

PORK SAFETY

Title: Efficacy of ultrasonic technology to reduce pathogens associated with fresh and ready-to-eat pork products - **NPB #07-195**

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Scientific Abstract:

The objectives of the study were to apply ultrasound technology to reduce microbial loads, enhance product quality, and extend shelf life of fresh and ready-to-eat pork products and to determine consumer acceptability of ultrasound-treated pork products and feasibility of using the technology in commercial pork processing operations. After a series of experiments with contact ultrasound demonstrated significant reductions in pathogens when suspended in buffers, experiments were performed with experimentally inoculated and vacuum packaged chops and ham slices. For these experiments, several different contact and non-contact ultrasound systems were identified, constructed, and/or evaluated. Despite observations of cavitation (bubble formation) and surface changes (whitening) to the fresh pork surfaces, it does not appear that either contact or non-contact ultrasound can penetrate the 2 mil vacuum packaging materials and reduce pathogens (*L. monocytogenes* and *S. Typhimurium*) associated with the surface of the ham steaks or pork chops. As such, other non-thermal technologies should be considered for reducing pathogens associated with fresh or further processed, vacuum packaged pork products.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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