

Poster Abstracts

Risk Analysis

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MICROBIAL TESTING IN FOOD SAFETY: EFFECT OF SPECIFICITY AND SENSITIVITY ON SAMPLING PLANS - HOW DOES THE OC CURVE MOVE -

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Abstract Content: Management of microbiological food safety is largely based on good design of processes, products and procedures by means of Good Manufacturing Practices and Hazard Analysis Critical Control Points. Testing of the environment, intermediate and finished product may be considered as a supportive measures within these procedures. However, testing gives only very limited information on the safety status of a food. Generally pathogens are present in food environments and products at low or very low prevalence, and non-homogeneously. Therefore, when taking a sample, there is only a low probability that a pathogen is detected, even if it is present in the batch of food.

Apart for this low level, the inhomogeneity, and the binomial effect in the taking of multiple samples, there is an additional factor that should be taken into consideration, which is the performance of the test methods. Microbiological methods are never perfect and tests can result in correct answers, but also in false positives and false negatives. In this investigation the effect of the performance of the testing method is evaluated on the detection probability and the Operating Characteristic (OC) curve of sampling plans. A lower sensitivity of the method moves the OC curve to the right (lower rejection), and a lower specificity moves the OC curve to the left (lower acceptance). Especially the effect of the specificity of the testing method has a very large effect on the performance of a sampling plan, in particular when sampling plans had higher numbers of samples.

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