

Title: An analysis of primary research and meta-analysis to investigate temporal changes in serotypes of Salmonella in US-based pigs and pork products - **NPB #15-070**

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Scientific Abstract:

As Salmonella enterica is an important pathogen of food animals, surveillance programs for S. enterica serovars have existed for many years in the United States. Surveillance programs serve many purposes, one of which is to evaluate alterations in the prevalence of serovars that may signal changes in the ecology of the target organism. The primary aim of this study was to evaluate changes in the proportion of S. enterica serovars isolated from swine over a 20-year observation period using four longitudinal datasets from different food animal species. The secondary aim was to evaluate correlations between changes in S. enterica serovars frequently recovered from food animals and changes in S. enterica serovars associated with disease in humans. We found decreasing proportions of S. enterica serovar Typhimurium, serovar Derby, and serovar Heidelberg and increasing proportions of S. enterica serovar 4,[5],12:i:-, serovar Infantis, and serovar Johannesburg in swine over time. We also found positive correlations for the yearly changes in S. enterica serovar 4,[5],12:i:-, serovar Anatum, and serovar Johannesburg between swine and human data; in S. enterica Worthington between avian and human data; and in S. enterica serovar 4,[5],12:i:- between bovine and human data. We found negative correlations for the yearly changes in S. enterica serovar 4,[5],12:i:- and serovar Johannesburg between avian and human data.

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 This report has not been peer-reviewed.

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