



# SEISMO INFO

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## EARLY DETECTION FOR FOOD SAFETY – HIGHLIGHTS

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very important info



important info



interesting info

### MICROBIOLOGY

#### ★★★★ *Acanthamoeba castellanii* cysts harbor viable foodborne pathogens

Findings of a recent study demonstrate that *Acanthamoeba castellanii* cysts can harbor viable foodborne pathogens on **fresh and steamed leafy greens** during refrigerated storage, and that internalized pathogens survive within the cysts. The cysts remain intact on the produce surface, and bacteria are not released during storage. Given that fresh produce is often consumed raw or minimally processed, the presence of **viable pathogens within amoebal cysts** on leafy greens represents a potential public health concern. [IntJFoodMicrobiol](#), 10 pages. (02.07.2026).

#### ★★★ **Virus from seafood is linked to a persistent eye disease in humans**

A virus - **Covert Mortality Nodavirus** (CMNV) - that typically infects marine animals, such as shrimp and fish, has jumped to humans and is causing **chronic eye disease** in some people, according to recently published studies. In recent years, the number of people in **China** with a condition called persistent ocular hypertension viral anterior uveitis (POH-VAU) has been increasing with no clear explanation as to why. Symptoms include extremely elevated eye pressure and inflammation. [MedicalXpress](#), 1 page. (07.04.2026). Original Publication: [Nat Microbiol](#).

#### ★★★ **Rising temperatures and heat waves as drivers of *Salmonella* bacteremia**

Rising temperatures and heatwaves **increase food-borne infection risk**. From 2010–2019 in Queensland (QLD), **Australia**, a Distributed Lag Non-Linear Model analysis found *Salmonella* bacteremia strongly linked to higher ambient temperatures, especially in Southeast (SE) and Tropical North QLD. Each 1 °C rise raised risk by up to 20% in SE and 18% in the North, with heatwaves triggering 31% higher cases. No significant effect was found for *Campylobacter*. [FSN](#), 3 pages. (14.04.2026). Original Publication: [SciTotalEnviron](#).

#### ★★★ **Hemolytic uremic syndrome (HUS) in adults**

In January 2025, France reported an outbreak of hemolytic uremic syndrome (HUS) in **adults** caused by a LEE-negative Shiga toxin-producing *Escherichia coli*. Twenty-five cases were identified across Europe. Genomic analysis revealed a **hybrid STEC/ETEC strain** (O77:H18) carrying *stx2d* and enterotoxin genes. **Raw-milk cheese** was implicated as the source, highlighting the emergence and cross-border spread of this unusual pathotype [Emerg Infect Dis](#), 11 pages. (04.2026).

### ★★★ **FAO highlights importance of group B *Streptococcus* ST283**

The FAO has highlighted the significance of *Streptococcus agalactiae* ST283 (ST283) as an **atypical foodborne pathogen** with zoonotic characteristics. This identification challenges the conventional paradigm of the etiology of foodborne diseases and requires a re-evaluation of risk management strategies. ST283 is associated with invasive infections and transmission is linked to the consumption of freshwater fish. [FoodSafetyMag](#), (21.04.2026). Original Publication: [CompRevFoodSciFS](#). Additional Information: [Risk profile - Group B Streptococcus \(GBS\)](#).

### ★★★ **Emergence of extensively drug-resistant *Shigella***

CDC analyzed 16,788 *Shigella* isolates (2011–Oct 2023); 510 (3%) were **extensively drug-resistant** (XDR). XDR isolates increased from 0% in 2011 to 8.5% in 2023. XDR strains resist five antibiotics: ampicillin, azithromycin, ceftriaxone, ciprofloxacin, and trimethoprim-sulfamethoxazole. No FDA-approved oral treatments exist for XDR *Shigella* infections. [FoodSafetyMag](#), (13.04.2026). Original Publication: [MMWR](#).

### ★★★ **Does current cleaning strategies inadvertently foster *L. monocytogenes* persistence?**

The study proposes the **secondary colonizer** hypothesis to explain the persistence of *Listeria monocytogenes* in food processing environments. *L. monocytogenes* exploits ecological niches within existing biofilms, particularly voids created by the dispersal of other Gram-negative bacteria. It utilizes specific resources and limits iron availability, providing a **competitive advantage**. This implies that current cleaning strategies may inadvertently foster *L. monocytogenes* persistence. [JFoodProt](#), (05.05.2026).

### ★ **Clinical emergence of a novel sequence type of *Vibrio parahaemolyticus***

This study characterizes a novel multidrug-resistant *Vibrio parahaemolyticus* strain (VP1434) identified during a foodborne disease outbreak. The analysis reveals the presence of the *bla*<sub>NDM-1</sub> gene on a transferable plasmid. The isolate, sequence type ST3672, exhibits virulence factors, including *tlh* and *trh*, but lacks *tdh*. Mouse pathogenicity assays showed **higher lethality with this strain (VP1434)**. [FrontMicr](#), 10 pages. (08.04.2026).

