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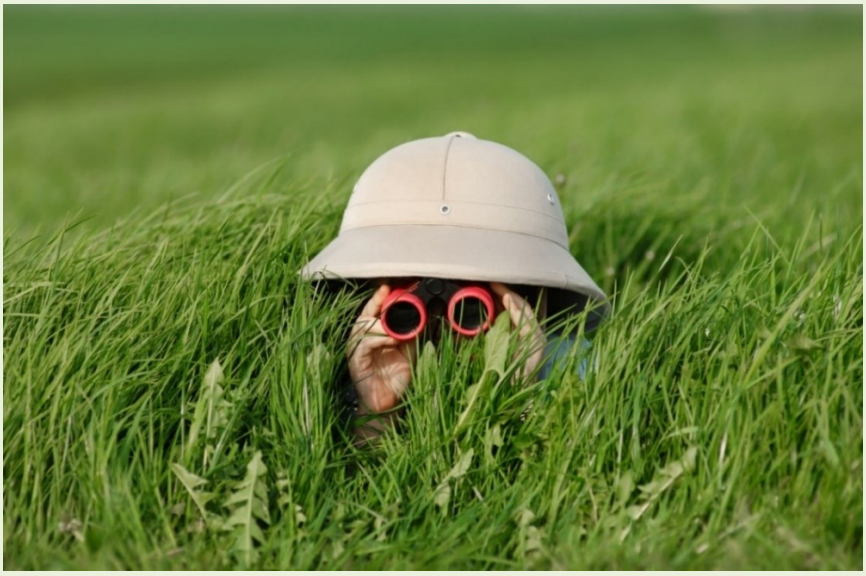
Federal Department of Home Affairs FDHA
Federal Food Safety and Veterinary Office FSVO
Risk Assessment

Seismo Info 12/2023



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The FSVO compiles the most important food safety information every month:
FSVO website

★★★ very important info ★★ important info ★ interesting info

★★★ **Survey:** The survey is now closed. Thank you for your participation! We are currently reviewing your answers and will provide a breakdown of the results in the near future.

Microbiology

★★ **High prevalence of multidrug-resistant, biofilm-forming virulent Clostridium perfringens:** A total of 280 samples comprising meat, intestinal contents, water, and hand swabs were processed to detect contamination by ***Clostridium perfringens.*** The overall occurrence of *C. perfringens* was 22.5%. Nearly all (95.24%) isolates were multidrug resistant and 68.25% were biofilm formers. Foods, 7 pages. (20.11.2023).

★★ **Biofilm formation and desiccation survival of *Listeria monocytogenes*:** This study aimed to characterize the growth and diversity of a ***L. monocytogenes*** strain cocktail during biofilm formation on polyvinyl chloride (PVC) and stainless steel without and with the presence of a diverse set of background microbiota. Results show that *L. monocytogenes* is able to form single and **multispecies biofilms** on PVC with high strain diversity following cleaning and disinfection treatments. IntJFoodMicr, 10 pages. (30.11.2023).

★★ ***Listeria monocytogenes* in plant-based ready-to-eat food:** Vegetarian and vegan deli sandwich slices, fresh-cut (mixes of) leafy vegetables, and multi-ingredient salad bowls were collected on the Belgian market and the prevalence of ***L. monocytogenes*** (i.e. detection in 25 g food) was performed. *L. monocytogenes* was not detected in deli sandwich slices (0 out of 51 batches), while 1 out of 51 and 6 out of 48 batches were found positive for respectively fresh-cut leafy vegetables and salad bowls IntJFoodMicr, 1 page. (25.11.2023).

★★ **US - Food safety gaps in controlled environment agriculture:** An article highlighted the gaps and needs in food safety that need to be addressed in the **controlled environment agriculture** sector. Food safety research is particularly needed in the areas of water, seeds, and soilless substrate, as well as with hygienic design, cleaning and sanitization. FoodSafetyMag, 3 pages. (23.11.2023). Original Publication: JFoodProt.

★★ **Food safety implications of new food sources:** The Food and Agriculture Organization of the United Nations has published a summary of the findings of a recent foresight technical meeting on new food sources and production systems. The objective of the meeting was to evaluate the **food safety issues** associated with plant-based food products, new applications of **precision fermentation**, and **3D food printing**, as well as to illustrate, through a foresight exercise, the possible future landscape of new foods and production systems. FoodSafetyMag, 5 pages. (05.12.2023). Original Publication: FAO.

★ **Food safety priorities of the fresh produce industry:** A broad understanding of industry community member **food safety priorities** in the **fresh produce supply chain** does not currently exist. In a study, 281 participants ranked 24 fresh produce safety priorities in a survey. Health and hygiene, training, postharvest sanitation, traceability, and harvest sanitation were ranked as the top five food safety priorities. JFoodProt, 15 pages. (28.10.2023).

★ ***Bacillus cereus* sensu lato isolated from raw berries and their products:** *Bacillus cereus* is estimated to be responsible for 1.4–12% of all food poisoning outbreaks worldwide. The objective of a recent study was to investigate the **toxigenic potential** of 181 isolates of ***B. cereus*** previously recovered from different types of **berries** and **berry products** (strawberries, raspberries, blackberries, and blueberries) by assessing the presence of enterotoxin genes (hblA, hblC, hblD, nheA, nheB, nheC, and cytK) and an emetic toxin cereulide synthetase gene (ces). Twenty-three toxigenic profiles were found. Foods, 11 pages. (03.11.2023).

★ **Antimicrobial resistance genes and associated mobile genetic elements in Lactobacillales:** Lactobacillales are commonly used in food products and as probiotics in animal and human medicine. Despite being generally recognized as safe, **lactic acid bacteria** may harbor a variety of **antimicrobial resistance genes** (ARGs), which may be transferable to human or veterinary pathogens, thus, may pose veterinary and **public health concerns**. A new study highlights the importance of the One Health concept by demonstrating the potential for Lactobacillales, commonly used in food products, to serve as **reservoirs and vectors** for ARGs. FrontMicr, 10 pages. (03.11.2023).

★ ***Streptococcus suis* in pork meat:** Health officials in **Thailand** are urging people not to eat raw or undercooked **pork**. From January to November 2023, there were 500 ***Streptococcus suis*** cases with 24 deaths in several different provinces, according to the Department of Disease Control (DDC). Patients reported **eating raw** or undercooked pork, meals with **pig's blood** as well as working with **potentially infected animals**. ProMed, 3 pages. (05.11.2023). Original Publication: FSN .

★ **Interaction of pathogens with ready-to-eat products:** In a recent study published in the journal *Food Microbiology*, researchers summarized the evidence on interactions of **enteric bacterial pathogens** with ready-to-eat fruits and vegetables. MedNewsToday, 5 pages. (06.11.2023). Original Publication: Food Microbiol..

★ **Occurrence of *Salmonella* in farmed insects:** Insects represent a sustainable and protein-rich food source. This new supply chain requires the study and monitoring of **pathogens'** presence and impact, as for other farmed animals. ***Salmonella*** *(S.)* serovar Wandsworth and *S.* serovar Stanley were isolated only in one sample of ready-to-eat crickets. A second study detected operational taxonomic units (OTUs) related to *S. enterica* in cricket and mealworm powders. No studies detected *Salmonella* in mealworms according to cultural methods. IntJFoodMicr, 10 pages. (09.11.2023).

★ **Spread of a multidrug resistant *Salmonella* Infantis along the food chain:** Recently, an increase of MDR ***Salmonella infantis*** carrying *bla*CTX-M genes involved in 3rd generation **cephalosporin resistance** was noticed in the EU. A study study reported the occurrence of *S. infantis* strains harboring pESI-like plasmids, carrying *bla*CTX-M-1 genes, in Central Italy, at different **sampling points along the food chain**. Results confirmed the presence of pESI-like plasmids in 97 % of the 35 samples investigated. A total of 118 virulence genes were identified in isolates harboring the pESI-like plasmid. IntJFoodMicr, 10 pages. (17.11.2023).

Chemistry

★★★ **Acrylamide and furanoic compounds in meat alternatives:** Study found that **acrylamide** and **furanoic compounds** were the highest in plant-based meat alternatives compared to meat-burgers **after pan-frying**. Based on the tolerable intake calculated by the EFSA Scientific Panel on Contaminants in the Food Chain, these amounts do not pose a health risk. Nevertheless, since plant-based novel food are being increasingly consumed, further investigations into the formation of food contaminants in novel processed foods are warranted. FoodChem, 7 pages. (23.11.2023).

★★ **Recycled plastics contain hundreds of toxic chemicals:** Scientists studied the chemical analysis of 28 samples of **recycled high-density polyethylene** (HDPE) pellets from recycling plants in 13 countries. They found a total of 491 organic compounds in the plastic pellets, with a further 170 compounds tentatively identified. These compounds come from a variety of classes, including **pesticides, pharmaceuticals, industrial chemicals and plastic additives**. The paper provides a dataset that advances knowledge of the complex chemical composition associated with recycled plastics. Affidia, 1 page. (16.11.2023). Original Publication: Data in Brief.

★★ **Potential ban of smoke flavouring primary product:** The European Commission is planning to remove the additive **SmokEz Enviro-23 (SF-006)** that give smoky flavors from the European Union market due to concerns about their potential to cause **cancer**. A report from the European Food Safety Authority (EFSA) that concluded these additives present risks of genotoxicity. If the Member States agree, the measure could be in force by early 2024. For this type of toxicity, the European Food Safety Authority cannot define a safe level of use. Infobae, 3 pages. (23.11.2023). Original Publication: EFSA.

★★ **Dietary exposure to acrylamide in Spanish canteens:** In this study, the **processed potatoes** were found to be the primary source of the contaminant and the risk of **acrylamide exposure** can increase by more than four times depending on the side dish selected by students. The calculation of the margin of exposure values for neoplastic effects indicated a **high health concern**, with a higher risk in women than men, even considering only the central meal of the day. Foods, 15 pages. (25.11.2023).

★ **Arsenic uptake and accumulation in bean and lettuce plants:** A study investigated the uptake and **accumulation of arsenic** in **bean** and **lettuce** plants. The plants were irrigated with water contaminated with arsenic at different concentrations. The study also evaluated the human health risk associated with consuming these arsenic-laced vegetables. The results showed that arsenic concentration increased in plant parts with higher concentrations in lettuce compared to bean. Environ Sci Pollut Res Int., 12 pages. (02.11.2023).

★ **Cell culture-based coffee:** The global coffee production is facing serious challenges including land use, climate change, and sustainability while demand is rising. **Cellular agriculture** is a promising alternative to produce plant-based commodities such as **coffee**, which are conventionally produced by farming. The present results demonstrate a proof of concept for a cellular agriculture approach as an alternative coffee production platform and guide future optimization work. JAgrFoodChem, 25 pages. (16.11.2023).

★ **Bioaccessibility of PFAS in fish during cooking treatment:** In this study, three kinds of fishes with different fat contents were selected, and the **bioaccessibility of PFAS** during **cooking treatment** (steaming and frying) was evaluated using in vitro gastrointestinal simulation. The results showed that related to their molecular structures, the bioaccessibility of an individual PFAS varied greatly, ranging from 26.0 to 108.1%. Cooking can reduce the bioaccessibility of PFAS, and steaming is more effective than oil-frying. JAgrFoodChem, 10 pages. (20.11.2023).

Nutrition

★★ **Comparison of answers between ChatGPT and human dieticians:** More people than ever are turning to online sources for nutrition information. The **ChatGPT** chatbot has gained tremendous popularity since its inception and could become a resource for nutrition information. However, the suitability of ChatGPT for answering **nutrition questions** has not been investigated. Therefore, the aim of a new study was to investigate the **competence of ChatGPT** in answering common nutrition questions. J Nutr Metab, 9 pages. (07.11.2023).

★★ **Consumption of UPF and multimorbidity:** This was a prospective cohort study including 266,666 participants (60% women) free of cancer, cardiovascular disease, and type 2 diabetes at recruitment from seven European countries. After a median of 11.2 years of follow-up, results show that higher **ultra-processed foods** (UPF) consumption (~260 g/day without alcoholic drinks) was associated with an increased risk of **multimorbidity** of cancer and cardiometabolic diseases. **Atificially and sugar-sweetened beverages**, **animal-based products** and sauces, spreads and condiments, but not other items, were associated with increased risk of multimorbidity, suggesting that more nuanced subgroup analyses of UPFs are warranted. Lancet Reg. Health - Eur., 20 pages. (01.12.2023).

★ **Ultra-processing markers are more prevalent in plant-based meat products:** A study analyzed **plant-based meat products** (PBMP) and **meat-based products** (MBP) in a German food market and found that **ultra-processing markers** were more prevalent in PBMP compared to MBP. The study also found differences in nutrient composition, with PBMP having lower energy, total fat, saturated fat, and protein content, but higher amounts of carbohydrate, sugar, fiber, and salt. The researchers suggest that substituting MBP with PBMP may have negative **health effects** due to the higher prevalence of ultra-processed markers. PHN, 25 pages. (06.11.2023).

★ **Artificial sweeteners increase insulin levels in saliva:** Although it is commonly believed that artificial sweeteners like aspartame do not raise insulin levels in the same way as sugar, a new clinical trial challenges this idea. Researchers found that salivary insulin levels increased one hour after consuming a soft drink, for both regular and diet drinks — sweetened with artificial sweeteners. Insulin levels in saliva did not change after consuming water or a drink with low sucrose content. Scientific research found a correlation between insulin levels in saliva and blood food ingredients 1st, 3 pages. (13.11.2023). Original Publication: Food Res. Int.

★ **Adaptogenic ingredients in food and beverages:** Consumer interest in **botanical adaptogenic ingredients** has grown recently. A pharmaceutical group is now reviewing the literature to provide a clearer understanding of the many different ingredients, their mechanisms of action, their labelling and their potential uses. Caution is advised as some may interact with hormones, such as **ashwagandha**, which was banned in Denmark in 2023. FSN, 2 pages. (23.11.2023). Original Publication: SLV. Additional Information: VitafoodsInsight.

Allergy

★ **Revisiting fruit allergy: prevalence across the globe:** Fruit allergy manifests with a variety of clinical presentations ranging from localised contact allergy and oral allergy syndrome to the potential for severe systemic reactions including anaphylaxis. A **systematic literature search** covering the years 2009 to 2023 was conducted to provide a **global overview** of the prevalence of **fruit allergy**. Foods, 21 pages. (10.11.2023).

★ **Flaxseed allergy on the rise:** Flaxseed is an increasingly popular ingredient in baked goods and other food products due to its perceived health benefits. It is even used as a substitute for egg in some recipes. A study carried out by the **American College of Allergy, Asthma and Immunology** has found that flaxseed allergies are appearing **more frequently in adults** but “not as often in children”. Flaxseed can cause allergic reaction – both after being ingested and also after touching the skin. NewFoodMag, 2 pages. (13.11.2023). Original Publication: Eur Ann Allergy Clin Immunol ., EurekAlert. Additional Information: Allergy Asthma Clin Immunol. .

Thank you for your fidelity, Happy Holidays and see you in 2024!

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Risk Assessment

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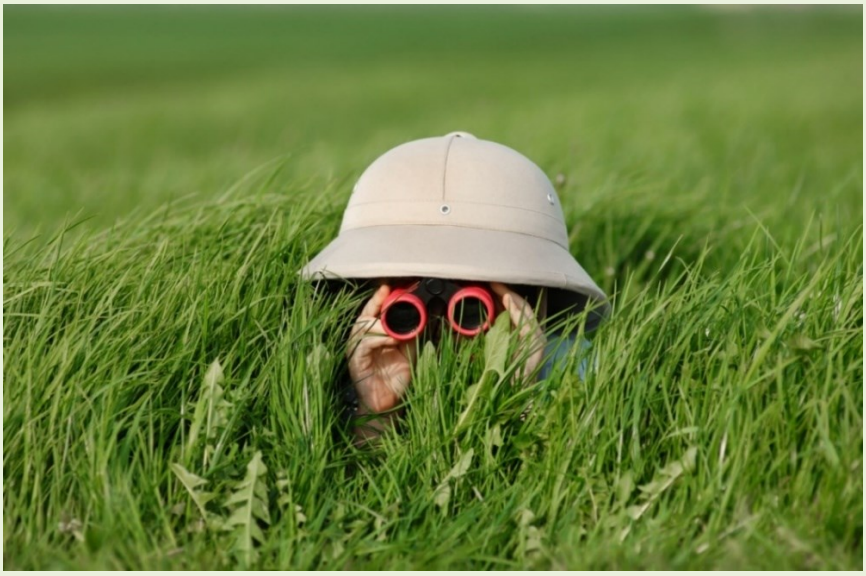

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★★★ very important info ★★ important info ★ interesting info

★★★ **Survey:** Last chance for participation! Take part in our survey here until the 30th October, 18h. Time required: 5 to 10 minutes. Your data will be treated confidentially. Thank you!

Microbiology

★★★ **Discovery of a tolerance mechanism in *Escherichia coli*:** Scientists at INRAE - the French National Research Institute for Agriculture, Food and the Environment - have discovered that ***Escherichia coli* O157:H7** can develop **tolerance to acidic stomach conditions** in certain environments found in solid foods such as **minced meat** and **cheese**. INRAE, 2 pages. (17.10.2023). Original Publication: npj Sci Food.

★★★ **Fresh produce as a reservoir of antimicrobial resistance genes:** In this study, 75 imported and 75 non-imported fresh produce samples purchased from **Swiss retailers** were tested for the **presence of antimicrobial resistant bacteria (ARB)** and **antimicrobial resistance genes (ARGs)**. 95 % of the fresh produce samples contained ARGs. SciTotalEnviron, 8 pages. (06.10.2023).

★★ **Prevention and control of microbiological hazards in fresh fruits and vegetables:** The aim of the **JEMRA** meeting was to evaluate commodity specific measures applied at all stages of **fresh fruit and vegetable** production, from primary production to post-harvest activities, transport, point of sale and consumer use. The results and conclusions have now been published. JEMRA , 112 pages. (10.10.2023).

★★ **Microbiological hazards associated with the use of water in the post-harvest handling:** A EFSA study focuses on the **microbiological hazards** associated with the **use of water** in post-harvest handling and processing operations of fresh and frozen fruits, vegetables, and herbs. The most relevant hazards include *Listeria monocytogenes*, *Salmonella* spp., human pathogenic *Escherichia coli*, and *enteric viruses*. EFSA, 111 pages. (03.11.2023).

★★ **Spore-forming microbes in plant-based dairy ingredients:** A recent study has provided an overview of the levels and types of microbial contaminants present in 88 different **plant-based ingredients** used to make dairy alternatives. The researchers found the microbial loads in different ingredients to be highly variable, as well as a high proportion of **spore-forming microbes** among the total microbial counts in many samples. The main aerobic spore formers were *Bacillus subtilis* and *Bacillus cereus* group members. The predominant anaerobic species encountered were *Clostridum sporogenes/tepidum.* FoodSafetyMag, 4 pages. (11.10.2023). Original Publication: IntJFoodMicr.

★★ ***Listeria monocytogenes* in a dynamic frozen vegetable processing environment:** The results of a study demonstrate that **whole genome sequencing** (WGS) is a strong tool for tracing contamination sources and transmission routes, and for identifying in-house clones, as five **different *L. monocytogenes* in-house clones** were identified using cgMLST-CT. IntJFoodMicr, 42 pages. (09.11.2023).

★★ ***Salmonella enterica* serovar Agona isolated from a novel food product:** A study reports about the multidrug-resistant isolates, 18-SA00377, isolated from a **dietary supplement** in Germany in 2018. Their characterization revealed the presence of 23 different **antibiotic resistance genes**, conferring resistance to twelve different antibiotic drug classes, as well as genes conferring resistance to six different heavy metals. FrontMicr, 5 pages. (25.10.2023).

★★ **Extended-spectrum β-lactamase-producing Enterobacterales in diverse foodstuffs:** The involvement of non-human-to-human transmission of **extended-spectrum β-lactamase-producing** Enterobacterales (ESBL-PE) remains elusive. Foodstuffs may serve as reservoirs for ESBL-PE and contribute to their spread. A study from **Switzerland** aimed to systematically investigate the presence of ESBL-PE in diverse unprocessed foodstuffs of different origin purchased in Basel. Among 947 **food samples**, **14.8% were positive** for ESBL-PE isolate/s belonging to eight different ESBL-PE-producing bacterial species. FrontMicr, 10 pages. (06.11.2023).

★★ **Diversity of antimicrobial resistance:** The objective of this study was to analyze antimicrobial resistance, stress resistance, and virulence factors through whole genome sequencing of ***Salmonella***-,**Shiga toxin-producing *Escherichia coli*** (STEC)-and ***Listeria monocytogenes* isolates**. *Salmonella* isolates were found to carry multiple metal-resistance genes. The non-O157 STEC isolates universally exhibited acid-resistance genes, and some *L. monocytogenes* isolates were equipped with resistance genes against biocides. Front. sustain. food syst., 10 pages. (20.10.2023).

★★ **High-Pressure Processing - impacts on the virulence and antibiotic resistance:** High-pressure processing (HPP) is one of the **non-thermal methods** of food preservation considered to be safe but may cause an increase/decrease in **virulence potential** and **antibiotic resistance**. A study evaluating the survival of ***L. monocytogenes*** isolates after HPP, indicated that the stress occurring during HPP can affect both phenotypic and genotypic changes in the virulence and antibiotic resistance potential of pathogens isolated from food and food processing environments. Foods, 15 pages. (24.10.2023).

★★ **Multidrug-resistant *E. coli* outperforms harmless strains in controlling the gut:** A study reveals that a multidrug-resistant strain of *E. coli*, known as **MDR ST131**, outperforms harmless strains in colonizing the gut. The research, conducted using a mouse model, sheds light on why multidrug-resistant strains of *E. coli* are able to dominate and displace other strains in the intestine. Notiulti, 5 pages. (18.10.2023). Original Publication: PLoS Biol.

★ **Shiga toxin-producing *Escherichia coli* (STEC) in meat and leafy greens:** A recent study summarizes the results of four surveys performed at different time periods, which investigated the occurrence and characteristics of Shiga toxin-producing ***Escherichia coli* (STEC)** in **beef**, **lamb** and **leafy greens** available in the **Swedish** retail market. The ***stx2a*** subtype in combination with *eae* occurred in STEC from both beef and lamb. IntJFoodMicr, 10 pages. (11.10.2023).

★ **Genotypic diversity of staphylococcal enterotoxin B gene (*seb*):** To investigate the expression pattern of **staphylococcal enterotoxin B** (**SEB**) in food and the genotypic diversity of SEB-encoding gene in association with molecular characteristics and antimicrobial resistance of *S. aureus*, 498 isolates from retail food were screened for *seb* gene and detected for SEB production in *S. aureus*. A total of 45 (**9.0 %**) ***seb*-positive *S. aureus*** strains were identified, all of which expressed SEB. IntJFoodMicr, 12 pages. (12.10.2023).

★ **Virulence and resistance patterns of Vibrio cholerae non-O1/non-O139:** In a new study, **virulence and resistance patterns** of ***Vibrio*** *cholerae* non-O1/non-O139 strains derived from **Germany** and other **European countries** were assessed. Thirty-seven virulence genes (VGs) were identified among 87 *V. cholerae* non-O1/non-O139 isolates FrontMicr, 10 pages. (30.10.2023).

★ **Microplastics in aquaculture and antibiotic resistance:** An article highlights how microplastics and **antibiotic resistance genes** can affect the production and quality of **aquatic products**, influence the development and reproduction of aquatic organisms, and accelerate the spread of **resistant bacteria**. Environ Sci Pollut Res Int., 10 pages. (16.10.2023).

★ ***Cronobacter*** **spp. isolated from plant-based food products:** A study aimed to determine the genotyping diversity and hemolytic properties of 24 strains of ***Cronobacter*** **spp.** (15 *Cronobacter sakazakii*, 6 *Cronobacter malonaticus*, 2 *Cronobacter turicensis*, and 1 *Cronobacter condimenti*) isolated from commercial **ready-to-eat leaf vegetables**, **sprouts**, **nuts**, and **dried fruits**. The study demonstrated the high genotypic diversity of the *Cronobacter* genus bacteria isolated from plant-based foods. One *C. sakazakii* strain (s12) isolated from alfalfa sprouts was assigned to the clonal complex CC4, which encompasses strains often associated with severe infections leading to meningitis in infants. Foods, 10 pages. (23.10.2023).

★ **Foodborne pathogens in low and non-alcoholic craft beer:** In a recent study, samples were inoculated with individual five-strain cocktails of ***E. coli*** **O157:H7**, ***S. enterica***, and ***L. monocytogenes***, then stored at two different temperatures (4 and 14°C) for 63 days. Results showed that non-alcoholic beers allowed for pathogen growth and survival, as opposed to the low-alcoholic ones. JFoodProt, 12 pages. (20.10.2023).

★ **Rate of food safety certification and number of foodborne illnesses:** Whether or not a country's food businesses have largely achieved **food safety certification** is the second most important predictor of instances of **foodborne illness**, according to a recent study funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture. FoodSafetyMag, 3 pages. (11.10.2023). Original Publication: JFoodProt.

