

Hygiene changes adopted by the food industry to control COVID-19

Are there any other benefits?

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Like all key industries that have remained in production during the COVID-19 pandemic, the food industry has had to undertake additional hygiene measures, primarily during production periods, to help manage coronavirus. These have primarily consisted of social distancing, the increased undertaking of hand washing and the use of hand hygiene products (including a potential increase in hand hygiene monitoring), and additional disinfection of environmental human touch points (e.g. door handles, switches, stop/start buttons, HMI screens, hand rails, keyboards, hand soap and towel dispensers).

Hopefully, these practices, designed to reduce the number of viruses on the hands and in the food processing environment (that could be transferred to the hands), have helped in their intended COVID-19 control.

However, these changes which have enhanced personal hygiene and cleaning and disinfection, are perhaps the biggest single change in such hygiene practices within the food industry for many years. Is it possible that these changes could also have brought additional benefits in terms of food safety or personal health?

Whilst intending to control coronavirus, these hygiene changes are likely to also control a wide range of other microorganisms. As approximately 50% of the microorganisms on hands are transferred to the food product when it is touched, a reduced number of microorganisms on the hands could lead to: -

less transfer of microorganisms to foods during food handling



resulting in the food showing lower counts of general microorganism indicators (TVC, Enterobacteriaceae); and potentially lower pathogen detections e.g. *S. aureus*



which could result in increased food quality and safety and/or longer shelf-life.



and fewer customer complaints and recalls.

Fewer other, non-SARS-CoV-2, respiratory viruses on the hands could also lead to fewer cases of respiratory diseases (colds and flu) resulting in less absenteeism.

Fewer microorganisms in the food process environment might lead to reduced levels of general microorganism indicators (TVC, Enterobacteriaceae) and reduced levels of environmental pathogens, particularly Listeria. This could reduce levels of cross-contamination of microorganisms from the environment to the food product, resulting in the food showing lower counts of general microorganism indicators (TVC, Enterobacteriaceae) and lower pathogen incidence.

Is there any evidence for this? In talking to our customers there is anecdotal evidence of lower Listeria incidence in the environment and in the finished product. In the wider community, Public Health England published cumulative data up to week 30 for common gastrointestinal infections in England and Wales (Table 1).

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911317/hpr15_20_GIs.pdf

Laboratory reports	Cumulative to week 30 2019	Cumulative to week 30 2020
Campylobacter spp.	31949	24463
Cryptosporidium spp.	1615	1177
Giardia spp.	2652	1901
Salmonella spp.	3668	2356
Shigella spp.	1637	988
STEC O157	211	123
Rotavirus	2364	492
Norovirus	4165	2591

Table 1 - Laboratory reports of common gastrointestinal infections in England and Wales reported to Public Health England to 26 July 2020 (and previous data from the same period in 2019)

Table 1 shows that the general incidence of gastrointestinal infections in the population was approximately one third lower in 2020. Similarly, the number of Listeria recalls alerted by the FSA in the period January to August for 2018, 2019 and 2020 is shown in Table 2.

Number of Listeria recalls	2018	2019	2020
	11	4	2

Table 2 – FSA Listeria recalls, January – August 2018, 2019, 2020

Listeria incidence, the organism most likely to be controlled by frequent environmental disinfection in food factories, was also much reduced in 2020. The figures for other pathogen recalls, e.g. Salmonella, which is more associated with contaminated raw materials, however, has not shown a reduction. This position is not unique to the UK and other countries have also shown a reduction in pathogen incidence in the community including Finland and Australia.

<https://www.foodsafetynews.com/2020/06/australia-sees-decline-in-campylobacter-and-salmonella/>

<https://www.foodsafetynews.com/2020/06/decline-in-foodborne-outbreaks-likely-due-to-covid-19-measures/>



The reasons for the reduction in cases of gastrointestinal illness in the population is complex. Perhaps not as many cases of illness have been reported due to difficulty in accessing GPs (and therefore fewer stool tests), or people are not eating outside the home in restaurants so much, or the diet of people spending more time at home has changed?

There may also be changes in the food factory or the manufacturing procedures that might enhance food hygiene. For example, reduced food product volumes, fewer product SKUs, fewer staff, more use of gloves, longer hygiene windows to enable enhanced cleaning. Equally the opposite may be true, with food manufacturers increasing production, particularly at the start of the pandemic, with an increased pressure on maintaining hygiene windows.

It would be very useful, therefore, for both individual food manufacturers and the industry at large, to try and gain evidence from food industry data to see if this major change in food hygiene practices has had additional benefits to food safety or personal health.

How can such evidence be gathered?

Firstly, three key criteria are required: -

1. The factory must have used more hand hygiene products and undertaken enhanced environmental disinfection during production periods. This could be evidenced by: -
 - a. Hand hygiene product and disinfectant usage figures
 - b. Holchem help in developing CICs for environmental disinfection of operative's contact points or additional hand hygiene facilities.
2. The factory has been producing the same product range, using the same manufacturing process, with the same number of staff, for several years. This may allow the comparison of data recorded in 2020 with that of 2019 and perhaps 2018 (or longer).
3. There are no, or few, other factors involved that could account for differences in food product or environmental microbiological populations

What sectors of the food industry might benefit most?

The food manufacturers who are most likely to benefit from enhanced product food safety are those in the RTE sector, and in particular, those that produce food products for which food handling is a key part of the manufacturing process.

All the food industry may benefit from reduced absenteeism.

What information is needed?

- Evidence for compliance with the above three key criteria.
- Microbiological data - primarily beginning of life and end of life figures, generic microbial levels (e.g. TVC), pathogen incidence likely to be associated with cross-contamination from hands (e.g. *S. aureus*) or the environment (e.g. *Listeria*).
- Environmental microbiological data - generic microbial levels (e.g. TVC) and pathogen incidence (e.g. *Listeria*) as appropriate.
- Complaints data (if this is likely to show micro issues).
- Absenteeism data from HR.
- Ideally the data should be from the start of lockdown in March through to the current month (e.g. November at the time of writing) for 2020 and 2019 (and ideally 2018 if possible).

- If required, Holchem can offer to analyse this data, e.g. via regional or national Technical Support services

Overall goal of the work

If individual food manufacturers, or the industry at large, could show that a small change in hygiene practices influence product quality/safety and personal health then this both: -

- reiterates the need for good hand hygiene and cleaning and disinfection practices and
- establishes what best practice looks like for product quality and safety related to the influence of food operatives' personal practices and cleaning programme design,

Holchem is happy to collate anonymous data from our customers or other food manufacturers to provide an industry overview on this subject or work with other interested parties.

