

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



2014 JAM Mobile App release date July 11, 2014.



Go to www.asas.org/JAM2014
for download information.



Dean Hawkins
JAM Overall Program Chair

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



ADSA AND ASAS PRESIDENTS' WELCOME



Scott Rankin
ADSA President



Greg Lardy
ASAS President

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

CSAS PRESIDENT'S WELCOME



John Baah
President, CSAS

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.**



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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.

GENERAL MEETING INFORMATION

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 event 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.

GENERAL MEETING INFORMATION

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.**

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!



10th World Congress on
Genetics Applied to
Livestock Production



Vancouver, British Columbia
August 17–22, 2014

This congress is the premier conference for
researchers and professionals involved in
genetic improvement of livestock.

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 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.

SPECIAL EVENTS

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.



2014 ASAS University Ice Cream Competition

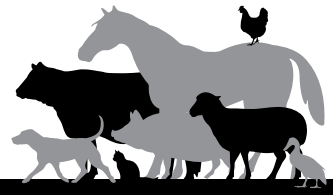
We are excited to kick off the first ever ASAS University ice cream competition at the 2014 JAM Opening BBQ. In 2014, we are featuring ice cream from the Kansas State University, South Dakota State University, University of Connecticut, University of Missouri, and Washington State University. Come out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

American Society of Animal Science

BIG SCOOP AWARD



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!

SPECIAL EVENTS

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 then 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!

SPECIAL EVENTS

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 his 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.

PRECONFERENCE EVENTS

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.

2014 AWARD DONORS

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CSAS Award Donors

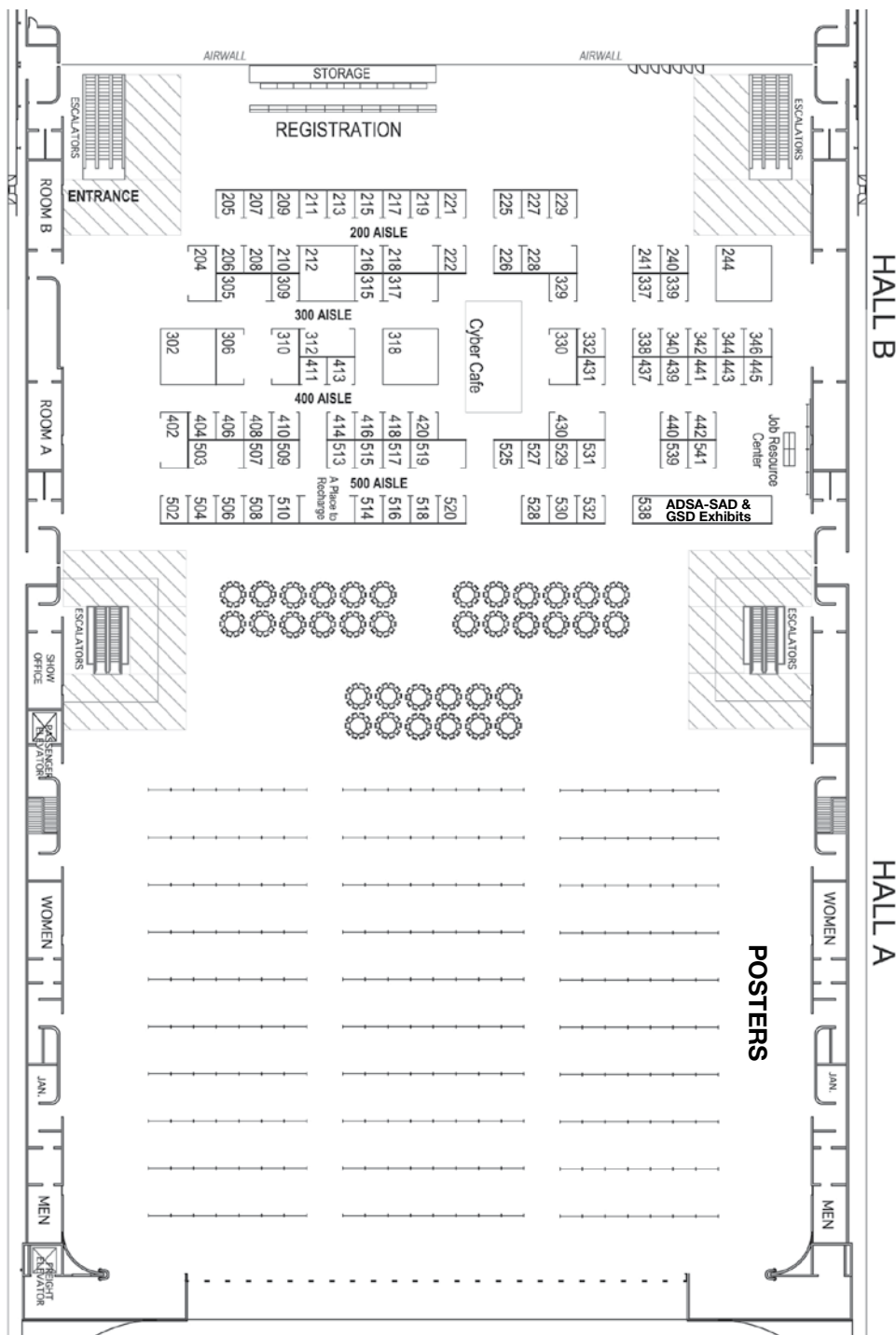
Alltech Canada
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Canadian Cattlemen's Association
Dairy Farmers of Canada
Elanco Animal Health Canada
Nutreco Canada, Inc.

EXHIBIT SCHEDULE / FLOOR PLAN

Exhibit Schedule

| | | |
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| Monday, July 21 | Exhibits Open | 8:00 am – 6:00 pm |
| Tuesday, July 22..... | Exhibits Open | 8:00 am – 5:00 pm |
| Wednesday, July 23..... | Exhibits Open | 8:00 am – 3:00 pm |
| | Exhibit Dismantle..... | 3:00 pm – 6:00 pm |

Exhibit Floor Plan



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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.

ADM

1000 N. 30th Street • Quincy, Illinois 62301

Phone: 217-231-2878

www.adm.com

Booth(s): 516

For more than a century, the people of Archer Daniels Midland Company (NYSE: ADM) have transformed crops into products that serve vital needs. Today, 30,000 ADM employees around the globe convert oilseeds, corn, wheat and cocoa into products for food, animal feed, industrial and energy uses. With more than 265 processing plants, 460 crop procurement facilities, and the world's premier crop transportation network, ADM helps connect the harvest to the home in more than 140 countries. For more information about ADM and its products, visit www.adm.com.

Adifo NV

Industrielaan 11b, 9990 Maldegem, Belgium

Phone: +32 50 303 211

Fax: +32 50 711 193

www.adifo.com

US contact: Milo Bauermeister-Carey

Phone: +1 612 280 4798

milo.bauermeister@adifo.com

Booth(s): 339

World market leader Adifo develops and services a unique range of feed industry-specific software tools for least-cost feed formulation, quality data management, ration calculation, cloud services and ERP. 600 customers in over 60 countries apply Adifo's software to optimize their resources, to be more efficient and to be more profitable.

Adisseo

4400 N Point Parkway, Suite 275, One Point Royal •

Alpharetta, GA 30022-2429

www.adisseo.biz/

Booth(s): 430

At Adisseo, we are nutritionists with a long tradition of applying our expertise to nutritional additives. We are dedicated to

servicing the animal production industry by helping premixers, feed manufacturers, and integrators improve their performance and to become more competitive.

Ag Processing, Inc.

PO Box 2047, 12700 West Dodge Road

Omaha, NE 68103-2047

Phone: 402-492-3309

Booth(s): 342

www.amino-plus.com

AminoPlus is the number one volume bypass protein soybean meal dairy supplement in the United States. The patented AminoPlus process utilizes soybean meal to provide high amino acid quality, rumen bypass, and intestinal digestibility without the addition of chemicals or non-soybean components.

Agri-King, Inc.

18246 Waller Road • Fulton, IL 61252

Phone: 800-435-9560

www.agriking.com

Booth(s): 221

Agri-King, Inc. is an animal nutrition company committed to the success and profitability of livestock producers worldwide. Known for its precise feed analyses, highly fortified products, and knowledgeable staff, Agri-King strives to help livestock producers get the most out of each pound of feed and each head of livestock.

Alltech

3031 Catnip Hill Road • Nicholasville, KY 40356-8700

www.alltech.com

Booth(s): 244

Founded by Dr. Pearse Lyons, Alltech is a global animal health and nutrition company with 32 years' experience in developing natural products that are scientifically proven to enhance animal health and performance. With 2,800 employees in 128 countries, the company has developed a strong regional presence in Europe, North America, Latin America, the Middle East, Africa, and Asia. For further information, visit www.alltech.com.

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.

EXHIBIT DIRECTORY

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
- ASAS Public Policy

Ankom Technology

2052 O'Neil Road • Macedon, NY 14502-8953

www.ankom.com

Booth(s): 502

Ankom Technology is best known for the development of filter bag technology for automating fiber and fat analysis in foods and feeds. Ankom has products supporting in vitro digestibility, in vitro gas production, and in situ digestibility. Ankom products are in use in over 90 countries around the world.

Arm & Hammer Animal Nutrition

469 N Harrison Street • Princeton, NJ 08540-3510

www.AHDairy.com

Booth(s): 520

Arm & Hammer Animal Nutrition is a leading supplier of dairy feed ingredients that work to improve producer profitability. We have developed a wide range of innovative products to address the dairy nutrition challenges today's producers face. Trust Arm & Hammer Animal Nutrition for innovative, proven, and reliable nutritional solutions.

Balchem

PO Box 600, 52 Sunrise Park • New Hampton, NY 10958-0600

www.balchem.com

Booth(s): 312

Balchem's Animal Nutrition and Health Division brings the benefits of patented proprietary micro-encapsulation and chelated trace mineral technology to the livestock, poultry, and companion animal industries. Encapsulation and chelation technologies offer "protection nutrition" to sensitive compounds. Hence, these compounds become bioavailable when and where they offer the most benefit to the animal. noShure-L, Nitro-Shure, KeyShure, VitaShure, and choline chloride.

Bar Diamond Inc

PO Box 60 • Parma, ID 83660-0060

www.bardiamond.com

Booth(s): 529

Bar Diamond Inc. provides the world with rumen cannulae and accessories. Our cannulae are used in cattle, goats, sheep, water buffalo, bison, deer, reindeer, llama, musk oxen, and a camel! Visit our booth and see our newest photos from around the World.

Bayer Animal Health

120707 Shawnee Mission Parkway •

Shawnee Mission, KS 66216

www.animalhealth.bayer.com/

Booth(s): 504

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Biomin

1846 Lockhill Selma Road, Suite 101 •

San Antonio, TX 78213-1551

www.biomin.net

Booth(s): 413

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Bruker Optics, Inc.

19 Fortune Drive • Billerica, MA 01821-3923

www.brukernir2u.com

Booth(s): 226

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Nosworthy Way • Wallingford, Oxfordshire, OX10 8DE, United Kingdom

www.cabi.org

Booth(s): 218

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. Our mission and direction is influenced by our member countries who help guide the activities we undertake.

Cambridge University Press

32 Avenue of The Americas, Bldg 1 • New York, NY 10013-2473

www.journals.cambridge.org

Booth(s): 340

Cambridge University Press publishes high-quality books and journals, including *Animal: The International Journal of Animal Bioscience* on behalf of The Animal Consortium, and *Animal Health Research Reviews* in collaboration with the Conference of Research Workers in Animal Diseases. Please stop by our booth to peruse these and other publications.

Cattle Stats, LLC

9421 N Robinson Avenue • Oklahoma City, OK 73114

Phone: 405-607-4522

www.cattlestats.com

Booth(s): 507

Cattle Stats is an independent bovine testing facility. Dr. Shaun Sweiger, President of Cattle Stats, has many years of experience conducting bovine research. Our focus is on BVD-PI testing and pregnancy testing using the Idexx ELISA test. We offer accurate results, reliable service and fast turnaround times.

Central Life Sciences

1501 E. Woodfield Drive, Suite 200 W •

Schaumburg, IL 60173

www.centrallifesciences.com

Booth(s): 222

ClariFly® Larvicide is a feed supplement that prevents adult house flies, stable flies, face flies, and horn flies from developing in and emerging from the manure of treated cattle. Unlike conventional insecticides that attack the nervous system of insects, ClariFly® Larvicide works by interrupting the fly's lifecycle, rather than through direct toxicity. When mixed into cattle feed, ClariFly® Larvicide passes through the digestive system and into the manure. Another effective fly control product, Altosid® IGR, is an insect growth regulator (IGR) that passes through the animal into its manure, where horn flies lay their eggs. The active ingredient, (S)-Methoprene, is a copy of the horn fly's own biochemicals and breaks the fly's lifecycle by preventing pupae from developing into biting adult flies.

Chr. Hansen

9015 W Maple Street • Milwaukee, WI 53214-4213

www.chr-hansen.com

Booth(s):

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Clemson University

Department of Animal and Veterinary Sciences

123 P : A Building • Clemson, SC 29634

Booth(s): 206

Clemson University faculty member Heather Walker Dunn and her Creative Inquiry students have developed two unique full-color photo atlases of Ruminant Anatomy and Companion Animal Anatomy. These textbooks are designed for Animal Science undergraduates to increase their understanding of animal anatomy using a visual guide. Review pages are included.

C-Lock, Inc.

2951 N Plaza Drive, Suite 103 • Rapid City, SD 57702-9380

www.c-lockinc.com

Booth(s): 514

GreenFeed is a low-cost (patented) system to measure CH₄ and CO₂ emissions from ruminants remotely in a nonintrusive way. CH₄ and CO₂ data collected several times daily provide valuable feedback on the performance of individual animals and can aid in maintaining animal health and in maximizing feed efficiency.

Context Products Ltd

53 Mill Street • Packington
Ashby de la Zouch
Leicestershire
England LE651WN
www.contextbookshop.com
00 44 1530 411337

Booth(s): 431

Context specialises in books for the Animal Nutrition Sector. Our books are written and designed to be color, easy to use and will help improve your knowledge. We also sell books for Nottingham Press, Roodbont, CABI, Chalcombe. For great books, service and price visit www.contextbookshop.com
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Cumberland Valley Analytical Services

14515 Industry Drive • Hagerstown, MD 21742-2410
www.foragelab.com

Booth(s): 519

Cumberland Valley Analytical Services is a full-service forage and feed testing laboratory specializing in chemistry analysis.

Dairy Records Management

313 Chapanoke Road, Suite 100 • Raleigh, NC 27603-3434
www.drms.org

Booth(s): 228

Dairy Records Management Systems provides innovative dairy information products and services for producers, DHIA staff, consultants, and other dairy industry professionals. Comprehensive processed reports include Transition Cow Management, Survival Analysis and Persistency Analysis. Leading-edge software and web tools include PCDART, PocketDairy, Herd Detective, DairyMetrics, WebReports, and Reports On-Demand.

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.

DASCOR, Inc.

PO Box 462885 • Escondido, CA 92046-2885
<http://www.dascor.com/ruminframe.html>

Booth(s): 527

DASCOR, Inc. manufactures autonomous data loggers and sensors for ruminant 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 ruminants. Wireless solutions will also be available this year.

Diamond V

2525 60th Avenue SW • Cedar Rapids, IA 52404
www.diamondv.com

Phone: 800-373-7234

Booth(s) 212

Diamond V is a global, research-focused, technology-driven company that develops and manufactures all-natural products to improve animal health and performance. We connect unique competencies in world-class research, specie-specific expertise, and proprietary microbial fermentation technologies to create profitable solutions for customers everywhere. Diamond V brands include Original, DiaMune, SelenoSource, SynGenX, DV Aqua, and others. From Diamond V headquarters in Cedar Rapids, IA, our people, products, and partnerships provide value in feed and food production around the world, growing and sustaining our reputation as The Trusted Experts in Nutrition and Health.

For more information email diamond@diamondv.com.

DVM Systems, LLC

Phone: 970-506-4044

Booth(s): 530

DVM Systems is an animal health and breeding company uniquely providing early illness detection, calving alerts and identification of estrus using a temperature monitoring bolus and sophisticated software. DVM's TempTrack software is based upon extensive university research and field testing. Simple to use, TempTrack automatically monitors your animals' health and improves your bottom line.

EAAP

Via G. Tomassetti
00161 Rome, Italy
www.eaap.org

Booth(s): 215

EAAP annually organizes the largest animal science meeting in Europe. This meeting is the perfect venue to create a network with qualified animal scientists. Over one thousand scientists have attended the EAAP annual meetings in the past years. EAAP produces the journal "Animal", one of the highest ranked animal science magazines. EAAP has many other services and activities for its members: publishing scientific books, organizing specific and regional workshops and scientific meetings, coordinating international research projects, and defending positions of animal science and livestock industry at international level. EAAP is a federation of national members with the national members being the backbone of EAAP. To increase the quantity and quality of services to the animal science community, EAAP established the individual membership structure. Everyone is invited to become members of EAAP and benefit from belonging to the EAAP community.

E. I. Medical Imaging

110 12th Street SW, Unit 102 • Loveland, CO 80537

www.eimedical.com

Booth(s): 329

E. I. Medical Imaging continues to be a world leader and the only US manufacturer of portable ultrasound solutions specifically engineered for veterinary use. For the past 25 years, the company's core values have remained intact: putting the customer first and delivering solid, effective ultrasound solutions. Engineered for detailed image quality and ultraportability, the versatile Ibex ultrasound scanner is made with interchangeable transducers that allow fast, in-field flexibility and superior image resolution delivers accurate diagnosis. E. I. Medical Imaging designs portable ultrasound solutions for today's veterinary professionals. For more information about Ibex Pro and Ibex Lite call 1 (866) 365-6595 or (970) 669-1793; e-mail info@eimedical.com; or visit www.eimedical.com.

Elsevier

1600 John F Kennedy Blvd, Suite 1800 •

Philadelphia, PA 19103-2398

www.elsevierhealth.com

Booth(s): 510

Elsevier is a world-leading multiple media publisher of science, technology, and health information products and services. We are proud to publish the *Journal of Dairy Science*[®] (JDS), the official journal of the American Dairy Science Association. Please visit the Elsevier booth in the exhibit hall with any questions you might have about accessing the *Journal of Dairy Science* online and to browse our other titles in animal science.

Evonik Corp

1701 Barrett Lakes Blvd NW Ste 340 •

Kennesaw, GA 30144-4509

www.evonik.com/feed-additives

Booth(s): 317

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7519 Standish Place, MPN4 • Rockville, MD 20855

www.fda.gov/animalveterinary

Booth(s): 441

At CVM, a component of the US Food and Drug Administration, we ensure that animal drugs, food additives, animal devices, and medicated feeds are safe and effective. We ensure that food (e.g., milk, meat, and eggs) from treated animals is safe for us to eat. And, we protect public and animal health by approving safe and effective products; monitoring marketed products for safety and effectiveness; conducting research;

educating the public; and enforcing the applicable sections of the Federal Food, Drug, and Cosmetic Act, the law under which we operate.

Federation of Animal Science Societies

1800 S Oak Street, Suite 100 • Champaign, IL 61820-6974

www.fass.org

Booth(s):406

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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www.feedstuffs.com

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Booth(s): 517

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www.hjbaker.com

Booth(s): 332

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Booth(s): 418

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Web site: www.immvac.com

Kansas State University

www.asi.k-state.edu

Booth(s): 213

Kemin Industries

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www.kemin.com

Booth(s): 204

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Booth(s): 525

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www.labsource.com

Booth(s): 211

Lallemand Animal Nutrition

6120 W. Douglas Avenue • Milwaukee, WI 53218-1548
www.lallemandanimalnutrition.com

Booth(s): 305

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dairy industry, including Levucell SC and Levucell SB active dry yeast, Biotal forage inoculants, Alkosel organic selenium yeast, Agrimos, and other mineral-enriched yeast supplements.

Lesaffre Feed Additives

7475 W Main Street • Milwaukee, Wisconsin 53214
Phone: 414-615-3300

www.lsaf.com

Booth(s): 420

Lesaffre Feed Additives is the animal health and nutrition division of the Lesaffre Group; the World's largest manufacturer of yeast and yeast extracts. Lesaffre Feed Additives researches and designs active dry yeasts, mineral yeast, and yeast extracts that offer solutions to problems and challenges faced in production agriculture.

Micronutrients

1550 Research Way • Indianapolis, IN 46231

www.micro.net

Booth(s): 205

Micronutrients, based in Indianapolis, is dedicated to challenging the status quo, by advancing the science, application and environmental sustainability of trace mineral nutrition in livestock. Product development has led to the creation of a new class of trace minerals, Hydroxy Trace Minerals. Use of the first mineral, IntelliBond C (Micronutrients' basic copper chloride), has grown consistently for the past 20 years as the leading source of Cu in the poultry and swine markets. In the past two years zinc and manganese hydroxychloride have followed basic copper chlorides' lead in the market, supported by expansion into the ruminant market. Greater than 80 independent research studies involving Hydroxy trace minerals have proven their ability to deliver improved essential nutrient stability in feeds while significantly increasing the availability and efficacy of the trace mineral to the animal.

National Animal Nutrition Program

University of Kentucky

Lexington, KY

www.nanp-nrsp-9.org

Booth(s): 408

NIRS Forage and Feed Testing Consortium (NIRSC):

E17995 Western Road • Hillsboro, Wisconsin 54634

Phone: 608-489-3960

www.nirsconsortium.org

Booth(s): 532

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.

Novus International

20 Research Park Drive • Saint Charles, MO 63304-5633
www.novusint.com

Booth(s): 503

Novus is a leading developer of animal health and nutrition products for all species with worldwide headquarters in St. Charles, Missouri. Offering products based in science such as ALIMET and MHA methionine supplements, SANTOQUIN and AGRADO Plus antioxidants, MINTREX and MAAC chelated trace minerals, and CIBENZA enzymes, Novus works to improve animal performance, health and well-being globally.

Osborne Industries, Inc.

PO Box 388, 120 N Industrial Avenue • Osborne, KS 67473
Phone: 785-346-2192

Booth(s): 208

Osborne Industries manufactures the leading system for performance testing of pigs, sheep, and goats. The FIRE® (Feed Intake Recording Equipment) System automates the measurement of individual feed intake and other performance characteristics for genetic, feed, and pharmaceutical testing. Osborne is 100% employee owned and headquartered in North Central Kansas.

Parnell

9401 Indian Creek Pkwy, Suite 1170 •
Overland Park, KS 66210
Phone: 1-800-88PARNELL

www.parnell.com

Booth(s): 216

Parnell is a fully integrated pharmaceutical company focused on developing, manufacturing and commercializing innovative animal health solutions. Our goal is to improve dairy reproductive performance one farm at a time by partnering with veterinarians and producers and by providing true innovation. Parnell has invested tens of millions of dollars to bring GONAbreed® (gonadorelin acetate) to market; the first product approved by the FDA to synchronize estrous cycles in both lactating dairy and beef cows. Available with estroPLAN® (cloprostenol sodium) in the convenience of the SYNCHRONIZATION PACK™, there is now a repro solution for every operation.

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Poultry Protein & Fat Council

1530 Cooledge Road • Tucker, GA 30084-7303
www.poultryegg.org/ppfc

Booth(s): 225

The Poultry Protein & Fat Council solicits and sponsors research that would develop new and increased utilization of poultry byproduct meal, feather meal, blood meal, and poultry fat by demonstrating their efficacy in poultry, aquaculture, livestock, and companion animal rations.

Probiotech International, Inc.

6225 Choquette Street Street • Hyacinthe, QC J25 8L2, Canada
www.probiotech.com

Booth(s): 528

Probiotech International Inc. and Phodé Laboratories develop and provide the animal nutrition industry with natural solutions. The line of products was designed using the principles of biotechnology in order to promote animal health and to maximize agriculture production with the respect of our environment in mind. Products include patented rumenprotected choline for dairy cows to natural appetite enhancers, organic acidifiers, and plant extracts and sweeteners for all species.

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Booth(s): 315

Rock River Laboratory Inc., Headquarters

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www.rockriverlab.com

Facebook: Rock River Laboratory, Inc.

Booth(s): 227

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www.smartstock-usa.com

Booth(s): 506

Soybean Meal Information Center

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Ankeny, Iowa 50023-7068

Phone: 515-210-1601

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Booth(s): 210

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SoyBest

PO Box 157 • West Point, NE 68788-0157

www.soybest.com

Booth(s): 402

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SoyPlus SoyChlor West Central

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United States Contact: Alicia Clancy

Phone: 712-667-3334

aclancy@westcentral.net

Booth(s): 207

Unity Scientific, Inc.

117 Old State Road • Brookfield, CT 06804

Booth(s): 411

Unity Scientific is a global leader in the design and manufacturing of near infrared instrumentation that serves a wide variety of applications in the animal science industry. Unity has just introduced a new Feed Analyzer and Dairy Analyzer that offers everything required to start analyzing samples with pre-loaded calibrations.

Varied Industries Corporation (Vi-COR)

905 S Carolina Avenue, PO Box 1483 • Mason City, IA 50402

www.vi-cor.com

Booth(s): 318

Vi-COR (Varied Industries Corporation) headquarters, located in Mason City, IA was purchased in 1998 by Mark Holt, President. The company has expanded sales and marketing efforts by launching several new products and hiring key personnel for research, international sales, domestic sales and technical service positions. Vi-COR a manufacturer of unique, all-natural refined functional carbohydrate feed ingredients is the first in the market to develop a concentrated, a liquid, and a soluble concentrated powder. Vi-COR provides a global on farm customer service and tech service, focusing on serving producers in dairy, beef, swine and poultry in over 65 countries.

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www.zinpro.com

Booth(s): 330

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109 Asher Bay Street • Smithville, MO 64089

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Booth(s): 337



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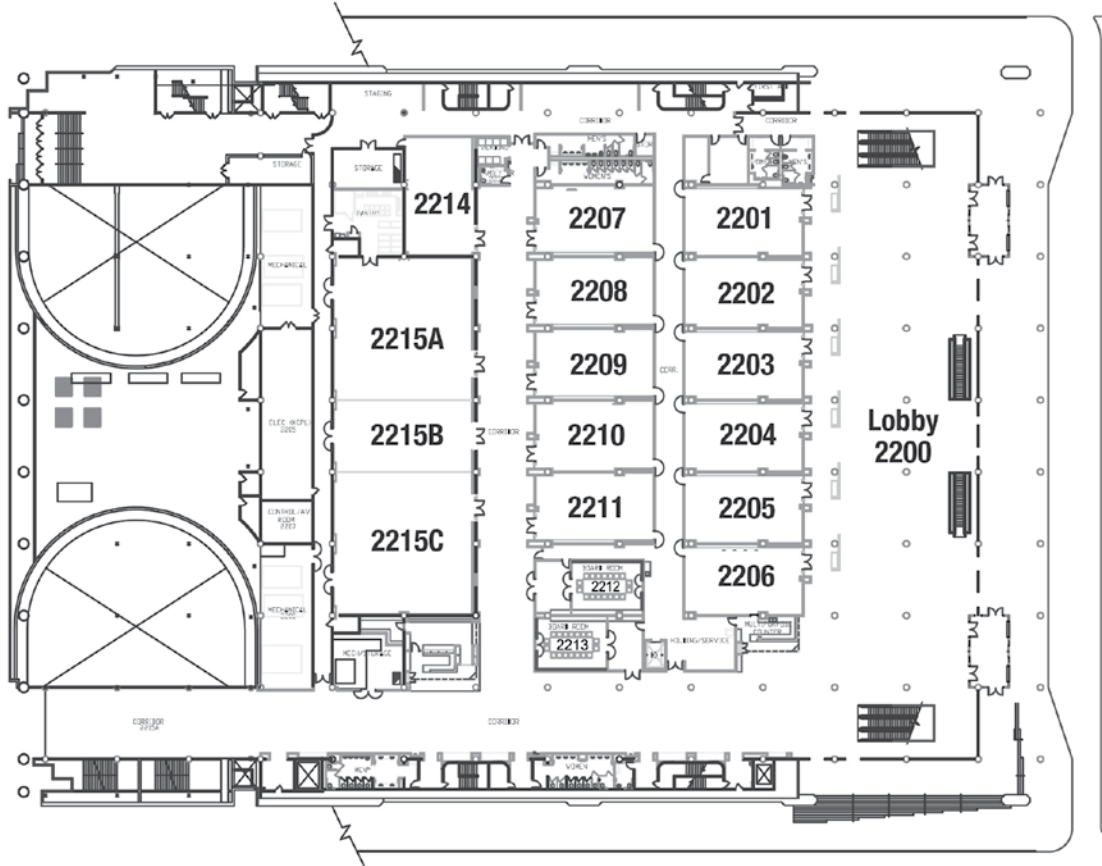
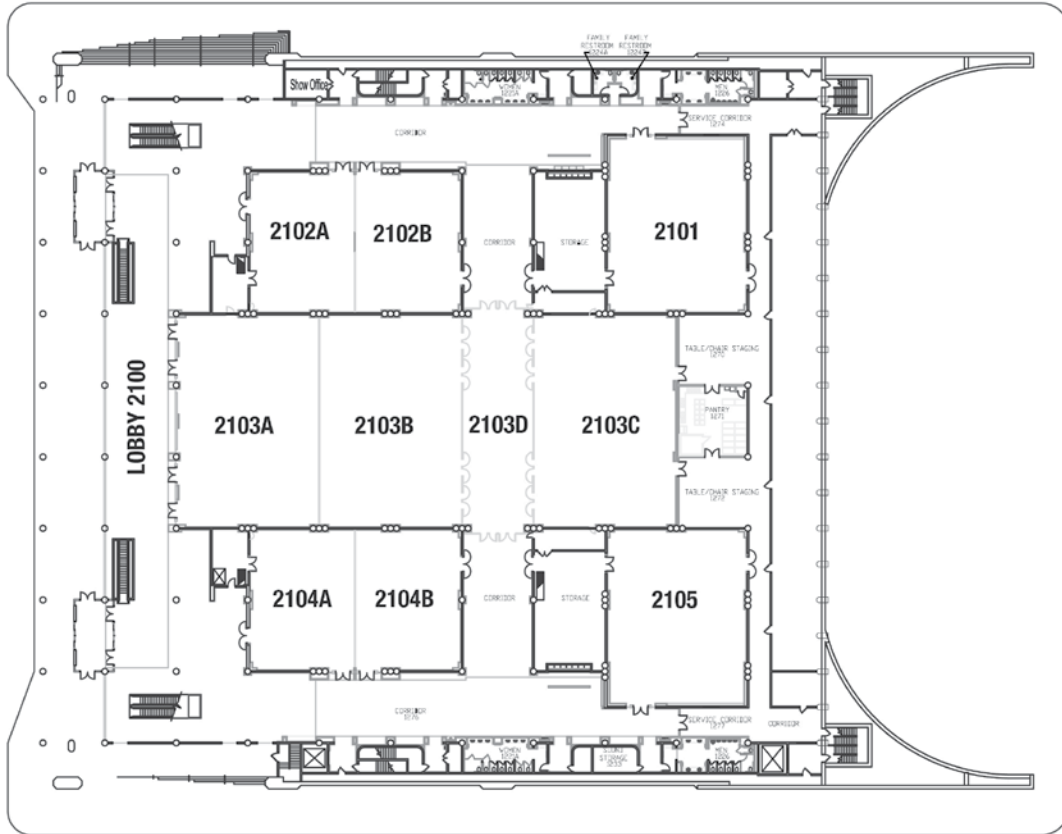
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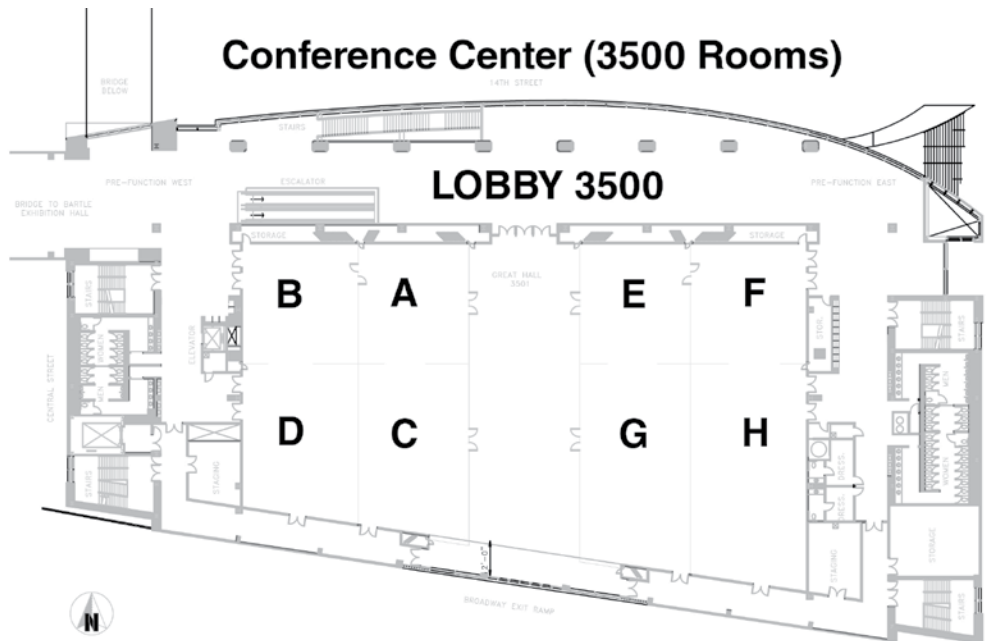
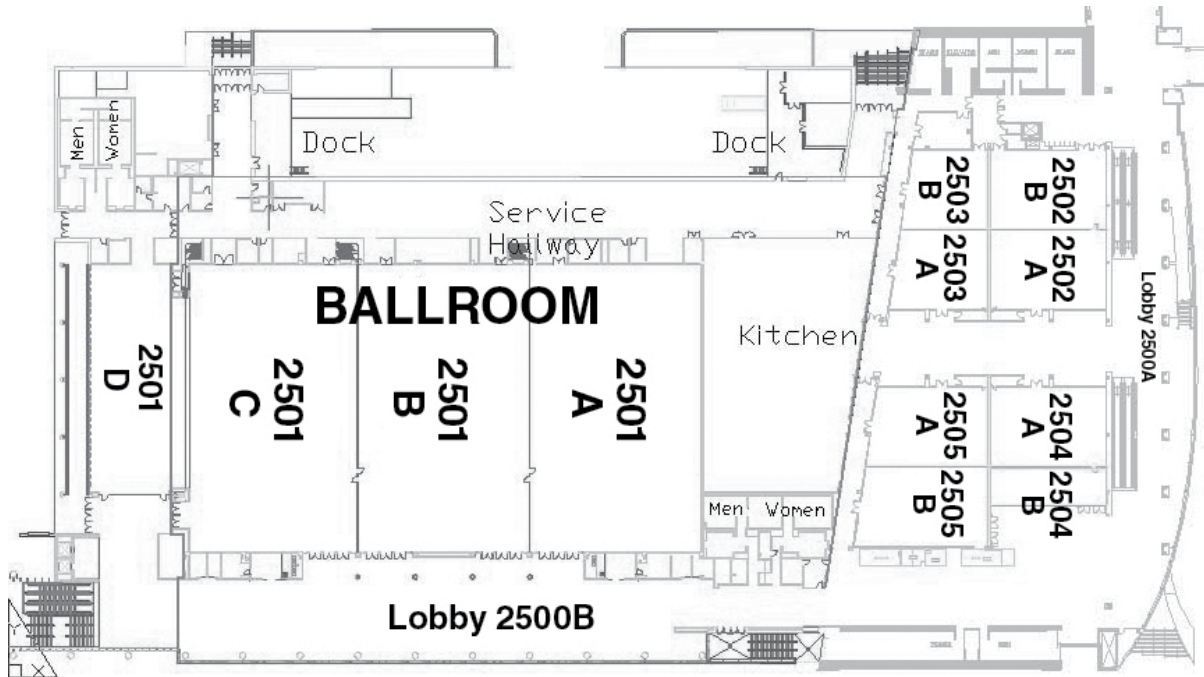
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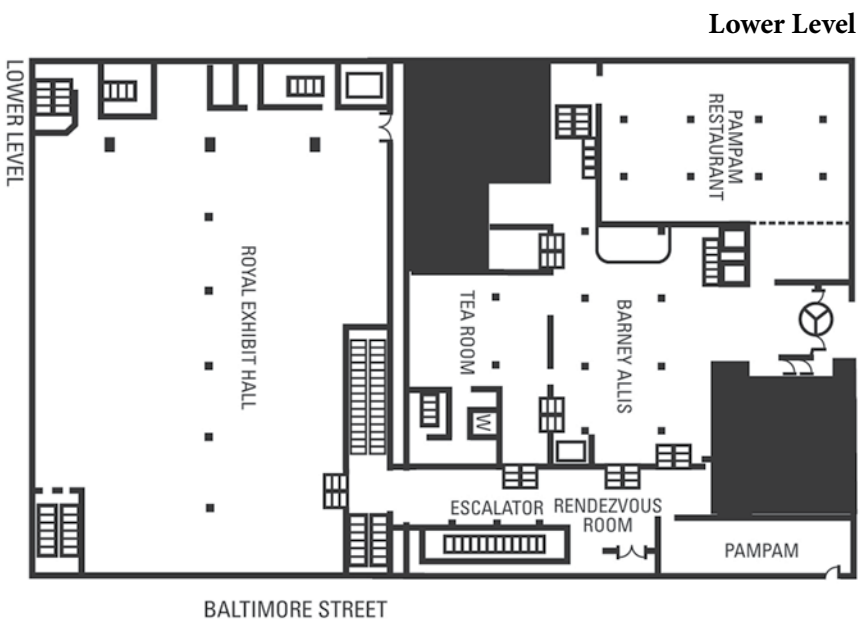
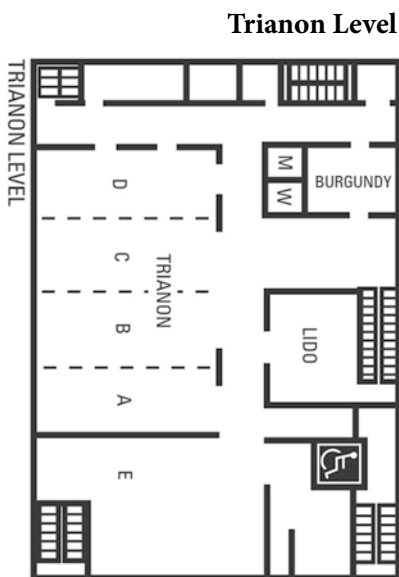
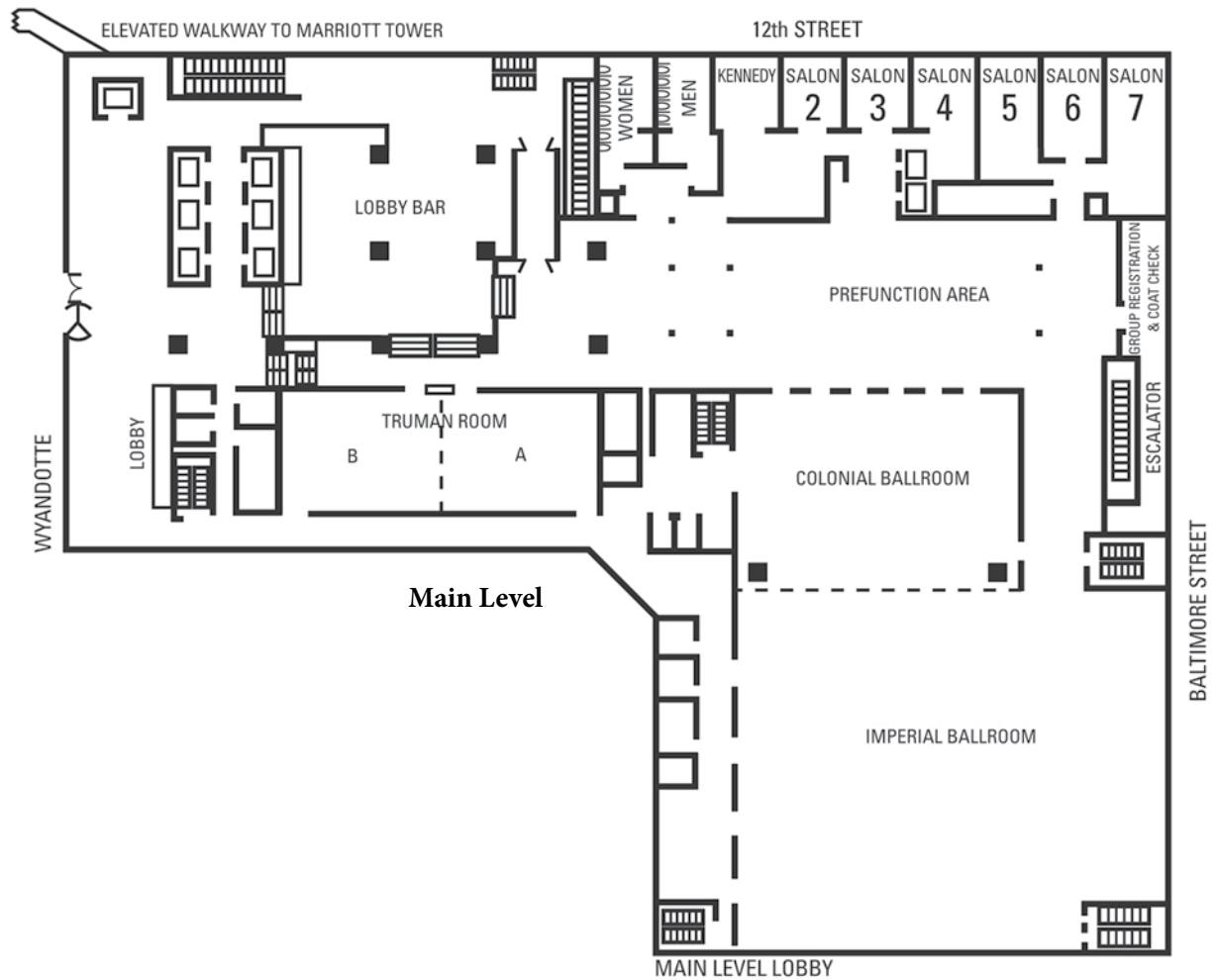
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CONFERENCE CENTER MAPS

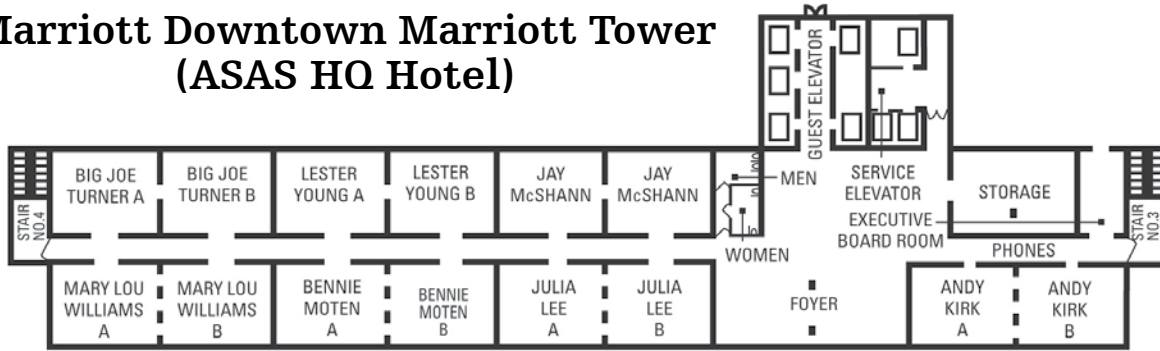


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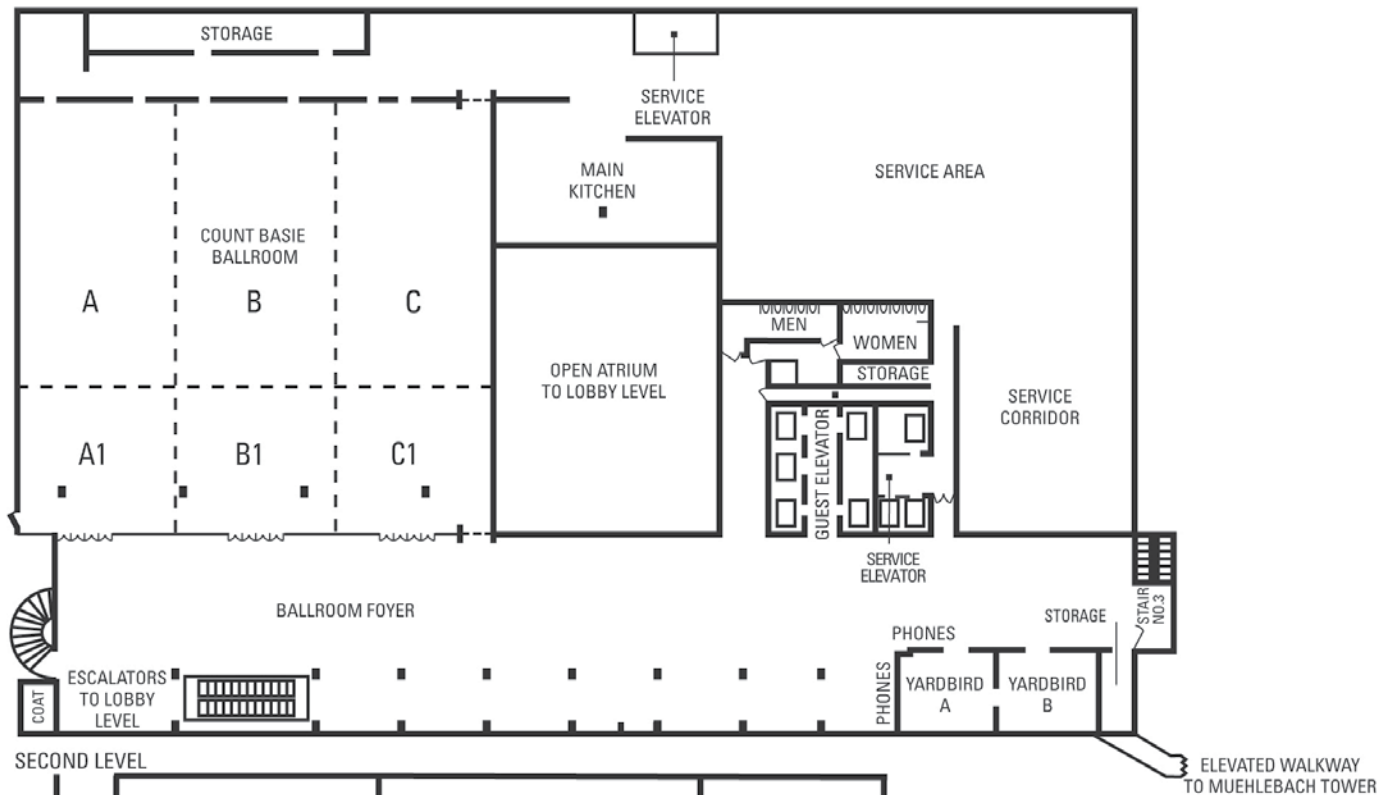


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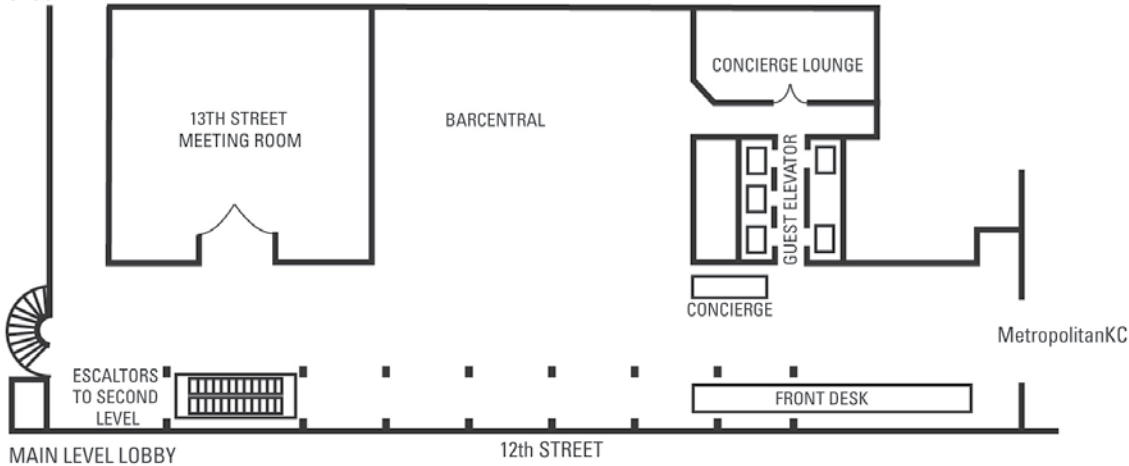
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SCHEDULE OF EVENTS

Scheduling and locations are subject to change without notice.

Saturday, July 19

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

Sunday, July 20

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

SCHEDULE OF EVENTS

Monday, July 21

| | | |
|---------------------|---|--|
| All day | ASAS Undergraduate Academic Quadrathlon | Marriott Downtown |
| 6:30 am – 8:00 am | ADSA Dairy Specialists/Dairy-Related Participants Breakfast | Marriott Downtown, Truman A |
| 6:30 am – 8:00 am | Michigan State University Breakfast | Convention Center, 2201 |
| 6:30 am – 5:15 pm | Registration open | Convention Center, Exhibit Hall AB |
| 7:30 am – 9:15 am | Poster Presentations | Convention Center, Exhibit Hall AB |
| 7:30 am – 9:15 am | ADSA-SAD Undergraduate Poster Competition | Convention Center, Exhibit Hall AB |
| 7:30 am – 8:15 am | Turn in ADSA-SAD Yearbooks, Scrapbooks and Annual Reports for Judging at ADSA-SAD Booth 538 | Convention Center, Exhibit Hall AB |
| 8:00 am – 9:00 am | Johnes/TB Disease Interest Group | Convention Center, 2212 |
| 8:00 am – 6:00 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 |
| 8:30 am – 9:30 am | ADSA-SAD Judging of Yearbooks, Scrapbooks and Annual Reports in ADSA-SAD Booth 538 | Convention Center, Exhibit Hall AB |
| 8:30 am – 9:30 am | ADSA-SAD Interviews for Outstanding Student and Advisor Awards | Convention Center, 2209 |
| 8:30 am – 9:45 am | ADSA-SAD Activities Symposium | Convention Center, 2210 |
| 9:30 am – 10:30 am | Discover Conference Steering Committee | Convention Center, 2213 |
| 9:30 am – 5:00 pm | Scientific Sessions | Convention Center |
| 9:45 am – 10:45 am | ADSA-SAD Business Meeting | Convention Center, 2210 |
| 9:45 am – 4:00 pm | Spouse Event 1: Arabia Steamboat & Hallmark Visitor Center | Marriott Downtown, Lobby |
| 10:30 am – 12:30 pm | ARPAS Exam | Convention Center, 2214 |
| 11:00 am – 12:15 pm | ADSA-SAD Undergraduate Dairy Foods Paper Presentations | Convention Center, 2208 |
| 12:30 pm – 2:00 pm | ASAS National & Sectional Graduate Directors Meeting | Marriott Downtown, Andy Kirk A |
| 12:30 pm – 2:00 pm | ASAS Undergraduate Lunch and Learn | Marriott Downtown, Bennie Moten A |
| 12:30 pm – 2:00 pm | ADSA Graduate Student Division Career Insights Luncheon | Convention Center, 2215A |
| 12:30 pm – 2:00 pm | Lunch Panel Discussion: Funding Agencies Perspective in Today's Economy | Convention Center, 2215B |
| 12:30 pm – 2:00 pm | ASAS Past Presidents' Lunch | Marriott Downtown, Bennie Moten B |
| 12:30 pm – 2:00 pm | ADSA Past Presidents' Lunch | Marriott Downtown, Barney Allis Tea Room |
| 12:30 pm – 2:00 pm | American College of Animal Science (ACAS) Annual Meeting | Convention Center, 2214 |
| 1:00 pm – 2:00 pm | Discover 28 'Starch for Ruminants' Program Committee | Convention Center, 2213 |
| 2:00 pm – 4:00 pm | ARPAS Exam | Convention Center, 2214 |
| 2:00 pm – 4:15 pm | ADSA-SAD Undergraduate Production Paper Presentations | Convention Center, 2208 |
| 2:00 pm – 4:30 pm | ADSA-SAD Undergraduate Original Research Paper Presentations | Convention Center, 2210 |
| 2:00 pm – 5:30 pm | Southern Branch ADSA Symposium and Business Meeting | Convention Center, 2101 |
| 5:00 pm – 5:30 pm | Removal of ADSA-SAD Posters | Convention Center, Exhibit Hall AB |
| 5:00 pm – 6:30 pm | Penn State University Reception | Marriott Downtown, Barney Allis Tea Room |
| 5:00 pm – 7:00 pm | Informal Calf Gathering | Marriott Downtown, Julia Lee A/B |
| 5:30 pm – 7:00 pm | ASAS Award Winners Dinner and Photo Session | Marriott Downtown, Colonial Ballroom |
| 6:00 pm – 9:00 pm | ASAS President's Picks Poster Presentations | Marriott Downtown, Imperial Ballroom Foyer |
| 7:00 pm – 8:30 pm | ASAS Awards Program & Undergraduate Academic Quadrathlon Finals | Marriott Downtown, Imperial Ballroom |
| 7:00 pm – 9:00 pm | ADSA-SAD and GSD Student Mixer | Howl at the Moon |
| 8:30 pm – 11:00 pm | Iowa State Alumni and Friends Reception | Marriott Downtown, Truman B |
| 8:30 pm – 11:00 pm | Purdue University Reception | Marriott Downtown, Truman A |
| 8:30 pm – 12:00 am | ASAS Awards Celebration | Marriott Downtown, Barney Allis |
| 9:00 pm – 12:00 am | ASAS Graduate Student Mixer | PBR Big Sky |

SCHEDULE OF EVENTS

Tuesday, July 22

| | | |
|---------------------|--|--------------------------------------|
| 6:30 am – 8:00 am | University of Illinois Breakfast | Marriott Downtown, Andy Kirk A/B |
| 6:30 am – 8:00 am | University of Kentucky Breakfast | Marriott Downtown, Yardbird A |
| 6:30 am – 8:00 am | Virginia Tech Breakfast | Marriott Downtown, Bennie Moten B |
| 6:30 am – 8:00 am | JDS Editorial Board Breakfast/Meeting | Marriott Downtown, Truman B |
| 6:30 am – 8:00 am | ADSA DF Division Milk Proteins and Enzyme Committee Breakfast | Convention Center, 2213 |
| 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 |
| 7:30 am – 9:15 am | ASAS Undergraduate Poster Competition | Convention Center, Exhibit Hall AB |
| 8:00 am – 9:00 am | ADSA Spokesperson/Media Training | Convention Center, 2208 |
| 8:00 am – 5:00 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 |
| 8:30 am – 9:30 am | ADSA-SAD Business Meeting–Election of Officers | Convention Center, 2210 |
| 9:00 am - 10:30 am | ASAS Presidents and Block and Bridle Board Meeting | Marriott Downtown, Andy Kirk A |
| 9:30 am – 11:00 am | ADSA-SAD Undergraduate Student Career Roundtable | Convention Center, 2215B |
| 9:30 am – 12:30 pm | ARPAS Symposium | Convention Center, 2102B |
| 9:30 am – 5:00 pm | Scientific Sessions | Convention Center |
| 9:45 am – 4:00 pm | Family Fun Day: Sea Life and LEGOLAND Discovery Center | Marriott Downtown, Lobby |
| 10:30 am - 11:00 am | Block & Bridle Advisors Meeting | Marriott Downtown, Andy Kirk B |
| 10:30 am – 12:00 pm | ASAS Investment Committee Meeting | Marriott Downtown, Andy Kirk A |
| 11:30 am – 12:30 pm | ADSA Production Division Business Meeting | Convention Center, 3501F |
| 11:30 am – 12:30 pm | ADSA Dairy Foods Division Business Meeting | Convention Center, 3501C |
| 11:45 am – 2:00 pm | ADSA-SAD Awards Luncheon | Convention Center, 2215A |
| 12:30 pm – 2:00 pm | ASAS Foundation Heritage Lunch | Marriott Downtown, Julia Lee A/B |
| 12:30 pm – 2:00 pm | ARPAS Business Meeting | Convention Center, 2101B |
| 12:30 pm – 2:00 pm | ADSA Dairy Foods Division Program Planning Lunch | Convention Center, 2212 |
| 12:30 pm – 2:00 pm | ADSA Dairy Foods Division Milk Proteins and Enzyme Committee | Convention Center, 2213 |
| 12:30 pm – 2:00 pm | ASAS JAS/Animal Frontiers Editorial Meeting and Lunch | Convention Center, 2515B |
| 12:30 pm – 2:00 pm | CSAS Annual General Meeting and Lunch | Crowne Plaza, Salon B |
| 2:00 pm – 3:00 pm | ARPAS Exam | Convention Center, 2214 |
| 2:00 pm – 4:00 pm | ADSA-SAD Award and Club Photos | Convention Center, 2215A |
| 2:00 pm – 5:00 pm | Pick up Yearbooks and Scrapbooks from SAD Exhibit | Convention Center, Exhibit Hall AB |
| 2:30 pm – 3:30 pm | ADSA-SAD Committee Meeting – Old and New Officers and Advisors | Convention Center, 2209 |
| 3:00 pm – 4:30 pm | ADSA Graduate Student Division Dairy Tales | Convention Center, 2208 |
| 4:00 pm – 5:00 pm | ASAS Open Forum: Accreditation | Convention Center, 2503 |
| 5:00 pm – 6:00 pm | ASAS-ARPAS Career Learning Center Launch | Convention Center, 2503 |
| 5:00 pm – 6:30 pm | ADSA Award Donor Dinner | Marriott Downtown, Truman AB |
| 7:00 pm – 8:15 pm | ADSA Awards Program | Marriott Downtown, Imperial Ballroom |
| 8:15 pm – 9:30 pm | JAM Ice Cream Social | Convention Center, Ballroom CD |
| 9:00 pm – 12:00 am | ADSA Graduate Student Division Mixer | PBR Big Sky |

SCHEDULE OF EVENTS

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. <i>R. J. Harmon*</i> , 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. <i>R. T. Zijlstra¹, T. A. Woyengo¹, Z. Nasir¹, and E. Beltranena^{1,2}</i> , ¹ University of Alberta, Edmonton, AB, Canada, ² Alberta Agriculture and Rural Development, Edmonton, AB, Canada. |
| Page 140 | 77 | Can the genetic selection for improved immune response be tailored to expand the efficacy of disease management interventions. <i>B. Mallard*</i> , Department of Pathobiology, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada. |
| Page 151 | 188 | Nutritional sustainability of pet foods. <i>R. A. Carter¹, P. R. Buff¹, K. S. Swanson², T. P. Yount¹, and J. H. Kersey¹</i> , ¹ The Nutro Company, Franklin, TN, ² Department of Animal Sciences, University of Illinois at Urbana-Champaign. |
| Page 151 | 189 | How sustainability influences ingredient sourcing, quality and safety. <i>D. L. Meeker*</i> , National Renderers Association, Alexandria, VA. |
| Page 151 | 190 | Sustainability of non-traditional companion animals. <i>G. Ballam*</i> , Purina Animal Nutrition, St Louis, MO. |
| Page 205 | 735 | Pasture development and sustainable grazing management. <i>S. P. Hart*</i> , American Institute for Goat Research, Langston University, Langston, OK. |
| Page 205 | 740 | Global demand for small ruminant products. <i>G. W. Williams* and D. Anderson</i> , Texas A&M University, College Station |

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Abstract Numbers by Section (Topic Area) ORAL AND SYMPOSIA PRESENTATIONS

| Section (topic area) Session | Day | Abstract Numbers |
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| Meeting the Present and Future Demand for Employees With a PhD in Dairy Science | T | 1–5 |
| ADSA Southern Section Symposium | | |
| Strategies for Housing Dairy Animals in the Southeast | M | 6–10 |
| ADSA-ASAS Northeast Section Symposium | | |
| Opportunities to Meet Changing Consumer Preferences for Animal Products | W | 11–13 |
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| Original Research | M | 18–23 |
| Dairy Production | M | 24–31 |
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| Animal Health II: Host-Microbial Interactions: Detection and Intervention | T | 80–90 |
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| 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: | | |
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| Section (topic area) Session | Day | Abstract Numbers |
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| Feed Additives | W | 144–151 |
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| Genetic and Genomic Methods | T | 163–169 |
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| Companion Animal Nutrition and Pet Food Processing..... | T | 180–187 |
| Symposium: Companion Animals and Sustainability: Today’s Impact on the Future..... | T | 188–192 |
| George C. Fahey Companion Animal Nutrition Symposium: Preparing Future Companion Animal Biologists | W | 193–197 |
| Comparative Gut Physiology Symposium | | |
| Session I..... | T | 198–203 |
| Session II | T | 204–211 |
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| CSAS oral student presentation competition..... | M | 212–228 |
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| Dairy Foods | | |
| Symposium: Advances in Delivery of Dairy Ingredients for Health and Functional Benefits | M | 233–237 |
| Technical Oral Session: Cheese / Yogurt / Ice Cream | M | 238–247 |
| Symposium: Protein Functionality in Cheese Systems: Natural, Process Cheese and Analogs..... | T | 248–252 |
| Symposium: Milk Protein-Hydrocolloid Interactions: Recent Impacts | T | 253–256 |
| Technical Oral Session: Analytical / Processing | T | 257–265 |
| Technical Oral Session: Protein / Polysaccharide Interactions | W | 266–275 |
| Symposium: Dairy Foods Consumption, Gut Microbiota and Human Health | W | 276–280 |
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| Know-How and Future Challenges for Developing the Horse Sector in Europe: The Activity of the EAAP Horse Commission | TH | 281–285 |
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| Symposium: Decision Support Tools in Extension | W | 292–294 |
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| Global Challenges to a Safe Food Supply..... | M | 295–298 |
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| Symposium: Developmental Programming: Applications in the Horse | T | 393–395 |
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| Symposium: Global Prospective of Livestock Production Systems to Meet the Growing Need For Animal Protein in Human Diets: Impacts on Production and Human Health | W | 400–403 |
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Periparturition Dairy

**Section (topic area)
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| Ruminant Nutrition V: Methane Beef/Dairy | T | 643–654 |
| Ruminant Nutrition VI: Amino Acids/Dairy | T | 655–666 |
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Small Ruminant

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Swine Species

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Teaching/Undergraduate and Graduate Education

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Triennial Lactation Symposium / BOLFA

| | | |
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POSTER PRESENTATIONS

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| Calf Health | 854-863 | T001-T010 |
| Cow and Heifer Health | 864-884 | W026-W046 |
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| ASAS Undergraduate Student Poster Competition | 885-904 | T011-T030 |
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| Cow-Calf and Bull | 915-928 | W047-W060 |
| Breeding and Genetics | | |
| Applications and Methods in Animal Breeding-Beef | 929-938 | M043-M052 |
| Genomic Methodology | 939-942 | M053-M056 |
| Applications and Methods in Animal Breeding-Dairy II | 943-950 | T041-T048 |
| Applications and Methods in Animal Breeding-Poultry | 951-956 | T049-T054 |
| Application and Methods in Animal Breeding-Livestock I | 957-961 | W061-W065 |
| Molecular Biology and Genomics | 962-968 | W066-W072 |
| Companion Animals | | |
| Companion Animal Nutrition | 969-978 | T055-T064 |
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| CSAS Graduate Student Poster Competition | 979-988 | M057-M066 |
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| Technical Poster Session II: Analytical / Processing | 1007-1018 | T065-T076 |
| Technical Poster Session III: Fluid Milk | 1019-1036 | W073-W090 |
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| Section (topic area) Session | Abstract Numbers | Poster Numbers |
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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 bronchospasms. 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

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D187 Rev0613

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 nymphomania 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.