### ★ **Wastewater reuse for production of plant-based foods**

Water scarcity is pushing agriculture to use **treated wastewater for irrigation**, but this poses health risks due to pathogens like *Clostridioides difficile* and *Clostridium perfringens*. These spore-forming bacteria are highly persistent and can contaminate soil and crops. Their potential to spread antibiotic resistance raises further concern. A recent review examines their pathogenicity and role in antimicrobial resistance in wastewater reuse [AEM](#), 17 pages. (21.04.2026).

### ★ **Raw horse meat contaminated with Shiga toxin-producing *Escherichia coli* O157**

In August 2023, 74 people in Japan fell ill with STEC O157 after eating raw horse meat. Genomic analysis revealed a persistent, low-diversity strain across 165 cases from 2022–2023, suggesting long-term contamination at the facility. While the shop's poor hygiene and lack of safety protocols were identified as factors, the specific source remains unproven. [FSN](#), 3 pages. (30.04.2026). Original Publication: [Food Microbiol.](#)

### ★ **Genomic epidemiology of *Acinetobacter baumannii***

This study of 23,000+ *Acinetobacter baumannii* genomes shows non-human isolates are **more genetically diverse** and have an open pangenome compared to clinical strains. It finds frequent transmission between human and non-human sources (e.g. domestic animals) and identifies **strong antibiotic resistance** in environmental and animal samples, highlighting the need for One Health surveillance of non-human reservoirs. [NatureComm](#), 22 pages. (28.04.2026).

## CHEMISTRY

### ★★★ **EFSA recommends limits on glycerol in drinks**

EFSA assessed glycerol (E 422) exposure in Europe, particularly via slush-ice beverages and dealcoholized wine, following reported cases of intoxication in children. The ARfD (acute reference dose) is set at 125 mg/kg body weight. Analyses show that exposure exceeds the ARfD across all age groups, suggesting maximum concentrations below 17,400 mg/l in slush-ice to avoid ARfD exceedance. [FoodSafetyMag](#), (06.05.2026). Original Publication: [EFSA](#).

### ★ **Aflatoxigenic potential of *Aspergillus quadrilineatus***

This research investigated the mycotoxigenic potential and food colonization capabilities of *Aspergillus quadrilineatus*, with a focus on food safety in arid climates. Nine isolates were obtained and colonized **peanuts** and **strawberries**,

producing **aflatoxins B1, B2, G1 and G2**. Concentrations reached up to 7.38 ppm, exceeding regulatory limits. Observed thermotolerance underscores the need for increased surveillance. [FrontMicr](#), 10 pages. (06.04.2026).

### ★ **Epigenetic links between early-onset colorectal cancer and pesticide exposure**

A study by the Vall d'Hebron Institute of Oncology links the herbicide **picloram** to rising early-onset colorectal cancer. Young patients showed distinct DNA methylation patterns tied to environmental exposure, with higher cancer rates in areas using picloram. While not proving causation, the findings suggest early-life chemical exposure may influence tumor development. [larazon.es](#), 4 pages. (23.04.2026). Original Publication: [Nat. Med.](#).

### ★ **Microplastic pollution in the gastrointestinal tract of green tiger prawns**

This study examines **microplastic** contamination in green tiger **prawns** from **Saudi Arabian** Gulf waters. Analyzing 101 samples, researchers found 238 particles, mostly PET fibers sized 251–1000 µm. While the findings indicate low overall ecological risk, the presence of microplastics in this commercially valuable species highlights the need for continued environmental monitoring and further investigation into pollution sources to ensure **seafood safety** and ecosystem health. [Environ Monit Assess](#), 10 pages. (05.05.2026).

### ★ **Microplastics and anthropogenic debris in the Pacific oyster**

This study provides the first assessment of **microplastic** contamination in wild **Pacific oysters** (*Magallana gigas*) harvested for human consumption along the southern coast of **Buenos Aires**, Argentina. By analyzing 145 individuals collected from various industrial, commercial, and recreational sites, researchers identified 346 microplastic particles, primarily consisting of **microfibers** made from polymers such as **polyacrylates** and **thermoplastic polyesters**. [Environ Monit Assess](#), 10 pages. (02.05.2026).

### ★ **Global research trends linking micro- and nanoplastics exposure to health**

This systematic review examines the evolving landscape of research investigating the relationship between **micro- and nanoplastics (MNP) exposure** and metabolic health. Utilizing bibliometric and evidence-mapping methodologies, the study analyzes 1,613 Web of Science Core Collection (WoS) entries and 1,725 Scopus records published between 2013 and 2025 to characterize research trends. The analysis highlights the **need for improved exposure assessment** and standardized cardiometabolic biomonitoring protocols. [FrontNutr](#), (06.05.2026).