★ **Cross-contamination in dry produce packinghouse environments:** An ongoing study funded by the Center for Produce Safety (CPS) is looking to fill knowledge gaps about the potential for **microbial cross-contamination** in dry produce packinghouse environments to inform risk assessments and mitigation strategies. FoodSafetyMag, 2 pages. (25.10.2023). Original Publication: CPS.

★ **What do people really do in their kitchens?** Every year in the UK, there are 2.4 million cases of foodborne illness. Now, Kitchen Life 2, research commissioned by the Food Standards Agency, has given insight into **what really happens behind closed doors** and how our **behaviours** could be making us sick. Using motion-sensitive cameras, interviews, and fridge thermometers to explore **food hygiene** in household and business kitchens, the study observed 101 kitchens. FSA, 2 pages. (26.10.2023).

Chemistry

★★★ **The Austrian children's biomonitoring survey 2020:** This study assessed the levels of environment and food-related exposures in urine of Austrian school children aged six to ten (n = 85) focusing on **mycotoxins**, **phytoestrogens**, and **food processing by-products**. 22% of the children exceeded the tolerable daily intake for **deoxynivalenol**, and the estimated margin of exposure for **ochratoxin A** indicates possible health risks for some children. Food Chem. Toxicol., 2 pages. (03.11.2023).

★★ **BPA and DEHP in food packaging cause health problems:** Results from a new US study suggest that some children are less able to excrete **Bisphenol A (BPA)** and **Diethylhexyl Phthalate (DEHP)** from their bodies than others. The study examined 149 children between 3 and 16 years of age, including children with autism, ADHD and neurotypical children. Children from the three groups were found to have different metabolic pathways for excreting BPA and DEHP but were otherwise similar with respect to their metabolic pathways. Neurotypical children were significantly more efficient at excreting BPA via a pathway known as glucuronidation than children with autism or ADHD. RottenApple, 4 pages. (23.10.2023). Original Publication: PlosOne.

★★ **FDA moves to revoke approval for brominated vegetable oil in food amid safety concerns:** The FDA is proposing to revoke the approval for **brominated vegetable oil** (BVO) in food due to safety concerns. Recent studies have shown that BVO exposure is linked to increased levels of bromine in tissues, particularly in the thyroid, which could lead to adverse health effects. The decision is based on a 90-day dietary exposure study in rats, which found elevated serum bromide, thyroid follicular cell hypertrophy, and hormonal imbalances. food ingredients 1st , 3 pages. (03.11.2023). Original Publication: FDA. Additional Information: Food Chem. Toxicol., Food Safety News.

★ **Research advances in plant protein-based products:** With the growing interest in sustainable and healthy food alternatives, **plant proteins** have gained considerable attention as viable substitutes for animal-based proteins. A new **review** summarises **the natural sources** of traditional and emerging plant proteins. The classifications, processing technologies, and applications of plant protein-based products in the food industry are explicitly elucidated. JAgrFood-Chem, 10 pages. (12.10.2023).

★ **Pollutants in aquatic system: an emerging threat:** The present study reviews the sources, toxicity, and possible remediation techniques of the **water contaminants**. Environ Sci Pollut Res Int., 10 pages. (21.10.2023).

★ **Risk ranking of chemical hazards in food and feed:** Various methods are available to rank hazard-product combinations to be included in **risk-based** monitoring programs. Such methods have been developed for either feed or food, but until now these do not consider hazards in both feed and food simultaneously. A **case study** on chemical hazards in cereals in the Netherlands for various animals and human age groups was done. Results showed that both methods resulted in the highest ranking for the **mycotoxins** deoxynivalenol, aflatoxin B1 and zearalenone. Food-Contr, 10 pages. (28.10.2023).

★ **Dietary pesticide exposure and non-communicable diseases and mortality:** A recent **systematic review** that examines the relationship between **dietary pesticide exposure** and **non-communicable diseases** (NCDs) and mortality among adults has been published. The review finds that pesticides are responsible for 25% of NCD-related deaths worldwide and that there is a potential link between dietary pesticide exposure and diseases such as cancer, diabetes, cardiovascular disease, and chronic respiratory diseases. Environ Health, 13 pages. (31.10.2023).

Nutrition

★★★ **Ultra-processed food addiction:** A recent analysis of two systematic **reviews** including 281 studies from 36 different countries found the overall pooled prevalence of **food addiction** was 14% in **adults** and 12% in **children**. This reported prevalence is similar to the levels of addiction seen for other legal substances in adults (e.g., 14% for alcohol and 18% for tobacco), but the level of implied addiction in children is unprecedented. 20Min, 1 page. (16.10.2023). Original Publication: BMJ.

★★ **Gut microbiota and breast cancer: diet as a potential modulating factor:** The influence of the **gut microbiome** on breast cancer (BCa) remains an emerging area of investigation. Associations between **significant microbial genera** identified from BCa cases and dietary intakes were identified, which highlights the potential of the gut microbiome as a source of biomarkers for BCa risk assessment. Nutrients, 10 pages. (31.10.2023).

★ **Genetics of vegetarianism:** In a study, researchers suggest that **genetic factors** may help explain why some people adhere to a strictly **vegetarian diet** while others do not. The study retained 5,324 vegetarians and 329,455 control subjects. Single-nucleotide polymorphisms (SNPs), a common type of genetic variation which determine a variety of biological characteristics, of each group were analyzed and compared to each other to determine whether certain SNPs were associated with a vegetarian diet. In the end, 11 specific genes were identified by researchers as potential contributors to vegetarianism. MedNewsToday, 5 pages. (04.10.2023). Original Publication: PlosOne.

★ **Consumption of sugary drinks among adults has increased:** A study carried out in 185 countries over a period of 28 years showed a **16%** increase in the intake of sweetened soft drinks by **adults**. 20Min, 3 pages. (17.10.2023). Original Publication: NatureComm.

★ **The fructose survival hypothesis unifying obesity hypotheses:** A new hypothesis for the driver of **obesity** is proposed in one study: the fructose survival hypothesis. The authors propose that **fructose** resets cell metabolism, increasing hunger and the desire for energy-rich foods such as fats and carbohydrates, leading to weight gain. MedNewsToday, 2 pages. (24.10.2023). Original Publication: Obesity.

Allergy

★ **Allergenic foods do not increase risk for infants:** Eggs, legumes including soya and peanuts, almonds and cashew nuts are now being introduced earlier in **infant diets** following revised advice in Sweden on the introduction of certain foods. However, there has been no change in the rate of **food allergies** or eczema in infants at the age of 18 months, meaning this measure does not increase of decrease the risk of developing food allergies. MedicalXpress, 4 pages. (10.10.2023). Original Publication: J Allergy Clin Immunol.

Fraud / Deception

★ **Traceability challenges and heavy metal risks in commercial shrimp and prawn:** Mislabeling in the global **seafood** sector raises concerns about the identity, safety and sustainability of seafood products. The aim of a recent study was to analyse the **mislabeling of shrimps** and **prawns** sold on the Spanish market and the possible risks of **heavy metal** intake. More than half of the samples did not comply with European labelling regulations. A third of the shrimps analysed were substitute species (not mentioned on the label) and 10% did not comply with the European legal limits for heavy metals. FoodContr, 44 pages. (07.11.2023).

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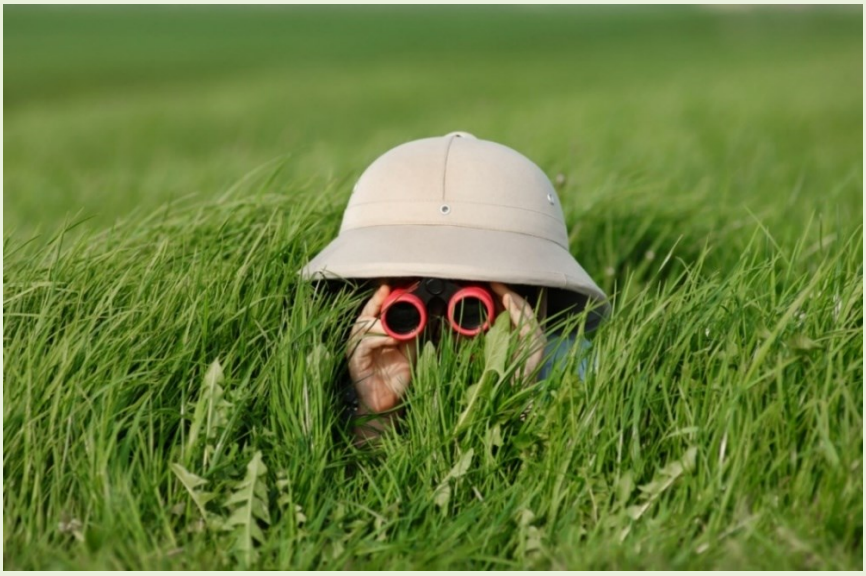

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The FSVO compiles the most important food safety information every month:
FSVO website

★★★ very important info ★★ important info ★ interesting info

★★★ **Survey:** What are your views on the early detection for food safety? Your opinion matters to us: take part in our survey here. Time required: 5 to 10 minutes. Your data will be treated confidentially. Thank you!

Microbiology

★★★ **New insights into *Bacillus cytotoxicus*:** *Bacillus cytotoxicus* is a **thermotolerant** member of the *Bacillus cereus* group. It has been associated with rare but sometimes fatal cases of diarrhoeal disease and may be missed by routine diagnostic screening temperatures commonly used for the *B. cereus* group. According to a Swiss study, it can **persist** in food production facilities for several years. *B. cytotoxicus* is almost exclusively found in foods containing **potato flakes/starch** or **insect products**. Food Microbiol., 12 pages. (12.10.2023).

★★ **Microbial contaminants in different plant-based ingredients:** A recent study examined the levels and types of **microbial contaminants** in 88 different **plant-based ingredients**, including many used to make dairy alternatives. Microbial loads in plant-based ingredients were highly variable. Many samples contained a high proportion of spore formers as part of the total counts. The main aerobic spore formers were members of the ***Bacillus subtilis*** and ***Bacillus cereus*** groups. IntJFoodMicr, 10 pages. (09.09.2023).

★★ **Gut microbiome and liver cirrhosis:** Previous studies have reported an association between **gut microbiota** and **cirrhosis**. However, the causality between intestinal flora and liver cirrhosis still remains unclear. A new study found new potential **causal effect** between cirrhosis and intestinal flora, and provided new insights into the role of gut microbiota in the pathological progression of liver cirrhosis. FrontMicr, 10 pages. (14.09.2023).

★★ ***Angiostrongylus cantonensis* on contaminated product:** The Centers for Disease Control and Prevention (CDC) has reported the spread of ***Angiostrongylus cantonensis*** into Georgia. This parasitic disease affects the brain and spinal cord and is transmitted by accidental ingestion of gastropod or larvae (e.g. on **contaminated produce**). MarlerBlog, 2 pages. (23.09.2023). Original Publication: Emerg Infect Dis . Additional Information: CDC.

★★ ***Escherichia coli* strains encoding novel shiga toxin 2 subtypes:** The sharing of genome sequences in online data repositories, allows for large scale analyses of specific genes or gene families. This can result in the detection of novel gene subtypes as well as development of improved detection methods. In a new study publicly available WGS data were used to detect a novel Stx subtype, **Stx2n** in two clinical *E. coli* strains isolated in the USA. During this process, additional Stx2 subtypes were detected; six **Stx2j** one **Stx2m** strain and one **Stx2o**. Preprints, 14 pages. (21.09.2023).

★★ **STEC in France - trend analysis:** Researchers have found a significant **increasing trend** for sporadic ***E. coli* O26** and ***E. coli* O80** HUS cases during a decade in France but a notable decrease for *E. coli* O157. *E. coli*–associated hemolytic uremic syndrome (HUS) is a substantial public health risk in France, according to scientists. Researchers conducted a study of 1,255 sporadic pediatric cases reported from 2012 to 2021. FSN , 2 pages. (23.09.2023). Original Publication: Emerg Infect Dis .

★★ **Atypical diarrhoeagenic *Escherichia coli* in milk:** A foodborne outbreak related to **milk** cartons served in school lunches occurred in June 2021 in Toyama City, Japan, which involved more than 1,800 cases from 25 schools. Although major foodborne toxins and pathogens were not detected, a specific ***Escherichia coli* strain, serotype OUT** (OgGp9):H18, was predominantly isolated from milk samples related to the outbreak and most patients tested. Microbiological tests and epidemiological information indicated that ***E. coli* OUT (OgGp9):H18** was the causative bacterium of this outbreak. Epidemiol. Infect., 9 pages. (11.09.2023).

★★ **Microfiltration created risk of spreading pasteurization-resistant bacteria:** Researcher found that microfiltration—an emerging processing technology that extends milk's shelf life by using semipermeable membranes to keep out undesirable microbes—can introduce bacteria that are resistant to pasteurization into fluid milk if equipment is not cleaned properly. FoodSafetyMag, 5 pages. (22.09.2023). Original Publication: J. Dairy Sci..

★★ **Inactivation of Hepatitis E Virus in pork products: Hepatitis E virus** genotype 3 (HEV-3) is mainly transmitted through the consumption of raw or undercooked pork. The effect of thermal inactivation of HEV by mimicking food processing steps specific to dried sausage and liver homogenate matrices was evaluated. After four weeks, HEV-inoculated **dried sausage** exposed to temperatures of 21 °C or lower was still infectious. For liver homogenate, the highest HEV-3c/e inactivation of the conditions tested was observed **at 71 °C for five minutes** or longer. Microorganisms, 17 pages. (29.09.2023).

★ **Detection of HAV, HEV, NoV, HAdV-F, and SaV in fresh and frozen berry products:** A study investigated, for the first time, the presence of different viruses in **ready-to-eat berries** at the point of sale in Ireland. Reverse transcriptase-polymerase chain reaction assays for **Hepatitis A** virus (HAV), **Hepatitis E** Virus (HEV), **Norovirus** (NoV), **human adenovirus species F** (HAdV-F) and **Sapovirus** (SaV) DNA were performed on 239 samples. Viral nucleic acid was present in 6.7% (n = 16) of the samples tested. FoodEnvironVirol, 9 pages. (01.08.2023).

★ ***Vibrio parahaemolyticus* and *V. vulnificus* in vitro biofilm dispersal from microplastics:** Growing concerns exist regarding human ingestion of **contaminated seafood** that contains *Vibrio* biofilms on **microplastics**. One of the mechanisms enhancing biofilm related infections in humans is due to biofilm dispersion, a process that triggers release of bacteria from biofilms into the surrounding environment, such as the gastrointestinal tract of human hosts. FrontMicr, 10 pages. (12.09.2023).

★ ***Listeria monocytogenes* - a surprisingly adaptive bacterium: *Listeria monocytogenes*** is a ubiquitous bacterium found in food, livestock and wild animals, soil, water and vegetation. The European ListAdapt project focused on the ability of strains of this bacterium to adapt to these different **environments**. It found that this ability is independent of the strains' environments of origin or their belonging to a given sub-group. FoodWorld, 1 page. (26.09.2023). Original Publication: anses.

★ ***Listeria monocytogenes* (LM) with atypical phenotypic and genotypic characteristics:** Out of 2495 soil, food and swab samples from the food industry, 262 LM isolates were found. A total of 30 isolates were isolated, mainly from soil and **plant foods**, and were classified as atypical LM (aLM). The environment influenced both the frequency of occurrence of non-haemolytic aLM and their unique phenotypic characteristics. Foods, 21 pages. (30.09.2023).

★ **Transmission of pandemic viruses in the food chain:** A position paper analyzes the potential introduction and transmission of **pandemic viruses via the food** chain and hypothesizes which new food safety issues could arise. Two scenarios were explored: a **gastrointestinal virus** and a **respiratory virus**. FoodContr, 10 pages. (30.09.2023).

Chemistry

★★ **Three out of four Swiss have too much BPA in their bodies: Bisphenol A** (BPA) was detected in 92% of adult participants from across 11 European countries. The hormone-like chemical measured in people's urine also exceed recently revised European safety thresholds, which raises long-term health concerns for everyone. In Switzerland, the limit is exceeded in **71 out of 100 people**. Infosperber, 3 pages. (27.09.2023). Original Publication: EEA.

★★ **PCDD/F and dioxin-like PCBs and PFAS in fish:** Many types of fish and seafood are rich in vitamins and trace elements, but they can also contain **undesirable substances** that accumulate, for example, in the fat of the animals. The Federal Institute for Risk Assessment (BfR) has calculated the amounts of such substances that consumers ingest if they eat one to **three fish meals a week** (150g each). BfR, 19 pages. (27.09.2023).

★★ **Furan and its derivatives in home-prepared foods:** Furan and its derivatives are found in various heat-treated foods. **Furan** is classified as a possible human **carcinogen**. A recent study estimated the exposure of infants and toddlers to furan and its methyl derivatives present in **home-prepared foods**. The margins of exposure calculated for most of the scenarios assumed for home-prepared meals indicate a health risk for infants and toddlers associated with exposure to furan and its derivative. Foods, 12 pages. (28.09.2023).

★★ **Foods with emulsifiers increase cardiovascular risks:** Researchers analyzed data from a prospective cohort study involving 95 442 French adults with an average age of 43, who had not previously experienced **cardiovascular diseases** (CVD). After an average follow-up period of 7 years, the study revealed that higher consumption of cellulose, mono- and diglycerides of fatty acids, and specific **emulsifiers** such as **carboxymethylcellulose**, **trisodium phosphate**, and certain variants of E472, was associated with an increased risk of CVD. Affidia, 3 pages. (18.09.2023). Original Publication: BMJ.

★★ **Mercury contamination in vegetables and herbs cultivated on a vertical indoor farming system:** Artificial grow lights, such as light-emitting diodes (**LEDs**) and fluorescent grow lights, are commonly used in modern day indoor farming. However, the use of LEDs poses a risk in **mercury contaminations** as a result of its production process. A total of 10.0 ppm of mercury was detected in a curly kale sample harvested from an indoor hydroponic vegetable farm, exceeding Singapore Food Regulation's limit of 0.05 ppm. JAgrFoodChem, 10 pages. (08.09.2023).

★ **Lead poisoning causes far more death and IQ loss than thought:** new research suggests that **lead poisoning** has a much greater impact on global health than previously thought, potentially causing more than five million deaths from **heart disease** in 2019, six times more than previous estimates. This accounts for about 30 per cent of all deaths from **cardiovascular disease**. Lead poisoning has also been found to cause a loss of almost six **IQ points** in young children in developing countries. Barron's, 3 pages. (11.09.2023). Original Publication: Lancet Planet. Health .

★ **Bioaccumulation - metal transfer from soil to honey:** In a study, soil and honey samples from the Maramureș region were analysed for potentially **toxic elements** and their concentrations. The highest concentrations were found for (Cu), (Zn), (Pb), (Cr), (Ni), (Cd), (Co) and (As). The study highlighted the role of anthropogenic activities in heavy metal pollution. **Honey** samples were analysed for heavy metal concentrations, with variations between types and locations. Positive correlations were found between certain elements in honey. Foods, 25 pages. (26.09.2023).

★ **Assessment of exposure to pesticides:** A recent study aimed to assess the relationship between **dietary intake** of **pesticides** and their presence in **urine samples**, in order to understand the **exposure** to pesticides in the general population. The researchers collected duplicate diets and urine samples from 35 healthy consumers and analyzed them for pesticide residues and metabolites. **Metabolites** were present in all urine samples, indicating exposure to pesticides. Anal Bioanal Chem, 16 pages. (22.09.2023).

★ **Safety assessment of European cranberrybush juice:** A study evaluated acute and subacute oral toxicities of **European cranberrybush (ECB)** (*Viburnum opulus* L.) fruit juice on rats and mice to establish a **toxicity profile**. The results revealed that even though a single high-dose exposure of ECB extract did not exhibit acute toxicity, prolonged exposure to high doses might lead to histopathological changes, especially in the liver, kidney, and adipose tissue. Food Chem. Toxicol., 2 pages. (01.10.2023).

★ **Free and hidden fumonisins in Brazilian corn:** The aim of a new study was to evaluate the contamination by both hidden and free fumonisins in popcorn and maize-based products sampled from all major **Brazilian** regions. Free fumonisins were detected in all (100%) of the 212 samples analysed, ranging from 7.2 to 2158.2 µg/ kg-1 concerning the sum of fumonisins. Hidden fumonisins were detected in all (100%) samples analysed, ranging from 19.2 to 750.8 µg kg-1 for the sum of fumonisins. FoodContr, 10 pages. (03.10.2023).

★ **Microplastics and phthalate esters release from teabags:** A study from Germany and Iran investigated the release of **microplastics** (MPs) and **phthalate esters** (PAEs) from teabags into tea drinks. The researchers analyzed **teabag** samples from different brands and found that the average abundance of MPs was 412.32 items per teabag for Persian brands and 147.28 items per teabag for German brands. The average concentration of PAEs was 2.87 mg/g for Persian brands and 2.37 mg/g for German brands. Environ Sci Pollut Res Int., 10 pages. (12.09.2023).

★ **Hexahydrocannabinol (HHC) in food**: HHC is used, for example, in liquids for e-cigarettes or offered in the form of HHC oils. However, it is also found in products that consumers may perceive as food. The Federal Institute for Risk Assessment (BfR) has therefore carried out a **toxicological assessment** of HHC in food. BfR, 13 pages. (05.10.2023).

Nutrition

★★ **Food industry pays 'influencer' dietitians to shape eating habits:** Food, beverage and dietary supplement industries are paying dozens of **registered dietitians** that collectively have millions of **social media** followers to help sell products and deliver **industry-friendly messages** on Instagram and TikTok, according to an analysis by The Washington Post and The Examination. Washington Post , 9 pages. (13.09.2023).

★★ **Health-Washing of ultra-processed products:** Researchers analysed the content of 118 Instagram accounts of food companies promoting **ultra-processed foods** over a six-month period. They found that more than half of the posts contained **health-related messages**. The authors conclude that there is a need for regulations to address **health washing** in the digital marketing of these products. J Nutr Educ Behav., 10 pages. (30.09.2023).

★ **Maternal emulsifier consumption impacts offspring:** A study shows that when pregnant mice were fed **emulsifiers**, metabolic impairments, cognition deficits and anxiety-like traits were observed in their offspring. FoodNavigator, 2 pages. (12.09.2023). Original Publication: PLoS Biol.

★ **Artificial sweeteners may increase depression risk:** Researchers found that the risk of depression was particularly related to eating **ultra-processed foods** and drinking beverages containing **artificial sweeteners**. MedNewsToday, 3 pages. (22.09.2023). Original Publication: JAMA Netw Open.

★ **Coconut oil may alter metabolism and cause obesity:** Low doses of **coconut oil** added to the diet of mice for eight weeks led to alterations in their metabolism that contributed to the development of **obesity** and related co-morbidities, according to a new study. The coconut oil disturbed the mice's ability to properly use **leptin** and **insulin**, two hormones important for regulating energy expenditure, hunger, and how the body handles fats and sugars. MedNews-Today, 2 pages. (09.09.2023). Original Publication: J. Funct. Foods. .

Fraud / Deception

★★ **UK food safety testing finds one third of e-commerce samples noncompliant with regulations:** A total of **1,010 samples** were collected across England and Wales during 2020 from national **supermarkets, independent retailers, and e-commerce vendors**. The samples were analyzed for authenticity, adulteration, and contamination. 82% (829 samples) were found to be compliant. The majority of noncompliant samples were due to product composition. Specifically, **one third** of samples bought online did not meet regulatory standards. FoodSafetyMag, 4 pages. (22.09.2023). Original Publication: FSA.

★★ **UNODC - corruption in food sector:** The United Nations Office on Drugs and Crime (UNODC) has brought attention to the pervasive **risk of corruption** throughout the entire **food supply** chain. The UNODC's recent analysis underlines how corrupt practices can lead to a loss of **public trust in governments**, undermine control systems, and jeopardize trade relationships. Affidia, 1 page. (13.09.2023). Original Publication: UNODC.

★ **Food fraud: Europol-coordinated operation "OPSON Europe":** Europol's **OPSON** Europe operation has achieved a significant breakthrough in combating **food fraud** across the European market. During the operation, Europol reported remarkable seizures, including 8 000 tonnes of illicit products and 6.5 million liters of predominantly alcoholic beverages. The main illicit products seized, listed in order of quantity, were **alcoholic beverages**, **cereals** and derived products, **fruits/vegetables/legumes**, **sweet and sugary products**, **meat and meat products**, **seafood**, **dairy products**, and **food supplements/additives**. Affidia, 1 page. (11.10.2023). Original Publication: Europol.

★ **Food seized in Spain:** Spanish authorities have seized more than 28 tons of food that they said was not suitable for human consumption. Items were found in the facilities of companies in the provinces of Zaragoza, Valencia, and Almería, according to the Guardia Civil. Officials said **meat products**, **frozen fish**, and other items were sold with **expired shelf-life dates**, **manipulated labels**, and **irregularities in traceability**. FSN , 1 page. (14.09.2023).

★ **Counterfeit wines with protected geographical indications:** Authorities in **Sardinia** have uncovered a major **fraud** in the wine sector, involving an agricultural company that produced **certified Sardinian wines**. The investigation revealed the use of falsified transport documents and the accounting of invoices for non-existent supplies of grapes and wine. The company was found to have produced and sold prestigious wines with DOC (*Denominazione di Origine controllata*), DOCG (*Denominazione di Origine Controllata e Garantita*) and IGT (*Indicazione Geografica Tipica*) labels. Cagliari, 2 pages. (13.09.2023). Additional Information: La Nuova .

