Linking animal science and animal agriculture: Meeting the global demands of 2050

July 20–24, Kansas City, Missouri

CONFERENCE INFORMATION & SCIENTIFIC PROGRAM

www.asas.org/JAM2014
Go to www.asas.org/JAM2014 for download information.
Welcome to 2014 Joint Annual Meeting (JAM)!

The American Society of Animal Science (ASAS) is excited to be meeting jointly with the American Dairy Science Association (ADSA) and the Canadian Society of Animal Science (CSAS). Over 2,200 abstracts were submitted and after strenuous review, approximately 2000 will be presented. More than 45 symposia, workshops, and educational lunches are planned.

The symposia and workshops program can be found in the scientific program starting on page 45 of this program. These and many other symposia, along with a broad, discipline-based scientific program, promise to make this year’s meeting truly outstanding. Graduate student oral and poster competitions as well as undergraduate student competitions and activities are featured throughout the program. These activities provide an excellent way for students to highlight their scientific achievements and to network with other students and professionals. I encourage you to sit in on these competitions—you will be impressed by the quality of papers and the information presented by our students.

Additionally, to add more continuity to JAM, we added a theme in 2014: Linking Animal Science and Animal Agriculture: Meeting the Global Demands of 2050. To help call attention to the theme, we have identified several talks per day as “linkages” talks. A listing of these talks can be found on page 44 of this program.

It has been an honor to serve as the JAM Program Chair for 2014; however, our program committees do the real work of organizing the meeting. These committees develop the ideas for the symposia, review the abstracts, and construct the oral and poster sessions. To thank the program chairs and their committees, we are having a special Program Committee Reception in the Marriott on Wednesday. Please stop by the reception, and help show the program committee appreciation for a job well done!

The ASAS and ADSA staff, do a fantastic job with the logistics of the meeting and making everything run smoothly. Please spare a moment to let the staff know what you think of the meeting.

JAM 2014 promises to be a meeting with a great scientific program and plenty of time for networking.

I look forward to seeing you in Kansas City!

Dean Hawkins
JAM Overall Program Chair
On behalf of the American Dairy Science Association and the American Society of Animal Science, we welcome you to Kansas City, MO and JAM 2014.

This year’s meeting begins on Sunday, July 20, and runs through Thursday, July 24. Many opportunities exist for interaction among society members, starting with the Opening Session on Sunday, July 20, when our speaker will be Dr. William C. Weldon.

Dr. Weldon is the Vice President for Global Research and Development at Elanco Animal Health and is a great advocate for the advancement of technology and food security. The Opening Session will be followed by a BBQ (page 10) for all attendees. Other special pre-meeting events include the Triennial Lactation Symposium: Nutrigenomics in Dairy Cows; the ASN-ASAS Preconference: Next Step from Innovate 2013: Feed Bunk to Bedside to Bench: Current Analytical Platforms in Nutrition; and the Beta Agonist Symposium: "What the Data say".

Approximately 2,000 abstracts and over 45 symposia are scheduled that cross many species, disciplines, and societal topics of importance to food and companion animal production. Our schedule highlights include symposia on research ethics, the role of water in the future of animal and food production and processing, a symposium on meeting the present and future demand for employees with a Ph.D. in dairy science, four dairy foods symposia, a symposium on the future of the beef cattle industry in the United States, two symposia on companion animals, and a symposium on the microbiome and its’ role in ruminant nutrition.

Attendees are encouraged to take full advantage of this great opportunity to share ideas across species and societies, visit with each other in person, and make new acquaintances.

We are grateful to the many people involved in making this meeting a success, starting with our sponsors. Their support is essential to the quality program that makes JAM unlike any other meeting. A list of sponsors of this year’s meeting is available in this program book. Please take time to thank them during the meeting. The program committee has worked long and hard to organize an excellent program. Our thanks to the overall program committee of Dean Hawkins (chair), Barry Bradford, Kees de Lange, Connie Larson, and Geoff Dahl for their efforts in bringing forth this outstanding scientific program. We also thank the many others who contributed to this huge undertaking, including staffs of ADSA and ASAS.

Finally, thank you, the attendees, for participating in JAM 2014 and making it a grand success!

Scott Rankin
ADSA President

Greg Lardy
ASAS President
I would like to extend a very warm welcome to everybody attending the 2014 Joint Annual Meeting (JAM 2014) of the American Dairy Science Association (ADSA), the American Society of Animal Science (ASAS) and the Canadian Society of Animal Science (CSAS) in Kansas City, MO.

Between the various symposia, oral presentations, posters and workshops, JAM 2014 promises to have something for everyone.

I would also like to thank all members of the planning committee of JAM 2014 for doing a fantastic job in putting together a comprehensive scientific program that guarantees something for everyone in addition to scheduling social and informal activities that provide unfettered networking opportunities among participants.

CSAS on its part will host a number of special events including: a symposium on “Feeding Behavior”, a topic which will be addressed from various perspectives by world class experts; graduate student competitions for best oral and poster presentations; an awards banquet to recognize and honor outstanding members of CSAS, and a special student “social” night, to provide an opportunity for students to have fun as well as to network.

Finally, I would like to say a special “thank you” to all our sponsors for their continual support of our awards and various activities.

On behalf of the CSAS and our host ASAS, I welcome you to JAM 2014.

John Baah
President, CSAS
Join ASAS and ARPAS as we launch the Career Learning Center on Tuesday, July 22 at 5pm in the Convention Center, room 2503.
Important Message

In the event that protestors interrupt the meeting, please ignore them. Their goal is to attract attention, and any attention you give them will only help their cause. Convention staff have a plan to handle these situations, and they depend on attendee cooperation. If members of the media approach you for an interview, please politely decline and direct them to the convention’s media room, where spokespersons will be available.

Thank you for your cooperation.
Schedule of Events
The 2014 ADSA-ASAS-CSAS JAM will be held July 20 – 24 (Sunday through Thursday). The Opening Session will be Sunday evening, July 20; scientific sessions will begin Monday morning, July 21, and run through noon on Thursday, July 24. Please note the Triennial Lactation, ASN-ASAS, and Beta Agonists preconferences will be on Sunday, July 20.

Location
The meeting will be held at the Kansas City Convention Center and area hotels. The convention center is ideally located in downtown Kansas City within walking distance of hotels, shopping, and dining.

Opening Night Activities
You can’t say “Kansas City” without thinking of BBQ! We’re bringing out the local flavor during the opening night activity. The events kicks off at 4:30 pm with a “Meet and Greet” in the Convention Center. Drinks (cash bar) and light snacks will be served. The Opening Session will begin at 5:30 pm featuring Dr. William Weldon as the Keynote Speaker. Dr. Weldon is a long-time member of the ASAS and will give a talk titled “Linking Animal Science and Animal Agriculture: Meeting the Global Demands of 2050.”

Following the Opening Session, join us at the National Agricultural Center & Hall of Fame for a night of fun! The event will feature BBQ and ice cream taste-testing, along with activities including hayrides and a mechanical bull. Buses from the Convention Center will run from 6:15 to 6:45 pm and begin returning to the Convention Center around 9:30 pm. Don’t miss the flavor of Kansas City!

Important Phone Numbers
Marriott Downtown (ADSA/ASAS HQ) (816) 421-6800
Crowne Plaza Downtown (CSAS HQ) (816) 474-6664
Aladdin Holiday Inn Downtown (Student HQ) (816) 421-8888
Hilton President Kansas City (816) 221-9490

Program Format for 2014
Poster sessions: .............................................. 7:30 am – 9:15 am
Scientific sessions: ........................................ 9:30 am – 12:30 pm
Lunch breaks: ............................................. 12:30 pm – 2:00 pm
Scientific sessions: ........................................ 2:00 pm – 5:00 pm

Meeting rooms will be equipped for electronic presentations and preloaded sessions. A cyber café will be available for attendees to keep up-to-date while at the meeting.

Registration Hours
Registration will be located in Hall AB in the Kansas City Convention Center.

Registration hours for the 2014 Joint Annual Meeting, including special symposia and other events, will be as follows:
Saturday, July 19 (preregistered only)........ 1:00 pm – 5:00 pm
Sunday, July 20 ........................................ 7:00 am – 6:00 pm*
Monday, July 21 ....................................... 6:30 am – 5:15 pm
Tuesday, July 22 ...................................... 6:30 am – 5:15 pm
Wednesday, July 23 ............................... 6:30 am – 5:15 pm
Thursday, July 24 .................................. 8:00 am – 12:00 pm

*Preregistered attendees can also pick up packets at the Registration desk during the Sunday evening “Meet & Greet” from 4:00 – 6:00 pm.

Media Check-In & Media Room
Please check in at the Registration Desk in Hall A-B in the Kansas City Convention Center. The Media Room is located in room 2204 in the Convention Center.

Speaker Ready Room
The Speaker Ready Room is located in Exhibit Hall AB of the Kansas City Convention Center. This room will be available for speakers from 7:00 am to 5:00 pm on each day of the meeting.

Hospitality Lounge
A hospitality lounge will be located in Exhibit Hall AB and the exhibit hall of the Kansas City Convention Center. Those lounges will offer attendees an area to relax and network. They also serve as a great meeting locations when departing the convention center as a group.

Business Center
The Harvest Productions Business Center is located on the 2200 level of the Kansas City Convention Center. The phone number is 816-513-5651. Use of the business center is at your own expense. The business center will be open during daytime meeting hours.

Presentation Information
Oral and Invited Speakers
Oral sessions will begin at 9:30 am on Monday and Tuesday, 10:30 am on Wednesday, and 8:30 am on Thursday. Meeting rooms will be equipped for electronic presentations and preloaded sessions.
Onsite Upload Information
Onsite presentation upload will be available; files can be delivered to the Pre-Load Room (2206) at the convention center (Saturday: 3:00 to 5:00 pm; Sunday to Wednesday: 7:00 am. to 5:00 pm; Thursday: 7:00 am. to noon). Presentations must be uploaded by 5:00 pm the day before your scheduled presentation. Files will not be accepted by e-mail. No presentations will be loaded while the session is in progress or between presentations.

Poster Presentations
Two hours each morning will be dedicated to poster presentations. The “open poster” sessions will be from 7:30 am to 9:15 am Monday, Tuesday and Wednesday in the Convention Center, Hall AB.

Each poster presentation will be available for public viewing for the entire day, with the authors present during the open posters time (7:30 am – 9:15 am). All posters must be mounted on the board 30 minutes before the beginning of the day’s session and must list the abstract number and corresponding day. The exhibit hall will open at 6:30 am, Monday through Wednesday. Posters must be removed after 5:00 pm each day. Any posters remaining after 5:30 pm will be removed by the Convention Center staff and discarded.

Each poster board area is 48 inches high and 96 inches wide. Use of this space is dictated by the presenter, with the following exceptions:
• The top of the poster space must include the abstract number with corresponding letter of the day it is being presented, title, authors and affiliations.
• The lettering for this section should be at least 1 inch high.

Please note maps of the poster board area can be found on page 251-256 of the program. The maps are perforated to make it easy to carry and use.

Locating the Correct Poster Board
Each poster board number corresponds to the abstract number as noted in the program. For Monday posters an “M”, Tuesday posters a “T”, and Wednesday posters a “W” precede the board number.

ARPAS Continuing Education Units
The 2014 Joint Annual Meeting has been approved for up to 21 continuing education units (CEUs) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

Continuing Education Credits for Veterinarians (RACE credits)
Many of the symposia at the 2014 Joint Annual Meeting will be approved for RACE credits. We are in the process of having specific symposia approved. Following approval, symposia approved for RACE credits will be posted online at http://www.asas.org/JAM2014. Information regarding RACE can be found at www.aavsb.org.

Job Resource Center
The ADSA-ASAS-CSAS Job Resource Center is located in the exhibit hall. Job announcements and CVs will be organized into the following categories for posting: Animal Behavior and Well-Being; Animal Health; Animal Breeding; Companion Animals; Extension; Food Safety; Food Science; Forages and Pastures; Genetics; Growth and Development; International Animal Agriculture; Lactation; Meat Science and Muscle Biology; Nonruminant Nutrition; Pharmacology and Toxicology; Physiology and Endocrinology; Production and Management; Ruminant Nutrition; and Teaching.

Cyber Café
Keep in touch with work, family and friends at the cyber café. Located in the exhibit hall, the cyber café is available to all meeting attendees. The cyber café will also have a computer with a printer for limited printing during the meeting.

JAM 2014 App and Personal Scheduler
There are two ways to keep informed and organized at JAM 2014. First, if you have not already downloaded the JAM App, please look for signage at the meeting to show you how to download. If allowed, the App will push all scheduling updates directly to your mobile devices. In addition to the JAM 2014 App is the Personal Scheduler. Find the Personal Scheduler at www.asas.org/JAM2014.

Notice to Attendees
Use of cameras, video cameras and cell phones (for calls or as cameras) is prohibited during oral and poster presentations to minimize disruption and unauthorized dissemination of data. Anyone found in violation of this policy will be asked to leave the session.
Transportation in Kansas City
Located 25 minutes northwest of downtown, the one-way taxi fare to the Kansas City Convention Center area is approximately $50.00. An airport shuttle service (SuperShuttle) is also available; the rate is $36.00 roundtrip. Visit http://groups.supershuttle.com/asas.html or call 1-800-258-3826 to book your reservation. Provide discount code 57GAF to receive this rate.

Kansas City Sightseeing Options
From the Kansas City Convention and Visitors Bureau (CVB):
Kansas City knows how to entertain visitors. Whether learning how greeting cards are made at the international headquarters of Hallmark Cards or watching how a “hog” is assembled at the Harley-Davidson Final Assembly Plant, today’s traveler will find a multitude of diverse and fun attractions. Thrill seekers of all ages love the side-by-side theme parks Worlds of Fun and Oceans of Fun. Kids can’t get enough of Union Station’s theater district and SeaLife Aquarium at Crown Center.

For a wild time, head to the Kansas City Zoo, or get a speed-rush at one of many Kansas Speedway racing events. For thrills of a different kind, head to the city’s five casinos for traditional gaming, dining and amazing live entertainment. When it comes to attractions, Kansas City has plenty to keep visitors busy! Visit the CVB (http://www.visitkc.com/) to plan your fun in Kansas City!

Hotels
Marriott Downtown – Marriott Tower
(ASAS Headquarters Hotel)
200 West 12th Street
Kansas City, MO 64105

Marriott Downtown – Muehlebach Tower
(ADSA Headquarters Hotel)
200 West 12th Street
Kansas City, MO 64105

Crowne Plaza Downtown
(CSAS Headquarter Hotel)
1301 Wyandotte Street
Kansas City, MO 64105

Aladdin Holiday Inn Downtown
(Student Headquarters Hotel)
1215 Wyandotte Street
Kansas City, MO 64105

Hilton President Kansas City
1329 Baltimore Avenue
Kansas City, MO 64105

More hotels will be added as necessary. Check the website for details.
SPECiaL EvEntS

**ADSA Student Tour**
Saturday, July 19 • 12:30 pm – 4:30 pm
Bus departs from Aladdin Holiday Inn Downtown
Heins Family Farm, Higginsville, MO

Students will travel to Higginsville, MO, to visit the Heins family farm. Paul and Cindy Heins are sixth generation dairy farmers who farm with their three children and milk more than 600 cows. The facilities employ new environmentally sensitive practices which are friendlier for the cows and the environment. This event is open to all ADSA student registrants, both undergraduate and graduate students.

**Student Mixer**
*Sponsored by ADSA*
Saturday, July 19 • 7:00 pm – 9:30 pm
College Basketball Experience

The College Basketball Experience is a 41,500 square-foot facility featuring hands-on basketball “experience” activities and the National Collegiate Basketball Hall of Fame. The night will offer something for everyone—from basketball aficionados to beginner fans. Participants should wear comfy clothes because this is a high-energy, highly interactive venue. This event is open to all students, undergrad and graduate.

**ADSA-SAD Undergraduate Midday Mixer & Pizza Party**
Sunday, July 20 • 11:00 am – 12:00 pm
Convention Center, 2215A

Join your fellow dairy clubs for a fun hour of networking, and get to know your 2014-2015 SAD Officer candidates. Ticket price includes lunch. Registration is limited to ADSA undergraduate student members and advisors.

**Graduate Student Manuscript Writing Workshop**
*Sponsored by ADSA*
Sunday, July 20 • 12:00 pm – 3:00 pm
Convention Center, 2211

Manuscript writing is a key skill for graduate students. We're excited to introduce the first ADSA GSD “Manuscript Writing Workshop: The Art and Science of Getting Published.” Topics for the workshop include: insight into the manuscript review process, how to write an effective response to revisions, explanations of copyright rules and ways to improve your writing. Many professionals will be present at this interactive workshop to field questions and help you get published. A $10 registration fee is required and includes lunch. All graduate students are welcome and attendees will be entered into a drawing for an exciting prize!

**ADSA Graduate Student Division Business Meeting and Open Forum**
Sunday, July 20 • 3:30 pm – 4:15 pm
Convention Center, 2211

In addition to meeting the incoming GSD officer team, be sure to attend this meeting to voice your ideas and opinions about ADSA GSD activities. Join us for a new, more interactive style of business meeting. Enjoy refreshing drinks and conversations with your fellow dairy science graduate students.

NEW IN 2014

- A meeting theme: “Linking Animal science and Animal Agriculture: Meeting the Global Demands of 2050”. Look for the oral presentations throughout the programs labeled as Links! The overall program committee chose these presentations to highlight the meeting theme and to “link” themes across species and disciplines!
- Enhanced industry involvement in session planning and presentations within the sessions.
- A new (or maybe an old) opening night format. Following a reception and a brief opening session, we will bus participants to a BBQ at the National Ag Hall of Fame. Years ago, the BBQ was a standing event at ASAS meetings. We are excited to bring the BBQ back in a city famous for BBQ and at a venue created to honor agriculture.
- Panel discussions during lunch:
  - Animal Science in the Real World
  - Funding Agencies: Perspectives in Today's Economy
- More snacks throughout the day.
- Virtual Meeting: To ensure attendees see every presentation of interest to the attendee, all symposia will be online available for attendee viewing within 24 hours of the presentation. All other presentations will be online within 7 days. No more worrying about overlapping presentations, now you can see them all. Watch them at your convenience on your own computer or come to room 2204 where they will be available to watch on large screen monitors.
ADSA Undergraduate SAD Dairy Quiz Bowl Final Round
Sunday, July 20 • 4:30 pm – 5:00 pm
Convention Center, 2210

University teams from across North America will compete in the ADSA-SAD Dairy Quiz Bowl contest. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The SAD invites you to join them for the excitement of the final round of competition as the top two schools go head-to-head for the title of 2014 Dairy Quiz Bowl Champion.

Opening Night Activities
Sunday, July 20 • 4:30 pm – 9:30 pm

Meet & Greet
4:30 pm – 5:30 pm
Music Hall Foyer

Prior to the opening session, visit with old friends and make new ones! Light snacks and drinks will be available. Pre-registered attendees will be able to pick up their packets at the registration desk during this time.

Opening Session
5:30 pm – 6:15 pm
Music Hall Foyer

Join us as we kick off the 2014 JAM at the opening session. The opening session will include meeting updates and announcements and a keynote by Dr. William Weldon. Dr. Weldon is a long-time member of the ASAS and will give a talk entitled “Linking Animal Science and Animal Agriculture: Meeting the Global Demands of 2050.”

Opening BBQ
6:45 pm – 9:30 pm
National Agricultural Center & Hall of Fame

New this year, we are having a Kansas City BBQ! After the opening session, head over to the National Agricultural Center & Hall of Fame just outside of the city. The museum will allow attendees to step back in time and explore one of the country’s great agrarian collections featuring plows, threshing machines, tractors and other implements used in agriculture since the early 1800s. The Hall of Fame profiles some of the men and women who have made a lasting impact on the industry, such as John Deere, George Washington Carver and Abraham Lincoln.

Come hungry and ready for fun! The event will feature BBQ and ice cream taste-testing, along with activities including hayrides and a mechanical bull. Buses from the Convention Center will run from 6:15 – 6:45 pm and begin returning to the Convention Center around 9:00 pm. Don’t miss the flavor of Kansas City!

ASAS Undergraduate Academic Quadrathlon

ASAS is excited to offer our four regional championship team undergraduates the chance to compete for the National Academic Quadrathlon (AQ) title. The AQ has been an integral part of ASAS history, and we are excited to use it as a platform to integrate more undergraduate involvement at our meetings. The lab practicum, written exam and oral presentations will be held early in the week. Quiz bowl finals will be held immediately before the ASAS awards on Monday night. Please come out and support our undergraduates.

Sunday, July 20 • All Day
Kansas State University
Lab practicum and written exam

Monday, July 21 • All Day
Marriott Downtown
Quiz bowl rounds

Opening Session Keynote Speaker

Dr. William Weldon, PhD

In his position, Dr. Weldon is responsible for Elanco’s global research, development and regulatory operations, as well as Western European Commercial Operations. These areas are responsible for the development and launch of new products and solutions that improve the health, wellbeing and performance of animals. In Western Europe, he is also responsible for sales and marketing of Elanco products. Since joining Elanco in 1995, he has served in various roles and been involved with teams focused on delivering innovation and introducing new products to market. Prior to Elanco, Dr. Weldon was assistant professor of animal science at Ohio State University and was a swine nutritionist at Newsham Hybrids USA.
**ADSA-SAD Undergraduate Poster Competition**

**Monday, July 21 • 7:30 am – 9:15 am**

**Convention Center, Exhibit Hall AB**

In addition to their oral presentations, ADSA undergraduate students will be presenting posters in the exhibit hall. You can visit the posters on Monday morning and attend the oral presentations on Monday afternoon. See program for complete details.

**Spouse Event 1: Arabia Steamboat & Hallmark Visitor Center**

**Monday, July 21 • 9:45 am – 4:00 pm**

**Meet in the Lobby of the Marriott Downtown Hotel**

A fun day of history and Kansas City sightseeing is planned for the Spouse Event! The day will kick off at the Arabia Steamboat Museum, where attendees will explore a home to a true time capsule of frontier life in the 1800s. The Arabia was headed up the Missouri River in the fall of 1856 when the boat struck a tree snag and sank just north of Kansas City. The steamboat’s cargo was 200 tons of supplies bound for general stores and pioneer settlements. As the years passed, the river changed course and left the Arabia buried beneath a Kansas cornfield. Finally, in 1988 a group of modern-day adventurers uncovered the lost Arabia and her magnificent cargo. They were amazed to find fine dishware, clothing and even bottled food all preserved in remarkable condition.

After the Arabia Steamboat Museum, there will be lunch provided and then attendees will travel to the Hallmark Visitors Center. The Hallmark Visitors Center celebrates the Hallmark story in a display of remarkable exhibits from humble beginning in 1910, to the creation of one of the world’s largest greeting card companies.

**ADSA Graduate Student Division Career Insights Luncheon**

**Sponsored by Leprino Foods**

**Monday, July 21 • 12:30 pm – 2:00 pm**

**Convention Center, 2215B**

ADSA graduate students will interact with career professionals from various industry, academic and government agencies. Students will be able to ask questions about how to get a job interview, interviewing skills and how to thrive once a job offer is made. Registration is required and includes a free box lunch. Thank you to Leprino Foods for making this luncheon possible through their generous sponsorship!

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**2014 ASAS University Ice Cream Competition**

We are excited to kick off the first ever ASAS University ice cream competition at the 2014 JAM Opening BBQ. In 2014, we are featuring ice cream from the Kansas State University, South Dakota State University, University of Connecticut, University of Missouri, and Washington State University. Come out to the BBQ, sample the ice-cream and vote for your favorite!

The university product that receives the most votes will receive the first ever traveling ASAS ice cream competition trophy, a $1,000 departmental scholarship and the honor of winning our first competition. Please note – there is no second place in this competition, the winner takes all. The winner will be announced and will receive their trophy and scholarship at the ASAS Awards Ceremony!

The five universities participating in this competition are fierce competitors, and we know they will bring their best. Come see it for yourself! And while friendly competition is expected, please take a moment and thank these universities for donating the ice cream.
Lunch Panel Discussion: Funding Agencies Perspective in Today’s Economy
Sponsored by ASAS
Monday, July 21 • 12:30 pm – 2:00 pm
Convention Center, 2215A
ASAS is excited to welcome key individuals from USDA, NSF, USAID, and NIH to discuss the current funding atmosphere. Panelists will give brief overviews of their perspective and take questions from the attendees. Our goal is provide a forum for frank and open conversation about availability of dollars and the best approaches to grant submission.

ASAS Undergraduate Lunch and Learn
Monday, July 21 • 12:30 pm – 2:00 pm
Marriott Downtown, Bennie Moten A
This interactive discussion will focus on preparing for a future in animal science with specific emphasis on navigating career challenges.

Late Breaking Abstract Session
Monday, July 21 • 2:00 pm – 4:00 pm
Convention Center, 2504
Join us for the oral presentations of the selected late-breaking abstracts. The late-breaking abstract are original research that highlight a broad spectrum of work, including cutting-edge, high-tech research that was completed very recently and is important to the species or disciplines involved in animal and dairy science. In addition to oral presentations, late-breaking abstracts are presented in poster form. This year the posters will be presented as e-Posters.

ASAS President’s Picks Posters
Monday, July 21 • 6:00 pm – 9:00 pm
Marriott Downtown, Imperial Ballroom Foyer
30 minutes before the ASAS awards, a select group of posters will be displayed, which represent the science the ASAS president finds innovative and exciting! Take a moment to walk through the posters and see what Dr. Lardy thinks is new and exciting at JAM this year. New this year, the President’s Picks will be displayed as large format ePosters.

ASAS Awards Ceremony
Monday, July 21 • 7:00 pm – 8:30 pm
Marriott Downtown, Imperial Ballroom
All meeting participants, families and friends are welcome to attend the ASAS Awards Ceremony. Please join us at this special event to recognize and congratulate the 2014 ASAS award winners. The 2014 Awards Celebration follows immediately after the awards ceremony.

ASAS Awards Celebration
Monday, July 21 • 8:30 pm
Marriott Downtown, Barney Allis
Come and join ASAS after our awards ceremony to celebrate and congratulate all of the 2014 ASAS award winners. ASAS and sponsors welcome you to this exciting reception. We will have food and a cash bar while you interact with award winners and colleagues.

ADSA Student Mixer
Monday, July 21 • 7:00 pm – 9:00 pm
Howl at the Moon
Howl at the Moon Kansas City is one of the hottest spots in the Power and Light District. The high-energy dueling pianos will have everyone singing and dancing to their favorite tunes. Plan on a howlin’ good time at the Monday night mixer! This event is open to all ADSA student registrants, both undergrad and graduate students.

ASAS Graduate Student Mixer
Monday, July 21 • 9:00 pm – 12:00 am
PBR Big Sky
Join your fellow graduate students from ASAS at a mixer for all to enjoy. This event will provide an opportunity to catch up with old friends and make new ones. Don’t miss it! Preregistration is highly recommended. Snacks and one drink ticket are included with the purchase of your ticket.

ASAS Undergraduate Poster Competition
Tuesday, July 22 • 7:30 am – 9:15 am
Convention Center, Exhibit Hall AB
In 2013 ASAS held their first undergraduate poster competition. After a successful inaugural year we are excited to continue the competition in 2014. Don’t miss the posters from our undergraduate students!

ADSA-SAD Undergraduate Student Career Roundtable
Tuesday, July 22 • 9:30 am – 11:00 am
Convention Center, 2215B
Students will have the opportunity to visit with industry members to learn about career opportunities, get useful tips on planning for their careers and much more insight. Students are encouraged to dress professionally (business casual or business professional) and bring several copies of their resume. Students should also visit industry representatives in the exhibit hall for information about upcoming internship and job opportunities.
Family Fun Day: Sea Life Aquarium and LEGOLAND Discovery Center  
Tuesday, July 22 • 9:45 am – 4:00 pm  
Meet in the Lobby of the Marriott Downtown Hotel  
Kansas City provides excitement for the whole family. Attendees will arrive at the Crown Center area near SEA LIFE Kansas City Aquarium and LEGOLAND Discovery Center. SEA LIFE Kansas City Aquarium provides an amazing underwater world to explore. With nose-to-nose experiences with sharks and astonishingly close views of starfish and seahorses, there are animals for the whole family to enjoy. LEGOLAND Discovery Center will make you feel like you’ve just jumped into the world’s biggest box of LEGO bricks! Lunch is not included in the ticket price, but multiple dining options are located within the Crown Center area. Buses will pick up and drop off from the Kansas City Marriott Downtown. Please note, adults not accompanied by children are not allowed into LEGOLAND.

ADSA Undergraduate SAD Awards Luncheon  
Tuesday, July 22 • 11:45 am – 2:00 pm  
Convention Center, 2215A  
Plan to attend this year’s SAD awards luncheon. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Students and industry professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

ASAS Foundation Heritage Lunch  
Tuesday, July 22 • 12:30 pm – 2:00 pm  
Marriott Downtown, Julia Lee A/B  
Each year the Foundation Heritage Lunch honors notable Animal Scientists for their achievements. The Heritage Lunch will be held during the JAM. Please join us at this Foundation fundraiser to honor pioneers of animal science. The 2014 honorees are J. Lush and Daryl Goll.

ASAS JAS and Animal Frontiers Editorial Meeting and Lunch  
Tuesday, July 22 • 12:30 pm – 2:00 pm  
Convention Center, 2215B  
Division editor, and associate division editors are invited to the Journal of Animal Science and Animal Frontiers Lunch to discuss the current status of the journals and future development opportunities.

ADSA Graduate Student Division Dairy Tales  
Tuesday, July 22 • 3:00 pm – 4:30 pm  
Convention Center, 2208  
Make plans to attend the 3rd annual Dairy Tales! This event will feature 15 minute “TED-style” talks from graduate students involved in the dairy industry. These talks will cover controversial topics in a balanced way and appeal to non-experts in the field. Confirmed topics include: the controversy over chocolate milk in the school lunch program, the farm bill and what it means, lameness in dairy cattle, and epigenetics and the dairy cow. This event is free and open to all graduate students, but please pre-register to stay informed about the program.

ASAS Open Forum: Accreditation  
Tuesday, July 22 • 4:00 pm – 5:00 pm  
Convention Center, 2503  
Come meet with the ASAS Accreditation Committee to discuss and contribute to this new ASAS initiative. ASAS is looking for suggestions, methods and volunteers. ASAS will begin with a brief description of the goals and scope of the project and use the remainder of time to answer questions and to take ideas from attendees.

ASAS-ARPAS: Career Learning Center Launch  
Tuesday, July 22 • 5:00 pm - 6:00 pm  
Convention Center, 2503  
Join ASAS and ARPAS at our Career Learning Center (CLC) launch party. The CLC is a new electronic member benefit that will host more than 400 hours of programming.

ADSA Awards Program  
Tuesday, July 22 • 7:00 pm – 8:15 pm  
Marriott Downtown, Imperial Ballroom  
All meeting participants, families, and friends are welcome to attend the 2014 ADSA awards program. Please join us at this special event at the Marriott Kansas City to recognize and congratulate the 2014 award winners.

JAM Ice Cream Social  
Sponsored by Kansas State University  
Tuesday, July 22 • 8:15 pm – 9:30 pm  
Convention Center, Ballroom CD  
All meeting participants, families, friends and award donors are invited to join us for the always popular ice cream social. Ice cream is donated by the KSU creamery—be sure to come by for this special treat!
ADSA Graduate Student Division Mixer  
**Sponsored by Lallemand Animal Nutrition, Bar Diamond, Inc. and Balchem**  
**Tuesday, July 22 • 9:00 pm – 12:00 am**  
**PBR Big Sky**  
Enjoy the evening with your fellow ADSA graduate students at PBR Big Sky, Kansas City’s most stunning country bar in the heart of the Power and Light District. Cold drinks and a little bull riding will make this a fun night out with new and old friends alike. Free drink tickets will be awarded for the first 100 to enter the door. Please preregister for this FREE event, located just three blocks from the convention center. Attend to win door prizes and relax with colleagues from around the globe.

Spouse Event 2: National WWI Museum and Shopping  
**Wednesday, July 23 • 9:45 am – 4:00 pm**  
**Meet in the Lobby of the Marriott Downtown Hotel**  
The National World War I Museum at Liberty Memorial shares deeply personal stories of courage, honor, patriotism and sacrifice. Through thousands of historical objects, photographs and eyewitness accounts, you will experience this monumental event from the individual’s perspective. This state-of-the-art museum takes you on an epic journey through a transformative time in our world’s history.  

Following the museum visit you will be dropped off at the Country Club Plaza for lunch and shopping. This 14-square-block outdoor shopping and entertainment district is filled with romantic Spanish architecture, European art and dazzling fountains. Designed in 1922, the Plaza features boutiques and fashionable national stores as well as distinctive restaurants, outdoor cafes and nightlife hotspots. Two nationally renowned art museums are located nearby, The Nelson-Atkins Museum of Art and the Kemper Museum of Contemporary Art. Buses will pick up and drop off at the Kansas City Marriott Downtown.

Focus on Animal Frontiers  
**Wednesday, July 23 • 10:30 am – 12:00 pm**  
**Convention Center, 2101**  
Join us as we launch the July issue of Animal Frontiers. We will have two speakers present and discuss the issue and a moment to congratulate Dr. Steven Zinn for is exceptional service to EiC. We will also welcome the new Animal Frontiers EiC.

Lunch Panel Discussion: Animal Science in the Real World  
**Sponsored by ASAS**  
**Wednesday, July 23 • 12:30 pm – 2:00 pm**  
**Convention Center, 2215A**  
Join us as members of industry and representatives of commodities groups discuss what is important in animal science in the real world today.

ASAS Graduate Student Snack and Fact  
**Wednesday, July 23 • 3:30 pm – 5:00 pm**  
**Convention Center, 2102A**  
Following the ASAS Graduate Student Symposium join us for the inaugural ASAS National Graduate Student Snack & Fact. This interactive discussion will focus on future career options and opportunities after graduation. Snacks and soft drinks are included in the ticket price.

CSAS Award Banquet  
**Wednesday, July 23 • 6:00 pm – 8:30 pm**  
**Crown Plaza, Starlight Ballroom**  
All meeting participants, families and friends are welcome to attend the CSAS awards banquet (please note this is a ticketed event). Please join us at this special event to recognize and congratulate the 2014 CSAS award winners. The banquet is being held in a round room with floor to ceiling windows on the 12th floor of the Crown Plaza providing attendees with the best view of Kansas City!

CSAS Graduate Student Mixer  
**Wednesday, July 23 • 9:00 pm – 12:00 am**  
**Crowne Plaza, Salon C**  
Please join us for Canadian hospitality at the CSAS Graduate Student Mixer immediately following the awards banquet. This event is open to all CSAS members and CSAS graduate students. Refreshments and a cash bar will be available.

Workshop: Make your Talk TED-Worthy  
**Thursday, July 24 • 9:00 am – 3:00 pm**  
**Marriott Downtown, Bennie Moten A/B**  
Join ASAS as we welcome the premiere PR firm, Charleston Orwig. This event will focus on refining and perfecting your presentation skills. Special emphasis will be making your presentations noteworthy and exceptional.
ASAS is pleased to announce that Dr. Sonny Ramaswamy, Director of the National Institute for Food and Agriculture will join us via video link at JAM 2014. Dr. Ramaswamy will speak to JAM attendees on Wednesday July 23, 2014 at 5 pm central. The video link will be broadcast live. We will have light refreshments in the room and there will be an opportunity to ask Dr. Ramaswamy questions.

**Dr. Sonny Ramaswamy**

Dr. Sonny Ramaswamy was appointed to serve as director of the USDA’s National Institute of Food and Agriculture (NIFA) on May 7, 2012. As part of USDA’s Research, Education, and Extension mission, he oversees NIFA awards funds for a wide range of extramural research, education, and extension projects that address the needs of farmers, ranchers, and agricultural producers.

Prior to joining NIFA, Dr. Ramaswamy served as dean of Oregon State University’s College of Agricultural Sciences and director of the Oregon Agricultural Experiment Station.

Previously, Dr. Ramaswamy was associate dean of the Purdue University College of Agriculture and directed the university’s agricultural research programs from 2006 to 2009. Prior to joining the Purdue faculty, Dr. Ramaswamy was head of Kansas State University’s Department of Entomology from 1997 to 2006, where he held the title of Distinguished Professor and was named the Presidential Outstanding Department Head in 2002. He also served on the faculty of Mississippi State University and as a research associate at Michigan State University. As an insect physiologist, he worked on the integrative reproductive biology of insects.

He received a Bachelor of Science in agriculture and a Master of Science in entomology from the University of Agricultural Sciences, Bangalore, India, and his doctorate in entomology from Rutgers University. He is also a graduate of the University of Nebraska’s New Academic Chair’s Program and Harvard University’s Management Development Program.

**Triennial Lactation/BOLFA (with Lactation Biology): Nutrigenomics in Dairy Cows**

*Sunday, July 20 • 8:30 am – 4:30 pm*  
*Convention Center, 2505B*

The 2014 BOLFA Conference will concentrate on the effects of specific nutritional molecules and overall energy status on gene expression and protein function. View the full speaker list on page 60 of this program.

**ASAS-ASN Preconference Workshop: Next Step from Innovate 2013: Feed Bunk to Bedside to Bench: Current Analytical Platforms in Nutrition**

*Sunday, July 20 • 8:00 am – 4:30 pm*  
*Convention Center, 2505A*

ASAS is pleased to partner with the American Society of Nutrition (ASN) to offer our third ASAS-ASN Preconference.

This year, we are using the preconference to build on the information presented at Innovate 2013. Just like Innovate 2013, we have an amazing line up outstanding speakers. In this round of talks they will take delve into the analytical aspects of their research - letting us know exactly how they are achieving their results. View the full line up of speakers on page 59.

**Beta Agonist Symposium: “What the Data Say”**

*Sunday, July 20 • 9:00 am – 4:00 pm*  
*Convention Center, 2502*

What a difference a year makes. At the 2013 JAM we were just beginning to hear about the controversy surrounding Beta Agonist use. A year later there are still multiple opinions. This Pre-conference is designed to move away from the hype and focus on the data. View the full line up of speakers on page 59.
**ADSA Award Donors**

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American Dairy Science Association
American Dairy Science Association Foundation
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Canadian Cattlemen’s Association
Dairy Farmers of Canada
Elanco Animal Health Canada
Nutreco Canada, Inc.
### Exhibit Schedule

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### Exhibit Floor Plan

The exhibit floor plan shows the layout of the exhibition areas, including aisles, storage, registration, and specific exhibit locations. The plan also indicates areas for posters and ADA accessible exhibits.
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AAALAC International
5283 Corporate Drive, Suite 203 • Frederick, MD 21703-2879
Phone: +301.696.9626
Fax: +301.696.9627
accredit@aaalac.org
www.aaalac.org
Booth(s): 416
AAALAC International (the Association for Assessment and Accreditation of Laboratory Animal Care) promotes the humane treatment of animals in science, research and education through voluntary assessment, accreditation and education programs. More than 900 institutions in 38 countries have earned AAALAC accreditation, demonstrating their commitment to responsible animal care and use.

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milo.bauermeister@adifo.com
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Booth(s): 342
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American Dairy Science Association (ADSA)
1800 S Oak St, Ste 100 • Champaign, IL 61820-6974
www.adsa.org
Booth(s): 404
Established in 1906, ADSA is an international organization of educators, scientists, industry, and government representatives who are committed to advancing the dairy industry. All are keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world’s population. Together, ADSA members have discovered new methods and technologies that have revolutionized the dairy industry. Please visit www.adsa.org for more information.
American Registry of Professional Animal Scientists (ARPAS)
1800 S Oak Street, Suite 100 • Champaign, IL 61820-6974
www.arpas.org
Booth(s): 439
ARPAS is the organization that provides certification of animal scientists through examination, continuing education, and commitment to a code of ethics. Continual improvement of individual members is catalyzed through publications (including The Professional Animal Scientist journal) and by providing information on educational opportunities.

American Society of Animal Science (ASAS)
PO Box 7410 • Champaign, IL 61820
www.asas.org
Booth(s): 302
Established in 1908, ASAS is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching, and service for the dynamic and rapidly changing livestock, companion animal, exotic animal, and food industries. Visit the ASAS booth for more information on
- Journal of Animal Science (www.journalofanimalscience.org)
- Animal Frontiers (animalfrontiers.org)
- Natural Sciences Education
- AnimalSmart.org
- ASAS Foundation
- ASAS Membership
- ASAS Sections
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Phone: 405-607-4522
www.cattlestats.com
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9015 W Maple Street • Milwaukee, WI 53214-4213
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Clemson University
Department of Animal and Veterinary Sciences
123 P : A Building • Clemson, SC 29634
Booth(s): 206
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www.drms.org
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Dairyland Laboratories
217 E Main Street • Arcadia, WI 54612
Phone 608-323-2123
www.dairylandlabs.com
Booth(s): 309
Dairyland Laboratories is an independent full service agriculture testing laboratory offering extensive analysis of feed, forage, soil, plant tissue, manure, water, molds and mycotoxins. Some of our core offerings include Fiber, Starch and Protein digestibilities, worldwide NIR calibration services and easy to use data reporting services.

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http://www.dascor.com/ruminframe.html
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DASCOR, Inc. manufactures autonomous data loggers and sensors for rumin research measurements of temperature, pH, ORP, Ion Specific (NH4+, K+), and pressure for use in cannulated cattle, and as boluses for bison, calves, sheep and goats, as well as wired laboratory systems for artificial rumens. Wireless solutions will also be available this year.

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www.diamondv.com
Phone: 800-373-7234
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Via G. Tomassetti
00161 Rome, Italy
www.eaap.org
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www.elsevierhealth.com  
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www.evonic.com/feed-additives  
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Federation of Animal Science Societies  
1800 S Oak Street, Suite 100 • Champaign, IL 61820-6974  
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The Federation of Animal Science Societies (FASS) was formed in 1998 by three founding member societies: the American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Poultry Science Association (PSA). FASS is unique in that we support common agricultural interests and, at the same time, streamline administrative expenses while preserving the societies’ traditions and values. We specialize in providing a wide array of management services to small and medium-sized, not-for-profit associations. In addition, each year, PhD scientists in animal science compete for the opportunity to represent FASS in Congress through the Congressional Science Fellowship (CSF) Program. Many of these individuals stay on the Washington scene after their fellowship year and continue to serve animal agriculture in significant ways.

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Phone: 608-489-3960  
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The NIRSC is a nonprofit association of commercial laboratories, universities, government units, plant researchers, and instrument manufacturers. Our scope is to work in synergy to develop innovations as well as unity for the use of NIRS. We look to collaborate with the agricultural industry to advance NIRS knowledge and performance.
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www.poultryegg.org/ppfc
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www.probiotech.com
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www.ritchiefount.com
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Phone: 920-261-0446
www.rockriverlab.com
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Booth(s): 227
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www.smartstock-usa.com
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Ankeny, Iowa 50023-7068
Phone: 515-210-1601
Fax: 515-334-1128
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www.soybest.com
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SoyPlus SoyChlor West Central
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United States Contact: Alicia Clancy
Phone: 712-667-3334
aclancy@westcentral.net
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www.vi-cor.com
Booth(s): 318
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**Scheduling of Events**

Scheduling and locations are subject to change without notice.

### Saturday, July 19

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 8:00 am</td>
<td>ASAS New Board Orientation</td>
<td>Marriott Downtown, Andy Kirk A/B</td>
</tr>
<tr>
<td>7:30 am – 5:00 pm</td>
<td>ADSA Board of Directors Meeting</td>
<td>Marriott Downtown, Truman A</td>
</tr>
<tr>
<td>8:00 am – 9:00 am</td>
<td>ASAS Membership Committee Meeting</td>
<td>Marriott Downtown, Jay McShann B</td>
</tr>
<tr>
<td>9:30 am – 5:30 pm</td>
<td>ASAS Board of Directors Meeting</td>
<td>Marriott Downtown, Andy Kirk A/B</td>
</tr>
<tr>
<td>12:30 pm – 4:30 pm</td>
<td>ADSA-SAD and GSD Tour</td>
<td>Departs from Aladdin Holiday Inn</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>Registration open (preregistered, badge and material pick-up only)</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>6:00 pm – 8:00 pm</td>
<td>ARPAS Executive Committee Dinner</td>
<td>Marriott Downtown, Kennedy (Salon 1)</td>
</tr>
<tr>
<td>7:00 pm – 9:00 pm</td>
<td>Student Mixer sponsored by ADSA</td>
<td>College Basketball Experience</td>
</tr>
</tbody>
</table>

### Sunday, July 20

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 am – 6:00 pm</td>
<td>Registration open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>7:30 am – 10:00 am</td>
<td>ADSA New Board Orientation</td>
<td>Marriott Downtown, Truman B</td>
</tr>
<tr>
<td>8:00 am – 12:30 pm</td>
<td>ASAS Board of Directors Meeting</td>
<td>Marriott Downtown, Andy Kirk A/B</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>ARPAS Governing Board Meeting</td>
<td>Marriott Downtown, Kennedy (Salon 1)</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Triennial Lactation Symposium/BOLFA: Nutrigenomics in Dairy Cows</td>
<td>Convention Center, 2505B</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>ASAS-ASN Preconference: Next Step for Innovate 2013: Feedbunk to Bedside to Bench: Current Analytical Platforms in Nutrition</td>
<td>Convention Center, 2505A</td>
</tr>
<tr>
<td>9:00 am – 4:00 pm</td>
<td>Beta Agonist Symposium: “What the Data Say”</td>
<td>Convention Center, 2502</td>
</tr>
<tr>
<td>9:00 am – 10:00 am</td>
<td>ADSA-SAD Officers and Advisor Meeting</td>
<td>Convention Center, 2209</td>
</tr>
<tr>
<td>10:00 am – 11:00 pm</td>
<td>ADSA-SAD Quiz Bowl Officials Meeting</td>
<td>Convention Center, 2208</td>
</tr>
<tr>
<td>10:00 am – 6:00 pm</td>
<td>Exhibit Setup</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>10:30 am – 11:00 am</td>
<td>ADSA-SAD Quiz Bowl Seating Test</td>
<td>Convention Center, 2215B</td>
</tr>
<tr>
<td>11:00 am – 12:00 pm</td>
<td>ADSA-SAD Undergraduate Midday Mixer &amp; Pizza Party</td>
<td>Convention Center, 2215A</td>
</tr>
<tr>
<td>12:00 pm – 1:00 pm</td>
<td>ADSA JDS Editors and Journal Management Committee Lunch</td>
<td>Marriott Downtown, Truman A</td>
</tr>
<tr>
<td>12:00 pm – 3:00 pm</td>
<td>Graduate Student Manuscript Writing Workshop</td>
<td>Convention Center, 2211</td>
</tr>
<tr>
<td>12:00 pm – 4:00 pm</td>
<td>ADSA-SAD Quiz Bowl Seating/Preliminary Rounds</td>
<td>Convention Center, 2208 &amp; 2210</td>
</tr>
<tr>
<td>12:00 pm – 5:00 pm</td>
<td>Hospitality Lounge open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>1:00 pm – 3:00 pm</td>
<td>ASAS Foundation Board of Trustees Meeting</td>
<td>Marriott Downtown, Andy Kirk A</td>
</tr>
<tr>
<td>1:00 pm – 3:00 pm</td>
<td>2015 Program Committee Meeting</td>
<td>Convention Center, 2504</td>
</tr>
<tr>
<td>1:00 pm – 5:00 pm</td>
<td>ADSA Journal Management Committee Meeting</td>
<td>Marriott Downtown, Truman A</td>
</tr>
<tr>
<td>1:00 pm – 6:00 pm</td>
<td>CSAS Executive Committee Meeting</td>
<td>Crowne Plaza, Executive Boardroom, Suite 2725</td>
</tr>
<tr>
<td>1:30 pm – 3:00 pm</td>
<td>ASAS Foundation Board of Trustees Meeting</td>
<td>Convention Center, 2213</td>
</tr>
<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ADSA Production Division Council Meeting</td>
<td>Convention Center, 2212</td>
</tr>
<tr>
<td>2:00 pm – 4:00 pm</td>
<td>ADSA Foundation Board of Trustees Meeting</td>
<td>Marriott Downtown, Truman B</td>
</tr>
<tr>
<td>3:00 pm – 4:00 pm</td>
<td>ADSA Production Division Nominating Committee</td>
<td>Convention Center, 2212</td>
</tr>
<tr>
<td>3:30 pm – 4:15 pm</td>
<td>ADSA Graduate Student Division Business Meeting and Open Forum</td>
<td>Convention Center, 2211</td>
</tr>
<tr>
<td>3:30 pm – 4:30 pm</td>
<td>NRC Update: Nutrient Requirements for Dairy Cattle</td>
<td>Convention Center, 2504</td>
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<tr>
<td>4:30 pm – 5:00 pm</td>
<td>ADSA-SAD Quiz Bowl Final Round</td>
<td>Convention Center, 2210</td>
</tr>
<tr>
<td>4:30 pm – 5:30 pm</td>
<td>JAM Opening Session Meet &amp; Greet</td>
<td>Music Hall Foyer</td>
</tr>
<tr>
<td>5:00 pm – 6:00 pm</td>
<td>ADSA Dairy Foods Division Council Meeting</td>
<td>Convention Center, 2212</td>
</tr>
<tr>
<td>5:30 pm – 6:15 pm</td>
<td>JAM Opening Session</td>
<td>Music Hall Theater</td>
</tr>
<tr>
<td>6:45 pm – 9:30 pm</td>
<td>JAM Opening BBQ</td>
<td>National Agricultural Center &amp; Hall of Fame</td>
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</tbody>
</table>
### SCHEDULE OF EVENTS

**Monday, July 21**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>All day</td>
<td>ASAS Undergraduate Academic Quadrathlon</td>
<td>Marriott Downtown</td>
</tr>
<tr>
<td>6:30 am – 8:00 am</td>
<td>ADSA Dairy Specialists/Dairy-Related Participants Breakfast</td>
<td>Marriott Downtown, Truman A</td>
</tr>
<tr>
<td>6:30 am – 8:00 am</td>
<td>Michigan State University Breakfast</td>
<td>Convention Center, 2201</td>
</tr>
<tr>
<td>6:30 am – 5:15 pm</td>
<td>Registration open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>7:30 am – 9:15 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>7:30 am – 9:15 am</td>
<td>ADSA-SAD Undergraduate Poster Competition</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>7:30 am – 8:15 am</td>
<td>Turn in ADSA-SAD Yearbooks, Scrapbooks and Annual Reports for Judging at ADSA-SAD Booth 538</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:00 am – 9:00 am</td>
<td>Johnne’s/TB Disease Interest Group</td>
<td>Convention Center, 2212</td>
</tr>
<tr>
<td>8:00 am – 6:00 pm</td>
<td>Exhibits open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Job Resource Center open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:00 am – 5:00 pm</td>
<td>Hospitality Lounge open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Judging of Yearbooks, Scrapbooks and Annual Reports in ADSA-SAD Booth 538</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Interviews for Outstanding Student and Advisor Awards</td>
<td>Convention Center, 2209</td>
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<tr>
<td>8:30 am – 9:45 am</td>
<td>ADSA-SAD Activities Symposium</td>
<td>Convention Center, 2210</td>
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<tr>
<td>9:30 am – 10:30 am</td>
<td>Discover Conference Steering Committee</td>
<td>Convention Center, 2213</td>
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<tr>
<td>9:30 am – 5:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center, 2210</td>
</tr>
<tr>
<td>9:45 am – 10:45 am</td>
<td>ADSA-SAD Business Meeting</td>
<td>Convention Center, 2215A</td>
</tr>
<tr>
<td>9:45 am – 4:00 pm</td>
<td>Spouse Event 1: Arabia Steamboat &amp; Hallmark Visitor Center</td>
<td>Marriott Downtown, Lobby</td>
</tr>
<tr>
<td>10:30 am – 12:30 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 2214</td>
</tr>
<tr>
<td>11:00 am – 12:15 pm</td>
<td>ADSA-SAD Undergraduate Dairy Foods Paper Presentations</td>
<td>Convention Center, 2208</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS National &amp; Sectional Graduate Directors Meeting</td>
<td>Marriott Downtown, Andy Kirk A</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Undergraduate Lunch and Learn</td>
<td>Marriott Downtown, Bennie Moten A</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA Graduate Student Division Career Insights Luncheon</td>
<td>Convention Center, 2215A</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>Lunch Panel Discussion: Funding Agencies Perspective in Today's Economy</td>
<td>Convention Center, 2215B</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Past Presidents’ Lunch</td>
<td>Marriott Downtown, Bennie Moten B</td>
</tr>
<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA Past Presidents’ Lunch</td>
<td>Marriott Downtown, Barney Allis Tea Room</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>American College of Animal Science (ACAS) Annual Meeting</td>
<td>Convention Center, 2214</td>
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<tr>
<td>1:00 pm – 2:00 pm</td>
<td>Discover 28 'Starch for Ruminants' Program Committee</td>
<td>Convention Center, 2213</td>
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<tr>
<td>2:00 pm – 4:00 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 2214</td>
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<tr>
<td>2:00 pm – 4:15 pm</td>
<td>ADSA-SAD Undergraduate Production Paper Presentations</td>
<td>Convention Center, 2208</td>
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<tr>
<td>2:00 pm – 4:30 pm</td>
<td>ADSA-SAD Undergraduate Original Research Paper Presentations</td>
<td>Convention Center, 2210</td>
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<tr>
<td>2:00 pm – 5:30 pm</td>
<td>Southern Branch ADSA Symposium and Business Meeting</td>
<td>Convention Center, 2101</td>
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<tr>
<td>5:00 pm – 5:30 pm</td>
<td>Removal of ADSA-SAD Posters</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>5:00 pm – 6:30 pm</td>
<td>Penn State University Reception</td>
<td>Marriott Downtown, Julia Lee A/B</td>
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<td>5:00 pm – 7:00 pm</td>
<td>Informal Calf Gathering</td>
<td>Marriott Downtown, Colonial Ballroom</td>
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<tr>
<td>5:30 pm – 7:00 pm</td>
<td>ASAS Award Winners Dinner and Photo Session</td>
<td>Marriott Downtown, Imperial Ballroom Foyer</td>
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<tr>
<td>6:00 pm – 9:00 pm</td>
<td>ASAS President’s Picks Poster Presentations</td>
<td>Marriott Downtown, Imperial Ballroom</td>
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<tr>
<td>7:00 pm – 8:30 pm</td>
<td>ASAS Awards Program &amp; Undergraduate Academic Quadrathlon Finals</td>
<td>Marriott Downtown, Imperial Ballroom</td>
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<tr>
<td>7:00 pm – 9:00 pm</td>
<td>ADSA-SAD and GSD Student Mixer</td>
<td>How at the Moon</td>
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<tr>
<td>8:30 pm – 11:00 pm</td>
<td>Iowa State Alumni and Friends Reception</td>
<td>Marriott Downtown, Truman B</td>
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<tr>
<td>8:30 pm – 11:00 pm</td>
<td>Purdue University Reception</td>
<td>Marriott Downtown, Truman A</td>
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<tr>
<td>8:30 pm – 12:00 am</td>
<td>ASAS Awards Celebration</td>
<td>Marriott Downtown, Barney Allis</td>
</tr>
<tr>
<td>9:00 pm – 12:00 am</td>
<td>ASAS Graduate Student Mixer</td>
<td>PBR Big Sky</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
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<tr>
<td>6:30 am – 8:00 am</td>
<td>University of Illinois Breakfast</td>
<td>Marriott Downtown, Andy Kirk A/B</td>
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<tr>
<td>6:30 am – 8:00 am</td>
<td>University of Kentucky Breakfast</td>
<td>Marriott Downtown, Yardbird A</td>
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<td>6:30 am – 8:00 am</td>
<td>Virginia Tech Breakfast</td>
<td>Marriott Downtown, Bennie Moten B</td>
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<td>6:30 am – 8:00 am</td>
<td>JDS Editorial Board Breakfast/Meeting</td>
<td>Marriott Downtown, Truman B</td>
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<td>6:30 am – 8:00 am</td>
<td>ADSA DF Division Milk Proteins and Enzyme Committee Breakfast</td>
<td>Convention Center, 2213</td>
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<tr>
<td>7:00 am – 5:15 pm</td>
<td>Registration open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>7:30 am – 9:15 am</td>
<td>Poster Presentations</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>7:30 am – 9:15 am</td>
<td>ASAS Undergraduate Poster Competition</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>8:00 am – 9:00 am</td>
<td>ADSA Spokesperson/Media Training</td>
<td>Convention Center, 2208</td>
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<tr>
<td>8:00 am – 5:00 pm</td>
<td>Exhibits open</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>8:00 am – 5:00 pm</td>
<td>Job Resource Center open</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>8:00 am – 5:00 pm</td>
<td>Hospitality Lounge open</td>
<td>Convention Center, Exhibit Hall AB</td>
</tr>
<tr>
<td>8:30 am – 9:30 am</td>
<td>ADSA-SAD Business Meeting–Election of Officers</td>
<td>Convention Center, 2210</td>
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<tr>
<td>9:00 am – 10:30 am</td>
<td>ASAS Presidents and Block and Bridle Board Meeting</td>
<td>Marriott Downtown, Andy Kirk A</td>
</tr>
<tr>
<td>9:30 am – 11:00 am</td>
<td>ADSA-SAD Undergraduate Student Career Roundtable</td>
<td>Convention Center, 2215B</td>
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<tr>
<td>9:30 am – 12:30 pm</td>
<td>ARPAS Symposium</td>
<td>Convention Center, 2102B</td>
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<tr>
<td>9:30 am – 5:00 pm</td>
<td>Scientific Sessions</td>
<td>Convention Center</td>
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<tr>
<td>9:45 am – 4:00 pm</td>
<td>Family Fun Day: Sea Life and LEGOLAND Discovery Center</td>
<td>Marriott Downtown, Lobby</td>
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<tr>
<td>10:30 am – 11:00 am</td>
<td>Block &amp; Bridle Advisors Meeting</td>
<td>Marriott Downtown, Andy Kirk B</td>
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<tr>
<td>10:30 am – 12:00 pm</td>
<td>ASAS Investment Committee Meeting</td>
<td>Marriott Downtown, Andy Kirk A</td>
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<tr>
<td>11:30 am – 12:30 pm</td>
<td>ADSA Production Division Business Meeting</td>
<td>Convention Center, 3501F</td>
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<tr>
<td>11:30 am – 12:30 pm</td>
<td>ADSA Dairy Foods Division Business Meeting</td>
<td>Convention Center, 3501C</td>
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<tr>
<td>11:45 am – 2:00 pm</td>
<td>ADSA-SAD Awards Luncheon</td>
<td>Convention Center, 2215A</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS Foundation Heritage Lunch</td>
<td>Convention Center, Julia Lee A/B</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ARPAS Business Meeting</td>
<td>Convention Center, 2101B</td>
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<td>12:30 pm – 2:00 pm</td>
<td>ADSA Dairy Foods Division Program Planning Lunch</td>
<td>Convention Center, 2212</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ADSA Dairy Foods Division Milk Proteins and Enzyme Committee</td>
<td>Convention Center, 2213</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>ASAS JAS/Animal Frontiers Editorial Meeting and Lunch</td>
<td>Convention Center, 2515B</td>
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<tr>
<td>12:30 pm – 2:00 pm</td>
<td>CSAS Annual General Meeting and Lunch</td>
<td>Crowne Plaza, Salon B</td>
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<tr>
<td>2:00 pm – 3:00 pm</td>
<td>ARPAS Exam</td>
<td>Convention Center, 2214</td>
</tr>
<tr>
<td>2:00 pm – 4:00 pm</td>
<td>ADSA-SAD Award and Club Photos</td>
<td>Convention Center, 2215A</td>
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<tr>
<td>2:00 pm – 5:00 pm</td>
<td>Pick up Yearbooks and Scrapbooks from SAD Exhibit</td>
<td>Convention Center, Exhibit Hall AB</td>
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<tr>
<td>2:30 pm – 3:30 pm</td>
<td>ADSA-SAD Committee Meeting – Old and New Officers and Advisors</td>
<td>Convention Center, 2209</td>
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<tr>
<td>3:00 pm – 4:30 pm</td>
<td>ADSA Graduate Student Division Dairy Tales</td>
<td>Convention Center, 2208</td>
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<td>4:00 pm – 5:00 pm</td>
<td>ASAS Open Forum: Accreditation</td>
<td>Convention Center, 2503</td>
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<td>5:00 pm – 6:00 pm</td>
<td>ASAS-ARPAS Career Learning Center Launch</td>
<td>Convention Center, 2503</td>
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<tr>
<td>5:00 pm – 6:30 pm</td>
<td>ADSA Award Donor Dinner</td>
<td>Marriott Downtown, Truman AB</td>
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<tr>
<td>7:00 pm – 8:15 pm</td>
<td>ADSA Awards Program</td>
<td>Marriott Downtown, Imperial Ballroom</td>
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<tr>
<td>8:15 pm – 9:30 pm</td>
<td>JAM Ice Cream Social</td>
<td>Convention Center, Ballroom CD</td>
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<tr>
<td>9:00 pm – 12:00 am</td>
<td>ADSA Graduate Student Division Mixer</td>
<td>PBR Big Sky</td>
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Wednesday, July 23

7:00 am – 9:15 am  ASAS Sectional Leadership Meeting  Convention Center, 2201
7:00 am – 5:15 pm  Registration open  Convention Center, Exhibit Hall AB
7:30 am – 9:15 am  Poster Presentations  Convention Center, Exhibit Hall AB
8:00 am – 9:00 am  S-PAC® Users Meeting  Convention Center, 2505A
8:00 am – 3:00 pm  Exhibits open  Convention Center, Exhibit Hall AB
8:00 am – 5:00 pm  Job Resource Center open  Convention Center, Exhibit Hall AB
8:00 am – 5:00 pm  Hospitality Lounge open  Convention Center, Exhibit Hall AB
9:30 am – 10:00 am  ASAS Business Meeting  Convention Center, 2104A
9:30 am – 10:30 am  ADSA Business Meeting  Convention Center, 2503
9:45 am – 4:00 pm  Spouse Event 2: National WWI Museum and Shopping  Marriott Downtown, Lobby
10:30 am – 12:30 pm  ARPAS Exam  Convention Center, 2214
10:30 am – 12:30 pm  Focus on Animal Frontiers Symposium & July Launch  Convention Center, 2101
10:30 am – 1:00 pm  NE ASAS/ADSA Symposium, Business Meeting, Reception and Awards  Convention Center, 3501B
10:30 am – 5:00 pm  Scientific Sessions  Convention Center
12:30 pm – 2:30 pm  ADSA Board of Directors Meeting  Marriott Downtown, Truman A
12:30 pm – 2:00 pm  Lunch Panel Discussion: Animal Science in the Real World  Convention Center, 2215A
2:00 pm – 4:00 pm  ARPAS Exam  Convention Center, 2214
2:30 pm – 4:30 pm  ASAS Board of Directors Meeting  Marriott Downtown, Andy Kirk A/B
3:00 pm – 5:00 pm  Exhibits Dismantle  Convention Center, Exhibit Hall AB
3:30 pm – 5:00 pm  ASAS Graduate Student Snack and Fact Convention Center, 2102A
5:00 pm – 6:30 pm  ASAS-Novus Graduate Student Dinner: Career Pathways  Convention Center, 2215B
6:00 pm – 9:00 pm  CSAS Awards Banquet  Crowne Plaza, Starlight Ballroom
6:30 pm – 8:30 pm  Companion Animal Reception  Convention Center, 3501F
8:30 pm – 10:30 pm  JAM 2014 Program Committee Reception  Marriott Downtown, Basie C/C1
9:00 pm – 12:00 am  CSAS Graduate Student Mixer  Crowne Plaza, Salon C

Thursday, July 24

8:00 am – 10:00 am  ASAS Executive Committee Meeting  Marriott Downtown, Andy Kirk A/B
8:00 am – 12:00 pm  Registration open  Convention Center, Lobby 2200
8:30 am – 11:30 am  Scientific Sessions  Convention Center
9:00 am – 3:00 pm  Workshop: Make your talk TED-worthy  Marriott Downtown, Bennie Moten A/B
10:00 am – 2:00 pm  Midwestern Section ASAS and Midwest Branch ADSA Board Meeting  Marriott Downtown, Julia Lee A/B
1:00 pm – 5:00 pm  NIFA Joint Animal Growth, Feed Efficiency & Animal Genomics Project Directory Meeting  Crowne Plaza

Friday, July 25

9:00 am – 1:00 pm  NIFA Joint Animal Growth, Feed Efficiency & Animal Genomics Project Directory Meeting  Crowne Plaza
Note about abstract numbering:
To better facilitate locating abstracts within their topic area the abstract number system has been adjusted for the 2014 JAM. First abstracts were split into oral and poster presentations, then grouped by their section (topic area) and finally sorted by presentation order. This modified abstract numbering system will ensure that all abstracts within the abstract book are grouped by oral and poster as well as by topic area. To help locate the abstract within their sessions we are providing two listing of sessions and the abstract numbers within those sessions; the first lists the abstracts grouped by oral and poster and then within their topic area, the second is a listing of sessions in presentation order by day.
Linking animal science and animal agriculture: Meeting the global demands of 2050

To help call attention to the theme, we have identified several talks and symposia per day as “linkages” talks. These talks or symposia are listed below and are identified throughout the program by the mark.

**Linkage Symposia – All talks**

Beta Agonist Symposium: “What the Data Say” (page 59)

Beef Species Symposium: Making More, But Using Less: The Future of the U.S. Beef Industry with a Reduced Cowherd and the Challenge to Feed the U.S. and the World; Session I. The U.S. Stocker and Feedlot Industries (page 90)

Beef Species Symposium: Making More, but Using Less: The Future of the U.S. Beef Industry with a Reduced Cowherd and the Challenge to Feed the U.S. and the World; Session II. The Cow-Calf Industry (page 103)

Dairy Foods Symposium: Advances in Delivery of Dairy Ingredients for Health and Functional Benefits (page 103)

ARPAS Symposium: Customer/Consumer Confidence In The Livestock Industry-Ethics (page 140)

International Animal Agriculture Symposium: Global Prospective Of Livestock Production Systems To Meet The Growing Need For Animal Protein In Human Diets: Impacts On Production And Human Health (page 194)

Animal Science in the Real World (page 197)

ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium: Water: Consideration for the Future of Animal and Food Production and Processing (page 198)

EAAP Equine Symposium: Know-How And Future Challenges for Developing the Horse Sector In Europe: The Activity of the EAAP Horse Commission (page 210)

Workshops: Crafting USAID’s Livestock Research Agenda – Animal Science Priorities Under Feed The Future (page 215)

**Linkage Talks**

Page 91 295  **Introduction – Global challenges to a safe food supply.**  
R. J. Harmon*, University of Kentucky, Lexington.

Page 98 741  **EAAP-ASAS Speaker Exchange Presentation: Opportunities and challenges with the use of carbohydrase and protease enzymes in swine formulations.**  

Page 140 77  **Can the genetic selection for improved immune response be tailored to expand the efficacy of disease management interventions.**  
B. Mallard*, Department of Pathobiology, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada.

Page 151 188  **Nutritional sustainability of pet foods.**  

Page 151 189  **How sustainability influences ingredient sourcing, quality and safety.**  
D. L. Meeker*, National Renderers Association, Alexandria, VA.

Page 151 190  **Sustainability of non-traditional companion animals.**  
G. Ballam*, Purina Animal Nutrition, St Louis, MO.

Page 205 735  **Pasture development and sustainable grazing management.**  
S. P. Hart*, American Institute for Goat Research, Langston University, Langston, OK.

Page 205 740  **Global demand for small ruminant products.**  
G. W. Williams* and D. Anderson, Texas A&M University, College Station
### Abstract Numbers by Section (Topic Area)

#### ORAL AND SYMPOSIUM PRESENTATIONS

<table>
<thead>
<tr>
<th>Section (Topic Area)</th>
<th>Session</th>
<th>Day</th>
<th>Abstract Numbers</th>
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<tr>
<td>ADSA Foundation Symposium</td>
<td>Meeting the Present and Future Demand for Employees</td>
<td>T</td>
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<tr>
<td>ADSA Southern Section Symposium</td>
<td>Strategies for Housing Dairy Animals in the Southeast</td>
<td>M</td>
<td>6–10</td>
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<tr>
<td>ADSA-ASAS Northeast Section Symposium</td>
<td>Opportunities to Meet Changing Consumer Preferences for Animal Products</td>
<td>W</td>
<td>11–13</td>
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<tr>
<td>ADSA-SAD Undergraduate Student Paper Competition</td>
<td>Dairy Foods</td>
<td>M</td>
<td>14–17</td>
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<td></td>
<td>Original Research</td>
<td>M</td>
<td>18–23</td>
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<td></td>
<td>Dairy Production</td>
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<td>24–31</td>
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<td>Animal Behavior and Well-Being</td>
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<td>Animal Behavior &amp; Well-Being II</td>
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<td>39–46</td>
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<td>Animal Behavior &amp; Well-Being III</td>
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<td>47–51</td>
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<td>Animal Behavior &amp; Well-Being IV</td>
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<td>Animal Health</td>
<td>Animal Health Symposium I: Animal Health Research From the Perspective of Information Gaps</td>
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<td>Animal Health I: Models of Disease and Stress</td>
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<td>64–75</td>
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<tr>
<td></td>
<td>Animal Health Symposium II: Optimizing Disease Response Modeling</td>
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<td>76–79</td>
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**ADSA Foundation Scholar Lecture**

Abstract Number: 190

**Animal Behavior & Well-Being II**

Abstract Number: 39–46

**Animal Frontiers Mini Symposium: Human Animal Bond**

Abstract Number: 191

**Beef Species: Feed Additives**

Abstract Number: 144–151

**Dairy Foods: Technical Oral Session: Protein / Polysaccharide Interactions**

Abstract Number: 266–275

**Extension Education: Symposium: Decision Support Tools in Extension**

Abstract Number: 292–294

**Food Safety: Food Safety: Advances in Food Safety**

Abstract Number: 299–303

**Forages and Pastures II: Forages for Livestock Systems**

Abstract Number: 317–324

**Growth & Development**

Abstract Number: 370–376

**International Animal Agriculture: Symposium: Global Prospective of Livestock Production Systems to Meet the Growing Need for Animal Protein in Human Diets:**

Impacts on Production and Human Health.

Abstract Number: 400–403

**Physiology and Endocrinology: Novel Approaches to Improving Reproductive Success in Domestic Animals**

Abstract Number: 521–530

**Production, Management, and the Environment: Nutrition and Management**

Abstract Number: 559–565

**Ruminant Nutrition VII: Periparturition Dairy**

Abstract Number: 667–674

**Ruminant Nutrition VIII: Microbiome**

Abstract Number: 675–682

**Swine Species: Symposium: Procedures and Methodology for Determining SID Amino Acid Digestibility and Energy of Feedstuffs**

Abstract Number: 749–751

**Animal Science in the Real World**

Abstract Number: 197
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Federal law restricts these drugs to use by or on the order of a licensed veterinarian. Not for use in humans. Non-steroidal anti-inflammatory drugs may inhibit prostaglandin synthesis; therefore this class of drugs should not be administered concurrently.
ProstaMate™
(dinoprost tromethamine)
Sterile Solution

BRIEF SUMMARY:
Before using ProstaMate™, please consult the product insert, a summary of which follows:

CAUTION: Federal (USA) law restricts this drug to use by or on the order of licensed veterinarian.

For intramuscular use for estrus synchronization, treatment of unobserved estrus and pyometra in cattle, and for abortion of feedlot and other non-lactating cattle.

DESCRIPTION: This product contains the naturally occurring prostaglandin F2 alpha (dinoprost). Each mL contains dinoprost tromethamine equivalent to 5 mg dinoprost.

INDICATIONS: ProstaMate™ Sterile Solution is indicated as a luteolytic agent. ProstaMate™ is effective only in those cattle having a corpus luteum. Future reproductive performance of animals that are not cycling will be unaffected by injection of ProstaMate™. For intramuscular use for estrus synchronization in beef cattle and non-lactating dairy heifers. ProstaMate™ is used to control the timing of estrus and ovulation in estrous cycling cattle that have a corpus luteum. For intramuscular use for unobserved estrus in lactating dairy cows with a corpus luteum. For intramuscular use for treatment of pyometra in cattle. For intramuscular use for abortion of feedlot and other non-lactating cattle during the first 100 days of gestation.

WARNINGS: Not for human use. Women of childbearing age, asthmatics, and persons with bronchial and other respiratory problems should exercise extreme caution when handling this product. Dinoprost tromethamine is readily absorbed through the skin and cause abortion and bronchiolespasm. Accidental spillage on the skin should be washed off immediately with soap and water.

Residue Warnings: No milk discard or pre-slaughter withdrawal is required for labeled use in cattle. Use of this product in excess of the approved dose may result in drug residues.

PRECAUTIONS: Do not administer intravenously. No vial stopper should be entered more than 20 times. For this reason, the 90 mL bottle should only be used for cattle. Non-steroidal anti-inflammatory drugs may inhibit prostaglandin synthesis; therefore this class of drugs should not be administered concurrently. Do not administer to pregnant cattle, unless abortion is desired. Cattle administered a progestin would be expected to have a reduced response to ProstaMate™ Sterile Solution.

ADVERSE REACTIONS: Limited salivation has been reported in some instances.

SAFETY AND TOXICOLOGY: In cattle, evaluation was made of clinical observation, clinical chemistry, hematology, urinalysis, organ weights, and gross plus microscopic measurements following treatment with various doses up to 250 mg dinoprost administered twice intramuscularly at a 10 day interval or doses of 25 mg administered daily for 10 days. There was no unequivocal effect of dinoprost on the hematology or clinical chemistry parameters measured. Clinically, a slight transitory increase in heart rate was detected. There was no evidence of toxicological effects. If given to a pregnant cow, it may cause abortion; the dose required for abortion varies considerably with the stage of gestation. Induction of abortion in feedlot cattle at stage of gestation up to 100 days of gestation did not result in dystocia, retained placenta or death of heifers in the field studies. However, induction of parturition or abortion with any exogenous compound may precipitate dystocia, fetal death, retained placenta and/or metritis, especially at latter stages of gestation.

For customer service or to obtain product information, including a Material Safety Data Sheet, call 1-800-255-6826.

ANADA 200-253, Approved by FDA

Bayer

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Shawnee Mission, Kansas 66201

OvaCyst™
(gonadorelin diacetate tetrahydrate)

Injection for the treatment of cystic ovaries in cattle

BRIEF SUMMARY:
Before using, please consult the product insert, as summary of which follows:

CAUTION: Federal (USA) law restricts this drug to use by or on the order of licensed veterinarian.

DESCRIPTION: OvaCyst™ is a sterile solution containing 50 micrograms of gonadorelin (GnRH) diacetate tetrahydrate per milliliter suitable for intramuscular or intravenous administration. Gonadorelin is the hypothalamic releasing factor responsible for the release of gonadotropins from anterior pituitary. Synthetic gonadorelin is physiologically and chemically identical to the endogenous bovine hypothalamic releasing factor.

INDICATIONS: OvaCyst™ is indicated for the treatment of ovarian follicular cysts in dairy cattle. Ovarian cysts are non-ovulated follicles with incomplete luteinization which result in nymphomoria or irregular estrus. Historically, cystic ovaries have responded to an exogenous source of luteinizing hormone (LH) such as human chorionic gonadotropin. OvaCyst™ initiates release of endogenous LH to cause ovulation and luteinization.

PRECAUTIONS: Not for use in humans. Keep this and all drugs out of reach of children.

For customer service or to obtain product information, including a Material Safety Data Sheet, call 1-800-255-6826.

ANADA 200-069, Approved by FDA

Bayer (reg;g), the Bayer Cross (reg;g) and ProstaMate are trademarks of Bayer.
SYMPOSIA AND ORAL SESSIONS

ASAS-ASN Preconference: Next Step from Innovate 2013: Feed Bunk to Bedside to Bench: Current Analytical Platforms in Nutrition

Chair: Doug Burrin, Baylor College of Medicine
Sponsor: ASAS, ASN, and DuPont - Danisco Animal Nutrition
2505A

8:30 AM  Welcome and introductions
Teresa Davis and Jim Sartin

8:45 AM  Techniques for imaging and correlating functional and physical early brain development influenced by nutrition.
R. W. Johnson*, University of Illinois at Urbana-Champaign.

9:30 AM  Perturbations in calcium and phosphorus homeostasis.
J. S. Radcliffe*, Purdue University, West Lafayette, IN.

10:15 AM  Break

11:00 AM  SCID pig model.
C. Tuggle*, Iowa State University, Ames.

11:45 AM  Lunch and poster competition

1:45 PM  Gut enteroids – What are they and how can we use them?
S. E. Blut*, Baylor College of Medicine, Houston, TX.

2:30 PM  Microbiome applications in animals.
K. Swanson*, University of Illinois at Urbana-Champaign.

3:15 PM  Functional crosstalk between the metagenome and metabolome.
T. Savidge*, Baylor College of Medicine, Houston, TX.

4:00 PM  Closing Remarks
D. G. Burrin*, Baylor College of Medicine, Houston, TX.

Beta Agonist Symposium: “What the Data Say”
Chair: Don Topliff, West Texas A&M University
Sponsor: Merck
2502

9:00 AM  Muscle fat/biology: Muscle.
B. Johnson*, Texas Tech University, Lubbock.

9:30 AM  Muscle fat/biology: Fat.
S. Smith*, Texas A&M University, College Station.

10:00 AM  Live/carcass performance: Swine.
T. See*, North Carolina State University, Raleigh.

10:30 AM  Live/carcass performance: Beef.
R. Rathman*, Texas Tech University, Lubbock.

11:00 AM  Carcass transfer/composition: Swine.
J. Apple*, University of Arkansas, Fayetteville.
11:30 AM  Carcass transfer/composition: Beef.  
T. Lawrence*, West Texas A&M University, Canyon.

12:00 PM  Lunch Break

1:00 PM  Sensory characteristics (color/palatability): Swine.  
D. Boler*, University of Illinois at Urbana-Champaign.

1:30 PM  Sensory characteristics (color/palatability): Beef.  
C. Brooks*, Texas Tech University, Lubbock.

2:00 PM  Private industry perspective  
K. Karr*, Cactus Feeders, Amarillo, TX.

2:30 PM  Trade barriers  
P. Clayton*, United States Meat Export Federation, Denver, CO.

3:00 PM  Panel Discussion

**Triennial Lactation Symposium / BOLFA: Nutrigenomics in dairy cows**

Chair: Monique Rijnkels, Baylor College of Medicine  
Sponsor: ASAS Foundation & EAAP

2505B

8:30 AM  Welcoming Remarks

8:40 AM  Utilizing ‘omic’ techniques to understand energy balance in the lactating dairy cow.  
J. R. Roche¹, C. V. Phyn¹, T. M. Grała², C. G. Walker², M. A. Crookenden¹, S. Meier¹, J. K. Kay¹, and J. J. Loor¹,  
¹DairyNZ, Hamilton, New Zealand, ²DairyNZ, Auckland, New Zealand, ³University of Illinois at Urbana-Champaign.

J. P. McNamara*, Washington State University, Pullman.

10:10 AM  Break

10:30 AM  Insights provided by nutrigenomics into the effect of diet on metabolism and milk production.  
K. J. Harvatine*, Pennsylvania State University, University Park.

11:15 AM  Nutrigenomics in dairy cows.  
M. Bionaz¹ and J. J. Loor², ¹Oregon State University, Corvallis, ²University of Illinois at Urbana-Champaign.

12:00 PM  Lunch Break

1:30 PM  Systems biology and the role of nutrition in coordinating adaptations to lactation.  
J. J. Loor¹ and M. Bionaz², ¹University of Illinois at Urbana-Champaign, ²Oregon State University, Corvallis.

