Seismo Info 09/2020

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The FSVO compiles the most important food safety information every month: FSVO Website. Additional relevant subjects concerning early detection may be found in our online data base ADURA.

Food Trends

🌟🌟🌟 GMO-Salmon: There are plans to begin selling genetically modified salmon in the US market as of this autumn. The FDA and Health Canada approved the salmon as the first and only bioengineered animal protein for human consumption. The genetic modification is intended to better protect the fish during their early, most vulnerable stages of growth, resulting in an estimated 70 per cent increase in annual production output versus that of conventional Atlantic salmon. Food Safety News, 1 page. FDA, 3 pages. Product website, 1 page. (08.09.2020).

🌟🌟 Human breast milk as a sports food? Athletes, in order to improve their performance, resort to the most varied products – apparently also human breast milk. The American FDA has explained the risks associated with the consumption of human breast milk and warns of a possible exposure to infectious diseases, such as HIV, as well as to chemical contaminants and traces of drugs. Food Safety News, 3 pages. Original publication, 2 pages. (20.08.2020).
Unusual outbreaks

🌟🌟🌟 *Salmonella Enteritidis*: The CDC has reported an outbreak with *Salmonella Enteritidis* in USA and Canada, reportedly from packaged peaches. Latest reports state a total of 126 people have been infected (78 in USA, 48 in Canada) involving 34 hospitalisations. No fatalities. CDC, 2 pages. Canada, 2 pages. (25.08.2020).

🌟🌟🌟 *Salmonella Typhimurium*: A Salmonella outbreak in the United Kingdom involving 98 cases has been reported. The most probable cause is due to nuts (Brazil nuts), which had been incorporated in Muesli bars. Affected products had apparently been shipped to more than 30 countries. Food Safety News, 2 pages. Food Safety News, 1 page. (28.08.2020).

🌟🌟 Cinlenbuterol in meat: Officials in a Mexican state have issued a warning after suspicions that more than 50 people fell sick from eating meat contaminated with clenbuterol. Clenbuterol is a medicinal product that has been used as a food additive in some livestock feed to promote muscle mass and meat yield in cattle, lamb, poultry and swine. Such use is illegal in the U.S. and in Europe. Food Safety News, 2 pages. (26.08.2020).

🌟🌟 Officials in Ireland are investigating an outbreak caused by Cryptosporidium in prepacked salads. The product was recalled. More than 40 people were infected. Food Safety News, 2 pages. (13.08.2020).

🌟🌟 Update on *Salmonella Newport*: Last month we reported an outbreak of *Salmonella Newport* in USA caused by contaminated onions. The number of infections has continued to increase; status as of 10.09.2020: a total of 1,469 people have been infected – 1,012 in USA and 457 in Canada. One person has died, although it is not known whether *Salmonella* contributed to the cause of death. CDC, 2 pages. Canada, 3 pages. (10.09.2020).

🌟🌟 Denmark: Public health officials in Denmark are looking into three outbreaks that have sickened almost 50 people; one outbreak being caused by Hepatitis A and two due to rare strains of *Salmonella*. The Hepatitis A outbreak involved 14 people and 11 of them were admitted to hospital. The outbreak of *Salmonella Strathcona* included 23 people and the other of *Salmonella Kasenyi* involved 11 patients. The suspected causes are imported foods. Food Safety News, 2 pages. (27.08.2020).

🌟🌟 *Cryptosporidium* outbreak: The *Cryptosporidium* outbreak, already reported in Seismo Info 07/2020 and linked to bagged salads (iceberg lettuce, red cabbage and/or carrots), continues to spread in USA. A total of 690 people have been affected in 13 federal states. Food Safety News, 1 page. CDC, 2 pages. (17.08.2020).

🌟🌟 *Salmonella Anatum*: An outbreak of the relatively rare *Salmonella enterica* serovar *Anatum* exists since 2015 in Taiwan. Pork meat and poultry have been identified as vehicles for the transmission. Nearly identical *Salmonella* Anatum strains have been identified in the United Kingdom, the United States, and the Philippines. Original publication, 2 pages. (19.08.2020).

