

APRIL 2024



AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

NEWSLETTER

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THE PRESIDENT'S MESSAGE

In Like a Lamb, Out Like a Lion

March often starts with winterlike weather and ends with the promise of spring. This year in western New York, March started out with unseasonably mild weather, but recently changed to very cold temperatures and snow. Like the weather, recent events in the cattle industry have not been mild. I would like to change the tenor of my usual president's message to share thoughts on the emerging disease event in dairy cattle and provide a brief update on the recent AABP Board of Directors (BOD) meeting.

Emerging dairy cattle disease event

An emerging disease continues to spread in dairy cattle in the central and southwest portions of the U.S. AABP has provided member communications throughout this process and has created a landing page where all resources will be placed during this disease event. Visit https://aabp.org/resources/dairy_cow_disease/ for these resources, which is also accessible from the AABP homepage (www.aabp.org).

As veterinarians, it is critical that we remain informed. We cannot control what happens in our lives, but we can control how we respond. When discussing this disease event, avoid propagating rumors and help others to understand the science and the known facts. If you have potentially affected herds, encourage your clients to submit the appropriate diagnostic samples. Review biosecurity protocols with your clients and within your practice. I would like to thank all the private practitioners, diagnostic lab personnel, and industry professionals who are working tirelessly on this issue daily. Your contributions to our industry are invaluable. I would encourage you also to take time to focus on your mental health and well-being as you work through these challenging times.

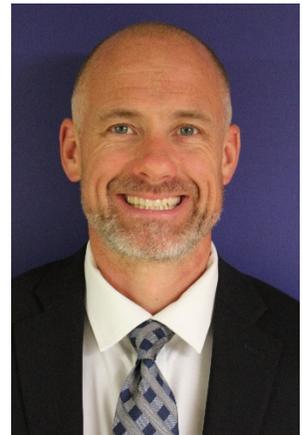
Spring board meeting update

The AABP BOD had a very productive spring meeting at AABP headquarters in Ashland, Ohio in early March. The group discussed a variety of topics including financial policy, future sites for AABP conferences, and committee membership appointments. Several AABP guidelines and position statements were updated during the meeting.

These important documents are publicly available and utilize the expertise of our members to provide direction on critical issues in the cattle industry. They outline best management practices and are used for advocacy. Find all AABP guidelines and position Statements on the website under the About tab.

Guidelines and position statements undergo a regular review process that includes an open member comment period, a review by relevant AABP committees, and then discussion and approval by the BOD.

The Castration Guidelines, Joint AABP-AVC Judicious Therapeutic Use of Medically Important Antimicrobials in Cattle Guidelines and the Policy on Industry Support of AABP Meetings and Events were all updated. The Disclosure of BVD PI Animals position statement was renewed. The BOD approved the new Selective Dry cow Therapy Implementation Guideline developed by the Milk Quality and Udder Health Committee. Also approved was the new AABP Guideline for Credentialed Veterinary Technicians (CVTs) in bovine practice. This guideline will help veterinarians expand their working relationship with CVTs. Thank you to all our members and committees who worked so diligently to help with these important documents.



Dr. Michael Capel

SAVE THE DATE!

American Association of Bovine Practitioners Annual Conference

2024	Columbus, Ohio	September 12-14
2025	Omaha, Nebraska	September 11-13
2026	Minneapolis, Minnesota	October 1-3
2027	Louisville, Kentucky	September 16-18

AABP Recent Graduate Conference

2025	Norman, Oklahoma	February 14-15
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DISCLAIMER

The AABP does not take responsibility for information contained in or accuracy of the abstracts published in this newsletter.

ACTIVITIES AND ADVOCACY

The following are activities AABP leadership has been involved in for the benefit of members and the industry:

- AABP Board of Directors Meeting, AABP Board, Officers and Staff – Ashland, Ohio
- Student AVMA Conference, Executive Director – Knoxville, Tenn.
- Zoetis-Ohio State Food Animal Medicine Student Symposium, AABP Executive Director and AABP Vice-President – Columbus, Ohio
- Academy of Veterinary Consultants spring meeting, Executive Director – Omaha, Neb.