★ **Food defense: factory worker who deliberately contaminated food:** A factory worker has been jailed for putting plastic bags, rubber gloves and ring-pulls into food. The company was made aware that dozens of its products, supplied to restaurants across the country, had been contaminated. The worker was jailed for 33 months for contaminating goods. BBC, 3 pages. (04.10.2023). Original Publication: FSN .

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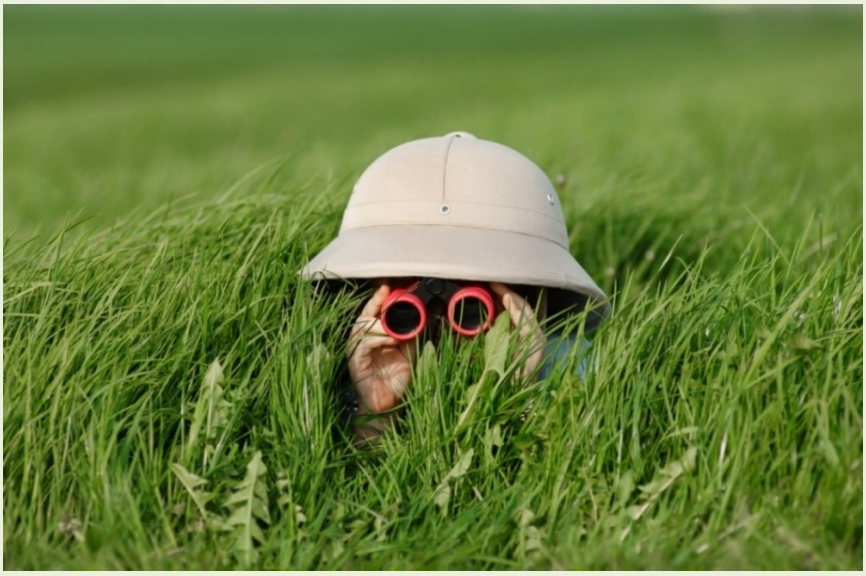

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Microbiology

★★★ ***Escherichia coli* O104:H4 Strain in the edible parts of lamb's lettuce: *E. coli* O104:H4** strain C227/11Φcu, a derivative of the 2011 enterohemorrhagic/enteroaggregative *E. coli* (EHEC/EAEC) outbreak strain, was shown to migrate into the edible part of **lamb's lettuce** plants after contamination of the surrounding soil. The highest recovery rate (27%) was found for lettuce grown on agar, with up to 1.6 × 10^3 CFU/g lettuce detected. Micro-organisms, 10 pages. (12.08.2023).

★★★ **More Brucella cases than previously suspected?:** Scientists have estimated that the global i**ncidence of Brucella infections** is much higher than previously believed. Findings suggest that at least 1.6 to 2.1 million new cases of human brucellosis occur every year. This differs significantly from one of the most cited references, which predicts an incidence of 500,000 new cases yearly. FSN , 2 pages. (16.08.2023). Original Publication: Emerg Infect Dis .

★★★ ***Toxoplasma gondii* in Spanish commercial dry-cured meat products: Toxoplasmosis** is an infection caused by *Toxoplasma gondii*, the transmission of which has usually been attributed to ingestion of undercooked or raw meat. Epidemiological studies also mention **cured meat products** as a potential risk factor. 552 samples of commercial **dry-cured hams/shoulders** and **dry-cured sausages** of different trademarks from different localities in Spain were randomly purchased for analysis. Bioassay test showed that 47 meat products in which the parasite has been detected produced mice seropositive response (IFA). FoodContr, 10 pages. (01.09.2023).

★★ ***Cronobacter spp.* isolated from quick-frozen foods in China:** Chinese researchers investigated the prevalence, molecular characterization, and antimicrobial susceptibility of *Cronobacter* in 576 quick-frozen food samples. ***Cronobacter spp***. were found in 18.8% (108/576) of the samples. Foods, 8 pages. (11.08.2023).

★★ **AMR risks associated with the use of biocides and heavy metals:** A study carried out by the UK Food Standard Agency concluded that there is published evidence that the release of chemicals such as **biocides** (particularly disinfectants) and/or **heavy metals** from **food animal production** may contribute to the selection, emergence and spread of **antibiotic resistance** (as bacteria or genes) that could be acquired by consumers, and that this could therefore pose a potential risk to the consumer. FSA, 2 pages. (21.08.2023).

★★ ***Listeria monocytogenes* biofilms in food-associated environments:** *Listeria monocytogenes* is a bacterial pathogen responsible for **listeriosis**, a foodborne illness associated with high rates of mortality (20–30%) and hospitalisation. The persistence of this organism in **food-associated environments** for months to years has been linked to several devastating listeriosis outbreaks. It may also result in significant costs to food businesses and economies. A new review shows the **current state of knowledge** on the subject. Foods, 10 pages. (06.09.2023).

★★ **Association of *Campylobacter* spp., *Salmonella* spp., and *Blastocystis* sp. in poultry:** A new study confirms the previously reported association between ***Blastocystis*** sp. and ***Campylobacter*** spp. in poultry and reveals a negative association between *Blastocystis* sp. and *Salmonella* spp. The presence of *Blastocystis* sp. favours the presence of *Campylobacter* spp. and vice versa. FoodWorld, 2 pages. (08.08.2023). Original Publication: Microorganisms.

★ **Air pollution linked with global rise in antibiotic resistance: Antibiotic resistance** mainly spreads to humans through contaminated food or water. But a recent study suggests this isn't the only way resistant bacteria can spread. According to researchers from China and the UK, **air pollution** may also be spreading antibiotic resistance. Conversation, 4 pages. (10.08.2023). Original Publication: Lancet Planet. Health ., SciTotalEnviron.

★ **China - emergence of GII.4 Sydney[P16]-like norovirus-associated gastroenteritis:** GII.4 Sydney[P16] **norovirus** has evolved into a new subline, **SHGII.4-2020**, which carries multiple mutations and is circulating in different regions of China. It was found that SHGII.4-2020 became the **predominant norovirus genotype** and led to an abrupt increase in diagnosed cases among children treated as outpatients at a hospital in Shanghai in 2021-2022. Emerg Infect Dis , 2 pages. (09.2023).

★ ***Vibrio parahaemolyticus* in bivalve molluscs in Sardinian coastal environments:** A recent study evaluated the occurrence of ***Vibrio parahaemolyticus*** in **bivalve molluscs** harvested from Sardinian coastal areas. Comparing the sampling period 2011-2014 with that of 2015-2018, an **increase in the prevalence** of *V. parahaemolyticus* in bivalve molluscs was observed. The occurrence was related to the sampling period and shellfish species. 208 potentially enteropathogenic strains of *V. parahaemolyticus* were identified. JFoodProt, 24 pages. (22.08.2023).

★ **First report of food poisoning due to staphylococcal enterotoxin type B in döner kebab:** In July 2022, the Turin local health board was notified of a suspected foodborne outbreak involving six children who had consumed **döner kebab** purchased from a takeaway restaurant. The whole genome sequencing of isolates from the food matrix confirmed the **staphylococcal enterotoxin genes** encoding for type B. This toxin is rarely reported in staphylococcal food poisoning, however, because there is **no specific commercial method of detection**. Pathogens, 10 pages. (06.09.2023).

Chemistry

★★★ **Residues of car tyres in lettuce:** K-Tipp had salads from major distributors tested in the laboratory. Residues of car tyres were **found in almost all products**. These get into the soil and from there into the plants via the roots. Three salads from Italy were particularly contaminated. K-Tipp, 4 pages. (23.08.2023).

★★ **Glycerol in slush-ice drinks: Slush ice drink**s can contain **glycerol** as a substitute for sugar to create the slush effect. The Food Standards Agency (FSA) UK has issued new voluntary industry guidance on glycerol in slush-ice drinks, advising that they should not be sold to children four years of age and under. An FSA risk assessment found that children below this age may suffer from headaches and sickness caused by exposure to glycerol. FSA, 1 page. (10.08.2023). Additional Information: Slush ice drinks linked to Illness in children.

★★ **Unregulated toxic chemicals in breast milk:** A new study has found toxic **brominated flame retardants** in breast milk samples, showing for the first time that chemicals designed to replace other banned toxic chemicals are now building up in humans. MedicalXpress, 3 pages. (08.08.2023). Original Publication: Environ. Pollut.. Additional Information: EFSA.

★★ **Interaction mechanism of four pesticide residues:** The presence of **multiple pesticide residues** in agricultural production highlights the need for studying **mixture** interaction during transepithelial transport. A new study applied the Caco-2 cell model to investigate the interaction of four pesticide residues (**carbendazim**, **epoxiconazole**, **phoxim**, and **chlorpyrifos**) in *Chaenomeles speciosa* during transepithelial transport. Results demonstrated that co-treatment with pesticide mixtures generally increased the cumulative transport. FoodChem, 10 pages. (12.08.2023).

★★ **Naturally aged microplastics stunted pakchoi growth with cadmium in soil: Biodegradable microplastics** (BMPs) and **cadmium** (Cd) are posing threats to agro-systems particulary to plants. Current studies have mostly used virgin BMPs to investigate their ecological effects. However, the effects of naturally aged BMPs and their combined effects with Cd on pakchoi (*Brassica rapa* subsp. *chinensis*) remain to be elucidated. The results suggested that the degradation of BMPs in soil over time may increase their toxicity to plants. Furthermore, the coexistence of BMPs (virgin and aged) and Cd caused greater damages to pakchoi than either alone. J. Hazard. Mater., 5 pages. (04.09.2023).

★★ **Novel seafood toxin responsible for ciguatera poisoning:** The National Research Council of Canada (NRC) has unearthed a **novel seafood toxin** responsible for **ciguatera** poisoning. The toxin, known as ciguatoxin, is found in large fish such as barracuda, moray eel, snapper and grouper, and can cause tingling and numbness in fingers and toes, nausea, abdominal pain, and even poisoning. FSN , 2 pages. (14.08.2023). Original Publication: NRC. Additional Information: Chemosphere.

★★ **90% of eco-friendly paper straws contain PFAS:** Researchers tested 39 different brands of **straws** made from **paper, glass, bamboo, stainless steel, and plastic**, and analyzed them for 29 different **poly- and perfluoroalkyl substances** (PFAS) compounds. Paper straws were most likely to contain PFAS, with the chemicals detected in 90% of the brands tested. The chemicals were found in 80% of the bamboo, 75% of the plastic and 40 % of the glass straws. slashdot, 1 page. (26.08.2023). Original Publication: Food Addit Contam Part A.

★★ **Rare earth elements (REE) in cultivated macrofungi:** Edible **macrofungi** are increasingly being cultivated as they are seen as a sustainable and popular food around the world. This trend is paralleled by a similar increase in the use of **rare earth elements** (REE) in consumer products, which has increased the possibility of contamination in mushrooms. There is a growing recognition of REE as emerging environmental contaminants due to their occurrence in food. FoodContr, 10 pages. (31.08.2023).

★ **Acrylamide exposure from foods consumed outside main meals in Singapore:** This study investigated the influence of '**snackification**' in Singaporean diets, leading to increased dietary acrylamide exposure. The **acrylamide exposure** from outside main meals was nearly equivalent to that from within the main meals. The calculated margins of exposure were below 10,000, indicating **potential human health concern**. Foods, 10 pages. (11.08.2023).

★ **Deoxynivalenol induces blood–testis barrier dysfunction:** Deoxynivalenol **(DON)** is widely present in **cereals** and processed grains. It can disrupt the **blood-testicular barrier** (BTB), leading to sterility in males; however, the mechanism is unknown. Immunofluorescence results indicated now that DON disrupted the localization of zonula occludens (ZO)-1 in mice and TM4 cells. JAgrFoodChem, 10 pages. (17.08.2023).

★ **Hexachlorocyclohexane impairs human sperm motility:** Decreased **sperm motility** is a leading cause of male infertility and persistent organic pollutants are known to contribute significantly to the development of this disease. The effects of **organochlorine pesticides** such as **hexachlorocyclohexane** (HCH) on human sperm function and their mechanisms of action have received much attention, but are still not fully understood. A new study discovered that HCH has a concentration- and time-dependent inhibitory effect on human sperm motility *in vitro*. Food Chem. Toxicol., 10 pages. (16.08.2023).

★ **Are chokeberry products safe for health:** In a recent study, for the first time, it was examined the content of **toxic elements** (As, Hg, Cd, Pb), nitrates, and nitrites in all chokeberry juices (organic, conventional, from concentrate, and not from fruit concentrate) without additives and in all **chokeberry** fibers available in Poland. Statistically significant differences in **As** content were found between juices from conventional and organic cultivation. Foods, 19 pages. (31.08.2023).

Nutrition

★★ **Future diets will be short of micronutrients like iron:** Iron deficiency is one of the most common forms of **nutrient deficiency** worldwide. As more people consider switching to a **plant-based** diet, the risk of iron deficiency is likely to increase. Analysis from New Zealand. Conversation, 3 pages. (01.09.2023).

★ **Sugar-sweetened beverages and risk of liver cancer:** A recent study examined how drinking **sugar-sweetened beverages** contributes to **liver problems**. The study found that women at the postmenopausal stage who consumed one or more sugar-sweetened drinks daily were at an increased risk for **liver cancer** and death from chronic liver disease. However, they found that participants who consumed **artificially-sweetened beverages** were not at an increased risk for liver cancer or death from chronic liver disease. MedNewsToday, 4 pages. (10.08.2023). Original Publication: JAMA .

★ **Consumption of ultra-processed foods and cardiometabolic risk factors:** The consumption of **ultra-processed foods** (UPF) has increased over the past few decades. A recent study included **students aged 12–17 years**. Food consumption was assessed using a 24-h food recall. The analysis included a total of 36,952 adolescents. The energy consumption from UPF was 30.7% (95%CI: 29.7–31.6) per day. It was observed that higher UPF consumption was directly associated with **high LDL-c** and inversely with **low HDL-c**. EJCN, 10 pages. (23.08.2023).

★ **Ultra-processed food raises risk of heart attack and stroke:** Two extensive studies presented at the annual meeting (2023) of the European Society of Cardiology, Amsterdam, the Netherlands, have demonstrated the high propensity of **ultra-processed foods** (UPF) to cause cardiovascular disease and stroke. According to the studies conducted by the University of Sydney and the Fourth Military Medical University in China, UPF such as cereals, protein bars, fizzy drinks, ready meals and fast food increases the risk of high blood pressure, heart disease, heart attacks and strokes. TheGuardian, 2 pages. (27.08.2023). Additional Information: Nutrition Insight .

★ **Longitudinal effect of ultra-processed on the development of dyslipidemia/obesity:** A recent study shows that higher **ultra-processed food** (UPF) intakes assessed by the NOVA system and Food Compass Score (FCS) are associated with increased incidences of **dyslipidemia and obesity**. Furthermore, NOVA-defined UPF shows a statistically significant negative association with **alternate Mediterranean diet score** (AMED score), indicating poor diet quality. Mol Nutr Food Res, 10 pages. (31.08.2023).

★ **Late night snacking could increase risk of diabetes and heart disease:** According to researchers at King's College London, people who eat most of their **snacks in the evening** after 9pm saw **larger spikes in their blood sugar** compared to those snacked earlier in the day. The group who snacked later also had **higher concentrations of fat** in their blood compared to those who snacked earlier. Independent, 2 pages. (25.07.2023). Original Publication: KCL.

★ **Rising caffeine levels spark calls for ban on energy drink sales to children:** Pediatricians and parents are calling for the U.S. to treat new **high-caffeine energy drinks** like alcohol and cigarettes and ban their sale to minors as a single serving can contain as much caffeine as six Coca-Colas. There is no proven safe dose of caffeine for **children,** according to the American Academy of Child and Adolescent Psychiatry (AACAP). Reuters, 2 pages. (30.08.2023). Additional Information: AACAP.

★ **Heavily restrictive diets linked with higher risk of mortality:** Researchers in Japan found that a **low carbohydrate** intake in men and a **high carbohydrate** intake in women are associated with a higher risk of all-cause and cancer-related mortality. FoodNavigator, 2 pages. (04.09.2023). Original Publication: J Nutr.

Allergy

★★ **FSA to consider label warnings as protein shake death sparks debate:** After a death of a schoolboy, the UK Food Standards Agency is to look at whether labels on **high-protein drinks** and **supplements** should feature a warning about the potentially fatal risk of a sudden spike in protein for people with undiagnosed disorders. FoodNavigator, 3 pages. (24.08.2023).

★ **Gluten-contamination recall: Soy flour** from a plant in Iowa (USA) has been recalled after users found it contained gluten. Soybeans processed at the facility are believed to have been affected by agricultural mixing with rye. **Rye and wheat** are used as **cover crops for soybeans** in Iowa, with the number of acres increasing in recent years. Gluten-free claims have been removed from soy products from this facility. RottenApple, 3 pages. (04.09.2023). Original Publication: Gluten Free Watchdog .

Fraud / Deception

★★ **Short-weighting, species authentication, and labeling compliance of prepackaged frozen shrimp:** The objective of this study was to investigate **frozen shrimp** for **Country of Origin Labeling** (COOL) compliance, species **authentication**, **acceptable market names**, **net weights**, and **percent glaze**. Overall, 94% of 106 samples were compliant with COOL. The average percent glaze was 16.6%, with 26% of samples having >20% glaze. Short-weighting was detected in 37% of samples, with the greatest proportion of incidents recorded for the super/extra colossal shrimp category (57.1%). Species labeling errors were observed in 37% of samples. FoodContr, 10 pages. (06.09.2023).

★ **More than 10% of seafood sold in Australia is not what's on the label:** More than 10 percent of seafood products being sold in **Australia** are not actually what their labels indicate. This fraud was discovered after DNA testing was performed on more than 600 **seafood** products by the Minderoo Foundation, which is based in the city of Perth in Western Australia. Natural News , 3 pages. (10.08.2023). Original Publication: Sci Rep. Additional Information: The Guardian.

★ **Adulterated tea powder:** The FDA in Thane, Maharashtra (India) raided several locations and seized adulterated tea powder. In cooperation with local law enforcement agencies, the FDA raided a tea warehouse and seized adulterated tea powder. The tea powder was found to contain food colouring. FNB News, 1 page. (24.08.2023).

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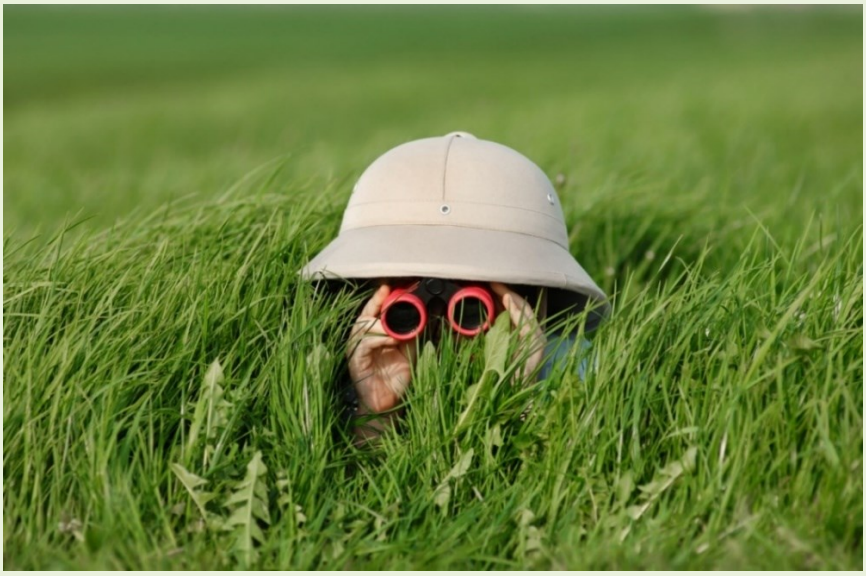

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ **Climate Change predicted to escalate foodborne illnesses:** According to recent scientific findings, the escalating **climate change** crisis is projected to amplify the incidence of foodborne infections, posing an increasing threat to public health in Germany. A report of the Robert Koch Institute sheds light on the potential health risks associated with foodborne bacteria, parasites, and marine biotoxins, such as *Salmonella*, *Campylobacter*, *Vibrio*, *Cryptosporidium*, and *Giardia*. Affidia, 1 page. (09.08.2023). Original Publication: Journal of Health Monitoring.

★★ **Peru: Guillain-Barré Syndrome (GBS):** The potential cause of the reported i**ncrease in GBS** incidence in Peru remains under investigation as ***Campylobacter jejuni*** infection was confirmed by the laboratory in 63% of GBS cases from 22 samples tested since epidemiological week 23. In 2019, Peru reported an unprecedented **outbreak** of Guillain-Barré Syndrome that affected several regions of the country, which was concluded to be associated with the presence of the *Campylobacter jejuni* ST2993 genotype. WHO, 3 pages. (25.07.2023).

★★ **Impacts of acidophilic lactic acid bacteria:** A review article assesses the knowledge and potential risks associated with the widespread use of **acidophilic lactic acid bacteria** (LAB). It should be noted that some LAB with a low pH can produce **biogenic amines**. **Antibiotic-resistance gene transfer** should also be taken into account when selecting isolates. Moreover, the presence of hemolytic, DNase, gelatinase, mucinolytic activities, and virulence genes of these acidophilic microorganisms should be evaluated before they are used in the health and food industry, and it should be demonstrated that their use is safe. Foods, 30 pages. (05.08.2023).

★★ **Spread of multidrug-resistant *Pseudomonas aeruginosa* in animal-derived foods:** The worldwide spread of **multidrug resistant** (MDR) ***P. aeruginosa*** is threatening public health. However, the prevalence and spread of MDR *P. aeruginosa* through the food chain is little referred under the One Health perspective. A total of 259 animal-derived foods (168 **chicken** and 91 **pork**) in China were analysed. The prevalence of *P. aeruginosa* in chicken and pork was 42.1 %. The phenotypic antimicrobial susceptibility testing showed that 69.7 % of isolates were MDR. IntJFoodMicr, 10 pages. (16.10.2023).

★★ **Global emergence of multidrug-resistant *Salmonella enterica* subsp. *enterica* Serovar Infantis:** Over the last decade, **multidrug-resistant** *Salmonella enterica* subsp. *enterica* serovar **Infantis** has spread globally. It is

mainly found in **broilers** and their meat. *Salmonella* Infantis carries a megaplasmid emergent (pESI*)* with antibiotic and arsenic-mercury resistance genes. IntJFoodMicr, 10 pages. (16.10.2023).

★ **Persistent strain of *Salmonella* Infantis (REPJFX01) linked to chicken:** CDC recently posted information about a **persistent** strain of ***Salmonella* Infantis** bacteria (REPJFX01) that has caused illnesses and outbreaks in the United States. Persisting strains are those causing illnesses over months or years. Infection with REPJFX01 has been linked to eating contaminated food (particularly **chicken**) and traveling internationally. REPJFX01 is a leading strain of Salmonella found in chicken produced in the United States. CDC, 3 pages. (21.07.2023). Additional Information: CDC.

★ ***C. difficile* - an intestinal germ with pathogenic potential: *Clostridioides (C.) difficile*** is a bacterium that can colonise the human intestine, without causing any symptoms. However, it can also cause infections associated with diseases of the gastrointestinal tract if the bacterial community in the intestine of the has been disturbed. Causes include **contaminated food** and contact with farm animals. BfR, 5 pages. (20.07.2023). Additional Information: BLV

★ ***Staphylococcus aureus* enterotoxin-like X (SEIX):** A Chinese research group investigated the *selx* gene carrying rate of 165 ***Staphylococcus aureus*** strains isolated from 95 food poisoning outbreaks between 2006 and 2019. The results showed that the *selx* gene carrying rate was 90.30%. **SEIX** had significant resistance to heat treatment and pepsin digestion (pH = 4.0 and pH = 4.5), and had good superantigen and emetic activity. IntJFoodMicr, 10 pages. (03.08.2023).

★ **Plant toxins in food matrices - an outbreak in France:** An outbreak of acute gastroenteritis among customers of a dining facility at a military base in France was investigated. A total of 200 patients were reported out of a population of 1700. A case–control survey was carried out. Statistical analysis pointed to the **chili con carne** served at lunch as the very likely source of poisoning. **Phytohaemagglutinin**, a plant **lectin**, was found in the chili con carne at a concentration above the potentially toxic dose (400 HAU/gram). Toxins, 18 pages. (13.07.2023).

★ **Ancient pathogens released from melting ice could wreak havoc on the world:** Could **pathogens** that were once common on Earth – but frozen for millennia in glaciers, ice caps and permafrost – emerge from the melting ice to lay waste to modern ecosystems? The potential is, in fact, quite real. Conversation, 3 pages. (27.07.2023). Original Publication: PLoS Comput. Biol..

Chemistry

★★★ **Microplastics and bisphenol A found in tuna and swordfish:** An Italian study has discovered **microplastics** and **bisphenol A** contaminants in the muscle tissues of two popular fish species from the Mediterranean Sea: swordfish and bluefin tuna. One of the most significant aspects of this research is that it marks the **first-time contaminants** were detected in the muscle tissues of fish, the part typically consumed by humans. Previous studies mostly focused on the presence of microplastics in fish's digestive tracts. Affidia, 3 pages. (28.07.2023). Original Publication: J. Sea Res..

