

## PORK SAFETY

**Title:** Development of appropriate intervention methods to reduce the occurrence of pathogenic bacteria on Country-cured hams -**NPB # 01-143**

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**Abstract**

The purpose of this research was to evaluate the characteristics of market-ready country-cured ham products related to product safety and to identify potential intervention methods for use against possible food borne pathogens, specifically *Listeria monocytogenes*. To accomplish these objectives, a market basket survey was conducted of country-cured products available at retail followed by inoculation of country ham center slices with *L. monocytogenes* subjected to various chemical and mechanical intervention methods. Market basket results provides the following characterization of country-cured ham products; water activity averaged .88, salt content 6.5%, pH 6.1, and moisture/protein ratio was 0.96. Preliminary data indicated that two chemical methods (Nisin and Liquid Smoke) and one mechanical methods (steam) were most promising and had the greatest potential synergism. The second experiment focused on reduction of *L. monocytogenes* on inoculated center cut slices. Samples treated with Nisin had the greatest population reductions ( $P<.05$ ) versus both types of liquid smoke application. In addition, the application of steam in conjunction with chemical methods decreased ( $P<.05$ ) populations by last least two-fold. The most effective combination in reducing *L. monocytogenes* populations was the use of steam and nisin at a level of 10 times the minimum inhibitory concentration (20ug/ml). These data indicate that steam (10 seconds) and nisin when used in combination can act as an effective intervention method for country-cured ham center slices.

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