declared over. At least 407 people were sickened, with 158 hospitalizations and six deaths in the U.S. in the past three months. The same outbreak has caused 164 illness, 61 hospitalizations, and seven deaths in Canada. **Several serovars of Salmonella (Sundsvall and Oranienburg and more recently, Sohanina)** have been implicated, and **both whole cantaloupes and pre-cut fruit products** have been recalled.



Lead contamination in cinnamon applesauce pouches has led to FDA receiving at least **90 confirmed reports of adverse events** believed to be linked to the products, mostly in children (median age is one year old). However, when probable cases and suspected cases are included, the case count is now at 385 cases from 42 states, as reported by CDC. In addition to lead at levels of 2.18 ppm (**more than 200 times the action level** proposed in a draft guidance), FDA product testing has now found high levels of chromium (~0.6 ppm) in applesauce pouch samples. Lead and now **chromium** were also found in the cinnamon (produced by a company in Ecuador) used in the applesauce. **The relative levels of these two**

adulterant in spices.

Increased rates of **drug-resistant *Shigella* infections** have been noted in the last year:

- In late 2023, at least 80 people **experiencing homelessness or using opioids** (including 12 children) in **Philadelphia** were infected with *Shigella*, nearly **ten times the normal case rate** in that city. *Shigella* is a highly infectious disease **transmitted by exposure to human feces in food or water or through oral or anal sex**. *Shigella* infections can be quite serious but can often be treated effectively with antibiotics. However, many of the *Shigella* strains in this outbreak **exhibit resistance to antibiotics typically used to treat these infections**, a growing problem predicted last year by CDC.
- Meanwhile, across the pond, **extensively drug-resistant (XDR) *Shigella* infections** have risen by 53% in **England**. Many of these cases (97) were associated with an extensively drug resistant (XDR) strain of ***Shigella sonnei*** that has also caused 145 cases in the **Netherlands** with additional illnesses in Norway and Portugal, primarily in men who have sex with men.



Two uncommon poisoning events in recent news appeared to result from **children eating something that they shouldn't**:

- In Vietnam, one child died and two others required hospitalization after eating toad meat. According to a report of the event, toad meat and fat is nutritious and is not itself poisonous, but extreme care must be taken in processing the meat because **many organs of toads** (liver, eggs, skin, pus, eyes, etc.) **contain toxic substances including bufotoxins**. Consumption of these toxins can cause gastrointestinal symptoms within several hours, followed by neurological symptoms and breathing and cardiovascular complications.
- In Taiwan, five junior high school students required hospitalization after eating **seeds from tung trees** found at their school. Tung seeds contain **saponins**, a family of poisonous (to humans and other animals) glycosides found in many plants, including alfalfa, some legumes, certain pasture weeds, quinoa, and ornamental plants such as asparagus ferns. As an aside: Tung trees were imported into the southeastern U.S. from China in the early 1900s because of their valuable oil but are now considered an invasive plant.



Government and Regulatory News

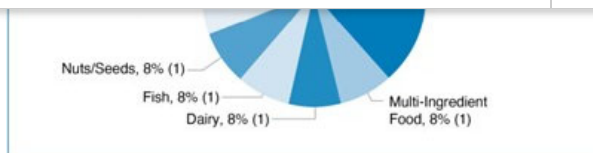
FDA has issued the first report from its **Coordinated Outbreak Response & Evaluation (CORE) network**, which is a partnership with FDA, CDC, and state

Responses with Identified Product(s) Linked to Illnesses, by Associated Food Category, 2022

Other/Unknown, 31% (4) — Produce, 37% (5)

outbreaks. Of 65 incidents evaluated by CORE in 2022, 28 were investigated further by a Response Team. Although many of the outbreaks were not linked to a food, of those that were, **more than a third were associated with produce.** In

addition to providing an overview of the outbreaks that occurred that year, the report includes information on FDA's actions (with **links to five warning letters** issued as a result of these outbreaks).



On the meat side, **USDA's FSIS** has also issued [a report](#) summarizing the seven outbreaks (**three *Salmonella*, three *STEC*, and one *C. botulinum***) that it investigated in FY 2022. Of note: The *C. botulinum* outbreak was a single case associated with a commercially prepared chicken rice soup. The empty soup can did contain botulinum toxin type A (the same type identified in the patient); however, this case was believed to be an isolated incident, as other cans of soup made as part of the same lot were not contaminated.

Tejocote (a variety of hawthorn) root is marketed as a **dietary supplement for weight loss**. After serious complications were suffered by a 23-month old child who had consumed a tejocote product, the New Jersey Poison Information and Education System [obtained and tested ten](#) products labeled as tejocote that were marketed as weight loss supplements. **Nine of these products were found to contain yellow oleander, with no authentic tejocote present.** More recently, FDA [also tested](#) nine products purporting to be tejocote; all contained yellow oleander. Consumption of yellow oleander is associated with neurologic, gastrointestinal, and cardiovascular adverse health effects that may be fatal. **FDA issued a warning to consumers to stop consuming tejocote products**, which are sold most often by third-party platforms.



Current Literature



A [new report](#) found that strains of *L. monocytogenes* (from lineages 1/2a, 1/2b, and 4b) **can survive for 12 months on individually quick frozen vegetables** stored at -10 or -18°C. Only ~0.5 log reductions in the organism were observed over the year during storage at either temperature.

