



More outbreaks associated with Tahini and houmous

Danish officials have reported a *Listeria* outbreak linked to houmous that first affected people in 2016.

The same type of *Listeria monocytogenes* was found in six people from 2016 to 2019. Five women and one man aged 30 to 91 years fell ill. All of the affected individuals lived in the East Jutland region of Denmark, which led to officials suspecting that the infection came from food which was not sold in the rest of the country.

In September 2019, interviews with the latest ill people found they had been shopping at the same store and eaten houmous which was produced on the premises. Information was also able to link one of those who fell ill in 2016 to the same location.

Whole genome sequencing of *Listeria* isolates allowed the Danish authorities to identify the outbreak strain and compare sequences from *Listeria* found in patients with those discovered in the food and production environment. Results showed they were all similar and of sequence type 1.

During a later inspection at the company, the Danish Veterinary and Food Administration also found *Listeria* in a variety of houmous samples from the store and once again in the production area.

Earlier this month in the UK the Food Standards Agency issued a recall of various brands of houmous because of the possibility of contamination by *Salmonella*.

One of the main ingredients in houmous is Tahini paste and just in the last twelve months we have reported on three different outbreaks of *Salmonella* related to the consumption of this product, and more alarmingly there has been eight occurrences of *Salmonella* over the last 5 weeks associated with this product. The issue is linked to the sesame seeds originating from Sudan (Multiple), Mexico (2), Syria (1), and Uganda (1).

Rare *Salmonella* serotype reported in Europe

Five European countries are investigating 192 *Salmonella mikawasima* infections identified by whole genome sequencing (WGS).

As of Nov. 12, 138 people were ill in the U.K., 33 in Sweden, 18 in France, two in Denmark and one in Ireland. Most illnesses are non-travel related. The earliest date of illness onset is late August 2019.

Portugal has also recorded an increase of *Salmonella mikawasima* in 2019, with most cases identified since August. WGS data for this year are not yet available for the isolates, which are currently under investigation.

The European Centre for Disease Prevention and Control (ECDC) stated that all isolates are sequence type (ST) 1815.

The close genomic relationship between isolates in the different countries indicates association with a common source. The lack of travel history for the cases and the recent identification possibly points to a vehicle of infection simultaneously distributed in different EU countries.

Spanish *Listeria* outbreak - Update

The Spanish authorities investigating the outbreak of *Listeriosis* which was reported in September's bulletin have released information which states that individuals were aware since December 2018 that some of the food products contained *Listeria*, but they did not inform the authorities and continued to sell the food.

The outbreak from "La Mecha" brand chilled roasted meat produced by Magrudis affected more than 200 people, causing three deaths in elderly people and five pregnant women lost their babies. At the peak, 125 people were in the hospital.

Investigations found at least three of the people responsible for the products knew that a batch produced in December 2018 was contaminated with *Listeria* but did not tell the authorities. The withdrawal or destruction of the affected products was not able to be proven to the authorities.

Six people have so far been arrested and two people are currently held in provincial detention without bail.

Vibrio parahaemolyticus adventurer cells aid colonisation of new environments

Researchers from the Max Planck Institute have found out more about how *Vibrio* spreads in the natural environment. *Vibrio parahaemolyticus* causes acute gastroenteritis in humans and is the leading cause for seafood borne illnesses in the world.

Scientists from the Max Planck Institute for Terrestrial Microbiology in Marburg, Germany, identified specialised cells which they have named “adventurer” cells which they claim aid in the bacterium’s dissemination and prevalence.

In Central and Northern Europe, *Vibrio* infections are among emerging diseases whose incidence has recently increased or is likely to rise in the future. Reasons for this are the increase in global trade and the higher water temperatures caused by climate change.

Mussels, oysters and crabs in supermarkets from tropical regions can become contaminated and can cause infection if eaten raw, or if they are consumed after insufficient cooking.

Vibrio parahaemolyticus forms colonies in the tidal zone of estuaries and its lifecycle is triggered by conditions in this habitat. Scientists simulated conditions of the tidal zone and investigated the bacterial lifecycle and mechanisms of movement.

They found that *Vibrio parahaemolyticus* forms special cell types in different environmental conditions. While short swimmer cells with a single polar flagellum can move quickly in a liquid environment, the longer swarm cells reside within bacterial populations that are attached to solid surfaces. Swarmer cells are specialised for movement over surfaces and can rapidly colonise new surface areas.

The *Vibrio* bacterial swarm colonies are not homogenous across the whole colony. While the middle of the colony consists of rather shorter cells, the longer swarm cells are found in the outer areas.

The researchers showed that if the swarm colony is flooded with water, like the natural habitat during tidal rhythms, cells are released from the colony into the liquid surroundings. However, the released cells are an unexpected and new cell type of medium length. These so called adventurer cells are optimised for living in water and are good swimmers.

The team found that once released, the adventurer cells were capable of spreading in their new liquid environments and were able to detect and move towards potential nutrient sources such as chitin – an essential component of marine animals to which *Vibrio parahaemolyticus* attaches.

The researchers concluded that the release of adventurer cells into the water could help spread the bacterium in the environment and bring *Vibrio parahaemolyticus* to new shores such as the surface of seafood and into the food chain, increasing the risk of infection.

E coli O157 outbreak on the Isle of Wight

Public Health England is investigating a number of *E. coli* O157 infections linked to the Isle of Wight, and they are currently working with environmental health officers from the Islands council to try to identify the source of the outbreak.

Four children who visited the island off the south coast of England in early October have been infected with Shiga toxin-producing *E. coli* (STEC) O157, and up to 10 other people may be affected.

Inquiries are ongoing to find the source of the infection.

Salmonella found in raw meat – shock!!!!

An analysis of pet food made from raw meat by researchers from the University of Zurich has found *Salmonella* and *E. coli*. No surprise there I hear you all say.....

However, there have been numerous recalls of raw pet food due to the presence of *Salmonella* in the United States in the past couple of years, and some human infections were allegedly confirmed as a result.

The study evaluated commercially available raw meat-based diets (RMBDs) with regard to microbiological quality and antimicrobial resistant (AMR) Enterobacteriaceae.

Meat-eating pets, mainly dogs, are increasingly being fed raw meat, animal by-products, bones and additional food such as fruit and vegetables. Proponents call this mix BARF (Biologically Appropriate Raw Food).

However, researchers believe BARF diets are a significant risk factor for the spread of antibiotic-resistant bacteria when pet owners come into contact with the bacteria when preparing food. Another reason is pets have close contact with humans, increasing risk of transmitting the bacteria.

The current EU 2073/2005 has a zero tolerance approach for *Salmonella* for raw meat products (even those which are intended to be thoroughly cooked by the customer) on products placed on the market throughout their shelf life. My concern is that all criteria should be achievable given good manufacturing processes, and whether absence of *Salmonella* is attainable (and is even an accurate indicator of food quality) in raw meat is open to debate.

A separate study published in the Veterinary Record Journal in September looked at food-transmitted pathogens among pet owners who feed their animal’s raw food, and the study found that foodborne pathogens are rarely transmitted to humans through raw pet food. Perhaps the people in this study appreciated the rather obvious importance of good and effective hand washing after handling raw meat!!!!