



Salmonella Presence in Mandibular, Mesenteric, and Subiliac Lymph Nodes Collected from Sheep and Goats in the U.S.

K. E. Hanlon*, M. F. Miller, L. M. Guillen, and M. M. Brashears

Department of Animal and Food Sciences, Texas Tech University, Lubbock, TX, USA

Keywords: goat, lymph node, mandibular, mesenteric, subiliac, *Salmonella*, sheep, lamb
Meat and Muscle Biology 1(2):114

doi:10.221751/rmc2016.111

Objectives

To survey the presence of *Salmonella* harbored within lymph nodes of sheep and goats in the United States.

Materials and Methods

Mandibular, mesenteric and subiliac lymph nodes were collected from 125 sheep and 130 goat carcasses at harvest. Samples were collected at small abattoirs ($n = 578$; 1 to 30 animals/d) and large ($n = 183$; 800 to 1,000 animals/d) facilities in California, New Mexico and Texas over a 2-yr period.

Lymph nodes were trimmed from fat and fascia, boiled, pulverized and enriched in Tryptone Soy Broth (TSB). Enrichments were subjected to standard immunomagnetic separation (IMS) procedures for *Salmonella*, selective enrichment in Rappaport-Vassiliadis (RV) broth, and plating onto Xylose Lysine Desoxycholate (XLD) and Brilliant Green Sulfa (BGS) agars. Typical colonies from either medium were latex-agglutinated. A Chi-square test was performed via PROC FREQ on SAS (version 9.4; SAS Inst. Inc., Cary, NC) to compare the frequency of *Salmonella* by species and lymph node type. Significance was detected at $P \leq 0.05$.

Results

In sheep, *Salmonella* was detected in 4.0% (5/125) of mandibular, 7.2% (9/125) of mesenteric, and 1.9% (7/125) of subiliac lymph nodes, with no significant difference among lymph node types. In goats, significant differences among lymph node types were detected with *Salmonella* present in 1.6% (2/128) of mandibular, 3.1% (4/129) of mesenteric and 7.8% (10/129) of subiliac lymph nodes ($P = 0.035$). Overall *Salmonella* detection in the combined species was 2.8% in mandibular lymph nodes ($n = 253$), 5.1% in mesenteric lymph nodes ($n = 254$) and 6.7% in subiliac lymph nodes ($n = 254$). *Salmonella* presence differed significantly by month of collection, with the highest frequency of detection in March (12.36%), and no *Salmonella* detected in April or November ($P < 0.0001$). Thirty animals (11 goats, 19 sheep) were found to have 1 or more *Salmonella*-positive lymph nodes.

Conclusion

Our data indicate that *Salmonella* is harbored within the lymph nodes of small ruminants. Further studies are needed to further assess seasonal and geographical effects on the prevalence of this pathogen in sheep and goats, and the potential influence of production practices on *Salmonella* contamination in ovine and caprine food products.