Substantial within-Animal Diversity of *Salmonella* Isolates from Lymph Nodes, Feces, and Hides of Cattle at Slaughter

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**ABSTRACT**

Lymph nodes (mandibular, mesenteric, mediastinal, and subiliac; \( n = 68 \)) and fecal \( ( n = 68 \) ) and hide \( ( n = 35 \) ) samples were collected from beef carcasses harvested in an abattoir in Mexico. Samples were analyzed for *Salmonella*, and presumptive colonies were subjected to latex agglutination. Of the isolates recovered, a subset of 91 was characterized by serotyping, pulsed-field gel electrophoresis (PFGE), and antimicrobial susceptibility phenotyping. *Salmonella* was isolated from 100% (hide), 94.1% (feces), 91.2% (mesenteric), 76.5% (subiliac), 55.9% (mandibular), and 7.4% (mediastinal) of samples. From the 87 typeable isolates, eight *Salmonella* enterica serotypes, including Kentucky (32.2%), Anatum (29.9%), Reading (17.2%), Meleagridis (12.6%), Cerro (4.6%), Muenster (1.1%), Give (1.1%), and Mbandaka (1.1%), were identified. *S*. Meleagridis was more likely \((P = 0.03)\) to be recovered from lymph nodes than from feces or hides, whereas *S*. Kentucky was more likely \((P = 0.02)\) to be recovered from feces and hides than from lymph nodes. The majority (59.3%) of the *Salmonella* isolates were pansusceptible; however, multidrug resistance was observed in 13.2% of isolates. Typing by PFGE revealed that *Salmonella* strains generally clustered by serotype, but some serotypes (Anatum, Kentucky, Meleagridis, and Reading) were comprised of multiple PFGE subtypes. Indistinguishable PFGE subtypes and, therefore, serotypes were isolated from multiple sample types, and multiple PFGE subtypes were commonly observed within an animal. Given the overrepresentation of some serotypes within lymph nodes, we hypothesize that certain *Salmonella* strains may be better at entering the bovine host than other *Salmonella* strains or that some may be better adapted for survival within lymph nodes. Our data provide insight into the ecology of *Salmonella* within cohorts of cattle and offer direction for intervention opportunities.

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