EMERGING RISK IDENTIFICATION SYSTEM
Enhancing Food Safety in New Zealand

Signals

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A quarterly brief on emerging food safety issues (Jul-Sep 2024)

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This brief has been prepared for the ERIS project funders and the NZFSSRC by Nicola King (ESR), with support from Kate Thomas (NZFS), Abhi Gautam (ESR).

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

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

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

Contact: Nicola.King@esr.cri.nz

Keeping watch on the known and the emerged

After more than three years in operation, we have considered almost 900 signals and over 180 emerging issues. The challenge now is keeping track of any new information that might affect our earlier decisions or actions.

Streptococcus suis is a known pathogen for pigs and humans, although the notification of human cases is not required in most countries. Eating raw pig products is one cause of human illness. A recent media article emphasised the impact of foodborne *S. suis* in Thailand. Globally, this is an emerged risk, but we watch for signals of change, such as an increase in foodborne disease.

Perfluoroalkylated substances (PFAS) are highly stable, fluorinated compounds and persistent organic pollutants. Dietary exposure is now being managed through both regulatory and voluntary controls of PFAS concentrations in food and food contact materials. However, the issue continues to evolve and we need to keep up-to-date. A July report highlighted that PFAS can be intentionally added as the active ingredient in a pesticide or can leach into pesticides from storage containers. Once in the environment, PFAS from pesticides can remain in soils, move into water, or be metabolised into highly persistent and mobile ultrashort-chain PFAS.

While ERIS focuses on emerging food safety risks, these examples show why it is important to monitor issues we do not consider to be emerging as well as established risks. This prompts us to regularly re-consider issues, plus helps our funders to better understand and manage the risks relevant to them.

News from the network

The viruses that cause mpox and highly pathogenic avian influenza (HPAI) continue to cause unease. HPAI is a huge biosecurity and animal health concern but is yet to be detected in NZ. Mpox cases have occurred in NZ. Human cases arise through exposure to infected animals (HPAI) or close contact with infected people (Mpox). Illness from consumption of contaminated food has not been shown but, as the viruses spread and evolve and research is completed, we learn more about the potential for foodborne transmission. Good hygienic practices, including ensuring sick people are not preparing food for others and cooking high risk foods, will mitigate foodborne risks.

A report from the European Commission includes a summary of the Rapid Alert System for Food and Feed Network (RASFF) notifications for 2023. The highest number of notifications were for pesticide residues (936, 32% for chlorpyrifos) followed by pathogenic microorganisms (856, 65% for *Salmonella*) and mycotoxins (401, 83% for aflatoxins). There were also notifications for the migration of heavy metals and other chemicals from food contact materials. The RASFF focuses on known food hazards but trends and aberrations can signal emerging risks. Excessive capsaicinoids in corn flour snacks was highlighted. Link to EC RASFF report (pdf)

Summary of activities

Identified this quarter were

- 5 emerging issues concerning food or the food industry.
- Signals prompting updates to 15 identified emerging risks.
- 62 signals that did not meet the requirement of being a foodborne emerging risk to human health.

The ERIS Action Forum will decide if they want to undertake actions on these signals or identified emerging issues.

Featured emerging risks and issues

Azole-resistant *Aspergillus* on food. *Aspergillus* are ubiquitous mould-type fungi that usually infect immunocompromised people via inhalation. Antifungal resistance is increasing and azole-resistant *A. fumigatus* is a global problem. One contributor to increased resistance is the use of azole fungicides in agriculture to prevent crop losses. Azole-resistant *Aspergillus* spp. have been detected on foods but this has not been linked to illness. Azole resistance is of international concern and is being considered through a One Health lens.

Glass fibres in shellfish. Glass particles have been identified in the tissues of oysters and mussels. The main source is glass reinforced plastic (fibreglass) from boats that are being built or repaired, or get damaged or scuttled in aquatic environments. These particles may affect the health of shellfish and other aquatic organisms. Their impact on human health requires investigation. This is a newly identified foodborne hazard requiring research.

Quinolizidine alkaloids in lupins. Lupins are a protein-rich legume crop that can be used to replace other plant proteins or animal proteins in foods such as bakery products, plant-based dairy and meat analogues and drinks. It is well known that lupins naturally contain quinolizidine alkaloids (QAs) that are toxic to humans. QA concentrations are highest in 'bitter' lupins, which are usually not used in food. However, the increasing use of lupins in foods is changing dietary exposure and this has prompted researchers and regulators to re-evaluate dietary exposure and risk from QAs. Lupins are also being used more in animal feed which may also increase human exposure to QAs from dairy and meat products.

Some other observations

- A review has highlighted the emergence of sodium salt substitutes made from halophytic plants, herbs, spices and plant-derived peptides. The authors point out the need for safety assessments and national standards to support introduction of these ingredients.
- A joint publication by Chinese and New Zealand researchers has found that consumer food safety knowledge among urban Chinese declined after the COVID-19 pandemic.
- A labelling debate in the scientific literature considered the possibility of plant-based milks interacting with medications. Clinical research may be needed to support healthcare professionals to provide dietary advice when prescribing certain medications.
- Two publications highlighted the need to manage discharges of antibiotics into the environment from rodent testing facilities or antibiotic manufacturers. These can end up in wastewater and solid waste where they contribute to increased antimicrobial resistance.
- An explorative study has looked at the possible role logistics companies could have in protecting consumers if they were authorised to inspect foods purchased online.
- The WHO released a framework to guide studies into the origins of pathogens. Studies of pathogen persistence on surfaces and in food, water or the air, plus assessing how the food chain might introduce novel pathogens, were all recommended.

Links to:

Review of plant-derived salt substitutes

Chinese urban consumer study

Original paper
Letter
Response to letter

Australia/NZ rodent facilities report
Guidance for antibiotic manufacturers

Study of logistics companies as inspectors

WHO framework for studies of pathogens with epidemic and pandemic potential

The NZFSSRC member organisations funding ERIS are:

Horticulture New Zealand Ahumāra Kai Aotearoa
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