Dr. Shawn Archibeque
JAM Program Chair

Welcome to the 2016 Joint Annual Meeting!

The American Society of Animal Science is excited to be meeting jointly with the American Dairy Science Association®, the Canadian Society of Animal Science and the Western Section of the American Society of Animal Science.

Around 2,000 abstracts were submitted, and approximately 1,800 will be presented. Prior to the start of the JAM, the 5th Grazing Livestock Nutrition Conference will take place at the Canyons Resort in Park City with a scientific program containing over 40 abstract presentations. At the conclusion of JAM, the 35th International Society for Animal Genetics Conference will commence at the Hilton Salt Lake City Center. Around 400 abstracts were submitted to this meeting and over 360 abstracts will be presented.

JAM, combined with these two conferences, will create the most comprehensive two weeks in animal science meeting history.

Graduate student oral and poster competitions, as well as Student Affiliate Division 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.

It has been an honor to serve as the JAM Program Chair for 2016; 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.

The ASAS and ADSA® staff do a fantastic job with the logistics of the meeting and making everything run smoothly. If it was not for their hard work and dedication, none of this meeting would be possible. Please spare a moment to let the staff know what you think of the meeting.

JAM 2016 promises to be a meeting with a great scientific program and plenty of time for networking.

I look forward to seeing you in Salt Lake City!

Dr. Shawn Archibeque, JAM Program Chair

ADSA AND ASAS PRESIDENTS' WELCOME

Dr. Michael Looper
ASAS President

Dr. Susan Duncan
ADSA President

On behalf of the American Society of Animal Science and the American Dairy Science Association, we welcome you to Salt Lake City and JAM 2016.

This year's meeting begins on Tuesday, July 19, and runs through Saturday, July 23. Many opportunities exist for interacting among society members, starting with the Opening Session on Tuesday, July 19, when five member nominated speakers will share their stories and passion for animal science in a new series called AnimalX.

Stylized after the well-known Ted-Talks, each AnimalX presentation offers a unique perspective on animal agriculture. AnimalX spotlights can be found scattered throughout the program.

The Opening Session will be followed by a BBQ (page 10) for all attendees. Other special pre-meeting events include the ASN-ASAS Preconference: Gut Microbiota, Diet and Health and the ASN Poster Competition.

Over 50 symposia are scheduled that cross many species, disciplines and societal topics of importance to food and companion animal production.

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 Shawn Archibeque (chair), Barry Bradford, Connie Larson, Ignacio Ipharraguerre, Cathleen Williams, Filippo Miglior, Jack Whittier and Clare Gill for their efforts in bringing forth this outstanding scientific program. We also thank the many others who contributed to this huge undertaking, including the staffs of ASAS and ADSA.

Finally, thank you, the attendees, for participating in JAM 2016 and making it a grand success!

Dr. Michael Looper, ASAS President

Dr. Susan Duncan, ADSA President

Dr. Tim Reuter
CSAS President

Welcome to the 2016 Joint Annual Meeting!

Dear CSAS Members and Participants,

The Canadian Society of Animal Science is excited to be meeting jointly with the American Society of Animal Science, the American Dairy Science Association, and the Western Section of the American Society of Animal Science.

It gives me great pleasure to welcome you to the Joint Annual Meeting in Salt Lake City. With over 3,250 participants from over 35 countries, this truly embodies an unparalleled global event of the brightest minds in animal science and agriculture.

This meeting provides an unequalled opportunity to see old friends, meet new ones, learn about CSAS's recent activities and advances in the animal science industry, and participate in discussions with experts from around the globe about some of the most important issues related to animal science. We are honoured to count you among the conference participants.

Another year has passed by with lightning speed; however, I invite all CSAS members to our 2016 Annual General Meeting and Lunch, July 21 from 12:30-14:00 at the Salt Palace Convention Center in Salt Lake City. During our AGM, I will present to you the most recent updates related to the work of your executive team, inform you of a number of achievements, as well as host a discussion on challenges confronting our society.

I look forward to joining you in attending many exciting presentations including the student competitions, scientific discussions, CSAS symposium, and our CSAS awards night where we recognize and celebrate outstanding members of our society.

