Accredited sampling according to ISO 18593: tool for *Listeria monocytogenes* management in the food chain environment

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INTRODUCTION

Food safety criteria for **LISTERIA MONOCYTOGENES IN READY-TO-EAT (RTE)** foods have been applied since 2006 (Commission Regulation (EC) 2073/2005). There is increasing focus on L. monocytogenes as a problem, as the number of cases of listeriosis has not decreased. **Regulation (EC) No. 2073/2005 on *Listeria monocytogenes* new update for RTE is scheduled to enter into force in 2026.** The main objective of this initiative is to protect the health of consumers and to facilitate official controls carried out by the competent authorities of EU countries. So, it can be said, that the **CONCERN ABOUT THE CURRENT SITUATION IS HIGH. ENVIRONMENTAL** samples are part of the producer's internal control and risk assessment program for maintaining good hygiene and food safety in production. Procedures and equipment for **SAMPLING**, as well as handling of the samples prior to analysis can **HAVE** an **IMPACT ON THE RESULT**.

METHODS

Accredited testing laboratories play a key part in the food safety chain, providing competent and independent testing of samples. The test results are later used as proof of food safety, but their reliability beyond the analysed sample are however not always given much more consideration. Accredited analyses are no longer a novelty, **ACCREDITED ENVIRONMENTAL SAMPLING** is an uncommon service on the market. **ISO 18593** contains guidelines for how this process should be carried out in the order to obtain representative samples and how to maintain their integrity, but this is a challenging process.

RESULTS

Customers usually tend to **FOCUS ON INFORMATION ABOUT THE PRESENCE OR ABSENCE OF THE TARGET ORGANISM** - in this case *Listeria monocytogenes* - **BUT LESS ON INFORMATION ABOUT THE ACTUAL SAMPLES** that the analytical result is supposed to describe. The evaluation of risk is thus based on the results alone. However, some extra uncertainty – and sometimes sufficiently significant in relation to the uncertainty in analysis – arise from the sampling itself. From this point of view, sampling is just as crucial as appropriate analysis, so it could be a fair assumption that **ACCREDITED SAMPLING WILL PROVIDE EVEN MORE RELIABLE RESULTS**. Two key requirements to obtain a sample that is both: (1) sufficiently close to being representative of the object and (2) to have it collected by a competent sampler who is aware of the purpose and requirements of the sampling. ISO 17025 specifies the statements that are required of the sampling report in order to maintain the traceability of samples and procedures: (a) a sampling plan; (b) a sampling method (ISO18593); (c) a description of the records required; (d) details of the handling of sampling equipment; (e) the validation of processes; (f) the sample handling and (g) the training of samplers. Thus, resulting in an **INDEPENDENT RESULT THAT MINIMIZES THE UNCERTAINTY AND INCREASE RELIABILITY**.

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Ordre: Miljøprøve

Date: 29/08/24
Lab.no: 24/4978
Arkive: 948438
Samples recei.: 27/08/24

RESULTS

Periode: 27/08/24 - 29/08/24 Sampling procedure: Simple Sampler: The customer

24/4978-1	Environment test Miljøprøve	Sampling:: 23/08/24 RB38	

Analysis	Method	Ref	Result	Unit
Listeria mono. PCR (svab/klut)	AFNOR UNI03/08-11/13		**Not Detected**	

Torbjørn Midtun
Quality Manager

Justa Sirvaityte
Laboratory Manager

Digitally signed

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When the customer is responsible for sampling, the results relate to the samples in the condition they are received. The results relate only to the analysed samples. Copying of the report shall reproduce the entire report, copying of excerpts where our logo or signature are used shall be approved in writing by the laboratory. Individual results may otherwise be used by referring to this report. The measurement uncertainty is available by contacting the laboratory.

DATE: 18.04.2024
Lab-ID: 24/1844
Archive:3299

EXAMPLE

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REPORT

Sampling from surfaces in the food chain enviroment carried out according to ISO 18593

Customer:
Sampling location:
Sampling date: 15.04.2024
Responsible sampler:
Sampling plan reference document ID: Customers sampling, plan version 6.03
Sampling equipment :
Thermologger No.:
Thermologger data document ID:
Analysis provider and report ID.: Alex Stewart International Norge AS dept. SLab (TEST 187)/241844

Results Section

Sample receipt: 15.04.2024 Analysis start: 16.05.2024

24/1844-1	**Surface sampling (ISO 18593) swab sample**	Time:	16:00
	Reference: Fillet machine no 2 (FM002)	Marking: Stainless steel surface	

Analysis	Method	Result
Listeria monocytogenes, swab	NordVal 22	**Not detected**
Listeria spp., swab	NordVal 22	**Not detected**

Remarks: Sampling has been carried out at end of production, before cleaning.

Responsible sampler

Sampler name

Sampling manager

Results are valid only for the samples in the report and are representative for the time and location of the sampling. The report can only be split with the permission of the laboratory. Information regarding uncertainty in measurement is avaliable upon request. If sampling has been carried out by the customer, the accreditation is valid only for the condition of the samples upon receipt.

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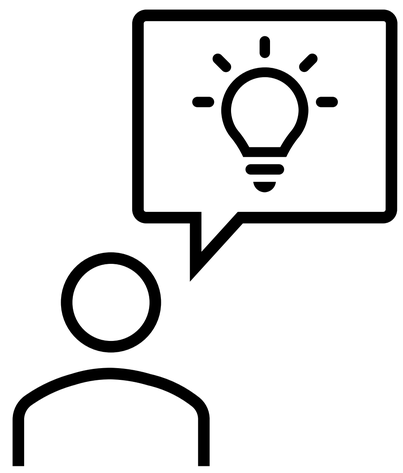

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DISCUSSIONS

ACCREDITED SAMPLING OFFERS AN INVALUABLE ADDITIONAL APPROACH TO ENSURE THE QUALITY OF MEASUREMENTS. It is often used for chemical parameters and almost never on microbiological ones. Why? Most likely because sampling is a daily routine in the production and the spread in the microbiological results are larger.

We believe accredited sampling can be an important tool in ensuring appropriate quality in sampling, and hence in results.