

Confirmation of the microbiological hygiene of cotton towel dispensers

The Hjelt Institute would like to confirm the microbiological safety and hygiene of cotton towel systems (towel dispenser and cotton towels) for hand drying, following examination and evaluation¹.

Test results

Following a study of the microbiological hygiene of cotton towel dispensers and the towels they contain, the following results are confirmed:

1. There was no multiplication of microbes on cotton towels
 - Microbes survived for a limited period, but did not multiply on cotton towels
2. Microbes from a used portion of cotton towel did not transfer to the rest of the cotton roll
 - The cotton towel did not act as a vector for microbes from the artificially contaminated area to the unused area in either dry or moist conditions.
3. No microbes transferred from the used cotton towel to the dispenser holding it
 - Microbes did not survive on the dispenser surfaces and there was no transfer from the cotton towel to the dispenser

Test methodology

Testing for the multiplication of microbes was carried out in two phases, following the European standard EN-ISO 11737-1 on sterilisation of medical devices, for the number and type of microbes:

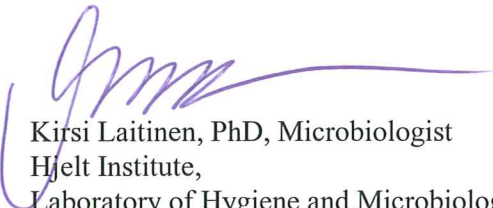
- First, the number and type ('bioburden') of microbes on a clean cotton towel were measured. The standard requires a maximum of 300 cfu per 100 cm²: these test results showed an average of 51.3 cfu per 100 cm² (cfu=colony forming unit).
- Second, clean cotton towels were artificially contaminated with five different types of microbes and then tested in two-hourly intervals. The microbes used were: Staphylococcus aureus; Escherichia coli; Pseudomonas aeruginosa; Enterococcus faecalis and Candida albicans.

In addition:

- Testing for the transfer of microbes from a used portion of a cotton towel to an unused portion was carried out under different conditions. The same microbe strains were used.
- Testing for the possible microbial contamination of different parts of the towel dispenser was carried out with the cotton towel contaminated with artificially soiled hands.

Conclusion

It can be concluded that microbes do not transfer from a used to an unused portion of the cotton towel, nor to the dispenser containing them. When each user receives an individual dry portion of towel, it is hygienically clean. Cotton towels therefore fully meet the requirements of the European standard EN 11737-1.



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¹ Study carried out for ETSA by Kirsi Laitinen, PhD, microbiologist of the Hjelt Institute, Laboratory of Hygiene and Microbiology, University of Helsinki in 2012