2:15 PM  Nutrient partitioning during intramammary inflammation: A key to severity of mastitis and risk of subsequent disease?  
K. M. Moyes¹, Department of Animal and Avian Sciences, University of Maryland, College Park.

3:00 PM  EAAP - ASAS Speaker Exchange Presentation: Nutritional effects on immunology and inflammation in dairy cattle.  
E. Trevisi¹, P. Grossi, and A. Minuti, Università Cattolica del Sacro Cuore, Piacenza, Italy.

3:45 PM  Concluding Remarks

3:55 PM  H. Allen Tucker Lactation and Endocrinology Award Ceremony
106th ANNUAL MEETING
AMERICAN SOCIETY OF ANIMAL SCIENCE
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787 M001 Characterization of serotonin (5-HT) and glucose patterns and their hepatic receptor profiles during the transition period in dairy cows.

788 M002 Inhibitory factors of casein synthesis in mammary tissue of lactating dairy cows.

789 M003 Health of Holstein bull calves fed a fermentation extract of Aspergillus Oryzae.

790 M004 Fecal score evaluation of pre-weaned dairy calves in group housing.
M. Kittell*, J. Augustine, and S. I. Kehoe, University of Wisconsin-River Falls.

Animal Behavior & Well-Being Posters I

791 M005 Free range pork production system on savanna pasture in Brazil.

792 M006 Behavioral laterality, facial hair whorls, and heart rate variability in horses.
C. B. Shivley*, T. Grandin, and M. Deesing, Colorado State University, Fort Collins.

793 M007 Effects of rearing system and stocking density on growth performance, carcass quality and welfare of male Arbor Acres broilers.

794 M008 Comparison of three acute stressors in horses.
A. J. Bachman, A. Berzas, and C. E. Ferguson*, McNeese State University, Lake Charles, LA.

795 M009 Effect of social housing on pre- and post-weaning intake and performance of dairy calves.
E. K. Miller-Cushon*1, R. Bergeron2, K. E. Leslie4, G. J. Mason3, and T. J. DeVries4, 1University of Guelph, Kemptville, ON, Canada, 2University of Guelph, Alfred, ON, Canada, 3University of Guelph, Guelph, ON, Canada.

796 M010 Associations of stall design, behavior, and hygiene of lactating dairy cows.
M. A. Overvest*, and T. J. DeVries, University of Guelph, Kemptville, ON, Canada.

797 M011 Time budget and rumen development of dairy calves around the time of weaning.
M. A. Overvest*, E. K. Miller-Cushon, and T. J. DeVries, University of Guelph, Kemptville, ON, Canada.

798 M012 Use of peripartum period cud chewing and activity data for diagnosis of health disorders.
D. N. Liboreiro*1, K. S. Machado1, P. Basso Silva2, M. M. Filho3, G. Franco3, A. E. Barreto3, M. I. Endres2, and R. C. Chebel4, 1Department of Veterinary Population Medicine, University of Minnesota, St Paul, 2University of Guelph, Kemptville, ON, Canada, 3University of Guelph, Guelph, ON, Canada.

799 M013 Effect of stall size, tie-rail position, and chain length on cow injuries and cleanliness in Eastern Canadian tie-stall farms.
V. Bouffard*2, A. M. de Passille1, J. Rushen1, E. Vasseur1, D. B. Haley1, and D. Pellerin1, 1Université Laval, Québec, QC, Canada, 2Faculty of Veterinary Medicine, University of British Columbia, Agassiz, BC, Canada.

800 M014 Evaluation of cow cleanliness and fly avoidance behaviors among cows with docked, switch-trimmed, and switch-intact tails.

801 M015 Effect of reduced hair coat on performance of feedlot steers during summer heat stress.
Animal Health: Models of Animal Immune Status and Performance

827 M016 Gastrointestinal and hepatic tissue fatty acid composition and interleukin-6 concentration in broiler chickens: Effect of maternal dietary n-3 fatty acids.
C. J. Bullock, G. Bobe, and G. Cherian*, Oregon State University, Corvallis.

828 M017 Sandwich enzyme-linked immunosorbent assay for detection of Fasciola gigantica excretory secretory in goat sera.
H. R. Metawi1 and E. M. Oudah2, 1Animal Production Research Institute, Agriculture Research Center, Cairo, Egypt, 2Department of Agriculture, Mansoura University, Mansoura, Egypt.

829 M018 Response of beef cows offered a chlortetracycline fortified mineral and either strip or continuous stocked to stockpiled fescue.
M. S. Gadberry1, D. S. Hubbell, IIIF, J. D. Tucker2, T. Hess2, P. A. Beck3, J. Jennings4, J. G. Powell5, and E. A. Backes4, 1Department of Animal Science, University of Arkansas, Little Rock, 2University of Arkansas Livestock and Forestry Research Station, Batesville, 3Department of Animal Science, University of Arkansas, Hope, 4Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville.

830 M019 Regulation of gene expression and chemotactic and phagocytic function of bovine neutrophils incubated with citrus oil and lipopolysaccharides.
M. Garcia1, D. Biswas1, T. H. Elsasser2, and K. M. Moyes1, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2USDA/ARS Growth Biology Lab, Beltsville, MD.

831 M020 Effect of Penicillium mycotoxins on bovine macrophage (BoMac) function.
S. Y. Oh7, H. J. Boermans8, H. V. L. N. Swamy1, T. K. Smith1, and N. A. Karrov1, 1Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 2Department of Biomedical Sciences, University of Guelph, Guelph, ON, Canada, 3Haladi Consultancy Services, Bangalore, India.

832 M021 The Mycobacterial Diseases of Animals (MDA) Multistate Initiative—a cooperative effort addressing animal diseases.
K. E. Olson1, V. Kapur2, P. Coussens3, and D. H. Lein4, 1KEO Consulting, Schaumburg, IL, 2Pennsylvania State University, State College, PA, 3Michigan State University, East Lansing, 4Cornell University, Ithaca, NY.

833 M022 Up-regulation of fetal cardiac genes following persistent and transient bovine viral diarrhea virus infection.
S. W. Hahm*, T. R. Hansen, and H. Han, Colorado State University, Fort Collins.

834 M023 Omnigen-AF supplementation inclusion rate independently promotes immune function in a rat model.
J. A. Branson1,2, D. J. McLean1, N. E. Forsberg1, S. A. Armstrong1, T. H. Schell1, and G. Bobe2, 1OmniGen Research, Prince Agri Products, Corvallis, OR, 2Oregon State University, Corvallis.

835 M024 Effects of betaine on growth performance, carcass characteristics and meat quality of broilers.
J. Ma, W. Chang*, G. Liu, H. Cai, S. Zhang, and A. Zhen, Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing, China.

836 M025 Effects of dietary polyphenols on inflammatory processes, nutrient digestibility and microbiota in the intestine of piglets.
A. Fiesel1, D. K. Geßner1, B. Eckel*2, and K. Eder1, 1Institute of Animal Nutrition and Nutrition Physiology, Universität Gießen, Gießen, Germany, 2Dr. Eckel GmbH, Niederzissen, Germany.

837 M026 Effects of CO2 and filter pore size on bovine neutrophil chemotaxis.
A. M. Barnard*, R. Nebenhaus, S. Polukis, and T. F. Gressley, University of Delaware, Newark.

838 M027 Preliminary evaluation of the effect of a mushroom (Coriolus versicolor) probiotic on gene expression in goat blood.
K. A. Ekwemalor*, North Carolina Agricultuiral and Technical State University, Greensboro.

839 M028 Current colostrum management practices on Jersey farms in Vermont and New York State.
K. M. Morrill1, M. M. Spring2, and H. D. Tyler2, 1Cornell University, Ithaca, NY, 2Iowa State University, Ames.

840 M029 Effect of 2,4-thiazolidinedione treatment in milk production and leukocytes phagocytosis after sub-clinical mastitis induction in lactating dairy goats.
S. G. Richards1, L. Robertson, D. Dahl, L. Johnston, C. T. Estill, and M. Bionaz, Department of Animal and Rangeland Sciences, Oregon State University, Corvallis.

841 M030 Cross-talk between liver and mammary tissue after experimental Escherichia coli mastitis in Holstein dairy cows using RNaseq.
M. Bionaz1, K. M. Moyes2, and P. Sørensen1, 1Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, 2Department of Animal and Avian Sciences, University of Maryland, College Park, 3Center for Quantitative Genetics and Genomics, Department of Molecular Biology and Genetics, Aarhus University, Tjele, Denmark.
M. Rovai1, G. Caja1, A. Salama1,2, A. Juber1, B. Lazaro1, M. Lazaro1, and G. Leitner1, 1Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain, 2Animal Production Research Institute, Dokki, Giza, Egypt, 1Laboratorio Interprofessional Lletet de Catalunya (ALLIC), Cabril, Spain, 2Vacunek, Ibaizabal Bidea 800, Parque Científico y Tecnológico de Bizkaia, Derio, Spain, 3National Mastitis Reference Center, Kimron Veterinary Institute, Bet-Dagan, Israel.

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M. A. Sales1, M. Ata1, B. Williamson1, K. P. Coffey1, M. L. Looper2, and C. F. Rosenkrans1, 1University of Arkansas, Fayetteville, 2USDA-ARS Dale Bumpers Small Farms Research Center, Booneville, AR.

S. S. Gonzalez1 and I. Vieta-Mendoza2, 1Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico, 2Instituto Tecnologico El LLano, Aguascalientes, Mexico.

A. Lago1 and N. Silva-del-Rio2, 1DairyExperts, Tulare, CA, 2VMTRC, University of California, Tulare.


R. M. D. Silva1,2, J. T. Pádua1,2, J. J. R. Fernandes3, R. Z. Taveira1, R. L. Missio1, P. S. Pacheco1, D. A. Fausto4, and J. Restle4, 1Universidade Estadual de Goiás, São Luis de Montes Belos, Goiás, Brazil, 2Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 3FAPEG, Goiânia, Goiás, Brazil, 4Universidade Federal de Goiás, Goiânia, Brazil, 5Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 6ESALQ / USP, Piracicaba, São Paulo, Brazil.

Breeding and Genetics: Applications and Methods in Animal Breeding-Beef


R. M. D. Silva1,2, J. T. Pádua1,2, J. J. R. Fernandes3, R. Z. Taveira1, R. L. Missio1, P. S. Pacheco1, D. A. Fausto4, and J. Restle4, 1Universidade Estadual de Goiás, São Luis de Montes Belos, Goiás, Brazil, 2Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 3FAPEG, Goiânia, Goiás, Brazil, 4Universidade Federal de Goiás, Goiânia, Brazil, 5Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 6ESALQ / USP, Piracicaba, São Paulo, Brazil.
Monsanto, GA, Adnan Menderes University, Aydın, Turkey. Iowa State University, Ames, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, Colorado State University, Fort Collins, Cornell University, Ithaca, NY.

Seasonality and fresh semen quality from Pantaneira and Nellore bulls raised in Brazilian Pantanal.
L. E. S. Silva¹, L. K. Hatamoto-Zervoudakis¹, A. F. Ramos², P. P. Tsuneda³, F. M. Wingert¹, M. F. Duarte Junior¹, T. B. Castaldelli¹, R. D. Almeida¹, and J. D. O. Moraes¹, ¹Federal University Of Mato Grosso, Cuiaba, Brazil, ²Embrapa-Cenargen, Brasilia, Brazil.

Sliding window methods to detection of regions under selection in Nellore cattle.
D. F. Cardoso¹,², G. C. Venturini¹, D. J. A. Santos¹, R. R. Aspiclusaet Borquis¹, A. A. Stella¹, F. Baldi², L. G. Albuquerque³, M. E. Z. Mercadante³, and H. Tonhati¹, ¹State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil, ²State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil, ³Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil.

Association between copy number variation regions in the Nellore cattle genome and meat tenderness.
M. P. Berton¹, M. V. A. Lemos¹, C. Aboujaoude¹, G. M. de Camargo¹, F. Feitosa¹, G. C. Venturini¹, R. L. Tomussi¹, R. Espigolan¹, D. M. Gordo¹, A. S. C. Pereira¹, H. N. Oliveira¹, L. G. Albuquerque¹, and F. Baldi⁲, ¹State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil, ²State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil.

An evaluation of six years of carcass and feedlot performance in Brahman and Brahman influenced steers tested by the American Brahman Breeders Association (ABBA) National Carcass Evaluation Program.
A. Royer¹ and M. D. Garcia, Louisiana State University, Baton Rouge.

Relationship of physical characteristics and reproductive status in crossbred Angus replacement heifers.
J. E. Thames¹, C. M. Turner¹, A. H. Brown, Jr.², C. F. Rosenkrans¹, K. Anschutz², and J. G. Powell², ¹University of Arkansas, Fayetteville, ²Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville.

Breeding and Genetics: Genomic Methodology

Signature of selection reveals large difference in selection traits.
X. Zhang¹, I. Misztal¹, M. Heidariatbar², J. W. M. Bastiaansen³, R. Hawken⁴, R. Okimoto⁴, R. L. Sapp⁴, H. H. Cheng⁵, D. A. Lourenço⁶, and W. M. Muir⁶, ¹University of Georgia, Athens, ²Wageningen University, Wageningen, Netherlands, ³Animal Breeding and Genetics Centre, Wageningen University, Wageningen, Netherlands, ⁴Cobb-Vantress Inc., Siloam Springs, AR, ⁵USDA, ARS, ADOL, East Lansing, MI, ⁶Purdue University, West Lafayette, IN.

Weighted single-step genomic BLUP: An iterative approach for accurate calculation of breeding values and SNP effects.
X. Zhang⁶, D. A. L. Lourenco, and I. Misztal, University of Georgia, Athens.

Derivation of Bayes and Minimax decision rules for allelic frequencies estimation in biallelic loci.
C. A. Martinez¹,², K. Khare¹, and M. A. Elzo¹, ¹Department of Animal Sciences, University of Florida, Gainesville, ²Department of Statistics, University of Florida, Gainesville.

Adjusting genomic relationship matrices in single-step genomic BLUP for crossbred evaluations.
D. Lourenco⁶ and I. Misztal, University of Georgia, Athens.
CSAS Graduate Student Poster Competition

979 M057 Effect of dietary supplementation with linseed oil on the miRNome profile of the bovine mammary gland.
R. Li\(^1\), F. Beaudoin\(^1\), X. Zhao\(^1\), C. Lei\(^2\), and E. M. Ibeagha-Awemu\(^1\), \(^1\)Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, \(^2\)Northwest AD&F University, Xian, China, \(^3\)McGill University, St Ann De Bell, PQ, Canada.

980 M058 Effect of co-expression of Lc and C1 flavanoid regulatory genes in alfalfa on nutritive value and ruminal methane production.
R. G. Heendeniya Vidanaral\(^1\), M. Y. Gruber\(^2\), Y. Wang\(^3\), D. A. Christensen\(^1\), J. J. McKinnon\(^1\), B. Coulman\(^1\), and P. Yu\(^1\), \(^1\)University of Saskatchewan, Saskatoon, SK, Canada, \(^2\)Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, \(^3\)Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

981 M059 Predicting milk fat concentration from nutrient content and DCAD of the diet.
L. Fadul-Pacheco\(^*\), D. Pellerin, P. Y. Chouinard, and E. Charbonneau, Université Laval, Québec, QC, Canada.

982 M060 Evaluation of methane prediction equations for beef cattle fed high forage or high concentrate diets.
P. Escobar\(^*\), K. A. Beauchemin\(^1\), and M. Oba\(^1\), \(^1\)University of Alberta, Lethbridge, AB, Canada, \(^2\)Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, \(^3\)Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, \(^4\)University of Alberta, Edmonton, AB, Canada.

983 M061 Non-protein nitrogen improves feed efficiency of growing pigs fed a diet deficient in non-essential amino acid nitrogen.
W. D. Mansilla\(^*\), J. K. Htoo\(^2\), and C. F. de Lange\(^1\), \(^1\)University of Guelph, Guelph, ON, Canada, \(^2\)Evonik Industries AG, Hanau-Wolfgang, Germany.

984 M062 Impact of the fatty acids in the diet on milk fat content: Analysis from a database of commercial farms.
H. Mannai\(^*\), P. Y. Chouinard, L. Fadul-Pacheco, D. Pellerin, and E. Charbonneau, Université Laval, Québec, QC, Canada.

985 M063 Pregnancy and lambing rates in anestrous ewes bred to a new synchronization protocol and laparoscopic timed artificial insemination (TAI).
S. B. Turner\(^*\), M. B. Gordon\(^1\), T. Gowen\(^1\), J. A. Small\(^2\), and D. M. W. Barrett\(^1\), \(^1\)Faculty of Agriculture, Dalhousie University, Truro, NS, Canada, \(^2\)Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

986 M064 Effect of duration on feed and energy substrate on the digestive physiology of finishing feedlot cattle.
F. Joy\(^*\), J. J. McKinnon, S. Hendrick, and G. B. Penner, University of Saskatchewan, Saskatoon, SK, Canada.

987 M065 A prepartum diet supplemented with rolled canola seed reduced pituitary sensitivity to GnRH in dairy cows during second week postpartum.
R. Salehi\(^*\), M. G. Colazo\(^1\), M. Oba\(^1\), and D. J. Ambrose\(^1\), \(^1\)University of Alberta, Edmonton, AB, Canada, \(^2\)Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

988 M066 Utilization of high lipid byproduct pellet in the finishing diet of feedlot steers to improve carcass traits and reducing feed costs.
F. Joy\(^*\), J. J. McKinnon\(^1\), P. Gorka\(^2\), and G. B. Penner\(^1\), \(^1\)University of Saskatchewan, Saskatoon, SK, Canada, \(^2\)University of Agriculture in Krakow, Krakow, Poland.

Dairy Foods: Technical Poster Session 1: Cheese / Yogurt

989 M067 Physicochemical and sensory characteristics of processed cheese manufactured from goat’s milk fed diet supplemented with sunflower seed or sunflower oil.
A. G. Mohamed\(^*\), T. A. Morsy, and S. Kholif, National Research Center, Cairo, Egypt.

990 M068 Fatty acid profile of sheep cheeses that are commercialized in Chile.
E. Vargas-Bello-Pérez\(^*\), C. Ugalde, P. Toro-Mujica, R. Vera, and C. Aguilar, Pontificia Universidad Católica de Chile, Santiago, Chile.

991 M069 Investigating the impact of distillers dried grains with solubles on the quality of milk and swiss cheese.
V. Manimanna Sankarlad\(^*\), E. D. Testroet, and S. Clark, Iowa State University, Ames.

992 M070 Evaluation of unidentified structural features in hard, aged cheeses and soft, washed rind cheeses by powder X-ray diffractometry.
G. F. Tansman\(^*\), P. S. Kindstedt\(^1\), and J. M. Hughes\(^2\), \(^1\)Department of Nutrition and Food Sciences, University of Vermont, Burlington, \(^2\)Department of Geology, University of Vermont, Burlington.

993 M071 Quality of milk and minas freshcheese of pasture cows supplemented with licuri cake.
A. C. C. Ferreira\(^*\), R. L. Oliveira\(^1\), J. F. Vieira\(^1\), T. M. Silva\(^1\), A. M. Barbosa\(^1\), S. M. P. L. Jaeger\(^1\), and D. D. Amaral\(^1\), \(^1\)Universidade Federal da Bahia, Brazil, \(^2\)Universidade Federal da Bahia, Salvador, Brazil, \(^3\)Universidade do Recôncavo da Bahia-UFRB, Cruz das Almas, Brazil.
Microbial stress responses and gene expression during aging of cation-substituted full fat cheddar cheese.
B. Ganesan*, S. Muruganandam, and D. J. McMahon, Western Dairy Center, Utah State University, Logan.

Characteristics of yogurt manufactured using reconstituted yogurt cultured milk powder compared to yogurt powder.
L. Song*1 and K. J. Aryana2, 1Louisiana State University, Baton Rouge, 2Louisiana State University Agricultural Center, Baton Rouge.

Impacts of different types of exopolysaccharides on the physical and rheological properties of yogurts.
U. Pachekrepapol*1, J. A. Lucy2, and D. S. Horne2, 1Department of Food Science, University of Wisconsin–Madison, 2Wisconsin Center for Dairy Research, Madison.

Substituting KCl for NaCl in fresh queso fresco.
D. L. Van Hekken*1, D. X. Ren1,2, and M. H. Tunic1, 1USDA, ARS, ERRC, Dairy & Functional Foods Research Unit, Wyndmoor, PA, 2Institute of Dairy Science, College of Animal Science, Zhejiang University, Hangzhou, P.R., China.

Effect of potassium sorbate and sodium benzoate concentrations on growth of cheese starter cultures.
D. Olson*, E. Gonzalez, M. Ponce, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

Influence of submicronization of sodium chloride on the sensory characteristics of surface salted cheese crackers.
M. Moncada*, C. Sabliov, C. Astete, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

Submicronization of sodium chloride and its effect on the physico-chemical and microbiological characteristics of surface salted cheese crackers.
M. Moncada*, C. Sabliov; C. Astete, and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge.

Influence of various health beneficial spices on some characteristics of yogurt culture bacteria and Lactobacillus acidophilus and sensory acceptability of spicy probiotic yogurt.
M. Sánchez-Vega and K. J. Aryana*, Louisiana State University Agricultural Center, Baton Rouge.

Yogurt characteristics as effected by added lactose.
B. Mena and K. J. Aryana*, Louisiana State University Agricultural Center, Baton Rouge.

Influence of added lactose on some probiotic properties of yogurt culture bacteria.
B. Mena and K. J. Aryana*, Louisiana State University Agricultural Center, Baton Rouge.

Evaluation of the Perten Dough Lab for production of imitation mozzarella cheese.
A. Kommineni*1, S. Patel1, A. C. Biswas2, C. Marella2, and L. Metzger3, 1Dairy Science Department, South Dakota State University, Brookings, 2Dairy Science Department, California Polytechnic State University, San Luis Obispo, 3Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

Genome analysis of two Lactobacillus curvatus strains that have emerged as dominant non-starter lactic acid bacteria in cheese.
C. J. Oberg1, T. S. Oberg2, J. R. Broadbent2, M. D. Cumumber1, D. J. McMahon1, and J. L. Seetle1, 1Department of Microbiology, Weber State University, Ogden, UT, 2Department of Nutrition, Dietetics, and Food Sciences, Western Dairy Center, Utah State University, Logan, 3Western Dairy Center, Utah State University, Logan, 4University of Wisconsin-Madison.

Use of a water-in-oil-in-water (W/O/W) double emulsion to simulate the full-fat cheese physical properties in a 30% reduced-fat cheese.
L. Liu1,2, D. Clayton1, and D. J. McMahon2, 1Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China, 2Western Dairy Center, Utah State University, Logan.

**Forages and Pastures Posters I: Silages and Forages in Dairy Production Systems**

The influence of wilting on the quality of Leucaena leucocephala silage.
T. Clavero*1 and R. Ruzz2, 1Universidad Del Zulia, Maracaibo, Venezuela, 2Universidad del Zulia, Maracaibo, Venezuela.

Comparison of milk fatty acid profiles of dairy cows grazing cool-season perennial ryegrass or birdsfoot trefoil pasture on a commercial organic dairy farm.
R. G. Christensen1, J. S. Eun1, V. Fettner, A. J. Young1, and J. W. MacAdam1, 1Utah State University, Logan, 2North Carolina State University, Raleigh.

Lactational response of Holstein cows to brown midrib or leafy-floury corn silage.
S. Y. Morrison*1, K. W. Cotanch1, C. S. Ballard2, H. M. Dann1, E. O. Young1, R. J. Grant1, and C. I. Key1, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2Healthy Herd Genetics & Nutrition, LLC, Oneida, NY.

Production response of lactating cows to diets based on corn or forage sorghum silage produced from first or second harvest.
J. K. Bernard*, University of Georgia, Tifton.
1072 M089 Feeding strategy and pasture quality relative to nutrient requirements of grazing dairy cows in the northeastern U.S. A. N. Hafla*, K. J. Soder, A. F. Brito, R. Kersbergen, F. Benson, H. Darby, and M. D. Rubano, USDA-Agricultural Research Service, University Park, PA, 2University of New Hampshire, Durham, 3University of Maine Cooperative Extension, Waldo, 4Cornell University Extension, Cortland, NY, 5The University of Vermont, Albans.

1073 M090 Use of biological additives to improve lactic fermentation tropical silages. L. Bernal*, R. Herrera, P. Avila, H. Jimenez, M. Cuchillo, and S. D. Martens, 1La Salle University, Bogotá, Colombia, 2Corpoica, Bogota, Colombia, 3International Center for Tropical Agriculture, Cali, Colombia, 4Saxon State Office for Environment, Agriculture and Geology, Department of Animal Production, Köllnitsch, Germany.

1074 M091 Quality evaluation of five varieties of corn for silage production in crop-livestock-forest integration system in the Cerrado Region. M. C. A. Santana, A. A. Pinheiro, V. A. Silva, J. T. C. Pacheco, A. C. Fernandes, I. D. Carneiro, V. C. Modesto, and J. Cavali, 1Emater, Goiânia, Brazil, 2UNESP, Jaboticabal, Brazil, 3Universidade Federal de Rondônia-Unir, Rondonia, Brazil.

1075 M092 Impact of hybrid and growing location on yield and composition of corn plants harvested for silage. D. Bolinger, L. Nuzback, and F. N. Owens, 1DuPont Pioneer, Perrinton, MI, 2DuPont Pioneer, Johnston, IA.


1080 M097 Effect of Lactobacillus plantarum MTD1, potassium sorbate or their combination on production of volatile organic compounds and aerobic stability of corn silage. M. C. Windle, C. Merrill, M. L. Smith, S. D. Hafner, F. M. Mitloehner, R. Franco, and L. Kung Jr., University of Delaware, Newark, 2Hafner Consulting LLC, Washington, DC, 3University of California-Davis.

1081 M098 The effects of strains of yeasts or Lactobacillus buchneri 40788 on the fermentation, production of volatile organic compounds (VOCs), and aerobic stability of corn silage. R. M. Savage, M. C. Windle, S. D. Johanningsmeier, and L. Kung Jr., University of Delaware, Newark, USDA-ARS Food Science Research Unit, Raleigh, NC.

1082 M099 Isolation and identification of lactic acid bacteria in forage peanut silage. L. D. Rufino, E. S. Leandro, K. G. Ribeiro, H. C. Mantovani, T. C. Silva, and O. G. Pereira, Universidade Federal de Viçosa, Vicosa, Minas Gerais, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

1083 M100 Evaluating top losses in Argentine corn silages. L. O. Abdelhadi, G. Marley, and J. M. Barneix, 1Est. El Encuentro, Research & Extension in Ruminant Nutrition, Brandeis, Buenos Aires, Argentina, 2Sil-All Global Product Manager, Gloucestershire, United Kingdom, 3Sil-All Argentine Product Manager, Lincoln, Buenos Aires, Argentina.

1084 M101 Corn silage analysis as influenced by sample size. I. M. Malebana, D. J. R. Cherney, and W. J. Cox, 1Agricultural Research Council, Pretoria, South Africa, 2Cornell University, Ithaca, NY.

1085 M102 In situ degradation characteristics of sorghum silage treated with fibrolytic enzymes. A. Coronado, K. C. McCuistion, J. L. Foster, G. Schuster, and Z. Lope, Texas A&M University-Kingsville, Texas A&M AgriLife Research-Beeville Station, Beeville, 1Dow AgroSciences, Knoxville, TN.


1087 M104 Fermentation profile, chemical composition and microbial population in silages of Stylosanthes Campo Grande with microbial inoculant and pelleted citrus pulp. W. F. D. Souza, K. G. Ribeiro, S. A. Santos, T. C. Silva, V. P. Silva, and O. G. Pereira, Universidade Federal da Bahia, Salvador, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
Recombined, late harvested ensiled alfalfa leaves and stems give comparable performance to normally harvested alfalfa silage.
R. D. Hatfield\textsuperscript{1}, M. B. Hall\textsuperscript{1}, R. E. Muck\textsuperscript{1}, W. J. Radloff\textsuperscript{1}, and K. J. Shinners\textsuperscript{2}, \textsuperscript{1}U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI, \textsuperscript{2}Biological Systems Engineering, University of Wisconsin-Madison.

Changes in the structural carbohydrates of corn stover silage added with yeast culture and fermented apple pomace.
N. H. Ruiz\textsuperscript{*1}, C. Rodríguez-Muela, D. Díaz-Plascencia, O. Ruiz-Barrera, A. Corral, A. Ramírez-Godínez, and C. Arzola-Alvarez, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.

Effects of different additives on chemical composition, fermentation characteristics and aerobic stability of barley silage.
Y. Joo\textsuperscript{1}, D. Kim\textsuperscript{1}, H. Lee\textsuperscript{1}, S. M. Amanullah\textsuperscript{1}, S. C. Kim\textsuperscript{1}, and I. H. Choi\textsuperscript{1}, \textsuperscript{1}Division of Applied Life Science (BK21 Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, South Korea, \textsuperscript{2}Department of Companion Animal and Animal Resources Science, Jeonju University, Geumsan-gun, South Korea.

Effects of bacterial inoculation on the fermentation and aerobic stability of whole crop soybean silage.
B. D. Nkosi\textsuperscript{*1}, R. Meeske\textsuperscript{2}, T. Langa\textsuperscript{1}, T. F. Mutavhatsindi\textsuperscript{1}, and I. M. Malebana\textsuperscript{1}, \textsuperscript{1}ARC-Animal Production Institute, Irene, South Africa, \textsuperscript{2}Outeniqua Research Farm, Western Cape Department of Agric., George, South Africa.

Quality and fermentation profile of sugar cane silage treated with chemical and microbial additives.
L. L. Cardoso, M. I. Marcondes\textsuperscript{*1}, K. G. Ribeiro, O. G. Pereira, T. E. Silva, and D. G. Ferreira, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

The effect of native phospholipids on the flavor and flavor stability of bleached cheddar whey.
C. Park\textsuperscript{*1} and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.

The effect of norbixin destruction or removal on flavor and functionality of 80\% whey protein concentrate.
Y. Qiu\textsuperscript{1}, T. Smith, A. Foegeding, and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.

Storage and temperature effects on the solubility, maillard browning, and sensory characteristics of milk protein concentrates.
T. Smith\textsuperscript{*1}, R. Campbell, and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.

The salt, pH and thermostolerance of a novel nonstarter lactic acid bacterium that might be associated with slat defect in ripened cheddar cheese.
F. Ortakci\textsuperscript{*1}, J. R. Broadbent\textsuperscript{1}, C. J. Oberg\textsuperscript{2}, and D. J. McMahon\textsuperscript{1}, \textsuperscript{1}Department of Nutrition, Dietetics, and Food Sciences, Western Dairy Center, Utah State University, Logan, \textsuperscript{2}Department of Microbiology, Weber State University, Ogden, UT, \textsuperscript{3}Western Dairy Center, Utah State University, Logan.

Role of protein interactions on microstructure and rheological properties of Greek-style yogurt.
G. H. Meletharayil\textsuperscript{1}, H. A. Patel\textsuperscript{1}, and S. G. Sutaraya\textsuperscript{1}, \textsuperscript{1}South Dakota State University, Brookings, \textsuperscript{2}Dairy Science Department, South Dakota State University, Brookings.

Assessment of consumer perceptions and preferences regarding fluid milk at the beginning and end of printed code date.
M. E. Paterson\textsuperscript{1}, Iowa State University, Ames.

Performance of cross-linked and calcium-reduced milk protein concentrate ingredients in model high-protein nutrition bars.
J. C. Banach\textsuperscript{*1}, S. Clark\textsuperscript{1}, L. Metzger\textsuperscript{2}, and B. P. Lamsal\textsuperscript{1}, \textsuperscript{1}Iowa State University, Ames, \textsuperscript{2}Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

The effects of post-exercise consumption of a Kefir beverage on performance and recovery during intensive endurance training.
K. V. O’Brien\textsuperscript{*1}, Louisiana State University, Baton Rouge.

Manufacture of high protein yogurts with low-Ca MPC.
A. Kommineni\textsuperscript{1}, C. Marella\textsuperscript{1}, A. C. Biswas\textsuperscript{1}, and L. Metzger\textsuperscript{1}, \textsuperscript{1}Dairy Science Department, South Dakota State University, Brookings, \textsuperscript{2}Dairy Science Department, California Polytechnic State University, San Luis Obispo, CA, \textsuperscript{3}Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

Effect of titanium dioxide, annatto and homogenisation on the translucency of reduced-fat cheddar cheese.
R. A. Ibanez\textsuperscript{1,2} and P. L. H. McSweeney\textsuperscript{1}, \textsuperscript{1}University College Cork, Cork, Ireland, \textsuperscript{2}University of Wisconsin-Madison.
### Graduate Student Competition: ADSA Production Poster, MS

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<td>M122</td>
<td>Effects of supplemental garlic (Allium sativum) powder and probiotics on diarrhea and immunoglobulin response in preweaned dairy calves.</td>
<td>T. W. Kekana*, University of Venda, Thohoyandou, South Africa.</td>
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<td>M123</td>
<td>Development of an application for touch-screen devices to capture defined calving-related events in dairy herds.</td>
<td>A. A. Barragan*, J. D. Workman, and G. M. Schuennemann, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.</td>
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<td>M124</td>
<td>Effects of dietary crude protein levels during a twelve-week period on late-lactation dairy cow performance.</td>
<td>M. A. Quassdorff*, T. Barros1, J. J. Olmos Colmenero2, M. J. Aguerre1, S. J. Bertics1, and M. A. Wattiaux1, 1University of Wisconsin-Madison, 2University of Guadalajara, Tepatilan, Mexico.</td>
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<td>M126</td>
<td>Ruminal degradability and intestinal digestibility of protein and amino acids in canola meal.</td>
<td>N. Jayasinghe*, South Dakota State University, Brookings.</td>
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<td>M127</td>
<td>Estimate of serum immunoglobulin G concentration in Jersey calves using refractometry.</td>
<td>M. M. Spring1, K. M. Morrill1, A. L. Robinson1, and H. D. Tyler1, 1Iowa State University, Ames, 2Cornell University, Ithaca, NY.</td>
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<td>M128</td>
<td>Examination of pre-milking teat disinfectant contact times using the excised teat model.</td>
<td>B. D. Enger*, L. K. Fox, J. M. Gay, and K. A. Johnson, Washington State University, Pullman.</td>
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<td>M129</td>
<td>The effects of feeding an algae supplement on milk yield, milk components, and dry matter intake.</td>
<td>M. E. Weatherly1, A. M. Gelman1, A. M. Lisembee2, J. D. Clark1, D. L. Ray1, and J. M. Bewley1, 1University of Kentucky, Lexington, 2Altech, Inc., Nicholasville, KY.</td>
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<td>M130</td>
<td>Rumen morphology measurements in periruminant Holstein bull calves fed a fermentation extract of Aspergillus oryzae.</td>
<td>T. T. Yohe1, E. M. Dudash, K. M. O'Diam, and K. M. Daniels, Department of Animal Sciences, The Ohio State University, Wooster.</td>
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<td>M131</td>
<td>Response of dairy cows supplemented with antioxidants and/or chelated trace minerals to intra-mammary bacterial challenge.</td>
<td>R. O. Rodrigues1, M. O. Caldeira1, G. I. Zanton2, and M. R. Waldron1, 1University of Missouri, Columbia, 2Novus International, Inc., St. Charles, MO, 3Nutrition Professionals, Inc., Chilton, WI.</td>
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### Graduate Student Competition: ADSA Production Poster, PhD

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<td>M132</td>
<td>Effect of feeding diets with different type of carbohydrates on dry matter intake, rumen fermentation, and productivity of lactating dairy cows.</td>
<td>X. Gao1, J. Mewis, and M. Oba, University of Alberta, Edmonton, AB, Canada.</td>
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<td>M133</td>
<td>Propionate is a dominant inducer of bovine cytosolic phosphoenolpyruvate carboxykinase gene expression.</td>
<td>Q. Zhang*, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.</td>
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<td>M134</td>
<td>Slow-release urea, rumen-protected methionine, and histidine: Effects on expression and activation of the mTOR signaling pathway in skeletal muscle of dairy cows receiving a diet deficient in metabolizable protein.</td>
<td>F. Giallongo*, H. Sadri2, A. N. Hristov1, J. Werner1, C. Parys1, B. Sarem1, H. Sauverwein1, and C. Lang1, 1Department of Animal Science, The Pennsylvania State University, University Park, 2Institute of Animal Science, Physiology &amp; Hygiene Unit, University of Bonn, Bonn, Germany, 3Animal Resource Program, The Pennsylvania State University, University Park, 4Evonik Industries AG, Hanau, Germany, 5Department of Cellular and Molecular Physiology, Penn State College of Medicine, Hershey.</td>
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<td>M135</td>
<td>Attenuation of the integrated cortisol response following administration of oral firocoxib in preweaned calves prior to cauter disbudding.</td>
<td>M. L. Stock*, R. Gehring1, S. T. Millman1, C. Wang1, L. W. Wulfs1, L. A. Barth1, and J. F. Coetzee1, 1Iowa State University, Ames, 2Kansas State University, Manhattan, 3Pharmacology Analytical Support Team, Iowa State University College of Veterinary Medicine, Ames.</td>
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<td>M136</td>
<td>Effect of storage temperature on the bacterial growth and pH levels of bovine colostrum.</td>
<td>C. Cummins1*, J. Lorenzo1, and E. Kennedy1, 1Teagasc, Animal and Grassland Research and Innovation Center, Moorepark, Fermoy, Co. Cork, Ireland, 2School of Agriculture, Food Science &amp; Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 3Teagasc, Moorepark, Fermoy, Co. Cork, Ireland.</td>
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Interaction among energy status, retinol-binding protein and retinoids status in periparturient dairy cows: hepatic and adipose gene expression.

The effect of prepartum housing on metabolic and reproductive health in dairy cows.
C. L. Millenburg' and S. J. LeBlanc, University of Guelph, Guelph, ON, Canada.

Intake, milk production, ruminal, and feed efficiency responses to DCAD in lactating dairy cows.
M. E. Iwanick* and R. A. Erdman, University of Maryland, College Park

Hepatic metabolomics and transcriptomics in prepartal dairy cows supplemented with Smartamine M and MetaSmart during the transition period.
K. Shahzad*, J. S. Osorio1, D. N. Luchini2, and J. J. Loor1, 1University of Illinois at Urbana-Champaign, 2Adisseo S.A.S., Alpharetta, GA.

Detection of subclinical milk fever and ketosis in fresh dairy cows using rumination time, lying time, reticulorumen temperature, and neck activity.
A. E. Sterrett*1, B. A. Wadsworth1, R. J. Harmon1, M. Arnold1, J. D. Clark1, E. P. Aalseth2, D. L. Ray1, and J. M. Bewley1,
1University of Kentucky, Lexington, 2Earl P. Aalseth, Jr. Dairy Consulting, PLLC, Lake Stevens, WA.

Relationship between dry period length and production and reproduction in grazing Jersey and Holstein cows in Costa Rica.

Effect of stage of gestation and feeding regime on intake and apparent total tract digestibility in Holstein × Gyr dairy cows.
P. P. Rotta1, S. C. Valadares Filho2, T. E. Engle1, L. F. Costa e Silva1, M. I. Marcondes3, F. S. Machado2, T. R. Gionbelli2, B. C. Silva1, and F. A. Silva1, 1Colorado State University, Fort Collins, 2Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, 3Universidade Federal de Viçosa, Viçosa, Brazil, 4EMBRAPA, Juiz de Fora, Brazil, 5Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Description of high cow premix recipes in California dairies.
Y. Trillo*, A. Lago2, and N. Silva-del-Rio1, 1VMTRC, University of California, Tulare, 2DairyExperts, Tulare, CA.

Lactation Biology Poster I

Effect of insulin on mRNA expression of genes related to milk synthesis in primary bovine mammary epithelial cells cultured in vitro.
T. Qin1, H. Y. Wang1, D. P. Bu2, and H. B. Zhu1, 1Embryo Biotechnology and Reproduction Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Conjugated linoleic acid (CLA) trans-10, cis-12 decreases ACC-α gene expression in lactating mammary gland by decreasing specific transcripts from different promoters.
D. E. Oliveira1, D. E. Bauman2, and K. J. Harvatine1, 1Santa Catarina State University, Lages, SC, Brazil, 2Cornell University, Ithaca, NY, 3Penn State University, State College.

Conjugated linoleic acid (CLA) affects in different ways acetyl-CoA carboxylase alpha (ACC-α) transcripts from different promoters in mammary and adipose tissue from lactating ewes.
E. Ticiani1, M. Urio1, A. P. Povaluk1, M. V. Camara1, R. Ferreira2, L. C. Milet1, K. J. Harvatine1, and D. E. Oliveira4, 1Santa Catarina State University, Lages, SC, Brazil, 2Santa Catarina State University, Chapecó, SC, Brazil, 4Penn State University, State College.

Effect of different hormones on β-casein and lactoferrin expression in mammary epithelial cells.
W. Q. Li1,2, J. Q. Wang3, D. P. Bu4, and X. M. Nan1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Life Science, Henan Agricultural University, Zhengzhou, China.

Effects of methionyl-methionine on milk protein synthesis in bovine mammary gland.
J. X. Yang1, H. Y. Liu1, C. H. Wang1, Q. B. Xu1, and J. X. Liu2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China.

Effect of bta-miR-145 over-expression and down-expression on the other microRNA expression in primary bovine mammary epithelial cells.
W. Q. Li1, D. P. Bu4, J. Q. Wang3, and X. M. Nan1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
1229 M151 **Stearic acid alters microRNA profiles in bovine mammary gland epithelial cells.**
Y. G. Chai1, X. M. Nan1, D. P. Bu2, J. J. Loor1, and J. Q. Wang3, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 3University of Illinois at Urbana-Champaign.

1230 M152 **The peroxisome proliferator-activated receptor gamma (PPARγ) agonist thiazolidinedione (TZD) does not overcome trans-10, cis-12 conjugated linoleic acid (CLA) inhibition of milk fat synthesis in lactating dairy ewes.**
E. C. Sandri1, E. M. Sandri2, M. V. Camera1, A. P. Povaluk1, M. Orio1, L. Ticiani1, K. J. Harvatine3, and D. E. Oliveira4, 1Santa Catarina State University, Lages, SC, Brazil, 2Santa Catarina State University, Chapecó, SC, Brazil, 3Penn State University, State College.

1231 M153 **Fatty acid synthase is essential for milk fat formation in goat mammary gland.**
J. Zhu1, J. Luo2, Y. Sun1, and H. Shi1, 1Northwest A&F University, Yangling, China, 2Northwest A & F University, Yangling, China.

**Meat Science & Muscle Biology Posters I**

1242 M154 **Proximate composition and physico-chemical characteristics of broiler fed varying levels of honey in their diet.**
F. Patience Oluosola1, A. Victor O2, O. Bayonle O.2, and O. Olumuyiwa Jacob2, 1Osun State University, Osogbo, Nigeria, 2Osun State University, College of Agriculture, Osogbo, Nigeria.

1243 M155 **Carcass and organ characteristics of broilers fed varying levels of honey.**
A. Victor Olayi2, F. Patience Oluosola, O. Olumuyiwa Jacob, and O. Kehinde O., Osun State University, Osogbo, Nigeria.

1244 M156 **Ractopamine and immunocastration: Effects on enhanced pork loin.**
A. F. S. I. de Freitas1, D. S. Lucas, A. Fausto1, S. F. N. Pertile, F. F. Delgada, N. S. Janzantti2, and E. T. F. Silveira3, 1UNESP, São José do Rio Preto, São Paulo, Brazil, 2IFMT, Campo Novo do Parecis, Mato Grosso, Brazil, 3UFF, Rio de Janeiro, Rio de Janeiro, Brazil, 4ESALQ / USP, Piracicaba, São Paulo, Brazil, 5UNESP, São José do Rio Preto-São Paulo, Brazil, 6ITAL, Campinas, São Paulo, Brazil.

1245 M157 **Analysis of porcine myosin heavy chain isoforms by liquid chromatography and mass spectrometry.**
G. D. Kim1, E. Y. Jung2, H. W. Seo3, J. Y. Jeong4, S. T. Joo4, and H. S. Yang5, 1Department of Food Science and Biotechnology, Kyungnam University, Changwon, South Korea, 2Division of Applied Life Science, Gyeongsang National University, Jinju, South Korea, 3Department of Animal Science, Gyeongsang National University, Jinju, South Korea, 4Department of Animal Science and Life Science, Gyeongsang National University, Jinju, South Korea, 5Division of Applied Life Science, Gyeongsang National University, Jinju, South Korea.

1246 M158 **Occurrence of dietary unsaturated fatty acids and their biohydrogenation products in muscles of non-ruminating foregut fermenters.**
A. Schwarm1, M. Kreuzer2, F. Leiber3, S. Ortmann1, and M. Claus4, 1ETH Zurich, Institute of Agricultural Sciences, Zurich, Switzerland, 2ETH Zurich, Zurich, Switzerland, 3Research Institute of Organic Agriculture (FiBL), Frick, Switzerland, 4Leibniz Institute for Zoo and Wildlife Research, Berlin, Germany, 5University of Zurich, Clinic for Zoo Animals, Exotic Pets and Wildlife, Zurich, Switzerland.

1247 M159 **Effects of amino acid supplementation of reduced crude protein (RCP) diets on fatty acid compositions of subcutaneous fat and muscle.**
A. N. Young1, J. K. Apple, J. W. Yancey, T. M. Johnson, T. C. Tsai, and C. V. Maxwell, Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville.

1248 M160 **Postmortem pH evolution in four muscles and onset, state and resolution of rigor mortis of guinea pigs (Cavia porcellus) carcass.**
D. Núñez-Valle2, L. P. Cevallos-Velastegui1, A. Morales-delaNuez1, N. Castro1, B. Argüello1, and D. Sánchez Macías1, 1Agroindustrial Engineering, Universidad Nacional de Chimbote, Chimbote, Peru, 2Escuela Superior Politécnica de Chimbote, Chimbote, Peru, 3Facultad de Ciencia Pecuarias, Escuela Superior Politécnica de Chimbote, Chimbote, Peru, 4Department of Animal Science, Universidad de Las Palmas de Gran Canaria, Arucas, 35413, Las Palmas, Spain.

1249 M161 **Water holding capacity and cooking losses of different muscles of guinea pigs (Cavia porcellus).**
L. P. Cevallos-Velastegui, D. Núñez Valle, A. Morales-delaNuez, N. Castro, B. Argüello, and D. Sánchez Macías1, 1Agroindustrial Engineering, Universidad Nacional de Chimbote, Chimbote, Peru, 2Escuela Superior Politécnica de Chimbote, Chimbote, Peru, 3Department of Animal Science, Universidad de Las Palmas de Gran Canaria, Arucas, 35413, Las Palmas, Spain.
Nonruminant Nutrition: Amino Acid, Mineral and Energy Nutrition in Monogastrics

1288 M162 Calcium level and dEB affect the protein and mineral digestibility of lactating sows.
R. Davín1, S. A. Guzmán-Pino1, D. Solà-Oriol2, E. G. Manzanilla1, and J. F. Pérez1, 1Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain.

1289 M163 Early dietary amino acid restrictions and flaxseed oil supplementation on the leanness of pigs and quality of pork: Growth performance, serum metabolites, and carcass traits.
C. K. Adhikari1, L. I. Chiba1, S. D. Brozgø2, M. D. S. Vieira1, S. P. Rodning1, W. G. Bergen1, C. L. Bratcher1, and E. G. Welles1, 1Auburn University, Auburn, AL, 2Federal University of Rio Grande do Sul, Porto Alegre, Brazil.

1290 M164 Effects of supplementation with a commercial source of selenium in a laying hens’ feeding system.
L. Betancourt*, Universidad de La Salle, Bogotá, Colombia

1291 M165 Correlating molecular spectroscopy and chemometrics to explore carbohydrate utilization of co-products from bio-fuel and bio-brewing processing.
L. Chen1, X. Zhang1, X. Huang2, and P. Yu3, 1Department of Animal Science, Tianjin Agricultural University, Tianjin, China, 2Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

1292 M166 Phosphorus utilization and sodium-dependent phosphate co-transporters gene expression in growing pigs fed low available phosphorus diets.
B. B. Pokharel1, C. M. Nyachoti1, and W. K. Kim1, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2University of Manitoba, Winnipeg, MB, Canada, 3University of Georgia, Athens.

1293 M167 The impact of an inflammatory challenge and dietary omega-6 to omega-3 fatty acid ratios on protein deposition in nursery pigs.
L. Eastwood1 and D. Beaulieu, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

1294 M168 Phosphorus digestibility in high protein canola meals, conventional canola meal, and soybean meal fed to growing pigs.
C. K. Parr*, Y. Liu, C. M. Parsons, and H. H. Stein, University of Illinois at Urbana-Champaign.

1295 M169 Effect of dietary net energy concentrations on the growth performance of growing gilts housed individually.
G. I. Lee1, K. S. Kim1, J. C. Park1, and D. Y. Kil1, 1Chung-Ang University, Anseong-si, South Korea, 2Rural Development Administration, Cheonan-si, South Korea.

Q. Hu*, U. Agarwal, and B. J. Bequette, Department of Animal and Avian Sciences, University of Maryland, College Park.

1297 M171 Plasma vitamin concentrations are altered by fat-soluble vitamin administration in suckling pigs.
Y. D. Jang1, J. Y. Ma1, J. S. Monegue1, H. J. Monegue1, R. L. Stuart2, and M. D. Lindemann1, 1University of Kentucky, Lexington, 2Stuart Products Inc, Bedford, TX.

1298 M172 Digestibility of amino acids in distillers dried grains with solubles produced in Europe from wheat, maize, or mixtures of wheat and maize and fed to growing pigs.
S. M. Curry1, J. K. Htoo2, H. V. Masey O’Neill3, and H. H. Stein1, 1University of Illinois at Urbana-Champaign, 2Evonik Industries AG, Hanau-Wolfgang, Germany, 3AB Vista Feed Ingredients, Marlborough, United Kingdom.

1299 M173 The determination of the amino acid requirements of pigs in the nursery phase.

1300 M174 Effect of dietary energy level and weaning weight on growth performance and digestibility in weanling piglets.
M. D. S. Vieira1, A. M. L. Ribeiro1, A. D. M. Kessler1, L. I. Chiba1, M. L. Somensi1, L. Bockor1, and L. G. Teixeira1, 1Federal University of Rio Grande do Sul, Porto Alegre, Brazil, 2Auburn University, Auburn, AL.

1301 M175 Effect of dietary energy level and weaning weight on body composition and efficiency of energy utilization in weanling piglets.
M. D. S. Vieira1, A. M. L. Ribeiro1, A. D. M. Kessler1, M. L. Somensi1, L. I. Chiba1, L. Bockor1, and C. S. Marcolla1, 1Federal University of Rio Grande do Sul, Porto Alegre, Brazil, 2Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 3Auburn University, Auburn, AL.

1302 M176 Egg quality of brown laying hens fed with different Met + Cys and chelate Cu levels.
J. E. D. Moraes1, C. C. Pizzolante1, A. P. O. Saccomani2, E. A. D. Oliveira1, S. K. Kakimoto4, J. C. Dadalt*5, and M. A. D. T. Neto5, 1APTA -Unidade de Pesquisa de Brotas-SAA-SP, Brotas, Brazil, 2Instituto de Zootecnia-APTA -SAA-SA, Nova Odessa, Brazil, 3Secretaria de agricultura de Brotas, Brotas, Brazil, 4Granja Kakimoto, Bastos, Brazil, 5University of São Paulo-USP, Pirassununga, Brazil.

1303 M177 Validation of net energy system of feed formulation in growing-finishing pigs fed barley based diets with alternative feed ingredients.
D. E Velayudhan* and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada.
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<td>Egg quality of brown layers fed with different levels of threonine and chelate zinc.</td>
<td>J. E. D. Moraes, C. C. Pizzolante, A. P. O. Saccomanni, E. A. D. Oliveira, S. K. Kakimoto, J. C. Dadalt, and M. A. D. T. Neto, Unidade de Pesquisa de Brotas-SAA-SP, Brotas, Brazil, Instituto de Zootecnia-APTA -SAA-SA, Nova Odessa, Brazil, Secretaria de agricultura de Brotas, Brotas, Brazil, Granja Kakimoto, Bastos, Brazil, University of São Paulo-SP, Pirassununga, Brazil.</td>
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<td>J. K. Mathai and H. H. Stein, University of Illinois at Urbana-Champaign.</td>
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<td>T. J. Pasquetti, P. C. Pozza, I. Moreira, T. C. D. Santos, D. Perondi, C. D. L. Costa Filho, W. Tamamat, P. L. D. O. Carvalho, and C. F. Muniz, Universidade Estadual de Maringá, Bolsista CAPES, Maringá, PR, Brazil, Universidade Estadual de Maringá, Maringá, PR, Brazil, Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil, Universidade Estadual do Oeste do Paraná, Marechal Cândido Rondon, PR, Brazil.</td>
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<td>Effects of mineral supplementation on the performance of nulliparous and multiparous does fed forage containing diets.</td>
<td>L. Verjel-Trigos, I. Rodríguez-Carrascal, and C. Ordoñez-Gomez, Universidad Francisco de Paula Santander-Ocaña, Ocaña, Colombia, Universidad Nacional de Colombia, Bogotá, Colombia.</td>
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<td>1311</td>
<td>Amino acid digestibility in oilseed meals fed to growing pigs.</td>
<td>C. S. Park, A. R. Son, and B. G. Kim, Konkuk University, Seoul, South Korea.</td>
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<td>1312</td>
<td>Standardized total tract digestibility of phosphorus in oilseed meals fed to growing pigs.</td>
<td>C. S. Park, Y. D. Jeong, B. G. Kim, and S. K. Park, Konkuk University, Seoul, South Korea, Rural Development Administration, Suwon, South Korea.</td>
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<td>1313</td>
<td>Standardized total tract digestibility of phosphorus in cereal grains and coproducts fed to growing pigs.</td>
<td>Y. D. Jeong, C. S. Park, B. G. Kim, and S. K. Park, Rural Development Administration, Suwon, South Korea, Konkuk University, Seoul, South Korea.</td>
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**Physiology and Endocrinology I**

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<td>1371</td>
<td>Comparison of endocrine changes, timing of ovulations, ovarian follicular growth, and efficacy associated with Estra-doublesynch and Heatsynch protocols in Murrah buffaloes (Bubalus bubalis).</td>
<td>R. Mirmahmoudi and B. S. Prakash, Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran, National Dairy Research Institute, Karnal, India.</td>
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<td>1372</td>
<td>Development of a novel strategy for synchronization of ovulation and fertility augmentation in cycling buffalo cows.</td>
<td>R. Mirmahmoudi and B. S. Prakash, Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran, National Dairy Research Institute, Karnal, India.</td>
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Reactive oxygen metabolites (ROM) and advanced oxidation protein products (AOPP) as influenced by energy intake and niacin supplementation in the periparturient dairy cow.


The effect of aspirin on prostaglandin F₂α secretion in lactating dairy cows during the luteal phase of the estrous cycle.

J. A. Spencer*, K. Steinkamp, B. Shafii, and A. Ahmadzadeh, University of Idaho, Moscow.

Association between oxidative stress through excessive fat accumulation and the number of mitochondrial DNA copies in adipose tissue of dairy cows.


Telomere length shortening in response to an excessive fat accumulation in subcutaneous adipose tissue of dairy cows.


Pregnancy per AI of high producing Holstein cows treated with norgestomet ear implant or progesterone intravaginal device.


Telomere length in different visceral and subcutaneous adipose tissue depots of overconditioned cows.


Livability of buck spermatozoa after cold storage using egg yolk citrate extender.


Bedding surface does not alter circulating patterns of cortisol, corticosteroid-binding globulin, or free cortisol index in preweaned Jersey calves.


Niacin increases chemerin mRNA abundance in differentiated bovine preadipocytes in vitro.

C. Kopp*, H. Khalilvandi-Behroozyar*, †H. Sauerwein*, and M. Mielenz**, *Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, Germany, †Department of Animal Science, University of Idaho, Moscow, ‡Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.

Macrophage infiltration into subcutaneous adipose tissue in overconditioned cows after excessive fat accumulation.


Rumen-protected methionine, histidine, and slow-release urea: Effects on plasma 3-methylhistidine and ubiquitin proteasome-related gene expression in skeletal muscle of dairy cows receiving a diet deficient in metabolizable protein.

H. Sadri*, F. Giallongo, A. N. Hristov*, C. Lang, J. Werner, C. Parys, B. Saremi, and H. Sauerwein, *Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, †Department of Animal Science, The Pennsylvania State University, University Park, State College, PA, ‡Department of Cellular and Molecular Physiology, Hershey Medical Center, Penn State College of Medicine, Hershey, §Evonik Industries AG, Hanau, Germany, ¶Evonik Industries AG, 63457 Hanau, Germany.

Antioxidant supplementation during in vitro maturation increased oocyte mitochondrial membrane potential and bovine embryo development.

B. C. J. D. Leão*, N. A. D. S. Rocha Frigoni, P. C. Dall’Acqua, and G. Z. Mingoti, University of Sao Paulo State (UNESP), Aracatuba, Brazil.

Hepatic and adipose mRNA expression of genes related to FGF21 in response to conjugated linoleic acid (CLA) supplementation in dairy cows during early lactation.

H. Sadri*, S. Dänicke*, J. Rehaage, and H. Sauerwein, *Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, †Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany, ‡University for Veterinary Medicine, Foundation, Hannover, Germany.
1389 M206 Effect of melatonin (MEL) or maternal nutrient restriction on vascularity of the ovine placenta.
1North Dakota State University, Fargo, 2West Virginia University, Morgantown, 3Mississippi State University, Mississippi State.

1390 M207 Follicle-stimulating hormone stimulates beta-catenin via protein kinase B in granulosa cells.
B. I. Gómez1, C. A. Gifford1, D. M. Hallford1, and J. Hernandez Gifford1, Oklahoma State University, Stillwater; 1New Mexico State University, Las Cruces.

1391 M208 Ileal tight junction gene expression in glugucan-like peptide 2-treated dairy bull calves with and without coccidiosis.
M. P. Walker1, E. E. Connor1, R. L. Baldwin1, and S. Kahl1, USDA-ARS, BFGL, Beltsville, MD, USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD; USDA-ARS, Beltsville, MD.

1392 M209 Effects of heat stress on the metabolic transcriptional profiling of peripheral tissues in growing pigs.
M. Sanz Fernandez1, J. S. Johnson1, J. T. Sibert1, R. L. Boddicker1, S. C. Isom2, L. Cox3, J. W. Ross4, R. P. Rhoads4, and L. H. Baumgard4, 1Iowa State University, Ames, 2Utah State University, Logan; 3Virginia Tech, Blacksburg.

1393 M210 Effect of feeding high or low portions of concentrate during the transition period on serum adiponectin concentrations and mRNA expression of adiponectin and its receptors in subcutaneous and retroperitoneal fat of dairy cows.
P. Friedrichs1, M. Weber1, L. Locher2, S. Dänicke3, U. Meyer3, R. Tienken3, H. Sauerwein*1, and M. Mielenz4, 1Institute of Animal Science, Urmia University, Urmia, Iran, 3University for Veterinary Medicine, Foundation, Hannover, Germany, 4Leibniz Institute for Farm Animal Biology (FBN), Institute of Nutritional Physiology, Dummerstorf, Germany.

1394 M211 Heat stress affects insulin sensitivity in primary bovine adipocytes.
P. P. Faylon1, L. H. Baumgard1, R. P. Rhoads1, and D. M. Sparlock1, Iowa State University, Ames; 2Virginia Tech, Blacksburg.

1395 M212 mRNA expression of chemerin and its receptor in a subcutaneous and a visceral fat depot of dairy cows fed with high or low portions of concentrate during the transition period.
P. Friedrichs1, H. Khalilvandi-Behroozyar1, L. Locher1, S. Dänicke1, U. Meyer1, R. Tienken1, H. Sauerwein1, and M. Mielenz1, 1Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, 2Department of Animal Science, Urmia University, Urmia, Iran, 3University for Veterinary Medicine, Foundation, Hannover, Germany, 4Leibniz Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLL), Braunschweig, Germany, 5Leibniz Institute for Farm Animal Biology (FBN), Institute of Nutritional Physiology, Dummerstorf, Germany.

1396 M213 Individual trans monounsaturated fatty acids have distinct effects on lipogenesis in 3T3-L1 adipocytes.
P. Vahmani1, T. D. Turner1, P. D. Duff1, D. C. Rolland1, C. Mapiye2, W. J. Meadus1, and M. E. R. Dugan1, Agriculture & Agri-Food Canada, Lacombe, AB, Canada, 2Stellenbosch University, Stellenbosch, Western Cape, South Africa.

1397 M214 Modeling diurnal variation in ruminal temperature of beef cows.
B. H. Boehmer1 and R. P. Wettemann, Oklahoma Agricultural Experiment Station, Stillwater.

1398 M215 β-Hydroxybutyrate profile of high-yielding dairy cows of a Brazilian intensive system.
C. Bespalhok Jacometo1, J. Oliveira Feijó1, P. Matti1, A. Marangoz Oliveira1, E. Schmidt1, V. Coitinho Tabeleão1, C. Cassal Brauner1, F. B. Del Pino1, S. Soriano1, and M. Nunes Corrêa1, 1Federal University of Pelotas, Pelotas, Brazil, 2Embrapa, Porto Velho-RO, Brazil, 3Fazenda Colorado, Araras, Brazil.

1399 M216 Analysis of transcription regulator gene networks in peripartal bovine liver during summer and spring seasons.
K. Shahzad1, H. Akbar1, L. Basiricò2, P. Morera2, U. Bernabucci2, and J. J. Loor1, 1University of Illinois, Urbana-Champaign, 2Università degli Studi della Tuscia, Viterbo, Italy.

Production, Management, and the Environment: Influence of Diet and Management on Health and Performance

1456 M217 A six-year study evaluating health, milk and milk quality in 427 dairy herds fed OmniGen-AF to dry and lactating cows.
O. Bewley1, T. Boyle1, M. Brady1, K. Brubaker1, J. D. Chapman1, T. Elliott1, L. O. Ely1, S. Fitzner1, A. E. Holland1, D. Larson1, R. Shaw1, and J. Ydstie1, Prince Agri Products, Inc., Quincy, IL, 2University of Georgia, Athens.

1457 M218 Crude glycerin as a replacement for dry ground corn in finishing diets for beef cattle: Economic analysis.
P. Del Bianco Benedetti1, P. V. R. Paulino1, M. I. Marcondes1, A. Faciola2, I. Franca Smith Maciel1, and M. Custódio da Silva1, 1Federal University of Vicsao, Vicsao, Brazil, 2University of Nevada, Reno, 3Nutron Alimentos Ltda, Campinas, Brazil.

1458 M219 Inhibition of rumen methanogenesis induced by Bioflavex and its pure flavonoid components under in vitro fermentation using rumen fluid from steers fed high concentrate diets.
A. R. Seradij1, J. Crespo2, D. Villalba1, and J. Balcells1, 1University of Lleida, Lleida, Spain, 2Interquim S. A. (Ferrer Health Tech), Barcelona, Spain.
Effects of trace mineral-fortified, limit-fed creep supplements on performance of beef calves (pre-weaning).
A. Saran Neto¹, L. S. Caramalac², P. G. M. D. A. Martins², P. Moriel², H. J. Fernandes³, and J. D. Arthington⁴, ¹University of São Paulo, Pirassununga, Brazil, ²UF/IFAS Range Cattle Research and Education Center, Ona, FL, ³State University of Mato Grosso do Sul, Aquidauana, Brazil.

The effect of a maternal dietary yeast cell wall supplement during gestation on cow performance and calf growth and immunity.
M. C. Roberts¹, S. E. Schmidt², D. A. Neuendorff², R. C. Vann³, N. C. Burdick Sanchez³, J. R. Corley³, J. A. Carroll³, T. H. Welsh, Jr³, and R. D. Raneld⁴, Texas A&M AgriLife Research, Overton, Texas A&M University, College Station, ²Texas A&M AgriLife Research, Overton, ³MAFES-Brown Loam Experiment Station, Mississippi State University, Raymond, MS, ⁴USDA-ARS, Lubbock, TX, ⁵Lesaffre Feed Additives, Milwaukee, WI, ⁶USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ⁷Texas A&M University Department of Animal Science, College Station.

Effect of restricted feeding on body weight, some hematological and biochemical parameters in sheep and goats raised under semi-arid conditions.
E. B. Abdalla¹, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.

Effects of trace mineral-fortified, limit-fed creep supplements on performance of beef calves (post-weaning).
A. Saran Neto¹, L. S. Caramalac², P. G. M. D. A. Martins², P. Moriel², H. J. Fernandes³, and J. D. Arthington⁴, ¹University of São Paulo, Pirassununga, Brazil, ²UF/IFAS Range Cattle Research and Education Center, Ona, FL, ³State University of Mato Grosso do Sul, Aquidauana, Brazil.

Young beef calves preferentially consume supplements fortified with hydroxy vs. organic and sulfate sources of Cu, Zn, and Mn.
L. S. Caramalac¹, H. J. Fernandes³, and J. D. Arthington¹, ¹UF/IFAS Range Cattle Research and Education Center, Ona, FL, ³State University of Mato Grosso do Sul, Aquidauana, Brazil.

Predicting dry matter intake of steers and heifers in the feedlot by using categorical and continuous variables.
O. Koskan¹, H. Koknaroglu¹, D. D. Loy², and M. P. Hoffman³, ¹Suleyman Demirel University, Isparta, Turkey, ²Iowa State University, Ames.

Comparison of high-performance dairy cows fed concentrates vs. those fed no concentrates over a period of 10 years.
P. L. Kunze¹, M. Buergisser¹, and M. Furger¹, Bern University of Applied Sciences, Zollikofen, Switzerland, ²Agricultural Education and Advisory Centre Plantahof, Landquart, Switzerland.

Effect of Leukonostoc citreum SK2556 fermented Korean aged garlic extract (KAGE) on feed intake, production performance, egg quality, odor gas emission from feces, excreta microbiota and hematological profiles in laying hens.
D. Jung¹, J. H. Cho, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

Effects of probiotics supplementation on growth performance, nutrient digestibility, carcass characteristics, meat quality, intestinal microflora and fecal noxious gas emission in broilers.
I. H. Kim¹, Y. Lei, and S. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

Effects of a symbiotic feed additive on milk quality and calving interval in Brazilian dairy herds.
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Effects of injectable trace minerals at the start of the breeding season on attainment of pregnancy in commercial beef cows.
J. D. Arthington¹, P. G. M. D. A. Martins¹, P. Moriel¹, and L. Havenga², ¹UF/IFAS Range Cattle Research and Education Center, Ona, FL, ²MultiMin USA, Ft. Collins, CO.

Withdrawn by author.

Cost analysis of feeding bermudagrass (Cynodon dactylon) or ryegrass (Lolium multiflorum) plus rye (Secale cereale) baleage based on nutrient composition and forage refusal of weaned crossbred beef calves.
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Evaluation of three copper sources on measures of forage utilization and copper status in beef cattle.
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Comparison of camellina meal and DDGS in the diet of replacement beef heifers.
E. E. Grings, A. Sackey¹, and G. A. Perry, South Dakota State University, Brookings.
1474 M235 Effects of prepartum evaporative cooling and vitamin E supplementation on immune function of Holstein cows during summer in Florida.
G. C. Gomes1, J. E. Zuniga1, E. Karakaya1, L. F. Greco1, L. D. P. Sinedino1, N. Martinez1, R. S. Bisinotto1, E. S. Ribeiro1, P. M. Leopoldo Junior2, M. A. Engstrom2, J. P. Driver2, J. E. P. Santos1, and C. R. Staples3, 1Department of Animal Sciences, University of Florida, Gainesville, 2DVM, Eden Prairie, MN, 3Department of Animal Sciences, University of Florida, Gainesville.

1475 M236 Forages used in high producing cow rations in California.
Y. Trillo1, A. Lago2, and N. Silva-del-Rio1, 1VMTRC, University of California, Tulare, 2DairyExperts, Tulare, CA.

1476 M237 Evaluating on-farm methods for measuring dry matter content of potatoes.
R. J. Norell1, J. B. Glaze Jr2, M. Chahine2, and N. L. Olsen1, 1University of Idaho, Idaho Falls, 2University of Idaho, Twin Falls, 3University of Idaho, Kimberly.

1477 M238 Optimizing drying time of potatoes by food dehydrator and Koster Moisture Tester.
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1478 M239 Withdrawn by author.

1479 M240 Validating a refractometer to evaluate Immunoglobulin G concentration in Jersey colostrum and the impact of multiple freeze-thaw cycles on evaluating colostrum quality.

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1527 M241 Metagenomic analysis of the rumen microbiome of dairy cows during the transition period.
D. W. Pitta1, S. Kumar1, N. Indugu2, R. Sinha2, B. Veiccharelli1, B. Bhukya1, and J. Ferguson1, 1University of Pennsylvania, Kennett Square, 2University of Pennsylvania, Philadelphia.

1528 M242 Peripartal supplementation of Smartamine M has positive effects on blood neutrophil activation in dairy cows.
J. S. Osorio1, P. JF, J. K. Drackley2, D. N. Luchini2, and J. J. Loor1, 1University of Illinois at Urbana-Champaign, 2William H. Miner Agricultural Research Institute, Chazy, NY, 3Adisseo S.A.S., Alpharetta, GA.

1529 M243 Effect of a limited supply of phenylalanine, threonine, and tryptophan on mammary metabolism of dairy cows.
I. H. Iroshan1, H. Lapierre2, and L. Doepel3, 1University of Calgary, Calgary, AB, Canada, 2Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada.

1530 M244 Effects of supplementing rumen-protected Met and Lys on diets containing soybean meal or canola meal in lactating dairy cows.
G. A. Broderick1,2 and A. Faciola3, 1US Dairy Forage Research Center, Madison, WI, 2University of Wisconsin-Madison, 3University of Nevada, Reno.

1531 M245 Determination of the comparative bioavailability of lysine in two rumen-protected lysine products using the in vivo plasma lysine response method.

1532 M246 Impacts of feeding ruminally protected phenylalanine and/or methionine to early lactation cows fed diets containing high levels of canola meal.
N. Swanepoel1,2, P. H. Robinson1, and L. J. Erasmus2, 1University of California-Davis, 2University of Pretoria, Pretoria, South Africa.

1533 M247 Ruminal degradation and intestinal digestibility of crude protein and amino acids and correction for microbial contamination in rumen-undegradable protein.
H. A. Paz Manzano1, E. Castillo-Lopez2, T. J. Klopfenstein1, and P. J. Kononoff1, 1University of Nebraska-Lincoln, 2University of Saskatchewan, Saskatoon, SK, Canada.

1534 M248 Validation of the bioavailability of the second generation AjiPro-L using the in vivo plasma lysine response method.
N. L. Whitehouse1, A. F. Brito1, A. Crowther1, A. B. D. Pereira1, C. G. Schwab2, I. Shinzato3, and M. Miura4, 1University of New Hampshire, Durham, 2Schwab Consulting, LLC, Boscobel, WI, 3Ajinomoto Heartland Inc., Chicago, IL, 4Ajinomoto Co., Inc., Kawasaki, Japan.

1535 M249 Comparison of duodenal nitrogen and amino acid flows in dairy cows fed a corn straw or mixed forage diet.
C. Qin1,2, P. Sun1, D. P. Bu1, J. Q. Wang1, P. Zhang2, and P. An1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Hunan Provincial Key Laboratory for Genetic Improvement of Domestic Animal, College of Animal Science and Technology, Hunan Agricultural University, Changsha, China.
Comparison of mammary amino acid utilization in dairy cows fed a corn straw or mixed forage diet.
C. Qin1,2, P. Sun1, D. P. Bu1, J. Q. Wang1,2, P. Zhang1, and P. An1, 1Heilongjiang Bayi Agricultural University, Daqing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 3Hunan Provincial Key Laboratory for Genetic Improvement of Domestic Animal, College of Animal Science and Technology, Hunan Agricultural University, Changsha, China.

Plasma L-methionine and supplemental L-methionine precursor responses to rumen administration of a rumen-protected DL-methionine source or different levels of 2-hydroxy-4-methylthio-butanolic acid.
G. I. Zanton1, S. E. Betts, and M. Vazquez-Anon, Novus International, Inc., St. Charles, MO.

Effects of the ideal profiles of lysine, methionine, threonine, phenylalanine, histidine, and valine on milk protein synthesis gene network expression in bovine mammary epithelial cells.
S. Li1,2, W. Zhao3, A. Hosseini4, J. X. Liu4, and J. J. Loor3, 1Zhejiang University, Hangzhou, China, 2University of Illinois at Urbana-Champaign, 3Northwest A & F University, Yangling, China, 4University of Bonn, Bonn, Germany.

Changes in plasma methionine concentrations after administration of two different doses of rumen protected methionine.
P. D. Carvalho1, N. E. Lobos2, M. Z. Toledo2, E. Trevisol2, V. G. Santos2, R. V. Barletta2, G. M. Baez2, A. Garcia-Guerrero2, J. N. Guenther2, A. H. Sousa2, D. Luchini3, P. M. Fricke2, R. D. Shaver4, and M. C. Wiltbank1, 1University of Wisconsin-Madison, 2Department of Dairy Science, University of Wisconsin-Madison, 3Adisseo, Alpharetta, GA.

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Histidine requirement of dairy cows determined by the indicator amino acid oxidation (AAO) technique.
D. R. Ouellet1, G. E. Lobley2, and H. Lapierre1, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, United Kingdom, 3Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada.

Estimation of histidine requirement in lactating dairy cows.
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Effects of different protein sources on milk performance and amino acid profile in early lactating dairy cows.
X. Q. Zhou1,2, D. P. Bu1, Y. D. Zhang1, M. Zhao1, P. Sun1, and J. Q. Wang1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Northeast Agricultural University, Harbin, China.

Lipogenic gene network expression in bovine mammary epithelial cells in response to the “ideal” profile of Lys, Met, Thr, Phe, His, and Val.
S. Li1,2, W. Zhao3, A. Hosseini4, J. X. Liu4, and J. J. Loor3, 1University of Illinois at Urbana-Champaign, 2Zhejiang University, Hangzhou, China, 3Northwest A & F University, Yangling, China, 4University of Bonn, Bonn, Germany.

Rumen-protected methionine and choline supplementation during the transition period enhance the proinflammatory cytokine response of whole blood.
M. Vailati Riboni1,2, Z. Zhou2, D. N. Luchini1, A. Minuti1, E. Trevisi1, and J. J. Loor2, 1Università Cattolica del Sacro Cuore, Piacenza, Italy, 2University of Illinois at Urbana-Champaign, 3Adisseo S.A.S., Alpharetta, GA.

Amino acid analysis in dairy cow plasma by chloroformate derivatization and gas chromatography.
N. E. Lobos1, G. A. Broderick1, P. D. Carvalho1, D. N. Luchini2, R. D. Shaver1, A. H. Souza2, and M. C. Wiltbank1, 1Department of Dairy Science, University of Wisconsin-Madison, 2Broderick Nutrition & Research, LLC, Madison, WI, 3University of Wisconsin-Madison, 4Adisseo S.A.S., Alpharetta, GA, 5University of California, Cooperative Extension, Tulare.

Effects of supplementing limiting amino acids in diets with reduced CP on nitrogen excretion.
M. A. C. Danes1, G. A. Broderick1, and C. Parys1, 1University of Wisconsin-Madison, 2Broderick Nutrition & Research, LLC, Madison, WI, 3Evonik Industries AG, Hanau, Germany.

Effects of rumen-protected γ-amino butyric acid on immune function and antioxidant status in heat-stressed dairy cows.
J. Cheng1,2,3, N. Zheng1,3, X. Sun1,2, D. P. Bu4, L. Pan4, and J. Wang2,3,4, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Effects of supplemental rumen-protected methionine and histidine on performance of lactating dairy cows.
W. D. Weich1, K. F. Kalscheur2, K. J. Herrick3, and K. E. Griswold3, 1South Dakota State University, Brookings, 2Kemin Industries, Inc., Des Moines, IA, 3Kemin Animal Nutrition & Health, Des Moines, IA.
1550 M264 Canola meals from different plants over two production years differ in rumen-undegradable protein.
G. A. Broderick1, S. Colombini, A. Faciola, and M. A. Karshl, 1Broderick Nutrition & Research, LLC, Madison, WI, 2University of Milan, Milan, Italy, 3University of Nevada, Reno, 4Kirikkale University, Kirikkale, Turkey.

1551 M265 Rumen-undegradable protein of blood meal, canola meal, low-fat distillers dried grain with solubles, soybean meal, and expeller soybean meal determined using in situ and in vitro ammonia release procedures.
H. A. Paz Manzano*, T. J. Klopfenstein*, and P. J. Kononoff, 1University of Nebraska-Lincoln.

1552 M266 Sources of protein and protected methionine on in situ ruminal degradability of crude protein of feed ingredients.
F. D. O. Scarpino van Cleef1,2, J. M. Bertocco Ezequiel1, E. Neves Muniz1, R. L. Galati, and E. H. C. B. Van Cleef1,3, 1UNESP, Jaboticabal, Brazil, 2CNPq, Brasilia, Brazil, 3Embrapa Tabuleiros Costeiro, Aracaju, Brazil, 4Federal University of Mato Grosso, Cuiaba, Brazil, 5FAPESP, Sao Paulo, Brazil.

1553 M267 Supplementation of lysine and methionine in the starter concentrate or milk replacer of dairy calves.
J. T. Silva1, M. R. De Paula, G. Santos, G. Slanzonz, and C. M. M. Bittar, University of Sao Paulo, Piracicaba, Brazil.

1554 M268 Evaluating the plasma free amino acid dose-response method to determine the content of metabolizable methionine in a rumen-protected methionine supplement.
N. L. Whitehouse1,2, C. G. Schwab1, M. C. Blais1, A. F. Brito1, and B. K. Sloan1, 1University of New Hampshire, Durham, 2Schwab Consulting, LLC, Boscobel, WI, 3Adisseo, Alpharetta, GA.

1555 M269 Amino acids supplementation in the milk replacer for dairy calves.
J. T. Silva1, N. B. Rocha, E. Miqueo, T. Manzoni, G. Santos, S. Baldassin, and C. M. M. Bittar, University of Sao Paulo, Piracicaba, Brazil.

1556 M270 Effects of maternal nutrition and arginine supplementation on characteristics of wool quality in offspring.
J. L. Peine*, P. P. Borowicz, J. S. Caton, and R. R. Redden, North Dakota State University, Fargo.

1557 M271 Effects of maternal nutrition and rumen-protected arginine supplementation on postnatal lamb performance and organ mass.

1558 M272 Ultrasonography for investigating the effect of supplementing whole milk with plant-derived complex carbohydrates on curd clearance through the abomasum of dairy calves.
K. Singh1, R. S. Leath1, H. V. Henderson1, T. J. Watson1, D. Pacheco1, and C. D. McMahon1, 1AgResearch Ltd, Ruakura Research Centre, Hamilton, New Zealand, 2AgResearch Ltd, Ruakura Research Centre, Hamilton, New Zealand, 3AgResearch Ltd, Grasslands, Palmerston North, New Zealand, Hamilton.

1559 M273 Relationship between non-protein nitrogen and true protein in supplements during the post-weaning phase of Nellore steers in the dry-wet season transition.
B. C. Carvalho1, R. M. Fernandes2, C. M. D. Almeida1, N. M. Jerônimo1, G. F. Bertl1, C. G. C. Marcolino1, M. H. Moretti3, I. M. de Oliveira4, F. D. D. Resende5, and G. R. Siqueira5, 1Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil, 2UNESP-FAV, Jaboticabal, Brazil, 3Universidade Estadual Paulista, Jabinotabcia, Brazil, 4APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil.

