

MICROBIOLOGICAL ANALYSIS OF SURFACES AND BIOFILMS

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Nowadays, the analysis and control of surfaces plays an essential role in food safety. Increasingly, microbiological problems, and especially food crises, are related to food contamination from processing errors. Problems related to *Salmonella*, *Listeria monocytogenes*, *Escherichia coli*, or even *Campylobacter*, have a transmission from surfaces. Moreover, loss of food batches is more frequent due to contamination by spoilage microorganisms, such as *Pseudomonas* or any of the lactic acid bacteria species.

Therefore, it is very important to implement appropriate measures to:

- Detect contaminated areas on the surface, using detectors, which will reveal the actual critical control points of the installation.
- Know the actual contamination of critical control points, through direct analysis, such as the installation and analysis of surface sensors.
- Use of rapid methods, such as epifluorescence microscopy, real-time PCR, detection using techniques without pre-incubation.
- Determination of the formation of biofilms, and microbial composition.
- Detection of the chemical components of the biofilm, to design specific cleaning products, that guarantee the efficiency of the sanitization process.

With all these methods, it would be possible to assure a solution of the detected issues. Moreover, as preventive action, it may be possible to fix the microbiological sampling procedures to know the safety level and the acceptable risk level.