AABP NEWS

AABP Award Nominations Sought

Do you have a mentor, peer or colleague who is deserving of special recognition? Have you received an award and wish to pay it forward to someone else? Nominate that special veterinarian for one of the prestigious AABP awards, which will be given to recipients at the 2024 57th AABP Annual Conference in Columbus, Ohio, Sept. 12-14. Awards include Practitioner of the Year, Excellence in Preventive Medicine, Mentor of the Year, Award of Excellence, Distinguished Service Award, and James A. Jarrett Award for Young Leaders. Award **nominations are due by 5pm EDT, May 31, 2024.**

For more information about the awards and to nominate someone for an award, visit the AABP awards page at https://aabp.org/about/vet_awards.asp.

Research Summary Abstract Submission

Research projects having direct application to the health, welfare and productivity of cattle or small ruminants are being solicited for presentation at the Research Summaries (oral presentations) and Scientific Poster Sessions for the 2024 AABP Annual Conference Sept. 12-14, 2024 in Columbus, Ohio.

Find all information and the submission portal at <https://aabp.org/abstracts/default.asp> by **April 12, 2024, 5:00 pm EST.**

Student Case Presentation Competition

The AABP Program Committee seeks abstract submissions for the 2024 Student Research/Clinical Case Presentation Competition to be held Thursday, Sept. 12, 2024, at the 57th AABP Annual Conference in Columbus, Ohio.

Find out more and submit cases online by **April 12, 2024, 5:00 pm EST** at <https://aabp.org/students/case/>.

2024 AABP Practice Applicable Beef Cow-Calf Nutrition Seminar

AABP announces the 2024 beef seminar, Practice Applicable Beef Cow-Calf Nutrition, which will be held June 27-28, 2024, at The Ohio State University College of Veterinary Medicine Large Animal Services ambulatory clinic in Marysville, Ohio. Attendees will be able to go home and immediately implement the skills taught in this course or improve their cow-calf nutrition consulting skills.

This seminar is taught by an expert faculty of Dr. Jeffery Hall, Dr. Chris Chase and Dr. David Rethorst. Topics include health and economic impacts of vitamin/mineral deficiencies, use of liver biopsies, nutrition effects on the immune system, decision processes during drought, nutritional impacts on fetal programming, introduction to ration balancing for cow-calf operations, effects of flies and how to manage them, and a review of coccidiosis impacts on cow-calf operations.

On the second day there will be a liver biopsy wet lab on beef cows where attendees will be taught how to collect, process and ship liver biopsies to assess the mineral program. Dr. Jeffery Hall is the leading expert on this procedure and attendees will be able to immediately incorporate this service into their cow-calf consulting program.

For a detailed agenda of topics, please visit http://aabp.org/resources/2024/Beef_nutrition_2024.pdf.

The OSU clinic is located 40 minutes northwest of the Columbus airport. A block of rooms has been reserved at the Hampton Inn Marysville for \$124 plus tax. The hotel has a free breakfast, and lunch will be provided to all

attendees as part of your registration fee. To book your hotel reservation, visit <https://bit.ly/4am4FE5>.

Registration is limited to 20 attendees. The seminar will be submitted for 15 hours of continuing education in jurisdictions that recognize RACE approval.

AABP Edwin Robertson Beginning Embryo Transfer Seminar

The AABP, with the support from the American Embryo Transfer Association, will hold a three-day embryo transfer seminar for beginners July 29-31, 2024, at the Virginia-Maryland College of Veterinary Medicine in Blacksburg, Va. If you want to learn embryo transfer or if you have begun and are struggling, this seminar is for you. You will be taught the most up-to-date techniques by a staff with years of experience at your side.

Superovulated cows will be provided for each student to collect, and then search for, evaluate and freeze embryos on their own. Microscopes, freezers and all ET equipment will be provided, but you are welcome to bring any equipment with you. All techniques will be discussed and demonstrated on donor cows before you begin your work on the practice cows. Superovulation, collection, freezing, transfer, estrus synchronization, donor scheduling and embryo morphology will all be discussed in detail. We will also discuss transferring fresh and frozen IVF-derived embryos.

A highly-qualified faculty of experts teaching the seminar include Joel Anderson, DVM (Cross Country Genetics); Bill Croushore, DVM (White Oak Veterinary Clinic); Sam Edwards, DVM (Harrogate Genetics International); Ashley Swenson DVM (Midwest Embryo Transfer Service); and Greg Schueller, DVM (Sunshine Genetics). This seminar has been submitted for 24 CE hours in jurisdictions that recognize RACE approval. As part of the registration, the AETA is giving one free annual membership to the association and one free registration to its annual conference to every attendee. Register at <http://aabp.org/seminars/register.asp?seminar=2024%20AABP%20ET%20Seminar>.