1560 M274 Sulfur sources in supplement foods and their influence upon amino acid profiles.
F. P. Leonel1, C. J. Silva1, L. M. Moreira1, J. M. Carvalho, J. C. Pereira1, T. C. Nunes1, and R. A. Vieira4, 1Federal University of São João do Rei (UFSJ), São João del Rei, Brazil, 2National University of Brasilia, Brasilia, Brazil, 3Federal University of Viçosa (UFV), Viçosa, Brazil, 4Norte Fluminense State University, Campos dos Goytacazes, Brazil.

1561 M275 Slow-release urea in diets of crossbred lactating cows.
F. P. Leonel1, B. T. Santiago1, S. D. J. Vilella1, J. C. Carvalho1, M. M. Assis1, T. C. Nunes1, and L. M. Moreira1, 1Federal University of São João del Rei (UFSJ), São João del Rei, Brazil, 2Federal University of Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, Brazil, 3Federal University of Viçosa (UFV), Viçosa, Brazil

1562 M276 Passage rate and efficiency of microbial protein synthesis in bufaloes fed increasing levels of crude protein.

1563 M277 Effects of test weight and processing method on in vitro intestinal digestibility of barley grain.
Y. Zhao1, S. Yan1, Z. He1, A. Neel1, M. L. Swift1, T. A. McAllister*, and W. Yang1, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2College of Animal Science, Inner Mongolia Agricultural University, Hohhot, China, 3Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

1564 M278 Using a fibrolytic enzyme to barley-based finishing diets containing wheat dried distillers grains with solubles: Ruminal fermentation, digestibility, and growth performance in feedlot steers.
Z. He1,2, M. He1, N. D. Walker1, T. A. McAllister*, and W. Yang1, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, China, 3AB Vista Feed Ingredients, Marlborough, United Kingdom, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
Effects of forage intake to minimize the risk of subacute ruminal acidosis on performance of feedlot finishing cattle.
K. M. Koenig1, G. E. Chibisal, G. B. Penner, and K. A. Beauchemin, Department of Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.

Saliva production and short-chain fatty acid absorption in beef cattle fed a low- or high-forage diet.
G. E. Chibisal, K. A. Beauchemin, and G. B. Penner, Department of Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada.

Interactions between levels and source of energy supplementation in beef cattle.
J. R. R. Dórea1, L. R. Dell Agostinho Neto3, V. N. Gouvea3, D. A. Fleury3, A. V. Pires3, and F. A. P. Santos1, University of Sao Paulo, Piracicaba, Brazil, 2University of Sao Paulo-FMVZ-USP, Pirassununga, Brazil, 3University of Sao Paulo, Piracicaba, Brazil.

Digestibility and nitrogen efficiency of growing beef cattle fed diets containing different proportions of Stylosanthes Campo Grande and corn silages.
W. F. D. Souza1, O. G. Pereira2, K. G. Ribeiro2, S. A. Santos2, S. C. Valadares Filho3, V. P. Silva1, and M. C. N. Agarussi1, 1Universidade Federal da Bahia, Salvador, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 4Instituto Nacional de Ciência e Tecnologia-Ciência Animal, Viçosa, Minas Gerais, Brazil, 5University of Delaware, Newark.

Influence of Macleaya cordata preparation on feedlot performance and carcass characteristics of finishing bulls.
R. Barajas1, B. J. Cervantes2, I. Rogge3, A. Camacho1, and L. R. Flores1, 1FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico, 2Ganadera los Migueles, S.A. de C.V., Culiacan, Mexico, 3Phytobiotics Futterzusatzstoffe GmbH, Eltville, Germany.

Supply levels of multiple supplements for beef heifers on pasture during the dry season: Ruminal pH and ammonia nitrogen.
R. P. D. Silva1, J. T. Zervoudakis1, L. K. Hatamoto-Zervoudakis1, L. D. S. Cabral1, J. A. Neto2, J. Q. Soares2, A. C. B. Melo2, E. R. Donida1, P. I. José1, R. C. Soares1, E. A. Teixeira1, and A. J. Possamai1, Federal University of Mato Grosso, Cuiaba, Brazil.

Comparison of commercially available lick tubs to daily by-product supplementation of calves grazing corn residue.
M. Jones*, University of Nebraska-Lincoln.

Dry matter intake of supplemented cattle under grazing during the dry season.
T. O. J. A. Lins1, R. R. Silva1, F. B. Mendes1, M. M. Lisboa1, M. M. S. Pereira1, G. Abreu Filho3, S. O. Souza1, and L. G. Silva1, 1Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, 2Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, 3Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil.

Interaction between grazing management and energy supplementation on behavior of grazing beef cattle.
L. R. Dell Agostinho Neto1, M. G. M. F. D. Santos2, M. R. Lovaglio2, D. F. A. Costa2, J. R. R. Dórea1, and F. A. P. Santos3, 1University of Sao Paulo, Piracicaba, Brazil, 2University of Sao Paulo, Piracicaba, Brazil.

Supply levels of multiple supplements for beef heifers on pasture during the dry season: Intake and digestibility of nutrients.
R. P. D. Silva1, J. T. Zervoudakis1, L. K. Hatamoto-Zervoudakis1, L. D. S. Cabral1, E. Alexandrino2, R. L. Galati3, J. Q. Soares1, A. C. B. Melo2, E. R. Donida1, P. I. José1, A. J. Possamai1, K. F. Cervelati1, L. B. D. Freiria1, and D. A. D. Faria1, 1Federal University of Mato Grosso, Cuiaba, Brazil, 2Federal University of Tocantins, Araguaína, Brazil, 3University of São Paulo, Piracicaba, Brazil.

Individual and additive value of conventional and non-conventional technologies in beef heifers housed and fed using a GrowSafe feeding system.
A. R. Harding*, Oklahoma State University, Stillwater.

Effect of pregnancy and feeding level on voluntary intake, digestion and microbial N production in Nellore cows.
M. P. Gionbelli1,2, M. S. Duarte1, S. C. Valadares Filho1, E. Detmann1, B. C. Silva3, D. F. Sathler2, T. R. Gionbelli2, F. A. Villadiego2, and L. H. Silva1, 1Instituto Nacional de Ciencia e Tecnologia-Ciencia Animal, Viçosa, Minas Gerais, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 3Universidade Federal de Goiás, Goiânia, Brazil.

Growth and feed intake of Nellore steers fed whole corn diets containing feed antibiotics.

Effects of volume weight, precision processing and processing index on in vitro ruminal fermentation of dry-rolled barley grain.
U. Y. Anele1, B. Refati1, M. L. Swift1, Z. He1, T. A. McAllister1, and W. Yang1, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
1579 M293 Total tract NDF digestion predicted using rumen in vitro measures is related to commercial dairy in vivo total tract nutrient digestion.
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1580 M294 Influence of fibrolytic enzyme supplements on production performance of lactating buffaloes in early lactation.
T. A. Morsy* and S. Kholif, National Research Center, Cairo, Egypt.

1581 M295 Effect of two exogenous fibrolytic enzyme preparations on rumen fermentation and in situ degradability kinetics in dairy cattle.
J. J. Romero*1, E. G. Macías1, Z. Ma1, R. M. Martins2, C. R. Staples1, and A. T. Adesogan1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department de Zootecnia, Universidad Nacional Agraria La Molina, Lima, Peru, 3Department of Zootecnia, Universidade Federal de Viçosa, Minas Gerais, Brazil.

1582 M296 Proteomic analysis of compositional differences between exogenous fibrolytic enzyme preparations that were effective or ineffective at improving forage digestibility.
J. J. Romero*1, Z. Ma1, C. Silva-Sanchez2, and A. T. Adesogan1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Proteomics, ICBR, University of Florida, Gainesville.

1583 M297 Effects of ensiling, exogenous protease addition and inoculation on ruminal in vitro starch digestibility in rehydrated corn.

1584 M298 Forage type and exogenous fibrolytic enzyme application rate effects on the digestibility of dairy cattle forages.
J. J. Romero1, Z. Ma1, E. G. Macías1, D. H. Garbuio1, and A. T. Adesogan1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department de Zootecnia, Universidad Nacional Agraria La Molina, Lima, Peru, 3Universidade Estadual Paulista, São Paulo, Brazil.

1585 M299 A meta-analysis on the effect of fibrolytic enzyme treatment of dairy cow diets.
K. G. Arriola*1, A. T. Adesogan1, and M. C. Giurcanu2, 1University of Florida, Department of Animal Sciences, Gainesville, 2University of Florida, Department of Statistics, Gainesville.

1586 M300 Effects of forage particle size and corn oil supplementation related to milk fat depression in dairy cows consuming reduced-fat corn dried distillers grains with solubles.
H. A. Ramirez Ramirez* and P. J. Kononoff, University of Nebraska, Lincoln.

1587 M301 Impact of forage inclusion rate in a dry total mixed ration on the behavior and growth of growing dairy cattle.
M. J. Groen1,2, M. A. Steele3, and T. J. DeVries*1, 1University of Guelph, Kemptville, ON, Canada, 2Wageningen University, Wageningen, Netherlands, 3Nutreco Canada, Guelph, ON, Canada.

1588 M302 Assessment of feeding high moisture corn grain with different qualities of alfalfa hay in high-forage lactation dairy diets.
A. W. Kelley, K. Neal, A. J. Young, and J. S. Eun*, Utah State University, Logan.

1589 M303 Replacing corn with soyhulls for late-lactation cows fed high-forage diets.
V. R. Moreira1, L. K. Zeringue1, C. Leonardi1, D. Schilling1, and M. E. McCormick2, 1LSU AgCenter School of Animal Sciences, Franklinton, LA, 2LSUHSC-School of Public Health-Biostatistics, New Orleans, LA.

1590 M304 Effects of different dietary forage sources on milk performance and amino acid profile in early lactating dairy cows.
X. Q. Zhou1,2, D. P. Bu1, Y. D. Zhang1, M. Zhao1, P. Sun1, and J. Q. Wang1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Northeast Agricultural University, Harbin, China.

1591 M305 The partial replacement of corn silage by sugarcane silage plus crude glycerin and the effect of sensory feed additives for dairy cows.
O. F. Zacararini1, F. F. Cardoso1, A. C. S. Melo1, R. F. Lima1, R. A. N. Pereira2,3, and M. N. Pereira1,2, 1Universidade Federal de Lavras, Lavras, Brazil, 2Better Nature Research Center, Ijaci, Brazil, 3Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil.

1592 M306 Relative excretion of nitrogen from alfalfa silage, corn silage, corn grain and soybean meal in urine and feces by lactating dairy cows.

F. Bargo1, S. Muñoz2, M. Candelas2, J. Vargas1, and I. Ipharraguerre1, 1Lucta S.A., Barcelona, Spain, 2Naplem, Durango, Mexico.

1594 M308 Performance and health of calves pre- and post weaning fed milk replacers with supplements for heat abatement in the summer months.
H. Chester-Jones*, University of Minnesota Southern Research and Outreach Center, Waseca.
Performance and health of calves pre- and post-weaning fed milk replacers with supplements for heat abatement in the summer months.
D. Schimek, B. Ziegler, H. Chester-Jones, and M. Raeth-Knight, Hubbard Feeds Inc., Mankato, MN, University of Minnesota and Outreach Center, Waseca, University of Minnesota, St. Paul.

Effect of supplementing heat stressed dairy cows with electrolytes on milk yield, composition, and blood metabolites.
C. J. Cabrera, S. H. Ward, and A. J. Geiger, Mississippi State University, Mississippi State.

Average daily gain among calves fed a high plane of milk replacer during the pre-weaning period is not associated with improved reproductive efficiency or lactational performance in Holstein heifers.
M. D. Sellers, C. R. Nightingale, and M. A. Ballou, Texas Tech University, Department of Animal and Food Sciences, Lubbock.

Response of rumen fermentation to urease inhibitor using dual-flow rumen simulation system.
P. P. Wang, D. Jin, J. Q. Wang, D. P. Bu, and S. Zhao, State Key Laboratory of Agricultural Science, Institute of Animal Science, Chinese Academy of Agricultural Science, Beijing, China, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Effect of inclusion of canola meal or wheat dried distillers grains with solubles on ruminal fermentation, omasal nutrient flow, and production performance in lactating Holstein dairy cows fed two levels of forage: Concentrate.
M. E. Walpole, G. E. Chibisa, and T. Mutsangwa, University of Saskatchewan, Saskatoon, SK, Canada.

Extruded soybean meal increases feed intake and milk production in dairy cows.

Effect of supplementing dairy cows with a hydrolyzed yeast product (Progrut Rumen) on milk production and somatic cell scores.
D. J. Gaffney, M. R. Sheehy, J. A. Vuorenmaa, and A. G. Fahey, Hankkija Oy/Suomen Rehu, Hyvinkää, Finland, Devenish Nutrition, Belfast, Northern Ireland, School of Veterinary Medicine, University College Dublin, Dublin, Ireland, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.

Effect of live yeast vs. sodium sesquicarbonate supplementation on milk yield and milk components in dairy cows.
M. B. de Ondarza, E. Chevaux, and A. Hall, Paradox Nutrition, LLC, West Chazy, NY, Lallemand Animal Nutrition, Milwaukee, WI.
Milk production of dairy cows fed sugar cane silage based diets.
L. L. Cardoso, M. I. Marcondes, K. G. Ribeiro, O. G. Pereira, G. F. Bayao, and M. M. D. Castro, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

Fecal sample starch content deteriorates over time after sampling.
K. Haer1, 2, J. P. Goessler, and C. R. Heuer1, 3, 1University of Illinois at Urbana-Champaign, 2Rock River Laboratory, Inc, Watertown, WI, 3Department of Dairy Science, University of Wisconsin-Madison.

Effects of pH and incubation duration on the stability of the endoglucanase activity of seventeen exogenous fibrolytic enzyme preparations.
A. F. Campos, B. Y. Coy, K. G. Arriola, and A. T. Adesogan, 1São Paulo State University, Department of Animal Science, São Paulo, Brazil, 2University of Florida, Department of Animal Sciences, Gainesville, 3Department of Animal Sciences, University of Florida, Gainesville.

Evaluation of a source of α-amylase and a protease in the diet of lambs on nutrient intake and digestibility and blood parameters.
B. Quintana*, L. C. Solorzano, and A. A. Rodriguez, 1University of Puerto Rico, Mayaguez, PR, 2DSM Nutritional Products, Parsippany, NJ.

Evaluation of a source of α-amylase and a protease in the diet of lambs on nutrient intake and digestibility and blood parameters.
B. Quintana*, L. C. Solorzano, and A. A. Rodriguez, 1University of Puerto Rico, Mayaguez, PR, 2DSM Nutritional Products, Parsippany, NJ.

Utilization of industrial enzymes in the evaluation of neutral detergent insoluble fiber content in high-starch samples.
C. Batista Sampaio*, D. I. Gomez, E. Detmann, S. de Campos Valadares Filho, H. Valentim Nunes Machado, and M. de Oliveira Franco, 1Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, 2Universidade Federal do Pará, Parauapebas, Pará, Brazil, 3Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 4Universidade Federal de São João Del Rei, São João Del Rei, Minas Gerais, Brazil.

In situ degradation and fermentation of a diet with an exogenous phytase for lambs.
L. H. Vallejo-Hernandez*, G. Buendia-Rodriguez, J. E. Ramirez-Bribiesca, L. A. Miranda-Romero, M. M. Crosby-Queretaro, and S. S. Gonzalez, 1Universidad Autonoma del Estado de Mexico, Toluca, Mexico, 2CENIDFyMA INIFAP, Queretaro, Mexico, 3Colegio de Postgraduados, Montecillo, Mexico, 4Universidad Autonoma de Chapingo, Chapingo, Mexico, 5Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico.

Sources of sulfur in protein supplements and fiber degradability.
F. P. Leonel*, C. J. Silva, L. M. Moreira, J. C. Pereira, J. M. Carvalho, J. C. Carvalho, R. A. Vieira, and M. M. Assis, 1Federal University of São João del Rei (UFSJ), São João del Rei, Brazil, 2National University of Brasilia, Brasilia, Brazil, 3Federal University of Viçosa (UFV), Viçosa, Brazil, 4Norte Fluminense State University, Campos dos Goytacazes, Brazil.

Effect of weight gain rates in the post-weaning phase and forage allowance in the finishing phase with high supplementation on performance of Nellore cattle.
V. A. C. Mota*, G. F. Bertó, J. A. Alves Neto, R. M. Fernandes, P. H. Gonçalves, B. C. Carvalho, M. A. P. Alves, I. M. de Oliveira, F. D. D. Resende, and G. R. Siqueira, 1UNESP/FCAV, Jaboticabal, Brazil, 2Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil, 3Universidade Estadual Paulista, Jaboticabal, Brazil, 4UNESP-FCAV, Jaboticabal, Brazil, 5APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil.

Nutritional evaluation of Forage Kochia (Kochia Prostrata) as an alternative forage for beef cattle using a dual-flow continuous culture system.
E. Marostegan de Paula*, L. Galoro da Silva, T. Shenkoru, Y. L. Yeh, J. Bunkers, and A. Faciola, University of Nevada, Reno.

Effect of using either barley straw or alfalfa hay on intake and digestibility in growing Simmental heifers fed high-concentrate diets.
A. Madruga*, E. Mainau, J. L. Ruíz, X. Manteca, M. Rodriguez, L. A. González, and A. Ferret, 1Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Animal Nutrition and Welfare Service Department of Animal and Food Sciences Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 3Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 4Centre for Carbon, Water and Food; Department of Plant and Food Sciences, Faculty of Agriculture and Environment; The University of Sidney, Camden, Australia.

Metabolism of nitrogenous compounds in beef cattle fed tropical forage supplemented with protein in the rumen, abomasum or both.
1623 M337 Effect of Amaferm on digestion of diets containing forages with high or low neutral detergent fiber digestibility. A. B. Chestnut*, J. M. Aldrich, W. Hu, W. B. Fokkink, and H. G. Bateman, Provimi North America, Brookville, OH.

1624 M338 Differences in forage utilization between Bos taurus and Bos indicus steers fed low-quality forage and supplemented soybean meal. M. de Oliveira Franco*, J. E. Sawyer*, J. R. Baber*, N. L. Bell*, E. Detmann*, and T. A. Wickersham*, 1Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil; 2sponsored by CAPES, Brasília, Brazil; 3Texas AgriLife Research, College Station; 4Texas A&M University, College Station; 5Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.


1628 M342 Within laboratory repeatability of the in situ nylon bag method. H. V. Laar* and J. Doorenbos, Nutreco R&D, Boxmeer, Netherlands.

1629 M343 Comparison of fermentation kinetics of four feedstuffs using an in vitro gas production system and the ANKOM Gas Production System. J. G. L. Regadas Filho*, L. O. Tedeschi*, M. A. Fonseca*, and L. F. L. Cavalcanti*. 1Universidade Federal de Vícossa, Vícossa, Minas Gerais, Brazil; 2Texas A&M University, College Station; 3Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

1630 M344 The influence of source and quality of water and a water treatment system on the ruminal fermentation and nutrient digestibility of a total mixed ration using an in vitro gas production measurement system. D. Casper* and I. P. Acharya, South Dakota State University, Brookings.


1634 M348 Relationship of protein structural conformation to protein functional property, buffer and water solubility, rumen digestive behaviors, and intestinal availability of common feed in ruminants. Q. Peng*, N. A. Khan*, Z. Wang*, X. Huang**, and P. Yu*, 1University of Saskatchewan, Saskatoon, SK, Canada; 2Sichuan Agriculture University, Sichuan, China.

1635 M349 Carbohydrate -protein matrix structure impacts protein and other primary nutrient digestion in common prairie feeds with different soluble and insoluble fractions. Q. Peng*, X. Huang**, Z. Wang*, and P. Yu*, 1University of Saskatchewan, Saskatoon, SK, Canada; 2Sichuan Agriculture University, Sichuan, China.

1636 M350 Performance and dry matter digestibility of finishing lambs fed diets with ground canola grains. N. I. Ortega-Alvarez*1, G. Buendia-Rodríguez*1, J. A. Cuaron-Ibarquengoytia*, G. D. Mendoza-Martínez*, and S. S. Gonzalez-Muñoz4*, 1Universidad Nacional Autónoma de Mexico, Mexico D.F., Mexico; 2CENIDFyMA INIFAP, Queretaro, Mexico; 3Universidad Autonoma Metropolitana, Unidad Xochimilco, Mexico D.F., Mexico; 4Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico.
1637 M351 Ruminal pH and epithelial function as affected by increasing compound feed supply in growing Holstein heifers. A. Navarro-Villa1, M. A. Steele2, J. A. Metcalf2, and J. Martin Tereso2, 1Nutreco Research and Development, Boxmeer, Netherlands, 2Nutreco Canada Agresearch, Guelph, ON, Canada.

1638 M352 Metabolic characteristics of grazing Nellore bulls receiving concentrated supplementation with additives. J. A. C. Lima1,2, H. J. Fernandez2, E. P. Rosa2, L. S. Caramalac2, K. A. Silveira2, G. C. Silva2, B. D. D'Auria2, and A. Aguilar1, 1Federal University of Viçosa, Viçosa, Brazil, 2State University of Mato Grosso do Sul, Aquidauana, Brazil, 3University of Florida, Gainesville.

1639 M353 Productive parameters, metabolic and economic viability of dairy cows supplemented with different levels of urea in diets based on sugar cane. R. C. D. Souza1, R. B. Reis2, F. C. F. Lopes1, J. M. Leão1, and M. H. F. Mourtê2, 1PUC Minas, Betim, Brazil, 2UFMG, Belo Horizonte, Brazil, 3Embrapa Gado de Leite, Juiz de Fora, Brazil, 4Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Brazil.

1640 M354 Chia seed supplementation increases ruminal propionate concentration in alfalfa hay based diets evaluated in a dual-flow continuous culture system. J. Bunkers1, E. Marostegan de Paula, L. Galoro da Silva, T. Shenkoru, Y. L. Yeh, B. Amorati, D. Holcombe, and A. Faciola, University of Nevada, Reno.

1641 M355 Analysis of rumen motility patterns using a wireless telemetry system to characterize bovine reticulo-ruminal contractions. A. M. Egert1, K. R. McLeod1, J. L. Klotz2, and D. L. Harmon1, 1University of Kentucky, Lexington, 2USDA-ARS, FAPRU, Lexington, KY.

1642 M356 Use of grouped samples of orts does not compromise feed intake data in studies of confined cattle. D. Zenetti1, S. C. Valadares Filho1, M. V. C. Pacheco2, L. F. Prados2, E. Detmann1, L. A. Godoi1, F. C. Rodrigues1, R. C. D. O. Ribeiro1, J. M. D. Silva Júnior2, and S. A. Santos2, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 3Universidade Federal de Viçosa, Viçosa, Brazil, 4Universidade Federal da Bahia, Salvador, Brazil.

1643 M357 Three dimensional imaging of rumen tissue for morphometric analysis using micro-computed tomography. M. A. Steele1, F. Garcia2, M. Lowerison3, K. Gordon1, J. A. Metcalf1, and M. Hurtig2, 1Nutreco Canada Agresearch, Guelph, ON, Canada, 2University of Guelph, Guelph, ON, Canada, 3University of Calgary, Calgary, AB, Canada.

1644 M358 Kinetics of gas production of soybean meal, cotton seed meal and fish meal is affected using different zeolites. F. Kafilzadeh, M. Karimi Zandi, and G. Taasoli, Razi University, Kermanshah, Iran.

1645 M359 Effects of zilpaterol hydrochloride on feedlot performance and carcass characteristics of hair-breed ram lambs. A. Mendoza-García1, R. Rojo-Rubio2, U. Macias-Cruz3, L. Avendaño-Reyes4, A. F. Z. M. Salom5, M. A. Jaime6, and J. F. Vázquez-Armijo1, 1Universidad Autónoma del Estado de México, Temascaltepec, Mexico, 2University Autonoma Agraria Antonio Narro, Torreon, Mexico, 3Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Mexico.

1646 M360 Effect of particle size upon dry matter intake and ruminal pH in goats fed with alfalfa hay and sorghum silage. D. Espurza1, R. Rodriguez1, G. Veliz2, C. Meza-Herrera3, and P. Robles-Trillo4, 1Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, 2Universidad Autonoma Chapingo, Unidad Regional Universitaria de Zonas Aridas, Bermejillo, Mexico.

1647 M361 Milk composition of Murrah buffalo grazing on pasture in the Municipality of Taipu, Rio Grande do Norte, Brazil. J. M. D. Silva Júnior1, T. D. S. Martins1, R. M. D. Paula1, L. C. Alves1, D. Zenetti2, J. A. D. C. Lima1, L. F. Prados1, L. N. Renno1, G. J. Melo1, and W. G. D. Nascimento1, 1Federal University of Viçosa, Viçosa, Brazil, 2Universidade Federal de Viçosa, Viçosa, Brazil, 3Universidade Federal do Pernambuco, Recife, Brazil, 4Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

1648 M362 Performance and morphometry of the gastrointestinal tract of goats kept on pasture during the dry period of the semi-arid Pernambuco. J. M. D. Silva Júnior1, K. P. Pereira1, A. S. C. Veras1, D. K. D. A. Silva1, J. S. Lima1, G. J. Melo1, D. Zenetti1, T. D. S. Martins1, R. M. D. Paula1, L. C. Alves1, and L. N. Renno1, 1Federal University of Viçosa, Viçosa, Brazil, 2Rural Federal University of Pernambuco, Garanhuns, Brazil, 3Rural Federal University of Pernambuco, Garanhuns, Brazil, 4Rural Federal University of Pernambuco, Garanhuns, Brazil.

1649 M363 Effects of replacing alfalfa hay and corn silage with corn straw in diets on milk production and composition of dairy cows. Y. Zhang1,2,3, N. Zheng1,2,3, D. P. Bu1, M. Zhao1, X. Q. Zhou1, and J. Wang1,2,3, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

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The use of favored or unfavored ingredients in starter feeds for preweaned calves.
M. Terré*1 and A. Bach2, 1IRTA, Caldes de Montbui, Spain, 2Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.

Small Ruminant Poster I

A simple method to estimate feed required for maintenance of small ruminants.
A. L. Goetsch1, R. Puchala1, A. T. Dolebo1, T. A. Gipson1, Y. Tsukahara1, and L. J. Dawson1,2, 1American Institute for Goat Research, Langston University, Langston, OK, 2Center of Veterinary Health Sciences, Oklahoma State University, Stillwater.

Dermal application of PGF2α for estrus synchronization in goats: Preliminary feasibility.
C. E. Ferguson*1, D. J. Kesler2, H. Nordberg1, and J. Veillon1, 1McNeese State University, Lake Charles, LA, 2University of Illinois at Urbana-Champaign.

Longissimus muscle fatty acid profile of crossbred Boer goat kids fed diets containing crude glycerin.
M. O. M. Parente1, K. S. Rocha1, H. N. Parente1, E. M. Ferreira1, R. D. C. R. E. Queiroga1, A. S. M. Batista1, R. M. S. Gomes1, P. R. O. Silva1, and J. S. Araújo1, 1Universidade Federal do Maranhão, Chapadinha, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 3Universidade Federal do Paraíba, João Pessoa, Brazil, 4Universidade do Vale do Aço, Ubatuba, Brazil.

Performance and carcass characteristics of finishing goat kids fed diets containing crude glycerin.
M. O. M. Parente1, K. S. Rocha1, H. N. Parente1, E. M. Ferreira1, I. G. R. Araújo1, R. C. Rodrigues1, R. M. S. Gomes1, and P. R. O. Silva1, 1Universidade Federal do Maranhão, Chapadinha, Brazil, 2Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil.

Effect of reducing dietary cation-anion difference on acid-base balance, plasma minerals level and anti-oxidative stress of female goats.
W. X. Wu* and Y. Yang, College of Animal Science, Guizhou University, Guiyang, China.

Effect of dietary linseed supplementation on milk fatty acid profile in dairy goats with different alphaS1-casein (CSN1S1) genotype.

GIS hot-spot analysis of pasture utilization of two separate herds of goats over time.
T. A. Gipson1, S. P. Hart1, and R. Heinemann2, 1American Institute for Goat Research, Langston University, Langston, OK, 2Kiamichi Forestry Research Station, Oklahoma State University, Idabel.

Model evaluation of methane emission from goats.
M. H. M. R. F. Fernandes1, K. T. Resende2, A. R. C. Lima1, I. A. M. A. Teixeira2, B. Biagioli1, and T. F. V. Bompadre1, 1UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, Jaboticabal, Brazil, 2UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil.

The effect of some herbal plants on plasma metabolites of lactating goats.
K. Rezayazdi1, M. Ganjkhanlou2, A. Zali2, A. Akbari-Afjani3, and M. Dehghan-Banadaky*2, 1University of Birjand, Birjand, Iran, 2University of Tehran, Tehran, Iran, 3University of Zanjan, Zanjan, Iran.

Mean retention time of particulate matter through gastrointestinal tract of growing goat.
R. F. Leite1, F. O. M. Figueiredo1, M. M. Freire1, V. B. Carvalho1, and I. A. M. A. Teixeira1, 1UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, Jaboticabal, SP, Brazil, 2Sao Paulo State University, Jaboticabal/SP, Brazil, 3UFAL, Maceio, AL, Brazil.

Goat kids of different genders change the proteic metabolism when subjected to feed restriction.
N. C. D. Silva1, K. T. Resende1, I. A. M. A. Teixeira1, H. C. Bonfá2, C. J. Harter2, F. O. M. Figueiredo1, R. F. Leite1, and M. M. Freire1, 1UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, 2University of Birjand, Birjand, Iran, 3University of Tehran, Tehran, Iran, 4North Carolina A&T State University, Greensboro, USA.

Effects of dietary chromium supplementation on performance, liver and blood metabolites of kids.
A. Emami1, M. Ganjkhanlou2, A. Zali2, A. Akbari-Afjani3, and M. Dehghan-Banadaky*2, 1University of Birjand, Birjand, Iran, 2University of Tehran, Tehran, Iran, 3University of Zanjan, Zanjan, Iran.

Effect of Tasco on fecal egg counts and packed cell volume in meat goats.
1913 M379 Pharmacokinetic processes of lithium used for food aversion in sheep and goats.
C. L. Manuelian1, E. Albaneli1, M. Rovai1, A. Salama1,2, G. Caja1, and R. Guitart1, 1Group of Ruminant Research (G2R),
Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain, 2Animal Production Research Institute, Dokki, Giza,
Egypt, 3Laboratory of Toxicology, Faculty of Veterinary, Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain.

1914 M380 Influence of partial replacement of corn by crude glycerin on water consumption, feed intake and nutrient apparent
digestibility.
D. M. Polizel1, R. S. Gentil1, E. M. Ferreira1, R. A. Souza1, A. P. A. Freire1, J. A. Faleiro Neto2, A. V. Pires1, and I. Susin3, 1Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 3Faculdade de Medicina Veterinária e Zootecnia-FMVZ/USP, São Paulo, Brazil, 3University of São Paulo-ESALQ/USP, Piracicaba, Brazil.

1915 M381 Post-weaning performance by intact male F1 Kiko × Boer progeny from does selected based on parasite resistance:
1-year summary.
L. S. Wilbers*, B. C. Shanks, J. D. Caldwell, K. L. Basinger, W. M. Haslag, J. D. Walker, K. M. Jones, and A. L. Bax, Depart-
ment of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.

1916 M382 Effects of thyme oil (Thymus vulgaris) on in vitro ruminal fermentation kinetics.
Faleiro Neto1, and J. P. C. Thieme2, 1University of São Paulo-FMVZ/USP, Pirassununga, Brazil, 2University of São Paulo-
ESALQ/USP, Piracicaba, Brazil, 3Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 4The
Ohio State University, Columbus.

Swine Species: Reproduction and Management

1937 M383 Dietary supplementation with organic or inorganic selenium and pyridoxine in gilts on gene expression in the porcine
expanded blastocysts in vivo.
D. Bueno Dalto1,2, S. Tsoi3, I. Audet1, M. Dyck3, and J. J. Matte1, 1Agriculture & Agri-Food Canada, Sherbrooke, QC,
Canada, 2Department of Animal Science, Universidade Estadual de Londrina, Londrina, Brazil, 3Department of Agricul-
tural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

1938 M384 Comparing the growth curves of females and immuno castrated males in commercial conditions.
S. López-Vergé2, G. Ibanez2, and J. Gasa1, 1Animal Nutrition and Welfare Service, Department of Animal and Food Sci-
ences, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Globosuinos Agropecuária S/A, Paraná, Brazil.

1939 M385 Growth performance of Sarda purebreed suckling piglets reared in smallholder farms.
C. Sulas1, S. Fele2, G. G. Fruttero2, S. B. Gusai2, and G. Battacone2, 1Dipartimento di Agraria, University of Sassari, Sass-
sari, Italy, 2Agenzia LAORE Sardegna, Cagliari, Italy.

1940 M386 Piglet body weight at weaning: A key success factor for post-weaning performance?
D. Solá-Oriol, S. López-Vergé2, and J. Gasa, Animal Nutrition and Welfare Service, Department of Animal and Food Sci-
ences, Universitat Autònoma de Barcelona, Bellaterra, Spain.

1941 M387 Comparison of fecal microbiota among healthy piglets during the weaning transition using barcoded 16S rDNA pyrose-
quencing.
J. P. Chae, E. A. Pajarillo, and D. K. Kang*, Department of Animal Resources Science, Dankook University, Cheonan, South
Korea.

S. López-Vergé2, D. Solá-Oriol, and J. Gasa, Animal Nutrition and Welfare Service, Department of Animal and Food Sci-
ences, Universitat Autònoma de Barcelona, Bellaterra, Spain.

1943 M389 Effects of parity and selection for uterine capacity on sow litter performance traits.
B. A. Freking1 and J. L. Vallet1, 1USDA ARS USMARC, Clay Center, NE, 2USDA, ARS, U.S. Meat Animal Research Center,
Clay Center, NE.

1944 M390 Gene expression profiles in muscle of black Iberian pigs supplemented with organic selenium compared with sodium
selenite in finishing diets.

1945 M391 Neither photoperiod in the farrowing room nor time of weaning affect nursery performance.
L. Eastwood, J. Shea, and D. Beaulieu*, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

1946 M392 Behavior traits and growth characteristics of newly weaned piglets.

1947 M393 Oxidative stress is higher in replacement gilts than in multiparous sows.
J. Lapointe*, C. Roy, and M. Lavoie, Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada.
SYMPOSIA AND ORAL SESSIONS

Animal Health Symposium I:
Animal Health Research From the Perspective of Information Gaps
Chair: Theodore H. Elsasser, USDA, Agricultural Research Service
Sponsor: Elanco Animal Health

2502

9:30 AM  Welcoming Remarks

9:35 AM  60  Animal health – From systems biology to translational research.
C. Gay*, USDA-ARS Office of National Programs, Beltsville, MD.

10:20 AM  61  Respiratory disease management in livestock- new challenges and knowledge gaps-what is critical on the horizon?
A. W. Confer*, Oklahoma State University, Stillwater.

11:05 AM  Break

11:20 AM  62  Metabolic and health consequences of heat stress: Knowledge gaps and opportunities.
L. H. Baumgard*1, J. W. Ross1, N. K. Gabler1, S. M. Lonergan1, A. F. Keating1, J. T. Selsby1, and R. P. Rhoads2, 1Iowa State University, Ames, 2Virginia Tech, Blacksburg.

12:05 PM  63  Ensuring good health and well-being in the aging equine population.
K. Malinowski*, R. C. Avenatti, and K. H. McKeever, Rutgers Equine Science Center, New Brunswick, NJ.

Beef Species Symposium: Making More, But Using Less: The Future of the U.S. Beef Industry with a Reduced Cowherd and the Challenge to Feed the U.S. and the World;
Session I. The U.S. Stocker and Feedlot Industries
Chair: Allison M. Meyer, Division of Animal Sciences, University of Missouri
Sponsor: Merck

2101

9:30 AM  117  Nutritional strategies to improve efficiency in the stocker and feedlot industries in a consumer conscious market.
M. S. Kerley*, W. J. Sexten, and A. M. Meyer, University of Missouri, Columbia.

10:00 AM  118  What is the future of genetic selection and cattle sorting technologies in the stocker and feedlot industries?
R. L. Weaber*, Kansas State University, Manhattan.

10:30 AM  119  Beef quality vs. quantity in today’s market.
B. J. Johnson*, Texas Tech University, Lubbock.

11:00 AM  120  Economic considerations related to rebuilding the U.S. cowherd.
G. T. Tonsor*1 and L. L. Schulz2, 1Kansas State University, Manhattan, 2Iowa State University, Ames.

Breeding and Genetics: Applications and Methods in Animal Breeding-Dairy I
Chair: Jennifer M. Bormann, Kansas State University

2505A

9:30 AM  152  Calculation and delivery of U.S. genomic evaluations for dairy cattle.
G. R. Wiggans*1, T. A. Cooper1, P. M. VanRaden1, D. J. Null1, J. L. Hutchison1, O. M. Meland1, M. E. Tooker2, and H. D. Norman1, 1Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 2USDA-ARS-AIPL, Beltsville, MD.

9:45 AM  153  An updated version of lifetime net merit incorporating additional fertility traits and new economic values.
J. B. Cole*1 and P. M. VanRaden1, 1Animal Improvement Programs Laboratory, Agricultural Research Service, United States Department of Agriculture, Beltsville, MD, Council on Dairy Cattle Breeding, Columbus, OH.

10:00 AM  154  Gains in reliability with genomic information in U.S. commercial holstein heifers.
F. A. Di Croce*, J. B. Osterstock, D. J. Weigel, and M. J. Lormore, Zoetis Inc., Kalamazoo, MI.
10:15 AM 155 Genome-wide association analysis in Italian Simmental cows for lactation curve traits using a low density (7K) SNP panel.
N. P. P. Macciotta1, D. Vicario1, C. Dimauro1, G. Gaspa1, M. Cellesi1, A. Puledda1, S. Sorbolini1, and P. Ajmone-Marsan1, 1Università di Sassari, Sassari, Italy, 1ANAPRI, Udine, Italy, 1Dipartimento di Agraria,Università di Sassari, Sassari, Italy, 1Università Cattolica del Sacro Cuore, Piacenza, Italy.

10:30 AM 156 Genetic parameters for pre-calving feed intake.
B. N. Shonka1 and D. M. Spurlock2, 1Iowa State University, Ames.

10:45 AM 157 Phenotypic and genetic correlations among milk energy output, body weight, and feed intake, and their effects on feed efficiency in lactating dairy cattle.
M. J. VandeHaar1, Y. Lu1, D. M. Spurlock1, L. E. Armentano1, K. A. Weigel1, R. F. Veerkamp4, M. Coffey1, Y. de Haas8, C. R. Staples4, E. E. Connor1, M. D. Hanigan8, and R. J. Tempelman1, 1Michigan State University, East Lansing, 1Iowa State University, Ames, 3University of Wisconsin-Madison, 4Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Wageningen, Netherlands, 6Scottish Agriculture College, Edinburgh, United Kingdom, 8Department of Animal Sciences, University of Florida, Gainesville, 7USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, 8Virginia Polytechnic Institute and State University, Blacksburg.

11:00 AM 158 Benchmarking reproductive efficiency in commercial dairy herds in California.
A. H. Souza1, N. Silva-Del-Rio2, E. O. S. Batista1, W. VerBoort1, P. S. Baruselli3, and P. J. Ross2, 1University of California Cooperative Extension, Tulare, 2University of Sao Paulo-VRA, Sao Paulo, Brazil, 3University of Birjand, Birjand, Iran.

Food Safety: Global Challenges to a Safe Food Supply
Chair: Robert J. Harmon, University of Kentucky
2102A

9:30 AM 295 Introduction – Global challenges to a safe food supply.
R. J. Harmon1, University of Kentucky, Lexington.

9:45 AM 296 Raw milk—is it safe?
B. Jayarao1 and E. Hovingh, Penn State University, University Park.

10:45 AM 297 The shift from reaction to prevention for animal feedstuffs.
D. McChesney1, Food and Drug Administration, Washington, DC.

11:30 AM 298 Retailer perspective of food safety in international markets.
N. Dyenson1, Walmart Stores, Inc., Bentonville, AR.

Forages and Pastures I: Silages
Chair: Kathy J. Soder, USDA-Agricultural Research Service
2104B

9:30 AM 304 Effect of corn silage hybrids differing in starch and NDF digestibility on lactation performance and total tract nutrient digestibility by dairy cows.
L. F. Ferraretto1, A. C. Fonseca1, C. J. Sniffen1, A. Formigoni1, and R. D. Shaver1, 1University of Wisconsin-Madison, 2Fencrest, LLC, Holderness, NH, 3Università di Bologna, Bologna, Italy.

9:45 AM 305 The interaction of drought stress and heat stress as determinant of dry matter yield and nutritional composition of corn whole-plant for silage.
G. Ferreira1, H. D. Behl2, E. Hokanson2, W. E. Thomason2, and C. D. Teutsch2, 1Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

10:00 AM 306 Effects of different levels of corn silage and alfalfa hay on rumen pH, VFA and milk production in dairy cows.
A. Akbari-Afjani1, A. Zali1, M. Ganjkhanlou1, M. Dehghan-Banadaky2, and A. Emami2, 1University of Zanjan, Zanjan, Iran, 2University of Tehran, Tehran, Iran, 2University of Birjand, Birjand, Iran.

Withdrawn by author.
10:15 AM 308 Effects of dairy slurry on the nutritive value and fermentation characteristics of alfalfa silages. 
W. K. Coblentz1, R. E. Muck, M. A. Borchardt1, W. E. Jokela1, M. G. Bertram1, and K. P. Coffey1, 1US Dairy Forage 
Research Center, Marshfield, WI, 2U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI, 3University of Wis-
consin, Arlington, 4University of Arkansas, Fayetteville.

10:30 AM 309 The effects of combination of lactic acid-producing bacteria and hydrolytic enzyme inoculants on ensiling character-
istics of alfalfa and corn. 
J. M. Chilson*, P. Rezamand, and M. E. Drewnoski, University of Idaho, Moscow.

10:45 AM 310 In vitro digestibility and gas production kinetic characteristics of corn stover treated by calcium oxide and stored 
under anaerobic condition. 
H. T. Shi1, Z. J. Cao, S. L. Li, W. N. Shi, and Z. H. Wu, State Key Laboratory of Animal Nutrition, College of Animal 
Science and Technology, China Agricultural University, Beijing, China.

11:00 AM 311 Effects of calcium oxide level and moisture content on the in situ degradability of the alkali treated and anaerobi-
cally stored corn stover. 
H. T. Shi1, S. L. Li, Z. J. Cao, Y. He, and Q. Zhou, State Key Laboratory of Animal Nutrition, College of Animal Science 
and Technology, China Agricultural University, Beijing, China.

11:15 AM 312 Effects of different silage forages on cecal fermentation in rabbits: In vitro gas production. 
M. Gonzalez Ronquillo1, A. Zetina Sanchez2, O. Castelan Ortega2, and J. Romero Bernal2, 1Universidad Autonoma del 
Estado de Mexico, Toluca, Mexico, 2Universidad Autonoma del Estado de Mexico, Toluca, Mexico.

Graduate Student Competition: ADSA Dairy Foods Oral
Chair: Beth Briczinski, National Milk Producers Federation
3501C

9:30 AM
Welcoming Remarks

9:35 AM 325 Improving properties of acid skim milk gels by adjusting non-micellar to micellar protein ratio and controlling 
protein interactions. 
G. H. Meletharayil1, H. A. Patel2, and S. G. Sutariya1, 1South Dakota State University, Brookings, 2Dairy Science 
Department, South Dakota State University, Brookings.

9:50 AM 326 Controlling the viscosity of milk concentrates through tailored casein-whey protein interactions. 
S. G. Sutariya1, H. G. Patel1, T. Huppertz2, and G. H. Meletharayil1, 1South Dakota State University, Brookings, 
2NIZO food research, Ede, The Netherlands, Ede, SD.

10:05 AM 327 Partial calcium depletion during membrane filtration impacts gelation of reconstituted milk protein concentrates. 
H. Eshpari1,2, P. S. Tong3, and M. Corredig4, 1University of Guelph, Guelph, ON, Canada, 2California Polytechnic State 
University, San Luis Obispo, 3Department of Dairy Science, California Polytechnic State University, San Luis Obispo, 
4Dept Food Science, University of Guelph, Guelph, ON, Canada.

10:20 AM 328 Utilizing whey protein isolate and polysaccharide complexes to stabilize aerated dairy gels. 
E. C. O’Chiu1 and B. Vardhanabhuti, University of Missouri, Columbia.

S. Zhang1 and B. Vardhanabhuti, University of Missouri, Columbia.

10:50 AM
Break

11:00 AM 330 Evaluation of an adsorbent for the removal of aflatoxin M1 from contaminated milk. 
E. D. Womack1, D. L. Sparks, A. Brown, and S. H. Ward, Mississippi State University, Mississippi State.

11:15 AM 331 Application of FT-IR and flow cytometry to evaluate the effect of sodium chloride on probiotic bacteria. 
N. Shah and A. Gandhi*, The University of Hong Kong, Hong Kong.

11:30 AM 332 Genomic insights into high exopolysaccharide-producing dairy starter bacterium Streptococcus thermophilus ASCC 
1275. 
N. Shah, Q. Wu*, and H. M. Tun, The University of Hong Kong, Hong Kong.

11:45 AM 333 Effectiveness of pulsed light treatment on the inactivation of pathogenic and spoilage bacteria on cheese surface. 
J. Proulx*, L. Hsu1, B. Miller1, G. Sullivan1, K. Paradis1, and C. I. Moraru1, 1Cornell University, Ithaca, NY, 2McGill 
University, Montreal, QC, Canada.
Graduate Student Competition: ADSA Production Oral, MS
Chair: Peter S. Erickson, University of New Hampshire
2505B

9:30 AM  334  Nutrient utilization and metabolism by lactating dairy cows fed high-forage diets with protein supplements.
K. Neal1, J. S. Eun1, A. J. Young2, and K. Mjoun3, 1Utah State University, Logan, 2Alltech, Brookings, SD.

9:45 AM  335  Individual and additive value of conventional and non-conventional technologies in beef steers housed in small research pens.
A. R. Harding1, Oklahoma State University, Stillwater.

10:00 AM  336  The effects of supplementing two pasteurized milk balancer products to pasteurized whole milk on the health and growth of dairy calves.
K. M. Glosson1, B. A. Hopkins1, S. Washburn1, S. Davidson1, G. Smith1, T. Earleywine2, and C. Ma3, 1North Carolina State University, Raleigh, 2Land O’Lakes Animal Milk Products, Shoreview, MN, 3North Carolina State University, Raleigh.

10:15 AM  337  Relationship between fertility and postpartum changes in body condition and body weight in lactating dairy cows.
P. D. Carvalho1, A. H. Sousa2,3, M. C. Amundson1, K. S. Hackbart1, A. R. Dresch2, L. M. Vieira2, J. N. Guenther2, R. R. Grummer2,4, R. D. Shaver1, P. M. Fricke1, and M. C. Wiltbank2, 1University of Wisconsin-Madison, 2Department of Dairy Science, University of Wisconsin-Madison, 3University of California Cooperative Extension, Tulare, 4Balchem Corporation, New Hampton, NY.

10:30 AM  338  Effect of serum calcium status at calving on survival, health, and performance of post-partum dairy cows and calves.
A. Hunter1, M. G. Maquivar2, S. Bas3, T. A. Brick1, W. P. Weiss3, J. S. Velez2, H. Bothe2, and G. M. Schuenemann1, 1Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, 2Department of Animal Sciences, Washington State University, Pullman, 3Department of Animal Sciences, The Ohio State University, Wooster, 4Aurora Organic Farms, Platteville, CO.

10:45 AM  339  Sodium salicylate decreases glucose turnover rate in periparturient dairy cows, likely through enhanced liver insulin sensitivity.
S. R. Montgomery1, L. Mamedova, A. J. Carpenter, and B. Bradford, Kansas State University, Manhattan.

11:00 AM  340  Effects of elevated subcutaneous fat stores on serum nonesterfied and milk fatty acid profile and peripheral blood mononuclear cells gene expression of pro-inflammatory markers and production measures in periparturient dairy cows.

11:15 AM  341  Effect of prophylactic and therapeutic antibiotic administration on fecal excretion of antibiotic resistance genes by dairy cows.

11:30 AM  342  Effects of oscillating the crude protein content in dairy cow rations.
A. N. Brown1 and W. P. Weiss2, 1The Ohio State University, Wooster, 2Department of Animal Sciences, The Ohio State University, Wooster.

11:45 AM  343  Interaction among energy status, and retinoid status in periparturient dairy cows: Production, milk retinoid, and metabolic response.

12:00 PM  344  Reproductive performance of timed artificial insemination and activity-based estrus detection.

12:15 PM  345  Energy content of reduced-fat distillers grains for lactating dairy cows.
A. Fothen1, G. Garcia Gomez2, T. Brown-Brandl3, H. C. Frey3, and P. J. Kononoff1, 1University of Nebraska-Lincoln, 2ARS-USDA, Clay Center, NE, 3USDA, ARS, U.S. MARC, Clay Center, NE.

12:30 PM  346  Relationship Between digestibility and residual feed intake in lactating Holstein cows fed high and low starch diets.

12:45 PM  347  Evaluation of the effects of vitamin D and toll-like receptor signaling pathways on expression of antibacterial α-defensin genes in bovine neutrophils and mammary epithelial cells.
K. E. Merriman1 and C. D. Nelson, Department of Animal Sciences, University of Florida, Gainesville.
Horse Species Symposium: Advances in Equine Stem Cell Biology
Chair: Josie Coverdale, Texas A&M University
3501F

9:30 AM 382 Developmental progenitor cells of articular chondrocytes.
J. N. MacLeod*, University of Kentucky, Lexington.

10:20 AM 383 Understanding the link between inflammation and muscle satellite cells in the horse.
S. A. Reed*, Department of Animal Science, University of Connecticut, Storrs.

11:10 AM 384 Use of mesenchymal stem cells in bone repair.
K. E. Govoni*, Department of Animal Science, University of Connecticut, Storrs.

Meat Science and Muscle Biology
Chair: Nick K. Gabler, Iowa State University
3501D

9:30 AM 419 Changes to the muscle proteome during acute heat stress are dependent on predominant fiber type.

9:45 AM 420 Relationship of fat quality to meat quality traits of pork.
E. D. Testroet*, C. Yoder, C. Bustos, S. M. Lei, D. C. Beitz, and T. J. Baas, Iowa State University, Ames.

10:00 AM 421 Effects of dietary level of dried citrus pulp on growth, feed efficiency, carcass merit, and lean quality of finishing pigs.

10:15 AM 422 Effects of zilpaterol hydrochloride and implants in beef heifers I: Feedlot performance, carcass characteristics, and intramyocellular lipid accumulation.

10:30 AM 423 Effects of zilpaterol hydrochloride and implants in beef heifers II: Aging effects on Warner-Bratzler shear force, collagen solubility, and fiber cross-sectional area.

10:45 AM 424 Effect of zilpaterol hydrochloride on carcass composition, subprimal yield, and meat quality of Nellore heifers.
1University of Sao Paulo, Pirassununga, Brazil, 2MSD Saúde Animal, Sao Paulo, Brazil, 3University of Sao Paulo, Sao Paulo, Brazil.

11:00 AM 425 Effects of duration of vitamin C supplementation on growth performance, carcass traits, and protein degradation of the longissimus thoracis of steers fed a 0.31 or 0.59% sulfur diet.

11:15 AM 426 Interaction of various inclusion levels of dietary vitamin D2 enriched yeast cell wall with zilpaterol hydrochloride on dry matter intake and post mortem tenderness in feedlot steers.

11:30 AM 427 Zinc methionine alters muscle and adipose gene expression and protein concentration of calf-fed Holstein steers fed zilpaterol hydrochloride.
J. E. Hergenreder*, J. O. Baggerman, M. E. Branine, and B. J. Johnson, 1Texas Tech University, Lubbock, 2Zinpro Corporation, Eden Prairie, MN.

11:45 AM 428 Muscle fiber and color characteristics of different locations within beef Longissimus lumborum steaks.

12:00 PM 429 In utero manipulation of muscle development in beef cattle fetuses.
M. S. Duarte*, M. P. Gionbelli, P. Paulino, N. V. L. Serão, S. E. Facioni, S. de Campos Valadares Filho, and M. Dut, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Instituto Nacional de Ciência e Tecnologia Ciência Animal, Viçosa, Minas Gerais, Brazil, 3Universidade Federal De Vicsosa, Vicoa-MG, Brazil, 4Iowa State University, Ames, 5Universidade Federal de Vicsosa, Vicoa, Brazil, 6Washington State University, Pullman.
Nonruminant Nutrition:
Nutrient Requirements of Monogastrics and Amino Acid Digestibility of Feedstuffs
Chair: Joshua Jendza, BASF Corporation

9:30 AM 435  Determination of additivity of apparent and standard ileal digestibility of amino acids in different ingredients for mixed diets fed to growing pigs.
P. Xie*, D. Ragland, and L. Adeola, Purdue University, West Lafayette, IN.

9:45 AM 436  Effects of dietary threonine: Lysine ratio and sanitary conditions on performance and plasma urea nitrogen of weaned pigs fed antibiotic-free diets.
B. Jayaraman1*, J. K. Htoo2, and C. M. Nyachoti1, 1University of Manitoba, Winnipeg, MB, Canada, 2Evonik Industries AG, Hanau-Wolfgang, Germany.

10:00 AM 437  Estimated lysine requirement of 25 to 50 kg growing gilts.
J. K. Mathai1* and H. H. Stein, University of Illinois at Urbana-Champaign.

10:15 AM 438  Homocysteineinemia, growth performance and immune responses in suckling and weanling piglets.

10:30 AM 439  Leucine supplementation of a restricted protein diet improves lean growth in neonatal pigs.
D. A. Columbus1*, J. Steinhoff-Wagner1, A. Suryawanshi, M. Kao1, A. Hernandez-Garcia1, C. Boutry1, H. V. Nguyen1, M. L. Fiorotto1, and T. A. Davis1, 1Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX, 2USDA/ARS-Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX, 3Neonatology, Baylor College of Medicine, Houston, TX.

10:45 AM 440  Optimal sulfur amino acid to lysine ratio for weaned pigs fed antibiotic-free diets and raised under clean and unclean conditions.
R. K. Kahindi1*, M. C. Nyachoti1, and J. K. Htoo2, 1University of Manitoba, Winnipeg, MB, Canada, 2Evonik Industries AG, Hanau-Wolfgang, Germany.

11:00 AM  Break

11:15 AM 441  Energy concentration and amino acid digestibility in two sources of canola meal fed to growing pigs.
N. W. Jaworski*, Y. Liu, and H. H. Stein, University of Illinois at Urbana-Champaign.

11:30 AM 442  Amino acid digestibility in processed soybean products and rapeseed products fed to weanling pigs.
D. M. D. L. Navarro1*, Y. Liu1, T. S. Bruun2, and H. H. Stein1, 1University of Illinois at Urbana-Champaign, 2Danish Pig Research Centre, Copenhagen, Denmark.

11:45 AM 443  Standardized ileal crude protein and amino acid digestibility of eight wheat genotypes fed to growing pigs.
P. Rosenfelder1*, H. K. Spindler1, K. E. B. Knudsen1, H. Jørgensen1, N. Sauer1, J. K. Htoo2, M. Eklund1, and R. Mosenthin1, 1University of Hohenheim, Institute of Animal Nutrition, Stuttgart, Germany, 2Aarhus University, Department of Animal Science, Tjele, Denmark, 3Landwirtschaftliche Untersuchungs- und Forschungsanstalt Speyer, Speyer, Germany, 4Evonik Industries AG, Hanau-Wolfgang, Germany.

12:00 PM 444  Standardized ileal amino acid digestibility in eight genotypes of rye fed to growing pigs.
E. J. P. Strang1*, M. Eklund1, P. Rosenfelder1, H. K. Spindler1, N. Sauer1, J. K. Htoo2, and R. Mosenthin1, 1University of Hohenheim, Institute of Animal Nutrition, Stuttgart, Germany, 2Landwirtschaftliche Untersuchungs- und Forschungsanstalt Speyer, Speyer, Germany, 4Evonik Industries AG, Hanau-Wolfgang, Germany.

12:15 PM 445  Digestible phosphorus requirement of 20-kg pigs – A cooperative study.
O. Adeola1*, M. J. Azain1, S. D. Carter1, T. D. Crenshaw1, M. J. Estienne1, B. J. Kerr1, M. D. Lindemann1, C. V. Maxwell1, P. S. Miller1, M. C. Shannon1, E. van Heuften1, and N. A. S-10612, 1Purdue University, West Lafayette, IN, 2University of Georgia, Athens, 3Oklahoma State University, Stillwater, 4University of Wisconsin-Madison, 5Virginia Tech Tidewater AREC, Suffolk, 6USDA-ARS, Ames, IA, 7University of Kentucky, Lexington, 8Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, 9University of Nebraska-Lincoln, 10University of Missouri-Columbia, 11North Carolina State University, Raleigh, 12Swine Nutrition Committee and Nutritional Systems for Swine to Increase Reproductive Efficiency Committee, West Lafayette, IN.

12:30 PM 446  The flow of inositol phosphate esters and phytate phosphorus in the proximal and distal parts of the digestive tract of broilers receiving diets adequate in available phosphorus and supplemented with high levels of phytase.
L. A. Beeson1*, C. L. Walk2, and O. Olukosi1, 1SRUC, Ayr, United Kingdom, 2AB Vista Feed Ingredients, Marlborough, United Kingdom.
Physiology and Endocrinology:
Pregnancy, Placentation and Reproductive Health in Ruminants
Chair: Gregoy Bedecarrats, University of Guelph
2103C

9:30 AM 486 Bioinformatics analysis of mammary gland and liver transcriptome in response to an intra-mammary E. coli lipopolysaccharide challenge in early-lactation dairy cattle. A. Minuti1, D. E. Graugnard2, E. Trevisi3, and J. J. Loor4, 1Università Cattolica del Sacro Cuore, Piacenza, Italy, 2University of Illinois at Urbana-Champaign.

9:45 AM 487 The role of pH and progesterone on bovine uterine protein secretion in response to maternal recognition, interferon-tau. J. A. Spencer1, K. J. Austin2, K. G. Carnahan3, and A. Ahmadzadeh4, 1University of Idaho, Moscow, 2Department of Animal Science, University of Wyoming, Laramie.

10:00 AM 488 Hepatic steroid inactivating enzymes, hepatic portal blood flow, and corpus luteum blood perfusion in lactating dairy cattle. C. G. Hart5, B. E. Voelz, K. E. Brockus, and C. O. Lemley, Mississippi State University, Mississippi State.


10:45 AM 491 Possible markers of uterine and metabolic health in transition dairy cows. G. Esposito1,2, A. Chapwanya2, E. C. Webb2,3, and P. C. Irons2, 1Department of Production Animal Studies, Faculty of Veterinary Sciences, University of Pretoria, Onderstepoort, South Africa, 2Institute of Food, Nutrition and Well-being University of Pretoria, Pretoria, South Africa, 3Department of Animal and Wildlife Sciences, Faculty of Natural and Agricultural Sciences, University of Pretoria, Pretoria, South Africa.


11:30 AM 494 Effect of postpartum treatment with non-steroidal anti-inflammatory drugs (NSAID) on reproductive performance and removal from the herd in dairy cattle through mid-lactation. A. J. Carpenter3, C. M. Ylioja1, C. F. Vargas Rodriguez2, L. G. D. Mendoza2, L. Mamedova1, J. F. Coetzee2, L. Hollis2, R. Gehring2, and B. Bradford1, 1Department of Animal Sciences and Industry, Kansas State University, Manhattan, 2Pharmacology Analytical Support Team, Iowa State University College of Veterinary Medicine, Ames, 3Department of Clinical Sciences, Kansas State University, Manhattan.

11:45 AM 495 Biology and molecular signatures of elongating preimplantation conceptuses in dairy cows. E. S. Ribeiro1, L. F. Greco1, R. S. Bisinotto1, F. S. Lima2, W. W. Thatcher3, and J. E. P. Santos4, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Animal Sciences, University of Florida, Gainesville.

12:00 PM 496 Modulation of the immune system during post-partum uterine infection. C. G. Walker4, S. Meier2, J. R. Roche2, M. D. Mitchell1, and C. Burke4, 1DairyNZ, Auckland, New Zealand, 2DairyNZ, Hamilton, New Zealand, 3University of Queensland, Queensland, Australia, 4Dairy NZ Ltd, Hamilton, New Zealand.


12:30 PM 546 The effect of preovulatory concentration of estradiol and length of proestrus on pregnancy rate to timed-AI and embryo transfer in beef cows. L. H. Gruppe1, R. S. Cipriano2, F. M. Abreu2, M. L. Mussard1, K. J. Wells1, G. E. Fogle3, B. R. Harstine1, M. D. Utt4, G. A. Bridges5, and M. L. Day6, 1The Ohio State University, Columbus, 2UniSalesiano, Araçatuba, Brazil, 3Select Sires Inc, Plain City, OH, 4University of Minnesota, Grand Rapids.
Ruminant Nutrition I: Feedlot Nutrition
Chair: Anna Taylor, South Dakota State University
2103A

9:30 AM 589 Feed performance and diet digestibility of feed efficiency-ranked beef steers fed corn or roughage-based diets and finished with corn or byproduct-based diets.
J. R. Russell1, N. O. Minton2, W. J. Sexten2, M. S. Kerley2, and S. L. Hansen1, 1Iowa State University, Ames, 2University of Missouri, Columbia.

9:45 AM 590 Effects of processing of treated corn stover and distillers grains on intake and digestibility of feedlot diets.
J. L. Harding1, M. L. Jolly, J. C. MacDonald, and G. E. Erickson, University of Nebraska-Lincoln.

10:00 AM 591 Effects of dietary glycerin inclusion at 0%, 5%, 10%, and 15% of dry matter on energy metabolism and nutrient balance in finishing beef steers.
K. E. Hales1, A. P. Foote2, T. Brown-Brandl2, and H. C. Freesty2, 1USDA-ARS-MARC, Clay Center, NE, 2USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

10:15 AM 592 Intake and digestibility of diets without forage in Nellore and Angus young bulls.
M. M. Ladeira1, J. R. R. Carvalho1, M. L. Chizzotti2, D. R. Casagrande2, P. D. Teixeira1, M. C. L. Alves1, R. A. Gomes1, and L. A. Silva1, 1Universidade Federal de Lavras, Lavras, Brazil, 2Universidade Federal de Viçosa, Viçosa, Brazil.

10:30 AM 593 A survey of dry-rolled corn particle size and fecal starch in U.S. feedlots.
E. Schwandt, Kansas State University, Manhattan.

10:45 AM 594 Effects of feeding zilpaterol hydrochloride on feedlot performance and carcass characteristics of Nellore bulls and steers.

11:00 AM 595 Effects of Next Enhance concentrations in finishing diets on performance and carcass characteristics of yearling feedlot cattle.
C. J. Bittner1, G. E. Erickson1, K. H. Jenkins2, M. K. Luebbe2, G. I. Zanton3, and M. A. Andersen4, 1University of Nebraska-Lincoln, 2University of Nebraska, Scottsbluff, 3Novus International, Inc., St. Charles, MO.

11:15 AM 596 Effects of plane of nutrition during late gestation and weaning age on transcriptome profiles of Longissimus muscle in Simmental x Angus offspring.
S. Moisa1, L. M. Shoup, D. W. Shike, and J. J. Loor, University of Illinois at Urbana-Champaign.

11:30 AM 597 Postnatal nutritional management alters transcription regulator gene networks in Longissimus muscle of Angus x Simmental offspring.
S. Moisa1, L. M. Shoup, D. W. Shike, and J. J. Loor, University of Illinois at Urbana-Champaign.

11:45 AM 598 Effect of ractopamine hydrochloride and dietary protein content on performance and carcass traits of Nellore bulls.
N. R. B. Cônsolo1, F. Rodriguez1, M. O. Frasseto1, R. A. P. Macei1, V. Rizzi1, and L. F. P. Silva1, 1University of Sao Paulo, Pirassununga, Brazil, 2University of Sao Paulo, Sao Paulo, Brazil, 3Ouro Fino, Cravinhos, Brazil.

12:00 PM 599 Effect of 300 or 400 mg daily of ractopamine hydrochloride on growth performance and carcass characteristics of finishing steers during the last 14, 28, or 42 days.
C. J. Bittner1, D. B. Burken1, G. E. Erickson1, and N. A. Pyatt2, 1University of Nebraska-Lincoln, 2Elanco Animal Health, Greenfield, IN.

12:15 PM 600 Comparison of the total tract digestibility in feedlot cattle fed barley grain treated with lactic and citric acid.
M. Nematpoor3, K. Rezayazdi1, and M. Dehghan-Banadaky4, 1Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 2University of Tehran, Karaj, Iran, 3University of Tehran, Tehran, Iran.

Ruminant Nutrition II: Models, Starch; Forages, Dairy
Chair: Mary Beth Hall, US Dairy Forage Research Center
2103B

9:30 AM 601 Using a dynamic metabolic model to investigate differences in metabolic patterns among lactating animals.
L. Oliveira1, H. Kimball2, J. P. McNamara2, and A. Fix2, 1University of Sao Paulo State University, Sao Paulo, Brazil, 2Washington State University, Pullman.
9:45 AM 602 A dynamic, mechanistic model of metabolism in adipose tissue of lactating dairy cattle. J. P. McNamara*¹, K. Huber², and A. Kenez³, ¹Washington State University, Pullman, ²University of Hannover, Hannover, Germany.

10:00 AM 603 Total volatile fatty acid concentrations are unreliable estimates of treatment effects on in vivo ruminal fermentation. M. B. Hall¹, T. D. Nennick¹, and P. H. Doane¹, ¹U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI, ²Purdue University, West Lafayette, IN, ³ADM Research, Decatur, IL.

10:15 AM 604 Effects of diets differing in starch, fiber, and fatty acid concentrations on milk production and energy partitioning. J. P. Boerman¹, S. E. Burczynski, M. J. VandeHaar, and A. L. Lock, Michigan State University, East Lansing.

10:30 AM 605 Propionic acid decreased meal size and feed intake compared with glycerol when infused abomasally in cows in the postpartum period. L. B. Gauldron-Duarte* and M. S. Allen, Michigan State University, East Lansing.

10:45 AM 606 Responses to starch infusion on milk synthesis in low yield lactating dairy cows. Y. Zou*, Z. Yang, Y. Guo, S. Li, and Z. J. Cao, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.

11:00 AM 607 The effect of starch digestibility of two corn silage varieties on lactation performance in dairy cows. E. E. Klingensmith¹, L. Harthan¹, and M. D. Hanigan, ¹Virginia Tech, Blacksburg.

11:15 AM 608 Effects of calcium oxide treated corn stover as a partial replacement for corn silage, Chinese wildrye or concentrate on milk yield and composition of dairy cows. H. T. Shi¹, S. L. Li, Z. J. Cao, and Y. Q. Wu, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.


11:45 AM 610 Effect of feeding different types of sugars on rumen fermentation and productivity of lactating dairy cows. X. Gao* and M. Oba, University of Alberta, Edmonton, AB, Canada.

12:00 PM 611 Effects of alfalfa and cereal straw as a forage source on nutrient digestibility, rumen microbial protein synthesis, and lactation performance in lactating dairy cows. B. Wang¹, S. Y. Mao², H. J. Yang³, Y. M. Wu¹, J. K. Wang³, S. L. Li¹, Z. M. Shen³, and J. X. Liu¹, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Nanjing Agricultural University, Nanjing, China, ³China Agricultural University, Beijing, China, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China, Zhejiang University, Hangzhou, China.

12:15 PM 612 Feeding lactating dairy cattle long hay separate from the TMR can maintain DMI during incidents of low rumen pH. A. D. Kmicikewycz* and A. J. Heinrichs, The Pennsylvania State University, University Park.

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Swine Species Mini-Symposium: Opportunities and Challenges with the Use of Carbohydrase and Protease Enzymes in Swine Formulations

Chair: John F. Patience, Iowa State University
Sponsor: JBS United & EAAP

9:30 AM 741 EAAP-ASAS Speaker Exchange Presentation: Opportunities and challenges with the use of carbohydrase and protease enzymes in swine formulations. R. T. Zijlstra¹, T. A. Woyengo¹, Z. Nasir², and E. Beltranena¹,², ¹University of Alberta, Edmonton, AB, Canada, ²Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

10:10 AM Discussion

Swine Species: Reproduction and Management

Chair: Charles Starkey, American Proteins, Inc.

9:30 AM 741 Swine Species: Reproduction and Management

10:30 AM 742 Betaine supplementation in maternal diet modulates the epigenetic regulation of hepatic gluconeogenic genes in neonatal piglets. D. Cai¹, Y. Jia, H. Song, S. Sui, J. Lu, Z. Jiang, and R. Zhao, Nanjing Agricultural University, Nanjing, China.
10:45 AM  743  Rearing system affects the efficiency of oleic acid deposition in Duroc x Iberian pigs.  

11:00 AM  744  Effects of sugar beet pulp on reproductive performance of gestation sows.  

11:15 AM  745  Utilizing meta-analyses to generate prediction equations for pork carcass back, belly, and jowl fat iodine value.  
C. B. Paulk†, J. R. Bergstrom†, M. D. Tokach†, S. S. Dritz†, D. D. Burnett†, J. M. DeRouchey†, R. D. Goodband†, J. L. Nelssen†, and J. M. Gonzalez†, 1Kansas State University, Manhattan, 2DSM Nutritional Products, Inc., Parsippany, NJ.

11:30 AM  746  The effects of copper source (copper sulfate or methionine hydroxy analogue chelate; Mintrex) on growth performance, carcass characteristics, and barn cleaning time in finishing pigs.  
K. F. Coble†, J. M. DeRouchey†, M. D. Tokach†, S. S. Dritz†, B. Lawrence†, J. Escobar†, J. C. Woodworth†, R. D. Goodband†, and N. Boettger†, 1Kansas State University, Manhattan, 2Novus International, St. Charles, MO.

11:45 AM  747  Immunocastration affects testicular mass, serum concentrations of testosterone, and average daily gain of boars.  
D. Lugar*, S. Clark*, S. Callahan†, L. Wittish†, and M. Estienne‡, 1Virginia Tech, Blacksburg, 2Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, 3Virginia Tech, Suffolk.

12:15 PM  748  New perspectives to the enterotoxigenic E. coli F4 infection model in weanling piglets in relation to the susceptibility genotypes and bacterial shedding.  

ADSA-SAD Undergraduate Student Paper Competition: Dairy Foods  
Chair: Dale R. Olver, The Pennsylvania State University

11:00 AM  14  Dairy fats: The good, the bad, and the ugly.  

11:15 AM  15  Differences in bovine and caprine cheese production.  
K. Wolf* and J. M. Bewley, University of Kentucky, Lexington.

11:30 AM  16  Do current regulations for raw milk cheeses ensure consumer safety?  

11:45 AM  17  Applications for functional dairy starter cultures.  
G. G. FitzPatrick* and D. R. Olver, The Pennsylvania State University, University Park.

Graduate Student Competition: ADSA Southern Section Oral  
Chair: Jeffrey M. Bewley, University of Kentucky

12:00 PM  359  Changes in activity and milk components around onset of clinical mastitis.  

12:15 PM  360  Predicting impending calving using automatically collected measures of activity and rumination in dairy cattle.  

CSAS Graduate Student Oral Competition  
Chair: Cornelis F.M. de Lange, University of Guelph

1:00 PM  212  Effects of butyrate during subacute ruminal acidosis on VFA transport capacity in the rumen epithelium of holstein dairy cows.  
A. H. Laarman*, L. Dionissopoulos*, O. AlZahal‡, S. L. Greenwood‡, M. A. Steele‡, and B. W. McBride‡, 1University of Guelph, Guelph, ON, Canada, 2Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada, 3University of Vermont, Burlington, 4Nutreco Canada, Guelph, ON, Canada.
1:15 PM 213  Nutrient composition and degradation characteristics of anthocyanidin containing alfalfa transformed with Le, C1 and Le x C1 regulatory genes.
R. G. Heendeniya Vidanaral1, M. Y. Gruber2, Y. Wang3, D. A. Christensen1, J. J. McKinnon1, B. Coulman1, and P. Yu1,
1University of Saskatchewan, Saskatoon, SK, Canada, 2Agriculture and Agri-Food Canada, Saskatoon, SK, Canada,
3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

1:30 PM 214 Comparative analyses of the bovine rumen microbiota using RNA and targeted DNA-based sequencing approaches.
F. Li1, S. Xian2, G. Henderson1, F. Cox3, P. H. Janssen1, and L. L. Guan1, 1Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, 2University of Alberta, Edmonton, AB, Canada,
3AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand.

1:45 PM 215 Effect of pelleting at different conditions on ruminal degradation kinetics and intestinal digestion of canola meal in dairy cattle.
X. Huang* and P. Yu, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

2:00 PM 216 Evaluation of corn and barley varieties in backgrounding grazing programs for beef calves.
S. A. McMillan1, B. Lardner2, J. J. McKinnon1, K. Larson2, and G. B. Penner1, 1University of Saskatchewan, Saskatoon, SK, Canada,
2Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

2:15 PM 217 Transcriptomic analysis of rectal-anal junction tissue from super-shedders vs cattle negative for E. coli O157:H7.
O. Wang1, G. Liang1, X. Sun1, B. Selinger2, K. Stanford1, G. S. Plastow1, T. A. McAllister4, and L. L. Guan1, 1University of Alberta, Edmonton, AB, Canada, 2University of Lethbridge, Lethbridge, AB, Canada, 3Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

2:30 PM 218 Influence of steeping DDGS on growth performance and digestive function in liquid fed weanling pigs.
M. Wieman1, J. Zhu, D. Wei, and C. F. de Lange, University of Guelph, Guelph, ON, Canada.

2:45 PM 219 Selection of hybrid bromegrass for increased NDF digestibility.
C. L. Rosser1, B. Coulman1, and G. B. Penner1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada.

3:00 PM 220 Effect of feeding different sources of nitrogen on performance of growing pigs fed diets deficient in non-essential amino acid nitrogen.
W. D. Mansilla1, J. K. Htoo2, and C. F. de Lange1, 1University of Guelph, Guelph, ON, Canada, 2Evonik Industries AG, Hanau-Wolfgang, Germany.

3:15 PM 221 Comparison of winter feeding systems for the evaluation of beef cow performance, reproductive efficiency and system costs.
D. Jose1, G. B. Penner1, J. J. McKinnon1, K. Larson1, and B. Lardner21, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Western Beef Development Centre, Humboldt, SK, Canada.

3:30 PM 222 Dietary supplementation with excess leucine transiently improved whole body nitrogen retention in young pigs challenged with bacterial lipopolysaccharide.
M. Rudar1 and C. F. de Lange1, University of Guelph, Guelph, ON, Canada.

3:45 PM 223 The relationship between trailer motion and carcass bruising in market cows during transport.
C. E. Kehler2, K. H. Ominski1, L. L.Connor1, T. G. Crowe3, and K. S. Schwatzkopf-Genswein, 1University of Manitoba, Winnipeg, MB, Canada, 2Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 3Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.

4:00 PM 224 Impact of reducing dietary crude protein concentration on serum lysine concentration and lysine utilization efficiency in lactating sows.
L. A. Huber1, C. F. de Lange1, U. K. Larsen1, D. Chamberlin1, and N. L. Trottier1, 1University of Guelph, Guelph, ON, Canada, 2Aarhus University, Foulum, Denmark, 3Michigan State University, East Lansing.

4:15 PM 225 Diurnal variations in enteric methane emissions from non-lactating dairy cows offered diets differing in forage to grain ratio.
A. J. Koz1, S. C. Li1, E. J. McGeough1, E. Khafipour3, and J. C. Plaizier2, 1University of Manitoba, Winnipeg, MB, Canada, 2Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 3Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.

4:30 PM 226 Long-term supplementation of diets with 3-nitrooxypropanol resulted in a sustained reduction in methane production in beef cattle.
A. Romero-Perez1, E. K. Okine1, S. M. McGinn1, L. L. Guan1, M. Oba1, S. M. Duval1, and K. A. Beauchemin1, 1Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, 3DSM Nutritional Products France, Research Centre for Animal Nutrition and Health, Saint Louis Cedex, France.
Measuring animal productivity and rumen efficiency from extensively overwintered beef cows on the Canadian Prairies.

Adding sera enriched in PUFA with different n-6/n-3 ratio advanced bovine in vitro embryo development from both high- and inferior-quality oocytes.
R. Salehi*, A. Ruiz-Sanchez, M. G. Colazo, M. Oba, M. Dyck, and D. J. Ambrose, 1University of Alberta, Edmonton, AB, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 3Alberta Agriculture and Rural Development, Livestock Research Branch, Edmonton, AB, Canada.

ADSA Southern Section Symposium: Strategies for Housing Dairy Animals in the Southeast
Chair: Jeffrey M. Bewley, University of Kentucky
2102A

Photoperiod management of dairy cattle: Considerations and applications.
G. E. Dahl*, University of Florida, Gainesville.

Impacts of heat stress on cow and calf.
S. Tao*, G. E. Dahl, and J. K. Bernard, 1University of Georgia, Tifton, 2University of Florida, Gainesville.

Implications of overstocking on the behavior, health, and productivity of dairy cows in the Southeast.
P. D. Krawczel*, The University of Tennessee, Knoxville.

Managing heat stress in dairy calves and heifers: Housing considerations.
S. H. Ward*, Mississippi State University, Mississippi State.

Compost bedded pack barns as a lactating cow housing system for the Southeast.
J. M. Bewley*, R. A. Black, F. A. Damasceno, E. A. Eckelkamp, G. B. Day, and J. L. Taraba, 1University of Kentucky, Lexington, 2University of Tennessee, Knoxville, 3Federal University of Mato Grosso, Campus Rondonópolis, Brazil.

Discussion

Southern ADSA Business Meeting

ADSA-SAD Undergraduate Student Paper Competition: Dairy Production
Chair: Kasim H. Ingawa, North Carolina State University
2208

Dairy cow welfare: Bridging the gap.
E. A. Morabito* and J. M. Bewley, University of Kentucky, Lexington.

The effects of overcrowding on the behavior of lactating dairy cows in free-stall housing systems.
S. F. Templeton*, R. A. Black, and P. D. Krawczel, University of Tennessee, Knoxville.

A polled future.
M. Richard* and C. C. Williams, 1Louisiana State University, Baton Rouge, 2LSU AgCenter, Baton Rouge, LA.

The future role of metabolomics in dairy science.
A. E. Kraus*, K. J. Harvatine, and D. R. Olver, Pennsylvania State University, University Park.

Break

Polled genetics: Benefits, detriments and identification of polled dairy cattle.

Crossbreeding-Is it a good option?
R. J. Yarbrough* and S. Washburn, North Carolina State University, Raleigh.
**ADSA-SAD Undergraduate Student Paper Competition: Original Research**

**Chair: Dale R. Olver, The Pennsylvania State University**

2210

2:00 PM 24  Weaning age impacts growth, feed intake and behavioral indicators of stress in Holstein calves fed a high plane of nutrition.

H. E. Brown, E. C. Eckert, K. E. Leslie, T. J. DeVries, and M. A. Steele, University of Guelph, Guelph, ON, Canada.

2:15 PM 25  Effects of AICAR, rapamycin, and non-essential amino acids on cell signaling in bovine mammary tissue.


2:30 PM 26  Within-day alteration of ration starch fermentability had no effect on feed intake, total-tract neutral detergent fiber digestibility, and milk fat concentration of cows in late lactation.

