Effect of Processing Technologies to Control Viruses in Foods

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Traditionally, processing technologies rely on the control of bacterial contaminants as a measure of their effectiveness. However, some of these control measures may not be directly applicable to viruses, since “growth” is not a concern whereas “survival” or maintaining infectivity is key. In addition, as the food industry moves towards milder thermal processes and the use of non-thermal technologies, the likelihood of viruses surviving such treatments increases. Therefore, validations of control strategies need documented scientific evidence to demonstrate effectiveness of control measures for reducing or eliminating viruses from foods. This presentation will gather information from the recent literature on the efficacy of various food attributes and processing technologies to inactivate enteric viruses in different matrices. It will emphasize and discuss the factors which hamper validation approaches, such as the difficulty in cultivating enteric viruses, the progress made with the replication assay developed for certain human NoV strains, the lack of representative non-pathogenic surrogates which can be detected and quantified with simple rapid methods. Hence, the need for the development of a standardized method for evaluating viral decontamination efficiency in foods and future research activities to develop such guidance will be discussed.

Biography

Dr Sophie Zuber works as R&D Food Safety Microbiologist and Virus Issue Manager at Nestlé Research, based in Lausanne, Switzerland. She received her PhD in microbiology from the Department of Genetics, University of Melbourne, AU. In her current position, her principal responsibilities include providing scientific advice and guidance on possible risks of viruses in the food chain. She leads a work program to control and manage the virus risk within Nestlé and shapes the Nestlé strategy regarding issues and opportunities related to viruses. In this context Dr Zuber has published peer-reviewed publications on the monitoring of foodborne viruses in the food chain, the importance of virus risk mitigation at farm level and the effects of thermal and alternative treatments used in food processing on viral and bacterial pathogens and surrogates.