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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 Toppliff, 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, Amirillo, 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 774 **Utilizing ‘omic’ techniques to understand energy balance in the lactating dairy cow.**
J. R. Roche¹, C. V. Phyn¹, T. M. Grala², C. G. Walker², M. A. Crookenden², S. Meier¹, J. K. Kay¹, and J. J. Loor³,
¹DairyNZ, Hamilton, New Zealand, ²DairyNZ, Auckland, New Zealand, ³University of Illinois at Urbana-Champaign.
- 9:25 AM 775 **Systems biology of regulatory mechanisms of nutrient metabolism in lactation.**
*J. P. McNamara**, Washington State University, Pullman.
- 10:10 AM **Break**
- 10:30 AM 776 **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 777 **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 778 **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 779 **Nutrient partitioning during intramammary inflammation: A key to severity of mastitis and risk of subsequent disease?**
*K. M. Moyes**, Department of Animal and Avian Sciences, University of Maryland, College Park.
- 3:00 PM 780 **EAAP - ASAS Speaker Exchange Presentation: Nutritional effects on immunology and inflammation in dairy cattle.**
E. Trevisi, 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 AWARDS PROGRAM



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POSTER PRESENTATIONS

Exhibit Hall AB

ADSA-SAD Undergraduate Student Paper Competition: Original Research

- 787 M001 **Characterization of serotonin (5-HT) and glucose patterns and their hepatic receptor profiles during the transition period in dairy cows.**
M. Olsen, J. Laporta, A. P. Prichard, S. A. E. Moore, B. P. Schnell, S. R. Weaver, C. R. Cronick, and L. L. Hernandez, University of Wisconsin-Madison.*
- 788 M002 **Inhibitory factors of casein synthesis in mammary tissue of lactating dairy cows.**
R. L. Garnett, A. Felock, W. K. Ray, R. F. Helm, S. I. Arriola Apelo, and M. D. Hanigan, Virginia Tech, Blacksburg.*
- 789 M003 **Health of Holstein bull calves fed a fermentation extract of *Aspergillus Oryzae*.**
R. M. Townsley, T. T. Yohe, E. M. Dudash, Y. Roman Garcia, A. R. Gibson, K. M. O'Diam, and K. M. Daniels, Department of Animal Sciences, The Ohio State University, Wooster.*
- 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.**
L. S. Murata, F. L. da Silva, L. R. Roos, L. S. Fonseca, I. Fontana, C. A. da Silva Júnior, F. N. Gomes da Costa, C. G. D. Q. Roriz, L. H. N. Ribeiro, A. P. Santana, and S. L. S. Cabral Filho, University of Brasilia, Brasilia, 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.**
W. Chang, J. Tang, G. Liu, and H. Cai, Feed Research Institute, Chinese Academy of Agricultural Sciences, Beijing.*
- 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-Cushon¹, R. Bergeron², K. E. Leslie³, G. J. Mason³, and T. J. DeVries¹, 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. Liboreiro¹, K. S. Machado¹, P. Basso Silva², M. M. Filho¹, G. Franco³, A. E. Barreto³, 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.
- 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^{1,2}, A. M. de Passille³, J. Rushen³, E. Vasseur⁴, D. B. Haley⁵, and D. Pellerin¹, ¹Université Laval, Québec, QC, Canada, ²Valacta, Sainte-Anne-de-Bellevue, QC, Canada, ³University of British Columbia, Agassiz, BC, Canada, ⁴University of Guelph-Campus d'Alfred, Alfred, ON, Canada, ⁵University of Guelph, Guelph, ON, Canada.
- 800 M014 **Evaluation of cow cleanliness and fly avoidance behaviors among cows with docked, switch-trimmed, and switch-intact tails.**
E. A. Morabito, D. T. Nolan, and J. M. Bewley, University of Kentucky, Lexington.*
- 801 M015 **Effect of reduced hair coat on performance of feedlot steers during summer heat stress.**
A. K. Curtis, B. Scharf, W. J. Sexten, and D. E. Spiers, University of Missouri, Columbia.*

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, ²Faculty 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, III², J. D. Tucker², T. Hess², P. A. Beck³, J. Jennings¹, J. G. Powell⁴, 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. Oh¹, H. J. Boermans², H. V. L. N. Swamy³, T. K. Smith¹, and N. A. Karrow¹, 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 diarrhoea virus infection.**
S. W. Hahn, 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. Branson^{1,2}, 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. Eckel², 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 Agricultural 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. Richards, 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. Sørensen³, 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.

- 842 M031 **Identifying the major bacteria causing intramammary infections in individual milk samples of sheep and goats using traditional bacteria culturing and real-time polymerase chain reaction.**
M. Rovai¹, G. Caja¹, A. Salama^{1,2}, A. Jubert³, B. Lazaro⁴, M. Lazaro³, and G. Leitner⁵, ¹Group of Ruminant Research (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, ²Animal Production Research Institute, Dokki, Giza, Egypt, ³Laboratori Interprofessional Lleter de Catalunya (ALLIC), Cabriels, Spain, ⁴Vacunek, Ibaizabal Bidea 800, Parque Científico y Tecnológico de Bizkaia, Derio, Spain, ⁵National Mastitis Reference Center, Kimron Veterinary Institute, Bet-Dagan, Israel.
- 843 M032 **Antibiotic dry-off therapy for intramammary infections in dairy sheep and goats.**
M. Rovai¹, G. Caja¹, A. Salama^{1,2}, C. L. Manuelian¹, X. Such¹, M. Cervino³, and G. Leitner⁴, ¹Group of Ruminant Research (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, ²Animal Production Research Institute, Dokki, Giza, Egypt, ³Boehringer-Ingelheim España S.A., Barcelona, Spain, ⁴National Mastitis Reference Center, Kimron Veterinary Institute, Bet-Dagan, Israel.
- 844 M033 **Tissue protein nitration and peripheral blood endotoxin activity are indicative of the severity of systemic organ compromise in naturally-occurring clinical cases of bacterial mastitis in holstein dairy cows.**
S. Kahl^{}, T. H. Elsasser, and G. Sample*, USDA, Agricultural Research Service, Beltsville, MD.
- 845 M034 **Proinflammatory responses of a hTERT-transformed, immortalized line of cultured bovine mammary epithelial cells (BME).**
T. H. Elsasser^{}, S. Kahl¹, D. E. Kerr², E. Zudaire³, and F. Cuttitta³*, ¹USDA, Agricultural Research Service, Beltsville, MD, ²University of Vermont, Burlington, ³NIH-NCI, Bethesda, MD.
- 846 M035 **A snapshot of multi-toxin contamination in feed – Summary of 37+ analysis results for 2012/2013.**
A. Yiannikouris^{}*, Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.
- 847 M036 **Identification of immune response markers to Omnigen-AF supplementation in a rat model.**
J. A. Branson^{1,2}, 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.
- 848 M037 **Effects of recombinant bovine somatotropin treatment during the transition period on serum growth hormone and insulin-like growth factor 1 concentrations and liver content of lipid, triglyceride, and glycogen.**
P. Basso Silva¹, D. S. Lobao², D. H. Keisler³, and R. C. Chebel⁴, ¹University of Minnesota, Saint Paul, ²Department of Animal Science, University of Minnesota, St. Paul, ³University of Missouri-Division of Animal Sciences, Columbia, ⁴Department of Veterinary Population Medicine, University of Minnesota, St. Paul.
- 849 M038 **Vitamin D signaling enhances expression of antibacterial β -defensin genes in bovine monocytes.**
C. D. Nelson¹, K. E. Merriman¹, and J. D. Lippolis², ¹Department of Animal Sciences, University of Florida, Gainesville, ²USDA, ARS, National Animal Disease Center, Ames, IA.
- 850 M039 **Effects of genotype and transportation stress on cytokine gene expression in steers.**
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.
- 851 M040 **Prevalence and molecular identification of *Cryptosporidium* spp. in lambs on the Huasteca Alta Region, State of Veracruz, México.**
S. S. Gonzalez¹ and I. Vitela-Mendoza², ¹Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico, ²Instituto Tecnológico El LLano, Aguascalientes, Mexico.
- 852 M041 **Bacteriological culture and California mastitis test results of non-clinical quarters from cows with clinical mastitis.**
A. Lago¹ and N. Silva-del-Rio², ¹DairyExperts, Tulare, CA, ²VMTRC, University of California, Tulare.
- 853 M042 **Effect of early feed restriction programs on IgY production of broiler chickens.**
M. L. Moraes^{}, F. M. Butzen, M. M. Vieira, C. M. M. Pimentel, and A. M. L. Ribeiro*, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil.

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

- 929 M043 **Effects of functional polymorphisms on beef carcass merit.**
W. M. Snelling¹, L. A. Kuehn², R. M. Thallman², G. L. Bennett², and E. J. Pollak², ¹USDA, ARS, U.S. MARC, Clay Center, NE, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
- 930 M044 **Steers carcass characteristics with different genetic predominance fed with diets containing substitution levels of grain corn by millet grain.**
R. M. D. Silva^{1,2,3}, J. T. Pádua², J. J. R. Fernandes^{4,5}, R. Z. Taveira¹, R. L. Missio⁶, P. S. Pacheco⁷, D. A. Fausto⁸, and J. Restle², 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 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.

- 931 M045 **Genome-wide association analysis for beef traits in Marchigiana cattle breed.**
S. Sorbolini¹, C. Gruber², C. Dimauro¹, G. Gaspa¹, M. Cellesi¹, A. Valentini², and N. P. P. Macciotta¹, ¹Università di Sassari, Sassari, Italy, ²Dipartimento per l'Innovazione dei sistemi biologici, agroalimentari e forestali, Viterbo, Italy.
- 932 M046 **Estimation of genetic parameters for reproductive traits in a multibreed population of beef cattle.**
S. O. Peters¹, K. Kizilkaya², D. J. Garrick³, R. L. Fernando³, E. J. Pollak⁴, M. Enns⁵, and I. G. Imumorin⁶, ¹Berry College, Mount Berry, GA, ²Adnan Menderes University, Aydin, Turkey, ³Iowa State University, Ames, ⁴USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ⁵Colorado State University, Fort Collins, ⁶Cornell University, Ithaca, NY.
- 933 M047 **Copy number variation in the genome of Nellore cattle.**
M. V. A. Lemos¹, M. P. Berton², C. Aboujaoude³, F. Feitosa⁴, G. C. Venturini⁵, R. L. Tonussi⁵, R. Espigolan⁵, H. N. Oliveira², L. G. Albuquerque⁶, and F. Baldi⁷, 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, ³FCAV-UNESP, Jaboticabal, Brazil, ⁴UNESP, Jaboticabal, Brazil, ⁵Sao Paulo State University (UNESP), Jaboticabal, Brazil, ⁶State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil, ⁷Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil.
- 934 M048 **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. Tsuneda¹, F. M. Wingert¹, M. F. Duarte Junior¹, T. B. Castaldeli¹, R. D. Almeida¹, and J. D. O. Moraes¹, ¹Federal University Of Mato Grosso, Cuiaba, Brazil, ²Embrapa-Cenargen, Brasilia, Brazil.
- 935 M049 **Sliding window methods to detection of regions under selection in Nellore cattle.**
D. F. Cardoso^{1,2}, G. C. Venturini³, D. J. A. Santos⁴, R. R. Aspilcueta Borquis¹, A. A. Stella¹, F. Baldi³, L. G. Albuquerque¹, M. E. Z. Mercadante⁶, and H. Tonhati¹, ¹State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil, ²Bolsista-Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), São Paulo, Brazil, ³Sao Paulo State University (UNESP), Jaboticabal, Brazil, ⁴UNESP Univ Estadual Paulista, Jaboticabal, Brazil, ⁵Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil, ⁶Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho-SP, Brazil.
- 936 M050 **Association between copy number variation regions in the Nellore cattle genome and meat tenderness.**
M. P. Berton¹, M. V. A. Lemos², C. Aboujaoude³, G. M. de Camargo³, F. Feitosa¹, G. C. Venturini⁴, R. L. Tonussi⁴, R. Espigolan⁴, D. M. Gordo¹, A. S. C. Pereira⁵, H. N. Oliveira¹, L. G. Albuquerque³, and F. Baldi², ¹State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil, ²Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil, ³State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil, ⁴Sao Paulo State University (UNESP), Jaboticabal, Brazil, ⁵State University of São Paulo, Jaboticabal, Brazil.
- 937 M051 **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. Royer and M. D. Garcia, Louisiana State University, Baton Rouge.*
- 938 M052 **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

- 939 M053 **Signature of selection reveals large difference in selection traits.**
X. Zhang¹, I. Misztal¹, M. Heidaritabar², J. W. M. Bastiaansen³, R. Hawken⁴, R. Okimoto⁴, R. L. Sapp⁴, H. H. Cheng⁵, D. A. L. Lourenco¹, and W. M. Muir⁶, ¹University of Georgia, Athens, ²Wageningen University, Wageningen, Netherlands, ³Animal Breeding and Genomics Centre, Wageningen University, Wageningen, Netherlands, ⁴Cobb-Vantress Inc., Siloam Springs, AR, ⁵USDA, ARS, ADOL, East Lansing, MI, ⁶Purdue University, West Lafayette, IN.
- 940 M054 **Weighted single-step genomic BLUP: An iterative approach for accurate calculation of breeding values and SNP effects.**
X. Zhang, D. A. L. Lourenco, and I. Misztal, University of Georgia, Athens.*
- 941 M055 **Derivation of Bayes and Minimax decision rules for allelic frequencies estimation in biallelic loci.**
C. A. Martinez^{1,2}, K. Khare², and M. A. Elzo¹, ¹Department of Animal Sciences, University of Florida, Gainesville, ²Department of Statistics, University of Florida, Gainesville.
- 942 M056 **Adjusting genomic relationship matrices in single-step genomic BLUP for crossbred evaluations.**
D. Lourenco 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^{1,2}, F. Beaudoin¹, X. Zhao³, C. Lei², and E. M. Ibeagha-Awemu¹, ¹Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ²Northwest A&F University, Xi'an, China, ³McGill 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 Vidanarala¹, 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.
- 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^{1,2}, K. A. Beauchemin³, and M. Oba⁴, ¹University of Alberta, Lethbridge, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ⁴University 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. Mansilla¹, J. K. Htoo², and C. F. de Lange¹, ¹University of Guelph, Guelph, ON, Canada, ²Evonik 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 anestrus ewes bred to a new synchronization protocol and laparoscopic timed artificial insemination (TAI).**
S. B. Turner¹, 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.
- 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. Salehi¹, M. G. Colazo², M. Oba¹, and D. J. Ambrose², ¹University of Alberta, Edmonton, AB, Canada, ²Alberta 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. Joy¹, J. J. McKinnon¹, P. Gorka², and G. B. Penner¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²University 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 Sankarlal^{}, 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. Tansman¹, P. S. Kindstedt¹, and J. M. Hughes², ¹Department of Nutrition and Food Sciences, University of Vermont, Burlington, ²Department of Geology, University of Vermont, Burlington.
- 993 M071 **Quality of milk and minas freshcheese of pasture cows supplemented with licuri cake.**
A. C. C. Ferreira¹, R. L. Oliveira², J. F. Vieira³, T. M. Silva², A. M. Barbosa², S. M. P. L. Jaeger³, and D. D. Amaral², ¹Universidade Federal da Bahia, Brazil, ²Universidade Federal da Bahia, Salvador, Brazil, ³Universidade do Reconcavo da Bahia-UFRB, Cruz das Almas, Brazil.

- 994 M072 **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.*
- 995 M073 **Characteristics of yogurt manufactured using reconstituted yogurt cultured milk powder compared to yogurt powder.**
*L. Song**¹ and *K. J. Aryana*², ¹*Louisiana State University, Baton Rouge*, ²*Louisiana State University Agricultural Center, Baton Rouge.*
- 996 M074 **Impacts of different types of exopolysaccharides on the physical and rheological properties of yogurts.**
*U. Pachekrepapol*¹, *J. A. Lucey*², and *D. S. Horne*², ¹*Department of Food Science, University of Wisconsin–Madison*, ²*Wisconsin Center for Dairy Research, Madison.*
- 997 M075 **Substituting KCl for NaCl in fresh queso fresco.**
*D. L. Van Hekken**¹, *D. X. Ren*^{1,2}, and *M. H. Tunick*¹, ¹*USDA, ARS, ERRC, Dairy & Functional Foods Research Unit, Wyndmoor, PA*, ²*Institute of Dairy Science, College of Animal Science, Zhejiang University, Hangzhou, P.R., China.*
- 998 M076 **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.*
- 999 M077 **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.*
- 1000 M078 **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.*
- 1001 M079 **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.*
- 1002 M080 **Yogurt characteristics as effected by added lactose.**
B. Mena and *K. J. Aryana**, *Louisiana State University Agricultural Center, Baton Rouge.*
- 1003 M081 **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.*
- 1004 M082 **Evaluation of the Perten Dough Lab for production of imitation mozzarella cheese.**
*A. Kommineni**¹, *S. Patel*¹, *A. C. Biswas*¹, *C. Marella*², and *L. Metzger*³, ¹*Dairy Science Department, South Dakota State University, Brookings*, ²*Dairy Science Department, California Polytechnic State University, San Luis Obispo*, ³*Midwest Dairy Foods Research Center, South Dakota State University, Brookings.*
- 1005 M083 **Genome analysis of two *Lactobacillus curvatus* strains that have emerged as dominant non-starter lactic acid bacteria in cheese.**
*C. J. Oberg**¹, *T. S. Oberg*², *J. R. Broadbent*², *M. D. Culumber*¹, *D. J. McMahon*³, and *J. L. Steele*⁴, ¹*Department of Microbiology, Weber State University, Ogden, UT*, ²*Department of Nutrition, Dietetics, and Food Sciences, Western Dairy Center, Utah State University, Logan*, ³*Western Dairy Center, Utah State University, Logan*, ⁴*University of Wisconsin-Madison.*
- 1006 M084 **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. Liu^{1,2}, *D. Clayton*², and *D. J. McMahon*², ¹*Key Laboratory of Dairy Science, Ministry of Education, Northeast Agricultural University, Harbin, China*, ²*Western Dairy Center, Utah State University, Logan.*

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

- 1068 M085 **The influence of wilting on the quality of *Leucaena leucocephala* silage.**
*T. Clavero**¹ and *R. Razz*², ¹*Universidad Del Zulia, Maracaibo, Venezuela*, ²*Universidad del Zulia, Maracaibo, Venezuela.*
- 1069 M086 **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. Christensen*¹, *J. S. Eun*¹, *V. Fellner*², *A. J. Young*¹, and *J. W. MacAdam*¹, ¹*Utah State University, Logan*, ²*North Carolina State University, Raleigh.*
- 1070 M087 **Lactational response of Holstein cows to brown midrib or leafy-floury corn silage.**
*S. Y. Morrison**¹, *K. W. Cotanch*¹, *C. S. Ballard*¹, *H. M. Dann*¹, *E. O. Young*¹, *R. J. Grant*¹, and *C. I. Key*², ¹*William H. Miner Agricultural Research Institute, Chazy, NY*, ²*Healthy Herd Genetics & Nutrition, LLC, Oneida, NY.*
- 1071 M088 **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. Hafsa¹, K. J. Soder¹, A. F. Brito², R. Kersbergen³, F. Benson⁴, H. Darby⁵, and M. D. Rubano¹, ¹USDA-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^{*1}, R. Herrera², P. Avila³, H. Jimenez², M. Cuchillo³, and S. D. Martens⁴, 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, Köllitsch, 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^{*1}, A. A. Pinheiro¹, V. A. Silva¹, J. T. C. Pacheco¹, A. C. Fernandes¹, I. D. Carneiro¹, V. C. Modesto², and J. Cavalari³, 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. Bolinger¹, L. Nuzback^{*2}, and F. N. Owens², ¹DuPont Pioneer, Perrinton, MI, ²DuPont Pioneer, Johnston, IA.
- 1076 M093 **Impact of corn plant maturation and planting density on nutrient composition and potential milk yield.**
L. Brown^{*1}, L. Nuzback², B. Redenius², P. M. Walker³, and F. N. Owens², ¹DuPont Pioneer, Bloomington, IL, ²DuPont Pioneer, Johnston, IA, ³Illinois State University, Normal.
- 1077 M094 **Gas production and volatile fatty acids of corn stover silage added with yeast culture and fermented apple pomace.**
C. Rodríguez-Muela^{*}, N. H. Ruiz, P. F. Mancillas-Flores, O. Ruiz-Barrera, A. Corral, C. Arzola-Alvarez, A. Ramírez-Godínez, and E. Santellano, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.
- 1078 M095 **Effect of a chemical additive on fermentation and aerobic stability of high-moisture corn.**
T. C. Da Silva, M. L. Smith^{*}, S. A. Polukis, A. M. Barnard, and L. Kung Jr., University of Delaware, Newark.
- 1079 M096 **The effect of chemical additives with anti-fungal properties on the fermentation and aerobic stability of corn silage.**
M. C. Windle^{*}, C. Merrill, M. C. N. Agarussi, L. O. Rosa, and L. Kung Jr., University of Delaware, Newark.
- 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. Windle¹, C. Merrill¹, M. L. Smith¹, S. D. Hafner², F. M. Mitloehner³, R. Franco³, and L. Kung Jr.¹, ¹University 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^{*1}, M. C. Windle¹, S. D. Johanningsmeier², and L. Kung Jr.¹, ¹University of Delaware, Newark, ²USDA-ARS Food Science Research Unit, Raleigh, NC.
- 1082 M099 **Isolation and identification of lactic acid bacteria in forage peanut silage.**
L. D. Rufino¹, E. S. Leandro¹, K. G. Ribeiro¹, H. C. Mantovani¹, T. C. Silva¹, and O. G. Pereira^{*2}, ¹Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
- 1083 M100 **Evaluating top losses in Argentine corn silages.**
L. O. Abdelhadi^{*1}, G. Marley², and J. M. Barneix³, ¹Est. El Encuentro, Research & Extension in Ruminant Nutrition, Brandsen, 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. Malebana¹, D. J. R. Cherney^{*2}, and W. J. Cox², ¹Agricultural Research Council, Pretoria, South Africa, ²Cornell University, Ithaca, NY.
- 1086 M103 **In situ degradation characteristics of sorghum silage treated with fibrolytic enzymes.**
A. Coronado^{*1}, K. C. McCuiston¹, J. L. Foster², G. Schuster¹, and Z. Lopez³, ¹Texas A&M University-Kingsville, ²Texas A&M AgriLife Research-Beeville Station, Beeville, ³Dow AgroSciences, Knoxville, TN.
- 1087 M104 **Effect of ensiling time on fermentation profile and starch digestibility in whole plant corn silage from two different hybrid types.**
L. F. Ferraretto^{*1}, R. D. Shaver¹, S. Massie², R. Singo², D. M. Taysom³, and J. P. Brouillette⁴, ¹University of Wisconsin-Madison, ²Renaissance Nutrition Inc, Roaring Springs, PA, ³Dairyland Laboratories Inc, Arcadia, WI, ⁴Dow AgroSciences, Mycogen Seeds, Indianapolis, IN.
- 1088 M105 **Fermentation profile, chemical composition and microbial population in silages of *Stylosanthes Campo Grande* with microbial inoculant and pelletized citrus pulp.**
W. F. D. Souza¹, K. G. Ribeiro², S. A. Santos¹, T. C. Silva², V. P. Silva², and O. G. Pereira^{*3}, ¹Universidade Federal da Bahia, Salvador, Brazil, ²Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, ³Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.

- 1089 M106 **Recombined, late harvested ensiled alfalfa leaves and stems give comparable performance to normally harvested alfalfa silage.**
R. D. Hatfield¹, M. B. Hall¹, R. E. Muck¹, W. J. Radloff¹, and K. J. Shinnars², ¹U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI, ²Biological Systems Engineering, University of Wisconsin-Madison.
- 1090 M107 **Changes in the structural carbohydrates of corn stover silage added with yeast culture and fermented apple pomace.**
N. H. Ruiz^{}, C. Rodríguez-Muela, D. Díaz-Plascencia, O. Ruiz-Barrera, A. Corral, A. Ramírez-Godínez, and C. Arzola-Alvarez, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.*
- 1091 M108 **Effects of different additives on chemical composition, fermentation characteristics and aerobic stability of barley silage.**
Y. Joo¹, D. Kim¹, H. Lee¹, S. M. Amanullah¹, S. C. Kim¹, 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, Joongbu University, Geumsan-gun, South Korea.
- 1092 M109 **Effects of bacterial inoculation on the fermentation and aerobic stability of whole crop soybean silage.**
B. D. Nkosi¹, R. Meeske², T. Langa¹, T. F. Mutavhatsindi¹, and I. M. Malebana¹, ¹ARC-Animal Production Institute, Irene, South Africa, ²Outeniqua Research Farm, Western Cape Department of Agric., George, South Africa.
- 1093 M110 **Withdrawn by author.**
- 1094 M111 **Quality and fermentation profile of sugar cane silage treated with chemical and microbial additives.**
L. L. Cardoso, M. I. Marcondes^{}, K. G. Ribeiro, O. G. Pereira, T. E. Silva, and D. G. Ferreira, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*

Graduate Student Competition: ADSA Dairy Foods Poster

- 1129 M112 **The effect of native phospholipids on the flavor and flavor stability of bleached cheddar whey.**
C. Park^{} and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.*
- 1130 M113 **The effect of norbixin destruction or removal on flavor and functionality of 80% whey protein concentrate.**
Y. Qiu^{}, T. Smith, A. Foegeding, and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.*
- 1131 M114 **Storage and temperature effects on the solubility, maillard browning, and sensory characteristics of milk protein concentrates.**
T. Smith^{}, R. Campbell, and M. Drake, Southeast Dairy Foods Research Center, NCSU, Raleigh, NC.*
- 1132 M115 **The salt, pH and thermotolerance of a novel nonstarter lactic acid bacterium that might be associated with slit defect in ripened cheddar cheese.**
F. Ortakci¹, J. R. Broadbent¹, C. J. Oberg^{1,2}, and D. J. McMahon³, ¹Department of Nutrition, Dietetics, and Food Sciences, Western Dairy Center, Utah State University, Logan, ²Department of Microbiology, Weber State University, Ogden, UT, ³Western Dairy Center, Utah State University, Logan.
- 1133 M116 **Role of protein interactions on microstructure and rheological properties of Greek-style yogurt.**
G. H. Meletharayil¹, H. A. Patel², and S. G. Sutariya¹, ¹South Dakota State University, Brookings, ²Dairy Science Department, South Dakota State University, Brookings.
- 1134 M117 **Assessment of consumer perceptions and preferences regarding fluid milk at the beginning and end of printed code date.**
M. E. Paterson^{}, Iowa State University, Ames.*
- 1135 M118 **Performance of cross-linked and calcium-reduced milk protein concentrate ingredients in model high-protein nutrition bars.**
J. C. Banach¹, S. Clark¹, L. Metzger², and B. P. Lamsal¹, ¹Iowa State University, Ames, ²Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
- 1136 M119 **The effects of post-exercise consumption of a Kefir beverage on performance and recovery during intensive endurance training.**
K. V. O'Brien^{}, Louisiana State University, Baton Rouge.*
- 1137 M120 **Manufacture of high protein yogurts with low-Ca MPC.**
A. Kommineni¹, C. Marella², A. C. Biswas¹, and L. Metzger³, ¹Dairy Science Department, South Dakota State University, Brookings, ²Dairy Science Department, California Polytechnic State University, San Luis Obispo, CA, ³Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
- 1138 M121 **Effect of titanium dioxide, annatto and homogenisation on the translucency of reduced-fat cheddar cheese.**
R. A. Ibanez^{1,2} and P. L. H. McSweeney¹, ¹University College Cork, Cork, Ireland, ²University of Wisconsin-Madison.

Graduate Student Competition: ADSA Production Poster, MS

- 1139 M122 **Effects of supplemental garlic (*Allium sativum*) powder and probiotics on diarrhea and immunoglobulin response in pre-weaned dairy calves.**
*T. W. Kekana**, University of Venda, Thohoyandou, South Africa.
- 1140 M123 **Development of an application for touch-screen devices to capture defined calving-related events in dairy herds.**
*A. A. Barragan**, *J. D. Workman*, and *G. M. Schuenemann*, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus.
- 1141 M124 **Effects of dietary crude protein levels during a twelve-week period on late-lactation dairy cow performance.**
*M. A. Quaassdorff*¹, *T. Barros*¹, *J. J. Olmos Colmenero*², *M. J. Aguerre*¹, *S. J. Bertics*¹, and *M. A. Wattiaux*¹, ¹University of Wisconsin-Madison, ²University of Guadalajara, Tepatilan, Mexico.
- 1142 M125 **Patterns of circulating serotonin (5-HT), calcium, and glucose in lactating Jersey and Holstein dairy cows.**
*S. A. E. Moore**, *J. Laporta*, and *L. L. Hernandez*, University of Wisconsin-Madison.
- 1143 M126 **Ruminal degradability and intestinal digestibility of protein and amino acids in canola meal.**
*N. Jayasinghe**, South Dakota State University, Brookings.
- 1144 M127 **Estimate of serum immunoglobulin G concentration in Jersey calves using refractometry.**
*M. M. Spring*¹, *K. M. Morrill*², *A. L. Robinson*¹, and *H. D. Tyler*¹, ¹Iowa State University, Ames, ²Cornell University, Ithaca, NY.
- 1145 M128 **Examination of pre-milking teat disinfectant contact times using the excised teat model.**
*B. D. Enger**, *L. K. Fox*, *J. M. Gay*, and *K. A. Johnson*, Washington State University, Pullman.
- 1146 M129 **The effects of feeding an algae supplement on milk yield, milk components, and dry matter intake.**
*M. E. Weatherly*¹, *A. M. Gehman*², *A. M. Lisembee*², *J. D. Clark*¹, *D. L. Ray*¹, and *J. M. Bewley*¹, ¹University of Kentucky, Lexington, ²Alltech, Inc., Nicholasville, KY.
- 1147 M130 **Rumen morphology measurements in periruminant Holstein bull calves fed a fermentation extract of *Aspergillus oryzae*.**
*T. T. Yohe**, *E. M. Dudash*, *K. M. O'Diam*, and *K. M. Daniels*, Department of Animal Sciences, The Ohio State University, Wooster.
- 1148 M131 **Response of dairy cows supplemented with antioxidants and/or chelated trace minerals to intra-mammary bacterial challenge.**
*R. O. Rodrigues*¹, *M. O. Caldeira*¹, *G. I. Zanton*², and *M. R. Waldron*^{1,3}, ¹University of Missouri, Columbia, ²Novus International, Inc., St. Charles, MO, ³Nutrition Professionals, Inc., Chilton, WI.

Graduate Student Competition: ADSA Production Poster, PhD

- 1149 M132 **Effect of feeding diets with different type of carbohydrates on dry matter intake, rumen fermentation, and productivity of lactating dairy cows.**
*X. Gao**, *J. Mewis*, and *M. Oba*, University of Alberta, Edmonton, AB, Canada.
- 1150 M133 **Propionate is a dominant inducer of bovine cytosolic phosphoenolpyruvate carboxykinase gene expression.**
*Q. Zhang**, *S. L. Koser*, and *S. S. Donkin*, Purdue University, West Lafayette, IN.
- 1151 M134 **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.**
*F. Giallongo*¹, *H. Sadri*², *A. N. Hristov*¹, *J. Werner*³, *C. Parys*⁴, *B. Saremi*⁴, *H. Sauerwein*², and *C. Lang*⁵, ¹Department of Animal Science, The Pennsylvania State University, University Park, ²Institute of Animal Science, Physiology & 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.
- 1152 M135 **Attenuation of the integrated cortisol response following administration of oral firocoxib in preweaned calves prior to cautery disbudding.**
*M. L. Stock*¹, *R. Gehringer*², *S. T. Millman*¹, *C. Wang*¹, *L. W. Wulff*¹, *L. A. Barth*¹, and *J. F. Coetzee*³, ¹Iowa State University, Ames, ²Kansas State University, Manhattan, ³Pharmacology Analytical Support Team, Iowa State University College of Veterinary Medicine, Ames.
- 1153 M136 **Effect of storage temperature on the bacterial growth and pH levels of bovine colostrum.**
C. Cummins^{1,2}, *I. Lorenz*², and *E. Kennedy*³, 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.

- 1154 M137 **Interaction among energy status, retinol-binding protein and retinoids status in periparturient dairy cows: hepatic and adipose gene expression.**
*C. Y. Tsai**, K. C. Ramsey, J. Murray, Z. M-Amiri, L. Martin, W. Price, M. A. McGuire and P. Rezamand, University of Idaho, Moscow, ID.
- 1155 M138 **The effect of prepartum housing on metabolic and reproductive health in dairy cows.**
*C. L. Miltenburg** and S. J. LeBlanc, University of Guelph, Guelph, ON, Canada.
- 1156 M139 **Intake, milk production, ruminal, and feed efficiency responses to DCAD in lactating dairy cows.**
*M. E. Iwaniuk** and R. A. Erdman, University of Maryland, College Park
- 1157 M140 **Hepatic metabolomics and transcriptomics in prepartal dairy 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.
- 1158 M141 **Detection of subclinical milk fever and ketosis in fresh dairy cows using rumination time, lying time, reticulorumen temperature, and neck activity.**
A. E. Sterrett¹, 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.
- 1159 M142 **Effects 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. Machado⁴, T. R. Gionbelli⁵, B. C. Silva⁵, and F. A. S. Silva³, ¹Colorado State University, Fort Collins, ²Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, ³Universidade Federal de Vicosa, Vicosa, Brazil, ⁴EMBRAPA, Juiz de Fora, Brazil, ⁵Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.
- 1160 M143 **Description of high cow premix recipes in California dairies.**
Y. Trillo¹, A. Lago², and N. Silva-del-Rio¹, ¹VMTRC, University of California, Tulare, ²DairyExperts, Tulare, CA.

Lactation Biology Poster I

- 1222 M144 **Relationship between dry period length and production and reproduction in grazing Jersey and Holstein cows in Costa Rica.**
J. M. Sánchez¹, A. Saborio-Montero¹, and A. Córdoba-Roldán², ¹Centro de Investigaciones en Nutrición Animal y Escuela de Zootecnia, Universidad de Costa Rica, San José, Costa Rica, ²Programa de Transferencia Tecnológica, Cooperativa de Productores de Leche Dos Pinos, San José, Costa Rica.
- 1223 M145 **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.
- 1224 M146 **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. Harvatine³, ¹Santa Catarina State University, Lages, SC, Brazil, ²Cornell University, Ithaca, NY, ³Penn State University, State College.
- 1225 M147 **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. Urrio¹, A. P. Povaluk¹, M. V. Camera¹, R. Ferreira², L. C. Miletti¹, K. J. Harvatine³, and D. E. Oliveira¹, ¹Santa Catarina State University, Lages, SC, Brazil, ²Santa Catarina State University, Chapecó, SC, Brazil, ³Penn State University, State College.
- 1226 M148 **Effect of different hormones on β -casein and lactoferrin expression in mammary epithelial cells.**
W. Q. Li^{1,2}, J. Q. Wang¹, D. P. Bu¹, 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.
- 1227 M149 **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.
- 1228 M150 **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. Bu¹, J. Q. Wang², 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. Loo³, and J. Q. Wang², 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 (PPAR γ) 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. Urrio¹, E. Ticiani¹, K. J. Harvatine³, and D. E. Oliveira¹, 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 Olusola¹, A. Victor O.², 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 Olabisi*, F. Patience Olusola, 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 Freitas^{1,2}, D. S. Lucas³, D. A. Fausto⁴, S. F. N. Pertile⁴, E. F. Delgado⁴, N. S. Janzantti⁵, and E. T. F. Silveira⁶, 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. Seo², J. Y. Jeong³, 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, ³Institute of Agriculture and Life Science, Gyeongsang National University, Jinju, South Korea, ⁴Department of Animal 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. Ortman⁴, and M. Clauss⁵, 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. Young*, 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-Valle¹, L. P. Cevallos-Velastegui¹, A. Morales-delaNuez², N. Castro³, A. Argüello³, and D. Sánchez Macías¹, ¹Agroindustrial Engineering, Universidad Nacional de Chimborazo, Riobamba, Ecuador, ²Facultad de Ciencia Pecuarías, Escuela Superior Politécnica de Chimborazo, Riobamba, Ecuador, ³Department 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-Velastegui¹, D. Núñez Valle¹, A. Morales-delaNuez², N. Castro³, A. Argüello³, and D. Sánchez Macías¹, ¹Agroindustrial Engineering, Universidad Nacional de Chimborazo, Riobamba, Ecuador, ²Facultad de Ciencia Pecuarías, Escuela Superior Politécnica de Chimborazo, Riobamba, Ecuador, 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. Davin¹, 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. Brotzge¹, M. D. S. Vieira², 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. Betancourt¹, 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. Chen^{1,2}, X. Zhang¹, X. Huang², and P. Yu², 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. Nyachoti², and W. K. Kim³, 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. Eastwood^{} 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. Kim², J. C. Park², and D. Y. Kil¹, ¹Chung-Ang University, Anseong-si, South Korea, ²Rural Development Administration, Cheonan-si, South Korea.
- 1296 M170 **Gluconeogenesis and substrate utilization in chicken embryos during later development determined by in ovo continuous infusion of [¹³C₆]glucose and [¹³C₃]glycerol.**
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.**
E. A. Vermillion^{}, C. R. Dove, and M. J. Azain, University of Georgia, Athens.*
- 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. Chiba², 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. Ribeiro², A. D. M. Kessler¹, M. L. Somensi¹, L. I. Chiba³, 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. Oliveira³, S. K. Kakimoto⁴, J. C. Dadalt⁵, 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.*

- 1304 M178 **Effects of dietary tryptophan: Lysine ratio and sanitary conditions on performance 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.
- 1305 M179 **Egg quality of brown layers fed with different levels of threonine and chelate zinc.**
J. E. D. Moraes¹, C. C. Pizzolante¹, A. P. O. Saccomani², E. A. D. Oliveira³, S. K. Kakimoto⁴, J. C. Dadalt⁵, 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.
- 1306 M180 **Tryptophan: Lysine ratio for pigs from 15 to 30 kg of body weight.**
T. J. Pasquetti¹, P. C. Pozza², I. Moreira², L. M. Diaz Huepa², L. D. Castilha², M. R. Fachinello², L. A. C. Esteves², V. R. C. Paula², and S. W. Kim³, ¹Universidade Estadual de Maringá, Bolsista CAPES, Maringá, PR, Brazil, ²Universidade Estadual de Maringá, Maringá, PR, Brazil, ³North Carolina State University, Raleigh.
- 1307 M181 **Energy intake and nutrient digestibility in heavy finishing swine fed varying levels of soluble fiber.**
D. J. Rodrigues¹, M. C. Thomaz¹, U. D. S. Ruiz², M. M. Lima¹, M. S. F. Oliveira¹, M. V. Marujo¹, F. F. Castro¹, and E. Daniel³, ¹Sao Paulo State University, Jaboticabal/SP, Brazil, ²Univ. Estadual Paulista-UNESP, Dracena, Brazil, ³Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil.
- 1308 M182 **Amino acid digestibility in field peas, fish meal, corn, soybean meal, and soybean hulls.**
J. K. Mathai^{} and H. H. Stein, University of Illinois at Urbana-Champaign.*
- 1309 M183 **Lysine and tryptophan levels in diets for gilts from 15 to 30 kg of body weight.**
T. J. Pasquetti¹, P. C. Pozza², I. Moreira², T. C. D. Santos², D. Perondi³, C. D. L. Costa Filho², W. Tanamati², P. L. D. O. Carvalho⁴, and C. F. Muniz², ¹Universidade Estadual de Maringá, Bolsista CAPES, Maringá, PR, Brazil, ²Universidade Estadual de Maringá, Maringá, PR, Brazil, ³Department of Animal Science-FCAV/UNESP, Jaboticabal/SP, Brazil, ⁴Universidade Estadual do Oeste do Paraná, Marechal Cândido Rondon, PR, Brazil.
- 1310 M184 **Effects of mineral supplementation on the performance of nulliparous and multiparous does fed forage containing diets.**
L. Verjel-Trigos¹, I. Rodriguez-Carrascal¹, and C. Ordoñez-Gomez², ¹Universidad Francisco de Paula Santander-Ocaña, Ocaña, Colombia, ²Universidad Nacional de Colombia, Bogotá, Colombia.
- 1311 M185 **Amino acid digestibility in oilseed meals fed to growing pigs.**
C. S. Park^{}, A. R. Son, and B. G. Kim, Konkuk University, Seoul, South Korea.*
- 1312 M186 **Standardized total tract digestibility of phosphorus in oilseed meals fed to growing pigs.**
C. S. Park¹, Y. D. Jeong², B. G. Kim¹, and S. K. Park², ¹Konkuk University, Seoul, South Korea, ²Rural Development Administration, Suwon, South Korea.
- 1313 M187 **Standardized total tract digestibility of phosphorus in cereal grains and coproducts fed to growing pigs.**
Y. D. Jeong¹, C. S. Park², B. G. Kim², and S. K. Park¹, ¹Rural Development Administration, Suwon, South Korea, ²Konkuk University, Seoul, South Korea.

Physiology and Endocrinology I

- 1371 M188 **Comparison of endocrine changes, timing of ovulations, ovarian follicular growth, and efficacy associated with Estradioublesynch and Heatsynch protocols in Murrah buffaloes (*Bubalus bubalis*).**
R. Mirmahmoudi¹ and B. S. Prakash², ¹Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran, ²National Dairy Research Institute, Karnal, India.
- 1372 M189 **Development of a novel strategy for synchronization of ovulation and fertility augmentation in cycling buffalo cows.**
R. Mirmahmoudi¹ and B. S. Prakash², ¹Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran, ²National Dairy Research Institute, Karnal, India.
- 1373 M190 **Maternal dietary effects on embryonic ovarian development in cattle.**
S. E. Echternkamp¹, D. R. Eborn², and R. A. Cushman³, ¹USDA, Agricultural Research Service, Clay Center, NE, ²ARS/ U.S. Meat Animal Research Center, Clay Center, NE, ³USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE
- 1374 M191 **Effects of excessive energy intake and supplementation with chromium propionate on insulin resistance parameters in lactating dairy cows: I. Performance and weekly physiological measurements.**
T. Leiva¹, R. F. Cooke², F. G. Dantas¹, F. P. Santos¹, A. P. Brandao¹, J. Ranches¹, A. C. Aboin¹, and J. L. M. Vasconcelos¹, ¹UNESP-FMVZ, Botucatu, Brazil, ²Oregon State University-EOARC Burns.
- 1375 M192 **Association of monocyte chemoattractant protein-1 and vascular endothelial growth factor in subcutaneous and visceral adipose tissue of early lactating dairy cows.**
S. Häussler¹, C. Sacré¹, P. Friedrichs², S. Dänicke³, and H. Sauerwein¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.

- 1376 M193 **Reactive oxygen metabolites (ROM) and advanced oxidation protein products (AOPP) as influenced by energy intake and niacin supplementation in the periparturient dairy cow.**
H. Sadri¹, D. Nakov², S. Dänicke³, U. Meyer³, R. Tienken³, and H. Sauerwein⁴, ¹Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, ²Institute for Animal Biotechnology, University St. Cyril and Methodius, Skopje, Macedonia, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany, ⁴University of Bonn, Institute of Animal Science, Bonn, Germany.
- 1377 M194 **The effect of aspirin on prostaglandin F_{2α} 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.
- 1378 M195 **Association between oxidative stress through excessive fat accumulation and the number of mitochondrial DNA copies in adipose tissue of dairy cows.**
L. Laubenthal¹, L. Locher², J. Winkler³, U. Meyer³, J. Rehage², S. Dänicke³, H. Sauerwein¹, and S. Häussler¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.
- 1379 M196 **Telomere length shortening in response to an excessive fat accumulation in subcutaneous adipose tissue of dairy cows.**
L. Laubenthal¹, L. Locher², J. Winkler³, U. Meyer³, J. Rehage², S. Dänicke³, H. Sauerwein¹, and S. Häussler¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.
- 1380 M197 **Pregnancy per AI of high producing Holstein cows treated with norgestomet ear implant or progesterone intravaginal device.**
H. Ayres^{1,2}, C. M. Azevedo³, J. B. Solak⁴, O. Corso⁴, S. Soriano⁵, M. C. Wiltbank⁶, and R. M. Ferreira², ¹MSD Animal Health, São Paulo, Brazil, ²Departamento de Reprodução Animal, USP, São Paulo, Brazil, ³Quality Calf Consultoria Ltda, Venceslau Braz, Brazil, ⁴Castrovet Consultoria Veterinária, Castro, Brazil, ⁵Fazenda Colorado, Araras, Brazil, ⁶University of Wisconsin-Madison.
- 1381 M198 **Telomere length in different visceral and subcutaneous adipose tissue depots of overconditioned cows.**
L. Laubenthal¹, L. Locher², J. Winkler³, U. Meyer³, J. Rehage², S. Dänicke³, H. Sauerwein¹, and S. Häussler¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.
- 1382 M199 **Livability of buck spermatozoa after cold storage using egg yolk citrate extender.**
A. O. Ladokun*, J. A. Abiona, J. O. Daramola, E. O. Oke, and A. M. Onifade, Federal University of Agriculture, Abeokuta, Nigeria, Abeokuta, Nigeria.
- 1383 M200 **Bedding surface does not alter circulating patterns of cortisol, corticosteroid-binding globulin, or free cortisol index in preweaned Jersey calves.**
H. G. Kattesh*, C. A. Kurman, B. E. Gillespie, P. D. Krawczel, and A. M. Saxton, University of Tennessee, Knoxville.
- 1384 M201 **Niacin increases chemerin mRNA abundance in differentiated bovine preadipocytes in vitro.**
C. Kopp¹, H. Khalilvandi-Behroozyar^{1,2}, H. Sauerwein³, and M. Mielenz^{1,4}, ¹Institute of Animal Science, Physiology & Hygiene Unit, University of Bonn, Bonn, Germany, ²Department of Animal Science, Urmia University, Urmia, Iran, ³University of Bonn, Institute of Animal Science, Bonn, Germany, ⁴Leibniz Institute for Farm Animal Biology (FBN), Institute of Nutritional Physiology, Dummerstorf, Germany.
- 1385 M202 **Macrophage infiltration into subcutaneous adipose tissue in overconditioned cows after excessive fat accumulation.**
S. Häussler¹, L. Laubenthal¹, L. Locher², J. Winkler³, U. Meyer³, J. Rehage², S. Dänicke³, and H. Sauerwein¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.
- 1386 M203 **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. Sadri¹, F. Giallongo², A. N. Hristov², C. Lang³, J. Werner², C. Parys⁴, B. Saremi⁵, and H. Sauerwein¹, ¹Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, ²Department of Animal Science, The Pennsylvania State University, University Park, State College, PA, ³Department of Cellular and Molecular Physiology, Hershey Medical Center, Penn State College of Medicine, Hershey, ⁴Evonik Industries AG, Hanau, Germany, ⁵Evonik Industries AG, 63457 Hanau, Germany.
- 1387 M204 **Antioxidant supplementation during in vitro maturation increased oocyte mitochondrial membrane potential and bovine embryo development.**
B. C. D. S. Leão*, N. A. D. S. Rocha Frigoni, P. C. Dall'Acqua, and G. Z. Mingoti, University of Sao Paulo State (UNESP), Araçatuba, Brazil.
- 1388 M205 **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. Sadri¹, S. Dänicke², J. Rehage³, and H. Sauerwein¹, ¹Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, ²Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany, ³University for Veterinary Medicine, Foundation, Hannover, Germany.

- 1389 M206 **Effect of melatonin (MEL) or maternal nutrient restriction on vascularity of the ovine placenta.**
*K. A. Vonnahme¹, M. E. Wilson², S. Romero¹, S. T. Dorsam¹, J. Haring¹, P. P. Borowicz¹, D. A. Redmer¹, and C. O. Lemley³,
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. Gomez¹, C. A. Gifford¹, D. M. Hallford², and J. Hernandez Gifford¹, ¹Oklahoma State University, Stillwater, ²New Mexico State University, Las Cruces.
- 1391 M208 **Ileal tight junction gene expression in glucagon-like peptide 2-treated dairy bull calves with and without coccidiosis.**
M. P. Walker¹, E. E. Connor², R. L. Baldwin³, and S. Kahl¹, ¹USDA-ARS, BFGL, Beltsville, MD, ²USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ³USDA-ARS, Beltsville, MD.
- 1392 M209 **Effects of heat stress on the metabolic transcriptional profile of peripheral tissues in growing pigs.**
M. Sanz Fernandez¹, J. S. Johnson¹, J. T. Seibert¹, R. L. Boddicker¹, S. C. Isom², L. Cox², J. W. Ross¹, R. P. Rhoads³, and L. H. Baumgard¹, 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. Sauerwein¹, and M. Mielenz⁴, ¹Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, 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. Rhoads², and D. M. Spurlock¹, ¹Iowa 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-Behroozyar², L. Locher³, S. Dänicke⁴, U. Meyer⁴, R. Tienken⁴, H. Sauerwein¹, and M. Mielenz⁵, 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, ⁴Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), 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, ¹Agriculture & 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. Boehmer^{} 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. Bessalho Jacometo¹, J. Oliveira Feijó¹, P. Mattei¹, A. Marangon Oliveira¹, E. Schmitt², V. Coitinho Tabeleão¹, C. Cassal Brauner¹, F. B. Del Pino¹, S. Soriano³, 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 periparturient 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. Ely², S. Fitzner¹, A. E. Holland¹, D. Larson¹, R. Shaw¹, and J. Ydstie¹, ¹Prince 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 Benedetti^{1,2}, P. V. R. Paulino³, M. I. Marcondes¹, A. Faciola², I. França Smith Maciel¹, and M. Custódio da Silva¹, ¹Federal University of Vicosa, Vicosa, 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. Seradj¹, J. Crespo², D. Villalba¹, and J. Balcells¹, ¹University of Lleida, Lleida, Spain, ²Interquim S. A. (Ferrer Health Tech), Barcelona, Spain.

- 1459 M220 **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. Arthington², 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.
- 1460 M221 **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. Neuendorff³, R. C. Vann⁴, N. C. Burdick Sanchez⁵, J. R. Corley⁶, J. A. Carroll⁷, T. H. Welsh, Jr.⁸, and R. D. Randel¹, ¹Texas A&M AgriLife Research, Overton, ²Texas A&M University, College Station, ³Texas A&M Agrilife Research, Overton, ⁴MAFES-Brown Loam Experiment Station, Mississippi State University, Raymond, MS, ⁵USDA-ARS, Lubbock, TX, ⁶Lesaffre Feed Additives, Milwaukee, WI, ⁷USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ⁸Texas A&M University Department of Animal Science, College Station.
- 1461 M222 **Effect of restricted feeding on body weight, some hematological and biochemical parameters in sheep and goats raised under semi-arid conditions.**
E. B. Abdalla^{}, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.*
- 1462 M223 **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. Arthington², 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.
- 1463 M224 **Young beef calves preferentially consume supplements fortified with hydroxy vs. organic and sulfate sources of Cu, Zn, and Mn.**
L. S. Caramalac¹, H. J. Fernandes², and J. D. Arthington¹, ¹UF/IFAS Range Cattle Research and Education Center, Ona, FL, ²State University of Mato Grosso do Sul, Aquidauana, Brazil.
- 1464 M225 **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. Hoffman², ¹Suleyman Demirel University, Isparta, Turkey, ²Iowa State University, Ames.
- 1465 M226 **Comparison of high-performance dairy cows fed concentrates vs. those fed no concentrates over a period of 10 years.**
P. L. Kunz¹, M. Buergisser¹, and M. Furger², ¹Bern University of Applied Sciences, Zollikofen, Switzerland, ²Agricultural Education and Advisory Centre Plantahof, Landquart, Switzerland.
- 1466 M227 **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. Jung^{}, J. H. Cho, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.*
- 1467 M228 **Effects of probiotics supplementation on growth performance, nutrient digestibility, carcass characteristics, meat quality, intestinal microflora and fecal noxious gas emission in broilers.**
I. H. Kim^{}, Y. Lei, and S. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.*
- 1468 M229 **Effects of a symbiotic feed additive on milk quality and calving interval in Brazilian dairy herds.**
R. D. Sainz¹, E. A. Filgueiras^{2,3,4}, C. U. Magnabosco⁵, P. H. Medes³, and K. S. Mendanha², ¹University of California-Davis, ²Universidade Federal de Goiás, Goiânia-GO, Brazil, ³Biofórmula Ltda, Goiânia-GO, Brazil, ⁴CAPEL, Brasília-DF, Brazil, ⁵Embrapa Cerrados, Brasília, Brazil.
- 1469 M230 **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.
- 1470 M231 **Withdrawn by author.**
- 1471 M232 **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.**
R. M. Martin¹, R. J. Pruitt², B. Buttrey³, and R. Walker³, ¹LSU AgCenter, School of Animal Sciences, Baton Rouge, LA, ²LSU AgCenter, Agricultural Economics and Agribusiness, Baton Rouge, LA, ³LSU AgCenter, Hill Farm Research Station, Homer, LA.
- 1472 M233 **Evaluation of three copper sources on measures of forage utilization and copper status in beef cattle.**
P. G. M. D. A. Martins¹, O. F. R. Cunha¹, G. P. Caputti¹, A. Saran Neto², J. M. B. Vendramini¹, and J. D. Arthington¹, ¹UF/IFAS Range Cattle Research and Education Center, Ona, FL, ²University of São Paulo, Pirassununga, Brazil.
- 1473 M234 **Comparison of camelina meal and DDGS in the diet of replacement beef heifers.**
E. E. Grings, A. Sackey^{}, 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. Gomes^{*1}, J. E. Zuniga¹, E. Karakaya¹, L. F. Greco¹, L. D. P. Sinedino¹, N. Martinez¹, R. S. Bisinotto¹, E. S. Ribeiro¹, P. M. Leopoldo Junior¹, M. A. Engstrom², J. P. Driver¹, J. E. P. Santos¹, and C. R. Staples³, ¹Department of Animal Sciences, University of Florida, Gainesville, ²DSM, Eden Prairie, MN, ³Department of Animal Sciences, University of Florida, Gainesville.
- 1475 M236 **Forages used in high producing cow rations in California.**
Y. Trillo^{*1}, 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. Norell^{*1}, J. B. Glaze, Jr.², M. Chahine², and N. L. Olsen³, 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.**
R. J. Norell^{*1}, J. B. Glaze Jr.², M. Chahine², and N. L. Olsen³, ¹University of Idaho, Idaho Falls, ²University of Idaho, Twin Falls, ³University of Idaho, Kimberly.
- 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.**
K. M. Morrill^{*1}, K. Hard², M. M. Spring², A. L. Robinson², and H. D. Tyler², ¹Cornell University, Ithaca, NY, ²Iowa State University, Ames.

Ruminant Nutrition Posters I

- 1527 M241 **Metagenomic analysis of the rumen microbiome of dairy cows during the transition period.**
D. W. Pitta^{*1}, S. Kumar¹, N. Indugu², R. Sinha², B. Veiccharelli¹, B. Bhukya¹, and J. Ferguson¹, ¹University of Pennsylvania, Kennett Square, ²University of Pennsylvania, Philadelphia.
- 1528 M242 **Periparturient supplementation of Smartamine M has positive effects on blood neutrophil activation in dairy cows.**
J. S. Osorio¹, P. Ji², J. K. Drackley¹, D. N. Luchini¹, and J. J. Looor^{*1}, 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. Lapierre^{*2}, and L. Doepel¹, 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. Broderick^{*1,2} 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.**
H. A. Tucker^{*1}, M. Miura², I. Shinzato³, C. S. Ballard¹, and H. M. Dann¹, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Ajinomoto Co., Inc., Kawasaki, Japan, ³Ajinomoto Heartland Inc., Chicago, IL.
- 1532 M246 **Impacts of feeding ruminally protected phenylalanine and/or methionine to early lactation cows fed diets containing high levels of canola meal.**
N. Swanepoel^{*1,2}, 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 Manzano^{*1}, 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. Whitehouse^{*1}, 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. Qin^{1,2}, 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.