B. C. Oglesby and M. S. Allen, Michigan State University, East Lansing.

2:45 PM 27  Growth of periruminant Holstein bull calves fed a fermentation extract of *Aspergillus oryzae*.


3:00 PM

Break

3:15 PM 29  Case study: Effect of alley floor scraping frequency on environmental mastitis-causing pathogen counts.


3:30 PM 30  Dry matter intake and efficiency in lactating Holstein cows grouped by direct genomic values for feed utilization.

I. W. Haagen and C. D. Dechow, The Pennsylvania State University, University Park.

3:45 PM 31  Can prior subjection to pre-heating enhance the heat tolerance of mesophilic bacterial cultures?

R. E. Brown and K. J. Aryana, Louisiana State University, Baton Rouge.

4:00 PM 32  Use of the RatLoft in laboratory conditions decreases pup mortality in lactating mice.


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**Animal Health I: Models of Disease and Stress**

**Chairs: Stanislaw Kahl, USDA, Agricultural Research Service and Kasey M. Moyes, Department of Animal and Avian Sciences, University of Maryland**

2502

2:00 PM 64  Heat stress as a model to study the effect of a gut health concept (Presan-Fx) on the intestinal barrier function of weanling piglets.

P. J. Roubos and Y. M. Han, Nutreco Research & Development, Boxmeer, Netherlands.

2:15 PM 65  A dual challenge of corticotropin releasing hormone and vasopressin alters immune cell profiles in beef heifers.

J. A. Carroll, N. C. Burdick Sanchez, J. O. Buntyn, S. E. Sieren, S. J. Jones, and T. B. Schmidt, USDA-ARS, Livestock Issues Research Unit, Lubbock, TX.

2:30 PM 66  Investigating innate immune response differences between Angus and Holstein cattle with the dermal fibroblast model.


2:45 PM 67  Predictive models of lameness in dairy cows achieve high sensitivity and specificity with force measurements in three dimensions.


3:00 PM 68  Performance trends in commercial livestock populations in the United States before and subsequent to the inclusion of genetically modified feed in livestock diets.

A. L. Van Eenennaam, University of California-Davis.

3:15 PM 69  Evaluation of a brix refractometer to estimate serum immunoglobulin G concentration in neonatal dairy calves.

S. M. Deelen, T. L. Ollivett, D. M. Haines, and K. E. Leslie, University of Guelph, Guelph, ON, Canada.
3:30 PM 70  Associations of serum haptoglobin in newborn dairy calves with future health, growth and mortality up to 4 months of age.  
C. F. Murray1, C. Windeyer2, T. F. Duffield3, K. M. Waalderbos4, and K. E. Leslie5, 1University of Guelph, Guelph, ON, Canada, 2University of Calgary, Calgary, AB, Canada.

3:45 PM 71  Dynamics of culling for Jersey, Holstein, and crossbred cows in large multi-breed herds.  
P. J. Pinedo4, A. Daniels2, J. Shumaker5, and A. De Vries1, 1Texas A&M AgriLife Research, Amarillo, 2Circle H Headquarters, Dalhart, TX, 3Magnolia Veterinary Services, Amarillo, TX, 4University of Florida, Gainesville.

4:00 PM 72  Relationship of ocular and rectal temperatures to indicators of stress in mature horses.  
M. J. Anderson*, J. L. Lucia, K. J. Stuts, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

4:15 PM 73  Enhancement of the acute phase response to lipopolysaccharide in feedlot steers supplemented with OmniGen-AF.  
N. C. Bartick Sanchez1, J. O. Buntyn1, J. A. Carroll1, T. Wistuba1, K. DeHaan1, S. E. Sieren1, S. J. Jones1, and T. B. Schmidt1, 1USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 2University of Nebraska, Department of Animal Science, Lincoln, 3Prince AgriProducts Inc., Quincy, IL, 4University of Nebraska-Lincoln.

4:30 PM 74  Age dependent changes in heifer fibroblast DNA methylation and LPS-induced gene expression.  

4:45 PM 75  Effect of trace mineral supplementation on clinical signs, immune response variables, and mineral balance of calves following exposure to bovine viral diarrhea virus and subsequent Mannheimia haemolytica infection.  
B. K. Wilson6, G. I. Zanton2, D. L. Step1, R. W. Fulton1, A. W. Confer1, C. L. Maxwell1, C. A. Gifford3, C. R. Krehbiel1, and C. J. Richards3, 1USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, 2USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, 3University of Nebraska, West Central Research and Extension Center, North Platte.

Beef Species Symposium: Making More, but Using Less: The Future of the U.S. Beef Industry with a Reduced Cowherd and the Challenge to Feed the U.S. and the World;  
Session II. The Cow-Calf Industry  
Chair: Allison M. Meyer, University of Missouri  
Sponsor: Merck

2:00 PM 121  Where can we support more cows? Overview of the beef cowherd and land use.  
J. A. Paterson*, National Cattlemen's Beef Association, Centennial, CO.

2:30 PM 122  How can we improve replacement heifers as we rebuild the cowherd?  
S. L. Lake*, University of Wyoming, Laramie.

3:00 PM 123  Can we improve cow efficiency or manipulate feeding strategies to reduce inputs?  
H. C. Freetly*, USDA, ARS, U.S. MARC, Clay Center, NE.

3:30 PM 124  Can we build the cowherd by increasing longevity of females?  
A. Roberts1, M. Petersen1, and R. N. Funston1, 1USDA, ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, 2University of Nebraska, West Central Research and Extension Center, North Platte.

4:00 PM 125  Can we develop a cow-less cowherd? Beef production without mature cows.  
G. E. Seidel*, Colorado State University, Fort Collins.

Dairy Foods Symposium:  
Advances in Delivery of Dairy Ingredients for Health and Functional Benefits  
Chair: David R. McCoy, Dairy Research Institute  
Sponsor: Dairy Research, Inc.

2:00 PM 233  Market opportunities for dairy proteins.  
A. Bienvenue*, U.S. Dairy Export Council, Arlington, VA.

2:30 PM 234  Using charged membranes to improve dairy protein ingredients.  
M. Etzel*, University of Wisconsin-Madison.

3:00 PM 235  Emerging uses of new dairy ingredients in cheese, yogurt, beverages and other products.  
L. Metzger*, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
3:30 PM 236 An update on carrier and delivery systems using casein micelles from bovine milk.
F. Harte*, University of Tennessee, Knoxville.

4:00 PM 237 Protein modification for health benefits.
J. A. Lucey*, Department of Food Science, University of Wisconsin-Madison.

### Dairy Foods: Technical Oral Session: Cheese / Yogurt / Ice Cream
**Chair: Frederico Harte, Penn State University**
3501D

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker Details</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>Microbial production of conjugated linoleic acid (CLA): Development of functional dairy products- an overview.</td>
<td>S. Abd El Ghani* and W. K. Bahgaat, National Research Centre, Giza, Cairo, Egypt.</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>Chemical and organoleptic characteristics of cheese from dairy cows supplemented with soya and partially hydrogenated vegetable oils.</td>
<td>E. Vargas-Bello-Pérez1, G. Iñiguez-González1, K. Fehrmann-Cartes1, and P. C. Garnsworthy2, 1Pontificia Universidad Católica de Chile, Santiago, Chile, 2The University of Nottingham, Loughborough, United Kingdom.</td>
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<tr>
<td>2:30 PM</td>
<td>Comparison of the effect of Holstein-Friesian and Jersey milk on cheddar cheese production.</td>
<td>J. H. Bland*, C. C. Fagan, and A. S. Grandison, University of Reading, Reading, United Kingdom.</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Adding citrate to ice cream mix for enhanced protein functionality.</td>
<td>A. Gilbert, J. Prost, and H. D. Goff*, University of Guelph, Guelph, ON, Canada.</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>The nutritional value of kishk: Dried wheat fermented milk Egyptian native dairy food.</td>
<td>S. Abd El Ghani1 and W. K. Bahgaat2, 1National Research Centre, Dairy Department, Giza, Cairo, Egypt, 2National Research Centre, Giza, Cairo, Egypt.</td>
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<tr>
<td>3:15 PM</td>
<td>Bacterial community shifts in geriatric subjects in response to probiotic intervention revealed by high throughput DNA sequencing.</td>
<td>G. H. Meletharayil1, S. Senan2, P. Jashbhai2, and C. G. Joshi3, 1South Dakota State University, Brookings, 2SMC College of Dairy Science, Anand Agricultural University, Anand, India, 3Faculty of Veterinary Science, Anand Agricultural University, Anand, India.</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Microbial population dynamics during aging of cheddar cheese.</td>
<td>B. Ganesan*, C. Brothersen, and D. J. McMahon, Western Dairy Center, Utah State University, Logan.</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>The influence of protein content of milk protein concentrates on the rheological properties of Greek style acid skim milk gels.</td>
<td>G. H. Meletharayil1, H. A. Pate2, and T. Huppertz1, 1South Dakota State University, Brookings, 2Dairy Science Department, South Dakota State University, Brookings.</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Investigating the refrigerated performance shelf-life of high pressure treated, reduced sodium, low moisture part skim mozzarella cheese.</td>
<td>M. Ozturk*, S. Govindasamy-Lucey2, Y. Lu2, J. J. Jaeggi2, M. E. Johnson2, and J. A. Lucey2,3, 1University of Wisconsin-Madison, 2Wisconsin Center for Dairy Research, Madison, 3University of Wisconsin-Madison.</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>Impact of potassium substitution for sodium on pH, proteolysis, organic acids, and microbial populations during storage of cheddar cheese.</td>
<td>D. J. McMahon1,2, C. J. Oberg2,3, M. Drake2, N. Forkye2, L. V. Moyes2, and M. R. Arnold2, 1Western Dairy Center, Utah State University, Logan, 2Department of Microbiology, Weber State University, Ogden, UT, 3Western Dairy Center, Utah State University, Ogden, 4Southeast Dairy Foods Research Center, North Carolina State University, Raleigh, 5Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.</td>
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### Graduate Student Competition: ADSA Production Oral, PhD
**Chair: Peter S. Erickson, University of New Hampshire**
2505B

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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker Details</th>
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<tr>
<td>2:00 PM</td>
<td>Antioxidant activity after in vitro gastrointestinal digestion of cheese containing catechins encapsulated within liposomes.</td>
<td>A. Rashidinejad1,2, D. Everett1,2, J. Birch1, and D. Sun-Waterhouse1, 1University of Otago, Dunedin, New Zealand, 2Riddet Institute, Palmerston North, New Zealand, 3Plant and Food Research, Auckland, New Zealand.</td>
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2:15 PM  349  Effects of mineral salts and calcium chelating agents on the functionalities of milk protein concentrate prepared by ultrafiltration.  
X. Luo*, L. Ramchandran, and T. Vasiljevic, Victoria University, Melbourne, Australia.


2:45 PM  351  Effect of dietary phosphorus on intestinal P absorption in growing Holstein steers.  

3:00 PM  352  A survey of calving and colostrum management practices on Irish dairy farms.  
C. Cummins*, R. Sayers, I. Lorenz, and E. Kennedy, 1Teagasc, Animal and Grassland Research and Innovation Center, Moorepark, Fermoy, Co. Cork, Ireland, 2School of Agriculture, Food Science & Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 3Teagasc, Moorepark, Fermoy, Co. Cork, Ireland.

3:15 PM  353  Effects of supplementing lipid-encapsulated echium oil on lactational responses and milk fatty acid composition.  
M. Bainbridge*, A. L. Lock, and J. Kraft, 1University of Vermont, Burlington, 2Michigan State University, East Lansing, 3Department of Animal Science, University of Vermont, Burlington.

3:30 PM  354  Effects of dietary crude protein level on nitrogen use efficiency and urinary nitrogen excretion during a twelve-week period in late lactation dairy cows.  

3:45 PM  355  Evaluation of a handheld device for the detection of ß-hydroxybutyrate pre-calving in dairy cattle.  

4:00 PM  356  Effects of dietary nitrate supplementation on enteric methane and nitrous oxide emissions from beef cattle.  
C. J. Neumeier*, Q. Wang, A. R. Castillo, Y. Zhao, Y. Pan, and F. M. Milloehner, 1University of California-Davis, 2University of California Cooperative Extension, Merced.

4:15 PM  357  Early pair housing influences the feeding behavior and development of dairy calves.  

4:30 PM  358  Epigenetic differences of cows classified with biased antibody and cell mediated immune response traits.  
M. A. Paihomesai* and B. Mallard, 1University of Guelph, Guelph, ON, Canada, 2Dept Pathobiology, University of Guelph, Guelph, ON, Canada.

Graduate Student Competition: ADSA-ASAS Northeast Section Oral

Chair: Kristen E. Govoni, Department of Animal Science, University of Connecticut  
Sponsor: ADSA-ASAS Northeast Section  
2104B

2:00 PM  361  Glucose metabolism by bovine neutrophils characterized by mass spectrometry and [13C6]glucose.  
Y. Qu*, B. J. Bequette, T. H. Elsasser, and K. M. Moyes, 1Department of Animal and Avian Sciences, University of Maryland, College Park, 2USDA/ARS Growth Biology Lab, Beltsville, MD.

2:15 PM  362  Exploring the molecular diversity and density of the rumen microbiome within the Impala (Aepyornis melampus melampus) from Pongola, South Africa.  
L. M. Cersosimo*, B. St-Pierre, W. van Hoven, and A. D. G. Wright, 1University of Vermont, Burlington, 2University of Pretoria, Pretoria, South Africa.

2:30 PM  363  Effects of ground flaxseed on milk production, milk composition, and methane emissions in organically-managed Jersey cows during the grazing season.  

2:45 PM  364  Farm-level evaluation of implementing feeding best management practices (BMP) on Pennsylvania dairy farms.  
3:00 PM 365  The impact of dairy advisory teams on farm improvement in Pennsylvania dairies.  

3:15 PM 366  Break

3:30 PM 366  Plant-derived compounds, trans-cinnamaldehyde and eugenol, reduce adhesion and invasion of Staphylococcus aureus in bovine mammary epithelial cells in vitro.  
D. Jaganathan*, A. Kollanoor-Johny, V. Kekkatarayanan, G. W. Kazmer, L. Kuo, Y. B. Wang, and K. E. Govoni,  
1Department of Animal Science, University of Connecticut, Storrs, 2Department of Statistics, University of Connecticut, Storrs.

3:45 PM 367  Effect of dietary supplementation of Capsicum extract on feed intake, milk production and composition, rumen fermentation, and rumen microbial populations in dairy cows.  
J. Oh*, F. Giiallongo, H. L. Weeks, T. W. Frederick, A. N. Hristov, and E. H. Wall,  
1Department of Animal Science, The Pennsylvania State University, University Park, 2Pancosma, Geneva, Switzerland.

4:00 PM 368  The effects of CO₂ and HEPES buffer on in vitro chemotaxis assays of bovine neutrophils.  

4:15 PM 369  The 2001 Dairy NRC Ration Evaluation Software effectively predicts dietary strong ion and DCAD concentrations in lactating dairy cow diets.  
M. E. Iwaniuk* and R. A. Erdman, University of Maryland, College Park.

---

Horse Species

Chair: Josie Coverdale, Texas A&M University  
3501F

2:00 PM 385  Effects of high starch and sugar diets on postprandial inflammatory proteins in horses.  
1The Ohio State University, Wooster, 2Virginia Tech, Blacksburg, 3Ranch-Way Feeds, Fort Collins, CO, 4Michigan State University, East Lansing, 5Virginia Tech, Blacksburg.

2:15 PM 386  Evaluation of conjugated linoleic acid supplementation on markers of joint inflammation and metabolism in young horses challenged with lipopolysaccharide.  
1Texas A&M University, College Station, 2Clemson University, Clemson, SC, 3Sam Houston State University, Huntsville, TX, 4Texas A&M University, Department of Animal Science, College Station.

2:30 PM 387  Age-related effects on markers of inflammation and cartilage metabolism in response to an intra-articular lipopolysaccharide challenge.  
M. K. Kahn*, J. Coverdale, J. L. Lucia, C. E. Arnold, R. A. Dabareiner, A. Bradbery, A. A. Millican, and T. H. Welsh,  
1Texas A&M University, College Station, 2Sam Houston State University, Huntsville, TX, 3Clemson University, Clemson, SC, 4Department of Animal Science, Texas A&M University, College Station.

2:45 PM 388  The effect of restricted diet and slow-feed hay nets on body weight and morphometric measurements in adult horses.  

3:00 PM 389  Influence of diet fortification on mature horses at maintenance: Performance characteristics.  
J. L. Lucia*, D. L. Parker, M. J. Anderson, K. J. Stutts, M. M. Beverly, S. F. Kelley, and E. D. Lamprecht,  
1Sam Houston State University, Huntsville, TX, 2Cargill Incorporated, Elk River, MN.

3:15 PM 390  The effect of small-square feeder design on hay waste, herd weight change, and economics during outdoor feeding of adult horses.  

3:30 PM 391  Influence of ambient temperature and relative humidity on recovery from exercise in young horses.  
1Sam Houston State University, Huntsville, TX, 2Truman State University, Kirksville, MO.

3:45 PM 392  Commercial application of the follicular ablation technique in mares.  
S. E. Buist*, A. K. Sexten, D. M. Grieger, C. A. Blevins, J. S. Stevenson, and J. M. Kouba, Kansas State University, Manhattan.
Lactation Biology I
Chairs: Monique Rijnkels, Baylor College of Medicine and Rupert M. Bruckmaier, Veterinary Physiology, Vetsuisse Faculty, University of Bern

2:00 PM 404 Temporary alterations to milking frequency, immediately post-partum, modifies expression of milk synthesis and apoptosis genes in the mammary glands of grazing dairy cows.

2:15 PM 405 Dietary anion-cation difference and day length differently affect milk calcium secretion pathways.
M. Boutinaud1, A. Bondon1, A. Narcy2, C. Hurtaud3, M. Johan1, J. Coudon1, and P. Lamberton4, 1INRA, Saint Gilles, France, 2INRA, Nouzilly, France, 3INRA, Le Rheu, France.

2:30 PM 406 Infusion of a 5-hydroxy-L-tryptophan (5-HTP) to late-lactation cows impacts circulating calcium and glucose concentrations.
J. Laporta5, S. A. E. Moore1, A. P. Prichard5, M. Olsen1, B. P. Schnell1, S. R. Weaver1, C. R. Cronick1, R. M. Bruckmaier2, and L. L. Hernandez2, 1University of Wisconsin-Madison, 2Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

2:45 PM 407 The dopamine antagonist domperidone increases prolactin concentration and milk production in dairy cows.
P. Lacasse1 and S. Ollier2, Dairy and Swine R&D Centre, Sherbrooke, QC, Canada.

3:00 PM 408 Compensatory feeding of gestating gilts does not affect mammary development of their offspring at puberty.
C. Farmer7, M. F. Palin7, and Y. Martel-Kennes8, 1Agriculture and Agri-Food Canada, Dairy and Swine R & D Centre, Sherbrooke, QC, Canada, 2La COOP Fédérée, Animal Nutrition Division, St-Romuald, QC, Canada.

3:15 PM 409 Comparative 2D-DIGE proteomic analysis of mammary epithelial cells during lactation reveals protein signatures for lactation persistency and milk yield.

3:30 PM 410 Milk protein synthesis is regulated by lysine and branched chain amino acid deficiencies in lactating bovine mammary glands.
J. Doelman1, R. V. Curtis2, M. Carson1, J. J. M. Kim2, J. P. Cant2, and J. A. Metcalf1, 1Nutreco Canada Agresearch, Guelph, ON, Canada, 2Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada.

3:45 PM 411 Lysine and BCAA deficiencies decrease abundances of S6K and eIF2Bα in the mammary glands of lactating dairy cows.
J. Doelman1, R. V. Curtis2, M. Carson1, J. J. M. Kim2, J. A. Metcalf2, and J. P. Cant2, 1Nutreco Canada Agresearch, Guelph, ON, Canada, 2Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada.

Nonruminant Nutrition:
Nutrient Digestibility of Ingredients for Monogastric Diets
Chair: Cornelis F.M. de Lange, University of Guelph

2:00 PM 447 Digestible, metabolizable, and net energy in diets containing 0, 15, or 30% wheat bran fed to growing pigs.
N. W. Jaworski1, D. Liu1, D. Li2, and H. H. Stein1, 1University of Illinois at Urbana-Champaign, 2State Key Lab of Animal Nutrition, China Agricultural University, Beijing, China, 3Ministry of Agriculture Feed Industry Centre, Beijing, China.

2:15 PM 448 Effects of feeding barley on growth performance and diet nutrient digestibility of weaned pigs.
Z. Nasir1, M. G. Young1, M. L. Swift1, E. Beltranena2, and R. T. Zijlstra1, 1University of Alberta, Edmonton, AB, Canada, 2Gowans Feed Consulting, Wainwright, AB, Canada, 3Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 4Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

2:30 PM 449 Nutrient profile and in vitro digestibility of tubers in swine.

2:45 PM 450 Nutritional enhancement of dried distillers grains with solubles via sporobolomyces roseus fermentation.
J. M. Wilson1, Kansas State University, Manhattan.
3:00 PM 451  Performance of pigs fed diets containing canola meal produced from high protein or conventional varieties of canola seeds.
Y. Liu*, T. Maison, and H. H. Stein, University of Illinois at Urbana-Champaign.

3:15 PM 452  Physio-chemical and nutritional composition of sorghum (sorghum bicolor) as potential food and feed for humans and poultry.
M. Mabelebele1,2 and P. Iji2, 1University of Limpopo, Polokwane, South Africa, 2University of New England, Armidale, Australia.

3:30 PM  Break

3:45 PM 453  Comparative digestibility of energy and nutrients in feed ingredients fed to sows and growing pigs.
J. E. Lowell*, Y. Liu, and H. H. Stein, University of Illinois at Urbana-Champaign.

4:00 PM 454  Performance and nutrient digestibility of weaned rabbits fed cooked albizia seed meal (Albizia sp) as replacement for full-fat soybean meal.
A. R. Asafa* and P. Agbaye, Lagos State Polytechnic, Ikorodu, Nigeria.

4:15 PM 455  Nutritional evaluation of raw anthonotha macrophylla seed meal as a replacement for soybean meal in the diet of broiler chickens.
A. H. Akinmutimi*, Michael Okpara University of Agriculture, Umudike, Umuahia, Nigeria.

4:30 PM 456  Effect of graded levels of defatted green microalgal inclusion into broiler diets on growth performance and digestibility.

4:45 PM 457  Effects of duration of mixing diets with high inclusion of cereal grain co-products on growth performance and carcass measurements in finishing pigs.
M. E. Morts*, J. D. Hancock, K. L. Kohake, and J. D. McAtee, Kansas State University, Manhattan.

Ruminant Nutrition III: Lipids/Fats Dairy
Chair: Jong-Su Eun, Utah State University
2103A

2:00 PM 613  Performance of and digestion in calves fed conventional, moderate, and aggressive milk replacer programs.

2:15 PM 614  Performance of and digestion in calves fed two levels of milk replacer and functional ingredients.

2:30 PM 615  The effect of solid feed diet on the oral and cross-sucking behavior of pre-weaned dairy calves.
J. K. Margerison* and C. Hansen, Massey University, Palmerston North, New Zealand.

2:45 PM 616  Development of a modified accelerated milk replacer feeding program through 8 weeks of age.
B. M. Strayer1, D. Ziegler2, D. Schimek1, B. Ziegler1, H. Chester-Jones1, J. L. Anderson1, K. F. Kalscheur1, and D. Casper1, 1South Dakota State University, Brookings, 2University of Minnesota Southern Research and Outreach Center, Waseca, 3Hubbard Feeds Inc., Mankato, MN.

3:00 PM 617  Amino acid supplementation of calf milk replacers containing bovine plasma protein.
S. Y. Morrison1, K. A. Myers1, A. E. Volland1, P. Cardoso1, J. M. Campbell1, and J. K. Drackley1, 1University of Illinois at Urbana-Champaign, 2APC, Inc., Ankeny, IA.

3:15 PM 618  The use of highly digestible corn grain in calf starters when calves are fed an accelerated milk replacer.
D. Casper1, S. Srivastava1, M. Kirk1, S. Harris1, K. Koone1, and B. M. Strayer1, 1South Dakota State University, Brookings, 2Masters Choice, Ann, IL.

3:30 PM 619  Intensive milk feeding in calves affects growth performance, metabolic and endocrine traits, but not rumen development.
H. M. Hammon1, J. Maciej1, J. Gruse1, E. Wirthgen1, R. Zitnan1, M. Piechotta4, and A. Hoefflich1, 1Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, 2Ligandis GbR, Gülzow, Germany, 3National Centre of Agriculture and Food Nitra, Kosice, Slovakia, 4University of Veterinary Medicine, Hannover, Germany.

3:45 PM 620  Fish oil supplementation on growth and health of pre-weening dairy calves.
R. Panivivat1, P. Sopannarat1, and S. Sriwichai2, 1Kasetsart University, Bangkok, Thailand, 2Dairy Promotion and Organization of Thailand, Saraburi, Thailand.

4:00 PM 621  The effects of corn silage inclusion in pre-weaned calf diets.
S. I. Kehoe1,2, S. L. Retz1, T. J. Pogreba1, K. Dill-McFarland2, and G. Suen1, 1University of Wisconsin-River Falls, 2University of Wisconsin-Madison.
4:15 PM 622  Growth performance and health of dairy calves fed with *Schizochytrium* sp.
R. Panivivat* and K. Taboonpong, Kasetsart University, Bangkok, Thailand.

4:30 PM 623  Growth performance, health, and immunocompetence of preweaning dairy calves fed with stevioside.
R. Panivivat*, C. Boonkaewwan*, and S. Srivichai*, 1Kasetsart University, Bangkok, Thailand, 2Dairy Promotion and Organization of Thailand, Saraburi, Thailand.

4:45 PM 624  An evaluation of a calf-side betahydroxybutyrate test in dairy calves fed a high plane of nutrition and weaned at six versus eight weeks of age.
H. E. Brown*, E. C. Eckert*, M. A. Steele*, T. J. DeVries*, and K. E. Leslie*, 1University of Guelph, Guelph, ON, Canada, 2Nutreco Canada Agrresearch, Guelph, ON, Canada.

**Ruminant Nutrition Symposium:**
The Rumen Microbiome and Nutritional Health and Production

Chair: Rick Kohn, University of Maryland

2013B

2:00 PM 625  How to use data on the microbiome to improve our understanding of nutrition.
J. L. Firkins* and Z. Yu, The Ohio State University, Columbus.

2:45 PM 626  The microbiome and health.
G. B. Penner*, E. Khafipour*, J. C. Plaizier*, and L. L. Guan*, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 3Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

3:30 PM 627  Use of genomics and transcriptomics to identify strategies to lower ruminal methanogenesis.

4:15 PM 628  Increasing condensed corn distillers solubles alters the rumen microbiome of beef cattle.
J. C. McCann*, S. A. Alqarni*, J. R. Segers*, D. W. Shike*, and J. J. Loor*, 1University of Illinois at Urbana-Champaign, 2University of Georgia, Tifton.

4:30 PM 629  The microbiome composition of the hindgut is altered following weaning in dairy calves: Impact of different weaning strategies.
S. C. Li*, M. A. Steele*, P. Azevedo*, M. Carson*, J. C. Plaizier*, H. Derakhshani*, and E. Khafipour*, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2Nutreco Canada Agrresearch, Guelph, ON, Canada, 3Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.

4:45 PM 630  Effects of different dry period managements on rumen microbiome composition.
H. Khazanehei*, S. Li*, J. C. Plaizier*, and E. Khafipour*, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.
Annual Review of Animal Biosciences
Volume 2 • February 2014 • animal.annualreviews.org

Co-Editors: Harris A. Lewin, University of California, Davis
R. Michael Roberts, University of Missouri

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• The Modern Feedlot for Finishing Cattle, John J. Wagner, Shawn L. Archibeque, Dillon M. Feuz
• The Nexus of Environmental Quality and Livestock Welfare, Sara E. Place, Frank M. Mitloehner
• The Suckling Piglet as an Agrimedical Model for the Study of Pediatric Nutrition and Metabolism, Jack Odle, Xi Lin, Sheila K. Jacobi, Sung Woo Kim, Chad H. Stahl

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TRIAL 1: 1143 healthy pigs fed 150 ppm Cu fed 111 days

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<th>Control</th>
<th>CuSO4</th>
<th>IBc</th>
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<td>$91/cwt LW</td>
<td>273.9</td>
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<td>286.7</td>
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<td>Live Wt (lb)</td>
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<td>210.2</td>
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<td>Carcass Wt (lb)</td>
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<td>IOFC ($/pig)</td>
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<td>$1.59</td>
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TRIAL 2: 1248 pigs w/flu fed 150 ppm Cu fed 120 Days

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<td>Live Wt (lb)</td>
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<td>Carcass Wt (lb)</td>
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<tr>
<td>IOFC ($/pig)</td>
<td>-</td>
<td>$3.91</td>
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Kansas State University (KSU) research suggests copper-fed pigs weighed more and had higher hot carcass weights (HCW) compared to pigs fed a control diet that did not include copper. (National Hog Farmer, August, 2013)

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<th>Poster No.</th>
<th>Title</th>
<th>Authors</th>
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<tr>
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<td>Holstein calves fed non-saleable milk that was pasteurized or raw had decreased incidence of abnormal feces and hematology measures than calves fed accelerated milk replacer.</td>
<td>L. E. Hulbert*, J. A. Noel, S. C. Trombetta, R. H. Pritchard*, University of Wisconsin, Kansas State University.</td>
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<tr>
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<td>C. Campos-Granados*, A. Rojas-Bourrillon, C. C. Elrod, University of Costa Rica, San Jose, Costa Rica.</td>
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</tr>
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<td>861 T008</td>
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<td>862 T009</td>
<td>The effect of four antiseptic compounds on umbilical cord healing and infection rates in the first 24 hours in dairy calves from a commercial herd.</td>
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<td>Relationship between birth weight and calving ease with passive transfer of immunoglobulins in neonatal beef calves.</td>
<td>J. J. Gaspers*, G. Stokke, B. W. Neville, C. R. Dahlen, North Dakota State University, Cooperstown.</td>
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Effects of electrostatic particle ionization on hog barn air quality, emissions and pig growth performance.
K. N. Card¹, J. A. De Jong¹, J. M. DeRouchey¹, P. J. Tomlinson¹, M. J. Baumgartner², and Z. Liu¹, ¹Kansas State University, Manhattan, ²BEI Ag Solutions, Olivia, MN.

Effects of different cooling interventions on stationary livestock trailers at a commercial packing plant.
M. Heiller¹*, L. Edwards-Callaway², R. Bailey³, N. Pudenz⁴, M. Klassen⁵, M. J. Ritter⁶, A. Dezeewu⁷, and P. J. Rincker⁸, ¹Iowa State University, Ames, ²JBS, Greeley, CO, ³JBS, Marshalltown, IA, ⁴Elanco, Greenfield, IN, ⁵Elanco Animal Health, Bondurant, IA, ⁶Elanco Animal Health, Dahinda, IL.

Effects of poor maternal nutrition during gestation on gene expression in liver of offspring.

Interleukin-1β decreases myoblast fusion in vitro.
B. E. Sullivan¹* and S. A. Reed², ¹University of Connecticut, Storrs, ²Department of Animal Science, University of Connecticut, Storrs.

Sperm maturation (capacitation) but not progesterone reduces the abundance of a receptor for oviduct glycans.
R. A. Winters¹, E. Silva¹, and D. J. Miller, University of Illinois at Urbana-Champaign.

Variations in the expression of triglyceride synthesis genes in pigs provided Enterobacter cloacae.
S. J. White¹*, J. A. Carroll¹, J. A. Thornton¹, P. R. Broadway¹, J. G. Wilson¹, and J. R. Donaldson¹, ¹Mississippi State University, Mississippi State, ²USD4-ARS, Livestock Issues Research Unit, Lubbock, TX, ³Texas A&M University, College Station.

Gene set enrichment analysis of residual feed intake in Hereford cattle.
L. D. Kidder¹*, A. Wojtowicz², J. F. Taylor², C. M. Seabury¹, K. A. Johnson¹, and H. L. Neibergs¹, ¹Washington State University, Pullman, ²University of Missouri, Columbia, ³Texas A&M University, College Station.

pH fluctuations in the hindgut of horses relative to meal feeding.
K. M. DeLano¹*, T. L. Douthit¹, A. Reeg¹, N. M. Bello¹, M. E. Gordon¹, and K. Williamson¹, ¹Kansas State University, Manhattan, ²Purina Animal Nutrition, LLC, Gray Summit, MO.

Oral supplementation with vitamin E and fertility in young bulls raised in Brazilian midwest.

Polymelia in Holstein cattle.
K. D. Moss¹*, F. Avila², B. M. Marron¹, T. Raudsepp¹, J. Beever³, M. Neupane³, S. Parish³, J. Kiser³, B. Cantrell³, and H. L. Neibergs³, ¹Washington State University, Pullman, WA, ²Texas A&M University, College Station, ³University of Illinois at Urbana-Champaign, ⁴Washington State University, Pullman.

Effect of supplementation of the middle and freezing with vitamin “E” about: The feasibility and quality of frozen bovine semen.

The effects of cutting height and plant maturity on yield and nutritional value of brome forage.
M. A. Woolsoncroft¹*, S. R. Duncan, A. J. Sexten, and A. K. Sexten, Kansas State University, Manhattan.

Cattle requiring multiple treatments for bovine respiratory disease exhibit decreased capacity to protect against histone cytotoxicity.
J. Matera¹*, B. K. Wilson, J. Hernandez Gifford, C. R. Krehbiel, and C. A. Gifford, Oklahoma State University, Stillwater.

Development of a non-invasive system for monitoring dairy cattle sleep.

Associative effects of feeding varying levels of soyhulls to lambs consuming grass hay.

Adding post-extraction algal residue (pear) to cattle finishing diets reduces the quantity of fecal volatile chemicals often associated with feedlot malodor.
H. R. Voegele¹*, C. R. Kerth¹, T. A. Wickersham², J. C. Hoffman², and T. J. Luckemeyer², ¹Texas A&M University Animal Science Department, College Station, ²Texas A&M University, College Station.

Treatment response to bovine respiratory disease in beef stocker calves was not positively affected when using isoflupredone acetate as ancillary therapy.
C. E. Crews¹*, J. G. Powell¹, E. B. Kegley², J. L. Reynolds², and J. A. Hornsby², ¹University of Arkansas, Fayetteville, ²Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville.
903 T029 The effects of stage of production and implant exposure on feedlot performance, carcass characteristics, and relative mRNA gene expression.
K. E. Larrabee*, B. C. Bernhard, C. L. Maxwell, B. K. Wilson, S. Roberts, and C. R. Krehbiel, Oklahoma State University, Stillwater.

904 T030 The effects of corn silage diets on intestinal morphology in dairy calves.

Beef Species: Feedlot and Stocker

905 T031 The effect of good or poor residual feed intake sires on feedlot heifer performance and carcass characteristics.
K. M. Retallick*, D. B. Faulkner1, and D. W. Shike1, 1California Polytechnic State University, San Luis Obispo, CA, 2University of Arizona, Oro Valley, 3University of Illinois at Urbana-Champaign.

906 T032 Feed efficiency and carcass traits for Nellore young bulls fed processed soybean grains.

907 T033 Supplementing beef cattle finishing diets containing wheat distillers grain with feed enzymes to decrease the ratio of n-6/n-3 fatty acids in meat.
Z. He*, Y. Zhao1, N. D. Walker1, K. A. Beauchemin1, T. A. McAllister5, and W. Yang1, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, China, 3College of Animal Science, Inner Mongolia Agricultural University, Hohhot, China, 4AB Vista Feed Ingredients, Marlborough, United Kingdom, 5Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

908 T034 Effects of fat level in distillers grain on finishing feedlot performance and carcass traits.
V. L. Anderson* and C. L. Engel2, 1North Dakota State University, Carrington, 2Carrington Research Extension Center, North Dakota State University, Carrington.

909 T035 Effects of zilpaterol hydrochloride feeding time on Nellore bulls performance and carcass characteristics.
A. C. R. Dos Santos*, M. Caetano1, R. S. Goulart1, S. B. Pflanzer1, S. Luz e Silva1, and D. P. D. Lanna1, 1University of Sao Paulo / ESALQ, Piracicaba, Brazil, 2current address University of Adelaide, Roseworthy, Australia, 3MSD Saúde Animal, Sao Paulo, Brazil, 4University of Campinas / FEA, Campinas, Brazil, 5University of Sao Paulo / FZEA, Pirassununga, Brazil.

910 T036 Influence of calcium depletion and repletion on beef tenderness of steers fed zilpaterol hydrochloride.
J. O. Carothers*, South Dakota State University, Brookings.

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911 T037 Using early ultrasound measurements to predict beef carcass quality grade.

912 T038 Influence of breed on the sensory meat quality and consumer acceptability in extensively reared beef.
M. E. A. Canozzi1, L. Sphor1, C. M. Pimentel2, J. O. Barcellos3, C. H. E. C. Poli1, R. D. Saing2, and L. Kindlein*1, 1Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 2Universidade de Brasilia, Brasilia, Brazil, 3Universidade Federal Do Rio Grande Do Sul, Porto Alegre, Brazil, 4University of California-Davis.

913 T039 Evaluation of growth and performance characteristics prior to entering the feedlot as an indicator for contracting Bovine Respiratory Disease.
S. Miller*, M. D. Garcia2, R. Walker4, T. Page1, and K. W. Harborth1, 1Louisiana State University, Baton Rouge, 2LSU, Baton Rouge, LA, 3LSU AgCenter, Homer.

914 T040 Maximizing profit in a feedlot enterprise using systems analysis thinking and linear programming.

943 T041 Genome-wide association study on dairy cow mortality in three U.S. regions.
S. Tsuruta*, I. Misztal*, and T. J. Lawlor*, 1University of Georgia, Athens, 2Holstein Association USA Inc., Brattleboro, VT.

944 T042 Multiple-breed genomic evaluations by using a reduced pool of SNP-markers.
M. Cellesi*, N. P. P. Macciotta1, P. Ajmone-Marsan2, A. Rossoni1, G. Marra1, G. Gaspa1, and C. Dimaro1, 1Università di Sassari, Sassari, Italy, 2Università Cattolica del Sacro Cuore, Piacenza, Italy, 3Associazione Nazionale Allevatori Raza Bruna, Bussolengo, Italy.
945 T043 Determination of single nucleotide polymorphisms associated with subclinical ketosis in Jersey cattle.
R. T. Fugate*, L. H. Dauten*, G. R. Wiggans2, and H. M. White4, 1University of WI, Madison, WI, 2University of Connecticut, Storrs, 3Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, 4Department of Dairy Science University of Wisconsin-Madison.

946 T044 Multi-trait, multi-breed conception rate evaluations.
P. M. VanRaden1, J. R. Wright*, C. Sun2, J. L. Hutchison1, and M. E. Tooker1, 1Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, 2National Association of Animal Breeders, Columbia, MO.

947 T045 Genome-wide genotyping-by-sequencing (GBS) and association analysis of saturated and monounsaturated fatty acids in bovine milk identifies novel markers in Canadian Holstein cows.
E. M. Ibeagha-Awemu*, S. O. Peters2, I. G. Imumorin3, and X. Zhao4, 1Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, 2Berry College, Mount Berry, GA, 3Cornell University, Ithaca, NY, 4McGill University, St Ann De Bell, PQ, Canada.

948 T046 Peroxisome proliferator-activated receptor gamma isoforms alter lipogenic gene networks in goat mammary epithelial cells.
H. Shi*, J. Luo*, D. Yao*, and J. Zhu*, 1Northwest A&F University, Yangling, China, 2Northwest A & F University, Yangling, China.

949 T047 Association between polymorphisms in the IGF-I, GHR and STAT5A genes and the interval from calving to conception and milk production in Holstein cows.

950 T048 A polymorphism within the prolactin gene is associated with milk production in Holstein dairy cows managed under summer heat stress conditions in northwest Mexico.
P. Luna*, Instituto Tecnologico de Sonora, Ciudad Obregon, Mexico.

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951 T049 Regulation of microRNAs in necrotic enteritis infected two genetically disparate chicken lines.
Y. H. Hong*, Chung-Ang University, Anseong-Si, South Korea.

952 T050 Changes in variance of top SNP windows over generations under selection for three traits in broiler chicken.
B. D. Fragomeni*, I. Misztal1, D. Lourenco1, I. Aguilar1, and R. Hawken1, 1University of Georgia, Athens, 2Instituto Nacional de Investigación Agropecuaria, Las Brujas, Uruguay, 3Cobb-Vantress Inc., Siloam Springs, AR.

953 T051 Relationship between laying frequency and egg sizes in quail.

954 T052 Phenetic classification of six bird species based on the proximate and mineral composition of their eggs.

955 T053 Effect of shell thickness on quail chick pip-out at hatching.

956 T054 Weight changes in quail eggs during incubation.

Companion Animals: Companion Animal Nutrition

969 T055 Influence of velocity on Weimaraner trotting stride mechanics.
L. Carlisle1, M. C. Nicodemus2, and K. Slater1, 1Mississippi State University, Mississippi State, 2Banfield Pet Hospital, Houston, TX.

970 T056 Effects of dietary resistant starch on the fasted plasma metabolome of healthy adult dogs.
A. N. Beloshapka*, K. L. Pappan2, and K. S. Swanson1, 1Department of Animal Sciences, University of Illinois at Urbana-Champaign, 2Metabolon, Inc., Durham, NC.

971 T057 In vitro effect of diets added with fructooligosaccharides and differing in their protein content and digestibility on dog fecal microbiota.
G. Biagi*, M. Grandi, and C. Pinna, Department of Veterinary Medical Sciences, University of Bologna, Ozzano Emilia, Italy.

972 T058 The modified Atwater equation does not accurately predict diet ME value of premium food in adult cats.
K. D. Berendt*, A. K. Shoveller2, M. Guevara2, and R. T. Zijlstra2, 1University of Alberta, Edmonton, AB, Canada, 2Procter & Gamble Pet Care, Mason, OH.
T059  Association of idiopathic epilepsy with a novel locus in the Belgian Shepherd.
A. M. Oberbauer* and J. M. Belanger, University of California-Davis.

T060  Amino acid and mineral concentrations of whole grains and grain byproducts used in pet foods.
A. N. Beloshapka*, P. R. Buff*, and K. S. Swanson*, 1Department of Animal Sciences, University of Illinois at Urbana-Champaign, 2The Nutro Company, Franklin, TN.

T061  Metabolic phenotyping using mass spectrometry-based metabolomics: A cross-sectional pilot study of lean and overweight domestic cats.
R. E. Cokeley1, G. R. Seiler1, and J. W. McFadden1,2, 1West Virginia University, Morgantown, 2Johns Hopkins University, Baltimore, MD.

T062  Effects of dietary energy restriction on the hunting behavior and home-range size of free-ranging domestic cats.
A. N. DeGrave*, S. K. Carignan, and S. E. Kitts-Morgan, Berry College, Mount Berry, GA.

T063  Differences in the cerebral cortex metabolome of young adult and geriatric dogs.
M. R. C. de Godoy1*, K. L. Pappan2, and K. S. Swanson3, 1Department of Animal Sciences, University of Illinois at Urbana-Champaign, 2Metabolon, Inc., Research Triangle Park, NC, 3Department of Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign.

T064  Use of gelatin as a strengthening agent in dry extruded pet food.
A. Simmons*, C. G. Aldrich1, T. Zhou1, M. Remund1, T. Putarov2, S. Alavi1, E. Maichel1, and C. K. Jones1, 1Kansas State University, Manhattan, 2Sao Paulo State University, Sao Jose do Rio Preto, Brazil.

Dairy Foods: Technical Poster Session II: Analytical / Processing

1007  Incidence of thermoduric bacteria and spores on selected midwest dairy farms.
K. P. Buehner*, S. Anand, and A. D. Garcia, 1Dairy Science Department, South Dakota State University, Brookings, 2Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

1008  Withdrawn by author.

1009  Mechanisms and ways for improving heat stability of micellar casein concentrates.

1010  Influence of carboxymethylcellulose molecular weight on physicochemical properties and stability of whey protein-stabilized emulsions.
S. Zhang* and B. Vardhanabhuti, University of Missouri, Columbia.

1011  Induction of pitting on stainless steel 304 and 316 by bacillus sporothermodurans.
S. Gupta* and S. Anand, 1South Dakota State University, Brookings, 2Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

1012  Protective effect of lactic acid bacteria against H2O2-induced oxidative stress in Caco-2 cells.
S. Liu1, C. Man1,2, X. Peng1, W. Zhou1, M. Guo4, and Y. Jiang1,2,3, 1Department of Food Science, Northeast Agricultural University, Harbin, China, 2Synergetic Innovation Center of Food Safety and Nutrition, Harbin, China, 3National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, China, 4University of Vermont, Burlington.

1013  Fatty acid composition of cultured butter with probiotic Lbc. Acidophilus la-5 produced in winter time.
O. Tsisaryk*, L. Musiy1, O. Golubets2, and S. Shkaruba2, 1Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine, 2Ukrmetrstandart, Kyiv, Ukraine.

1014  Development of dairy products enriched with healthy lipids.
J. Moats*1, M. Epp2, and D. Christensen2, 1O&T Farms Ltd., Regina, SK, Canada, 2University of Saskatchewan, Saskatoon, SK, Canada.

1015  Evaluation of dulce de leche produced with different starch.
F. Silva1, H. Ferreira2, M. Pinto1, R. Stephan1, A. Carvalho*, and Perrone1, 1Federal University of Viçosa, Viçosa, Brazil, 2Gemacom Tech, Juiz de Fora, Brazil, 3Federal University of Viçosa, Viçosa, Brazil.

1016  Rheological behaviors of edible casein-based packaging films under extreme environmental conditions, using humidity-controlled dynamic mechanical analysis.
S. Akkurt1, L. M. Bonmaille2, H. Zhang3, and P. M. Tomasula1, 1Rutgers University, Department of Food Science, New Brunswick, NJ, 2Dairy & Functional Foods Research Unit, Eastern Regional Research Center, Agricultural Research Service, United States Department of Agriculture, Wyndmoor, PA.

1017  Evaluation of a laboratory-scale batch crystallizer for lactose isolation from deproteinized whey.
S. Beckman*, S. Anand, and L. Metzger, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
Dispersibility, suspension ability, solubility, and gelation properties of rehydrated frozen highly concentrated micellar casein.
Y. Lu1, D. J. McMahon*1, and L. Metzger2, 1Western Dairy Center, Utah State University, Logan, 2Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

Extension Education

Potential bull buyers perceive increased value to their operations when purchasing bulls from the Florida Bull Test.

300 D Grazing Discovery Farm.
T. R. Troxel1, M. S. Gadberry1, J. A. Jennings1, S. M. Jones1, K. J. Simon1, J. G. Powell2, D. S. Hubbell, III1, and J. D. Tucker1, 1Department of Animal Science, University of Arkansas, Little Rock, 2Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, 1University of Arkansas Livestock and Forestry Research Station, Batesville.

Case study: Fermentation profile, physical form, and starch digestibility of whole-plant corn silage harvested with novel processing.
L. F. Ferraretto1, L. M. Vanderwerff*2, and R. D. Shaver1, 1University of Wisconsin-Madison, 2University of Wisconsin-Madison.

Initial assessment of producers’ experiences, perceptions and attitudes about mastitis and bulk tank somatic cell count management in the Southeast.
S. M. Schexnayder1, P. D. Krawczel1, M. Fly1, L. E. Garkovich2, C. S. Petersson-Wolfe3, J. M. Bewley2, S. H. Ward4, G. M. Pighetti1, R. A. Almeida1, M. Arnold2, S. C. Nickerson3, A. DeVries4, and S. P. Oliver1, 1The University of Tennessee, Knoxville, 2University of Kentucky, Lexington, 3Virginia Tech University, Blacksburg, 4Mississippi State University, Mississippi State, 5University of Georgia, Athens, 6University of Florida, Gainesville.

The status of milk quality at the start of the Southeast Quality Milk Initiative.
G. M. Pighetti1, C. S. Petersson-Wolfe2, J. M. Bewley3, S. C. Nickerson4, S. H. Ward5, A. DeVries6, P. D. Krawczel1, R. A. Almeida1, M. Fly1, S. M. Schexnayder1, L. E. Garkovich2, M. Arnold3, and S. P. Oliver1, 1The University of Tennessee, Knoxville, 2Virginia Tech University, Blacksburg, 3University of Kentucky, Lexington, 4University of Georgia, Athens, 5Mississippi State University, Mississippi State, 6University of Florida, Gainesville.

Hedonic pricing models for Angus bulls sold at auction following performance testing at Oklahoma Panhandle State University.
D. L. Stephens*1, P. K. Camfield1, and T. C. Schroeder2, 1Oklahoma Panhandle State University, Goodwell, OK, 2Kansas State University, Manhattan.

Survey of management practices used in the implementation of artificial insemination and estrous synchronization programs in the united states.
S. K. Johnson*1 and G. Duhike2, 1Kansas State University, Colby, 2Iowa State University, Ames.

Effect of on-farm dairy Beef Quality Assurance (BQA) training on worker knowledge of BQA and welfare-related practices.

Monetary impact of heat stress on dairy and beef industries in the US.

Phosphorus status of grazing beef cattle in Virginia’s Chesapeake Bay watershed.

Assessment of farm nutrient management and phosphorus supplementation practices of beef cattle producers in Virginia’s Chesapeake Bay watershed.

An economic impact decision support tool for farm specific estimation of not covering horizontal silos storing corn silage.
Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Yangzhou University, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4College of Animal Science and Technology, Xinjiang Agricultural University, Urumchi, China.

Food Safety

Regulatory process for food additives used in animal foods.
S. A. Benz1, R. Christiansen2, and M. G. Alewyne3, 1Center for Veterinary Medicine, FDA, Woodbine, MD, 2Nutrition & Labeling Team, Center for Veterinary Medicine, FDA, Rockville, MD.

Persistence of Escherichia coli O157:H7 in feces from cattle fed diets with or without wet distillers grains with solubles.
E. D. Berry*, J. E. Wells, and V. H. Varel, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

Characterization of Shiga toxin-producing Escherichia coli isolated from feces of cattle in commercial feedlots.
T. W. Alexander*, T. A. McAllister, K. Stanford, and E. Topp, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 3Agriculture and Agri-Food Canada, London, ON, Canada.

Development of an ultrasensitive aptasensor for the detection of aflatoxin B1.
X. Guo1,2,3, F. Wen4, N. Zheng1,2,4, Q. Luo1, and J. Wang1, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Yangzhou University, Taoxun, China, 3Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, 4State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Cytotoxicity induced by ochratoxin A, zearalenone and α-zearalenol: Effects of individual and combined treatment.
H. Wang1,2,3, N. Zheng1,2, S. Li1,2, F. Li1, and J. Wang1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, 3Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 4College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.

Efficacy of various levels of mycotoxin adsorbent to reduce aflatoxin M1 levels in milk of lactation cows fed aflatoxin B1.
M. Dehghan Banadaky*, 1, R. Motamemy2, and S. Parhizkar3, 1Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 2Azad University, Tehran, Iran, 3University of Tehran, Karaj, Iran.

Inhibitory activity of Staphylococcus aureus against Lactococcus spp. isolated from artisanal Minas cheese.
F. F. Angelo1, L. M. Fonseca2,3, and M. A. F. Brito4, 1Universidade Federal da Paraíba/CTDR, João Pessoa, Brazil, 2Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil, 3University of Wisconsin-Madison/CAPES Est.Senior 18183-12-3, 4EMBRAPA Gado de Leite (CNPGL), Juiz de Fora, Brazil.

Microbiological quality and safety of commercial local yogurt products in Giza Governorate- Egypt.
M. M. Motawe2* and S. A. Ibrahim1, 1National Organization for Drug Control and Research, Giza- Egypt, Egypt, 2North Carolina A&T State University, Greensboro.

Stability of 10 β-lactam antibiotics in raw milk under different storage conditions.
H. Wang1,2,3, N. Zheng1,2, F. Wen4, H. Wang2, and J. Wang1, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Yangzhou University, Yangzhou, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Risk warning of veterinary drug residues in raw milk based on Shewhart Control Chart.
R. Han1,2,3, N. Zheng4, Z. Xu, Y. Xue1,2, S. Li1,2, Y. Zhang1,2,7, X. Zhou1,4, and J. Wang1,2,4, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Food Science and Engineering, Qingdao Agricultural University, Qingdao, China, 3Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.
1063  T103  Stability of flavonoids in grape seed and grape marc meal extract (GSGME).

1064  T104  Effect of lysozyme or antibiotics on fecal zoonotic pathogens in nursery pigs.

1065  T105  Thermophilic spore forming bacilli: Attachment and biofilm formation on stainless steel.
M. C. Enes Ribeiro1, G. Theodore Walsh2, M. Lucia Gigante1, and R. Jimenez-Flores2;1 1Faculty of Food Engineering, University of Campinas, Campinas, SP, Brazil, 2Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.

1066  T106  The consumer profile of certified beef in the XXI century.

1067  T107  Identification of horsemeat presence in beef commercial butcheries using the polymerase chain reaction (PCR) technique.
G. Aranda-Osorio*, Universidad Autonoma Chapingo, Chapingo, Mexico.

Forages and Pastures Posters II: Forages in Beef Production Systems

1095  T108  Reducing winter feeding needs in southern Arkansas through the use of best management grazing principles.
B. Stewart1, P. Beck2, L. Sullivan1, M. Sims1, and J. Jennings2, 1University of Arkansas SWREC, Hope, 2Department of Animal Science, University of Arkansas, Little Rock.

1096  T109  Bale diameter and feeder design effects on hay waste.
D. J. Tomczak*, N. E. Mertz, and W. J. Sexten, University of Missouri, Columbia.

1097  T110  Forage and shade type effects on stocker heifers' performance.
G. Scaglia*, LSU AgCenter, Jeanerette.

1098  T111  Monensin supplementation levels effects on rumen fluid and blood parameters of steers receiving warm-season grass.
J. M. B. Vendramini1, R. F. Cooke2, A. D. Aguari3, O. F. R. Cunha1, A. C. J. Pereira1, P. D. S. Ferreira1, and C. B. Zacetti1, 1University of Florida/IFAS Range Cattle Research and Education Center, Ona, 2Oregon State University-EOARC Burns, 3‘Elanco Animal Health, Greenfield, IN.

1099  T112  Polymers molecularly imprinted with ergotamine: Recognition properties to template and related alkaloids.

1100  T113  Silage and hay of Stylosanthes Campo Grande associated or not to corn silage: Nutrient intake and performance of beef cattle.
L. D. Rufino1, K. G. Ribeiro1, S. C. Valadares Filho1,2, R. M. Martins1, T. F. Bernardes1, J. A. G. Azevedo1, and O. G. Pereira2, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

1101  T114  Evaluation of nutrient intake, in situ disappearance, and fermentation characteristics of fermented Chaffhaye with alfalfa hay and prairie grass hay in steers.
K. K. Guatam*, B. S. Oliveiit, S. J. Trojan, and M. A. Ballou, Department of Animal and Food Sciences, Texas Tech University, Lubbock.

1102  T115  Ruminal fermentation characteristics of beef steers grazing grass monocultures versus low- and high-tannin grass-legume mixtures.
C. T. Noviandi1,2, T. J. Bingham3, J. S. Eun1,4, D. R. ZoBell1, B. L. Waldron4, and M. D. Peel1, 1Utah State University, Logan, 2Universitas Gadjah Mada, Yogyakarta, Indonesia, 3Forage and Range Research Laboratory, USDA-ARS, Logan, UT.

1103  T116  Agronomic assessment and beef cattle nutrition suitability of 31 forage type annual crops in the Peace Region of Alberta.
T. A. Omokanye1, M. Hobin1, I. A. Adeyinka2, and M. Benoit1, 1Peace Country Beef & Forage Association, Grande Prairie Regional College, Fairview, AB, Canada, 2National Animal Production Research Institute, Shika-Zaria, Nigeria.
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<td>Body weight adjustments for feeding status and pregnant or non-pregnant condition in beef cows*</td>
<td>M. P. Gionbelli¹, M. S. Duarte¹, S. C. Valadares Filho², E. Detmann¹, M. L. Chizzotti¹, T. R. Gionbelli¹, F. C. Rodrigues¹, D. Zanetti¹, and M. G. Machado¹, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Instituto Nacional de Ciência e Tecnologia-Ciência Animal, Viçosa, Minas Gerais, Brazil.</td>
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<td>Changes in performance and immune response in dairy calves offered milk replacer or raw milk.</td>
<td>C. Yunta¹, A. Bach², and M. Terré², ¹IRTA, Caldes de Montbui, Spain, ²Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, ²ICREA, Barcelona, Spain.</td>
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<td>A. M. Smith, S. L. Gelsinger, C. M. Jones, and A. J. Heinrichs, The Pennsylvania State University, University Park.</td>
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<td>Effect of omega-3 fatty acids and thyme essence on carcass traits of Mahabadi kids.</td>
<td>A. A. Hozhabri¹, A. Zali¹, M. Ganjkhanlou¹, A. Emami², A. Akbari-Afjani³, and M. Dehghan-Banadaky², ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.</td>
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<td>Effect of stage of pregnancy, maternal feeding level and fetal sex on fetal gut length in Holstein×Zebu cows*.</td>
<td>T. R. Gionbelli¹, P. P. Rotta¹, C. M. Veloso¹,², M. P. Gionbelli¹, S. de Campos Valadares Filho¹,², M. A. Novaes¹, J. V. Souza¹, J. S. Santos¹, L. C. Lacerda¹, and C. S. Cunha¹, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Instituto Nacional de Ciência e Tecnologia-Ciência Animal, Viçosa, Minas Gerais, Brazil.</td>
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<td>1169</td>
<td>Intrauterine position affects fetal weight and crown-rump length throughout gestation.</td>
<td>Y. D. Jang¹, Y. L. Ma, and M. D. Lindemann, University of Kentucky, Lexington.</td>
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<td>1170</td>
<td>Milk diet but not quercetin intake affects postprandial glucose metabolism in neonatal calves.</td>
<td>J. Gruse¹, S. Gös¹, W. Otten¹, J. M. Weitzel¹, S. Wolffram¹, C. C. Metges¹, and H. M. Hammon¹, ¹Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, ²Institute of Animal Nutrition and Physiology, University of Kiel, Kiel, Germany.</td>
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<td>1171</td>
<td>Ontogenic gene expression profiles in pig hepatogenesis.</td>
<td>J. Kwintkiewicz¹, T. J. Caperna¹, T. G. Ramsay¹, H. D. Guthrie¹, C. C. Talbo², L. L. Schreiter¹, and L. A. Blomberg², ¹USDA-ARS-BARC, Beltsville, MD, ²The Johns Hopkins School of Medicine, Baltimore, MD.</td>
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<td>1172</td>
<td>Production of bioactive porcine mutant myostatin propeptide/Fc fusion protein in Escherichia coli.</td>
<td>S. B. Lee², S. K. Park³, and Y. S. Kim¹, ¹University of Hawaii, Honolulu, ²National Institute of Animal Science, RDA, Suwon, South Korea, ³Korea Agricultural University.</td>
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<td>1173</td>
<td>Short- and medium-term changes in performance and metabolism of dairy calves offered different amounts of milk replacer.</td>
<td>C. Yunta¹, M. Terré¹, and A. Bach²,³, ¹IRTA, Caldes de Montbui, Spain, ²ICREA, Barcelona, Spain, ³Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.</td>
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<td>Stabilization of intestinal mast cells at weaning improves performance of early-weaned pigs.</td>
<td>A. Meresz¹, M. G. Tedo¹, J. Charve¹, A. J. Moeser², and I. R. Ipharraguerre³,⁴, ¹Lucia S.A., Montornés del Vallès, Spain, ²North Carolina State University, Raleigh.</td>
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<td>1175</td>
<td>The effect of essential oil/botanical product on growth and performance of calves fed milk replacer.</td>
<td>B. L. Miller¹, T. E. Johnson¹, T. Earleywine¹, W. S. Bowen Yoho¹, and T. E. Johnson¹, ¹Land O’ Lakes-Purina Feed LLC, Gray Summit, MO, ²Land O’ Lakes Animal Milk Products, Shoreview, MN, ³Land O’ Lakes, Inc., Webster City, IA.</td>
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<td>1176</td>
<td>The effects of feeding strategy and housing management on intake and growth performance of Holstein calves from birth through weaning.</td>
<td>H. M. Gauthier¹, S. E. Williams², D. M. Shenk¹, C. S. Ballard¹, K. M. Morrill¹, and H. M. Dunn¹, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Cornell University, Ithaca, NY.</td>
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1177  T133  The impact of in utero heat stress and nutrient restriction on progeny body composition.
J. S. Johnson1, M. Abuajamieh1, M. Sanz Fernandez1, J. T. Seibert1, S. K. Stoakes4, A. F. Keating1, J. W. Ross1, J. T. Selshby1, R. P. Rhoads1, and L. H. Baumgard1, 1Iowa State University, Ames, 2Virginia Tech, Blacksburg.

1178  T134  Weight, height and relative accuracy indicators as a management tool for reducing age at first breeding and calving of dairy heifers.
M. Duplessis1,2, R. Lacroix2, R. I. Cue1, D. E. Santschi1, and D. M. Lefebvre2, 1Université Laval, Département des Sciences Animales, Québec, QC, Canada, 2Valacta, Ste-Anne-de-Bellevue, QC, Canada, 3McGill University, Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada.

1179  T135  Growth and health of pre-weaned Holstein dairy heifers fed PROTERNATIVE SF in combination with LEVU-CELL S.
D. L. Gadeken1, A. D. Garcia2, F. Diaz-Royón3, T. Erickson1, and A. Aguilar3, 1South Dakota State University, Brookings, 2Dairy Science Department, South Dakota State University, Brookings, 3Lallemand, Martinsville, IN.

Horse Species I

1198  T136  Glucose-insulin homeostasis and characterization of proteins involved in glucose uptake signaling in equine skeletal muscle.
R. C. Avenatti1, K. Malinowski, and K. H. McKeever, Rutgers Equine Science Center, New Brunswick, NJ.

1199  T137  Splanchnic extraction of phenylalanine in adult Thoroughbred mares fed two different levels of threonine.
S. Tanner, T. Barnes, K. Cybulak, and K. L. Urschel1, University of Kentucky, Lexington.

1200  T138  Effects of a docosahexaenoic acid -rich algae supplement on plasma amino acid levels in healthy, mature horses after prolonged treatment with dexamethasone.
R. A. Williams1, K. L. Urschel, R. E. Schaeffer1, and K. M. Brennan2, 1Alltech Inc., Nicholasville, KY, 2University of Kentucky, Lexington.

1201  T139  Evaluating the expression of microRNA miR-1 and miR-133 in the muscle of horses fed a docosahexaenoic acid -rich algae supplement after prolonged dexamethasone treatment.

1202  T140  The effects of abrupt dietary alterations on equine cecal pH.
A. Reeg1, T. Douthit1, K. M. DeLano1, M. E. Gordon1, M. M. Raghavendra Rao2, and K. Williamson2, 1Kansas State University, Manhattan, 2Purina Animal Nutrition, LLC, Gray Summit, MO.

1203  T141  Utilizing fecal pH to predict cecal pH in the equine.
C. J. Douthit1, T. Douthit1, A. Reeg1, N. M. Bello3, M. E. Gordon1, and K. Williamson2, 1Kansas State University, Manhattan, 2Purina Animal Nutrition, LLC, Gray Summit, MO.

1204  T142  Comparison of ultrasound transducers to determine rump fat thickness in mature horses at maintenance.
K. J. Stutts1, J. L. Lucia, M. J. Anderson, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

1205  T143  On-farm tapeworm testing in horses.
N. C. Whiteley1, R. Kaplan2, K. Moulton1, S. B. Routh1, R. Franco1, and R. K. Splan1, 1North Carolina A&T State University, Greensboro, 2University of Georgia, Athens, 3Virginia Tech, Middleburg.

International Animal Agriculture: International Animal Production

1213  T144  Handbook for livestock research on smallholder farms in developing countries.
A. L. Goetsch*, American Institute for Goat Research, Langston University, Langston, OK.

1214  T145  Reproductive performance in United Kingdom Holstein dairies by geographic region.
J. Hildon1, C. Vergara2, and H. Lopez3, 1Genus ABS, Stapeley, United Kingdom, 2ABS Global, DeForest, WI, 3ABS Global Inc., DeForest, WI.

1215  T146  Crossbreeding effects for body weight and carcass characteristics in a 3-breed diabled cross.
D. Norris1, L. Tyasi1, and J. Ng’ambi1, 1University of Limpopo, Polokwane, South Africa, 2University of Limpopo, Sovenga, South Africa.

1216  T147  Total bacteria counting profile of raw milk in Minas Gerais state according to the storage system.
A. G. Fernandes1, L. M. Fonseca2, M. P. Cerqueira1, M. O. Leite2, M. C. P. Oliveira2, R. M. Longo2, G. C. Ribeiro3, C. F. A. M. Penna2, and M. R. Souza2, 1Ministry of Agriculture, Belo Horizonte, Brazil, 2Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil, 3University of Wisconsin-Madison/CAPES Est.Senior 18183-12-3.
Reproductive performance in Chilean Holstein dairies by geographic region.
F. Arias1, H. Lopez2, R. Krauss1, and C. F. Vergara1,2, 1ABS Chile Ltda, Santiago, Chile, 2ABS Global Inc., DeForest, WI.

In vitro fermentation and digestion characteristics of shrubs Leucophyllum frutescens and Zanthoxylum fagara browsed by white-tailed deer (Odocoileus virginianus Texanus).
A. MS1, C. S. MA*1, G. C. M1, G. R. H.1, and R. L. RG.1, 1Universidad Juárez del Estado de Durango, Durango, Mexico, 2Universidad Autónoma de Nuevo León, Linares, Nuevo León, Mexico, 1Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Nuevo León, Mexico.

Characterization of goat foraging and body condition in Jhadol Block, Udaipur, India.
M. Valentine*, Cornell University, Ithaca, NY.

K. C. McRoberts1, D. Parsons2, C. F. Nicholson3, L. V. Nam4, and D. J. R. Cherney5, 1Cornell University, Ithaca, NY, 2University of Tasmania, Hobart, Australia, 3The Pennsylvania State University, University Park, 4Hue University of Agriculture and Forestry, Hue, Vietnam.

Selenium concentration in blood, milk and urine in grazing Jersey herds in Costa Rica.

Meat Science & Muscle Biology Posters II

Effect of the inclusion of plant extracts, vitamins and their association on biological efficiency, carcass length, total beef cuts, tissue composition and carcass muscularity of Nellore cattle.
M. B. Silva1, A. M. Jorge, F. D. Resende1, G. R. Siqueira1, G. F. Brito1, J. M. B. Benatti1, C. L. Francisco1, and D. C. M. Silva1, 1Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, 2Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu-SP, Brazil, 3Agência Paulista de Tecnologia dos Agronegócios-APTA, Colina, Brazil, 4APTA-Polo Regional Alta Mogiana, Colina, Brazil, 5Centro Universitário da Fundação Educacional de Barretos-Unitef, Barretos, Brazil, 6Universidade Estadual Paulista-FCAV, Jaboticabal, Brazil.

Pearson's correlation between fatty acid profile and gene expression of transcription factors and lipogenic enzymes in the muscle of young bulls fed soybean or cottonseed, with or without vitamin E.
M. M. Ladeira1, D. M. Oliveira1, A. Chalfun Junior1, M. L. Chizzotti2, P. D. Teixeira1, and T. C. Coelho1, 1Universidade Federal de Lavras, Lavras, Brazil, 2Universidade Federal de Viçosa, Viçosa, Brazil.

Effect of functional oils and high levels of glycerine in the diet of Purunã bulls finished in a feedlot on fatty acid composition in the longissimus muscle grilled.
F. Zawadzki1, D. C. Rivaroli2, A. Guerrero1, J. A. Torrecilhas1, C. A. Fugita1, J. Torrent3, and I. N. D. Prado1, 1State University of Maringá, Maringá, Brazil, 2Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, 3Oligo Basics USA LLC, Chanhassen, MN.

Effects of dietary rolled barley grain processed by lactic and citric acid on meat quality in feedlot cattle.
M. Nematpoor1, K. Rezayazdi2, and M. Dehghan-Banadaky1, 1University of Tehran, Karaj, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 3University of Tehran, Tehran, Iran.

Natural additives in the diet of bulls (Angus vs. Nellore) finished in feedlot: Fatty acids composition.

Effects of tannins extract addition in to the diet on physicochemical characteristics of meat from finishing bulls.
B. O. Lopez1, M. A. Mariezcurrena1, M. D. Mariezcurrena1, and R. Barajas2, 1Universidad Autónoma del Estado fde México, Toluca, Mexico, 2Universidad Autónoma de Estado de México, Toluca, Mexico, 3FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico.

Effect of polymorphisms in the DECR1 and LDHB genes on beef color stability.
J. D. Neal*, J. W. Buchanan, and R. G. Mateescu, Oklahoma State University, Stillwater.

Meat quality in yearling bulls fattened in three production systems from Mexican dry tropic.
G. Corral-Flores1, C. Rodríguez-Muela1, A. Flores-Maritaelarena1, J. A. Ramírez-Godínez1, F. S. Solorio1, C. R. Durán1, 1Universidad Autónoma de Chihuahua, Chihuahua, Mexico, 2Universidad Autónoma de Yucatán, Mérida, Mexico, 3Universidad Autónoma de Chihuahua, Chihuahua, Mexico.
Effect of diet without forage on beef quality in *Bos taurus* and *Bos indicus* young bulls.

M. L. Chizzotti¹, P. D. Teteira², M. M. Ladeira³, J. R. R. Carvalho³, K. C. Busato², R. A. Gomes², A. C. Rodrigues², and M. C. L. Alves³, ¹Universidade Federal de Viçosa, Viçosa, Brazil, ²Universidade Federal de Lavras, Lavras, Brazil.

Prediction of lamb carcass backfat thickness by skinfold measurement.

H. A. Ricardo¹ and R. O. Roça², ¹Grande Dourados Federal University (UFGD), Dourados, Brazil, ²São Paulo State University (FCA/UNESP), Botucatu, Brazil.

Carcass traits and meat quality of goat kids supplemented with chromium-methionine.

A. Emami¹, M. Ganjkhanlou², A. Zali², and M. Dehghan-Banadaky², ¹University of Birjand, Birjand, Iran, ²University of Tehran, Tehran, Iran.

Effect of high level of copper on meat quality in Iranian Mahabadi goat kids.

M. Ganjkhanlou¹, A. Zali¹, A. Hatefi¹, A. Emami¹, A. Akbari-Afjani¹, and M. Dehghan-Banadaky², ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.

Effect of fish oil and thyme on meat quality and meat oxidative stability of Mahabadi kids.

A. Hozhabri¹, M. Ganjkhanlou¹, A. Zali¹, A. Emami¹, A. Akbari-Afjani¹, and M. Dehghan-Banadaky², ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.

Effect of fish oil and thyme on performance, blood metabolites, meat sensory of Mahabadi kids.

A. Hozhabri¹, A. Zali¹, M. Ganjkhanlou¹, A. Emami¹, A. Akbari-Afjani¹, and M. Dehghan-Banadaky², ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.

Milk Protein and Enzymes

Separation and quantification of major milk proteins in different species by reversed phase high performance liquid chromatography.

L. Ma, D. P. Bu¹, J. Q. Wang, and J. T. Chen, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Size distribution of casein micelles in milk from dairy cows with different crossbreeding levels of Holstein-Zebu cattle.

D. R. Freitas¹, M. M. Santoro¹, F. N. Souza¹, C. V. Ladeira³, M. O. Leite³, C. F. A. M. Penna³, S. A. Diniz³, M. X. Silva¹, J. P. Haddad³, L. M. Fonseca³, and M. P. Cerqueira³, ¹Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, ²Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil.

Comparative analysis of immunoglobulin and lactoferrin in bovine milk from different species.

J. T. Chen¹,², L. Ma¹, J. Q. Wang¹, Y. X. Yang¹, and D. P. Bu¹, ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ²College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.

Effect of thermal conditions on the concentration of biological active whey protein in cow milk.

J. T. Chen¹,², L. Ma¹, D. P. Bu¹, Y. X. Yang¹, and J. Q. Wang¹, ¹State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ²College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.

Effect of extraction methods on the 2-DE map of whey proteome in cow milk.

J. T. Chen¹,², L. Ma¹, D. P. Bu¹, Y. X. Yang¹, and J. Q. Wang¹,², ¹Heilongjiang Bayi Agricultural University, Daqing, China, ²State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Effect of metabolic acidosis in lactating dairy cows on concentration of milk proteins.


Process optimization for production of whey protein hydrolysate from cheese whey having antioxidant property.

A. S¹, B. Mann, R. Sharma, and R. Bajaj, National Dairy Research Institute, Karnal, India.

The effect of heat and extraction technique on β-lactoglobulin hydrolysis.

C. Kembel¹ and R. Jimenez-Flores¹, ¹California Polytechnic State University, San Luis Obispo, ²Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.

Evaluation of the viscosity profile during simulated conditions of thermal processing.

A. Souza¹, L. C. Junior², R. Stephani³, M. Pinto³, A. Carvalho³, Perrone³, and R. Costa³, ¹Gemacon Tech, Juiz de Fora, Brazil, ²EPAMIG, Juiz de Fora, Brazil, ³Fedarl University of Viçosa, Viçosa, Brazil, ²Federal University of Viçosa, Viçosa, Brazil.

Viscosity measurement of solutions composed by whey protein using a rapid viscosity analyser (RVA).

M. Alves¹, M. Martins¹, P. H. Junior¹, R. Moreira¹, G. Mendes¹, M. Pinto¹, Perrone¹, and A. Carvalho¹, ¹Federal University of Viçosa, Viçosa, Brazil, ²Fedarl University of Viçosa, Viçosa, Brazil.
Nonruminant Nutrition:
The Impact of Feed Additives on the Health and Performance of Swine and Poultry

1314 T177 Evaluating the toxicity of metabolites derived from the trichothecene biotransformation using Biomin BBSH 797 in vitro.
S. Schaumberger 1 and U. Hofstetter 2, 1 BIOMIN Holding GmbH, Herzogenburg, Austria, 2 Biomin Holding GmbH, Herzogenburg, Austria.

1315 T178 Effects of dietary supplementation of β-mannanase on ileal digestibility of fiber and viscosity of jejunal digesta in nursery pigs fed corn and soybean meal-based diets.
I. Park 1, T. J. Pasquetti 1,2, and S. W. Kim 1, 1 North Carolina State University, Raleigh, 2 Bolsista do, CNPq, Brazil.

1316 T179 Effects of dietary supplementation of selenium-enriched probiotics on productive performance and intestinal microbiota of weanling piglets raised under high ambient temperature.
C. Lv 1, T. Wang 2, S. F. Liao 2, and K. Huang 1, 1 Nanjing Agricultural University, Nanjing, Jiangsu, China, 2 Mississippi State University, Mississippi State.

1317 T180 Growth performance and carcass characteristics of pigs fed high-fiber diets supplemented with Bacillus spp. expressing multi-enzyme activities.
A. Owusu-Asiedu 1, R. Lizardo 2, J. Brufau 2, and A. Awati 1, 1 DuPont Industrial Biosciences-Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom, 2 IRTA-Mas de Bover, Tarragona, Spain.

1318 T181 Effects of star anise (Illicium verum) on growing performance and antioxidant status of sows and nursing piglets.
G. Y. Wang 1, C. Yang 1, Y. X. Guo 1, Z. Yang 1, and Y. Wang 1, 1 College of Animal science, Shandong Agricultural University, Tai-an, China, 2 College of Life Science, Shandong Agricultural University, Tai-an, China.

1319 T182 The effects of Calibrin-Z or a Calibrin-Z-based blended product on post-weaning performance of nursery pigs.
S. L. Johnston 1, F. Chi 1, S. Ching 1, R. Cravens 1, and O. Adeola 1, 1 Amlan International, Chicago, IL, 2 Purdue University, West Lafayette, IN.

1320 T183 Nutrient digestibility of rice bran, with or without exogen enzymes, for weaned piglets.
J. C. Dadalt 1, G. D. V. Polycarpo 1, C. Gallardo 1, P. D. A. P. Ribeiro 1, B. Alves 1, and M. A. D. T. Neto 1, University of São Paulo-USP, Pirassununga, Brazil.

1321 T184 The improvements in growth, bone mineral status and nutrient digestibility in pigs following the addition of phytase is accompanied by modifications in ileal nutrient transporters.
S. Vigors 2, T. Sweeney 2, D. N. Doyle 1, C. J. O’Shea 1, and J. V. O’Doherty 1, 1 School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, 2 College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

1322 T185 Effects of bromelain supplementation on growth performance, nutrient digestibility, blood profiles, fecal microbial shedding, fecal score, and fecal nitrogen gas emission in weanling pigs.
M. M. Hossain 1, H. L. Li 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1323 T186 Effect of nutrifen supplementation with different levels of metabolic energy on growth performance, nutrient digestibility, meat quality, blood profile, excreta microflora, and excreta gas emission of broiler chickens.
H. Shin 1, A. Hosseindoust 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1324 T187 Effect of fermented organic rare earth (ORE) on growth performance, nutrient digestibility, blood profiles, meat quality, relative organ weight, excreta microflora, and noxious gas emission in broiler chickens.
Y. Liu 1, S. D. Upadhaya 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1325 T188 Apparent total tract digestibility and ileal digestibility of dry matter, nitrogen, energy and amino acids in conventional Bacillus subtilis fermented and enzyme treated soybean meal fed to weanling pigs.
H. Yun 1, E. Balolong Jr. 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1326 T189 Effect of bromelain supplementation on growth performance, nutrient digestibility, blood profiles, fecal score, fecal microbiota and noxious gas emission in sows and piglets.
M. Jung 1, Y. Lei 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1327 T190 Effect of CALSPORIN on growth performance, nutrients digestibility, organ weight, meat quality and excreta and intestinal microbiota and slurry noxious gas emission in broiler chickens.
H. Beak 1, H. L. Li 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.

1328 T191 Evaluation of Korean aged garlic extract (AGE) by Leuconostoc citreum SK2556 on production achievement, meat quality, relative organ weight, targeted Escherichia coli colony, slurry gas emission and hematological profiles in broilers.
J. W. Park 1, S. D. Upadhaya 1, and I. H. Kim 1, Department of Animal Science, Dankook University, Cheonan, South Korea.
1329 T192 The effect of vitality mineral liquid complex on production performance, nutrient digestibility, blood characteristics, egg quality and excreta microflora in laying hens.  
M. Mohammadi Gheisar, J. P. Lee, and I. H. Kim*, Department of Animal Science, Dankook University, Cheonan, South Korea.

1330 T193 Effects of nutriten on growth performance, nutrient digestibility, blood profiles, fecal microflora, fecal gas emission, and fecal score in weaning pigs.  
D. Jung*, H. L. Li, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

1331 T194 Effect of rare earth element-yeast on egg production, nutrient digestibility, egg quality, blood profiles, excreta gas emission, and excreta microbiota in laying hens.  
J. H. Cho*, L. Cai, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

1332 T195 Effects of Bacillus subtilis on growth performance, relative organ weight, meat quality, salmonella population, and blood profiles in broilers.  
J. H. Cho*, M. Begum, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

1333 T196 The effect of salicornia herbacea and dendropanax morifera on the growth performance, meat quality, fecal microbial population and fecal noxious gas emission in broilers.  
J. P. Lee, M. M. Hossain, and I. H. Kim*, Department of Animal Science, Dankook University, Cheonan, South Korea.

1334 T197 The effect of Salmonella inhibitors supplementation on egg production, egg quality, blood profiles, and excreta salmonella in laying hens.  
J. H. Cho*, H. Shin, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.

