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Role of RASFF in food crisis management

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Case: Listeria in frozen vegetables



Human cases – where it all started

- Finnish Institute for Health and Welfare reported in Nov 2017 four human clusters of *Listeria monocytogenes* (Lm) confirmed by whole genome sequencing (WGS) since 2016 to Epidemic Intelligence Information System (EPIS) because no common food source had been identified.
- Commission transmitted a RASFF news about the outbreak in Nov 2017
- Clusters of Lm ST6 had also been detected in Austria, Denmark, Sweden and the UK
- European Union -wide investigation to find the source was triggered

Food – at the same time



- Finnish importer found in Jan 2018 from an own-check sample Lm exceeding 100 cfu/g in one batch of sweet corn. FBO informed Finnish Food Safety Authority. A product recall was launched by the FBO.
- RASFF alert on Lm in sweet corn was published by Finland in Jan 2018
- More information, questions, follow-ups were shared in RASFF

One Health co-operation



- Finnish Lm strains from sweet corn and humans were sequenced and compared in a Swedish laboratory and a match with outbreaks in Finland found in Feb 2018
- In the EU joint work to link human and food isolates of Lm by ECDC - EU Reference Laboratory for *Listeria monocytogenes*/NRL network – EFSA was carried out
 - link to frozen corn was confirmed in all affected MS – microbiological link
 - consumption of frozen corn was confirmed by patients in FI and SE – epidemiological link

Tracing the source



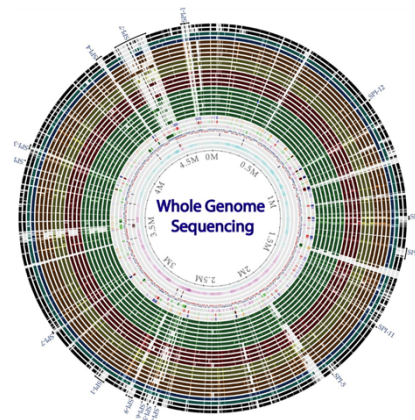
- The "matched" food product connected to an importer in Finland was used to trace the source of contaminated corn
- EFSA started a massive tracing in the supply chain
- Investigation lead to a freezing plant in an EU-MS
- FBOs in several EU-MS recalled the implicated products
- Risk management measures in the freezing plant were started (marketing ban, order to withdraw or recall the products, closure of the plant, sampling, cleaning etc.)



Outbreak



- 47 human cases (9 fatalities) were found between Dec 2015 and March 2018, most of them in Finland
- The case showed that cross-sectoral collaboration in food-borne outbreak investigation is crucial
- The value of WGS is emphasised



International dimension: RASFF - INFOSAN



- The products were distributed to all EU Member States, as well as, countries outside the EU
- The number of recipient countries was altogether 107
- Information was effectively shared between RASFF and INFOSAN to trace products and to facilitate recalls and other risk management measures



EFSA-ECDC co-operation

- Rapid outbreak assessments by EFSA and ECDC
- MS and EU-RL network contribution



TECHNICAL REPORT



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Multi-country outbreak of *Listeria monocytogenes* serogroup IVb, multi-locus sequence type 6, infections linked to frozen corn and possibly to other frozen vegetables – first update

European Food Safety Authority
European Centre for Disease Prevention and Control

Abstract

An outbreak of invasive *Listeria monocytogenes* infections confirmed by whole-genome sequencing (WGS) and linked to frozen corn and possibly to other frozen vegetables has been ongoing in Austria, Denmark, Finland, Sweden and the United Kingdom since 2015. As of 15 June 2018, 47 cases were reported and nine patients died. WGS analysis of 29 non-human *L. monocytogenes* isolates found them to be closely related to the multi-country human cluster of *L. monocytogenes* serogroup IVb, multi-locus sequence type 6. The non-human isolates were obtained from frozen corn, frozen vegetable mixes including corn, frozen spinach products, frozen green beans and two environmental samples. The strong microbiological link between the human and the non-human isolates is indicative of a common source related to frozen corn and other frozen vegetable mixes persisting in the food chain. Traceability information for the contaminated products pointed to the source of contamination in a Hungarian freezing plant. It is possible that frozen vegetables other than corn processed in this plant, could also be a vehicle of human infection. The information available confirms contamination within the Hungarian plant, but thorough sampling and testing are needed to identify the source of contamination at the plant concerned. On 29 June 2018, the Hungarian Competent Authority banned the marketing of all frozen vegetable products produced by the Hungarian plant, and ordered their immediate withdrawal and recall. This restrictive measure is likely to significantly reduce the risk of human infections and contain the outbreak. Any potentially contaminated frozen vegetables could still represent a possible risk to consumers until completely withdrawn and recalled. New invasive listeriosis cases may also be identified due to the long incubation period, the long shelf-lives of these products, and potential consumption of frozen vegetable products bought by consumers before the recalls and eaten without being properly cooked.

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Key words: *Listeria monocytogenes*, frozen corn, frozen vegetables, multi-country outbreak, multi-locus sequence type (MLST), Whole Genome Sequencing (WGS)

Requestor: European Commission

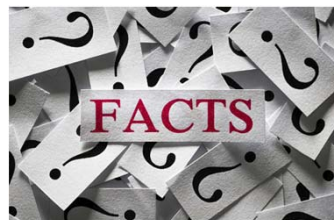
Question number: EFSA-Q-2018-00313

Correspondence: zoonoses@efsa.europa.eu

What you need to tackle a cross-border food crises – lessons learned



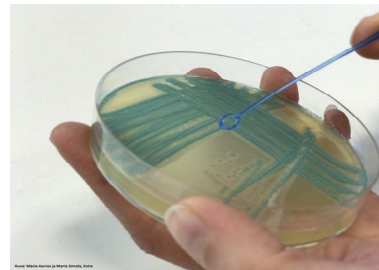
- Data – facts, quickly!
- Public – private co-operation – mutual interest to protect human health (e.g. own-check samples)
- Co-operation: public health – food, across borders
- Laboratory capacity, advanced methods (WGS)
- Data sharing – RASFF, EWRS, EPIS, INFOSAN, laboratory network, crisis coordinator network etc.
- Public information (authorities, FBOs)



Cross-border co-operation to protect human health



- EU Member States
- National Food Authorities
- National Public Health Institutes
- National Reference Laboratories
- EU Commission
- EFSA
- ECDC
- EU Reference Laboratories
- WHO
- 107 countries
- EPIS
- RASFF
- EWRS
- INFOSAN





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“All you need is RASFF?”

**...and a lot more – including tons of transparency,
co-operation and expertise based on sound science!**



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Thank you!

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