

PORK SAFETY

Title: On-farm antimicrobial use and patterns of antimicrobial resistance of *Salmonella* isolates collected on farms and at slaughter plants.
NPB #98-222

Investigator: Craig Altier, D.V.M., Ph.D.

Institution: North Carolina State University

Co-Investigators: W.E. Morgan Morrow BVSc, MS, PhD, Wondwossen Gebreyes, DVM, Maria Correa, PhD

Date Received: 5/5/2000

Abstract

Salmonella is an important foodborne pathogen that can exhibit resistance to multiple antimicrobial agents. We evaluated antimicrobial resistance in 370 *Salmonella* isolates obtained from pigs at 5 farms and 486 isolates from these pigs after commercial slaughter. Samples of feces from defined groups of finishing pigs on commercial farms, and cecal and mesenteric lymph node samples from the same groups of pigs after slaughter were cultured for *Salmonella* and tested for resistance to a panel of 11 antimicrobials. We found that the prevalence of antimicrobial resistance varied among serotypes, the most striking example being the occurrence of multiple resistance in 94% of isolates of *S. typhimurium*, compared with 11% of isolates of all other serotypes. Concordance between *Salmonella* serotypes from on-farm samples and those serotypes isolated after slaughter varied widely among farms, suggesting that risk of exposure to *Salmonella* during transport and lairage remains a concern under contemporary industry conditions. Slaughter plant studies based on bacterial culture do not provide a reliable index of the *Salmonella* status of commercial swine farms nor their associated patterns of antimicrobial resistance.

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 This report has not been peer reviewed

For more information contact:

National Pork Board, P.O. Box 9114, Des Moines, Iowa USA

800-456-7675, Fax: 515-223-2646, E-Mail: porkboard@porkboard.org, Web: <http://www.porkboard.org/>