Food safety

🌟🌟🌟 *SARS-CoV-2* on imported foods: Chinese authorities have indicated that traces of *SARS-CoV-2* had been detected on the surface of frozen chicken wings, imported from Brazil. The discovery came a day after traces of the virus had been found on the packaging of frozen shrimp from Ecuador. It is unclear whether and to what extent the new coronavirus will have an influence on the international trade with foodstuffs. Swissinfo, 1 page. Food Safety News, 1 page. (18.08.2020).
Vibrio, E. coli ST 131, STEC: Three studies commissioned by the FSVO were recently completed. The aim of the literature review on *Vibrio spp.* was to assess the prevalence of *V. parahaemolyticus* and *V. vulnificus* in seafood and fish; their levels in *seafood* were found to be 43.1 % and 17 % respectively. *Vibrio,* 44 pages. For *E. coli ST 131* the authors estimate the risk for Swiss foodstuff producers as moderate for *poultry and fish products* and as low for all other products. *E. coli ST 131,* 36 pages. The persistence and prevalence of *STEC* in flour products was assessed by means of Challenge tests and qPCR. *STEC,* 43 pages. (03.09.2020).

Microplastics in fruit and vegetables: Notification from the BeoWarn information sheet no. 4/2020 (internal document). “Two current studies examine the presence of microplastics in plants. According to the authors, *apples* are the most highly contaminated fruit and *carrots* are the most highly contaminated vegetable. The particles are thought to reach the plants due to the uptake of water by the root systems.” *Publication A,* 7 pages. *Publication B,* 7 pages.

Microplastics in seafood: A new study reveals just how much and what types of microplastics may be contained in various *fish and seafoods* (oysters, prawns, sardines, ...). The analytical method could help reveal the extent of contamination in seafood and aid risk assessments to consumers, the researchers say. *C&EN,* 1 page. *Original publication,* 10 pages. (24.08.2020).

Mycotoxins in tomato products: A collaborative study by several cantonal laboratories (ZH, SG, TG, GR, GL and Lichtenstein) has revealed the presence of *tenuazonic acid (TEA)* in 38 of 54 (ca. 70%) investigated tomato products - from pelati to ketchup to tomato purée. Tenuazonic acid is a mycotoxin (mould fungus toxin) of the group of the *Alternaria* toxins. Four samples were rejected. *SRF,* 1 page. *Office Grisons,* 1 page. More information on this topic may be found in our database *ADURA,* (27.08.2020).

HEV in pork: A German study was able to detect the *RNA of Hepatitis-E-Viruses (HEV)* in commercially available pork; more than 10% of all the tested products were found to be contaminated. *Animal Health Online,* 1 page. *Original publication,* 19 pages. (10.09.2020).

HEV in goat products: A recently published Egyptian study describes the prevalence of *hepatitis E viruses* in goats by means of analyses of sampled milk, blood, urine and faeces. In *goat milk,* immunoglobulin G (IgG), antigens (Ag) and RNA of hepatitis E viruses were detected in 7%, ca. 2% and 0.7% of the samples, respectively. *Original publication,* 8 pages. (21.08.2020).

Cadmium in seaweed: The French Agency ANSES has raised concerns on the potential risks of *seaweed* as a foodstuff. In nearly a quarter of edible algae analysed by ANSES, *cadmium concentrations* were found to be greater than the maximum content of 0.5 mg/kg set by the French authorities. Cadmium is classified as a human carcinogen and is naturally occurring in the environment. *Food Navigator,* 2 pages. *ANSES,* 1 page. *Original publication,* 57 pages.

Citrus fruit and *Listeria:* A U.S. producer has recalled oranges, lemons and limes, among other things, as they may be contaminated with *L. monocytogenes.* *Food Poison Journal,* 2 pages. (10.08.2020).

Morphine in poppy baked goods: Several producers have recalled *poppy-containing baked goods,* as an elevated *morphine content* was detected in them. The problem already occurred in poppy from Slovakia at the same time last year (see Seismo Info 09/2019). *Produkt warning,* 1 page. (19.08.2020).

