Comparison of *Salmonella* Prevalence Rates in Bovine Lymph Nodes across Feeding Stages

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Abstract

Peripheral lymph nodes (LNs) located in the fatty tissues of beef carcasses have been shown to harbor *Salmonella* and, thus, potentially contaminate ground beef. *Salmonella* prevalence within LNs is known to differ among feedlots. Two South Texas feeding operations (identified as locations A and B) known to harbor salmonellae in the feedlot environment, while historically producing cattle with opposing rates (one "high" and one "low") of *Salmonella* prevalence in LNs, were used in this study. To determine whether this difference was due to cattle source or factors associated with different stages of feeding, weanling steers of common and known origin were followed through normal feeding stages at both operations. Eighty Angus-sired beef steers were harvested at each of four feeding stages: 1, post-weaning; 2, background or stocker; 3, 60 days on feed; and 4, 120 days on feed. Left and right subiliac and superficial cervical LNs (n = 304) were collected from each carcass, and similar node types were pooled by animal (n = 152). Results showed a difference (P < 0.05) in prevalence of *Salmonella* in bovine lymph nodes between location A and location B and among feeding stages in location B. *Salmonella* was not isolated from any feeding stage 1 (post-weaning) or location A LN samples. Within location B, there was an increase in *Salmonella* prevalence as cattle moved into later stages of feeding: at 22.2% (4 of 18), 77.8% (14 of 18), and 94.4% (17 of 18) for feeding stages 2, 3, and 4, respectively. Although the reasons for the differences seen between feeding operations and for increased *Salmonella* prevalence in LNs at later feeding stages remain unexplained, these results indicate that factors other than cattle source are likely influencing *Salmonella* prevalence in LNs.

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