## NUTRITION

### ★★ **Children and adolescents use dietary supplements in the US**

A recent study published in *Pediatrics Open Science* revealed that approximately one-third of children and adolescents in the **United States** use dietary supplements. The study, utilizing NHANES data, highlights a potentially under-recognized **public health trend** requiring further investigation. Supplement use is linked to income, parental habits, and perceived dietary inadequacy. Caution is warranted due to potential adverse effects. [MedicalXpress](#), 1 page. (24.04.2026). Original Publication: [Pediatrics](#).

### ★★ **Omega-3 supplements may be linked to faster cognitive decline in seniors**

A prospective cohort study investigated the relationship between oral **omega-3 fatty acid supplementation** and cognitive performance in 2,862 older adults (≥65 years). Findings suggest a significant association between regular omega-3 supplement use and accelerated **cognitive decline**, challenging the widely perceived benefits of omega-3 supplementation for cognitive health. [MedicalXpress](#), (04.05.2026). Original Publication: [JAPD](#).

### ★★ **Impact of low Selenium status on intellectual and cognitive performance**

This cross-sectional study investigated the relationship between nutritional **selenium status**, dietary intake, and cognitive performance in 132 **Spanish** university students. A notably high prevalence of low serum selenium was found (53.5% in women and 16.4% in men). Analysis revealed a significant difference in serum selenium levels between students categorized by TIQ (<90 vs. ≥90), with the lower-performing group exhibiting lower concentrations. Selenium intake showed an inverse association with cognitive performance. [FrontNutr](#), (05.05.2026).

### ★ **High-salt diet linked to faster memory decline in men**

A longitudinal observational study by Edith Cowan University in **Australia** found a link between **high sodium intake** and faster episodic memory decline in men. Results suggest that high-salt diets **may impact cognition**, independent of known cardiovascular effects. This memory decline affects both immediate and delayed recall. Researchers propose this association may be due to disruption of blood-brain barrier integrity and neuroinflammation. [MedicalXpress](#), 1 page. (15.04.2026). Original Publication: [Neurobiol. Aging](#).

## ★ Rising CO<sub>2</sub> levels are diminishing the nutritional value of staple crops

Rising CO<sub>2</sub> is driving a “hidden hunger” crisis by making staple crops richer in carbohydrates but **poorer in key minerals** such as **iron** and **zinc**. This lowers the **nutritional value** of global food supplies and hits vulnerable populations hardest. Diversifying crops may help, but the main solution is cutting CO<sub>2</sub> emissions to protect food quality. [Washing-ton Post](#), 2 pages. (02.05.2026).

## ALLERGY

### ★★★ Food allergen carryover within the edible insect supply chain

This pilot study assessed **allergen transfer** from substrates to *Hermetia illucens* larvae. A 48-hour pre-harvest fasting period failed to eliminate **soy** and **celery** residues, while **almond** was sporadically detected and **peanut** residues were absent. Fasting alone is insufficient; rigorous substrate selection and transparent labeling remain critical for ensuring consumer safety in the edible insect industry. [Foods](#), 10 pages. (28.04.2026).

### ★ Celery instead of parsley, food fraud with safety aspects

In 2025, the Cantonal Laboratory of Zurich analyzed 118 spices and spice blends using Next Generation Sequencing (NGS). This technology allows precise identification of plant composition, which was previously not possible at this scale. While most samples were correctly labeled, five products were flagged. In one serious case, a product sold as dried parsley consisted entirely of celery leaves, which pose an **allergen** risk. [FoodAktuell](#), (29.04.2026).

## FRAUD / DECEPTION

### ★★★ Apple juice instead of balsamic vinegar

A recent judicial decision (BG.2025.59) summarizes findings regarding allegations of fraudulent practices related to the sale of aged balsamic vinegar. A business model involved customers purchasing premium balsamic vinegar in casks for storage over five years. Investigations revealed the presence of apple juice in some casks, suggesting fraudulent substitution. Total investment amounted to 8.4 million Swiss Francs between 2019 and 2020. The judicial decision concerned the jurisdictional assignment between the cantons of Zug and Zurich. [FoodAktuell](#), (21.04.2026).

### ★★★ Most farmed prawns mislabeled on origin

A study by World Forest ID found widespread **mislabeling of farmed prawns** in Western supermarkets. Using stable isotope and trace element analysis on samples from **Ecuador**, **Honduras**, and **Thailand**, only **16% matched their labelled origin**. About 84% showed low assignment accuracy, suggesting post-processing changes or fraudulent labelling, raising **concerns about traceability**, transparency, and consumer trust in seafood supply chains. [TheGrocer](#), 2 pages. (21.04.2026). Original Publication: [FoodContr](#). Additional Information: [World Forest ID](#).

## Close up

New information has emerged from the FSVO's early detection system for food safety:

- Signal Report: freshwater mussels from Swiss waters (in [German](#) and [French](#))

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To find out more information about early detection for food safety, visit the [FSVO website](#)

Send your questions and suggestions to the following e-mail address: [seismo@blv.admin.ch](mailto:seismo@blv.admin.ch)

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