For those flying into Roanoke, Va., efforts will be made to provide transportation if needed. A rate of \$134 per night at the Hilton Garden Inn Blacksburg, which is walking distance to the seminar location, has been secured. Call 540-552-5005 and ask for the American Association of Bovine Practitioners block or book online at www.blacksburg.hgi.com and enter the group code under special rates (AABP24) to make a reservation. The group rate is available through 06/29/2024 or until the group block sells out, whichever comes first.

Call Bill Croushore at 814-233-6768 or email billcroushore6768@gmail.com for more information.

WROF Externship Grant

The Wisconsin Rural Opportunities Foundation (WROF), Inc. will provide the AABP Foundation five \$2,000 grants to support veterinary students who complete an externship at a participating bovine practice in Wisconsin and intend to practice in Wisconsin. The funds are intended to provide financial support while students complete an externship. Grants are not designated for any specific use and may be used at the student's discretion for any associated expenses such as travel, lodging or equipment. In addition, the funds may provide some income to replace lost earnings while the student is participating in an externship in lieu of employment.



This grant is separate from the AABP Foundation externship grant. Students can apply for and may receive both the WROF, Inc. grant and AABP Foundation externship grants. The WROF, Inc. has committed to providing five annual grants.

Veterinary practices that wish to participate will have their clinics listed on the application site on the AABP website. At least one member of the practice must be an AABP member. Students must contact and discuss the externship with the practice and the practice must state that the student has been accepted to complete an externship with them.

The student must be a student AABP member before applying for the externship. Please note that it can take up to three business days to process your membership dues.

Find more information and an application link at <http://aabp.org/students/wrof/>.

AABP Dues Renewal Season Open

Now is a great time to renew your AABP dues for the 2024-2025 dues year! AABP continues to increase benefits to our members. This includes a significant increase in CE resources and advocacy for our members. Historically, AABP has had one annual conference each year as its major CE event. Our annual conference continues to be our main event; however, we also now have online CE of all conference sessions and webinars, a recent graduate conference, webinars, podcasts, online publications, e-newsletters, seminars outside of the annual conference, practice management workshops, and new this year, a virtual conference for beef and dairy near the end of the year.

In addition to this tremendous expansion of CE benefits, we have also greatly increased our advocacy efforts. This includes maintaining access to xylazine, ensuring access to follicle stimulating hormone drugs that are in short supply, supporting the practicing veterinarian by advocating for the importance of in-person farm visits

to establish a VCPR, advocating against a mid-level practitioner who might compete with veterinarians, and collaborating with stakeholders and veterinarians on this recent disease event we are currently experiencing. This is what organized veterinary medicine does for veterinarians! We support you and this work is only possible through membership dues. Dues revenue is by far our primary source of income to fund our efforts. We not only ask that you renew your dues to support AABP efforts, but that you encourage any colleagues who are not AABP members to join us as well.

Please renew your dues today by going to <https://aabp.org/dues/paydues.asp>, and at the same time, consider a charitable donation to one of the funds supported by the AABP Foundation.

AABP SDCT Guidelines Updated

The AABP Selective Dry Cow Therapy Implementation Guidelines have been updated by the AABP Board of Directors. AABP Milk Quality and Udder Health Committee Chair Dr. Pam Ruegg says over the last decade, veterinarians and dairy producers have made great progress in reducing the prevalence of subclinical mastitis in dairy cows. “Most of the progress has been a result of increased adoption of preventive management strategies such as effective post-milking teat dipping, improved hygiene, consistent adoption of standardized milking routines, and improved dry-cow management,” she says. “With improved preventive strategies, the prevalence of cows with subclinically infected quarters at dry off has been reduced and the need for administration of antibiotics to all cows that dry off has also declined. Some farms have reached a point where selective dry cow antibiotic therapy can be effectively used, while other farms may continue to require blanket dry cow therapy to best manage udder health. These guidelines have been developed to help veterinarians better advise clients relative to use of dry cow antibiotics, and to ensure that veterinarians have resources to help them guide clients in judicious use of antibiotics to manage the dry-off process.”