Please enjoy the conference and take advantage of the many opportunities to learn, share, and network in Salt Lake City.

Respectfully yours,

Dr. Tim Reuter
CSAS President

WSASAS PRESIDENT'S WELCOME

Dr. Micheal Salisbury
WSASAS President

The Western Section of the American Society of Animal Science (WSASAS) is excited to be part of JAM, and meeting jointly with the American Society of Animal Science (ASAS), American Society of Dairy Science (ADSA) and the Canadian Society of Animal Science (CSAS). We would like to welcome everyone to Salt Lake City, UT and hope that you enjoy the joint programing this year.

It is always exciting to join our programing with the national programing; thus, I would encourage everyone to take full advantage of the WSASAS activities. However, there will be some programs that are exclusive to WSASAS. One of the strengths of WSASAS is our student members and they will be highlighted in three events. First, 19 graduate students will compete in our graduate student paper competition representing nine different institutions on Wednesday. Second, make plans to attend the undergraduate poster competition on Thursday morning. Third, the Young Scholar Recognition program will highlight the accomplishments of two M.S. and two Ph.D. students.

Although the WSASAS sponsored ruminant nutrition symposium will be a part of the Grazing Livestock Nutrition Conference that will precede JAM, there are other symposia to participate in covering broad areas by species, discipline and societies. We encourage everyone to take advantage of this opportunity to learn about cutting edge research, emerging technologies, and hot topics in animal science.

We are grateful to all those involved in organizing this tremendous event and making JAM the outstanding conference it has grown to be. We encourage everyone to look at the list of sponsors in the program and thank them when you see representative(s) throughout the meeting.

The WSASAS would like to encourage everyone to make the most of this opportunity to network, make new friends, and visit with old friends. Events, such as this, are what allow us to learn from each other and find solutions to help solve those issues facing animal agriculture. Welcome to Salt Lake City and enjoy the conference.

Dr. Micheal Salisbury
WSASAS President

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Important Message

In the event that protestors interrupt the meeting, please ignore them. Their goal is to attract attention, 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.

Credit: Kellyn B Burtka
Digital Credit: Kellyn B Burtka
Publisher: MyHorseUniversity.com

Original Creator: Jan Bowman
Digital Creator: Jan Bowman

Visit the newly renovated
ASAS Animal Science Image Gallery

animalimagegallery.org

This site is designed to provide images, animations, and short video for classroom and outreach learning. To supplement the visual information, each file has a description and metadata including the origins and ownership for the image. Downloading any image within the gallery is free for ASAS members and only $5 per image for non-members.

Each file in the Gallery has had at least two peer reviews to optimize the image and its metadata, and to ensure that the information is sufficient and accurate.

Submitting an image to the gallery is easy. There is no submission fee for ASAS members and only a $25 fee (per image) for non-members.

Schedule of Events

The 2016 ASAS-ADSA-CSAS-WSASAS JAM will be held July 19 – 24 (Tuesday through Sunday). The Opening Session will be Tuesday evening, July 19; scientific sessions will begin Wednesday morning, July 20, and run through noon on Saturday, July 23.

Location

The meeting will be held at the Salt Palace Convention Center and area hotels. The convention center is ideally located within walking distance of hotels, shopping and dining.

Opening Night Activities

We will kick everything off with a "Meet and Greet" at 4:30 pm in the South Foyer of the convention center. Join us for drinks (cash bar) and light snacks. The "Meet and Greet" will be followed by the Opening Session (5:30 pm in Grand Ballroom E-J). The 2016 opening session will feature a series of TED-Style Talks.

Immediately following the Opening Session, we invite everyone to join us at This is the Place Heritage Park for the JAM Opening BBQ. We will have games for the kids, great food, as well as the Big Scoop and the Battle of the Brats competitions.

