Understanding losses from liver abscesses in the beef industry

Economic effects of viscera losses and observations from liver audits are presented in a recent article in Applied Animal Science

Champaign, IL, April 4, 2022—Liver abscesses in cattle cause significant financial losses in the beef industry. A team of scientists set out to combat this problem by deepening our understanding of this complex issue. They investigated incidence rate; economic effects; bacterial flora; and differences in severity, geographical region, and cattle type, and their findings are reported in a new article in *Applied Animal Science*.

The researchers compiled and analyzed several types of data. They observed livers and liver abscesses and collected samples at fed-beef and cull-beef processing facilities all over the United States. Using USDA reports, they calculated viscera losses per animal, by region and type, and these losses per animal were then scaled to a national level. Beef cattle slaughtered per year was also estimated from USDA reports. To retrieve data about liver abscesses, the scientists took several samples at each processing facility.

Many observations are presented in the article. "Average liver abscess incidence was 20.3% for cattle slaughtered at fed-beef processing facilities and 17.6% for cattle slaughtered at cull-beef processing facilities," said T. E. Lawrence, PhD, Beef Carcass Research Center, Department of Agricultural Sciences, West Texas A&M University, Canyon, TX, USA. The article discusses how among cattle types, Holsteins stood out as having greater liver abscess incidence rates. Incidence rates varied by region, which is likely related to cattle diets being based on silage, forage, or grain and the amount of dairy influence in the region. The authors noted that bacterial species also varied by region and cattle type, and some bacteria were absent in certain regions. Incidences of *Fusobacterium necrophorum*, *Trueperella pyogenes*, and *Salmonella enterica* are detailed in the article. The article states that $41.6 million in annual viscera losses can be expected from liver abscesses.

Caption: In the beef industry, liver abscesses result in significant financial loss (Credit: T. Lawrence).

"Liver abscesses in cattle significantly affect the beef industry (cull- and fed-beef processing), not only from the loss of a condemned liver and often all viscera, but also through reduced animal performance, diminished carcass yield, and decreased processor efficiency," said Lawrence. David K. Beede, PhD, Editor in Chief of *Applied Animal Science* said, "Additional cost-effective management practices are needed to reduce the negative effects of liver abscesses and associated factors in the beef industry."

The article appears in the April issue of *Applied Animal Science*.

Notes for editors
"Exploratory observational quantification of liver abscess incidence, specific to region and cattle type, and their associations to viscera value and bacterial flora," by R. T. Herrick, C. L. Rogers, T. J. McEvers, R. G. Amachawadi, T. G. Nagaraja, C. L. Maxwell, J. B. Reinbold, and T. E. Lawrence (https://doi.org/10.15232/aas.2021-02228), *Applied Animal Science*, volume 38, issue 2 (April 2022), published by Fass Inc. and Elsevier.

This article is openly available at https://doi.org/10.15232/aas.2021-02228.

Full text of the article is also available to credentialed journalists upon request; contact Brittany Morstatter at +1-217-356-3182 ext. 143 or ARPAS@assochq.org to obtain copies. To schedule an interview with the author(s), please contact Ty Lawrence at tlawrence@wtamu.edu.

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