Title: Risk informed management of Salmonella in deep tissue lymph nodes – NPB #10-130

Investigator: H. Scott Hurd

Institution: Iowa State University

Date submitted: September 6, 2012

Scientific abstract

The objective of this project was to assess the contribution of deep tissue lymph nodes (DTLN) to the Salmonella contamination of ground pork in the United States. A quantitative risk assessment model was developed that described ground pork production starting from chilled swine carcasses. A scenario analysis was conducted to compare the probability of Salmonella contaminated ground pork between baseline and alternative scenarios where three main input parameters related to Salmonella contamination in DTLN were intentionally modified. The scenario analysis showed when the Salmonella contamination originated from DTLN was changed from baseline value to zero, the probability of Salmonella contaminated ground pork changed from 8.3% to 7.8%, without the evidence of significance based on t-test. In contrast, the probability of Salmonella contaminated ground pork significantly increased when Salmonella contamination from carcass surface was increased. Our findings indicate that the deep tissue lymph nodes do not have an influential impact on Salmonella contamination in ground pork, compared to other sources such as Salmonella on carcass surface. Therefore, the intervention of DTLNs’ removal at processing plants might not be able to effectively reduce the Salmonella contamination in ground pork.