1335 T198 Feed additives affects RNA expression in the brush border membrane in broilers.  
M. F. Fernandez Alarcon*, J. P. Steibel1, 2, L. S. Antonio2, R. L. Furlan3, L. S. Sant’Anna4, R. L. Furlan1, and L. R. Furlan5, 1Department of Animal Morphology and Physiology, Sao Paulo State University, Jaboticabal, SP, Brazil, 2Michigan State University, East Lansing, 3Department of Fisheries and Wildlife, Michigan State University, East Lansing, 4Department of Biological Sciences – Biochemistry, University of São Paulo, Bauru, SP, Brazil, 5Aquaculture Center, Sao Paulo State University, Jaboticabal, SP, Brazil.

1336 T199 Apparent digestibility of wheat bran nutrients with or without exogen enzymes addition in weaned piglets.  
J. C. Dadalt1, P. D. A. P. Ribeiro2, G. D. F. Polycarpo3, C. Gallardo4, G. D. Ricci5, and M. A. D. T. Neto1, 1Department of Animal Science, Massey University, Palmerston North, New Zealand, 2Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, 3Department of Fisheries and Wildlife, Massey University, Palmerston North, New Zealand, 4Department of Animal Science, Massey University, Palmerston North, New Zealand, 5Aquaculture Center, Sao Paulo State University, Jaboticabal, SP, Brazil.

1337 T200 Evaluating the effects of Salicornia extract on performance, egg quality and blood profile of laying hens.  
I. H. Kim*, H. L. Li, and M. M. Hossain, Department of Animal Science, Dankook University, Cheonan, South Korea.

1338 T201 Effect of material bioconversion natural complex on the growth performance, nutrient digestibility, fecal microflora, fecal score, fecal moisture and pH in weanling pigs.  
M. Jung, Y. Lei, and I. H. Kim*, Department of Animal Science, Dankook University, Cheonan, South Korea.

1339 T202 Effects of microencapsulated Enterococcus faecalis and enzyme supplementation on piglet response to an Escherichia coli (K88) challenge.  
S. C. Lien*, D. E. Felayudhan1, A. K. Li2, Y. Z. Feng3, D. Liu4, Y. L. Yin1, and C. M. Nyachoti1, 1University of Manitoba, Winnipeg, MB, Canada, 2Institute of Animal Husbandry, Harbin, China, 3Academy of State Administration of Grain, Beijing, China, 4Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, China.

1340 T203 Sodium alginate addition improves water stability and utilization of extrudated feed for farmed saltwater crocodiles (C. porosus).  
M. Francis1, T. J. Wester2, P. C. H. Morel3, and B. H. P. Wilkinson4, 1Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand, 2Institute of Food, Nutrition and Human Health, Massey University, Palmerston North, New Zealand, 3School of Agriculture and Horticulture, Massey University, Palmerston North, New Zealand, 4Laboratories Ordesa S. L., Parc Científic de Barcelona, Barcelona, Spain.

1341 T204 Impact of allicin on enzyme activity, cytokine secretion, and gene expression dynamics in oxidative- and endotoxin-stressed porcine intestinal epithelial cells.  
N. L. Horn1, G. Miller2, K. M. Ajuwon1, and O. Adeola1, 1Department of Animal Sciences, Purdue University, West Lafayette, IN, 2BioMatrix, Princeton, MN.

1342 T205 Evaluation of a new probiotic strain of Bifidobacterium longum subsp. infantis CECT 7210 to improve health status of weaning piglets orally inoculated with Salmonella Typhimurium.  
E. Barba-Vidal1, L. Castillejos1, V. F. Buttow Roll1, M. Rivero2, J. A. Moreno Muñoz1, and S. Martin-Oriol1, 1Animal Nutrition and Welfare Service Department of Animal and Food Sciences Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 2Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 3Department of Animal Science, Faculty of Agronomy Eliseu Maciel, Federal University of Pelotas, Pelotas, Brazil, 4Laboratorios Ordesa S. L., Parc Científic de Barcelona, Barcelona, Spain.

1343 T206 A standardized blend of capsicum oleoresin, cinnamaldehyde and carvacrol improves performance of lactating sows.  
C. Oguey1 and C. Bruneau1, 1Pancosma, Geneva, Switzerland, 2Pancosma, Saint-Hyacinthe, QC, Canada.
Zilpaterol hydrochloride improves growth performance of meat producer Japanese quails.
H. Davila-Ramos and J. C. Robles-Estrada*, Universidad Autonoma de Sinaloa, Culiacan, Mexico.

Effects of increasing levels of curcumin on growth performance and immune response of nursery pigs.
M. R. Bible*, S. D. Carter, H. Kim, and K. F. Coble, Oklahoma State University, Stillwater.

Mannan oligosaccharides and β-glucan in diets for weaned piglets.

Physiology and Endocrinology: Physiology and Endocrinology II

Fertility of lactating dairy cows treated with gonadotropin-releasing hormone at estrus, 5 d after AI, or both, during summer heat stress.
L. G. D. Mendonça*, F. M. Mantelo, and J. S. Stevenson, Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas State University, Manhattan.

Luteolysis and pregnancy outcome in 5-day Resynch dairy cows after 1 or 2 injections of prostaglandin F₂α.
J. S. Stevenson*, S. L. Pulley, and S. L. Hill, Kansas State University, Manhattan.

Now being presented in the Physiology & Endocrinology Symposium, Wednesday, July 23 at 4:30 pm.

Characterization of luteal dynamics in lactating dairy cows for 32 days after synchronization of ovulation and timed artificial insemination.
A. Ricci¹, P. D. Carvalho², M. C. Amundson¹, and P. M. Fricke¹, Department of Dairy Science, University of Wisconsin-Madison, ²University of Wisconsin-Madison.

Influence of fat supplementation on LH pulses and fsh concentration in Nellore Heifers.
R. S. Cipriano¹, M. C. V. Miguel¹, H. F. Costa¹, J. S. Souza¹, L. M. Pavanello¹, M. A. MaioI², D. Giraldo-Araná², D. M. Pinheiro², F. M. Abreu², L. H. Cruppe², M. L. Day², and G. Nogueira², UniSalesiano, Araçatuba, Brazil, ²UNESP, Araçatuba, Brazil, ³The Ohio State University, Columbus.

Pregnancy outcomes based on pregnancy-associated glycoproteins in milk and serum during the first trimester of gestation in Holstein dairy cows.
A. Ricci¹², P. D. Carvalho¹, M. C. Amundson¹, S. Koller², R. H. Fourdraine², L. Vincenti², and P. M. Fricke¹, Department of Dairy Science, University of Wisconsin-Madison, ²University of Turino, Turino, Italy, ³University of Wisconsin-Madison, ⁴IDEXX Laboratories, Inc, Westbrook, ME, ⁵AgSource Laboratories, Verona, WI.

Comparison of two gonadorelin formulations and two luteolytic agents on pregnancy rates in beef cattle synchronized with a 5-d CO-Synch + CIDR program.
S. Bas¹, T. A. Brick¹, G. Starkey¹, G. Messerschmidt¹, A. A. Barraquán¹, G. M. Schuenemann¹, and M. L. Day², Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, ²The Ohio State University, Columbus.

Rams treated with testosterone induce sexual activity in anovulatory Dorper adult sheep.
L. M. Tejada*, Universidad Autónoma Agraria Antonio Narro, Torreón, Mexico.

Regulation in vivo and in vitro of G Protein-Coupled Receptor 34 (GPR34) mRNA in ovarian granulosa cells of cattle and its role in steroidogenesis.
L. J. Spicer¹, J. A. Williams¹, L. F. Schutz¹, M. L. Totty¹, N. B. Schreiber¹, and J. Gilliam², Oklahoma State University, Stillwater, ²Oklahoma State Center for Veterinary Health Sciences, Stillwater.

Interaction between a mammary immune response to lipopolysaccharide and luteal function in lactating dairy cows.
J. Luettgenau¹, O. Wellnitz¹², R. M. Bruckmaier², and H. Bollwein¹, Clinic of Reproductive Medicine, Vetsuisse Faculty University of Zurich, Zurich, Switzerland, ²Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

Influence of maternal nutrient restriction and realimentation on vascularity of bovine placentomes.
B. R. Mordhorst¹, L. E. Camacho², C. O. Lemley¹, P. P. Borowicz², D. A. Redmer¹, K. C. Swanson¹, and K. A. Vonnahme¹, North Dakota State University, Fargo, ²University of Arizona, Tucson, ³Mississippi State University, Mississippi State.

Lyosphosphatic acid (LPA) activates ERK1/2-P90RSK signaling in porcine trophoblast cells.
J. Kim*, J. Lee, J. Jung, H. Bang, Y. Sung, Y. Choi, and J. Kim, Dankook University, Cheonan, South Korea.

Relationship between dry-matter intake and subclinical endometritis in healthy postpartum dairy cows.
A. H. Souza³, P. D. Carvalho¹, A. R. Dresch¹, L. M. Vieira², K. S. Hackbart², R. D. Shaver¹, and M. C. Wiltbank³, University of California Cooperative Extension, Tulare, ²University of Wisconsin-Madison, ³Department of Dairy Science, University of Wisconsin-Madison, ⁴University of Sao Paulo-VRA, Sao Paulo, Brazil.
The effect of the initial GnRH and dose of PGF$_{2\alpha}$ on pregnancy rate to TAI in beef heifers submitted to the 5-d CO-Synch + CIDR program.


$^1$The Ohio State University, Columbus, $^2$University of Wisconsin, Madison, $^3$University of Minnesota, Grand Rapids, $^4$Utah State University, Logan.

Use of a CIDR in the 5-day CO-Synch estrous synchronization protocol improves pregnancy rates to timed artificial insemination.

G. A. Bridges$^{9}$, R. P. Lemenager$^2$, E. Taylor$^3$, and P. J. Gunn$^4$.

$^1$University of Minnesota, Grand Rapids, MN, $^2$Purdue University, West Lafayette, IN, $^3$Purdue University, Lafayette, IN, $^4$Iowa State University, Ames.

Incidence of ovulation to GnRH at onset of 5-d CO-Synch + CIDR and impact on reproductive responses.


$^1$Aluno do programa de pós-graduação em Zootecnia, FMVZ-UNESP, Botucatu, Brazil, $^2$University of Minnesota, Grand Rapids, MN, $^3$Iowa State University, Ames.

The use of 5-d CO-Synch+CIDR and 7-d EB+CIDR synchronization programs in Nellore females.


$^4$University of São Paulo-FMVZ/USP, Pirassununga, Brazil, $^5$University of São Paulo-ESALQ/USP, Piracicaba, Brazil, $^6$Experimental Station Hildegard Georgina Von Pritzewitz, Londrina, Brazil, $^7$The Ohio State University, Columbus.

The efficacy of different PGF$_{2\alpha}$ treatments to promote luteolysis on D 7 or D 9 of the estrous cycle in nonlactating Nellore cows.


$^{13}$University of São Paulo-ESALQ/USP, Piracicaba, Brazil, $^6$The Ohio State University, Columbus, $^8$University of São Paulo-FMVZ/USP, Pirassununga, Brazil, $^9$Experimental Station Hildegard Georgina Von Pritzewitz, Londrina, Brazil.

Effect of timing of artificial insemination and estrus expression using sexed semen on pregnancy rates in Holstein dairy cows.

S. E. Crego$^1$, E. L. Larimore, and G. A. Perry, South Dakota State University, Brookings.

Evaluation of the hypothalamic kisspeptin system throughout the estrous cycle in gilts.

E. S. Jolitz$^1$ and J. A. Clapper, South Dakota State University, Brookings.

Levels of IGF-1, thyroxine, triiodothyronine and cortisol in yearling bulls in feedlot or silvopastoral system.


$^1$Universidad Autónoma de Chihuahua, Chihuahua, Mexico, $^2$Universidad Autónoma de Yucatán, Mérida, Mexico.

Meta-analysis of the effect of estrus expression before fixed-time AI on conception rates in beef cattle.

B. N. Richardson$^1$, S. L. Hill$^2$, J. S. Stevenson$^2$, G. D. Djira$^1$, and G. A. Perry$^3$.

$^1$South Dakota State University, Brookings, $^2$Kansas State University, Manhattan.

Comparison of estrus parameters in nulliparous heifers by two automated activity monitoring systems.


Cryopreserved sperm quality in young Brangus bulls raised on pasture and supplemented with vitamin E.


Addition of vitamin C extender and post-cryopreservation semen quality in bulls.


$^1$Federal University Of Mato Grosso, Cuiaba, Brazil, $^2$Federal University Of Mato Grosso, Cuiaba, Brazil, $^3$Federal University Of Mato Grosso, Cuiaba, Brazil, $^4$Federal University Of Mato Grosso, Cuiaba, Brazil, $^5$Federal University Of Mato Grosso, Cuiaba, Brazil, $^6$Federal University Of Mato Grosso, Cuiaba, Brazil, $^7$Federal University Of Mato Grosso, Cuiaba, Brazil, $^8$Federal University Of Mato Grosso, Cuiaba, Brazil.

Concentrations of progesterone during early follicular development and pregnancy rate to AI in beef cows.


$^1$The Ohio State University, Columbus, $^2$USDA ARS Fort Keogh, Miles City, MT, $^3$University of Minnesota, Grand Rapids.

Tocopherol in bovine semen cryopreservation extender: Fertility and oxidative stress.

Embryonic growth between d 33 and 45 of pregnancy in lactating dairy cows differing in hormone and metabolite concentrations.
T. J. Stratman*, S. E. Poock, S. L. Murphy, A. Thomas, D. Bouhan, D. H. Keisler, and M. C. Lucy, 1University of Missouri-Division of Animal Sciences, Columbia, 2University of Missouri-College of Veterinary Medicine, Columbia.

Altered ovarian dynamics in lactating dairy cows undergoing embryonic mortality.
R. Wijma*, M. L. Stangaferro, J. R. Bransen, J. M. Howard, and J. O. Giordano, 1Department of Animal Science, Cornell University, Ithaca, NY; 2Biotracking LLC, Moscow, ID.

Production, Management, and the Environment: Management and Heat Stress

Concentrations of heavy metals in the whole raw milk of dairy cows under different management systems and country of origin: A meta-analytical study.
G. Zwierzchowski and B. N. Ametaj*, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

Macro- and microminerals in the whole raw milk of dairy cows from conventional and organic farms: A meta-analytical study.
G. Zwierzchowski and B. N. Ametaj*, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

Evaluating the accuracy of using reinforcing bar and an infrared thermometer versus long-stemmed thermometers in monitoring compost pile temperature.
E. Pacheco, A. Reyes, M. Negron, T. A. Gipson, and R. Merkel*, 1University of Puerto Rico-Mayaguez, Mayaguez, PR; 2American Institute for Goat Research, Langston University, Langston, OK.

Milk production, dry matter intake and body condition score evaluated in cross-bred commercial cows supplemented with OmniGen-AF during and following heat stress.
A. E. Holland, J. D. Chapman*, and L. O. Ely, 1Prince Agri Products, Inc., Quincy, IL; 2University of Georgia, Athens.

Factors affecting transition success in tie stall herds.
D. E. Santschi*, M. S. Perreault, S. Adam, R. Lacroix, and D. M. Lefebvre, 1Valacta, Ste-Anne-de-Bellevue, QC, Canada; 2Université Laval, Québec, QC, Canada.

Effect of spatial orientation and shade on internal environment of a wooden 3-calf hutch.
J. D. Allen*, L. W. Hall, 1Northwest Missouri State, Maryville, MO; 2The University of Arizona, Tucson.

Effect of deterred and undeterred bird depredation on nutrient composition of a cattle diet and growth performance in cattle at a Southwestern feedlot facility.
J. D. Allen*, L. W. Hall, S. Garcia, and J. Marchello, 1Northwest Missouri State, Maryville, MO; 2The University of Arizona, Tucson.

Predicting Holstein heifer growth by genomic traits.

Blood parameters in transition dairy cattle and their effects on milk production.
C. H. Ramires*, R. B. Navarro, R. M. Silva, G. T. Santos, R. Locatelli-Ditrich, and R. D. Almeida, 1Universidade Federal do Paraná, Curitiba-Paraná, Brazil; 2Capal Cooperativa Agroindustrial, Arapoti-Paraná, Brazil; 3Kemin do Brasil, Indaiatuba-São Paulo, Brazil; 4Universidade Estadual de Maringá, Maringá-Paraná, Brazil.

A comparison of two implant protocols; Synovex-Choice and Synovex-Plus vs. Synovex-S and Revalor-S on steer feedlot performance and carcass characteristics.
H. R. Nielson*, A. F. Summers, and R. N. Funston, 1University of Nebraska, West Central Research and Extension Center, North Platte, 2University of Nebraska-Lincoln.

Mitigating heat stress in dairy cattle via conductive cooling.

Changes in behavioral and physiological parameters around estrus in partially synchronized cows.

Effect of maternal heat stress during the dry period on development of immune system of offspring.
1493 T252 Impact of dry period heat stress on milk yield, reproductive performance and health of dairy cows.


1494 T253 Extending the interval from Presynch to initiation of Ovsynch in a Presynch-Ovsynch protocol did not reduce fertility of lactating dairy cows not detected in estrus that received timed artificial insemination.

J. O. Giordano*, M. J. Thomas1, G. K. Catucumba2, and M. D. Curley2, 1Department of Animal Science, Cornell University, Ithaca, NY, 2Dairy Health and Management Services, LLC, Lowell, NY.

1495 T254 Mortality and herd turnover rates in large dairy herds in the Upper Midwest USA.

T. Evink* and M. I. Endres, University of Minnesota, Saint Paul.

1496 T255 Biased milk production programmed by fetal sex affects sexed semen economics.

A. De Vries1, K. Hinde1, A. J. Carpenter1, J. Clay1, and B. Bradford2, 1University of Florida, Gainesville, 2Harvard University, Cambridge, MA, 3Kansas State University, Manhattan, 4Dairy Records Management Systems, Raleigh, NC.

1497 T256 Study the temperature-humidity index and its effect on performance of dairy cows in Isfahan.

G. Ghorbani*1 and A. Ahangaran2, 1Isfahan University of Technology, Isfahan, Iran, 2Isfahan University of Technology, Isfahan, Iran.


P. L. Kunz* and A. Reinhard, Bern University of Applied Sciences, Zollikofen, Switzerland.

1499 T258 Effects of supplementation with propylene glycol in heat-stressed dairy goats.

S. Hamzaoui1, A. Salama*1,2, G. Caja1, E. Albanell1, and X. Such1, 1Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain, 2Animal Production Research Institute, Dokki, Giza, Egypt.

1500 T259 The effects of technology use in feedlot production systems on the heat stress and blood metabolites of finishing steers.

B. C. Bernhard*, C. L. Maxwell1, C. F. O'Neill1, B. K. Wilson1, C. G. Hixon1, C. Haviland1, A. Grimes1, M. S. Calvo-Lorenzo1, C. J. Richards1, D. L. Step1, B. P. Holland1, and C. R. Krehbiel1, Oklahoma State University, Stillwater; 2Merck, Volga, SD.

1501 T260 The effects of technology use in feedlot production systems on feedlot performance, carcass characteristics, and feeding behaviors of crossbred beef steers.

C. L. Maxwell1, B. C. Bernhard*, C. F. O'Neill1, B. K. Wilson1, C. Hixon1, C. Haviland1, A. Grimes1, M. S. Calvo-Lorenzo1, D. L. VanOverbeke1, G. G. Mafi1, C. J. Richards1, D. L. Step1, B. P. Holland1, and C. R. Krehbiel1, Oklahoma State University, Stillwater; 2Merck Animal Health, DeSoto, KS.

1502 T261 Survey of fatty acid profile of milk fat in Italian Water buffalo.

M. G. Manca1, G. Cosenza2, E. Apicella3, A. Pauciullo4, A. Coletta5, A. Nudda*1, N. P. P. Maccio7, L. Zicarelli6, and L. Ramunno7, 1Dipartimento di Agraria, University of Sassari, Sassari, Italy, 2Department of Agriculture, University of Naples Federico II, Naples, Italy, 3ISPAAM, Laboratory of Animal Cytogenetics and Gene Mapping, National Research Council, Naples, Italy, 4ANASB, Italian National Association of Buffalo Breeders, Caserta, Italy, 5Università di Sassari, Sassari, Italy, 6Department of Veterinary Medicine and Animal Production, University of Naples Federico II, Naples, Italy, 7Department of Agriculture, University of Naples, Naples, Italy.

1503 T262 Comparative study between 5% copper sulfate and a β-ionone and limonene solution in a split footbath.

A. C. Thompson* and J. M. Bewley, University of Kentucky, Lexington.

1504 T263 Comparison of milk components before and after passing through a novel inline milk filter.

D. T. Nolan1, M. J. Bakke2, and J. M. Bewley1, 1University of Kentucky, Lexington, 2Custom Dairy Performance, Clovis, CA.

**Ruminant Nutrition Posters II**

1651 T264 In vitro assessment of Saccharomyces cerevisiae cell fractions (YCF) using bovine epithelial cells and macrophages.

Z. Li1, Q. You1, F. Ossa2, P. Mead1, and N. A. Karrow3, 1University of Guelph, Guelph, ON, Canada, 2Lallemand Inc., Montreal, QC, Canada, 3Department of Animal and Poultry Science, University of Guelph, Guelph, ON, Canada.

1652 T265 Digestibility of the diet of grazing Nellore bulls receiving concentrated supplementation with additives.

J. A. C. Lima1,2, H. J. Fernandes1, M. F. Paulino1, E. P. Rosa2, L. S. Caramalac2, K. A. Silveira2, B. D. Dauria2, and A. Aguiar3, 1Federal University of Viçosa, Viçosa, Brazil, 2State University of Mato Grosso do Sul, Aquidauana, Brazil, 3University of Florida, Gainesville.

1653 T266 Pre- and post-weaning performance and health of calves fed 24% crude protein and 20% fat milk replacer at different feeding rates.

B. M. Strayer1, D. Ziegler2, D. Schimek3, B. Ziegler3, M. Raeth-Knight4, H. Chester-Jones2, and D. Casper1, 1South Dakota State University, Brookings, 2University of Minnesota Southern Research and Outreach Center, Waseca, 3Hubbard Feeds Inc., Mankato, MN, 4University of Minnesota, St. Paul.
1654 T267  Pre- and post-weaning performance and health of calves fed milk replacers with two protein concentrations and two feeding rates.
B. M. Strayer1, D. Ziegler2, D. Schimek3, B. Ziegler2, M. Raeth-Knight1, H. Chester-Jones2, and D. Casper1, 1South Dakota State University, Brookings, 2University of Minnesota Southern Research and Outreach Center, Waseca, MN, 3Hubbard Feeds Inc., Mankato, MN, 4University of Minnesota, St. Paul.

1655 T268  The effect of dietary supplementation of artificial sweetener on performance of milk-fed calves.
A. Siurana1, E. H. Wall1, M. Rodríguez2, L. Castillejos1, A. Ferret1, and S. Calsamiglia1, 1Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autónoma de Barcelona, Bellaterra 08193, Spain, 2Pancosma, Geneva, Switzerland.

1656 T269  The effect of supplementation with a blend of capsicum, carvacrol, and cinnamaldehyde on performance of milk-fed calves.
A. Siurana1, E. H. Wall1, M. Rodríguez2, L. Castillejos1, A. Ferret1, and S. Calsamiglia1, 1Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autónoma de Barcelona, Bellaterra 08193, Spain, 2Pancosma, Geneva, Switzerland.

1657 T270  Effect of milk replacer solids content on intake, growth and fecal characteristics of Holstein calves.

1658 T271  Pre- and post weaning performance and health of dairy calves fed all-milk protein milk replacers or partially replacing milk protein in milk replacers with plasma, wheat proteins and soy protein concentrate.
D. Ziegler1, H. Chester-Jones1, B. Ziegler2, D. Schimek2, M. Raeth-Knight3, and D. L. Cook4, 1University of Minnesota Southern Research and Outreach Center, Waseca, 2Hubbard Feeds Inc., Mankato, MN, 3University of Minnesota, St. Paul, 4Milk Products, Chilton, WI.

1659 T272  Effect of Radix Bupleuri herbal supplementation on diversity of the bacterial community and cellulolytic bacteria in the rumen of lactating dairy cows analyzed by DGGE and RT-PCR.

1660 T273  The effect of soluble propolis in milk on the performance of Holstein suckling calves.
P. Peravian1, K. Rezayazdi2, and G. Nehzati3, 1University Of Tehran, Tehran, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 3University Of Tehran, Karaj, Iran.

1661 T274  Supplementation of lysine and methionine for dairy calves on a step down milk-replacer feeding program.
J. T. Silva1, G. Santos, N. B. Rocha, E. Miqueo, T. Manzoni, and C. M. M. Bittar, University of Sao Paulo, Piracicaba, Brazil.

1662 T275  Response of newborn calves to injectable vitamins A, D and E.
D. B. Snider1, J. Gaska2, D. E. Gockowski3, and R. L. Stuart4, 1Iowa State University, Ames, 2Gaska Dairy Health Services, Columbus, WI, 3North Ridge Veterinary Svc, Sturgeon Lake, MN, 4Stuart Products Inc, Bedford, TX.

1663 T276  Fecal scores, hemagamometry and blood metabolites of diarrheic calves fed concentrate containing sugar cane molasses or glucose syrup as a replacement for corn.
M. C. Soares1, G. G. O. Nápoles2, C. E. Oltramari2, J. T. Silva1, M. R. De Paula1, and C. M. M. Bittar1, 1University of Sao Paulo, Piracicaba, Brazil, 2University of Santa Catarina State, Chapecó, Brazil.

1664 T277  Fecal scores, hemagamometry and blood parameters of diarrheic calves fed concentrate containing citrus pulp as a replacement for corn.
M. C. Soares1, C. E. Oltramari2, J. T. Silva1, M. R. De Paula1, M. P. Gallo1, and C. M. M. Bittar1, 1University of Sao Paulo, Piracicaba, Brazil, 2University of Santa Catarina State, Chapecó, Brazil.

1665 T278  Effect of diet particle size on sorting, eating rate, rumen ph and digestibility in dairy heifers.

1666 T279  Fatty acid profiles of longissimus dorsi from Nelore cattle on pasture supplemented with crude glycerin and whole cottonseed.
J. T. Zervoudakis1, A. J. Possamai1, L. K. Hatamoto-Zervoudakis1, A. S. Oliveira1, L. B. D. Freiria1, R. P. D. Silva1, A. C. Barbosa1, and J. W. Koscheck2, 1Federal University Of Mato Grosso, Cuiaba, Brazil, 2UFMT, Cuiabá, Brazil, 3UFMT, Sinop, Brazil, 4UNESP, Jaboticabal, Brazil.

1667 T280  Performance and carcass attributes of Nelore heifers fed with zilpaterol hydrochloride.
N. R. B. Cunhato1, R. S. Goulart1, F. Rodriguez2, M. O. Frasseto1, J. M. Souza1, L. F. P. Silva1, and V. B. Ferrari1, 1University of Sao Paulo, Pirassununga, Brazil, 2MSD Saíde Animal, Sao Paulo, Brazil.

1668 T281  Carcass characteristics of Nelore steers fed whole corn diets containing feed antibiotics.
B. J. M. Lemos1, F. G. F. Castro2, B. P. C. Mendoça1, C. E. Dambros1, D. B. Fernandes1, A. L. Braga Netto1, V. R. M. Couto1, and J. J. R. Fernandes2, 1Universidade Federal de Goiás, Goiânia, Brazil, 2AgroCria, Goiânia, Brazil.
#### 1669 T282 Fatty acids ratio of loin from lambs fed with increasing levels of crude glycerin in feedlot.


#### 1670 T283 Performance and carcass yield of finishing lambs fed diets with safflower meal.

P. A. Meneses-Tapia, G. Buendia-Rodriguez, F. E. Martinez-Castañeda, C. G. Peñuelas-Rivas, and S. S. Gonzalez-Muñoz, 1Universidad Autónoma del Estado de Mexico, Toluca, Mexico, 2CENIDFyMA INIFAP, Queretaro, Mexico, 3Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico.

#### 1671 T284 Quality traits of longissimus muscle of two genetic groups fed with crude glycerin.

I. M. de Oliveira, J. P. I. S. Monnerat, N. V. L. Serão, M. S. Duarte, V. R. M. Couto, S. C. Valadares Filho, M. L. Chizzotti, and P. V. R. Paulino, 1APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, 2Universidade Federal de Viçosa, Viçosa, Brazil, 3Iowa State University, Urbana, 4Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 5Universidade Federal de Goiás, Goiânia, Brazil, 6Nutron Alimentos Ltda, Campinas, Brazil.

#### 1672 T285 Effects of corn processing method and dietary starch level on finishing performance of Nellore bulls.

M. Caetano, R. S. Goulart, S. Luiz e Silva, J. S. Drouillard, S. C. Valadares Filho, M. L. Chizzotti, and P. V. R. Paulino, 1APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, 2Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, China, 3AB Vista Feed Ingredients, Marlborough, United Kingdom, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

#### 1673 T286 Effect of wheat dried distillers grains with soubles inclusion and fibrolytic enzyme supplementation on ruminal fermentation and digestibility in beef heifers fed backgrounding diet.

Z. He, N. D. Walker, T. A. McAllister, and W. Yang, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, China, 3AB Vista Feed Ingredients, Marlborough, United Kingdom, 4Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

#### 1674 T287 Increasing condensed corn distillers solubles affects gene expression in rumen epithelial tissue.

J. C. McCann, S. Alqarni, J. R. Segers, D. W. Shike, and J. J. Loor, 1University of Illinois at Urbana-Champaign, 2University of Georgia, Tifton.

#### 1675 T288 Crude glycerin as an energy source in finishing beef diets.

P. Del Bianco Benedetti, P. V. R. Paulino, M. I. Marconder, A. Faciola, I. França Smith Maciel, and M. Custódio da Silva, 1Federal University of Vicosa, Vicosa, Brazil, 2University of Nevada, Reno, 3Nutron Alimentos Ltda, Campinas, Brazil.

#### 1676 T289 Ruminal fermentation of steers fed crude glycerin replacing starch- vs. fiber-based energy ingredients at low or high concentrate diets.


#### 1677 T290 Supplements containing different crude glycerin concentration does not affect the intake and digestibility of Nellore grass-fed beef.

E. San Vito, L. Maneck Delevatti, E. E. Dalanttonia, J. F. Lage, M. B. Abra, C. S. Ribeiro Júnior, L. R. Simonetti, M. Machado, and T. T. Berchielli, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Current address University of Adelaide, Roseworthy, Australia, 3University of Sao Paulo / ESALQ, Piracicaba, Brazil, 4University of Sao Paulo / ESALQ, Piracicaba, Brazil.

#### 1678 T290 Whole cottonseed and crude glycerin for nelore cattle on pasture: Intake and digestibility of nutrients.


#### 1679 T290 Crude glycerin in multiple supplements for beef cattle in grazing: pH and ammoniacal nitrogen.


#### 1680 T293 Grain processing methods and concentration of corn silage NDF in the finishing diet of Nellore bulls.

Effect of corn processing methods and dietary concentrations of sugarcane bagasse fiber on finishing Nellore bulls performance.
A. H. F. Melo¹, D. F. A. Costa², C. A. B. Delveaux¹, J. D. Souza¹, F. Batistel², D. C. Basto¹, P. R. Gabarra¹, A. C. Aoki¹, and F. A. P. Santos³, ¹University of São Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil.

Predicting ruminal and total tract starch digestion as influence by changes in density of steam-flaked corn: Flake thickness, enzymatic reactivity, fecal starch.
M. A. Franco⁴, J. F. Calderón-Cortes⁵, L. Corona⁶, A. Plascencia⁷, and R. A. Zinn⁸, ¹UNAM, Mexico City, Mexico, ²UABC, Mexicali, Mexico, ³UABC, Mexicali, Mexico, ⁴University of California-Davis, El Centro.

Intake and performance of crossbred dairy calves fed spineless cactus in transition.
R. Gomes¹, M. F. S. Queiroz², S. Gonzaga Neto³, R. G. Costa⁴, J. S. Oliveira⁴, G. O. Mendes⁵, R. L. Galati⁶, and G. R. Beltrão da Cruz⁷, ¹University of Paraíba, CCA/UFPB, Areia, Brazil, ²University of Mato Grosso-DZER/UFMT, Cuiabá, Brazil, ³University of Paraíba-CCA/UFPB, Areia, Brazil, ⁴University of Paraiba-CCHSA/UFPB, Bananeiras, Brazil.

Carcass characteristics of crossbred dairy calves fed spineless cactus in transition.
R. Gomes¹, M. F. S. Queiroz², R. G. Costa³, S. Gonzaga Neto⁴, J. S. Oliveira⁴, G. O. Mendes⁵, G. R. Beltrão da Cruz⁶, and J. Jordão Filho⁷, ¹University of Paraíba, CCA/UFPB, Areia, Brazil, ²University of Mato Grosso-DZER/UFMT, Cuiabá, Brazil, ³University of Paraíba-CCA/UFPB, Bananeiras, Brazil, ⁴University of Paraiba-CCHSA/UFPB, Bananeiras, Brazil.

Effect of chitosan and soybean oil combination on ruminal fermentation and milk yield and composition of dairy cows.
T. A. Del Valle¹, F. C. R. D. Santos¹, P. G. D. Paiva², E. F. Jesus², F. Zanferari³, M. K. Kametani¹, A. G. B. V. B. Costa¹, and F. P. Renno⁴, ¹School of Veterinary Medicine and Animal Science, University of São Paulo, Pirassununga, Brazil, ²School of Agricultural and Veterinary Sciences of UNESP, Jaboticabal, Brazil.

Growth performance and total tract nutrient digestion for Holstein heifers precision-fed diets high in distillers grains with different forage particle size.

Comparison of efficiency of energy use in Holstein and Jersey dairy cows offered diets containing reduce fat distillers grains RFDDGS.
G. Garcia Gomez¹, A. Foth², P. J. Kononoff², T. Brown-Brandl³, and H. C. Freely³, ¹University of Nebraska-Lincoln, ²ARS-USDA, Clay Center, NE.

Effects of feeding canola meal (CM) and wheat dried distillers grains with solubles (W-DDGS) as the major protein source in low or high crude protein diets on ruminal nitrogen utilization, omasal nutrient flow, and milk production in dairy cows.
T. Mutsvangwa¹ and K. Doranalli², ¹University of Saskatchewan, Saskatoon, SK, Canada, ²Evonik (SEA) Pte. Ltd., Singapore, Singapore.

Performance, digestibility, and blood acid-base balance of dairy cows in response to the replacement of corn by crude glycerin.
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Effects of crude glycerin supplementation on fatty acids composition of milk fat from primiparous lactating cows on irrigated tropical pasture.
M. C. A. Santana¹, H. A. Santana Junior¹, M. P. Figueiredo², E. O. C. Santana³, G. A. Filho⁴, C. B. Figueiredo⁵, M. S. Maciel⁶, and J. J. Simionato⁷, ¹Emater, Goiânia, Brazil, ²Universidade Estadual de Jaguarina, Corrente, Brazil, ³Universidade Estadual do Sul de Minas, Poços de Caldas, Brazil, ⁴Universidade Federal de Lavras, Lavras, Brazil, ⁵Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, ⁶Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, ⁷Universidade Estadual de Londrina, Londrina, Brazil.

Effect of grain processing and fat supplementation on ruminal pH dynamics of cows grazing a tropical pasture.
J. D. Souza¹, F. Batistel¹, E. Miqueo², P. D. Andrade³, M. M. V. Silva⁴, C. Sitta⁵, and F. A. P. Santos⁶, ¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil, ³University of São Paulo, Piracicaba, Brazil.

Grain processing and fat supplementation on milk yield and milk composition of dairy cows grazing a tropical pasture.
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Effect of grain type (corn versus milo), particle size (600 versus 1000 microns) and steam-flaked corn on productive and metabolite responses of early lactating Holstein cows.
E. Mahjoubi¹, J. R. Johnson², B. J. Bradford⁵, and M. J. Brouk⁶, ¹Department of Animal Science, University of Zanjan, Zanjan, Iran, ²Department of Animal Sciences and Industry, Kansas State University, Manhattan.
Effect of concentrate source (cottonseed vs. barley) on milk performance and fatty acids profile of spring calving Holstein-Friesian cows feeding an indoors silage regime.
A. I. Roca-Fernández and A. González-Rodríguez, Agrarian Research Centre of Mabegondo, La Coruña, Spain.

Ruminal starch degradation of maize silage affected by ensiling time and dry matter content.
J. Doorenbos* and H. V. Laar, Nutreco R&D, Boxmeer, Netherlands.

Relationship of in vitro starch digestion to corn kernel measurements from farms in Michigan.
D. Bolinger1, L. Nuback1, and F. N. Owens2, 1DuPont Pioneer, Perrinton, MI, 2DuPont Pioneer, Johnston, IA.

Effect of particle size and time of rumen fluid collection on in vitro starch digestibility of corn and sorghum.
E. Raffrenato1,2, L. J. Erasmus1, W. A. van Niekerk1, and C. Engelbrecht1, 1University of Pretoria, Pretoria, South Africa, 2Stellenbosch University, Stellenbosch, South Africa.

Effect of reducing dietary intake on lactation performance, and ruminal parameters of dairy cows: A meta-analysis.

Effect of rehydration and silage storage period of corn with medium vitreous endosperm on chemical composition and dry matter in situ degradability.
M. A. Arcari1, C. Martins1, J. Gonçalves1, D. Sousa1, T. Tomazi1, L. F. P. Silva2, and M. Veiga dos Santos1, 1University of São Paulo, Pirassununga, Brazil, 2University of Sao Paulo, Pirassununga, Brazil.

Factors affecting 7 hour starch digestibility on conventional corn silage, BMR corn silage, and high moisture corn grain.

Glycerol exacerbates effects of sorghum-based tannins extract on in vitro fermentative activity of mixed ruminal microorganisms.
E. San Vito1, T. J. Herald2, P. Gadgil2, and J. S. Drouillard3, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2USDA-ARS Grain Quality, and Structure Research Unit, Manhattan, KS, 3Kansas State University, Manhattan.

Use of byproducts from corn industry and citric acid on dairy heifers diet.
I. D. C. Hermisdorff, R. M. Dos Santos*, M. F. Gonçalves, A. M. França, M. Visoná-Oliveira, H. Nogueira, A. Santos, and I. C. Ferreira, Universidade Federal de Uberlândia, Uberlândia, Brazil.

Monensin increases endotoxin concentration in an in vitro rumen fermentation model.
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Effect of a calcareous algae and monensin on feed intake and rumen parameters of cattle fed abruptly high concentrate diets.
R. Ferreira Carvalho1, A. P. S. Silva1, M. Rezende Mazor1, C. A. Zotti1, L. Silva Oliviera1, S. Luz e Silva1, and P. R. Leme1, 1University of Sao Paulo / FZEA, Pirassununga, Brazil, 2University of Sao Paulo, Pirassununga, Brazil.

Effect of post-extraction algal residue supplementation on the rumen microbiome of steers consuming low-quality forage.
J. C. McCann1, M. L. Drewery1, W. E. Pinchak2, J. E. Sawyer4, and T. A. Wickersham2, 1University of Illinois at Urbana-Champaign, 2Texas A&M University, College Station, 3Texas A&M Agrilife Research, Vernon, 4Texas AgriLife Research, College Station.

Effect of concentrate diets contrasting in fatty acid profiles on lamb performance, carcass characteristics, fatty acid composition and wool production.
S. J. Meale1,2, A. V. Chaves3, M. He2, and T. A. McAllister2, 1The University of Sydney, Sydney NSW, Australia, 2Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Feed value for ruminants of newly developed black and yellow type of canola seeds.
K. Theodoridou1, P. Yu2,3, H. Xin1, and X. Huang1, 1University Of Saskatchewan, Department Animal And Poultry Science, Saskatoon, SK, Canada, 2Department of Animal Science, Tianjin Agricultural University, Tianjin, SK, China, 3University of Saskatchewan, Saskatoon, SK, Canada.

Could lactic acid treatment decrease in vitro gas production of barley grain.
M. Dehghan Banadaky1, A. Zali2, M. Ganjkhani2, K. Rezayazdi2, M. Nematpoor2, and A. Laki2, 1Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 2University of Tehran, Karaj, Iran, 3Department of Animal Science, University of Tehran, Karaj, Tehran, Iran.

Microwave irradiation induced changes in protein inherent structure, protein chemical profile, protein subfractions and digestive behavior of different types of new hulless barley in the rumen and intestine of dairy cows.
X. Yan1,2, N. Khan1, X. Huang1, and P. Yu1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Jilin Academy of Agricultural Sciences, Jilin, China.
1710 T323 Protein and energy availability of sorghum wet distiller grains without solubles in comparison to the parental grain. M. D. L. A. Brun1 and A. I. Trujillo1, 1Facultad de Agronomía Universidad de la Republica, Paysandú, Uruguay, 2Facultad de Agronomía, Universidad de la Republica, Montevideo, Uruguay.

1711 T324 Effect of crude glycerin on dry matter and nutrient digestibility of feed ingredients in dairy cows. F. D. O. Scarpino van Cleef1,2, J. M. Bertocco Ezequiel1, J. Borsari Dourado Sancanari1, and E. H. C. B. Van Cleef3, 1UNESP, Jaboticabal, Brazil, 2CNPq, Brasília, Brazil, 3UCB, Jaboticabal, Brazil, 4FAPESP, São Paulo, Brazil.

1712 T325 Positive effect of fat supplementation in the early postpartum period can continue throughout lactation after fat supplementation ceases. M. Garcia4, L. F. Greco1, W. W. Thatcher1, J. E. P. Santos2, and C. R. Staples3, 1Department of Animal Sciences, University of Maryland, College Park, 2Department of Animal Sciences, University of Florida, Gainesville, Florida, 3Department of Animal Sciences, University of Florida, Gainesville.

1713 T326 Sources and levels of rumen protected fat on energy balance of dairy cows grazing a tropical pasture. F. Batistel1, J. D. Souza2, and F. A. P. Santos1, 1University of São Paulo, Piracicaba, Brazil, 2University of Sao Paulo, Piracicaba, Brazil.


1715 T328 Production performance parameters of early lactation Iranian Holstein cows fed diets containing high levels of palmitic acid or Ca-salt of unsaturated fatty acids. H. Khalilvandi-Behroozyar1, M. Dehghan Banadak2, K. Rezayazdi1, and M. Ghaffarzadeh1, 1Department of Animal Science, Urmia University, Urmia, Iran, 2Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 3Chemistry and Chemical Engineering Research Center of Iran, Tehran, Iran.

1716 T329 Characterization of the role of long-chain fatty acids in the regulation of lipogenic gene expression via LXRα in goat mammary epithelial cells. W. Zhao1,2, J. Luo1, P. Dovc3, and J. J. Loo3, 1Northwest A & F University, Yangling, China, 2University of Illinois at Urbana-Champaign, 3University of Ljubljana, Domzale, Slovenia.

1717 T330 Effects of feeding protected unsaturated fatty acids (Persia Fat) on milk fatty acid profile of Iranian Holstein dairy cows. H. Khalilvandi-Behroozy1, M. Dehghan Banadак2, and M. Ghaffarzadeh1, 1Department of Animal Science, Urmia University, Urmia, Iran, 2Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 3Chemistry and Chemical Engineering Research Center of Iran, Tehran, Iran.

1718 T331 Milk yield and milk fat responses to increasing levels of stearic acid supplementation of dairy cows. J. P. Boerman1, and A. L. Lock, Michigan State University, East Lansing.

1719 T332 Effect of different dietary fatty acid profiles on individual milk fatty acid yields by dairy cattle fed diets with less than 3% total fatty acids. C. M. Stoffel and L. E. Armentano2, University of Wisconsin-Madison.


1721 T334 Effect of coconut oil and lauric acid on omasal nutrient flow and microbial protein synthesis in dairy cows. A. Faciola1 and G. A. Broderick1, 1University of Nevada, Reno, 2Broderick Nutrition & Research, LLC, Madison, WI.

1722 T335 Supplementation of lemongrass oil and a mixture of garlic and ginger oil improved in vitro feed digestion. A. Nanon1, W. Suksumbat, and W. Yang2, 1Suranaree University of Technology, Muang, Thailand, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

1723 T336Use of lemongrass oil for manipulation of ruminal fermentation using Rusitec technique. A. Nanon1, W. Suksumbat, and W. Yang2, 1Suranaree University of Technology, Muang, Thailand, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

1724 T337 Effect of tea oil and sunflower oil on rumen fermentation, milk composition and rumen microbial population in water buffaloes fed elephant grass-based diets. C. Yang3, X. Liang4, S. Wei2, X. Liang2, S. Li2, C. Zou2, B. Yang2, and L. Li2, 1Buffalo Research Institute, Chinese Academy of Agricultural Sciences, Nanning, China, 2Buffalo Research Institute, The Chinese Academy of Agricultural Sciences, Nanning, China.

1725 T338 Effects of echium and linseed oil on ruminal fatty acid metabolism in vitro. L. Jin4,2, C. Li2, M. He2, Y. Wang3, T. W. Alexander2, and T. A. McAllister4, 1Department of Animal Science and Technology, Northeast Agricultural University, Harbin, China, 2Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 3Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
Effects of linseed oil and propolis additives on protozoa population in dairy cows.
E. H. Yoshimura1, L. M. Zeoula1, R. Franzolin2, N. W. Santos3, E. Machado4, B. C. Agustinho4, L. D. M. Pereira1, and F. Alves1. 1Universidade Estadual de Maringá, Maringá, Brazil, 2Universidade de São Paulo-Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga-SP, Brazil.

Effect of linoleic and linolenic acid sources supplementation on in vitro rumen fermentation characteristics and microbial diversity.
S. M. Amanullah1, S. C. Kim1, D. Kim1, H. Lee1, Y. Joo1, and I. H. Choi2, 1Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, South Korea, 2Department of Companion Animal and Animal Resources Science, Joongbuk University, Geumsan-Gun, South Korea.

Intake and daily gain of grazing Nellore bulls receiving concentrated supplementation with additives.
J. A. C. Lima1,2, H. J. Fernandes3, M. F. Paulino1, E. P. Rosa1, L. S. Caramalac1, K. A. Silva1, G. C. Silva2, and A. Aguilar1, 1Federal University of Viçosa, Viçosa, Brazil, 2State University of Mato Grosso do Sul, Aquidauana, Brazil, 3University of Florida, Gainesville.

Effects of concentrate level and combined use of virginiamycin and salinomycin on nutrient intake and digestibility of Nellore steers.
A. J. C. Nuñez1, V. V. Almeida1, I. E. Borges1, F. Pines1, F. T. Mercado1, S. L. Silva1, P. R. Leme1, and J. C. M. Nogueira Filho1, 1Department of Animal Science-FZEA/USP, Pirassununga/SP, Brazil, 2Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil.

A meta-analysis of effects of feeding nitrate on toxicity, production, and enteric methane emissions in ruminants.
C. Lee* and K. A. Beauchemin, Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Methane production of Nellore young bulls on pasture in the rainy season supplemented with crude glycerin associated energy sources.
A. José Neto1, L. G. Rossi2, A. F. Ribeiro3, B. R. Vieira2, I. Pena Carvalho de Carvalho2, E. E. Dalantoni3, A. S. Gómez1, and T. T. Berchielli1, 1Universidade Estadual Paulista “Julio de Mesquita Filho”, Jaboticabal, Brazil, 2Universidade Estadual Paulista, Jaboticabal, Brazil, 3Universidade Estadual Paulista Julio de Mesquita Filho / UNESP, Jaboticabal, Brazil.

Effects of the combined use of virginiamycin and salinomycin on rumen fluid kinetics of Nellore steers.
A. J. C. Nuñez1, V. V. Almeida1, F. Pines1, I. E. Borges1, F. T. Mercado1, S. L. Silva1, P. R. Leme1, and J. C. M. Nogueira Filho1, 1Department of Animal Science-FZEA/USP, Pirassununga/SP, Brazil, 2Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil.

Effects of grain source and monensin level on site and extent of digestion in feedlot heifers.
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Effects of different doses of sodium monensin on rumen tissue histology of feedlot cattle.
A. L. Rigueiro1, A. C. J. Pinto1, M. C. Pereira1, D. H. Watanabe2, C. A. Oliveira2, T. V. Carrara2, D. D. Estevam2, D. P. Silva1, F. T. Pereira1, and D. D. Millen1,3, 1São Paulo State University (UNESP), Dracena campus, Dracena, Brazil, 2São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, 3Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.

Effects of different doses of sodium monensin on rumen DM intake and selective consumption by feedlot cattle.
D. H. Watanabe1,2, M. C. Pereira1, J. Silva1, T. V. Carrara2, A. L. Rigueiro2, L. A. Tomaz2, D. P. Silva1, D. V. Vicari1, A. C. J. Pinto1, D. D. Estevam2, M. D. Arrigoni1, and D. D. Millen1, 1São Paulo State University (UNESP), Dracena campus, Dracena, Brazil, 2São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, 3Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.
1738 T351 Feeding monensin or essential oils in high corn or byproduct finishing diets for nellore bulls.
L. J. Chagas*, M. G. Dos Santos, A. H. De Melo, J. R. R. Dórea, D. F. A. Costa, and F. A. P. Santos, 1University of São Paulo-ESALQ, Piracicaba, Brazil, 2University of São Paulo, Piracicaba, Brazil.

1739 T352 The effect of a citrus extract rich in flavonoids (Bioflavex) and its main components on rumen fermentation and microbial population under in vitro system using steers fed high concentrate diet as rumen liquor donors.
A. R. Seradj, J. Crespo*, M. Fondevila, and J. Balcells, 1University of Lleida, Lleida, Spain, 2Interquim S. A. (Ferrer Health Tech), Barcelona, Spain, 3University of Zaragoza, Zaragoza, Spain.

1740 T353 Use of a citrus flavonoids extract (Bioflavex) to improve rumen fermentation efficiency and performance in steers consuming high concentrate diets.
A. R. Seradj, B. A. Refat, A. Jimeno, J. Crespo*, and J. Balcells, 1University of Lleida, Lleida, Spain, 2University of Zaragoza, Zaragoza, Spain, 3Interquim S. A. (Ferrer Health Tech), Barcelona, Spain.

1741 T354 Effect of blend Enterococcus faecium plus Saccharomyces cerevisiae in different doses on intake and digestibility of steers in feedlot.

1742 T355 Effect of doses at Enterococcus faecium and Saccharomyces cerevisiae on ruminal parameters responses of feeder cattle.

1743 T356 Influence of soybean meal supplementation with tannins extracted from pistachio hulls on performance and feed efficiency of Holstein bulls.
A. Jolazadeh*, M. Dehghani Banadaky, and K. Rezayazdi, 1University of Tehran, Karaj, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

1744 T357 Depression of rumen ammonia and protozoal population of Holstein bulls fed soybean meal treated with tannins extracted from pistachio hulls.
A. Jolazadeh*, M. Dehghani Banadaky, and K. Rezayazdi, 1University of Tehran, Karaj, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

1745 T358 Could soybean meal supplementation with crude extract of pistachio hulls change the blood metabolites of Holstein bulls?
M. Dehghani Banadaky*, A. Jolazadeh, K. Rezayazdi, and N. Vahdani, 1Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 2University of Tehran, Karaj, Iran.

1746 T359 Effect of saikosaponin on rumen gas production, volatile fatty acid concentrations and microbial populations in vitro.

1747 T360 Methane production from dairy cows fed red clover- or corn silage-based diets supplemented with linseed oil.
C. Benchaar*, F. Hassanal, R. Gervais, and R. Martinneau, 1Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada, 2Université Laval, Québec, QC, Canada.

1748 T361 Replacing alfalfa with panicked-tick clover or sericea lespedeza in a dairy diet decreases ruminal methane but not total gas production.
H. D. Naumann*, S. A. Armstrong, M. A. Fonseca, B. D. Lambert, and L. O. Tedeschi, 1University of Missouri, Columbia, 2Prince Agri Products, Inc, Quincy, IL, 3Oregon State University, Corvallis, 4Texas A&M University, College Station, 5Texas A&M AgriLife Research, Stephenville, 6Tarleton State University, Stephenville, TX.

1749 T362 Effects of forage source and NDF concentration on methane emissions and milk production of dairy cows.

1750 T363 Changes of rumen methanogen diversity associated with different types of forage and protein in diets.

1751 T364 Effect of cashew nut shell liquid on lactation performance and rumen methane production in dairy cows.
A. F. Branco, F. Giallongo*, T. Frederick, H. Weeks, J. Ohe, and A. N. Hristov, 1Universidade Estadual de Maringá, Paraná, Brazil, 2Department of Animal Science, The Pennsylvania State University, University Park.
Effect of different doses of *Bacillus subtilis* natto on in vitro rumen fermentation parameters.
J. Li, Li, D. P. Bu, J. Q. Wang, P. Sun, and F. D. Li, Heilongjiang Bayi Agricultural University, Daqing, China,
State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.

An on-farm application of feed probiotics to increase total tract starch digestibility (TTSD) in high producing, lactating dairy cows.
W. L. Braman*, K. A. Bryan, and J. E. Kurtz, Chr. Hansen Animal Health and Nutrition, Milwaukee, WI.

Effect of feeding yeast (VC) on lactation performance of dairy cows fed diets differing in rumen fermentability.

Milk fatty acid profile in cows fed red clover or alfalfa based diets differing in rumen-degradable protein supply.
M. Leduc*, P. Y. Chouinard1, R. Gervais1, E. Baumann1, Y. Lebeuf1, and G. Tremblay2, 1Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, QC, Canada, Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, QC, Canada.

Use of virginiamycin and monensin sodium in diets of confined beef steers.
F. R. Camilo1, A. M. Mobiglia1, R. K. Grizotto2, J. A. Alves Neto3, M. Q. Manella4, F. D. D. Resende5, G. R. Siqueira5, and J. J. R. Fernandes5, 1Escola de Veterinária e Zootecnia da UFG, Goiânia, Brazil, 2APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, 3University of Estadual Paulista, Jaboticabal, Brazil, 4Phibro Animal Health Corporation, Guarulhos, Brazil, 5Universidade Federal de Goiás, Goiânia, Brazil.

Global network for the development of nutrition-related strategies for mitigation of methane and nitrous oxide emissions from ruminant livestock.
A. N. Hristov1, E. Kebreab2, Z. T. Yu3, C. Martin4, M. Eugène5, D. R. Yáñez –Ruiz6, K. J. Shingfield7, S. Ahvenjärvi6, P. O’Kiely8, C. K. Reynolds9, J. Dijkstra10, A. Bannink10, A. Schwarm11, and M. Kreuzer12, 1Department of Animal Science, The Pennsylvania State University, University Park, 2University of California-Davis, 3The Ohio State University, Columbus, 4INRA, Clermont-Ferrand, France, 5Estacion Experimental del Zaidin, CSIC, Granada, Spain, 6MTT Agrifood Research, Animal Production Research, Jokioinen, Finland, 7Animal and Grassland Research and Innovation Centre, Teagasc, Dunsany, Ireland, 8University of Reading, Reading, United Kingdom, 9Animal Nutrition Group, Wageningen University, Wageningen, Netherlands, 10Animal Nutrition, Wageningen UR Livestock Research, Lelystad, Netherlands, 11ETH Zurich, Institute of Agricultural Sciences, Zurich, Switzerland, 12ETH Zurich, Zurich, Switzerland.

Effect of oat grain variety on methane emissions from mature sheep.

Effect of acetate, propionate and ph on aqueous concentration and gaseous methane and hydrogen production in continuous culture.
S. Ghimire*, B. A. Wenner1, R. A. Kohn1, J. L. Firkins1, and M. D. Hanigan1, 1Virginia Polytechnic Institute and State University, Blacksburg, 2The Ohio State University, Columbus, 3University of Maryland, College Park.
1766 T379  Ruminal parameters of confined steers fed with diets containing virginiamycin and monensin sodium.  
F. R. Camilo1, A. M. Mobiglia1, G. F. Bert2, N. M. Jerônimo3, R. K. Grizotto3, M. Q. Manella4, F. D. D. Resende4, G. R. Siqueira4, and J. R. J. Fernandes5, Escola de Veterinária e Zootecnia da UFG, Goiânia, Brazil, 2Centro Universitário da Fundação Eduacional de Barretos-Unifeb, Barretos, Brazil, 3APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, 4Phibro Animal Health Corporation, Guarulhos, Brazil, 5Universidade Federal de Goiás, Goiânia, Brazil.

1767 T380  Ruminal parameters of young Nellore bulls in a feedlot fed Yea-Sacc®417 live yeast, monensin and their combination.  
J. M. B. Benatti1, N. M. Geronimo2, J. A. Alves Neto1, J. M. de Oliveira3, A. D. Moreira1, C. L. Francisco4, G. R. Siqueira5, and F. D. D. Resende5, Universidade Estadual Paulista, Jaboticabal, Brazil, 2UNIFEB, Barretos, Brazil, 3APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, 4Universidade Estadual Paulista-FMVZ, Botucatu, Brazil.
SYMPOSIA AND ORAL SESSIONS

Animal Health Symposium II-Optimizing disease response modeling
Chair: Thomas R. Overton, Department of Animal Science, Cornell University
Sponsor: Elanco Animal Health

2502

9:30 AM Welcoming Remarks

9:35 AM 76 Understanding animal-to-animal variation in disease management.
D. E. Kerr*, University of Vermont, Burlington.

10:20 AM 77 Can the genetic selection for improved immune response be tailored to expand the efficacy of disease management interventions.
B. Mallard*, Department of Pathobiology, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada.

11:05 AM Break

11:10 AM 78 Selecting pharmacological interventions through rapid screening motifs and proper cell models.
E. Zudaire*, NIH-NCI, Bethesda, MD.

11:55 AM 79 Managing animal health from an aquaculture perspective.
C. A. Shoemaker*, B. R. LaFrentz, D. Xu, and D. Zhang, USDA-ARS, Aquatic Animal Health Research Unit, Auburn, AL.

ARPAS Symposium: Customer/Consumer Confidence In The Livestock Industry-Ethics
Chair: Jack E. Garrett, QualiTech, Inc.
Sponsor: ARPAS

2102B

9:30 AM 102 Perspectives on business ethics in a new-age feed industry.
L. D. Bunting*, ADM Alliance Nutrition, Lubbock, TX.

10:10 AM 103 Customer/consumer confidence in the livestock industry – Ethics: University perspective.
M. L. Galyean*, Texas Tech University, Lubbock.

10:50 AM 104 Veterinary perspective.
C. D. Ashworth*, Elanco Dairy Business, Fort Smith, AR.

11:30 AM 105 Regulatory definitions, processes, and functionality assessment for animal food.
M. G. Alewynse* and S. A. Benz*1, 1Center for Veterinary Medicine, Olney, MD, 2Center for Veterinary Medicine, FDA, Woodbine, MD.

Beef Species: Cow-calf
Chair: Patrick J. Gunn, Iowa State University

2104B

9:30 AM 126 Changes in body composition during winter gestation of mature beef cows grazing different herbage allowances of native pastures.
A. Casal1, A. L. Astessiano Dickson1, A. I. Trujillo1, P. Soca2, A. C. Espasandin2, and M. Carriquiry1, 1Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Departamento de Producción Animal y Pasturas-Facultad de Agronomía-UdelaR, Paysandú, Uruguay.

9:45 AM 127 Prepartum supplement level and age of weaning: I. Effects on pre- and postpartum beef cow performance and calf performance through weaning.

10:00 AM 128 Prepartum supplement level and age of weaning: II. Effects of developmental programming on performance and carcass composition of steer progeny.
10:15 AM  129  Efficiency and performance of primiparous Angus cows raised in a range system.  
J. S. Lemes¹, C. C. Brauner², R. Z. Vaz¹, and M. A. Pimentel¹, ¹Universidade Federal de Pelotas, Pelotas, Brazil, ²Federal University of Pelotas, Pelotas, Brazil.

10:30 AM  130  Effect of an injectable trace mineral on reproductive performance of beef cows grazing irrigated pasture.  
C. J. Brasche¹, J. B. Hall¹, and M. E. Drewnoski¹, ¹University of Idaho, Moscow, ²University of Idaho, Carmen.

10:45 AM  131  Effect of injectable trace mineral supplementation in yearling bulls on serum and semen trace mineral levels and reproductive parameters.  
A. A. Kirchhoff² and K. E. Fike, Kansas State University, Manhattan.

11:00 AM  132  Effect of an injection of a fat soluble vitamin mix (E, A, and D) to newborn beef calves on markers of cell oxidative damage and calf performance.  
W. A. Sutton¹ and M. E. Drewnoski, University of Idaho, Moscow.

11:15 AM  133  Relationships between maintenance energy EPD and performance measures of progeny from Red Angus sires divergent for maintenance energy EPD.  
C. M. Welch¹, S. E. Speidel², D. H. Crews¹, J. K. Ahola¹, J. B. Hall¹, W. Price¹, and R. A. Hill¹, ¹University of Idaho, Moscow, ²Colorado State University, Department of Animal Sciences, Fort Collins, ³Colorado State University, Fort Collins, ⁴University of Idaho, Carmen.

11:30 AM  134  Effects of breeding system of origin (natural service or artificial insemination) on growth, attainment of puberty, and pregnancy rates in crossbred beef heifers.  
M. R. Schook², P. L. Steichen¹, V. R. G. Mercadante², G. C. Lamb³, B. W. Neville³, and C. R. Dahlen¹, ¹North Dakota State University, Fargo, ²University of Florida, Marianna, ³North Dakota State University, Streeter.

11:45 AM  135  Simulation and economic analysis of beef cattle natural service and induced twinning via embryo transfer following AI breeding and two calf management systems.  
D. G. Aherin¹, P. J. Ebert, J. R. Shearer, R. L. Weaber, J. M. Bormann, D. W. Moser, and M. D. MacNeil, Kansas State University, Manhattan.

12:00 PM  136  The indirect effects of horn flies and sire breed on calf preweaning and postweaning performance traits.  
A. R. Mays¹, M. A. Brown², and C. F. Rosenkrans³, ¹Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR, ²ARS, USDA, Grazinglands Research Laboratory, El Reno, OK, ³University of Arkansas, Fayetteville.

Companion Animals: Companion Animal Nutrition and Pet Food Processing
Chair: George C. Fahey, University of Illinois at Urbana-Champaign
Sponsor: ASAS Foundation: Fahey Appreciation Club
3501B

9:45 AM  180  Indirect calorimetry, real-time interstitial glucose monitoring and blood sampling to determine effects of low, medium and high glycemic index cat foods.  
K. D. Berendt¹, A. K. Shoveller², and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Procter & Gamble Pet Care, Mason, OH.

10:00 AM  182  The effect of extrusion and elevated storage temperatures on vitamin retention in pet food.  
A. K. Mooney¹, Kansas State University, Manhattan.

10:15 AM  183  Effects of processing on water soluble B-vitamins in a canned cat diet.  
S. DeNoya¹, G. Aldrich, and C. K. Jones, Kansas State University, Manhattan.

10:30 AM  Break

10:45 AM  184  Feeding frequency and dietary water content affect voluntary physical activity in young lean adult female cats.  
M. R. C. de Godoy¹, K. Ochi², L. F. de Oliveira Mateus³, A. C. C. de Justino¹, and K. S. Swanson¹,³, ¹Department of Animal Sciences, University of Illinois at Urbana-Champaign, ²Nippon Pet Foods Co. Ltd, Tokyo, Japan, ³Department of Animal Sciences University of São Paulo State, Jaboticabal, Brazil, ³Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, ³Department of Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign.

11:00 AM  185  Effects of graded dietary resistant starch concentrations on apparent total tract macronutrient digestibility, fecal characteristics, and fecal fermentative end-products in healthy adult dogs.  
A. N. Beloshapka¹ and K. S. Swanson, Department of Animal Sciences, University of Illinois at Urbana-Champaign.

11:15 AM  186  Evaluation of common analysis methods for oxidation in rendered protein meals used to produce pet foods.  
M. Gray¹, G. Aldrich, and C. K. Jones, Kansas State University, Manhattan.
Broken beans (Phaseolus vulgaris) use on extruded diets for cats.  
B. P. Neto¹, F. C. Sa², N. Musco³, A. P. Maria⁴, B. Agy⁵, B. A. Kamimura⁶, R. S. Vasconcellos⁷, and A. C. Carciofi⁸, ¹Universidade Estadual de Maringa, Maringa, Brazil, ²Sao Paulo State University, Jaboticabal, Brazil, ³Università degli Studi di Napoli Federico II, Napoli, Italy, ⁴Universidade de Campinas, Campinas, Brazil, ⁷Sao Paulo State University-UNESP, Jaboticabal, Brazil.

Comparative Gut Physiology Symposium: Session I  
Chairs: David M. Bravo, Pancosma SA, Thomas B. McFadden, University of Missouri and John Furness, University of Melbourne  
Sponsor: Pancosma SA  
2103A

9:30 AM  Introductory Remarks

9:45 AM  Integrated responses to feeding, comparative aspects.  
J. Furness*, University of Melbourne, Parkville, Australia.

10:15 AM  Expression of nutrient transporter mRNA in the jejunum of high and low efficiency steers.  
H. C. Cunningham¹, Z. T. L. Gray¹, S. I. Paisley¹, K. J. Austin¹, K. M. Cammack¹, and A. M. Meyer², ¹Department of Animal Science, University of Wyoming, Laramie, ²Division of Animal Sciences, University of Missouri, Columbia.

10:30 AM  Comparative physiology of glucagon-like peptide 2-Implications and applications for production and health of ruminants.  
E. E. Connor¹, M. P. Walker², C. M. Evock-Clover², T. H. Elsasser², and S. Kahn², ¹USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ²USDA-ARS, BFGL, Beltsville, MD, ³USDA, Agricultural Research Service, Beltsville, MD.

11:00 AM  Differential subcellular and cellular storage of glp-1 and ppy, and its implications.  
J. Furness¹, H. J. Cho¹, S. Kosari¹, and D. M. Bravo², ¹University of Melbourne, Parkville, Australia, ²Pancosma SA, Geneva, Switzerland.

11:15 AM  The role of the microbiome in gut immune system development in newborn and mature cattle.  
P. J. Griebel¹, N. Malmuthuge², G. Liang², M. Zhou², and L. L. Guan², ¹Vaccine, and Infectious Disease Organization, University of Saskatchewan, Saskatoon, SK, Canada, ²University of Alberta, Edmonton, AB, Canada.

11:45 AM  The effects of intentionally-induced leaky gut on metabolism and production in lactating Holstein dairy cows.  
S. K. Stoakes¹, M. Abuajamieh¹, D. B. Snider¹, M. V. Sanz Fernandez¹, J. S. Johnson¹, P. J. Gorden¹, N. K. Gaehler¹, H. B. Green¹, K. M. Schoenberg¹, and L. H. Baumgard¹, ¹Iowa State University, Ames, ²Elanco Animal Health, Indianapolis, IN.
Dairy Foods Symposium:  
Protein Functionality In Cheese Systems: Natural, Process Cheese And Analogs  
Chair: Rodrigo Roesch, Schreiber Foods  
3501C

9:30 AM  248  
Commercial and functional considerations when formulating foods with dairy proteins.  
T. McCarthy*, Schreiber Foods, Green Bay, WI.

9:50 AM  249  
A model for the formation of the aggregated network in process cheese products that can be used to predict functional properties.  
L. Metzger*, Midwest Dairy Foods Research Center, South Dakota State University, Brookings.

10:10 AM  250  
Autocatalytic multistage gel formation reaction in dairy based systems in relation to compositional factors.  
U. Kulozik*, Technische Universität München, Freising-Weiherstephan, Germany.

11:30 AM  251  
Protein functionality in processed cheese – Fundamental principles and practical observations.  
D. C. Reid*, Fonterra Research and Development Centre, Palmerston North, New Zealand.

Extension Education  
Chair: Amy E. Radunz, University of Wisconsin-River Falls  
Sponsor: AnimalSmart.org

2505B

9:30 AM  286  
Developing, marketing and branding mobile apps for the horse industry.  
K. L. Martinson*, R. J. Coleman1, and M. E. McCue1, 1University of Minnesota, Saint Paul, 2University of Kentucky, Lexington.

9:45 AM  287  
Calving management education program for dairy and beef workers and producers.  
L. G. D. Mendonça*, L. Hollis1, J. M. Zeller2, and J. P. Harner2, 1Department of Animal Sciences and Industry, Kansas State University, Manhattan, 2Department of Biological and Agricultural Engineering, Kansas State University, Manhattan.

10:00 AM  288  
Premium beef semen on dairy calculator.  
G. Lopes*1 and V. Cabrera1, 1Accelerated Genetics, Baraboo, WI, 2University of Wisconsin-Madison.

10:15 AM  289  
A decision support tool to estimate the economic potential of SCC hot sheet data.  
D. T. Nolan* and J. M. Bewley, University of Kentucky, Lexington.

10:30 AM  290  
The Kentucky master stocker program.  
J. W. Lehmkuhler1, W. R. Burris2, S. R. Smith, Jr1, G. Halich1, K. Burdine1, M. Arnold1, S. F. Higgins1, A. Gumbert1, and K. Laurent1, 1University of Kentucky, Lexington, 2University of Kentucky, Princeton.

10:45 AM  291  
The North Dakota Beef Industry Survey; enterprise management, risk factors, and risk management strategies of beef cattle operations.  
D. N. Black*, J. C. Hadrich1, G. P. Lardy1, and C. R. Dahlen1, 1North Dakota State University, Fargo, 2Colorado State University, Fort Collins.

Forages And Pastures Symposium: Use Of Marginal Lands And Fibrous Byproducts In Efficient Beef And Dairy Production Systems  
Chair: Jeff Lehmkuhler, University of Kentucky  
2104A

9:30 AM  313  
Improving efficiency of production in pasture/range based beef and dairy systems.  
J. T. Mulliniks*, A. G. Rius2, M. A. Edwards1, K. B. Brantley1, S. R. Edwards1, and R. L. Nave1, 1University of Tennessee, Crossville, 2Present address: University of Tennessee, Knoxville, 3University of Tennessee, Knoxville.

10:10 AM  314  
Forage breeding programs aimed at increasing productivity of marginal lands.  
M. Casler*, USDA-ARS, Madison, WI.
10:50 AM  Break

11:10 AM  315  Improving soil health and productivity on marginal lands using managed grazing livestock.
R. R. James* and J. Bisinger, Iowa State University, Ames.

11:50 AM  316  Optimizing the use of fibrous residues in beef and dairy diets.
J. C. MacDonald*, G. E. Erickson, P. J. Kononoff, and T. J. Klopfenstein, University of Nebraska-Lincoln.

International Animal Agriculture: Internation Animal Production
Chair: Fernando R. Valdez, Kemin Industries, Inc.
3501F

9:30 AM  396  Effect of high nutrient density diets on growth performance, feed efficiency, age at puberty and feeding economics in Nili-Ravi buffalo heifers.
M. Abdullah*, K. Javed, Z. M. Iqbal, M. Saadullah, M. A. Jabbar, and A. U. Haque, 1University of Veterinary and Animal Sciences, Lahore, Pakistan, 2Buffalo Research Institute, Fattoki, Pakistan.

9:45 AM  397  Environment concerns and waste management strategies of pig production in China.
J. Peng*, L. Liu, and L. Huang, 1Jiangxi Agricultural University, Nanchang, China, 2Jiangxi Department of Agriculture, Nanchang, China.

10:00 AM  398  Identification of barriers of Bahamian agriculture production: An assessment of stakeholder needs.
S. J. Trojan*, M. T. Brashears, S. Morales, A. Echeverry, and M. Brashears, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Department of Agriculture Education and Communications, Texas Tech University, Lubbock.

10:15 AM  399  Diet-induced shifts in the rumen microbiome of Mehshana Buffalo (Bubalus bubalis).
D. W. Pitta*, S. Kumar, B. Veicharelli, N. Parmar, and C. Joshi, 1University of Pennsylvania, Kennett Square, 2Anand Agriculture University, Anand, India.

Nonruminant Nutrition Symposium: Functional Amino Acids:
New Paradigm Shifts in Understanding Animal Protein Nutrition
Chair: Guoyao Wu, Texas A&M University
Sponsor: Ajinomoto Heartland, Inc.
2504

9:30 AM  Welcoming Remarks

9:35 AM  458  Amino acid signaling for embryonic and fetal development.
G. Wu*, F. Bazer, R. Burghardt, G. Johnson, M. C. Satterfield, and X. Wang, Texas A&M University, College Station.

10:10 AM  459  Leucine: A potent nutrient signal for protein synthesis in neonates.
T. A. Davis*, M. L. Fiorotto, A. Suryawan, and D. Columbus, 1USDA/ARS-Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX, 2Baylor College of Medicine, CNRC, Houston, TX.

10:45 AM  460  Tryptophan: Functions beyond protein synthesis.
S. W. Kim* and Y. Shen, North Carolina State University, Raleigh.

11:20 AM  461  New insights into sulfur amino acid function in gut health and disease.
D. G. Burdin, USDA-ARS Children's Nutrition Research Center, Houston, TX.

11:55 AM  462  Glutamate and glutamine: Nonessential or essential amino acid.
M. Watford*, Rutgers, New Brunswick, NJ.

Physiology And Endocrinology:
Interrelationships Between Environmental, Metabolic And Physiological Processes I
Chair: Brian Keith Whitlock, Auburn University
2105

9:30 AM  Insulin sensitivity of the lipid metabolism of precalving dairy cows across a range of BCS.
J. De Koster* and G. Opsomer, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium.
9:45 AM 499  
Effect of ractopamine hydrochloride and zilpaterol hydrochloride on the electrocardiogram and blood lactate in finishing steers.

D. A. Frese*1, C. Reinhardt1, S. J. Bartle1, D. N. Rethorst1, B. S. Bawa1, J. D. Thomason2, G. H. Loneragan2, and D. Thomson1, 1Kansas State University, Manhattan, 2Texas Tech University, Lubbock.

10:00 AM 500  
Expansion and evaluation of a dynamic, mechanistic model of nutritional and reproductive processes in dairy cattle.

J. P. McNamara*1 and S. L. Shields2, 1Washington State University, Pullman, 2Elanco Inc, Pasco, WA.

10:15 AM 501  
Metabolic, paracellular permeability, and immune gene expression in ruminal epithelium during the transition period in dairy cattle.

A. Minuti1, S. Algarni2, P. Cardoso3, E. Trevisi1, and J. J. Loor4, 1Università Cattolica del Sacro Cuore, Piacenza, Italy, 2University of Illinois, Urbana-Champaign.

10:30 AM 502  
Energy expenditure is lower in efficient compared to inefficient lactating dairy cattle.

K. DiGiacomo5, L. C. Maret6, W. J. Wiles7, B. J. Hayes8, F. R. Dunseh9, and B. J. Leury5, 1The University of Melbourne, Parkville, Australia, 2The Department of Environment and Primary Industries, Victoria, Ellinbank, Australia, 3The Department of Environment and Primary Industries, Bundaburga, Australia.

10:45 AM 503  
Supplementation of OmniGen-AF during the receiving period modulates the metabolic response to a lipopolysaccharide challenge in feedlot steers.

N. C. Burdick Sanchez1, J. O. Buntyn2, J. A. Carroll3, T. Wistuba4, K. DeHaan5, S. E. Sieren6, S. J. Jones3, and T. B. Schmidt7, 1USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 2Department of Animal Science, University of Nebraska-Lincoln, 3Prince Agri Products Inc, Quincy, IL, 4Prince AgriProducts Inc., Quincy, IL, 5University of Nebraska-Lincoln.

11:00 AM 504  
Supplementation of Saccharomyces cerevisiae modulates the metabolic response to a lipopolysaccharide challenge in feedlot steers.

T. B. Schmidt7, J. O. Buntyn2, N. C. Burdick Sanchez1, E. Chevaux4, K. Barling2, S. E. Sieren6, S. J. Jones3, and J. A. Carroll3, 1University of Nebraska-Lincoln, 2Department of Animal Science, University of Nebraska-Lincoln, 3USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 4Lallemand Animal Nutrition, Milwaukee, WI, 5Lallemand Animal Nutrition, Iola, TX.

11:15 AM 505  
Circulating amino acids and biomarkers of metabolism and inflammation during the peripartal period in cows with different liver functionality index (LFI).

Z. Zhou1, J. J. Loor2, F. Piccioli-Capelli3, G. E. Lobley4, and E. Trevisi2, 1University of Illinois at Urbana-Champaign, 2Università Cattolica del Sacro Cuore, Piacenza, Italy, 3Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, United Kingdom.

11:30 AM 506  
Peripheral leukocytic responses to ultraviolet radiation in pre-pubertal rabbits fed a turmeric-supplemented diet.

V. A. Togun1, Ladoke Akintola University of Technology, Ogbomosho, Nigeria.

11:45 AM 507  
Regulation of adipogenesis and key adipogenic gene expression by retinoic acid in 3T3-L1 preadipocytes.

S. Ji1, M. Da2, and R. A. Hill3, 1University of Idaho, Moscow, 2Washington State University, Pullman.

12:00 PM 508  
Cholesterol metabolism, transport and hepatic regulation during negative energy balance in early and mid-lactation in dairy cows.

J. J. Gross1, E. C. Kessler1, C. Albrecht2, and R. M. Bruckmaier3, 1Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, 2Institute of Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland, 3Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

12:15 PM 1963  
Non-targeted plasma metabolomic profile at early and late lactation in parity 1 dams with diverging body composition at weaning.

L. A. Rempel* and J. R. Miles, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

Ruminant Nutrition IV: Lipids and Fats

Chair: Jong-Su Eun, Utah State University

2103B

9:30 AM 631  
Effect of sunflower seed or sunflower oil as diet supplement on milk production, milk composition and milk fatty acid profile in lactating goats.

T. A. Morsy1, S. Khalifi2, O. Matloup3, and A. Abu Elella4, 1National Research Center, Cairo, Egypt, 2Animal Production Research Institute, Agriculture Research Center, Cairo, Egypt.

9:45 AM 632  
The relationship between human daily requirements of CLA, the potential enrichment of milk through cow’s nutrition and daily human consumption.

A. Siurana* and S. Calsamiglia, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain.
Tolerance study of rumen protected conjugated linoleic acid on dairy cows during the transition and early lactation period.
Z. H. Wei1, J. S. Shen1, J. X. Liu2, Y. J. Zhang1, and Y. Jiang2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China, 3BASF (China) Company Ltd., Shanghai, China.

Effect of different dietary fat supplements on milk odd and branched chain fatty acids in dairy cows.
E. Baumann1, P. Y. Chouinard, J. Lebeuf, and R. Gervais, Université Laval, Québec, QC, Canada.

Feeding incremental levels of ground flaxseed increased n-3 fatty acids and conjugated linoleic acids in organically-managed Jersey cows.
A. F. Brito1, J. Kraft2, T. L. Resende1, A. B. D. Pereira1, K. J. Soder1, D. H. Woitschach1, and R. B. Reis1, 1University of New Hampshire, Durham, NH, 2Department of Animal Science, University of Vermont, Burlington, 3Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 4USDA-Agricultural Research Service, University Park, PA, 5Universidade Federal de Viçosa, Viçosa, Brazil.

Lactational responses to palmitic acid supplementation when substituted for soyhulls or corn grain.

Interaction between culture pH and corn oil concentration on NDF digestibility and biohydrogenation of unsaturated fatty acids in batch culture.
Y. Sun1, M. S. Allen, and A. L. Lock, Michigan State University, East Lansing.

Feed intake and production responses of lactating dairy cows when commercially available fat supplements are included in diets: A meta-analysis.
J. P. Boerman* and A. L. Lock, Michigan State University, East Lansing.

