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National Beef Quality Audit-2016: Comparisons between Fed Steers/Heifers and Market Cows/Bulls for By-Product Condemnations

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Objectives

The National Beef Quality Audit (NBQA) has been an integral information source for the beef industry for almost 3 decades. The NBQA–2016 surveyed both fed steers/heifers and market cows/bulls, and one objective was to compare condemnation rates for by-products between these 2 sectors. With this knowledge, strategies may be developed to reduce economic losses related to by-product condemnations.

Materials and Methods

Data were collected with the assistance of USDA-Food Safety and Inspection Service personnel. By-products from fed steers/heifers (livers, lungs, and viscera: $n = 24,940$; heads and tongues: $n = 26,657$) and from market cows/bulls (livers, lungs, and viscera: $n = 4800$; heads and tongues: $n = 5720$) were assessed for condemnations, and when available, reasons for condemnation were recorded. Data were analyzed using JMP Pro, Version 12.0.1 (SAS Inst. Inc., Cary, NC). Frequency distributions were evaluated using the distribution function of JMP for condemnation traits assessed. Tests of hypotheses regarding differences in prevalence of by-product condemnations between NBQA-2016 fed steers/heifers and market cows/bulls were conducted at $P = 0.05$ using Chi-square analysis.

Results

By-product condemnations tended to be higher for market cows/bulls than fed steers/heifers for livers, lungs, viscera, heads, and tongues. For liver condemnations, market cows/bulls had a higher incidence ($P < 0.0001$) of flukes (3.2% versus 1.1%), abscesses (20.7% versus 17.8%), and total condemnations (44.6% versus 30.8%), whereas fed steers/heifers had a greater incidence ($P < 0.0001$) of contamination (10.1% versus 7.8%). However, both cattle populations showed a high frequency of liver condemnations, with nearly a third (fed steers/heifers) and half (market cows/bulls) of all livers being condemned. Lung condemnations, primarily a result of contamination, were higher ($P < 0.0001$) for market cows/bulls (23.1%) versus fed steers/heifers (18.2%). Additionally, lung pneumonia was not different for the 2 groups of cattle ($P = 0.6264$). With conventional feedlot confinement, a higher incidence of lung pneumonia might be expected in fed steers/heifers, however, advanced chronological age of market cows/bulls may contribute to similar (7.4% versus 7.6%) pneumonia rates in this population. Viscera condemnations for abscesses were higher ($P < 0.0001$) in market cows/bulls (5.1 versus 2.8%), whereas fed steers/heifers had a greater incidence of viscera contamination (13.4 versus 10.1%; $P < 0.0001$). For both head and tongue by-products, market cows/bulls had a higher incidence ($P < 0.0001$) of condemnations than the fed steers/heifers.

Conclusion

Overall, rates of by-product condemnations identified during the NBQA-2016 were higher than anticipated. These condemnations can be a substantial and unnecessary economic loss to the industry, especially because they are often a result of inputs at the feedyard or management practices at the ranch. Producers and processors should consider ways to reduce condemnation of these valuable by-products.