- 1536 M250 **Comparison of mammary amino acid utilization in dairy cows fed a corn straw or mixed forage diet.**
C. Qin^{1,2}, P. Sun², D. P. Bu², J. Q. Wang^{*1,2}, P. Zhang³, and P. An², 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.
- 1537 M251 **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-butanoic acid.**
G. I. Zanton^{*}, S. E. Bettis, and M. Vazquez-Anon, Novus International, Inc., St. Charles, MO.
- 1538 M252 **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. Li^{1,2}, W. Zhao^{2,3}, A. Hosseini⁴, J. X. Liu¹, and J. J. Loo^{*2}, ¹Zhejiang University, Hangzhou, China, ²University of Illinois at Urbana-Champaign, ³Northwest A & F University, Yangling, China, ⁴University of Bonn, Bonn, Germany.
- 1539 M253 **Changes in plasma methionine concentrations after administration of two different doses of rumen protected methionine.**
P. D. Carvalho^{*1}, N. E. Lobos², M. Z. Toledo², E. Trevisol², V. G. Santos², R. V. Barletta², G. M. Baez², A. Garcia-Guerra², J. N. Guenther², A. H. Sousa², D. Luchini³, P. M. Fricke², R. D. Shaver¹, and M. C. Wiltbank¹, ¹University of Wisconsin-Madison, ²Department of Dairy Science, University of Wisconsin-Madison, ³Adisseo, Alpharetta, GA.
- 1540 M254 **A three-step in vitro procedure for evaluating rumen-protected lysine products.**
Y. Miyazawa¹, M. Miura^{*2}, T. Fujieda², I. Shinzato³, S. W. Fessenden⁴, and M. D. Stern⁴, ¹Ajinomoto Co., Inc., Kawasaki, Japan, ²Ajinomoto Co., Inc., Tokyo, Japan, ³Ajinomoto Heartland, Inc., Chicago, IL, ⁴University of Minnesota, St. Paul.
- 1541 M255 **Histidine requirement of dairy cows determined by the indicator amino acid oxidation (AAO) technique.**
D. R. Ouellet^{*1}, G. E. Lobley², and H. Lapierre³, 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.
- 1542 M256 **Estimation of histidine requirement in lactating dairy cows.**
H. Lapierre^{*1}, D. R. Ouellet², and G. E. Lobley³, ¹Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, United Kingdom.
- 1543 M257 **Effects of different protein sources on milk performance and amino acid profile in early lactating dairy cows.**
X. Q. Zhou^{*1,2}, 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.
- 1544 M258 **Lipogenic gene network expression in bovine mammary epithelial cells in response to the “ideal” profile of Lys, Met, Thr, Phe, His, and Val.**
S. Li^{1,2}, W. Zhao^{1,3}, A. Hosseini⁴, J. X. Liu², and J. J. Loo^{*1}, ¹University of Illinois at Urbana-Champaign, ²Zhejiang University, Hangzhou, China, ³Northwest A & F University, Yangling, China, ⁴University of Bonn, Bonn, Germany.
- 1545 M259 **Rumen-protected methionine and choline supplementation during the transition period enhance the proinflammatory cytokine response of whole blood.**
M. Vailati Riboni^{*1,2}, Z. Zhou², D. N. Luchini³, A. Minuti¹, E. Trevisi¹, and J. J. Loo², ¹Università Cattolica del Sacro Cuore, Piacenza, Italy, ²University of Illinois at Urbana-Champaign, ³Adisseo S.A.S., Alpharetta, GA.
- 1546 M260 **Amino acid analysis in dairy cow plasma by chloroformate derivatization and gas chromatography.**
N. E. Lobos^{*1}, G. A. Broderick², P. D. Carvalho³, D. N. Luchini⁴, R. D. Shaver³, A. H. Souza⁵, and M. C. Wiltbank³, 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.
- 1547 M261 **Effects of supplementing limiting amino acids in diets with reduced CP on nitrogen excretion.**
M. A. C. Danes^{*1}, G. A. Broderick², and C. Parys³, ¹University of Wisconsin-Madison, ²Broderick Nutrition & Research, LLC, Madison, WI, ³Evonik Industries AG, Hanau, Germany.
- 1548 M262 **Effects of rumen-protected γ -aminobutyric acid on immune function and antioxidant status in heat-stressed dairy cows.**
J. Cheng^{1,2,3}, N. Zheng^{1,3,4}, X. Sun^{1,2,3}, D. P. Bu³, L. Pan³, and J. Wang^{*1,3,4}, 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.
- 1549 M263 **Effects of supplemental rumen-protected methionine and histidine on performance of lactating dairy cows.**
W. D. Weich^{*1}, K. F. Kalscheur¹, K. J. Herrick², 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-undegraded protein.**
G. A. Broderick^{*1}, S. Colombini², A. Faciola³, and M. A. Karstli⁴, 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. Klopfenstein¹, and P. J. Kononoff², 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 Cleef^{*1,2}, J. M. Bertocco Ezequiel¹, E. Neves Muniz³, R. L. Galati⁴, and E. H. C. B. Van Cleef^{*5}, ¹UNESP, Jaboticabal, Brazil, ²CNPq, Brasilia, Brazil, ³Embrapa Tabuleiros Costeiros, 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. Silva^{*}, M. R. De Paula, G. Santos, G. Slanzon, 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. Whitehouse^{*1}, C. G. Schwab², M. C. Blais¹, A. F. Brito¹, and B. K. Sloan³, 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. Silva^{*}, 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.**
J. L. Peine^{*}, G. Jia, S. T. O'Rourke, L. P. Reynolds, and J. S. Caton, North Dakota State University, Fargo.
- 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. Singh^{*1}, S. R. Leath², H. V. Henderson¹, T. J. Watson¹, D. Pacheco³, and C. D. McMahon², 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. Berti¹, C. G. C. Marcolino¹, M. H. Moretti³, I. M. de Oliveira^{*4}, F. D. D. Resende⁴, and G. R. Siqueira⁴, ¹Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil, ²UNESP-FCAV, Jaboticabal, Brazil, ³Universidade Estadual Paulista, Jaboticabal, Brazil, ⁴APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil.
- 1560 M274 **Sulfur sources in protein supplements and their influence upon amino acid profiles.**
F. P. Leonel^{*1}, C. J. Silva², L. M. Moreira¹, J. M. Carvalho¹, J. C. Carvalho³, J. C. Pereira³, T. C. Nunes¹, and R. A. Vieira¹, ¹Federal University of São João del Rei (UFSJ), São João del Rei, Brazil, ²National University of Brasília, 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. Leonel^{*1}, B. T. Santiago², S. D. J. Vilella², J. M. Carvalho¹, J. C. Carvalho³, 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 buffaloes fed increasing levels of crude protein.**
E. Machado, L. M. Zeoula^{*}, E. H. Yoshimura, R. B. Samensari, N. W. Santos, B. C. Agostinho, L. D. M. Pereira, and S. C. Aguiar, Universidade Estadual de Maringá, Maringá, Brazil.
- 1563 M277 **Effects of test weight and processing method on in vitro intestinal digestibility of barley grain.**
Y. Zhao¹, S. Yan², Z. He¹, U. Anele¹, M. L. Swift³, T. A. McAllister⁴, and W. Yang^{*1}, 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. He^{*1,2}, M. He¹, N. D. Walker³, T. A. McAllister⁴, 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.

- 1565 M279 **Effects of forage intake to minimize the risk of subacute ruminal acidosis on performance of feedlot finishing cattle.**
K. M. Koenig¹, G. E. Chibisa¹, G. B. Penner², and K. A. Beauchemin¹, ¹Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada.
- 1566 M280 **Saliva production and short-chain fatty acid absorption in beef cattle fed a low- or high-forage diet.**
G. E. Chibisa¹, K. A. Beauchemin², and G. B. Penner³, ¹Agriculture 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.
- 1567 M281 **Interactions between levels and source of energy supplementation in beef cattle.**
J. R. R. Dórea¹, L. R. Dell Agostinho Neto¹, V. N. Gouvea², D. A. Fleury¹, A. V. Pires¹, and F. A. P. Santos³, ¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo-FMVZ/USP, Pirassununga, Brazil, ³University of São Paulo, Piracicaba, Brazil.
- 1568 M282 **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. Ribeiro³, S. A. Santos¹, S. C. Valadares Filho⁴, V. P. Silva³, and M. C. N. Agarussi⁵, 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.
- 1569 M283 **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.
- 1570 M284 **Supply levels of multiple supplements for beef heifers on pasture during the dry season: Ruminal pH and ammonia nitrogen.**
R. P. D. Silva^{*}, J. T. Zervoudakis, L. K. Hatamoto-Zervoudakis, L. D. S. Cabral, A. J. Neto, J. Q. Soares, A. C. B. Melo, E. R. Donida, P. I. José, R. C. Soares, E. A. Teixeira, and A. J. Possamai, Federal University of Mato Grosso, Cuiaba, Brazil.
- 1571 M285 **Comparison of commercially available lick tubs to daily by-product supplementation of calves grazing corn residue.**
M. Jones^{*}, University of Nebraska-Lincoln.
- 1572 M286 **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 Filho², S. O. Souza¹, and L. G. Silva³, ¹Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, ²Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, ³Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil.
- 1573 M287 **Interaction between grazing management and energy supplementation on behavior of grazing beef cattle.**
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- 1574 M288 **Supply levels of multiple supplements for beef heifers on pasture during the dry season: Intake and digestibility of nutrients.**
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- 1575 M289 **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.
- 1576 M290 **Effect of pregnancy and feeding level on voluntary intake, digestion and microbial N production in Nellore cows*.**
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- 1577 M291 **Growth and feed intake of Nellore steers fed whole corn diets containing feed antibiotics.**
B. J. M. Lemos¹, F. G. F. Castro², B. P. C. Mendonça², A. L. Braga Netto², C. E. Dambros¹, D. B. Fernandes², V. R. M. Couto¹, and J. J. R. Fernandes¹, ¹Universidade Federal de Goiás, Goiânia, Brazil, ²AgroCria, Goiânia, Brazil.
- 1578 M292 **Effects of volume weight, precision processing and processing index on in vitro ruminal fermentation of dry-rolled barley grain.**
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- 1579 M293 **Total tract NDF digestion predicted using rumen in vitro measures is related to commercial dairy in vivo total tract nutrient digestion.**
J. P. Goesser^{1,2} and C. R. Heuer^{1,2}, ¹Department of Dairy Science, University of Wisconsin-Madison, ²Rock River Laboratory, Inc, Watertown, WI.
- 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. Romero¹, E. G. Macias², Z. Ma¹, R. M. Martins³, 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 de 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.**
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- 1583 M297 **Effects of ensiling, exogenous protease addition and inoculation on ruminal in vitro starch digestibility in rehydrated corn.**
L. F. Ferraretto, S. M. Fredin, R. D. Shaver, and P. C. Hoffman, University of Wisconsin-Madison.*
- 1584 M298 **Forage type and exogenous fibrolytic enzyme application rate effects on the digestibility of dairy cattle forages.**
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- 1585 M299 **A meta-analysis on the effect of fibrolytic enzyme treatment of dairy cow diets.**
K. G. Arriola¹, 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. Groen^{1,2}, M. A. Steele³, and T. J. DeVries¹, 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. Zeringue², C. Leonardi³, D. Schilling², and M. E. McCormick², ¹LSU AgCenter School of Animal Sciences, Franklinton, LA, ²LSU AgCenter, Franklinton, LA, ³LSUHSC-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. Zhou^{1,2}, 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. Zacaroni¹, F. F. Cardoso¹, A. C. S. Melo¹, R. F. Lima¹, R. A. N. Pereira^{2,3}, and M. N. Pereira^{1,2}, 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.**
M. J. Powell¹, T. Barros², M. A. C. Danes², M. J. Aguerre², and M. A. Wattiaux², ¹USDA-Agricultural Research Service, U.S. Dairy Forage Research Center, Madison, WI, ²University of Wisconsin-Madison.
- 1593 M307 **A sensory additive improves performance of dairy cows under heat stress.**
F. Bargo¹, S. Muñoz², M. Candelas², J. Vargas¹, and I. Ipharraguerre¹, ¹Lucta S.A., Barcelona, Spain, ²Nuplem, 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.*

- 1595 M309 **Performance and health of calves pre- and post-weaning fed milk replacers with supplements for heat abatement in the summer months.**
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- 1596 M310 **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.*
- 1597 M311 **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.*
- 1598 M312 **Ruminal in situ DM and starch digestion descriptive statistics of corn silage and high moisture corn.**
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- 1599 M313 **Response of rumen fermentation to urease inhibitor using dual-flow rumen simulation system.**
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- 1600 M314 **Effects of four ruminant feed additives on in vitro ruminal fermentation kinetic gas production and degradability.**
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- 1601 M315 **Comparison of omasal and reticular sampling methods on ruminal nutrient outflow and digestion in lactating dairy cows.**
S. M. Fredin¹, L. F. Ferraretto¹, M. S. Akins², and R. D. Shaver¹, ¹University of Wisconsin-Madison, ²University of Wisconsin, Platteville.
- 1602 M316 **Validation of a new approach to estimate total tract fiber digestibility from in vitro NDFD values.**
*F. Lopes^{*1}, K. Ruh¹, D. K. Combs², L. F. Ferraretto¹, S. M. Fredin¹, C. Arndt¹, R. D. Shaver¹, and L. E. Armentano¹, ¹University of Wisconsin-Madison, ²Department of Dairy Science University of Wisconsin-Madison.*
- 1603 M317 **The effects of supplementation with a blend of capsicum, cinnamaldehyde, and eugenol on milk production performance of dairy cows.**
*R. Blanck^{*1}, K. Vecht¹, C. Oguey², and E. H. Wall², ¹Bar-Magen, Emek Hefer, Israel, ²Pancosma, Geneva, Switzerland.*
- 1604 M318 **Stochastic analysis of the effects of variation in corn silage composition on the supply of metabolizable energy and protein in lactating dairy cows.**
J. Ferguson^{}, Z. Wu, D. T. Galligan, L. Baker, and N. Thomsen, University of Pennsylvania, Kennett Square.*
- 1605 M319 **Extruded soybean meal increases feed intake and milk production in dairy cows.**
*T. Frederick^{*1}, F. Giallongo¹, J. Oh¹, H. Weeks¹, A. N. Hristov¹, D. M. Kniffen¹, and R. A. Fabin², ¹Department of Animal Science, The Pennsylvania State University, University Park, ²Fabin Bros. Farms, Indiana, PA.*
- 1606 M320 **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. Mutsvangwa^{}, University of Saskatchewan, Saskatoon, SK, Canada.*
- 1607 M321 **Analysis of dipeptidyl peptidase IV from microbial metagenomic library in the rumen of dairy cow.**
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- 1608 M322 **Modification of the feeding behavior of dairy cows through live yeast supplementation.**
*T. J. DeVries^{*1} and E. Chevaux², ¹University of Guelph, Kemptville, ON, Canada, ²Lallemand Animal Nutrition, Milwaukee, WI.*
- 1609 M323 **The effect of supplementing dairy cows with a hydrolyzed yeast product (Progut Rumen) on milk production and somatic cell scores.**
*D. J. Gaffney^{*1}, M. R. Sheehy^{2,3}, J. A. Vuorenmaa¹, and A. G. Fahey⁴, ¹Hankkija Oy/Suomen Rehu, Hyvinkää, Finland, ²Devenish Nutrition, Belfast, Northern Ireland, ³School of Veterinary Medicine, University College Dublin, Dublin, Ireland, ⁴School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.*
- 1610 M324 **Effect of live yeast vs. sodium sesquicarbonate supplementation on milk yield and milk components in dairy cows.**
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- 1611 M325 **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.*
- 1612 M326 **Fecal sample starch content deteriorates over time after sampling.**
K. Haerr^{1,2}, J. P. Goeser^{2,3}, and C. R. Heuer^{2,3}, ¹University of Illinois at Urbana-Champaign, ²Rock River Laboratory, Inc, Watertown, WI, ³Department of Dairy Science, University of Wisconsin-Madison.*
- 1613 M327 **Effects of pH and incubation duration on the stability of the endoglucanase activity of seventeen exogenous fibrolytic enzyme preparations.**
*A. F. Campos¹, B. Y. Coy², K. G. Arriola*², and A. T. Adesogan³, 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.*
- 1614 M328 **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*¹, L. C. Solorzano², and A. A. Rodriguez¹, ¹University of Puerto Rico, Mayaguez, PR, ²DSM Nutritional Products, Parsippany, NJ.*
- 1615 M329 **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*¹, L. C. Solorzano², and A. A. Rodriguez¹, ¹University of Puerto Rico, Mayaguez, PR, ²DSM Nutritional Products, Parsippany, NJ.*
- 1616 M330 **Utilization of industrial enzymes in the evaluation of neutral detergent insoluble fiber content in high-starch samples.**
*C. Batista Sampaio*¹, D. I. Gomes², E. Detmann³, S. de Campos Valadares Filho¹, H. Valentim Nunes Machado¹, and M. de Oliveira Franco¹, 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.*
- 1617 M331 **In situ degradation and fermentation of a diet with an exogenous phytase for lambs.**
*L. H. Vallejo-Hernandez*¹, G. Buendia-Rodriguez², J. E. Ramirez-Bribiesca³, L. A. Miranda-Romero⁴, M. M. Crosby-Galvan³, and S. S. Gonzalez⁵, 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.*
- 1618 M332 **Sources of sulfur in protein supplements and fiber degradability.**
*F. P. Leonel*¹, C. J. Silva², L. M. Moreira¹, J. C. Pereira³, J. M. Carvalho¹, J. C. Carvalho³, R. A. Vieira⁴, and M. M. Assis¹, ¹Federal University of São João del Rei (UFSJ), São João del Rei, Brazil, ²National University of Brasília, Brasília, Brazil, ³Federal University of Viçosa (UFV), Viçosa, Brazil, ⁴Norte Fluminense State University, Campos dos Goytacazes, Brazil.*
- 1619 M333 **Effect of weight gain rates in the post-weaning phase and forage allowance in the finishing phase with high supplementation on performance of Nelore cattle.**
*V. A. C. Mota¹, G. F. Berti², J. A. Alves Neto³, R. M. Fernandes⁴, P. H. Gonçalves², B. C. Carvalho², M. A. P. Alves², I. M. de Oliveira*⁵, F. D. D. Resende⁵, and G. R. Siqueira⁵, 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.*
- 1620 M334 **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.*
- 1621 M335 **Effect of using either barley straw or alfalfa hay on intake and digestibility in growing Simmental heifers fed high-concentrate diets.**
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- 1622 M336 **Metabolism of nitrogenous compounds in beef cattle fed tropical forage supplemented with protein in the rumen, abomasum or both.**
*E. D. Batista*¹, E. Detmann¹, D. I. Gomes², L. M. A. Rufino¹, A. R. Lopes¹, S. C. Valadares Filho¹, M. F. Paulino¹, and E. C. Titgemeyer³, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Universidade Federal Rural da Amazônia, Parauapebas, Pará, Brazil, ³Kansas State University, Manhattan.*

- 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^{1,2}, *J. E. Sawyer*³, *J. R. Baber*⁴, *N. L. Bell*⁴, *E. Detmann*⁵, and *T. A. Wickersham*⁴, ¹*Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil,* ²*sponsored by CAPES, Brasília, Brazil,* ³*Texas AgriLife Research, College Station,* ⁴*Texas A&M University, College Station,* ⁵*Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*
- 1625 M339 **Impact of supplementation during the dry season on performance of young Nelore bulls in the post-weaning phase on pasture in the wet season.**
*I. M. de Oliveira*¹, *M. H. Moretti*², *A. D. Moreira*³, *J. A. Alves Neto*³, *R. M. Fernandes*², *P. H. Gonçalves*⁴, *M. A. P. Alves*⁴, *G. F. Berti*⁴, *G. R. Siqueira*¹, and *F. D. D. Resende*¹, ¹*APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil,* ²*UNESP-FCAV, Jaboticabal, Brazil,* ³*Universidade Estadual Paulista, Jaboticabal, Brazil,* ⁴*Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil.*
- 1626 M340 **Use of modulators additives the ruminal fermentation in supplements high intake for finished bovines in pasture.**
*J. A. Alves Neto*¹, *J. M. B. Benatti*¹, *M. H. Moretti*¹, *A. D. Moreira*¹, *R. C. Silva*¹, *I. M. de Oliveira*², *P. H. Gonçalves*³, *M. A. P. Alves*³, *F. D. D. Resende*², and *G. R. Siqueira*², ¹*Universidade Estadual Paulista, Jaboticabal, Brazil,* ²*APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil,* ³*Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil.*
- 1627 M341 **Effects of heights of Marandu pastures and sources of energy supplements on the intake, digestibility of nutrients by young Nelore bulls during the rainy season.**
*A. A. Oliveira*¹, *M. V. Azenha*², *S. S. Santana*², *A. L. S. Valente*², *J. P. R. Costa*², *T. T. Berchielli*², *A. C. Ruggieri*², and *R. A. Reis*², ¹*UNESP, Jaboticabal, Brazil,* ²*University of Sao Paulo State, Jaboticabal, 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*¹, *L. O. Tedeschi*², *M. A. Fonseca*², and *L. F. L. Cavalcanti*³, ¹*Universidade Federal de Vicosa, Vicosa, Brazil,* ²*Texas A&M University, College Station,* ³*Universidade 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.*
- 1631 M345 **Relationships between dry matter degradation, in vitro gas production and chemical composition of 15 feedstuffs.**
Y. J. Xu, *M. Zhao*, and *D. P. Bu**, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- 1632 M346 **In vitro gas production and dry matter degradability of a high concentrate diet: Influence of exogenous enzymes level.**
D. López^{1,2}, *J. F. Vázquez-Armijo*¹, *A. F. Z. M. Salem*³, *J. Hernández*², *R. Rojo*¹, and *J. Cedillo*¹, ¹*Centro Universitario UAEM Temascaltepec, Temascaltepec, Mexico,* ²*Universidad Autónoma de Tamaulipas, Ciudad Victoria, Mexico,* ³*Universidad Autónoma del Estado de México, El Cerrillo Piedras Blancas, Mexico.*
- 1633 M347 **In vitro ruminal fermentation with three sources of inoculum in diets containing *Acrocomia aculeate*.**
*S. L. S. Cabral Filho*¹, *L. S. Murata*¹, *R. A. Mandarino*², *C. Eufrásio de Souza*³, *D. Leornadi Migotto*³, *F. Lopes da Silva*³, *J. Artemio Marin Beltrame*⁴, and *J. H. Bernardes Pereira*³, ¹*University of Brasília, Brasília, Brazil,* ²*Universidade Federal de Minas Gerais, Brasília, Brazil,* ³*Universidade de Brasília, Brasília, Brazil,* ⁴*Universidade Federal de Mato Grosso do Sul, Campo Grande, Brazil.*
- 1634 M348 **Relationship of protein structural conformation to protein functional property, buffer and water solubility, rumen digestive behaviors, and intestinal availability of common feeds in ruminants.**
Q. Peng^{1,2}, *N. A. Khan*¹, *Z. Wang*², *X. Huang*¹, and *P. Yu*¹, ¹*University of Saskatchewan, Saskatoon, SK, Canada,* ²*Sichuan 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^{1,2}, *X. Huang*¹, *Z. Wang*², and *P. Yu*¹, ¹*University of Saskatchewan, Saskatoon, SK, Canada,* ²*Sichuan 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-Rodriguez*², *J. A. Cuarón-Ibarguengoytia*², *G. D. Mendoza-Martinez*³, and *S. S. Gonzalez-Muñoz*⁴, ¹*Universidad Nacional Autónoma de México, México D.F., México,* ²*CENIDFyMA INIFAP, Querétaro, México,* ³*Universidad Autónoma Metropolitana, Unidad Xochimilco, México D.F., México,* ⁴*Colegio de Postgraduados, Montecillo Estado de México, México.*

- 1637 M351 **Ruminal pH and epithelial function as affected by increasing compound feed supply in growing Holstein heifers.**
A. Navarro-Villa¹, M. A. Steele^{2}, J. A. Metcalf², and J. Martin Tereso¹, 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. Lima^{1,2}, H. J. Fernandes², E. P. Rosa², L. S. Caramalac², K. A. Silveira², G. C. Silva², B. D. D'Auria², and A. Aguiar³, 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. Lopes³, J. M. Leão², and M. H. F. Mourthé⁴, 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. Bunkers^{}, 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 reticulorumenal 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. Zanetti¹, S. C. Valadares Filho¹, M. V. C. Pacheco², L. F. Prados², E. Detmann¹, L. A. Godoi², F. C. Rodrigues¹, R. C. D. O. Ribeiro³, J. M. D. Silva Júnior⁴, and S. A. Santos⁵, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Universidade Federal de Viçosa, Viçosa, Brazil, ³Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, ⁴Federal University of Viçosa, Viçosa, Brazil, ⁵Universidade 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. Gordon², 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. Macías-Cruz³, L. Avendaño-Reyes⁴, A. F. Z. M. Salem⁵, M. A. Jaime¹, and J. F. Vázquez-Armijo¹, ¹Universidad Autónoma del Estado de México, Temascaltepec, Mexico, ²Universidad Autónoma Del Estado De Mexico, Temascaltepec, Mexico, ³Universidad Autónoma de Baja California, Mexicali, Mexico, ⁴Universidad Autónoma De Baja California, Calexico, CA, ⁵Universidad Autónoma del Estado de México, El Cerrillo Piedras Blancas, Mexico.
- 1646 M360 **Effect of particle size upon dry matter intake and ruminal pH in goats fed with alfalfa hay and sorghum silage.**
D. Esparza¹, R. Rodríguez¹, G. Veliz¹, C. Meza-Herrera², and P. Robles-Trillo¹, ¹Universidad Autónoma Agraria Antonio Narro, Torreon, Mexico, ²Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, 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. Zanetti², J. A. D. C. Lima¹, L. F. Prados¹, L. N. Rennó¹, G. J. Melo³, and W. G. D. Nascimento³, ¹Federal University of Viçosa, Viçosa, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Rural Federal University of Pernambuco, Garanhuns, 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. Pereira², A. S. C. Veras³, D. K. D. A. Silva², J. S. Lima³, G. J. Melo², D. Zanetti¹, T. D. S. Martins¹, R. M. D. Paula¹, L. C. Alves¹, and L. N. Rennó¹, ¹Federal University of Viçosa, Viçosa, Brazil, ²Rural Federal University of Pernambuco, Garanhuns, Brazil, ³Rural Federal University of Pernambuco, Recife, Brazil, ⁴Universidade Federal de Viçosa, Viçosa, Minas Gerais, 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. Zhang^{1,2,3}, N. Zheng^{1,2,3}, D. P. Bu³, M. Zhao³, X. Q. Zhou³, and J. Wang^{1,2,3}, 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.

- 1650 M364 **The use of favored or unfavored ingredients in starter feeds for preweaned calves.**
M. Terré¹ and A. Bach², ¹IRTA, Caldes de Montbui, Spain, ²Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.

Small Ruminant Poster I

- 1899 M365 **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. Dawson^{1,2}, ¹American Institute for Goat Research, Langston University, Langston, OK, ²Center of Veterinary Health Sciences, Oklahoma State University, Stillwater.
- 1900 M366 **Dermal application of PGF_{2α} for estrus synchronization in goats: Preliminary feasibility.**
C. E. Ferguson¹, D. J. Kesler², H. Nordberg¹, and J. Veillon¹, ¹McNeese State University, Lake Charles, LA, ²University of Illinois at Urbana-Champaign.
- 1901 M367 **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. Ferreira², R. D. C. R. E. Queiroga³, A. S. M. Batista⁴, 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 da Paraíba, João Pessoa, Brazil, ⁴Universidade do Vale do Acaraú, Sobral, Brazil.
- 1902 M368 **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. Ferreira², 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.
- 1903 M369 **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.
- 1904 M370 **Effect of dietary linseed supplementation on milk fatty acid profile in dairy goats with different alphaS1-casein (CSN1S1) genotype.**
A. Nudda^{*}, G. Battacone, N. P. P. Macciotta, A. Fenu, and G. Pulina, Dipartimento di Agraria, University of Sassari, Sassari, Italy.
- 1905 M371 **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.
- 1906 M372 **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.
- 1907 M373 **The effect of some herbal plants on plasma metabolites of lactating goats.**
K. Rezayazdi¹, F. Mirzaei², and M. Hosseinabadi³, ¹Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, ²Animal Science Research Institute, Karaj, Iran, ³University of Tehran, Karaj, Iran.
- 1908 M374 **Seasonal variation influences the semen characteristics and freezability in Xinong Saanen goat.**
W. Wang, J. Luo^{*}, and S. Sun, Northwest A&F University, Yangling, China.
- 1909 M375 **Mean retention time of particulate matter through gastrointestinal tract of growing goat.**
R. F. Leite¹, F. O. M. Figueiredo², M. M. Freire³, V. B. Carvalho¹, and I. A. M. A. Teixeira¹, ¹UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, ²Sao Paulo State University, Jaboticabal/SP, Brazil, ³UFAL, Maceio, AL, Brazil.
- 1910 M376 **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. Bonfa², C. J. Harter¹, F. O. M. Figueiredo³, R. F. Leite¹, and M. M. Freire¹, ¹UNESP, Univ Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, ²UFV, Universidade Federal de Viçosa, Department of Animal Science, Viçosa, MG, Brazil, ³Sao Paulo State University, Jaboticabal/SP, Brazil, ⁴UFAL, Maceio, AL, Brazil.
- 1911 M377 **Effects of dietary chromium supplementation on performance, liver and blood metabolites of kids.**
A. Emami¹, M. Ganjkanlou², A. Zali², A. Akbari-Affani³, and M. Dehghan-Banadaky², ¹University of Birjand, Birjand, Iran, ²University of Tehran, Tehran, Iran, ³University of Zanjan, Zanjan, Iran.
- 1912 M378 **Effect of Tasco on fecal egg counts and packed cell volume in meat goats.**
N. C. Whitley^{*}, S. H. Oh, K. Moulton, R. Franco, S. B. Routh, and C. Kyle, North Carolina A&T State University, Greensboro.

- 1913 M379 **Pharmacokinetic processes of lithium used for food aversion in sheep and goats.**
C. L. Manuelian¹, E. Albanell¹, M. Rovai¹, A. Salama^{1,2}, G. Caja¹, and R. Guitart³, ¹Group of Ruminant Research (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain, ²Animal Production Research Institute, Dokki, Giza, Egypt, ³Laboratory of Toxicology, Faculty of Veterinary, Universitat Autònoma 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. Pires³, 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, 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, Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.
- 1916 M382 **Effects of thyme oil (*Thymus vulgaris*) on in vitro ruminal fermentation kinetics.**
A. D. B. Ribeiro¹, A. V. Pires², I. Susin³, M. V. Bieh², V. N. Gouvea¹, M. V. C. Ferraz Jr.¹, M. L. Day⁴, L. H. Cruppe⁴, J. A. 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 Dalto^{1,2}, 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 Agricultural, 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-Vergé¹, G. Ibanez², and J. Gasa¹, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Globosuiños Agropecuária S/A, Paraná, Brazil.
- 1939 M385 **Growth performance of Sarda purebred suckling piglets reared in smallholder farms.**
C. Sulas¹, S. Fele², G. G. Fruttero², S. B. Gusai², and G. Battacone¹, ¹Dipartimento di Agraria, University of Sassari, Sassari, Italy, ²Agenzia LAORE Sardegna, Cagliari, Italy.
- 1940 M386 **Piglet body weight at weaning: A key success factor for post-weaning performance?**
D. Solà-Oriol, S. López-Vergé*, and J. Gasa, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain.
- 1941 M387 **Comparison of fecal microbiota among healthy piglets during the weaning transition using barcoded 16S rDNA pyrosequencing.**
J. P. Chae, E. A. Pajarillo, and D. K. Kang*, Department of Animal Resources Science, Dankook University, Cheonan, South Korea.
- 1942 M388 **Piglets' early body weight and milk consumption partially explain post-weaning performance.**
S. López-Vergé*, D. Solà-Oriol, and J. Gasa, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, 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. Vallet², 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.**
D. E. Graugnard*, A. C. Smith, M. L. Spry, L. F. Spangler, and K. M. Brennan, Alltech Inc., Nicholasville, KY.
- 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.**
M. R. Zukle*, J. E. Naginis, and L. A. Pettey, California State Polytechnic University, Pomona.
- 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. Baumgard¹, 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. Weaver**, 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. Wiggans¹, T. A. Cooper¹, P. M. VanRaden², D. J. Null³, J. L. Hutchison², O. M. Meland⁴, M. E. Tooker², and H. D. Norman⁴, ¹Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, ²USDA-ARS-AIPL, Beltsville, MD, ³Animal Improvement Programs Laboratory, Agricultural Research Service, United States Department of Agriculture, Beltsville, MD, ⁴Council on Dairy Cattle Breeding, Columbus, OH.
- 9:45 AM 153 **An updated version of lifetime net merit incorporating additional fertility traits and new economic values.**
J. B. Cole¹ and P. M. VanRaden², ¹Animal Improvement Programs Laboratory, Agricultural Research Service, United States Department of Agriculture, Beltsville, MD, ²USDA-ARS-AIPL, Beltsville, MD.
- 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. Vicario², C. Dimauro¹, G. Gaspa¹, M. Cellesi¹, A. Puledda³, S. Sorbolini¹, and P. Ajmone-Marsan⁴, ¹Università di Sassari, Sassari, Italy, ²ANAPRI, Udine, Italy, ³Dipartimento di Agraria, Università di Sassari, Sassari, Italy, ⁴Università Cattolica del Sacro Cuore, Piacenza, Italy.
- 10:30 AM 156 **Genetic parameters for pre-calving feed intake.**
B. N. Shonka* and D. M. Spurlock, Iowa 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. Spurlock², L. E. Armentano³, K. A. Weigel³, R. F. Veerkamp⁴, M. Coffey⁵, Y. de Haas⁴, C. R. Staples⁶, E. E. Connor⁷, M. D. Hanigan⁸, and R. J. Tempelman¹, ¹Michigan State University, East Lansing, ²Iowa State University, Ames, ³University of Wisconsin-Madison, ⁴Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Wageningen, Netherlands, ⁵Scottish Agriculture College, Edinburgh, United Kingdom, ⁶Department 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. Batista³, W. VerBoort⁴, P. S. Baruselli³, and P. J. Ross², ¹University of California Cooperative Extension, Tulare, ²University of California-Davis, ³University of Sao Paulo-VRA, Sao Paulo, Brazil, ⁴AgriTech Analytics, Visalia, CA.

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. Harmon*, University of Kentucky, Lexington.
- 9:45 AM 296 **Raw milk—is it safe?**
B. Jayarao* and E. Hovingh, Penn State University, University Park.
- 10:45 AM 297 **The shift from reaction to prevention for animal feedstuffs.**
D. McChesney*, Food and Drug Administration, Washington, DC.
- 11:30 AM 298 **Retailer perspective of food safety in international markets.**
N. Dyenson*, 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. Sniffen², A. Formigoni³, 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-Affjani¹, A. Zali², M. Ganjkanlou², M. Dehghan-Banadaky², and A. Emami³, ¹University of Zanjan, Zanjan, Iran, ²University of Tehran, Tehran, Iran, ³University of Birjand, Birjand, Iran.
- 307 **Withdrawn by author.**

- 10:15 AM 308 **Effects of dairy slurry on the nutritive value and fermentation characteristics of alfalfa silages.**
W. K. Coblenz¹, R. E. Muck², M. A. Borchardt¹, W. E. Jokela¹, M. G. Bertram³, and K. P. Coffey⁴, ¹US Dairy Forage Research Center, Marshfield, WI, ²U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI, ³University of Wisconsin, Arlington, ⁴University of Arkansas, Fayetteville.
- 10:30 AM 309 **The effects of combination of lactic acid-producing bacteria and hydrolytic enzyme inoculants on ensiling characteristics 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. Shi, 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 anaerobically stored corn stover.**
H. T. Shi, 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 México, 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. Huppertz^{1,2}, 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. Eshpari^{1,2}, 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'Chiu and B. Vardhanabhuti, University of Missouri, Columbia.*
- 10:35 AM 329 **pH-triggered intragastric gelation of whey protein/alginate and its effect on sucrose release.**
S. Zhang 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. Womack, 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. Proulx¹, L. Hsu¹, B. Miller¹, G. Sullivan¹, K. Paradis², 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. Young¹, and K. Mjoun², 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. Harding^{}, 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. Sousa^{2,3}, M. C. Amundson², K. S. Hackbart², A. R. Dresch², L. M. Vieira², J. N. Guenther², R. R. Grummer^{2,4}, R. D. Shaver¹, P. M. Fricke², and M. C. Wiltbank¹, 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. Bas¹, T. A. Brick¹, W. P. Weiss³, J. S. Velez⁴, H. Bothe⁴, 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. Montgomery^{}, L. Mamedova, A. J. Carpenter, and B. Bradford, Kansas State University, Manhattan.*
- 11:00 AM 340 **Effects of elevated subcutaneous fat stores on serum nonesterified and milk fatty acid profile and peripheral blood mononuclear cells gene expression of pro-inflammatory markers and production measures in periparturient dairy cows.**
C. M. Scholte^{}, K. C. Ramsey, C. Y. Tsai, A. Hendrickson, Z. M-Amiri, B. Shafii, and P. Rezamand, University of Idaho, Moscow.*
- 11:15 AM 341 **Effect of prophylactic and therapeutic antibiotic administration on fecal excretion of antibiotic resistance genes by dairy cows.**
L. R. Caudle^{}, H. M. Littier, A. Pruden, X. Feng, and K. F. Knowlton, Virginia Tech, Blacksburg.*
- 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.**
K. C. Ramsey^{}, J. D. Blickenstaff, C. Y. Tsai, C. M. Scholte, W. Price, M. A. McGuire, and P. Rezamand, University of Idaho, Moscow.*
- 12:00 PM 344 **Reproductive performance of timed artificial insemination and activity-based estrus detection.**
K. A. Dolecheck^{}, W. J. Silvia, G. Heersche Jr., and J. M. Bewley, University of Kentucky, Lexington.*
- 12:15 PM 345 **Energy content of reduced-fat distillers grains for lactating dairy cows.**
A. Foth¹, G. Garcia Gomez¹, T. Brown-Brandt², H. C. Freethy³, 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.**
S. E. Burczynski^{}, J. P. Boerman, A. L. Lock, M. S. Allen, and M. J. VandeHaar, Michigan State University, East Lansing.*
- 12:45 PM 347 **Evaluation of the effects of vitamin D and toll-like receptor signaling pathways on expression of antibacterial β -defensin genes in bovine neutrophils and mammary epithelial cells.**
K. E. Merriman^{} 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.**
S. M. Cruzen, K. B. Carlson, S. C. Pearce, L. H. Baumgard, N. K. Gabler, and S. M. Lonergan, Iowa State University, Ames.*
- 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.**
C. M. Strong, J. H. Brendemuhl, D. D. Johnson, and C. Carr, University of Florida, Gainesville*
- 10:15 AM 422 **Effects of zilpaterol hydrochloride and implants in beef heifers I: Feedlot performance, carcass characteristics, and intramyocellular lipid accumulation.**
M. A. Vaughn, S. M. Ebarb, K. J. Phelps, D. D. Burnett, J. S. Drouillard, and J. M. Gonzalez, Kansas State University, Manhattan.*
- 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.**
S. M. Ebarb, K. J. Phelps, M. A. Vaughn, J. A. Noel, C. B. Paulk, J. S. Drouillard, and J. M. Gonzalez, Kansas State University, Manhattan.*
- 10:45 AM 424 **Effect of zilpaterol hydrochloride on carcass composition, subprimal yield, and meat quality of Nellore heifers.**
N. R. B. Cônsolo¹, R. S. Goulart², F. Rodriguez¹, M. O. Frasseto¹, R. A. P. Maciel³, J. F. Penso³, and L. F. P. Silva¹, ¹University of Sao Paulo, Pirassununga, Brazil, ²MSD Saúde Animal, Sao Paulo, Brazil, ³University of Sao Paulo, São 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.**
D. Pogge, S. M. Lonergan, and S. L. Hansen, Iowa State University, Ames.*
- 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.**
A. J. Thompson, F. R. B. Ribeiro¹, J. E. Hergenreder¹, W. C. Burson¹, B. J. Ragland¹, A. D. Hosford¹, J. R. Corley², and B. J. Johnson¹, ¹Texas Tech University, Lubbock, ²Lesaffre Feed Additives, Milwaukee, WI.*
- 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. Hergenreder¹, J. O. Baggerman¹, M. E. Branine², and B. J. Johnson¹, 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.**
K. J. Phelps, M. A. Vaughn, S. M. Ebarb, D. D. Burnett, J. S. Drouillard, and J. M. Gonzalez, Kansas State University, Manhattan.*
- 12:00 PM 429 **In utero manipulation of muscle development in beef cattle fetuses.**
M. S. Duarte¹, M. P. Gionbelli², P. Paulino³, N. V. L. Serão⁴, S. E. Facioni⁵, S. de Campos Valadares Filho¹, and M. Du⁶, ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Instituto Nacional de Ciência e Tecnologia-Ciência Animal, Viçosa, Minas Gerais, Brazil, ³Universidade Federal De Vicosa, Vicosa-MG, Brazil, ⁴Iowa State University, Ames, ⁵Universidade Federal de Viçosa, Viçosa, Brazil, ⁶Washington State University, Pullman.

Nonruminant Nutrition: Nutrient Requirements of Monogastrics and Amino Acid Digestibility of Feedstuffs

Chair: Joshua Jendza, BASF Corporation
2503

- 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. Xue^{}, 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. Mathai^{} and H. H. Stein, University of Illinois at Urbana-Champaign.*
- 10:15 AM 438 **Homocysteinemia, growth performance and immune responses in suckling and weanling piglets.**
I. Audet, C. L. Girard, M. Lessard, L. Lo Verso, and J. J. Matte^{}, Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada.*
- 10:30 AM 439 **Leucine supplementation of a restricted protein diet improves lean growth in neonatal pigs.**
D. A. Columbus¹, J. Steinhoff-Wagner¹, A. Suryawan², M. Kao³, A. Hernandez-Garcia¹, C. Boutry¹, H. V. Nguyen², M. L. Fiorotto¹, and T. A. Davis², 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 un-clean 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. Knudsen², H. Jørgensen², N. Sauer^{1,3}, J. K. Htoo⁴, 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. Sauer^{1,2}, J. K. Htoo³, and R. Mosenthin¹, ¹University of Hohenheim, Institute of Animal Nutrition, Stuttgart, Germany, ²Landwirtschaftliche Untersuchungs- und Forschungsanstalt Speyer, Speyer, Germany, ³Evonik Industries AG, Hanau-Wolfgang, Germany.
- 12:15 PM 445 **Digestible phosphorus requirement of 20-kg pigs – A cooperative study.**
O. Adeola¹, M. J. Azain², S. D. Carter³, T. D. Crenshaw⁴, M. J. Estienne⁵, B. J. Kerr⁶, M. D. Lindemann⁷, C. V. Maxwell⁸, P. S. Miller⁹, M. C. Shannon¹⁰, E. van Heugten¹¹, and N. A. S-1061¹², 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. Trevisi¹, and J. J. Loo², 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. Carnahan¹, and A. Ahmadzadeh¹, 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. Hart, B. E. Voelz, K. E. Brockus, and C. O. Lemley, Mississippi State University, Mississippi State.*
- 10:15 AM 489 **Effects of supplementing Holstein heifers with dietary melatonin during late gestation on growth and cardiovascular measurements of offspring.**
K. E. Brockus, C. G. Hart, S. H. Ward, and C. O. Lemley, Mississippi State University, Mississippi State.*
- 10:30 AM 490 **Uterine blood flow, calf, and placental weights from beef cows supplemented during late gestation.**
V. C. Kennedy, B. R. Mordhorst, M. L. Bauer, K. C. Swanson, and K. A. Vonnahme, North Dakota State University, Fargo.*
- 10:45 AM 491 **Possible markers of uterine and metabolic health in transition dairy cows.**
G. Esposito^{1,2}, A. Chapwanya², E. C. Webb^{2,3}, and P. C. Irons^{1,2}, 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.
- 11:00 AM 492 **Pregnancy-induced changes in metabolome and proteome in ovine uterine flushings.**
T. R. Hansen, J. J. Romero, C. Broeckling, and J. E. Prenni, Colorado State University, Fort Collins.*
- 11:15 AM 493 **Syncytin expression in uterine endometrium and fetal membranes during early pregnancy in sheep.**
K. J. McLean, L. P. Reynolds, A. Grazul-Bilska, J. Haring, and J. S. Caton, North Dakota State University, Fargo.*
- 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. Carpenter, C. M. Ylloja¹, C. F. Vargas Rodriguez¹, L. G. D. Mendonça¹, L. Mamedova¹, J. F. Coetzee², L. Hollis¹, R. Gehring³, 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. Ribeiro, L. F. Greco¹, R. S. Bisinotto¹, F. S. Lima², W. W. Thatcher¹, and J. E. P. Santos¹, ¹Department of Animal Sciences, University of Florida, Gainesville, ²University of Florida, Gainesville.*
- 12:00 PM 496 **Modulation of the immune system during post-partum uterine infection.**
C. G. Walker, S. Meier², J. R. Roche², M. D. Mitchell³, and C. Burke¹, ¹DairyNZ, Auckland, New Zealand, ²DairyNZ, Hamilton, New Zealand, ³University of Queensland, Queensland, Australia, ⁴Dairy NZ Ltd, Hamilton, New Zealand.*
- 12:15 PM 497 **Carryover effects of postpartum diseases on early conceptus development in dairy cows.**
E. S. Ribeiro, L. F. Greco, G. C. Gomes, R. Cerri, W. W. Thatcher, and J. E. P. Santos, Department of Animal Sciences, University of Florida, Gainesville.*
- 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. Cruppe, R. S. Cipriano², F. M. Abreu¹, M. L. Mussard¹, K. J. Wells¹, G. E. Fogle¹, B. R. Harstine¹, M. D. Utz³, G. A. Bridges⁴, and M. L. Day¹, 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 **Feedlot 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. Harding^{}, 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-Brandl³, and H. C. Freetly⁴, ¹USDA-ARS-MARC, Clay Center, NE, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ³ARS-USDA, Clay Center, NE, ⁴USDA, ARS, U.S. MARC, 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. Casagrande¹, P. D. Teixeira¹, M. C. L. Alves¹, R. A. Gomes¹, and L. A. Silveira¹, 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.**
A. L. Brichi¹, C. F. Costa¹, A. Perdigao¹, M. A. Factori¹, I. C. Pereira¹, D. D. Estevam¹, R. S. Goulart², C. L. Martins¹, D. D. Millen^{3,4}, and M. D. Arrigoni¹, ¹São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, ²MSD Saúde Animal, Sao Paulo, Brazil, ³Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil, ⁴São Paulo State University (UNESP), Dracena campus, Dracena, Brazil.
- 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. Luebbeck², G. I. Zanton³, and M. A. Andersen³, 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. Moisa^{}, L. M. Shoup, D. W. Shike, and J. J. Loor, University of Illinois at Urbana-Champaign.*
- 11:30 AM 597 **Post-natal nutritional management alters transcription regulator gene networks in Longissimus muscle of Angus x Simmental offspring.**
S. Moisa^{}, 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. Frassetto¹, R. A. P. Maciel², V. Rizzi³, and L. F. P. Silva¹, ¹University of Sao Paulo, Pirassununga, Brazil, ²University of Sao Paulo, São 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. Nematpoor¹, K. Rezayazdi², and M. Dehghan-Banadaky³, ¹University of Tehran, Karaj, Iran, ²Department of Animal Science, Faculty of Agriculture, University 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, ¹Sao 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. McNamara¹, K. Huber², and A. Kenez², 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. Nennich², and P. H. Doane³, 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. Boerman, 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. Gualdron-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. Klingensmith, 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. Shi, 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.*
- 11:30 AM 609 **Effects of dried sugar beet pulp as a replacement for corn silage on performance of dairy cows.**
G. R. Ghorbani, N. Naderi, A. Sadeghism, and I. Sadrearhami, Isfahan University of Technology, Isfahan, Iran.*
- 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. Wang¹, S. L. Li⁴, Z. M. Shen², and J. X. Liu⁵, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Nanjing Agricultural University, Nanjing, China, ³China Agricultural University, Beijing, China, ⁴State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University, Beijing, China, ⁵Zhejiang 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.*

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

2504

- 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. Nasir¹, and E. Beltranena^{1,2}, 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.

2504

- 10:30 AM 742 **Betaine supplementation in maternal diet modulates the epigenetic regulation of hepatic gluconeogenic genes in neonatal piglets.**
D. Cai, 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.**
D. Solà-Oriol¹, S. López-Vergé^{2,1}, E. Varella², A. C. Barroeta¹, and J. Gasal¹, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Tecnología & Vitaminas, S.L., Alforja, Spain.
- 11:00 AM 744 **Effects of sugar beet pulp on reproductive performance of gestation sows.**
Z. Cheng^{}, D. Hou, Y. Chen, H. Zhang, B. Wang, Y. Wang, S. Bai, H. Lei, S. Jiang, and W. Jin, Animal Nutrition & Feed Center, COFCO Nutrition and Health Institute, Beijing, China.*
- 11:15 AM 745 **Utilizing meta-analyses to generate prediction equations for pork carcass back, belly, and jowl fat iodine value.**
C. B. Paulk¹, J. R. Bergstrom², M. D. Tokach¹, S. S. Dritz¹, D. D. Burnett¹, J. M. DeRouchey¹, R. D. Goodband¹, J. L. Nelssen¹, and J. M. Gonzalez¹, 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. Coble¹, J. M. DeRouchey¹, M. D. Tokach¹, S. S. Dritz¹, B. Lawrence², J. Escobar², J. C. Woodworth¹, R. D. Goodband¹, and N. Boettger², 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^{*1}, S. Clark², S. Callahan¹, L. Wittish¹, and M. Estienne³, 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.**
P. J. Roubos^{}, R. H. G. M. Litjens, J. W. Resink, and Y. M. Han, Nutreco Research & Development, Boxmeer, Netherlands.*

ADSA-SAD Undergraduate Student Paper Competition: Dairy Foods

Chair: Dale R. Olver, The Pennsylvania State University
2208

- 11:00 AM 14 **Dairy fats: The good, the bad, and the ugly.**
H. Potts^{}, B. A. Corl, and D. R. Winston, Virginia Tech, Blacksburg.*
- 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?**
C. T. Redding^{}, K. H. Ingawa, and S. P. Washburn, North Carolina State University, Raleigh.*
- 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
2104B

- 12:00 PM 359 **Changes in activity and milk components around onset of clinical mastitis.**
A. S. Griffith^{}, M. L. McGilliard, and C. S. Petersson-Wolfe, Virginia Tech University, Blacksburg.*
- 12:15 PM 360 **Predicting impending calving using automatically collected measures of activity and rumination in dairy cattle.**
M. R. Borchers^{}, A. E. Sterrett, B. A. Wadsworth, and J. M. Bewley, University of Kentucky, Lexington.*

CSAS Graduate Student Oral Competition

Chair: Cornelis F.M. de Lange, University of Guelph
2505A

- 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. Laarman¹, L. Dionissopoulos¹, O. AlZahal², S. L. Greenwood³, M. A. Steele⁴, and B. W. McBride², 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 Lc, C1 and Lc x C1 regulatory genes.**
R. G. Heendeniya Vidanarala¹, 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, X. Sun², G. Henderson³, F. Cox³, P. H. Janssen³, and L. L. Guan², 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, ²Western Beef Development Centre, Humboldt, 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. Stanford³, 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. Wiseman^{}, J. Zhu, D. Wey, and C. F. de Lange, University of Guelph, Guelph, ON, Canada.*
- 2:45 PM 219 **Selection of hybrid brome grass for increased NDF digestibility.**
*C. L. Rosser^{*1}, B. Coulman¹, and G. B. Penner², 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. Larson², and B. Lardner^{1,2}, 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. Rudar^{} and C. F. de Lange, 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. Kehler^{*1,2}, K. H. Ominski¹, L. L. Connor¹, T. G. Crowe³, and K. S. Schwartzkopf-Genswein¹, ¹University of Manitoba, Winnipeg, MB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ³University of Saskatchewan, Saskatoon, SK, 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. Huber^{*1}, C. F. de Lange¹, U. K. Larsen², D. Chamberlin³, and N. L. Trottier³, 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. Kotz¹, S. C. Li², 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-Perez^{*1,2}, E. K. Okine¹, S. M. McGinn², L. L. Guan¹, M. Oba¹, S. M. Duval³, and K. A. Beauchemin², 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.*

- 4:45 PM 227 **Measuring animal productivity and rumen efficiency from extensively overwintered beef cows on the Canadian Prairies.**
*G. R. Donohoe**, *K. M. Wittenberg*, *D. N. Flaten*, *B. D. Amiro*, and *K. H. Ominski*, *University of Manitoba, Winnipeg, MB, Canada.*
- 5:00 PM 228 **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*¹*, *A. Ruiz-Sanchez¹*, *M. G. Colazo²*, *M. Oba¹*, *M. Dyck¹*, and *D. J. Ambrose³*, *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

- 2:00 PM 6 **Photoperiod management of dairy cattle: Considerations and applications.**
*G. E. Dahl**, *University of Florida, Gainesville.*
- 2:30 PM 7 **Impacts of heat stress on cow and calf.**
*S. Tao*¹*, *G. E. Dahl²*, and *J. K. Bernard¹*, *¹University of Georgia, Tifton, ²University of Florida, Gainesville.*
- 3:00 PM 8 **Implications of overstocking on the behavior, health, and productivity of dairy cows in the Southeast.**
*P. D. Krawczel**, *The University of Tennessee, Knoxville.*
- 3:30 PM 9 **Managing heat stress in dairy calves and heifers: Housing considerations.**
*S. H. Ward**, *Mississippi State University, Mississippi State.*
- 4:00 PM 10 **Compost bedded pack barns as a lactating cow housing system for the Southeast.**
*J. M. Bewley*¹*, *R. A. Black²*, *F. A. Damasceno³*, *E. A. Eckelkamp¹*, *G. B. Day¹*, and *J. L. Taraba¹*, *¹University of Kentucky, Lexington, ²University of Tennessee, Knoxville, ³Federal University of Mato Grosso, Campus Rondonópolis, Brazil.*
- 4:30 PM **Discussion**
- 4:45 PM **Southern ADSA Business Meeting**

ADSA-SAD Undergraduate Student Paper Competition: Dairy Production

Chair: Kasim H. Ingawa, North Carolina State University
2208

- 2:00 PM 18 **Dairy cow welfare: Bridging the gap.**
*E. A. Morabito** and *J. M. Bewley*, *University of Kentucky, Lexington.*
- 2:15 PM 19 **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.*
- 2:30 PM 20 **A polled future.**
*M. Richard*¹* and *C. C. Williams²*, *¹Louisiana State University, Baton Rouge, ²LSU AgCenter, Baton Rouge, LA.*
- 2:45 PM 21 **The future role of metabolomics in dairy science.**
*A. E. Kraus**, *K. J. Harvatine*, and *D. R. Olver*, *Pennsylvania State University, University Park.*
- 3:00 PM **Break**
- 3:15 PM 22 **Polled genetics: Benefits, detriments and identification of polled dairy cattle.**
*A. L. Pach**, *R. R. Cockrum*, and *D. R. Winston*, *Virginia Tech, Blacksburg.*
- 3:30 PM 23 **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^{*1}, E. C. Eckert¹, K. E. Leslie¹, T. J. DeVries¹, and M. A. Steele², ¹University of Guelph, Guelph, ON, Canada, ²Nutreco Canada, Guelph, ON, Canada.*
- 2:15 PM 25 **Effects of AICAR, rapamycin, and non-essential amino acids on cell signaling in bovine mammary tissue.**
A. Felock¹, S. I. Arriola Apelo, R. L. Garnett, and M. D. Hanigan, Virginia Tech, Blacksburg.
- 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*.**
E. M. Dudash^{}, T. T. Yohe, R. M. Townsley, Y. Roman Garcia, A. R. Gibson, K. M. O'Diam, and K. M. Daniels, Department of Animal Sciences, The Ohio State University, Wooster.*
- 3:00 PM **Break**
- 3:15 PM 29 **Case study: Effect of alley floor scraping frequency on environmental mastitis-causing pathogen counts.**
J. L. Lowe^{}, K. A. Akers, A. E. Sterrett, J. D. Clark, and J. M. Bewley, University of Kentucky, Lexington.*
- 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^{*1} and K. J. Aryana², ¹Louisiana State University, Baton Rouge, ²Louisiana State University Agricultural Center, Baton Rouge.*
- 4:00 PM 416 **Use of the RatLoft in laboratory conditions decreases pup mortality in lactating mice.**
S. R. Weaver^{}, C. R. Cronick, A. P. Prichard, J. Laporta, N. J. Benevenga, and L. L. Hernandez, University of Wisconsin-Madison.*

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. Carroll¹, N. C. Burdick Sanchez¹, J. O. Buntyn², S. E. Sieren³, S. J. Jones³, and T. B. Schmidt³, ¹USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ²University of Nebraska, Department of Animal Science, Lincoln, ³University of Nebraska-Lincoln.
- 2:30 PM 66 **Investigating innate immune response differences between Angus and Holstein cattle with the dermal fibroblast model.**
*A. L. Benjamin^{*1}, W. J. Weber², S. D. McKay¹, B. A. Crooker², and D. E. Kerr¹, ¹University of Vermont, Burlington, ²University of Minnesota, Saint Paul.*
- 2:45 PM 67 **Predictive models of lameness in dairy cows achieve high sensitivity and specificity with force measurements in three dimensions.**
*J. T. Dunthorn^{*1}, R. M. Dyer², U. Tasch³, N. Neerchal³, P. Rajkondawar⁴, and G. Steingraber⁴, ¹Step Analysis, Baltimore, MD, ²University of Delaware, Newark, ³University of Maryland, Baltimore County, Baltimore, ⁴BouMatic, Madison, WI.*
- 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. Deelen¹, T. L. Ollivett¹, D. M. Haines², and K. E. Leslie^{*1}, ¹University of Guelph, Guelph, ON, Canada, ²University of Saskatchewan, Saskatoon, SK, 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. Duffield¹, K. M. Waalderbos¹, and K. E. Leslie¹, 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. Pinedo¹, A. Daniels², J. Shumaker³, and A. De Vries⁴, ¹Texas A&M AgriLife Research, Amarillo, ²Circle H Headquarters LLC, 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. Stutts, 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. Burdick Sanchez¹, J. O. Buntyn², J. A. Carroll¹, T. Wistuba³, K. DeHaan³, S. E. Sieren⁴, S. J. Jones⁴, and T. B. Schmidt⁴, 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.**
B. B. Green^{}, S. D. McKay, and D. E. Kerr, University of Vermont, Burlington.*
- 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. Wilson¹, G. I. Zanton², D. L. Step¹, R. W. Fulton¹, A. W. Confer¹, C. L. Maxwell¹, C. A. Gifford¹, C. R. Krehbiel¹, and C. J. Richards¹, ¹Oklahoma State University, Stillwater, ²Novus International, Inc., St. Charles, MO.

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
2101



- 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. Funston², 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.
3501C

- 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

- 2:00 PM 238 **Microbial production of conjugated linoleic acid (CLA): Development of functional dairy products- an overview**
velopment of functional dairy products- an overview.
*S. Abd El Ghani** and *W. K. Bahgaat*, National Research Centre, Giza, Cairo, Egypt.
- 2:15 PM 239 **Chemical and organoleptic characteristics of cheese from dairy cows supplemented with soya and partially hydrogenated vegetable oils.**
E. Vargas-Bello-Pérez¹, *G. Ñíguez-González¹*, *K. Fehrmann-Cartes¹*, and *P. C. Garnsworthy²*, ¹Pontificia Universidad Católica de Chile, Santiago, Chile, ²The University of Nottingham, Loughborough, United Kingdom.
- 2:30 PM 240 **Comparison of the effect of Holstein-Friesian and Jersey milk on cheddar cheese production.**
*J. H. Bland**, *C. C. Fagan*, and *A. S. Grandison*, University of Reading, Reading, United Kingdom.
- 2:45 PM 241 **Adding citrate to ice cream mix for enhanced protein functionality.**
A. Gilbert, *J. Prost*, and *H. D. Goff**, University of Guelph, Guelph, ON, Canada.
- 3:00 PM 242 **The nutritional value of kishk: Dried wheat fermented milk Egyptian native dairy food.**
S. Abd El Ghani¹ and *W. K. Bahgaat²*, ¹National Research Centre, Dairy Department, Giza, Cairo, Egypt, ²National Research Centre, Giza, Cairo, Egypt.
- 3:15 PM 243 **Bacterial community shifts in geriatric subjects in response to probiotic intervention revealed by high throughput DNA sequencing.**
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.
- 3:30 PM 244 **Microbial population dynamics during aging of cheddar cheese.**
*B. Ganesan**, *C. Brothersen*, and *D. J. McMahon*, Western Dairy Center, Utah State University, Logan.
- 3:45 PM 245 **The influence of protein content of milk protein concentrates on the rheological properties of Greek style acid skim milk gels.**
G. H. Meletharayil¹, *H. A. Patel²*, and *T. Huppertz¹*, ¹South Dakota State University, Brookings, ²Dairy Science Department, South Dakota State University, Brookings.
- 4:00 PM 246 **Investigating the refrigerated performance shelf-life of high pressure treated, reduced sodium, low moisture part skim mozzarella cheese.**
M. Ozturk¹, *S. Govindasamy-Lucey²*, *Y. Lu²*, *J. J. Jaeggi²*, *M. E. Johnson²*, and *J. A. Lucey^{2,3}*, ¹University of Wisconsin-Madison, ²Wisconsin Center for Dairy Research, Madison, ³University of Wisconsin-Madison.
- 4:15 PM 247 **Impact of potassium substitution for sodium on pH, proteolysis, organic acids, and microbial populations during storage of cheddar cheese.**
D. J. McMahon¹, *C. J. Oberg^{2,3}*, *M. Drake⁴*, *N. Farkye⁵*, *L. V. Moyes²*, and *M. R. Arnold⁵*, 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.

Graduate Student Competition: ADSA Production Oral, PhD

Chair: Peter S. Erickson, University of New Hampshire

2505B

- 2:00 PM 348 **Antioxidant activity after in vitro gastrointestinal digestion of cheese containing catechins encapsulated within liposomes.**
A. Rashidinejad^{1,2}, *D. Everett^{1,2}*, *J. Birch¹*, and *D. Sun-Waterhouse³*, ¹University of Otago, Dunedin, New Zealand, ²Riddet Institute, Palmerston North, New Zealand, ³Plant and Food Research, Auckland, New Zealand.

