

## **Post-package pasteurization of RTE deli meats by submersion heating for reduction of *Listeria monocytogenes***

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*Listeria monocytogenes* is an important foodborne pathogen that is often present in meat processing environments despite extensive efforts to eliminate them. This is even more significant for the processed meat industry where no further cooking is required for consumption. In the interests of food safety, processors should consider possible microbial interventions, including additional processing hurdles to insure product safety. One such hurdle may be post-package pasteurization as a means of reducing surface pathogen contamination that may occur during packaging.

The objectives were to evaluate time and temperature parameters for reduction of *L. monocytogenes* inoculated onto various ready-to-eat deli meats. Various considerations such as final purge volume and inoculation method were important in proper evaluation of the process.

A mixed strain “cocktail” of 4 *L. monocytogenes* strains was added to a variety of RTE meat products at final concentrations of approximately  $10^7$  CFU/ml in natural product purge. All products were vacuum sealed in shrink-wrap packaging bags, massaged to insure inoculum distribution, held at refrigeration temperature for ~1hr, and then submerged into a steam-injected water bath at various temperatures between 190°-210°F and for 2 to 10 minutes. All products were run in paired samplings in either a duplicate or triplicate testing regimen.

On various *L. monocytogenes*-inoculated RTE deli meats (turkeys, hams, roasts), 2-4 log cycle reductions were achieved when processed at either 195°F, 200°F, or 205°F when heated for 2 to 10 minutes. High-level inoculation with *L. monocytogenes* ( $\sim 10^7$  CFU/ml) ensured that cells infiltrated the least processed areas.

The current data indicates that minimal heating regimens of 2 minutes, at 195°F can readily provide 2-log reductions in all RTE deli meats we processed. Obviously, greater time and temperatures provide greater reductions. This process may be an effective microbial intervention against *L. monocytogenes* on RTE meats.

Keywords: Meat, pasteurization, *Listeria*, ready-to-eat, contamination