Salmonella spp. at Slaughter Lacks Ability to Predict Contamination on Farm

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The aim of this study was to evaluate the ability of Salmonella contamination in lymph nodes at slaughter to represent the Salmonella shedding on farm. 20 Iowa herds were selected based on cooperation and visited from September 2006 to February 2009. 11 of the 20 herds had multiple visits. At each farm visit, 30 individual fecal samples were collected. At slaughter, 30 mesenteric and 30 sub-iliac lymph nodes were collected. The fecal samples and sub-iliac lymph nodes were able to match on animal level by tattooing pigs on farms. Samples were tested Salmonella spp. by conventional microbiological methods and serotyping. Culture prevalence from farm feces over all the farms was 6%, ranging from 0 to 40% on the farm level and from 0 to 47% on the visit level. At slaughter, the culture prevalence of Salmonella in mesenteric lymph nodes was 29% (range from 7% to 70%) for farm and visit level. In sub-iliac lymph nodes the culture prevalence of Salmonella was 0.2%. High serotype diversity was detected (23 serotypes overall, 13 in farm feces and 15 in lymph nodes respectively). Salmonella Derby was predominant in both farm feces (13/45, 15.6%) and mesenteric lymph nodes (43/169, 25.4%). Salmonella Anatum (15.6%) and Agona (11.1%) were isolated in fecal samples, and serotypes Typhimurium (Copenhagen) (33.1%) and Agona (19.5%) were found in mesenteric lymph nodes. The only Salmonella positive sub-iliac lymph node was serotype 6,7:e,h:-. The correlation between culture prevalence of Salmonella in farm feces and mesenteric lymph nodes was 0.13 ($P=0.24$) on visit level suggesting the existence of Salmonella in farm feces was not statistically associated with in mesenteric lymph nodes. The rare existence of Salmonella in sub-iliac lymph nodes indicates this sample is unlikely to be a useful tool for identifying farms with high Salmonella contamination.