For a new summary of the survival (and decontamination) of SARS-CoV-2 on foods at various temperatures, see [here](#). **TLDR: The potential for transmission of SARS-CoV-2 via food still seems very low.**



A [new study](#) suggests that **lactose is an important factor in controlling the production of the toxin cereulide by emetic *Bacillus cereus* in dairy products**. Milk containing lactose contained 13-fold less cereulide than lactose-free milk. Adding lactose back to the lactose-free milk reduced cereulide levels by 91%. The effect of lactose on suppression of cereulide was observed for all *B. cereus*

repress expression of cereulide, providing support to the idea that its addition may be an effective method to reduce cereulide production in foods.

The microbiological concerns related to traditionally grown (i.e., in soil) leafy greens have been a hot topic in recent years, but **how do hazards differ when greens are grown indoor without soil?** A [new review](#) describes different types of controlled environment agriculture (CEA) used for such produce and tabulates outbreaks and recalls (especially *L. monocytogenes* and *Salmonella*) associated with CEA-grown leafy greens and **microgreens**. Sources of contamination (primarily environmental) and studies investigating microbial growth and pre-and post-harvest control measures in CEA-grown leafy greens are also described.



How much do *Listeria monocytogenes* strains vary in their ability to grow at different pH and water activity levels? A collection of clinical and food (mostly meat and fish) *L. monocytogenes* isolates [were tested](#) for growth as assessed in media by turbidity measurements. Strains varied considerably by the minimal pH (4.20 to 5.04) and minimal water activities (0.925 and 0.951) where growth was possible. No relationship was observed between the ability to grow at lower pH levels and lower water activities for the strains tested. Meat and clinical isolates did not grow at water activities below 0.925, while no fish isolates grew at water activities lower than 0.933. No isolates from meat grew at pH values lower than 4.29, and the average minimal pH value for growth of meat isolates was lower for meat samples than for other isolates.

A [new report](#) in PNAS describes a **rapid new optical imaging technique using hyperspectral stimulated Raman scattering (SRS) to identify and quantitate micro- (1-5 μm in length) and nano- (<1 μm) plastic particles** with greater sensitivity and specificity than other methods. Testing with standard particles of different plastics verified that the method could distinguish between the seven major types of plastics and obtain accurate particle counts. The method was then used to profile **micro- and nano-plastics found in different brands of commercial bottle water samples**. An average of 2.4×10^5 of plastic particles (of which ~90% were nanoplastics) were estimated to be present in a liter of bottled water, with a variety of plastics found in each water sample. **This number of particles is several orders of magnitude higher than earlier reported values for plastic particles (which primarily measured microplastics only)**. The detection of these large numbers of nanoplastic particles in all bottled waters tested is of concern because **the small size of nanoplastics may allow them to cross biological barriers**, increasing toxicity concerns.



Other News

Several free webinars related to food safety are coming up (or can still be watched online):

- Food Safety Magazine is hosting a webinar, "**AI in food safety: Current applications and future**



go [here](#).

- On Feb. 15, the American Chemical Society is hosting [a webinar](#), “**Eating dangerously: How a chemist’s ‘Poison Squad’ won the battle for food safety in the U.S.**” **Deborah Blum**, Pulitzer Prize-winning author of “**Poison Squad**,” will be one of the speakers.
- If you missed it, you can still listen to a recent webinar (or view [the slides](#)) on [FDA’s reorganization plans](#).
- IAFNS is hosting from Jan. 22–31 [a seven-part webinar series](#) on **sodium reduction in the food supply**. (FRI’s associate director **Kathy Glass** will be speaking on the Jan. 25 webinar). Webinar recordings will be posted [here](#) when available.

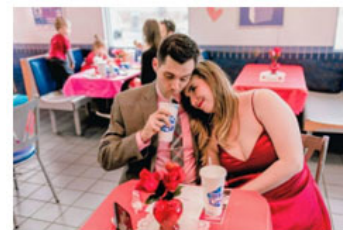


What is the **most foul-smelling cheese in the world**, and why do people seek such cheeses out? Is it a relatively new washed rind cheese from Scotland called “**Minger**” (slang for one who smells bad), which is [currently having its media moment](#), or a classic such as **Limburger** (which many FRI Summer Scholars have enjoyed, to their surprise, on a visit to the [last remaining Limburger manufacturer](#) in the U.S. during the Summer Scholars program)? Read more (including UW-Madison Center for Dairy Research expert **Mark Johnson’s**

hypothesis for why some people seek such cheeses out) [here](#).

Do you still have Valentine’s Day plans to make?

- Perhaps consider gifting these new **Sweetheart candy hearts** that contain [intentionally blurred, difficult to decipher messages, especially if your relationship status is murky and unclear](#).
- If you want to take things up a notch, you can [make a reservation at a White Castle](#) for a special Valentine’s Day meal (complete with tablecloths and flowers) at select locations.
- Maybe you are contemplating a romantic getaway with your loved one to a tropical beach. Keep in mind, however, that according to [a new report](#) from CDC, **significant percentages of U.S. infections by nontyphoidal Salmonella (11%) and STEC (4% of O157 and 18% of non-O157) were associated with recent**



international travel, especially to Mexico and the Dominican Republic. These destinations are particularly popular in the winter and spring, which may be why U.S. outbreaks linked to international travel peak during those months.

Sadly, for Wisconsinites and Pack fans around the world, the **Green Bay Packers football season has now ended**. But you can still read [here](#) about how the **meat packing industry in Green Bay (along with one of its shipping clerks, Earl “Curly”**



Financial challenges in the meat industry led to the formation of



the publicly owned Green Bay Packers Corporation in 1923, which remains the only community-owned major sports franchise in the U.S. **So, why are fans of the Pack known as “cheeseheads” and not “meatheads”?**



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