



# Food Poisoning Recalls

## On the rise in 2018?

Product recalls due to bacterial pathogen contamination of food are still grabbing the headlines, with several high-profile incidents in 2018 causing multiple cases and widespread product recalls around the world. But what causes the contamination, why can it take so long to identify the origin and what can be done to prevent it? **And do you remember what you ate 10 weeks ago?**

### Below are a few of the outbreaks reported by the food authorities so far this year:

- *Listeria monocytogenes* in frozen vegetables, >100 Countries including Europe, USA and Canada, 54 cases (10 deaths)
- *Listeria monocytogenes* in processed meats, South Africa, 1060 cases (216 deaths)
- *Listeria monocytogenes* in Rockmelon, Australia, 22 cases (7 deaths)
- *Listeria monocytogenes* in salmon products, Europe, 8 cases (4 deaths)
- *Listeria monocytogenes* and *Salmonella* contamination of vegetable products, USA widespread recall.
- *Salmonella* in cereal, USA, 135 cases
- *Salmonella* in raw egg, USA, 44 cases
- *Salmonella* in Laksa, Malaysia, 83 cases (2 deaths)
- *Salmonella* in ground beef, USA, 120 cases
- STEC (Shiga-toxin producing *E.coli*) in lettuce, USA 200 cases (5 deaths)
- STEC in raw milk cheese, France, 15 cases (1 death)

### It can take months to identify the cause

The South African contamination of processed meats was the largest known outbreak of *Listeriosis* ever recorded globally. It took over a year for the authorities to identify the processed meat as the probable source of the outbreak. Likewise, it took approximately 18 months to identify frozen vegetables as the source of the multi-country outbreak originating from a frozen vegetable processor in Hungary.

### What did you eat 70 days ago?

A major challenge with identifying the source of *Listeria* outbreaks is the long incubation period of up to 70 days before symptoms manifest. It also means that cases still occur long after the recall has been implemented. A study conducted by the EU revealed that more than half of *Listeria* outbreaks go undetected. This could be improved if a technique called whole genome sequencing (WGS) was more widely adopted. WGS is DNA sequencing of the entire genome of an organism; all the DNA and genes that make-up that organism. WGS is a fast and accurate way to identify a pathogen, ascertain variations within species, and detect virulence factors; i.e. those genes which enable the pathogen to cause infection.

### Does contamination start in the factory?

A common theme with many major recalls is that the outbreak strain is found in the factory environment. In one recall, when the FDA inspected the facility, they reported unhygienic conditions and multiple *Salmonella* positive environmental swabs from the factory environment. The management team had not identified *Salmonella* as a hazard requiring a preventative control.

The source of the South African *Listeria* outbreak was found to be a Polony factory. An inspection of the facility by the National Institute for Communicable Diseases (NICD), revealed that there were insufficient hygiene controls. More than 100 food and swab samples from the factory tested positive for *Listeria monocytogenes*, of which 25 were the outbreak strain. Deep cleaning, staff re-training and implementation of a new food safety management system was needed before the site could re-open. This large outbreak has resulted in South Africa working on reforming its food safety regulations and inspection regimes.





## Or in the field?

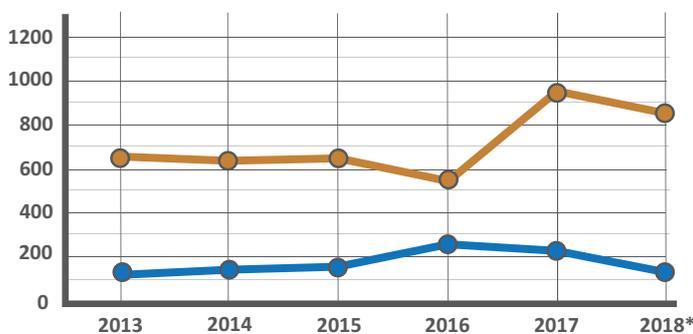
In other outbreaks, contaminated raw materials have been the source. Investigations into the Rockmelon incident in Australia suggested that adverse weather conditions on the farms played a role in contaminating the skin of the melons with *Listeria*, which despite the good practices used at the factory, was able to survive on the rough skins of the melons.

The source of the STEC outbreak from romaine lettuce was contaminated irrigation water from nearby cattle farms, and the contaminated Reblochon cheese, which resulted in the hospitalisation of 15 children and one death, was made with contaminated raw milk.

## What's the scale of the issue?

The US FDA enforcement report figures show a highpoint in the number of pathogen related food recall events in 2016. The European Rapid Alert System for Food and Feed figures show a peak in 2017 but with 2018 having considerably more RASFF notifications than during 2013 – 2016.

### Pathogenic Micro-Organism Recalls



FDA Events — RASFF Notifications

\*Figures for 2018 are extrapolated from Jan-Oct 2018 data

## What's the solution?

Outbreaks of this nature may be prevented by going back to basics and reinforcing good food hygiene practices, such as:

- ✓ Effective HACCP / food safety plans
- ✓ Effective cleaning and disinfection
- ✓ Staff training
- ✓ Maintaining high standards of fabrication
- ✓ Factory design/layout
- ✓ Supplier assurance and sourcing of high-quality raw materials
- ✓ Robust verification procedures including raw material screening and effective environmental monitoring programs
- ✓ Taking appropriate and timely action following positive micro results (product and swabs)

## These are pretty basic measures

You will recognise that many of these are basic pre-requisites that all food businesses should have in place. When considering *Listeria* control, food businesses must also look at how *Listeria* can enter a factory and then spread from floors/drains on to food contact surfaces. Any environmental swabbing program must be designed to 'find *Listeria*', rather than to generate 'negative results' for KPI reports! Reducing and/or avoiding water on the floor or condensate dripping, and eliminating the use of high-pressure hosing, all help to limit the spread of *Listeria*, as does the use of dedicated, captive footwear and equipment.

## Food safety culture will make a difference

The BRC Global Food Safety Standard Issue 8 introduces more emphasis on food safety culture. Food businesses need to demonstrate a commitment to good food hygiene practices throughout all levels of the organisation. Management commitment to food safety is essential, as is a willingness to investigate and learn from mistakes/errors.

## The food manufacturer must interpret the test results

It is rare nowadays that food businesses can pick up the phone to their contract testing laboratory and get advice about test results, since few laboratories still provide this valuable service. The onus is on food businesses to understand and interpret test results for themselves, investigate sources of contamination and implement appropriate corrective actions. This need is also reflected in BRC Food issue 8, with the introduction of a new clause which requires relevant personnel to interpret laboratory results.

## Need help?

RQA can advise on developing robust and effective microbiological testing regimes and provide training to help your team understand and interpret microbiological test results.

Click [here](#) for more information or get in touch via [contact@rqa-group.com](mailto:contact@rqa-group.com)

## Want to know more?

World Health Organisation – Disease Outbreak News  
<http://www.who.int/csr/don/en/>

USFDA – Warning Letters  
<https://www.fda.gov/ICECI/EnforcementActions/WarningLetters/>

USFDA - Recalls, Market Withdrawals, & Safety Alerts  
<https://www.fda.gov/safety/recalls/>

EU RASFF Portal  
<https://webgate.ec.europa.eu/rasff-window/portal/>

Food Standards Australia New Zealand – Food Incidents  
<http://www.foodstandards.gov.au/industry/FoodIncidents/Pages/default.aspx>

HACCP for Senior Managers and Directors course  
<https://www.rqa-group.com/training/haccp-for-senior-managers-and-directors-training/>