RESEARCH ABSTRACT

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PORK SAFETY

Title: Post-Process Pasteurization of Packaged, Ready-to-Eat products for Control of *Listeria monocytogenes*- **NPB# 01-110**

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Abstract

The efficacy of a saturated steam-based post-process pasteurization system to reduce/eliminate *L. monocytogenes* on frankfurters and restructured hams was evaluated. Frankfurters were packaged in a single layer format (4 per package), rinsed with lactic acid (2 or 4%) and pasteurized to end point surface temperatures of 160, 170 and 180°F. In addition, frankfurters were individually packaged and treated with lactic acid (2 or 4%), vacuum packaged and pasteurized to end-point surface temperatures of 160, 170 and 180°F. Similarly, restructured hams (half hams) were treated with lactic acid (2 or 4%), vacuum packaged and pasteurized for 2 or 4 min.

Pasteurization of inoculated single layer franks to target surface end point temperatures of 160, 170 and 180 °F resulted in *L. monocytogenes* reductions ($p \leq 0.05$) of 0.92, 1.44 and 2.89 log CFU/frank, respectively. Treatment of the franks with lactic acid at either 2 or 4% did not result in greater ($p > 0.05$) *L. monocytogenes* reductions. Greater reductions in *L. monocytogenes* reductions were observed when the frankfurters were individually packaged, with 2.33, 4.63 and 6.52 log CFU/Frank reductions at target surface end point temperatures of 160, 170 and 180 °F. Pasteurization of hams (half) for 2 and 4 min resulted in *L. monocytogenes* reductions ($p \leq 0.05$) of 2.03 and 4.14 log CFU/Sq. Cm., respectively. Lactic acid treatment at either 2 or 4 % did not result in greater ($p > 0.05$) *L. monocytogenes* reductions. Surface pasteurization of frankfurters resulted in minimal, but statistically significant increases ($p \leq 0.05$) in surface hardness values and lower L* values compared to the nontreated controls. However, the a* and b* values were not affected by heat treatments. Pasteurization of hams did not result in changes ($p > 0.05$) in the color values (L*, a* and b*) of the ham surfaces.

Post process pasteurization of frankfurters (in-package) and hams using saturated steam based Stork-RMS Protecon system is effective in reducing the risk of *L. monocytogenes*