- 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.
- 2:30 PM 350 **Effects of slow-release urea, rumen-protected methionine, and histidine on performance of dairy cows fed metabolizable protein-deficient diets.**
*F. Giallongo**¹, J. Oh¹, T. Frederick¹, H. Weeks¹, A. N. Hristov¹, H. Lapierre², R. A. Patton³, A. Gehman⁴, and C. Parys⁵,
¹Department of Animal Science, The Pennsylvania State University, University Park, ²Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada, ³Nittany Dairy Nutrition Inc., Mifflinburg, PA, ⁴Alltech Inc., Nicholasville, KY, ⁵Evonik Industries AG, Hanau, Germany.
- 2:45 PM 351 **Effect of dietary phosphorus on intestinal P absorption in growing Holstein steers.**
*X. Feng**, E. T. Ronk, H. H. Schramm, M. D. Hanigan, M. A. McCann, and K. F. Knowlton, Virginia Tech, Blacksburg.
- 3:00 PM 352 **A survey of calving and colostrum management practices on Irish dairy farms.**
*C. Cummins**^{1,2}, R. Sayers¹, I. Lorenz², and E. Kennedy³, 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**¹, A. L. Lock², and J. Kraft³, 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.**
*T. Barros**¹, M. A. Quaassdorff¹, J. J. Olmos Colmenero², M. J. Aguerre¹, S. J. Bertics¹, and M. A. Wattiaux¹, ¹University of Wisconsin-Madison, ²University of Guadalajara, Tepatilan, Mexico
- 3:45 PM 355 **Evaluation of a handheld device for the detection of β -hydroxybutyrate pre-calving in dairy cattle.**
*E. H. Tatone**, J. L. Gordon, S. J. LeBlanc, and T. F. Duffield, University of Guelph, Guelph, ON, Canada.
- 4:00 PM 356 **Effects of dietary nitrate supplementation on enteric methane and nitrous oxide emissions from beef cattle.**
*C. J. Neumeier**¹, Q. Wang¹, A. R. Castillo², Y. Zhao¹, Y. Pan¹, and F. M. Mitloehner¹, 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.**
*J. H. C. Costa**, R. K. Meagher, M. A. von Keyserlingk, and D. M. Weary, Animal Welfare Program-University of British Columbia, Vancouver, BC, Canada.
- 4:30 PM 358 **Epigenetic differences of cows classified with biased antibody and cell mediated immune response traits.**
*M. A. Paibomesai**¹ and B. Mallard², 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 [¹³C]₆glucose.**
*Y. Qu**¹, B. J. Bequette¹, 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.
- 2:15 PM 362 **Exploring the molecular diversity and density of the rumen microbiome within the Impala (*Aepyceros melampus melampus*) from Pongola, South Africa.**
*L. M. Cersosimo**¹, B. St-Pierre², W. van Hoven³, and A. D. G. Wright¹, ¹University of Vermont, Burlington, ²University of Vermont, Burlington, ³University 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.**
*B. J. Isenberg**¹, A. F. Brito¹, A. B. D. Pereira¹, N. L. Whitehouse¹, R. B. Standish¹, and K. J. Soder², ¹University of New Hampshire, Durham, NH, ²USDA-Agricultural Research Service, University Park, PA.
- 2:45 PM 364 **Farm-level evaluation of implementing feeding best management practices (BMP) on Pennsylvania dairy farms.**
*H. L. Weeks**, T. W. Frederick, L. M. Hagan, K. S. Heyler, and A. N. Hristov, Department of Animal Science, The Pennsylvania State University, University Park.

- 3:00 PM 365 **The impact of dairy advisory teams on farm improvement in Pennsylvania dairies.**
M. H. Buza^{}, L. Holden, and R. C. Goodling, The Pennsylvania State University, University Park.*
- 3:15 PM **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. Jaganathan¹, A. Kollanoor-Johny¹, K. Vekitanarayanan¹, G. W. Kazmer¹, L. Kuo², Y. B. Wang², and K. E. Govoni¹,
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. Oh¹, F. Giallongo¹, H. L. Weeks¹, T. W. Frederick¹, A. N. Hristov¹, and E. H. Wall²,
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.**
A. M. Barnard^{}, R. Nebenhaus, R. M. Dyer, and T. F. Gressley, University of Delaware, Newark.*
- 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.**
*J. K. Suagee¹, R. K. Splan², K. L. Swyers³, R. J. Geor⁴, and B. A. Corl⁵,
¹The Ohio State University, Wooster, ²Virginia Tech, Middleburg, 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.**
*A. N. Bradbery¹, J. Coverdale¹, K. L. Vernon², J. L. Lucia³, C. E. Arnold¹, R. A. Dabareiner¹, M. K. Kahn¹, A. A. Millican², and T. H. Welsh, Jr.⁴,
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. Kahn¹, J. Coverdale¹, J. L. Lucia², C. E. Arnold¹, R. A. Dabareiner¹, A. Bradbery¹, A. A. Millican³, and T. H. Welsh⁴,
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.**
E. Glunk^{}, A. M. Grev, W. J. Weber, M. Hathaway, and K. L. Martinson, University of Minnesota, Saint Paul.*
- 3:00 PM 389 **Influence of diet fortification on mature horses at maintenance: Performance characteristics.**
*J. L. Lucia¹, D. L. Parker¹, M. J. Anderson¹, K. J. Stutts¹, M. M. Beverly¹, S. F. Kelley¹, and E. D. Lamprecht²,
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.**
A. M. Grev^{}, E. Glunk, M. Hathaway, W. Lazarus, and K. L. Martinson, University of Minnesota, Saint Paul.*
- 3:30 PM 391 **Influence of ambient temperature and relative humidity on recovery from exercise in young horses.**
*J. L. Lucia¹, K. S. Carlson¹, M. J. Anderson¹, K. W. Walter², K. J. Stutts¹, M. M. Beverly¹, and S. F. Kelley¹,
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**
2105

- 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.**
*T. M. Grala¹, J. K. Kay², J. R. Roche², A. G. Rius², and C. V. Phyn^{*2}, ¹DairyNZ, Auckland, New Zealand, ²DairyNZ, Hamilton, New Zealand.*
- 2:15 PM 405 **Dietary anion-cation difference and day length differently affect milk calcium secretion pathways.**
M. Boutinaud¹, A. Bondon¹, A. Narcy², C. Hurtaud¹, M. Johan¹, J. Couedon¹, and P. Lambertson³, 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. Laporta^{*1}, S. A. E. Moore¹, A. P. Prichard¹, M. Olsen¹, B. P. Schnell¹, S. R. Weaver¹, C. R. Cronick¹, R. M. Bruckmaier², and L. L. Hernandez¹, 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. Lacasse^{} and S. Ollier, 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. Farmer^{*1}, M. F. Palin¹, and Y. Martel-Kennes², 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.**
J. Janjanam^{}, S. Singh, M. K. Jena, J. K. Kaushik, A. K. Dang, and A. K. Mohanty, National Dairy Research Institute, Karnal, India.*
- 3:30 PM 410 **Milk protein synthesis is regulated by lysine and branched chain amino acid deficiencies in lactating bovine mammary glands.**
*J. Doelman^{*1}, 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 eIF2B α in the mammary glands of lactating dairy cows.**
*J. Doelman¹, R. V. Curtis^{*2}, M. Carson¹, J. J. M. Kim², J. A. Metcalf¹, 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
2503

- 2:00 PM 447 **Digestible, metabolizable, and net energy in diets containing 0, 15, or 30% wheat bran fed to growing pigs.**
*N. W. Jaworski^{*1}, D. Liu², D. Li³, 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. Nasir^{*1}, M. G. Young², M. L. Swift³, E. Beltranena⁴, 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.**
U. P. Tiwari^{}, A. K. Singh, H. M. Zaleski, and R. Jha, University of Hawaii at Manoa, Honolulu.*
- 2:45 PM 450 **Nutritional enhancement of dried distillers grains with solubles via sporobolomyces roseus fermentation.**
J. M. Wilson^{}, 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. Mabelebele^{*1,2}* and *P. Iji²*, ¹*University of Limpopo, Polokwane, South Africa*, ²*University 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.**
*S. K. Gatrell**, *T. J. Derksen*, *E. V. O'Neil*, and *X. G. Lei*, *Cornell University, Ithaca, NY.*
- 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.**
*T. M. Hill**, *J. D. Quigley*, *H. G. Bateman, II*, *J. M. Aldrich*, and *R. L. Schlotterbeck*, *Provimi North America, Brookville, OH.*
- 2:15 PM 614 **Performance of and digestion in calves fed two levels of milk replacer and functional ingredients.**
*T. M. Hill**, *J. D. Quigley*, *H. G. Bateman, II*, *J. M. Aldrich*, and *R. L. Schlotterbeck*, *Provimi North America, Brookville, OH.*
- 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. Strayer^{*1}*, *D. Ziegler²*, *D. Schimek³*, *B. Ziegler³*, *H. Chester-Jones²*, *J. L. Anderson¹*, *K. F. Kalscheur¹*, and *D. Casper¹*, ¹*South Dakota State University, Brookings*, ²*University of Minnesota Southern Research and Outreach Center, Waseca*, ³*Hubbard Feeds Inc., Mankato, MN.*
- 3:00 PM 617 **Amino acid supplementation of calf milk replacers containing bovine plasma protein.**
*S. Y. Morrison^{*1}*, *K. A. Myers¹*, *A. E. Volland¹*, *P. Cardoso¹*, *J. M. Campbell²*, and *J. K. Drackley¹*, ¹*University of Illinois at Urbana-Champaign*, ²*APC, 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. Casper^{*1}*, *S. Srivastava¹*, *M. Kirk³*, *S. Harris²*, *K. Koone²*, and *B. M. Strayer¹*, ¹*South Dakota State University, Brookings*, ²*Masters Choice, Anna, IL.*
- 3:30 PM 619 **Intensive milk feeding in calves affects growth performance, metabolic and endocrine traits, but not rumen development.**
*H. M. Hammon^{*1}*, *J. Maciej¹*, *J. Gruse¹*, *E. Wirthgen²*, *R. Zitnan³*, *M. Piechotta⁴*, and *A. Hoeflich¹*, ¹*Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*, ²*Ligandis GbR, Gülzow, Germany*, ³*National Centre of Agriculture and Food Nitra, Kosice, Slovakia*, ⁴*University of Veterinary Medicine, Hannover, Germany.*
- 3:45 PM 620 **Fish oil supplementation on growth and health of pre-weaning dairy calves.**
*R. Panivivat^{*1}*, *P. Sopannarat¹*, and *S. Sriwichai²*, ¹*Kasetsart University, Bangkok, Thailand*, ²*Dairy Promotion and Organization of Thailand, Saraburi, Thailand.*
- 4:00 PM 621 **The effects of corn silage inclusion in pre-weaned calf diets.**
*S. I. Kehoe^{*1}*, *S. L. Retz¹*, *T. J. Pogreba¹*, *K. Dill-McFarland²*, and *G. Suen²*, ¹*University of Wisconsin-River Falls*, ²*University 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**¹, *C. Boonkaewwan*¹, and *S. Sriwichai*², ¹*Kasetsart University, Bangkok, Thailand,* ²*Dairy 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**¹, *E. C. Eckert*¹, *M. A. Steele*², *T. J. DeVries*¹, and *K. E. Leslie*¹, ¹*University of Guelph, Guelph, ON, Canada,* ²*Nutreco Canada Agresearch, Guelph, ON, Canada.*

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

**Chair: Rick Kohn, University of Maryland
2103B**

- 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**¹, *E. Khafipour*², *J. C. Plaizier*², and *L. L. Guan*³, ¹*University of Saskatchewan, Saskatoon, SK, Canada,* ²*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada,* ³*Department 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.**
*T. A. McAllister**¹, *L. L. Guan*², *G. Henderson*³, *G. Attwood*³, and *P. H. Janssen*³, ¹*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada,* ²*University of Alberta, Edmonton, AB, Canada,* ³*AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand.*
- 4:15 PM 628 **Increasing condensed corn distillers solubles alters the rumen microbiome of beef cattle.**
*J. C. McCann**¹, *S. A. Alqarni*¹, *J. R. Segers*², *D. W. Shike*¹, and *J. J. Looor*¹, ¹*University of Illinois at Urbana-Champaign,* ²*University 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**¹, *M. A. Steele*², *P. Azevedo*¹, *M. Carson*², *J. C. Plaizier*¹, *H. Derakhshani*¹, and *E. Khafipour*^{1,3}, ¹*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada,* ²*Nutreco Canada Agresearch, Guelph, ON, Canada,* ³*Department 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**¹, *S. Li*¹, *J. C. Plaizier*¹, and *E. Khafipour*², ¹*Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada,* ²*Department of Medical Microbiology and Infectious Diseases, Winnipeg, MB, Canada.*



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- *Applied Animal Genomics: Results from the Field*, Alison L. Van Eenennaam, Kent A. Weigel, Amy E. Young, Matthew A. Cleveland, Jack C.M. Dekkers
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| Carcass Wt (lb) | 202.5 | 205.2 | 210.2 |
| FCR | 2.58 | 2.62 | 2.58 |
| IOFC (\$/pig) | - | \$1.59 | \$4.84 |

TRIAL 2

1248 pigs w/flu fed 150 ppm Cu fed 120 Days

| \$91/cwt LW | Control | IBc |
|-----------------|---------|---------------|
| Live Wt (lb) | 278.1 | 284.3 |
| Carcass Wt (lb) | 207.9 | 213.2 |
| FCR | 2.68 | 2.64 |
| IOFC (\$/pig) | - | \$3.91 |



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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POSTER PRESENTATIONS

Exhibit Hall AB

Animal Health: Calf Health

- 854 T001 **Immune status of dairy heifer calves in the northern plains of Costa Rica. Year III.**
*J. A. Elizondo-Salazar^{*1}, J. J. Arroyo-Arroyo², J. Sanchez-Salas³, and J. Heinrichs⁴, ¹Estación Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias., Universidad de Costa Rica, Costa Rica, ²Universidad de Costa Rica, San José, Costa Rica, ³Cooperativa de Productores de Leche Dos Pinos R.L, San Jose, Costa Rica, ⁴The Pennsylvania State University, University Park.*
- 855 T002 **Passive transfer of immunity of dairy calves in the central northern region of Costa Rica.**
*J. A. Elizondo-Salazar^{*1}, O. A. Vargas-Villalobos¹, L. Noguera-Solera², and J. Heinrichs³, ¹Estación Experimental Alfredo Volio Mata. Facultad de Ciencias Agroalimentarias., Universidad de Costa Rica, Costa Rica, ²Cooperativa de Productores de Leche Dos Pinos R.L, Alajuela, Costa Rica, ³The Pennsylvania State University, University Park.*
- 856 T003 **Effects of added spray-dried whole colostrum and spray-dried plasma on veal calf health and performance.**
D. Wood^{}, R. Blome, and J. Sowinski, Animix, Juneau, WI.*
- 857 T004 **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.**
*L. E. Hulbert^{*1}, J. A. Noel², S. C. Trombetta¹, S. R. Montgomery¹, G. A. Hanzlicek³, and B. J. Bradford¹, ¹Department of Animal Sciences and Industry, Kansas State University, Manhattan, ²Kansas State University, Manhattan, ³Diagnostic Medicine Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan.*
- 858 T005 **Effects of Celmanax supplementation to prepartum dairy cows on colostrum quality and the subsequent growth and health of their calves.**
*C. Campos-Granados^{*1}, A. Rojas-Bourrillon¹, and C. C. Elrod², ¹University of Costa Rica, San Jose, Costa Rica, ²Vi-COR, Inc., Mason City, IA.*
- 859 T006 **Maternal energy status during mid-gestation affects the immune response in the resultant beef offspring.**
*A. R. Taylor^{*1}, D. A. Mohrhauser¹, R. Neiger¹, E. J. Blom¹, K. R. Underwood¹, R. H. Pritchard¹, A. E. Wertz-Lutz², B. P. Holland³, and A. D. Weaver⁴, ¹South Dakota State University, Brookings, ²ADM Alliance Nutrition, Inc., Quincy, IL, ³Merck, Volga, SD, ⁴South Dakota State University, Rapid City.*
- 860 T007 **Comparison of ivermectin and extended-release eprinomectin deworming treatment on stocker and subsequent feedlot performance and carcass characteristics of fall-born Angus heifers.**
*C. A. Clark^{*1}, B. J. Dedrickson², J. L. Sorensen², and P. J. Gunn³, ¹Armstrong Memorial Research and Demonstration Farm, Iowa State University, Lewis, ²Merial, Duluth, GA, ³Iowa State University, Ames.*
- 861 T008 **Effect of rumen and fecal inocula from calves fed either milk replacer or whole milk fed on intestinal cells and digestive tract microbiota.**
*M. Terré^{*1}, S. Genís¹, C. Yunta¹, A. Bach², and A. Arís¹, ¹IRTA, Caldes de Montbui, Spain, ²Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.*
- 862 T009 **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.**
A. L. Robinson^{}, L. L. Timms, K. Stalder, and H. D. Tyler, Iowa State University, Ames.*
- 863 T010 **Relationship between birth weight and calving ease with passive transfer of immunoglobulins in neonatal beef calves.**
*J. J. Gaspers^{*1}, G. Stokka², B. W. Neville³, and C. R. Dahlen¹, ¹North Dakota State University, Fargo, ²North Dakota State University, Cooperstown, ³North Dakota State University, Streeter.*

ASAS Undergraduate Student Poster Competition

- 885 T011 **Effects of supplementing Holstein heifers with dietary melatonin during late gestation on serum antioxidant capacity and anti-Müllerian hormone of offspring.**
B. O. Fleming^{}, K. E. Brockus, C. G. Hart, and C. O. Lemley, Mississippi State University, Mississippi State.*

- 886 T012 **Effects of electrostatic particle ionization on hog barn air quality, emissions and pig growth performance.**
K. N. Card¹, J. A. De Jong¹, J. M. DeRouche¹, P. J. Tomlinson¹, M. J. Baumgartner², and Z. Liu¹, ¹Kansas State University, Manhattan, ²BEI Ag Solutions, Olivia, MN.
- 887 T013 **Effects of different cooling interventions on stationary livestock trailers at a commercial packing plant.**
M. Heiller¹, L. Edwards-Callaway², R. Bailey³, N. Pudenz⁴, M. Klassen⁴, M. J. Ritter⁵, A. Dezeeuw⁴, and P. J. Rincker⁶, ¹Iowa State University, Ames, ²JBS, Greeley, CO, ³JBS, Marshalltown, IA, ⁴Elanco, Greenfield, IN, ⁵Elanco Animal Health, Bondurant, IA, ⁶Elanco Animal Health, Dahinda, IL.
- 888 T014 **Effects of poor maternal nutrition during gestation on gene expression in liver of offspring.**
K. K. McFadden^{}, M. L. Hoffman, K. N. Peck, S. A. Reed, S. A. Zinn, and K. E. Govoni, Department of Animal Science, University of Connecticut, Storrs.*
- 889 T015 **Interleukin-1 β decreases myoblast fusion in vitro.**
B. E. Sullivan¹ and S. A. Reed², ¹University of Connecticut, Storrs, ²Department of Animal Science, University of Connecticut, Storrs.
- 890 T016 **Sperm maturation (capacitation) but not progesterone reduces the abundance of a receptor for oviduct glycans.**
R. A. Winters^{}, E. Silva¹, and D. J. Miller, University of Illinois at Urbana-Champaign.*
- 891 T017 **Variations in the expression of triglyceride synthesis genes in pigs provided *Enterobacter cloacae*.**
S. J. White¹, J. A. Carroll¹, J. A. Thornton¹, P. R. Broadway², J. G. Wilson¹, and J. R. Donaldson¹, ¹Mississippi State University, Mississippi State, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ³Texas Tech University, Wolfforth.
- 892 T018 **Gene set enrichment analysis of residual feed intake in Hereford cattle.**
L. D. Kidder¹, A. Wojtowicz¹, J. F. Taylor², C. M. Seabury³, K. A. Johnson¹, and H. L. Neibergs¹, ¹Washington State University, Pullman, ²University of Missouri, Columbia, ³Texas A&M University, College Station.
- 893 T019 **pH fluctuations in the hindgut of horses relative to meal feeding.**
K. M. DeLano¹, T. L. Douthit¹, A. Reeg¹, N. M. Bello¹, M. E. Gordon², and K. Williamson², ¹Kansas State University, Manhattan, ²Purina Animal Nutrition, LLC, Gray Summit, MO.
- 894 T020 **Oral supplementation with vitamin E and fertility in young bulls raised in Brazilian middlewest.**
R. D. Almeida^{}, L. K. Hatamoto-Zervoudakis, W. A. D. S. Marinho, B. H. Tsuneda, F. A. D. P. D. B. Arguello, J. T. Zervoudakis, M. F. Duarte Junior, P. P. Tsuneda, and T. B. Castaldeli, Federal University Of Mato Grosso, Cuiaba, Brazil.*
- 895 T021 **Polymelia in Holstein cattle.**
K. D. Moss¹, F. Avila², B. M. Marron³, T. Raudsepp², J. Beever³, M. Neupane⁴, S. Parish⁴, J. Kiser⁴, B. Cantrell⁴, and H. L. Neibergs⁴, ¹Washington State University, Pullman, WA, ²Texas A&M University, College Station, ³University of Illinois at Urbana-Champaign, ⁴Washington State University, Pullman.
- 896 T022 **Effect of supplementation of the middle and freezing with vitamin "E" about: The feasibility and quality of frozen bovine semen.**
R. D. Almeida^{}, L. K. Hatamoto-Zervoudakis, M. F. C. Filho, J. T. Zervoudakis, P. P. Tsuneda, and T. B. Castaldeli, Federal University Of Mato Grosso, Cuiaba, Brazil.*
- 897 T023 **The effects of cutting height and plant maturity on yield and nutritional value of brome forage.**
M. A. Woolsoncroft^{}, S. R. Duncan, A. J. Sexten, and A. K. Sexten, Kansas State University, Manhattan.*
- 898 T024 **Cattle requiring multiple treatments for bovine respiratory disease exhibit decreased capacity to protect against histone cytotoxicity.**
J. Matera^{}, B. K. Wilson, J. Hernandez Gifford, C. R. Krehbiel, and C. A. Gifford, Oklahoma State University, Stillwater.*
- 899 T025 **Development of a non-invasive system for monitoring dairy cattle sleep.**
J. M. Klefot^{}, J. L. Murphy, K. D. Donohue, B. F. O'Hara, M. E. Lhamon, and J. M. Bewley, University of Kentucky, Lexington.*
- 900 T026 **Associative effects of feeding varying levels of soyhulls to lambs consuming grass hay.**
K. M. Ulmer^{}, D. D. Harmon, S. J. Neil, A. K. Revercomb, J. G. Young, L. A. Engel, and M. A. McCann, Virginia Polytechnic Institute and State University, Blacksburg.*
- 901 T027 **Adding post-extraction algal residue (pear) to cattle finishing diets reduces the quantity of fecal volatile chemicals often associated with feedlot malodors.**
H. R. Voegel¹, C. R. Kerth¹, T. A. Wickersham², J. C. Hoffman¹, and T. J. Luckemeyer¹, ¹Texas A&M University Animal Science Department, College Station, ²Texas A&M University, College Station.
- 902 T028 **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. Powell², 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.**
*T. J. Pogreba*¹, S. I. Kehoe¹, K. Dill-McFarland², and G. Suen², ¹University of Wisconsin-River Falls, ²University of Wisconsin-Madison.

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*¹, D. B. Faulkner², and D. W. Shike³, 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.**
*M. C. L. Alves, M. M. Ladeira**, D. R. Casagrande, J. R. R. Carvalho, P. D. Teixeira, L. A. Silveira, A. C. Rodrigues, and L. R. Santos, Universidade Federal de Lavras, Lavras, Brazil.
- 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^{1,2}, M. He¹, Y. Zhao^{1,3}, N. D. Walker⁴, 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*¹ 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*¹, M. Caetano^{1,2}, R. S. Goulart^{1,3}, S. B. Pflanzler⁴, S. Luz e Silva⁵, 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.
- 911 T037 **Using early ultrasound measurements to predict beef carcass quality grade.**
*J. K. Smith**, M. D. Hanigan, S. P. Greiner, and M. A. McCann, Virginia Tech, Blacksburg.
- 912 T038 **Influence of breed on the sensory meat quality and consumer acceptability in extensively reared beef.**
*M. E. A. Canozzi*¹, L. Sphor¹, C. M. Pimentel², J. O. Barcellos³, C. H. E. C. Poli¹, R. D. Sainz⁴, and L. Kindlein¹, ¹Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, ²Universidade de Brasília, Brasília, 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*¹, M. D. Garcia², R. Walker³, 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.**
*K. J. Retallick*¹, T. E. Adcock¹, T. R. Schultz¹, J. M. Bormann¹, R. L. Weaver¹, D. W. Moser¹, and M. D. MacNeil², ¹Kansas State University, Manhattan, ²Delta G, Montana, MT.

Breeding and Genetics: Applications and Methods in Animal Breeding-Dairy II

- 943 T041 **Genome-wide association study on dairy cow mortality in three U.S. regions.**
*S. Tsuruta*¹, I. Misztal¹, and T. J. Lawlor², 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*¹, N. P. P. Macciotta¹, P. Ajmone-Marsan², A. Rossoni³, G. Marras¹, G. Gaspa¹, and C. Dimauro¹, ¹Università di Sassari, Sassari, Italy, ²Università Cattolica del Sacro Cuore, Piacenza, Italy, ³Associazione Nazionale Allevatori Razza Bruna, Bussolengo, Italy.

- 945 T043 **Determination of single nucleotide polymorphisms associated with subclinical ketosis in Jersey cattle.**
R. T. Fugate¹, L. H. Dauten², G. R. Wiggans³, 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. Wright¹, 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-Awemu¹, 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. Shi¹, J. Luo², D. Yao¹, and J. Zhu¹, 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.**
L. Hax^{}, A. Schneider, C. Bespalhok Jacometo, P. Mattei, T. da Silva, G. Farina, and M. Nunes Corrêa, Federal University of Pelotas, Pelotas, Brazil.*
- 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 Tecnológico de Sonora, Ciudad Obregon, Mexico.*

Breeding and Genetics: Application and Methods in Animal Breeding-Poultry

- 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. Fragomeni¹, I. Misztal¹, D. Lourenco¹, I. Aguilar², and R. Hawken³, 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.**
O. T. Abanikannda^{}, O. N. Ottun, and A. O. Leigh, Lagos State University, Ojo-Lagos, Nigeria.*
- 954 T052 **Phenetic classification of six bird species based on the proximate and mineral composition of their eggs.**
O. T. Abanikannda^{}, O. N. Ottun, and A. O. Leigh, Lagos State University, Ojo-Lagos, Nigeria.*
- 955 T053 **Effect of shell thickness on quail chick pip-out at hatching.**
O. T. Abanikannda^{}, A. O. Leigh, and O. N. Ottun, Lagos State University, Ojo-Lagos, Nigeria.*
- 956 T054 **Weight changes in quail eggs during incubation.**
O. T. Abanikannda^{}, O. N. Ottun, and A. O. Leigh, Lagos State University, Ojo-Lagos, Nigeria.*

Companion Animals: Companion Animal Nutrition

- 969 T055 **Influence of velocity on Weimaraner trotting stride mechanics.**
L. Carlisle¹, M. C. Nicodemus¹, and K. Slater², 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. Beloshapka¹, 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. Berendt¹, A. K. Shoveller², M. Guevara², and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Procter & Gamble Pet Care, Mason, OH.

- 973 T059 **Association of idiopathic epilepsy with a novel locus in the Belgian Shepherd.**
A. M. Oberbauer and J. M. Belanger, University of California-Davis.*
- 974 T060 **Amino acid and mineral concentrations of whole grains and grain byproducts used in pet foods.**
A. N. Beloshapka¹, P. R. Buff², and K. S. Swanson³, ¹Department of Animal Sciences, University of Illinois at Urbana-Champaign, ²The Nutro Company, Franklin, TN.
- 975 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. McFadden^{1,2}, ¹West Virginia University, Morgantown, ²Johns Hopkins University, Baltimore, MD.
- 976 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.*
- 977 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.
- 978 T064 **Use of gelatin as a strengthening agent in dry extruded pet food.**
A. Simmons¹, 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 T065 **Incidence of thermotolerant bacteria and spores on selected midwest dairy farms.**
K. P. Buehner¹, S. Anand², and A. D. Garcia¹, ¹Dairy Science Department, South Dakota State University, Brookings, ²Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
- 1008 T066 **Withdrawn by author.**
- 1009 T067 **Mechanisms and ways for improving heat stability of micellar casein concentrates.**
S. G. Sutariya, H. G. Patel, and G. H. Meletharayil, South Dakota State University, Brookings.*
- 1010 T068 **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 T069 **Induction of pitting on stainless steel 304 and 316 by bacillus sporothermodurans.**
S. Gupta¹ and S. Anand², ¹South Dakota State University, Brookings, ²Midwest Dairy Foods Research Center, South Dakota State University, Brookings.
- 1012 T070 **Protective effect of lactic acid bacteria against H₂O₂-induced oxidative stress in Caco-2 cells.**
S. Liu¹, C. Man^{2,3}, X. Peng¹, W. Zhou¹, M. Guo⁴, and Y. Jiang^{1,2,3}, 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 T071 **Fatty acid composition of cultured butter with probiotic *Lbc. Acidophilus* la-5 produced in winter time.**
O. Tsisaryk¹, L. Musiy¹, O. Golubets², and S. Shkaruba², ¹Lviv National University of Veterinary Medicine and Biotechnologies, Lviv, Ukraine, ²Ukrmetrstandart, Kyiv, Ukraine.
- 1014 T072 **Development of dairy products enriched with healthy lipids.**
J. Moats^{1,2}, M. Epp², and D. Christensen², ¹O&T Farms Ltd., Regina, SK, Canada, ²University of Saskatchewan, Saskatoon, SK, Canada.
- 1015 T073 **Evaluation of dulce de leche produced with different starch.**
F. Silva¹, H. Ferreira², M. Pinto³, R. Stephani², A. Carvalho¹, and Perrone¹, ¹Federal University of Viçosa, Viçosa, Brazil, ²Gemacom Tech, Juiz de Fora, Brazil, ³Federal University of Viçosa, Viçosa, Brazil.
- 1016 T074 **Rheological behaviors of edible casein-based packaging films under extreme environmental conditions, using humidity-controlled dynamic mechanical analysis.**
S. Akkurt¹, L. M. Bonnaillie², H. Zhang¹, and P. M. Tomasula², 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 T075 **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.*

- 1018 T076 **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

- 1037 T077 **Potential bull buyers perceive increased value to their operations when purchasing bulls from the Florida Bull Test.**
D. D. Henry^{}, V. R. G. Mercadante, F. M. Ciriaco, P. M. Mercadante, T. Schulmeister, N. DiLorenzo, and G. C. Lamb, University of Florida, Marianna.*
- 1038 T078 **300 D Grazing Discovery Farm.**
*T. R. Troxel^{*1}, M. S. Gadberryl¹, J. A. Jennings¹, S. M. Jones¹, K. J. Simon¹, J. G. Powell², D. S. Hubbell, IIF³, and J. D. Tucker³, ¹Department of Animal Science, University of Arkansas, Little Rock, ²Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, ³University of Arkansas Livestock and Forestry Research Station, Batesville.*
- 1039 T079 **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.*
- 1040 T080 **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. Krawczel^{*1}, 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. Nickerson⁵, A. DeVries⁶, 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.*
- 1041 T081 **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. Krawczel^{*1}, R. A. Almeida¹, M. Fly¹, S. M. Schexnayder¹, L. E. Garkovich³, 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.*
- 1042 T082 **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.*
- 1043 T083 **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. Dahlke², ¹Kansas State University, Colby, ²Iowa State University, Ames.*
- 1044 T084 **Effect of on-farm dairy Beef Quality Assurance (BQA) training on worker knowledge of BQA and welfare-related practices.**
*A. E. Adams^{*1}, J. K. Ahola¹, M. Chahine², A. L. Ohlheiser¹, and I. N. Roman-Muniz¹, ¹Colorado State University, Fort Collins, ²University of Idaho, Twin Falls.*
- 1045 T085 **Monetary impact of heat stress on dairy and beef industries in the US.**
B. Scharf^{}, D. Liu, J. M. Leath, S. A. Kelly, T. X. Nguyen, Y. Shi, M. Schrader, G. D. Martin, P. A. Eichen, and D. E. Spiers, University of Missouri, Columbia.*
- 1046 T086 **Phosphorus status of grazing beef cattle in Virginia's Chesapeake Bay watershed.**
S. J. Neil¹, K. J. Mize, D. D. Harmon, J. K. Smith, and M. A. McCann, Virginia Polytechnic Institute and State University, Blacksburg.
- 1047 T087 **Assessment of farm nutrient management and phosphorus supplementation practices of beef cattle producers in Virginia's Chesapeake Bay watershed.**
S. J. Neil^{}, K. J. Mize, D. D. Harmon, J. K. Smith, and M. A. McCann, Virginia Polytechnic Institute and State University, Blacksburg.*
- 1048 T088 **An economic impact decision support tool for farm specific estimation of not covering horizontal silos storing corn silage.**
B. A. Wadsworth^{}, D. M. Amaral-Phillips, and J. M. Bewley, University of Kentucky, Lexington.*

- 1049 T089 **A producer assessment of precision dairy farming technology use, usefulness, and pre-purchase considerations.**
M. R. Borchers and J. M. Bewley, University of Kentucky, Lexington.*
- 1050 T090 **Sustainable year-round forage production and grazing/browsing management education program.**
U. Karki¹, L. B. Karki², and N. Gurung¹, ¹Tuskegee University, Tuskegee, AL, ²PadmaDal Memorial Foundation, Auburn, AL.
- 1051 T091 **Assessment of the potential for compost bedded pack barns in sustainable organic dairy farming systems.**
H. A. Mussell¹, J. L. Taraba, K. L. Jacobsen, and J. M. Bewley, University of Kentucky, Lexington.
- 1052 T092 **Development and utilization of the AI Cowculator: A decision-aid application to determine whether to utilize fixed-time artificial insemination (TAI) or purchase herd sires for natural service.**
V. R. G. Mercadante¹, D. D. Henry¹, F. M. Ciriaco¹, P. M. Mercadante¹, J. C. Rodgers², N. DiLorenzo¹, and G. C. Lamb¹, ¹University of Florida, Marianna, ²Zoetis, Florham Park, NJ.

Food Safety

- 1053 T093 **Regulatory process for food additives used in animal foods.**
S. A. Benz¹, R. Christensen², and M. G. Alewynse², ¹Center for Veterinary Medicine, FDA, Woodbine, MD, ²Nutrition & Labeling Team, Center for Veterinary Medicine, FDA, Rockville, MD.
- 1054 T094 **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.*
- 1055 T095 **Characterization of Shiga toxin-producing *Escherichia coli* isolated from feces of cattle in commercial feedlots.**
T. W. Alexander¹, T. A. McAllister¹, K. Stanford², T. Reuter², and E. Topp³, ¹Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Alberta Agriculture and Rural Development, Lethbridge, AB, Canada, ³Agriculture and Agri-Food Canada, London, ON, Canada.
- 1056 T096 **Development of an ultrasensitive aptasensor for the detection of aflatoxin B1.**
X. Guo^{1,2,3}, F. Wen^{1,4}, N. Zheng^{1,3,4}, Q. Luo², and J. Wang^{1,4}, ¹Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, ²College of Animal Science and Technology, Xinjiang Agricultural University, Urumchi, 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.
- 1057 T097 **Cytotoxicity induced by ochratoxin A, zearalenone and α -zearalenol: Effects of individual and combined treatment.**
H. Wang^{1,2,3,4}, N. Zheng^{1,2,3}, S. Li^{1,2,3}, F. Li⁴, and J. Wang^{1,2,3}, 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.
- 1058 T098 **Efficacy of various levels of mycotoxin adsorbent to reduce aflatoxin M1 levels in milk of lactation cows fed aflatoxin B1.**
M. Dehghan Banadaky¹, R. Motameny², and S. Parhizkar³, ¹Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, ²Azad University, Tehran, Iran, ³University of Tehran, Karaj, Iran.
- 1059 T099 **Inhibitory activity of *Staphylococcus aureus* against *Lactococcus* spp. isolated from artisanal Minas cheese.**
F. F. Angelo¹, L. M. Fonseca^{2,3}, and M. A. V. P. 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.
- 1060 T100 **Microbiological quality and safety of commercial local yogurt products in Giza Governorate- Egypt.**
M. M. Motawee¹ and S. A. Ibrahim², ¹National Organization for Drug Control and Research, Giza- Egypt, Egypt, ²North Carolina A&T State University, Greensboro.
- 1061 T101 **Stability of 10 β -lactam antibiotics in raw milk under different storage conditions.**
H. Wang^{1,2,3}, N. Zheng^{1,3}, F. Wen^{1,3}, H. Wang², and J. Wang^{1,3}, 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.
- 1062 T102 **Risk warning of veterinary drug residues in raw milk based on Shewhart Control Chart.**
R. Han^{1,2,3}, N. Zheng^{3,4}, Z. Yu², X. Qu^{1,3,4}, S. Li^{1,3,4}, Y. Zhang^{1,3,4}, X. Zhou^{1,3}, and J. Wang^{1,3,4}, 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).**
M. Würzbach, E. Holl, and B. Eckel, Dr. Eckel GmbH, Niederrissen, Germany.*
- 1064 T104 **Effect of lysozyme or antibiotics on fecal zoonotic pathogens in nursery pigs.**
J. E. Wells, E. D. Berry, N. Kalchayanand, L. A. Rempel, and W. T. Oliver, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.*
- 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, 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.**
M. E. A. Canozzi¹, J. Magero¹, R. C. T. Mesquita¹, J. O. Barcellos², D. Streit Júnior¹, and L. Kindlein¹, ¹Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, ²Universidade Federal Do Rio Grande Do Sul, Porto Alegre, Brazil.
- 1067 T107 **Identification of horsemeat presence in beef commercial butchereries 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. Beck¹, 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. Aguiar¹, O. F. R. Cunha¹, A. C. J. Pereira³, P. D. S. Ferreira¹, and C. B. Zacciti¹, ¹University of Florida/IFAS Range Cattle Research and Education Center, Ona, ²Oregon State University-EOARC Burns, ³Elanco Animal Health, Greenfield, IN.
- 1099 T112 **Polymers molecularly imprinted with ergotamine: Recognition properties to template and related alkaloids.**
M. B. Kudupojee¹, E. S. Vanzant², A. Yiannikouris³, K. A. Dawson³, and K. R. McLeod², ¹Alltech-University of Kentucky Nutrition Research Alliance, Lexington, ²University of Kentucky, Lexington, ³Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.
- 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 Filho^{1,2}, R. M. Martins³, T. F. Bernardes⁴, J. A. G. Azevedo⁵, and O. G. Pereira², ¹Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, ²Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ³Department of Animal Sciences, University of Florida, Gainesville, ⁴Universidade Federal de Lavras, Lavras, Minas Gerais, Brazil, ⁵Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil.
- 1101 T114 **Evaluation of nutrient intake, in situ disappearance, and fermentation characteristics of fermented Chaffhay with alfalfa hay and prairie grass hay in steers.**
K. K. Guatam, B. S. Obeidat, 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. Novianti^{1,2}, T. J. Bingham¹, J. S. Eun¹, D. R. ZoBell¹, B. L. Waldron³, and M. D. Peel³, 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.

Growth & Development Poster I

- 1161 T117 **Body weight adjustments for feeding status and pregnant or non-pregnant condition in beef cows*.**
M. P. Gionbelli^{1,2}, M. S. Duarte¹, S. C. Valadares Filho^{1,2}, E. Detmann^{1,2}, M. L. Chizzotti^{1,2}, 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.
- 1162 T118 **Changes in performance and immune response in dairy calves offered milk replacer or raw milk.**
C. Yunta¹, A. Bach^{2,3}, and M. Terré¹, ¹IRTA, Caldes de Montbui, Spain, ²Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, ³ICREA, Barcelona, Spain.
- 1163 T119 **Comparison of albumin depleted and whole serum samples for biomarker identification.**
J. K. Grubbs*, C. K. Tuggle, J. C. M. Dekkers, and S. M. Lonergan, Iowa State University, Ames.
- 1164 T120 **Comparison of radial immunodiffusion and enzyme-linked immunosorbant assay for quantification of bovine IgG in colostrum and plasma.**
A. M. Smith, S. L. Gelsinger*, C. M. Jones, and A. J. Heinrichs, The Pennsylvania State University, University Park.
- 1165 T121 **Effect of fish oil and thyme on nutrient digestibility, chewing activity, and rumen metabolites of Mahabadi goat kids.**
A. Hozhabri¹, M. Ganjkhanlou¹, A. Zali¹, A. Emami², A. Akbari-Affani³, and M. Dehghan-Banadaky¹, ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.
- 1166 T122 **Effect of heat treatment and bacterial population of colostrum on passive transfer of IgG.**
S. L. Gelsinger* and A. J. Heinrichs, The Pennsylvania State University, University Park.
- 1167 T123 **Effect of omega-3 fatty acids and thyme essence on carcass traits of Mahabadi kids.**
A. Hozhabri¹, A. Zali¹, M. Ganjkhanlou¹, A. Emami², A. Akbari-Affani³, and M. Dehghan-Banadaky¹, ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.
- 1168 T124 **Effect of stage of pregnancy, maternal feeding level and fetal sex on fetal gut length in Holstein×Zebu cows*.**
T. R. Gionbelli¹, P. P. Rotta¹, C. M. Veloso^{1,2}, M. P. Gionbelli^{1,2}, S. de Campos Valadares Filho^{1,2}, 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.
- 1169 T125 **Intrauterine position affects fetal weight and crown-rump length throughout gestation.**
Y. D. Jang*, Y. L. Ma, and M. D. Lindemann, University of Kentucky, Lexington.
- 1170 T126 **Milk diet but not quercetin intake affects postprandial glucose metabolism in neonatal calves.**
J. Gruse¹, S. Görs¹, W. Otten¹, J. M. Weitzel¹, S. Wolfram², 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.
- 1171 T127 **Ontogenic gene expression profiles in pig hepatogenesis.**
J. Kwintkiewicz¹, T. J. Caperna¹, T. G. Ramsay¹, H. D. Guthrie¹, C. C. Talbot², L. L. Schreier¹, and L. A. Blomberg¹, ¹USDA-ARS-BARC, Beltsville, MD, ²The Johns Hopkins School of Medicine, Baltimore, MD.
- 1172 T128 **Production of bioactive porcine mutant myostatin propeptide/Fc fusion protein in *Escherichia coli*.**
S. B. Lee¹, S. K. Park², and Y. S. Kim¹, ¹University of Hawaii, Honolulu, ²National Institute of Animal Science, RDA, Suwon, South Korea.
- 1173 T129 **Short- and medium-term changes in performance and metabolism of dairy calves offered different amounts of milk replacer.**
C. Yunta¹, M. Terré¹, and A. Bach^{2,3}, ¹IRTA, Caldes de Montbui, Spain, ²ICREA, Barcelona, Spain, ³Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.
- 1174 T130 **Stabilization of intestinal mast cells at weaning improves performance of early-weaned pigs.**
A. Mereu¹, M. G. Tedo¹, J. Charve¹, A. J. Moeser², and I. R. Ipharraguerre¹, ¹Lucta S.A., Montornés del Vallés, Spain, ²North Carolina State University, Raleigh.
- 1175 T131 **The effect of essential oil/botanical product on growth and performance of calves fed milk replacer.**
B. L. Miller¹, T. Earleywine², W. S. Bowen Yoho³, and T. E. Johnson³, ¹Land O'Lakes-Purina Feed LLC, Gray Summit, MO, ²Land O'Lakes Animal Milk Products, Shoreview, MN, ³Land O'Lakes, Inc., Webster City, IA.
- 1176 T132 **The effects of feeding strategy and housing management on intake and growth performance of Holstein calves from birth through weaning.**
H. M. Gauthier¹, S. E. Williams¹, D. M. Shenk¹, C. S. Ballard¹, K. M. Morrill², and H. M. Dann¹, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Cornell University, Ithaca, NY.

- 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. Stoakes¹, A. F. Keating¹, J. W. Ross¹, J. T. Selsby¹, R. P. Rhoads², 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. Duplessis^{1,2}, R. Lacroix², R. I. Cue³, D. E. Santschi², 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 PROTENATIVE SF in combination with LEVU-CELL S.**
D. L. Gaden¹, A. D. Garcia², F. Díaz-Royón², 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. Avenatti, 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. Urschel, 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. Urschel², R. E. Schaeffer¹, and K. M. Brennan¹, 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.**
M. L. Spry, A. C. Smith, D. E. Graugnard, R. E. Schaeffer, and K. M. Brennan, Alltech Inc., Nicholasville, KY.*
- 1202 T140 **The effects of abrupt dietary alterations on equine cecal pH.**
A. Reeg¹, T. Douthit¹, K. M. DeLano¹, M. E. Gordon², 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. Bello¹, M. E. Gordon², 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. Stutts, 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. Whitley¹, R. Kaplan², K. Moulton¹, S. B. Routh¹, R. Franco¹, and R. K. Splan³, 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 diallel cross.**
D. Norris¹, L. Tyasi², 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. Fonseca^{2,3}, M. P. Cerqueira², M. O. Leite², M. C. P. P. Oliveira², R. M. Longo², G. C. Ribeiro², 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.

- 1217 T148 **Reproductive performance in Chilean Holstein dairies by geographic region.**
*F. Arias¹, H. Lopez², R. Krauss¹, and C. F. Vergara^{*1,2}, ¹ABS Chile Ltda, Santiago, Chile, ²ABS Global Inc., DeForest, WI.*
- 1218 T149 **In vitro fermentation and digestion characteristics of shrubs *Leucophyllum frutescens* and *Zanthoxylum fagara* browsed by white-tailed deer (*Odocoileus virginianum Texanus*).**
*A. MS.¹, C. S. MA^{*1}, G. C. M.¹, G. R. H.², and R. L. RG.³, ¹Universidad Juárez del Estado de Durango, Durango, Mexico, ²Universidad Autónoma de Nuevo León, Linares, Nuevo León, Mexico, ³Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Nuevo León, Mexico.*
- 1219 T150 **Characterization of goat foraging and body condition in Jhadol Block, Udaipur, India.**
M. Valentine^{}, Cornell University, Ithaca, NY.*
- 1220 T151 **Characterization of cattle manure value chains in south-central Vietnam.**
*K. C. McRoberts¹, D. Parsons², C. F. Nicholson³, L. V. Nam⁴, and D. J. R. Cherney^{*1}, ¹Cornell University, Ithaca, NY, ²University of Tasmania, Hobart, Australia, ³The Pennsylvania State University, University Park, ⁴Hue University of Agriculture and Forestry, Hue, Vietnam.*
- 1221 T152 **Selenium concentration in blood, milk and urine in grazing Jersey herds in Costa Rica.**
A. Saborio-Montero¹, M. Alfaro-Cascante¹, F. Granados-Chinchilla², and A. Molina-Alvarado¹, ¹Centro de Investigaciones en Nutrición Animal y Escuela de Zootecnia, Universidad de Costa Rica, San José, Costa Rica, ²Centro de Investigaciones en Nutrición Animal, Universidad de Costa Rica, San José, Costa Rica.

Meat Science & Muscle Biology Posters II

- 1250 T153 **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 Nelore cattle.**
M. B. Silva¹, A. M. Jorge², F. D. Resende³, G. R. Siqueira⁴, G. F. Berti⁵, J. M. B. Benatti⁶, 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-Unifeb, Barretos, Brazil, ⁶Universidade Estadual Paulista-FCAV, Jaboticabal, Brazil.
- 1251 T154 **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.
- 1252 T155 **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.
- 1253 T156 **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-Banadaky³, ¹University of Tehran, Karaj, Iran, ²Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, ³University of Tehran, Tehran, Iran.
- 1254 T157 **Natural additives in the diet of bulls (Angus vs. Nelore) finished in feedlot: Fatty acids composition.**
C. A. Fugita^{}, R. Prado, I. N. D. Prado, F. Zawadzki, C. Eiras, M. Valero, and R. Passetti, State University of Maringá, Maringá, Brazil.*
- 1255 T158 **Effects of tannins extract addition in to the diet on physicochemical characteristics of meat from finishing bulls.**
*B. O. Lopez^{*1}, M. A. Mariezcurrena², M. D. Mariezcurrena², and R. Barajas³, ¹Universidad Autónoma del Estado fde México, Toluca, Mexico, ²Universidad Autónoma de Estado de México, Toluca, Mexico, ³FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico.*
- 1256 T159 **Effect of polymorphisms in the DECRI and LDHB genes on beef color stability.**
J. D. Neal^{}, J. W. Buchanan, and R. G. Mateescu, Oklahoma State University, Stillwater.*
- 1257 T160 **Meat quality in yearling bulls fattened in three production systems from Mexican dry tropic.**
G. Corral-Flores¹, C. Rodríguez-Muela¹, A. Flores-Mariñelarena¹, J. A. Ramírez-Godínez¹, F. S. Solorio², and C. R. Duran³, ¹Universidad Autónoma de Chihuahua, Chihuahua, Mexico, ²Universidad Autónoma de Yucatán, Merida, Mexico, ³Universidad Autónoma de Chihuahua, Chihuahua, Mexico.

- 1258 T161 **Effect of diet without forage on beef quality in *Bos taurus* and *Bos indicus* young bulls.**
M. L. Chizzotti¹, P. D. Teixeira², M. M. Ladeira², J. R. R. Carvalho², K. C. Busato², R. A. Gomes², A. C. Rodrigues², and M. C. L. Alves², ¹Universidade Federal de Viçosa, Viçosa, Brazil, ²Universidade Federal de Lavras, Lavras, Brazil.
- 1259 T162 **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.
- 1260 T163 **Carcass traits and meat quality of goat kids supplemented with chromium-methionine.**
A. Emami¹, M. Ganjkanlou², A. Zali², and M. Dehghan-Banadaky², ¹University of Birjand, Birjand, Iran, ²University of Tehran, Tehran, Iran.
- 1261 T164 **Effect of high level of copper on meat quality in Iranian Mahabadi goat kids.**
M. Ganjkanlou¹, A. Zali¹, A. Hatefi¹, A. Emami², A. Akbari-Afjani³, and M. Dehghan-Banadaky¹, ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.
- 1262 T165 **Effect of fish oil and thyme on meat quality and meat oxidative stability of Mahabadi kids.**
A. Hozhabri¹, M. Ganjkanlou¹, A. Zali¹, A. Emami², A. Akbari-Afjani³, and M. Dehghan-Banadaky¹, ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.
- 1263 T166 **Effect of fish oil and thyme on performance, blood metabolites, meat sensory of Mahabadi kids.**
A. Hozhabri¹, A. Zali¹, M. Ganjkanlou¹, A. Emami², A. Akbari-Afjani³, and M. Dehghan-Banadaky¹, ¹University of Tehran, Tehran, Iran, ²University of Birjand, Birjand, Iran, ³University of Zanjan, Zanjan, Iran.

Milk Protein and Enzymes

- 1278 T167 **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.
- 1279 T168 **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. Ladeira¹, M. O. Leite², C. F. A. M. Penna², S. A. Diniz¹, M. X. Silva¹, J. P. Haddad¹, L. M. Fonseca¹, and M. P. Cerqueira², ¹Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, ²Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil.
- 1280 T169 **Comparative analysis of immunoglobulin and lactoferrin in bovine milk from different species.**
J. T. Chen^{1,2}, 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.
- 1281 T170 **Effect of thermal conditions on the concentration of biological active whey protein in cow milk.**
J. T. Chen^{1,2}, 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.
- 1282 T171 **Effect of extraction methods on the 2-DE map of whey proteome in cow milk.**
J. T. Chen^{1,2}, L. Ma², D. P. Bu², Y. X. Yang², and J. Q. Wang^{1,2}, ¹Heilongjiang Bayi Agricultural University, Daqing, China, ²State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
- 1283 T172 **Effect of metabolic acidosis in lactating dairy cows on concentration of milk proteins.**
C. M. de Magalhães Rodrigues Martins, K. C. Welter, M. A. Arcari, C. A. Fernandes de Oliveira, J. L. Golçalves, V. L. Schvartzaid, A. Saran Neto^{}, and M. Veiga dos Santos, University of São Paulo, Pirassumunga, Brazil.*
- 1284 T173 **Process optimization for production of whey protein hydrolysate from cheese whey having antioxidant property.**
A. S^{}, B. Mann, R. Sharma, and R. Bajaj, National Dairy Research Institute, Karnal, India.*
- 1285 T174 **The effect of heat and extraction technique on β -lactoglobulin hydrolysis.**
C. Kembel¹ and R. Jimenez-Flores², ¹California Polytechnic State University, San Luis Obispo, ²Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo.
- 1286 T175 **Evaluation of the viscosity profile during simulated conditions of thermal processing.**
A. Souza¹, L. C. Junior², R. Stephani¹, M. Pinto³, A. Carvalho⁴, Perrone⁴, and R. Costa², ¹Gemacom Tech, Juiz de Fora, Brazil, ²EPAMIG, Juiz de Fora, Brazil, ³Federal University of Viçosa, Viçosa, Brazil, ⁴Federal University of Viçosa, Viçosa, Brazil.
- 1287 T176 **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. Pinto², Perrone¹, and A. Carvalho¹, ¹Federal University of Viçosa, Viçosa, Brazil, ²Federal 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. Hofstetter², ¹BIOMIN Holding GmbH, Herzogenburg, Austria, ²Biomin 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. Kim¹, ¹North Carolina State University, Raleigh, ²Bolsista do, CNPq, Brazil.*
- 1316 T179 **Effects of dietary supplementation of selenium-enriched probiotics on productive performance and intestinal microflora of weanling piglets raised under high ambient temperature.**
*C. Lv¹, T. Wang^{*2}, S. F. Liao², and K. Huang¹, ¹Nanjing Agricultural University, Nanjing, Jiangsu, China, ²Mississippi 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. Lizardo², J. Brufau², and A. Awati¹, ¹DuPont Industrial Biosciences-Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom, ²IRTA-Mas de Bover, Constantí, Tarragona, Spain.*
- 1318 T181 **Effects of star anise (*Ilicium verum*) on growing performance and antioxidant status of sows and nursing piglets.**
*G. Y. Wang¹, C. Yang², Y. X. Guo¹, Z. Yang^{*3}, and Y. Wang⁴, ¹College of Animal science, Shandong Agricultural University, Tai-an, China, ²College of Life Science, Shandong Agricultural University, Taian, China, ³College of Animal Science, Shandong Agricultural University, Taian, China, ⁴Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.*
- 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. Chi¹, S. Ching¹, R. Cravens¹, and O. Adeola², ¹Amlan International, Chicago, IL, ²Purdue University, West Lafayette, IN.*
- 1320 T183 **Nutrient digestibility of rice bran, with or without exogen enzymes, for weaned piglets.**
J. C. Dadalt^{}, G. D. V. Polycarpo, C. Gallardo, P. D. A. P. Ribeiro, B. Alves, and M. A. D. T. Neto, 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. Vigers^{*1}, T. Sweeney², D. N. Doyle¹, C. J. O'Shea¹, and J. V. O'Doherty¹, ¹School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, ²College 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 noxious gas emission in weanling pigs.**
M. M. Hossain^{}, H. L. Li, and I. H. Kim, 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, A. Hosseindoust, and I. H. Kim^{}, 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, S. D. Upadhyaya, and I. H. Kim^{}, 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, E. Balolong Jr., and I. H. Kim^{}, 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 microflora and noxious gas emission in sows and piglets.**
M. Jung, Y. Lei, and I. H. Kim^{}, 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 microflora and slurry noxious gas emission in broiler chickens.**
H. Beak, H. L. Li, and I. H. Kim^{}, Department of Animal Science, Dankook University, Cheonan, South Korea.*
- 1328 T191 **Evaluation of Korean aged garlic extract (AGE) by *Leukonostoc 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, S. D. Upadhyaya, and I. H. Kim^{}, 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 nutrifen on growth performance, nutrient digestibility, blood profiles, fecal microflora, fecal gas emission, and fecal score in weanling 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 morbifera* 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 Alarcon¹, J. P. Steibel^{2,3}, L. S. Antonio⁴, R. Lunedo¹, G. Baldissera¹, 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. Dadalt, P. D. A. P. Ribeiro, G. D. V. Polycarpo, C. Gallardo, G. D. Ricci, and M. A. D. T. Neto*, University of São Paulo-USP, Pirassununga, 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 microbiota, 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 fecalis* and enzyme supplementation on piglet response to an *Escherichia coli* (K88) challenge.**
H. S. Chen^{1,2}, D. E. Velayudhan, A. K. Li³, Y. Z. Feng², D. Liu², 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 extruded feed for farmed saltwater crocodiles (*C. porosus*).**
M. Francis¹, T. J. Wester, P. C. H. Morel¹, and B. H. P. Wilkinson²*, 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.
- 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. Horn, 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. Castillejos², V. F. Buttow Roll³, M. Rivero⁴, J. A. Moreno Muñoz⁴, and S. Martín-Orúe¹, 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. Bruneau², ¹Pancosma, Geneva, Switzerland, ²Pancosma, Saint-Hyacinthe, QC, Canada.

- 1344 T207 **Zilpaterol hydrochloride improves growth performance of meat producer Japanese quails.**
H. Dávila-Ramos and J. C. Robles-Estrada, Universidad Autonoma de Sinaloa, Culiacan, Mexico.*
- 1345 T208 **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.*
- 1346 T209 **Mannan oligosaccharides and β -glucan in diets for weaned piglets.**
U. V. Luna¹, J. G. Caramori Junior¹, G. S. S. Corrêa¹, S. D. Assis¹, E. Brusamarello¹, J. C. R. Ribas¹, M. A. Souza¹, A. B. Corrêa¹, B. S. Vieira¹, E. Rovaris², and S. A. P. V. Barbosa¹, ¹Federal University of Mato Grosso, Cuiabá, Brazil, ²Federal University of Mato Grosso, Cuiaba, Brazil.

Physiology and Endocrinology: Physiology and Endocrinology II

- 1400 T210 **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. Mendonça¹, F. M. Mantelo¹, and J. S. Stevenson², ¹Department of Animal Sciences and Industry, Kansas State University, Manhattan, ²Kansas State University, Manhattan.
- 1401 T211 **Luteolysis and pregnancy outcome in 5-day Resynch dairy cows after 1 or 2 injections of prostaglandin F_{2α}.**
J. S. Stevenson, S. L. Pulley, and S. L. Hill, Kansas State University, Manhattan.*
- 1402 T212 **Now being presented in the Physiology & Endocrinology Symposium, Wednesday, July 23 at 4:30 pm.**
- 1403 T213 **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, ¹Department of Dairy Science, University of Wisconsin-Madison, ²University of Wisconsin-Madison.
- 1404 T214 **Influence of fat supplementation on LH pulses and fsh concentration in Nellore Heifers.**
R. S. Cipriano¹, M. C. V. Migue², H. F. Costa², J. S. Souza², L. M. Pavanello², M. A. Maioli², D. Giraldo-Arana², D. M. Pinheiro², F. M. Abreu³, L. H. Cruppe³, M. L. Day³, and G. Nogueira², ¹UniSalesiano, Araçatuba, Brazil, ²UNESP, Araçatuba, Brazil, ³The Ohio State University, Columbus.
- 1405 T215 **Pregnancy outcomes based on pregnancy-associated glycoproteins in milk and serum during the first trimester of gestation in Holstein dairy cows.**
A. Ricci^{1,2}, P. D. Carvalho³, M. C. Amundson¹, S. Koller⁴, R. H. Fourdraine⁵, L. Vincenti², and P. M. Fricke¹, ¹Department 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.
- 1406 T216 **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. Barragan¹, G. M. Schuenemann¹, and M. L. Day², ¹Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, ²The Ohio State University, Columbus.
- 1407 T217 **Rams treated with testosterone induce sexual activity in anovulatory Dorper adult sheep.**
L. M. Tejada, Universidad Autónoma Agraria Antonio Narro, Torreón, Mexico.*
- 1408 T218 **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, ¹Oklahoma State University, Stillwater, ²Oklahoma State University Center for Veterinary Health Sciences, Stillwater.
- 1409 T219 **Interaction between a mammary immune response to lipopolysaccharide and luteal function in lactating dairy cows.**
J. Luetzgenau¹, O. Wellnitz^{1,2}, R. M. Bruckmaier², and H. Bollwein¹, ¹Clinic of Reproductive Medicine, Vetsuisse Faculty University of Zurich, Zurich, Switzerland, ²Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland.
- 1410 T220 **Influence of maternal nutrient restriction and realimentation on vascularity of bovine placentomes.**
B. R. Mordhorst¹, L. E. Camacho², C. O. Lemley³, P. P. Borowicz¹, D. A. Redmer¹, K. C. Swanson¹, and K. A. Vonnahme¹, ¹North Dakota State University, Fargo, ²University of Arizona, Tucson, ³Mississippi State University, Mississippi State.
- 1411 T221 **Lysophosphatidic acid (LPA) activates ERK1/2-P90RSK signaling in porcine trophoblast cells.**
J. Kim, J. Lee, S. Jung, H. Bang, Y. Sung, Y. Choi, and J. Kim, Dankook University, Cheonan, South Korea.*
- 1412 T222 **Relationship between dry-matter intake and subclinical endometritis in healthy postpartum dairy cows.**
A. H. Souza¹, P. D. Carvalho², A. R. Dresch³, L. M. Vieira⁴, K. S. Hackbart³, R. D. Shaver², and M. C. Wiltbank², ¹University 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.