★★★ **Assessing the release of microplastics and nanoplastics from plastic containers: Heating bottles** and baby food containers in the microwave oven releases billions of **nano and microplastics**, which in some cases reach the hyperbolic figure of two billion nanoparticles and four million microparticles for every square centimetre of container wall. Particles that children then ingest together with milk and food and which, in in vitro tests, cause the death of kidney cells. IlFatto, 1 page. (24.07.2023). Original Publication: Environ. Sci. Technol..

★★ **Histamine levels in edible crickets:** Edible **cricket** has attracted the attention of consumers and the food industry as an alternative high-protein food source. However, in view of safety, the information on **biogenic amine** contents, particularly **histamine**, was still lacking. The histamine levels in two species of edible crickets, *Acheta domesticus* and *Gryllus bimaculatus* were measured. They increased when crickets were stored at room temperature. FoodContr, 10 pages. (08.08.2023).

★★ **T-2 and HT-2 Toxins - toxicity, occurrence and analysis:** A new **review** provides a concise assessment of the existing understanding concerning the toxicological effects of **T-2** and **HT-2** in humans and animals, their biosynthetic pathways, occurrence, impact of climate change on their production and an evaluation of the analytical methods applied to their detection. Toxins, 42 pages. (29.07.2023).

★ **Climate Change - increasing mycotoxin occurrence:** During the last decade, scientists have given increasingly frequent warnings about **global warming**, linking it to **mycotoxin**-producing moulds. It has been predicted that in Europe in the next 50–100 years, *A. flavus* and **aflatoxins** will become of the greatest concern. Additionally, the representation of certain mycotoxigenic **Fusarium** species is changing ever more substantially, while the frequency of contamination with *F. graminearum*, as a species capable of producing several toxic mycotoxins, is increasingly observed in northern and central Europe. Foods, 18 pages. (14.07.2023).

★ **Occurrence of aflatoxins in water:** The occurrence of aflatoxins in bodies of water is reviewed for the first time, along with the decontamination methods. Aflatoxins have been detected in surface, wastewater and **drinking water**, including **tap** and **bottled water**. The specific sources of water contamination remain unclear. WaterRes, 10 pages. (01.04.2023).

★ **Microcystins - potential risks to human's health:** The rapid rise of microcystins (MCs) poses a serious threat to global freshwater ecosystems and has become an important issue of global public health. MCs have considerable stability and are the most widely distributed hepatotoxins. In daily life, humans can be exposed to MCs in the following ways: physical contact; drinking contaminated water; eating contaminated food; edible algae dietary supplements and hemodialysis. Toxins, 14 pages. (06.07.2023).

★ **Release of organophosphite antioxidants from plastic food packaging:** Organic phosphite antioxidants (OPAs) are widely added in **plastic** products and can be oxidized to generate oxidized derivatives, namely organic phosphate esters (OPEs), during production and use processing. Herein, the occurrence of OPEs and OPAs in five **plastic food packages** was detected. The estimated ingestion of OPAs and OPEs through plastic-packaged food can reach 2.6 and 32.7 ng/kg in children and 1.1 and 6.5 ng/kg in adults, indicating a non-negligible **exposure risk** of organic phosphorus pollutants. JAgrFoodChem, 10 pages. (20.07.2023).

★ **Fukushima fish with 180 times legal limit of radioactive cesium:** A **fish** living near drainage outlets at the **Fukushima** Daiichi nuclear power plant in May contained levels of radioactive **cesium** that are 180 times Japan's safety limit. The black rockfish caught on 18 May was found by plant operator Tokyo Electric Power Company (Tepco) to have 18,000 becquerels per kilogram of cesium-137, compared with the legal maximum level of 100 becquerels per kg. TheGuardian, 1 page. (24.07.2023).

★ **Drinking borax is the latest TikTok trend:** A potentially dangerous trend has gained prominence on **TikTok**, with a number of people mixing **borax** into water and drinking it for supposed health benefits. This isn't new. Social media platforms have been hosting to many dangerous "challenges" – and users have been dosing themselves with questionable substances for years. NBCNews, 1 page. (22.07.2023). Original Publication: Conversation.

Nutrition

★★ **Nutritional content of milk alternatives:** To assess how the nutritional content of **plant-based milk alternatives** compares to that of **cow's milk**, researchers examined more than 200 plant-based milk alternative products being sold in the U.S. in 2023. Compared to cow's milk, only **12%** of the milk alternative products contained **comparable or greater** amounts of all three nutrients studied: **calcium, vitamin D, and protein**. EurekAlert, 3 pages. (24.07.2023). Original Publication: Nutrition 2023.

★★ **Vegetarian diet may increase risk of bone fracture:** A recent study in the UK examined the risk for **hip fractures** among people who ate meat, pescatarians, and vegetarians. The results of the study showed that both men and women who followed a **vegetarian diet** were at higher risk for hip fractures. MedNewsToday, 2 pages. (04.08.2023). Original Publication: BMC Med.

★★ **Long-term artificial sweetener intake increases body fat adipose tissue volume:** Over 20 years, a research team examined people's regular **dietary intake**, paying particular attention to **non-nutritive sweeteners** commonly found in artificial sweeteners. The study group found that long-term consumption of **aspartame**, **saccharin** and diet beverages were linked to increased **fat stores** in the abdomen and fat within muscle. EurekAlert, 2 pages. (03.08.2023). Original Publication: Int J Obes.

★ **Consuming added sugars may increase risk of kidney stones:** A study has shown for the first time that an elevated consumption of **added sugars** should probably be added to the list of risk factors for **kidney stones**. EurekAlert, 2 pages. (04.08.2023). Original Publication: FrontNutr.

★ **Obesity associated with chemicals in ultra-processed food:** The hypothesis presented in this article is that substances, called **obesogens**, that have entered our bodies recently cause obesity by **generating false and misleading information** about energy status, such as inappropriate insulin secretion or hunger, that lead to obesity. These obesogens could generate changes in redox state (a normal signal of either excess or the need for energy) that are unrelated to energy needs but falsely **stimulate hunger** or fuel storage when not needed. EurekAlert, 2 pages. (26.07.2023). Original Publication: Trans. R. Soc. B: Biol..

★ **Inflammatory potential of diets associated with anxiety disorder:** Diet may be a modifiable factor in the prevention of psychiatric disorders by modulating inflammation. The empirical dietary inflammatory index (EDII) is designed to evaluate the **inflammatory potential of diets**. A case–control study found that there is a positive association between the EDII score, odds, and severity of **anxiety disorder**. Food Sci. Nutr., 10 pages. (27.07.2023).

Allergy

★★ **Emerging tick bite-associated meat allergy:** According to the US Centers for Disease Control and Prevention (CDC), at least 110,000 Americans have been diagnosed with a **meat allergy** since 2010. Because of a potentially higher number of unreported cases, the researchers fear that in the US alone, over 450,000 people could be affected by the allergy without even knowing it. According to the CDC, the triggers are the bites of **a certain tick species**, the "Lone Star Tick". However, the allergy can also be transmitted by other ticks. Südkurier, 3 pages. (01.08.2023). Original Publication: CDC.

★★ **Sugar-sweetened beverages and allergy traits:** Sugar-Sweetened Beverage (SSBs) consumption has risen in early life. A cohort study showed that SSB exposure is associated with allergy traits in children's second year of life. Nutrients, 10 pages. (20.07.2023).

Fraud / Deception

★★ **Many sports supplements have no trace of their key ingredients:** Just 11 percent of nearly 60 tested **dietary supplements** actually contain an accurate amount of key ingredients listed on the label. Forty percent did not contain a detectable amount of the ingredients at all. Sci. News, 2 pages. (26.07.2023). Original Publication: JAMA Netw Open.

★ **Widespread illegal trade of hazardous chemicals:** Researchers have studied the global trade in highly hazardous **chemicals** subject to a global treaty – the Rotterdam Convention. Nearly half of the total trade volume of these chemicals crosses national borders illegally. Of the total 64.5 million tons, the majority – 55.3 million tons – is **ethylene dichloride**. In second place, with 6.3 million tons, is the disinfectant and pesticide **ethylene dioxide**. The other chemicals, which are predominantly **pesticides**, make up a relatively small portion of the total. BR , 2 pages. (11.07.2023). Original Publication: Nat Sustain.

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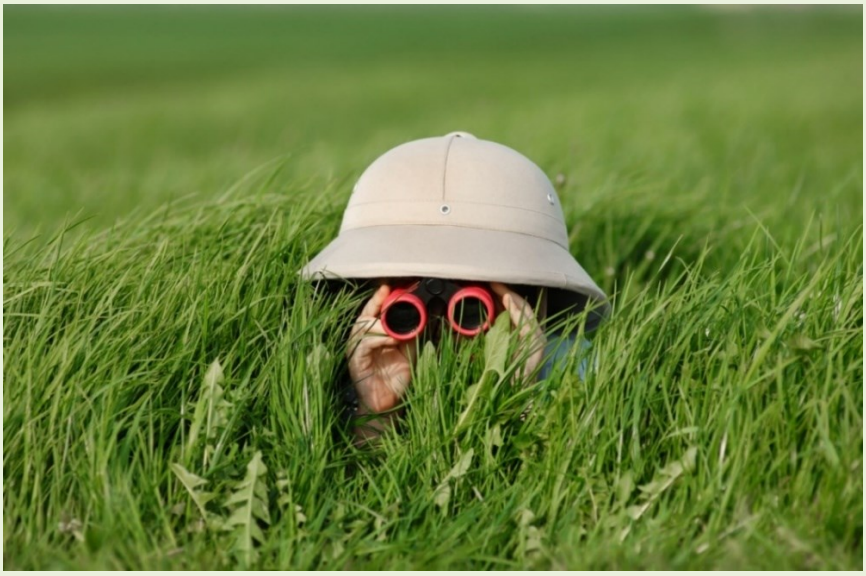

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ ***Pseudomonas* biofilms pose food safety threat:** According to a study, ***Pseudomonas* biofilms** can aid the survival of ***Listeria monocytogenes*** cells even after disinfection. Although *Pseudomonas* are often overlooked as a food safety hazard due to being associated with food spoilage rather than with human foodborne illnesses, findings suggest that the bacteria may pose a direct threat to **food safety** in the **processing environment**. FoodSafetyMag, 4 pages. (26.06.2023). Original Publication: Microorganisms.

★★ **Breast milk - a potential route of Tick-Borne Encephalitis Virus (TBEV):** While tick bites are the primary mode of **TBEV** transmission, emerging evidence suggests the potential for TBEV transmission through **breast milk** from infected mothers to their infants. A recently published review article provides an overview of the current knowledge regarding TBEV transmission through breast milk. Cureus, 6 pages. (09.07.2023).

★★ **Walking the line between sustainability and hygiene:** A variety of actions can contribute to making **sanitizing procedures** more **sustainable**. In this article, the authors examine the effectiveness, implementation **difficulties** and **consequences** for the **final product** of a number of these actions. In essence the results and principles are universally applicable for the entire food industry. FoodSafetyMag, 8 pages. (12.06.2023).

★ **Rare Salmonella type behind multi-country outbreak:** Almost 70 people became ill this past year as part of a ***Salmonella Ball*** outbreak involving in nine EU countries, the UK and the United States. The European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC) said **new cases and outbreaks** are likely to occur in **multiple countries** until the sources of infection are identified and control measures implemented. FSN , 2 pages. (23.06.2023).

★ **Bacteria in cancer initiation, promotion and progression:** Only a few microorganisms have been identified that directly initiate **tumorigenesis** or skew the **immune system** to generate a **tumour**-permissive milieu. The roles of **bacteria** in gastrointestinal tract malignancies and cancers were depicted in a review which describes the evolving understanding of these mechanisms. Nat. Rev. Cancer , 10 pages. (03.07.2023).

★ **Cyclosporiasis cases partially attributable to a salad Kit:** An outbreak of infections from the ***Cyclospora*** parasite that sickened hundreds in Florida in 2022 is now being reported by the U.S. Centers for Disease Control and Prevention. In total, Florida posted 513 conformed infections from the parasite in 2022. FSN , 1 page. (07.07.2023). Original Publication: MMWR.

★ **Cholera returns to Sardinia?** A cholera case occurred in Sardinia. Cholera had been absent for 50 years. The Public Hygiene Service reported a 71-year-old retiree. The possible vehicle of infection was probably the consumption of seafood. ECDC labels this case as a sporadic case with non-cholera V. cholerae infection. Donna, 2 pages. (11.07.2023). Additional Information: Italy 24 News.

★ **Cold smoked sea bass (*Dicentrarchus labrax*), a new product of fishery:** A study investigated the microbial and physico-chemical characteristics of **cold smoked sea bass** (CSSB), a **novel italian fish product**. The microbiological analyses showed the presence of bacterial contamination from the raw material, the environment, and the production process. No pathogenic bacteria were detected. Foods, 20 pages. (12.07.2023).

Chemistry

★★★ **Tara[protein]flour - a new ingredient and its consequences:** A CEO speaks for the first time about the **tara flour** that sickened hundreds, led to lawsuits, and revealed big problems in U.S. food safety. While tara flour is almost certainly the culprit, it remains unclear *why* the ingredient leads to these symptoms. It is suggested by the journal *Chemical Research in Toxicology* that tara flour has high levels of nonprotein amino acids known as **baikiain**, which can cause adverse effects, particularly in individuals with a specific genetic makeup. FC, 12 pages. (22.06.2023). Original Publication: Chem. Res. Toxicol..

★★ **Acrylamide contamination in plant-based protein ingredients:** A recent study conducted by researchers from the University of Bari Aldo Moro (Italy) has raised concerns over the presence of **acrylamide** in commercially available **plant-based protein ingredients**. The study found a significant variability in the acrylamide content of PBPIs produced through different processing technologies. Affidia, 2 pages. (23.06.2023). Original Publication: Foods.

★★ **Sugarcane pulp take-out containers and microparticles:** A study investigated aqueous, acidic, and fatty foods simulants, to analyze the **migration of microparticles** coming from the **sugarcane pulp take-out container**. Results showed **acidic food** caused the degradation of sugarcane fibers, thereby releasing the highest number of microparticles. Foods, 10 pages. (27.06.2023).

★★ **Emerging contaminants in South African surface and wastewater:** A non-targeted screening shows that **pharmaceuticals** made up 40% of the detected compounds in surface and wastewater, **biological compounds** and **industrial chemicals** 24 and 18% respectively, while **personal care products**, **pesticides** and **food additives** made up approximately 5, 4 and 4% respectively. Seventeen pharmaceuticals were reported for the first time in South African waters, of which four are reported for the first time ever in surface water. Emerg. Contam., 10 pages. (07.07.2023).

★★ **High PFAS levels in the populations of Greenland:** The study shows that 92% of residents in Ittoqqortoormiit, even though they live far away from sources of contamination with per- and polyfluoroalkyl substances (**PFAS**), have far more PFAS in their **body** than the European Food Safety Authority (EFSA) recommends to avoid **damage to the immune system**. EurekAlert, 5 pages. (12.07.2023). Original Publication: Lancet Planet. Health .

★ **New report finds most US kale samples contain PFAS:** The testing looked at conventional and organic kale bought at grocery stores across the country, and comes after Food and Drug Administration analyses conducted between 2019 and 2021 found no **per- and polyfluoroalkyl substances** (PFAS) contamination. **Seven out of eight** US kale samples recently tested for toxic PFAS contained high levels of the compounds. TheGuardian, 5 pages. (30.06.2023). Original Publication: ANH.

★ **Switzerland - one in two samples of tap water contaminated with PFAS:** A study carried out in all regions of Switzerland shows that almost one in two samples of **drinking water** contains per-and polyfluoroalkyl substances (**PFAS**). The Swiss-German consumer magazine "K-Tipp" analysed almost 1000 samples of drinking water from all regions of Switzerland. Of the 872 samples analysed, 400 were contaminated. 20Min, 2 pages. (21.06.2023). Original Publication: K-Tipp.

★ **Half of U.S. tapwater contaminated by PFAS:** A nationwide study conducted by the U.S. Geological Survey (USGS) has revealed that nearly **half of all U.S. tapwater** is contaminated by **per- and polyflouralkyl substances** (PFAS), also known as “forever chemicals.” Dietary exposure to PFAS is an issue of increasing concern due to the growing body of evidence regarding the chemicals’ harm to human health. FoodSafetyMag, 3 pages. (11.07.2023). Original Publication: Environ Int.

★ **WHO to declare aspartame as possible carcinogen:** The International Agency for Research on Cancer (IARC), which is the cancer arm of the World Health Organization (WHO), recently indicated that the artificial sweetener **aspartame** will likely be declared a “possible carcinogen to humans”. Summary of the evaluation will be published online the 14th of July NewsMedLifeSc, 5 pages. (29.06.2023). Original Publication: WHO. Additional Information: The Conversation.

★ **Banana peel as a food ingredient:** Bananas are among the most popular types of fruit, but they are also often contaminated with **pesticide residues**. The trend to use as much of the fruit as possible to avoid waste - the **zero-waste** movement and the topic of **food upcycling** - has also gained in importance for bananas. On the Internet various recipes with **banana peel** as an ingredient can be found. A report of the CVUA Stuttgart analysed different bananas and their peels for pesticides. CVUA Stuttgart , 4 pages. (11.07.2023).

★ **Potentially lethal protein powder - high caffein:** The Food Standards Agency from England and Wales (FSA) is warning people not to consume a **protein powder** product which has been found to contain extremely high levels of **caffeine**. Testing of the product found that it contained over 5000 mg (5 g) of caffeine per serving. FSA, 2 pages. (10.07.2023).

★ **FDA updates on chemical safety reassessment work:** Following an announcement of a new framework for systematic post-market **reassessment for chemicals used in foods**, the U.S. Food and Drug Administration (FDA) has released a public inventory of certain food ingredients and additives determined to have unsafe uses in food because they are unapproved, as well as **lists of select chemicals currently under the agency’s review**. FoodSafetyMag, 4 pages. (12.07.2023). Original Publication: FDA.

Nutrition

★★ **Artificial intelligence designs soda for Swiss market:** The development team at a **Swiss beverage company** used the publicly available AI apps **ChatGPT** and **Midjourney** to design a new soft drink within 2 days. ChatGPT suggested a formula for a low-sugar, vegan soda with ‘health benefits’ which included lime juice, haskap berry juice, ginger juice, chicory root powder and cane sugar. RottenApple, 2 pages. (10.07.2023). Original Publication: FoodNavigator. Additional Information: vivikola.ch, Migros.

★★ **One third of normal-weight individuals are obese:** The researchers analyzed the **anthropometric data** of 3,000 Israeli women and men, accumulated over several years. About 1000 participants were found to be within the normal weight range. Of these, 38.5% of the women and 26.5% of the men were identified as '**obese with normal weight**' – having excess fat content despite their normal weight. EurekAlert, 3 pages. (12.07.2023). Original Publication: FrontNutr.

★★ **New Nordic Nutrition Recommendations report spotlight overlooked nutrients:** In the sixth edition of the **Nordic Nutriton Recommendations**, experts recalculated for the first time in 40 years all micronutrients’ recommendations. As such, eight of them have received recommendations for the **first time**: Vitamin K, biotin, pantothenic acid, choline, magnesium, manganese, molybdenum and fluoride. And recommended intakes have been **increased by more than 20%** for nine micronutrients: vitamins C, E, B6 and B12, folate, calcium, thiamine, zinc and selenium. FoodNavigator, 3 pages. (12.07.2023). Original Publication: NordicCoo. Additional Information: Nordic Co-operation.

★★ **Differentiating the benefits and risks of different types of meat:** A Special Issue of the journal « Foods » features three broad areas related to meat: **meat and human health**, the effects of **animals' diets on the nutritional characteristic**s of meat, and consumers' attitudes about buying and consuming **cell-based meat**. The first two areas are related, whereas the third raises important consumer concerns about new, alternative technologies for meat production. Foods, 4 pages. (14.06.2023).

★ **Keto diet in cancer: a double-edged sword?** Researchers have been investigating **ketogenic diets** as a means of **slowing the growth of cancer cells**. However, new research suggests that this approach may come with a significant catch: it may also promote **cachexia**, the untreatable wasting disease that can occur with cancer. MedNewsToday, 5 pages. (19.06.2023). Original Publication: Cell Metab.

★ **When "low fat" labels do more harm than good:** According to a study carried out in Germany, when manufacturers advertise their products as '**low fat**', many consumers assume that they also contain **less sugar**, even though the actual sugar content of many low-fat products differs little from that of other products. FoodNavigator, 2 pages. (28.06.2023). Original Publication: Food Qual. Prefer. .

Allergy

★★ **Molecular farming brings new concerns for allergen management:** The US Food and Drug Administration (FDA) has issued an **open letter** warning start-ups in the emerging field of **molecular farming** that expressing animal proteins such as egg and dairy proteins in genetically engineered crops such as soybeans will require strict allergen management. Allergen Bureau, 2 pages. (26.06.2023). Original Publication: FDA.

★ **Soy-containing foods and food supplements:** More and more people are eating a predominantly **plant-based diet**. Their diet partly relies on **soy-based** meat or milk substitutes. For certain population groups, the german Bundesinstitut für Risikobewertung (BfR) sees possible **health risks** due to its content in **isoflavones** and other **hormone-like substances** as well as its **allergenic potential.** BfR, 10 pages. (28.06.2023).

Fraud / Deception

★★ **Counterfeit Maggi, contaminated with *Salmonella* spp. sold in the U.S.:** A small amount of Maggi **«Masala ae Magic»** Seasoning Sachets were sold to some U.S. retail outlets, and that product has tested positive for ***Salmonella***. The affected product was not manufactured by Nestlé, nor does Nestlé sell this product in the United States Cision, 1 page. (30.06.2023). Original Publication: FDA.

★★ **Supply shortages could increase risk of food fraud:** According to a company carrying out audits and certifications, manufacturers could be at **growing risk** of **food fraud** if they do not take the correct precautions when selecting **new suppliers**. Events such as those in Ukraine, where the recent Kakhovka dam burst, are expected to have a significant impact on food supply. ESM, 2 pages. (28.06.2023). Original Publication: LRQA.

★★ **Fish fraud:** Italian authorities are investigating a case of **fish fraud** that led to several people suffering from **histamine** poisoning. Officials believe products were defrosted and adulterated with substances such as **nitrites** and **nitrates**, to enhance their appearance and color before being placed on the market. FSN , 2 pages. (12.07.2023).

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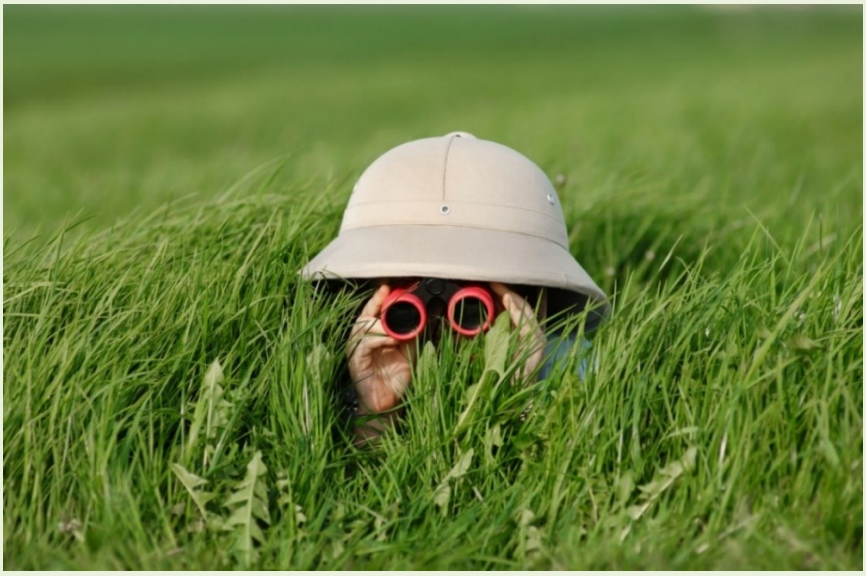
Risk Assessment

Seismo Info 06/2023



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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ ***Helicobacter pullorum*: an emerging zoonotic pathogen:** *Helicobacter pullorum* (*H.pullorum*) frequently colonises the **gastrointestinal tract of poultry** and causes gastroenteritis. The bacterium can be transmitted to **humans** through contaminated meat, where it has been linked to colitis and hepatitis. Despite the high prevalence of *H. pullorum* in poultry, this bacterium has received little attention. FrontMicr, 8 pages. (10.04.2017).

★★★ **Formation of *Salmonella* on fresh strawberries:** This is the first study to demonstrate the formation of **biofilm** by a bacterial enteric pathogen on the **surface of strawberries**. ***Salmonella enterica* subsp. *Enterica* serovar Thompson** was able to survive and form biofilm on the surface of strawberries stored at room temperature (20 °C) during 72 h and at refrigeration temperatures (7 and 4 °C) after 240 h. FoodContr, 5 pages. (05.06.2023).

