Evaluation of the safety and efficacy of Listex™ P100 for reduction of pathogens on different ready-to-eat (RTE) food products

EFSA Panel on Biological Hazards (BIOHAZ)

Abstract

Studies evaluating the safety and efficacy of Listex™ P100 during processing of three ready-to-eat (RTE) product categories (meat and poultry, fish and shellfish, and dairy products) were assessed. Treatments consisted of application of up to $1 \times 10^9$ plaque forming units (PFU) of P100 per cm$^2$ of product. No food safety concerns are foreseen concerning the use of Listex™ P100 during processing of these foods. Reduction of Listeria monocytogenes in artificially inoculated samples of the three RTE food categories was demonstrated both after treatment and during storage. Reduction depends on the P100 dose applied with a best estimate for the mean ranging from 1.7 to 3.4 log$_{10}$ colony forming units (CFU) at the maximum dose. As the P100 dose is reduced tenfold, the magnitude of reduction would be decreased by about 0.5 log$_{10}$ units. In naturally contaminated foods, P100 is expected to reduce the proportion of RTE food units containing $> 100$ CFU/g of L. monocytogenes at the end of shelf-life. Predictions of the magnitude of the efficacy of Listex™ P100 in reducing L. monocytogenes contamination of RTE foods in specific processing plants are highly uncertain. Experimental studies indicate that a proportion of naturally occurring Listeria strains exhibit resistance to P100. Furthermore, P100-resistant variants might be selected as a consequence of its use in industrial settings but cleaning and disinfection of the areas where P100 is used, together with proper use of P100 and disposal of unsold treated products would eliminate or minimise this risk. Experiments have shown that P100 resistance can be accompanied by changes in the spectrum of resistance to certain therapeutic antimicrobials. The likelihood of persistence of P100 in the environment is low. Validation of the efficacy of P100 applied in specific processing plants and monitoring of the susceptibility of L. monocytogenes strains isolated from processing plants to Listex™ P100 is recommended.

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