

## PORK SAFETY

**Title:** Impact of organic acids and Quaternary Ammonium Compounds on *Salmonella* serovars with SGI1- mediated multi-antibiotic resistance - **NPB # 07-200**

**Investigator:** Mark Harrison

**Institution:** University of Georgia (Athens)

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### Scientific Abstract

Multidrug-resistant (MDR) *Salmonella* emerged early in the 1980s in the United Kingdom, and since then several infections and outbreaks have been reported worldwide.

In this study, six MDR *Salmonella* and two non-MDR *Salmonella* were evaluated against organic acids, quaternary ammonium compounds, possible organic acid cross-protection to subsequent treatment with quaternary ammonium compounds, and survival of biofilm cells after quaternary ammonium compounds treatments.

According to the findings of this study, acid adapted bacteria survived better than non-adapted bacteria when challenged with 2% of either acid at pH 3.5. Lactic acid was more effective than acetic acid after 4 h of exposure. Pre-adjustment with organic acids did not confer cross-protection against further treatments with quaternary ammonium compounds. There was no significant difference ( $p > 0.05$ ) in response between MDR and non MDR-*Salmonella* that were planktonic or in biofilms quaternary ammonium treatments.

Key words: Multidrug resistant *Salmonella*, quaternary ammonium compounds, organic acids, cross-protection

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For more information contact:

National Pork Board • PO Box 9114 • Des Moines, IA 50306 USA • 800-456-7675 • Fax: 515-223-2646 • [pork.org](http://pork.org)

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