★★★ **Rise of *E. coli* O26 infections noted in England:** Researchers looked at **STEC O26:H11** clonal complex (CC) 29 in England. Between January 2014 and December 2021, 834 human isolates from 724 patients belonging to CC29 were sequenced at the UK Health Security Agency (UKHSA). STEC O26:H11 notifications in 2021 were eight times higher than those recorded in 2014. FSN , 2 pages. (26.05.2023). Original Publication: J. Infect..

★★ **Parasitic contamination of fruits, vegetables and leafy greens:** A study assesses the occurrence of the **parasitic contamination** of fruits, vegetables and leafy greens grown in the Ecuadorian Andes. Parasites were detected in 63.4% of the samples, leafy greens were the most contaminated (76.9%). **Protozoa** were more frequent (49.6%) detected than **helminths** (15.5%). F1000, 10 pages. (23.05.2023).

★★ **Risk factors for non-O157 shiga toxin–producing *Escherichia coli* infections:** Shiga toxin–producing *Escherichia coli* (**STEC**) causes acute diarrheal illness. To determine risk factors for non-O157 STEC infection, a study enrolled 939 patients and 2,464 healthy controls in a case–control study conducted in 10 US sites. The highest population-attributable fractions for domestically acquired infections were for eating **lettuce** (39%), **tomatoes** (21%), or at a **fast-food restaurant** (23%). Emerg Infect Dis , 3 pages. (06.2023).

★★ **Impact of climate change on waterborne infections and intoxications:** Progressive climate change has the potential to increase **human health risks** from **waterborne infections and intoxications**, e.g. through an increase in pathogen concentrations in water bodies, through the establishment of new pathogens or through possible changes in pathogen characteristics. This article presents some examples of possible impacts of climate change. Journal of Health Monitoring, 13 pages. (01.06.2023).

★★ **Food risk associated with vegetable consumption:** Data from this study showed a higher percentage of **microbiological contamination** and **antimicrobial-resistant** bacteria in fresh vegetables (leafy-, fruit-, bulb- and flower vegetables) compared to ready-to-eat vegetables (leafy vegetables and mixed salads) and opposite results for **pesticide contamination**. IJFS, 1 page. (08.06.2023). Original Publication: IJFS.

★★ **New insights into emerging *Brucella* bacteria:** For newly discovered ***Brucella*** species, one of the major questions is whether they pose a risk to humans. The **IDEMBRU** project, coordinated by the French Agency for Food, Environmental and Occupational Health & Safety (ANSES) over a **two-year period** and involving **8 European countries** aimed to gain a better understanding of these bacteria. The results are currently being published. anses, 2 pages. (13.06.2023). Additional Information: Pathogens.

★ **Heat-damaged DNA in food linked to possible genetic risks:** Diets high in **red meat** and **fried foods** have long been tied to health risks, including cancer. A new study in mice has revealed that food cooked at **high heats** could damage the **DNA in the food**, leading to increased cancer risk in those consuming it. EurekAlert, 3 pages. (13.06.2023). Original Publication: ACS Cent. Sci..

★ **Outbreak of *Salmonella* Infections Linked to Cashew Brie:** On March 30, 2021, during weekly analysis of sequenced isolates, the Tennessee Department of Health identified two ***Salmonella* Duisburg** isolates that had been determined to be closely related by whole genome sequencing (WGS). Among 19 patients, 15 reported eating the same brand of cashew brie. On the basis of the food sample results and FDA traceback, the **cashew** ingredients used to make the **brie products** were the likely source of contamination. MMWR, 2 pages. (26.05.2023).

★ **Antimicrobial resistance profiles of *Salmonella* isolates in Chinese edible frogs:** In this study, 103 live edible Chinese frogs were collected from wet markets throughout Hong Kong. Tests identified a multidrug resistance (MDR) in 21% of the isolates. These results demonstrate that a high percentage of live **frogs** sold for **human consumption** in wet markets are carriers of **multidrug-resistant *Salmonella***. Foods, 10 pages. (01.06.2023).

★ **Gene editing and food safety:** The Food and Agriculture Organization of the United Nations (FAO) has released a report on **food safety** considerations for regulating foods derived from gene editing (also known as "**genome editing**") to help national authorities develop and implement policies and regulatory criteria for food products derived from gene editing. The report provides a review of food safety related issues in applying gene editing. FoodSafetyMag, 2 pages. (18.04.2023). Original Publication: FAO.

Chemistry

★★ **Algae toxin widespread in the east coast of Florida:** *Pseudo-nitzschia spp.*, an algae that produces the **neurotoxin** domoic acid, can **bioaccumulate within food webs** causing harm to humans and animals. A molecular study of Florida's Indian River Lagoon shows this algae was present in **87 percent** of the water samples collected. All isolates showed toxicity, and domoic acid was found in **47 percent** of surface water samples. EurekAlert, 3 pages. (15.06.2023). Original Publication: Harmful Algae.

★★ **Assessment of microplastic contamination in an eastern Pacific tuna:** This work investigated **microplastic** (MP) pollution in a commercially-important **tuna** species *Katsuwonus pelamis* (*K. pelamis*) from the Eastern Pacific. **21 out of 22** *K. pelamis* caught from the Eastern Pacific Ocean suffered from MPs pollution. FoodChem, 8 pages. (08.06.2023).

★★ **Fibrous microplastics and natural microfibers in fishes:** The ingestion of **synthetic microfibers** and **natural fibers** was assessed in the European anchovy and the Red mullet, two **commercially important** fish species in the **Mediterranean Sea**. The preliminary results showed the occurrence of microfibers in **53** and **60%** of European anchovy and Red mullet, respectively. IJFS, 1 page. (06.06.2023).

★★ **Food safety risks of chemical food contaminants on gut microbiome:** The Food and Agriculture Organization of the United Nations (FAO) has published the results of an **extensive literature review** examining the **effects** of consuming three pervasive, chemical food contaminants—**pesticide residues, veterinary drug residues, and microplastics**—on the **human gut microbiome**. The literature reviews aim to fill existing knowledge gaps about how dietary components can impact the gut microbiome and human health, which is crucial information to improve food safety risk assessment. FoodSafetyMag, 4 pages. (24.05.2023). Original Publication: FAO, FAO, FAO.

★★ **EFSA opens consultation on health risks associated with PBDEs in food:** Food contaminated with **polybrominated diphenyl ethers** (PBDEs) pose a **health risk** to all age groups, according to the draft conclusion of a recent scientific opinion by the European Food Safety Authority (EFSA). FoodSafetyMag, 3 pages. (08.06.2023). Original Publication: EFSA.

★★ **Dietary exposure to cadmium from six common foods in the United States:** A **risk assessment** conducted by the Michigan State University, found that the age groups 6–24 months and 24–60 months-old are the most highly exposed to **cadmium** (Cd) **in common foodstuff**s. American infants and young children of these age groups who regularly consumed rice, spinach, oats, barley, potatoes, and wheat had mean Cd exposures **exceeding maximum tolerable intake level** was set by the Agency for Toxic Substances and Disease Registry (ATSDR) Food Chem. Toxicol., 15 pages. (02.06.2023).

★★ **Chronic exposure to metals increases risk of cardiovascular disease:** Around the world, most people are regularly exposed to low or moderate levels of **lead**, **cadmium** and **arsenic** in the environment, increasing risk of coronary artery disease, stroke and peripheral artery disease. EurekAlert, 5 pages. (12.06.2023). Original Publication: JAHA.

★ **Nitrate and nitrite levels in enteral nutrition formula:** In a new study, the **nitrite** and **nitrate** levels of 37 **enteral nutrition formulas** marketed in Turkey were evaluated. The authors of the study concluded that the presence of nitrites and nitrates in enteral nutrition formulas may lead to health problems in sensitive groups. Food Chem. Toxicol., 10 pages. (22.05.2023).

★ **10 commonly used pesticides directly linked to PD:** In California, researchers analyzed hundreds of common **pesticides** for their link with **Parkinson's disease**. Ten pesticides were directly linked to toxicity and death of dopaminergic neurons — one of the hallmarks of Parkinson's disease (PD). MedNewsToday, 3 pages. (24.05.2023). Original Publication: NatureComm.

★ **Risk assessment of flavor components in flavored milk:** This study screened fifteen **flavor components of concern** among flavored milk consumed by Chinese residents and discovered that 2,3,5-trimethylpyrazine, furfural, benzaldehyde, and benzenemethanol were detected in 100% of **flavored milk samples**. Foods, 10 pages. (26.05.2023).

★ **Chemical found in common sweetener damages DNA:** A new study finds thar **sucralose-6-acetate**, a chemical formed when we digest **sucralose,** is "genotoxic," meaning it **breaks up DNA**. The chemical is also found in trace amounts in the sweetener itself, and the finding raises questions about how the sweetener may contribute to health problems. EurekAlert, 2 pages. (31.05.2023). Original Publication: J. Toxicol. Environ. Health .

★ **PFAS exposure during pregnancy linked to increased risk of obesity in kids:** The researchers found that higher levels of **per- and polyfluoroalkyl substances** (PFAS) in mother's blood during pregnancy were related to slightly higher BMIs. **Increased risk of obesity** was seen equally for male and female children. The results based on eight prospective research cohorts located in different parts of the U.S. as well as with different demographics. EurekAlert, 5 pages. (07.06.2023). Original Publication: ehp.

Nutrition

★★★ **Proteins and minerals in whey protein supplements:** The study aimed to determine **protein richness** and compliance with the labelling of several **whey protein supplements** commercialized in **Europe** and to characterize the mineral profile of these novel foods. It was concluded that the quality and safety of these products needs to be monitored and regulated as not only have discrepancies in the **labeled protein** percentage been detected but also as some **potentially toxic elements** with limited dietary intakes, such as molybdenum and chromium, have been observed in considerable concentrations. Foods, 10 pages. (01.05.2023).

★★ **WHO advises not to use NSS for weight control:** The World Health Organization (**WHO**) has released a new guideline on **non-sugar sweeteners** (NSS), which recommends against the use of NSS to control body weight or reduce the risk of noncommunicable diseases (NCDs). The recommendation is based on the findings of a **systematic review** of the available evidence which suggests that use of NSS does not confer any long-term benefit in reducing body fat in adults or children. FoodNavigator, 2 pages. (15.05.2023). Original Publication: WHO.

★★ **Diets high in fats and sugar impact deep sleep quality:** Researchers found that after consuming a **high-fat/high-sugar diet** (HFHS) diet, the quality of **deep sleep** in the participants worsened compared to when they followed the healthier diet. Although the duration of sleep and overall sleep structure did not significantly differ between the two diets, the HFHS diet was associated with reduced deep sleep quality and changes in some important **sleep patterns**. MedNewsToday, 5 pages. (08.06.2023). Original Publication: Obesity.

★ **Nutritional values of plant-based cheese alternatives:** Vegetable cheese alternatives now have a firm place on supermarket shelves. The Consumer Advice Centre Hamburg examined 17 of these products more closely. The conclusion: **Nutritionally**, the plant-based alternatives are **not as valuable as real cheese** because they usually contain very **little protein** and hardly any **calcium**. FoodAktuell, 1 page. (11.05.2023). Original Publication: VZ.

★ **Fire Paan - a potentially dangerous food trend:** A **novel indian street snack** called "**Fire Paan**", contains a mixture of herbal masala, dried fruits, nuts and sugar set on fire and thrown straight into the mouth of the customer. Aside from the potential injuries associated with the fire, the composition of the snack remains relatively unknown and might contain **chemicals** capable of causing inflammation of the stomach and duodenum. Instagram, 1 page. (05.05.2023). Additional Information: Times of India .

Allergy

★ **Allergen-related issues persist in Australian product recalls:** Recent data released by the Food Standards Australia New Zealand (FSANZ) indicates that **allergens** were the cause of nearly **half of all food recalls** in Australia in 2022. Affidia, 2 pages. (17.05.2023). Original Publication: FSANZ.

★ **Genetically modified eggs to solve egg allergy:** A Japanese research team has used **genetic engineering** to remove a major **allergenic protein from eggs**. While the researchers consider these modified eggs to be "less allergenic", they are not yet completely safe for people with egg allergies Futura Sciences, 3 pages. (20.05.2023). Original Publication: Food Chem. Toxicol..

★ **Racial, ethnic, and socioeconomic differences in food allergies:** This survey study of a nationally representative sample suggests that the prevalence of **food allergies** was highest among Asian, Hispanic, and non-Hispanic Black individuals compared with non-Hispanic white individuals in the United States. EurekAlert, 2 pages. (14.06.2023). Original Publication: JAMA Netw Open.

Fraud / Deception

★★ **Purity and quality of avocado oil:** A study from the University of California, Davis, found that 69% of **avocado oils** sold by retailers had **impurities** such as other, cheaper oils mixed in. Additionally, many of the tested avocado oil samples had **high levels of oxidation**, indicating that the oils had started to turn rancid New York Post, 1 page. (25.05.2023). Original Publication: FoodContr.

★ **Russian counterfeit alcohol:** Russian officers have raided a bottling factory in Moscow, which had been bottling fake **Johnnie Walker Black Label whisky** and other brands. The officers found the **fake bottles**, which they said were unsafe to drink. On a post on a **Russian** social media post, the liquid within a fake Johnnie Walker Black Label bottle appeared to include a black, oily substance. db, 1 page. (15.05.2023).

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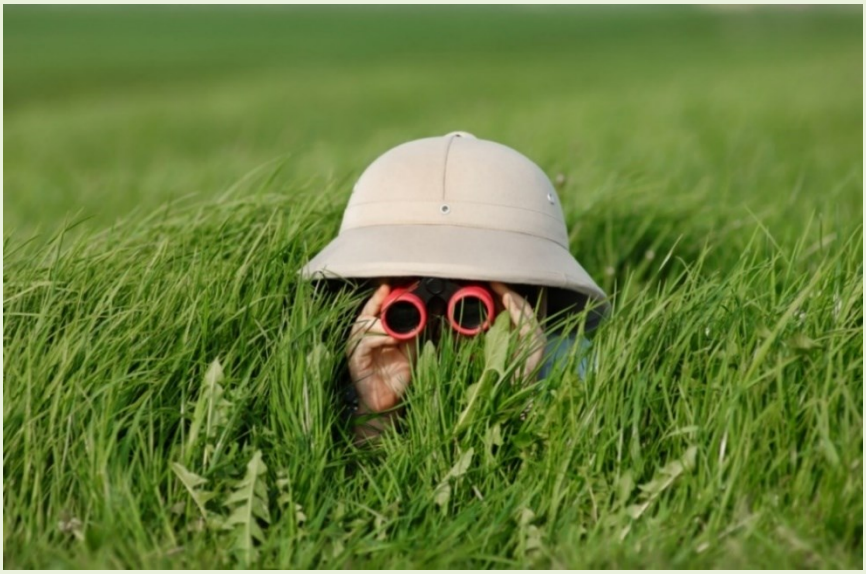

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ **Severe *Streptococcus equi* subspecies *zooepidemicus* Outbreak:** During November 2021–May 2022, an investigation identified 37 clinical cases of ***Streptococcus equi* subspecies *zooepidemicus*** infections in central Italy. Epidemiologic investigations and whole-genome sequencing showed unpasteurized fresh dairy products were the outbreak source. Emerg Infect Dis , 3 pages. (05.2023).

★★★ **Mycotoxins in commercial bee pollen:** Bee pollen is a natural product gaining popularity. However, there are still a number of questions regarding the safety of this beekeeping product. A **survey** evaluated for the first time the presence of **five mycotoxins** - aflatoxin B1, ochratoxin A, zearalenone, deoxynivalenol, and toxin T2 - in **80 bee pollen samples**. **100%** of bee pollen samples had **quantifiable levels of mycotoxins**, with **deoxynivalenol** exceeding the safety limit in **28%** of the cases analysed. **Aflatoxin B1** concentration was identifies as a **high public health concern** in 84% of the cases considered. FoodContr, 10 pages. (03.05.2023).

★★ **Spain - multidrug-resistant bacteria in supermarket meat: Multidrug-resistant *E. coli*** were found in **40% of supermarket meat** samples tested in a **Spanish** study. *E. coli* strains capable of causing severe infections in people were also highly prevalent. EurekAlert, 3 pages. (15.04.2023). Original Publication: FoodContr.

★★ **Antimicrobial resistance in Europe - new surveillance report published:** A recent report on **antibiotic resistance surveillance**, jointly published by the European Centre for Disease Control and Prevention (ECDC) and WHO Europe, paints a concerning picture of high antibiotic resistance levels to **third-generation antimicrobials** (such as cephalosporins and carbapenems) in multiple countries in the **WHO European Region**. Affidia, 2 pages. (21.04.2023). Original Publication: ECDC.

★★ **Hepatitis E virus in pork meat products and exposure assessment:** In a new study **Hepatitis E (HEV)** product contamination and overall exposure was estimated in **Belgium**. **Ready-to-eat pork products** have the highest HEV contamination estimate. HEV RNA was detected in 17/54 (31 %) of samples. All positive samples belonged to **genotype 3**, subtype 3c. IntJFoodMicr, 10 pages. (16.07.2023).

★★ **Growing urgency of fungal disease in crops:** Hundreds of **fungal diseases** affect the 168 crops listed as important in human nutrition by the Food and Agricultural Organization (FAO) of the United Nations. Despite widespread spraying of fungicides and the planting of cultivars bred to be more disease resilient, growers worldwide lose

between 10% and 23% of their crops to fungal disease every year, and another 10–20% **post-harvest.** More political and public **awareness** of the plight of the world's crops when it comes to fungal disease is crucial to stave off a major threat to **global food security**. Nature, 5 pages. (02.05.2023).

★ **Yersinia cases are potentially missed: Yersiniosis**, most often caused by ***Yersinia enterocolitica***, is one of the most common bacterial food-borne zoonoses in Europe with reported overall incidence of 1.8 cases per 100,000 population in 2020. However, researchers have estimated that around 7,500 ***Yersinia enterocolitica*** infections may go undiagnosed in **England** annually. Findings suggest a considerable number of **yersiniosis** cases are **not recorded,** probably due to a lack of laboratory testing FSN , 1 page. (18.04.2023). Original Publication: Eurosurveillance.

★ ***Cryptosporidium* prevalence and transmission in Western European dairy farms: *Cryptosporidium parvum*** is an enteric parasite and a major contributor to acute enteritis in **calves** worldwide, causing an important economic burden for farmers. This parasite poses a major **public health threat** through transmission between livestock and humans. Prevalence of ***Cryptosporidium*** ranged from 23.3% to 25%, across dairy cow farms from Belgium, France and the Netherlands. Vet. Parasitol., 10 pages. (06.2023).

★ **Spring onions suspected in fatal Danish EIEC outbreak: Spring onions** imported from the Netherlands were suspected to be the source of the first **enteroinvasive *Escherichia coli* (EIEC)** outbreak in **Denmark** (see Seismo Info 04.2023). The onions had actually been imported from **Egypt** before being rinsed and root-cut by the Dutch company. Although no specific batch was identified as the cause of the outbreak, the Danish Embassy in Egypt shared reports from 2021 indicating several cases of **overflow from the Nile**, which may have been the cause of the outbreak. FSN , 3 pages. (27.04.2023).

★ **Foodborne outbreak of MDR ESBL-producing *Shigella sonnei*:** UK Health Security Agency surveillance systems detected an outbreak of **multidrug-resistant** (MDR) **extended spectrum beta-lactamase** (ESBL)-producing ***Shigella sonnei*** in 2021. Traceback investigations identified **contaminated spring onions** from **Egypt** as the outbreak vehicle, despite the absence of microbiological evidence from the food and environmental sampling. JFoodProt, 10 pages. (19.04.2023).

★ **Salmonella outbreak linked to cantaloupes:** The U.S. Food and Drug Administration (**FDA**) has released a report on its investigation of a ***Salmonella* Typhimurium** outbreak linked to **cantaloupes** that occurred during July–September 2022. Although the investigation did not result in identification of a specific microbial source or route that resulted in the outbreak, the agency identified *Salmonella* on-farm, post-harvest, and off-farm. FoodSafetyMag, 2 pages. (27.04.2023). Original Publication: FDA.

★ **Bacterial composition of refrigerators in households:** A study conducted in Korea aimed to investigate the **microbiota in the air** and **on the surface of a refrigerator**. Results shows significant differences between samples collected from refrigerators **with and without vegetable drawers**. Moreover, **pathogenic bacteria** were found. Among them, *Staphylococcus aureus* was determined to be a **core hazardous pathogen in air**. Food Microbiol., 10 pages. (28.04.2023).

★ ***Trichinella* outbreak sickens 16 in Spain:** An outbreak of ***Trichinella*** has sickened at least 16 people in a Spanish city. Public health officials in the city of León said the incident is affecting people who went **hunting.** Samples of wild boar meat and sausages typically consumed by hunters have been analysed and the presence of *Trichinella* larvae in **chorizo** was confirmed. FSN , 2 pages. (10.05.2023).

★ **Antibiotic-resistant bacteria isolated from Korean fresh produce:** A recent study indicates that there is a low possibility of transferring **antibiotic resistance** by potential pathogenic **enterobacteria** via fresh produce in Korea. However, the authors conclude, with regards to public health and consumer safety, fresh produce should nevertheless be continuously monitored to detect the occurrence of foodborne pathogens and to hinder the transfer of antibiotic resistance genes potentially present in these bacteria. Microorganisms, 16 pages. (08.05.2023).

Chemistry

★★★ **California - 40% of tested agricultural pesticides contain PFAS:** Widely used **insecticides** and **pesticides** in California, US, have been found to contain high levels of **per- and polyfluoroalkyl substances** (PFAS), according to a study by the Center for Biological Diversity and Public Employees for Environmental Responsibility. These chemicals are contaminating millions of acres of farmland in California's Central Valley, where they are used on crops such as **almonds, grapes, peaches**, and **pistachios**. Affidia, 2 pages. (10.05.2023). Original Publication: CBD.

★★ **Singapore - Exposure to PFAS and women's fertility outcomes:** A case-control study conducted in Singapore on women of child-bearing age who were trying to conceive found that higher **perfluoroalkyl substances** (PFAS) exposures are associated with **decreased fertility** in women. Infosperber, 4 pages. (24.04.2023). Original Publication: SciTotalEnviron.

★★ **Artificial fruit ripening agents:** The Food Safety and Standards Authority of India (**FSSAI**) has issued a notice asking state food safety departments for action against unauthorised use of **artificial fruit ripening agents**. FSSAI has prohibited the use of **Calcium carbide** also known as 'Masala' as a ripening agent for artificial ripening of the fruits FNB News, 1 page. (27.04.2023). Original Publication: FSSAI.

★ **Alternariol in tomato ketchup:** The German consumer magazine Öko-Test has recently carried out some lab analysis on different brands of **tomato ketchup** and found worrying results in one of the most well-known brands, with **alternariol** well above the guideline values recommended by the EU. Affidia, 1 page. (03.03.2023). Original Publication: Öko.

★ **Italy - some regions ask to use a banned pesticide:** Due to *Flavescence dorée*, a vine disease that is killing plants in Northern Italy, some regions have asked to use -as an extraordinary measure- **chlorpyrifos**, a **pesticide banned by the European Union** in 2020 and known to have **serious health consequences**, especially on children. The request is currently under examination by the Italian Ministry of Health. Affidia, 2 pages. (19.04.2023). Original Publication: Corriere Del Veneto.

★ **Re-evaluation of the risks to public health related to the presence of BPA in foodstuffs:** The safety of **bisphenol** A (BPA) has been examined by the EFSA since the first comprehensive risk assessment in 2006. The **re-evaluation** revealed a rise in a particular white blood cell (T helper), which could lead to allergic lung inflammation and autoimmune disorders. EFSA's expert Panel considerably **reduced the tolerable daily intake** (TDI), by approximately 20 000 times, from the previous temporary TDI set in 2015. Affidia, 2 pages. (19.04.2023). Original Publication: EFSA.

★ **Melatonin gummies:** A new study has revealed that **melatonin gummies** advertised to help with sleep may have potentially harmful levels of the hormone, as well as **cannabidiol** (**CBD**) that was not labelled on the packaging. The study found that 88% of the gummies investigated were inaccurately labelled, with only 12% containing within 10% of the quantity that was labelled. Kron, 2 pages. (27.04.2023). Original Publication: JAMA .

★ **Île-de-France - eggs from domestic hen houses unsafe for consumption:** The Regional Health Agency (ARS) of **Île-de-France** recommends ceasing the consumption of **eggs from domestic hen houses** in the region following an alert on the concentration of **dioxins** in eggs from domestic hen houses located around a **waste incinerator**. The first conclusions of the analyses show that all soil and egg samples are contaminated by the three families of persistent organic pollutants: **dioxins, furans and polychlorinated biphenyls.** ARS Île-de-France, 2 pages. (19.04.2023).

★ **Mercury level in eggs from laying hens in a mining area in Colombia:** The study highlights the variability of **mercury** concentrations in different localities and the potential **risks associated with consuming eggs**. They found that mercury in eggs exceeded the tolerable weekly intake therefore, **daily exposure** would be likely to cause non-cancer **adverse effects** during an individual's lifetime. Emerg. Contam., 15 pages. (20.04.2023).

★ **Metal Oxide Nanoparticles in Food Packaging:** A review article conclude that more attention should be paid to the use of engineered **metal oxide nanoparticles** for food packaging as they may produce **undesirable consequences for human health**. Indeed, the researchers stated that only a **small number of studies** address the issue of food packaging based on these particles. Foods, 8 pages. (03.05.2023).