Find the updated guidelines at https://aabp.org/committees/resources/DryCowGL_2024.pdf.

Upcoming AABP Webinars

All live webinars are from 2:00 – 3:00 pm Central. See below for more information and how to join.

April 23 – “Results from the 2022 National Beef Quality Audit – What Veterinarians Should Know” with Dr. Julia Herman. The National Beef Quality Audit (NBQA), conducted every five years since 1991, tell us exactly how

the cattle industry is doing and assesses progress on a variety of production issues that ultimately affect consumer demand for beef. Results from the 2022 NBQA can be utilized by all segments of beef and dairy production. Veterinarians will take away animal care points to provide guidance to cattle producers in areas of fitness for transport, marketing, and culling decisions.

May 22 – “Producing Cattle with Reduced Genetic Susceptibility to Bovine Viral Diarrhea Virus (BVDV)” with Aspen Workman. Naturally occurring genetic resistance to specific livestock pathogens has been historically challenging to identify, and thus has limited our ability to use selection and conventional breeding to improve disease resistance. Technological advancements in genome editing and reproductive technologies now provide the opportunity to create and propagate de novo genetic variants in livestock. Recently, the first calf with reduced genetic susceptibility to bovine viral diarrhea virus (BVDV) was produced. The research group’s proof-of-concept study showed that substituting just six amino acids in CD46 caused a dramatic reduction in BVDV susceptibility in a gene-edited calf without causing any obvious adverse effects in the first two years of life. This work provided the first example of gene-editing in cattle to reduce the impact of a major viral disease.

Find all webinar topics and joining information under the “Members” menu of the AABP website at <https://aabp.org/webinar/>. Webinars are submitted for one hour of CE in jurisdictions that recognize RACE approval. Members can also view all recorded webinars at https://aabp.org/members/cont_ed.asp. Select Webinar under Conference Location.

Recorded Sessions from 2023 AABP Annual Conference Now Available

AABP membership includes free access to all recorded sessions from the annual conferences, recent graduate conferences and webinars. To access, click on the purple cow head logo at the bottom of any AABP webpage or at https://aabp.org/members/cont_ed.asp. Members can also listen to presentations on their mobile device by downloading the free “BCI Mobile Conference” app from your device’s app store. RACE-approved CE certificates are available after viewing on a web browser and passing a quiz. Note that certified CE is not available through the app. Search for conferences or session tracks using the search feature or set conference location to “webinar” to find recorded webinars. View upcoming webinars at the Members tab on the website and add them to your calendar.

AABP would like to thank the partnership with the Kansas State University Beef Cattle Institute, Dr. Brad

White, and the Kansas State University students for assisting with the recordings and hosting the CE portal for AABP members.

PrideVMC, an LGBTQ+ Resource for Veterinarians

The AABP DEI Committee announces Pride Veterinary Medical Community (PrideVMC) will be exhibiting in the trade show at the 2024 AABP Annual Conference in Columbus, Ohio. You can find out more about PrideVMC at pridevmc.org. PrideVMC is a veterinary medical association dedicated to supporting LGBTQ+ veterinarians in their professional journeys. Whether you're a student or an experienced veterinarian, PrideVMC offers a wealth of resources, including educational materials, a job board, scholarships and much more. PrideVMC has available a directory of LGBTQ+ friendly practices. If you're part of an LGBTQ+ friendly practice, consider adding to the directory at <https://pridevmc.org/directory/>.

AABP COMMITTEE REPORTS

Mental Health Committee

The Veterinary Hope Foundation and AABP are partnering to offer another support group for AABP members. These are led by an experienced facilitator who understands our unique type of practice. Join us for practical conversations and skills regarding well-being and bovine practice at 11pm Eastern/8pm Pacific on April 9. Register at https://form.jotform.com/Veterinary_Hope/aabp-support-group-registration.

The original support group will continue to meet every other Wednesday at 8:00 p.m. Eastern. Upcoming dates are April 10, April 24, May 8 and May 22. The link for this group is <https://us02web.zoom.us/j/89492745871>.

GENERAL INFORMATION

Feedlot Metaphylaxis Survey

Veterinary faculty from the Center for Outcomes Research and Epidemiology at Kansas State University are leading a study to understand metaphylaxis use recommendations and decisions for feedlot cattle at medium risk for bovine respiratory disease (BRD). A survey to elicit professional opinions and recommendations can be found below. A similar survey is also being distributed to feedlot managers. Survey results will help to inform industry stakeholders about how BRD risk is classified, and how

metaphylaxis use decisions are made for medium-risk feedlot cattle.

