RESEARCH ABSTRACT

PORK SAFETY

Title: A Rapid and Specific Test for *Salmonella* Serovars with Particular Reference to *Salmonella choleraesuis* serovar C1 - **NPB # 01-107**

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ABSTRACT

A polymerase chain reaction based enzyme linked immunosorbent assay (PCR-ELISA) was developed to identify Salmonella serovars A, B, C1, C2, and D. Primers were selected from the *rfb* gene cluster, which is responsible for biosynthesis of O antigens of Salmonella lipopolysaccharide. Salmonella isolates (n=203) were tested using the PCR-ELISA procedure. Of those Salmonella isolates, 156 isolates had been serogrouped previously. These isolates were used to determine the sensitivity and specificity of this PCR-ELISA procedure. DNA from all isolates was amplified using the PCR procedure for selected serovars and amplified products were visualized on agarose gels, as well as subjected to the ELISA procedure. The sensitivity of this procedure to correctly identify Salmonella serovars was 92% and the specificity was 99%. Eighty-eight percent of serovar D/A, 91% of serovar B, 89% of serovar C1, and 100% of serovar C2 were identified correctly with this procedure. Of the remaining 47 isolates that were not serogrouped, 5 were identified as serovar B, 7 as serovar C1, 1 isolate as serovar D/A and 34 isolates were neither B, C1, C2 or D/A. Results of this study indicate that the PCR-ELISA procedure is a rapid and accurate method for serogrouping Salmonella isolates. Utilization of the PCR-ELISA procedure for Salmonella serogrouping would aide the swine industry in identification, surveillance, prevention and control of Salmonella on the farm.