

Title: *Determination of the Diagnostic Sensitivity and Specificity of a Reference Method for Salmonella sp. Detection in Swine Fecal Samples of Known Infection Status - NPB Project #05-053*

Investigator: Dr. Brenda C. Love

Institution: Pennsylvania State University

Co- Investigator: Dr. Marcos H. Rostagno, USDA/ARS

Abstract:

This project was conducted in order to evaluate five commonly used culture methods (Methods 1, 2, 3, 4, and 5) for recovery of *Salmonella* species from swine feces, both for sensitivity of detection (ability to recover *Salmonella* from a positive sample), and for specificity (not to inadvertently identify an organism as *Salmonella* species in a negative sample). While these five methods have some overlap in terms of media used, there are different combinations of pre-enrichment media and growth media used. Fifty four negative samples and forty eight positive samples were processed using each of the five methods. All negative samples were negative for *Salmonella* species when cultured by all five methods (100% specificity). Two of the methods (Methods 1 and 4) resulted in the recovery of significantly less ($P < 0.05$) *Salmonella* species when compared to the remaining three methods (Methods 2, 3, and 5). No one method was successful in recovering *Salmonella* species from all positive samples, although recovery with Method 2 was statistically similar to the total number of positive samples analyzed (44 versus 48 *Salmonella*-positive samples, $P > 0.05$).

All of the fecal samples in this study were cultured in one laboratory. It is documented that inter-laboratory variability exists, so that when samples are divided and processed by more than one laboratory, different results are achieved. The results of this study can be used as baseline values for analysis of these methods when used in different laboratories, or when analyzing different culture methods for recovering *Salmonella* from naturally contaminated swine fecal samples.

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 This report has not been peer reviewed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/>