This project is funded in part by the Foundation for Food & Agriculture Research (FFAR) - International Consortium for Antimicrobial Stewardship in Agriculture (ICASA) with matching funding from cattle feeding and veterinary companies, creating a public-private partnership.

If you provide services to feedlots as part of your veterinary practice, please respond to this survey **by April 30**. The survey will require 15-30 minutes to complete.

For questions or comments, contact Drs. Natalia Cernicchiaro (ncernic@vet.kstate.edu), David Renter (drenter@vet.k-state.edu), or Christy Hanthorn (cjhanthorn@vet.k-state.edu).

Find the survey at

https://kstate.qualtrics.com/jfe/form/SV_eRp5eWM0vNLO_RPE.

CLSI Releases Latest Vet09 Document

The Clinical Laboratory Standards Institute (CLSI) publishes standards for veterinary laboratories. These documents are opened for update and review to ensure they are consistent with current scientific knowledge. The VET09 document publishes standards for antimicrobial susceptibility test data that is relevant to cattle veterinarians. *CLSI VET09: Understanding Susceptibility Test Data as a Component of Antimicrobial Stewardship in Veterinary Settings*, is now available for download for \$50 for non-CLSI members.

Dr. Virginia Fajt, who serves on AABP's Committee on Pharmaceuticals and Biologics, was also the chairholder for the review of this document. Fajt says, "This new edition of VET09 was developed by experts in microbiology and pharmacology. Cattle veterinarians will find updates and enhancements to the cattle-specific chapter and to the chapters that provide overviews of the principles of antimicrobial susceptibility testing with examples of reports. A new chapter has recommendations about extrapolation of breakpoints to animal species like sheep and goats, for which there are no approved breakpoints."

Fajt says every veterinary clinic should have a copy on hand, so veterinarians can get the most out of reports generated from their own cases and to aid in interpreting antibiograms and published antimicrobial susceptibility data.

For more information or to purchase the latest issue, visit <https://clsi.org/standards/products/veterinary-medicine/documents/vet09/>.

<https://doi.org/10.3168/jds.2023-24197>

Prevalence and Spatial Distribution of Infectious Diseases of Dairy Cattle in Ontario, Canada

D.B. Nobrega*, C. Miltenburg, G. Séguin, D.F. Kelton

Here we investigated the prevalence and spatial distribution of selected pathogens associated with infectious diseases of dairy cattle in Ontario, Canada. The cross-sectional study surveyed bulk tank milk for antibodies against bovine leukemia virus (BLV), *Mycobacterium avium* ssp. paratuberculosis (MAP), and *Salmonella* Dublin, and for the presence of mastitis pathogens (*Staphylococcus aureus*, *Streptococcus agalactiae*, *Mycoplasma bovis*). Between October 2021 and June 2022, bulk tank milk (BTM) samples were obtained from every commercial dairy farm in Ontario (n = 3,286). Samples underwent ELISA testing for presence of BLV, MAP and *S. Dublin* antibodies, and quantitative PCR testing for the detection of specific antigens of pathogens associated with mastitis. Bayesian models were used to estimate prevalence, and spatial analysis was carried out to identify regional clusters of high pathogen prevalence. Prevalence varied for different pathogens. BLV was widespread across dairy farms in Ontario, with an estimated prevalence of 88.3%. Prevalence of MAP, *Staph. aureus* and *S. Dublin* in Ontario dairy herds were 39.8%, 31.5% and 5.1%, respectively. The vast majority of dairy herds in Ontario were free of intramammary infections caused by *Strep. agalactiae* and *M. bovis*. Clusters of increased test positivity rates were detected for *S. Dublin*, MAP, and *Staph. aureus*, indicating potential geographic risk factors for pathogen transmission. For *S. Dublin*, an area of increased test positivity rates was detected in southwestern Ontario, close to the Canada-U.S. border where most of the dairy herds in Ontario are located. Conversely, a localized cluster of positive test outcomes involving 14 subdivisions located in the southeastern region of Ontario was detected for *Staph. aureus*. Findings from our survey highlight the importance of the testing of aggregated samples and spatial analysis as part of disease surveillance programs and for implementing risk-based trading approaches among dairy producers.

