RESEARCH ABSTRACT

PORK SAFETY

Title: Quantization of Salmonella in transport and lairage to assess interventions for reduction of cross-contamination in pigs. - **NPB #06-086**

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Scientific Abstract:

Salmonella cross-contamination in pigs during transport and lairage has been shown to increase levels of *Salmonella* in tissues at slaughter. The objective of this study was to determine if a qPCR, recently developed in our laboratory, could be used to rapidly determine the amount of *Salmonella* present in lairage areas. Primer set StnF2, Stn-111 was tested for specificity with eight genera of *Enterobacteriaceae* and 19 *Salmonella* isolates. The primer set was specific for all of the *Salmonella* serotypes and did not cross-react with any of the *Enterobacteriaceae*. Sensitivity was determined by spiking *Salmonella*-free fecal samples with ten fold dilutions of *Salmonella* from 10^8 cfu's down to 10^1 and performing qPCR. qPCR detected *Salmonella* as low as 10^4 cfu's in feces, which is lower than what is consistently infectious in swine. To determine the difference between total *Salmonella* present and the amount of viable *Salmonella* in the samples, qPCR results were compared to most probable number (MPN) results of spiked fecal samples. Comparison of qPCR and MPN revealed that viable *Salmonella* in the spiked fecal samples was within one log of the total amount of *Salmonella* in the samples. Samples from pens at slaughter plants showed a reduction in positive results after treatments, however, this trend was not significant. The most likely reason this study did not find a reduction that was significant as the number of *Salmonella* positive pens and samples was very low before any treatment was done. These results suggest that *Salmonella* is a rare event in hogs slaughtered in the sampled plants. Due to the low numbers found in this study, samples were not collected from transport trailers as they would have not lead to significant differences between various treatments.

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