

PORK SAFETY

Title: Evaluation of Antemortem Salmonella Detection Procedures in Market Weight Swine – **NPB# 00-098**

Investigator: James D. McKean

Institution: Iowa State University

Date Received: 8/30/2001

Abstract:

The objective of this study was to compare fecal culture, meat juice ELISA, and culture of abattoir collected tissues for their ability to accurately estimate the on-farm prevalence of *Salmonella enterica* in market swine. Six conventional commercial herds, depopulated in the Accelerated Pseudorabies Eradication Program (APEP) were used. One-half of study pigs (50) were necropsied on-farm; the other half (50) at a commercial abattoir. The true farm prevalence (TFP), based on the summation of positive cultures from ileocecal lymph nodes, cecal contents, or fecal samples was estimated at 5.3%. This estimate was higher than any provided by a single sample type cultured. The seroprevalence (meat juice ELISA) was estimated at 20% using a cutoff of OD% > 40. Swine were transported directly to the abattoir in disinfected trucks. They were allowed to reside in the antemortem pens for an average of 2.5 hours (1.5 to 3.5 hrs) before harvest. The tissues sampled were the same as on-farm. Prevalence estimates from abattoir collected samples were significantly higher than TFP; 39.9% of pigs were culture positive. Three *Salmonella enterica* serotypes were identified on-farm. These and an additional 14 serotypes were found in abattoir collected samples. This study shows that a single round of fecal collections will underestimate the true *Salmonella* status of a herd and that samples collected at the abattoir will overestimate the on-farm prevalence. It also demonstrates a significant rise in prevalence and serotype distribution between the production site and abattoir. Antemortem holding pens are considered a significant risk factor for this rise in prevalence.

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 This report has not been peer reviewed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/>