- 1413 T223 **The effect of the initial GnRH and dose of PGF_{2α} on pregnancy rate to TAI in beef heifers submitted to the 5-d CO-Synch + CIDR program.**
L. H. Cruppe¹, S. L. Lake², F. M. Abreu¹, S. G. Kruse³, S. L. Bird³, K. Heaton⁴, B. R. Harstine¹, M. L. Day¹, and G. A. Bridges³, ¹The Ohio State University, Columbus, ²University of Wyoming, Laramie, ³University of Minnesota, Grand Rapids, ⁴Utah State University, Logan.
- 1414 T224 **Use of a CIDR in the 5-day CO-Synch estrous synchronization protocol improves pregnancy rates to timed artificial insemination.**
G. A. Bridges¹, R. P. Lemenager², E. Taylor³, and P. J. Gunn⁴, ¹University of Minnesota, Grand Rapids, MN, ²Purdue University, West Lafayette, IN, ³Purdue University, Lafayette, IN, ⁴Iowa State University, Ames.
- 1415 T225 **Incidence of ovulation to GnRH at onset of 5-d CO-Synch + CIDR and impact on reproductive responses.**
H. P. Dias¹, S. G. Kruse², S. L. Bird², B. J. Funnell², T. C. Geppert³, E. L. Lundy³, P. J. Gunn³, and G. A. Bridges², ¹Aluno do programa de pós graduação em Zootecnia, FMVZ-UNESP-Botucatu, Botucatu, Brazil, ²University of Minnesota, Grand Rapids, MN, ³Iowa State University, Ames.
- 1416 T226 **The use of 5-d CO-Synch+CIDR and 7-d EB+CIDR synchronization programs in Nelore females.**
M. V. C. Ferraz Jr.¹, A. V. Pires², M. V. Biehl², R. Sartori², J. R. S. Gonçalves³, E. M. Moreira¹, M. H. Dos Santos¹, L. H. Cruppe⁴, and M. L. Day⁴, ¹University of São Paulo-FMVZ/USP, Pirassununga, Brazil, ²University of São Paulo-ES-ALQ/USP, Piracicaba, Brazil, ³Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, Brazil, ⁴The Ohio State University, Columbus.
- 1417 T227 **The efficacy of different PGF_{2α} treatments to promote luteolysis on D 7 or D 9 of the estrous cycle in nonlactating Nelore cows.**
M. V. Biehl¹, A. V. Pires¹, L. H. Cruppe², M. V. C. Ferraz Jr.³, R. Sartori¹, A. D. B. Ribeiro³, J. A. Faleiro Neto³, J. R. S. Gonçalves⁴, and M. L. Day², ¹University of São Paulo-ESALQ/USP, Piracicaba, Brazil, ²The Ohio State University, Columbus, ³University of São Paulo-FMVZ/USP, Pirassununga, Brazil, ⁴Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, Brazil.
- 1418 T228 **Effect of timing of artificial insemination and estrus expression using sexed semen on pregnancy rates in Holstein dairy cows.**
S. E. Crego^{*}, E. L. Larimore, and G. A. Perry, South Dakota State University, Brookings.
- 1419 T229 **Evaluation of the hypothalamic kisspeptin system throughout the estrous cycle in gilts.**
E. S. Jolitz^{*} and J. A. Clapper, South Dakota State University, Brookings.
- 1420 T230 **Levels of IGF-1, thyroxine, triiodothyronine and cortisol in yearling bulls in feedlot or silvopastoral system.**
M. E. Romero¹, J. A. Ramirez-Godínez¹, G. Corral-Flores¹, A. Flores-Mariñelarena¹, C. Rodríguez-Muela¹, P. F. Mancillas¹, J. A. Gutierrez¹, and A. Ayala², ¹Universidad Autónoma de Chihuahua, Chihuahua, Mexico, ²Universidad Autónoma de Yucatán, Mérida, Mexico.
- 1421 T231 **Meta-analysis of the effect of estrus expression before fixed-time AI on conception rates in beef cattle.**
B. N. Richardson¹, S. L. Hill², J. S. Stevenson², G. D. Djira¹, and G. A. Perry¹, ¹South Dakota State University, Brookings, ²Kansas State University, Manhattan.
- 1422 T232 **Comparison of estrus parameters in nulliparous heifers by two automated activity monitoring systems.**
B. F. Silper^{*}, A. M. L. Madureira, T. A. Burnett, M. Kaur, E. L. Drago Filho, A. M. de Passillé, J. Rushen, and R. L. A. Cerri, Faculty of Land and Food Systems-University of British Columbia, Vancouver, BC, Canada.
- 1423 T233 **Cryopreserved sperm quality in young Brangus bulls raised on pasture and supplemented with vitamin E.**
P. P. Tsuneda^{*}, L. K. Hatamoto-Zervoudakis, R. D. Almeida, W. A. D. S. Marinho, J. T. Zervoudakis, B. H. Tsuneda, F. A. D. P. D. B. Arguello, M. F. Duarte Junior, and T. B. Castaldeli, Federal University Of Mato Grosso, CUIABA, Brazil.
- 1424 T234 **Addition of vitamin C extender and post-cryopreservation semen quality in bulls.**
A. L. Cândida de Resende Fraga¹, L. K. Hatamoto-Zervoudakis¹, T. B. Castaldeli¹, R. A. Minozzo², J. T. Zervoudakis¹, P. P. Tsuneda¹, F. M. Wingert¹, and R. D. Almeida¹, ¹Federal University Of Mato Grosso, Cuiaba, Brazil, ²Federal University Of Mato Grosso, cuiaba, Brazil.
- 1425 T235 **Concentrations of progesterone during early follicular development and pregnancy rate to AI in beef cows.**
F. M. Abreu¹, M. L. Day¹, M. A. Coutinho da Silva¹, C. A. Madsen², T. Martins², L. H. Cruppe¹, B. R. Harstine¹, G. A. Bridges³, and T. W. Geary², ¹The Ohio State University, Columbus, ²USDA ARS Fort Keogh, Miles City, MT, ³University of Minnesota, Grand Rapids.
- 1426 T236 **Tocopherol in bovine semen cryopreservation extender: Fertility and oxidative stress.**
L. K. Hatamoto-Zervoudakis^{*}, L. Soares, J. T. Zervoudakis, F. M. Wingert, P. P. Tsuneda, M. F. Duarte Junior, and L. E. S. Silva, Federal University of Mato Grosso, Cuiaba, Brazil.

- 1427 T237 **Embryonic growth between d 33 and 45 of pregnancy in lactating dairy cows differing in hormone and metabolite concentrations.**
T. J. Stratman^{*1}, S. E. Poock², S. L. Murphy¹, A. Thomas¹, D. Bouhan¹, D. H. Keisler¹, and M. C. Lucy¹, ¹University of Missouri-Division of Animal Sciences, Columbia, ²University of Missouri-College of Veterinary Medicine, Columbia.
- 1428 T238 **Altered ovarian dynamics in lactating dairy cows undergoing embryonic mortality.**
R. Wijma^{*1}, M. L. Stangaferro¹, J. R. Branen², J. M. Howard², and J. O. Giordano¹, ¹Department of Animal Science, Cornell University, Ithaca, NY, ²Biotracking LLC, Moscow, ID.

Production, Management, and the Environment: Management and Heat Stress

- 1480 T239 **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.
- 1481 T240 **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.
- 1482 T241 **Evaluating the accuracy of using reinforcing bar and an infrared thermometer versus long-stemmed thermometers in monitoring mortality compost pile temperature.**
E. Pacheco^{1,2}, A. Reyes^{1,2}, M. Negron^{1,2}, T. A. Gipson², and R. Merkel², ¹University of Puerto Rico-Mayaguez, Mayaguez, PR, ²American Institute for Goat Research, Langston University, Langston, OK.
- 1483 T242 **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. Holland¹, J. D. Chapman^{*1}, and L. O. Ely², ¹Prince Agri Products, Inc., Quincy, IL, ²University of Georgia, Athens.
- 1484 T243 **Factors affecting transition success in tie stall herds.**
D. E. Santschi^{*1}, M. S. Perreault^{1,2}, S. Adam¹, R. Lacroix¹, and D. M. Lefebvre¹, ¹Valacta, Ste-Anne-de-Bellevue, QC, Canada, ²Université Laval, Québec, QC, Canada.
- 1485 T244 **Effect of spatial orientation and shade on internal environment of a wooden 3-calf hutch.**
J. D. Allen^{*1} and L. W. Hall², ¹Northwest Missouri State, Maryville, MO, ²The University of Arizona, Tucson.
- 1486 T245 **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^{*1}, L. W. Hall², S. Garcia², and J. Marchello², ¹Northwest Missouri State, Maryville, ²The University of Arizona, Tucson.
- 1487 T246 **Predicting Holstein heifer growth by genomic traits.**
D. E. Cook^{*1}, D. K. Combs¹, R. W. Bender¹, P. M. Krump¹, and K. A. Weigel², ¹Department of Dairy Science University of Wisconsin-Madison, ²University of Wisconsin-Madison.
- 1488 T247 **Blood parameters in transition dairy cattle and their effects on milk production.**
C. H. Ramires¹, R. B. Navarro², R. M. Silva³, G. T. Santos⁴, R. Locatelli-Dittrich¹, and R. D. Almeida^{*1}, 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.
- 1489 T248 **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^{*1}, A. F. Summers², and R. N. Funston¹, ¹University of Nebraska, West Central Research and Extension Center, North Platte, ²University of Nebraska-Lincoln.
- 1490 T249 **Mitigating heat stress in dairy cattle via conductive cooling.**
K. M. Perano^{*}, K. G. Gebremedhim, J. G. Usack, T. J. Shelford, C. A. Gooch, and L. T. Angenent, Cornell University, Ithaca, NY.
- 1491 T250 **Changes in behavioral and physiological parameters around estrus in partially synchronized cows.**
K. A. Dolecheck^{*}, W. J. Silvia, G. Heersche Jr., A. E. Sterrett, B. A. Wadsworth, and J. M. Bewley, University of Kentucky, Lexington.
- 1492 T251 **Effect of maternal heat stress during the dry period on development of immune system of offspring.**
B. M. Ahmed^{*1}, A. P. A. Monteiro¹, S. Tao¹, K. E. Merriman², J. P. Driver², B. L. Artiaga¹, J. Hayen¹, I. M. Thompson¹, C. D. Nelson², and G. E. Dahl¹, ¹University of Florida, Gainesville, ²Department of Animal Sciences, University of Florida, Gainesville.

- 1493 T252 **Impact of dry period heat stress on milk yield, reproductive performance and health of dairy cows.**
*I. M. Thompson**, A. P. A. Monteiro, G. E. Dahl, S. Tao, and B. M. Ahmed, University of Florida, Gainesville.
- 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*¹, M. J. Thomas², G. K. Catucumba², and M. D. Curler², ¹Department of Animal Science, Cornell University, Ithaca, NY, ²Dairy Health and Management Services, LLC, Lowville, 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 Vries*¹, K. Hinde², A. J. Carpenter³, J. Clay⁴, and B. Bradford³, 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.
- 1498 T257 **The influence of body weight on the efficiency of dairy cows.**
*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. Hamzaoui*¹, A. Salama^{1,2}, G. Caja¹, E. Albanell¹, and X. Such¹, ¹Group of Ruminant Research (G2R), Universitat Autònoma 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*¹, 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. Holland², and C. R. Krehbiel¹, ¹Oklahoma 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. Maxwell*¹, B. C. Bernhard¹, C. F. O'Neill¹, B. K. Wilson¹, C. Hixon¹, C. Haviland¹, A. Grimes¹, M. S. Calvo-Lorenzo¹, D. L. VanOverbeke¹, G. G. Mafl¹, C. J. Richards¹, D. L. Step¹, B. P. Holland², and C. R. Krehbiel¹, ¹Oklahoma State University, Stillwater, ²Merck Animal Health, DeSoto, KS.
- 1502 T261 **Survey of fatty acid profile of milk fat in Italian Water buffalo.**
*M. G. Manca*¹, G. Cosenza², E. Apicella², A. Pauciuolo³, A. Coletta⁴, A. Nudda⁵, N. P. P. Macciotta⁵, 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. Nolan*¹, 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. Li*¹, 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. Lima^{1,2}, H. J. Fernandes², M. F. Paulino¹, E. P. Rosa², L. S. Caramalac², K. A. Silveira², B. D. D'auria², 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. Strayer*¹, 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. Ziegler³, M. Raeth-Knight⁴, 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. Wall², M. Rodríguez¹, L. Castillejos¹, A. Ferret¹, and S. Calsamiglia¹, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma 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. Wall², M. Rodríguez¹, L. Castillejos¹, A. Ferret¹, and S. Calsamiglia¹, ¹Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma 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.**
J. D. Quigley¹, T. M. Hill, H. G. Bateman, II, J. M. Aldrich, and R. L. Schlotterbeck, Provimi North America, Brookville, OH.
- 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.**
L. Pan, D. P. Bu¹, J. Q. Wang, J. B. Cheng, X. Z. Sun, and W. Liu, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.
- 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, hemogasometry 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. Nápoles¹, 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, hemogasometry 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.**
F. H. Pino¹, A. J. Heinrichs, and C. Castro, The Pennsylvania State University, University Park.
- 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. Possamai², L. K. Hatamoto-Zervoudakis¹, A. S. Oliveira³, L. B. D. Freiria¹, R. P. D. Silva¹, A. C. Barboza², and J. W. Koscheck⁴, 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. Cônsolo¹, R. S. Goulart², F. Rodriguez¹, M. O. Frassetto¹, J. M. Souza¹, L. F. P. Silva¹, and V. B. Ferrari¹, ¹University of Sao Paulo, Pirassununga, Brazil, ²MSD Saúde 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. Mendonça², C. E. Dambros¹, D. B. Fernandes², A. L. Braga Netto², V. R. M. Couto¹, and J. J. R. Fernandes¹, 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.**
C. M. Cunha¹, A. R. M. Fernandes¹, H. A. Ricardo¹, L. V. C. Girão², R. O. Roça³, L. O. Seno¹, M. A. P. Orrico Junior¹, J. C. S. Osório¹, and F. M. Vargas Junior¹, ¹Grande Dourados Federal University (UFGD), Dourados, Brazil, ²Uberlândia Federal University (UFU), Uberlândia, Brazil, ³São Paulo State University (FCA/UNESP), Botucatu, Brazil.
- 1670 T283 **Performance and carcass yield of finishing lambs fed diets with safflower meal.**
P. A. Meneses-Tapia¹, G. Buendia-Rodriguez², F. E. Martinez-Castañeda¹, C. G. Peñuelas-Rivas¹, and S. S. Gonzalez-Muñoz³, ¹Universidad Autonoma 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 Oliveira¹, J. P. I. S. Monnerat², N. V. L. Serão¹, M. S. Duarte¹, V. R. M. Couto³, S. C. Valadares Filho⁴, M. L. Chizzotti⁴, and P. V. R. Paulino⁶, 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 Nelore bulls.**
M. Caetano^{1,2}, R. S. Goulart³, S. Luz e Silva⁴, J. S. Drouillard⁵, P. R. Leme⁴, 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 Sao Paulo / FZEA, Pirassununga, Brazil, ⁵Kansas State University, Manhattan.
- 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^{1,2}, N. D. Walker³, T. A. McAllister⁴, 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.
- 1674 T287 **Increasing condensed corn distillers solubles affects gene expression in rumen epithelial tissue.**
J. C. McCann¹, S. Alqarni¹, J. R. Segers², D. W. Shike¹, and J. J. Loor¹, 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^{1,2}, P. V. R. Paulino³, M. I. Marcondes¹, A. Faciola², I. França Smith Maciel¹, and M. Custódio da Silva¹, 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.**
J. F. Lage¹, A. F. Ribeiro², E. San Vito¹, C. S. Ribeiro Júnior¹, L. M. Delevatti³, E. E. Dalanttonia¹, F. Baldi⁴, R. A. Reis⁵, and T. T. Berchielli¹, 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, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil, ⁵University of Sao Paulo State, Jaboticabal, Brazil.
- 1677 T290 **Supplements containing different crude glycerin concentration does not affect the intake and digestibility of Nelore grass-fed beef.**
E. San Vito¹, 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, Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.
- 1678 T291 **Whole cottonseed and crude glycerin for nelore cattle on pasture: Intake and digestibility of nutrients.**
A. J. Possamai¹, J. T. Zervoudakis², L. K. Hatamoto-Zervoudakis², A. S. Oliveira³, E. R. Donida², P. I. J. L. R. Silva¹, A. C. Barboza¹, R. G. D. P. Junior², and J. W. Koscheck⁴, ¹UFMT, Cuiabá, Brazil, ²Federal University Of Mato Grosso, Cuiabá, Brazil, ³UFMT, Sinop, Brazil, ⁴UNESP, Jaboticabal, Brazil.
- 1679 T292 **Crude glycerin in multiple supplements for beef cattle in grazing: pH and ammoniacal nitrogen.**
R. G. D. P. Junior¹, A. J. Possamai², J. T. Zervoudakis¹, L. D. S. Cabral¹, L. K. Hatamoto-Zervoudakis¹, A. C. Barboza², L. B. D. Freiria¹, J. B. Azevedo³, and A. S. Oliveira⁴, ¹Federal University Of Mato Grosso, Cuiabá, Brazil, ²UFMT, Cuiabá, Brazil, ³Federal University of Mato Grosso, Cuiabá, Brazil, ⁴UFMT, Sinop, Brazil.
- 1680 T293 **Grain processing methods and concentration of corn silage NDF in the finishing diet of Nelore bulls.**
C. Sitta¹, D. A. Fleury¹, J. D. Souza¹, F. Batista², W. F. Angolini¹, M. A. P. Meschiatti¹, N. C. G. Barbosa¹, G. G. Rosa¹, B. A. V. Arthur¹, P. D. Andrade¹, A. Paro¹, A. C. Aoki¹, M. R. R. Soares¹, and F. A. P. Santos², ¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil.

- 1681 T294 **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. Santos², ¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil.
- 1682 T295 **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. Franco¹, J. F. Calderon-Cortes², L. Corona¹, A. Plascencia³, and R. A. Zinn⁴, ¹UNAM, Mexico City, Mexico, ²UABC, Mexicali, Mexico, ³UABC, Mexicali, Mexico, ⁴University of California-Davis, El Centro.
- 1683 T296 **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. Oliveira³, G. O. Mendes⁴, R. L. Galati², and G. R. Beltrão da Cruz⁴, ¹University of Paraíba, CCA/UEPB, Areia, Brazil, ²University of Mato Grosso-DZER/UFMT, Cuiabá, Brazil, ³University of Paraíba-CCA/UEPB, Areia, Brazil, ⁴University of Paraíba-CCHSA/UEPB, Bananeiras, Brazil.
- 1684 T297 **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. Mendes³, G. R. Beltrão da Cruz³, and J. Jordão Filho³, ¹University of Paraíba, CCA/UEPB, Areia, Brazil, ²University of Mato Grosso-DZER/UFMT, Cuiabá, Brazil, ³University of Paraíba-CCHSA/UEPB, Bananeiras, Brazil, ⁴University of Paraíba-CCA/UEPB, Areia, Brazil.
- 1685 T298 **Effect of chitosan and soybean oil combination on ruminal fermentation and milk yield and composition of dairy cows.**
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- 1686 T299 **Growth performance and total tract nutrient digestion for Holstein heifers precision-fed diets high in distillers grains with different forage particle size.**
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- 1687 T300 **Comparison of efficiency of energy use in Holstein and Jersey dairy cows offered diets containing reduce fat distillers grains RFDDGS.**
G. Garcia Gomez¹, A. Foth¹, P. J. Kononoff¹, T. Brown-Brandl², and H. C. Freetly², ¹University of Nebraska-Lincoln, ²ARS-USDA, Clay Center, NE.
- 1688 T301 **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.
- 1689 T302 **Performance, digestibility, and blood acid-base balance of dairy cows in response to the replacement of corn by crude glycerin.**
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- 1690 T303 **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 Junior², M. P. Figueiredo³, E. O. C. Santana⁴, G. A. Filho⁴, C. B. Figueiredo², M. S. Maciel², and J. I. Simionato⁵, ¹Emater, Goiânia, Brazil, ²Universidade Estadual do Piauí, Corrente, Brazil, ³Universidade Estadual do Sudoeste da Bahia, Vitória da Conquista, Brazil, ⁴Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil, ⁵Universidade Estadual de Londrina, Londrina, Brazil.
- 1691 T304 **Effect of grain processing and fat supplementation on ruminal pH dynamics of cows grazing a tropical pasture.**
J. D. Souza¹, F. Batistel², E. Miqueo¹, P. D. Andrade¹, M. M. V. Silva¹, C. Sitta¹, and F. A. P. Santos², ¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil.
- 1692 T305 **Grain processing and fat supplementation on milk yield and milk composition of dairy cows grazing a tropical pasture.**
F. Batistel¹, J. D. Souza², M. R. R. Soares², C. S. M. Motta², E. Miqueo², and F. A. P. Santos¹, ¹University of São Paulo, Piracicaba, Brazil, ²University of Sao Paulo, Piracicaba, Brazil.
- 1693 T306 **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. Bradford², and M. J. Brouk², ¹Department of Animal Science, University of Zanjan, Zanjan, Iran, ²Department of Animal Sciences and Industry, Kansas State University, Manhattan.

- 1694 T307 **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.*
- 1695 T308 **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*
- 1696 T309 **Relationship of in vitro starch digestion to corn kernel measurements from farms in Michigan.**
*D. Bolinger¹, L. Nuzback², and F. N. Owens*², ¹DuPont Pioneer, Perrinton, MI, ²DuPont Pioneer, Johnston, IA.*
- 1697 T310 **Effect of particle size and time of rumen fluid collection on in vitro starch digestibility of corn and sorghum.**
E. Raffrenato^{1,2}, L. J. Erasmus¹, W. A. van Niekerk¹, and C. Engelbrecht¹, ¹University of Pretoria, Pretoria, South Africa, ²Stellenbosch University, Stellenbosch, South Africa.*
- 1698 T311 **Effect of reducing dietary starch on intake, lactation performance, and ruminal parameters of dairy cows: A meta-analysis.**
S. M. Fredin, L. F. Ferraretto, and R. D. Shaver, University of Wisconsin-Madison.*
- 1699 T312 **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. Sousa*¹, T. Tomazi¹, L. F. P. Silva², and M. Veiga dos Santos¹, ¹University of São Paulo, Pirassununga, Brazil, ²University of Sao Paulo, Pirassununga, Brazil.*
- 1700 T313 **Factors affecting 7 hour starch digestibility on conventional corn silage, BMR corn silage, and high moisture corn grain.**
*A. J. Miner*¹, M. Tetreault², C. J. Sniffen³, and R. Ward⁴, ¹Poulin Grain Inc., Newport, VT, ²Poulin Graing Inc., Newport, VT, ³Fencrest, LLC, Holderness, NH, ⁴Cumberland Valley Analytical Services Inc., Hagerstown, MD.*
- 1701 T314 **Glycerol exacerbates effects of sorghum-based tannins extract on in vitro fermentative activity of mixed ruminal microorganisms.**
*E. San Vito*¹, 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.*
- 1702 T315 **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.*
- 1703 T316 **Monensin increases endotoxin concentration in an in vitro rumen fermentation model.**
*N. Reisinger¹, S. Schaumberger*², I. Dohnal¹, C. Emsenhuber¹, C. Stoiber¹, and G. Schatzmayr³, ¹BIOMIN Research Center, Tulln, Austria, ²BIOMIN Holding GmbH, Herzogenburg, Austria, ³BIOMIN Research Center, Tulln, Austria.*
- 1704 T317 **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 Mazon², C. A. Zotti¹, L. Silva Oliviera¹, S. Luz e Silva*¹, and P. R. Leme¹, ¹University of Sao Paulo / FZEA, Pirassununga, Brazil, ²University of Sao Paulo, Pirassununga, Brazil.*
- 1705 T318 **Effect of post-extraction algal residue supplementation on the rumen microbiome of steers consuming low-quality forage.**
*J. C. McCann*¹, M. L. Drewery², W. E. Pinchak³, 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.*
- 1706 T319 **Effect of concentrate diets contrasting in fatty acid profiles on lamb performance, carcass characteristics, fatty acid composition and wool production.**
*S. J. Meale^{1,2}, A. V. Chaves¹, M. He², and T. A. McAllister*², ¹The University of Sydney, Sydney NSW, Australia, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.*
- 1707 T320 **Feed value for ruminants of newly developed black and yellow type of canola seeds.**
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- 1708 T321 **Could lactic acid treatment decrease in vitro gas production of barley grain.**
*M. Dehghan Banadaky*¹, A. Zali², M. Ganjkanlou², K. Rezayazdi³, 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.*
- 1709 T322 **Microwave irradiation induced changes in protein inherent structure, protein chemical profile, protein subfractions and digestive behavior of different types of new hullless barley in the rumen and intestine of dairy cows.**
*X. Yan^{1,2}, N. Khan¹, X. Huang*¹, 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.**
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- 1711 T324 **Effect of crude glycerin on dry matter and nutrient digestibility of feed ingredients in dairy cows.**
F. D. O. Scarpino van Cleef^{1,2}, J. M. Bertocco Ezequiel¹, J. Borsari Dourado Sancanari³, and E. H. C. B. Van Cleef^{1,4}, ¹UNESP, Jaboticabal, Brazil, ²CNPq, Brasilia, Brazil, ³UCB, Jaboticabal, Brazil, ⁴FAPESP, Sao Paulo, Brazil.
- 1712 T325 **Positive effect of fat supplementation in the early postpartum period can continue throughout lactation after fat supplementation ceases.**
M. Garcia¹, L. F. Greco², W. W. Thatcher², J. E. P. Santos², and C. R. Staples³, ¹Department of Animal, and Avian Sciences, University of Maryland, College Park, ²Department of Animal Sciences, University of Florida, Gainesville, 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.
- 1714 T327 **Saturated fat supplementation interacts with dietary forage NDF concentration during the postpartum period in Holstein cows: Energy balance, nutrient digestibility, and metabolism.**
P. Piantoni^{}, A. L. Lock, and M. S. Allen, Michigan State University, East Lansing.*
- 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 Banadaky², K. Rezayazdi², and M. Ghaffarzadeh³, 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 LXR α in goat mammary epithelial cells.**
W. Zhao^{1,2}, J. Luo¹, P. Dovc³, and J. J. Loo², 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-Behroozyar¹, M. Dehghan Banadaky², and M. Ghaffarzadeh³, 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. Boerman^{} 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. Armentano^{}, University of Wisconsin-Madison.*
- 1720 T333 **Effect of specific essential oil blend on performance of Nellore young bulls in feedlot.**
A. L. D. S. Valente^{}, J. M. Serra, E. Romanzini, R. A. Reis, R. Barbero, T. Araujo, S. Santos, L. Delevatti, and F. Souza, UNESP, Jaboticabal, Brazil.*
- 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. Broderick², 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. Suksombat¹, and W. Yang², ¹Suranaree University of Technology, Muang, Thailand, ²Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
- 1723 T336 **Use of lemongrass oil for manipulation of ruminal fermentation using Rusitec technique.**
A. Nanon¹, W. Suksombat¹, 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. Yang¹, X. Liang¹, S. Wei¹, X. Liang², S. Li¹, C. Zou², B. Yang¹, and L. Li¹, 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 flaxseed oil on ruminal fatty acid metabolism in vitro.**
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- 1726 T339 **Effects of linseed oil and propolis additives on protozoa population in dairy cows.**
E. H. Yoshimura¹, L. M. Zeoula¹, R. Franzolin², N. W. Santos¹, E. Machado¹, B. C. Agostinho¹, 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.
- 1727 T340 **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, Joongbu University, Geumsan-Gun, South Korea.
- 1728 T341 **Intake and daily gain of grazing Nellore bulls receiving concentrated supplementation with additives.**
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- 1729 T342 **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. Almeida², I. E. Borges¹, F. Pinese¹, 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.
- 1730 T343 **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.
- 1731 T344 **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. Vieira⁴, I. Pena Carvalho de Carvalho², E. E. Dalanttonia⁵, A. S. Gómez I⁴, and T. T. Berchielli⁵, ¹Universidade Estadual Paulista "Julio de Mesquita Filho", Jaboticabal, Brazil, ²Universidade Estadual Paulista, Jaboticabal, Brazil, ³Universidade Estadual Paulista "Júlio de Mesquita Filho" / UNESP, Jaboticabal, Brazil, ⁴Universidade Estadual Paulista Júlio de Mesquita Filho, Jaboticabal, São Paulo, Brazil, ⁵Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.
- 1732 T345 **Effects of encapsulated nitrate on toxicity, feed intake and feed consumption rates in beef cattle.**
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- 1733 T346 **Effects of the combined use of virginiamycin and salinomycin on rumen fluid kinetics of Nellore steers.**
A. J. C. Nuñez¹, V. V. Almeida², F. Pinese¹, 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.
- 1734 T347 **Monensin, virginiamycin and functional oils on rumen health of Nellore cattle fed high concentrate diets without adaptation.**
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- 1735 T348 **Effects of grain source and monensin level on site and extent of digestion in feedlot heifers.**
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- 1736 T349 **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. Watanabe¹, C. A. Oliveira¹, T. V. Carrara², D. D. Estevam², D. P. Silva¹, F. T. Pereira¹, and D. D. Millen^{1,3}, 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.
- 1737 T350 **Effects of different doses of sodium monensin on DMI variation and selective consumption by feedlot cattle.**
D. H. Watanabe¹, M. C. Pereira¹, J. Silva¹, T. V. Carrara², A. L. Rigueiro¹, L. A. Tomaz¹, D. P. Silva¹, D. V. Vicari¹, A. C. J. Pinto¹, D. D. Estevam², M. D. Arrigoni², and D. D. Millen^{1,3}, 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.

- 1738 T351 **Feeding monensin or essential oils in high corn or byproduct finishing diets for nellore bulls.**
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- 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. Seradj¹, J. Crespo^{*2}, M. Fondevila³, and J. Balcells¹, 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. Seradj¹, B. A. Refat¹, A. Jimeno², J. Crespo^{*3}, and J. Balcells¹, 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.**
A. A. Oliveira, J. Koscheck^{}, A. L. D. S. Valente, F. Basso, C. Rabelo, U. Carneiro, and R. A. Reis, UNESP, Jaboticabal, Brazil.*
- 1742 T355 **Effect of doses at *Enterococcus faecium* and *Saccharomyces cerevisiae* on ruminal parameters responses of feeder cattle.**
A. A. Oliveira, J. Koscheck^{}, A. L. D. S. Valente, F. Basso, C. Rabelo, U. Carneiro, and R. A. Reis, UNESP, Jaboticabal, Brazil.*
- 1743 T356 **Influence of soybean meal supplementation with tannins extracted from pistachio hulls on performance and feed efficiency of Holstein bulls.**
*A. Jolazadeh¹, M. Dehghan Banadaky^{*2}, and K. Rezayazdi², 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. Jolazadeh¹, M. Dehghan Banadaky^{*2}, and K. Rezayazdi², 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. Dehghan Banadaky^{*1}, A. Jolazadeh², K. Rezayazdi¹, and N. Vahdani², 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.**
L. Pan^{}, D. P. Bu, J. Q. Wang, J. B. Cheng, and X. Z. Sun, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- 1747 T360 **Methane production from dairy cows fed red clover- or corn silage-based diets supplemented with linseed oil.**
*C. Benchaar^{*1}, F. Hassanat¹, R. Gervais², and R. Martineau¹, 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 paniced-tick clover or sericea lespedeza in a dairy diet decreases ruminal methane but not total gas production.**
*H. D. Naumann^{*1}, S. A. Armstrong^{2,3}, M. A. Fonseca⁴, B. D. Lambert^{5,6}, and L. O. Tedeschi⁴, 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.**
K. J. Hammond^{}, A. K. Jones, D. J. Humphries, L. A. Crompton, and C. K. Reynolds, University of Reading, Reading, United Kingdom.*
- 1750 T363 **Changes of rumen methanogen diversity associated with different types of forage and protein in diets.**
X. W. Wang, J. Q. Wang^{}, D. P. Bu, and S. G. Zhao, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- 1751 T364 **Effect of cashew nut shell liquid on lactation performance and rumen methane production in dairy cows.**
*A. F. Branco¹, F. Giallongo^{*2}, T. Frederick², H. Weeks², J. Oh², and A. N. Hristov², ¹Universidade Estadual de Maringá, Paraná, Brazil, ²Department of Animal Science, The Pennsylvania State University, University Park.*

- 1752 T365 **Metabolism of dairy cows as affected by dietary starch level and supplementation with monensin during early lactation.**
M. M. McCarthy¹, T. Yasui¹, C. M. Ryan¹, S. H. Pelton¹, G. D. Mechor², and T. R. Overton¹, ¹Cornell University, Department of Animal Science, Ithaca, NY, ²Elanco Animal Health, Greenfield, IN.
- 1753 T366 **Effect of dietary monensin supplementation and amino acid balancing on lactation performance by dairy cows.**
A. L. Hagen^{1,2}, L. F. Ferraretto¹, R. D. Shaver¹, and R. Martin², ¹University of Wisconsin-Madison, ²Vita Plus Corporation, Madison, WI.
- 1754 T367 **Effects of beta-extract of *Humulus lupulus* (hops) on fermentation by rumen microbes in continuous culture.**
S. W. Fessenden^{*}, I. J. Salfer, and M. D. Stern, University of Minnesota, Saint Paul.
- 1755 T368 **Evaluation of Celmanax SCP on lactational performance and ruminal fermentation of Holstein dairy cows fed corn silage based diets with a moderate starch content.**
H. M. Dann¹, P. Ji¹, K. W. Cotanch¹, C. S. Ballard¹, R. J. Grant¹, and C. C. Elrod², ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Vi-COR, Inc., Mason City, IA.
- 1756 T369 **Effects of *Bacillus subtilis* and yeast cell wall on diarrhea incidence and immune function of dairy calves.**
J. Freitas^{*}, University of Parana, Palotina, Brazil.
- 1757 T370 **Effects of *Bacillus subtilis* and yeast cell wall on diarrhea incidence and immune function of dairy calves.**
J. A. Freitas¹, V. Souza², J. C. De Souza³, C. Nozawa⁴, and P. Pinto⁵, ¹University of Parana, Palotina, Brazil, ²University of Sao Paulo, Piracicaba, Brazil, ³University of South of Mato Grosso, Aquidauana, Brazil, ⁴University of Londrina, Londrina, Brazil, ⁵University Federal of Parana, Palotina, Brazil.
- 1758 T371 **Effects of different doses of *Bacillus subtilis* natto on in vitro rumen fermentation parameters.**
J. Li^{1,2,3}, D. P. Bu², J. Q. Wang^{1,2}, P. Sun², and F. D. Li³, ¹Heilongjiang Bayi Agricultural University, Daqing, China, ²State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, ³College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China.
- 1759 T372 **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.
- 1760 T373 **Effect of feeding yeast culture (YC) on lactation performance of dairy cows fed diets differing in rumen fermentability.**
A. L. Dias^{*}, R. A. Azevedo, J. A. Freitas, B. Micai, T. V. Silva, G. C. Gomes, E. S. Ribeiro, L. F. Greco, P. M. Leopoldo Junior, and J. E. P. Santos, Department of Animal Sciences, University of Florida, Gainesville.
- 1761 T374 **Milk fatty acid profile in cows fed red clover or alfalfa based diets differing in rumen-degradable protein supply.**
M. Leduc¹, 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.
- 1762 T375 **Use of virginiamycin and monensin sodium in diets of confined beef steers.**
F. R. Camilo¹, A. M. Mobiglia¹, R. K. Grizzotto², J. A. Alves Neto³, M. Q. Manella⁴, F. D. D. Resende², G. R. Siqueira², and J. J. R. Fernandes⁵, ¹Escola de Veterinária e Zootecnia da UFG, Goiânia, Brazil, ²APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, ³Universidade Estadual Paulista, Jaboticabal, Brazil, ⁴Phibro Animal Health Corporation, Guarulhos, Brazil, ⁵Universidade Federal de Goiás, Goiânia, Brazil.
- 1763 T376 **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. Eugène⁴, D. R. Yáñez-Ruiz⁵, K. J. Shingfield⁶, S. Ahvenjärvi⁶, P. O'Kiely⁷, C. K. Reynolds⁸, K. J. Hammond⁸, J. Dijkstra⁹, 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.
- 1764 T377 **Effect of oat grain variety on methane emissions from mature sheep.**
J. M. Moorby^{*}, H. R. Fleming, and S. A. Cowan, Aberystwyth University, Aberystwyth, United Kingdom.
- 1765 T378 **Effect of acetate, propionate and ph on aqueous concentration and gaseous methane and hydrogen production in continuous culture.**
S. Ghimire¹, B. A. Wenner², R. A. Kohn³, J. L. Firkins², 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. Berti², N. M. Jerônimo², R. K. Grizzotto³, M. Q. Manella⁴, F. D. D. Resende³, G. R. Siqueira³, and J. J. R. Fernandes⁵, ¹Escola de Veterinária e Zootecnia da UFG, Goiânia, Brazil, ²Centro Universitário da Fundação Educacional 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-Sacc8417 live yeast, monensin and their combination.**
J. M. B. Benatti¹, N. M. Geronimo², J. A. Alves Neto¹, I. M. de Oliveira³, A. D. Moreira¹, C. L. Francisco⁴, G. R. Siqueira³, and F. D. D. Resende³, ¹Universidade Estadual Paulista, Jaboticabal, Brazil, ²UNIFEB, Barretos, Brazil, ³APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, ⁴Universidade Estadual Paulista-FMVZ, Botucatu, Brazil.
- 1768 T381 **Optimal ratio of combined origanum essential oils to reduce methane emissions under in vitro ruminal fermentation.**
A. Castañeda-Correa¹, A. Corral-Luna¹, F. A. Rodriguez-Almeida¹, L. De la Torre-Saenz², R. Silva-Vázquez³, L. Carlos-Valdez¹, H. Gutiérrez-Bañuelos⁴, and O. Ruiz-Barrera¹, ¹Universidad Autonoma de Chihuahua, Chihuahua, Mexico, ²CIMAV, Chihuahua, Mexico, ³CIRENA, Salta, Mexico, ⁴Universidad Autonoma de Zacatecas, Zacatecas, Mexico.
- 1769 T382 **Effect of phytogetic feed additives on performance parameters and health of bull calves under commercial conditions.**
C. Schieder¹, T. Steiner¹, and M. Friedrichkeit², ¹BIOMIN Holding GmbH, Herzogenburg, Austria, ²Commercial farm, Reisenberg, Austria.
- 1770 T383 **Efficacy of *Propionibacterium* strains in mitigating methane emissions from beef heifers fed a high forage diet.**
D. Vyas¹, A. Alazeh¹, S. M. McGinn², O. M. Harstad³, H. Holo³, T. A. McAllister⁴, and K. A. Beauchemin¹, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada, ³Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences, Ås, Norway, ⁴Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
- 1771 T384 **Effect of a commercially probiotic on in vitro gas production of alfalfa hay and barley grain.**
S. Payandeh¹, F. Kafizadeh¹, E. Maleki¹, G. Taasoli¹, and A. Kamyab², ¹Razi University, Kermanshah, Iran, ²University of Columbia, Columbia.
- 1772 T385 ***Lactobacillus brevis* YM 3-30, a γ -aminobutyric acid producing bacteria, decreases blood endotoxin level of Hanwoo cattle.**
S. S. Lee¹, B. S. Ku¹, L. L. Mamud¹, S. H. Kim¹, C. D. Jeong¹, Y. J. Choi¹, A. P. Soriano¹, K. Lee², and K. K. Park³, ¹Sunchon National University, Suncheon, South Korea, ²The Ohio State University, Columbus, ³Konkuk University, Seoul, South Korea.
- 1773 T386 **Probiotic levels, chemical composition and fermentative characteristics in the solid state fermentation of paper sludge for ruminant feeding.**
O. Ruiz-Barrera¹, Y. Castillo-Castillo², C. Rodriguez-Muela¹, L. M. Carrillo-Chan³, C. Arzola-Alvarez¹, J. Lopez-Morones³, and A. Corral-Luna¹, ¹Universidad Autónoma de Chihuahua, Chihuahua, Mexico, ²University of Ciudad Juarez, Cd. Juarez, Mexico, ³University of Chihuahua, Chihuahua, Mexico.
- 1774 T387 ***Lactobacillus brevis* YM 3-30, a γ -aminobutyric acid producing bacteria, increases antioxidant concentration and reduces biogenic amines.**
S. S. Lee¹, B. S. Ku¹, L. L. Mamud¹, S. H. Kim¹, C. D. Jeong¹, Y. J. Choi¹, A. P. Soriano¹, K. Lee², and K. K. Park³, ¹Sunchon National University, Suncheon, South Korea, ²The Ohio State University, Columbus, ³Konkuk University, Seoul, South Korea.
- 1775 T388 **Effects of lactobacilli and fibrolytic enzymes on chemical composition, fermentation traits, conservation characteristics and in situ digestibility of mixed cereal silage.**
L. Jin¹, L. Dunier¹, Y. Wang², and T. A. McAllister², ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
- 1776 T389 **Use of Yea-Sacc8417 live yeast, monensin and their combination in diets for young Nellore bulls in a feedlot.**
J. M. B. Benatti¹, N. M. Geronimo², J. A. Alves Neto¹, R. C. Silva¹, I. M. de Oliveira³, C. L. Francisco⁴, G. R. Siqueira³, and F. D. D. Resende³, ¹Universidade Estadual Paulista, Jaboticabal, Brazil, ²UNIFEB, Barretos, Brazil, ³APTA-Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil, ⁴Universidade Estadual Paulista-FMVZ, Botucatu, Brazil.
- 1777 T390 **Effects of lactobacilli and fibrolytic enzymes on ensiling as well as in vitro and in situ digestibility of of barley silage.**
L. Jin¹, L. Dunier¹, Y. Wang², and T. A. McAllister², ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Agriculture and Agri-Food Canada, Lethbridge, AB, Canada.
- 1778 T391 **Effect of direct-fed microbials and monensin on in vitro fermentation of a high-forage substrate.**
S. Wingard¹, E. S. Vanzant¹, D. L. Harmon¹, and K. R. McLeod¹, University of Kentucky, Lexington.

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*¹* and *S. A. Benz²*, 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.
*L. M. Shoup**, *A. C. Kloth*, *D. Gonzalez-Peña Fundora*, *F. A. Ireland*, *S. L. Rodriguez Zas*, *T. L. Felix*, and *D. W. Shike*, University of Illinois at Urbana-Champaign.
- 10:00 AM 128 Prepartum supplement level and age of weaning: II. Effects of developmental programming on performance and carcass composition of steer progeny.
*L. M. Shoup**, *D. Gonzalez-Peña Fundora*, *F. A. Ireland*, *S. L. Rodriguez Zas*, *T. L. Felix*, and *D. W. Shike*, University of Illinois at Urbana-Champaign.

- 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. Hall², 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. Kirchhoff^{} 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. Sutton^{} 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. Crews³, J. K. Ahola³, J. B. Hall⁴, 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. Schook¹, P. L. Steichen¹, V. R. G. Mercadante², G. C. Lamb², 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. Aherin^{}, P. J. Ebert, J. R. Shearer, R. L. Weaver, 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

- 180 **Withdrawn by author.**
- 9:45 AM 181 **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. Mooney^{}, Kansas State University, Manhattan.*
- 10:15 AM 183 **Effects of processing on water soluble B-vitamins in a canned cat diet.**
S. DeNoya^{}, 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 Justino³, and K. S. Swanson^{1,4,5}, 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, ⁴Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, ⁵Department 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. Beloshapka^{} 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. Gray^{}, G. Aldrich, and C. K. Jones, Kansas State University, Manhattan.*

- 11:30 AM 187 **Broken beans (*Phaseolus vulgaris*) use on extruded diets for cats.**
B. P. Neto¹, F. C. Sa², N. Musco³, A. P. Maria², B. Agy², B. A. Kamimura⁴, R. S. Vasconcellos¹, and A. C. Carciofi^{5}, ¹Universidade Estadual de Maringá, Maringá, Brazil, ²Sao Paulo State University, Jaboticabal, Brazil, ³Università degli Studi di Napoli Federico II, Napoli, Italy, ⁴Universidade de Campinas, Campinas, Brazil, ⁵Sao 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 198 **Integrated responses to feeding, comparative aspects.**
J. Furness^{}, University of Melbourne, Parkville, Australia.*
- 10:15 AM 199 **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. Meyer^{2}, ¹Department of Animal Science, University of Wyoming, Laramie, ²Division of Animal Sciences, University of Missouri, Columbia.*
- 10:30 AM 200 **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. Elsasser³, and S. Kahl², ¹USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ²USDA-ARS, BFGI, Beltsville, MD, ³USDA, Agricultural Research Service, Beltsville, MD.
- 11:00 AM 201 **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 202 **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 203 **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. Gordon¹, N. K. Gabler¹, H. B. Green², K. M. Schoenberg², and L. H. Baumgard¹, ¹Iowa State University, Ames, ²Elanco Animal Health, Indianapolis, IN.

CSAS Symposium: Understanding Feeding Behaviour to Improve Animal Well-being and Productivity

Chair: Cornelis F.M. de Lange, Department of Animal and Poultry Science, University of Guelph

Sponsor: CSAS, EAAP
2101

- 9:30 AM **Introduction**
- 9:35 AM 229 **The psychology and sociology of feeding behaviour.**
J. J. Villalba^{}, Utah State University-Agricultural Experiment Station, Logan.*
- 10:10 AM 230 **Physiological mechanisms controlling feeding behavior.**
M. S. Allen^{} and P. Piantoni, Michigan State University, East Lansing.*
- 10:45 AM 231 **Feeding behavior, productivity and welfare of dairy cows.**
M. A. G. von Keyserlingk^{} and D. M. Weary, University of British Columbia, Vancouver, BC, Canada.*
- 11:20 AM 232 **Good eating habits lead to good growth and welfare of dairy calves.**
T. J. DeVries^{}, University of Guelph, Kemptville, ON, Canada.*
- 11:55 AM **EAAP – CSAS Speaker Exchange Presentation: Feeding behaviour, productivity and welfare of sows.**
S. Edwards^{}, University of Newcastle, Newcastle Upon Tyne, United Kingdom.*

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-Weihenstephan, 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.
- 11:50 AM 252 **Impact of emulsifying salts on milk proteins and process cheese properties.**
*J. A. Lucey**, University of Wisconsin-Madison.

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. Martinson¹, R. J. Coleman², 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. Mendonça¹, 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. Lopes¹ and V. Cabrera², 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. Black¹, J. C. Hadrich², 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. Mulliniks¹, A. G. Rius², M. A. Edwards³, K. B. Brantley³, S. R. Edwards³, 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: International 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. Javed¹, Z. M. Iqbal¹, M. Saadullah¹, M. A. Jabbar¹, and A. U. Haque², ¹University of Veterinary and Animal Sciences, Lahore, Pakistan, ²Buffalo Research Institute, Pattoki, Pakistan.*
- 9:45 AM 397 **Environment concerns and waste management strategies of pig production in China.**
J. Peng, L. Liu², and L. Huang¹, 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. Brashears², S. Morales², A. Echeverry¹, and M. Brashears¹, 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. Pitta¹, S. Kumar, B. Veiccharelli¹, N. Parmar², and C. Joshi², 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. Fiorotto¹, A. Suryawan¹, and D. Columbus², 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. Burrin, 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 498 **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. Frese¹, C. Reinhardt¹, S. J. Bartle¹, D. N. Rethorst¹, B. S. Bawa¹, J. D. Thomason¹, 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. McNamara¹ 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. Alqarni², P. Cardoso³, E. Trevisi¹, and J. J. Loo², 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. DiGiacomo¹, L. C. Maret², W. J. Wales³, B. J. Hayes³, F. R. Dunshea¹, and B. J. Leury¹, 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.
- 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. Carroll¹, T. Wistuba³, K. DeHaan⁴, S. E. Sieren⁵, S. J. Jones⁵, and T. B. Schmidt⁵, 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. Schmidt¹, J. O. Buntyn², N. C. Burdick Sanchez³, E. Chevaux⁴, K. Barling⁵, S. E. Sieren¹, S. J. Jones¹, 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 periparturient period in cows with different liver functionality index (LFI).**
Z. Zhou¹, J. J. Loo¹, F. Piccioli-Capelli², G. E. Lobley³, 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. Togun^{*}, Ladoke Akintola University of Technology, Ogbomoso, Nigeria.
- 11:45 AM 507 **Regulation of adipogenesis and key adipogenic gene expression by retinoic acid in 3T3-L1 preadipocytes.**
S. Ji¹, M. Du², and R. A. Hill¹, 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. Kholif¹, O. Matloup¹, and A. Abu Elella², 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.

- 10:00 AM 633 **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. Zhang³, and Y. Jiang³, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Zhejiang University, Hangzhou, China, ³BASF (China) Company Ltd., Shanghai, China.
- 10:15 AM 634 **Effect of different dietary fat supplements on milk odd and branched chain fatty acids in dairy cows.**
E. Baumann, P. Y. Chouinard, Y. Lebeuf, and R. Gervais, Université Laval, Québec, QC, Canada.*
- 10:30 AM 635 **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. Resende³, A. B. D. Pereira¹, K. J. Soder⁴, D. H. Woitschach⁵, and R. B. Reis³, 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.
- 10:45 AM 636 **Lactational responses to palmitic acid supplementation when substituted for soyhulls or corn grain.**
C. L. Preseault, J. P. Boerman, and A. L. Lock, Michigan State University, East Lansing.*
- 11:00 AM 637 **Interaction between culture pH and corn oil concentration on NDF digestibility and biohydrogenation of unsaturated fatty acids in batch culture.**
Y. Sun, M. S. Allen, and A. L. Lock, Michigan State University, East Lansing.*
- 11:15 AM 638 **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.*
- 11:30 AM 639 **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.
- 11:45 AM 640 **Farm survey: Milk fatty acid composition measured by mid-infrared.**
D. M. Barbano^{1,2}, C. Melilli^{1,2}, and T. R. Overton³, ¹Cornell University, Ithaca, NY, ²Northeast Dairy Foods Research Center, Ithaca, NY, ³Department of Animal Science, Cornell University, Ithaca, NY.
- 12:00 PM 641 **The effects of high rates protected fat in rations of high yielding dairy cows on production efficiency and digestibility.**
U. Moallem¹, E. Frank^{1,2}, M. Zachut¹, L. Livshitz¹, and A. Arieli², ¹Institute of Animal Science, Volcani Center, Bet Dagan, Israel, ²Faculty of Agriculture, Hebrew University, Rehovot, Israel.
- 12:15 PM 642 **Long chain fatty acids alter expression of genes involved in lipid metabolism in goat mammary epithelial cells partly through PPAR γ .**
W. Zhao^{1,2}, M. Bionaz³, J. Luo¹, A. Hosseini⁴, P. Dove⁵, and J. J. Loo², 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

- 9:30 AM 643 **Methane emissions from lactating and dry dairy cows fed diets differing in forage source and NDF concentration.**
K. J. Hammond, D. J. Humphries, L. A. Crompton, P. Kirton, C. Green, and C. K. Reynolds, University of Reading, Reading, United Kingdom.*
- 9:45 AM 644 **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. Lin², 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.
- 10:00 AM 645 **Effect of lowered pH and increased passage rate on methane and volatile fatty acid production from continuous culture.**
B. A. Wenner¹, F. Batistel², J. D. Souza³, T. J. Hackmann⁴, and J. L. Firkins¹, ¹The Ohio State University, Columbus, ²University of São Paulo, Piracicaba, Brazil, ³University of Sao Paulo, Piracicaba, Brazil, ⁴University of Florida, Gainesville.
- 10:15 AM 646 **Effects of encapsulated nitrate on nitrogen utilization and enteric methane emissions in beef cattle.**
C. Lee¹, R. C. Araujo^{2,3}, K. M. Koenig⁴, and K. A. Beauchemin¹, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²GRASP Ind. & Com. LTDA, Curitiba, Brazil, ³EW Nutrition GMBH, Visbek, Germany, ⁴Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, AB, Canada.

- 10:30 AM 647 **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.
- 10:45 AM 648 **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. F. L. Cavalcanti², J. G. L. Regadas Filho³, T. R. Callaway⁴, G. E. Carstens¹, T. A. Wickersham¹, and L. O. Tedeschi¹, ¹Texas A&M University, College Station, ²Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, ³Universidade Federal de Vicosa, Vicosa, Brazil, ⁴USDA-ARS, College Station, TX.
- 11:00 AM 649 **Effects of including viginiamycin 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.
- 11:15 AM 650 **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.
- 11:30 AM 651 **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.
- 11:45 AM 652 **Improving the performance of dairy cattle with a xylanase-rich exogenous enzyme preparation.**
J. J. Romero¹, E. G. Macias², Z. Ma¹, R. M. Martins³, B. Y. Coy¹, F. M. Silva⁴, D. H. Garbui⁴, 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 de Zootecnia, Universidad Nacional Agraria La Molina, Lima, Peru, ³Department de Zootecnia, Universidade Federal de Viçosa, Minas Gerais, Brazil, ⁴Universidade Estadual Paulista, São Paulo, Brazil.
- 12:00 PM 653 **Effects of feeding chitosan on nutrient digestibility in beef heifers.**
D. D. Henry^{}, F. M. Ciriaco, V. R. G. Mercadante, T. Schulmeister, D. Demeterco, A. Marin, G. C. Lamb, and N. DiLorenzo, University of Florida, Marianna.*
- 12:15 PM 654 **Effect of *Saccharomyces cerevisiae* fermentation product (XP) on energetic efficiency of diet fed to high producing dairy cows during the hot season.**
U. Moallem^{}, L. Livshitz, and M. Zachut, Institute of Animal Science, Volcani Center, Bet Dagan, Israel.*

Teaching/Undergraduate and Graduate Education

Chair: Peter K. Camfield, Oklahoma Panhandle State University
3501D

- 9:30 AM 762 **The effects of learning communities and pro-active advising on performance of first semester students.**
S. L. Schaake^{}, A. K. Sexten, T. L. Douthit, D. A. Nichols, J. M. Kouba, D. W. Moser, B. W. Schurle, and M. R. Hay McCammant, Kansas State University, Manhattan.*
- 9:45 AM 763 **Changes in the perceptions of students involved in a traditional meat science course.**
M. J. Anderson^{}, J. L. Lucia, K. J. Stutts, M. M. Beverly, and S. F. Kelley, Sam Houston State University, Huntsville, TX.*
- 10:00 AM 764 **Student and evaluator perceptions of an oral equine "Speed Selling" exercise.**
J. S. McCann^{}, Virginia Tech, Blacksburg.*
- 10:15 AM 765 **Efficacy of iCEV incorporation into a general animal science undergraduate classroom.**
R. J. Rathmann^{} and R. A. Ritz, Texas Tech University, Lubbock.*
- 10:30 AM 766 **Impact of the male on meat production: A case scenario in swine.**
J. J. Parrish^{} and J. L. Susko-Parrish, University of Wisconsin-Madison.*
- 10:45 AM 767 **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.
- 11:00 AM 768 **Improved student achievement through gamification and the flipped classroom.**
C. J. Mortensen^{} and A. M. Nicholson, University of Florida, Gainesville.*
- 11:15 AM 769 **Impact of student engagement activities on student performance on a short assessment.**
O. N. Genther^{} 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. Wahrmond, 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.*
- 2:35 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*¹, A. Bach², and M. Devant³, 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.*
- 2:30 PM 34 **The effect of respiratory disease on lying behavior in Holstein dairy calves.**
*T. L. Ollivett¹, K. E. Leslie*¹, D. V. Nydam², T. F. Duffield¹, G. Zobel³, J. Hewson¹, and D. F. Kelton⁴, 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. Black*¹, H. M. Dann², and P. D. Krawczel¹, ¹University of Tennessee, Knoxville, ²William H. Miner Agricultural Research Institute, Chazy, NY.*

- 3:00 PM 36 **Health of dairy calves when using automated feeders in the Midwest USA.**
M. Jorgensen^{*1}, A. Adams Progar¹, S. Godden¹, H. Chester-Jones², J. Rushen³, A. M. de Passille³, and M. I. Endres¹,
¹University of Minnesota, Saint Paul, ²University of Minnesota Southern Research and Outreach Center, Waseca, MN,
³University of British Columbia, Agassiz, BC, Canada.
- 3:15 PM 37 **Effect of heat retaining covers on calf hutch temperature during cold weather.**
J. A. Haberman^{*}, T. H. Friend, and W. Binion, Texas A&M University, College Station.
- 3:30 PM 38 **Modeling the effect of reflective film calf hutch covers on reducing heat loss.**
W. Binion^{*} 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.

2502

- 2:00 PM 80 **Alterations in the response of pigs to *Salmonella Typhimurium* when provided *Enterobacter cloacae*.**
J. R. Donaldson^{*1}, J. A. Carroll², N. C. Burdick Sanchez², J. W. Dailey², T. B. Schmidt³, T. R. Callaway⁴, and J. G. Wilson¹,
¹Mississippi State University, Mississippi State, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ³University of
Nebraska-Lincoln, ⁴USDA-ARS, College Station.
- 2:15 PM 81 **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.
- 2:30 PM 82 **Effect of metaphylaxis on production responses and antimicrobial usage in high-risk steers.**
A. B. Word^{*1}, T. A. Wickersham¹, G. Mays¹, L. A. Trubenbach¹, and J. E. Sawyer², ¹Texas A&M University, College Sta-
tion, ²Texas AgriLife Research, College Station.
- 2:45 PM 83 **PR-39 ameliorates *Salmonella Typhimurium*-induced intestinal epithelial barrier dysfunction.**
X. Xi^{*}, Institute of Feed Science, Zhejiang University, Hangzhou, China.
- 3:00 PM 84 **Quantification of microbial populations in organic and inorganic dairy cattle bedding materials.**
R. F. Rowbotham^{*1,2}, T. L. Peters², T. M. Walker², and P. L. Ruegg², ¹Grande Cheese Company, Brownsville, WI, ²De-
partment of Dairy Science, University of Wisconsin-Madison.
- 3:15 PM 85 **Prevalence of bovine mastitis pathogens in bulk tank milk.**
Y.-L. Bi^{*1}, E. J. Cao¹, W. Sun², Y. Qin², and S.-L. Li¹, ¹State Key Laboratory of Animal Nutrition, College of Animal
Science and Technology, China Agricultural University, Beijing, China, ²Hipra, Avda. La Selva, No.135 17170-Amer
(Girona) Spain, Girona, Spain.
- 3:30 PM 86 **Modulation of the acute phase response in feedlot steers supplemented with *Saccharomyces cerevisiae*.**
J. O. Buntyn^{*1}, N. C. Burdick Sanchez², J. A. Carroll², E. Chevaux³, K. Barling⁴, S. E. Sieren⁵, S. J. Jones⁵, and T. B.
Schmidt⁵, 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.
- 3:45 PM 87 **Performance evaluation of calves with diarrhea in different systems supplemented with yeast culture plus enzymati-
cally hydrolyzed yeast cell wall.**
V. R. Rabassa^{*1}, B. Scherer¹, F. B. Del Pino², C. C. Brauner², F. M. Gonçalves¹, R. F. S. Raimondo¹, E. G. Xavier³, C.
C. Elrod⁴, and M. Nunes Corrêa², ¹Universidade Federal de Pelotas, Pelotas, Brazil, ²Federal University of Pelotas,
Pelotas, Brazil, ³Granjas 4 Irmãos, Rio Grande, Brazil, ⁴Vi-COR, Inc., Mason City, IA.
- 4:00 PM 88 **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.
- 4:15 PM 89 **Yeast probiotics vary in their potential to bind to gram positive or gram negative bacteria.**
G. Posadas^{*1}, J. A. Carroll², J. R. Corley³, A. Lawrence¹, and J. R. Donaldson¹, ¹Mississippi State University, Missis-
sippi State, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, ³Lesaffre Feed Additives, Milwaukee, WI.
- 4:30 PM 90 **An analysis of *Giardia lamblia* and *Cryptosporidium parvum* in bucket Calves at The University of Findlay's Animal
Science Barn.**
S. M. Waibel^{*}, F. D. McCarthy, R. M. Wood, and B. Henderson-Dean, The University of Findlay, Findlay, OH.

Beef Cattle Reproduction Symposium: Rebuilding the U.S. Cowherd: Rethinking the Way Industry Selects and Develops Replacements

Chair: David J. Patterson, University of Missouri

2101

- 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.**
*J. Atkins^{*1}, K. G. Pohler², and M. F. Smith^{2, 1}American Simmental Association, Bozeman, MT, ²University of Missouri, Columbia.*
- 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.**
D. J. Patterson¹, J. M. Thomas¹, D. S. Brown¹, J. E. Decker¹, W. J. Sexten¹, and S. E. Pooock², ¹University of Missouri, Columbia, ²University of Missouri-College of Veterinary Medicine, Columbia.