★ **Food additive nanoparticles could negatively affect your gut health:** The results of research conducted on a chicken intestinal tract suggest that certain **metal oxide nanoparticles** used as **food additives**, notably titanium dioxide and silicon dioxide, have the potential to **negatively affect intestinal functionality**. The doses of nanoparticles that were tested reflect what is typically consumed by humans. EurekAlert, 2 pages. (09.05.2023). Original Publication: Antioxidants.

★ **Toxic metals detected in soft beverages:** Five of 60 commercially available beverages tested contained levels of the **toxic metal** above federal drinking water standards. Two mixed juices had **arsenic** levels above the US Food

and Drug Administration (FDA) standard limit. A cranberry juice, a mixed carrot and fruit juice and an oat milk all exceeded the FDA standard limit for **cadmium**. EurekAlert, 2 pages. (04.05.2023). Original Publication: J. Food Compos. Anal..

★ **Cadmium in aspargus:** The NDR consumer magazine "Markt" had several **asparagus** (white and green) samples tested for contaminants. The origin of the asparagus was from **Spain**, **Greece**, **Peru** and **Germany**. The vegetables were subsequently tested for pesticides, chlorates and the heavy metals arsenic and **cadmium**. No pesticides or chlorates were found. The cadmium content in the samples from Peru and Spain was above the permissible limit value in Germany. NDR, 2 pages. (08.05.2023). Original Publication: Öko.

★ **Foodborne illness outbreak due to morel mushrooms:** At least 30 people have been tied to a **foodborne illness** outbreak after eating at a restaurant in the US. According to a health department release, 3 individuals had severe outcomes, including 2 deaths. A preliminary investigation found that **morel mushrooms** were likely the exposure of concern. The mushrooms were cultivated in China and shipped to a California distributor. ProMed, 3 pages. (09.05.2023). Original Publication: BDC.

Nutrition

★★ **High fried food consumption impacts anxiety and depression:** A research team in Hangzhou, China, found that frequent consumption of **fried foods**, especially fried potatoes, was linked with a 12% higher risk of **anxiety** and 7% higher risk of **depression** than in people who didn't eat fried foods. The researchers suggest that **acrylamide** is to blame for the higher risk of anxiety and depression. CNN, 4 pages. (24.03.2023). Original Publication: PNAS.

★★ **South Korea - UPF intakes are associated with depression in the general population:** In the Korea National Health and Nutrition Examination Survey comprising 9 463 participants, researcher found a significant association between higher **ultra-processed food** (UPF) intake and **depression** among females but not among males in the Korean general population. Nutrients, 6 pages. (28.04.2023).

★ **Study finds sugary beverages increase dementia risk:** A study found that higher **sugar-sweetened beverages** and **artificially-sweetened beverages** intake was associated with higher risk of **dementia**, and moderate natural juices intake was associated with a lower risk of dementia. NewsMedLifeSc, 2 pages. (17.04.2023). Original Publication: AJCN.

★ **Addressing sugar addiction:** Sugar addiction is a major **health concern**. It can lead to health conditions such as **diabetes** and **cardiovascular disease**, **mental health** conditions such as depression, and some experts have suggested that it could be as **addictive** as cocaine. But it is often not perceived as an addiction. FoodNavigator, 3 pages. (14.04.2023). Original Publication: BMJ.

★ **Red meat and refined carbs linked to 70% of type 2 diabetes cases:** A study finds that **dietary issues** are responsible for **most of the world's new cases of type 2 diabetes**. Its authors found that a **lack of whole grains** and consuming **too much refined grain** and wheat and **processed meats** were the primary drivers of diet-related type 2 diabetes. MedNewsToday, 3 pages. (21.04.2023). Original Publication: Nature.

★ **10 popular diets scored for heart-healthy elements:** According to the American Heart Association, several dietary patterns, including the Dietary Approaches to Stop Hypertension (DASH)-style eating plan, Mediterranean, pescatarian and vegetarian eating patterns, consistent with the Association's dietary recommendations for improving cardiometabolic health. However, other eating patterns, including **Paleo** and **ketogenic diets**, contradict the Association's guidance and **did not rank as heart-healthy eating** patterns. EurekAlert, 6 pages. (27.04.2023). Original Publication: Circulation.

★ **Ingesting microplastics may increase fat absorption by 145 per cent:** Using a model of a human small intestine, researchers found that **micro-nanoplastics** (MNPs) in **high-fat foods** significantly **increase the absorption of fat**. The presence of MNPs increased fat digestion by 33% and increased fat absorption by 147 and 145% 1 and 2 h after exposure. NewScientist, 2 pages. (31.03.2023). Original Publication: EnvSciTech.

★ **Link between excess visceral fat and cognitive performance:** Based on an analysis of the health data of close to 9,000 multi-ethnic Singaporeans, scientists have found that Asians with an excess amount of **visceral fat** tend to

have a **poorer ability to think**, **learn** and **remember**. EurekAlert, 3 pages. (03.05.2023). Original Publication: Lancet Reg. Health West. Pac..

Allergy

★ **Missing allergen information for non-prepacked foods:** In the **Netherlands**, food business operators must provide consumers with allergen information for **non-prepacked foods**. Approximately **six out of every 10 companies** are **not correctly providing food allergen information** for such products, according to the Netherlands Food and Consumer Product Safety Authority (NVWA). FSN , 2 pages. (20.04.2023). Original Publication: NVWA.

★ **Lack of information on online food shopping could affect health:** The consumer magazine *saldo* found many products on **internet shops** without a **list of ingredients** and **allergy information**. saldo, 2 pages. (29.04.2023).

Fraud / Deception

★★ **China approves first gene-edited soybean:** China has granted its first-ever approval for a **gene-edited crop,** signalling a growing reliance on scientific advancements to enhance food production. The Ministry of Agriculture and Rural Affairs issued a safety certificate for the gene-edited **soybean**, valid for five years starting April 21. Affidia, 2 pages. (10.05.2023). Original Publication: Reuters.

★★ **Enhanced production of fake "Made in Italy": T**o respond to the demand for Italian food from Russian citizens, Russia counterfeit food product has expended very rapidly. The **production of imitations** has become so important that in many regions, from the Urals to the Sverdlovsk region, factories specialising in the production of **fake Italian cheeses** and **cured meats** have sprung up. Russian cheese producers have announced the start of exports of **Parmesan made in Russia** in the next 5 to 7 years. Il Quotidiano del Sud, 4 pages. (10.05.2023).

★ **Fake shrimp - a company in the province of Perugia fined:** More than half a ton of **fake shrimp** and two tons of fish products have been seized during the latest checks by the Livorno Coast Guard **Fisheries Inspectors**. The goods were distributed by a wholesale company in the province of Perugia, Italy. UJ, 2 pages. (22.04.2023).

★ **Food with protected designations inspected:** The Association of Cantonal Chemists of Switzerland (**VKCS**) organised a national inspection campaign focusing on the inspection of **Swiss dairy and meat products** with protected designations (**PDO, PGI**). The inspections took place. The picture that emerged was reassuring: most of the complaints were due to **minor deficiencies** in the information on the label, while only 2% of the products were found to be misleadingly labelled or produced in non-certified companies VKCS, 2 pages. (25.04.2023).

★ **Italy - food purchased online lacking nutritional labels:** A study conducted by the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) aimed to assess the accuracy of nutritional labels food products **purchased online**. Results shows that **nutritional information** on e-commerce sites can be **incomplete, inaccurate, or false**, especially for locally-produced foods. Of the 80 processed food items bought from a popular e-commerce platform, **35%** of processed products l**acked nutritional labels**. Affidia, 3 pages. (27.04.2023). Original Publication: IZSVe.

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Risk Assessment

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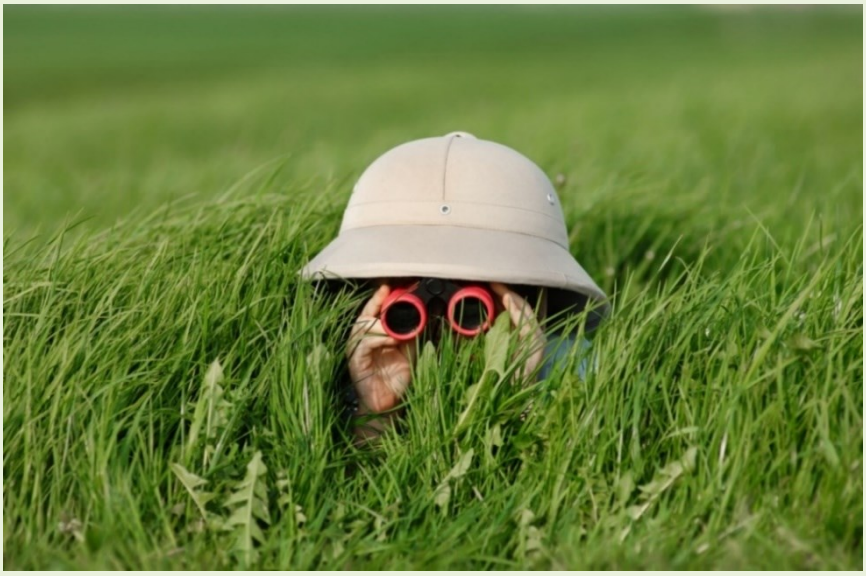

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ **Multi-country outbreak of *Salmonella* Virchow ST16 infections:** Since June 2017, a persistent cross-border outbreak of ***Salmonella* Virchow ST16** has been ongoing in five European Union/European Economic Area (EU/EEA) countries, the United Kingdom, and the United States. A total of **210 cases** have been reported mostly linked to local restaurants serving **kebab meat**. New infections are likely to occur until further investigations are performed to identify the sources and points of contamination along the **chicken meat** production chain. EFSA, 16 pages. (30.03.2023).

★★★ **First detection of *tet*(X4)-positive Enterobacterales in retail vegetables:** In a new study, 113 **vegetable samples** from farmers' markets were screened for **tigecycline-resistant (*tet*(X4)) strains**. Ten ***Escherichia coli*** (two ST195, two ST48, and one ST10, ST58, ST88, ST394, ST641, and ST101) and one ***Klebsiella pneumoniae*** (ST327) recovered from nine vegetable samples ((8 %) were identified as carrying *tet*(X4). IntJFoodMicr, 10 pages. (16.04.2023).

★★ **Wind speed and landscape context mediate *Campylobacter* risk among poultry:** A study conducted by Washington State University researchers found that **high winds** increased the **prevalence of *Campylobacter*** among **outdoor** chicken flocks. The researchers are calling attention to their findings so that organic and free-range chicken farmers whose flocks are exposed to the outdoor environment can better mitigate the food safety risk of high winds. FoodSafetyMag, 1 page. (16.03.2023). Original Publication: Animals.

★★ **Bacteria from meat likely to cause urinary tract infections:** Foodborne ***E. coli*** strains are estimated to cause half a million **urinary tract infections** (UTI) annually in the United States. Eighty-five percent of UTIs are caused by *E. coli*, and 8 percent of these infections are acquired from meat. Two *E.coli* lineages, **ST131-H22** and **ST58**, appeared to have particularly high virulence potential. Washington Post , 4 pages. (23.03.2023). Original Publication: One Health.

★★ **First report of enterotoxigenic *Staphylococcus argenteus* as a foodborne pathogen:** A new study characterised two coagulase-positive non-pigmented staphylococci involved in two independent **outbreaks** that occurred in **France**. Both isolates were identified as ***Staphylococcus argenteus*** by whole genome sequencing. The results shed light on the **enterotoxigenic** properties of *S. argenteus*, and emphasize the importance in monitoring of *S. argenteus* as an **emerging** foodborne pathogen. IntJFoodMicr, 10 pages. (02.06.2023).

★★ **Antimicrobial-Resistant *Listeria monocytogenes* in Ready-to-Eat Foods:** A study conducted in South Africa evaluated the antimicrobial susceptibility of ***L. monocytogenes*** from **ready-to-eat (RTE)** foods against antimicrobial agents currently in use for managing listeriosis and the potential possible risks of **antimicrobial resistance**. High resistance (>50%) against amoxicillin, penicillin, ertapenem, erythromycin, sulfamethoxazole, cefotetan, ceftriaxone, trimethoprim, streptomycin, oxytetracyclines, and vancomycin was observed. Foods, 14 pages. (22.03.2023).

★★ **Antimicrobial resistance genes of frequently used probiotic bacteria:** Researchers screened genetic data of **12 probiotic species** commonly used in non-fermented/fermented foods or probiotic dietary supplements for **antibiotic resistance genes** (ARGs). Ten of them were found to contain ARGs. A considerable proportion of ARGs were likely found to be **mobile**, meaning it is conceivable they may be transferred to other bacteria present in the gut and therefor **contribute to the gut resistome**. Eurosurveillance, 6 pages. (06.04.2023).

★★ **Imported spring onions related to the first recorded outbreak of EIEC in Denmark:** Between November and December 2021, the first ever recorded outbreak of **enteroinvasive *Escherichia coli* (EIEC)** in **Denmark** occurred at national scale. Interviews of 42 cases and traceback investigation pointed towards consumption of ready-to-eat salads as the outbreak cause. While the ready-to-eat salads comprised different vegetables, **spring onions** imported from the Netherlands were the only common ingredient and thus the likely source. Environmental investigations failed to recover outbreak strains. Eurosurveillance, 5 pages. (13.04.2023).

★ **Chronic wasting disease in deer at farms in the US:** Chronic wasting disease (CWD) is a **prion**-related transmissible spongiform encephalopathy of **cervids**. The number of cases has been increasing for the past 5 years. US scientists assume a **possible risk** of infection for humans, by analogy with **BSE**. Animal health officials in Texas announced on April 11, 2023 that CWD has been detected in **deer** at farms. CIDRAP, 1 page. (12.04.2023). Original Publication: TAHC.

★ **Potential transmission of *Vibrio parahaemolyticus* from freshwater food:** *Vibrio parahaemolyticus* is an increasingly important foodborne pathogen that cause acute gastroenteritis in humans. However, the prevalence and transmission of this pathogen in **freshwater food** remains unclear. A study shows ***V. parahaemolyticus*** was more prevalent in **freshwater food** (56.7%) than in seafood (38.8%). Food Microbiol., 10 pages. (08.2023).

Chemistry

★★★ **Risks of unintended changes with gene-editing techniques:** Testbiotech, a non-profit organisation operating in the field of genetic engineering, warns that several studies have shown that the use of **gene-editing techniques** can produce **unintended genetic changes** unlikely to occur with conventional breeding or random mutagenesis. Testbiotech stresses that these changes could have **negative impacts on health** and the environment, beyond what is known from conventional breeding. Affidia, 1 page. (04.04.2023). Original Publication: Testbiotech.

★★ **Nitrosamines in food raise a health concern:** EFSA's assessment on the public health risk related to the presence of **nitrosamines in food** has been published. Consumer exposure to nitrosamines, compounds that can form in food during its preparation and processing, raises a **health concern**. Ten nitrosamines found in food are **carcinogenic** and **genotoxic**. EFSA, 1 page. (28.03.2023). Original Publication: EFSA.

★★ **“Safer” PFAS types used in food packaging still hazardous:** Due to the known exposure risks of using smaller per- and polyfluoroalkyl substances **(PFAS)** in food-contact materials, many companies have pivoted to using **larger polymeric PFAS** to make wrappers, bowls, and other fast-food packaging water- and grease-repellent. These polymeric PFAS are promoted as “safer” alternatives that are inert and too heavy to escape from products. However, a study provides the first evidence that **polymeric PFAS** used in food packaging could break down into smaller molecules that are still **harmful** and can leach into food and the environment. FoodSafetyMag, 1 page. (28.03.2023). Original Publication: Environ. Sci. Technol. Lett..

★★ **PFAS pollution in the south of Lyon - presence confirmed in eggs:** The Rhône prefecture confirmed the presence of **high levels of PFAS** pollutants in **eggs** taken near chemical facilities in the south of **Lyon**. In January, the prefecture had already indicated that initial samples had revealed levels of PFAS, which were eight to sixteen times higher than the regulatory values. These results led the prefecture to extend the **ban on their consumption** to other nearby areas. LeMonde, 1 page. (03.04.2023). Original Publication: Préfète du Rhône.

★★ **Lithium in drinking water increases risk of autism:** Naturally occurring **lithium in drinking water** could affect the **brain development of unborn children**. Researchers compared 8,842 children with **autism** and 43,864 without a diagnosis. The more lithium in the drinking water consumed by the mothers during pregnancy, the higher the risk that the offspring would later be diagnosed with autism. Forschung und Wissen, 1 page. (09.04.2023). Original Publication: JAMA Pediatr..

★★ **Jams containing insecticides or fungicides:** The French National Institute of Consumption (INC) has detected 15 different molecules of **insecticides or fungicides** in **22 of the 40** analysed references of **supermarket jams**. In these, four jars of jam contained **two pesticides banned** from use in the **European Union** because of their harmfulness: **carbendazim and thiophanate-methyl.** 60 Millions de consommateurs, 2 pages. (30.03.2023).

★ **Pesticide residues in vine leaves:** The German Organisation Öko-Test analysed eight unfilled **vine leaves** and eleven filled with rice for pesticide residues. The laboratory separated the stuffed vine leaves in advance - i.e. the rice and the vine leaves were examined separately. High amounts of **different pesticides** were detected in some products, in others, none. Öko, 4 pages. (05.04.2023).

★ **Prenatal heavy metals exposure impacts steroid hormones production in children:** A study conducted in China found that **prenatal maternal exposure** to **mercury** may have **long-term effects** on the next generation as it may affect **sex hormones** in children. Nature, 10 pages. (27.03.2023).

★ **South Korea - foodborne toxin in cherry tomato:** There have recently been a series of reports of people vomiting after eating cherry tomatoes in **South Korea.** The cause is suspected to be a glycoalkaloid called **"tomatine"** which has been detected in a new variety of cherry **tomatoes**. The Ministry of Food and Drugs has now confirmed this fact. ProMed, 2 pages. (31.03.2023).

★ **LDPE nanocomposite film uses antimicrobial solution to extend shelf-life of strawberries:** A new method developed by researchers has succeeded in extending the shelf life of strawberries. Researchers tested five low-density polyethylene (LDPE) **nanocomposite films** with encapsulated **bioactive formulation**. This formulation was based on **plant-derived essential oils**, which have antimicrobial and antifungal properties. FoodNavigator, 2 pages. (11.04.2023). Original Publication: J. Food Sci..

★ **Food thermal labels are a source of dietary exposure to BPS:** A **Canadian** research group analysed 140 **packaging materials** from packaged fresh food purchased in North America. No bisphenol A (BPA) was detected in either the packaging samples or **thermal labels**. However, significant amounts of **bisphenol S** (BPS) and alternative color developers were present in thermal labels. EnvSciTech, 10 pages. (15.03.2023).

Nutrition

★★★ **FAO, WHO Publish First Global Report on Cell-Based Food Safety:** The first global report on the **food safety** aspects of **cell-based foods** has been published by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). The report is intended to provide a solid scientific basis to begin establishing regulatory frameworks and effective systems to ensure the safety of cell-based foods. FoodSafetyMag, 1 page. (05.04.2023). Original Publication: FAO.

★★ **Association between childhood obesity and prenatal exposure to environmental pollutants:** Prenatal exposure to **persistent organic pollutants** may contribute to the development of **childhood obesity** and **metabolic disorders**. However, the results of a study suggest that the nutritional status of the mother during pregnancy may modulate these effects. The researchers found that high levels of **vitamin B12** may **enhance** the **obesogenic effect** of prenatal exposure to the **fungicide hexachlorobenzene**. Conversely, the dietary **antioxidant β-cryptoxanthin** may have a **protective effect** against the **obesogenic effects** of **perfluorooctane sulfonate** (PFOS). EurekAlert, 3 pages. (22.03.2023). Original Publication: ehp.

★★ **Estimated micronutrient shortfalls of the EAT–Lancet planetary health diet:** Recently published research suggests the **planetary health diet** does not provide enough **vitamins** and **minerals** – including iron, zinc, calcium and vitamin B12 – to nourish the global population due to its low amount of animal source foods. FoodNavigator, 2 pages. (31.03.2023). Original Publication: Lancet Planet. Health.

★★ **Bubble tea containing more ingredients than expected: Bubble tea**, of Taiwanese origin, is a real phenomenon that young people are very fond of. The Fédération Romande des Consommateurs (FRC) analysed some of these drinks sold in Switzerland, which, according to the recipe, were supposed to contain only **theine, lactose and saccharose**. It turned out that they also contained a **mixture of glucose and fructose**, **preservatives** and **colourings**. According to the producers, the drinks meet the safety and quality requirements. FRC, 3 pages. (30.03.2023). Additional Information: 20Minutes.

★★ **Sweets change our brain:** Fatty and sweet foods (**high-fat/high-sugar snack**) strongly **alter the brain**'s reward system. According to a study, the brain thus learns to unconsciously **prefer such foods**. FoodAktuell, 1 page. (22.03.2023). Original Publication: Cell Metab.

★ **Common sweetener in high doses may suppress immune system:** A new study indicates that **high doses** of the artificial sweetener **sucralose** reduce **immune responses** in **mice**. More research is needed to understand the impact sucralose has on humans. MedNewsToday, 3 pages. (23.03.2023). Original Publication: Nature.

★ **Effects of ultra-processed foods on the microbiota-gut-brain axis:** Modern ultra-processed foods (**UPF**) contain large quantities of **saturated** and **trans-fat**, added **sugar**, **salt**, and **food additives**. A study investigates the effects of UPF and concludes: UPF consumption impact **intestinal functions** and physical **health**. Food additives change the **gut microbiota** composition and may cause **intestinal inflammation**. UPF potentially exert adverse effects on brain health through the microbiota-gut-brain axis. Food Res. Int., 10 pages. (05.2023).

★ **Health assessment of glutamic acid and glutamates (E 620–E 625):** The Federal Institute for Risk Assessment (BfR) in Germany shares its state of knowledge on the **health assessment** of this additive group in Communication No. 013/2023. At moderate consumption levels of foods containing **glutamates** as additives as well as naturally occurring or added **glutamic acid**, all age groups except people aged 65 and over may **exceed the Acceptable Daily Intake (ADI)**. At high consumption levels, all age groups exceed the ADI of 30 mg per kg body weight and day. BfR, 2 pages. (24.03.2023).

★ **The role of diet as a modulator of the inflammatory process in the neurological diseases:** A review has examined the role of **gut health** promoting **supplements**, such as **probiotics** and **omega-3 fatty acids**, in modulating cognitive health, with calls for personalised interventions. Personalized nutritional interventions may constitute a non-invasive and effective strategy in combating neurological disorders. FoodNavigator, 3 pages. (20.03.2023). Original Publication: Nutrients.

★ **Tiktok trend "dragon's breath" - children hurt eating liquid nitrogen: Dragon's Breath (chiki ngebul or chikibulis)**, a snack dipped in **liquid nitrogen**, causes vapour to billow out of the eater's nose and mouth. Popularised on TikTok, Indonesia's health ministry has warned of its dangers after some children suffered **burns and food poisoning**. No deaths have been reported, but the ministry said around 25 children have been affected, with two hospitalised. TheGuardian, 1 page. (17.01.2023).

Allergy

★ **Food allergen recalls:** The majority of **food allergen recalls** are caused by preventable labelling errors, according to a recent analysis of recall data for U.S. Food and Drug Administration (FDA) –regulated products. Additionally, **milk** remains the top major food allergen implicated in major food allergen recalls. FoodSafetyMag, 1 page. (10.04.2023). Original Publication: JFoodProt.

Fraud / Deception

★★★ **EU Commission publishes results on honey adulteration:** The results of an EU-wide coordinated action on **honey** contaminated with **sugars** are published. Sixteen EU Member States plus Switzerland and Norway embarked on a testing campaign. 320 honey consignments - imported from 20 countries - were randomly sampled. 147 samples (**46%**) were suspicious to be adulterated. JRC, 3 pages. (23.03.2023). Original Publication: JRC.

★★ **Switzerland - Too light bread:** In 2022, a number of bakeries and other businesses sold loaves of bread that were too **light**: 86 of the 761 samples tested (11%) did not meet the legal requirements. In addition, a number of bakeries and confectioners as well as affiliated tea rooms were not very accurate with their **pricing**. FoodAktuell, (29.03.2023). Original Publication: seco.

★ **Alcohol for Covid used for champagne and wine:** Guardia di Finanza: a criminal business in smuggling, **adulteration** and **counterfeiting** of **alcoholic beverages** discovered in Naples. 12 people arrested and EUR 10 million seized. **During this operation** about 900 bottles were also found, with the wording olive oil, but which instead contained seed oil. RD, 3 pages. (16.03.2023).

★ **Mass food fraud under investigation in UK:** Following allegations reported by trade publication Farmer's Weekly, the Food Standards Agency (FSA) is investigating the **false labelling** of foreign meat as British by a supplier of **pork** products used in dining halls of schools, hospitals, care homes and prisons, and that also ended up in items such as ready meals, quiches and sandwiches sold by UK supermarkets. Affidia, 2 pages. (30.03.2023). Original Publication: FarmersWeekly.

