VALIDATION OF INNOVATIVE METHODS FOR HUMAN PATHOGEN BACTERIA DETECTION IN FRESH CUT VEGETABLES

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In the framework of the QUAFETY FP7 – EU project innovative diagnostic methods have been developed for the detection and quantification of *Listeria monocytogenes* and *Escherichia coli* O157:H7 in minimally processed fresh cut fruits and vegetables. The aim of the present study was to validate the technical efficiency of these methods and evaluate their efficacy and viability for routine analysis. For this purpose, ready-to-eat fresh fruits and vegetables, have been collected throughout the production chain. More accurately, a total of 48 samples of rocket, mixed salad and *piel de sapo* melon have been provided by Italian, Portuguese and Greek SMEs. A multidisciplinary approach, including newly developed ELISA and MPN-qPCR methods as well as ISO procedures have been used to detect the pathogenic bacteria after harvesting, processing, packaging and shelf-life.

Results obtained exhibited the technical efficiency of the developed methods. More accurately, both methods had similar sensitivity, specificity, negative predictive values and negative likelihood ratios. False positive results obtained by the ELISA method resulted in the reduction of positive predictive values. Regarding their efficacy and viability for routine analysis it is mostly dependent upon available equipment and technical expertise.