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<https://doi.org/10.1016/j.vetmic.2024.110015>

Antimicrobial Susceptibility of Mastitis Pathogens Isolated from North American Dairy Cattle, 2011-2022

M.T. Sweeney*, L. Gunnett, D.M. Kumar, B.L. Lunt, V. Moulin, M. Barrett, A. Gurjar, E. Doré, J.R. Pedraza, D. Bade, C. Machin

A total of 10,890 bacterial isolates of *Streptococcus dysgalactiae*, *Streptococcus uberis*, *Staphylococcus aureus* and *Escherichia coli* isolated as etiological agents from dairy cows with mastitis by 29 veterinary laboratories across North America between 2011 and 2022 were tested for in vitro antimicrobial susceptibility by broth microdilution to ampicillin, cefoperazone, ceftiofur, cephalothin, erythromycin, oxacillin, penicillin-novobiocin and pirlimycin according to CLSI standards. Using available clinical breakpoints, antimicrobial resistance among *S. dysgalactiae* (n = 2406) was low for penicillin-novobiocin (0% resistance), ceftiofur (0.1%), erythromycin (3.2%) and pirlimycin (4.6%). Among *S. uberis* (n = 2398), resistance was low for ampicillin (0%) and ceftiofur (0.2%) and moderate for erythromycin (11.9%) and pirlimycin (18.4%). For *S. aureus* (n = 3194), resistance was low for penicillin-novobiocin (0%), ceftiofur (0.1%), oxacillin (0.2%), erythromycin (0.7%), cefoperazone (1.2%) and pirlimycin (2.8%). For *E. coli* (n = 2892), resistance was low for ceftiofur (2.8%) and cefoperazone (3.4%) and moderate for ampicillin (9.2%). Overall, the results indicate that mastitis pathogens in the United States and Canada have not shown any substantial changes in the in vitro susceptibility to antimicrobial drugs over the 12 years of the study, or among that of the preceding survey from 2002–2010. The data support the conclusion that resistance to common antimicrobial drugs among mastitis pathogens, even to drugs that have been used in dairies for mastitis management for many years, continues to remain low.

* Zoetis, Kalamazoo, MI 49007

GENERAL INTEREST

<https://doi.org/10.3390/v11060561>

Influenza A in Bovine Species: A Narrative Literature Review

C.C. Sreenivasan*, M. Thomas, R.S. Kaushik, D. Wang, F. Li

It is quite intriguing that bovines were largely unaffected by influenza A, even though most of the domesticated and wild animals/birds at the human–animal interface succumbed to infection over the past few decades. Influenza A occurs on a very infrequent basis in bovine species and hence bovines were not considered to be susceptible hosts for influenza until the emergence of

influenza D. This review describes a multifaceted chronological review of literature on influenza in cattle which comprises mainly of the natural infections/ outbreaks, experimental studies, and pathological and seroepidemiological aspects of influenza A that have occurred in the past. The review also sheds light on the bovine models used in vitro and in vivo for influenza-related studies over recent years. Despite a few natural cases in the mid-twentieth century and seroprevalence of human, swine, and avian influenza viruses in bovines, the evolution and host adaptation of influenza A virus (IAV) in this species suffered a serious hindrance until the novel influenza D virus (IDV) emerged recently in cattle across the world. Supposedly, certain bovine host factors, particularly some serum components and secretory proteins, were reported to have anti-influenza properties, which could be an attributing factor for the resilient nature of bovines to IAV. Further studies are needed to identify the host-specific factors contributing to the differential pathogenetic mechanisms and disease progression of IAV in bovines compared to other susceptible mammalian hosts.

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BEEF

App Ani Sci

February 2024

<https://doi.org/10.15232/aas.2023-02454>

Growth Performance, Carcass Traits, and Feeder Calf Value of Beef × Holstein and Holstein Feedlot Steers

M. Pimentel-Concepción*, J.R. Jaborek, J.P. Schweihofer, A.J. Garmyn, M.-G.-S. McKendree, B.J. Bradford, A. Hentschl, D.D. Buskirk

Objective

The objective of this study was to compare feedlot performance, carcass traits, and value of beef × Holstein (B×HO) and Holstein (HO) feedlot steers.

