

Title:

Slicing at retail as source of cross-contamination of ready-to-eat meat products with *Listeria monocytogenes*

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Abstract:

Listeria monocytogenes is a pathogen of major public health significance, and it constitutes an important concern for the food industry and the consumers of ready-to-eat foods. Meat products are subject to recontamination after manufacturing due to cross-contamination during procedures performed outside the industrial environment, such as slicing in food services at retail. The cross-contamination becomes even more important in ready-to-eat foods, because there is no pathogen elimination step before consumption. The aim of this work was to study the transfer of *Listeria monocytogenes* (cross-contamination) during slicing of cooked ham, to be used in the development of a cross-contamination predictive model. The experiments were carried out with pieces of cooked ham purchased in supermarkets and checked for absence of *Listeria monocytogenes* using ISO 11290-2:1998 method. Initially, a meat matrix was created in a manual meat slicer by slicing a *L. monocytogenes*-negative piece of cooked ham. Another piece of cooked ham was experimentally contaminated by immersion for 30 min in two different suspensions containing *L. monocytogenes*, 6 log CFU/ml (high contamination/first trial) and 4 log CFU/ml (medium contamination/ second trial) and sliced, causing the experimental contamination of the slicer. Subsequently, new pieces of non-contaminated ham were sliced, until 190 slices were obtained. The extent of pathogen transfer (cross-contamination) was determined counting *L. monocytogenes* in all slices in the first ten sequential slices and then in every 5th/10th slice in both trials. Counts of *L. monocytogenes* in first cross-contaminated slice were 4 log CFU/g in the first slices of the both trial, after the 15th slice the counts decreased gradually with counts around 2-1 log CFU/g. A long tailing effect was observed until the 190th slice. The contaminated food products can transfer *Listeria monocytogenes* to the slicer and then to other products during slicing. So these results confirm that slicing at retail level is an important source of cross-contamination of ready-to-eat meat products. These data will be useful for the development of cross-contamination predictive models.

Key-Words: *Listeria monocytogenes*, cross-contamination, meat products and ready-to-eat foods

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