Effect of dietary fat source on milk production and milk composition in early lactation cows in a continuous trial design.
G. Ma1, J. H. Harrison2, E. Block3, and L. VanWieringen4, 1Washington State University, Pullman, 2Washington State University, Puyallup, 3Church and Dwight Animal Nutrition, Ewing, NJ, 4Washington State University, Sunnyside.

Farm survey: Milk fatty acid composition measured by mid-infrared.
D. M. Barbano1,2, C. Melilli1,2, and T. R. Overton1, 1Cornell University, Ithaca, NY, 2Northeast Dairy Foods Research Center, Ithaca, NY, 3Department of Animal Science, Cornell University, Ithaca, NY.

The effects of high rates protected fat in rations of high yielding dairy cows on production efficiency and digestibility.
U. Moallem1, E. Frank1,2, M. Zachut1, L. Livshitz1, and A. Arieli2, 1Institute of Animal Science, Volcani Center, Bet Dagan, Israel, 2Faculty of Agriculture, Hebrew University, Rehovot, Israel.

Long chain fatty acids alter expression of genes involved in lipid metabolism in goat mammary epithelial cells partly through PPARγ.
W. Zhao1,2, M. Bionaz3, J. Luo4, A. Hossen3, P. Dove5, and J. J. Loor2, 1Northwest A & F University, Yangling, China, 2University of Illinois at Urbana-Champaign, 3Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, 4University of Bonn, Bonn, Germany, 5University of Ljubljana, Domzale, Slovenia.

Ruminant Nutrition V: Methane Beef/Dairy
Chair: Shawn Archibeque, Colorado State University
2103C

Methane emissions from lactating and dry dairy cows fed diets differing in forage source and NDF concentration.
K. J. Hammond2, D. J. Humphries, A. C. Crompton, P. Kirton, C. Green, and C. K. Reynolds, University of Reading, Reading, United Kingdom.

Effects of cysteamine on ruminal fermentation parameters and methane production of water buffalo by in vitro gas production method.
C. Zou1, Y. L. Huang2, X. Liang2, S. J. Wei2, B. Lin1, C. J. Yang2, and X. W. Liang2, 1Buffalo Research Institute, The Chinese Academy of Agricultural Sciences, Nanning, China, 2Buffalo Research Institute, Chinese Academy of Agricultural Sciences, Nanning, China.

Effect of lowered pH and increased passage rate on methane and volatile fatty acid production from continuous culture.
B. A. Wenner1, F. Batistel1, J. D. Souza1, T. J. Hackmann1, and J. L. Firkins1, 1The Ohio State University, Columbus, 2University of Sao Paulo, Piracicaba, Brazil, 3University of Sao Paulo, Piracicaba, Brazil, 4University of Florida, Gainesville.

Effect of encapsulated nitrate on nitrogen utilization and enteric methane emissions in beef cattle.
C. Lee1, R. C. Araujo1, K. M. Koenig4, and K. A. Beauchemin1, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2GRASP Ind. & Com. LTDA, Curitiba, Brazil, 3Overmelen, Germany, 4Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.
Correspondence between in vitro and in vivo rumen methane production obtained with different starch sources and starch levels.
B. Hatew1, J. W. Cone1, W. F. Pellikaan1, S. C. Podesta1, W. H. Hendriks1, A. Bannink2, and J. Dijkstra1, 1Animal Nutrition Group, Wageningen University, Wageningen, Netherlands, 2Wageningen UR Livestock Research, Wageningen University and Research Centre, Lelystad, Netherlands.

The potential benefit of corn dried distillers’ grain (co)products (DDG) in the mitigation of methane production in cattle: An in vivo analysis.
M. A. Fonseca1, L. E. L. Cavalcanti2, J. G. L. Regadas Filho1, T. R. Callaway4, G. E. Carstens1, T. A. Wickershams1, and L. O. Tedeschi1, 1Texas A&M University, College Station, 2Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 3Universidade Federal de Víciosa, Vícosa, Brazil, 4USDA-ARS, College Station, TX.

Effects of including viginamycin in feedlot diets containing monensin under commercial conditions in Mexico.
M. Gorocica1, A. Gonzalez-Asif2, and S. C. Loerch3, 1Phibro Animal Health, Merida, Mexico, 2SuKarne Agroindustrial, Culiacan, Mexico, 3The Ohio State University, Wooster.

Effects of extracts of Perilla frutescens (seeds) on in vitro rumen fermentation, methanogenesis and microbial population.
M. Liu1, J. X. Liu2, and J. K. Wang1, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China.

Effect of tannin or inoculum as silage additives on silage quality and rumen fermentation kinetics.
V. J. Taha1, J. A. Huntington1, R. G. Wilkinson1, and D. A. Davies2, 1Harper Adams University, Newport, United Kingdom, 2Silage Solutions, Aberystwyth, United Kingdom.

Improving the performance of dairy cattle with a xylanase-rich exogenous enzyme preparation.
J. J. Romero1, E. G. Macias1, Z. Ma1, R. M. Martins1, B. Y. Coy1, F. M. Silva1, D. H. Garbuio1, I. A. Brody1, C. L. Curry1, K. J. Mills1, M. G. Zenobi1, C. R. Staples1, and A. T. Adesogan1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Zootecnia, Universidad Nacional Agraria La Molina, Lima, Peru, 3Department of Zootecnia, Universidade Federal de Viçosa, Minas Gerais, Brazil, 4Univesidade Estadual Paulista, São Paulo, Brazil.

Effects of feeding chitosan on nutrient digestibility in beef heifers.

Effect of Saccharomyces cerevisiae fermentation product (XP) on energetic efficiency of diet fed to high producing dairy cows during the hot season.

Teaching/Undergraduate and Graduate Education

Chair: Peter K. Camfield, Oklahoma Panhandle State University

The effects of learning communities and pro-active advising on performance of first semester students.

Changes in the perceptions of students involved in a traditional meat science course.
M. J. Anderson1, J. L. Lucia, K. J. Stutts, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

Student and evaluator perceptions of an oral equine “Speed Selling” exercise.
J. S. McCann1, Virginia Tech, Blacksburg.

Efficacy of iCEV incorporation into a general animal science undergraduate classroom.
R. J. Rathmann1 and R. A. Ritz, Texas Tech University, Lubbock.

Impact of the male on meat production: A case scenario in swine.
J. J. Parrish1 and J. L. Susko-Parrish, University of Wisconsin-Madison.

Incorporating writing-intensive assignments in an animal science production course.
S. J. Trojan1, C. Meyers2, and N. Hudson2, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Texas Tech University, Lubbock.

Improved student achievement through gamification and the flipped classroom.

Impact of student engagement activities on student performance on a short assessment.
O. N. Genthcr1 and S. L. Hansen, Iowa State University, Ames.
11:30 AM  770  The impact of implementing interactive exam review strategies on student satisfaction and exam scores.
D. T. Masser, J. M. Falk, and A. Ahmadzadeh*, University of Idaho, Moscow.

11:45 AM  771  Integrating teaching and extension: Swine production.
H. M. Zaleski*, University of Hawaii at Manoa, Honolulu.

12:00 PM  772  Teaching companion animal management: Perspective from a livestock nutritionist.
J. L. Wahrmund*, Texas A&M University-Commerce.

12:15 PM  773  A comparative veterinary course for pre-veterinary students.
A. P. Fidler*, University of Arkansas, Fayetteville.

ADSA Foundation Symposium:
Meeting the Present and Future Demand for Employees with a PhD in Dairy Science
Chair: Mike Socha, Zinpro Corporation
Sponsor: ADSA Foundation
2102A

2:00 PM  Welcoming Remarks

2:10 PM  1  Current problems with funding PhD programs.
L. H. Baumgard* and M. G. Hogberg, Iowa State University, Ames.

2:25 PM  2  Current situation for finding qualified people with a PhD; an industry perspective, dairy production.
W. C. Weldon*, Elanco Animal Health, Greenfield, IN.

3:00 PM  3  Current Situation for finding qualified people with a PhD; an industry perspective, dairy foods.
C. Allen*, Kraft Foods, Glenview, IL.

3:25 PM  4  Current situation for finding qualified people with PhDs; an academic perspective.
V. V. Mistry*, South Dakota State University, Brookings.

3:50 PM  5  Short term employment opportunities in industry for people pursuing graduate degrees.
C. Johnson*, Land O’Lakes, Inc., Arden Hills, MN.

4:15 PM  Discussion

4:45 PM  Reception

Animal Behavior & Well-Being I
Chair: Heather M. Dann, William H. Miner Agricultural Research Institute
2505B

2:00 PM  32  Associations between bovine respiratory disease complex and the probability and latency of group-reared neonatal dairy calves to approach a novel object or stationary person.
M. C. Cramer* and A. L. Stanton, University of Wisconsin-Madison.

2:15 PM  33  Effect of concentrate feeder design on feeding behavior in Holstein bulls fed high-concentrate diets.
M. Verdu*, A. Bach*, and M. Devant1, IRTA-Department Ruminant Production, Caldes Montbui-Barcelona, Spain, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 1IRTADepartment of Ruminant Production, Caldes De Montbui, Spain.

2:30 PM  34  The effect of respiratory disease on lying behavior in Holstein dairy calves.
T. L. Ollivett1, K. E. Leslie1, D. V. Nydam1, T. F. Duffield1, G. Zobel1, J. Hewson1, and D. F. Kelton1, 1University of Guelph, Guelph, ON, Canada, 2Cornell University, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, 3University of British Columbia, Vancouver, BC, Canada, 4Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada.

2:45 PM  35  Freestall housing during the dry period altered lying time but did not affect milk quality or energy balance compared to pasture.
R. A. Black2, H. M. Dann2, and P. D. Krawczel1, 1University of Tennessee, Knoxville, 2William H. Miner Agricultural Research Institute, Chazy, NY.
Health of dairy calves when using automated feeders in the Midwest USA.
1University of Minnesota, Saint Paul, 2University of Minnesota Southern Research and Outreach Center, Waseca, MN,
3University of British Columbia, Agassiz, BC, Canada.

Effect of heat retaining covers on calf hutch temperature during cold weather.
J. A. Haberman*, T. H. Friend, and W. Binton, Texas A&M University, College Station.

Modeling the effect of reflective film calf hutch covers on reducing heat loss.
W. Binton* and T. H. Friend, Texas A&M University, College Station.

Animal Health II: Host – Microbial Interactions: Detection and Intervention
Chair: Charles C. Elrod, Vi-COR, Inc.

Alterations in the response of pigs to Salmonella Typhimurium when provided Enterobacter cloacae.
1Mississippi State University, Mississippi State, 2USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 3University of Nebraska-Lincoln.

Adhesion of Escherichia coli in piglets and association of phenotypes to known candidate genes in South African breeds.
N. S. Chaora*, Agricultural Research Council, Pretoria, South Africa.

Effect of metaphylaxis on production responses and antimicrobial usage in high-risk steers.
A. B. Word*, T. A. Wickersham, G. Mays, L. A. Trubenbach, and J. E. Sawyer, 1Texas A&M University, College Station, 2Texas AgriLife Research, College Station.

PR-39 ameliorates Salmonella Typhimurium-induced intestinal epithelial barrier dysfunction.
X. Xi*, Institute of Feed Science, Zhejiang University, HangZhou, China.

Quantification of microbial populations in organic and inorganic dairy cattle bedding materials.

Prevalence of bovine mastitis pathogens in bulk tank milk.
Y.-L. Bi*, E. J. Cao, W. Sun, Y. Qin, and S.-L. Li*, 1State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China, 2Hirpa, Avda. La Selva, No.135 17170-Amer (Girona) Spain, Girona, Spain.

Modulation of the acute phase response in feedlot steers supplemented with Saccharomyces cerevisiae.
J. O. Buntyn*, N. C. Burdick Sanchez, J. A. Carroll, E. Chevaux, K. Barling, S. E. Sieren, S. J. Jones, and T. B. Schmidt,
1Department of Animal Science, University of Nebraska-Lincoln, 2USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 3Lallemand Animal Nutrition, Milwaukee, WI, 4Lallemand Animal Nutrition, Iola, TX, 5University of Nebraska-Lincoln.

Performance evaluation of calves with diarrhea in different systems supplemented with yeast culture plus enzymatically hydrolyzed yeast cell wall.

Variations in the survival of Listeria monocytogenes to grow in bile from porcine gallbladders.
J. G. Wilson*, S. J. White, and J. R. Donaldson, Mississippi State University, Mississippi State.

Yeast probiotics vary in their potential to bind to gram positive or gram negative bacteria.
G. Posadas*, J. A. Carroll, J. R. Corley, A. Lawrence, and J. R. Donaldson, Mississippi State University, Mississippi State.

An analysis of Giardia lamblia and Cryptosporidium parvum in bucket Calves at The University of Findlay’s Animal Science Barn.
Beef Cattle Reproduction Symposium: Rebuilding the U.S. Cowherd: Rethinking the Way Industry Selects and Develops Replacements

Chair: David J. Patterson, University of Missouri

2:00 PM  112  Rebuilding the U.S. cowherd: Rethinking the way industry selects and develops replacements.  
D. S. Brown* and D. J. Patterson, University of Missouri, Columbia.

2:45 PM  113  Physiology and endocrinology of puberty in Heifers.  

3:15 PM  114  Beef heifer replacement considerations related to breed and biological type.  
A. L. Van Eenennaam*, University of California-Davis.

3:45 PM  115  Nutritional development and the target weight debate.  
J. B. Hall*, University of Idaho, Carmen.

4:15 PM  116  Management strategies for adding value to replacement beef heifers: A working model-the Missouri Show-Me-Select Replacement Heifer Program.  

Beef Species: Stocker and Feedlot

Chair: Judson T. Vasconcelos, Merck & Co

2:00 PM  137  Effect of crude protein levels and metaphylaxis on growth and performance of newly received stocker calves.  

2:15 PM  138  Effect of growth rate and placement weight of stocker-feeder cattle on subsequent finishing performance and carcass characteristics: A meta-analysis.  
P. A. Lancaster*, C. R. Krehbiel, and G. W. Horn, Oklahoma State University, Stillwater.

2:30 PM  139  Performance impacts of feeding bermudagrass (Cynodon dactylon) or ryegrass (Lolium multiflorum) plus rye (Secale cereale) baleage to weaned crossbred beef calves.  
R. M. Martin*, R. Walker*, B. Buttrey*, and C. C. Williams*, 1Louisiana State University, Baton Rouge; 2LSU AgCenter, School of Animal Sciences, Baton Rouge, LA; 3LSU AgCenter, Hill Farm Research Station, Homer, LA; 4LSU AgCenter, Baton Rouge, LA

2:45 PM  140  Early metabolic imprinting for improvements in finishing feed efficiency and beef carcass characteristics.  

3:00 PM  141  Linear and non-linear estimates of the efficiency of metabolizable energy use for maintenance and gain in beef cattle.  
C. A. Old* and H. A. Rossow*, 1A3 Cattle Company, Le Grand, CA; 2VMTRC, University of California, Tulare.

3:15 PM  142  Relationships among feeding behaviors and performance traits of growing and finishing phase Red Angus cattle.  

3:30 PM  143  Phenotypic relationships between residual measurements of finishing feed efficiency and visceral organ mass of backgrounded beef steers.  
Breeding and Genetics: Genetic and Genomic Methods

Chair: John B Cole, Animal Improvement Programs Laboratory, Agricultural Research Service, United States Department of Agriculture

2504

2:00 PM 163 Evaluation of predictive ability of Cholesky factorization of genetic relationship matrix for additive and non-additive genetic effect using Bayesian regularized neural network.
H. Okut1, D. Gianola2, K. A. Weigel2, and G. J. M. Rosa3, 1University of Yuzuncu Yil, Van, Turkey, 2University of Wisconsin-Madison.

2:15 PM 164 Using recursion to compute the inverse of the genomic relationship matrix.
I. Misztal1, A. Legarra2, and I. Aguilar3, 1University of Georgia, Athens, 2INRA, Castanet-Tolosan, France, 3INIA, Las Brujas, Uruguay.

2:30 PM 165 Advantage of supernodal methods in restricted maximum likelihood when dense matrices are involved in a coefficient matrix of mixed model equations.
Y. Masuda1,2, S. Tsuruta2, and I. Misztal2, 1Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan, 2University of Georgia, Athens.

2:45 PM 166 Use of genomic recursions and APY algorithm for single-step GBLUP analyses with large number of genotypes.
B. D. Fragomeni1, I. Misztal1, D. Lourenco1, S. Tsuruta1, and Y. Masuda1,2, 1University of Georgia, Athens, 2Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.

3:00 PM 167 Genetic prediction accounting for residual heteroskedasticity.
Z. Ou1, R. J. Tempelman2, J. P. Steibel2, C. W. Ernst2, R. O. Bates1, and N. M. Bello1, 1Kansas State University, Manhattan, 2Michigan State University, East Lansing.

3:15 PM 168 Are past generations contributing to evaluations on young genotyped animals?
D. Lourenco1, I. Misztal1, S. Tsuruta1, I. Aguilar2, T. J. Lavel1, S. Forni1, and J. J. Weller1, 1University of Georgia, Athens, 2INIA, Las Brujas, Uruguay, 3Holstein Association USA Inc., Brattleboro, VT, 4Genus Plc, Hendersonville, TN, 5ARO, The Volcani Center, Bet Dagan, Israel.

3:30 PM 169 Use of linear models with normal, student-t or slash distributed error for the analysis of quantitative traits.
B. Mestav1, K. Kizilkaya2, and S. O. Peters3, 1Canakkale Onsekiz Mart University, Canakkale, Turkey, 2Adnan Menderes University, Aydin, Turkey, 3New Mexico State University, Mount Berry, GA.

Companion Animals Symposium:
Companion Animals and Sustainability: Today’s Impact on the Future

Chair: Maria R. C. de Godoy, University of Illinois
Sponsor: ASAS Foundation: George Fahey Appreciation Club

3501B

2:00 PM Introductory remarks

2:10 PM 188 Nutritional sustainability of pet foods.
R. A. Carter1, P. R. Buff1, K. S. Swanson2, T. P. Yount1, and J. H. Kersey1, 1The Nutro Company, Franklin, TN, 2Department of Animal Sciences, University of Illinois at Urbana-Champaign.

2:40 PM 189 How sustainability influences ingredient sourcing, quality and safety.
D. L. Meeker*, National Renderers Association, Alexandria, VA.

3:10 PM Break

3:25 PM 190 Sustainability of non-traditional companion animals.
G. Ballam*, Purina Animal Nutrition, St Louis, MO.

3:55 PM 191 Sustainable ecosystems: Free-ranging cats and their effect on wildlife populations.
S. E. Kitts-Morgan*, E. I. Parsons, and K. A. Hilburn, Berry College, Mount Berry, GA.

4:25 PM 192 Future aspects and perceptions of companion animal nutrition and sustainability.
K. S. Swanson*, Department of Animal Sciences, University of Illinois at Urbana-Champaign.
Comparative Gut Physiology Symposium: Session II
Chairs: David M. Bravo, Pancosma SA, Thomas B. McFadden, University of Missouri and John Furness, University of Melbourne
Sponsor: Pancosma SA

2:00 PM 204 Manipulating goblet cell function to protect against enteric infection.

M. Wlodarska*, University of British Columbia, Vancouver, BC, Canada.

2:30 PM 205 Nutritional immunology in swine.

Y. Liu1, D. M. Bravo2, and J. Pettigrew1, 1University of Illinois at Urbana-Champaign, 2Pancosma SA, Geneva, Switzerland.

2:45 PM 206 Mucosal IgA responses to members of the gut microbiota in healthy vs. malnourished Malawian children.

A. Kau*, Center for Genome Sciences & Systems Biology, St-Louis, MO.


H. Lillehoj*, ARS USDA, Beltsville, MD.

3:45 PM 208 Effect of dietary supplementation of Capsicum extract on immune responses, blood cell counts, blood chemistry, and oxidative stress markers in lactating dairy cows.

J. Oh1, S. Walusimbi2, F. Giallongo2, H. L. Weeks1, T. W. Frederick1, A. N. Hristov1, J. L. Pate1, R. J. Elias2, L. Tao2, and E. H. Wall1, 1Department of Animal Science, The Pennsylvania State University, University Park, 2Department of Food Science, The Pennsylvania State University, University Park, Pancosma, Geneva, Switzerland.

4:00 PM 209 Host-microbiome interactions during gut development across species: The role of milk.

T. B. McFadden*, University of Missouri, Columbia.

4:30 PM Panel Discussion

Dairy Foods: Technical Oral Session: Analytical / Processing
Chair: Chenchaiah Marella, Cal Poly

2:00 PM 257 Modification of the functionality of micellar casein concentrates by changing the structure of casein micelles using high pressure processing.

C. I. Moraru1, M. WALKING-RIBEIRO1, I. APRODU1, and M. V. Karwe1, 1Cornell University, Ithaca, NY, 2Dunarea de Jos University, Galati, Romania, 3Rutgers University, New Brunswick, NJ.

2:15 PM 258 Microfiltration (MF) of milk protein concentrate using ceramic membranes: Determination of limiting flux and serum protein (SP) removal at 8, 9 or 10% protein in the recirculation loop.

E. E. Hurt1,2, M. C. Adams1,2, and D. M. Barbano1,2, 1Cornell University, Ithaca, NY, 2Northeast Dairy Foods Research Center, Ithaca, NY.

2:30 PM 259 Impact of membrane channel diameter on limiting flux and serum protein removal during milk protein concentrate microfiltration.

M. C. Adams1, E. E. Hurt, and D. M. Barbano, Cornell University, Ithaca, NY.

2:45 PM 260 Using membrane filtration techniques to fractionate acid whey into value added ingredients.

B. Chen1, K. E. Smith1, J. A. Lucey2, R. Kalscheuer2, and M. Molitor2, University of Wisconsin-Madison.

3:00 PM 261 Polymerization of lactose to poly lactose by twin-screw extrusion.

T. C. Schoenfuss1, C. E. Tyl1, and E. M. Reid1, University of Minnesota, St. Paul.

3:15 PM 262 A proficiency test system to improve laboratory and method performance and produce reference values for component calibration samples for infrared milk analysis.

D. M. Barbano1,2, K. L. Wojciechowski1,2, and C. Melilli1,2, 1Cornell University, Ithaca, NY, 2Northeast Dairy Foods Research Center, Ithaca, NY.

3:30 PM 263 A relatively rapid method for the estimation of the amount of exopolysaccharide produced by lactic acid bacteria during milk fermentation.

S. N. Khanal1 and J. A. Lucey2,1, 1University of Wisconsin-Madison, Department of Food Science, 2University of Wisconsin-Madison, Wisconsin Center for Dairy Research, Madison.
Raw milk quality in the dairy industry: Compositional changes correlated with somatic cell counts.
C. R. T. Júnior¹, G. C. Ribeiro², R. M. Longo³, M. C. P. P. Oliveira⁴, L. M. Fonseca⁵, M. O. Leite⁶, and M. P. Cerqueira⁷, ¹Ministry of Agriculture, Poços de Caldas, Brazil, ²Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil, ³University of Wisconsin-Madison/CAPES Est. Senior 18183-12-3.

The effect of immunoglobulins and somatic cells on the gravity separation of fat, bacteria, and spores in pasteurized whole milk.

Dairy Foods Symposium: Milk Protein-Hydrocolloid Interactions: Recent Impacts
Chair: Karen Schmidt, Kansas State University
Sponsor: EAAP
3501C

Exopolysaccharides from lactic acid bacteria- a world of opportunities.
A. Hassan*, South Dakota State University, Brookings.

EAAP-ASAS Speaker Exchange Presentation: A tale of in-body magnetic resonance imaging of foods and gut feelings.
L. Marciani*, University of Nottingham, Nottingham, United Kingdom.

Functionality and structure of hydrocolloids in dairy foods.
H. D. Goff*, University of Guelph, Guelph, ON, Canada.

Impact of starch on milk protein functionality in food applications.
M. E. Yildiz*, Ingredion, Bridgewater, NJ.

Horse Species: Developmental Programming: Applications in the Horse
Chair: Tom Hoagland, University of Connecticut
Sponsor: EAAP
3501F

Developmental programming in agriculturally relevant species: An overview.
K. A. Vonnahme*, North Dakota State University, Fargo.

EAAP-ASAS Speaker Exchange Presentation: Glucocorticoid programming of development during early life.
A. Fowden¹, O. A. Valenzuela², J. K. Jellyman³, N. B. Holdstock⁴, and A. J. Forhead⁵, ¹University of Cambridge, Cambridge, England, ²University of Cambridge, Cambridge, United Kingdom, ³University of Cambridge, Cambridge, United Kingdom, ⁴University of Cambridge, Cambridge, United Kingdom.

Nutritional programming and the impact on mare and foal performance.
J. Coverdale⁶, C. J. Hammer⁷, and K. W. Walter⁸, ¹Texas A&M University, College Station, ²North Dakota State University, Fargo, ³Truman State University, Kirksville, MO.

Lactation Biology II
Chair: Monique Rijnkels, Baylor College of Medicine and Mark A McGuire, University of Idaho
2103B

Intramammary glucocorticoid during a mammary immune response to lipopolysaccharide modulates the blood-milk barrier.
O. Wellnitz⁹, S. K. Wall⁶, M. Saudenova⁷, and R. M. Bruckmaier⁸, ⁹Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland, ⁶Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland.

Milk prolactin response after experimental infection with different coagulase-negative staphylococci in dairy heifers.

Regulation of nuclear IGFBP-3 in response to intrinsic apoptotic stress in bovine mammary epithelial cells.
A. Agostini-Dreyer, A. E. Jetz, and W. S. Cohick*, Rutgers, the State University of NJ, New Brunswick.
2:45 PM  415  Cellular composition of water buffalo mammary gland and its proliferation status during dry and mastitis.
R. K. Choudhary1, D. Pathak2, D. Deka1, and R. Verma1, 1School of Animal Biotechnology, GADVASU, Ludhiana, Punjab-141 004, India, 2Department of Veterinary Anatomy, GADVASU, Ludhiana, Punjab-141 004, India.
Now presented in ADSA-SAD Undergraduate Competition: Original Research, Monday, July 21, at 4:00 pm, in room 2210.

3:00 PM  417  Addition of glycerol to lactating cow diets stimulates milk protein yield to a greater extent than addition of corn grain.
D. L. Bajramaj1, R. V. Curtis2, J. J. M. Kim1, V. R. Osborne2, T. Wright1, and J. P. Cant1, 1University of Guelph, Guelph, ON, Canada, 2Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada, 3University of Guelph/OMAF, Guelph, ON, Canada.

3:15 PM  418  Glucose does not stimulate milk protein yield of dairy cows when essential amino acids are in excess supply.
K. Nichols1, M. Carson2, J. J. M. Kim1, J. A. Metcalf1, J. P. Cant1, and J. Doelman2, 1Department of Animal & Poultry Science, University of Guelph, Guelph, ON, Canada, 2Nutreco Canada Agresearch, Guelph, ON, Canada.

Physiology and Endocrinology: Interrelationships Between Environmental, Metabolic and Physiological Processes II
Chair: Lance Baumgard, Iowa State University
2105

2:00 PM  509  Effects of calcium salts of soybean oil on factors that influence pregnancy establishment in Bos indicus beef cows.
B. I. Cappellozza1, R. F. Cooke1, T. Guarnieri Filho2, I. Bueno4, D. W. Bohnert1, R. L. A. Cerri3, and J. L. M. Vasconcelos1, 1Oregon State University-EOARC Burns, 2Faculdade de Medicina Veterinária e Zootecnia, UNESP – Univ. Estadual Paulista, Botucatu, Brazil, 3Faculty of Land and Food Systems-University of British Columbia, Vancouver, BC, Canada, 4Univ Estadual Paulista, Botucatu, Brazil.

2:15 PM  510  Metabolomics profiling of four biofluids from dairy cow fed different forages using gas chromatography–time of flight/mass spectrometry.
H. Z. Sun1, B. Wang1, D. M. Wang1, J. K. Wang1, L. L. Guan2, and J. X. Liu3, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Department of Agricultural, Food & Nutritional Science, University of Alberta, Edmonton, AB, Canada, 3Zhejiang University, Hangzhou, China.

2:30 PM  511  Separation of proteins from the milk fat globule membrane with minimal losses.
W. Holzmüller2, Technische Universität München, Freising, Germany.

2:45 PM  512  Serotonin (5-HT) receptor expression in bovine apocrine sweat gland epithelial cells isolated from cow skin.
S. Hamzaoui1, J. L. Collier2, and R. J. Collier3, 1Universitat Autònoma de Barcelona, Bellaterra, Spain, 2University of Arizona, Tucson, 3University of Arizona, Tucson.

3:00 PM  513  Responses to an insulin challenge in dairy cows classed as efficient or inefficient based on residual feed intake (RFI) during mid lactation and the dry period.
K. DiGiacomo1, E. Norris1, L. C. Marett2, W. J. Wales1, B. J. Hayes3, F. R. Dunshea4, and B. J. Leury4, 1The University of Melbourne, Parkville, Australia, 2The Department of Environment and Primary Industries, Victoria, Ellinbank, Australia, 3The Department of Environment and Primary Industries, Bundoora, Australia.

3:15 PM  514  Interactions between metabolic load and dairy cow welfare-related parameters in herbage based feeding systems.
R. S. Zbinden1, J. J. Gross1, M. Fakk2, H. A. van Dorland3, A. Münger4, F. Dohme-Meier5, and R. M. Bruckmaier5, 1Veterinary Physiology, Vetsuisse Faculty of Bern, Bern, Switzerland, 2Clinic of Reproductive Medicine, Vetsuisse Faculty of Zurich, Zurich, Switzerland, 3Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

3:30 PM  515  Effects of repeated short-term feed-restrictions and LPS induced systemic inflammation on metabolism and performance in dairy cows.
J. J. Gross1, E. Kakaitzakis2, O. Wellnitz3, H. Bollwein4, and R. M. Bruckmaier5, 1Veterinary Physiology, Vetsuisse Faculty of Bern, Bern, Switzerland, 2Clinic of Reproductive Medicine, Vetsuisse Faculty of Zurich, Zurich, Switzerland, 3Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.

3:45 PM  516  Effects of heat stress on pancreatic insulin content and β-cell distribution in growing pigs.
M. Sanz Fernandez1, J. S. Johnson1, M. Abujamieh2, S. K. Stoakes3, S. M. Lei2, R. P. Rhoads2, and L. H. Baumgard1, 1Iowa State University, Ames, 2Virginia Tech, Blacksburg.

4:00 PM  517  Effects of protein supplementation frequency on metabolic responses associated with reproduction of beef cows.
M. M. Reis1, R. F. Cooke1, B. I. Cappellozza1, R. Marques1, T. Guarnieri Filho2, G. A. Perry4, and D. W. Bohnert1, 1Oregon State University-EOARC Burns, 2Faculdade de Medicina Veterinária e Zootecnia, UNESP – Univ. Estadual Paulista, Botucatu, Brazil, 3South Dakota State University, Brookings.
4:15 PM 518  A vaccine-induced acute-phase reaction increases plasma leptin concentrations in beef cattle.
R. Marques1, R. F. Cooke1, B. I. Cappellozza1, T. Guarnieri Filho1, M. M. Reis1, D. H. Keisler3, and D. W. Bohnert1,
1Oregon State University-EOARC Burns, 2Faculdade de Medicina Veterinária e Zootecnia, UNESP – Univ. Estadual Paulista, Botucatu, Brazil, 3University of Missouri-Division of Animal Sciences, Columbia.

4:30 PM 519  A prepartum diet supplemented with rolled sunflower seed increased calf weight, the incidence of dystocia and colostrum immunoglobulin content in Holstein cows.
R. Salehi1, M. G. Colazo1, M. Ob1, and D. J. Ambrose1, 1University of Alberta, Edmonton, AB, Canada, 2Alberta Agriculture and Rural Development, Edmonton, AB, Canada.

4:45 PM 520  Effect of altering the dietary ratio of n-6 to n-3 fatty acids on luteolytic mechanism in dairy cows.
L. F. Greco1, J. T. Neves Neto2, A. Pedrico2, F. S. Lima2, R. S. Bisinotto1, N. Martinez1, E. S. Ribeiro1, W. W. Thatcher1, C. R. Staples3, and J. E. P. Santos1, 1Department of Animal Sciences, University of Florida, Gainesville, 2University of Florida, Gainesville, 3Department of Animal Sciences, University of Florida, Gainesville.

Chair: J. Scott Radcliffe, Purdue University
2102B

2:00 PM 547  Effect of breed type and pasture type on methane emissions from weaned lambs offered fresh grasses.
M. D. Fraser, H. R. Fleming, V. J. Theobald, and J. M. Mooyr1, Aberystwyth University, Aberystwyth, United Kingdom.

2:15 PM 548  Effects of dietary nitrate supplementation on enteric methane and nitrous oxide emissions from beef cattle.
C. J. Neumeier2, Q. Wang1, A. R. Castillo2, Y. Zhao1, Y. Pan1, and F. M. Mitloehner1, 1University of California-Davis, 2University of California Cooperative Extension, Merced.

2:30 PM 549  Comparison of active flux and passive concentration measurements of methane concentrations from cattle.
P. Huhtanen1, E. H. Cabezas Garcia2, S. R. Zimmerman1, and P. R. Zimmerman1, 1Swedish University of Agricultural Sciences (SLU), Umea, Sweden, 2Swedish University of Agricultural Sciences, Umea, Sweden, 3C-Lock Inc, Rapid City, SD.

2:45 PM 550  Methane emission intensities by Holstein and Holstein x Jersey crossbreed lactating cows in two Brazilian grazing systems.

3:00 PM 551  Comparison between the sulfur hexafluoride tracer technique and the portable automated head chamber system for measurements of enteric methane fluxes in mid-lactation Holstein cows.
A. B. D. Pereira1, C. D. Dorich1, A. F. Brito1, R. K. Varner1, and R. Martinez2, 1University of New Hampshire, Durham, NH, 2Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

3:15 PM 552  Nitrogen use efficiency and carbon footprint by beef cattle limit-fed co-product feedstuffs.
W. B. Smith1, K. P. Coffey1, R. T. Rhein1, E. B. Kegley1, D. Philipp1, and A. N. Young1, 1Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, 2University of Arkansas, Fayetteville, 3Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.

Ruminant Nutrition VI: Amino Acids/Dairy
Chair: Hellen Lapierre, Agriculture & Agri-Food Canada
2103C

2:00 PM 655  Effect of rumen-protected lysine supplementation of corn-protein based diets fed to lactating dairy cows.
N. E. Lobos1, G. A. Broderick2, and M. A. Wattiaux1, 1Department of Dairy Science, University of Wisconsin-Madison, 2Broderick Nutrition & Research, LLC, Madison, WI, 1University of Wisconsin-Madison.

2:15 PM 656  Effects of a rumen protected lysine (AjiPro-L) supplementation on peripartum disease, reproduction and lactational performance of dairy cows.
J. E. Nocek1, A. Haruno2, M. Miura2, T. Takagi2, I. Shinzato1, and T. Fujieda1, 1Spruce Haven Farm and Research Center, Auburn, NY, 2Ajinomoto Co., Inc., Tokyo, Japan, 3Ajinomoto Heartland, Inc., Chicago, IL.

2:30 PM 657  Effect of strategic ration balancing with use of Prolak and USA-Lysine on the efficiency of milk protein production and environmental impact.
J. H. Harrison1, J. Jarrett1, Y. Chen1, L. VanWieringen2, B. Chalupa2, F. Sun1, P. Ndewa1, D. Wilks2, and H. S. Joo1, 1Washington State University, Pullman, 2Prince Agri, Quincy, IL, 3Washington State University, Pullman, 4Washington State University, Sunnyvale, 5University of Pennsylvania, New Bolton Center, 6EPL Feeds, Dixie, WA.
Effect of strategic ration balancing with use of Prolak and MetaboLys on the efficiency of milk protein production and environmental impact.

P. Ndewa1, J. H. Harrison2, D. Wilks3, L. VanWieringen4, Y. Chen5, W. Chalupa5, F. Sun1, and H. S. Joo1, 1Washington State University, Pullman, 2Washington State University, Payaplu, 3EPL Feeds, Dixie, WA, 4Washington State University, Sunnyside, 5University of Pennsylvania, New Bolton Center.

Evaluation of diets formulated with soybean-based products, blood meal, or rumen-protected lysine to meet MP lysine demands of lactating dairy cows.

W. D. Weich6, K. F. Kalscheur2, K. J. Herrick2, and F. R. Valdez7, 1South Dakota State University, Brookings, 2Kemin Industries, Inc., Des Moines, IA.

The plasma free amino acid dose response technique: A proposed approach for determining lysine bioavailability of ruminally-protected lysine products.

N. L. Whitehouse4, A. F. Brito1, and C. G. Schwab2, 1University of New Hampshire, Durham, NH, 2Schwab Consulting, LLC, Boscobel, WI.

Effects of maternal nutrition and rumen-protected arginine supplementation on pregnant and non-pregnant ewe and postnatal lamb serum amino acids.

J. L. Peine1, G. Jia1, M. Kapphahn1, S. T. O’Rourke1, A. M. Meyer2, L. P. Reynolds1, and J. S. Cator1, 1North Dakota State University, Fargo, 2Division of Animal Sciences, University of Missouri, Columbia.

Intestinal digestibility of amino acids in fluid- and particle-associated rumen bacteria determined using a precision-fed cecctomized rooster bioassay.

A. C. Fonseca1, S. M. Fredin1, L. F. Ferraretto1, P. L. Utterback2, C. M. Parsons2, and R. D. Shaver1, 1University of Wisconsin-Madison, 2University of Illinois at Urbana-Champaign.

Performance by Holstein steers offered hay and supplement with or without added methionine.


Concentration of soluble non-ammonia nitrogen and related transporter expression in non-mesenteric gastrointestinal tissues of dairy cows.

Y. M. Xie1, Q. B. Xu1, Y. M. Wu1, and J. X. Liu2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China.

Role of proton-coupled oligopeptide transporter 1 in small peptide absorption in the bovine forestomach.

Q. B. Xu1, Y. M. Wu1, H. L. Liu4, and J. X. Liu2, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China.

Small Ruminant

Chair: R. R. Redden, North Dakota State University

2104A

Rumen microbial species associated with feed efficiency in sheep fed a forage-based diet.

K. M. Cammack1, M. Ellison2, G. C. Conant3, W. R. Lamberson4, R. Cockrum4, and K. J. Austin1, 1Department of Animal Science, University of Wyoming, Laramie, 2University of Wyoming, Laramie, 3University of Missouri, Columbia, 4Virginia Polytechnic Institute and State University, Blacksburg.

Rationing late gestation ewes using a net energy or metabolisable energy rationing system: Impacts on ewe and lamb performance.

F. Campion5, F. McGovern, A. G. Fahey, and T. M. Boland, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.

Determining growth performance implications on meat goat kids fed soybean hull or corn based pelleted diets.


Early supplementation of alfalfa to starter diets improves the pre- and post-weaning performance of lambs.

B. Yang7, B. He1, S. S. Wang1, J. X. Liu2, and J. K. Wang7, 1Institute of Dairy Science, Zhejiang University, Hangzhou, China, 2Zhejiang University, Hangzhou, China.
Performance and reproductive measurements of Katahdin ewes and fall-calving Angus cows grazing stockpiled toxic tall fescue under a mixed or sequential grazing scheme – 2 year summary.
R. E. Daugherty Jr.*, J. D. Caldwell, B. C. Shanks, C. L. Boeckmann, C. A. DeOnellis, and A. L. Bax, Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.

Reducing dietary cation-anion difference increased gastrointestinal calcium binding proteins-D9k expression level of transition goats for plasma calcium absorption.
W. X. Wu* and Y. Yang, College of Animal Science, Guizhou University, Guiyang, China.

Hematological and serum chemical profiles in lambs fed sericea lespedeza.
M. Acharya1, J. M. Burke2, J. E. Miller3, T. H. Terrill4, E. Smyth5, G. Huff6, E. B. Kegley6, K. P. Coffey7, and C. F. Rosenkranz8, 1University of Arkansas, Fayetteville, 2USDA-ARS, Booneville, AR, 3Louisiana State University, Baton Rouge, 4Fort Valley State University, Fort Valley, GA, 5USDA, Agriculture Research Service, Fayetteville, AR, 6Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville.

Comparison of white blood cell phagocytic efficiency in two genotypes of Katahdin sheep.
S. Azarpajouh*, T. Wuliji, and A. L. Bax, Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.

Production, Management, and the Environment:
Animal Health: A Retrospective Look
Chair: Robert J. Collier, University of Arizona
2102B

Antibiotic use in period 2005-2012 in dairy herds in the Netherlands, with outlook to some other countries.
A. Kuipers*1 and H. Wenmenhove2, 1Expertise Centre for Farm Management and Knowledge Transfer, Wageningen UR, Wageningen, Netherlands, 2Livestock Research Wageningen UR, Lelystad, Netherlands.

Retrospective analysis of body energy content profiles of dairy cows with different production and metabolic diseases during the transition period.
G. L. Smith1, M. G. Chagunda1, C. J. Ashworth2, and N. C. Friggens3, 1Scottish Rural University College (SRUC), Edinburgh, United Kingdom, 2The Roslin Institute, University of Edinburgh, Edinburgh, United Kingdom, 3Institut National de la Recherche Agronomique (INRA), Paris, France.

N. S. Pierre1, G. A. Millikin1, D. E. Bauman1, R. J. Collier*2, J. S. Hogan1, J. K. Shearer1, K. L. Smith1, and W. W. Thatcher2, 1The Ohio State University, Columbus, 2Kansas State University, Manhattan, 3Cornell University, Ithaca, NY, 4The University of Arizona, Tucson, 5The Ohio State University, Wooster, 6Iowa State University, Ames, 7Department of Animal Sciences, University of Florida, Gainesville.

Trends in U.S. milk quality based on bulk-tank somatic cell counts.

Somatic cell counts, mastitis infection prevalence, and mastitis pathogen distribution in compost bedded pack and sand freestall farms.

Corn silage management practices on California dairies.
J. M. Heguy*, D. Meyer, and N. Silva-del-Rio, 1UCCE Stanislaus and San Joaquin Counties, Modesto, CA, 2Department of Animal Science, University of California-Davis, 3VMTRC, University of California, Tulare.
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POSTER PRESENTATIONS

Animal Behavior & Well-Being Posters II

802  W001  Relationship between hair cortisol concentration and previous performance and feeding behavior in Holstein bulls fed high-concentrate diets.
M. Verdú1, A. Bach2, and M. Devant1, 1IRTA-Department Ruminant Production, Caldes Montbui-Barcelona, Spain, 2Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 3IRTA-Department of Ruminant Production, Caldes De Montbui, Spain.

803  W002  Competition in the milk-feeding stage affects post-weaning feeding behavior of pair-housed dairy calves.
E. K. Miller-Cushon1, R. Bergeron2, K. E. Leslie3, G. J. Mason4, and T. J. DeVries5, 1University of Guelph, Kemptville, ON, Canada, 2University of Guelph, Alfred, ON, Canada, 3University of Guelph, Guelph, ON, Canada.

804  W003  Effect of exposure to individual ration components on feed sorting of dairy heifers.
E. K. Miller-Cushon1, J. P. Vogel2,3, and T. J. DeVries4, 1University of Guelph, Kemptville, ON, Canada, 2Dalhousie University, Truro, NS, Canada.

805  W004  Relationships of temperament, behavior, and growth of performance tested bulls.
S. A. Lockwood1, H. G. Kattesh1, P. D. Krawczel2, J. B. Wilkerson2, J. D. Rhinehart2, D. Kirkpatrick2, and A. M. Saxton3, 1University of Tennessee, Knoxville.

806  W005  The efficacy of bridging stimuli during acquisition of an operant task and the use of food-based positive reinforcement training on unwanted oral investigative behaviors in horses, Equus caballus.
M. R. LaFollette1, K. A. Cloonan1, and K. W. Walter1, Truman State University, Kirksville, MO.

807  W006  Towards a better understanding of foraging behavior to boost the expression of conditioned preferences for low-quality foods.
F. H. Catanese1, R. A. Distel2, and J. J. Villalba1, 1Universidad Nacional del Sur, Bahia Blanca, Argentina, 2Utah State University-Agricultural Experiment Station, Logan.

808  W007  Effects of bedding frequency on lying behavior of weaned calves.
M. Terré1 and A. Bach2, 1IRTA, Caldes de Montbui, Spain, 2Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.

809  W008  Behavior of pigs infected with Salmonella and fed diets containing a probiotic or a physiological promoter.
V. F. Buttow Roll1, E. Barba-Vidal2, L. Castillejos3, X. Manteca2, and S. Martin-Oríos1, 1Department of Animal Science, Faculty of Agronomy Eliseu Maciel, Federal University of Pelotas, Pelotas, Brazil, 2Animal Nutrition and Welfare Service Department of Animal and Food Sciences Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 3Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain.

810  W009  Effect of oral meloxicam on indicators of pain following band castration in beef calves.
S. Martí1, M. J. Jelinski2, L. C. Dorin3, E. D. Janzen1, M. E. Olson4, B. J. Ralston1, and K. S. Schwartzkopf-Genswein1, 1Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2Veterinary Agri-Health Services, Airdrie, AB, Canada, 3University of Calgary, Calgary, AB, Canada, 4Alberta Veterinary Laboratories, Calgary, AB, Canada, 5Alberta Agriculture and Rural Development, Calgary, AB, Canada.

811  W010  Integrating animal science and human medicine: Development of a novel porcine model for calcium oxalate stone formation.
B. P. Trojan1, S. J. Trojan1, A. Navetta1, S. Filleur1, and T. Nelius1, 1Texas Tech University Health Sciences Center, Lubbock, 2Texas Tech University, Department of Animal and Food Sciences, Lubbock.

812  W011  Effects of group size and social rank on welfare and performance of gestating sows in a group-housing system with floor feeding.
Y. Li1 and L. Wang1, University of Minnesota, West Central Research and Outreach Center, Morris, MN.

813  W012  Grazing and feedlot performance, and carcass quality measurements of beef cattle surgically castrated at different stages of maturity with or without analgesia.
E. A. Backes1, A. C. Brown1, E. B. Kegley1, J. T. Richeson1, H. D. Hughes2, M. L. Thomas1, K. Anschutz1, and J. G. Powell1, 1Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR, 2Department of Agricultural Sciences, West Texas A&M University, Canyon.
Evaluation of a disposition scoring system in pen-raised white-tailed deer.
K. J. Stutts*, J. L. Lucia, M. J. Anderson, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.

Objective movement of calf-fed Holstein steers fed in confinement.
J. A. Reed¹, N. May², T. McEvers¹, L. A. Walters¹, J. P. Hutcheson², and T. E. Lawrence¹, ¹West Texas A&M University, Canyon, ²Merck Animal Health, Summit, NJ, ³West Texas A&M University, Canyon.

A competitive and unpredictable feeding environment disrupts feeding and social behavior of pre-partum dairy cows.
K. Proudfoot*, D. Weary¹, and N. von Keyserlingk¹, ¹The Ohio State University, Columbus, ²The University of British Columbia, Vancouver, BC, Canada.

Effect of within dyad weight variation on competition, feed intake, and milk production of dairy cows sharing feeding gates.
J. R. R. Dórea¹, A. L. Stanton¹, C. M. Staffe², and L. E. Armentano², ¹University of São Paulo, Piracicaba, Brazil, ²University of Wisconsin-Madison.

Impact of feeding and housing strategy on calf performance and behavior.
S. H. Ward*, K. Parker, and K. Hart, Mississippi State University, Mississippi State.

Communicating farm animal welfare science: Wisconsin dairy producers’ attitudes toward and interest in cow welfare.
C. Skasa¹, S. Turner¹, and A. L. Stanton*, ¹University of Wisconsin- Eau Claire, ²University of Wisconsin-Madison.

Effect of transportation stress on cytokine gene expression, hematic biometry and blood chemistry in heifers.
B. Avila*, J. Kawas, D. Zamora, and H. Fimbres, Universidad Autónoma de Nuevo León, Escobedo, Nuevo León, Mexico.

Flight speed as predictor of cattle ability to adapt to feedlots.

Influence of pen-shade on respiratory rate and panting score in two breed types of growing bull-calves.
A. Camacho*, B. J. Cervantes², L. R. Flores², J. J. Lomeli¹, J. A. Romo¹, and R. Barajas¹, ¹FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico, ²Ganadera los Migueles, S.A. de C.V., Culiacan, Mexico.

Association among residual feed intake, residual body weight gain, residual intake and body weight gain and temperament of Nellore cattle.
C. L. Francisco¹, A. M. Jorge¹, A. M. Castilhos¹, F. D. Resende¹, J. M. B. Benatti¹, M. B. Silva¹, and R. F. Cooke¹, ¹Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, ²Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu-SP, Brazil, ³Agência Paulista de Tecnologia dos Agronegócios-APTA, Colina, Brazil, ⁴Universidade Estadual Paulista-FCAV, Jaboticabal, Brazil, ⁵Oregon State University-EOARC Burns.

Association among peripartum health parameters, cud chewing and activity.
D. N. Liboreiro¹, K. S. Machado¹, P. Basso Silva¹, M. M. Filho¹, G. Franco¹, A. E. Barreto¹, M. I. Endres², and R. C. Chebel¹, ¹Department of Veterinary Population Medicine, University of Minnesota, St. Paul, ²University of Minnesota, Saint Paul, ³Department of Veterinary Population Medicine, St Paul, MN.

Animal welfare policies in South Korea.
D. H. Kim¹, J. H. Jeon¹, S. H. Moon¹, M. J. Kim¹, D. M. Ha¹, H. S. Park¹, N. Whitley¹, and S. H. Oh², ¹Gyeongnam National University of Science and Technology, Jinju, South Korea, ²National Institute of Animal Science, Sunwon, South Korea, ³Konkuk University, Chungju, South Korea, ⁴Seongwoon Livestock Production, Geochang, South Korea, ⁵North Carolina A&T State University, Greensboro.

Influence of environmental conditions across day on respiratory rate and panting score of beef cattle in a hot and humid weather.
A. Camacho*, B. J. Cervantes², E. X. Murillo³, M. B. Corona³, M. A. Osuna³, and R. Barajas¹, ¹FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico, ²Ganadera los Migueles, S.A. de C.V., Culiacan, Mexico.
Animal Health: Cow and Heifer Health

864 W026 Identification of serum innate immunity reactants in transition dairy cows before clinical signs of laminitis.

865 W027 Milk yield and reproductive performance of Holstein cows seropositive for tuberculosis.
D. S. Resendiz*, Universidad Autónoma Agraria Antonio Narro, Torreon, Mexico.

866 W028 Behavior of lactating dairy cows under mild and severe heat stress with free access or not to shade.

867 W029 Risk factors for hypocalcemia incidence and their effect on milk yield and reproduction in a grazing Jersey, Guernsey and Holstein herd in Costa Rica.

868 W030 Activation of innate immunity in transition dairy cows before clinical appearance of milk fever.

869 W031 Transition dairy cows show blood alterations in innate immunity ahead of occurrence of retained placenta.

870 W032 Hypocalcemia and hypomagnesemia prevalence in a grazing Jersey, Guernsey and Holstein herd in Costa Rica.

871 W033 Milk and blood selenium concentrations in dairy cattle differ depending on the source of selenium supplementation (sodium selenite, selenium-yeast or l-selenomethionine).
L. Vandaele, B. Ampe, S. Wittox, L. Segers, M. Rovers, A. van der Aa, G. du Laing, and S. De Campeneere, Institute for Agricultural and Fischeries Research (ILVO), Melle, Belgium, Orffa Additives BV, Werkendam, Netherlands, Excentials BV, Werkendam, Netherlands, Ghent University, Gent, Belgium.

872 W034 Dynamic of intramammary infections in ¾ Holstein x Zebu dairy cows from a herd of Minas Gerais State, Brazil.
C. V. Ladeira, F. N. Souza, D. R. Freitas, L. G. Ladeira, D. S. Rodrigues, M. O. Leite, L. M. Fonseca, C. M. Penna, M. A. P. Brita, and M. P. Cerqueira, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, EPAMIG, Belo Horizonte, Brazil, Embrapa, Juiz de Fora, Brazil, Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil.

873 W035 In vitro efficacy of teat disinfectants against Staphylococcus aureus strains isolated from bovine mastitis in Brazil.
R. P. Santos, E. N. Souza, C. C. Vasconcelos, A. Cortez, D. O. Lapinha, A. B. Jardim, A. F. Cunha, M. O. Leite, M. R. Souza, A. Q. Lana, M. B. Heinemann, and M. P. Cerqueira, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, Laboratorio Veterinario Vidavei, Botucatu, Brazil, Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil.

874 W036 Profile of clinical and subclinical mastitis pathogens isolated from cows housed on compost bedding.

875 W037 Risk factors for repeated cases of clinical mastitis during the same lactation.
B. dos Santos, G. G. Wanderley, H. Langoni, and J. C. F. Pantoja*, Sao Paulo State University, Botucatu, Brazil.

876 W038 Incidence of retained placenta and the consequences on milk production and reproductive efficiency of Holstein cows.
E. V. Rezende, C. C. Campos, and R. M. Santos*, FAMEV-UFU, Uberlândia, Brazil.

877 W039 Associations between severity and etiology of clinical mastitis and pregnancy outcomes to first-service in dairy cows.
M. J. Fuenzalida, P. D. Carvalho, M. C. Wilbank, P. M. Fricke, and P. L. Ruegg, Department of Dairy Science, University of Wisconsin-Madison, University of Wisconsin-Madison.

878 W040 Application of probiotics in the vaginal tract modulated bacterial composition in transition dairy cows.
B. N. Ametaj*, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.
Intravaginal administration of probiotics modulated serum metabolites and milk composition of transition dairy cows.
B. N. Ametaj*, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.

Association among peripartum body condition score and metabolic parameters of Jersey cows and cure of subclinical mastitis in the dry period and incidence of sub-clinical and clinical mastitis postpartum.
D. N. Liboreiro* and R. C. Chebel, Department of Veterinary Population Medicine, University of Minnesota, St. Paul.

Evaluation of the ketone bodies concentration and clinical parameters in dairy cows supplemented with rumen-protected choline during the transition period.
R. C. D. Souza†1, R. C. Souza†1, R. F. Cota†1, J. M. Leão†1, I. B. Fortes†1, and L. S. Andrade†1, 1PUC Minas, Betim, Brazil, 2UFMG, Belo Horizonte, Brazil.

Switching lactating Jersey cows from a high neutral detergent fiber diet to an isoenergetic high soluble carbohydrate diet induces mild inflammation.
G. Taasoli†1,2, C. R. Nightingale*1, F. Kafilzadeh2, D. Ghadimi2, J. A. Carroll4, and M. A. Ballou1, 1Department of Animal and Food Sciences, Texas Tech University, Lubbock, 2Razi University, Department of Animal Science, Kermanshah, Iran, 3MRI, Institute of Physiology and Biochemistry, Karlsruhe, Germany, 4USDA-ARS, Livestock Issues Research Unit, Lubbock, TX.

Effects of oral calcium supplementation on body temperature, incidence of uterine diseases, and milk yield in dairy cows.
N. Martinez*1, L. D. P. Sinedino1, R. S. Bisinotto1, R. Daetz1, G. C. Gomes1, L. F. Greco1, W. W. Thatcher1, C. A. Risco2, and J. E. P. Santos1, 1Department of Animal Sciences, University of Florida, Gainesville, 2Department of Large Animal Clinical Sciences, University of Florida, Gainesville.

Blood calcium dynamics after prophylactic treatment of subclinical hypocalcemia with oral or intravenous calcium.
C. D. Blanc*1,2, M. Van der List2,3, S. S. Aly3, H. A. Rosso4, and N. Silva-del-Rio3, 1Pacific Rim Dairy, Corcoran, CA, 2Boehringer Ingelheim, St Joseph, CA, 3VMTRC, University of California, Tulare.

Pregnant beef heifers categorized by residual feed intake measured in adolescence exhibit differential intake and feeding behaviors when fed a restricted diet.
C. Fitzsimmons*1,2, G. Muhire1,2, F. Paradis1,2, L. McKeown1,3, C. Straathof1,3, B. Yaremcio1, J. A. Basarab5, and H. Bruce2, 1University of Alberta, Edmonton, AB, Canada, 2Agriculture and Agri-Food Canada, Edmonton, AB, Canada, 3Alberta Agriculture and Rural Development, Edmonton, AB, Canada, 4Alberta Agriculture and Rural Development, Lacombe, AB, Canada, 5Alberta Agriculture and Rural Development, Stettler, AB, Canada.

Physiological stress response of heifers divergently ranked for residual feed intake following a bovine corticotrophin releasing hormone challenge.
A. K. Kelly*1, A. G. Fahey3, B. Earley1, M. McGee1, and D. A. Kenny1, 1School of Agriculture and Food Science, University College Dublin, Dublin, Ireland, 2School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland, 3Teagasc Grange, Dunsany Co Meath, Ireland, 4Teagasc Grange, Meath, Ireland.

Relationship of metabolic hormones, urea and body composition with feed efficiency in Angus heifers carrying different genetic markers under grazing conditions.
A. I. Trujillo*, A. Casal1, M. Carrquiry3, and P. Chilibroste2, 1Facultad de Agronomía, Universidad de la Republica, Montevideo, Uruguay, 2Facultad de Agronomía, Universidad de la Republica, Paysandu, Uruguay.

Effects of maternal plane of nutrition during mid- or late gestation on beef cow performance and progeny performance through weaning.
T. B. Wilson* and D. W. Shike, University of Illinois at Urbana-Champaign.

Effects of prepartum plane of nutrition during mid- or late gestation on beef cow BW, BCS, and preimplantation embryo recovery.
W. C. Meteer*, T. B. Wilson, P. Cardoso, and D. W. Shike, University of Illinois at Urbana-Champaign.

Effects of breed, sex, parity, birth year and birth season on body weight traits for five local cattle breeds and crossbreds in arid region of Punjab, Pakistan.
G. Bilal†1, M. Moeen-ud-Din†1, M. Aqeel1, A. Ijaz†2, M. S. Khan1, M. Y. Gondal1, K. M. Khan2, M. Mukhtar4, and M. N. Manzoor1, 1PMAS-Arid Agriculture University, Rawalpindi, Pakistan, 2University of Agriculture, Faisalabad, Pakistan, 3Barani Livestock Production Research Institute, Attock, Pakistan.
Effect of rumen protected carbohydrate supplementation on performance and plasma glucose concentrations in growing heifers.

Evaluation of forage soybean, with and without pearl millet, as an alternative forage for developing beef replacement heifers.
E. Taylor, P. J. Gurn, L. A. Horstman, R. L. Atkinson, K. D. Johnson, and R. P. Lemenager, Purdue University, West Lafayette, IN.

Plasma glucose concentration, subcutaneous fat thickness, and puberty attainment in Nelore heifers treated with recombinant bovine somatotropin.

Effect of dried distillers grains with solubles and dried citrus pulp supplementation on metabolic and reproductive parameters of Charolais beef cows grazing buffelgrass in northeastern Mexico.

Evaluation of anthelmintic resistance of intestinal parasitic nematodes in heifers in south central Nebraska.

Effect of an injectable trace mineral on pregnancy rate of virgin heifers when synchronized using the 5 day Co-Synch plus CIDR or 14 day CIDR-PG protocol.
C. J. Brasche, J. B. Hall, and M. E. Drewnoski, University of Idaho, Moscow.

Oral suplementation with selenium for young Brangus bulls raised in pasture: Seminal quality in fresh and frozen semen.

Use of vitamin C combined to pentoxifylline and fertility in cattle after cryopreservation.

### Breeding and Genetics: Application and Methods in Animal Breeding-Livestock I

Whole genome association analysis for detecting QTL related to fat and protein production in buffaloes.
H. Tonhaï, D. F. Cardoso, R. R. Aspilcueta Borquís, N. A. Hurtado Lugo, G. M. de Camargo, L. G. Albuquerque, D. J. A. Santos, D. C. Scalez, and M. C. Nakagawa, State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil.

Evaluation of single nucleotide polymorphism markers on four pig chromosomes for potential associations with halothane sensitivity phenotypes in a population of Yorkshire-Landrace pigs.

Growth rate of purebred Berkshire pigs housed in hoop buildings in North Carolina.
S. H. Oh, N. Whiteley, F. McElveen, and H. S. Park, North Carolina A&T State University, Greensboro.

Use of the canonical discriminant analysis for selecting a panel of informative markers in 21 Italian sheep breeds.
C. Dimarou, M. Cellesi, L. Niccolò, P. Crepaldi, N. P. P. Macciotta, G. Pulina, and F. Pilla, Università di Sassari, Sassari, Italy, Università di Milano, Milano, Italy.

Genomic differences between Rambouillet sheep selected for high and low reproductive rate.
Breeding and Genetics: Molecular Biology and Genomics

962 W066 Associations of the NCAPG 1442M and GDF8 Q204X loci on feed efficiency at the onset of puberty in a beef x dairy cattle resource population.
C. Kühn*, P. Widmann, R. Weikard, and E. Albrecht, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany.

963 W067 Association of DNA methylation levels with tissue-specific expression of adipogenic and lipogenic genes in longissimus dorsi muscle of Korean cattle.
M. Baik1, T. T. T. Vu, M. Y. Piao1, and H. J. Kang1, 1Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, South Korea, 2Chonnam National University, Gwangju, South Korea.

964 W068 Changes in the cattle cervical transcriptome between estrus and luteal phase.
D. Gonzalez-Peña Fundora*, P. Cardoso, M. B. Wheeler, and S. L. Rodriguez Zas, University of Illinois at Urbana-Champaign.

965 W069 Physical and chemical and fatty acid profile in the steers beef with different genetic predominance fed with diets containing substitutions levels of corn by pearl millet.
R. M. D. Silva1,2-3, J. T. Pádua1, J. J. R. Fernandes4, R. Z. Taveira1, R. L. Missio5, P. S. Pacheco1, D. A. Fausto6, and J. Restle2, 1Universidade Estadual de Goiás, São Luís de Montes Belos, Goiás, Brazil, 2Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 3FAPEG, Goiânia, Goiás, Brazil, 4Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 5Universidade Federal de Goiás, Goiânia, Goiás, Brazil, 6Universidade Tecnológica Federal do Paraná, Pato Branco, Paraná, Brazil, 7Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil, 8ESALQ / USP, Piracicaba, São Paulo, Brazil.

966 W070 Major loci associated with growth traits on BTA14 in Hanwoo (Korean cattle).
S. W. Lee*, K. Y. Chung1, U. H. Kim1, B. W. Choi2, D. Lim2, Y. M. Cho2, C. G. Dang2, H. C. Kim1, S. H. Yeon1, H. S. Kang1, and C. Gondro2, 1Hanwoo Experiment Station, NIAS, RDA, Pyeongchang, South Korea, 2Animal Genomics & Bioinformatics Division, NIAS, RDA, Savon, South Korea.

Dairy Foods: Technical Poster Session III: Fluid Milk

1019 W073 Interaction of bovine and caprine milk alpha-caseins with tea polyphenols.
A. Mora-Gutierrez* and R. Attatte, Prairie View A&M University, Prairie View, TX.

1020 W074 Comparison of Jersey And Holstein-Friesian milk composition and coagulation properties.
J. H. Bland*, C. C. Fagan, and A. S. Grandison, University of Reading, Reading, United Kingdom.

1021 W075 Light exposure affects milk acceptability and emotional response of college students.
A. M. Walsh, H. Potts*, and S. Duncan, Virginia Tech, Blacksburg.

1022 W076 Fatty acid compositions of low-fat goat milk ice creams formulated with commercial ice cream mix and 3 different levels of caprine milk fat.
C. E. McGhee, B. P. Gupta*, and Y. W. Park, Fort Valley State University, Fort Valley, GA.

1023 W077 Application of non-nutritive natural sweeteners to skim chocolate milk.
X. E. Li*, K. Lopetcharat, and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.

1024 W078 Cross-linking of milk proteins can reduce its susceptibility to plasmin-induced hydrolysis.
H. Bhatt1,2, A. Cucheval3, C. Coker2, H. G. Patel1, A. Carr1, and R. Bennett1, 1Massey University, Palmerston North, New Zealand, 2Fontier Research & Development Centre, Palmerston North, New Zealand, 3South Dakota State University, Brookings.

1025 W079 Optimization of gamma-aminobutyric acid production of Lactobacillus plantarum and determination of flavor substances in gamma-aminobutyric acid-enriched fermented milk.
L. Li1, C. Man1, T. Li1, Y. Shan1, Y. Deng1, M. Ding1, M. Guo1, and Y. Jiang1,2, 1Department of Food Science, Northeast Agricultural University, Harbin, China, 2National Dairy Engineering and Technology Research Center, Northeast Agricultural University, Harbin, China, 3Synergetic Innovation Center of Food Safety and Nutrition, Harbin, China, 4University of Vermont, Burlington.
1026 W080  Comparison of odd and branched chain fatty acids profiles of cow, yak, buffalo, Jersey cattle, goat, camel and horse milk fat.
   L. Ma1,2, D. P. Bu2, J. T. Chen2, and J. Q. Wang2*, 1Inner Mongolia Agricultural University, Huhhot, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

1027 W081  Detection and comparison of major and trace elements from different species milk by inductively coupled plasma-mass spectrometry.

1028 W082  Identification of microRNA in fresh milk of cow and goat.
   D. P. Bu1, L. Ma1, X. M. Nan1, J. J. Loor2, and J. Q. Wang*1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2University of Illinois at Urbana-Champaign.

1029 W083  Sodium azide and potassium dichromate not suitable preservative of raw milk for detection β-lactamase by cylinder plate method.
   Y. Zhang1,2,3, N. Zheng1,2,3, F. Wen1,2,3, S. Li1,2,3, S. Zheng1, and J. Wang*1,2,3, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products (Beijing), Beijing, China, 2Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

1030 W084  Discrimination of reconstituted milk and over-processed milk in pasteurized and UHT milk.
   H. Wang1,2,3, N. Zheng1,2,3, F. Wen1,2,3, H. Wang2, X. Guo1,2,3, S. Li1,2,3, and J. Wang2,3*, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Yangzhou University, Yangzhou, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

1031 W085  Caseinomacropeptide index (CMP), microbiology and protein content of UHT chocolate milk-whey-based drinks in Brazil.
   F. P. Paula1, L. M. Melgaço1, A. B. Jardim1, C. F. A. M. Penna1, L. M. Fonseca1, M. R. Souza1, M. P. Cerqueira2, and M. O. Leite*2, 1Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, 2Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil.

1032 W086  Stability of vitamin A palmitate in raw skim milk and apple juice on exposure to ultraviolet light.
   M. S. Mohan* and F. Harte, University of Tennessee, Knoxville.

1033 W087  Effect of abomasal ferrous lactate infusion of dairy cows on milk proteins.
   A. Wang*1, A. M. Dietrich1, S. Duncan1, K. F. Knowlton1, and W. Slade2, 1Virginia Tech, Blacksburg, 2University of North Carolina at Chapel Hill.

1034 W088  Effect of high hydrostatic pressure processing on in vitro digestion of milk proteins and fats.
   D. X. Ren1,2, D. L. Van Hekken1, M. H. Tunick1, and P. M. Tomasula1*, 1USDA, ARS, ERRC, Dairy & Functional Foods Research Unit, Wyndmoor, PA, 2Institute of Dairy Science, College of Animal Science, Zhejiang University, Hangzhou, P.R., China, 3Dairy & Functional Foods Research Unit, Eastern Regional Research Center, Agricultural Research Service, United States Department of Agriculture, Wyndmoor, PA.

1035 W089  Effect of storage temperature on the physio-chemical properties of skim milk powders treated with chelators.
   V. Sikand*, P. S. Tong1, S. Vink1, and S. Roy2, 1Department of Dairy Science, California Polytechnic State University, San Luis Obispo, 2Department of Statistics, California Polytechnic State University, San Luis Obispo.

1036 W090  Effect of sunflower oil, vitamin E and selenium inclusion in the diet of dairy cows on the sensory acceptability of milk.

**Forages and Pastures Posters III: General forages and forage systems**

1037 W091  Effect of plant density on nutritional quality of green chopped corn.
   G. Ferreira*1,2, D. Carp*, M. Alfonso1, and S. Depino1, 1Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, 2CREA Lincoln, Asociación Argentina de Consorcios Regionales de Experimentación Agropecuaria, Lincoln, Buenos Aires, Argentina, 3Forratec Argentina, SA, Chacabuco, Buenos Aires, Argentina.

1038 W092  Assessment of in vitro fermentation characteristics of lactation dairy diets consisting of orchardgrass or birdsfoot trefoil pasture forages with different supplements using continuous cultures.
   R. G. Christensen1, A. J. Young1, J. S. Eun1, J. W. MacAdam1, and B. R. Min1, 1Utah State University, Logan, 2Tuskegee University, Tuskegee, AL.
1106  W093  Fatty acid profile and oxidative stability of carcass fat from meat goats fed grass-legume forage diets.
B. R. Min*, Tuskegee University, Tuskegee, AL.

1107  W094  Effects of moisture level at baling and FRESH CUT plus on quantity and quality of alfalfa hay harvested in large rectangular bales.

1108  W095  Estimation of macronutrients content in mixed swards by near infrared reflectance spectroscopy.
A. I. Roca-Fernández*, P. Castro-García, and A. González-Rodríguez, Agrarian Research Centre of Mabegondo, La Coruña, Spain.

1109  W096  Fall harvest management of Eastern gamagrass.
W. K. Coblentz*, M. G. Bertram2, P. C. Hoffman1, N. M. Esser4, and J. S. Cavadini1, 1US Dairy Forage Research Center, Marshfield, WI, 2University of Wisconsin, Arlington, 4University of Wisconsin-Madison, 4University of Wisconsin, Marshfield.

1110  W097  Fertilization of fall-grown oat with urea or bedded-pack manure.
W. K. Coblentz*1, W. E. Jokela1, and M. G. Bertram2, 1US Dairy Forage Research Center, Marshfield, WI, 2University of Wisconsin, Arlington.

1111  W098  Nutrient composition and in vitro digestibility of cultivated and non-cultivated plant species found within a Southwestern forage production operation.
J. D. Allen1, L. W. Half2, and J. English3, 1Northwest Missouri State, Maryville, 2The University of Arizona, Tucson.

1112  W099  Effects of Marandu pastures height and sources of energy supplements on the weight gains per animal and per area.
A. A. Oliveira1, M. V. Azenha2, S. S. Santana3, C. H. O. Macedo4, J. P. R. Costa4, T. T. Berchielli5, A. C. Ruggieri6, and R. A. Reis1, 1UNESP, Jaboticabal, Brazil, 2Sao Paulo State University, Jaboticabal, Brazil, 3Sao Paulo State University, Jaboticabal, Brazil.

1113  W100  Effect of sowing date on forage yields and quality of Italian ryegrass in early spring-seeded.
K. Kim*, Livestock Institute, Jeollanamdo, South Korea.

1114  W101  Relationship between protein structural characteristics and supply of metabolizable protein to dairy cattle from new cool-season forage corn varieties in Western Canada.
N. A. Khan, S. Abeysekara, D. A. Christensen, X. Huang1, and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

1115  W102  Evaluation of agronomic characteristics of five varieties of corn in integrated crop-livestock-forest system.
A. A. Pinheiro*, M. C. A. Santana, V. A. Silva, J. T. C. Pacheco, A. C. Fernandes, and I. D. Carneiro, Emater, Goiânia, Brazil.

1116  W103  Non-structural carbohydrates in Marandu-grass pastures under different grazing intensities.
M. V. Azenha1, L. F. Brito2, A. A. Oliveira1, E. R. Janusckiewicz3, E. Raposo1, S. S. Santana1, R. A. Reis1, and A. C. Ruggieri6, 1University of Sao Paulo State, Jaboticabal, Brazil, 2Sao Paulo State University, Jaboticabal, Brazil.

1117  W104  Production and quality of alfalfa harvested on different stages of maturity in summer and fall.
C. Arzola-Alvarez7, R. Copado-Garcia2, O. Ruiz-Barrera2, C. Rodriguez-Muela2, A. Corral-Luna2, A. Castañeda-Correa2, H. M. Gaytan-Torres1, and D. Diaz-Plascencia1, 1Universidad Autónoma de Chihuahua, Chihuahua, Mexico, 2Universidad Autónoma de Nuevo Leon, Monterrey, Mexico.

1118  W105  Effect of cultivars and planting dates on bioenergy feedstock characteristics of switchgrass (Panicum virgatum) in South Korea.
B. Kim1,2, M. M. Sargolzehi3, B. Lee2, D. Ji3, J. Peng4, J. Nejad5, S. Kang1, D. H. Min5, and K. Sung6, 1Department of Animal Life System, College of Animal Life Science, Kangwon National University, Chuncheon, South Korea, 2Department of Animal Science, College of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran, 3Planning and Coordination Division, National Institute of Animal Science, Savon, South Korea, 4Department of Agronomy, College of Agriculture, Kansas State University, Manhattan.

1119  W106  Morphological composition of Piata palisade grass tillers subjected to strategies of intermittent defoliation.
G. O. Rocha1, F. H. Chizzotti2, D. M. Fonseca1, M. E. Santos1, and B. M. Pereira1, 1Universidade Federal de Vicosa, Vicosa, Brazil, 2Universidade Federal de Uberlandia, Uberlandia, Brazil.

1120  W107  Chemical composition and isitu dry matter degradability of tropical forages grasses in Northeastern Brazil.

1121  W108  Influence of phenological stage on fresh forage, hay and silage on nutritional value of tall wheatgrass.
M. Menghini1,2, H. M. Arelovich1,2,3, M. F. Martinez2, and R. D. Bravo3, 1Dto. Agronomía, Universidad Nacional del Sur, Bahía Blanca, Argentina, 2CIC, Bahía Blanca, Argentina, 3CERZOS, Bahía Blanca, Argentina.
Spatio-temporal evaluation of the nutritive value of *Croton cortezianus* and *Leucophyllum frutescens* through in vitro fermentation kinetics.
M. S. Alvarado¹, M. Guerrero-Cervantes*, H. González-Rodríguez², Domínguez-T. Gómez¹ and A. Juárez-Reyes¹,
¹Universidad Juárez del Estado de Durango, Durango, Mexico, ²Universidad Autónoma de Nuevo León, Linares, Nuevo León, Mexico

Reduction of enteric methane emission by using tannin supplementation in grazing goats.
A. C. Ruggieri*, N. C. Meister, F. O. Alari, V. C. Silva, N. L. Santos, and E. B. Malheiro, Sao Paulo State University, Jabioboticaiba, Brazil.

Nutritive value of buffelgrass-based diets supplemented with dried distillers grains with solubles and dried citrus pulp.
N. C. Vásquez Aguilar¹, H. Bernal Barragán¹, R. G. Ramírez Lozano¹, M. Cerrillo Soto¹, M. V. Gómez Meza¹, E. Gutiérrez Orellana¹, and M. Guerrero Cervantes¹, ¹Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Mexico, ²Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Mexico, ³Universidad Juárez del Estado de Durango, Durango, Mexico.

Lignin concentration and its correlation with degradability of tropical grasses.
A. Vargas Velásquez*, Universidade de São Paulo, Pirassununga, Brazil.

Chemical characterization and in vitro fermentation activity of tropical legumes.
I. Scull-Rodriguez¹, M. A. Cerrillo Soto², O. Olao¹, M. Guerrero-Cervantes¹, A. Juárez-Reyes², and R. Herrera-García¹, ¹Instituto de Ciencia Animal, San José de las Lajas, Cuba, ²Red Internacional de Nutrición y Alimentación en Rumiantes, Durango, Mexico, ³Universidad Juárez del Estado de Durango, Durango, Mexico.

Modeling dry matter production in *Panicum maximum* grasses.
V. L. N. Brandao¹, M. I. Marcondes¹, F. H. M. Chizzotti¹, and H. Bandeira¹, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Federal University of Viçosa, Viçosa, Brazil.

Productive performance of *Atriplex canescens* forage for 30 years of exclusion and grazing in different seasons of the year in the north of Mexico.
E. Suarez*, UAAAN, Saltillo, Mexico.

Effect of incubation temperature on the proliferation and differentiation of pig preadipocytes in primary culture.
A. E. Bohan*, J. Bartosh, and T. D. Brandebourg, Auburn University, Auburn, AL.

Effects of maternal nutrient restriction on muscle satellite cell activity.

Effects of milk replacer and multivitamin-mineral supplementation on performance of heat stressed dairy calves.
S. Blair¹, C. C. Williams¹, B. F. Jenny¹, M. Thomas¹, V. Morgan¹, and T. Earleywine¹, ¹LSU AgCenter, Baton Rouge, ²Land O’Lakes Animal Milk Products, Shoreview, MN.

Effects of milk replacer feeding frequency on growth and performance of neonatal Holstein calves.

High energy diet enhances intramuscular adipogenesis in Hanwoo steers distributed to breeding value for meat quality.

Impact of the sires on puberty onset in Nellore heifers.
M. V. C. Ferraz Jr.¹, A. V. Pires², D. D. Nepomuceno², A. D. B. Ribeiro³, M. V. Biehl³, J. P. C. Thieme³, E. M. Moreira¹, J. A. Faleiro Neto¹, and J. R. S. Gonçalves¹, ¹University of São Paulo-FMVZ/USP, Pirassununga, Brazil, ²University of São Paulo-ESALQ/USP, Piracicaba, Brazil, ³Experimental Station Hildegard Georgina Von Pritzewitz, Londrina, Brazil.

Microarray studies in high and low RFI cattle reveal a potential role for gonadotropin releasing hormone (GnRH) in regulating feed efficiency.
S. D. Perkins¹*, C. Foradori¹, A. K. McNeel¹, L. A. Kriese-Anderson¹, and T. D. Brandebourg¹, ¹Auburn University, Auburn, AL, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.

Microbiota diversity is inversely related to adiposity in Mangalica pigs.
J. W. Broady, L. Wang, A. G. Moss, T. D. Brandebourg, and E. Schwartz², Auburn University, Auburn, AL.
Muscle hypertrophy induced by myostatin inhibition is suppressed by rapamycin administration.
D. Choi1, J. Yang1, S. K. Park2, and Y. S. Kim1, 1University of Hawaii, Honolulu, 2National Institute of Animal Science, RDA, Suwon, South Korea.

Poor maternal nutrition during gestation reduces mesenchymal stem cell (MSC) proliferation in offspring.
S. M Pillai1, M. L. Hoffman1, K. N. Peck1, E. V. Valley1, T. D. Crenshaw2, S. A. Zinn1, and K. E. Govoni1, 1Department of Animal Science, University of Connecticut, Storrs, 2University of Wisconsin-Madison.

Regulation of key markers of lipid metabolism by short chain fatty acids in differentiated pig adipocytes.
H. Yan1 and K. M. Ajuwon2, 1Purdue University, West Lafayette, IN, 2Department of Animal Sciences, Purdue University, West Lafayette, IN.

Relationship among efficiency measures, economic value and feedlot performance assessed in growing phase of Nellore cattle.
A. M. Castilhos1, C. L. Francisco1, A. M. Jorge1, R. H. Branco2, M. E. Z. Mercadante2, S. F. M. Bonilha2, C. M. Pariz2, and D. C. Rivaroli1, 1Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, 2Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertânia-SP, Brazil.

Role of G Protein-coupled estrogen receptor-1 and matrix metalloproteinases 2 and 9 in the effects of estradiol-17β on proliferation, protein synthesis and protein degradation in bovine satellite cell cultures.
E. Kamanga-Sollo, B. C. Reiter, K. J. Thornton1, M. E. White, and W. R. Dayton, University of Minnesota, Saint Paul.

The effect of pre-weaning feeding and housing strategy on calf growth performance and behavior following post-weaning housing transition.
H. M. Gauthier1, H. A. Tucker1, S. E. Williams1, D. M. Shenk2, C. S. Ballard1, K. M. Morrill2, and H. M. Dann1, 1William H. Miner Agricultural Research Institute, Chazy, NY, 2Cornell University, Ithaca, NY.