Oleandrin in milk: Notification from the BeoWarn information sheet no. 4/2020 (internal document). “In this study of a poisoning of 50 milk cows that were affected after being offered a diet containing dry oleander pruning wastes accidentally mixed with fodder, the toxin *oleandrin* was detected in serum, liver and heart as well as in *milk* and...
cheese samples. This is the first report of the transfer of oleandrin into milk and dairy products and suggests a potential risk for consumers.” Original publication, 11 pages. (08.09.2020).

Food fraud


Dolphin meat in canned tuna: A study by a Mexican student has discovered evidence of dolphin meat in canned tuna. In 15 of the investigated cans, three were found to contain traces of dolphin DNA, thereby confirming the presence of dolphin meat. Seafood Source, 1 page. (02.09.2020).

Close up

The next pandemic: An 82 page document entitled “Preventing the Next Pandemic – Zoonotic diseases and how to break the chain of transmission” has been published by UNEP (United Nations Environment Programme) and ILRI (International Livestock Research Institute). The authors provide recommendations on how future zoonotic outbreaks may be prevented, and identify One Health as the optimal path for preventing and responding to future pandemics. Press Release, 2 pages. Key messages (English and French), 1 page. Original publication, 82 pages. (03.09.2020).

Microplastics as bacteria transporters: Microplastics in the world’s oceans is a known problem for the environment. A new study now warns that the problem may be much greater than previously thought, since the transport of pathogens, such as bacteria and viruses, may be promoted by microplastics. Science Daily, 1 page. Original publication, 10 pages. (28.08.2020).

EHEC in Switzerland: Laboratory-confirmed cases of infections with Shiga toxin-producing E. coli (STEC) have markedly increased in Switzerland since 2015. The question to be posed is whether there are in fact more cases or whether this increase is attributable to the increased number of laboratory tests. In a new publication, Swiss researchers concluded that this increase is not attributable solely to an increased number of tests, and it probably concerns a real epidemiological trend. Original publication, 11 pages. (27.08.2020).

Principal sources: SEISMO; HorizonScan; Safefood.ai.

For questions and suggestions: seismo@blv.admin.ch

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Food Trends

🌟🌟🌟 Protective coating for avocados: A Swiss retailer launches avocados coated with a protective layer intended to keep them fresh for longer. Food Aktuell, 1 page. (05.08.2020).

🌟 Nanotechnology: The EFSA invites feedback on a draft document aimed to establish criteria to assess the presence of nanoparticles in food and feed products. Comments may be submitted up to 9th September 2020. EFSA, 1 page. (09.07.2020).

🌟 Sea cucumbers: Researchers in Norway are investigating commercial farming practices for sea cucumbers, which they say should be exploited as a raw ingredient for health products. Sea cucumbers have long been consumed in Asian countries. Food Navigator, 2 pages. (08.07.2020).
Unusual outbreaks

★★★★ Salmonella Newport: The CDC reports an outbreak of 125 cases of Salmonella Newport in USA involving 24 hospitalisations. The cause could not be established and is actively searched. The outbreak has spread rapidly – also in Canada. CDC, 1 page. (22.07.2020). Update 03.08.2020: Onions have now been identified as the most probable cause. Present numbers: in USA 640 reported cases, 85 hospitalisations, no deaths. An additional 239 reported cases in Canada. Canada, 4 pages.

★★★★ E. coli: Two unrelated outbreaks of E. coli have been reported in South Korea and Japan; a total of several thousand people have been affected. The outbreak in South Korea was traced back to a kindergarten; the majority of the more than 100 cases were children. There were 21 hospitalisations; 16 of these people showed indications of haemolytic uremic syndrome (HUS). In Japan, more than 3 400 teachers and pupils in 15 schools were struck down with food poisoning. E. coli was detected in the faeces of some patients and was later found in the seaweed salad that had been delivered to the schools. Food Safety News, 1 page. Asahi Shimbun, 1 page. Korea Herald, 1 page. (20.07.2020).

★★ The report on the food-related group outbreaks in Switzerland in 2019 has been published. Food-related outbreaks of illness occur very infrequently in Switzerland. A total of 23 food-related outbreaks of illness were reported in 2019. Although this is twice as many as in the previous year, the number remains low in comparison to other countries. FSVO Report, 4 pages. (06.06.2020).