Beef Species: Stocker and Feedlot

Chair: Judson T. Vasconcelos, Merck & Co

2104B

- 2:00 PM 137 **Effect of crude protein levels and metaphylaxis on growth and performance of newly received stocker calves.**
T. J. Braud¹, B. B. Karisch¹, D. R. Smith¹, C. L. Huston¹, R. Vann², and S. G. Genova¹, ¹Mississippi State University, Mississippi State, ²MAFES-Brown Loam, Mississippi State University, Raymond.
- 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^{1,2}, R. Walker³, B. Buttrey³, and C. C. Williams⁴, 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.**
J. K. Smith, M. D. Hanigan, S. P. Greiner, and M. A. McCann, Virginia Tech, Blacksburg.*
- 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. Old¹ and H. A. Rossow², 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.**
M. McGee¹, C. M. Welch¹, J. A. Ramirez², G. E. Carstens², W. Price¹, J. B. Hall³, and R. A. Hill¹, ¹University of Idaho, Moscow, ²Texas A&M University, College Station, ³University of Idaho, Carmen.
- 3:30 PM 143 **Phenotypic relationships between residual measurements of finishing feed efficiency and visceral organ mass of backgrounded beef steers.**
J. K. Smith, A. R. Murray, D. D. Harmon, M. D. Hanigan, S. P. Greiner, and M. A. McCann, Virginia Tech, Blacksburg.*




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. Rosa², 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. Masuda^{1,2}, 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. Masuda^{1,2}, ¹University of Georgia, Athens, ²Obihiro University of Agriculture and Veterinary Medicine, Obihiro, Japan.
- 3:00 PM 167 **Genomic prediction accounting for residual heteroskedasticity.**
Z. Ou¹, R. J. Tempelman², J. P. Steibel², C. W. Ernst², R. O. Bates², 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. Lawlor³, S. Forni⁴, and J. I. Weller⁵, 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
2103A

- 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. Liu**¹, *D. M. Bravo*², and *J. Pettigrew*¹, 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.
- 3:15 PM 207 **Gut immune system: A new frontier for nutritional modulation of gut health.**
*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. Oh**¹, *S. Walusimbi*¹, *F. Giallongo*¹, *H. L. Weeks*¹, *T. W. Frederick*¹, *A. N. Hristov*¹, *J. L. Pate*¹, *R. J. Elias*², *L. Tao*², and *E. H. Wall*³, ¹Department of Animal Science, The Pennsylvania State University, University Park, ²Department of Food Science, The Pennsylvania State University, University Park, ³Pancosma, 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: Chenchaiha Marella, Cal Poly
3501D

- 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. Moraru**¹, *M. Walkling-Ribeiro*¹, *I. Aprodu*², and *M. V. Karwe*³, 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. Hurt^{1,2}, *M. C. Adams*^{1,2}, and *D. M. Barbano*^{1,2}, 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. Adams**, *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. Chen**, *K. E. Smith*, *J. A. Lucey*, *R. Kalscheuer*, and *M. Molitor*, University of Wisconsin-Madison.
- 3:00 PM 261 **Polymerization of lactose to poly lactose by twin-screw extrusion.**
*T. C. Schoenfuss**, *C. E. Tyl*, and *E. M. Reid*, 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. Barbano^{1,2}, *K. L. Wojciechowski*^{1,2}, and *C. Melilli*^{1,2}, 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. Khanal*¹ and *J. A. Lucey*^{2,3}, ¹University of Wisconsin-Madison, Department of Food Science, ²University of Wisconsin-Madison, ³Wisconsin Center for Dairy Research, Madison.

- 3:45 PM 264 **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. Oliveira², L. M. Fonseca³, M. O. Leite², and M. P. Cerqueira², 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.
- 4:00 PM 265 **The effect of immunoglobulins and somatic cells on the gravity separation of fat, bacteria, and spores in pasteurized whole milk.**
D. M. Barbano^{*1,2} and S. R. Geer^{3,4}, ¹Northeast Dairy Foods Research Center, Ithaca, NY, ²Cornell University, Ithaca, NY, ³Cornell University, Ithaca, NY, ⁴Northeast Dairy Foods Research Center, Ithaca, NY.

Dairy Foods Symposium: Milk Protein-Hydrocolloid Interactions: Recent Impacts

Chair: Karen Schmidt, Kansas State University

Sponsor: EAAP

3501C

- 2:00 PM 253 **Exopolysaccharides from lactic acid bacteria- a world of opportunities.**
A. Hassan*, South Dakota State University, Brookings.
- 2:35 PM 254 **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.
- 3:10 PM 255 **Functionality and structure of hydrocolloids in dairy foods.**
H. D. Goff*, University of Guelph, Guelph, ON, Canada.
- 3:45 PM 256 **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

- 2:00 PM 393 **Developmental programming in agriculturally relevant species: An overview.**
K. A. Vonnahme*, North Dakota State University, Fargo.
- 2:50 PM 394 **EAAP-ASAS Speaker Exchange Presentation: Glucocorticoid programming of development during early life.**
A. Fowden^{*1}, O. A. Valenzuela², J. K. Jellyman², N. B. Holdstock³, and A. J. Forhead⁴, ¹University of Cambridge, Cambridge, England, ²University of Cambridge, Cambridge, United Kingdom, ³University of Cambridge, Cambridge, United Kingdom, ⁴University of Cambridge, Cambridge, United Kingdom.
- 3:40 PM 395 **Nutritional programming and the impact on mare and foal performance.**
J. Coverdale^{*1}, C. J. Hammer², and K. W. Walter³, 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

- 2:00 PM 412 **Intramammary glucocorticoid during a mammary immune response to lipopolysaccharide modulates the blood-milk barrier.**
O. Wellnitz^{*1}, S. K. Wall², M. Saudenova², and R. M. Bruckmaier¹, ¹Veterinary Physiology, Vetsuisse Faculty, University of Bern, Bern, Switzerland, ²Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland.
- 2:15 PM 413 **Milk prolactin response after experimental infection with different coagulase-negative staphylococci in dairy heifers.**
K. Piccart^{*1}, S. Piepers¹, J. Verbeke¹, N. Melo de Sousa², J. F. Beckers², and S. De Vliegher¹, ¹Ghent University, Ghent, Belgium, ²University of Liège, Liège, Belgium.
- 2:30 PM 414 **Regulation of nuclear IGFBP-3 in response to intrinsic apoptotic stress in bovine mammary epithelial cells.**
A. Agostini-Dreyer, A. E. Jetzt, 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.
- 416 **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. Kim², V. R. Osborne¹, T. Wright³, 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. Metcalf², 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. Cappelozza¹, R. F. Cooke¹, T. Guarnieri Filho^{1,2}, I. Bueno², D. W. Bohnert¹, R. L. A. Cerri³, and J. L. M. Vasconcelos⁴, 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, ⁴UNESP-FMVZ, 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. Holzmillner¹, 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. Collier^{2,3}, 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. Maret², W. J. Wales², B. J. Hayes³, F. R. Dunshea¹, and B. J. Leury¹, 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. Falk², H. A. van Dorland¹, A. Münger², F. Dohme-Meier², and R. M. Bruckmaier³, ¹Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, ²Agroscope, Institute for Livestock Sciences ILS, Postieux, 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. Kalaitzakis², O. Wellnitz^{2,3}, H. Bollwein², and R. M. Bruckmaier³, ¹Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, ²Clinic of Reproductive Medicine, Vetsuisse Faculty University 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. Abuajamieh¹, S. K. Stoakes¹, S. M. Lei¹, 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. Cappelozza¹, R. Marques¹, T. Guarnieri Filho^{1,2}, G. A. Perry³, 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 Filho^{1,2}, 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. Colazo², M. Oba¹, and D. J. Ambrose², 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.

Production, Management, and the Environment: Influence Of Diet And Management Practices On Environmental Footprint

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. Moorby*, 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. Neumeier¹, 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 emissions from cattle.**
P. Huhtanen¹, E. H. Cabezas Garcia², S. R. Zimmerman³, and P. R. Zimmerman³, 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.**
A. Berndt, A. P. Lemes, L. A. Romero, T. C. Alves, A. M. Pedroso*, A. D. F. Pedroso, and P. P. A. Oliveira, EMBRAPA, São Carlos, Brazil.
- 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. Martineau², 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. Coffey², R. T. Rhein¹, E. B. Kegley¹, D. Philipp¹, J. D. Caldwell³, 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. Wattiaux³, ¹Department of Dairy Science, University of Wisconsin-Madison, ²Broderick Nutrition & Research, LLC, Madison, WI, ³University 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. Shinzato³, and T. Fujieda², 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. Jarrett², Y. Chen³, L. VanWieringen⁴, B. Chalupa⁵, F. Sun³, P. Ndegwa³, D. Wilks⁶, and H. S. Joo³, ¹Washington State University, Puyallup, ²Prince Agri, Quincy, IL, ³Washington State University, Pullman, ⁴Washington State University, Sunnyside, ⁵University of Pennsylvania, New Bolton Center, ⁶EPL Feeds, Dixie, WA.

- 2:45 PM 658 **Effect of strategic ration balancing with use of Prolak and MetaboLys on the efficiency of milk protein production and environmental impact.**
*P. Ndegwa¹, J. H. Harrison², D. Wilks³, L. VanWieringen⁴, Y. Chen^{*1}, W. Chalupa⁵, F. Sun¹, and H. S. Joo¹, ¹Washington State University, Pullman, ²Washington State University, Puyallup, ³EPL Feeds, Dixie, WA, ⁴Washington State University, Sunnyside, ⁵University of Pennsylvania, New Bolton Center.*
- 3:00 PM 659 **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. Weich^{*1}, K. F. Kalscheur¹, K. J. Herrick², and F. R. Valdez², ¹South Dakota State University, Brookings, ²Kemin Industries, Inc., Des Moines, IA.*
- 3:15 PM 660 **The plasma free amino acid dose response technique: A proposed approach for determining lysine bioavailability of ruminally-protected lysine products.**
*N. L. Whitehouse^{*1}, A. F. Brito¹, and C. G. Schwab², ¹University of New Hampshire, Durham, NH, ²Schwab Consulting, LLC, Boscobel, WI.*
- 3:30 PM 661 **Effects of maternal nutrition and rumen-protected arginine supplementation on pregnant and non-pregnant ewe and postnatal lamb serum amino acids.**
*J. L. Peine^{*1}, G. Jia¹, M. Kappahn¹, S. T. O'Rourke¹, A. M. Meyer², L. P. Reynolds¹, and J. S. Caton¹, ¹North Dakota State University, Fargo, ²Division of Animal Sciences, University of Missouri, Columbia.*
- 3:45 PM 662 **Intestinal digestibility of amino acids in fluid- and particle-associated rumen bacteria determined using a precision-fed cecectomized rooster bioassay.**
*A. C. Fonseca¹, S. M. Fredin^{*1}, L. F. Ferraretto¹, P. L. Utterback², C. M. Parsons², and R. D. Shaver¹, ¹University of Wisconsin-Madison, ²University of Illinois at Urbana-Champaign.*
- 4:00 PM 663 **Performance by Holstein steers offered hay and supplement with or without added methionine.**
*A. L. Bax^{*1}, J. D. Caldwell¹, L. S. Wilbers¹, B. C. Shanks¹, T. Hampton², S. E. Bettis², Y. Liang², and G. I. Zanton², ¹Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO, ²Novus International, Inc., St. Charles, MO.*
- 4:15 PM 664 **Effects of feeding slow release NPN and microbial fermentation extracts on lactation performance of high-producing dairy cows.**
*F. Díaz-Royón^{*1}, A. D. Garcia¹, K. F. Kalscheur², and K. Mjoun³, ¹Dairy Science Department, South Dakota State University, Brookings, ²South Dakota State University, Brookings, ³Alltech, Brookings, SD.*
- 4:30 PM 665 **Concentration of soluble non-ammonia nitrogen and related transporter expression in non-mesenteric gastrointestinal of dairy cows.**
*Y. M. Xie¹, Q. B. Xu^{*1}, Y. M. Wu¹, and J. X. Liu², ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Zhejiang University, Hangzhou, China.*
- 4:45 PM 666 **Role of proton-coupled oligopeptide transporter 1 in small peptide absorption in the bovine forestomach.**
*Q. B. Xu^{*1}, Y. M. Wu¹, H. Y. Liu¹, 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

- 2:00 PM 724 **Rumen microbial species associated with feed efficiency in sheep fed a forage-based diet.**
*K. M. Cammack^{*1}, M. Ellison², G. C. Conant³, W. R. Lamberson³, 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.*
- 2:15 PM 725 **Rationing late gestation ewes using a net energy or metabolisable energy rationing system: Impacts on ewe and lamb performance.**
F. Campion^{}, F. McGovern, A. G. Fahey, and T. M. Boland, School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.*
- 2:30 PM 726 **Determining growth performance implications on meat goat kids fed soybean hull or corn based pelleted diets.**
A. C. Vesco^{}, C. K. Jones, L. C. Grimes, T. H. Fountain, B. R. Faris, and A. K. Sexten, Kansas State University, Manhattan.*
- 2:45 PM 727 **Early supplementation of alfalfa to starter diets improves the pre- and post-weaning performance of lambs.**
*B. Yang^{*1}, B. He¹, S. S. Wang¹, J. X. Liu², and J. K. Wang¹, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Zhejiang University, Hangzhou, China.*

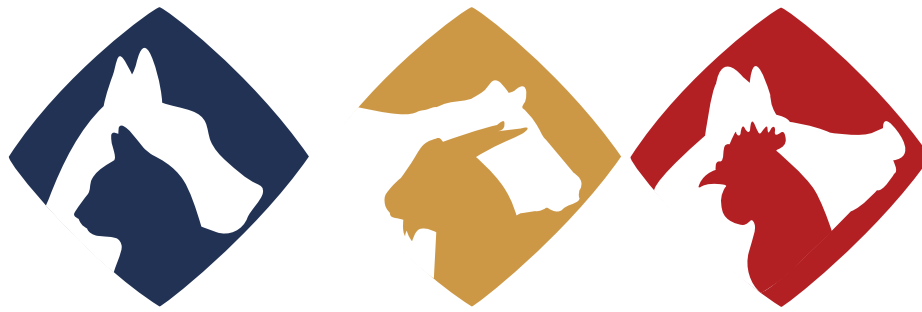
- 3:00 PM 728 **Performance and reproductive measurements of Katahdin ewes and fall-calving Angus cows grazing stockpiled toxic tall fescue under a mixed or sequential grazing scheme – 2 year summary.**
*R. E. Daugherty Jr.*¹, J. D. Caldwell, B. C. Shanks, C. L. Boeckmann, C. A. DeOrnellis, and A. L. Bax, Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO.*
- 3:15 PM 729 **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.*
- 3:30 PM 730 **Hematological and serum chemical profiles in lambs fed sericea lespedeza.**
M. Acharya¹, J. M. Burke², J. E. Miller³, T. H. Terrill⁴, E. Smyth¹, G. Huff⁵, E. B. Kegley⁶, K. P. Coffey¹, and C. F. Rosenkrans¹, 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.
- 3:45 PM 731 **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.*
- 4:00 PM 732 **Short-term effects of divergent selection for parasite resistance in F1 Kiko × Boer doe progeny.**
C. L. Thomas^{1,2}, B. C. Shanks¹, J. D. Caldwell¹, L. S. Wilbers¹, K. L. Basinger¹, B. Weber³, and W. R. Lamberson², ¹Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO, ²University of Missouri, Columbia, ³Kansas State University, Manhattan.*
- 4:15 PM 733 **Milk production and characteristics of lactation curve in dairy sheep and their crosses in Mexico.**
J. C. Angeles Hernandez¹, D. A. Solis Guzman¹, M. Gonzalez Ronquillo¹, A. H. Ramirez Perez², and S. Angeles Campos², ¹Universidad Nacional Autonoma de Mexico, Mexico, ²Universidad Autonoma del Estado de México, Toluca, Mexico.
- 4:30 PM 734 **Goats of Arkansas & Missouri: A production survey.**
K. F. Cole¹, B. M. Onyango¹, J. A. Pennington², C. A. Clifford-Rathert³, C. Hoegeman¹, and E. L. Walker¹, ¹Missouri State University, Springfield, ²Lincoln University, Jefferson City, MO, ³Department 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

- 3:30 PM 553 **Antibiotic use in period 2005-2012 in dairy herds in the Netherlands, with outlook to some other countries.**
*A. Kuipers*¹ and H. Wemmenhove², ¹Expertise Centre for Farm Management and Knowledge Transfer, Wageningen UR, Wageningen, Netherlands, ²Livestock Research Wageningen UR, Lelystad, Netherlands.*
- 3:45 PM 554 **Retrospective analysis of body energy content profiles of dairy cows with different production and metabolic diseases during the transition period.**
*G. L. Smith*¹, 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.*
- 4:00 PM 555 **Update on animal health concerns of recombinant bovine somatotropin (rbST): Meta-analysis of use in dairy cows.**
*N. St. Pierre¹, G. A. Millikin², D. E. Bauman³, R. J. Collier*⁴, J. S. Hogan⁵, J. K. Shearer⁶, K. L. Smith³, and W. W. Thatcher⁷, 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.*
- 4:15 PM 556 **Trends in U.S. milk quality based on bulk-tank somatic cell counts.**
J. E. Lombard, C. A. Koprak, and K. E. Bjork, USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO.*
- 4:30 PM 557 **Somatic cell counts, mastitis infection prevalence, and mastitis pathogen distribution in compost bedded pack and sand freestall farms.**
E. A. Eckelkamp, J. L. Taraba, R. J. Harmon, K. A. Akers, and J. M. Bewley, University of Kentucky, Lexington.*
- 4:45 PM 558 **Corn silage management practices on California dairies.**
*J. M. Heguy*¹, D. Meyer², and N. Silva-del-Rio³, 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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ANIMAL FRONTIERS

The review magazine of animal agriculture

A woman with long dark hair and sunglasses is smiling and holding two dogs. She is wearing a dark blue jacket. The dog on the right is a dachshund puppy, and the dog on the left is a small brown dog. The background is a lush green field with some trees.

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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. Verdu^{*1}, A. Bach², and M. Devant³, 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-Cushon^{*1}, R. Bergeron², K. E. Leslie³, G. J. Mason³, and T. J. DeVries¹, 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-Cushon^{*1}, J. P. Vogel^{1,2}, and T. J. DeVries¹, 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. Lockwood^{}, H. G. Kattesh, P. D. Krawczel, J. B. Wilkerson, J. D. Rhinehart, D. Kirkpatrick, and A. M. Saxton, University 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. LaFollette^{}, K. A. Cloonan, and K. W. Walter, 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. Catanese^{*1}, R. A. Distel¹, and J. J. Villalba², 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. Terré^{*1} and A. Bach², ¹IRTA, Caldes de Montbui, Spain, ²Department of Ruminant Production, IRTA, Caldes de Montbui, Spain.*
- 810 W009 **Behavior of pigs infected with *Salmonella* and fed diets containing a probiotic or a physiological promoter.**
*V. F. Buttow Roll¹, E. Barba-Vidal^{*2}, L. Castillejos³, X. Manteca², and S. Martín-Orúe², 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.*
- 809 W008 **Effect of oral meloxicam on indicators of pain following band castration in beef calves.**
*S. Marti^{*1}, M. J. Jelinski², L. C. Dorin³, E. D. Janzen³, M. E. Olson⁴, B. J. Ralston⁵, 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. Trojan^{*1}, S. J. Trojan², 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. Li^{} and L. Wang, 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. Backes^{*1}, A. C. Brown¹, E. B. Kegley¹, J. T. Richeson², 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.*

- 814 W013 **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.*
- 815 W014 **Objective movement of calf-fed Holstein steers fed in confinement.**
*J. A. Reed*¹, *N. May*¹, *T. McEvers*¹, *L. A. Walters*¹, *J. P. Hutcheson*², and *T. E. Lawrence*³, ¹*West Texas A&M University, Canyon*, ²*Merck Animal Health, Summit, NJ*, ³*West Texas A&M University, Canyon.*
- 816 W015 **A competitive and unpredictable feeding environment disrupts feeding and social behavior of pre-partum dairy cows.**
*K. Proudfoot*¹, *D. Weary*², and *N. von Keyserlingk*², ¹*The Ohio State University, Columbus*, ²*The University of British Columbia, Vancouver, BC, Canada.*
- 817 W016 **Effects of within dyad weight variation on competition, feed intake, and milk production of dairy cows sharing feeding gates.**
*J. R. R. Dórea*¹, *A. L. Stanton*², *C. M. Stoffel*², and *L. E. Armentano*², ¹*University of São Paulo, Piracicaba, Brazil*, ²*University of Wisconsin-Madison.*
- 818 W017 **Impact of feeding and housing strategy on calf performance and behavior.**
S. H. Ward^{*}, *K. Parker*, and *K. Hart*, *Mississippi State University, Mississippi State.*
- 819 W018 **Communicating farm animal welfare science: Wisconsin dairy producers' attitudes toward and interest in cow welfare.**
*C. Skasa*¹, *S. Turner*¹, and *A. L. Stanton*², ¹*University of Wisconsin- Eau Claire*, ²*University of Wisconsin-Madison.*
- 820 W019 **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.*
- 821 W020 **Flight speed as predictor of cattle ability to adapt to feedlots.**
*D. R. Soares*¹, *J. N. S. G. Cyrillo*², *A. C. Sant'Anna*³, *T. S. Valente*⁴, *K. S. Schwartzkopf-Genswein*⁵, and *M. J. R. Paranhos da Costa*⁶, ¹*Bolsista do CNPq-Brasil. Programa de Pós-Graduação em Zootecnia, Faculdade de Ciências Agrárias e Veterinárias, UNESP, 14.884-900, Jaboticabal-SP, Brazil*, ²*Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho-SP, Brazil*, ³*Departamento de Zootecnia, Faculdade de Ciências Agrárias e Veterinárias, UNESP, 14.884-900, Jaboticabal-SP, Brazil*, ⁴*Programa de Pós-Graduação em Genética e Melhoramento Animal, Faculdade de Ciências Agrárias e Veterinárias, UNESP, 14.884-900, Jaboticabal-SP, Brazil*, ⁵*Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*, ⁶*Pesquisador CNPq-Departamento de Zootecnia, Faculdade de Ciências Agrárias e Veterinárias, UNESP, 14.884-900, Jaboticabal-SP, Brazil.*
- 822 W021 **Influence of pen-shade on respiratory rate and panting score in two breed types of growing bull-calves.**
*A. Camacho*¹, *B. J. Cervantes*², *L. R. Flores*¹, *J. J. Lomeli*¹, *J. A. Romo*¹, and *R. Barajas*¹, ¹*FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico*, ²*Ganadera los Migueles, S.A. de C.V., Culiacan, Mexico.*
- 823 W022 **Association among residual feed intake, residual body weight gain, residual intake and body weight gain and temperament of Nellore cattle.**
*C. L. Francisco*¹, *A. M. Jorge*², *A. M. Castilhos*¹, *F. D. Resende*³, *J. M. B. Benatti*⁴, *M. B. Silva*¹, and *R. F. Cooke*⁵, ¹*Universidade Estadual Paulista-FMVZ, Botucatu, Brazil*, ²*Faculdade de Medicina Veterinária e Zootecnia, Universidade Estadual Paulista, Botucatu-SP, Brazil*, ³*Agência Paulista de Tecnologia dos Agronegócios-APTA, Colina, Brazil*, ⁴*Universidade Estadual Paulista-FCAV, Jaboticabal, Brazil*, ⁵*Oregon State University-EOARC Burns.*
- 824 W023 **Association among peripartum health parameters, cud chewing and activity.**
*D. N. Liboreiro*¹, *K. S. Machado*¹, *P. Basso Silva*², *M. M. Filho*¹, *G. Franco*³, *A. E. Barreto*³, *M. I. Endres*², and *R. C. Chebel*¹, ¹*Department of Veterinary Population Medicine, University of Minnesota, St. Paul*, ²*University of Minnesota, Saint Paul*, ³*Department of Veterinary Population Medicine, St Paul, MN.*
- 825 W024 **Animal welfare policies in South Korea.**
*D. H. Kim*¹, *J. H. Jeon*², *S. H. Moon*³, *M. J. Kim*⁴, *D. M. Ha*¹, *H. S. Park*⁵, *N. Whitley*⁵, and *S. H. Oh*⁵, ¹*Gyeongnam National University of Science and Technology, Jinju, South Korea*, ²*National Institute of Animal Science, Suwon, South Korea*, ³*Konkuk University, Chungju, South Korea*, ⁴*Seongwoon Livestock Production, Geochang, South Korea*, ⁵*North Carolina A&T State University, Greensboro.*
- 826 W025 **Influence of environmental conditions across day on respiratory rate and panting score of beef cattle in a hot and humid weather.**
*A. Camacho*¹, *B. J. Cervantes*², *E. X. Murillo*¹, *M. B. Corona*¹, *M. A. Osuna*¹, and *R. Barajas*¹, ¹*FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico*, ²*Ganadera 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.**
*G. Zhang**, *D. M. Hailemariam*, *E. Dervishi*, *Q. Deng*, *S. A. Goldansaz*, *S. M. Dunn*, and *B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.*
- 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.**
*V. Fischer**¹, *E. Forgiarini Vizzotto*¹, *A. Susenbach de Abreu*¹, *A. Thaler Neto*², *M. Tempel Stumpf*¹, *D. Werncke*¹, and *F. André Schmidt*², ¹*Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil,* ²*Universidade Estadual de Lages, Lages, Brazil.*
- 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.**
*A. Saborio-Montero** and *J. M. Sánchez*, *Centro de Investigaciones en Nutrición Animal y Escuela de Zootecnia, Universidad de Costa Rica, San José, Costa Rica.*
- 868 W030 **Activation of innate immunity in transition dairy cows before clinical appearance of milk fever.**
*G. Zhang**, *D. M. Hailemariam*, *E. Dervishi*, *Q. Deng*, *S. A. Goldansaz*, *S. M. Dunn*, and *B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.*
- 869 W031 **Transition dairy cows show blood alterations in innate immunity ahead of occurrence of retained placenta.**
*G. Zhang**, *D. M. Hailemariam*, *E. Dervishi*, *Q. Deng*, *S. A. Goldansaz*, *S. M. Dunn*, and *B. N. Ametaj*, *Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada.*
- 870 W032 **Hypocalcemia and hypomagnesemia prevalence in a grazing Jersey, Guernsey and Holstein herd in Costa Rica.**
*J. M. Sánchez** and *A. Saborio-Montero*, *Centro de Investigaciones en Nutrición Animal y Escuela de Zootecnia, Universidad de Costa Rica, San José, 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*¹, *B. Ampe*¹, *S. Wittocx*², *L. Segers*², *M. Rovers*^{2,3}, *A. van der Aa*³, *G. du Laing*⁴, and *S. De Campeneere*¹, ¹*Institute for Agricultural and Fisheries Research (ILVO), Melle, Belgium,* ²*Orffa Additives BV, Werkendam, Netherlands,* ³*Exentials BV, Werkendam, Netherlands,* ⁴*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*¹, *F. N. Souza*¹, *D. R. Freitas*¹, *L. G. Ladeira*², *D. S. Rodrigues*², *M. O. Leite*¹, *L. M. Fonseca*¹, *C. M. Penna*¹, *M. A. P. Brito*³, and *M. P. Cerqueira*⁴, ¹*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil,* ²*EPAMIG, Belo Horizonte, Brazil,* ³*Embrapa, Juiz de Fora, Brazil,* ⁴*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*¹, *F. N. Souza*¹, *C. C. Vasconcelos*², *A. Cortez*², *D. O. Lapinha*¹, *A. B. Jardim*¹, *A. F. Cunha*¹, *M. O. Leite*³, *M. R. Souza*³, *A. Q. Lana*¹, *M. B. Heinemann*¹, and *M. P. Cerqueira*³, ¹*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil,* ²*Laboratório Veterinário Vidavet, Botucatu, Brazil,* ³*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.**
F. V. R. Portilho, *S. Favero*, *G. G. Wanderley*, *H. Langoni*, and *J. C. F. Pantoja**, *Sao Paulo State University, Botucatu, Brazil.*
- 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*¹, *P. D. Carvalho*², *M. C. Wiltbank*², *P. M. Fricke*¹, and *P. L. Ruegg*¹, ¹*Department of Dairy Science, University of Wisconsin-Madison,* ²*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.*

- 879 W041 **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.
- 880 W042 **Association among peripartum body condition score and metabolic parameters of Jersey cows and cure of sub-clinical 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.
- 881 W043 **Evaluation of the ketone bodies concentration and clinical parameters in dairy cows supplemented with rumen-protected choline during the transition period.**
R. C. D. Souza¹, *R. C. Souza¹*, *R. F. Cota¹*, *J. M. Leão²*, *I. B. Fortes¹*, and *L. S. D. Andrade¹*, ¹PUC Minas, Betim, Brazil, ²UFMG, Belo Horizonte, Brazil.
- 882 W044 **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. Nightingale¹*, *F. Kafizadeh²*, *D. Ghadimi³*, *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.
- 883 W045 **Effects of oral calcium supplementation on body temperature, incidence of uterine diseases, and milk yield in dairy cows.**
N. Martinez¹, *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.
- 884 W046 **Blood calcium dynamics after prophylactic treatment of subclinical hypocalcemia with oral or intravenous calcium.**
C. D. Blanc¹, *M. Van der List²*, *S. S. Aly³*, *H. A. Rossow³*, and *N. Silva-del-Rio³*, ¹Pacific Rim Dairy, Corcoran, CA, ²Boehringer Ingelheim, St Joseph, CA, ³VMTRC, University of California, Tulare.

Beef Species: Cow-Galf and Bull

- 915 W047 **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. Muhire^{1,2}*, *F. Paradis^{1,2}*, *L. McKeown^{1,3}*, *C. Straathof¹*, *H. Block⁴*, *M. G. Colazo³*, *C. Li^{1,2}*, *B. Yarencio⁵*, *J. A. Basarab⁶*, and *H. Bruce¹*, ¹University of Alberta, Edmonton, AB, Canada, ²Agriculture and Agri-Food Canada, Edmonton, AB, Canada, ³Alberta Agriculture and Rural Development, Edmonton, AB, Canada, ⁴Agriculture and Agri-Food Canada, Lacombe, AB, Canada, ⁵Alberta Agriculture and Rural Development, Stettler, AB, Canada, ⁶Alberta Agriculture and Rural Development, Lacombe, AB, Canada.
- 916 W048 **Physiological stress response of heifers divergently ranked for residual feed intake following a bovine corticotrophin releasing hormone challenge.**
A. K. Kelly¹, *A. G. Fahey²*, *B. Earley³*, *M. McGee³*, and *D. A. Kenny⁴*, 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.
- 917 W049 **Relationship of metabolic hormones, urea and body composition with feed efficiency in Angus heifers carrying different genetic markers under grazing conditions.**
A. I. Trujillo¹, *A. Casal¹*, *M. Carriquiry¹*, and *P. Chilibroste²*, ¹Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay, ²Facultad de Agronomia, Universidad de la Republica, Paysandu, Uruguay.
- 918 W050 **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.
- 919 W051 **Effects of prepartum plane of nutrition during mid- or late gestation on beef cow BW, BCS, and preimplantation embryo recovery.**
*W. C. Meter**, *T. B. Wilson*, *P. Cardoso*, and *D. W. Shike*, University of Illinois at Urbana-Champaign.
- 920 W052 **Effects of breed, sex, parity, birth year and birth season on body weight traits for five local cattle breeds and cross-breeds in arid region of Punjab, Pakistan.**
G. Bilal¹, *M. Moaen-ud-Din¹*, *M. Aqeel¹*, *A. Ijaz¹*, *M. S. Khan²*, *M. Y. Gondal³*, *K. M. Khan³*, *M. Mukhtar³*, and *M. N. Manzoor³*, ¹PMAS-Arid Agriculture University, Rawalpindi, Pakistan, ²University of Agriculture, Faisalabad, Pakistan, ³Barani Livestock Production Research Institute, Attock, Pakistan.

- 921 W053 **Effect of rumen protected carbohydrate supplementation on performance and plasma glucose concentrations in growing heifers.**
J. P. Russi¹, P. Davies², N. DiLorenzo³, and A. E. Relling⁴, ¹Facultad de Cs Veterinarias. UNLP, La Plata, Buenos Aires, Argentina, ²INTA Gral. Villegas, General Villegas, Argentina, ³University of Florida, Marianna, ⁴Facultad de Cs Veterinarias UNLP, La Plata, Buenos Aires, Argentina.
- 922 W054 **Evaluation of forage soybean, with and without pearl millet, as an alternative forage for developing beef replacement heifers.**
E. Taylor¹, P. J. Gunn², L. A. Horstman³, R. L. Atkinson⁴, K. D. Johnson³, and R. P. Lemenager³, ¹Purdue University, West Lafayette, IN, ²Iowa State University, Ames, ³Purdue University, West Lafayette, IN, ⁴Southern Illinois University-Carbondale.
- 923 W055 **Plasma glucose concentration, subcutaneous fat thickness, and puberty attainment in Nelore heifers treated with recombinant bovine somatotropin.**
G. Nogueira¹, D. Giraldo-Arana¹, J. S. Souza¹, M. A. Maioli¹, M. C. V. Miguel¹, R. S. Cipriano², T. Sayuri Aguiar³, D. M. Pinheiro¹, and R. F. Cooke⁴, ¹UNESP, Araçatuba, Brazil, ²UniSalesiano, Araçatuba, Brazil, ³UNESP, Aracatuba, Brazil, ⁴Oregon State University-EOARC Burns.
- 924 W056 **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.**
E. Garza Brenner¹, H. Bernal Barragán^{1,2}, E. Gutiérrez Ornelas^{1,2}, F. Sánchez Dávila¹, A. S. Juárez Reyes^{2,3}, and E. Olivares Sáenz¹, 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.
- 925 W057 **Evaluation of anthelmintic resistance of intestinal parasitic nematodes in heifers in south central Nebraska.**
S. A. Jones¹, C. C. Chase¹, R. Cortinas², D. Griffin³, L. A. Kuehn¹, K. Shuck³, K. Whitman³, R. G. Tait, Jr.¹, and J. W. Keele⁴, ¹USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, ²University of Nebraska-Lincoln, ³Great Plains Veterinary Educational Center, Clay Center, NE, ⁴USDA-ARS, Clay Center, NE.
- 926 W058 **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. Brasche¹, J. B. Hall², and M. E. Drewnoski¹, ¹University of Idaho, Moscow, ²University of Idaho, Carmen.
- 927 W059 **Oral supplementation with selenium for young Brangus bulls raised in pasture: Seminal quality in fresh and frozen semen.**
T. B. Castaldeli^{*}, L. K. Hatamoto-Zervoudakis, B. H. Tsuneda, J. T. Zervoudakis, W. A. D. S. Marinho, F. A. D. P. D. B. Arguello, M. F. Duarte Junior, P. P. Tsuneda, and R. D. Almeida, Federal University of Mato Grosso, Cuiaba, Brazil.
- 928 W060 **Use of vitamin C combined to pentoxifylline and fertility in cattle after cryopreservation.**
R. D. Almeida^{*}, L. K. Hatamoto-Zervoudakis, M. F. Duarte Junior, J. T. Zervoudakis, P. P. Tsuneda, A. L. C. Rezende Fraga, F. A. D. P. D. B. Arguello, T. B. Castaldeli, and F. M. Wingert, Federal University of Mato Grosso, Cuiaba, Brazil.

Breeding and Genetics: Application and Methods in Animal Breeding-Livestock I

- 957 W061 **Whole genome association analysis for detecting QTL related to fat and protein production in buffaloes.**
H. Tonhati¹, D. F. Cardoso¹, R. R. Aspilcueta Borquis¹, N. A. Hurtado Lugo², G. M. de Camargo¹, L. G. Albuquerque¹, D. J. A. Santos³, D. C. Scalez¹, and M. C. Nakagawa⁴, ¹State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil, ²Universidade Estadual Paulista "Júlio de Mesquita Filho" (FCAV-UNESP), Jaboticabal, Brazil, ³UNESP Univ Estadual Paulista, Jaboticabal, Brazil, ⁴State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, São Paulo, Brazil.
- 958 W062 **Evaluation of single nucleotide polymorphism markers on four pig chromosomes for potential associations with halothane sensitivity phenotypes in a population of Yorkshire-Landrace pigs.**
K. R. Perry^{*}, C. W. Ernst, J. P. Steibel, and R. O. Bates, Michigan State University, East Lansing.
- 959 W063 **Growth rate of purebred Berkshire pigs housed in hoop buildings in North Carolina.**
S. H. Oh^{*}, N. Whitley, F. McElveen, and H. S. Park, North Carolina A&T State University, Greensboro.
- 960 W064 **Use of the canonical discriminant analysis for selecting a panel of informative markers in 21 Italian sheep breeds.**
C. Dimauro¹, M. Cellesi¹, L. Nicoloso², P. Crepaldi², N. P. P. Macciotta¹, G. Pulina³, and F. Pilla⁴, ¹Università di Sassari, Sassari, Italy, ²Università di Milano, Milano, Italy, ³Dipartimento di Agraria, University of Sassari, Sassari, Italy, ⁴Università del Molise, Campobasso, Italy.
- 961 W065 **Genomic differences between Rambouillet sheep selected for high and low reproductive rate.**
J. M. Thomson^{*} and J. G. Berardinelli, Montana State University, Bozeman.

Breeding and Genetics: Molecular Biology and Genomics

- 962 W066 **Associations of the NCAPG I442M 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. Vu², 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. Silva^{1,2,3}, J. T. Pádua², J. J. R. Fernandes^{4,5}, R. Z. Taveira¹, R. L. Missio⁶, P. S. Pacheco⁷, D. A. Fausto⁸, and J. Restle², 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, Goiás, Brazil, ⁵Universidade Federal de Goiás, Goiânia, 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. Lee¹, K. Y. Chung¹, U. H. Kim¹, B. W. Choi², D. Lim², Y. M. Cho², C. G. Dang¹, H. C. Kim¹, S. H. Yeon¹, H. S. Kang¹, and C. Gondro³, ¹Hanwoo Experiment Station, NIAS, RDA, Pyeongchang, South Korea, ²Animal Genomics & Bioinformatics Division, NIAS, RDA, Suwon, South Korea, ³University of New England, Armidale 2350, Australia.
- 967 W071 **SNP located on three candidate genes influencing growth, performance and carcass traits in a population of steers sired by Braunvieh, Charolais and Simmental Bulls.**
*M. D. Garcia**, S. Mizell, and T. Page, Louisiana State University, Baton Rouge.
- 968 W072 **Single nucleotide polymorphisms in the XKR4 and DRD2 genes influence adjusted birth and 205-day weights of calves grazing endophyte-infected tall fescue.**
K. M. Ely¹, C. J. Kojima¹, A. M. Saxton¹, and R. L. Kallenbach², ¹University of Tennessee, Knoxville, ²University of Missouri, Columbia.

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. Attaie, 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. Bhatt^{1,2}, A. Cucheval², C. Coker², H. G. Patel³, A. Carr¹, and R. Bennett¹, ¹Massey University, Palmerston North, New Zealand, ²Fonterra 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. Man^{2,3}, T. Li¹, Y. Shan^{2,3}, Y. Deng¹, M. Ding¹, M. Guo⁴, and Y. Jiang^{1,2,3}, 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. Ma^{1,2}, D. P. Bu², J. T. Chen², and J. Q. Wang^{*2}, 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.**
L. Ma, D. P. Bu, J. T. Chen, and J. Q. Wang^{}, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- 1028 W082 **Identification of microRNA in fresh milk of cow and goat.**
*D. P. Bu¹, L. Ma¹, X. M. Nan¹, J. J. Loo², 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. Zhang^{1,2,3}, N. Zheng^{1,2,3}, F. Wen^{1,2,3}, S. Li^{1,2,3}, 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. Wang^{1,2,3}, N. Zheng^{1,3}, F. Wen^{1,3}, H. Wang², X. Guo^{1,3}, S. Li^{1,3}, and J. Wang^{*1,3}, 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 **Caseinomacropptide 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. Penna², L. M. Fonseca¹, M. R. Souza², 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. Ren^{1,2}, D. L. Van Hekken¹, M. H. Tunick¹, and P. M. Tomasula^{*3}, 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^{*1}, 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.**
L. F. D'Abreu^{}, C. Rodrigues, A. Saran Netto, J. L. Guimarães, M. A. Silva, and N. D. P. Lopes, School of Animal Science and Food Engineering, University of São Paulo, Pirassununga, Brazil.*

Forages and Pastures Posters III: General forages and forage systems

- 1104 W091 **Effect of plant density on nutritional quality of green chopped corn.**
*G. Ferreira^{*1,2}, D. Carp², M. Alfonso³, and S. Depino³, 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.*
- 1105 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. Eun^{*1}, J. W. MacAdam¹, and B. R. Min², 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.**
K. E. Griswold^{}, R. Almada, A. Lipata, and E. Rodberg, Kemin Animal Nutrition & Health, Des Moines, IA.*
- 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. Coblenz^{*1}, M. G. Bertram², P. C. Hoffman³, N. M. Esser⁴, and J. S. Cavadini⁴, ¹US Dairy Forage Research Center, Marshfield, WI, ²University of Wisconsin, Arlington, ³University of Wisconsin-Madison, ⁴University of Wisconsin, Marshfield.*
- 1110 W097 **Fertilization of fall-grown oat with urea or bedded-pack manure.**
*W. K. Coblenz^{*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 South-western forage production operation.**
*J. D. Allen^{*1}, L. W. Hall², and J. English², 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. Azenha^{*2}, S. S. Santana², C. H. O. Macedo², J. P. R. Costa², T. T. Berchielli³, A. C. Ruggieri³, and R. A. Reis², ¹UNESP, Jaboticabal, Brazil, ²University of Sao Paulo State, 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. Abeyssekara, D. A. Christensen, X. Huang^{}, 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. Azenha^{*1}, L. F. Brito¹, A. A. Oliveira¹, E. R. Januszkiewicz¹, E. Raposo¹, S. S. Santana¹, R. A. Reis¹, and A. C. Ruggieri², 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-Alvarez^{*1}, R. Copado-García², O. Ruiz-Barrera¹, C. Rodríguez-Muela¹, A. Corral-Luna¹, A. Castañeda-Correa¹, 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. Kim^{*1}, M. M. Sargolzehi², B. Lee¹, D. Ji¹, J. Peng¹, J. Nejad¹, S. Kang³, D. H. Min⁴, and K. Sung¹, 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, Suwon, 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. Chizzotti^{*1}, D. M. Fonseca¹, M. E. Santos², and B. M. Pereira¹, ¹Universidade Federal de Vicosa, Vicosa, Brazil, ²Universidade Federal de Uberlandia, Uberlandia, Brazil.*
- 1120 W107 **Chemical composition and *in situ* dry matter degradability of tropical forages grasses in Northeastern Brazil.**
S. S. C. Sanches, R. C. Rodrigues, M. O. M. Parente^{}, I. G. R. Araújo, C. M. S. Galvão, A. L. Silva Júnior, S. Figueredo, R. A. Araújo, I. Rodrigues, and S. S. Mendes, Universidade Federal do Maranhão, Chapadinha, Brazil.*
- 1121 W108 **Influence of phenological stage on fresh forage, hay and silage on nutritional value of tall wheatgrass.**
*M. Menghini^{1,2}, H. M. Arelovich^{*1,2,3}, M. F. Martínez¹, and R. D. Bravo¹, ¹Dto. Agronomía, Universidad Nacional del Sur, Bahía Blanca, Argentina, ²CIC, Bahía Blanca, Argentina, ³CERZOS, Bahía Blanca, Argentina.*

- 1122 W109 **Spatio-temporal evaluation of the nutritive value of *Croton cortesianus* and *Leucophyllum frutescens* through in vitro fermentation kinetics.**
M. S. Alvarado¹, M. Guerrero-Cervantes*¹, H. González-Rodríguez², Domínguez-T. G. Gómez¹ and A. Juárez-Reyes¹,
¹Universidad Juárez del Estado de Durango, Durango, Mexico, ²Universidad Autónoma de Nuevo León, Linares, Nuevo León, Mexico
- 1123 W110 **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. Malheiros, Sao Paulo State University, Jaboticabal, Brazil.
- 1124 W111 **Nutritive value of buffelgrass-based diets supplemented with dried distillers grains with solubles and dried citrus pulp.**
N. C. Vásquez Aguilar*¹, H. Bernal Barragán^{1,2}, R. G. Ramírez Lozano¹, M. Cerrillo Soto^{2,3}, M. V. Gómez Meza¹, E. Gutiérrez Ornelas^{1,2}, and M. Guerrero Cervantes^{2,3}, 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.
- 1125 W112 **Lignin concentration and its correlation with degradability of tropical grasses.**
A. Vargas Velásquez*, Universidade de São Paulo, Pirassununga, Brazil.
- 1126 W113 **Chemical characterization and in vitro fermentation activity of tropical legumes.**
I. Scull-Rodríguez^{1,2}, M. A. Cerrillo Soto*^{2,3}, O. Olao^{1,2}, M. Guerrero-Cervantes^{2,3}, A. Juárez-Reyes^{2,3}, and R. Herrera-García^{1,2}, 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.
- 1127 W114 **Modeling dry matter production in *Panicum maximum* grasses.**
V. L. N. Brandao¹, M. I. Marcondes², F. H. M. Chizzotti*², and H. Bandeira², ¹Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ²Federal University of Vicoso, Vicoso, Brazil.
- 1128 W115 **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.

Growth & Development Poster II

- 1180 W116 **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.
- 1181 W117 **Effects of maternal nutrient restriction on muscle satellite cell activity.**
J. S. Raja*, M. L. Hoffman, K. N. Peck, K. E. Govoni, S. A. Zinn, and S. A. Reed, Department of Animal Science, University of Connecticut, Storrs.
- 1182 W118 **Effects of milk replacer and multivitamin-mineral supplementation on performance of heat stressed dairy calves.**
S. Blair*¹, C. C. Williams¹, B. F. Jenny¹, M. Thomas¹, V. Morgan¹, and T. Earleywine², ¹LSU AgCenter, Baton Rouge, ²Land O'Lakes Animal Milk Products, Shoreview, MN.
- 1183 W119 **Effects of milk replacer feeding frequency on growth and performance of neonatal Holstein calves.**
M. Thomas*, C. C. Williams, B. F. Jenny, S. Blair, C. F. Hutchison, C. Burke, E. L. Chartier, M. Orellana, and A. H. Dolejsiova, LSU AgCenter, Baton Rouge.
- 1184 W120 **High energy diet enhances intramuscular adipogenesis in Hanwoo steers distributed to breeding value for meat quality.**
K. Y. Chung*, S. W. Lee, U. H. Kim, S. C. Jang, Y. M. Cho, E. M. Lee, S. M. Lee, and H. S. Kang, Hanwoo Experiment Station, NIAS, RDA, Pyeongchang, South Korea.
- 1185 W121 **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. Ribeiro¹, M. V. Biehl², J. P. C. Thieme², E. M. Moreira¹, J. A. Faleiro Neto¹, and J. R. S. Gonçalves³, ¹University of São Paulo-FMVZ/USP, Pirassununga, Brazil, ²University of São Paulo-ESALQ/USP, Piracicaba, Brazil, ³Experimental Station Hildegard Georgina Von Pritzelwitz, Londrina, Brazil.
- 1186 W122 **Microarray studies in high and low RFI cattle reveal a potential role for gonadotropin releasing hormone (GnRH) in regulating feed efficiency.**
S. D. Perkins*¹, C. Foradori¹, A. K. McNeel², L. A. Kriese-Anderson¹, and T. D. Brandebourg¹, ¹Auburn University, Auburn, AL, ²USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE.
- 1187 W123 **Microbiota diversity is inversely related to adiposity in Mangalica pigs.**
J. W. Broady, L. Wang, A. G. Moss, T. D. Brandebourg, and E. Schwartz*, Auburn University, Auburn, AL.

- 1188 W124 **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.
- 1189 W125 **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.
- 1190 W126 **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.
- 1191 W127 **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. Pariz¹, and D. C. Rivaroli¹, ¹Universidade Estadual Paulista-FMVZ, Botucatu, Brazil, ²Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho-SP, Brazil.
- 1192 W128 **Retinoic acid alters expression of key genes during differentiation of bovine intramuscular preadipocytes.**
J. Kim¹, K. Chung², S. Chang², and B. J. Johnson¹, ¹Texas Tech University, Lubbock, ²Hanwoo Experiment Station, NIAS, RDA, Pyeongchang, South Korea.
- 1193 W129 **Role of G Protein-coupled estrogen receptor-1 and matrix metalloproteinases 2 and 9 in the effects of estradiol-17 β on proliferation, protein synthesis and protein degradation in bovine satellite cell cultures.**
E. Kamanga-Sollo, B. C. Reiter, K. J. Thornton^{}, M. E. White, and W. R. Dayton, University of Minnesota, Saint Paul.*
- 1194 W130 **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. Shenk¹, C. S. Ballard¹, K. M. Morrill², and H. M. Dann¹, ¹William H. Miner Agricultural Research Institute, Chazy, NY, ²Cornell University, Ithaca, NY.
- 1195 W131 **The effect of two sources of soy protein concentrate and hydrolyzed soy protein modified on growth and performance of calves fed milk replacer.**
B. L. Miller¹, T. Earleywine², W. S. Bowen Yoho³, and T. E. Johnson³, ¹Land O'Lakes-Purina Feed LLC, Gray Summit, MO, ²Land O'Lakes Animal Milk Products, Shoreview, MN, ³Land O'Lakes, Inc., Webster City, IA.
- 1196 W132 **The effect of various fat levels and fat sources on growth and performance of calves fed milk replacer.**
T. Earleywine¹, B. L. Miller², W. S. Bowen Yoho³, and T. E. Johnson³, ¹Land O'Lakes Animal Milk Products, Shoreview, MN, ²Land O'Lakes-Purina Feed LLC, Gray Summit, MO, ³Land O'Lakes, Inc., Webster City, IA.
- 1197 W133 **Use of biometric measurements to predict age and body weight of bovine fetus.**
T. R. Gionbelli¹, M. P. Gionbelli^{1,2}, M. S. Duarte¹, S. C. Valadares Filho^{1,2}, 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

- 1206 W134 **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.
- 1207 W135 **Development of an objective on-farm equine temperament scoring system.**
J. N. Foley¹, J. L. Lucia², and K. W. Walter¹, ¹Truman State University, Kirksville, MO, ²Sam Houston State University, Huntsville, TX.
- 1208 W136 **Cooling of equine semen at 16°C for 36h with the addition of cysteine in different concentrations.**
R. A. De Oliveira¹, L. S. Murata¹, M. A. D. O. Viu², and M. L. Gambarini², ¹University of Brasilia, Brasilia, Brazil, ²Federal University of Goiás, Goiânia, Brazil.
- 1209 W137 **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.
- 1210 W138 **The effect of skim milk as an equine semen extender.**
M. L. Freitas, C. S. Bouéres, F. J. G. De Oliveira, L. S. Murata^{}, and R. A. De Oliveira, University of Brasilia, Brasilia, Brazil.*
- 1211 W139 **Reproductive activity in Quarter Horse mares with artificial light.**
J. A. Ramirez-Godínez^{}, J. Delgado-Laphond, A. Flores-Mariñelarena, and E. Santellano-Estrada, Universidad Autónoma de Chihuahua, Chihuahua, Mexico.*

- 1212 W140 **Composition of follicular fluid and serum, ovarian dynamics, and IGF-1 concentrations following n-3 fatty acid supplementation in mares.**
S. E. Buist¹, M. J. Schmidt¹, D. M. Grieger¹, C. A. Blevins¹, S. K. Webel², T. L. Douthit¹, L. Murray¹, and J. M. Kouba¹,
¹Kansas State University, Manhattan, ²JBS United, Baylis, IL.

Lactation Biology Poster II

- 1232 W141 **Day length affects simultaneously mammary epithelium integrity and mammary epithelial cell exfoliation in milk.**
M. Boutinaud¹, A. Bondon¹, P. Debournoux¹, J. Couedon¹, M. Johan¹, A. Narcy², and C. Hurtaud¹, ¹INRA, Saint Gilles, France, ²INRA, Nouzilly, France.
- 1233 W142 **Serotonin receptors expression in caprine and ovine mammary gland by Real Time PCR-RT.**
A. Suárez-Trujillo¹, A. Argüello¹, M. A. Rivero², J. Capote³, and N. Castro¹, ¹Department of Animal Science, Universidad de Las Palmas de Gran Canaria, Arucas, 35413, Las Palmas, Spain, ²Department of Morphology, Universidad de Las Palmas de Gran Canaria, Arucas, 35413, Las Palmas, Spain, ³Canarian Agronomic Science Institute, La Laguna, 38200, Tenerife, Spain.
- 1234 W143 **Immortalization of a primary bovine mammary epithelial cell line by the SV40 large T-antigen gene.**
H. Hu^{1,2,3}, N. Zheng^{1,2,3}, W. Dai^{1,2,3}, H. Gao^{1,2,3}, and J. Wang^{1,2,3}, 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.
- 1235 W144 **Color measurement as potential tool for determination of colostrum quality in primiparous and multiparous dairy cows.**
J. J. Gross¹, E. C. Kessler¹, and R. M. Bruckmaier², ¹Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, ²Veterinary 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.**
W. J. Weber¹, M. Carriquiry², S. C. Fahrenkrug¹, and B. A. Crooker¹, ¹University of Minnesota, Saint Paul, ²Universidad de la República, Montevideo, Uruguay.
- 1237 W146 **Comparative glycolysis and Krebs cycle metabolism of the bovine and murine mammary gland determined with [¹³C]₆glucose and mass spectrometry.**
L. J. Juengst¹, E. E. Connor², R. L. Baldwin, VP³, and B. J. Bequette¹, ¹Department of Animal and Avian Sciences, University of Maryland, College Park, ²USDA-ARS, Bovine Functional Genomics Laboratory, Beltsville, MD, ³USDA-ARS, BFG, Beltsville, MD.
- 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. Brooker¹, J. E. Williams¹, S. M. Reynolds¹, K. M. Yahvah¹, L. K. Fox², and M. A. McGuire¹, ¹University of Idaho, Moscow, ²Washington State University, Pullman.
- 1239 W148 **Impact of machine milking on teat dimensions.**
J. F. Guarín^{1,2}, D. J. Reinemann³, and P. L. Ruegg¹, ¹Department of Dairy Science, University of Wisconsin-Madison, ²Grupo de Investigación Biogénesis, Facultad de Ciencias Agrarias, Universidad de Antioquia, Medellín, Colombia, ³Department of Biological Systems Engineering, University of Wisconsin-Madison.
- 1240 W149 **Comparison of ecological indices of bacterial communities in bovine milk varying in somatic cell count.**
J. E. Williams¹, S. M. Reynolds¹, K. M. Yahvah¹, S. L. Brooker¹, L. K. Fox², B. Shafiq¹, and M. A. McGuire¹, ¹University of Idaho, Moscow, ²Washington State University, Pullman.
- 1241 W150 **Effects of arginase inhibition on casein expression and proliferation of bovine mammary epithelial cells.**
L. Ding¹, M. Wang¹, L. Chen¹, H. Wang¹, and J. J. Loo², ¹Yangzhou University, Yangzhou, China, ²University of Illinois at Urbana-Champaign.

Meat Science & Muscle Biology Posters III

- 1264 W151 **Sun dried meat quality derived from young bulls fed licuri cake derived from biodiesel production.**
R. L. Oliveira¹, A. A. L. Govêa, A. G. Leão, N. G. D. N. Júnior, W. F. D. Souza, S. T. Carvalho, T. M. Silva, A. D. S. Nunes, and R. R. D. Albuquerque, Universidade Federal da Bahia, Salvador, Brazil.
- 1265 W152 **Processed burger quality derived from young bulls fed licuri cake from biodiesel production.**
R. L. Oliveira¹, A. A. L. Govêa¹, A. G. Leão¹, C. B. D. Pellegrini¹, N. G. D. N. Júnior¹, C. L. D. Abreu¹, T. M. Silva¹, V. B. D. Silva¹, and E. S. dos Santos², ¹Universidade Federal da Bahia, Salvador, Brazil, ²Federal University of Bahia, Salvador, Brazil.

- 1266 W153 **Collagen, cooking losses and shear force of aged meat from Nellore steers fed protected or unprotected linseed oil.**
W. Henrique¹, L. R. Simonetti², T. M. Pivaro³, V. G. Carvalho⁴, E. A. Oliveira⁵, C. C. P. D. Paz¹, and A. A. M. Sampaio⁶,
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- 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. Henrique¹, L. R. Simonetti², T. M. Pivaro³, V. G. Carvalho⁴, E. A. Oliveira⁵, C. C. P. D. Paz¹, and A. A. M. Sampaio⁶,
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- 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. Simonetti¹, W. Henrique², T. M. Pivaro³, V. G. Carvalho⁴, E. A. Oliveira⁵, C. C. P. D. Paz², and A. A. M. Sampaio⁶,
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- 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. Simonetti¹, W. Henrique², T. M. Pivaro³, V. G. Carvalho⁴, E. A. Oliveira⁵, C. C. P. D. Paz², and A. A. M. Sampaio⁶,
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- 1270 W157 **Aged beef from Nellore young bulls fed crude glycerin in diets with different roughage sources.**
J. F. Lage¹, A. F. Ribeiro², M. Machado¹, L. R. Simonetti³, E. A. Oliveira⁴, E. E. Dallantonia⁴, and T. T. Berchielli⁵,
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, Jaboticabal, Brazil.
- 1271 W158 **Effect of aging times on tenderness of five muscles from carcass of Nellore young bulls.**
L. R. Simonetti¹, J. F. Lage¹, E. E. Dalantonia¹, E. A. Oliveira², M. B. Abra¹, G. M. Delamagna³, L. Maneck Delevatti¹, and T. T. Berchielli¹,
¹Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, ²Universidade Estadual Paulista "Júlio de Mesquita Filho"-UNESP, Jaboticabal, Brazil, ³Universidade Estadual Júlio de Mesquita Filho-UNESP, 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. Abra¹, J. F. Lage¹, L. G. Rossi², L. R. Simonetti¹, E. A. Oliveira³, G. M. Delamagna⁴, E. E. Dalantonia⁴, V. B. Carvalho², and T. T. Berchielli¹,
¹Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, ²Universidade Estadual Paulista, Jaboticabal, Brazil, ³Universidade Estadual Paulista "Júlio de Mesquita Filho"-UNESP, Jaboticabal, Brazil, ⁴Universidade Estadual Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.
- 1273 W160 **Effects of excess dietary sulfur on beef carcass characteristics and quality after aging.**
J. Hawley¹, 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 Mazon¹, S. Luz e Silva², D. Silva Antonelo¹, K. Nubiato³, D. Juliana Brigida¹, B. Baptista³, and P. R. Leme²,
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. May¹, T. J. McEvers¹, L. A. J. Walter¹, J. A. Reed¹, J. P. Hutcheson², and T. E. Lawrence¹,
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. Baggerman¹, J. E. Hergenreder, and B. J. Johnson, Texas Tech University, Lubbock.

- 1277 W164 **Surgical castration and immunocastration improve cuts yield of high market value from animals crossbred Aberdeen Angus x Nellore.**
A. D. Moreira¹, F. D. Resende², G. R. Siqueira³, J. M. B. Benatti¹, M. H. Moretti⁴, J. A. Alves Neto¹, B. S. Lima⁵, J. F. Lage⁶, G. Z. Miguel⁷, P. H. Gonçalves⁸, and F. D. Santos⁸, ¹Universidade Estadual Paulista, Jaboticabal, Brazil, ²Agência Paulista de Tecnologia dos Agronegócios-APTA, Colina, Brazil, ³APTA-Polo Regional Alta Mogiana, Colina, Brazil, ⁴UNESP-FCAV, Jaboticabal, Brazil, ⁵Universidade Estadual Paulista "Júlio de Mesquita Filho"-UNESP, Jaboticabal, Brazil, ⁶Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil, ⁷Universidade do Estado de Mato Grosso, Pontes e Lacerda, Brazil, ⁸Centro Universitário da Fundação Educacional de Barretos-Unifeb, Barretos, Brazil.

Nonruminant Nutrition: Evaluation of Feed Ingredients For Monogastric Diets

- 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. Murata¹, 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. Sulabo¹, T. E. Sauber², 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. Sulabo¹, T. E. Sauber², 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. Pérez¹, 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. Figueroa^{1,2}, D. Solà-Oriol³, R. Davin⁴, J. F. Pérez⁴, and D. Dwyer^{5,6}, 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, ⁵Cardiff University, Cardiff, Wales, ⁶School 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. Woyengo¹, E. Sánchez^{1,2}, J. Yanez³, M. Cervantes⁴, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²Universidad Autónoma de Baja California, Mexicali, Mexico, ³Universidad Autónoma de Tlaxcala, Tlaxcala, Mexico, ⁴ICA, Universidad Autónoma de Baja California, Mexicali, 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. Diaz Berrocoso¹, L. Cámara¹, X. Roca², and G. G. Mateos¹, ¹Universidad Politécnica de Madrid, Madrid, Spain, ²Promic, S. A., Barcelona, Spain.
- 1354 W172 **Effect of wheat and wheat with corn distillers grain on growth performance in nursery pigs.**
D. J. Bloxham¹, R. Dove¹, and M. J. Azain¹, University of Georgia, Athens.
- 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. Nuñez², P. V. A. Alvarenga¹, F. R. Castolini¹, D. Perondi¹, R. G. Isola¹, A. Remus¹, Y. V. Silva-Guillen¹, E. Daniel¹, and S. L. Silva², 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 extract on production performance, feed intake, egg quality and excreta microbiota in laying hens.**
H. L. Li, Y. Lei, and I. H. Kim¹, Department of Animal Science, Dankook University, Cheonan, South Korea.