Program Format for 2016

Poster sessions (Wednesday – Friday)..... 7:15 am – 8:15 am, 8:15 am – 9:15 am, 1:00 pm – 2:00 pm, 5:00 pm – 6:00 pm

Scientific sessions ..... 9:30 am – 12:30 pm

Lunch breaks..... 12:30 pm – 2:00 pm

Scientific sessions ..... 2:00 pm – 5:00 pm

Poster sessions (Saturday)..... 7:15 am – 8:15 am, 8:15 am – 9:15 am

Registration Hours

Registration is located in the Exhibit Hall A/B area on Level 2 in the lower level of Salt Palace Convention Center. Registration hours for the 2016 JAM, including special symposia and other events, are as follows:

Monday, July 18 ..... (pre-registered only), 1:00 pm – 5:00 pm

Tuesday, July 19..... 7:00 am – 6:00 pm

Wednesday, July 20..... 6:30 am – 5:15 pm

Thursday, July 21..... 6:30 am – 5:15 pm

Friday, July 22..... 6:30 am – 5:15 pm

Saturday, July 23..... 7:15 am – 12:00 pm

Media Check-In & Media Room

A media room will be available in room 150 D of the convention center throughout the meeting to provide a space for media representatives to work. Meeting press releases will be available there. Complimentary registration is available for members of the media. For more information, please contact: asas@asas.org.

Speaker Ready Room

The Speaker Ready Room is located in 250 D of the 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 the Exhibit Hall. This lounge will offer attendees an area to relax and network. It also serves as a great meeting location when departing the convention center as a group.

Business Center

The Business Center is your office away from the office! They are an on-site, full service print, copy and shipping center located inside the convention center on the north end of the upper concourse. For more information, contact the Business Center at (385) 468-2228 or businesscenter@saltpalace.com.

Presentation Information

Oral and Invited Speakers

Oral sessions will begin at 9:30 am on Wednesday and Thursday, 10:30 am on Friday, and 8:30 am on Saturday. Meeting rooms will be equipped for electronic presentations and pre-loaded sessions.

Onsite Upload Information

Onsite presentation upload will be available. Files can be delivered to the Pre-Load Room (251A) at the convention center. Presentations must be uploaded by 5:00 pm on the day before your scheduled presentation. Files will not be accepted via e-mail. No presentations will be loaded while the session is in progress or between presentations.

Poster Presentations

We have dedicated 4, one-hour blocks each day on Wednesday – Friday and 2 one-hour blocks on Saturday for poster presentations. The "open poster" sessions will be from 7:15 to 8:15 am Wednesday, Thursday, and Friday. Each poster presentation will be available for public viewing for the entire day, with the presenting authors present during the open posters time (7:15 – 8:15 am). The poster presentations space will be located in the Exhibit Hall. We are bringing ePosters to JAM in 2016. All posters will be presented as ePosters. This new format offers some new and exciting options for poster presenters and attendees. Most notably, all posters will be on display for the duration of the meeting and available to all attendees to view at their leisure. This new technology is less expensive for presenters than printed posters and is easily transportable.

Some features of the ePosters include:

- ePosters offer the option to have multiple pages per poster.
- Videos, animations, graphs and images can be embedded into the poster.
- Graphs and images can be expanded to full screen view with a single click.

The Exhibit Hall will open at 6:30 am, Wednesday through Friday.

Locating the Correct Poster Board

Find the posters you want to view in the back of the program and identify the screen number (second number to the left of the abstract title). Then locate the corresponding screen in the back of the Exhibit Hall. During Poster Sessions only the poster scheduled for presentation will be available for viewing. At all other times, all posters presented throughout the week will be available for viewing on their assigned screens. E-poster technicians are available on-site if you need help finding a poster.

ARPAS Continuing Education Units

The 2016 Joint Annual Meeting has been approved for up to 21 continuing education units (CEU) for the American Registry of Professional Animal Scientists (ARPAS) certification requirements. Check the schedule of events for times and location of the ARPAS exams.

Job Resource Center

The ASAS-ADSA-CSAS-WSASAS 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 2016 App and Personal Scheduler

There are two ways to keep informed and organized at JAM 2016. 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 2016 App is the Personal Scheduler. Find the Personal Scheduler at https://event.crowdcompass.com/2016jam.

Notice to Attendees

Use of cameras, video cameras, and cell phones (for calls or as cameras) is prohibited during oral and poster presentations to minimize disruption and unauthorized dissemination of data. Anyone found in violation of this policy will be asked to leave the session.