Materials and Methods

After a 21-d acclimation to the feedlot, steers (B×HO, n = 60 and HO, n = 60) were blocked by BW into 10 pens per breed type. Steer BW gain, DMI, and G:F were measured on a 28-d basis. Steers were slaughtered at a commercial abattoir on d 245 for B×HO and 266 for HO, after reaching an average carcass empty body fat of 30.0%. Following a 48-h chill, carcass data were collected.

Results and Discussion

The B×HO steers tended to have 5% greater ADG (1.75 vs. 1.70 kg/d) compared with the HO steers but similar DMI

(10.40 vs. 10.35 kg/d). The B×HO steers had 4% greater G:F compared with HO steers (0.172 vs. 0.165). Cost of gain was 14% less for B×HO compared with HO steers (\$2.68 vs. \$2.83/kg). Although final live BW tended to be less for B×HO compared with HO steers (622 vs. 635 kg), carcass weights were similar between breed types (365 vs. 367 kg). The B×HO steers had 20% greater LM area (87.8 vs. 73.1 cm²), greater backfat thickness (1.18 vs. 0.79 cm), and a lesser average calculated USDA YG (2.9 vs. 3.2) than HO steers. The B×HO and HO steers had similar average marbling scores (426 vs. 437) and USDA QG. Based on abattoir prices, carcass revenue was greater for B×HO steers (\$1,836/carcass) when compared with HO steers (\$1,800/carcass). Based on a mean receiving BW of 171.9 kg, calculated breakeven feeder calf value was greater for B×HO steers compared with HO steers (\$367 vs. \$284/100 kg).

Implications and Applications

Overall, B×HO steers were more feed efficient and produced carcasses with more desirable carcass yield, resulting in greater feeder calf value when compared with HO steers.

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Submitted by the AABP Beef Health Management Committee

J Ani Sci

January 2023

<https://doi.org/10.1093/jas/skac332>

Environmental Stress During the Last Trimester of Gestation in Pregnant Cows and its Effect on Offspring Growth Performance and Response to Glucose and Adrenocorticotrophic Hormone

K.R. Nickles*, A.E. Relling, A. Garcia-Guerra, F.L. Fluharty, A.J. Parker

Winter and spring precipitation are predicted to increase in the Midwest region of the United States, causing muddy conditions. In a previous experiment, Angus cows (8 per treatment) were paired based on initial body weight (BW) and one cow from each pair was randomly allocated to either the mud or control treatment. Though cows consumed the same amount of dry matter, cows in the mud treatment weighed 37.4 kg less than cows in the control treatment by day 269 of gestation. The objective of this experiment was to evaluate developmental programming effects of steers born to cows in the mud treatment (MUD; n = 7) or the control treatment (CON; n = 6). Steers were weighed at birth and then weekly from approximately 56 d of age until weaning and were subjected to a glucose tolerance test (GTT) and

adrenocorticotrophic hormone (ACTH) challenge after weaning. Steers were then placed in the feedlot for an 84-d growing phase and were weighed weekly and 12th rib back fat (BF) and ribeye area (REA) were imaged every 28 d using ultrasonography. Data were analyzed as a randomized complete block design with repeated measurements when appropriate (SAS 9.4). Although there was a 37.4 kg decrease in BW of cows by the end of gestation, there was no evidence of a pen treatment effect on calf birth weight ($P = 0.60$) or weaning weight ($P = 0.99$). Additionally, there was no evidence of a pen treatment \times day effect for steer BW from birth to weaning ($P = 0.67$) or growing phase BW ($P = 0.60$). There was evidence of a treatment \times day of growing phase effect ($P = 0.02$) for BF, such that CON steers had greater BF on day 28 of the growing phase; however, there was no evidence of a treatment \times day effect for REA ($P = 0.20$). Furthermore,

there was no evidence of a pen treatment effect for the growing phase average daily gain ($P = 0.74$), dry matter intake ($P = 0.65$), gain:feed ($P = 0.48$), plasma glucose concentration ($P = 0.67$) or plasma insulin concentration ($P = 0.61$) in response to the GTT, or plasma cortisol concentration in response to the ACTH challenge ($P = 0.51$). These results indicate that while mud increased net energy requirements for cows in the MUD treatment, there were no subsequent effects observed for steer BW, gain:feed, or response to glucose and ACTH during the growing phase.

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Submitted by the AABP Beef Health Management Committee