EMERGING RISK IDENTIFICATION SYSTEM
Enhancing Food Safety in New Zealand

Signals

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A quarterly brief on emerging food safety issues (Jan–Mar 2026)

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Expecting the unexpected

Some food safety events only make sense in retrospect. The recent issue of infant formula contamination from the bacterial toxin cereulide is a timely example of 'surprisal' (a mismatch between expectation and reality). The situation was technically possible (knowable) but was not anticipated. These events remind us that the absence of prior signals does not imply the absence of risk.

Geopolitical and climate instability disrupt international and domestic food supply chains. During major disruptions, attention understandably focuses on business continuity, but food businesses must also focus on maintaining a safe food supply through the disruption. Businesses may need to source alternative ingredients or packaging, obtain foods from unfamiliar suppliers, re-direct products to unfamiliar markets, or manage delayed or compromised transportation. Deliberately exploring the potential for food safety issues that might arise from these changes helps decision-making. This is also the act of foresight, even when prompted by rapidly emerging events.

Food safety foresight cannot predict every hazard or risk but helps to direct responses and identify uncertainties. Unfortunately, surprisal remains inevitable. Expecting the unexpected may be uncomfortable but foresight cannot guarantee its removal.

News from the network

Contamination of infant formula with the *Bacillus cereus* toxin, cereulide, prompted a high-priority regulatory response across multiple jurisdictions, including New Zealand. The event highlighted the interconnected nature of the global food system and required rapid scientific risk assessment.

The latest Global Risks Report published by the World Economic Forum found geoeconomic confrontation and state-based armed conflict were the top risks most likely to trigger a material global crisis in 2026. Global environmental changes dominated the longer-term concerns. As these events manifest, food safety and security can be impacted as critical supply chains are disrupted.

The Food and Agricultural Organization of the United Nations (FAO) has published reports considering the food safety implications of environmental inhibitors, chemicals in water used in agrifood systems, and fraudulent practices in the fisheries and aquaculture sectors. The FAO have also considered the policy and legal challenges associated with food purchased via the internet (e-commerce).

The European Union funded HOLiFOOD and FoodSafeR projects will finish this year. Both projects included activities that explored emerging food safety risks and tools for their prediction, detection or management.

Links: WHO cereulide report, EFSA cereulide risk assessment ; WEF Global Risks Report ; FAO reports on EIs, agrifood water, fisheries fraud, ecommerce ; HOLiFood, FoodSafeR

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Summary of activities

Of interest since Issue 10 were:

- 3 emerging issues concerning food or the food industry.
- Signals prompting updates to 27 identified emerging risks.
- 35 signals that did not meet the requirement of being a foodborne emerging risk to human health.

NZFSSRC members will decide if they want to undertake actions on these signals or identified emerging issues.

Featured emerging risks and issues

Heavy metals in seed butters. Sunflower, flaxseed, sesame, and other oilseeds can accumulate cadmium (Cd) and other heavy metals from the soil during crop growth. This is not a new issue, with studies dating back 30 years demonstrating that Cd accumulates in sunflower kernels so can remain in the edible product after hulling. What may be changing is consumer dietary exposure to heavy metals (particularly Cd) with the growing availability of seed-based butters. However, there are important data gaps, including how much Cd is present in different seed butters, how often these products are consumed and how much is eaten each time. Health risks also depend on how readily Cd is absorbed by the body when eaten with the seed butter (bioavailability).

The food safety implications of warmer freezer temperatures. To save energy and cut greenhouse gas emissions, many organisations, including food transportation companies, are considering a small increase in standard frozen food storage temperatures, from −18°C to −15°C. This change might affect food quality, but it is not expected to reduce food safety. Even so, clear scientific evidence is needed to rule out any potential food safety risks. In March 2026, the FAO and WHO began a joint review to examine how freezing and frozen storage temperatures affect microbiological food safety. The findings will help the food industry manage any temperature changes safely.

New information on selected identified issues

- **Microplastics and nanoplastics in food**: The European Commission has requested EFSA to issue a scientific opinion on the health risks posed by microplastics in food, water and air. EFSA-Q-2025-00702
- **Quinolizidine alkaloids in lupins.** Recognising the increased use of lupins in foods, an assessment using new data on lupin consumption by Belgian adults and QA concentrations in lupin-based foods showed there was potential for harm from lupin beans and flour. Schryvers et al. (2026)
- **Bisphenol A in food contact materials.** An assessment of four compounds that could be used to replace BPA found that one, bisphenol TMC, exerted stronger oestrogenic effects than BPA. Joos et al. (2026)
- **Increasing backyard poultry ownership.** A review of salmonellosis linked to backyard poultry identified animal contact as the main transmission route, children as a high-risk group, and common practices that can allow flocks to become reservoirs for antimicrobial resistant *Salmonella* spp. Otwey et al. (2026)

Some other observations

- A Europe-focused review of food fraud cases showed that a high proportion of incidents posed real food safety risks, particularly due to the practice of food laundering (the attempted sale of materials that are illegal to sell as food).
- An opinion piece supports future thinking governance design to effectively control the safety of genetically engineered microbes intended for environmental release.
- An article discusses how the range of commercial names for “cinnamon” creates misunderstanding and miscommunication, creating opportunities for adulteration.
- A study shows that non-alcoholic wines may face microbiological quality issues due to the absence of ethanol. Safety issues were possible, but the evidence was weak.
- Updated estimates of the proportions of outbreak cases attributed to different foods have been published for the USA, focusing on salmonellosis, *E. coli* O157 and listeriosis. Both plant and animal foods were important vehicles of infection.
- NZ consumer exposure to the protein concentrate rubiso (ribulose bisphosphate carboxylase/oxygenase) will widen with a trial in supermarket baked goods. The NZ product being used is extracted from alfalfa. No safety concerns have been raised.

Links to:

EU food fraud case review by Alewijn et al.

Governance and GEMs review by Brewer et al.

Review of cinnamon names by He et al.

Wine study, González-Arenzana et al.

IFSAC 2023 food attribution report

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