★★ The Norwegian authorities have published a report on food-related group outbreaks. A total of 46 outbreaks were reported for a population of 5.3 million. The greatest outbreak, afflicting more than 2 000 persons, was traced back to C. jejuni in the potable water supply. Food Safety News, 1 page. (29.07.2020).

★★ Red kidney beans: The outbreak at the beginning of the year in Denmark was traced back to red kidney beans. The outbreak was caused by too much phytohaemagglutinin (PHA) in the frozen beans; it appeared the kidney beans weren’t boiled for long enough by the catering company concerned. PHA is one of the lectins that occur naturally in various pulses, and in high amounts may also have a toxic effect. Food Safety News, 2 pages. (08.07.2020).

★★ Zucchini as a possible cause of a plurality of cases of illness in UK. Zucchinis contain a naturally occurring compound (cucurbitacin). When the cucurbitacin content is at a high enough level, it can lead to symptoms such as nausea and diarrhoea. Four families in Castle Acre, Norfolk reported feeling unwell after eating produce they had grown. Food Safety News, 1 page. (26.07.2020).

Food safety

★★★★ Zoonosis report Switzerland 2019: Campylobacteriosis and Salmonellosis remain the most frequently reported zoonoses in humans in 2019. Increased numbers of cases, for example Q-fever and tularaemia, have occurred with some other zoonoses. Press release, 2 pages. Original report, 43 pages. (22.07.2020).

★★ COVID-19: Investigations of a super spreader incident in Germany in a slaughterhouse demonstrated a spread of the SARS-CoV-2 in a radius of 8 metres between the index case and work colleagues. The slaughterhouse is equipped with an air circulation system set to 10 °C. In addition, the virus seems to have persisted in the slaughterhouse. Original publication (not peer-reviewed), 30 pages. (23.07.2020).

★★ The Food and Agriculture Organisation of the United Nations (FAO) and the World Health Organisation (WHO) have observed an increase in outbreaks and cases of food-related illnesses traced back to Vibrio parahaemolyticus.

★★★★ **E. coli** ST131: *Escherichia coli* sequence type (ST) 131 is of concern because it can acquire antimicrobial resistance and cause extraintestinal infections. The *E. coli* sublineage ST131-H22 appears capable of being transmitted to humans through poultry. Researchers have now reported multidrug-resistant ST131-H22 poultry isolates in Brazil which are closely related to international human and poultry isolates. [Original publication](#), 1 page. (30.07.2020).

★★★★ **Selenite:** The European Food Safety Authority (EFSA) rejects the use of selenite triglyceride as a novel food. The reasoning: it is not clear in which form the substance, which is intended as a food supplement to be a source of selenium (Se), is present in the body following ingestion and absorption; consequently, it must be treated as a xenobiotic with unknown effects. [Food Navigator](#), 2 pages. EFSA, 19 pages. (08.07.2020).

★★★ **Aluminium in foods:** The BfR has published questions and answers on aluminium in foods and products intended for consumption. "Food classes with the highest individual contributions (of aluminium) are instant tea drinks (11 % of the total uptake from foods), mixed raw vegetable salads (8 %), tea drinks (7 %) as well as cocoa and chocolate products (6 %) and multigrain bread or rolls (4 %)." BfR, 8 pages. (21.07.2020).

★★ Detection of **Toxoplasma gondii** in retail meat samples in Scotland: *Toxoplasma gondii* DNA was detected in 0/39 (0 %) beef samples, 1/21 (4.8 %) chicken samples, 6/87 (6.9 %) lamb samples, 3/71 (4.2 %) pork samples and 48/149 (32.2 %) venison samples. [Original publication](#), 6 pages. (27.07.2020).

★★ Evaluating the residual nitrite concentrations in bacon in the United Kingdom: A total of 89 different commercially available bacon samples were collected, and analysed using flow injection analysis to determine their residual nitrite content. The mean residual nitrite concentration for all bacon samples was 10.80 mg/kg. [Original publication](#), 7 pages. (11.07.2020).