- 1357 W175 **Injection of glycosaminoglycans and vitamin C in incubation on the weight loss and shell conductance of the eggs.**
E. T. T. Santos¹, D. M. C. C. Castiblanco¹, L. L. Borges¹, C. H. D. F. Domingues², T. C. O. D. Quadros¹, S. Sgavioli¹, G. M. D. A. R. Garcia¹, R. D. G. Isola², and S. M. B. Artoni¹, ¹Department of Morphology and Animal Physiology, São Paulo State University, Jaboticabal, Brazil, ²Department of Animal Science, São Paulo State University, Jaboticabal, Brazil.
- 1358 W176 **Effect of material bioconversion natural complex on growth performance, nutrient digestibility, blood characteristics, and fecal microbiota in weanling pigs.**
J. H. Cho^{}, M. Begum, and I. H. Kim, Department of Animal Science, Dankook University, Cheonan, South Korea.*
- 1359 W177 **The effects of fermented cotton seed meal on growth performance and egg quality in laying hens.**
Y. Wang¹, A. Li¹, Y. Hou¹, Y. Li², X. Zhang¹, and H. Wei¹, ¹Academy of State Administration of Grain, Beijing, China, ²Animal Diseases Control and Prevention Centre of Miyun City, Beijing, China.
- 1360 W178 **Soybean meals and soy protein concentrates as main source of protein in phase 1 diets for piglets: Growth performance data.**
P. Guzmán, B. Saldaña, L. Cámara, and G. G. Mateos^{}, Universidad Politecnica de Madrid, Madrid, Spain.*
- 1361 W179 **Standardized total tract digestibility of phosphorus in camelina (*Camelina Sativa*) meal fed to growing pigs without or with phytase supplementation.**
P. A. Adhikari and C. M. Nyachoti^{}, University of Manitoba, Winnipeg, MB, Canada.*
- 1362 W180 **Effects of adding a dried food waste product to the diets of finishing pigs on growth, feed intake, and nutrient digestibility.**
H. L. Acuff^{} and L. A. Pettey, California State Polytechnic University, Pomona.*
- 1363 W181 **Determination of the effect of the level of corn starch in the diet on the energy value of crude glycerin in swine.**
C. Ordoñez-Gomez^{1,2}, C. Ariza-Nieto³, and G. Afanador-Tellez², ¹Universidad Francisco de Paula Santander-Ocaña, Ocaña, Colombia, ²Universidad Nacional de Colombia, Bogotá, Colombia, ³CORPOICA, Mosquera, Colombia.
- 1364 W182 **Effect of the substitution of soybean meal and sorghum for cull chickpeas on the apparent digestibility of nutrients in diets for growing pigs.**
J. M. Uriarte^{}, R. Barajas Cruz, J. A. Romo Rubio, H. R. Guemez Gaxiola, J. M. Romo Valdez, J. F. Nuñez, and N. A. López, Universidad Autónoma De Sinaloa, Culiacán, Mexico.*

Nonruminant Nutrition: Factors Impacting Feed Intake

- 1365 W183 **Antioxidant activity of intestinal mucosa in piglets fed deoxynivalenol naturally contaminated diet.**
F. Guay¹, M. Lessard², Y. Chorfi³, and B. V. Le Thanh⁴, ¹Université Laval, Québec, Québec City, QC, Canada, ²Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ³Université de Montréal, Faculté de Médecine Vétérinaire, St-Hyacinthe, QC, Canada, ⁴Université Laval, Québec City, QC, Canada.
- 1366 W184 **Effects of different feed processing procedures with expander on broiler performance.**
M. Gierus¹, C. Elwert², and S. Sternowsky³, ¹University of Natural Resources and Life Sciences-Institute of Animal Nutrition, Products, and Nutrition Physiology, Vienna, Austria, ²Feedtest, Wettin-Löbejün, Germany, ³Amandus Kahl GmbH & Co KG, Reinbek, Germany.
- 1367 W185 **Influence of pre-pelleting inclusion of whole corn on performance, nutrient utilization and digestive tract measurements of young broilers.**
Y. Singh¹, V. Ravindran¹, and T. J. Wester², ¹Massey University, Palmerston North, New Zealand, ²Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Palmerston North, New Zealand.
- 1368 W186 **Divergent selection for residual feed intake may be impacted by differences in feeding behaviour.**
S. Vígors¹, T. Sweeney², A. G. Fahey³, C. J. O'Shea¹, and J. V. O'Doherty¹, ¹School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, ²College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland, ³School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland.
- 1369 W187 **Effect of dietary aflatoxin from contaminated corn on performance of turkey poults.**
A. S. Oyegunwa, E. O. Ewuola, A. F. Agboola, and E. A. Iyayi^{}, University of Ibadan, Ibadan, Nigeria.*
- 1370 W188 **Worldwide occurrence of mycotoxins in feeds and feed components in the year 2013.**
S. Schaumberger¹, K. Nährer², and U. Hofstetter², ¹BIOMIN Holding GmbH, Herzogenburg, Austria, ²Biomin Holding GmbH, Herzogenburg, Austria.

Physiology and Endocrinology III

- 1429 W189 **Estimated energy balance of periparturient ewes grazing in rangelands.**
E. González-García¹, D. Tagliatella², M. Jouven³, and F. Bocquier³, ¹INRA UMR868 Systèmes d'Élevage Méditerranéennes et Tropicaux (SELMET), Montpellier 34060, Montpellier, France, ²Universidade Estadual de Londrina (UEL), Rodovia Celso Garcia Cid, PR 445 Km 380, Campus Universitário, Londrina, Brazil, ³Montpellier Supagro, Sciences Animales, UMR868 Systèmes d'Élevage Méditerranéennes et Tropicaux (SELMET), Montpellier 34060, France, Montpellier, France.
- 1430 W190 **Effects of adsorbent on milk aflatoxin M1 and lactation performance of dairy cows exposed to long-term challenge of aflatoxin B1.**
J. L. Xiong¹, Y. M. Wang², W. M. Huang¹, Y. Zhang¹, H. M. Guo¹, and J. X. Liu³, ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Novus International Trading (Shanghai) Co., Ltd, Shanghai, China, ³Zhejiang University, Hangzhou, China.
- 1431 W191 **Effects of excessive energy intake and supplementation with chromium propionate on insulin resistance parameters in lactating dairy cows: II. Glucose tolerance tests and follicular flushing.**
T. Leiva¹, R. F. Cooke², F. N. Correa¹, A. C. Aboin¹, A. P. Brandao¹, H. F. Soares¹, M. B. Piccolo¹, and J. L. M. Vasconcelos¹, ¹UNESP-FMVZ, Botucatu, Brazil, ²Oregon State University-EOARC Burns.
- 1432 W192 **Deuterium enrichment in plasma, rumen fluid and urine of growing sheep dosed with D₂O intravenously and intraruminally does not differ.**
C. C. Metges¹, S. Görs¹, H. M. Hammon¹, U. Agarwal², and B. J. Bequette², ¹Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, ²Department of Animal and Avian Sciences, University of Maryland, College Park.
- 1433 W193 **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^{1,2,3}, R. M. Bruckmaier¹, and O. Wellnitz¹, ¹Veterinary Physiology, Vetsuisse 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.
- 1434 W194 **Effects of road transportation on metabolic and immunological responses in dairy heifers.**
M. Baik¹, H. J. Kang¹, I. K. Lee¹, M. Y. Piao¹, C. W. Kwak¹, M. J. Gu¹, C. H. Yun¹, H. J. Kim¹, G. H. Kim², S. K. Kim², and J. K. Ha¹, ¹Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, South Korea, ²Department of Animal Science and Technology, Konkuk University, Seoul, South Korea.
- 1435 W195 **Differences in mitochondrial DNA copy numbers in various subcutaneous and visceral fat depots of overconditioned cows.**
L. Laubenthal¹, L. Locher², J. Winkler³, U. Meyer³, J. Rehage², S. Dänicke³, H. Sauerwein¹, and S. Häussler¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.
- 1436 W196 **In vitro insulin sensitivity of subcutaneous and omental adipocytes of precalving dairy cows across a range of BCS.**
J. De Koster¹, L. Hulpio¹, V. Fievez², W. Van den Broeck³, and G. Opsomer¹, ¹Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium, ²Department of Animal Production, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium, ³Department of Morphology, Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium.
- 1437 W197 **Dietary melatonin supplementation during late gestation alters concentrations of progesterone and milk yield in Holstein heifers.**
C. O. Lemley¹, K. E. Brockus¹, C. G. Hart¹, and S. H. Ward¹, Mississippi State University, Mississippi State.
- 1438 W198 **Dry-matter intake level and its effects on follicle growth and circulating progesterone in Nelore (*Bos indicus*) and Holstein (*Bos taurus*) heifers.**
E. O. S. Batista¹, R. V. Sala¹, M. D. D. V. Orotolan¹, E. F. Jesus², T. A. D. Vale³, G. G. Macedo¹, F. P. Rennó³, A. H. Souza⁴, and P. S. Baruselli⁵, ¹USP, São Paulo, Brazil, ²School of Agricultural and Veterinary Sciences of UNESP, Jaboticabal, Brazil, ³USP, Pirassununga, Brazil, ⁴University of California-Davis, ⁵University of Sao Paulo-VRA, Sao Paulo, Brazil.
- 1439 W199 **Association between insulin signaling and oxidative stress in serum and subcutaneous adipose tissue of overconditioned cows.**
S. Häussler¹, L. Locher², L. Laubenthal¹, S. P. Singh¹, U. Meyer³, J. Rehage², S. Dänicke³, and H. Sauerwein¹, ¹University of Bonn, Institute of Animal Science, Bonn, Germany, ²University for Veterinary Medicine, Foundation, Hannover, Germany, ³Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany.

- 1440 W200 **Serum apelin concentrations in dairy cows receiving different amounts of concentrate and a nicotinic acid supplement.**
M. Weber¹, L. Locher², K. Huber³, J. Rehage², R. Tienken⁴, U. Meyer⁴, S. Dänicke⁴, U. Müller⁵, H. Sauerwein⁵, and M. Mielenz⁶, 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, ⁴Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany, ⁵University of Bonn, Institute of Animal Science, Bonn, Germany, ⁶Leibniz Institute for Farm Animal Biology (FBN), Institute of Nutritional Physiology, Dummerstorf, Germany.
- 1441 W201 **Nuclear related factor-E2 is down-regulated by hyperinsulinemic euglycemia in dairy cows.**
M. Zarrin^{1,2,3}, O. Wellnitz¹, and R. M. Bruckmaier¹, ¹Veterinary Physiology, Vetsuisse 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.
- 1442 W202 **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, Nogueira², and G. Z. Mingoti¹, ¹University of Sao Paulo State (UNESP), Araçatuba, Brazil, ²EMBRAPA Pantanal, Corumbá, Brazil.
- 1443 W203 **Heat stress alters adipose adrenergic signaling in lactating dairy cows.**
G. Xie¹, L. W. Hall², M. Nearing², L. C. Cole², D. M. Spurlock³, L. H. Baumgard³, and R. P. Rhoads¹, ¹Virginia Tech, Blacksburg, ²The University of Arizona, Tucson, ³Iowa State University, Ames.
- 1444 W204 **Effect of vitamin C supplementation on biochemical parameters and haemagglutination potential of giant African land snail (*Archachatina marginata*) haemolymph.**
J. A. Abiona¹, A. O. Ladokun¹, J. O. Daramola¹, D. M. Abioja², E. O. Oke¹, and O. M. Onagbesan¹, ¹Federal University of Agriculture, Abeokuta, Nigeria, Abeokuta, Nigeria, ²Federal University of Agriculture, Abeokuta, Nigeria.
- 1445 W205 **Effects of grape seed supplementation on blood metabolic profile, immunity and milk production traits of dairy ewes.**
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.
- 1446 W206 **Determination of glucose metabolism and TCA cycle activity of early antral and late antral feline cat follicles employing [¹³C]₆glucose and mass spectrometry.**
J. L. Colvin¹, N. Songsasen², 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.
- 1447 W207 **Interrelationships between methods of blood mineral measurement in early postpartum dairy cows.**
B. M. Sweeney¹, E. M. Martens¹, K. P. Zanzalari², J. C. Lawrence³, and T. R. Overton¹, ¹Cornell University, Department of Animal Science, Ithaca, NY, ²Prince Agri Products, Inc., Franklin, IN, ³IDEXX Laboratories, Inc., Westbrook, ME.
- 1448 W208 **Development of a multiplex assay for simultaneous quantification of endocrine analytes.**
E. A. Benavides¹, K. D. Wells¹, and D. H. Keisler², ¹University of Missouri-Division of Animal Sciences, Columbia, ²University of Missouri-Division of Animal Sciences, Columbia.
- 1449 W209 **Effect of periconceptual growth hormone injection on feed intake and early fetal development in ewes.**
C. H. Pereira^{1,2,3}, K. C. Swanson³, H. O. Patino⁴, F. E. Doscher³, V. C. Kennedy³, B. R. Mordhorst³, J. D. Kirsch³, and K. A. Vonnahme³, ¹Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, ²North Dakota State University, Fargo, ³North Dakota State University, Fargo, ⁴Universidade Federal do Rio Grande Do Sul, Porto Alegre, Brazil.
- 1450 W210 **Relationship between plasma concentrations of thyroid hormones and physiological state of beef cow/calf pairs.**
B. H. Boehmer¹, M. R. Davis, and R. P. Wettemann, Oklahoma Agricultural Experiment Station, Stillwater, OK.
- 1451 W211 **Follicle-stimulating hormone converges with canonical WNT signaling to enhance Cyp19a1 promoter activity in granulosa cells.**
B. I. Gomez¹, J. O. E.¹, C. A. Gifford¹, D. M. Hallford², and J. Hernandez Gifford¹, ¹Oklahoma State University, Stillwater, ²New Mexico State University, Las Cruces.
- 1452 W212 **Effects of various doses of gonadotropin stimulation on reproductive performance of seasonally anestrous ewes.**
S. L. Rastle-Simpson¹, K. N. D'Souza¹, A. K. Redhead¹, C. D. Paul², E. N. Keller¹, and M. Knights², ¹West Virginia University, Morgantown, ²West Virginia University, Morgantown.
- 1453 W213 **Effect of methionine supplementation on methylation and lipid accumulation of the preimplantation embryo in dairy cows.**
D. A. Velasco Acosta^{1,2}, A. C. Denicol³, C. S. Skenandore¹, Z. Zhou¹, M. Nunes Corrêa², D. N. Luchini⁴, P. J. Hansen³, J. J. Loor¹, and F. C. Cardoso¹, ¹University of Illinois at Urbana-Champaign, ²Federal University of Pelotas, Pelotas, Brazil, ³Department of Animal Sciences, University of Florida, Gainesville, ⁴Adissee S.A.S., Alghetta, GA.

- 1454 W214 **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. Oliveira³,
¹University of Guelph, Guelph, ON, Canada, ²Universidade de São Paulo, Pirassununga, Brazil, ³Michigan State University, East Lansing.
- 1455 W215 **Luteinizing hormone (LH) profiles after either porcine LH or GnRH treatment in Holstein cows with or without FSH-stimulation.**
A. Behrouzi¹, M. Fakhri¹, R. Salehi¹, M. G. Colazo², and D. J. Ambrose^{1,2}, ¹Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, ²Alberta Agriculture and Rural Development, Livestock Research Branch, Edmonton, AB, Canada.

Production, Management, and the Environment: Reducing the Environmental Footprint Through Nutrition and Management

- 1505 W216 **Methane and carbon dioxide emissions from manure of dairy cows fed red clover- or corn silage-based diets supplemented with linseed oil.**
F. Hassanat*, D. I. Massé, and C. Benchaar, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.
- 1506 W217 **Life cycle assessment of heavy pig production in a sample of Italian farms.**
G. Pirlo¹, S. Carè², G. Della Casa², R. Marchetti², G. Ponzoni², V. Faeti², V. Fantin³, P. Msoni³, P. Buttò³, and F. Falconi⁴, 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.
- 1507 W218 **Control of water consumption in swine barns: One step-closer to real time management.**
C. Pineiro*, P. Castro, J. Morales, and G. Montalvo, PigCHAMP Pro Europa, Segovia, Spain.
- 1508 W219 **Increasing milk yield affects sustainability of dairy cattle production in terms of cultural energy use efficiency.**
H. Koknaroglu*, H. Saglam, and O. Koskan, Suleyman Demirel University, Isparta, Turkey.
- 1509 W220 **Effect of astaxanthin production by the yeast phaffiarhodozyma on growth performance, blood profiles, meat quality, and slurry noxious gas emission in broilers.**
S. Kim, S. D. Upadhaya, and I. H. Kim*, Department of Animal Science, Dankook University, Cheonan, South Korea.
- 1510 W221 **Assessing variability in whole-farm environmental impact estimates using a partially-stochastic beef production model.**
K. A. Johnson and R. R. White*, Washington State University, Pullman.
- 1511 W222 **Environmental assessment of a representative grass-finished beef operation in Southern Pennsylvania.**
J. A. Dillon*¹ 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.
- 1512 W223 **A modeling assessment of cow management decisions, sustainability and durability of beef production systems.**
R. R. White* and K. A. Johnson, Washington State University, Pullman.
- 1513 W224 **Nitrogen excretion from beef cattle for 6 cover crop mixes as estimated by a nutritional model.**
E. E. Grings*, A. Sackey, M. J. Hansen, V. Owens, D. Beck, and P. Sexton, South Dakota State University, Brookings.
- 1514 W225 **Effect of crude glycerin associated with energy sources on enteric methane emission from finishing Nelore bulls on pasture in the dry season.**
A. José Neto¹, L. G. Rossi², A. F. Ribeiro³, B. R. Vieira⁴, E. E. Dalanttonia⁵, J. Duarte Messana², E. Garbin Sgobi², and T. T. Berchielli⁵, ¹Universidade Estadual Paulista "Julio de Mesquita Filho", Jaboticabal, Brazil, ²Universidade Estadual Paulista, Jaboticabal, Brazil, ³Universidade Estadual Paulista "Júlio de Mesquita Filho" / UNESP, Jaboticabal, Brazil, ⁴Universidade Estadual Paulista Júlio de Mesquita Filho, Jaboticabal, São Paulo, Brazil, ⁵Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.
- 1515 W226 **Enteric methane emission from beef cattle fed diets containing crude glycerin associated with energy sources.**
L. G. Rossi¹, A. José Neto², B. R. Vieira³, E. E. Dalanttonia⁴, A. S. Gómez P⁵, and T. T. Berchielli⁴, ¹Universidade Estadual Paulista, Jaboticabal, Brazil, ²Universidade Estadual Paulista "Julio de Mesquita Filho", Jaboticabal, Brazil, ³Universidade Estadual Paulista Júlio de Mesquita Filho, Jaboticabal, São Paulo, Brazil, ⁴Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.
- 1516 W227 **Using fecal phosphorus, calcium and ash excretion to predict total and inorganic phosphorus intake of beef cattle consuming a forage-based ration.**
D. D. Harmon*, J. K. Smith, and M. A. McCann, Virginia Tech, Blacksburg.
- 1517 W228 **Influence of low doses tannins extract addition on the presence of *Escherichia coli* in feces of beef cattle.**
T. D. J. Heras*¹, I. Enriquez¹, B. J. Cervantes², S. M. Gaxiola¹, J. A. Romo¹, and R. Barajas¹, ¹FMVZ-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.**
E. A. Riley, D. D. Harmon, J. K. Smith, A. L. Zezeski, S. P. Greiner, K. F. Knowlton, and M. A. McCann, Virginia Tech, Blacksburg.*
- 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.**
A. B. D. Pereira¹, A. F. Brito¹, and S. A. Utsumi², ¹University of New Hampshire, Durham, ²Department of Animal Science, Michigan State University, Hickory Corners.
- 1520 W231 **Effect of dietary nitrate and organic copper supplementation on dairy enteric methane and nitrous oxide emissions.**
S. J. Werth¹, Q. Wang¹, C. J. Neumeier¹, G. Getachew¹, D. H. Putnam¹, A. R. Castillo², and F. M. Mitloehner¹, ¹University of California-Davis, ²University of California Cooperative Extension, Merced.
- 1521 W232 **Influence of tannins extract addition on in vitro gas production of feces from beef cattle.**
R. Barajas, E. X. Murillo, N. Castro, and E. A. Velazquez, FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico.*
- 1522 W233 **Quantification of cephalixin 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. Ray¹, K. F. Knowlton², C. Shang³, and K. Xia³, ¹Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, ²Virginia Tech, Blacksburg, ³Department 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. Ray¹, K. F. Knowlton², C. Shang³, and K. Xia³, ¹Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, ²Virginia Tech, Blacksburg, ³Department 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. Metges¹, M. Derno¹, J. Ziessler¹, N. Krattenmacher², G. Thaller³, and B. Kuhla¹, ¹Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, ²Institute of Animal Breeding and Husbandry, Kiel University, Kiel, Germany, ³Christian-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.*

Ruminant Nutrition Posters III

- 1779 W238 **Prevalence of subclinical ketosis detected by near infra-red analysis of BHB in DHI milk samples.**
D. E. Santschi, R. K. Moore, and D. M. Lefebvre, Valacta, Ste-Anne-de-Bellevue, QC, Canada.*
- 1780 W239 **Role of treatment soybean meal with pistachio extract on total tract nutrients digestibility of Holstein bulls.**
A. Jolazadeh¹, M. Dehghan banadaky², K. Rezayazdi², and N. Vahdani¹, ¹University of Tehran, Karaj, Iran, ²Department 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. Rezayazdi¹, F. Mirzaei², and M. Hosseinabadi³, ¹Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, ²Animal Science Research Institute, Karaj, Iran, ³University 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. Zhao¹, J. Q. Wang², S. G. Zhao², and D. P. Bu², ¹College of Animal Science and Technology of Inner Mongolia University for the Nationalities, Tongliao, China, ²State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.

- 1785 W244 **Effects of test weight, precision processing and processing index on in situ ruminal digestibility of barley grain in beef heifers.**
Y. Zhao^{1,2}, S. Yan², Z. He^{1,3}, U. Anele¹, M. L. Swift⁴, T. A. McAllister⁵, and W. Yang^{*1}, 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.
- 1786 W245 **Longitudinal shifts in the rumen bacterial communities of dairy cows during the transition period.**
D. W. Pitta¹, S. Kumar^{*1}, B. Veiccharelli², B. Bhukya², K. Bittinger³, D. Shirley³, and J. Ferguson², ¹University of Pennsylvania, Kennett Square, ²University of Pennsylvania, Kennett Square, ³University of Pennsylvania, Philadelphia.
- 1787 W246 **Effects of assumptions on estimating energetic efficiencies in lactating dairy cows.**
K. M. Kennedy^{*} and C. C. Calvert, University of California-Davis.
- 1788 W247 **Nutrient supply estimations errors when using free ruminal bacteria as reference sample.**
F. Díaz-Royón^{*}, J. M. Arroyo, and J. Gonzalez, Departamento de Producción Animal, Escuela Técnica Superior de Ingenieros Agrónomos, Universidad Politécnica de Madrid, Madrid, Spain.
- 1789 W248 **Evaluation of the Nordic dairy cow model karoline in predicting methane emissions.**
M. Ramin^{*1} and P. Huhtanen², ¹Swedish University of Agricultural Sciences (SLU), Umeå, Sweden, ²Swedish University of Agricultural Sciences (SLU), Umea, Sweden.
- 1790 W249 **Effects of different feeding frequencies on rumen tissue histology and cell proliferation of feedlot cattle.**
T. V. Carrara^{*1}, J. Silva², M. C. Pereira², I. C. Batista Júnior², C. A. Oliveira², A. C. J. Pinto², D. D. Estevam¹, M. D. Arrigoni¹, F. T. Pereira², and D. D. Millen^{2,3}, ¹São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, ²São Paulo State University (UNESP), Dracena campus, Dracena, Brazil, ³Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.
- 1791 W250 **Survey of nutritional recommendations used by dairy cattle nutritionists in Brazil in 2013.**
D. P. Silva^{*1}, A. M. Pedroso², T. V. Carrara³, and D. D. Millen^{1,4}, ¹São Paulo State University (UNESP), Dracena campus, Dracena, Brazil, ²EMBRAPA, São Carlos, Brazil, ³São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, ⁴Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.
- 1792 W251 **Effects of type of base forage on the β -carotene content of milk and blood plasma in lactating Holstein cows.**
H. C. Leicester^{*1,2} and L. J. Erasmus², ¹UC Davis, Dacis, CA, ²University of Pretoria, Pretoria, South Africa.
- 1793 W252 **Effect of acute exposure to ergot alkaloids on short-chain fatty acid absorption and barrier function of isolated bovine ruminal epithelium.**
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- 1794 W253 **Evaluation of the CNCPS v6.5 for predicting metabolizable energy and protein allowable milk in sugarcane based diets.**
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- 1795 W254 **Effects of different feeding frequencies on DMI variation and selective consumption by feedlot cattle.**
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- 1796 W255 **Evaluation of mineral excretion of lactating Holstein dairy cows supplemented with copper, manganese and zinc in organic and inorganic forms.**
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- 1797 W256 **Evaluation of milk yield and composition of F1 Holstein x Gir lactating cows supplemented with rumen-protected choline during the transition period.**
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- 1798 W257 **Effects of supplemental bupleurum extract on blood material metabolism in heat-stressed dairy cows.**
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- 1799 W258 **Evaluation of the updated version of CNCPS (v6.5).**
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- 1800 W259 **Effects of bupleurum extract on performance and health status in heat-stressed late lactation dairy cows.**
B. Shi^{1,2}, N. Zheng¹, J. Cheng^{1,2}, L. Min¹, C. Yin¹, and J. Wang^{1,3}, 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.
- 1801 W260 **Estimation of NDF pool in the rumen of cattle using fecal excretion and diet characteristics.**
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- 1802 W261 **Performance and carcass traits of immunocastrated Nellore cattle fed β -agonists.**
D. Silva Antonelo¹, M. Rezende Mazon¹, K. Eduardo Zanoni Nubiato¹, D. Juliana Brigida¹, J. Fernando Morales Gomes², B. Luis Nery Garcia¹, M. Zanata¹, P. R. Leme¹, and S. Luz e Silva³, ¹University of Sao Paulo, Pirassununga, Brazil, ²University of Cundinamarca, Fusagasugá, Colombia, ³University of Sao Paulo / FZEA, Pirassununga, Brazil.
- 1803 W262 **Effects of nicotinamide on hormone levels, antioxidant status and immune function of cows in heat stressed dairy cows.**
J. Cheng^{1,2,3}, N. Zheng^{1,3,4}, X. Sun^{1,2,3}, D. P. Bu³, L. Pan³, and J. Wang^{1,3,4}, 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.
- 1804 W263 **Effects of supplemental bupleurum extract on blood material metabolism in heat-stressed dairy cows.**
X. Sun^{1,2,3}, N. Zheng^{1,3,4}, J. Cheng^{1,2,3}, D. P. Bu³, L. Pan³, and J. Wang^{1,3,4}, 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.
- 1805 W264 **Effects of nicotinamide on blood material metabolism of dairy cows under heat stress.**
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- 1806 W265 **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?**
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- 1807 W266 **Effects of feeding a corn straw or mixed forage diet on immune function in dairy cows.**
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- 1808 W267 **Fatty acid composition of milk from cows supplemented with canola oil.**
K. C. Welter, C. M. de Magalhães Rodrigues Martins, M. M. Martins, B. Roqueto dos Reis, J. G. Rebelato Forti, A. Soligo Vizeu de Palma, B. L. Unglaube Schmidt, and A. Saran Netto^{}, University of São Paulo, Pirassununga, Brazil.*
- 1809 W268 **Effects of a corn straw or mixed forage diet on bovine milk fatty acid biosynthesis.**
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- 1810 W269 **Influence of forage level and corn processing method on feeding behavior of Nellore bulls.**
M. Caetano^{1,2}, A. R. Cabral³, G. B. Feltrin¹, R. S. Goulart⁴, S. Luz e Silva³, P. R. Leme³, 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. Li^{1,2}, *J. Q. Wang¹*, *P. Sun¹*, *F. D. Li²*, 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.*
- 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. Hahm¹*, *J. J. Wagner¹*, *J. S. Jennings²*, *H. Han¹*, and *T. E. Engle¹*, *¹Colorado 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. Ramires¹*, *S. L. Viechnieski²*, and *R. D. Almeida¹*, *¹Universidade 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. Zhou^{1,2}, *D. P. Bu²*, *Y. D. Zhang²*, *M. Zhao²*, *P. Sun²*, and *J. Q. Wang^{1,2}*, *¹Heilongjiang 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. Macdonald²*, *K. E. Schütz³*, *G. Verkerk²*, *J. R. Webster³*, *S. L. Rodriguez Zas¹*, *J. R. Roche²*, and *J. J. Loor¹*, *¹University 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. Abdelatty^{1,2}, *M. E. Iwaniuk²*, *A. E. Weidman²*, *B. B. Teter²*, *M. A. Tony¹*, *F. F. Mohammad¹*, and *R. A. Erdman²*, *¹Cairo 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.**
*A. Siurana**, *D. Gallardo*, and *S. Calsamiglia*, *Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain.*
- 1822 W281 **Effects of niacin supplementation and forage type on milk, digestibility, blood parameters and body temperature in lactating dairy cows.**
*R. B. Standish**, *P. S. Erickson*, *N. L. Whitehouse*, *B. J. Isenberg*, *E. M. Barron*, *J. Y. Buckley*, and *A. M. Pike*, *University of New Hampshire, Durham.*
- 1823 W282 **Differences in hepatic transcriptional regulatory networks due to body condition score at calving in grazing dairy cattle.**
H. Akbar¹, *Z. Zhou¹*, *K. Macdonald²*, *K. E. Schütz³*, *G. Verkerk²*, *J. R. Webster³*, *S. L. Rodriguez Zas¹*, *J. R. Roche²*, and *J. J. Loor¹*, *¹University 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*, *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.*
- 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*, *¹University of Sao Paulo, Piracicaba, Brazil, ²University of São Paulo, Piracicaba, Brazil.*

- 1826 W285 **Evaluating daily variation in body weight, milk production, and rumination activity on a commercial dairy with robotic milking.**
*R. W. Bender**, D. E. Cook, T. L. Chandler, H. M. White, and D. K. Combs, Department of Dairy Science University of Wisconsin-Madison.
- 1827 W286 **Peroxisome proliferator activated receptor- γ controls lipogenic gene networks in goat mammary epithelial cells.**
W. Zhao^{1,2}, J. Luo¹, and J. J. Loo², ¹Northwest A & F University, Yangling, China, ²University of Illinois at Urbana-Champaign
- 1828 W287 **Effects of ergot alkaloid exposure on serotonin receptor mRNA in the smooth muscle of the bovine gastrointestinal tract.**
*J. L. Klotz*¹, D. Kim², A. P. Foote², and D. L. Harmon², ¹USDA-ARS, FAPRU, Lexington, KY, ²University of Kentucky, Lexington.
- 1829 W288 **Effect of mineral supplementation on lactational performance in early-lactating dairy cows fed a high-concentrate diet.**
*A. R. Alfonso-Avila*¹, E. Charbonneau¹, P. Y. Chouinard¹, G. Tremblay², and R. Gervais¹, ¹Université Laval, Québec, QC, Canada, ²Agriculture and Agri-Food Canada, Soils and Crops Research and Development Centre, Québec, QC, Canada.
- 1830 W289 **Mineral profile, immunoglobulins and antioxidant activity in culls cows fed DDGS.**
*A. Flores-Mariñelarena*¹, 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.
- 1831 W290 **Metabolic characteristics and truly metabolizable protein supply to dairy cattle from new cool-season forage corn varieties in Western Canada.**
S. Abeyssekara, D. A. Christensen, N. A. Khan, X. Huang*, and P. Yu, University of Saskatchewan, Saskatoon, SK, Canada.
- 1832 W291 **Hepatic expression of genes associated with glutathione and fatty acid metabolism during the periparturient period reveal beneficial effects of MetaSmart and Smartamine M supplementation on health status in dairy cows.**
*J. S. Osorio*¹, P. Ji², J. K. Drackley¹, D. N. Luchini⁴, and J. J. Loo¹, ¹University of Illinois at Urbana-Champaign, ²William H. Miner Agricultural Research Institute, Chazy, NY, ⁴Adisseo S.A.S., Alpharetta, GA.
- 1833 W292 **Feed intake and feeding behavior of lactating dairy cows were affected by dietary fatty acid profile.**
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- 1834 W293 **Whole cottonseed and vitamin E in diets for Nellore cattle finished in feedlot: Performance traits and feed conversion.**
*A. M. Ferrinho*¹, F. Baldi², B. M. Toda¹, F. B. Mendonça¹, B. L. Utembergue¹, R. R. Germano¹, A. S. C. Pereira¹, P. R. Leme¹, and S. L. Silva¹, ¹Universidade de São Paulo, Pirassununga, Brazil, ²Universidade Estadual Paulista "Júlio de Mesquita Filho"- UNESP, Faculdade de Ciências Agrárias e Veterinárias, Jaboticabal, Brazil.
- 1835 W294 **Effect of chitosan and lipid source combination on energy intake and milk yield and composition of dairy cows.**
*T. A. Del Valle*¹, V. C. Galvão¹, F. C. R. D. Santos¹, E. F. Jesus², A. G. B. V. B. Costa¹, C. E. C. Consentini¹, G. F. D. Almeida¹, G. F. Cabral³, F. Zanferari¹, and F. P. Rennó¹, ¹School of Veterinary Medicine and Animal Science, University of São Paulo, Pirassununga, Brazil, ²School of Agricultural and Veterinary Sciences of UNESP, Jaboticabal, Brazil, ³School of Animal Science and Food Engineering of University of São Paulo, Pirassununga, Brazil.
- 1836 W295 **Plasma urea concentration of beef heifers fed with different lipid sources and frequency supplementation.**
*M. C. A. Santana*¹, V. C. Modesto², G. T. Pereira², R. A. Reis², G. M. P. Melo², H. J. U. Costa², T. T. Berchielli², and L. P. L. Moreira², ¹Emater, Goiânia, Brazil, ²UNESP, Jaboticabal, Brazil.
- 1837 W296 **Effects of selenium supply, maternal plane of nutrition, and physiological stage on nitrogen flow, microbial efficiency, and metabolizable protein in primiparous ewes.**
*K. J. McLean*¹, A. M. Meyer², L. R. Coupe¹, G. P. Lardy¹, K. A. Vonnahme¹, and J. S. Caton¹, ¹North Dakota State University, Fargo, ²Division of Animal Sciences, University of Missouri, Columbia.
- 1838 W297 **Effect of prototype sequestering agents on performance and milk aflatoxin M1 concentrations of dairy cows fed aflatoxin B1-contaminated diets.**
*I. M. Ogunade*¹, K. G. Arriola¹, R. M. Martins¹, B. Y. Coy¹, C. L. Curry², D. K. Terkoski¹, A. Rubright¹, M. G. Zenobi², 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.

- 1839 W298 **Blood glucose concentrations and deposition of muscular and subcutaneous fat tissues of Nellore young bulls finished in pasture supplemented with crude glycerin.**
*E. San Vito**, J. F. Lage, L. Maneck Delevatti, E. E. Dalanttonia, L. R. Simonetti, M. B. Abra, and T. T. Berchielli, *Universidade Estadual Paulista Júlio de Mesquita Filho-UNESP, Jaboticabal, Brazil.*
- 1840 W299 **Effect of propolis on plasma metabolites and hematocrit of Holstein calves.**
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- 1841 W300 **Effects of maternal plane of nutrition, selenium supply, and physiological stage on digestibility and ruminal fermentation in ewes.**
K. J. McLean¹, A. M. Meyer², L. R. Coupe¹, G. P. Lardy¹, K. A. Vonnahme¹, and J. S. Caton¹, *¹North Dakota State University, Fargo, ²Division of Animal Sciences, University of Missouri, Columbia.*
- 1842 W301 **Effect of reduced energy density of close-up diet on dry matter intake, milk yield and energy balance in multiparous Holstein cows.**
*W. M. Huang**, 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.*
- 1843 W302 **Effects 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. Rico**, J. Y. Ying, and K. J. Harvatine, *Penn State University, University Park.*
- 1844 W303 **Effects of fescue toxicosis induced by endophyte-infected tall fescue seed on forestomach epithelial gene expression in Angus steers.**
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- 1845 W304 **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-Zervoudakis*, P. N. Cosentino, J. T. Zervoudakis, and A. L. Cândida de Resende Fraga, *Federal University Of Mato Grosso, Cuiaba, Brazil.*
- 1846 W305 **Supplements with chelated mineral for cows Nellore: Growth performance, oocyte quality and oxidative stress.**
T. D. P. Trindade, L. K. Hatamoto-Zervoudakis*, C. Pasa, J. T. Zervoudakis, P. P. Tsuneda, F. M. Wingert, and A. L. Cândida de Resende Fraga, *Federal University of Mato Grosso, Cuiaba, Brazil.*
- 1847 W306 **Contribution of a chelated trace mineral supplement as a methionine source for dairy cows.**
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- 1848 W307 **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. Resende³, G. R. Siqueira⁴, G. F. Berti⁵, C. L. Francisco¹, and A. M. Castilhos¹, *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-Unifeb, Barretos, Brazil.*
- 1849 W308 **Body condition score assessment in a grazing Jersey herd in Costa Rica.**
*A. Saborio-Montero** and J. M. Sánchez, *Centro de Investigaciones en Nutrición Animal y Escuela de Zootecnia, Universidad de Costa Rica, San José, Costa Rica.*
- 1850 W309 **Intake and nutrient digestibility of growing Nellore heifers and steers fed two levels of calcium and phosphorus.**
L. F. Costa e Silva¹, T. E. Engle¹, P. P. Rotta¹, S. C. Valadares Filho², R. D. Valadares³, F. A. S. Silva⁴, and E. C. Martins⁴, *¹Colorado State University, Fort Collins, ²Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, ³Universidade Federal De Vicoso, Viçosa, Brazil, ⁴Universidade Federal de Vicoso, Vicoso, Brazil.*
- 1851 W310 **Ration composition in Wisconsin dairy herds: Factors affecting fertility.**
A. H. Souza¹, P. D. Carvalho², C. M. Drake³, R. D. Shaver², and M. C. Wiltbank², *¹University of California Cooperative Extension, Tulare, ²University of Wisconsin-Madison, ³University of California.*
- 1852 W311 **Milk quality from dairy farms divided in five levels of production.**
L. L. Cardoso, M. I. Marcondes*, G. A. T. Ferreira, V. L. N. Brandao, A. S. Trece, and A. S. Trece, *Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil.*
- 1853 W312 **MasterGraze silage for growing Holstein heifers.**
D. L. Gaden¹, K. Koone², S. Harris², M. Kirk³, and D. Casper¹, *¹South Dakota State University, Brookings, ²Masters Choice, Anna, IL, ³Masters Choice, Anna, IL.*

- 1854 W313 **Transcriptome profiling of milk in dairy cows fed linseed.**
*A. Siurana**, *D. Gallardo*, and *S. Calsamiglia*, *Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona, Bellaterra 08193, Spain.*
- 1855 W314 **Feeding diets inducing milk fat depression to heat-stressed dairy cows on performance, energy partitioning, and antioxidant status.**
S. Kargar¹, *M. Khorvash¹*, *G. R. Ghorbani¹*, and *D. J. Schingoethe^{2*}*, ¹*Isfahan University of Technology, Isfahan, Iran*, ²*South Dakota State University, Brookings.*
- 1856 W315 **Altering ewe nutrition in late gestation; the impact on lamb performance.**
F. McGovern¹, *F. Champion¹*, *T. Sweeney²*, *S. Fair³*, *S. Lott²*, and *T. M. Boland¹*, ¹*School of Agriculture and Food Science, University College Dublin, Dublin 4, Ireland*, ²*College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland*, ³*Department of Life Sciences, University of Limerick, Limerick, Ireland.*
- 1857 W316 **A sensory additive alters the eating behavior of dry dairy cows.**
C. Iglesias¹, *F. Bargo^{2*}*, *A. Mereu²*, *I. Ipharraguerre²*, and *A. Bach^{1,3}*, ¹*IRTA, Barcelona, Spain*, ²*Lueta S.A., Barcelona, Spain*, ³*ICREA, Barcelona, Spain.*
- 1858 W317 **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. Perdigão²*, *L. L. Cursino¹*, *R. S. Barducci²*, *M. D. Arrigoni²*, and *D. D. Millen³*, ¹*São Paulo State University (UNESP), Dracena campus, Dracena, Brazil*, ²*São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil*, ³*Supported by São Paulo State Foundation (FAPESP), São Paulo, Brazil.*
- 1859 W318 **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*, ¹*The University of Arizona, Tucson*, ²*Northwest Missouri State, Maryville, MO*, ³*Prince Agri Products, Inc., Quincy, IL*, ⁴*Clemson University, Clemson, SC.*
- 1860 W319 **Assessment of the effect of plant tannins on rumen fermentation and gut microbial diversity in goats using 16S rDNA amplicon pyrosequencing.**
B. R. Min¹, *C. Wright¹*, *P. Ho²*, *J. S. Eun³*, *N. Gurung¹*, and *R. Shang¹*, ¹*Tuskegee University, Tuskegee, AL*, ²*Montgomery Blair High School, Silver Spring, MD*, ³*Utah State University, Logan.*
- 1861 W320 **Effect of supplemental chelated Cu, Zn, and Mn on antioxidant status and hoof health of lactating cows.**
X. J. Zhao¹, *J. H. Wang²*, *Y. M. Wang^{3*}*, and *L. Wang¹*, ¹*College of Animal Science and Veterinary Medicine, Shandong Agriculture University, Taian, China*, ²*College of Animal Science, Zhejiang University, Hangzhou, China*, ³*Novus International Trading (Shanghai) Co., Ltd, Shanghai, China.*
- 1862 W321 **Effects of supplemental bupleurum extract on serum hormone and immune globulin levels in heat-stressed dairy cows.**
X. Sun^{1,2,3}, *J. Cheng^{1,2,3}*, *D. P. Bu³*, *L. Pan³*, *N. Zheng^{1,3,4}*, and *J. Wang^{1,3,4}*, ¹*Ministry of Agriculture-Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China*, ²*College of Animal Science and Technology, Anhui Agricultural University, Hefei, China*, ³*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, ⁴*Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China.*
- 1863 W322 **Dry matter intake, milk yield and composition of Holstein cows fed organic minerals.**
T. A. Del Valle¹, *E. F. Jesus²*, *A. G. B. V. B. Costa¹*, *G. F. Cabral³*, *V. C. Galvão¹*, *P. G. D. Paiva²*, *T. S. Acedo⁴*, *L. F. M. Tamassia¹*, and *F. P. Rennó¹*, ¹*School of Veterinary Medicine and Animal Science, University of São Paulo, Pirassununga, Brazil*, ²*School of Agricultural and Veterinary Sciences of UNESP, Jaboticabal, Brazil*, ³*School of Animal Science and Food Engineering of University of São Paulo, Pirassunga, Brazil*, ⁴*DSM Produtos Nutricionais, São Paulo, Brazil.*
- 1864 W323 **Effects of sampling position on blood hormone concentration in dairy cattle.**
M. Zhao, *D. P. Bu*, *J. Q. Wang**, *X. Q. Zhou*, *Y. Zhang*, *S. G. Zhao*, and *P. Sun*, *State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China.*
- 1865 W324 **Effects of dietary protein composition on blood hormone levels in dairy cattle.**
M. Zhao¹, *D. P. Bu¹*, *J. Q. Wang**, *X. Q. Zhou^{1,2}*, *Y. Zhang¹*, and *P. Sun¹*, ¹*State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*, ²*Northeast Agricultural University, Harbin, China.*
- 1866 W325 **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. Vieira²*, ¹*Universidade Federal de Vicosa, Vicosa, Brazil*, ²*Texas A&M University, College Station*, ³*Universita Di Sassari, Sassari, Italy*, ⁴*Universidade Federal de Viçosa, Vicosa, Brazil*, ⁵*Norte Fluminense State University, Campos dos Goytacazes, Brazil.*

- 1867 W326 **Effect of “COGU” technology on glucose uptake and mineral utilization and deposition in growing lambs.**
A. M. Temple¹, G. A. Ayangbile¹, D. R. Vandermyde¹, and C. R. Vandermyde², ¹Agri-King Inc., Fulton, IL, ²Morrison Veterinary Clinic, Morrison, IL.
- 1868 W327 **Effect on plasma metabolites of Nellore bulls fed ractopamine hydrochloride and protein level.**
N. R. B. Cônsolo¹, F. Rodriguez¹, M. O. Frasseto¹, R. A. P. Maciel², V. Rizzi³, and L. F. P. Silva¹, ¹University of Sao Paulo, Pirassununga, Brazil, ²University of Sao Paulo, São Paulo, Brazil, ³Ouro Fino, Cravinhos, Brazil.
- 1869 W328 **Impact of “COGU” technology on performance in lactating dairy cows.**
A. M. Temple^{}, G. A. Ayangbile, D. F. Jones, and D. A. Spangler, Agri-King Inc., Fulton, IL.*
- 1870 W329 **A conceptual model of protein-precipitable polyphenols (condensed tannins) on protein binding and protein digestion in ruminants.**
H. D. Naumann¹, N. M. Cherry², L. O. Tedeschi³, J. P. Muir^{2,4}, and B. D. Lambert^{2,4}, ¹University of Missouri, Columbia, ²Texas A&M AgriLife Research, Stephenville, ³Texas A&M University, College Station, ⁴Tarleton State University, Stephenville, TX.
- 1871 W330 **Effect of sprouted barley grain supplementation of an herbage or haylage diet on ruminal fermentation and methane output in continuous culture.**
A. N. Hafsa¹, K. J. Soder¹, A. F. Brito², M. D. Rubano¹, and C. J. Dell¹, ¹USDA-Agricultural Research Service, University Park, PA, ²University of New Hampshire, Durham.
- 1872 W331 **Effect of lalsil bacterial inoculants on the pH of corn silage with low dry matter.**
M. Saberi¹, K. Rezayazdi², and M. Dehghan banadaky³, 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.
- 1873 W332 **The microbiome composition of the rumen is altered during the periparturient period in dairy cattle.**
H. Derakhshani¹, S. Alqarni², H. Khazanehei¹, F. C. Cardoso², J. C. Plaizier¹, E. Khafipour^{1,3}, and J. J. Loores², 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.
- 1874 W333 **Evaluating rations offered to a group of cattle as a component of ration formulation software.**
J. Ferguson¹, Z. Wu², D. T. Galligan², L. Baker², and N. Thomsen², ¹University of Pennsylvania, Kennett Square, ²University of Pennsylvania, Kennett Square.
- 1875 W334 **Epidemiological study about the effects of chelated minerals on milk, reproductive performance, and locomotion scores of dairy cattle.**
A. Bach^{1,2}, A. Pinto³, and M. Blanch⁴, 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.
- 1876 W335 **Apparent synthesis of thiamin and vitamin B₁₂ in rumen of lactating dairy cows fed alfalfa or orchardgrass silages at different maturity stages.**
D. S. Castagnino^{1,2}, K. Kammes³, M. S. Allen³, R. Gervais¹, P. Y. Chouinard¹, D. E. Santschi⁴, and C. L. Girard², ¹Université Laval, Québec, QC, Canada, ²Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ³Michigan State University, East Lansing, ⁴Valacta, Ste-Anne-de-Bellevue, QC, Canada.
- 1877 W336 **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.*
- 1878 W337 **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. Trujillo¹, M. D. L. A. Bruni², and P. Chilibruste³, ¹Facultad de Agronomía, Universidad de la Republica, Montevideo, Uruguay, ²Facultad de Agronomía Universidad de la Republica, Paysandu, Uruguay, ³Facultad de Agronomía, Universidad de la Republica, Paysandu, Uruguay.
- 1879 W338 **Relative bioavailability of phosphorylated ascorbic acid in lactating dairy cows.**
C. K. Reynolds¹, D. J. Humphries¹, C. E. S. Barratt¹, P. C. Aikman¹, and W. Steinberg², ¹University of Reading, Reading, United Kingdom, ²DSM Nutritional Products, Basel, Switzerland.
- 1880 W339 **Changes in serum IgG and total protein concentrations in calves fed differing amounts of colostrum replacer.**
J. D. Quigley, L. L. Deikun^{}, T. M. Hill, H. G. Bateman, II, J. M. Aldrich, and R. L. Schlotterbeck, Provim North America, Brookville, OH.*
- 1881 W340 **Apparent synthesis of thiamin, riboflavin, vitamin B₆ and vitamin B₁₂ in rumen of lactating dairy cows fed 2 concentrations of nitrogen and 2 energy sources.**
V. Beaudet^{1,2}, R. Gervais¹, P. Y. Chouinard¹, P. Nozière³, B. Graulet³, M. Doreau³, and C. L. Girard², ¹Université Laval, Québec, QC, Canada, ²Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ³INRA-URH, Saint Genès Champanelle, France.

- 1882 W341 **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^{*1}, K. Kammes², M. S. Allen², R. Gervais³, P. Y. Chouinard³, D. E. Santschi⁴, and C. L. Girard¹, ¹Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ²Michigan State University, East Lansing, ³Université Laval, Québec, QC, Canada, ⁴Valacta, Ste-Anne-de-Bellevue, QC, Canada.*
- 1883 W342 **Concentration of vitamin B₁₂ in colostrum and milk from dairy cows fed different energy levels during the dry period.**
*M. Duplessis^{*1,2}, S. Mann³, D. V. Nydam³, C. L. Girard², D. Pellerin¹, and T. R. Overton⁴, 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.*
- 1884 W343 **Ruminal bacterial community structure of dairy cows fed conventional and reduced-fat dried distillers grains with solubles.**
H. A. Ramirez Ramirez, C. J. R. Jenkins^{}, S. C. Fernando, C. L. Anderson, N. D. Aluthge, and P. J. Kononoff, University of Nebraska-Lincoln.*
- 1885 W344 **Diet influences microbial community composition, and methane emission in growing and finishing beef cattle.**
S. C. Fernando^{}, A. L. Knoell, C. L. Anderson, A. C. Pesta, G. E. Erickson, and T. J. Klopfenstein, University of Nebraska-Lincoln.*
- 1886 W345 **Dietary fatty acid profile affects plasma metabolic profile of peripartum Holstein cows.**
*H. Khalilvandi-Behroozyar¹, M. Dehghan Banadaky^{*2}, M. Ghaffarzadeh³, and K. Rezayazdi², 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.*
- 1887 W346 **Prediction of enteric methane emissions in Holstein dairy cows fed various forage sources.**
*D. E. Rico^{*1}, P. Y. Chouinard¹, F. Hassanat², C. Benchaar², and R. Gervais¹, ¹Université Laval, Québec, QC, Canada, ²Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, Sherbrooke, QC, Canada.*
- 1888 W347 **RNA-Seq detection of differential gene expression in the rumen of beef steers associated with feed efficiency phenotypes.**
*R. J. Kern^{*1}, A. K. Lindholm-Perry², H. C. Freely², W. M. Snelling², J. R. Miles², J. W. Kern³, and P. A. Ludden¹, ¹University of Wyoming, Laramie, ²USDA, ARS, U.S. MARC, Clay Center, NE, ³Kern Statistical Services, Sauk Rapids, MN.*
- 1889 W348 **Bioassay activity of different tannin sources by gas production technique.**
*N. Vahdani¹, M. Dehghan Banadaky^{*2}, F. khalighi-Sigaroudi³, and K. Rezayazdi⁴, 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.*
- 1890 W349 **Differences in formulation and bioavailability of commercial injectable fat-soluble vitamin products.**
*D. B. Snider^{*1}, R. A. Zinn², and R. L. Stuart³, ¹Iowa State University, Ames, ²University of California-Davis, El Centro, CA, ³Stuart Products Inc, Bedford, TX.*
- 1891 W350 **Individual and additive value of conventional and non-conventional technologies in beef steers housed and fed using a GrowSafe feeding system.**
*A. R. Harding^{*1}, G. K. Jim², C. W. Booker², E. J. Behlke², S. L. Parr², S. J. Hannon², T. M. Greer², Z. D. Paddock², M. L. May², L. Burciaga-Robles², and C. R. Krehbiel¹, ¹Oklahoma State University, Stillwater, ²Feedlot Health Management Services, Ltd., Okotoks, AB, Canada.*
- 1892 W351 **Effects of supplemental bupleurum extract on serum hormone and immune globulin levels in heat-stressed dairy cows.**
*X. Sun^{1,2,3}, J. Cheng^{1,2,3}, N. Zheng^{1,3,4}, D. P. Bu³, L. Pan³, and J. Wang^{*1,3,4}, 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.*
- 1893 W352 **Influence of additional tannins extract level on feedlot performance of finishing hair lambs.**
R. Barajas^{}, E. B. Bonilla, L. R. Flores, J. J. Lomeli, and J. A. Romo, FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico.*
- 1894 W353 **Supplementation of dairy cows before calving with beta-carotene.**
*R. C. Oliveira¹, B. M. Guerreiro², N. N. Moraes Junior³, R. L. Araujo¹, R. A. N. Pereira^{4,5}, and M. N. Pereira^{*1,5}, 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 Agropecuária 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. Herrick*¹, J. A. Davidson², F. R. Valdez¹, M. J. Christofferson¹, and S. E. Schuling³, 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 Silva*¹, T. E. Engle¹, S. C. Valadares Filho², P. P. Rotta¹, M. I. Marcondes³, B. C. Silva⁴, and M. V. C. Pacheco⁵, ¹Colorado State University, Fort Collins, ²Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, ³Universidade Federal de Vicosa, Vicosa, Brazil, ⁴Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, ⁵Universidade Federal de Viçosa, Viçosa, 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. Canbolat*¹, I. Filya¹, V. Akay², and A. Kamalak³, ¹University of Uludag, Faculty of Agriculture, Department of Animal Sciences, Bursa, Turkey, ²Global Nutritech Biotechnology LLC, Richmond, VA, ³University of Kahramanmaraş Sutcu Imam, Faculty of Agriculture, Department of Animal Sciences, Kahramanmaraş, Turkey.
- 1918 W359 **Effect of prostaglandin F_{2α} 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. Ortu*¹, G. Sanna², A. Scala², G. Pulina¹, P. Caboni³, 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. Wulji*¹, J. G. Hickford², W. R. Lamberson³, B. C. Shanks¹, and S. Azarpajouh¹, ¹Department of Agriculture, and Environmental Sciences, Lincoln University, Jefferson City, MO, ²Lincoln University, Lincoln, New Zealand, ³University of Missouri, Columbia.
- 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*.**
*Y. Tsukahara**, T. A. Gipson, S. P. Hart, L. J. Dawson, Z. Wang, R. Puchala, T. Sahlu, and A. L. Goetsch, American Institute for Goat Research, Langston University, Langston, OK.
- 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. Cavini*¹, S. Iraira¹, A. Siurana², A. Foskolos¹, A. Ferret¹, M. A. Gomez³, and S. Calsamiglia¹, ¹Animal Nutrition and Welfare Service, Universitat Autònoma de Barcelona, Bellaterra, Spain, ²Animal Nutrition and Welfare Service, Department 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. Santos*¹, K. G. Ribeiro², O. G. Pereira³, S. C. Valadares Filho³, S. D. J. Villela⁴, 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 Viçosa, Viçosa, Minas Gerais, Brazil, ⁴Federal 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. Polizel*¹, R. S. Gentil¹, E. M. Ferreira¹, R. A. Souza¹, M. V. C. Ferraz Jr.², M. C. A. Sucupira³, and I. Susin¹, ¹Escola Superior de Agricultura Luiz de Queiroz-ESALQ/USP, Piracicaba, Brazil, ²University of São Paulo-FMVZ/USP, Pirassumunga, Brazil, ³Faculdade de Medicina Veterinária e Zootecnia-FMVZ/USP, São Paulo, Brazil.

- 1926 W367 **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. Freire¹, 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.
- 1927 W368 **Intake and performance of finishing lambs fed diets with licuri nut (*Syagrus coronata*) cake.**
R. L. Oliveira^{}, J. B. Costa, T. M. Silva, M. S. Borja, M. D. C. Magalhães, A. D. S. Nunes, C. B. D. Pellegrini, W. F. D. Souza, and N. G. D. N. Júnior; Universidade Federal da Bahia, Salvador, Brazil.*
- 1928 W369 **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.
- 1929 W370 **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.*
- 1930 W371 **Composition of cheeses made from milk of ewes fed with soybean seed or linseed concentrates.**
C. F. A. M. Penna¹, M. I. Simão², F. P. Paula³, M. O. Leite¹, M. P. Cerqueira¹, L. M. Fonseca³, M. R. Souza¹, and I. Borges³, 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.
- 1931 W372 **Pregnancy and lambing rates in anestrus ewes bred to a new synchronization protocol and laparoscopic timed artificial insemination (TAI).**
S. B. Turner¹, 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.
- 1932 W373 **Effect of supplementation with water-washed neem fruit and/or yeast on the performance and digestibility of west African dwarf sheep.**
M. K. Adewumi^{} and T. O. Ososanya, University of Ibadan, Ibadan, Nigeria.*
- 1933 W374 **Effect of crude protein level and zilpaterol supplementation on growth performance and carcass dressing of finishing hairy lambs.**
A. E. Angulo¹, I. C. Perez², A. Plascencia³, H. L. Lopez⁴, P. M. Peraza², E. I. Gonzalez², and F. G. R. Rincon², ¹Universidad Autonoma Of Sinaloa, Culiacan Sinaloa, Mexico, ²Universidad Autonoma De Sinaloa, Culiacan Sinaloa, Mexico, ³Uabc, Mexicali, Mexico, ⁴Universidad Autonoma De Sinaloa, Culiacan Sinaloa, Mexico.
- 1934 W375 **Performance of lambs fed with crude glycerin diets.**
V. B. Carvalho¹, J. M. Bertocco Ezequiel², R. F. Leite¹, S. F. F. Petrorossi³, T. R. Delphino³, H. L. Perez³, J. R. Paschoaloto³, M. T. C. Almeida³, V. R. Favaro⁴, and E. H. Fernandes³, 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.
- 1935 W376 **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.*
- 1936 W377 **Feeding behavior of feedlot lambs fed with high levels of crude glycerin.**
V. B. Carvalho¹, J. M. Bertocco Ezequiel², R. F. Leite¹, S. F. F. Petrorossi³, T. R. Delphino³, M. T. C. Almeida³, J. R. Paschoaloto³, H. L. Perez³, V. R. Favaro⁴, E. M. Oliveira³, and A. P. D'Aurea³, 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.

Swine Species: Nutrition

- W378 **Withdrawn**
- 1949 W379 **Effect of porcine digestive peptides as sweet milk whey replacer for piglets diets: Preferences, acceptance and performance during the nursery period.**
J. E. Figueroa^{1,2}, D. Solà-Oriol³, R. Davin⁴, E. Borda⁵, 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, ⁵Bioiberica, Barcelona, Spain.

- 1950 W380 **High nutrient intake alters muscular growth and metabolic status of neonatal intra-uterine growth-retarded pigs.**
*F. Han**, L. Chen, L. Che, B. Yu, X. Ding, Y. Luo, S. Bai, D. Chen, Y. Xuan, and K. Zhang, *Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China.*
- 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.**
*C. B. Paulk**, M. D. Tokach, S. S. Dritz, J. M. DeRouche, and R. D. Goodband, *Kansas State University, Manhattan.*
- 1953 W383 **Postnatal nutrition restriction affects growth and immune response of intrauterine growth restricted piglets.**
*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.*
- 1954 W384 **Effects of dietary omega-3 polyunsaturated fatty acids on growth and immune response of weanling pigs.**
*Q. Li, J. H. Brendemuhl, K. Jeong, and L. Badinga**, *University of Florida, Gainesville.*

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.**
*P. A. Eichen**, B. Scharf, G. D. Martin, R. Mott, and D. E. Spiers, *University of Missouri, Columbia.*
- 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.*
- 10:55 AM 12 **The "Greek yogurt effect": Impact on milk production and the dairy industry in New York.**
*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**

3501F

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**

2505B

10:30 AM 39 **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.*

10:45 AM 40 **Maternal behavior in sheep production: Effects on lamb performance and economic indicators.**
*C. Raineri^{*1,2}, 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 41 **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 42 **Monitoring stress behavior in grazing beef cows with a long range pedometric system.**
R. Gabrieli, Ministry of Agriculture and Rural Development, Extension Service, Beit Dagan, Israel, Beit Dagan, Israel.*

11:30 AM 43 **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 44 **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 45 **Balking behavior incidence in cattle at the processing plant and carcass implications.**
*M. L. Thomas^{*1}, Y. V. Thaxton², A. H. Brown, Jr.¹, K. E. Pfalzgraf¹, K. D. Christensen³, K. Anschutz¹, and C. F. Rosenkrans⁴, ¹Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR, ²Center for Food Animal Wellbeing, University of Arkansas, Fayetteville, ³Center of Excellence for Poultry Science, University of Arkansas, Fayetteville, ⁴University of Arkansas, Fayetteville.*

12:15 PM 46 **Effects of ractopamine or zilpaterol on physiologic and metabolic parameters in feedlot steers.**
*A. L. Fuller^{*1,2}, 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
2101

10:30 AM **EAAP - ASAS Speaker Exchange Presentation: Effects of interactions between therapy animals and humans.**
L. Lidfors, Swedish University of Agricultural Sciences, Skara, Sweden.*

11:10 AM **Bonding with commodities: Implications of human-animal relationships for livestock animal welfare.**
C. Cronney, 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.**
M. J. Hersom^{}, T. A. Thrift, and J. V. Yelich, University of Florida, Gainesville.*
- 10:45 AM 145 **Effects of dose and duration of ractopamine hydrochloride supplementation on growth performance and carcass characteristics of feedlot heifers.**
B. M. Edenburn¹, N. A. Pyatt², and T. L. Felix¹, ¹University of Illinois at Urbana-Champaign, ²Elanco Animal Health, Greenfield, IN.
- 11:00 AM 146 **A meta-analysis of zilpaterol and ractopamine effects on feedlot.**
I. J. Lean¹, J. M. Thompson², and F. R. Dunshea³, ¹SBSchibus, 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.**
W. C. Burson¹, A. J. Thompson¹, M. A. Jennings¹, J. A. Carroll², N. C. Burdick Sanchez², B. J. Ragland¹, J. E. Hergenreder¹, J. O. Baggerman¹, K. S. Sharon¹, T. R. Schmidt¹, E. S. Murray¹, F. R. B. Ribeiro¹, B. J. Johnson¹, and R. J. Rathmann¹, ¹Texas Tech University, Lubbock, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX.
- 11:30 AM 148 **Comparison of real-time ultrasound measurements for body composition traits to carcass data in feedlot cattle fed zilpaterol hydrochloride.**
B. J. Ragland, F. R. B. Ribeiro^{}, W. C. Burson, B. J. Johnson, and R. J. Rathmann, Texas Tech University, Lubbock.*
- 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.**
W. C. Burson¹, A. J. Thompson¹, M. A. Jennings¹, J. A. Carroll², N. C. Burdick Sanchez², J. E. Hergenreder¹, J. O. Baggerman¹, B. J. Ragland¹, E. S. Murray¹, T. R. Schmidt¹, K. S. Sharon¹, F. R. B. Ribeiro¹, B. J. Johnson¹, and R. J. Rathmann¹, ¹Texas Tech University, Lubbock, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX.
- 12:15 PM 151 **Effects of zilpaterol hydrochloride on blood gas, electrolyte balance and pH in feedlot cattle.**
W. C. Burson¹, A. J. Thompson¹, M. A. Jennings¹, J. A. Carroll², N. C. Burdick Sanchez², J. E. Hergenreder¹, J. O. Baggerman¹, B. J. Ragland¹, K. S. Sharon¹, T. R. Schmidt¹, E. S. Murray¹, F. R. B. Ribeiro¹, B. J. Johnson¹, and R. J. Rathmann¹, ¹Texas Tech University, Lubbock, ²USDA-ARS, Livestock Issues Research Unit, Lubbock, TX.