Transportation in Salt Lake City

Public transportation to and from the Salt Lake City International Airport is provided by the Utah Transit Authority (UTA).

The TRAX/light rail Green Line leaves the airport every 15 minutes on weekdays and every 20 minutes on weekends. The TRAX stop is located at the south end of Terminal One. To locate the TRAX stop, visit our Airport Terminal Map. One-way fare for the bus and train is $2.50.

Salt Lake City Sightseeing Options

From the Salt Lake City Convention and Visitors Bureau:

It is not just hotels that are within easy distance of the convention center. The downtown convention district abounds with restaurants, nightlife, and shopping. The convention center is next door to the City Creek Center, Salt Lake's newest shopping destination, and a short walk from the Gateway. If you prefer not to walk, six Trax stops (all within the "free fare zone") provide quick transportation to destinations within the downtown area, or as far away as the University of Utah, South Valley, West Valley, or the Airport.

View the route at http://www.visitsaltlake.com/why-salt-lake-meetings/easy-access/public_transit/.

Hotels

Salt Lake City Marriott
(ADSA Headquarters Hotel)
75 South West Temple
Salt Lake City, UT 84101
(801) 531-0800

Hilton Salt Lake City Center
(ASAS/ISAG Headquarters Hotel)
255 South West Temple
Salt Lake City, UT 84101
(801) 328-2000

Hotel Monaco Salt Lake City
(CSAS Headquarters Hotel)
15 W 200 S
Salt Lake City, UT
(801) 595-0000

The Salt Lake Plaza Hotel
(Student Headquarters Hotel)
122 West South Temple
Salt Lake City, UT 84101
(801) 521-0130

Radisson Hotel Salt Lake City Downtown
215 West South Temple
Salt Lake City, UT 84101
(801) 531-7500

Residence Inn Salt Lake City Downtown
285 Broadway
Salt Lake City, UT 84101
(801) 355-3300

Courtyard Salt Lake City Downtown
345 100 S
Salt Lake City, UT 84101
(385) 290-6500

Hampton Inn Salt Lake City Downtown
425 300 W
Salt Lake City, UT 84101
(801) 741-1110

How much have you learned in your undergraduate program?

How does your knowledge compare to other students at your school?

How does it compare with students regionally?

How does it compare nationally?

American Society of Animal Science 19 08 ACADEMIC QUADRATHLON

Participate in the Animal Science Academic Quadrathlon and find out!!

NEW IN 2016

New

- ePosterboards for all Poster Presentations
- TED-Style Talks during the Opening Session

Returning

- A meeting theme: "Animals and Science: Big Solutions for Grand Challenges"
- Enhanced industry involvement in sessions
- Reception before the Opening Session
- Panel discussions during lunch
- Opening BBQ
- Family Fun Day

Returning to our Roots:

We are excited to change the format of our opening night. Following a reception and a brief opening session, we will bus participants to an off-site BBQ. Years ago, the BBQ was a standing event at ASAS meetings and was met with unmitigated success and record attendance in 2014. Therefore, we are excited to bring the BBQ back again in 2016. The BBQ will also include our other popular events, the Big Scoop and Battle of the Brats Competitions. Additionally, we are adding back snacks throughout the day.

JAM EVENTS

Opening Night Activities

Tuesday, July 19 • 4:30 – 9:30 pm

Meet & Greet

4:30 – 5:30 pm

Salt Palace Convention Center, South Foyer

Before the opening session, come catch up with old friends and make new ones! Light snacks and a cash bar will be available. Pre-registered attendees may pick up their packets outside of the ballroom during this time.

Opening Session

5:30 – 6:15 pm

Salt Palace Convention Center, Grand Ballroom E-J

Join us as we kick off the 2016 JAM at the opening session with a series of TED-Style Talks about animal science and animal agriculture.