★ **Illicit pesticides:** The European Anti-Fraud Office (**OLAF**) and the **Bulgarian** authorities intercepted around 11 tonnes of **illicit pesticides** in Bulgaria. Some of the substances (**Thiamethoxam, Imidacloprid, Chlorpyrifosseized**) are banned in the EU altogether due to their danger for human health and the environment. OLAF, 1 page. (31.03.2023).

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Risk Assessment

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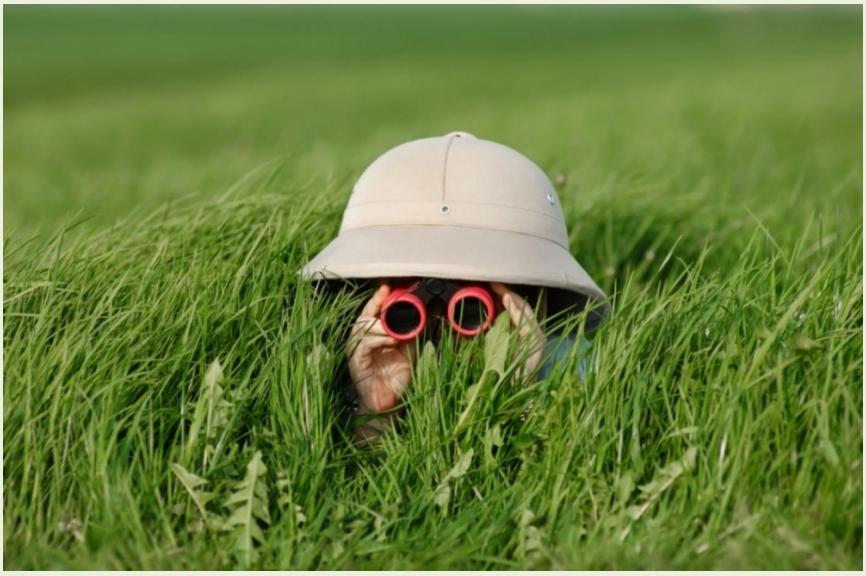

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ **Persistent Strain of *E. coli* O157:H7 (REPEXH01) Linked to Multiple Sources:** REPEXH01 is a **persistent strain** of Shiga toxin-producing **Escherichia coli** O157:H7 (Shiga Toxin Type Stx2a and/or Stx2c). This bacteria is described as "persistent" because it causes illnesses (634) and outbreaks (14) in the USA since several years. ProMed, 3 pages. (01.03.2023). Original Publication: CDC, FoodSafetyMag.

★★★ **Classification and ranking of shigatoxin-producing *Escherichia coli* (STEC) genotypes:** The risk classification and management of **shigatoxin-producing E. coli (STEC)** isolated from foods is incomplete. Knowledge gaps exist regarding the properties that determine the extent to which different subtypes of STEC can cause severe disease. As a result, a **new study** ranks **STEC genotypes** in **descending order** of potential **public health burden**. MicrRiskAnalysis, 5 pages. (04.2023).

★★★ **Identification of hazards in meat products manufactured from cultured animal cells: Cultured meat** is animal meat grown from cells, without killing animals. It uses the same biological process as in animals, but in controlled production facilities. The UK **Food Standards Agency** published a **hazard identification** examining potential hazards to consumers eating cultured meat. FSA, 32 pages. (15.03.2023).

★★ **A quantitative exposure assessment model for norovirus in oysters:** Oysters grown in waters contaminated with wastewater filter and accumulate **norovirus** particles. A new two-dimensional **exposure model** estimates per serving norovirus consumption, based on **ISO 15216–1:2017** result. This link between ISO detection and consumer exposure is novel and relevant for risk managers. MicrRiskAnalysis, 14 pages. (04.2023).

★★ **Almond milk recalled after link to botulism case:** A brand of **almond milk** is being recalled in **Australia** after it was linked to a case of **botulism**. New South Wales Health confirmed the presence of botulinum toxin in a sample of the milk. ProMed, 2 pages. (16.02.2023). Original Publication: Telegraph.

★★ **Vascular infections and endocarditis caused by *Campylobacter* spp.:** The incidence of **campylobacteriosis** has substantially increased. A study aimed to describe **vascular infection** or **endocarditis** caused by *Campylobacter* spp.. ***Campylobacter fetus*** was found to be the most frequently involved species. Emerg Infect Dis , 5 pages. (03.2023).

★★ ***Listeria monocytogenes* persister cells in the produce-processing environment:** A study examined the formation of **persisters** by ***Listeria monocytogenes*** (LM) in an environment simulating a processing plant for **leafy green production**. It was demonstrated that LM could form persister cells under the simulated conditions of a produce-processing environment. IntJFoodMicr, 10 pages. (02.04.2023).

★ **Salmonella in Chicken Increasingly Resistant to Critical Antibiotics:** According to a recent report published by the U.S. Department of Agriculture's Food Safety and Inspection Service, ***Salmonella*** isolates from chicken cecal and slaughter product samples show a significant increase in **resistance to the critically important antimicrobial drugs** FoodSafetyMag, 2 pages. (10.02.2023). Original Publication: USDA's FSIS.

★ **Increase in Drug Resistant Shigella in the United States:** The Centers for Disease Control and Prevention (**CDC**) has been monitoring an **increase** in extensively drug-resistant (XDR) ***Shigella*** infections (shigellosis). In 2022, about 5% of *Shigella* infections reported to CDC were caused by XDR strains, compared with 0% in 2015. FoodPoisonJournal, 3 pages. (25.02.2023). Original Publication: NARMS.

★ **Italy sees most HUS cases for decades: Italy** has reported the highest annual total of **Hemolytic Uremic Syndrome** (HUS) cases since records began. From January to December 2022, 91 cases were recorded. In Switzerland EHEC Incidences have risen between 2020 (7.95) to 2022 (13.65). FSN , 2 pages. (01.03.2023).

★ **Case Study: Clostridium botulinum poisoning caused by plant-based canned pâté:** Ten cases of ***Clostridium botulinum*** poisoning occurred from mid-July to mid-August of 2020, according to the Food Safety Department of **Vietnam**. Two victims with severe symptoms of *Clostridium botulinum* poisoning reported having eaten **canned, plant-based pâté**. Samples analysis of the leftover pâté found the presence of *Clostridium botulinum* toxin. FoodSafetyMag, 2 pages. (07.03.2023). Original Publication: Wellcome Open Res.. Additional Information: WHO.

Chemistry

★★ **Phthalates may increase diabetes risk in women:** A 6 years longitudinal study conducted by the University of Michigan School of Public Health has found that women exposed to high levels of **phthalates** have an up to 63% increased risk of **developing diabetes.** MedNewsToday, 5 pages. (13.01.2023). Original Publication: JCEM.

★★ **Tricyclazole residues in imported rice:** Two **Italian** companies have asked the government to block the import of **Asian rice** from Cambodia, Myanmar, Vietnam, India and Pakistan contaminated with **tricyclazole**. a chemical substance banned in the European Union. However, the European Food Safety Authority has decided to introduce a sort of tolerance threshold for **tricyclazole residues in imported rice.** Dissapore, 2 pages. (08.02.2023). Original Publication: EFSA.

★★ **Potential health risks of short-chain chlorinated paraffin:** Short-chain chlorinated paraffins (**SCCP**s) are ubiquitously distributed in various environmental matrices. SCCPs have been detected in various **human samples.** The estimated daily intakes of SCCPs indicate nonnegligible health risks to residents. SCCP levels were found to be positively correlated with **biomarkers of some diseases**. SciTotalEnviron, 10 pages. (05.2023).

★★ **Brazil nuts exposed to radiation:** A test by a consumer organisation shows high levels of **radioactive radium** in **South American nuts**. The consumer magazine examined 21 products from well-known manufacturers for radiation exposure and other ingredients. The Brazil nut products not only contain increased radiation exposure, but also slightly increased **perchlorate** and **barium** values. Öko, 2 pages. (23.02.2023).

★★ **Chinese tea with Fipronil:** According the Chinese Risk Assessment Authority, 20 % of **Chinese tea** contains **Fipronil** above the limit set by the EU. A total of 726 tea samples collected between 2011 and 2018 were tested for fipronil and its metabolites. In China, the use of fipronil has been banned since 2009. J. Food Compos. Anal., 10 pages. (01.2023).

★★ **Microplastics in vascular tissue:** Scientists from the University of Hull and Hull York Medical School have discovered **microplastics** in **vascular tissue** for the first time. Two of the most prominent polymer types that were found are used in **food packaging**. FoodSafetyMag, 1 page. (27.02.2023). Original Publication: PlosOne.

★★ **PFAS can suppress white blood cell's ability to destroy invaders:** In a study conducted in North Carolina State University, researchers found that the per- and polyfluoroalkyl substances (**PFAS**) impair the ability of **white blood cells** use to kill **invading pathogens**. EurekAlert, 3 pages. (15.02.2023). Original Publication: JImmunotox.

★★ **Study finds PFAS disrupt key biological processes:** Researchers from the University of Southern California found that exposure to **PFAS** alters several critical biological processes, including the **metabolism of fats and amino acids**, in both children and young adults. The disruption of these biological processes is connected to an **increased risk of a very broad range of diseases**, including developmental disorders, cardiovascular disease, metabolic disease and many types of cancer. EurekAlert, 2 pages. (22.02.2023). Original Publication: ehp.

★★ **Smoothie contains PFAS:** Testing found **smoothie** contains toxic **PFAS**, at levels far above federal advisory drinking water limits. It is **unclear** how the chemicals got in the drink. TheGuardian, 2 pages. (14.02.2023).

★ **Exposure of children and adolescents to PFAS:** A pilot study aimed to determine the **serum concentrations** of several PFAS in 113 girls and 112 boys (age 7-10 and 12-15) from Northeastern **Slovenia** and to identify **potential sources of exposure** using questionnaire data. Results showed an association between PFAS exposure and **public drinking water** quality. Chemosphere, 40 pages. (09.02.2023).

★ **How microplastics affect health:** Human **dietary exposure** to microplastics is associated with a number of urgent **health risks** such as **digestive**, **reproductive**, and **respiratory** harm, and should be addressed with a "degree of urgency," according to a report from the California State Policy Evidence Consortium (CalSPEC). FoodSafetyMag, 1 page. (20.02.2023). Original Publication: CalSPEC.

★ **Mineral oil hydrocarbons in butter:** The French-speaking consumers' federation (FRC) evaluated 13 samples of **Swiss butter** of which 5 contained traces of **mineral oil hydrocarbons (MOH)** exceeding the limit values. These were mainly originating from the packaging. Swiss legislation does not set limits for the amount of mineral oil in butter. For this reason, the FRC has based its tests on German values. FRC, 3 pages. (07.03.2023). Additional Information: EU guidance on MOH in food .

★ **FDA decides CBD products have unknown dangers: FDA** announced, "after careful review", that a **new regulatory pathway** is needed for **CBD products** in order to manage risks. Among FDA's safety concerns is the long-term use of CBD. Studies have shown the potential for harm to the **liver**, interactions with certain **medications** and possible harm to the **male reproductive system.** FSN , 2 pages. (08.02.2023). Original Publication: FDA.

★ **Nanoparticles in food colouring and anti-caking agents may damage parts of the human intestine: Metal oxide nanoparticles** that are commonly used as **food colouring** and **anti-caking agents** within the commercial ingredients industry may "damage parts of the human intestine", according to a recent article. NewFoodMag, 2 pages. (16.02.2023). Original Publication: Antioxidants.

★ **Decorative "cake design" dust is not always edible:** French authorities report on a development, called "**cake design**". It is a practice that consists in decorating cakes as if they were a work of art, for example with **shimmering colours**. Sold as **gold**, **silver** or **copper** "lustre" dust or powder, these metallic colourings need to be diluted and then applied with a brush or a spray gun. However, this metallic dust can be unsafe due to **inhalation**. Vigil'ANSES, 2 pages. (02.2023).

★ **L-arginine as alternative to nitrites and nitrate? Nitrites** and **nitrates**, often added to foods are increasingly subject to scrutiny as research about possible negative health effects emerge. New research tries to determine the feasibility of a **novel amino acid alternative** curing system for **meat**. FoodSafetyMag, 1 page. (22.02.2023). Original Publication: Texas A&M Today.

★ **Long-term exposure to nitrate in drinking water may be a risk factor for prostate cancer:** A study conducted in Spain concluded that **nitrate** ingested in a person's adult lifetime through the consumption of **tap water and bottled water** could be a risk factor for **prostate cancer.** EurekAlert, 2 pages. (08.03.2023). Original Publication: ehp.

★ **Erythritol linked to higher rates of heart attack and stroke:** New Cleveland Clinic research showed that **erythritol**, a popular artificial sweetener, is associated with an **increased risk of heart attack and stroke**. EurekAlert, 3 pages. (27.02.2023). Original Publication: Nat. Med..

Nutrition

★★ **Parkinson's disease may be caused by a disturbance of the intestinal microbiota:** People with this **neurodegenerative disease** have an overabundance of **opportunistic pathogens**, among other **microbiota** abnormalities. Researchers at the University of Alabama in the US found this **gut dysfunction** by comparing the microbiota of 490 people with Parkinson's disease with those of 230 "healthy" people. Sci Avenir, 1 page. (16.02.2023). Original Publication: NatureComm.

★★ **Ketogenic diet may be linked to heart attack and stroke:** Researchers from Canada assessed how **low-carbohydrate, high-fat (LCHF)** diets, similar to keto diets, may affect cardiovascular risk. The research found that a LCHF diet almost **doubled the risk of cardiovascular events** when compared to a standard diet. MedNewsToday, 5 pages. (10.03.2023). Original Publication: UBC.

★★ **Ultra-processed foods and associations with child anthropometry and bone maturation:** Frequent **ultra-processed food** (UPF) consumption is consistently associated with **poor health outcomes**. Little is known about UPF intake during early **childhood** and its effects on growth. A study with Ecuadorian children suggests that frequent UPF intake during early childhood may be linked to **stunted growth**, despite paradoxical associations with bone maturation. Br J Nutr, 46 pages. (13.03.2023).

★ **Ultra-processed foods may increase Crohn's disease risk:** A new study finds that people who eat **more ultra-processed foods** and **less unprocessed foods** have an **increased risk of developing Crohn's disease.** MedNewsToday, 4 pages. (13.03.2023). Original Publication: CGH.

★ **Cultivation of thick tender steaks in Switzerland:** A Swiss start-up achieves technological breakthrough for the **cultivation of thick tender steaks**. The company has developed what it calls a "**Fibration Technology**" that allows for efficient cultivation of tissue that **mimics conventional meat**. The company exclusively uses natural cells, in a **GMO-free** process. FoodAktuell, 1 page. (14.02.2023). Original Publication: Mirai.

★ **A detox trend that is all the rage on TikTok:** The practice of **clay eating,** known as **geophagy**, has grown in popularity recently, with self-proclaimed "clay eaters" claiming a host of benefits. Experts **warn** against consuming large amounts of kaolin, as it can cause **constipation** and **digestive issues**. Excess consumption can also interfere with the absorption of other essential minerals, including calcium and zinc. Archyde, 1 page. (26.02.2023).

★ **Gluten-free products are not usually nutritionally equivalent to those that contain gluten:** A research team at the University of the Basque Country (UPV/EHU) has spent 9 years monitoring gluten-free products to analyse whether they are nutritionally deficient. They found that the **macronutrient profile** of **gluten-free products** cannot be considered nutritionally equivalent to their gluten-containing counterparts. EurekAlert, 2 pages. (27.02.2023). Original Publication: Foods.

★ **Instant noodles: a quick and cheap snack, but healthy?** Instant noodles are cheap and popular. However, despite the long list of ingredients, this type of ramen offers hardly any valuable **nutrients**. A Korean study from 2017 showed that frequent consumption of **instant noodles** increases the risk of **cardiovascular diseases** among healthy college students aged 18–29 years. t-online.de, 1 page. (01.03.2023). Original Publication: Nutr Res Pract.

★ **Skipping breakfast and fasting may compromise the immune system:** Fasting has been linked to many health benefits, but a new **study in mice** suggests that there may be a cost in terms of **reduced immunity**. The research found that there was a **rapid reduction** in the number of **circulating immune cells** in animals that were not allowed to eat in the hours after they awoke**.** MedNewsToday, 4 pages. (28.02.2023). Original Publication: Immunity.

Allergy

★★ **Possible cross-reactivity between chia and sesame seeds:** According to data presented at the American Academy of Allergy, Asthma & Immunology Annual Meeting the incidence of **allergy** to **chia seeds** seems to be on the rise, with **co-sensitization** to **sesame seeds**. Affidia, 3 pages. (02.03.2023). Original Publication: J Allergy Clin Immunol.

★ **Severe allergic reaction following consumption of food supplement:** ANSES reports on a case of s**evere allergic reaction** after consumption of a **food supplement.** It warns people with allergies of the risk of severe allergic reactions from consuming **purple coneflower** and **green chiretta**. Vigil'ANSES, 2 pages. (18.02.2023).

Fraud / Deception

★ **Mānuka honey: 'All non-NZ brands failed the test':** Testing of **non-New Zealand mānuka** honey brands sold in the UK and US reveals all missed key indicators of mānuka according to New Zealand export standards. FoodNavigator, 1 page. (01.03.2023). Original Publication: UMFHA.

★ **Canada Food Fraud Report for 2021–2022:** The **Canadian Food Inspection Agency** (CFIA) has released its **Food Fraud** Annual Report for 2021–2022. Surveillance during 2021–2022 period included inspecting, sampling, and testing for authenticity and misrepresentation of **fish**, **honey**, **meat**, **olive oil**, other valuable **oils**, and **spices**. FoodSafetyMag, 1 page. (07.03.2023). Original Publication: GovCanada.

★ **Portuguese crackdowns target meat, supplements, and olive oil:** Authorities in **Portugal** have seized a number of food products in recent months including **meat**, **fish**, **food supplements**, and **olive oil.** Earlier this month, the Food and Economic Safety Authority (ASAE), with help from the National Republican Guard (GNR), seized 8.5 tons of fresh and frozen octopus from Spain. FSN , 2 pages. (12.03.2023).

★ **Food fraud probe into beef falsely labelled as British:** The National Food Crime Unit (NFCU) is currently investigating a food fraud incident involving a UK retailer selling **pre-packed sliced beef** labelled as "**British**" that is actually from the **European Union and South America**. BBC, 3 pages. (10.03.2023).

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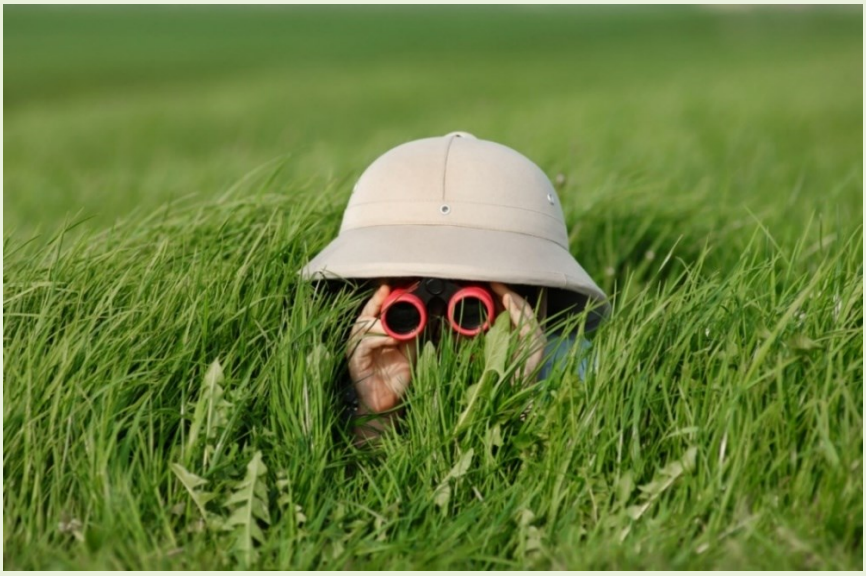

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FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ ***E. coli* isolated from plant-origin foods cause urinary tract infection:** A recent study is the first to systematically examine the diverse **plant-origin foods** such as cucumber, carrot, tomato, radish, chilli, fenugreek, coriander, peppermint, spring onion, cabbage, and spinach for the presence of **Extraintestinal pathogenic *Escherichia coli*** (ExPEC) or specific putative ExPEC pathotypes. A total **15%** putative ExPEC pathotypes were found in plant-origin foods. IntJFoodMicr, 10 pages. (02.02.2023).

★★★ **Plant-based "cheese" linked to Listeria infections:** A **plant-based "cheese"** brand has been linked to five serious **Listeria infections** in **France**. The five cases of listeriosis include four pregnant women who gave birth prematurely. They were infected with the same type of Listeria and reported symptoms between April and December 2022. Three additional cases have been identified in **Germany**, **Belgium** and the **Netherlands**. FSN , 2 pages. (21.01.2023). Original Publication: SpFrance.

★★★ **New circovirus (HCirV-1) involved in human Hepatitis:** French scientists have identified a previously unknown species of **circovirus**, provisionally named **human circovirus 1** (HCirV-1). It was shown to be implicated in damage to the **liver** of a patient undergoing immunosuppressive treatment. The **origin of the virus** – whether it is circulating in humans or of animal origin – has yet to be identified, and the **source of infection** (contact, **food**, etc.) remains **unknown**. 20Min, 2 pages. (07.02.2023). Original Publication: Emerg Infect Dis . Additional Information: Institut Pasteur.

★★★ **Study predicts global increase in antimicrobial use in food-producing animals:** A new **modeling study** suggests the global use of **antimicrobials** in food-producing **animals** will continue to climb over the decade without further efforts to curb such use. CIDRAP, 2 pages. (02.02.2023). Original Publication: PLOS glob. public health.

★★ ***Toxoplasma gondii* and *Neospora caninum* infections in sheep and goats in Switzerland: *Toxoplasma gondii*** and ***Neospora caninum*** infections are important causes of abortion in ruminants. Besides, meat from *T. gondii* infected animals represent a major infection source for humans. A recent study shows that there is a high prevalence of *T. gondii* and lower prevalence of *N. caninum* infections in small ruminants in **Switzerland**. Consumption of undercooked **meat** from *T. gondii* infected sheep and goats may represent a risk for public health. FoodWatParasitol, 12 pages. (09.2022).

★★ ***Clostridioides difficile* as a potential pathogen of importance to One Health: *Clostridioides difficile*** (basonym Clostridium) is a bacterial enteropathogen associated with infection that can result in pseudomembranous colitis, rapid fluid loss, and death. For decades following its isolation, *C. difficile* was thought to be a solely nosocomial pathogen. More recently, *C. difficile* spores have been identified in the broader environment, including in **food-producing animals**, soil, and **food matrices**, in both **ready-to-eat foods** and **meat** products. FoodbPathDis, 10 pages. (12.12.2022).

★★ **Repetitive low exposure to non-typhoidal Salmonella:** A study from the University of Illinois Chicago has linked ***Salmonella*** exposure to a **heightened risk of colon cancer**. Researchers observed human colon cancer tissue samples and animal models, finding that exposure to *Salmonella* may be linked with instances of colon cancer that develop earlier and have larger tumor growth. FoodSafetyMag, 3 pages. (19.01.2023). Original Publication: CellRepMed.

★★ **Nonpathogenic Listeria Strains Developing Concerning Characteristics:** Using whole genome sequencing (WGS), researchers from the University of Johannesburg have identified a trend of **nonpathogenic Listeria** strains developing concerning characteristics, such as **virulence and stress resistance**. Like the pathogenic *L. monocytogenes*, the “harmless” strains ***L. innocua*** and ***L. welshimeri*** are common to food processing facilities. FoodSafetyMag, 1 page. (26.01.2023). Original Publication: MicrSpectr.

★★ **Environmental persistence of Monkeypox Virus on surfaces in household:** A study group conducted **environmental sampling** at the residence of a person, who had human West African monkeypox virus (MPXV-WA). Targeted environmental swab sampling was conducted 15 days after the person who had **monkeypox** left the household. Viable **MPXV was detected** on household surfaces. However, low titers indicate a limited potential for indirect transmission. Emerg Infect Dis , 4 pages. (10.2022).

★★ **Persistence and survival of *Cryptosporidium parvum* oocysts on lamb's lettuce leaves:** A study evaluated the persistence and survival of ***Cryptosporidium* oocysts** in **lamb's lettuce**: during plant growth and in conditions mimicking the industrial washing process applied in minimally-processed vegetables. *Cryptosporidium parvum* oocysts **persist** on lamb's lettuce leaves up to harvest stage. IntJFoodMicr, 11 pages. (02.03.2023).

★★ **High-pressure processing effect on conjugal antibiotic resistance genes transfer:** A study analysed the effect of **high-pressure processing** (HPP) on the frequency of conjugal gene transfer of **antibiotic resistance** genes among strains obtained from starter cultures. The results suggest that high pressures may influence antibiotic resistance **spread**. IntJFoodMicr, 12 pages. (02.03.2023).

★ **Enoki Mushrooms from China contaminated with *Listeria*:** In the USA, a company recalls **Enoki mushrooms** from **China**, due to contamination with ***Listeria monocytogenes***. No illnesses have been reported to date in connection with this problem. FDA and the company continue to investigate the source of the potential contamination FSN , 2 pages. (14.01.2023).

