RISK MANAGEMENT OF READY-TO-EAT MEAT PRODUCTS CONTAMINATED WITH *LISTERIA MONOCYTOGENES*

Figen Korel
Izmir Institute of Technology, Urla, Izmir, Turkey

Nowadays, the modern life style relies heavily on the availability, quality, and safety of ready-to-eat (RTE) food products. The quality of the raw material, handling, processing, transportation and storage are the important factors influencing the microbial quality of the finished product. The mostly consumed RTE meat products are hamburgers, frankfurters, hot dogs, dry/semi-dry fermented sausages, salami, and deli meats. Several pathogens could be found on RTE meat products, including *Escherichia coli* O157:H7, *Salmonella*, *Listeria monocytogenes,* and *Staphylococcus aureus*. Vegetative pathogens are destroyed during thorough cooking and processing of these products. Contamination during post-processing in the plant, and further contamination and improper handling during storage, at retail or in home cause microbial growth. Pathogens can multiply under inappropriate conditions causing foodborne diseases and outbreaks.

One of the important pathogens found on RTE meat products posing a public health risk is *Listeria monocytogenes*. This pathogen results in about 2500 cases of listeriosis annually in U.S. and of these cases, 500 people die. Those at great risk of listeriosis are the elderly, those with suppressed or compromised immune systems, pregnant women and infants. This pathogen grows at low oxygen conditions and refrigeration temperatures. It also survives long period of time in processing plant environments, on foods, and in household refrigerators. To protect public against *L. monocytogenes,* food safety management strategies must be established especially in RTE meats. The author identified and characterized the hazard and developed the dose-response curves. Exposure assessment was made and the risk was characterized based on the individual RTE meat product. It was found that not reheated deli-meats and frankfurters were relatively often contaminated with *L. monocytogenes*, and the potential for rapid microbial growth to high levels. These products were stored for longer period of time

and had relatively high consumption rates. Dry/semi-dry fermented sausages and frankfurters (reheated) had moderate risk since these products included a bactericidal step or inhibitors. Immediate risk management action is needed to be taken for products having very high and moderate risks. New control strategies and consumer education programs should be developed. Food control measures including reformulating foods to have antimicrobials to prevent/retard growth of *L. monocytogenes* to high numbers, post packaging listericidal treatments, reduction of shelf life, or use of competitive flora to reduce the growth of *L. monocytogenes* should be taken into account. Good hygiene practices, good manufacturing practices and hazard analysis critical control point systems should be implemented to reduce the risks associated with *L. monocytogenes* in RTE meat products.