Opening BBQ, Big Scoop Competition, and Battle of the Brats

6:45 – 9:30 pm

This is the Place Heritage Park

Returning this year, we will have a BBQ! After the opening session, head over to the This is the Place historic village. This is the Place Heritage Park is the place for summer fun! And you don't have to like history to love the Park! There is something for every age to do. Step back in time and see the West as it was in the early settlement of Utah. Take a train tour of the village. "Set sail" on the Ship Brooklyn, a one-sixth replica of the original that tells the story of the expedition of pioneers who sailed from New York Harbor over 24,000 miles in search of a new home in the West.

In addition to the great food and fun for all ages, join us for the Big Scoop and Battle of the Brats Competitions! Buses from the Convention Center to the BBQ will be available from 6:30 to 6:45 pm. Buses will stage at 6:15 pm at the South Plaza Shuttle Entrance Bus Loading Area on 200 South Street, for departure 6:30 to 6:45 pm.

Spouse Event 1: Olympic Park tour and afternoon exploring downtown Park City

Wednesday, July 20 • 9:30 am – 4:00 pm

We will start the morning off with a guided bus tour of the Olympic Park followed by exploring, shopping and museum visits in historic downtown Park City.

Family Fun Day: Hogle Zoo

Thursday, July 21 • 9:30 am – 4:00 pm

We will depart by bus for the zoo. The Hogle Zoo has something for everyone! With hundreds of animals from hundreds of species to visit, the splendor of the animal kingdom is yours to behold.

JAM Ice Cream Social and Celebration of Dairy Award Winners, sponsored by Utah State University and Dairy Science Departments.

Thursday, July 21 • 8:15 – 9:30 pm

Salt Palace Convention Center, North Foyer

All meeting participants, families, friends, and award donors are invited to join us for the always-popular ice cream social. For the first time this year, the Ice Cream Social is being held specifically to recognize all of the dairy science award winners. Please join our award winners to celebrate!

Spouse Event 2: Thanksgiving Point Gardens

Friday, July 22 • 9:30 am – 4:30 pm

We will start the day departing for the gardens by bus. The gardens are an oasis in the desert, featuring 55-acres of stately gardens, grand lawns, as well as the largest manmade waterfall in the Western Hemisphere.

ASAS EVENTS

ASAS Undergraduate AQ

Monday, July 18 • All Day

Tuesday, July 19 • All Day

Utah State University, Logan, Utah

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, quiz bowl and oral presentations will be held early in the week. A special presentation will take place immediately before the ASAS awards on Wednesday night. Please come out and support our undergraduates.

ASAS Undergraduate Lunch and Learn

Wednesday, July 20 • 12:30 – 2:00 pm

Hilton Salt Lake City Center, Alpine Ballroom

The ASAS Undergraduate Student Lunch and Learn is an annual event for all undergraduate attendees. The Lunch and Learn is following a common theme for not only JAM but also all student educational events from the meeting this past year, "Branding Yourself." The lunch and learn will consist of a presentation from Dr. Todd Armstrong. The overarching topic for the lunch and learn will be on "elevator speeches" and on how to separate yourself from the group all while enjoying a great lunch and meeting fellow students from all over the country and the world.

ASAS President's Picks Posters

Salt Palace Convention Center, Exhibit Hall

New to JAM 2016: ASAS President's Picks Posters will be available for viewing all week. Any ePoster Dr. Looper thinks is new and exciting will have a little blue ribbon icon next to its title on the ePoster monitor home screens.

ASAS Awards Ceremony

Wednesday, July 20 • 7:15 – 8:45 pm

Hilton Salt Lake City Center, Grand 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 2016 ASAS award winners. The 2016 Awards Celebration follows immediately after the awards ceremony.

ASAS Awards Celebration

Wednesday, July 20 • 8:45 pm – 12:00 am

Hilton Salt Lake City Center, Grand Ballroom Foyer

Come and join ASAS after our awards ceremony to celebrate and congratulate all of the 2016 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.

ASAS/WSASAS Graduate Student Mixer

Wednesday, July 20 • 9:00 pm

The Twist

The ASAS graduate student mixer will be held at the Twist located just 4 blocks from the convention center. One unique feature to this year's mixer is that the Western Section mixer will be held at the same location as the National mixer. Western Section Graduates will meet at 8:00 pm for WSASAS Social Hour. The combined mixer starts at 9:00 pm. This location will be a lot of fun with good food and drink and a great place to catch up with old friends and make new ones.