B. L. Miller1, T. Earleywine1, W. S. Bowen Yoho1, and T. E. Johnson1, 1Land O’Lakes Animal Milk Products, Shoreview, MN, 2Land O’Lakes, Inc., Webster City, IA.

The effect of various fat levels and fat sources on growth and performance of calves fed milk replacer.
T. Earleywine1, B. L. Miller1, W. S. Bowen Yoho1, and T. E. Johnson1, 1Land O’Lakes Animal Milk Products, Shoreview, MN, 2Land O’Lakes-Purina Feed LLC, Gray Summit, MO, 3Land O’Lakes, Inc., Webster City, IA.

Use of biometric measurements to predict age and body weight of bovine fetus.
T. R. Gionbelli1, M. P. Gionbelli1,2, M. S. Duarte1, S. C. Valadares Filho1,2, F. C. Rodrigues1, M. G. Machado1, D. Zanetti1, B. C. Silva1, and F. A. Villadiego1, 1Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, 2Instituto Nacional de Ciência e Tecnologia-Ciência Animal, Viçosa, Minas Gerais, Brazil.

Horse Species II

Trotting stride variables of the North American Akhal-Teke Horse.
M. C. Nicodemus1 and J. Beranger2, 1Mississippi State University, Mississippi State, 2American Livestock Breeds Conservancy, Pittsboro, NC.

Development of an objective on-farm equine temperament scoring system.
J. N. Foley1, J. L. Lucia1, and K. W. Walter1, 1Truman State University, Kirksville, MO, 2Sam Houston State University, Huntsville, TX.

Cooling of equine semen at 16°C for 36h with the addition of cysteine in different concentrations.
R. A. De Oliveira1, L. S. Murata1,2, M. A. D. O. Vii2, and M. L. Gambarini1, 1University of Brasilia, Brasilia, Brazil, 2Federal University of Goiás, Goiânia, Brazil.

Administration of bioactive proteins to mature horses improves gait kinematics.
J. Coverdale1 and J. M. Campbell2, 1Texas A&M University, College Station, 2APC, Inc., Ankeny, IA.

The effect of skim milk as an equine semen extender.
M. L. Freitas, C. S. Bouères, F. J. G. De Oliveira, L. S. Murata1, and R. A. De Oliveira, University of Brasilia, Brasilia, Brazil.

Reproductive activity in Quarter Horse mares with artificial light.
J. A. Ramírez-Godínez1, J. Delgado-Laphond, A. Flores-Mariñelarena, and E. Santellano-Estrada, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.
Lactation Biology Poster II

1232 W141 Day length affects simultaneously mammary epithelium integrity and mammary epithelial cell exfoliation in milk.

1233 W142 Serotonin receptors expression in caprine and ovine mammary gland by Real Time PCR-RT.

1234 W143 Immortalization of a primary bovine mammary epithelial cell line by the SV40 large T-antigen gene.

1235 W144 Color measurement as potential tool for determination of colostrum quality in primiparous and multiparous dairy cows.
J. Gross*, E. C. Kessler, and R. M. Bruckmaier, Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland.

1236 W145 Effect of milk yield genotype on gene expression in liver and adipose tissue from periparturient Holsteins.

L. J. Juengst*, E. E. Connor, B. J. Bequette, Department of Animal and Avian Sciences, University of Maryland, College Park, USA.

1238 W147 Is there a core microbiome in bovine milk samples from healthy quarters with somatic cell counts of less than 200,000 cells/mL?
S. L. Brooker*, J. E. Williams, S. M. Reynolds, K. M. Yahvah, L. K. Fox, and M. A. McGuire, University of Idaho, Moscow, USA.

1239 W148 Impact of machine milking on teat dimensions.
J. F. Guarin*, D. J. Reinemann, and P. L. Ruegg, Department of Dairy Science, University of Wisconsin-Madison, USA.

1240 W149 Comparison of ecological indices of bacterial communities in bovine milk varying in somatic cell count.
J. E. Williams*, S. M. Reynolds, K. M. Yahvah, L. K. Fox, B. Shafii, and M. A. McGuire, University of Idaho, Moscow, USA.

1241 W150 Effects of arginase inhibition on casein expression and proliferation of bovine mammary epithelial cells.
L. Ding*, M. Wang, L. Chen, H. Wang, and J. J. Loor, Yangzhou University, Yangzhou, China.

Meat Science & Muscle Biology Posters III

1264 W151 Sun dried meat quality derived from young bulls fed licuri cake derived from biodiesel production.

1265 W152 Processed burger quality derived from young bulls fed licuri cake from biodiesel production.
WEDNESDAY, JULY 23, 2014

1266  W153  Collagen, cooking losses and shear force of aged meat from Nellore steers fed protected or unprotected linseed oil. W. Henrique*, L. R. Simonetti, T. M. Pivaro, V. G. Carvalho, E. A. Oliveira, C. C. P. D. Paz, and A. A. M. Sampaio, 1Instituto de Zootecnia, Sertãozinho, Brazil, 2Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 3FCAV/UNESP Jaboticabal, Pradípolis, Brazil, 4Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1267  W154  Effect of aging times and inclusion of unprotected or protected linseed oil on the diet of Nellore steers over the color of Longissimus. W. Henrique*, L. R. Simonetti, T. M. Pivaro, V. G. Carvalho, E. A. Oliveira, C. C. P. D. Paz, and A. A. M. Sampaio, 1Instituto de Zootecnia, Sertãozinho, Brazil, 2Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 3FCAV/UNESP Jaboticabal, Pradípolis, Brazil, 4Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1268  W155  Aging times and inclusion of unprotected or protected linseed oil on Nellore steers diet and its influence on cholesterol and lipid oxidation of the meat. L. R. Simonetti*, W. Henrique, T. M. Pivaro, V. G. Carvalho, E. A. Oliveira, C. C. P. D. Paz, and A. A. M. Sampaio, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Instituto de Zootecnia, Sertãozinho, Brazil, 3FCAV/UNESP Jaboticabal, Pradípolis, Brazil, 4Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1269  W156  Effect of aging times and inclusion of unprotected or protected linseed oil from ruminal degradation on the diet of Nellore steers over pH and water holding capacity of meat. L. R. Simonetti*, W. Henrique, T. M. Pivaro, V. G. Carvalho, E. A. Oliveira, C. C. P. D. Paz, and A. A. M. Sampaio, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Instituto de Zootecnia, Sertãozinho, Brazil, 3FCAV/UNESP Jaboticabal, Pradípolis, Brazil, 4Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1270  W157  Aged beef from Nellore young bulls fed crude glycerin in diets with different roughage sources. J. F. Lage*, A. F. Ribeiro, M. Machado, L. R. Simonetti, E. A. Oliveira, E. E. Dalanttonia, and T. T. Berchielli, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 3Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 4Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual Paulista “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1271  W158  Effect of aging times on tenderness of five muscles from carcass of Nellore young bulls. L. R. Simonetti*, J. F. Lage, E. E. Dalanttonia, E. A. Oliveira, M. B. Abra, G. M. Delamagna, L. Maneck Delevatti, and T. T. Berchielli, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 3Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 4Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 5Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 6Universidade Estadual Paulista “Júlio de Mesquita Filho”-FCAV, Jaboticabal, Brazil.

1272  W159  Color and pH of meat aged from Nellore young bulls fed crude glycerin associated with soybean grain in low or high starch diets. M. B. Abra, J. F. Lage*, L. G. Rossi, L. R. Simonetti, E. A. Oliveira, G. M. Delamagna, E. E. Dalanttonia, V. B. Carvalho, and T. T. Berchielli, 1Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, 2Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 3Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 4Universidade Estadual Paulista “Júlio de Mesquita Filho”-UNESP, Jaboticabal, Brazil, 5Universidade Estadual Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.

1273  W160  Effects of excess dietary sulfur on beef carcass characteristics and quality after aging. J. Hawley*, E. B. Kegley, J. W. Yancey, and J. K. Apple, Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR.

1274  W161  Effect of beta agonist and immunocastration on meat characteristics of Nellore cattle. M. Rezende Mazon, S. Luz e Silva, D. Silva Antônio, K. Nubiato, D. Juliana Brigida, B. Baptista, and P. R. Leme, 1University of Sao Paulo, Pirassununga, Brazil, 2University of Sao Paulo / FZEA, Pirassununga, Brazil, 3Universidade de São Paulo, Pirassununga, Brazil.

1275  W162  The use of bioelectrical impedance analysis to predict carcass composition in calf-fed Holstein steers. N. D. May, T. J. McEvers, L. A. J. Walter, J. A. Reed, J. P. Hutcheson, and T. E. Lawrence, 1West Texas A&M University, Canyon, 2Merck Animal Health, DeSoto, KS.

1276  W163  Increasing levels of sodium benzoate affect myosin heavy chain type expression in cultured bovine satellite cells. J. O. Baggerman*, J. E. Hergenreder, and B. J. Johnson, Texas Tech University, Lubbock.
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1347 W165 Nutritional value of macauba pulp presscake (Acrocomia aculeata) for growing pigs.
J. H. B. Pereira¹, S. L. S. Cabral Filho¹, C. G. D. Q. Roriz¹, C. B. Bernardes¹, T. M. Barbosa¹, L. R. Roos¹, A. P. Santana¹, J. B. Lopes², and L. S. Murata*¹, ¹University of Brasilia, Brasilia, Brazil, ²Federal University of Teresina, Teresina, Brazil.

1348 W166 Different corn hybrids fed to growing pigs. I. Chemical composition, energy concentration, and digestibility of nutrients.
Y. Liu¹, R. C. Salabó¹, T. E. Sauber¹, and H. H. Stein¹, ¹University of Illinois at Urbana-Champaign, ²Pioneer Hi-Bred International Inc., Johnston, IA.

1349 W167 Different corn hybrids fed to growing pigs. II. Concentrations and digestibility of amino acids.
Y. Liu¹, R. C. Salabó¹, T. E. Sauber¹, and H. H. Stein¹, ¹University of Illinois at Urbana-Champaign, ²Pioneer Hi-Bred International Inc., Johnston, IA.

1350 W168 A high dietary electrolyte balance reduces growth performance and CP and Zn total tract apparent digestibility in weanling piglets.
S. A. Guzmán-Pino¹, D. Solà-Oriol¹, R. Davin¹, E. G. Manzanilla¹, C. Torrente², and J. F. Pérez³, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Servei d’Emergències i Cures Intensives de la Fundació Hospital Clínic Veterinari-UAB, Departament de Medicina i Cirurgia Animals, Universitat Autònoma de Barcelona, Bellaterra, Spain.

1351 W169 Acceptance and palatability of different inclusion levels of protein solutions by feed restricted and non-restricted nursery pigs.
J. E. Figueroa¹², D. Solà-Oriol¹, R. Davin¹⁴, J. F. Pérez⁴, and D. Dwyer⁵⁶, ¹SNIBA, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Universidad Autónoma de Baja California, Mexicali, Mexico, ³Universidad Autonoma de Tlaxcala, Tlaxcala, Mexico, ⁴ICA, Universidad Autónoma de Baja California, Mexicali, Mexico, ⁵School of Psychology, University of New South Wales, NSW, Australia.

1352 W170 Nutritional value of whey permeate and egg products fed to growing pigs.
T. A. Woyengo*¹, E. Sánchez¹², J. Yanez¹, M. Cervantes¹, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universidad Autónoma de Baja California, Mexicali, Mexico, ³Universidad Autonoma de Tlaxcala, Tlaxcala, Mexico.

1353 W171 Inclusion of recycled wastes from the food industry in phase I diets for piglets: Effects on nutrient digestibility and growth performance.
B. Saldaña¹, P. Guzmán¹, G. Fondevila¹, J. F. Díaz Berrocoso¹, L. Cámara¹, X. Roca², and G. G. Mateos³, ¹Universidad Politécnica de Madrid, Madrid, Spain, ²Universidad Autónoma de Baja California, Mexicali, Mexico.

1354 W172 Effect of wheat and wheat with corn distillers grain on growth performance in nursery pigs.
D. J. Bloxham*, R. Dove, and M. J. Azain, University of Georgia, Athens, GA.

1355 W173 Effects of dietary protein and rapidly fermentable carbohydrate contents on microbial fermentation profile in the hindgut of weanling pigs.
V. V. Almeida¹, M. C. Thomaz¹, A. J. C. Nuñez¹, P. V. A. Alvarenga¹, F. R. Castelini¹, D. Perondi¹, R. G. Isola¹, A. Remus¹, Y. V. Silva-Guillen¹, E. Daniel¹, and S. L. Silva¹, ¹Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil, ²Department of Animal Science-FZEA/USP, Pirassununga/SP, Brazil.

1356 W174 Effects of dietary supplementation rice bran extracton production performance, feed intake, egg quality and excreta microbiota in laying hens.
H. L. Li, Y. Lei, and I. H. Kim*, Department of Animal Science, Dankook University, Cheonan, South Korea.
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<td>The effects of fermented cotton seed meal on growth performance and egg quality in laying hens.</td>
<td>Y. Wang, A. Li, Y. Hou, Y. Li, X. Zhang, and H. Wei. Academy of State Administration of Grain, Beijing, China; Animal Diseases Control and Prevention Centre of Miyun City, Beijing, China.</td>
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<td>F. Guay, M. Lessard, Y. Chorfi, and B. V. Le Thanh. Université Laval, Quebec, Quebec City, QC, Canada; Agriculture &amp; Agri-Food Canada, Sherbrooke, QC, Canada; Université de Montréal, Faculté de Médecine Vétérinaire, St-Hyacinthe, QC, Canada; Université Laval, Quebec City, QC, Canada.</td>
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<td>Y. Singh, V. Ravindran, and T. J. Wester. Massey University, Palmerston North, New Zealand; Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand.</td>
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<td>Deuterium enrichment in plasma, rumen fluid and urine of growing sheep dosed with D2O intravenously and intraruminally does not differ. C. C. Metges, S. Gös, H. M. Hammon, U. Agarwal, and B. J. Bequette, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, Department of Animal and Avian Sciences, University of Maryland, College Park.</td>
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<td>Manipulated plasma insulin, glucose, and BHBA affect immune factors in somatic cells in milk with and without intramammary LPS challenge in dairy cows. M. Zarrin, R. M. Bruckmaier, and O. Wellnitz, Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland, Department of Animal Science, Yasoji University, Yasoj, Iran, Graduate School for Cellular and Biomedical Sciences, University of Bern, Bern, Switzerland.</td>
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Serum apelin concentrations in dairy cows receiving different amounts of concentrate and a nicotinic acid supplement.
1Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, 2University for Veterinary Medicine, Foundation, Hannover, Germany, 3University of Hannover, Hannover, Germany.

Nuclear related factor-E2 is down-regulated by hyperinsulinemic euglycemia in dairy cows.
M. Zarrin1,2,3, O. Wellnitz2, and R. M. Bruckmaier4.
1Veterinary Physiology, VetSwiss Faculty, University of Bern, Bern, Switzerland, 2Department of Animal Science, Yasouj University, Yasouj, Iran, 3Graduate School for Cellular and Biomedical Sciences, University of Bern, Bern, Switzerland.

Bovine oocytes in vitro matured in the presence of antioxidants: Implications for intracellular levels of glutathione and reactive oxygen species and blastocyst development.
N. A. D. S. Rocha Frigoni1, B. C. D. S. Leão1, P. C. Dall’Acqua1, L. Rigon1, Nogueira1, and G. Z. Mingoti2, 1University of Sao Paulo State (UNESP), Araçatuba, Brazil, 2EMBRAPA Pantanal, Corumbá, Brazil.

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J. A. Abiona1, A. O. Ladokun1, J. O. Daramola1, D. M. Abioja2, E. O. Oke2, and O. M. Onaghasan3, 1Federal University of Agriculture, Abeokuta, Nigeria, Abeokuta, Nigeria, 2Federal University of Agriculture, Abeokuta, Nigeria.

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F. Correddu1, A. Marzano1, P. Bonelli2, P. Nicolussi2, and A. Nudda1, 1Dipartimento di Agraria, University of Sassari, Sassari, Italy, 2Istituto Zooprofilattico della Sardegna, Sassari, Italy.

J. L. Calvin1, N. Songsaen2, C. L. Keefer1, and B. J. Bequette1, 1Department of Animal, and Avian Sciences, University of Maryland, College Park, 2Center for Species Survival, Smithsonian Conservation Biology Institute, Front Royal, VA.

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E. A. Benavides1, K. D. Wells2, and D. H. Keisler3, 1University of Missouri-Division of Animal Sciences, Columbia, 2University of Missouri-Division of Animal Sciences, Columbia.

Effect of periconceptual growth hormone injection on feed intake and early fetal development in ewes.
1University of Nebraska, Lincoln, 2North Dakota State University, Fargo, 3North Dakota State University, Farg, 4North Dakota State University, Fargo, 5Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, 6Leibniz Institute for Farm Animal Biology (FBN), Institute of Nutritional Physiology, Dummerstorf, Germany, 7Department of Animal Sciences, University of Florida, Gainesville, 8Adisseo S.A.S., Alpharetta, GA.

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B. H. Boehmer1, M. R. Davis, and R. P. Wettemann, Oklahoma Agricultural Experiment Station, Stillwater, OK.

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B. I. Gomez1, J. O. E1, C. A. Gifford1, D. M. Hallford1, and J. Hernandez Gifford1, 1Oklahoma State University, Stillwater, 2New Mexico State University, Las Cruces.

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S. L. Rastle-Simpson1, K. N. D’Souza2, A. K. Redhead1, C. D. Paul3, E. N. Keller1, and M. Knights4, 1West Virginia University, Morgantown, 2West Virginia University, Morgantown.

Effect of methionine supplementation on methylation and lipid accumulation of the preimplantation embryo in dairy cows.
D. A. Velasco Acosta1,2, A. C. Denicol3, C. S. Skendandore1, Z. Zhou4, M. Nunes Corrêa2, D. N. Luchini2, P. J. Hansen4, J. J. Loor4, and F. C. Cardoso1, 1University of Illinois at Urbana-Champaign, 2Federal University of Pelotas, Pelotas, Brazil, 3Department of Animal Sciences, University of Florida, Gainesville, 4Adisseo S.A.S., Alpharetta, GA.
Expression of Foxp3 in peripheral blood mononuclear cells of pregnant cows.  
M. A. Paibomesai¹, R. Machado Ferreira Saran², R. da Silva Nunes Barreto², F. V. Meirelles², and L. J. Oliveira²,  
¹University of Guelph, Guelph, ON, Canada, ²Universidade de São Paulo, Pirassununga, Brazil, ³Michigan State University, East Lansing.

Luteinizing hormone (LH) profiles after either porcine LH or GnRH treatment in Holstein cows with or without FSH-stimulation.  
A. Behrouzi²*¹, M. Fakheri¹, R. Salehi¹, M. G. Colazo², and D. J. Ambrose¹ ², ¹Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, ²Alberta Agriculture and Rural Development, Livestock Research Branch, Edmonton, AB, Canada.

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Methane and carbon dioxide emissions from manure of dairy cows fed red clover- or corn silage-based diets supplemented with linseed oil.  
F. Hassanat¹, D. I. Massé, and C. Benchara, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

Life cycle assessment of heavy pig production in a sample of Italian farms.  
G. Pirlo¹, S. Care², G. Della Casa³, R. Marchetti³, G. Ponzon³, V. Faei³, V. Fantin³, P. Mson³, P. Buttò³, and F. Falconi³, ¹Consiglio per la ricerca e sperimentazione in agricoltura, Cremona, Italy, ²Consiglio per la ricerca e sperimentazione in agricoltura, San Cesario s/P, Italy, ³ENEA, Bologna, Italy, ⁴LCA-Lab, Bologna, Italy.

Control of water consumption in swine barns: One step-closer to real time management.  
C. Pineiro¹, P. Castro, J. Morales, and G. Montalvo, PigCHAMP Pro Europa, Segovia, Spain.

Increasing milk yield affects sustainability of dairy cattle production in terms of cultural energy use efficiency.  
H. Koknaroglu¹, H. Saglam, and O. Koskan, Suleyman Demirel University, Isparta, Turkey.

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S. Kim, S. D. Upadhyaya, and I. H. Kim¹, Department of Animal Science, Dankook University, Cheonan, South Korea.

Assessing variability in whole-farm environmental impact estimates using a partially-stochastic beef production model.  
K. A. Johnson and R. R. White¹, Washington State University, Pullman.

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J. A. Dillon¹ and C. A. Rotz², ¹Department of Animal Science, Pennsylvania State University, University Park, ²USDA-ARS Pasture Systems and Watershed Management Research Unit, University Park, PA.

Nitrogen excretion from beef cattle for 6 cover crop mixes as estimated by a nutritional model.  
E. E. Grings¹, S. Sackey, M. J. Hansen, V. Owens, D. Beck, and P. Sexton, South Dakota State University, Brookings.

Effect of crude glycerin associated with energy sources on enteric methane emission from finishing Nellore bulls on pasture in the dry season.  
A. José Neto¹, L. G. Rossi¹, A. F. Ribeiro¹, B. R. Vieira¹, E. E. Dalantonia¹, J. Duarte Messana¹, E. Garbin Gobbi¹, and T. T. Berchielli¹, ¹Universidade Estadual Paulista “Julio de Mesquita Filho”, Jaboticabal, Brazil, ²University Estadual Paulista, Jaboticabal, Brazil, ³University Estadual Paulista “Júlio de Mesquita Filho” / UNESP, Jaboticabal, Brazil, ⁴University Estadual Paulista, Jaboticabal, São Paulo, Brazil, ⁵University Estadual Paulista Julio de Mesquita Filho-UNESP, Jaboticabal, Brazil.

Enteric methane emission from beef cattle fed diets containing crude glycerin associated with energy sources.  
L. G. Rossi¹, A. José Neto², B. R. Vieira¹, E. E. Dalantonia¹, A. S. Gómez I³, and T. T. Berchielli¹, ¹Universidade Estadual Paulista, Jaboticabal, Brazil, ²University Estadual Paulista, Jaboticabal, Brazil, ³Universidade Estadual Paulista “Julio de Mesquita Filho”, Jaboticabal, Brazil, ⁴University Estadual Paulista, Jaboticabal, São Paulo, Brazil, ⁵University Estadual Paulista Julio de Mesquita Filho-UNESP, Jaboticabal, Brazil.

Using fecal phosphorus, calcium and ash excretion to predict total and inorganic phosphorus intake of beef cattle consuming a forage-based ration.  
D. D. Harmon¹, J. K. Smith, and M. A. McCann, Virginia Tech, Blacksburg.

Influence of low doses tannins extract addition on the presence of Escherichia coli in feces of beef cattle.  
T. D. J. Heras¹, I. Enriquez¹, B. J. Cervantes¹, S. M. Gaxiola¹, J. A. Romo¹, and R. Barajas¹, FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico, ²Ganadera los Migueles, S.A. de C.V., Culiacan, Mexico.
1518 W229 Phosphorus excretion in beef steers as impacted by increasing levels of dicalcium phosphate supplementation.  

1519 W230 Estimation of heat production and energy conversion efficiency using real time measurements of methane and carbon dioxide fluxes in mid-lactation Holstein cows.  

1520 W231 Effect of dietary nitrate and organic copper supplementation on dairy enteric methane and nitrous oxide emissions.  

1521 W232 Influence of tannins extract addition on in vitro gas production of feces from beef cattle.  

1522 W233 Quantification of cephalin in dairy cow feces and urine using solid phase extraction (SPE) coupled with ultra performance liquid chromatography-tandem mass spectrometry (UPLC/MS/MS).  
P. P. Ray*, K. F. Knowlton, C. Shang, and K. Xia, Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, Virginia Tech, Blacksburg, Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

1523 W234 Method development and application: Solid phase extraction (SPE) clean-up and ultra performance liquid chromatography-tandem mass spectrometry (UPLC/MS/MS) quantification of pirlimycin in dairy cow feces and urine.  
P. P. Ray*, K. F. Knowlton, C. Shang, and K. Xia, Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, Virginia Tech, Blacksburg, Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg.

1524 W235 A larger proportion of grass feed components in the ration was associated with higher methane production rates of dairy cows.  
C. C. Metges*, M. Derno, J. Ziessler, N. Krattenmacher, G. Thaller, and B. Kuhla, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, Institute of Animal Breeding and Husbandry, Kiel University, Kiel, Germany, Christian-Albrechts-Universität, Kiel, Germany.

1525 W236 Effect of eco-saline system on some hematological and biochemical parameters in Damascus goats raised under semi-arid conditions.  
E. B. Abdalla*, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.

1526 W237 Fibrolytic bacteria isolated from the rumen of North American moose (Alces alces).  
S. L. Ishaq and A. D. G. Wright, University of Vermont, Burlington.

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1779 W238 Prevalence of subclinical ketosis detected by near infra-red analysis of BHB in DHI milk samples.  

1780 W239 Role of treatment soybean meal with pistachio extract on total tract nutrients digestibility of Holstein bulls.  
A. Jolazadeh*, M. Dehghan banadaky, K. Rezayazdi, and N. Vahdani, University of Tehran, Karaj, Iran, Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

1781 W240 Effect of polyherbal supplementation as feed additive on milk production and composition in lactating goats.  
K. Rezayazdi*, F. Mirzae, and M. Hosseinabadi, Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, Animal Science Research Institute, Karaj, Iran, University of Tehran, Karaj, Iran.

1782 W241 Changes of protozoal diversity in response to forage and protein of diets in the rumen of dairy cows.  
J. Zhang, D. Bu*, S. Zhao, and J. Wang, State Key Laboratory of Animal Science, Institute of Animal Science, Chinese Academy of Agricultural Science, Beijing, China.

1783 W242 Pyrosequencing-based profiling of bacterial 16S rRNA genes identifies the unique Proteobacteria attached to the rumen epithelium of bovines.  
S. Zhao, J. Wang, and D. Bu, State Key Laboratory of Animal Science, Institute of Animal Science, Chinese Academy of Agricultural Science, Beijing, China.

1784 W243 Genetic diversity of dipeptidyl peptidase IV from anaerobic bacterial cultivation in vitro in dairy cow.  
J. W. Zhao*, J. Q. Wang, S. G. Zhao, and D. P. Bu, College of Animal Science and Technology of Inner Mongolia University for the Nationalities, Tongliao, China, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
Effects of test weight, precision processing and processing index on in situ ruminal digestibility of barley grain in beef heifers. 
Y. Zhao1, S. Yan2, Z. He3, U. Anele4, M. L. Swift5, T. A. McAllister2, and W. Yang6, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, 2College of Animal Science, Inner Mongolia Agricultural University, Hohhot, China, 3Key Laboratory for Agro-Ecological Processes in Subtropical Region, Institute of Subtropical Agriculture, The Chinese Academy of Sciences, Changsha, China, 4Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, 5Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

Longitudinal shifts in the rumen bacterial communities of dairy cows during the transition period. 
D. W. Pitta1, S. Kumar2, B. Veiccharelli2, B. Bhukya2, K. Bittinger2, D. Shirley1, and J. Ferguson2, 1University of Pennsylvania, Kennett Square, 2University of Pennsylvania, Philadelphia.

Effects of assumptions on estimating energetic efficiencies in lactating dairy cows. 
K. M. Kennedy7 and C. C. Calvert, University of California-Davis.

Nutrient supply estimations errors when using free ruminal bacteria as reference sample. 
F. Díaz-Royón1, J. M. Arroyo2, and J. Gonzalez, Departamento de Producción Animal, Escuela Técnica Superior de Ingenieros Agrónomos, Universidad Politécnica de Madrid, Madrid, Spain.

Evaluation of the Nordic dairy cow model karoline in predicting methane emissions. 
M. Ramin1 and P. Huhtanen2, 1Swedish University of Agricultural Sciences (SLU), Umeå, Sweden, 2Swedish University of Agricultural Sciences (SLU), Umea, Sweden.

Evaluation of the CNCPS v6.5 for predicting metabolizable energy and protein allowable milk in sugarcane based diets. 
E. A. Collao-Saenz1, A. Foskolos2, R. J. Higgs2, M. N. Pereira3, and M. E. Van Amburgh4, 1University of California- Davis, Tulare, CA, 2Alltech, Inc., Nicholasville, KY, 3University of Kentucky, Lexington, KY, 4VMTRC, University of California, Tulare.

Evaluation of mineral excretion of lactating Holstein dairy cows supplemented with copper, manganese and zinc in organic and inorganic forms. 

Evaluation of milk yield and composition of F1 Holstein x Gir lactating cows supplemented with rumen-protected choline during the transition period. 
R. C. D. Souza1, R. C. Souza1, A. B. D. Pereira2, R. F. Cota1, T. A. Torres1, I. B. Fortes1, and G. V. Fonseca3, 1PUC Minas, Betim, Brazil, 2University of New Hampshire, Durham, NH, 3PUC, Betim, Brazil.

Evaluation of milk yield and composition of F1 Holstein x Gir lactating cows supplemented with rumen-protected choline during the transition period. 
R. C. D. Souza1, R. C. Souza1, A. B. D. Pereira2, R. F. Cota1, T. A. Torres1, I. B. Fortes1, and G. V. Fonseca3, 1PUC Minas, Betim, Brazil, 2University of New Hampshire, Durham, NH, 3PUC, Betim, Brazil.

Effects of supplemental bupleurum extract on blood material metabolism in heat-stressed dairy cows. 
X. Sun4, Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China.
Effects of bupleurum extract on performance and health status in heat-stressed late lactation dairy cows.

B. Shi1, N. Zheng1, J. Cheng1,2, L. Min1, C. Yin1, and J. Wang2,3, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Estimation of NDF pool in the rumen of cattle using fecal excretion and diet characteristics.

H. C. Bonfá1, E. Detmann2, S. Krizsan3, S. C. Valadases Filho4, and P. Huhtanen5, 1UFV, Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, 2Universidade Federal de Viçosa, Viçosa, Viçosa, Minas Gerais, Brazil, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Performance and carcass traits of immunocastrated Nellore cattle fed β-agonists.

D. Silva Antoneloi, M. Rezende Mazonii, K. Eduardo Zanolii Nubiatic, J. Juliana Brigidal, J. Fernando Morales Gomesii, B. Luis Nery Garciaii, M. Zanataii, P. R. Leme1, and S. Luiz e Silvi1, 1University of Sao Paulo, Pirassununga, Brazil, 2University of Sao Paulo / FZEA, Pirassununga, Brazil.

Effects of nicotinamide on hormone levels, antioxidant status and immune function of cows in heat stressed dairy cows.

J. Cheng1,2, N. Zheng1,2, X. Sun1,2, D. P. Bu1, L. Pan1, and J. Wang2,3,4, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Effects of supplemental bupleurum extract on blood material metabolism in heat-stressed dairy cows.

X. Sun1,2, N. Zheng1,2, J. Cheng1,2, D. P. Bu1, L. Pan1, and J. Wang2,3,4, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Effects of nicotinamide on blood material metabolism of dairy cows under heat stress.

X. Sun1,2, N. Zheng1,2, D. P. Bu1, L. Pan1, and J. Cheng1,2, 1College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 2Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Supplementation of selenium plus vitamin E vs. canola oil in the diet of feedlot cattle: Which one can improve nutritional quality of meat modifying gene expression?

G. F. Gregghi1, A. Saran Neto2, H. Fukumasui1, J. C. D. C. Balieiro1, A. O. Latorre1, L. B. Correa1, and M. A. Zanetti1, 1University of São Paulo- USP/FZEA, Pirassununga, Brazil, 2University of São Paulo, Pirassununga, Brazil, 3University of São Paulo- USP/FMVZ, Pirassununga, Brazil, 4Adolfo Lutz Institute, São Paulo, Brazil.

Effects of feeding a corn straw or mixed forage diet on immune function in dairy cows.

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Fatty acid composition of milk from cows supplemented with canola oil.

K. C. Welte1, C. M. de Magalhães Rodrigues Martins1, M. M. Martins1, B. Roqueto dos Reis1, J. G. Rebelato Forti1, A. Soligo Vizeu de Palma1, B. L. Unglaube Schmidt1, and A. Saran Neto2, 1University of São Paulo- USP/FZEA, Pirassununga, Brazil.

Effects of a corn straw or mixed forage diet on bovine milk fatty acid biosynthesis.

M. Zhao1, D. P. Bu1, J. Q. Wang2, X. Q. Zhou1,2, Y. Zhang1, and P. Sun1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Northeast Agricultural University, Harbin, China.

Influence of forage level and corn processing method on feeding behavior of Nellore bulls.

M. Caetano1,2, A. R. Cabral1, G. B. Feltrin1, R. S. Goulart1, S. Laz e Silva1, P. R. Leme1, and D. P. D. Lanna1, 1University of Sao Paulo / ESALQ, Piracicaba, Brazil, 2current address University of Adelaide, Roseworthy, Australia, 3University of Sao Paulo / FZEA, Pirassununga, Brazil, 4MSD Saúde Animal, Sao Paulo, Brazil.
1811 W270  Evaluation of a hand-held meter to detect subclinical ketosis in dairy cows.  
Z. J. Cao*, S. S. Xu, and S. L. Li, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.

1812 W271  Effects of rumen protected choline supplementation on milk yield and plasma metabolites in dairy cows fed hay based diets.  
L. Pinotti†, M. Ottoboni, V. Caprarulo, A. Pilotto, A. Agazzi, G. Invernizzi, A. Baldi, and G. Savoini, Università degli Studi di Milano, Department of VESPA, Milan, Italy.

1813 W272  Liver metabolism of Holstein cows is altered by nutrient supply but not by lipopolysaccharide in vitro.  
M. Garcia*, B. J. Bequette, and K. M. Moyes, Department of Animal and Avian Sciences, University of Maryland, College Park.

1814 W273  Effect of postruminal infusion of fructose on hepatic steatosis.  
K. E. Boesche*, J. E. Sibray, S. L. Koser, and S. S. Donkin, Purdue University, West Lafayette, IN.

1815 W274  Effects of rare earth-chitosan chelate on liver and kidney parameters in lactating dairy cows.  
J. Li1,2, J. Q. Wang1, P. Sun1, F. D. Li1, and D. P. Bu1,1 State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.

1816 W275  Supplementation of Aspergillus oryzae α-amylase on ruminal volatile fatty acid distribution and digestive tract gene expression in beef steers fed a steam-flaked corn based finishing diet.  
B. N. Gordon1, S. W. Hahm*1, J. J. Wagner1, J. S. Jennings2, H. Han1, and T. E. Engle1,1 Colorado State University, Fort Collins, 2Texas A&M AgriLife Research, Amarillo.

1817 W276  Effects of rumen-protected choline during the transition period on nonesterified fatty acids and β-hydroxybutyrate concentrations in periparturient dairy cattle.  
I. M. Lima1, R. A. Silva1, C. H. Ramíres1, S. L. Viechnieski1, and R. D. Almeida1,1 Universidade Federal do Paraná, Curitiba-Paraná, Brazil, 2StarMilk Farm, Ceu Azul-Paraná, Brazil.

1818 W277  Effects of replacing alfalfa hay and corn silage with corn straw in diets on main hormones in blood of dairy cows.  
X. Q. Zhou1,2, D. P. Bu1, Y. D. Zhang2, M. Zhao1, P. Sun1, and J. Q. Wang1,2, Heilongjiang Bayi Agricultural University, Daqing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

1819 W278  Body condition score at calving alters the hepatic transcriptome in grazing dairy cattle.  
H. Akbar1, Z. Zhou1, K. Macdonald1, K. E. Schütz2, G. Verkerk2, J. R. Webster3, S. L. Rodriguez Zas1, J. R. Roche2, and J. J. Loor3,1 University of Illinois at Urbana-Champaign, 2DairyNZ, Hamilton, New Zealand, 3AgResearch, Hamilton, New Zealand.

1820 W279  Short term feed restriction increases afternoon but not morning milk fat concentration in lactating dairy cows.  
A. M. Abdelatty1,2, M. E. Iwaniuk2, A. E. Weidman2, B. B. Teter2, M. A. Tony1, F. F. Mohammad1, and R. A. Erdman2,1 Cairo University, Cairo, Egypt, 2University of Maryland, College Park.

1821 W280  The mRNA expression of the classical genes of enzymes involved in milk fatty acid synthesis does not explain milk fat depression in dairy cows.  

1822 W281  Effects of niacin supplementation and forage type on milk, digestibility, blood parameters and body temperature in lactating dairy cows.  

1823 W282  Differences in hepatic transcriptional regulatory networks due to body condition score at calving in grazing dairy cattle.  
H. Akbar1, Z. Zhou1, K. Macdonald1, K. E. Schütz1, G. Verkerk1, J. R. Webster1, S. L. Rodriguez Zas1, J. R. Roche2, and J. J. Loor1,1 University of Illinois at Urbana-Champaign, 2DairyNZ, Hamilton, New Zealand, 3AgResearch, Hamilton, New Zealand.

1824 W283  Effects of a corn straw or mixed forage diet on mammary gland function and its endocrine regulation in early lactation dairy cows.  
T. Qin1, H. Y. Wang1, D. P. Bu2, and H. B. Zhu1,1 Embryo Biotechnology and Reproduction Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

1825 W284  Milk fatty acid profile of dairy cows grazing a tropical pasture supplemented with sources of rumen protected fat.  
J. D. Souza1, F. Batistel2, C. Sitta1, and F. A. P. Santos2,1 University of Sao Paulo, Piracicaba, Brazil, 2University of Sao Paulo, Piracicaba, Brazil.
Evaluating daily variation in body weight, milk production, and rumination activity on a commercial dairy with robotic milking.

Peroxisome proliferator activated receptor-γ controls lipogenic gene networks in goat mammary epithelial cells.
W. Zhao1,2, J. Luo1, and J. J. Loor1, 1Northwest A & F University, Yangling, China, 2University of Illinois at Urbana-Champaign

Effects of ergot alkaloid exposure on serotonin receptor mRNA in the smooth muscle of the bovine gastrointestinal tract.
J. L. Klotz1, 2, D. Kim1, A. P. Foote2, and D. L. Harmon1, 1USDA-ARS, FAPRU, Lexington, KY, 2University of Kentucky, Lexington.

Effect of mineral supplementation on lactational performance in early-lactating dairy cows fed a high-concentrate diet.
A. R. Alfonso-Avila1, 2, E. Charbonneau1, P. Y. Chouinard1, G. Tremblay2, and R. Gervais1, 1Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Quebec, QC, Canada.

Mineral profile, immunoglobulins and antioxidant activity in culls cows fed DDGS.
A. Flores-Mariñelarena1, E. Acosta Sánchez1, G. Corral-Flores1, C. Rodríguez-Muela1, J. A. Ramírez-Godínez1, J. Dominguez-Viveros1, A. Anchondo-Garay1, and H. Ramírez-Garduño2, 1Universidad Autónoma de Chihuahua, Chihuahua, Mexico, 2INIFAP, Chihuahua, Mexico.

Metabolic characteristics and truly metabolizable protein supply to dairy cattle from new cool-season forage corn varieties in Western Canada.
S. Abeysekara, D. A. Christensen, N. A. Khan, X. Huang*, and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.

Hepatic expression of genes associated with glutathione and fatty acid metabolism during the peripartal period reveal beneficial effects of MetaSmart and Smartamine M supplementation on health status in dairy cows.
J. S. Osorio1, P. Ji2, J. K. Drackley1, D. N. Luchini1, and J. J. Loor1, 1University of Illinois at Urbana-Champaign, 2William H. Miner Agricultural Research Institute, Chazy, NY, 3Adisseo S.A.S., Alpharetta, GA.

Feed intake and feeding behavior of lactating dairy cows were affected by dietary fatty acid profile.
H. Khalilvandi-Behroozyar1, M. Dehghan Banadaky1, M. Ghaffarzadeh1, and K. Rezayazdi2, 1Department of Animal Science, Urmita University, Urmita, Iran, 2Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 3Chemistry and Chemical Engineering Research Center of Iran, Tehran, Iran.

Plasma urea concentration of beef heifers fed with different lipid sources and frequency supplementation.
M. C. A. Santana*1, V. C. Modesto1, G. T. Pereira1, R. A. Reis1, G. M. P. Melo1, H. J. U. Costa1, T. T. Berchielli1, and L. P. L. Moreira1, 1Emater, Goiânia, Brazil, 2UNESP, Jaboticabal, Brazil.

Effect of prototype sequestering agents on performance and milk aflatoxin M1 concentrations of dairy cows fed aflatoxin B1-contaminated diets.
I. M. Ogunade1, 2, K. G. Arriola1, R. M. Martins1, B. Y. Coy1, C. L. Curry2, D. K. Terkoski1, A. Rubright1, M. G. Zenobi1, 2, Z. Ma2, C. R. Staples2, and A. T. Adesogan2, 1University of Florida, Department of Animal Sciences, Gainesville, 2Department of Animal Sciences, University of Florida, Gainesville.
Blood glucose concentrations and deposition of muscular and subcutaneous fat tissues of Nellore young bulls finished in pasture supplemented with crude glycerin.
E. San Vito¹, J. F. Lage, L. Maneck Delevatti, E. E. Dalantonia, L. R. Simonetti, M. B. Abra, and T. T. Berchielli, Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.

Effect of propolis on plasma metabolites and hematocrit of Holstein calves.
P. Peravian², K. Rezayazdi², and G. Nehzati²,¹ University Of Tehran, Tehran, Iran, Departments of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran,¹ University Of Tehran, Karaj, Iran.

Effect of maternal plane of nutrition, selenium supply, and physiological stage on digestibility and ruminal fermentation in ewes.
K. J. McLean²,¹, A. M. Meyer², L. R. Coupe², G. P. Lardy, K. A. Vonnahme, and J. S. Caton,¹ North Dakota State University, Fargo, ²Division of Animal Sciences, University of Missouri, Columbia.

Effect of reduced energy density of close-up diet on dry matter intake, milk yield and energy balance in multiparous Holstein cows.
W. M. Huang², A. Simayi, A. Yasheng, Z. H. Wu, S. L. Li, and Z. J. Cao, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.

Effect of lysolecithin on milk fat synthesis and milk fatty acid profile of cows fed diets differing in fiber and unsaturated fatty acid concentration.
D. E. Rico², J. Y. Ying, and K. J. Harvatine, Penn State University, University Park.

Replacement of soybean meal by high energy cottonseed meal in diets of dairy cows: Milk production and ovarian follicular dynamics.
F. M. Wingert, L. K. Hatamoto-Zervoudakis², P. N. Cosentino, J. T. Zervoudakis, and A. L. Cândida da Resende Fraga, Federal University Of Mato Grosso, Cuiaba, Brazil.


Contribution of a chelated trace mineral supplement as a methionine source for dairy cows.
M. O. Caldeira¹, R. O. Rodrigues², M. R. Waldron³,², and G. I. Zanton¹, University of Missouri, Columbia, ²Nutrition Professionals, Inc., Chilton, WI, ³Novus International, Inc., St. Charles.

Effect of the supplementation of plant extracts, vitamins and their associations on feedlot performance and carcass traits of Nellore cattle.
M. B. Silva¹, A. M. Jorge², F. D. Resende¹, G. R. Siqueira³, G. F. Bertí³, C. L. Francisco¹, and A. M. Castilhos¹,¹ Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, ²Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu-SP, Brazil, ³Farmácia de Medicina e Cirurgia de Animais, UNESP, Botucatu, Brazil.

Body condition score assessment in a grazing Jersey herd in Costa rica.

Intake and nutrient digestibility of growing Nellore heifers and steers fed two levels of calcium and phosphorus.
L. F. Costa e Silva¹, T. E. Engle², P. P. Rotte², G. R. Siqueira², G. F. Bertí³, C. L. Francisco¹, and A. M. Castilhos¹,¹ Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, ²Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu-SP, Brazil, ³Farmácia de Medicina e Cirurgia de Animais, UNESP, Botucatu, Brazil.

Ration composition in Wisconsin dairy herds: Factors affecting fertility.
A. H. Souza¹, P. D. Carvalho, C. M. Drake², R. D. Shaver, and M. C. Wilfank,¹ University of California Cooperative Extension, Tulare, ²University of Wisconsin-Madison, ³University of California.

Milk quality from dairy farms divided in five levels of production.
L. L. Cardoso, M. I. Marcondes¹, G. A. T. Ferreira, V. L. N. Brandao, A. S. Trece, and A. S. Trece, Universidade Federal de Viçosa, Minas Gerais, Brazil, ²Universidade Federal De Viçosa, Minas Gerais, Brazil, ³Universidade Federal De Viçosa, Viçosa, Brazil.

MasterGraze silage for growing Holstein heifers.
D. L. Gadeken¹, K. Koone², S. Harris³, M. Kirk³, and D. Casper,¹ South Dakota State University, Brookings, ²Masters Choice, Anna, IL, ³Masters Choice, Anna, IL.
Transcriptome profiling of milk in dairy cows fed linseed.

Feeding diets inducing milk fat depression to heat-stressed dairy cows on performance, energy partitioning, and antioxidant status.
S. Kargar1, M. Khvorash1, G. R. Ghorbani1, and D. J. Schingoethe2,1, Isfahan University of Technology, Isfahan, Iran, 2South Dakota State University, Brookings.

Altering ewe nutrition in late gestation; the impact on lamb performance.
F. McGovern1*, F. Campion1, T. Sweeney1, S. Fair1, S. Lott1, and T. M. Boland1, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland, 2College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, 3Department of Life Sciences, University of Limerick, Limerick, Ireland.

A sensory additive alters the eating behavior of dry dairy cows.
C. Iglesias1, F. Bargo2, A. Mereu2, I. Ipharraguerre2, and A. Bach1,3, IRTA, Barcelona, Spain, 2Lucta S.A., Barcelona, Spain, 3ICREA, Barcelona, Spain.

Effects of restricted versus conventional dietary adaptation over periods of 6, 9 and 14 days on blood lipopolysaccharide binding-protein concentration of feedlot cattle.
D. V. Vicari1*, A. Perdigao2, L. L. Cursino1, R. S. Barducci3, M. D. Arrigoni3, and D. D. Millen3, São Paulo State University (UNESP), Dracena campus, Dracena, Brazil, São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, 3Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.

The effects of OmniGen-AF on serum metabolites, calcium concentrations and hormones of the adrenal axis during heat stress in lactating Holstein cows.
L. W. Hall1, F. A. Villar1, J. D. Allen2, J. D. Chapman3, N. M. Long4, and R. J. Collier1, 1The University of Arizona, Tucson, 2Northwest Missouri State, Maryville, MO, 3Prince Agri Products, Inc., Quincy, IL, 4Clemson University, Clemson, SC.

Assessment of the effect of plant tannins on rumen fermentation and gut microbial diversity in goats using 16S rDNA amplycon pyrosequencing.
B. R. Min1, C. Wright1, P. Ho2, J. S. Eun2, N. Gurung3, and R. Shang4, Tuskegee University, Tuskegee, AL, 2Montgomery Blair High School, Silver Spring, MD, 3Utah State University, Logan.

Effect of supplemental chelated Cu, Zn, and Mn on antioxidant status and hoof health of lactating cows.
X. J. Zhao1,2,3, J. Q. Wang*, X. Q. Zhou, Y. Zhang, S. G. Zhao, and P. Sun1, 1State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Dry matter intake, milk yield and composition of Holstein cows fed organic minerals.
T. A. Del Valle1, E. F. Jesus1, A. G. B. V. B. Costa1, G. F. Cabral1, V. C. Galvão1, P. G. D. Paiva1, T. S. Acedo2, L. F. M. Tumassia2, and F. P. Remô1, School of Veterinary Medicine and Animal Science, University of São Paulo, Pirassununga, Brazil, School of Agricultural and Veterinary Sciences of UNESP, Jaboticabal, Brazil, School of Animal Science and Food Engineering of University of São Paulo, Pirassununga, Brazil, DSM Produtos Nutricionais, São Paulo, Brazil.

Effects of sampling position on blood hormone concentration in dairy cattle.
M. Zhao1, D. P. Bu1, J. Q. Wang1, X. Q. Zhou, Y. Zhang, S. G. Zhao, and P. Sun1, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

Effects of dietary protein composition on blood hormone levels in dairy cattle.
M. Zhao1, D. P. Bu1, J. Q. Wang1, X. Q. Zhou1, Y. Zhang1, and P. Sun1, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 2Northeast Agricultural University, Harbin, China.

The small ruminant nutrition system: Considering the ruminal fiber stratification for goats.
J. G. L. Regadas Filho1, L. O. Tedeschi2, A. Cannas3, M. T. Rodrigues4, and R. A. Vieira5, 1Universidade Federal de Viçosa, Viçosa, Brazil, 2Texas A&M University, College Station, 3Universita Di Sassari, Sassari, Italy, 4Università Federale di Viçosa, Viçosa, Brazil, 5Norte Fluminense State University, Campos dos Goytacazes, Brazil.
Effect of “COGU” technology on glucose uptake and mineral utilization and deposition in growing lambs.
A. M. Temple*, G. A. Ayangbile, D. R. Vandermyde, and C. R. Vandermyde, 1Agri-King Inc., Fulton, IL, 2Morrison Veterinary Clinic, Morrison, IL.

Effect on plasma metabolites of Nellore bulls fed ractopamine hydrochloride and protein level.
N. R. B. Cônsolo*, F. Rodriguez, M. O. Frasseto, R. A. P. Maciel, V. Rizzi, and L. F. P. Silva, 1University of São Paulo, Pirassununga, Brazil, 2University of São Paulo, São Paulo, Brazil, 3Ouro Fino, Cravinhos, Brazil.

Impact of “COGU” technology on performance in lactating dairy cows.

Effect of sprouted barley grain supplementation of an herbage or haylage diet on ruminal fermentation and methane output in continuous culture.

Effect of lalsil bacterial inoculants on the pH of corn silage with low dry matter.
M. Saberi*, K. Rezayazdi, and M. Dehghan banadaky, 1Graduated student, Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 3Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran.

The microbiome composition of the rumen is altered during the peripartal period in dairy cattle.
H. Derakhshani, S. Alqarni, H. Khazanehei, F. C. Cardoso, J. C. Plaizier, E. Khafipour, and J. J. Loor, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2University of Illinois at Urbana-Champaign, 3Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.

Evaluating rations offered to a group of cattle as a component of ration formulation software.

Epidemiological study about the effects of chelated minerals on milk, reproductive performance, and locomotion scores of dairy cattle.
A. Bach*, A. Pinto, and M. Blanch, 1Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, 2ICREA, Barcelona, Spain, 3Department of Ruminant Production, IRTA, Barcelona, Spain, 4Novus Int. Inc., St Charles, MO.

Apparent synthesis of thiamin and vitamin B<sub>12</sub> in rumen of lactating dairy cows fed alfalfa or orchardgrass silages at different maturity stages.
D. S. Castagnino*, K. Kammes, M. S. Allen, R. Gervais, P. Y. Chouinard, D. E. Santschi, and C. L. Girard, 1Université Laval, Québec, QC, Canada, 2Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 3Michigan State University, East Lansing, 4Valacta, Ste-Anne-de-Bellevue, QC, Canada.

Potassium carbonate as a cation supplement to increase dietary cation anion difference and improve dairy feed efficiency in lactating dairy cows.
A. E. Weidman, M. E. Iwaniuk, and R. A. Erdman, University of Maryland, College Park.

Degradation ruminal kinetics of organic matter, neutral detergent fiber and crude protein of sorghum wet distiller grain without solubles in comparison to the original sorghum grain.
A. I. Trujillo*, M. D. L. Abruña, and P. Chilibraste, 1Facultad de Agronomía, Universidad de la República, Montevideo, Uruguay, 2Facultad de Agronomía Universidad de la República, Paysandú, Uruguay, 3Facultad de Agronomía, Universidad de la República, Paysandú, Uruguay.

Relative bioavailability of phosphorylated ascorbic acid in lactating dairy cows.
C. K. Reynolds*, D. J. Humphries, C. E. S. Barratt, P. C. Aikman, and W. Steinberg, 1University of Reading, Reading, United Kingdom, 2DSM Nutritional Products, Basel, Switzerland.

Changes in serum IgG and total protein concentrations in calves fed differing amounts of colostrum replacer.

Apparent synthesis of thiamin, riboflavin, vitamin B<sub>6</sub> and vitamin B<sub>12</sub> in rumen of lactating dairy cows fed 2 concentrations of nitrogen and 2 energy sources.
V. Beaudet*, R. Gervais, P. Y. Chouinard, P. Nozière, B. Graulet, M. Doreau, and C. L. Girard, 1Université Laval, Québec, QC, Canada, 2Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 3INRA-URH, Saint Genès Champanelle, France.
Apparent synthesis of thiamin and vitamin B12 in rumen of lactating dairy cows fed alfalfa or orchardgrass silages of different particle lengths.
D. S. Castagnino*, K. Kammes, M. S. Allen, R. Gervais, P. Y. Chouinard, D. E. Santschi, and C. L. Girard, 1Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 2Michigan State University, East Lansing, 3Université Laval, Québec, QC, Canada, 4Valacta, Ste-Anne-de-Bellevue, QC, Canada.

Concentration of vitamin B12 in colostrum and milk from dairy cows fed different energy levels during the dry period.
M. Duplessis*, S. Mann, D. V. Nydam, C. L. Girard, P. R. Pellerin, and T. R. Overton, 1Université Laval, Département des Sciences Animales, Québec, QC, Canada, 2Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 3Cornell University, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, 4Cornell University, Department of Animal Science, Ithaca, NY.

Ruminal bacterial community structure of dairy cows fed conventional and reduced-fat dried distillers grains with solubles.

Diet influences microbial community composition, and methane emission in growing and finishing beef cattle.

Ruminal bacterial community structure of dairy cows fed conventional and reduced-fat dried distillers grains with solubles.

Dietary fatty acid profile affects plasma metabolic profile of peripartum Holstein cows.
H. Khalilvandi-Behroozyar, M. Dehghan Banadaky*, M. Ghaffarzadeh, and K. Rezayazdi, 1Department of Animal Science, Urmia University, Urmia, Iran, 2Department of Animal Science, University of Tehran, Karaj, Tehran, Iran, 3Chemistry, and Chemical Engineering Research Center of Iran, Tehran, Iran.

Prediction of enteric methane emissions in Holstein cows fed various forage sources.
D. E. Rico*, P. Y. Chouinard, F. Hassanat, C. Benchaar, and R. Gervais, 1Université Laval, Québec, QC, Canada, 2Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.

RNA-Seq detection of differential gene expression in the rumen of beef steers associated with feed efficiency phenotypes.

Bioassay activity of different tannin sources by gas production technique.
N. Vahdani, M. Dehghan Banadaky*, F. Khalighi-Sigaroudi, and K. Rezayazdi, 1University of Tehran, Karaj, Iran, 2Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, 3Institute of medicinal plants, Academic Center for Education, Culture and Research (ACECR), Karaj, Iran, 4Department of Animal Science, University of Tehran, Karaj, Iran.

Differences in formulation and bioavailability of commercial injectable fat-soluble vitamin products.
D. B. Snider*, R. A. Zinn, and R. L. Stuart, 1Iowa State University, Ames, 2University of California-Davis, El Centro, CA, 3Stuart Products Inc, Bedford, TX.

Individual and additive value of conventional and non-conventional technologies in beef steers housed and fed using a GrowSafe feeding system.

Effects of supplemental bupleurum extract on serum hormone and immune globulin levels in heat-stressed dairy cows.
X. Sun, J. Cheng, N. Zheng, D. P. Bu, L. Pan, and J. Wang, 1Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, 2College of Animal Science and Technology, Anhui Agricultural University, Hefei, China, 3State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, 4Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.

Supplementation of dairy cows before calving with beta-carotene.
R. C. Oliveira, B. M. Guerreiro, N. N. Morais Junior, R. L. Araujo, R. A. N. Pereira, and M. N. Pereira, 1Universidade Federal de Lavras, Lavras, Brazil, 2Universidade de São Paulo, São Paulo, Brazil, 3Instituto Federal de Educação, Ciência e Tecnologia do Espírito Santo, Colatina, Brazil, 4Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil, 5Better Nature Research Center, Ijaci, Brazil.
1895  W354  Relationship between residual feed intake and mitochondrial function.  
M. M. Masiero*, M. S. Kerley, and W. J. Sexten, University of Missouri, Columbia.

1896  W355  Bioavailability of rumen protected choline sources when supplemented at different concentrations.  
K. J. Herrick1, J. A. Davidson2, F. R. Valdez3, M. J. Christofferson4, and S. E. Schuling5, 1Kemin Industries, Inc., Des Moines, IA, 2Land O Lakes Purina Feed, Gray Summit, MO, 3Hubbard Feeds, Inc., Des Moines, IA.

1897  W356  Effect of method of flaxseed processing and tannins on the growth performance and carcass fatty acid profile of lambs.  
E. Castillo-Lopez*, M. Edrosolam, P. J. Shand, D. A. Christensen, and G. B. Penner, University of Saskatchewan, Saskatoon, SK, Canada.

1898  W357  Evaluating the energy and protein requirements for growing Nellore heifers and steers fed two levels of calcium and phosphorus.  
L. F. Costa e Silva1, T. E. Engle1, S. C. Valadares Filho2, P. P. Rotta1, M. I. Marcondes1, B. C. Silva1, and M. V. C. Pacheco1, 1Colorado State University, Fort Collins, 2Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, 3Universidade Federal de Vicosa, Vícosa, Brazil, 4Universidade Federal de Viçosa, Vícosa, Minas Gerais, Brazil, 5Universidade Federal de Viçosa, Vícosa, Brazil.

Small Ruminant Poster Session II

1917  W358  The effects of live yeast, glucan and mannan on performance, rumen and blood parameters of fattening lambs.  
O. Canbolat1, J. Filya1, V. Akay2, and A. Kamalak1, 1University of Uludag, Faculty of Agriculture, Department of Animal Sciences, Bursa, Turkey, 2Global Nutritech Biotechnology LLC, Richmond, VA.

1918  W359  Effect of prostaglandin F2α on fertility of ewes treated with a short-term progesterone-based estrous synchronization protocol.  
C. D. Paul*, West Virginia University, Morgantown.

1919  W360  Anthelmintic activity of selected aldehydes and ketones against sheep gastro-intestinal nematodes.  
E. Ortu1,2, G. Sanna1, A. Scala1, G. Pulina1, P. Caboni2, and G. Battacone1, 1Dipartimento di Agraria, University of Sassari, Sassari, Italy, 2Dipartimento di Medicina Veterinaria, University of Sassari, Sassari, Italy, 3Dipartimento di Scienze della Vita e dell'Ambiente, University of Cagliari, Cagliari, Italy.

1920  W361  Ovine footrot gene marker screening in a Katahdin sheep flock.  
T. Wuliji1, J. G. Hickford1, W. R. Lamberson2, B. C. Shanks1, and S. Azarpajouh1, 1Department of Agriculture, and Environmental Sciences, Lincoln University, Jefferson City, MO, 2Lincoln University, Lincoln, New Zealand.

1921  W362  The effects of gonadotropic stimulation on fertility of progesterone-treated nulliparous ewes bred during seasonal anestrus.  
A. K. Redhead*, West Virginia University, Morgantown.

1922  W363  Effects of hair sheep breed on performance response of ram lambs to artificial infection with Haemonchus contortus.  

1923  W364  Effect of sodium butyrate administered in the concentrate on rumen development and productive performance of lambs in intensive production system during the suckling and the fattening periods.  
S. Cavini1, S. Iraira1, A. Foskolos1, A. Ferret1, M. A. Gomez1, and S. Calsamiglia1, 1Animal Nutrition and Welfare Service, Universitat Autonoma de Barcelona, Bellaterra, Spain, 2Animal Nutrition and Welfare Service, Departament of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain, 3Nutega/Novation, Madrid, Spain.

1924  W365  Nutrients intake and performance of lambs fed diets with two levels of crude protein and concentrate.  
R. S. Santos1, K. G. Ribeiro2, O. G. Pereira3, S. C. Valadares Filho4, S. D. J. Villela5, J. L. Silva1, and P. G. F. Duarte1, 1Federal University of Vicosa, Vicosa, Minas Gerais, Brazil, 2Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, 3Universidade Federal de Vicosa, Vícosa, Minas Gerais, Brazil, 4Universidade Federal de Viçosa, Vícosa, Minas Gerais, Brazil, 5Federal University of Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, Brazil.

1925  W366  Milk production, blood glucose, insulin and non-esterified fatty acids concentration in ewes fed diet containing crude glycerin.  
D. M. Polizel1, R. S. Gentil1, E. M. Ferreira1, R. A. Souza1, M. V. C. Ferraz Jr2, M. C. A. Sucupira1, and I. Susin1, 1Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 2University of São Paulo-FMVZ/USP, Pirassununga, Brazil, 3Faculdade de Medicina Veterinária e Zootecnia-FMVZ/USP, São Paulo, Brazil.
Apparent digestibility, rumen metabolism and nitrogen balance in lambs fed high-concentrate diets containing increasing levels of ground cottonseed.
R. A. Souza1, R. S. Gentil1, E. M. Ferreira1, D. M. Polizel1, A. P. A. Freire2, J. A. Faleiro Neto2, and I. Susin1, 1Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 2Faculdade de Medicina Veterinária e Zootecnia-FMVZ/USP, São Paulo, Brazil.

Intake and performance of finishing lambs fed diets with licuri nut (Syagrus coronata) cake.

Growth and carcass characteristics of lambs fed high-concentrate diets containing different sources of non-protein nitrogen.
A. P. A. Freire1, F. L. M. Silva1, D. M. Polizel1, R. A. Souza1, R. S. Gentil1, R. C. Araujo2, and I. Susin1, 1Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, 2GRASP Ind. & Com. LTDA, Curitiba, Brazil.

Zilpaterol hydrochloride modify the fatty acids profile of intramuscular fat of feedlot lambs.
H. Dávila-Ramos* and J. C. Robles-Estrada, Universidad Autonoma de Sinaloa, Culiacan, Mexico.

Composition of cheeses made from milk of ewes fed with soybean seed or linseed concentrates.
C. F. A. M. Penna*, M. I. Simão2, F. P. Paula1, M. O. Leite1, M. P. Cerqueira1, L. M. Fonseca1, M. R. Souza1, and I. Borges1, 1Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil, 2Universidade Federal de Minas Gerais (Veterinary School/ UFMG), Belo Horizonte, Brazil, 3Universidade Federal de Minas Gerais, Belo Horizonte, Brazil.

Pregnancy and lambing rates in anestrous ewes bred to a new synchronization protocol and laparoscopic timed artificial insemination (TAI).
S. B. Turner*, M. B. Gordon1, T. Gowan2, J. A. Small2, and D. M. W. Barrett1, 1Faculty of Agriculture, Dalhousie University, Truro, NS, Canada, 2Agriculture and Agri-Food Canada, Truro, NS, Canada.

Effect of supplementation with water-washed neem fruit and/or yeast on the performance and digestibility of west African dwarf sheep.
M. K. Adevumi* and T. O. Ososanya, University of Ibadan, Ibadan, Nigeria.

Effect of crude protein level and zilpaterol supplementation on growth performance and carcass dressing of finishing hairy lambs.
A. E. Angulo*, I. C. Perez1, A. Plascencia1, H. L. Lopez1, P. M. Peraza2, E. I. Gonzalez2, and F. G. R. Rincon2, 1Universidad Autonoma De Sinaloa, Culiacan Sinaloa, Mexico, 2Universidad Autonoma De Sinaloa, Culiacan Sinaloa, Mexico, 3Uabc, Mexicali, Mexico, 4Universidad Autonoma De Sinaloa, Culiacan Sinaloa, Mexico.

Performance of lambs fed with crude glycerin diets.
V. B. Carvalho*, J. M. Bertocco Ezequiel1, R. F. Leite1, S. F. F. Petrorossi1, T. R. Delphino1, H. L. Perez1, J. R. Paschoaloto1, M. T. C. Almeida1, V. R. Favaro1, and E. H. Fernandes1, 1UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, 2UNESP, Jaboticabal, Brazil, 3UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, Brazil, 4State University of Sao Paulo, Jaboticabal, Brazil.

Sexual response of anovulatory Dorper x Pelibuey nulliparous and multiparous ewes exposed to males + estrogenized females.
M. D. L. A. De Santiago*, Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico.

Feeding behavior of feedlot lambs fed with high levels of crude glycerin.
V. B. Carvalho*, J. M. Bertocco Ezequiel1, R. F. Leite1, S. F. F. Petrorossi1, T. R. Delphino1, M. T. C. Almeida1, J. R. Paschoaloto1, H. L. Perez1, V. R. Favaro1, E. M. Oliveira1, and A. P. D’Aurea1, 1UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, 2UNESP, Jaboticabal, Brazil, 3UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, Brazil, 4State University of Sao Paulo, Jaboticabal, Brazil.

Effect of porcine digestive peptides as sweet milk whey replacer for piglets diets: Preferences, acceptance and performance during the nursery period.
J. E. Figueroa1,2, D. Solà-Oriol3, R. Davin*, E. Borda3, S. A. Guzmán-Pino4, and J. F. Pérez4, 1SNiBA, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, Bellaterra, Spain, 2Universidad de Chile, Santiago, Chile, 3Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, 4Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain.

1951 W381 The inclusion of yeast-derived protein in weanling diet improves growth performance, anti-oxidative capability and intestinal health of piglets.  
L. Hu, L. Che*, G. Su, Y. Xuan, G. Luo, F. Han, Z. Fang, Y. Lin, S. Xu, and D. Wu, Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China.

1952 W382 Effects of added zinc during the grower and/or finisher phase on growth performance and carcass characteristics of finishing pigs fed diets with or without ractopamine HCl.  

L. Hu, L. Che*, Y. Liu, Y. Xuan, F. Han, Z. Fang, Y. Lin, S. Xu, and D. Wu, Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China.


Teaching/Undergraduate and Graduate Education

1955 W385 Examining demographics and student interests in an introductory animal science course.  
D. A. Nichols* and M. R. Hay McCammant, Kansas State University, Manhattan.

1956 W386 Development of a science education experience for adolescents based on stress physiology and a growing interest in smartphone technology.  

1957 W387 Student assessment through a survey instrument of a horse management laboratory course.  
M. C. Nicodemus* and T. L. Bova, Mississippi State University, Mississippi State.

1958 W388 Educational outcomes of an online course: Pharmaceutical use in cattle.  
E. Blythe*, West Texas A&M University, Canyon.

1959 W389 Using community engagement to enhance student learning in animal science: Farm to fork-at home and abroad.  
T. Montgomery*, University of Wisconsin-Platteville, Platteville.

1960 W390 An animal handling course for today’s animal science student.  
A. P. Fidler*, University of Arkansas, Fayetteville.

1961 W391 Experiential learning experience for undergraduate students in livestock and fisheries work in India.  
S. Robinson, M. Shelby, C. Prakash, O. Bolden-Tiller, and N. Gurung*, Tuskegee University, Tuskegee, AL.

1962 W392 Fine Focus: A new international journal for undergraduate microbiology research.  
J. L. McKillip*, Ball State University, Muncie, IN.

SYMPOSIA AND ORAL SESSIONS

ADSA-ASAS Northeast Section Symposium:  
Opportunities to Meet Changing Consumer Preferences for Animal Products  
Chair: Lisa Holden, The Pennsylvania State University  
Sponsor: ADSA-ASAS Northeast Section  
3501B

10:30 AM 11 The science and art of cheese making.  
K. E. Kaylegian*, Pennsylvania State University, University Park.

A. Novakovic*, Cornell University, Ithaca, NY.

11:20 AM 13 New approaches to low-fat meat products to better meet consumer demands.  
E. W. Mills*, Pennsylvania State University, University Park.

11:45 AM Panel Discussion

12:05 PM Business Meeting & Awards
ADSA Foundation Scholar Lecture
Chair: Cindie Luhman, Land O’Lakes

10:30 AM  Introduction to ADSA Foundation Scholar Award in Production
C. Luhman.

10:40 AM  Opportunities for mitigating low fertility in dairy cattle.
T. Bilby*, Merck Animal Health, Fort Worth, TX.

Animal Behavior and Well-Being II
Chair: Alexandra Harlander, University of Guelph

10:30 AM  Evaluation of hair cortisol as a biomarker of chronic stress in beef cattle.
D. Moya*, M. He, Y. Wang, T. A. McAllister, and K. S. Schwartzkopf-Genswein, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

C. Raineri1,2, B. C. Nunes3, T. B. Bovo4, E. A. Titto4, E. R. Afonso1, and A. H. Gameiro1, 1University of São Paulo. School of Veterinary Science and Animal Science, Department of Animal Nutrition and Production, Pirassununga, Brazil, 2Federal University of Uberlândia. School of Veterinary Medicine, Uberlândia, Brazil, 3Ministry of Science, Technology and Innovation, Brasilia, Brazil, 4University of São Paulo. School of Animal Science and Food Engineering, Pirassununga, Brazil.

11:00 AM  Effect of rest-stop duration during long-distance transport on indicators of animal welfare in weaned beef calves.
S. Marti and K. S. Schwartzkopf-Genswein, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

11:15 AM  Monitoring stress behavior in grazing beef cows with a long range pedometric system.

11:30 AM  Effect of four different reflective barriers on black-globe temperatures in calf hutches and on calf ADG.
T. H. Friend*, W. Binion and J. Haberman, Texas A&M University, College Station.

11:45 AM  Effects of three tail painting formulations on behavior of dairy heifers.
C. S. Skenandore* and F. C. Cardoso, University of Illinois at Urbana-Champaign.

12:00 PM  Effects of ractopamine or zilpaterol on physiologic and metabolic parameters in feedlot steers.
A. L. Fuller1,2, T. L. Covey2, T. E. Lawrence1, and J. T. Richeson1, 1West Texas A&M University, Canyon, 2OT Feedyard and Research Center, Hereford, TX.

Animal Frontiers Mini-Symposium: Human Animal Bond
Chair: Steven Zinn, University of Connecticut
Sponsor: ASAS, AMSA, Animal Frontiers, CSAS, and EAAP

10:30 AM  EAAP - ASAS Speaker Exchange Presentation: Effects of interactions between therapy animals and humans.
L. Lidjors*, Swedish University of Agricultural Sciences, Skara, Sweden.

11:10 AM  Bonding with commodities: Implications of human-animal relationships for livestock animal welfare.
C. Croney*, Purdue University, West Lafayette, IN.

11:50 AM  Discussion and Recognition
**Beef Species: Feed Additives**

Chair: Allison M. Meyer, University of Missouri

2103C

10:30 AM 144

Comparison of feed technologies for backgrounding of weaned beef calves.

10:45 AM 145

Effects of dose and duration of ractopamine hydrochloride supplementation on growth performance and carcass characteristics of feedlot heifers.
B. M. Edenburn*, N. A. Pyatt, and T. L. Felix, University of Illinois at Urbana-Champaign, Elanco Animal Health, Greenfield, IN.

11:00 AM 146

A meta-analysis of zilpaterol and ractopamine effects on feedlot.
I. J. Lean*, J. M. Thompson, and F. R. Dunshea*, SBScibus, Camden, Australia, 2The University of New England, Armidale, Australia, 3The University Of Melbourne, Parkville, Australia.

11:15 AM 147

Evaluation of objective and subjective mobility variables in feedlot cattle supplemented with zilpaterol hydrochloride.

11:30 AM 148

Comparison of real-time ultrasound measurements for body composition traits to carcass data in feedlot cattle fed zilpaterol hydrochloride.

11:45 AM 149

The effect of zilpaterol supplementation and RFI on growth performance.
L. A. J. Walter*, West Texas A&M University, Canyon.

12:00 PM 150

Effects of zilpaterol hydrochloride on internal body temperature and respiration rate of black-hided feedlot steers and heifers during moderate heat stress.

12:15 PM 151

Effects of zilpaterol hydrochloride on blood gas, electrolyte balance and pH in feedlot cattle.

**Dairy Foods: Technical Oral Session: Protein / Polysaccharide Interactions**

Chair: Hasmukh Patel, South Dakota State University

3501C

10:30 AM 266

Production and purification of whey protein glycate conjugated with low molecular mass dextrans.
L. Xu*, Y. Gong', and J. A. Lucey', 1University of Wisconsin-Madison, Department of Food Science, Madison, WI, 2Wisconsin Center for Dairy Research, Madison, WI, 3University of Wisconsin-Madison.

10:45 AM 267

Impact of maillard modification on the in vitro carbohydrate digestibility of wp-dextran glycates.
Y. Gong*, L. Xu', and J. A. Lucey', Department of Food Science, University of Wisconsin-Madison, Center for Dairy Research, University of Wisconsin-Madison.

11:00 AM 268

Effects of mineral salts and calcium chelating agents on the functionalities of milk protein concentrate prepared by ultrafiltration.
X. Luo*, L. Ramchandran, and T. Vasiljevic, Victoria University, Melbourne, Australia.

11:15 AM 269

Storage stability of sodium caseinate stabilized oil-in-water emulsions as affected by severe heat treatment and storage temperatures.
Y. Liang*, G. Gillies', H. G. Patel', L. Matta-Merino', A. Ye', and M. Golding', 1Massey University, Palmerston North, New Zealand, 2Fonterra Research and Development Centre, Palmerston North, New Zealand, 3South Dakota State University, Brookings, 4Riddet Institute, Palmerston North, New Zealand.

11:30 AM 270

Understanding mechanisms of the plasmin-induced dissociation of the casein micelle.

11:45 AM 271

Heat-induced changes in milk proteins in high-carbohydrate media.
T. Huppertz',2 and H. G. Patel', NIZO food research, Ede, Netherlands, South Dakota State University, Brookings.
12:00 PM 272  
Effects of pH on the morphology and mechanical property of heat-induced whey protein aggregates.  
C. W. Y. Lam\textsuperscript{*} and S. Ikeda, University of Wisconsin-Madison.

12:15 PM 273  
Strengthening interfacial whey protein films by conjugation with gellan.  
B. Cai\textsuperscript{*} and S. Ikeda, University of Wisconsin-Madison.

12:30 PM 274  
Enhancement of radical quenching ability of sweet whey and casein hydrolyzate: Mutual supplementation with thermally generated maillard reaction products.  
Z. Z. Haque\textsuperscript{*} and D. Mukherjee, Food Science, Nutrition & Health Promotion, Mississippi State University, Mississippi State.

12:45 PM 275  
Impact of heat treatments on the functionalities of milk protein concentrate 80.  
R. M. Horak\textsuperscript{*}, J. A. Lucey, and M. Molitor, University of Wisconsin-Madison.

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**Extension Education Symposium: Decision Support Tools in Extension**  
Chair: Amy E. Radunz, University of Wisconsin-River Falls  
2102A

10:30 AM 292  
History and development of the bovine estrus synchronization planner.  
S. K. Johnson\textsuperscript{1}, G. Dahlke\textsuperscript{2}, and D. R. Strohbehn\textsuperscript{3}, 1Kansas State University, Colby, 2Iowa State University, Ames.

11:00 AM 293  
Impact of decision support tools available for dairy farm management.  
V. Cabrera, University of Wisconsin-Madison.

11:30 AM 294  
Assessing the need, project development and impact of the National Swine Reproduction Troubleshooting and Management Guide.  
D. Levis\textsuperscript{1}, M. Estienne\textsuperscript{2}, W. Flowers\textsuperscript{3}, R. Baker\textsuperscript{4}, R. Knox\textsuperscript{5}, K. Stalder\textsuperscript{6}, T. Safranski\textsuperscript{7}, M. Knauer\textsuperscript{8}, W. Singleton\textsuperscript{9}, D. Meisinger\textsuperscript{10}, D. Levis Worldwide Swine Consultancy, Lincoln, NE, 2Virginia Tech, Suffolk, VA, 3North Carolina State University, Raleigh, 4Iowa State University, Ames, 5University of Illinois at Urbana-Champaign, 6University of Missouri, Columbia, 7Purdue University, Lafayette, IN, 8US Pork Center of Excellence, Clive, IA, 9National Pork Board, Clive, IA.

12:00 PM  
Discussion

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**Food Safety: Advances in Food Safety**  
Chair: Michaela G. Aleywine, Center for Veterinary Medicine  
3501D

10:30 AM 299  
Effectiveness of a mycotoxin binder to minimize transfer of aflatoxin from feed to milk in Nili-Ravi buffaloes.  
N. Aslam\textsuperscript{1}, I. Rodrigue\textsuperscript{2}, A. ul Haq\textsuperscript{3}, A. Covling\textsuperscript{4}, H. M. Warriach\textsuperscript{4}, D. M. McGill\textsuperscript{5}, and P. C. Wynn\textsuperscript{6}, 1Graham Centre for Agricultural Innovation, Charles Sturt University, Wagga Wagga, Australia, 2BIOMIN -Singapore Pte Ltd, Singapore, Singapore, 3Buffalo Research Institute, Bhunnikyi, Pakistan, 4University of Veterinary and Animal Science, Lahore, Pakistan.

10:45 AM 300  
Use of silage bacteria as enterosorbents to reduce aflatoxin contamination.  
Z. Ma\textsuperscript{*}, J. J. Romero, S. K. Williams, and A. T. Adesogan, Department of Animal Sciences, University of Florida, Gainesville.

11:15 AM 301  
Effect of starter culture as a source of microbial contamination on the quality and safety of yogurt products in Egypt.  
M. M. Motawee\textsuperscript{1}, W. E. D. I. Saber\textsuperscript{2}, and S. A. Ibrahim\textsuperscript{3}, 1National Organization for Drug Control and Research, Giza-Egypt, Egypt, 2Department of Microbiology, Giza, Egypt, 3Food Microbiology and Biotechnology Laboratory, North Carolina A&T State University, Greensboro.

11:30 AM 302  
Effectiveness of pulsed light treatment on the inactivation of pathogenic and spoilage bacteria on cheese surface.  
J. Proulx\textsuperscript{1}, L. Hsu\textsuperscript{4}, B. Miller\textsuperscript{2}, G. Sullivan\textsuperscript{3}, K. Paradis\textsuperscript{4}, and C. I. Moraru\textsuperscript{5}, 1Cornell University, Ithaca, NY, 2McGill University, Montreal, QC, Canada.

11:45 AM 303  
Evaluation of heavy metals, phenol and polycyclic aromatic hydrocarbons on singed skin-on red Sokoto buck goats.  
O. A. Babatunde\textsuperscript{1}, O. O. Oluosa\textsuperscript{2}, O. J. Aremo\textsuperscript{2}, and W. Y. Akwetey\textsuperscript{1}, 1Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, 2University of Ibadan, Ibadan, Nigeria.
Forages And Pastures II: Forages For Livestock Systems
Chair: Karla H Jenkins, University of Nebraska
2102B
10:30 AM 317  Interseeding bermudagrass pastures with alfalfa or clovers for growing calves.
P. Beck*, D. S. Hubbell, III, T. Hess*, and J. Jennings*, 1University of Arkansas SWREC, Hope, 2University of Arkansas Livestock, and Forestry Research Station, Batesville, 3Department of Animal Science, University of Arkansas, Little Rock.

10:45 AM 318  Grazing novel endophyte-infected fescue following grazing endophyte-infected fescue to alleviate fescue toxicosis in beef calves.

11:00 AM 319  Metagenomic analysis of the rumen microbiome in wheat-induced frothy bloat among steers.

11:15 AM 320  Stocking density effects in short duration grazing systems on botanical composition and soil characteristics of grasslands.
J. J. Bisinger*, Iowa State University, Ames.

11:30 AM 321  Seasonal changes in DM, CP, NDF, and NDF digestibility of pasture forage in grazing production systems.
J. Paulson*, B. J. Heins*, and D. G. Johnson*, 1University of Minnesota, Hutchinson, 2University of Minnesota West Central Research, and Outreach Center, Morris.

11:45 AM 322  Relationship between pasture nutritive measurements and plasma urea nitrogen in lambs grazing silvopasture or open pasture.
J. P. S. Neel* and D. P. Belesky*, 1USDA-ARS, El Reno, OK, 2West Virginia University, Morgantown.

