

Outbreaks of infection and suspected cross-contamination at food manufacturing plants

From time to time, we experience outbreaks of infection among the human population due to pathogen bacteria, such as Listeria and Campylobacter. Often the suspicion fall on processed food, and therefore the food manufacture, when the source of contamination is to be found.

When talking about products that have been heat-treated, the process should be monitored and well documented, often as a critical control point (CCP). Therefore, focus on potential cross-contamination should be on production steps after the heat treatment, such as filling/bottling/packing.



In the case of a massive infection, you will typically find the pathogenic bacteria in the product, and reference samples and then you have a specific place to start from and trace back from.

It is much more difficult if there is a **possible sporadic contamination**, where the bacteria in the product are not necessarily detected throughout the batch. However, looking for other indicators such as lactobacillus, pseudomonas or yeast may help identifying if there is a “dirty spot”. Swap samples and UV inspection are great tools.

Even though it can be difficult to find the contamination itself, if there is one, it may be even more difficult to document that the contamination does not originate from the company. The latter at risk of damaging the company's reputation with customers and consumers.

It is therefore important that you as a manufacturer can present documentation for the GMP related workflows, processes and controls which you most likely described within your quality management system.

When it concerns heat treated products my English partner David Whitham has compiled a checklist of focus areas based on his many years of experience with cleaning and hygiene in the food industry and a few of the main points are listed below. The complete list of recommendations can be accessed [here](#).

- Has the pasteuriser, regenerative and cooling unit checked for leaks?
- Is the divert-valve checked and working well?
- Are product samples taken regularly for foreign germs and coliform bacteria at both start-up and shut-down of the line, and are these ok?
- Is the quality of water supply controlled, including any buffer tanks or vessels?
- Is the CIP temperature sufficient in the cleaning area? As a starting point, 75C of the cleaning object is recommended for a minimum of 10 min
- Is there wear of surfaces that reduces the effect of cleaning?

- Have swab samples been taken to confirm the effectiveness of the cleaning?
- Are all filters inspected and clean - also on water and compressed air?
- Is all product-contact packaging protected against contamination - both from air currents and aerosols during cleaning?

In addition, during holidays and COVID-19 lock down, when all or part of the production may have been shut down, it is incredibly important to focus on not only plants but also utilities and supplies at the restart of production.



Special attention must be paid to water and compressed air, as there may have been a microbiological development during standing in the summer heat. In this connection, one must also be aware of Legionella in water for staff facilities, which the UK Health and Safety Executive has also informed about

<https://www.hse.gov.uk/coronavirus/legionella-risks-during-coronavirus-outbreak.htm>

For further information on the prevention of cross-contamination and sampling programs, please contact us for an initial dialog at info@foodefficiency.eu