EMERGING RISK IDENTIFICATION SYSTEM
Enhancing Food Safety in New Zealand

Monthly Brief

March 2023

E/S/R Science for Communities

New Zealand FOOD SAFETY SCIENCE & RESEARCH CENTRE

New Zealand Food Safety
Haumaru Kai Aotearoa

Welcome to Issue 16. ERIS is in year two of a two-year project, finishing April 2023. We are currently securing support to continue this work through to 2024 with an intent to transition into a long-term, core NZFSSRC service.

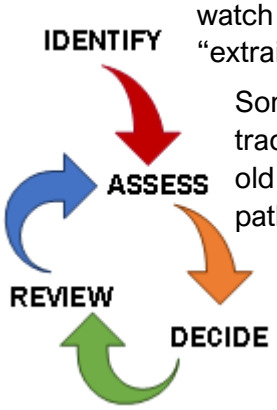
The VIBE – a FSANZ approach to emerging risks

Identifying emerging risks in the food supply is of global interest. Food Standards Australia New Zealand (FSANZ) have been monitoring emerging issues for over 10 years. In 2021, they implemented a new framework for identifying emerging challenges and opportunities. 'The VIBE' (**V**igilance and **I**ntelligence **B**efore food issues **E**merge) considers foodborne hazards, labelling, social sciences, nutrition and food technology. Using a people-centric approach, issues on the horizon are 'sensed' by FSANZ staff, with intelligence also coming from national and international networks, including ERIS. Potential issues are bought to a monthly meeting, where they are assessed for the potential to become a concern for FSANZ.

Why keeping watch is important. The ERIS project team keeps a database of all the signals we've picked up as we sift through information looking for emerging food safety risks. Only some of these signals become specific emerging risks that we consider further. We "keep watch" on the rest. We also keep watch on our list of identified emerging risks. Is there new information that changes the situation, or helps us understand it better?

Phthalates are chemicals that are found in many consumer products, including food packaging. The risk to human health from phthalates in food and beverages depends on a range of things. We consider phthalates in food to be an emerged risk but we are keeping watch as food risk assessors re-evaluate this issue. Our view might change. Our view has changed on the microbiological risks from raw, crumbed and frozen chicken (see next page).

Some types of a common bacteria, *Escherichia coli*, can cause illness when they contaminate food. These infections begin in the gastrointestinal tract. Pathogenic *E. coli* can also start infections in other parts of the body, such as the urinary tract. We are keeping watch for evidence of food transmitting these "extraintestinal" *E. coli* and causing illness.



Sometimes keeping watch just means keeping track of things like name changes, so we can link old and new information. Some important human pathogens have received new names recently!

The work of identifying emerging food safety risks is done in a data-poor space, so keeping watch helps to support decision-making and build scientific evidence.

Recycled packaging. Food packaging is important for keeping food safe and protected from damage and deterioration. Using packaging made from recycled materials helps to reduce waste. Bisphenols, like bisphenol A (BPA), and organophosphate esters (OPEs) are some of the chemicals of concern in packaging. Long-term (chronic) exposure to OPEs and bisphenols can affect human health (e.g. through endocrine disruption and organ toxicity). It has been reported that the concentration of bisphenols can be higher in recycled packaging compared to the original (virgin) packaging. A number of chemicals, such as bleach, paper strengthening agents and inks, are used in recycling processes and it is possible that these substances might also be introducing bisphenols into the recycled packaging. Risk assessment is critical to understanding if the presence of these chemicals is a problem.

The NZFSSRC member organisations funding ERIS are:

AsureQuality Kaitiaki Kai · Westland Milk Products Hokitika · New Zealand · PIANZ · Horticulture New Zealand Ahumāra Kai Aotearoa · mia Meat Industry Association · Oceania Dairy · Zespri Kiwifruit · Fonterra Dairy for life · United Fresh New Zealand Incorporated

Featured emerging risks and issues

Food contamination from flooding and silt (Jan/Feb 2023 cyclones, NZ). Cyclones Hale and Gabrielle caused widespread flooding of food production areas and damage to infrastructure, primarily in the northern and eastern regions of the North Island of New Zealand. In addition to the need to dispose of flood-contaminated foods, additional food safety challenges could develop over subsequent weeks and months. These include hazards that could be present in the remaining silt (including in silt dust), damaged/altered water supplies, animal feed and the marine environment. Both microbiological and chemical hazards are of concern. Food regulators, industry groups and scientists are providing support although initial steps have revealed important scientific data gaps on how to identify and deal with potential hazards.

Increased attention on *Salmonella* in raw, crumbed and frozen chicken. The potential presence of *Salmonella* on raw poultry is a known food safety issue. Efforts have been directed towards reducing consumer risks for decades. However, in the last few years there has been increased attention towards a subset of poultry products: Raw, crumbed (breaded) and often frozen chicken portions. These products can receive a mild heat treatment to set the coating or achieve some other function. They can appear cooked but are a raw product that must be thoroughly cooked before eating. Package labelling is provided to instruct consumers on the cook steps. However, continued outbreaks and attribution studies have prompted a regulatory response in some countries.

Summary of activities, February 2023

New emerging risks and issues. Two emerging risks concerning food were identified during February 2023, both featured above.

These issues are 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 14 emerging issues assessed during February 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.

- The safety of the artificial sweetener aspartame will be reassessed in 2023. The International Agency for Research on Cancer (IARC) will assess the potential carcinogenic effect of aspartame. Foodborne risk to consumers will be evaluated by the WHO/FAO Joint Expert Committee on Food Additives (JECFA). — Link to IARC Monograph vol 143 announcement
- Increased temperatures from climate change will put pressure on cool chains, making it more difficult to prevent microbial growth in food. A quantitative microbial risk assessment model was used to assess the risk of plant-based milk spoilage by *Geobacillus stearothermophilus*, a spore-forming bacteria that can survive ultra-heat treatment. The model predicted increased spoilage events but also identified risk mitigation options. While this work concerns food spoilage rather than food safety, such studies reinforce the need to understand and prepare for climate change impacts, to maintain control over any spoilage or pathogenic microorganisms in food. — Link to paper by Misiou *et al.* (2023)
- Like cultured meat, cell culture techniques can be used to make fat, which adds taste and texture to food. If the chemicals used to stimulate the fat cells to differentiate are not permitted in the final food, controls are put in place to prevent residues. However, good methods are needed to provide assurance that the final fat product is residue-free, and a recent publication proposes a method to meet this need. Cell culture techniques are advancing quickly, with food safety being a big driver of change. — Link to report by Song *et al.* (2023) on residue detection

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