

PORK SAFETY

Title: Estimating the National Prevalence of *Salmonella* spp. in Lymph Nodes from Market Hogs and Sows – (NPB #16-120)

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Scientific Abstract: The lymph nodes of swine are known to be harborage sites for *Salmonella* spp. and may play a role in carcass contamination during carcass fabrication and further processing of meat products sold at both wholesale and retail. Since most lymph nodes are below the skin surface, many antimicrobial interventions used to combat pathogen contamination may be ineffective. Although swine lymph nodes are a known source of the pathogen, it is unclear as to how prevalent *Salmonella* may be at the National level. To bridge this knowledge gap, a study was conducted to gain a more accurate estimate as to the National prevalence of *Salmonella* spp. in lymph nodes from both sows and market hogs and to determine the effect of chilling method on prevalence rates found in carcass from market hogs. Superficial inguinal Lymph node pairs (left and right; n = 25) were excised from both sows and market hogs from twelve (n = 12) USDA inspected swine slaughter establishments in the Northeast and Midwest regions of the United States. The lymph node pairs were pooled by individual animal (N = 300), labeled for identification, and shipped via overnight carrier to the lab for determination of the presence of *Salmonella*. Results of this study indicate that prevalence rates in the northern region were 37% and 6.4% for sows and market hogs respectively. This data was combined with samples (N = 207) taken in the southern region of the United States. Prevalence rates for *Salmonella* was not different ($P > 0.05$) for lymph node pairs from market hogs, regardless of production region. Positive samples from market hogs by carcass chilling type. Samples from conventionally chilled (~36-38°F air only; 20% positive) carcasses were significantly different ($P > 0.05$) when compared to samples from both blast chill (1.3% positive) or other (2.7% positive) chilling methods. Regardless of production region, conventionally chilled carcasses had higher positive sample rates ($P > 0.05$) when compared to all other methods of carcass chilling. Sows from the northern region had significantly higher ($P < 0.05$) positive samples (37% positive) when compared to sows from the southern region (4.8%). More investigation is needed to determine the cause for this difference.

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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