12:00 PM 323  Effect of organic grain supplementation on production, body weight, body condition score, and fatty acid profiles of organic dairy cows.
B. J. Heins*, M. I. Endres*, J. Paulson*, and R. D. Moores*, 1University of Minnesota West Central Research and Outreach Center, Morris, 2University of Minnesota, Saint Paul, 3University of Minnesota, Hutchinson, MN, 4University of Minnesota, St. Paul.

12:15 PM 324  Chemical composition and in vitro gas production of forage cereals associated with common vetch (Vicia sativa).
M. Gonzalez Ronquillo*, E. Y. Aguilar Lopez*, A. Morales*, M. G. Gutierrez*, and O. Castelan Ortega*, 1Universidad Autonoma del Estado de Mexico, Toluca, Mexico, 2Universidad Autonoma del Estado de Mexico, Toluca, Mexico.

Growth and Development
Chair: Gordon K. Murdoch, University of Idaho
2502
10:30 AM 370  Whole or ground oats in calf starters: Effects on rumen fermentation and rumen development.
F. X. Suarez-Mena*, A. J. Heinrichs*, C. M. Jones*, T. M. Hilf, and J. D. Quigley*, 1The Pennsylvania State University, University Park, 2Provimi North America, Brookville, OH.

10:45 AM 371  Rumen epithelial gene expression in periparturient Holstein bull calves fed a fermentation extract of Aspergillus oryzae.
T. T. Yohe*, K. M. O’Diam, and K. M. Daniels, Department of Animal Sciences, The Ohio State University, Wooster.

11:00 AM 372  Performance and rumen development of artificially reared calves to dietary butyrate supplementation.
A. K. Kelly*, J. V. O’Doherty*, D. A. Kenny*, T. M. Boland*, and K. M. Pierce*, 1School of Agriculture and Food Science, University College Dublin, Dublin, Ireland, 2Teagasc Grange, Meath, Ireland, 3School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.

11:15 AM 373  Non-genomic effects of trenbolone acetate on bovine satellite cell proliferation.

11:30 AM 374  Effects of recombinant bovine somatotropin on performance and biological activity of skeletal muscle over the finishing phase of feedlot heifers.
Identification of potential serum biomarkers for feed efficiency in young pigs.

Enhanced protein accretion and vital organ growth with intermittent bolus compared to continuous feeding in neonatal pigs.
S. W. El-Kadi1,2, C. Boutry1, A. Suryawan1, M. C. Gazzaneo1, R. A. Orellana1, N. Srivastava1, H. V. Nguyen1, S. R. Kimball1, M. L. Fiorotto1, and T. A. Davis1, 1USDA/ARS-Children’s Nutrition Research Center, Baylor College of Medicine, Houston, TX, 2Animal and Poultry Sciences, Virginia Tech, Blacksburg, 3Cellular and Molecular Physiology, Penn State College of Medicine, Hershey.

International Animal Agriculture Symposium: Global Prospective Of Livestock Production Systems To Meet The Growing Need For Animal Protein In Human Diets: Impacts On Production And Human Health.
Chair: Fernando R. Valdez, Kemin Industries, Inc.
Sponsor: Elanco Animal Health
2505A

Intensifying beef production to meet human nutrition needs.
D. Grace*, International Livestock Research Institute, CGIAR Program, Nairobi, Kenya.

Introduction: Not just nutrition and management: We need a Total Nutrition and Management Program.
F. R. Valdez*, Kemin Industries, Inc., Des Moines, IA.

Parallel comparisons of intensive meat production in developed and developing countries. What can we learn from each other’s systems?
R. Barajas Cruz2, Universidad de Sinaloa, Culiacan, Mexico.

Methods to improve nutrient intake in grazing cattle: Pasture management and supplementation.

Food safety. What efforts are underway internationally to improve food safety? FDA’s Office of International Programs, FDA

Panel Discussion

Physiology And Endocrinology: Novel Approaches To Improving Reproductive Success In Domestic Animals.
Chair: José E.P. Santos, Department of Animal Sciences, University of Florida
2104A

Ovarian and endocrine responses and efficacy associated with three ovulation synchronization strategies (Heat-synch, Doublesynch and Estradoublesynch) in Murrah buffaloes.
R. Mirmahmoudi1 and B. S. Prakash1, 1Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran, 2National Dairy Research Institute, Karnal, India.

CLC improves the post thaw semen quality but not the fertility in Sahiwal bulls.
A. Sattar1, A. G. Tarin1, N. Ahmad1, K. Javed1, M. Ahmad1, A. Razaq1, K. Ahmad1, and M. Younis1, 1Department of Theriogenology, University of Veterinary and Animal Sciences, Lahore, Pakistan, 2Department of Livestock Production, University of Veterinary and Animal Sciences, Lahore, Pakistan, 3Livestock Experiment Station, Fazilpur, Rajanpur, Pakistan, 4Semen Production Unit, Qadirabad, Sahiwal, Pakistan.

Effects of administration of prostaglandin F2α (PGF) at initiation of the 7-day CO-Synch+CIDR estrus synchronization protocol for replacement beef heifers.
V. R. G. Mercadante1, L. E. Kozicki2, F. M. Ciriaci1, D. D. Henry1, C. R. Dahlen1, R. N. Funston1, J. E. Larson1, G. A. Perry4, T. L. Steckler2, and G. C. Lamb4, 1University of Florida, Marianna, FL, 2Pontifical Catholic University (PUCPR), Curitiba, Brazil, 3North Dakota State University, Fargo, 4University of Nebraska, North Platte, 5Mississippi State University, Mississippi State, 6South Dakota State University, Brookings, 7University of Illinois, Simpson.

Modifications to Ovsynch improve fertility during resynchronization: Evaluation of presynchronization with GnRH 6 days before Ovsynch and a second PGF treatment.
P. D. Carvalho1, M. J. Fuenzalida1, A. Ricci2, M. Luchterhand3, J. M. Mulcahy1, R. V. Barletta2, G. M. Baez1, V. G. Santos1, M. C. Amundson1, J. N. Guenthner3, A. H. Sousa3, M. C. Wilthbank1, and P. M. Fricke1, 1Department of Dairy Science, University of Wisconsin-Madison, 2Department of Animal Sciences, University of Wisconsin-Madison, 3University of California Cooperative Extension, Tulare.
11:30 AM 525  The effects of prenatal stress and postnatal temperament on age and body weight at first sperm, puberty and sexual maturity in Brahman bulls.
M. C. Roberts1, R. C. Vann2, D. A. Neuendorff3, B. P. Littlejohn4, D. G. Riley5, J. A. Carroll6, T. H. Welsh, Jr.6, and R. D. Randel7, 1Texas A&M AgriLife Research, Overton, 2MAFES-Brown Loam Experiment Station, Mississippi State University, Raymond, 3Texas A&M AgriLife Research, Overton, 4Texas A&M AgriLife Research, College Station, 5USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 6Texas A&M University Department of Animal Science, College Station.

11:45 AM 526  Equine chorionic gonadotropin (eCG) improves follicular dynamics, estrus expression, ovulation and pregnancy rate in CIDR based estrus synchronization protocol in Nili-Ravi buffalo.
M. I. Naveed, A. Husnain, U. Riaz, M. Hassan, A. Sattar*, and N. Ahmad, Department of Theriogenology, University of Veterinary and Animal Sciences, Lahore, Pakistan.

12:00 PM 527  Effects of prenatal transportation stress on endogenous and exogenously-induced LH secretion in sexually mature Brahman bulls.
B. P. Littlejohn*1,2, M. C. Roberts1,2, M. N. Bedenbaugh1, A. W. Lewis2, D. A. Neuendorff2, D. G. Riley3,4, J. A. Carroll4, R. C. Vann5, M. Amstalden1, T. H. Welsh, Jr.1,3, and R. D. Randel2, 1Texas A&M University Department of Animal Science, College Station, 2Texas A&M AgriLife Research, Overton, 3Texas A&M AgriLife Research, College Station, 4USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, 5MAFES-Brown Loam Experiment Station, Mississippi State University, Raymond.

12:15 PM 528  Effects of artificial insemination and natural service breeding systems on calving characteristics and weaning weights of resultant progeny.
P. L. Steichen1, S. I. Klein1, Q. Larson1, K. M. Bischoff2, V. R. G. Mercadante3, G. C. Lamb4, C. S. Schauer5, B. W. Neville1, and C. R. Duhlen1, 1North Dakota State University, Fargo, 2University of Florida, NFREC, Marianna, 3University of Florida, Marianna, 4Hettinger Research Extension Center, Hettinger, ND, 5North Dakota State University, Streeter.

12:30 PM 529  Impact of manipulation of progesterone concentrations during follicular development on ovulatory follicle growth and timed AI pregnancy rate in beef cows.
F. M. Abreu1, M. A. Coutinho da Silva1, L. H. Cruppe1, M. L. Mussard1, B. R. Harstine1, G. A. Bridges2, T. W. Geary3, and M. L. Day1, 1The Ohio State University, Columbus, 2University of Minnesota, Grand Rapids, 3USDA ARS Fort Keogh, Miles City, MT.

12:45 PM 530  Reproductive performance of lactating dairy cows after resynchronization with ovsynch or a program aimed to maximize artificial insemination in estrus and fertility of timed artificial inseminations based on ovarian structures.
J. O. Giordano1, R. D. Watters2, R. Wijma1, and M. L. Stangaferro1, 1Department of Animal Science, Cornell University, Ithaca, NY, 2Quality Milk Production Services, Cornell University, Ithaca, NY.

Production, Management, and the Environment: Nutrition and Management
Chair: N. Andy Cole, USDA-ARS-CPRL
2104B

10:30 AM 559  Zilpaterol hydrochloride repartitions chemical components of the empty body of Holstein steers.
T. J. McEvers1, N. D. May1, L. A. J. Walter1, J. P. Hutcheson1, and T. E. Lawrence1, 1West Texas A&M University, Canyon, 2Merck Animal Health, DeSoto, KS.

10:45 AM 560  Effect of organic grain supplementation on activity and rumination time of organic dairy cows.
L. S. Sjostrom1, B. J. Heins2, M. I. Endres1, R. D. Moon1, and J. Paulson3, 1University of Minnesota, West Central Research and Outreach Center, Morris, 2University of Minnesota West Central Research and Outreach Center, Morris, 3University of Minnesota, Saint Paul, 4University of Minnesota, St. Paul, 5University of Minnesota, Hutchinson.

11:00 AM 561  Effect of feeding kelp on growth and profitability of group-fed dairy calves in an organic production system.
B. J. Heins1 and H. Chester-Jones2, 1University of Minnesota West Central Research and Outreach Center, Morris, 2University of Minnesota Southern Research and Extension Center, Waseca.

11:15 AM 562  Reproductive performance of Barki ewes in Siwa Oasis as affected by including date seeds in the concentrate ration.
E. B. Abdalla1, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.

11:30 AM 563  Impact of heifer development system on subsequent ADG and reproduction in two different breeding seasons.
H. R. Nielson1, J. D. Harms1, A. F. Summers2, R. A. Vraspir3, and R. N. Funston4, 1University of Nebraska, West Central Research and Extension Center, North Platte, NE, 2University of Nebraska-Lincoln.

11:45 AM 564  A comparison of serum metabolic profiles of dairy cows that maintained or lost body condition score 15 days before calving.
M. R. Sheehy1, F. J. Mulligan1, and A. G. Fahey2, 1School of Veterinary Medicine, University College Dublin, Dublin, Ireland, 2Devenish Nutrition Ltd, Belfast, Northern Ireland, 3School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.
Comparison of methods for isolation of miRNA from bovine milk whey.
X. L. Jin¹, H. Y. Liu¹, L. Liu¹, Z. H. Wei¹, and J. X. Liu², ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Zhejiang University, Hangzhou, China.

Ruminant Nutrition VII: Dairy Metabolism
Chair: Shawn Donkin, Purdue University
2103A

Effect of reduced energy density of close-up diet on ruminal fermentation parameters in multiparous Holstein cows.
W. M. Huang¹, A. Simayi, A. Yasheng, Z. H. Wu, Z. J. Cao, and S. L. Li, State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China.

S. Mann¹, F. A. Leal Yepes², T. R. Overton², J. J. Wakshlag³, and D. V. Nydam¹, ¹Cornell University, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, ²Cornell University, Department of Animal Science, Ithaca, NY, ³Cornell University, Department of Clinical Sciences, Ithaca, NY.

Hepatic acetyl COA concentration decreases following feeding in early-postpartum but not in late-lactation dairy cows.
P. Piantoni¹, C. M. Ylioja, and M. S. Allen, Michigan State University, East Lansing.

Overconditioned prepartum cows exhibit a greater magnitude of insulin resistance and mobilize more NEFA earlier compared with lean cows.
J. E. Rico¹ and J. W. McFadden¹², ¹West Virginia University, Morgantown, ²Johns Hopkins University, Baltimore, MD.

Identifying biomarkers for pre-onset insulin resistance using mass spectrometry-based metabolomics: Plasma ceramides are elevated in overconditioned transition dairy cows.
J. E. Rico¹ and J. W. McFadden¹², ¹West Virginia University, Morgantown, ²Johns Hopkins University, Baltimore, MD.

Effects of yeast product supplementation on production, feeding behavior, and metabolism in transition dairy cows.
K. Yuan¹, T. Liang², M. Muckey¹, L. Mendonca¹, L. Hulbert¹, L. Mamedova¹, C. C. Elrod², and B. Bradford², ¹Kansas State University, Manhattan, ²GM Powertrain, Pontiac, MI, ³Wi-COR, Inc., Mason City, IA.

Milk production performance of autumn-calving Holstein Friesian cows managed under flat-rate or feed-to-yield concentrate feeding systems.
D. C. Lawrence¹², E. Kennedy¹, M. O’Donovan¹, T. M. Boland¹, A. Lawless¹, and J. Patton¹, ¹School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland, ²Teagasc, Animal and Grassland Research and Innovation Center, Moorepark, Fermoy, Co. Cork, Ireland, ³Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, ⁴School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland, ⁵Teagasc, Johnstown Castle, Co. Wexford, Ireland, ⁶Teagasc, Grange, Dunsany, Co. Meath, Ireland.

Does concentrate allocation pattern affect the milk production of autumn calving cows at high and low feeding levels?
D. C. Lawrence¹², M. O’Donovan¹, T. M. Boland¹, E. Lewis¹, and E. Kennedy¹, ¹Teagasc, Animal and Grassland Research and Innovation Center, Moorepark, Fermoy, Co. Cork, Ireland, ²School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland, ³Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, ⁴School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.

Ruminant Nutrition VIII: Microbiome
Chair: Jong-Su Eun, Utah State University
2103B

Characterization of rumen microbial community composition of buffalo fed diets varying in forage: Concentrate ratio.
B. Lin¹², C. Zou¹, F. Cox¹, G. Henderson¹, P. H. Janssen¹, X. Liang¹, and G. Attwood¹, ¹Buffalo Research Institute, The Chinese Academy of Agricultural Sciences, Nanning, China, ²AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand.

Bacterial diversity associated with different primer pairs on different diets in the rumen microbiome of Kankrej cattle.
D. W. Pitta¹, N. Indugur¹, S. Kumar¹, K. B. Prayapathi¹, A. K. Patel¹, N. Parmar¹, A. B. Patel¹, B. Reddy¹, and C. Joshi¹, ¹University of Pennsylvania, Kennett Square, ²University of Pennsylvania, Kennett Square, ³Sardharkrishinagar Dantiwada Agricultural University, Sardharkrishinagar, India, ⁴Anand Agriculture University, Anand, India.
11:00 AM 677 Development of rumen microbiota in dairy calves: Impact of weaning and different weaning strategies.
S. C. Li*, M. A. Steele*, P. Azevedo*, M. Carson*, J. C. Plaizier*, H. Derakhshani1, and E. Khafipour1,2,3, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2Nutreco Canada Agresearch, Guelph, ON, Canada, 3Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.

11:15 AM 678 The potential benefit of corn dried distillers grain (co)products (DDG) in the mitigation of methane production in cattle: An in vitro analysis.
M. A. Fonseca*, D. K. A. Silva*, H. D. Naumann*, T. R. Callaway*, and L. O. Tedeschi*, 1Texas A&M University, College Station, 2Federal Rural University of Pernambuco, Garanhuns, Brazil, 3University of Missouri, Columbia, 4USDA-ARS, College Station.

11:30 AM 679 Use of avian antibodies against lipopolysaccharides to improve gastrointestinal function in early lactation dairy cows.

11:45 AM 680 Large-subunit rDNA based differentiation of anaerobic rumen fungi using restriction fragment length polymorphism.
D. Sumit1,2,3, S. Kumar*4,5, D. W. Pitta*, J. Edwards*, T. Callaghan*, G. Griffith*, P. Mudgil*, and A. Puniya*, 1Aberystwyth University, Aberystwyth, United Kingdom, 2National Dairy Research Institute, Karnal, India, 3Agharkar Research Institute, Pune, India, 4University of Pennsylvania, Kennett Square.

12:00 PM 681 Responses in rumen microbiomes of Bos taurus and Bos indicus steers fed rice straw and supplemented protein.
E. A. Latham*, J. C. McCann*, K. Weldon*, 1Texas A&M University, College Station, 2University of Illinois at Urbana-Champaign, 3Texas A&M AgriLife Research, Vernon.

12:15 PM 682 Effects of dietary fat source and monensin on methane to carbon dioxide ratio, VFA profile, and performance of finishing steers.

Swine Species Symposium: Procedures And Methodology For Determining SID Amino Acid Digestibility And Energy Of Feedstuffs
Chair: Charles Starkey, American Proteins, Inc.
Sponsor: DuPont - Danisco Animal Nutrition

10:30 AM 749 Procedures and methodology for determining SID amino acid digestibility of feedstuffs.
H. H. Stein*, University of Illinois at Urbana-Champaign.

11:00 AM 750 Procedures and methodology for determining the net energy content of feedstuffs.
C. M. Nyachoti*, University of Manitoba, Winnipeg, MB, Canada.

11:30 AM 751 Procedures for determining digestible and metabolizable energy contents of feedstuffs.
O. Adeola*, Department of Animal Sciences, Purdue University, West Lafayette, IN.

12:00 PM Panel Discussion

Animal Science in the Real World
Chair: Ronnie Green, University of Nebraska
Sponsor: ASAS

11:00 AM Welcome & Introduction
11:10 AM 30,000 foot overview: Feedyards.
R. Wilson*, Texas Cattle Feeders Association.

11:25 AM 30,000 foot overview: Beef industry.
F. Roberts*, National Cattlemen’s Beef Association.

11:40 AM 30,000 foot overview: Dairy industry.
J. Tricarico*, Dairy Research Institute.

11:55 AM 30,000 foot overview: Pork industry.
C. Hostetler*, National Pork Board.

12:10 PM Break
12:30 PM Panel Discussion & Lunch
ADSA Multidisciplinary and International Leadership Keynote (MILK) Symposium: Water: Consideration for the Future of Animal and Food Production and Processing
Chair: Barry Bradford, Kansas State University and Susan Duncan, Virginia Tech
Sponsor: ADSA
2101

2:00 PM 430  Drought: Lessons to learn in agriculture.
K. Matthews*, ERS, USDA, Washington, DC.

2:35 PM 431  Water sources and chemical quality considerations for animal production and food processing.
A. M. Dietrich*, Virginia Tech, Blacksburg.

3:10 PM 432  U.S. dairy water footprint in context.
Y. Wang†, A. D. Henderson†, and D. Jollivet†, ‘Innovation Center for U.S. Dairy, Rosemont, IL, 2University of Texas, Houston, 3University of Michigan, Ann Arbor.

3:45 PM 433  Rethinking the dairy supply chain: Innovative opportunities for creating value, efficiency and sustainability.
R. T. Sirolli†, Cargill Dairy Enterprise Group, Windsor, CO.

4:05 PM 434  Water usage at cattle feedlots and the potential for water conservation.
K. D. Casey†, J. M. Sweeten†, and R. Hagevoort†, 1Texas A&M AgriLife Research, Amarillo, 2New Mexico State University, Clovis.

Animal Behavior & Well-Being III
Chair: Peter D Krawczel, The University of Tennessee
2505A

2:00 PM 47  Breeding may simultaneously reduce pig aggressiveness at regrouping and in stable social groups but management may not.
S. P. Turner†, S. Desire†, R. B. D’Eath†, L. Canario†, and R. Roehe†, 1SRUC, Edinburgh, United Kingdom, 2INRA UMRI388, F-31326 Castanet-Tolosan, France.

2:30 PM 48  Effect of concentrate feeder design on performance, animal behavior, and ruminal health in Holstein bulls fed high-concentrate diets.
M. Verdu†, A. Bach†, and M. Devant†, 1IRTA-Department Ruminant Production, Caldes Montbui-Barcelona, Spain, 2Department of Ruminant Production, IRITA, Caldes de Montbui, Spain, 3IRTA-Department of Ruminant Production, Caldes De Montbui, Spain.

2:45 PM 49  Impact of using an electrified crowding gate on milk yield and milk flow.
I. Guasch†, A. Pinto†, and A. Bach†, 1Blanca, Hostalets de Tost, Spain, 2Department of Ruminant Production, IRITA, Barcelona, Spain, 3Department of Ruminant Production, IRITA, Caldes de Montbui, Spain, 4ICREA, Barcelona, Spain.

3:00 PM 50  Using designer diets to reduce aggression in pregnant sows.
A. Sapkota†, J. N. Marchant-Forde†, B. T. Richert†, and D. C. Lay Jr.†, 1Purdue University, West Lafayette, IN, 2USDA-ARS, West Lafayette, IN, 3U.S. Dept of Agriculture, West Lafayette, IN.

3:15 PM 51  Selection and breeding for improved feed efficiency alters gilt behavioral responsiveness to a novel object.
J. D. Colpoys†, N. K. Gabler†, C. E. Abell†, A. F. Keating†, S. T. Millman†, J. M. Siegford†, and A. K. Johnson†, 1Iowa State University, Ames, 2DNA Genetics, Columbus, NE, 3Michigan State University, East Lansing.

Animal Health III: Periparturient and Lactation Health
Chair: Troy J. Wistuba, Prince Agri Products
2104A

2:00 PM 91  Milk quality and milk components in lactating dairy goats fed OmniGen-AF from dry off through the entire lactation.
A. D. Rowson†, T. J. Boyle, D. J. McLean, S. A. Armstrong, and S. B. Puntenney, ‘Prince Agri Products, Inc, Quincy, IL.
2:15 PM 92  Modulation of innate immune function and phenotype in bred dairy heifers during the periparturient period induced by an immunostimulant 60 days prior to delivery.

2:30 PM 93  Restriction in energy or protein affects differentially behavior of lactating dairy cows.
V. Fischer, E. Forgiarini Vizzotto, F. André Schmidt, D. Werncke, A. Susenbach de Abreu, and A. Thaler Neto, 1Universidade Federal do Rio Grande do Sul, Porto Aére, Brazil, 2Universidade Estadual de Lages, Lages, Brazil.

2:45 PM 94  Dynamics of culling for Jersey, Holstein, and crossbred cows in large multi-breed dairy herds.
P. J. Pinedo, A. M. Daniels, J. Shumaker, and A. De Vries, 1Texas A&M AgriLife Research, Amarillo, 2Circle H Headquarters LLC, Dalhart, TX, 3Magnolia Veterinary Services, Amarillo, TX, 4University of Florida, Gainesville.

3:00 PM 95  Effect of an organic certified treatment (Optimum Uterflush) for toxic puerperal metritis on cure and reproductive performance of dairy cows.

3:15 PM 96  Effects of yeast product supplementation on immunity and uterine inflammation in transition dairy cows.
K. Yuan, L. Mendonca, L. Hubert, L. Mamedova, M. Muckey, Y. Shen, C. C. Elrod, and B. Bradford, 1Kansas State University, Manhattan, 2Vi-COR, Inc., Mason City, IA.

3:30 PM 97  Hyperketonemia in early lactation dairy cattle: Component and total cost per case.
J. A. A. McArt, D. V. Nydam, and M. W. Overton, 1Colorado State University, Fort Collins, 2Cornell University, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, 3Elanco Animal Health-Dairy, Athens, GA.

3:45 PM 98  The effects of grain-induced subacute ruminal acidosis on interleukin-6 and acute phase response in dairy cows.
S. C. Li, A. M. Danscher, P. H. Andersen, E. Khafipour, N. B. Kristensen, and J. C. Plazier, 1Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, 2Department of Large Animal Sciences, University of Copenhagen, Copenhagen, Denmark, 3Department of Clinical Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden, 4Danish Agricultural Advisory Service, Aarhus, Denmark.

4:00 PM 99  Evaluation of propylene glycol and glycerol infusions as potential treatments for ketosis in dairy cows.
P. Piantoni and M. S. Allen, Michigan State University, East Lansing.

4:15 PM 100  Integrating metabolomics and transcriptomics of liver to study susceptibility to ketosis in response to prepartal nutritional management.
K. Shahzad, J. S. Osorio, D. N. Luchini, and J. J. Loor, 1University of Illinois, Urbana-Champaign, 2University of Illinois at Urbana-Champaign, 3Adisseo S.A.S., Alpharetta, GA.

4:30 PM 101  A competitive and unpredictable feeding environment pre-calving increases inflammation and endometritis in Holstein dairy cows.
K. Proudfoot, S. J. LeBlanc, D. Weary, B. Bradford, L. Mamedova, and N. von Keyserlingk, 1The Ohio State University, Columbus, 2University of Guelph, Guelph, ON, Canada, 3The University of British Columbia, Vancouver, BC, Canada, 4Kansas State University, Manhattan.

ASAS Graduate Student Symposium:
Research Ethics: What Are They And Why Are They Needed?
Chair: Casey L. Maxwell, Oklahoma State University
Sponsor: ASAS
2102A

2:00 PM 109  What are research ethics?
M. S. Calvo-Lorenzo, Oklahoma State University, Stillwater.

2:30 PM 110  Why are research ethics important and how do they affect academia?
M. L. Galyean, Texas Tech University, Lubbock.

3:00 PM 111  Importance and impact of research ethics on industry.
Breeding and Genetics: Applications and Methods in Animal Breeding-Livestock II
Chair: Richard Tait, USDA, ARS, U.S. Meat Animal Research Center
2505B

2:00 PM 170 Genetic gain and economic weights in selection for boar fertility traits in a cross-breeding system.
D. Gonzalez-Peña Fundora*1, R. V. Knox1, J. Pettigrew1, M. D. MacNeil1, and S. L. Rodriguez Zas1, 1University of Illinois at Urbana-Champaign, Delta G, Montana, MT.

2:15 PM 171 A genome-wide association study for egg shell strength in the genome of brown-egg layers.
R. A. Ghebrewold*1,2, M. Heidaritabar1, A. Vereijken3, B. J. Ducro4, and J. W. M. Bastiaansen4, 1Wageningen University, Wageningen, Netherlands, 2Norwegian University of Life Sciences, ÅS, Norway, 3Hendrix Genetics, Boxmeer, Netherlands, 4Animal Breeding and Genomics Centre, Wageningen University, Wageningen, Netherlands.

2:30 PM 172 The identification of a putative mutation for slick hair coat in Senepol cattle.

2:45 PM 173 Genomic Selection of Nili-Ravi Buffalo.
M. Moaeen-ud-Din*1, G. Bilal1, and M. S. Khan2, 1PMAS-Arid Agriculture University, Rawalpindi, Pakistan, 2University of Agriculture, Faisalabad, Pakistan.

Chair: Greg Aldrich, Kansas State University
Sponsor: ASAS Foundation: Fahey Appreciation Club
3501D

2:00 PM Introductory Remarks

2:10 PM 193 Challenges in training companion animal biologists: Missing the research component, how to overcome it?
J. P. McNamara*, Washington State University, Pullman.

2:40 PM 194 Extension outreach: Use of technology in companion animal biology and nutrition.
L. Karr-Lilienthal*, University of Nebraska-Lincoln.

3:10 PM Break

3:25 PM 195 A circuitous route: Preparing for a career in the companion animal industry.
A. K. Shoveller*, The University of Guelph, Guelph, ON, Canada.

3:55 PM 196 How to effectively communicate science with pet owners and society: Understanding pet owner, purchasing decisions, and sensory characteristics of pet foods.
K. Koppel*, Kansas State University, Manhattan.

4:25 PM 197 Round table discussion—all speakers.
G. Aldrich*, Kansas State University, Manhattan.

Dairy Foods Symposium: Dairy Foods Consumption, Gut Microbiota and Human Health
Chair: Nagendra P. Shah, The University of Hong Kong
Sponsor: EAAP
3501C

2:00 PM 276 Probiotics and health benefits with reference to synthesis of gamma-aminobutyric acid (GABA) by selected probiotic bacteria.
N. Shah* and Q. Wu, The University of Hong Kong, Hong Kong.
2:30 PM  277  Gut microbiota, probiotics, bioactives (such as CLA, USFA), trans-fatty acids and their relationship to health.
   H. Gill*, RMIT University, Melbourne, Australia.

3:00 PM  278  EAAP-ADSA Speaker Exchange Presentation: Overview of whey protein based bioactivities (including colostrum) in gut and health promotion.
   A. M. Pihlanto* and R. M. Tahvonen, MTT Agrifood Research Finland, Jokioinen, Finland.

3:30 PM  279  Milk fat globule membrane components and gut health effects.
   R. Ward* and K. Hintze, Utah State University, Logan.

4:00 PM  280  Human gut microbiota, diet and health.
   M. Lefevre*, N. Hergert, and G. Rompato, Utah State University, Logan.

Chair: Gordon Murdoch, University of Idaho
Sponsor: EAAP 2503

2:00 PM  377  Proteomics in Animal Science.
   J. Lippolis*, National Animal Disease Center, Ames, IA.

2:40 PM  378  Proteomics in Fat Metabolism and Development.
   L. Guan*, University of Alberta, Edmonton, AB, Canada.

3:20 PM  379  Use of Proteomics in Animal Health and Disease Research.
   D. Eckersall*, University of Glasgow, Glasgow, Scotland.

4:00 PM  380  Use of Proteomics for Livestock Improvement.
   E. Huff-Longergan*, Iowa State University, Ames.

Nonruminant Nutrition: Fat, Fiber, Fermentation, and Residual Feed intake
Chair: Zach J Rambo, Zinpro
Sponsor: Zinpro 2502

2:00 PM  463  Changing the dietary omega-6 to omega-3 fatty acid ratio impacts nursery pig performance more than increasing omega-3 intake alone.
   L. Eastwood* and D. Beaulieu, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

2:15 PM  464  The dietary omega-6 to omega-3 fatty acid ratio impacts the inflammatory response in nursery pigs more than increasing omega-3 intake.
   L. Eastwood* and D. Beaulieu, Prairie Swine Centre, Inc., Saskatoon, SK, Canada.

2:30 PM  465  Effect of fiber and fat on calculated values for standardized total tract digestibility of calcium in fish meal.
   J. C. González-Vega1, C. L. Walk2, and H. H. Stein1, 1University of Illinois at Urbana-Champaign, 2AB Vista Feed Ingredients, Marlborough, United Kingdom.

2:45 PM  466  Response of pigs in ileal endogenous amino acid losses to different dietary fiber types determined using the regression method.
   S. A. Adegowski* and O. Adeola, Purdue University, West Lafayette, IN.

3:00 PM  467  Starch and fiber characteristics of barley influences site of energy digestion in ileal-cannulated grower pigs.
   J. M. Foulsed1, S. Moehn1, J. Gao1, T. Vasaathan1, M. Izydorczyk1, A. D. Beattie1, and R. T. Zijlstra1, 1University of Alberta, Edmonton, AB, Canada, 2Canadian Grain Commission, Winnipeg, MB, Canada, 3University of Saskatchewan, Saskatoon, SK, Canada.

3:15 PM  468  Effects of three types of dietary microalgal inclusions on n-3 and n-6 fatty acid profiles in egg yolks of laying hens.
   J. Kim, A. Magnason, and X. Lei, Cornell University, Ithaca, NY.

3:30 PM  Break

3:45 PM  469  Dose-dependent effect of a defatted green microalgal biomass on enriching omega-3 fatty acids in broiler chickens.
In vitro digestion and fermentation characteristics and in vivo digestibility of canola co-products in the pigs.
T. A. Woyengo\(^1\), R. Jha\(^2\), E. Beltranena\(^3\), and R. T. Zijlstra\(^1\), \(^1\)University of Alberta, Edmonton, AB, Canada, \(^2\)University of Hawaii at Manoa, Honolulu.

In vitro pig cecal fermentation with different inoculum source with diets content Acrocomia aculeata.
S. L. S. Cabral Filho\(^1\), L. S. Murat\(^1\), C. A. Silva Júnior\(^1\), H. dos Santos Sena\(^1\), F. Lopes da Silva\(^1\), F. Nishimoto Gomes da Costa\(^1\), T. F. Braga\(^1\), and J. F. Athayde Oliveira\(^1\), \(^1\)University of Brasilia, Brasilia, Brazil, \(^2\)Universidade de Brasilia, Brasilia, Brazil.

Residual feed intake in pigs is associated with organ weight, nutrient digestibility and intestinal nutrient transporter gene expression.
S. Vigors\(^1\), T. Sweeney\(^2\), A. K. Kelly\(^1\), C. J. O'Shea\(^1\), D. N. Doyle\(^1\), and J. V. O'Doherty\(^1\), \(^1\)School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, \(^2\)College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

The effect of divergent selection for residual feed intake on cytokine gene expression in pigs following an ex vivo lipopolysaccharide challenge.
S. Vigors\(^1\), J. V. O'Doherty\(^1\), C. J. O'Shea\(^1\), and T. Sweeney\(^2\), \(^1\)School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, \(^2\)College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

Physiology and Endocrinology Symposium: Reproductive Success in Ruminants: A Complex Interaction Between Endocrine, Metabolic and Environmental factors
Chair: Kyle C. Caires, Berry College
Sponsor: EAAP and Merck
2103C

Recent advances in the hypothalamic control of reproduction.
I. Clarke\(^1\), Monash University, Clayton, Victoria 3800, Australia.

Influence of stress on male reproductive physiology.
T. H. Welsh, Jr\(^*\), N. H. Ing\(^2\), and R. D. Randal\(^1\), \(^1\)Texas A&M University Department of Animal Science, College Station, \(^2\)Texas A&M University, Department of Animal Science, College Station, \(^3\)Texas A&M AgriLife Research, Overton.

Influences of heat stress and uterine diseases on reproduction of dairy cows.
J. E. P. Santos\(^1\), E. S. Ribeiro\(^1\), E. Karakayan\(^1\), K. N. Galvão\(^1\), and F. S. Lima\(^1\), \(^1\)Department of Animal Sciences, University of Florida, Gainesville, \(^2\)University of Florida, Gainesville, \(^3\)Department of Large Animal Clinical Sciences; University of Florida, Gainesville, \(^4\)Cornell University, Ithaca, NY.

Cellular and molecular mechanisms of heat stress related to bovine ovarian function.
Z. Roth\(^1\), The Hebrew University of Jerusalem, Rehovot, Israel.

Chair: C. L. Maxwell, Elanco Animal Health
2104B

Effects of technology use in feeding production systems on feedlot performance and carcass characteristics.
C. L. Maxwell\(^1\), B. C. Bernhard\(^1\), C. F. O'Neil\(^1\), B. K. Wilson\(^1\), C. Hixon\(^1\), C. Haviland\(^1\), A. Grimes\(^1\), M. S. Calvo-Lorenzo\(^1\), D. L. VanOverbeke\(^1\), G. G. Mafi\(^1\), C. J. Richards\(^1\), D. L. Step\(^1\), B. P. Holland\(^1\), and C. R. Krehbiel\(^1\), \(^1\)Oklahoma State University, Stillwater, \(^2\)Merck Animal Health, DeSoto, KS.
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<th>Time</th>
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<th>Affiliations</th>
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<tr>
<td>2:15 PM</td>
<td>567</td>
<td>The effects of technology use in feedlot production systems on the health status of finishing steers.</td>
<td>B. C. Bernhard¹, C. L. Maxwell¹, C. F. O’Neill¹, B. K. Wilson¹, C. G. Hixon¹, C. Haviland¹, A. Grimes¹, M. S. Calvo-Lorenzo¹, C. J. Richards¹, D. L. Step¹, B. P. Holland¹, and C. R. Krehbiel¹, Oklahoma State University, Stillwater; Merck, Volga, SD.</td>
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<tr>
<td>2:30 PM</td>
<td>568</td>
<td>Survey of BQA cattle handling practices that occurred during processing feedlot cattle.</td>
<td>R. Woiwode¹ and T. Grandin, Colorado State University, Fort Collins.</td>
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<td>2:45 PM</td>
<td>569</td>
<td>The effects of technology use in feedlot production systems on cattle behavior and mobility.</td>
<td>B. C. Bernhard¹, C. L. Maxwell¹, C. F. O’Neill¹, B. K. Wilson¹, C. Haviland¹, A. Grimes¹, M. S. Calvo-Lorenzo¹, C. J. Richards¹, D. L. Step¹, B. P. Holland¹, and C. G. Hixon¹, Oklahoma State University, Stillwater; Merck, Volga, SD.</td>
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<td>3:00 PM</td>
<td>570</td>
<td>Predicting dry matter intake by growing and finishing beef cattle: Evaluation of current methods and equation development.</td>
<td>U. Y. Anele¹, E. M. Domby², and M. L. Galyean³, Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada; Cargill Animal Nutrition, Amarillo, TX; Texas Tech University, Lubbock.</td>
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<td>3:15 PM</td>
<td>571</td>
<td>Optimizing concurrently dairy farm profitability and environmental performance.</td>
<td>D. Liang¹ and V. Cabrera, University of Wisconsin-Madison.</td>
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<td>3:30 PM</td>
<td>572</td>
<td>Economics of transition cow management of dairy herds.</td>
<td>G. M. Schuenemann¹ and K. N. Galvão², Department of Veterinary Preventive Medicine, The Ohio State University, Columbus; Department of Large Animal Clinical Sciences, University of Florida, Gainesville.</td>
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<td>3:45 PM</td>
<td>573</td>
<td>The impact of selected milking, feeding, and housing management systems on the profitability of Quebec dairy herds.</td>
<td>H. A. Delgado¹, R. I. Cue², A. Sewalem³, R. Lacroix³, D. Leveque³, E. Bouchard³, D. Haine³, and K. Wade³, McGill University, Sainte Anne de Bellevue, QC, Canada; Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada; Agriculture and Agri-Food Canada AAFC, Guelph, ON, Canada; Valacta, Ste-Anne-de-Bellevue, QC, Canada; University of Montreal, Saint-Hyacinthe, QC, Canada.</td>
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<td>4:00 PM</td>
<td>574</td>
<td>Grazing alfalfa as an alternative to reduce production costs in intensive milk production systems.</td>
<td>F. A. Kavahara¹, A. M. Pedroso², G. B. Souza³, and R. P. Ferreira³, UNESP/FMVZ, Botucatu, Brazil; EMBRAPA, São Carlos, Brazil.</td>
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<td>4:30 PM</td>
<td>576</td>
<td>Optimization of reproductive management programs using lift chart analysis and cost-sensitive evaluation of classification errors.</td>
<td>S. Shahinfar¹, J. N. Guenther¹, D. Page², A. Samia-Kalantari³, V. Cabrera³, P. M. Fricke³, and K. A. Weigel³, Department of Dairy Science University of Wisconsin-Madison; Department of Biostatistics and Medical Informatics and Department of Computer Science, University of Wisconsin-Madison.</td>
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<td>4:45 PM</td>
<td>577</td>
<td>The cost of clinical mastitis in the first 30 days of lactation: An economic assessment tool.</td>
<td>E. Rollin¹ and M. W. Overton², University Of Georgia College of Veterinary Medicine, Athens; Elanco Animal Health-Dairy, Athens, GA.</td>
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**Ruminant Nutrition IX: Minerals**

Chair: John Schoonmaker, Purdue University  
Sponsor: ASAS Foundation  
2103A

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<td>2:00 PM</td>
<td>683</td>
<td>Effects of supplemental zinc, copper, and manganese concentration and source on performance and carcass characteristics of feedlot steers.</td>
<td>E. Caldera⁴, J. J. Wagner⁴, K. Sellins¹, T. E. Engle⁴, S. B. Laudert⁴, and J. Spears⁴, Colorado State University, Fort Collins; Micronutrients, Indianapolis, IN; North Carolina State University, Raleigh.</td>
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<td>2:15 PM</td>
<td>684</td>
<td>Decreasing dietary calcium to potentiate changes in beef tenderness with zilpaterol hydrochloride supplementation.</td>
<td>C. L. Van Bibber-Krueger¹, K. A. Miller, and J. S. Drouillard, Kansas State University, Manhattan.</td>
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2:45 PM  686  Effect of supplementary copper source on copper status in growing beef heifers offered a diet naturally high in copper antagonists.
S. J. Whelan¹, T. M. Boland², V. P. Gath³, J. C. Jacquier¹, and K. M. Pierce⁴, ¹School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland, ²School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.

3:00 PM  687  Evaluation of liver mitochondrial oxygen consumption of lactating Holstein dairy cows supplemented with cobalt, copper, manganese and zinc in organic and inorganic forms.

3:15 PM  688  Cobalt-lactate inclusion in a high forage total mixed ration fed to late lactation dairy cows.
J. P. Pretz¹¹, H. T. Purvis¹², D. Davis¹³, B. Trautman¹⁴, J. L. Anderson¹⁵, K. F. Kalscheur¹⁶, and D. Casper¹⁷, ¹South Dakota State University, Brookings, ²Ralco Nutrition, Marshall, MN.

3:30 PM  689  Supplemental trace minerals (Zn, Cu, and Mn) as sulfates, organic amino acid complexes, or hydroxy trace mineral sources for shipping-stressed calves.
A. W. Ryan¹⁸, E. B. Kegley¹⁹, J. Hawley²⁰, J. A. Hornsby²¹, J. L. Reynolds²², and S. B. Laudert²³, ¹Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, ²Micronutrients, Indianapolis, IN.

3:45 PM  690  Effect of inorganic or organic selenium supplementation during gestation and lactation on cow and pre-weaning calf performance.
C. R. Muegge²⁴, K. M. Brennan²⁵, R. P. Lemenager²⁶, and J. P. Schoonmaker²⁷, ¹Purdue University, West Lafayette, IN, ²Alltech Inc., Nicholasville, KY.

4:00 PM  691  Effects of calf age at weaning on cow and calf performance and feed utilization in an intensive production system.
J. M. Warner²⁸, K. H. Jenkins²⁹, R. J. Rasby¹, M. K. Luebbe², G. E. Erickson³, and T. J. Klopfenstein³, ¹University of Nebraska-Lincoln, ²University of Nebraska, Scottsbluff.

4:15 PM  692  Can treatments of barley grain with lactic and citric acid improve performance of male calves.
K. Rezayazdi³⁰, M. Nematpoor³¹, and M. Dehghan Banadaky³², ¹Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, ²University of Tehran, Karaj, Iran.

4:30 PM  693  Starter crude protein concentrations on growth and intake of dairy calves.
S. A. McCullough³³, B. Houin³⁴, and T. D. Nennich³⁵, ¹Purdue University, West Lafayette, IN, ²Homestead Dairy, Plymouth, IN.

4:45 PM  694  Influence of dietary carbohydrate fractions on growth and development of prepubertal dairy heifers.
T. S. Dennis³⁶, J. E. Tower, A. M. Mosiman, and T. D. Nennich, ¹Purdue University, West Lafayette, IN.

Ruminant Nutrition:
The Glen Broderick Symposium – Improving Nitrogen Utilization in Dairy Cows
Chair: Antonio Faciola, University of Nevada
Sponsor: ASAS Foundation, EAAP, and DuPont - Danisco Animal Nutrition

2:00 PM  695  Opening remarks and overall impact of Dr. Glen Broderick on research around the world.
A. Faciola³⁷, University of Nevada, Reno.

2:30 PM  696  EAAP-ADSA Speaker Exchange Presentation: Conundrums of protein and peptide metabolism in the rumen.
R. J. Wallace³⁸, Rowett Institute of Nutrition and Health, Aberdeen, United Kingdom.

3:00 PM  697  Dr. Glen Broderick’s contributions to in vivo quantification of ruminal nitrogen metabolism using the omasal sampling technique.
P. Huhtanen³⁹, Swedish University of Agricultural Sciences (SLU), Umea, Sweden.

3:30 PM  698  Glen Broderick’s contributions to improving in vitro methodologies for assessing ruminal microbial growth and ruminal protein degradation.
P. Udén⁴⁰, Swedish University of Agricultural Sciences, Uppsala, Sweden.

4:00 PM  699  Dr. Glen Broderick’s contributions to protein and amino acid nutrition of the dairy cow.
A. N. Hristov⁴¹, Department of Animal Science, The Pennsylvania State University, University Park.

4:30 PM  700  Exploring milk urea-N excretion as a nutritional and environmental management tool for the dairy industry.
M. A. Wattiaux⁴² and P. M. Crump, University of Wisconsin-Madison.
Small Ruminant Symposium:
Sustainable Small Ruminant Production Strategies to Meet Global Demands
Chair: Roy Reid Redden, North Dakota State University
2102B

2:00 PM  Welcoming Remarks

2:05 PM  735  Pasture development and sustainable grazing management.
S. P. Hart*, American Institute for Goat Research, Langston University, Langston, OK.

2:25 PM  736  Internal parasite anthelmintic resistance and control.
J. E. Miller*, Louisiana State University, Baton Rouge.

2:45 PM  737  Genetic selection for enhanced production efficiency.
D. F. Waldron*, Texas A&M AgriLife Research, San Angelo.

3:05 PM  Break

3:20 PM  738  Efficiency of small ruminant reproductive management.
M. Knights*, West Virginia University, Morgantown.

3:40 PM  739  Managerial steps to alleviate the effects of heat stress, water deprivation and low pasture quality in small ruminants.
P. Y. Aad* and S. Abi Saab1, 1Notre Dame University, Zouk Mosbeh, Lebanon, 2Lebanese University, Faculty of Agricultural Sciences, Dekwaneh, Lebanon.

4:00 PM  740  Global demand for small ruminant products.
G. W. Williams* and D. Anderson, Texas A&M University, College Station.

4:20 PM  Panel Discussion

Swine Species: Nutrition
Chair: Robert Goodband, Kansas State University
3501B

2:00 PM  752  Apparent and standardized ileal amino acids digestibility for different protein feedstuffs fed at two dietary protein levels for growing pigs.
A. O. Adebiyi1, D. Ragland2, L. Adeola2, and O. A. Olukosi1, 1Scotland’s Rural College, Ayr, United Kingdom, 2Purdue University, West Lafayette, IN.

2:15 PM  753  Effects of high levels of nicotinic acid on growth, carcass traits, and meat quality of finishing pigs.
J. R. Flohr*, J. M. DeRouchey1, J. C. Woodworth1, M. D. Tokach1, S. S. Dritz1, R. D. Goodband1, T. A. Houser1, C. A. Fedler2, and K. J. Prusa3, 1Kansas State University, Manhattan, 2Iowa State University, Ames.

2:30 PM  754  Effects of sugar beet pulp and expansion on performances of lactating sows and nursery piglets.

2:45 PM  755  The evaluation of narasin in grow-finish swine diets.
L. Greiner*, R. Barrett, A. Graham*, and J. Connor, 1Carthage Innovative Swine Solutions, Carthage, IL, 2Carthage Veterinary Service, Ltd., Carthage, IL.

3:00 PM  756  Replacement value of maize offal in diets of weaned pigs supplemented with chicken offal meal.
A. O. K. Adesehirana1, E. O. Akinfaiy2, and O. O. Adeleye2, 1Institute of Agricultural Research &Training, Obafemi Awolowo University, Ibadan, Nigeria, 2Department of Animal Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria.

3:15 PM  757  The effects of standardized ileal digestible lysine level with or without tribasic copper chloride on growth performance, carcass characteristics, and fat quality in finishing pigs.
K. F. Coble*, S. S. Dritz1, J. L. Usry2, J. E. Nemechek3, M. D. Tokach1, J. M. DeRouchey1, R. D. Goodband1, J. C. Woodworth1, and G. M. Hill3, 1Kansas State University, Manhattan, 2Micronutrients, Social Circle, GA, 3Michigan State University, East Lansing.
3:30 PM  758  Effects of hard red winter wheat particle size on finishing pig growth performance and caloric efficiency.

3:45 PM  759  The effects of dietary zinc oxide and chlortetracycline on nursery pig growth performance.

4:00 PM  760  Efficacy of Biomin BBSH 797 to biotransform deoxynivalenol to the metabolite de-epoxy-deoxynivalenol in serum of pigs.
S. Schaumberger* and U. Hofstetter, Biomin Holding GmbH, Herzogenburg, Austria.

4:15 PM  761  The effect of superdosing phytase on inositol and phytate concentration in the gastrointestinal tract and its effect on pig performance.
P. Wilcock1, C. L. Bradley*, J. J. Chewning2, and C. L. Walk1, 1AB Vista Feed Ingredients, Marlborough, United Kingdom, 2Swine Research Services, Inc., Springdale, AR.
Inside: Learn about animals and their teeth.

All about

TEETH

Sign up for the Jr. Animal Scientist program at AnimalSmart.org
Starch for Ruminants (Dairy and Beef Cattle)

Conference Objective
During the past several years, the price of feed energy has increased 2 to 4 times its historic norm, caused in large part by the two- to four-fold increase in corn price. This large and very rapid increase in corn price has generated a firestorm of interest globally on alternatives to corn in ruminant (dairy and beef) rations and has led many to critically evaluate the use of starch in ruminant diets. The development of new strategies and methods to improve the utilization of starch by ruminants to either reduce feed costs and (or) improve animal performance on reduced-starch diets are now major focus areas for academic and industry researchers. While research with beef cattle on starch has long been abundant, this area is a relatively new frontier for dairy cattle research and field application. Therefore, a tremendous opportunity now presents itself for dialogue between dairy and beef cattle nutritionists and researchers on the proposed topic.

The goal of this Discover Conference is to provide a venue for this exchange to occur and allow for greater field input into research directions and the opportunity for improved field application through enhanced participant exchange of ideas. Another important objective is the inclusion of experts in cereal chemistry, feed processing, and plant breeding to enhance animal scientist’ understanding of emerging technologies in those disciplines with regard to starch utilization by ruminants.

Topics for Conference Sessions
- Animal Constraints to Starch Utilization by Ruminants
- Cereal Crop Constraints to Starch Utilization by Ruminants
- Impact of Ruminal Acidosis on Animal Health and Performance
- Starch Digestibility in Ruminants: Lab Analyses & Modeling
- Starch Utilization Work Groups
- Dietary Starch Inter-Relationships with Other Nutrients

Who Should Attend?
This conference is for members of the dairy and animal science community who are interested in the impact of dietary starch on the performance of dairy and beef cattle. Researchers, extension specialists, and consultants from academia, government agencies, and allied industries encompassing feed and animal health companies are invited. Graduate students are encouraged to attend.

Registration
Registration postmarked by September 6, 2014 is $375.00 for ADSA-ASAS-ARPAS members and $425.00 for non-members, which includes sessions and most meals. After September 6, the registration fee will be $475.00 member/$525.00 non-member, and will be accepted on an availability basis. To optimize interaction among participants, registration will be limited to the first 130 applications received.

Accommodations & Travel
All participants are responsible for making their own lodging reservations. The conference hotel is Country Inn & Suites, Naperville. Reservations can be made online at the Conference Accommodations link at http://www.adsa.org/Meetings/DiscoverConferences/28thDiscoverConference.aspx

For complete conference information, including the latest program and registration materials, go to: http://www.adsa.org/discover/
**Animal Behavior and Well-Being IV**

**Chair: Amy L. Stanton, University of Wisconsin-Madison**

8:30 AM 52  
Sprinkler flow rate affects dairy cattle physiological and behavioral responses.  

8:45 AM 53  
Short-term increases in stocking density did not alter feeding behavior of lactating Holstein dairy cattle.  
*R. A. Black*, R. J. Grant, and P. D. Krawczel, University of Tennessee, Knoxville, William H. Miner Agricultural Research Institute, Chazy, NY.

9:00 AM 54  
Evaluation of prepartum lying behavior as an indicator of health disorders in transition dairy cows.  
*K. Lobeck-Luchterhand*, P. Basso Silva, R. C. Chebel, and M. I. Endres, University of Minnesota, Saint Paul, Department Veterinary Population Medicine, University of Minnesota, St. Paul.

9:15 AM 55  
Effect of stocking density on social and feeding behavior of prepartum dairy cows.  
*K. Lobeck-Luchterhand*, P. Basso Silva, R. C. Chebel, and M. I. Endres, University of Minnesota, Saint Paul, Department Veterinary Population Medicine, University of Minnesota, St. Paul.

9:30 AM 56  
Using prepartum feeding behavior to identify dairy cows at risk for transition health disorders.  
*K. Lobeck-Luchterhand*, P. Basso Silva, R. C. Chebel, and M. I. Endres, University of Minnesota, Saint Paul, Department Veterinary Population Medicine, University of Minnesota, St. Paul.

9:45 AM 57  
Eating and drinking behavior prediction by use of tri-axial accelerometers in dairy cattle.  
*K. J. Haerr* and F. C. Cardoso, University of Illinois at Urbana-Champaign.

10:00 AM 58  
Herding cows with a robot: The behavioral response of dairy cows to an unmanned ground vehicle.  

10:15 AM 59  
Responses to rectal and uterine palpation for assessment of visceral pain associated with metritis in dairy cows.  

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**ASAS Cell Biology Symposium: Long-Term Consequences of Maternal and Neonatal Nutrition for Pregnancy and Postnatal Outcomes**

**Chair: Lawrence P. Reynolds, North Dakota State University**

Sponsor: ASAS, ASAS Foundation, and USDA-NIFA

8:30 AM 106  
Lactocrine programming of postnatal reproductive tract development.  
*F. F. Bartol* and C. A. Bagnell, Auburn University, Auburn University, AL, Rutgers University, New Brunswick, NJ.

9:25 AM 107  
Long-term consequences of maternal and neonatal nutrition for pregnancy and postnatal outcomes.  
*D. G. Burrin* and B. Stoll, USDA-ARS Children’s Nutrition Research Center, Houston, TX, Baylor College of Medicine, Houston, TX.

10:20 AM 108  
The epigenetic landscape of the beta-cell in IUGR rats.  
*S. Pinney* and R. A. Simmons, Perelman School of Medicine, University of Pennsylvania, Philadelphia.

11:15 AM  
ASAS Early Career Recipient: Small RNA expression and function during oocyte maturation and embryo development in the pig.  
*B. J. Hale*, C-X Yang, E. C. Wright, and J. W. Ross, Department of Animal Science, Iowa State University.
Breeding and Genetics: Applications and Methods-Molecular Biology
Chair: Alan G. Fahey, School of Agriculture and Food Science, University College Dublin
3501A

8:30 AM 174 Variation in toll-like receptor genes and susceptibility to clinical mastitis in Holstein cows.
C. M. Seabury¹, K. N. Galvao², K. Lager¹ and P. J. Pinedo³, ¹Department of Veterinary Pathobiology, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University System, College Station, ²Department of Large Animal Clinical Sciences and D. H. Barron Reproductive and Perinatal Biology Research Program, College of Veterinary Medicine, University of Florida, Gainesville, ³Iowa State University, Extension and Outreach, Ames, ⁴Texas A&M AgriLife Research, Amarillo.

8:45 AM 175 Experimental intramammary challenge with Staphylococcus chromogenes in dairy heifers with specific CXCR1 genotypes.

9:00 AM 176 Association of CXCR1 gene polymorphisms with incidence rate of clinical mastitis, somatic cell count and milk production in dairy cattle.
J. Verbeke*, M. Van Poucke, L. Peelman, S. Piepers and S. De Vliegher, Ghent University, Ghent, Belgium.

9:15 AM 177 Calpastatin and μ-calpain differ in their control of genotype specific residual variance of beef tenderness in Angus and MARC III steers.
R. G. Tait, Jr.¹, S. D. Shackelford¹, T. L. Wheeler¹, D. A. King², E. Casas³,⁴, T. P. L. Smith¹ and G. L. Bennett¹, ¹USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²USDA/ARS, Clay Center, NE, ³USDA. ARS, National Animal Disease Center, Ames, IA, ⁴USDA, ARS, National Animal Disease Center, Ames, IA.

9:30 AM 178 Investigation of polymorphisms at the MUC4, MUC13, MUC20 and TFRC candidate genes for F4ab/ac resistance in South African pig populations.
N. S. Chaora*, Agricultural Research Council, Pretoria, South Africa.

9:45 AM 179 Buffalo and cattle sequence diversity and molecular evolution.
M. Moaeen-ud-Din* and G. Bilal, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.

EAAP Equine Symposium: Know-How And Future Challenges for Developing the Horse Sector In Europe: The Activity of the EAAP Horse Commission
Chair: Nicoletta Miraglia, Molise University
Sponsor: EAAP
3501C

8:30 AM 281 EAAP-ASAS Speaker Exchange Presentation: Recent aspects in stallion sperm preservation for artificial insemination.
M. Magistrini*, INRA, Nouzilly, France.

9:00 AM 282 EAAP-ASAS Speaker Exchange Presentation: The growth of social sciences in equine research: Essential to create new understandings of the horse industry’s growth and evolution.
C. Vial¹ and R. Evans², ¹INRA Montpellier, Montpellier, France, ²Norwegian University College of Agriculture and Rural Development, Jaeren, Norway.

9:45 AM 283 EAAP-ASAS Speaker Exchange Presentation: Equids contribution to sustainable development in Europe: Modern aspects and transfer of knowledge.
N. Miraglia*, Molise University, Campobasso, Italy.

10:30 AM 284 EAAP-ASAS Speaker Exchange Presentation: Genomic research in horses in Europe.
K. Stock*, Vereingte Informationssysteme Tierhaltung, Verden, Germany.

11:15 AM Concluding Remarks
Nonruminant Nutrition: Feed Additives, Enzymes, and Dietary Supplements

Chair: Kari L. Saddoris-Clemons, Boehringer Ingelheim Vetmedica

2503

8:30 AM 474 Effects of a blend of essential oil compounds, feed-grade antibiotics, and their combination on the growth performance of nursery pigs.
M. J. Azain1*, R. Dove1, C. W. Parks2, and J. R. Bergstrom1, 1University of Georgia, Athens, 2DSM Nutritional Products, Inc., Parsippany, NJ.

8:45 AM 475 Impact of zinc and arginine dietary supplements on antioxidant capacity and oxidative status in weanling piglets under conditions of commercial production.
F. Guay1 and N. Bergeron2, 1Universite Laval, Quebec, Quebec City, QC, Canada, 2Universite Laval, Quebec City, QC, Canada.

9:00 AM 476 Effect of a 6-Phytase derived from Buttiauxella spp. expressed in Trichoderma reesei on Apparent Total Tract Digestibility of Ca and P, bone ash and growth performance in weanling piglets.
A. L. Wealleans1, Y. Dersjant-Li1*, R. M. Bold1, and H. H. Stein2, 1Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom, 2University of Illinois at Urbana-Champaign.

9:15 AM 477 Effect of supplementation of non-starch polysaccharide-degrading enzymes on nutrient digestibility of wheat and wheat millrun based diets in growing pigs.
Z. Nasir1, J. Broz2, D. Petterson3, and R. T. Zijlstra4, 1University of Alberta, Edmonton, AB, Canada, 2DSM Nutritional Products, Basel, Switzerland, 3Novozymes, Bagsvaerd, Denmark.

9:30 AM 478 Efficacy of novel 6-phytase derived from Buttiauxella spp. expressed in Trichoderma reesei on ileal and total tract nutrient digestibility in growing pigs fed a corn-soy based diet.
D. E Velayudhan1, J. M Heo2, Y. Dersjant-Li1*, A. Owusu-Asiedu1, and C. M. Nyachoti3, 1University of Manitoba, Winnipeg, MB, Canada, 2Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom, 3DuPont Industrial Biosciences-Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom.

9:45 AM 479 Nutrient digestibility of growing pigs fed phytase- and xylanase-supplemented wheat-based diets with low, medium or high lysine level.
T. A. Woyengo1, A. Owusu-Asiedu2, and R. T. Zijlstra3, 1University of Alberta, Edmonton, AB, Canada, 2DuPont Industrial Biosciences-Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom.

10:00 AM Break

10:15 AM 480 The effects of β-mannanase (Hemicell HT) supplementation to nursery pig diets on nutrient digestibility and retention.
C. Vonderohe1, A. M. Jones1, B. T. Richert1, J. E. Ferrel2, P. D. Matzat2 and J. S. Radcliffe1, 1Purdue University, West Lafayette, IN, 2Elanco Animal Health, Greenfield, IN.

10:30 AM 481 Nucleotide supplementation in the diet of farrowing sows and its effect on milk quality, litter weight gain, and mortality.
L. A. Vitagliano1, M. A. Bonato1, R. L. D. C. Barbalho2, G. D. Santos2, and L. F. Araújo1, 1Universidade de São Paulo, Pirassununga, Brazil, 2ICC Brazil, São Paulo, Brazil.

10:45 AM 482 Evaluation of the efficacy of Bacillus licheniformis or sodium butyrate in front of a Salmonella typhimurium oral challenge in piglets.
E. Barba-Vidal1, L. Castillejos1, V. F. Buttow Roll2, J. J. Mallo1, and S. Martin-Orivel1, 1Animal Nutrition and Welfare Service Department of Animal and Food Sciences Universitat Autónoma de Barcelona, Bellaterra 08193, Spain, 2Department of Animal Science, Faculty of Agronomy Eliseu Maciel, Federal University of Pelotas, Pelotas, Brazil, 3Norel S.A., Madrid, Spain.

11:00 AM 483 Effects of dietary supplementation of direct fed microbial on growth performance, nutrient digestibility, blood profiles, fecal microflora and noxious gas emission in nursery pigs.
J. H. Cho1, E. Kiariie1, S. Indrakumar2, and I. H. Kim1, 1Department of Animal Science, Dankook University, Cheonan, South Korea, 2DuPont Industrial Bioscience-Danisco Animal Nutrition, Waukesha, WI.

11:15 AM 484 Tributyrin, a source of butyric acid, modulates the intestinal health of weaning pigs.
B. Tugnoli, M. Bertocchi, A. Piva, G. Sarli and E. Grilli1, DIMEVET University of Bologna, Ozzano Emilia BO, Italy.

11:30 AM 485 Effects of salmonella inhibitors on growth performance, relative organ weight, meat quality, salmonella populations, fecal gas emission, and blood profiles in broilers.
A. Hosseindoust1, H. L. Li, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.
Physiology and Endocrinology: Advances in Estrous Synchronization
Chair: G. C. Lamb, University of Florida
2505B

8:30 AM  536  Detrimental effect of long term progestin-based protocol on oocyte quality and embryonic development in indigenous goats.
C. Navanukraw\textsuperscript{1}, A. Kraisoon\textsuperscript{1}, J. Thammasiri\textsuperscript{2}, V. Khanthusaeng\textsuperscript{2}, and S. Navanukraw\textsuperscript{1}, \textsuperscript{1}Khon Kaen University, Khon Kaen, Thailand, \textsuperscript{2}Department of Animal Science, Khon Kaen University, Khon Kaen, Thailand.

8:45 AM  537  Exogenous insulin effect on reproductive traits during a Heatsynch protocol in dairy cows.
C. C. Brauner\textsuperscript{1}, M. E. Lima\textsuperscript{1}, D. A. Velasco Acosta\textsuperscript{2}, L. F. Mielke\textsuperscript{2}, V. O. Freitas\textsuperscript{2}, E. G. Xavier\textsuperscript{1}, A. Schneider\textsuperscript{1}, F. B. Del Pino\textsuperscript{1}, V. R. Rabassa\textsuperscript{2}, and M. Nunes Corrêa\textsuperscript{1}, \textsuperscript{1}Federal University of Pelotas, Pelotas, Brazil, \textsuperscript{2}Universidade Federal de Pelotas, Pelotas, Brazil, \textsuperscript{3}Granjas 4 Irmãos, Rio Grande, Brazil.

9:00 AM  538  Effects of administration of prostaglandin F\textsubscript{2α} (PGF) at initiation of the 7-day CO-Synch+CIDR estrus synchronization protocol for suckled beef cows.
V. R. G. Mercadante\textsuperscript{1}, L. E. Kozicki\textsuperscript{2}, F. M. Ciriaco\textsuperscript{1}, D. D. Henry\textsuperscript{1}, C. R. Dahlen\textsuperscript{1}, J. E. Larson\textsuperscript{1}, B. E. Voelz\textsuperscript{1}, D. J. Patterson\textsuperscript{1}, G. A. Perry\textsuperscript{1}, T. L. Steckler\textsuperscript{1}, J. S. Stevenson\textsuperscript{1}, and G. C. Lamb\textsuperscript{1}, \textsuperscript{1}University of Florida, Marianna, \textsuperscript{2}Pontifical Catholic University (PUCPR), Curitiba, Brazil, \textsuperscript{3}North Dakota State University, Fargo, \textsuperscript{4}Mississippi State University, Mississippi State, \textsuperscript{5}University of Missouri, Columbia, \textsuperscript{6}South Dakota State University, Brookings, \textsuperscript{7}University of Illinois, Simpson, \textsuperscript{8}Kansas State University, Manhattan.

9:15 AM  539  Split-time AI: Delayed insemination of non-estrous beef heifers in timed artificial insemination following the 14-d CIDR-PG protocol.
J. M. Thomas\textsuperscript{1}, M. R. Ellersieck\textsuperscript{1}, S. E. Poock\textsuperscript{2}, M. F. Smith\textsuperscript{1}, and D. J. Patterson\textsuperscript{1}, \textsuperscript{1}University of Missouri, Columbia, \textsuperscript{2}University of Missouri-College of Veterinary Medicine, Columbia.

9:30 AM  540  Split-time AI: Delayed insemination of non-estrous beef cows in timed artificial insemination following the 7-d CO-Synch + CIDR protocol.
J. M. Thomas\textsuperscript{1}, M. R. Ellersieck\textsuperscript{1}, S. E. Poock\textsuperscript{2}, M. F. Smith\textsuperscript{1}, and D. J. Patterson\textsuperscript{1}, \textsuperscript{1}University of Missouri, Columbia, \textsuperscript{2}University of Missouri-College of Veterinary Medicine, Columbia.

9:45 AM  541  Effect of double ovulation on corpus luteum blood perfusion, peripheral progesterone, and hepatic steroid inactivating enzymes in dairy cattle.
B. E. Voelz\textsuperscript{1}, C. G. Hart, G. F. Cline, C. O. Lemley, and J. E. Larson, Mississippi State University, Mississippi State.

10:00 AM  542  A novel procedure using a gonadotropin-releasing hormone agonist to increase pregnancy rates in lactating dairy cattle.
A. Willmore\textsuperscript{1}, C. Hammons\textsuperscript{1}, J. Peak\textsuperscript{1}, T. M. Nett\textsuperscript{1}, and T. L. Davis\textsuperscript{1}, \textsuperscript{1}University of Idaho, Moscow, \textsuperscript{2}Colorado State University, Fort Collins.

10:15 AM  543  Effect of an automated estrous detection system during a timed AI program on first postpartum AI.
T. A. Burnett\textsuperscript{1}, A. M. L. Madureira, B. F. Silper, A. C. C. Fernandes and R. L. A. Cerri, Faculty of Land and Food Systems-University of British Columbia, Vancouver, BC, Canada.

10:30 AM  544  Effects of progesterone supplementation on reproductive responses in dairy cows subjected to timed AI programs: A meta-analysis.
R. S. Bisinotto\textsuperscript{1}, N. Martinez, L. D. P. Sinedino, G. C. Gomes, L. F. Greco, W. W. Thatcher, and J. E. P. Santos, Department of Animal Sciences, University of Florida, Gainesville.

10:45 AM  545  Regimens of progesterone supplementation for lactating dairy cows according to the presence of corpora lutea (CL) at the initiation of the timed AI program.
Production, Management, and the Environment: Effects of Temperature on Performance

Chair: Dean Hawkins, West Texas A&M
3501D

8:30 AM 578 Urine metabolomics of heat-stressed dairy goats supplemented with soybean oil.  
A. Salama123, N. Nayan1, A. Contreras-Jodar1, S. Hamzaoui1, and G. Caja1, 1Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona, Bellaterra, Barcelona, Spain, 2Animal Production Research Institute, Dokki, Giza, Egypt, 3Department of Animal Science, Faculty of Agriculture, University Putra Malaysia, 43400 UPM, Serdang, Malaysia.

8:45 AM 579 Bovine core body and scrotal temperature measured using surgically implanted temperature sensitive radio-transmitters, ibuttons and infrared thermography.  
A. Wallage12, J. B. Gaughan1, A. Lisle1, L. Beard2, A. J. Cawdell-Smith1, C. W. Collins1, and S. Johnston1, 1The University of Queensland, Gatton, Australia, 2University of Queensland, St Lucia, Australia.

9:00 AM 580 Rumen temperature of Brahman, Angus and Charolais steers with and without access to shade.  

9:15 AM 581 The effect of shade on vaginal temperature of cows housed outside under subtropical summer conditions.  

9:30 AM 582 Differences in panting score and shade usage between Brahman, Angus and Charolais steers with and without access to shade during summer.  

10:00 AM 583 Correlation between mean panting score and temperature humidity index in lactating dairy cows in a sub-tropical summer.  

10:15 AM 584 Correlation between milk production, days in milk and temperature humidity index in lactating dairy cows in a sub-tropical summer.  

10:30 AM 585 Effects of metabolizable energy intake on tympanic temperature and ADG of steers finished in southern Chile during wintertime.  

10:45 AM 586 Conductive cooling as an alternative to cool down dairy cows.  

11:00 AM 587 Comparison of winter feeding systems for the evaluation of beef cow performance, reproductive efficiency and system costs.  
D. Jose1, G. B. Penner1, J. J. McKinnon1, K. Larson2, and B. Lardner12, 1University of Saskatchewan, Saskatoon, SK, Canada, 2Western Beef Development Centre, Humboldt, SK, Canada.

11:15 AM 588 Effect of two winter housing systems on production, body weight, somatic cell count, BCS, and dry matter intake of organic dairy cows.  
L. S. Sjostrom1,2, B. J. Heins1, M. I. Endres1, R. D. Moon1, and U. S. Sorge1, 1University of Minnesota, West Central Research and Outreach Center, Morris, 2University of Minnesota, Saint Paul, 3University of Minnesota, Department of Veterinary Population Medicine, St. Paul.
Ruminant Nutrition X: Byproducts Beef
Chair: Tara Felix, University of Illinois at Urbana-Champaign
2505A

8:30 AM 701 Evaluation of 2013 Survey of Beef Producers in Nebraska.
M. Jones*, University of Nebraska-Lincoln.

8:45 AM 702 Meta-analysis of concentrate supplement effects on voluntary intake in high and low quality pastures.
J. R. R. Dórea and F. A. P. Santos*, University of Sao Paulo, Piracicaba, Brazil.

9:00 AM 703 Determining the preference and in situ digestibility of a microalgae co-product for beef cattle.
M. L. Van Emon, S. L. Hansen, and D. D. Loy, Iowa State University, Ames.

9:15 AM 704 Digestibility of traditional and adding cellulosic ethanol wet distillers grains in finishing lambs.

9:45 AM 705 Effect of sugarcane fiber digestibility and mode of conservation on intake and ruminal short chain fatty acids of growing steers.

10:00 AM 706 Evaluation of a mixture of crude glycerol and molasses as an energy supplement for beef cattle consuming bermudagrass hay.

10:15 AM 707 The effects of dietary energy density and intake restriction on apparent maintenance energy requirements of beef cows.
L. A. Trubenbach*, T. A. Wickersham, and J. E. Sawyer, Texas A&M University, College Station.

10:30 AM 708 Comparison of the effects of pectin and starch on the rumen fermentation, growth performance and microbial populations in sheep.
J. Liu*, M. Lu, and J. X. Liu, Institute of Dairy Science, Zhejiang University, Hangzhou, China, Zhejiang University, Hangzhou, China.

10:45 AM 709 Effect of dietary starch at similar energy intake during backgrounding on subsequent finishing performance and carcass characteristics in beef cattle: A meta-analysis.
P. A. Lancaster*, C. R. Krehbiel, and G. W. Horn, Oklahoma State University, Stillwater.

11:00 AM 710 Evaluation of MegaFerm fiber to enhance ruminal fermentation and nutrient digestibility of a total mixed ration using an in vitro gas production measurement system.
D. Casper*, I. P. Acharya, and D. Miller, South Dakota State University, Brookings, Miller-Casper Life Sciences, Brookings, SD.

11:15 AM 711 Application of fecal NIRs profiling to predict diet characteristics and voluntary intake in beef cattle.
Ruminant Nutrition XI: Dairy Metabolism
Chair: Brian Bequette, University of Maryland
2504

8:30 AM 712
A comparison between propylene glycol and a multiple component drench on energetic variables in early lactating Holstein cows.
M. Abuajamieh*1, S. K. Stoakes1, M. V. Sans-Fernandez1, J. S. Johnson1, P. J. Gorden1, D. M. McKilligan1, and L. H. Baumgard2, 1Iowa State University, Ames, 2TechMix LLC, Stewart, MN.

8:45 AM 713
A comparative analysis of metabolomics and transcriptomics from prepartal liver of cows developing ketosis post-partum and healthy cows supplemented with Smartamine M and MetaSmart during the transition period.
K. Shahzad1, J. S. Osorio1, D. N. Luchini2, and J. J. Loor1, 1University of Illinois at Urbana-Champaign, 2Adisseo S.A.S., Alpharetta, GA.

9:00 AM 714
The effect of subacute ruminal acidosis on milk fat synthesis and relative expression of key lipogenic enzyme genes in liver tissue in dairy cows.
Y. Guo1, S. L. Li1, Z. J. Cuo1, X. Xu1, and Y. Zou1, 1State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China, 2Shijiazhuang Academy of Agriculture and Forestry Science, Shijiazhuang, China.

9:15 AM 715
Effect of 2-hydroxy-4-(methylthio)butanoate (HMTBa) on risk of diet-induced milk fat depression.
M. Baldin1, J. Y. Ying1, G. I. Zanton2, and K. J. Harvatine1, 1The Pennsylvania State University, University Park, 2Novus International, Inc., St. Charles, MO.

9:30 AM 716
Time-course of changes in select ruminal microbes during induction and recovery from diet-induced milk fat depression in dairy cows.

9:45 AM 717
The effect of length of adaptation to a high-grain diet and acidosis challenge and recovery on rumen papillae mRNA expression of genes relating to barrier function, inflammation and short-chain fatty acid transport in beef heifers.
K. M. Wood*1, T. Schweiger1, J. C. Plaizier2, K. A. Beauchemin1, and G. B. Penner1, 1University of Saskatchewan, Saskatoon, SK, Canada, 2University of Manitoba, Winnipeg, MB, Canada, 1Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.

10:00 AM 718
Induction of subacute ruminal acidosis affects the rumen microbiome.
J. C. McCann*, S. A. Alqarni, S. Luan, P. Cardoso, and J. J. Loor, University of Illinois at Urbana-Champaign.

10:15 AM 719
Effects of feeding a negative DCAD diet prepartum for varied lengths of time on serum metabolites and performance.
Z. Wu1, J. K. Bernard1, K. P. Zanzalari2, and J. D. Chapman1, 1University of Georgia, Tifton, 2Prince Agri Products, Inc., Franklin, IN.

10:30 AM 720
Effect of pre-calving dietary cation anion difference on milk production: A meta-analysis.
I. J. Leam1, R. Rodnay1, P. J. DeGaris2, D. M. McNeill3, and E. Block4, 1SBScibus, Camden, Australia, 2Tarwin Veterinary Group, Leongatha, Australia, 3University of Queensland, Gatton, Australia, 4Church and Dwight Animal Nutrition, Ewing, NJ.

10:45 AM 721
Evaluation of choline metabolites in milk as potential biomarkers for choline absorption in the lactating dairy cow.
V. M. Artegoitia1, C. L. Girard2, H. Lapierre2, S. R. Campagna1, F. Harte1, and M. J. de Veth1, 1University of Tennessee, Knoxville, 2Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, 1Balchem Corporation, New Hampton, NY.

11:00 AM 722
Association of plasma ghrelin concentrations with feed intake in beef cattle.
A. P. Foote1, K. E. Hale1, C. A. Lents1, and H. C. Freely1, 1USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, 2USDA-ARS-MARC, Clay Center, NE, 3USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, 4USDA, ARS, U.S. MARC, Clay Center, NE.

11:15 AM 723
Effects of ruminal dose of sucrose, lactose and starch on ruminal fermentation and expression of genes in ruminal epithelial cells.
M. Oba*, J. Mewis, and Z. Zhu, University of Alberta, Edmonton, AB, Canada.
### Workshops: Crafting USAID's Livestock Research Agenda – Animal Science Priorities Under Feed The Future

**Chair:** Saharah Moon Chapotin, U.S. Agency for International Development  
**Sponsor:** USAID  
3501G

<table>
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<tr>
<th>Time</th>
<th>Session Number</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Affiliation</th>
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<tr>
<td>8:30 AM</td>
<td>781</td>
<td><strong>Feed the future research strategy and USAID’s global livestock investments.</strong></td>
<td>S. Moon Chapotin’ and J. Turk, U.S. Agency for International Development, Washington, DC.</td>
<td></td>
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<tr>
<td>8:50 AM</td>
<td>782</td>
<td><strong>Nutritional value of animal source foods.</strong></td>
<td>L. Iannoti, Institute for Public Health, Washington University, St. Louis, MO.</td>
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<td>9:30 AM</td>
<td>784</td>
<td><strong>The indispensable role of mixed small holder systems in global food and nutritional security.</strong></td>
<td>J. Smith*, International Livestock Research Institute, Washington, DC.</td>
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<td>9:50 AM</td>
<td>785</td>
<td><strong>Africa livestock futures and one health.</strong></td>
<td>D. Carroll*, U.S. Agency for International Development, Washington, DC.</td>
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<td>10:10 AM</td>
<td>786</td>
<td><strong>The role of new technologies in increasing livestock production.</strong></td>
<td>D. Nkrumah*, Bill and Melinda Gates Foundation, Seattle, WA.</td>
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<td>10:30 AM</td>
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<td><strong>Panel Discussion and Audience Q&amp;A</strong></td>
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2014: October 6-9, Naperville, IL

ASAS Innovate
2014: October 5-7, Brainerd, MN
2015: May 31 – June 2, Braselton, GA

Poultry Science Association Annual Meeting
2015: July 27-31, Louisville, KY
2016: July 11-15, New Orleans, LA

Joint Annual Meeting (JAM)
2015: July 12-16, Orlando FL
2016: July 19-23, Salt Lake City, UT

2017 ASAS Annual Meeting will be held in Baltimore, MD.
Look for dates and partner announcements in the ASAS Booth
Beat the heat

Fight heat stress with all-natural feed ingredients from Vi-COR®

Keep your cows eating and producing – even when temperatures climb. A-Max® and Celmanax® help dairy cows maintain milk production by promoting dry matter intake and increasing ration digestibility. Research shows a milk production improvement of up to 2.6 lbs. per head per day when A-Max is fed to cows during hot summer months.

Since Celmanax contains a full dose of A-Max yeast culture, along with proven Refined Functional Carbohydrates® (RFC®), it delivers even more benefits. Contact Vi-COR® to learn more about the heat-fighting power of A-Max and Celmanax, or visit www.vi-cor.com/heat.


Vi-COR®
The power of V.

www.vi-cor.com
641.423.1460 • 800.654.5617
Mason City, Iowa

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