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. Xu¹, Y. Gong¹, and J. A. Lucey^{2,3}, 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. Gong¹, L. Xu¹, and J. A. Lucey^{1,2}, ¹Department of Food Science, University of Wisconsin-Madison, ²Center 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. Liang¹, G. Gillies², H. G. Patel³, L. Matia-Merino¹, A. Ye⁴, and M. Golding^{1,4}, 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.**
H. Bhatt¹, A. Cucheval¹, C. Coker¹, H. G. Patel², A. Carr³, and R. Bennett³, ¹Fonterra Research & Development Centre, Palmerston North, New Zealand, ²South Dakota State University, Brookings, ³Massey University, Palmerston North, New Zealand.
- 11:45 AM 271 **Heat-induced changes in milk proteins in high-carbohydrate media.**
T. Huppertz^{1,2} and H. G. Patel³, ¹NIZO food research, Ede, Netherlands, ²South 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 and S. Ikeda, ¹University of Wisconsin-Madison.*
- 12:15 PM 273 **Strengthening interfacial whey protein films by conjugation with gellan.**
B. Cai 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 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, J. A. Lucey, and M. Molitor, University of Wisconsin-Madison.*

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, G. Dahlke², and D. R. Strohbehn², 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, M. Estienne², W. Flowers³, R. Baker⁴, R. Knox⁵, K. Stalder⁴, T. Safranski⁶, M. Knauer³, W. Singleton⁷, D. Meisinger⁸, C. Branderhorst⁸, and W. Winkelman⁹, ¹Levis 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**

Food Safety: Advances in Food Safety

Chair: Michaela G. Alewynse, 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. Aslam¹, I. Rodrigues², A. ul Haq³, A. Cowling¹, H. M. Warriach⁴, D. M. McGill¹, and P. C. Wynn, ¹Graham Centre for Agricultural Innovation, Charles Sturt University, Wagga Wagga, Australia, ²BIOMIN -Singapore Pte Ltd, Singapore, Singapore, ³Buffalo Research Institute, Bhunniky, 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, 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, W. E. D. I. Saber², and S. A. Ibrahim³, 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, L. Hsu¹, B. Miller¹, G. Sullivan¹, K. Paradis², and C. I. Moraru¹, 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, O. O. Olusola², O. J. Aremo², and W. Y. Akwetey¹, 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. Beck¹, D. S. Hubbell, IIP, T. Hess², and J. Jennings³, 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.**
T. B. Wilson, M. R. Milnamow, M. A. West, D. B. Faulkner, F. A. Ireland, and D. W. Shike, University of Illinois at Urbana-Champaign.*
- 11:00 AM 319 **Metagenomic analysis of the rumen microbiome in wheat-induced frothy bloat among steers.**
D. W. Pitta¹, W. E. Pinchak², B. Veiccharelli³, R. Sinha⁴, and D. Fulford⁵, ¹University of Pennsylvania, Kennett Square, ²Texas A&M AgriLife Research, Vernon, ³University of Pennsylvania, Kennett Square, ⁴University of Pennsylvania, Philadelphia, ⁵Texas AgriLife Research, Vernon.
- 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. Paulson¹, B. J. Heins², and D. G. Johnson², 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. Neel¹ and D. P. Belesky², 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. Heins¹, M. I. Endres², J. Paulson³, and R. D. Moon⁴, 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 Ronquillo¹, E. Y. Aguilar Lopez², A. Morales², M. G. Gutierrez², and O. Castelan Ortega², ¹Universidad Autonoma del Estado de México, 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-Mena¹, A. J. Heinrichs¹, C. M. Jones¹, T. M. Hill², and J. D. Quigley², ¹The Pennsylvania State University, University Park, ²Provimi North America, Brookville, OH.
- 10:45 AM 371 **Rumen epithelial gene expression in periruminant 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. Kelly¹, J. V. O'Doherty¹, D. A. Kenny², T. M. Boland³, and K. M. Pierce³, 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.**
K. J. Thornton, E. Kamanga-Sollo, M. E. White, and W. R. Dayton, University of Minnesota, Saint Paul.*
- 11:30 AM 374 **Effects of recombinant bovine somatotropin on performance and biological activity of skeletal muscle over the finishing phase of feedlot heifers.**
J. E. Hergenreder¹, J. O. Baggerman¹, A. J. Thompson¹, M. A. Jennings¹, K. S. Spivey¹, W. C. Burson¹, A. J. Laurent¹, G. J. Vogel², and B. J. Johnson¹, ¹Texas Tech University, Lubbock, ²Elanco Animal Health, Greenfield, IN.

- 11:45 AM 375 **Identification of potential serum biomarkers for feed efficiency in young pigs.**
*J. K. Grubbs**, *S. M. Lonergan*, *J. C. M. Dekkers*, and *C. K. Tuggle*, *Iowa State University, Ames.*
- 12:00 PM 376 **Enhanced protein accretion and vital organ growth with intermittent bolus compared to continuous feeding in neonatal pigs.**
S. W. El-Kadi^{1,2}, *C. Boutry*¹, *A. Suryawan*¹, *M. C. Gazzaneo*¹, *R. A. Orellana*¹, *N. Srivastava*¹, *H. V. Nguyen*¹, *S. R. Kimball*³, *M. L. Fiorotto*¹, and *T. A. Davis*¹, ¹*USDA/ARS-Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX*, ²*Animal and Poultry Sciences, Virginia Tech, Blacksburg*, ³*Cellular 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

- 10:30 AM 400  **Intensifying beef production to meet human nutrition needs.**
*D. Grace**, *International Livestock Research Institute, CGIAR Program, Nairobi, Kenya.*
- 10:45 AM 401  **Introduction: Not just nutrition and management: We need a Total Nutrition and Management Program.**
*F. R. Valdez**, *Kemin Industries, Inc., Des Moines, IA.*
- 10:55 AM 402  **Parallel comparisons of intensive meat production in developed and developing countries. What can we learn from each other's systems?**
*R. Barajas Cruz**, *Universidad de Sinaloa, Culiacan, Mexico.*
- 11:25 AM 403  **Methods to improve nutrient intake in grazing cattle: Pasture management and supplementation.**
*F. A. P. Santos**, *J. R. R. Dórea*, *F. Batistel*, and *D. F. A. Costa*, *University of São Paulo, Piracicaba, Brazil.*
- 11:55 AM  **Food safety. What efforts are underway internationally to improve food safety? FDA's Office of International**
*C. Bryant**, *Office of International Programs, FDA*
- 12:30 PM  **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

- 10:30 AM 521 **Ovarian and endocrine responses and efficacy associated with three ovulation synchronization strategies (Heat-synch, Doublesynch and Estradoublesynch) in Murrah buffaloes.**
*R. Mirmahmoudi*¹ and *B. S. Prakash*², ¹*Department of Animal Science, Faculty of Agriculture, University of Jiroft, Jiroft, Iran*, ²*National Dairy Research Institute, Karnal, India.*
- 10:45 AM 522 **CLC improves the post thaw semen quality but not the fertility in Sahiwal bulls.**
*A. Sattar*¹, *A. G. Tarin*¹, *N. Ahmad*¹, *K. Javed*², *M. Ahmad*¹, *A. Razzaq*¹, *K. Ahmad*³, and *M. Younis*⁴, ¹*Department of Theriogenology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, ²*Department of Livestock Production, University of Veterinary and Animal Sciences, Lahore, Pakistan*, ³*Livestock Experiment Station, Fazilpur, Rajanpur, Pakistan*, ⁴*Semen Production Unit, Qadirabad, Sahiwal, Pakistan.*
- 11:00 AM 523 **Effects of administration of prostaglandin F_{2α} (PGF) at initiation of the 7-day CO-Synch+CIDR estrus synchronization protocol for replacement beef heifers.**
*V. R. G. Mercadante*¹, *L. E. Kozicki*², *F. M. Ciriaco*¹, *D. D. Henry*¹, *C. R. Dahlen*³, *R. N. Funston*⁴, *J. E. Larson*⁵, *G. A. Perry*⁶, *T. L. Steckler*⁷, and *G. C. Lamb*¹, ¹*University of Florida, Marianna, FL*, ²*Pontifical Catholic University (PUCPR), Curitiba, Brazil*, ³*North Dakota State University, Fargo*, ⁴*University of Nebraska, North Platte*, ⁵*Mississippi State University, Mississippi State*, ⁶*South Dakota State University, Brookings*, ⁷*University of Illinois, Simpson.*
- 11:15 AM 524 **Modifications to Ovsynch improve fertility during resynchronization: Evaluation of presynchronization with GnRH 6 days before Ovsynch and addition of a second PGF treatment.**
*P. D. Carvalho*¹, *M. J. Fuenzalida*², *A. Ricci*², *M. Luchterhand*², *J. M. Mulcahy*², *R. V. Barletta*², *G. M. Baez*², *V. G. Santos*², *M. C. Amundson*², *J. N. Guenther*², *A. H. Sousa*^{2,3}, *M. C. Wiltbank*¹, and *P. M. Fricke*², ¹*University of Wisconsin-Madison*, ²*Department of Dairy Science, University of Wisconsin-Madison*, ³*University 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. Littlejohn¹, D. G. Riley⁴, J. A. Carroll⁵, T. H. Welsh, Jr.⁶, and R. D. Randel¹, 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. Roberts^{1,2}, M. N. Bedenbaugh¹, A. W. Lewis², D. A. Neuendorff², D. G. Riley^{1,3}, 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. Lamb³, C. S. Schauer⁴, B. W. Neville⁵, and C. R. Dahlen¹, 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. Hutcheson², 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. Sjoström¹, B. J. Heins², M. I. Endres³, R. D. Moon⁴, and J. Paulson⁵, 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 Outreach 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. Abdalla^{}, 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. Vraspir¹, and R. N. Funston¹, 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. Sheehy^{1,2}, F. J. Mulligan¹, and A. G. Fahey³, 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.

- 12:00 PM 565 **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

- 10:30 AM 667 **Effect of reduced energy density of close-up diet on ruminal fermentation parameters in multiparous Holstein cows.**
W. M. Huang^{}, 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.*
- 10:45 AM 668 **Prepartum dietary energy strategies for Holstein dairy cows: Effects on markers of negative energy balance and performance.**
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.
- 11:00 AM 669 **Hepatic acetyl COA concentration decreases following feeding in early-postpartum but not in late-lactation dairy cows.**
P. Piantoni^{}, C. M. Ylloja, and M. S. Allen, Michigan State University, East Lansing.*
- 11:15 AM 670 **Overconditioned prepartum cows exhibit a greater magnitude of insulin resistance and mobilize more NEFA earlier compared with lean cows.**
*J. E. Rico^{*1} and J. W. McFadden^{1,2}, ¹West Virginia University, Morgantown, ²Johns Hopkins University, Baltimore, MD.*
- 11:30 AM 671 **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. McFadden^{*1,2}, ¹West Virginia University, Morgantown, ²Johns Hopkins University, Baltimore, MD.*
- 11:45 AM 672 **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. Elrod³, and B. Bradford¹, ¹Kansas State University, Manhattan, ²GM Powertrain, Pontiac, MI, ³Vi-COR, Inc., Mason City, IA.
- 12:00 PM 673 **Milk production performance of autumn-calving Holstein Friesian cows managed under flat-rate or feed-to-yield concentrate feeding systems.**
*D. C. Lawrence^{*1,2}, E. Kennedy³, M. O'Donovan³, T. M. Boland⁴, A. Lawless⁵, and J. Patton⁶, 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, Dunsaney, Co. Meath, Ireland.*
- 12:15 PM 674 **Does concentrate allocation pattern affect the milk production of autumn calving cows at high and low feeding levels?**
*D. C. Lawrence^{*1,2}, M. O'Donovan³, T. M. Boland⁴, E. Lewis³, and E. Kennedy³, 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

- 10:30 AM 675 **Characterization of rumen microbial community composition of buffalo fed diets varying in forage: Concentrate ratio.**
*B. Lin^{*1,2}, C. Zou¹, F. Cox², G. Henderson², P. H. Janssen², X. Liang¹, and G. Attwood², ¹Buffalo Research Institute, The Chinese Academy of Agricultural Sciences, Nanning, China, ²AgResearch Limited, Grasslands Research Centre, Palmerston North, New Zealand.*
- 10:45 AM 676 **Bacterial diversity associated with different primer pairs on different diets in the rumen microbiome of Kankrej cattle.**
*D. W. Pitta^{*1}, N. Indugu², S. Kumar¹, K. B. Prajapati³, A. K. Patel⁴, N. Parmar⁴, A. B. Patel⁴, B. Reddy⁴, and C. Joshi⁴, ¹University of Pennsylvania, Kennett Square, ²University of Pennsylvania, Kennett Square, ³Sardharkrushinagar Dantiwada Agricultural University, Sardharkrushinagar, 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. Li¹, M. A. Steele², P. Azevedo¹, M. Carson², J. C. Plaizier¹, H. Derakhshani¹, and E. Khafipour^{1,3}, 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. Fonseca¹, D. K. A. Silva², H. D. Naumann³, T. R. Callaway⁴, and L. O. Tedeschi¹, 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.**
L. Ibarbia¹, F. Cunha¹, K. N. Galvão¹, F. Maunsell¹, A. Donovan¹, and N. DiLorenzo², ¹Department of Large Animal Clinical Sciences; University of Florida, Gainesville, ²University of Florida, Marianna.
- 11:45 AM 680 **Large-subunit rDNA based differentiation of anaerobic rumen fungi using restriction fragment length polymorphism.**
D. Sumit^{1,2,3}, S. Kumar^{2,4}, D. W. Pitta⁴, J. Edwards¹, T. Callaghan¹, G. Griffith¹, P. Mudgil², and A. Puniya², 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. Latham¹, J. C. McCann², K. Weldon¹, T. A. Wickersham¹, J. Coverdale¹, and W. E. Pinchak³, 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.**
A. C. Pesta^{*}, A. K. Watson, R. G. Bondurant, S. C. Fernando, and G. E. Erickson, University of Nebraska-Lincoln.

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
2503

- 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
2101






- 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 Cattleman'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**¹, *A. D. Henderson*², and *O. Jolliet*³, ¹Innovation 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**¹, *J. M. Sweeten*¹, and *R. Hagevoort*², ¹Texas A&M AgriLife Research, Amarillo, ²New Mexico State University, Clovis.
- 4:25 PM Reception

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**¹, *S. Desire*¹, *R. B. D'Eath*¹, *L. Canario*², and *R. Roehe*¹, ¹SRUC, Edinburgh, United Kingdom, ²INRA UMR1388, 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**¹, *A. Bach*², and *M. Devant*³, 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.
- 2:45 PM 49 **Impact of using an electrified crowding gate on milk yield and milk flow.**
*I. Guasch*¹, *A. Pinto*², and *A. Bach*^{3,4}, ¹Blanca, Hostalets de Tost, Spain, ²Department of Ruminant Production, IRTA, Barcelona, Spain, ³Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, ⁴ICREA, Barcelona, Spain.
- 3:00 PM 50 **Using designer diets to reduce aggression in pregnant sows.**
*A. Sapkota**¹, *J. N. Marchant-Forde*², *B. T. Richert*¹, and *D. C. Lay Jr.*³, 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**¹, *N. K. Gabler*¹, *C. E. Abell*², *A. F. Keating*¹, *S. T. Millman*¹, *J. M. Siegford*³, and *A. K. Johnson*¹, 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 feeding an immunostimulant 60 days prior to delivery.**
E. L. Nace, S. C. Nickerson, F. M. Kautz, S. Breidling, D. Wochele, L. O. Ely, and D. J. Hurley, University of Georgia, Athens.*
- 2:30 PM 93 **Restriction in energy or protein affects differentially behavior of lactating dairy cows.**
V. Fischer¹, E. Forgiarini Vizzotto¹, F. André Schmidt², D. Werncke¹, A. Susenbach de Abreu¹, and A. Thaler Neto², ¹Universidade Federal do Rio Grande do Sul, Porto Alegre, 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. Pinedo¹, A. M. Daniels², J. Shumaker³, and A. De Vries⁴, 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.**
P. J. Pinedo¹, J. S. Velez², H. Bothe³, D. Merchan³, J. M. Piñeiro³, and C. A. Risco⁴, ¹Texas A&M AgriLife Research, Amarillo, ²Aurora Organic Farms, Boulder, CO, ³Aurora Organic Dairy, Boulder, CO, ⁴College of Veterinary Medicine, University of Florida, Gainesville.
- 3:15 PM 96 **Effects of yeast product supplementation on immunity and uterine inflammation in transition dairy cows.**
K. Yuan¹, L. Mendonca¹, L. Hulbert¹, L. Mamedova¹, M. Muckey¹, Y. Shen¹, C. C. Elrod², and B. Bradford¹, 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. McArt¹, D. V. Nydam², and M. W. Overton³, 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. Li¹, A. M. Danscher², P. H. Andersen³, E. Khafipour¹, N. B. Kristensen⁴, and J. C. Plaizier¹, 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. Shahzad¹, J. S. Osorio², D. N. Luchini³, and J. J. Loo¹, 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. Proudfoot¹, S. J. LeBlanc², D. Weary³, B. Bradford⁴, L. Mamedova⁴, and N. von Keyserlingk³, 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. Galyeen, Texas Tech University, Lubbock.*
- 3:00 PM 111 **Importance and impact of research ethics on industry.**
M. Brown¹ and D. Smith², ¹Global Animal Products, Inc., Amarillo, TX, ²Performance Plus Liquids, Inc., Sterling, CO.

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 Fundora¹, R. V. Knox¹, J. Pettigrew¹, M. D. MacNeil², 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.**
T. S. Sonstegard¹, D. Bickhart², H. J. Huson³, A. Landaeta⁴, L. R. Porto-Neto⁵, A. Reverter-Gomez⁶, W. Barendse⁷, D. J. Null⁸, M. P. Morales⁹, P. J. Hansen¹⁰, D. Serdal¹¹, J. F. Garcia¹², R. W. Godfrey¹³, and C. P. Van Tassell¹, ¹USDA, ARS, BFGI, Beltsville, MD, ²USDA-ARS-AIPL, Beltsville, MD, ³Cornell University, Ithaca, NY, ⁴Universidad del Zulia, Maracaibo, Venezuela, ⁵CSIRO Food Futures Flagship, Brisbane, Australia, ⁶Food Futures Flagship, CSIRO Animal, Food and Health Sciences, Brisbane, Australia, ⁷CSIRO Animal, Health and Food Science, St. Lucia, Australia, ⁸Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD, ⁹University of Puerto Rico, Mayaguez, PR, ¹⁰Department of Animal Sciences, University of Florida, Gainesville, ¹¹University of Florida, Gainesville, ¹²Faculdade de Medicina Veterinária de Araçatuba, Univ Estadual Paulista, Araçatuba, Brazil, ¹³University of the Virgin Islands, St Croix, U.S. Virgin Islands.
- 2:45 PM 173 **Genomic Selection of Nili-Ravi Buffalo.**
M. Moaen-ud-Din¹, G. Bilal¹, and M. S. Khan², ¹PMAS-Arid Agriculture University, Rawalpindi, Pakistan, ²University of Agriculture, Faisalabad, Pakistan.

Companion Animals Symposium: George C. Fahey Companion Animal Nutrition Symposium: Preparing Future Companion Animal Biologists

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. Tahvonon, 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.*

Joint Growth & Development, and Meat Science & Muscle Biology Symposium: Applications of Proteomics in Animal Production

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. Adedokun and O. Adeola, Purdue University, West Lafayette, IN.*
- 3:00 PM 467 **Starch and fiber characteristics of barley influence site of energy digestion in ileal-cannulated grower pigs.**
J. M. Fouhse¹, S. Moehn¹, J. Gao¹, T. Vasanthan¹, M. Izydorczyk², A. D. Beattie³, 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. Magnuson, 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.**
S. K. Gatrell, J. Kim, T. J. Derksen, E. V. O'Neil, and X. G. Lei, Cornell University, Ithaca, NY.*

- 4:00 PM 470 **In vitro digestion and fermentation characteristics and in vivo digestibility of canola co-products in the pigs.**
T. A. Woyengo¹, R. Jha^{1,2}, E. Beltranena¹, and R. T. Zijlstra¹, ¹University of Alberta, Edmonton, AB, Canada, ²University of Hawaii at Manoa, Honolulu.
- 4:15 PM 471 **In vitro pig cecal fermentation with different inoculum source with diets content *Acrocomia aculeata*.**
S. L. S. Cabral Filho¹, L. S. Murata¹, C. A. Silva Júnior², H. dos Santos Sena², F. Lopes da Silva², F. Nishimoto Gomes da Costa², T. F. Braga², and J. F. Athayde Oliveira², ¹University of Brasilia, Brasilia, Brazil, ²Universidade de Brasilia, Brasilia, Brazil.
- 4:30 PM 472 **Residual feed intake in pigs is associated with organ weight, nutrient digestibility and intestinal nutrient transporter gene expression.**
S. Vigors¹, T. Sweeney², A. K. Kelly¹, C. J. O'Shea¹, D. N. Doyle¹, and J. V. O'Doherty¹, ¹School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, ²College of Agriculture, Food Science and Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland.
- 4:45 PM 473 **The effect of divergent selection for residual feed intake on cytokine gene expression in pigs following an ex vivo liposaccharide challenge.**
S. Vigors¹, J. V. O'Doherty¹, C. J. O'Shea¹, and T. Sweeney², ¹School of Agriculture and Food Science, University of College Dublin, Dublin, Ireland, ²College 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

- 2:00 PM 531 **Recent advances in the hypothalamic control of reproduction.**
I. Clarke, Monash University, Clayton, Victoria 3800, Australia.*
- 2:30 PM 532 **Influence of stress on male reproductive physiology.**
T. H. Welsh, Jr.¹, N. H. Ing², and R. D. Randel³, ¹Texas A&M University Department of Animal Science, College Station, ²Texas A&M University, Department of Animal Science, College Station, ³Texas A&M AgriLife Research, Overton.
- 3:00 PM 533 **EAAP-ASAS Speaker Exchange Presentation: Mechanisms linking infection and innate immunity in the female genital tract with infertility in dairy cattle.**
I. M. Sheldon, Swansea University, Singleton Park, Swansea, United Kingdom.*
- 3:30 PM 534 **Influences of heat stress and uterine diseases on reproduction of dairy cows.**
J. E. P. Santos¹, E. S. Ribeiro¹, E. Karakayan², K. N. Galvão³, and F. S. Lima⁴, ¹Department of Animal Sciences, University of Florida, Gainesville, ²University of Florida, Gainesville, ³Department of Large Animal Clinical Sciences; University of Florida, Gainesville, ⁴Cornell University, Ithaca, NY.
- 4:00 PM 535 **Cellular and molecular mechanisms of heat stress related to bovine ovarian function.**
Z. Roth, The Hebrew University of Jerusalem, Rehovot, Israel.*
- 4:30 PM 1402 **ADSA-EAAP Travel Award Presentation: Physiological characteristics of cows with divergent genetic merit for fertility traits during the transition period.**
S. Moore^{1,2}, P. Lonergan², T. Fair², and S. Butler³, ¹Teagasc Moorepark, Fermoy, Ireland, ²University College Dublin, Dublin, Ireland, ³Animal & Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Co. Cork, Ireland.

Production, Management, and the Environment: Economics Of Different Management Practices

Chair: C. L. Maxwell, Elanco Animal Health

2104B

- 2:00 PM 566 **Effects of technology use in feedlot production systems on feedlot performance and carcass characteristics.**
C. L. Maxwell¹, B. C. Bernhard¹, 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. Holland², and C. R. Krehbiel¹, ¹Oklahoma State University, Stillwater, ²Merck Animal Health, DeSoto, KS.

- 2:15 PM 567 **The effects of technology use in feedlot production systems on the health status of finishing steers.**
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. Holland², and C. R. Krehbiel¹, ¹Oklahoma State University, Stillwater; ²Merck, Volga, SD.
- 2:30 PM 568 **Survey of BQA cattle handling practices that occurred during processing feedlot cattle.**
R. Woiwode and T. Grandin, Colorado State University, Fort Collins.*
- 2:45 PM 569 **The effects of technology use in feedlot production systems on cattle behavior and mobility.**
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. Holland², C. R. Krehbiel¹, and C. G. Hixon¹, ¹Oklahoma State University, Stillwater; ²Merck, Volga, SD.
- 3:00 PM 570 **Predicting dry matter intake by growing and finishing beef cattle: Evaluation of current methods and equation development.**
U. Y. Anele¹, E. M. Dobby², and M. L. Galyean³, ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, ²Cargill Animal Nutrition, Amarillo, TX, ³Texas Tech University, Lubbock.
- 3:15 PM 571 **Optimizing concurrently dairy farm profitability and environmental performance.**
D. Liang and V. Cabrera, University of Wisconsin-Madison.*
- 3:30 PM 572 **Economics of transition cow management of dairy herds.**
G. M. Schuenemann¹ and K. N. Galvão², ¹Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, ²Department of Large Animal Clinical Sciences, University of Florida, Gainesville.
- 3:45 PM 573 **The impact of selected milking, feeding, and housing management systems on the profitability of Quebec dairy herds.**
H. A. Delgado¹, R. I. Cue², A. Sewalem³, R. Lacroix⁴, D. Lefevre⁵, E. Bouchard⁶, D. Haine⁶, and K. Wade¹, ¹McGill University, Sainte Anne de Bellevue, QC, Canada, ²McGill University, Department of Animal Science, Ste-Anne-de-Bellevue, QC, Canada, ³Agriculture and Agri-Food Canada AAFC, Guelph, ON, Canada, ⁴Valacta, Ste-Anne-de-Bellevue, QC, Canada, ⁵Valacta, Sainte Anne de Bellevue, QC, Canada, ⁶University of Montreal, Saint-Hyacinthe, QC, Canada.
- 4:00 PM 574 **Grazing alfalfa as an alternative to reduce production costs in intensive milk production systems.**
F. A. Kuwahara¹, A. M. Pedroso², G. B. Souza³, and R. P. Ferreira³, ¹UNESP/FMVZ, Botucatu, Brazil, ²EMBRAPA, São Carlos, Brazil, ³EMBRAPA, Sao Carlos, Brazil.
- 4:15 PM 575 **Comparison of productivity and management practices on Dairy Herd Improvement Association (DHIA) and non-DHIA herds in the United States.**
J. E. Lombard, C. A. Koprak, M. A. Parker, and C. A. Haley, USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO.*
- 4:30 PM 576 **Optimization of reproductive management programs using lift chart analysis and cost-sensitive evaluation of classification errors.**
S. Shahinfar, J. N. Guenther¹, D. Page², A. Samia-Kalantari¹, V. Cabrera³, P. M. Fricke², and K. A. Weigel³, ¹Department of Dairy Science University of Wisconsin-Madison, ²Department of Biostatistics and Medical Informatics and Department of Computer Science, University of Wisconsin-Madison, ³University of Wisconsin-Madison.*
- 4:45 PM 577 **The cost of clinical mastitis in the first 30 days of lactation: An economic assessment tool.**
E. Rollin and M. W. Overton¹, ¹University Of Georgia College of Veterinary Medicine, Athens, ²Elanco Animal Health-Dairy, Athens, GA.*

Ruminant Nutrition IX: Minerals

Chair: John Schoonmaker, Purdue University

Sponsor: ASAS Foundation

2103A

- 2:00 PM 683 **Effects of supplemental zinc, copper, and manganese concentration and source on performance and carcass characteristics of feedlot steers.**
E. Caldera¹, J. J. Wagner¹, K. Sellins¹, T. E. Engle¹, S. B. Laudert², and J. Spears³, ¹Colorado State University, Fort Collins, ²Micronutrients, Indianapolis, IN, ³North Carolina State University, Raleigh.
- 2:15 PM 684 **Decreasing dietary calcium to potentiate changes in beef tenderness with zilpaterol hydrochloride supplementation.**
C. L. Van Bibber-Krueger, K. A. Miller, and J. S. Drouillard, Kansas State University, Manhattan.*
- 2:30 PM 685 **Optimizing phosphorus utilization by dairy cows.**
J. C. Plaizier, K. H. Ominski, and E. J. McGeough, University of Manitoba, Winnipeg, MB, Canada.*

- 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. Boland¹, V. P. Gath², J. C. Jacquier¹, and K. M. Pierce^{*1}, 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.**
G. Acetoze^{*1}, J. Champagne², J. J. Ramsey³, A. M. Gehman⁴, K. A. Dawson⁵, and H. A. Rossow², ¹University of California-Davis, Tulare, ²VMTRC, University of California, Tulare, ³University of California-Davis, ⁴Alltech, Inc., Nicholasville, KY, ⁵Center for Animal Nutrigenomics and Applied Animal Nutrition, Alltech, Nicholasville, KY.
- 3:15 PM 688 **Cobalt-lactate inclusion in a high forage total mixed ration fed to late lactation dairy cows.**
J. P. Pretz^{*1}, H. T. Purvis², D. Davis², B. Trautman², J. L. Anderson¹, K. F. Kalscheur¹, and D. Casper¹, 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. Ryan^{*1}, E. B. Kegley¹, J. Hawley¹, J. A. Hornsby¹, J. L. Reynolds¹, and S. B. Laudert², 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. Muegge^{*1}, K. M. Brennan², R. P. Lemenager¹, and J. P. Schoonmaker¹, 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. Warner^{*1}, K. H. Jenkins², R. J. Rasby¹, M. K. Luebbe², G. E. Erickson¹, and T. J. Klopfenstein¹, 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. Rezayazdi^{*1}, M. Nematpoor², and M. Dehghan Banadaky¹, 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. McCullough¹, B. Houin², and T. D. Nennich^{*1}, 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. Dennis^{*1}, J. E. Tower¹, A. M. Mosiman¹, and T. D. Nennich¹, Purdue 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
2103B

- 2:00 PM 695 **Opening remarks and overall impact of Dr. Glen Broderick on research around the world.**
A. Faciola^{*}, University of Nevada, Reno.
- 2:30 PM 696 **EAAP-ADSA Speaker Exchange Presentation: Conundrums of protein and peptide metabolism in the rumen.**
R. J. Wallace^{*}, 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. Huhtanen^{*}, 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. Udén^{*}, 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. Hristov^{*}, 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. Wattiaux^{*} 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. Aad¹ and *S. Abi Saab²*, 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. Adebisi¹, *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. Flohr¹, *J. M. DeRouche¹*, *J. C. Woodworth¹*, *M. D. Tokach¹*, *S. S. Dritz¹*, *R. D. Goodband¹*, *T. A. Houser¹*, *C. A. Fedler²*, and *K. J. Prusa²*, 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.**
*Z. Cheng**, *D. Yuan*, *D. Hou*, *Y. Chen*, *H. Zhang*, *Y. Wang*, *W. Jin*, *B. Wang*, *H. Lei*, *Q. Li*, *S. Jiang*, *S. Bai*, and *Z. Zhang*, Animal Nutrition & Feed Center, COFCO Nutrition and Health Institute, Beijing, China.
- 2:45 PM 755 **The evaluation of narasin in grow-finish swine diets.**
L. Greiner¹, *R. Barrett¹*, *A. Graham¹*, and *J. Connor²*, 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. Adesehinwa¹, *E. O. Akinfala²*, and *O. O. Adeleye³*, ¹Institute of Agricultural Research & Training, Obafemi Awolowo University, Ibadan, Nigeria, ²Department of Animal Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria, ³Federal University of Agriculture, Abeokuta, 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. Coble¹, *S. S. Dritz¹*, *J. L. Usry²*, *J. E. Nemechek¹*, *M. D. Tokach¹*, *J. M. DeRouche¹*, *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.**
*J. A. De Jong**, *J. M. DeRouche*, *M. D. Tokach*, *R. D. Goodband*, and *S. S. Dritz*, *Kansas State University, Manhattan.*
- 3:45 PM 759 **The effects of dietary zinc oxide and chlortetracycline on nursery pig growth performance.**
*J. A. Feldpausch**, *J. A. De Jong*, *M. D. Tokach*, *S. S. Dritz*, *J. C. Woodworth*, *R. G. Amachawadi*, *H. M. Scott*, *J. L. Nelssen*, and *R. D. Goodband*, *Kansas State University, Manhattan.*
- 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*¹*, *J. J. Chewning²*, and *C. L. Walk¹*, *¹AB Vista Feed Ingredients, Marlborough, United Kingdom*, *²Swine Research Services, Inc., Springdale, AR.*



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**28th ADSA Discover Conference on Food
Animal Agriculture:**



Starch for Ruminants

October 6-9, 2014

Northern Illinois University

Conference Center in Naperville, IL

**Hosted by the American Dairy Science
Association**

Conference Format

The Discover Conference Series is designed to provide a format and venue that encourages in-depth discussion of cutting-edge science.

ADSA Discover ConferencesSM focus on topics of importance to the science of food animal agriculture and are held in a relaxed, informal setting. Sessions for this conference will allow ample time for discussion, networking and relaxation.

Program Committee Organizers:

Co Chairs:

Dr. Randy Shaver, University of Wisconsin -
Madison

Dr. Rick Grant, Miner Institute, Chazy, NY

Dr. Bill Weiss, The Ohio State University

Committee Members:

Dr. Mike Allen, Michigan State University

Dr. Galen Erickson, University of Nebraska

Dr. Patrick C. Hoffman, University of Wisconsin -
Madison

Dr. Mark Nelson, Washington State University

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>

American Dairy Science Association
Discover Conference Series
Phone: 217/356-5146 Fax: 217/398-4119
Email: adsa-discover@assoq.org



For complete conference information, including the latest program and registration materials, go to:

<http://www.adsa.org/discover/>

SYMPOSIA AND ORAL SESSIONS

Animal Behavior and Well-Being IV

Chair: Amy L. Stanton, University of Wisconsin-Madison
3501B

- 8:30 AM 52 **Sprinkler flow rate affects dairy cattle physiological and behavioral responses.**
*J. M. Chen^{*1}, K. E. Schütz², and C. B. Tucker¹, ¹University of California-Davis, ²AgResearch, Hamilton, New Zealand.*
- 8:45 AM 53 **Short-term increases in stocking density did not alter feeding behavior of lactating Holstein dairy cattle.**
R. A. Black¹, R. J. Grant², and P. D. Krawczel¹, ¹University of Tennessee, Knoxville, ²William 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-Luchterhand¹, P. Basso Silva¹, R. C. Chebel², and M. I. Endres¹, ¹University of Minnesota, Saint Paul, ²Department 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-Luchterhand¹, P. Basso Silva¹, R. C. Chebel², and M. I. Endres¹, ¹University of Minnesota, Saint Paul, ²Department 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-Luchterhand¹, P. Basso Silva¹, R. C. Chebel², and M. I. Endres¹, ¹University of Minnesota, Saint Paul, ²Department 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.**
C. E. Clark, S. C. Garcia^{}, K. L. Kerrisk, J. P. Underwood, J. I. Nieto, M. S. Calleja, S. Sukkarieh, and G. M. Cronin, University of Sydney, Sydney, Australia.*
- 10:15 AM 59 **Responses to rectal and uterine palpation for assessment of visceral pain associated with metritis in dairy cows.**
J. Stojkov¹, D. M. Weary¹, and M. A. G. von Keyserlingk², ¹Animal Welfare Program, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada, ²University of British Columbia, Vancouver, BC, Canada.

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
2502

- 8:30 AM 106 **Lactocrine programming of postnatal reproductive tract development.**
F. F. Bartol¹ and C. A. Bagnell², ¹Auburn University, Auburn University, AL, ²Rutgers University, New Brunswick, NJ.
- 9:25 AM 107 **Long-term consequences of maternal and neonatal nutrition for pregnancy and postnatal outcomes.**
D. G. Burrin¹ and B. Stoll², ¹USDA-ARS Children's Nutrition Research Center, Houston, TX, ²Baylor 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. Hale¹, C-X Yang¹, E. C. Wright¹, and J. W. Ross¹, ¹Department 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. Lager³ and P. J. Pinedo⁴, 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.**
J. Verbeke, K. Piccart, S. Piepers, M. Van Poucke, L. Peelman, and S. De Vlieghe, Ghent University, Ghent, Belgium.*
- 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 Vlieghe, 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. Shackelford², T. L. Wheeler², D. A. King², E. Casas^{3,4}, 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. Moaen-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, Vereinigte 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. Bergstrom², 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 weaning 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. Pettersson³, and R. T. Zijlstra¹, 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. Heo¹, Y. Dersjant-Li², A. Owusu-Asiedu³, and C. M. Nyachoti¹, 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. Zijlstra¹, 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. Bonato², R. L. D. C. Barbalho², G. D. Santos², and L. F. Araújo¹, ¹Universidade de São Paulo, Pirassumunga, 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. Mallo³, and S. Martín-Orúe¹, ¹Animal Nutrition and Welfare Service Department of Animal and Food Sciences Universitat Autònoma 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. Kiarie², 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 **Tributyryn, a source of butyric acid, modulates the intestinal health of weaning pigs.**
B. Tugnoli, M. Bertocchi, A. Piva, G. Sarli and E. Grilli^{}, 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. Hosseindoust^{}, 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^{*1}, A. Kraison², J. Thammasiri², V. Khanthusaeng², and S. Navanukraw², ¹Khon Kaen University, Khon Kaen, Thailand, ²Department 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^{*1}, M. E. Lima², D. A. Velasco Acosta², L. F. Mielke², V. O. Freitas², E. G. Xavier³, A. Schneider¹, F. B. Del Pino¹, V. R. Rabassa², and M. Nunes Corrêa¹, ¹Federal University of Pelotas, Pelotas, Brazil, ²Universidade Federal de Pelotas, Pelotas, Brazil, ³Granjas 4 Irmãos, Rio Grande, Brazil.*
- 9:00 AM 538 **Effects of administration of prostaglandin F_{2α} (PGF) at initiation of the 7-day CO-Synch+CIDR estrus synchronization protocol for suckled beef cows.**
*V. R. G. Mercadante^{*1}, L. E. Kozicki², F. M. Ciriaco¹, D. D. Henry¹, C. R. Dahlen³, J. E. Larson⁴, B. E. Voelz⁴, D. J. Patterson⁵, G. A. Perry⁶, T. L. Steckler⁷, J. S. Stevenson⁸, and G. C. Lamb¹, ¹University of Florida, Marianna, ²Pontifical Catholic University (PUCPR), Curitiba, Brazil, ³North Dakota State University, Fargo, ⁴Mississippi State University, Mississippi State, ⁵University of Missouri, Columbia, ⁶South Dakota State University, Brookings, ⁷University of Illinois, Simpson, ⁸Kansas 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^{*1}, M. R. Ellersieck¹, S. E. Pooch², M. F. Smith¹, and D. J. Patterson¹, ¹University of Missouri, Columbia, ²University 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^{*1}, M. R. Ellersieck¹, S. E. Pooch², M. F. Smith¹, and D. J. Patterson¹, ¹University of Missouri, Columbia, ²University 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^{}, 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^{*1}, C. Hammons¹, J. Peak¹, T. M. Nett², and T. L. Davis¹, ¹University of Idaho, Moscow, ²Colorado 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^{}, 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^{}, 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.**
R. S. Bisinotto^{}, L. O. Castro, C. D. Narciso, N. Martinez, M. B. Pansani, L. D. P. Sinedino, P. E. Carneiro, N. S. van de Burgwal, H. M. Bosman, R. Daetz, W. W. Thatcher, and J. E. P. Santos, Department of Animal Sciences, University of Florida, Gainesville.*

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. Salama^{*1,2}, N. Nayan³, A. Contreras-Jodar¹, S. Hamzaoui¹, and G. Caja¹, ¹Group of Ruminant Research (G2R), Universitat Autònoma 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. Wallage^{*1}, 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.**
A. M. Lees^{}, J. B. Gaughan, M. L. Sullivan, J. C. Lees, and A. Lisle, The University of Queensland, Gatton, Australia.*
- 9:15 AM 581 **The effect of shade on vaginal temperature of cows housed outside under subtropical summer conditions.**
J. C. Lees^{}, J. B. Gaughan, A. M. Lees and M. L. Sullivan, The University of Queensland, Gatton, Australia.*
- 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.**
J. B. Gaughan^{}, A. M. Lees, M. L. Sullivan, J. C. Lees, and N. B. Nquyen, The University of Queensland, Gatton, Australia.*
- 10:00 AM 583 **Correlation between mean panting score and temperature humidity index in lactating dairy cows in a sub-tropical summer.**
M. L. Sullivan^{}, J. B. Gaughan, N. Son, J. Lees, and A. M. Lees, The University of Queensland, Gatton, Australia.*
- 10:15 AM 584 **Correlation between milk production, days in milk and temperature humidity index in lactating dairy cows in a sub-tropical summer.**
M. L. Sullivan^{}, J. B. Gaughan, N. Son, J. Lees, and A. M. Lees, The University of Queensland, Gatton, Australia.*
- 10:30 AM 585 **Effects of metabolizable energy intake on tympanic temperature and ADG of steers finished in southern Chile during wintertime.**
*R. A. Arias^{*1}, T. Brown-Brandl², and T. L. Mader³, ¹Universidad Católica de Temuco. Núcleo de Investigación en Producción Alimentaria, Temuco, Chile, ²ARS-USDA, Clay Center, NE, ³Mader Consulting, LLC, Gretna, NE.*
- 10:45 AM 586 **Conductive cooling as an alternative to cool down dairy cows.**
*X. A. Ortiz^{*1}, J. F. Smith¹, F. Rojano¹, C. Y. Choi², J. Bruer³, T. Steele³, N. Schuring⁴, J. D. Allen⁵, and R. J. Collier⁶, ¹University of Arizona, Tucson, ²University of Wisconsin-Madison, ³Conco Technology Inc., Phoenix, AZ, ⁴GEA Farm Technologies, Naperville, IL, ⁵Northwest Missouri State, Maryville, ⁶University of Arizona, Tucson.*
- 11:00 AM 587 **Comparison of winter feeding systems for the evaluation of beef cow performance, reproductive efficiency and system costs.**
*D. Jose^{*1}, G. B. Penner¹, J. J. McKinnon¹, K. Larson², and B. Lardner^{1,2}, 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. Sjoström^{*1}, B. J. Heins¹, M. I. Endres², R. D. Moon², and U. S. Sorge³, 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.**
*E. L. Lundy**, M. L. Van Emon, D. D. Loy, and S. L. Hansen, Iowa State University, Ames.
- 9:45 AM 705 **Effect of sugarcane fiber digestibility and mode of conservation on intake and ruminal short chain fatty acids of growing steers.**
D. Sousa¹, B. Mesquita¹, J. Diniz-Magalhes¹, F. Rodriguez², I. Bueno¹, and L. F. P. Silva², ¹University of São Paulo, Pirassununga, Brazil, ²University of Sao Paulo, Pirassununga, Brazil.
- 10:00 AM 706 **Evaluation of a mixture of crude glycerol and molasses as an energy supplement for beef cattle consuming bermudagrass hay.**
*F. M. Ciriaco**, D. D. Henry, V. R. G. Mercadante, T. Schulmeister, G. C. Lamb, and N. DiLorenzo, University of Florida, Marianna.
- 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. Liu¹, M. Liu¹, and J. X. Liu², ¹Institute of Dairy Science, Zhejiang University, Hangzhou, China, ²Zhejiang 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. Casper¹, I. P. Acharya¹, and D. Miller², ¹South Dakota State University, Brookings, ²Miller-Casper Life Sciences, Brookings, SD.
- 11:15 AM 711 **Application of fecal NIRs profiling to predict diet characteristics and voluntary intake in beef cattle.**
J. R. Johnson¹, G. E. Carstens¹, S. D. Prince², K. H. Ominski³, K. M. Wittenberg³, M. Undi³, J. A. Basarab⁴, T. D. Forbes⁵, A. N. Hafla⁶, and D. R. Tolleson⁷, ¹Texas A&M University, College Station, ²Texas A&M AgriLife Research, Temple, ³University of Manitoba, Winnipeg, MB, Canada, ⁴Alberta Agriculture and Rural Development, Lacombe, AB, Canada, ⁵Texas A&M Agrilife Research, Uvalde, ⁶USDA-Agricultural Research Service, University Park, PA, ⁷University of Arizona, Camp Verde.

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. Abuajamieh¹, S. K. Stoakes¹, M. V. Sans-Fernandez¹, J. S. Johnson¹, P. J. Gorden¹, D. M. McKilligan², and L. H. Baumgard¹, 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 postpartum 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. Guo^{1,2}, S. L. Li¹, Z. J. Cao¹, 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.**
D. E. Rico^{*}, S. H. Preston, and K. J. Harvatine, The Pennsylvania State University, University Park.
- 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. Wood¹, T. Schwaiger¹, J. C. Plaizier², K. A. Beauchemin³, and G. B. Penner¹, ¹University of Saskatchewan, Saskatoon, SK, Canada, ²University of Manitoba, Winnipeg, MB, Canada, ³Lethbridge 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. Chapman³, ¹University of Georgia, Tifton, ²Prince Agri Products, Inc., Franklin, IN, ³Prince Agri Products, Inc., Quincy, IL.
- 10:30 AM 720 **Effect of pre-calving dietary cation anion difference on milk production: A meta-analysis.**
I. J. Lean¹, R. Rodney¹, 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 Veth^{1,3}, ¹University of Tennessee, Knoxville, ²Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, ³Balchem Corporation, New Hampton, NY.
- 11:00 AM 722 **Association of plasma ghrelin concentrations with feed intake in beef cattle.**
A. P. Foote¹, K. E. Hales², C. A. Lents³, and H. C. Freethy⁴, 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

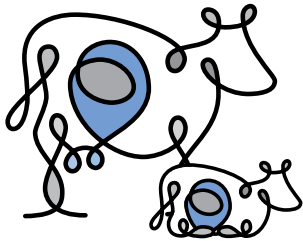
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- 8:30 AM 781  **Feed the future research strategy and USAID's global livestock investments.**
S. Moon Chapotin and J. Turk, U.S. Agency for International Development, Washington, DC.*
- 8:50 AM 782  **Nutritional value of animal source foods.**
L. Iannotti, Institute for Public Health, Washington University, St. Louis, MO.*
- 9:10 AM 783  **Research needs for inclusive livestock markets in developing countries.**
J. Yazman, U.S. Agency for International Development, Washington, DC.*
- 9:30 AM 784  **The indispensable role of mixed small holder systems in global food and nutritional security.**
J. Smith, International Livestock Research Institute, Washington, DC.*
- 9:50 AM 785  **Africa livestock futures and one health.**
D. Carroll, U.S. Agency for International Development, Washington, DC.*
- 10:10 AM 786  **The role of new technologies in increasing livestock production.**
D. Nkrumah, Bill and Melinda Gates Foundation, Seattle, WA.*
- 10:30 AM  **Panel Discussion and Audience Q&A**



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— Dean Hawkins, West Texas A&M University**

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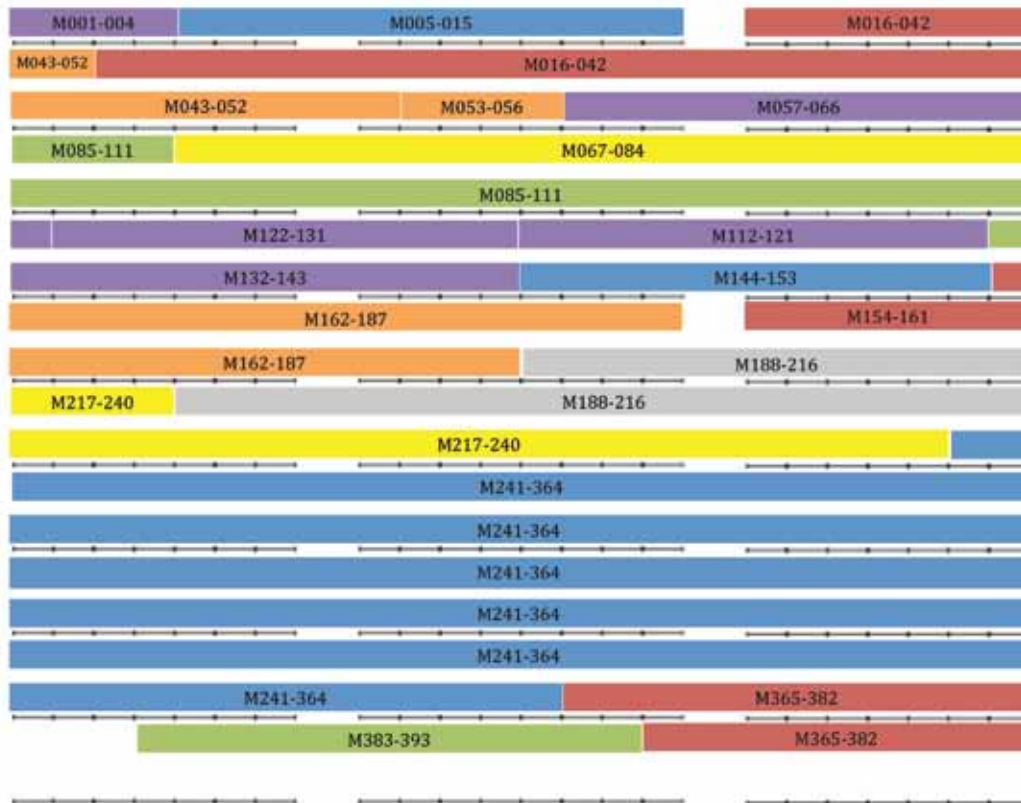
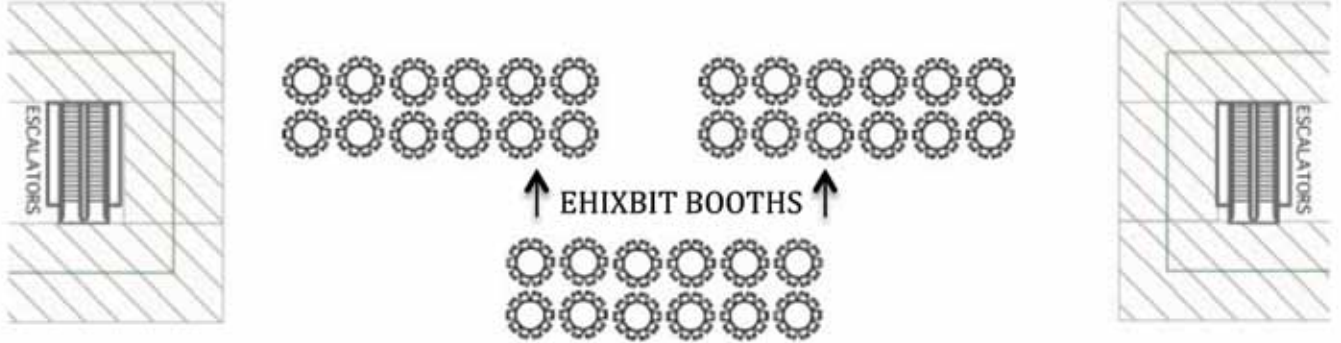
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MONDAY POSTER MAP



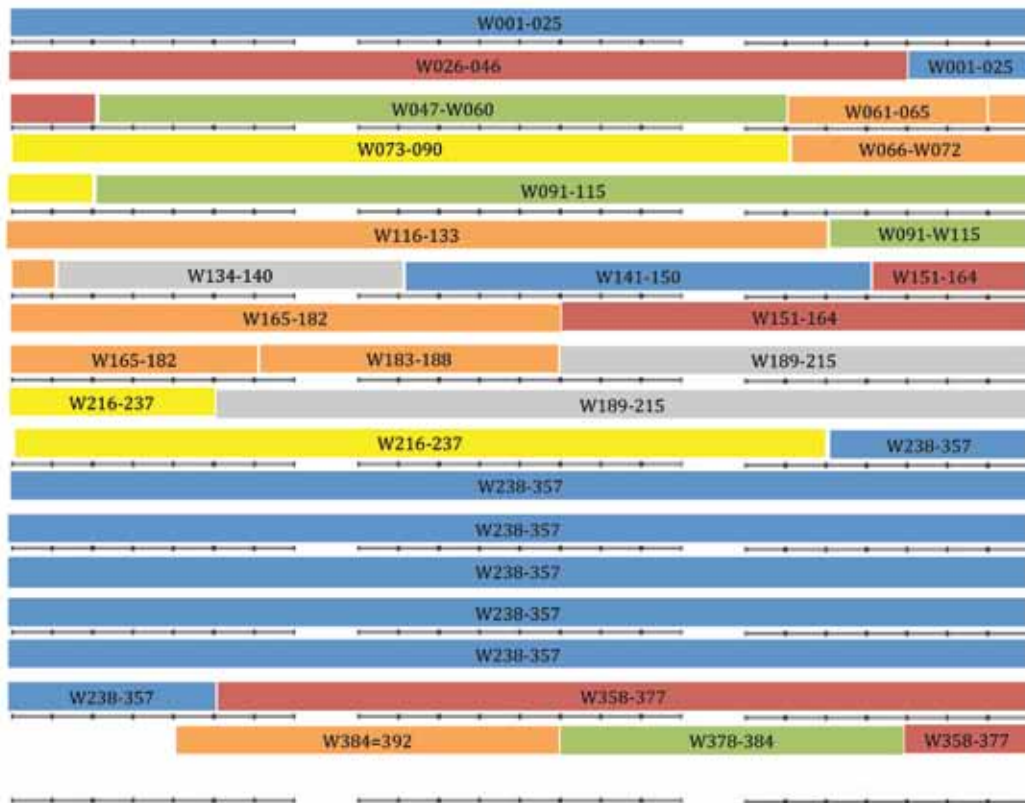
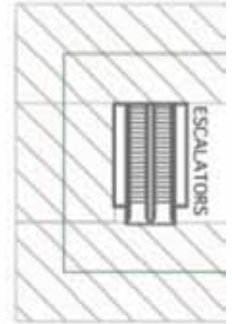
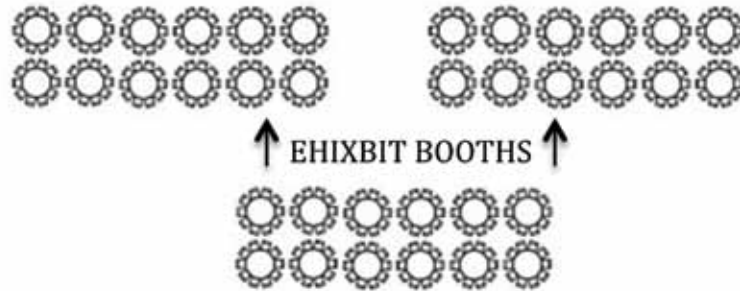
MONDAY MAP LEGEND

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|---|----------------|------------------|
| ADSA-SAD Undergraduate Student Paper Competition: Original Research Poster Competition | M001-M004 | 787-790 |
| Animal Behavior & Well-Being Posters I | M005-M015 | 791-801 |
| Animal Health: Models of Animal Immune Status and Performance | M016-M042 | 827-853 |
| Breeding and Genetics: Applications and Methods in Animal Breeding-Beef | M043-M052 | 929-938 |
| Breeding and Genetics: Genomic Methodology | M053-M056 | 939-942 |
| CSAS Graduate Student Competition: CSAS Graduate Student Poster Competition | M057-M066 | 979-988 |
| Dairy Foods: Technical Poster Session I: Cheese / Yogurt | M067-M084 | 989-1006 |
| Forages and Pastures Posters I: Silages and Forages in Dairy Production Systems | M085-M111 | 1068-1094 |
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| Meat Science & Muscle Biology Posters I | M154-M161 | 1242-1249 |
| Nonruminant Nutrition: Amino Acid, Mineral and Energy Nutrition in Monogastrics | M162-M187 | 1288-1313 |
| Physiology and Endocrinology I | M188-M216 | 1371-1399 |
| Production, Management, and the Environment: Influence of Diet and Management on Health and Performance | M217-M240 | 1456-1479 |
| Ruminant Nutrition Posters I | M241-M364 | 1527-1650 |
| Small Ruminant Poster I | M365-M382 | 1899-1916 |
| Swine Species: Reproduction And Management | M383-M393 | 1937-1947 |

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| Beef Species: Feedlot and Stocker | T031-T040 | 905-914 |
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| Breeding and Genetics: Applications and Methods in Animal Breeding-Poultry | T049-T054 | 951-956 |
| Companion Animals: Companion Animal Nutrition | T055-T064 | 969-978 |
| Dairy Foods: Technical Poster Session II: Analytical / Processing | T065-T076 | 1007-1018 |
| Extension Education Posters | T077-T092 | 1037-1052 |
| Food Safety: Food Safety | T093-T107 | 1053-1067 |
| Forages and Pastures Posters II: Forages in Beef Production Systems | T108-T116 | 1095-1103 |
| Growth & Development Poster I | T117-T135 | 1161-1179 |
| Horse Species I | T136-T143 | 1198-1205 |
| International Animal Agriculture: International Animal Production | T144-T152 | 1213-1221 |
| Meat Science & Muscle Biology Posters II | T153-T166 | 1250-1263 |
| Milk Proteins & Enzymes | T167-T176 | 1278-1287 |
| Nonruminant Nutrition: The Impact of Feed Additives on the Health and Performance of Swine and Poultry | T177-T209 | 1314-1346 |
| Physiology and Endocrinology II | T210-T238 | 1400-1428 |
| Production, Management, and the Environment: Management and Heat Stress | T239-T263 | 1480-1504 |
| Ruminant Nutrition Posters II | T264-T391 | 1651-1778 |

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| Breeding and Genetics: Application and Methods in Animal Breeding-Livestock I | W061-W065 | 957-961 |
| Breeding and Genetics: Molecular Biology and Genomics | W066-W072 | 962-968 |
| Dairy Foods: Technical Poster Session III: Fluid Milk | W073-W090 | 1019-1036 |
| Forages and Pastures Posters III: General Forages and Forage Systems | W091-W115 | 1104-1128 |
| Growth & Development Poster II | W116-W133 | 1180-1197 |
| Horse Species II | W134-W140 | 1206-1212 |
| Lactation Biology Poster II | W141-W150 | 1232-1241 |
| Meat Science & Muscle Biology Posters III | W151-W164 | 1264-1277 |
| Nonruminant Nutrition: Evaluation of Feed Ingredients For Monogastric Diets | W165-W182 | 1347-1364 |
| Nonruminant Nutrition: Factors Impacting Feed Intake | W183-W188 | 1365-1370 |
| Physiology and Endocrinology III | W189-W215 | 1429-1455 |
| Production, Management, and the Environment: Reducing the Environmental Footprint Through Nutrition and Management | W216-W237 | 1505-1526 |
| Ruminant Nutrition Posters III | W238-W357 | 1779-1898 |
| Small Ruminant Poster II | W358-W377 | 1917-1936 |
| Swine Species: Nutrition | W378-W384 | 1948-1954 |
| Teaching/Undergraduate and Graduate Education | W385-W392 | 1955-1962 |

FUTURE MEETINGS

ADSA Discover - Starch for Ruminants

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)

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2016: July 19-23, Salt Lake City, UT

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¹ R.G.S. Bruno, H.M. Rutigliano, K.L. Cerri, P.H. Robinson, J.E.P. Santos. (2009). Effect of feeding *Saccharomyces cerevisiae* on performance of dairy cows during summer heat stress. *Animal Feed Science and Technology*. 130:175-186.