★ **Global Risks Report 2023 - World Economic Forum:** The world faces a set of **risks** that feel both wholly new and eerily familiar. The **Global Risks Report 2023** explores in general some of the most severe risks we may face over the next decade. They may influence food safety also. A more **specific risk report** on food safety for the next decade you may find in the report of the FSVO, which was already published in 2022. WEF, 98 pages. (11.01.2023). Additional Information: The future of food safety: possible trends for the years 2022 - 2032 (FSVO).

★ **Nordic Countries and Seaweed Food Safety:** According to a report written by food safety regulatory representatives from the **Nordic countries**, **seaweed** is the **biggest aquaculture product in the world**, yet there are still **no international standards on food safety**. Food hazards identified as relevant for seaweed harvested in the Nordic countries are **iodine**, **cadmium**, **inorganic arsenic**, **lead**, **mercury**, ***Bacillus*** in heat-treated products, **kainic acid** in dulse (sea lettuce flakes), and **allergens**. FoodSafetyMag, 3 pages. (24.01.2023). Original Publication: NordicCoo.

★ **Nipah virus in Bangladesh:** The **Bangladesh's** minister of health and family welfare has announced that **Nipah virus** cases in the country have risen to 8, including 5 fatalities. This is more than the 3 cases that were reported in all of 2022. This has prompted officials to urge the public not to drink raw **date juice** and not to eat half-eaten fruit that may be found. The World Health Organization (WHO) says the **mortality rate** due to Nipah is between 40% and 75% globally. OutbreakNewsToday, 1 page. (29.01.2023). Original Publication: ProMed.

★ **Risk factors associated with microbial contamination in common food products:** A population-based repeated cross-sectional design was used to determine the **prevalence** and co-occurrence of ***Escherichia coli***, ***Klebsiella*** spp., ***Salmonella*** spp. and ***Vibrio*** spp. in key food commodities - **chicken**, **pork**, **prawns**, **salmon** and **leafy greens in the United Kingdom**. Prevalence in 1,369 food samples for these four target bacterial genera / species varied, while 25.6% of all samples had at least two of the target bacteria. Food Microbiol., 12 pages. (05.2023).

★ **Prevention and control of microbiological hazards in sprouts:** A report from **FAO/WHO** covers prevention and control measures specific to the **primary production** and handling of **seed for sprouting**, the production of sprouts and hygienic practices applicable to retail and food services. FAO, 104 pages. (02.2023).

Chemistry

★★★ **PFAS are widely detected in freshwater fish:** A study from the US concludes, that locally caught freshwater fish are likely a significant **source of exposure** to **perfluorooctane sulfonic acid (PFOS)** and other perfluorinated compounds. U.S. Environmental Protection Agency fish testing in 2013–2015 had a median PFAS concentration of 11,800 ng/kg. FoodNavigator, 2 pages. (17.01.2023). Original Publication: Environ. Res..

★★ **PFAS found in eggs laid by hens fed with contaminated feed:** Danish consumers, especially children, are at risk of **significant exposure** to per- and polyfluoroalkyl substances (**PFAS**) from **eggs**, according to research conducted by the DTU National Food Institute and the Danish Veterinary and Food Administration. The researchers believe that **fishmeal** used as **feed** is the most likely cause of **PFAS contamination in eggs**. FoodSafetyMag, 3 pages. (01.02.2023). Original Publication: DTU.

★★ **ECHA to ban PFAS:** The **European Chemicals Agency** (ECHA) published the proposal to **ban the production, use and placing** on the market (including import) of at least 10,000 **per- and polyfluoroalkyl substances** (PFAS). In their assessment, the authorities involved concluded that there are **risks** arising from the production, use and placing on the market and disposal of PFASs. BfR, 2 pages. (07.02.2023). Original Publication: ECHA.

★★ **Tea contamination by mycotoxins and azole-resistant mycobiota:** Despite **tea** beneficial health effects, there is a substantial risk of tea contamination by harmful pathogens and mycotoxins. A total of 40 tea samples (17 green (raw) tea; 13 black (fermented) tea; 10 herbal infusions or white tea) were purchased from different markets located in **Lisbon**. 57.5 % of all samples presented contamination by **one to five mycotoxins**. IntJFoodMicr, 10 pages. (16.01.2023).

★★ **Dietary exposure to nitrites and nitrates in association with type 2 diabetes risk:** The NutriNet-Santé cohort-study suggested that a **higher exposure** to both **foods and water-originated** and **additives-originated nitrites** was associated with **higher type 2 diabetes risk**. FoodSafetyMag, 3 pages. (23.01.2023). Original Publication: Plos Med.

★★ **Microplastics from breastmilk storage bags:** The occurrence of **microplastic** contaminants in food intended for human consumption has been widely explored. Microplastics and other particles ingested by **infants** from the use of breastmilk storage bags were estimated to be **0.61–0.89 mg/day** based on the average daily breastmilk intake by infants. Environ. Pollut., (01.02.2023).

★ **Ban on single-use plastics in England:** A range of polluting **single-use plastics** will be banned in England. The ban will include single-use plastic **plates**, **trays**, **bowls**, **cutlery**, balloon sticks, and certain types of **polystyrene cups** and **food containers**. This ban will be introduced from October 2023. Defra, 2 pages. (14.01.2023).

★ **Fertilizer made from human urine and faeces:** A new study has shown that modern 'green' products recycled from **human excreta** are safe fertilizers for agriculture. The authors also screened for the presence of 310 **chemicals** in the fecal compost. 6.5% of these were present above the limit of detection in the compost, albeit at low concentrations, including 11 **pharmaceuticals**. The painkiller ibuprofen and the anticonvulsant and mood-stabilizing drug carbamazepine were detectable in the edible parts of the cabbages. Front.Sci.News, 3 pages. (16.01.2023). Original Publication: Front. Environ. Sci..

★ **Novel water-soluble decanoic acid formulation as a fruit sanitizer:** A novel water-soluble **decanoic acid (WSDA),** also known as Capric acid, was evaluated as a fruit sanitizer in a recent study. WSDA sanitizer killed yeasts, molds and bacteria including *E. coli* microbes more effectively than other microbial loaded sanitizers. WASDA was able **to preserve** the **cherry fruit** quality much better than traditional sanitizers. IntJFoodMicr, 10 pages. (03.2023).

★ **Fukushima to release contaminated water:** Over ten years ago, a tsunami triggered a disaster at the **Fukushima** Daiichi Nuclear Power Plant on Japan's east coast. The Japanese authorities have now given the site permission to release the stored **radioactive water** through a pipeline to the **Pacific Ocean**. Conversation, 3 pages. (23.01.2023).

★ **Urban gardening in big cities:** A study found that a total of 4,154 hectares of **Berlin** could be used to grow vegetables. It accounts for almost 5 percent of the city's total area. And 82 percent of Berlin's **vegetable** demand could be met locally if all this land was used for urban gardening. However, food safety issues, such as **contamination**, have to be addressed in an urban environment. EurekAlert, 2 pages. (24.01.2023). Original Publication: Sustain.Cities Soc..

★ **Occurrence of phthalates in dry foods packed in paper packaging:** In a study, **7 dry foods** in paper packaging were evaluated for the presence of **phthalates**, chemical compounds that can migrate from food-packaging into food. Only two food samples did not contain any of the studied substances. In the other food samples, **the values exceeded the migration limits** established by Mercosur and European Union legislation by **2.5 to 5 times**. JCF, 5 pages. (19.01.2023).

Nutrition

★★★ **Tax on soft drinks - any effects?:** A paper shows that **Soft Drinks Industry Levy** (SDIL) in the **UK** had a mix of public health effects. The results suggest that the SDIL was associated with decreased prevalence of obesity in 6 year old girls, with the greatest differences in those living in the most **deprived areas**. Plos Med, 18 pages. (26.01.2023).

★★ **One in eight Americans over 50 show signs of food addiction:** A study carried out by the University of Michigan has claimed that **one in eight Americans** between 50 and 80 show signs of an **addiction** to **highly processed foods and beverages** such as sweets, salty snacks, sugary drinks and fast food. NewFoodMag, 3 pages. (31.01.2023). Original Publication: UniMichigan.

★★ **Ultra-processed food consumption linked to cancer risk and cancer mortality:** According to the findings of a study lead by Imperial College London, **higher consumption** of **ultra-processed foods** is associated with a **greater risk** of overall **cancer**, as well as **increased risk** of overall **cancer-associated mortality**. These associations persisted after adjustment for a range of socio-demographic, smoking status, physical activity, and key dietary factors. FoodNavigator, 4 pages. (01.02.2023). Original Publication: eCM.

★ **Sugar-to-Fiber Enzyme:** In 2018, a food enterprise approached a research Institute to develop a solution to **sugar reduction** that is workable in a food production setting. After four years of collaboration, the research team has developed an answer: **enzymes that convert sugar into fibre** when they **reach the human gut**. FoodNavigator, 2 pages. (22.12.2022). Original Publication: WI.

★ **Research shows impact of 'hyper-palatable' foods across four diets:** Researchers from the NIH's National Institute of Diabetes and Digestive and Kidney Diseases sought to determine what **characteristics of meals** were important for determining **how many calories were eaten.** They found that that **hyper-palatability** consistently **increased the amount of energy** consumed across four diet patterns: low-carbohydrate, low-fat, a diet based on unprocessed foods and one based on ultra-processed foods. EurekAlert, 3 pages. (30.01.2023). Original Publication: NatureFood. Additional Information: Obesity.

★ **Dry scooping - a risky dietary practice common among Canadian adolescents and young adults:** Analyzing data from over 2,700 Canadian adolescents and young adults, researchers from the University of Toronto found over **1 in 5 adolescent boys and young adult men** have engaged in "**dry scooping**", a novel dietary phenomenon described as ingesting pre-workout powders without a liquid. According to the researchers "Dry scooping can have serious health effects, including **issues with inhalation**, **cardiac abnormalities**, and **digestive issues**." EurekAlert, 1 page. (08.02.2023). Original Publication: EatingBehaviors.

Fraud / Deception

★★ **Botanical Ingredient Forensics:** A review of the schemes that **fraudsters** use in an attempt to fool **authentication** methods for **botanical ingredients** has been published. It provides evidence of how botanical ingredients are **intentionally adulterated** to exploit shortcomings in the specificity of commonly used analytical laboratory methods. J Nat Prod, 13 pages. (30.01.2023).

★★ **Swedish restaurants provide incorrect allergen Information:** In a national control project, the Swedish Food Agency reviewed the allergen information provided by 2,172 restaurants and cafes for a total of 4,344 products. They found that **every fourth restaurant and café** provided **incorrect allergen information.** FoodSafetyMag, 3 pages. (07.02.2023). Original Publication: SLV.

★ **Species substitution and mislabeling of ceviche, poke, and sushi dishes sold in California:** A study conducted in Orange County in California investigate **species substitution and mislabeling** of **sushi**, **poke**, and **ceviche** dishes sold at restaurants. Of the 103 samples, **63.1%** of samples had some form of **mislabeling. Species substitution** was detected at a rate of **23.3%** and **unacceptable market names** were found in **45.6% of samples.** FoodContr, 3 pages. (26.11.2022).

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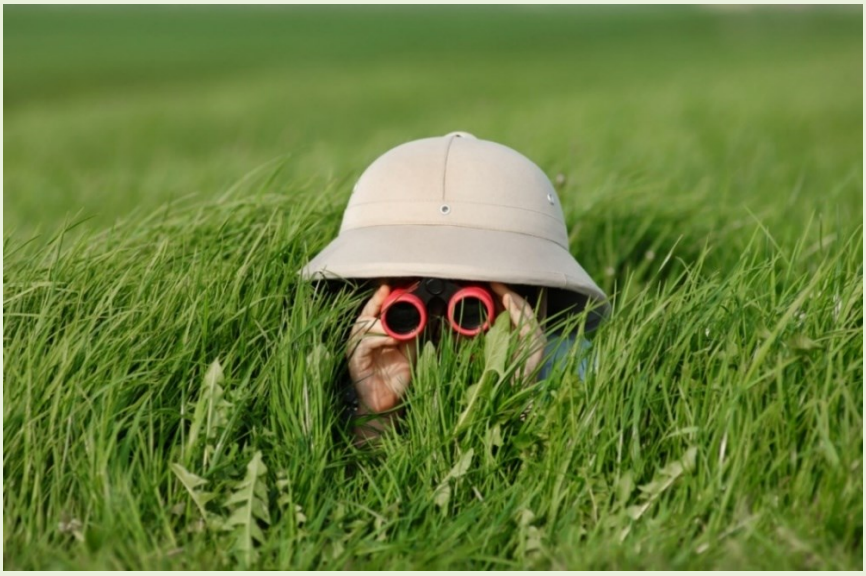

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The FSVO compiles the most important food safety information every month:
FSVO website

★★★ very important info ★★ important info ★ interesting info

Microbiology

★★★ ***Helicobacter pylori* in raw and ready-to-eat meat:** *Helicobacter pylori*, classified as a **class-I carcinogen**, is one of the leading medical pathogens of global concern associated mainly with the development of gastric adenocarcinomas and gastric mucosa-associated lymphoid tissue lymphomas; nevertheless, its prevalence in food especially meat and meat products is not fully covered. A study investigated the **prevalence**, **molecular characterization**, and **antimicrobial resistance** profiles of clarithromycin-, and metronidazole-resistant *H. pylori* isolated from raw and ready-to-eat meat samples retailed in Mansoura city, Egypt. The results showed a **widespread contamination of examined raw and ready-to-eat meat** product samples with multidrug-resistant *H. pylori* isolates, which could constitute a **tremendous public health hazard**. IntJFoodMicr, 47 pages. (08.12.2022).

★★★ **Alongshan-Virus (ALSV) in Swiss ticks:** The Alongshan virus was only discovered in **China in 2017**. Now researchers at the University of Zurich have detected the new virus in **Swiss ticks** for the first time. It seems to be at least as **widespread** as the early summer meningoencephalitis virus (TBE) and leads to similar symptoms. At present a possible transmission also via **milk**, like TBE, is not known. UZH News, 1 page. (07.12.2022). Original Publication: Zenodo.

★★★ **Extraintestinal pathogenic *E. coli* isolated from plant-origin foods:** A study systematically examines the diverse **plant-origin foods** such as cucumber, carrot, tomato, radish, chilli, fenugreek, coriander, peppermint, spring onion, cabbage, and spinach for the **presence of *Escherichia coli* (ExPEC)** or specific putative ExPEC pathotypes with an in-depth assessment of their phylogenetics, virulence, and drug resistance. 77 (15 %) putative ExPEC pathotypes were found in plant-origin foods. All putative ExPEC pathotypes exhibited 100 % **multidrug resistance**. IntJFoodMicr, (02.2023).

★★★ **Antibiotic resistant lactic acid bacteria in fermented food:** A study conducted in Malaysia on home-made and manufactured **fermented foods and beverages** found a high number of **multidrug resistant lactic acid bacteria (LAB)** strains. It demonstrated an increasing **antibiotic resistance** in LAB which could pose a threat to human health, thus signifying the need to monitor the antibiotic resistance pattern of LAB in the fermented food industries. FoodContr, 5 pages. (10.12.2022).

★★ **Cucumbers linked to multi-country *Salmonella* outbreak:** A Salmonella **outbreak** in Norway, Sweden, and the Netherlands has been linked to **contaminated cucumbers from Spain**. The Norwegian Institute of Public Health (FHI) said **72 people are sick** in the *Salmonella* Agona outbreak and 24 have been hospitalized. FSN , 3 pages. (21.12.2022). Additional Information: OutbreakNewsToday.

★★ **Persistent *Listeria monocytogenes* strains in food environments:** Specific ***Listeria monocytogenes*** (*Lm*) genotypes are adapted to **meat and dairy processing environments**. Genome analysis identified slaughterhouse as a *Lm* contamination source for meat processing facilities. Several events of *Lm* **persistence** over four years were identified in food processing facilities in **Italy**. Persistence seems not to be related to specific *Lm* genotypes. IntJFoodMicr, 10 pages. (02.2023).

★★ **Outbreak in the UK due to imported melons revealed:** In July and August 2021, there was an outbreak of 17 cases of **Shiga toxin-producing *Escherichia coli*** (STEC) O157:H7 in the UK. Analysis now show that this outbreak was linked to **precut watermelon** sourced from Europe. FSN , 2 pages. (06.01.2023). Original Publication: JFodProt.

★★ **Fiber-based food packaging materials in view of bacterial growth and survival capacities:** A study conducted by the Medical University of Graz evaluated **food contaminating species** microbial growth and survival in **packaging materials** with different fiber types. They found that **growth and survival were strongest** for the packaging material entirely made of **recycled fibers**. FrontMicr, (09.01.2023).

★ **Antimicrobial phage spray:** Researchers have developed a new, highly effective tool to **mitigate bacterial contamination** of foods, including pathogens displaying antimicrobial resistance (AMR). The technology involves the application of **bacteriophages** (phages) to goods in the form of microgels. FoodSafetyMag, 1 page. (09.12.2022). Original Publication: NatureComm.

★ **Mycotoxins in wheat: a growing food safety threat across Europe:** Wheat in Europe is under growing attack from **harmful mycotoxins**, according to a study from the University of Bath. Almost **half of European wheat crops** are impacted by ***Fusarium* Head Blight**, a fungal infection that gives rise to the toxins. The researchers suspect that **changes in farming**, such as soil preservation practices that provide a home for the Fusarium fungus, and **climate change** are playing an important role in the increasing levels of mycotoxins in wheat. The researchers stress the importance of the development of better ways to protect crops against fungal pathogens. FoodSafetyMag, 1 page. (20.12.2022). Original Publication: NatureFood.

Chemistry

★★★ **Nitrite-cured pork exacerbates colorectal cancer pathology:** A study by scientists from Queen's University Belfast found that **nitrite**-containing **sausages** may exacerbate the development of **Colorectal cancer** (CRC) pathology in mice to a greater extent than nitrite-free sausages. TheGuardian, 2 pages. (27.12.2022). Original Publication: npj Sci Food.

★★★ **Tire Wear Particle-derived compounds in lettuce:** Wind, sewage sludge, and waste water carry **tire wear particles** (TWP) from roads onto farmland and could get into the vegetables grown there. A new study conducted at the University of Vienna shows that **lettuce** took up all the TWP-compounds studied —some of them **highly toxic** — through their roots and accumulated them into their leaves. Phys.org, 2 pages. (04.01.2023). Original Publication: EnvSciTech.

★★ **Arsenic-contaminated water and antibiotic resistance:** In rural Bangladesh, areas with high levels of **arsenic contamination in drinking water**, compared to areas with less contamination, have a **higher prevalence** of **antibiotic-resistant *Escherichia coli*** in both water and child stool samples, according to a new study. EurekAlert, 2 pages. (08.12.2022). Original Publication: PLOSPath.

★★ **Baby spinach contaminated with *Solanum* sp.?:** Australia reports there are 47 people who have reported **symptoms** after eating **baby spinach**. At least 17 have sought medical attention. Reported symptoms can be severe, including: delirium or confusion, hallucinations, dilated pupils, rapid heartbeat, flushed face, blurred vision, dry mouth and skin and fever. A possibility is the **contamination** of the baby spinach of one of the many plants in the genus ***Solanum* sp**, also known as the nightshades or the belladona plants. ProMed, 6 pages. (19.12.2022). Original Publication: NSW.

★ **Grayanotoxin in honey from Nepal:** The Centre for Health Protection (CHP) of Hong Kong was investigating a case of **mad honey poisoning** after a patient consumed **home-made honey from Nepal**. Mad honey poisoning is caused by ingestion of honey containing **grayanotoxins** derived from plants belonging to the Ericaceae family, including **rhododendrons**. Grayanotoxins are **neurotoxins** which can affect nerves and muscles. ProMed, 2 pages. (25.12.2022). Original Publication: GoV HK.

★ **Lead and Cadmium in Dark Chocolate:** *Consumer Reports* in United States found **heavy metals** in **chocolate**. For 23 of the bars, eating just an ounce (approx. 28g) a day would put an adult over a level that public health authorities and CR's experts say may be harmful for at least one of those heavy metals. Five of the bars were above those levels for both **cadmium** and **lead**. CR, 3 pages. (15.12.2022).

★ **Spices second in lead poisoning in children:** A Douglas County Health Department study determined that **contaminated spices** were to be the second largest cause of **lead poisoning in children** in 2021 in Nebraska's most populous county. FSN , 2 pages. (10.01.2023).

★ **Lead concerns prompt human breast milk recall:** A brand of **human breast milk** products has been recalled in the United Kingdom because of the level of **lead**. The firm has withdrawn and recalled all products. However, most items are already out of date. The firm sold human breast milk to people **online**. FSN , 1 page. (10.01.2022).

Nutrition

★★★ **Nutritional quality of vegetarian meat substitutes:** The availability of **foods based on plant proteins** to substitute for meat has increased dramatically as more people choose a plant-based diet. At the same time, there are many challenges regarding the **nutritional value** of these products. A study now shows that many of the meat substitutes sold in Sweden claim a high content of **iron** – but in a form that **cannot be absorbed by the body**. EurekAlert, 2 pages. (08.12.2022). Original Publication: Nutrients.

★★★ **Consumption of fast food linked to liver disease:** A study from Keck Medicine of University of Southern California found that eating **fast food** is associated with **nonalcoholic fatty liver disease**, a potentially life-threatening condition in which fat builds up in the liver. People with obesity or diabetes who consume 20% or more of their daily calories from fast food have severely elevated levels of fat in their liver. EurekAlert, 2 pages. (10.01.2023).

★★ **Polymer encapsulation of vitamins:** American researchers have developed a new way to **fortify foods with vitamin A**. In a new study, they showed that encapsulating vitamin A in a **protective polymer** prevents the nutrient from being broken down during cooking or storage. EurekAlert, 2 pages. (12.12.2022).

★ **Aspartame and anxiety:** American researchers have linked **aspartame**, an artificial sweetener found in nearly 5,000 diet foods and drinks, to **anxiety-like behavior in mice**. Along with producing anxiety in the mice who consumed aspartame, the effects extended up to two generations from the males exposed to the sweetener. EurekAlert, 2 pages. (08.12.2022). Original Publication: ProceedingsNatAcSc.

★ **Vitamin D deficiency increases risk of losing muscle strength:** Vitamin D plays an important role in the **regulation of calcium and phosphorus absorption** by the organism. It also helps keep the brain and immune system working. Researchers have now shown that **vitamin D supplementation reduces the risk of dynapenia** (an age-associated loss of muscle strength) in older people by 78%. EurekAlert, 2 pages. (13.12.2022). Original Publication: CalcTisInt.

Allergy

★ **Milk causes most food allergen recalls in UK:** A recent study **analyzing recalls in the UK** from 2016–2021 has revealed allergens to be the most prevalent cause, and **milk** to be the most commonly implicated allergen. FoodSafetyMag, 2 pages. (05.01.2023). Original Publication: FoodContr.

★ **Precautionary Allergen Labelling: lack of legislation:** There is **no EU legislation** about **Precautionary Allergen Labelling** (PAL) for **unintended allergen presence** (UAP). As a result, PAL is used in different ways by different manufacturers and retailers, which **hampers consumers' interpretation** of the information in the PAL. FoodContr, 20 pages. (21.12.2022).

Fraud / Deception

★★★ **Basmati rice: new authenticity rules:** A huge number of newly cultivated varieties of **Basmati rice** have been permitted in the UK and EU since 2017, and some have turned out to be **sub-standard**, lacking the unique popcorn-like fragrance that helps to make this rice so sought after. New rules are being introduced at the beginning of 2023 that aim to take these lesser varieties of basmati **off the market**. Conversation, 2 pages. (29.12.2022).

★★ **Bamboo powder in food contact material:** The European Union recently acted against two major cases of food fraud: amongst them, **food contact materials** containing **bamboo powder**. Over the course of one year, 21 countries participated in the project. In total, **748 cases** of plastic food contact materials containing the illlegal additive bamboo powder were notified. A majority of the illegal products were found to have originated in China. FoodNavigator, 2 pages. (13.12.2022). Original Publication: EU COM.

★ **Australia: change to food irradiation rules?:** An application has been made to amend **food irradiation** rules in Australia. The proposal seeks to **increase the maximum permitted energy level** of machines generating X-rays for irradiating food from 5 to 7.5 megaelectronvolts (MeV). The assessment will not start until **October 2023**. Fresh produce except dried pulses, legumes, nuts and seeds can be treated with irradiation to kill pathogens that cause foodborne illnesses. FSN , 2 pages. (02.01.2023).

★ **Fresh beef sample found to contain sulphur dioxide:** The Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department (Hong Kong) announced that a **fresh beef sample** was found to contain **sulphur dioxide** (766 parts per million), a **preservative** which is **not permitted** to be used in fresh meat. CFS, 2 pages. (09.01.2023).

★ **Economic adulteration in honey:** The FDA has released data on **economic adulteration** in **honey**, from an assignment that was carried out in 2021 and 2022. The agency collected and tested 144 samples of imported honey from bulk and retail shipments from 32 countries. The FDA found 14 samples (10%) to be violative. FPB, 1 page. (04.01.2023). Original Publication: FDA.

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