

Welcome to Issue 14. ERIS is in year two of a two-year project. Our focus is on upskilling, expanding networks and continuous improvement. We are starting to think about what a long-term system could look like and how it may be funded.

Introducing Abhishek Gautam Senior Scientist, Risk Assessment & Social Systems team, ESR

ERIS Role: ERIS Coordinator.

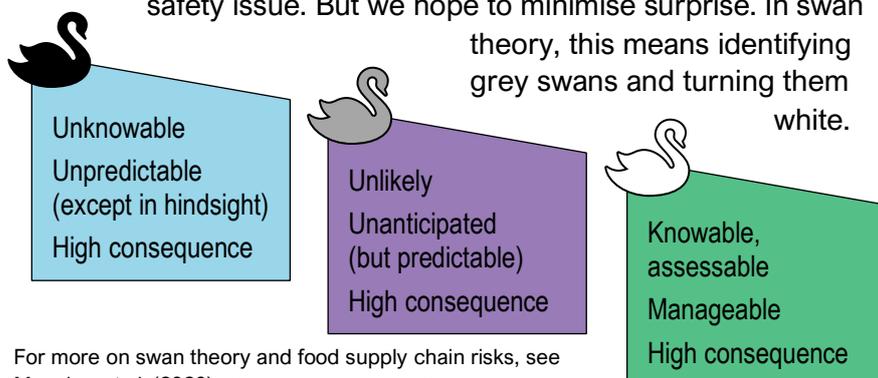
Abhishek is an experienced regulatory toxicologist with a pharmaceutical background. Abhishek specialises in hazard assessment, risk assessment and exposure assessment of industrial chemicals, agrichemicals (pesticides and biocides) and consumer products. He also has experience in classification of chemicals for human health hazards according to global regulations such as EU CLP and GHS. This chemistry expertise is key to identifying emerging risks.



Panic! Or not? A list of identified emerging risks appears in each of these monthly briefs. On their own, they appear quite alarming. Instead, these should be reassuring. Their appearance signals, firstly, that we are paying attention to what is going on outside the daily business of managing recognised foodborne hazards in the current food supply.

Secondly, raising these issues means they will be considered by scientists, regulators and food companies connected with the NZFSSRC. All these entities view each risk through their own lens: What does it mean for them and the foods they are responsible for? Is there a real or perceived risk to consumers that needs managing, or is this something to just be aware of? Are existing processes already managing this risk? Are there important science questions that need answering so we can better understand the food safety implications?

Ultimately, we are working to increase awareness and knowledge. We won't avoid a "black swan" event, which is by definition unknowable, nor a "perfect storm" of events that lead to a food safety issue. But we hope to minimise surprise. In swan theory, this means identifying grey swans and turning them white.



For more on swan theory and food supply chain risks, see Manning *et al.* (2020) <https://doi.org/10.1016%2Fj.tifs.2020.10.007>

Hazards in trending foods. While many foodborne hazards cause acute illness like gastrointestinal disease or intoxication, repeat exposures to some hazards contributes to other health effects like cancer. The risk of this happening is assessed based on total dietary exposure, i.e. how much of the hazard someone is exposed to through all the foods they eat, and which foods contribute the most. This assessment helps inform whether limits should be set for these hazards in foods. There are many foods that are not globally new but have become popular in New Zealand. Increased consumption of these foods changes dietary exposure to known hazards. Surveys overseas have sometimes detected mycotoxins in quinoa, and high levels of fluoride in soy beverages. To identify if there are risks for New Zealand consumers, we need new data on food consumption and hazard concentrations.

The NZFSSRC member organisations funding ERIS are:



Featured emerging risks and issues

Fraudulent use of additives in fresh tuna. Investigations in Europe discovered that antioxidant additives (ascorbates) were being used to maintain the fresh look of tuna intended for canning so that these products could be sold as fresh product. Often the fish had been frozen then thawed for sale. Hazards, such as histamine, could be present in tuna because of this fraudulent practice. This risk has emerged in the EU and is being managed through new ascorbate limits for tuna. The issue was raised through ERIS to communicate the EU findings and prompt discussion on whether such practices could be occurring in New Zealand. The Food Standards Code specifies limits for ascorbate additives in unprocessed frozen fish, including frozen and thawed fish.

Potential for novel food processing to affect food packaging integrity. There are several newer food processing technologies that improve food safety such as high hydrostatic pressure, pulsed electric field and ultraviolet radiation. Studies focus on making sure these technologies kill target microorganisms while not damaging food. However, food can be packaged before treatment. The effect of these treatments on the packaging needs greater consideration. The physical integrity of the packaging might be affected, reducing product protection. This loss of integrity might also cause packaging substances to migrate to the food.

Summary of activities, October and November 2022.

New emerging risks and issues. Five emerging risks concerning food were identified during October and November, along with one emerging issue for which the role of food was not yet clear but the issue was considered to be important for the food industry.

Concerns food:

- Pathogenic *E. coli* in falafel
- Fraudulent use of additives in fresh tuna
- Potential for novel food processing to affect food packaging integrity

- Spore-forming bacteria in plant-based proteins
- *Citrobacter* spp. in foods

Might concern food:

- Hyper-transmissible, zoonotic *Cryptosporidium parvum*

Many of these issues are likely to be important to New Zealand and briefing notes are being prepared. The Action Forum will decide if they want to undertake actions on these identified emerging risks. Briefing notes sourced from publicly available information can be provided by the coordinators to NZFSSRC members upon request.

Other assessed emerging issues. There were 40 emerging issues assessed during October and November that did not meet the requirement of being a foodborne emerging risk to human health. A list of these emerging issues is maintained for later review.

Some other observations. For interest, not currently in the ERIS Emerging Risks Register.

- UK consumer behaviour surveys show increased risky food safety behaviours due to the rising cost of living, e.g. turning off fridges/freezers, consuming foods past their use by date.
- Non-food grade poppy seeds have entered the food markets of Australia and NZ, causing illnesses and prompting recalls. This is a known risk, already identified through ERIS.
- New data shows that psychoactive THC can get into milk from dairy cows fed hemp silage. This risk is controlled in NZ.
- A risk assessment concludes there is currently no evidence to show foodborne transmission of mpox (monkeypox) but there are important data gaps, e.g. the risk from infected food handlers. Consumption of bushmeat has been implicated in retrospective investigations of outbreaks.

[Link to England, Wales & Northern Ireland survey](#)
[Link to Scotland survey](#)

[Link to NZ recall](#)
[Link to Australia recall](#)

[Link to Wagner et al. study](#)
[Link to NZ control \(ACVM Alert Notification 18-001\)](#)

[Link to Chaix et al. assessment](#)

Further information. This brief has been prepared for the NZFSSRC's funding and partner organisations by Nicola King (ESR), with the support of Seamus Watson (ESR), Kate Thomas (NZFS) and Abhi Gautam (ESR).

Institute of Environmental Science and Research (ESR). www.esr.cri.nz

New Zealand Food Safety Science and Research Centre (NZFSSRC). <https://www.nzfssrc.org.nz/our-work/eris/#/>

New Zealand Food Safety (NZFS). www.mpi.govt.nz/food-business

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