

Title Pre-and post-package thermal processing  
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### Abstract

In the past 2 decades, much has been learned about *Listeria monocytogenes* as a foodborne pathogen including its many virulence factors, transfer vehicles, sources of contamination, and diagnostic methods for detection and differentiation. It has persisted as a common and significant pathogen contaminating environmental surfaces in facilities manufacturing ready-to-eat (RTE) meat and poultry products in spite of the implementation of HACCP since 1998. The USDA-FSIS has since responded to the challenge by providing greater incentives for 'pathogen reduction' in regard to both post-process (post-cook) lethality steps that demonstrate significant reductions in *Listeria* as well as antimicrobial ingredients that either eliminate or control *Listeria*. In recent directives (10, 240.3, Dec., 2002) and final rules (June 6, 2003), provisions were stated that could reduce a high/medium risk product category (i.e., hotdogs, RTE deli meats) to low risk or various Alternatives (i.e., I, II, III) that could lead to reduced product testing if validated pathogen reduction and control measures were implemented. New initiatives to address pathogen reduction have been investigated by researchers, responding to these industry incentives. One area that has garnered considerable interest is in post-process surface pasteurization of RTE meat and poultry products. Many RTE products have considerable exposure to environmental conditions after removal from cook-in bags either for further processing (smoke flavor processing) or transfer into retail packaging bags. While exposed, products can acquire incidental contamination from racks and trays, workers' hands, food contact surfaces, and/or aerosols. Additional thermal processing immediately prior to (pre-package pasteurization) or after (post-package pasteurization) final packaging can reduce/eliminate surface pathogens with as little as 1-3 min of processing time and significantly reduce risk to consumers. These processes are now being implemented as effective pathogen reduction alternatives in the fight against foodborne pathogen contamination of RTE meat and poultry products.