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Increase in research provides insights on historic problem of liver abscesses

In a new perspective and commentary from Applied Animal Science, researchers discuss causation, detection, and prevention of liver abscesses

Champaign, IL, June 3, 2024—A new article published in the Special Issue of Applied Animal Science examines recent research on liver abscesses, which has been a persistent problem in the beef industry for over a century. Recent estimates suggest economic losses may exceed $400 million annually across all aspects of beef production and processing, driving researchers to seek effective mitigation strategies.

“Liver abscess disease in cattle is a multifactorial, polymicrobial disease that affects productivity and profitability,” said David K. Beede, PhD, editor in chief of Applied Animal Science. “This lead article of the Special Issue provides commentary and new perspectives by discussing research; anecdotal information; and opinions about causes, detection, mitigation, and prevention. The article sets the stage for topics that follow in the Special Issue.”

Liver abscess disease has historically had negative effects on growth and carcass characteristics; however, the study of liver abscesses has drastically increased in the past several years. This is due in part to “significant public and private funding designated for the study of all aspects of liver abscess from formation to prevention,” said lead author P. R. Broadway, Livestock Issues Research Unit, ARS, USDA (Lubbock, TX). Broadway said this increase is also driven by efforts to identify alternatives to the use of in-feed antibiotics, which is currently the most commonly used prevention strategy for liver abscesses.

Recent research has led to alternative theories, as well as new questions about genetic background of cattle, behavior, feed intake patterns, and other factors causing liver abscesses. Researchers using controlled experimental models are able to compare and evaluate the progression of disease across animals on a similar timeline, whereas other studies test diet manipulation as a management strategy.

Broadway concluded that further exploration of pathogens associated with liver abscesses is needed to fully understand abscess development. “Recent increases in research activity related to liver abscesses will continue to provide new insights into the etiology and prevention of this costly disease,” said Broadway. “Both basic and applied research using multidisciplinary, collaborative approaches are needed to successfully combat the challenges of liver abscesses in beef cattle.”
Research into the causes, detection, mitigation, and prevention of liver abscesses in cattle has increased in an effort to reduce the losses this disease causes to the beef industry (Credit: Kristin Hales). The article appears in the June issue of Applied Animal Science.

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Notes for editors

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To schedule an interview with the author(s), please contact P. R. Broadway at rand.broadway@usda.gov.

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include (but are not limited to) feed science, farm animal management and production, dairy science, meat science, animal nutrition, reproduction, animal physiology and behavior, disease control and prevention, microbiology, agricultural economics, and environmental issues related to agriculture. Themed special issues also will be considered for publication. www.appliedanimalscience.org

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