★★ Detection and quantification of **hepatitis E virus RNA** in ready to eat raw pork sausages in the Netherlands. HEV RNA was detected in 46/316 raw pork sausages (14.6 %). *Cervelaat, salami, metworst* and *snijworst* are more often positive than other sausages. The average level in contaminated sausages was 2.76 log10 HEV gc per 5 g. [Original publication](#), 25 pages. (12.07.2020).

★★ The German Federal Institute for Risk Assessment (BfR) has published an opinion on **Shiga toxin-producing E. coli** (STEC) in flour. [Food Safety News](#), 2 pages and [Original publication](#), 28 pages. (28.07.2020).

★★ Vitamin D3: There is a suspected case of food poisoning (hypercalcemia) that was caused by a too high content of vitamin D3 (2612.7 mg/day) in food supplements from Spain. [RASFF](#), 1 page. (22.07.2020).

★★ The Food Standards Australia and New Zealand FSANZ has identified **Salmonella in raw fish** as an emerging risk for food safety. For example, it was determined that three serotypes of *Salmonella* from one farmed species have been found to cross-contaminate equipment and two other fish species. Although as yet no human health issues have been determined which are directly related to this issue, this topic is viewed as a potential emerging issue – particularly with the increase in consumption of raw fish such as sushi, sashimi, ceviche, poke. [FSANZ](#), 7 pages. (29.07.2020).
Food fraud

Operation OPSON IX: Eleven European states have joined together in the Operation OPSON IX, coordinated by Europol and INTERPOL, in order to collectively prosecute possible cases of fraud in various foodstuffs. Among the results are: in Germany about one quarter of the investigated olive oils were found to be adulterated; the authorities determined anomalies in 17% of the investigated vanillin-containing products, and more than 17 tons of horse meat were impounded from several slaughterhouses in Ireland and other European countries. BVL, 2 pages. AgriLand, 2 pages. (29.07.2020).

COVID-19: As the supply chains continue to be affected by the current pandemic, there are growing concerns across the global food and beverage industry that vigilance against the varied types of food fraud is critically low. New supply chains are being created and consequently offer possibilities for criminal operators to become active in this field. Lloyd’s Register, 1 page. (17.07.2020).

Methodology to identify rice: A new study presents a methodology that is capable of differentiating the origin of rice from China, Vietnam and India. It is intended to protect consumers against misleading information and fraud. Original publication, 9 pages. (20.07.2020).

Elderberries: As a result of the Corona pandemic, substances that are reputed to strengthen the immune system are proving increasingly popular; these include elderberries. However, this trend also leads to products that are increasingly adulterated. Nutra Ingredients, 2 pages. (08.07.2020).

Close up

Plantations and animal husbandry: The connection between animal husbandry and the contamination of nearby orchards is the subject of a new study. Result: one out of five air samples (20%) in an almond plantation that neighboured a poultry farm tested positive for E. coli. In 2019 in the USA, there was an E. coli outbreak that was traced back to leaf spinach (167 cases); in May this year the FDA published the results of its investigations and wrote that a possible contributory factor was the close proximity of the cultivation area to cattle. Food Safety News, 2 pages. Abstract, 1 page. FDA, 6 pages. (21.07.2020).

Researchers from the University of Houston have reported that titanium dioxide doped with cobalt (CoO–TiO₂) in the form of nanoparticles inhibits the proliferation of Listeria monocytogenes. These results show that CoO–TiO₂ could be added as an antimicrobial in the food processing industry (e.g. in production units, direct application into foodstuffs and to food-contact surfaces). Science News, 2 pages. Original publication, 30 pages. (10.07.2020).

Salmonella: Researchers have discovered that some strains of Salmonella circumvent the immune defence system of plants and enter salad leaves, in that they open the miniscule breathing pores of the plants (stoma). Once inside the plants the bacteria can no longer be washed out and consequently transmit the food-related illness. Science Daily, 3 pages. Original publication, 16 pages. (20.07.2020).

Control of Vibrio parahaemolyticus in mussels by the gram-negative bacterium Halobacteriovorax, isolated from the Adriatic, which feeds on other bacteria. The bacterium was able to reduce the V. parahaemolyticus count during the cleaning of the mussels. Original publication, 25 pages. (21.07.2020).

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