DR. SHAWN ARCHIBEQUE

ANIMAL TED-Style Talks

Animal Science Comes From Many Roots—We Must Care for All of Them

Many individuals involved in agriculture do not fit the historical demographic of animal sciences. Dr. Archibeque will discuss his own family's connection to agriculture, and how, within a span of three generations, a family of Latino field workers went from only finishing the second grade to discussing the need to embrace diversity and inclusion in the animal sciences.

Dr. Archibeque is Associate Professor of Animal Sciences at Colorado State University.

SPECIAL EVENTS

ASAS Undergraduate Poster Competition

Thursday, July 21 • 7:15 – 8:15 am • 8:15 – 9:15 am

Salt Palace Convention Center, Exhibit Hall

The 4th annual ASAS Undergraduate Poster Competition will take place in the Exhibit Hall on Wednesday from 7:15 am to 8:15 am. These posters will be available for viewing the remainder of the week.

ASAS/WSASAS Graduate Student Lunch and Learn

Thursday, July 21 • 12:00 – 2:00 pm

Hilton Salt Lake City Center, Alpine Room

The ASAS Graduate Student Lunch and Learn is being co-hosted this year by the ASAS National Graduate Directors and the WSASAS Graduate Directors. The Lunch and Learn is following a common theme for not only JAM but also all graduate educational event from ASAS section meetings this past year, "Branding Yourself." Mark Branine, Mike Day, and Kristen Hales will be available to provide advice and answer any questions about pursuing their specific careers paths. This will be a great opportunity for students to explore employment opportunities within Animal Science and listen to advice from successful professionals in a variety of areas.

ASAS Foundation Heritage Lunch

Thursday, July 21 • 12:30 – 2:00 pm

Hilton Salt Lake City Center, Canyon 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. In 2016, we are partnering with Equine Science Society to honor a recent loss to Animal Science, Dr. Josie Coverdale.

ASAS JAS and Animal Frontiers Editorial Meeting and Open Forum

Thursday, July 21 • 4:00 – 5:00 pm

Salt Palace Convention Center, 251 D

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.

ASAS Early Career Award Winner

Friday, July 22 • 11:45 am – 12:15 pm

Salt Palace Convention Center, 150 G

Dr. M. Carey Satterfield

Texas A&M University

Dr. M. Carey Satterfield is an Associate Professor in the Department of Animal Science at Texas A&M University. His research focuses on understanding nutritional and environmental factors that alter placental and fetal growth and development. The primary goal of Dr. Satterfield's research program is to unravel basic biological information and translate this newfound understanding into practices that can be applied for the benefit of both animal agriculture and biomedicine. His research has been funded by both the United States Department of Agriculture and National Institutes of Health, with current funding exceeding $4,500,000. He has authored or co-authored 42 peer-reviewed journal articles, four book chapters, four proceedings papers and has given 15 invited presentations. In 2013, he received the Outstanding Young Animal Scientist in Research Award from the Southern Section of the American Society of Animal Science.

DR. TODD ARMSTRONG

ANIMALX TED-Style Talks

OneHealth: The Need for Alternatives to Protect the Health of Animals, and Ultimately People, Has Never Been Greater

Today, approximately 20 percent of livestock around the world are lost to disease, a significant source of food and resource waste. We must approach this challenge using science-based actions, decisions, practices and technologies to continue gains in efficiency and productivity, cut food loss and waste, and minimize environmental and resource impacts.

Dr. Armstrong is Senior Director, Global Market Access for Elanco Animal Health.

Animal Science Image Gallery Launch Party

Thursday, July 21 • 5:15 – 6:15 pm

Salt Palace Convention Center 251 D

Come join ASAS for the launch of the new and vastly improved Animal Science Image Gallery! This new site is designed to provide images and video for classroom and outreach learning while offering a friendly browsing experience utilizing the latest web design trends. The Polaroid gallery is a fun and creative way to show images. Images can be viewed full-size with a click. To supplement the visual information, each file has a description and metadata including the origins and ownership for the image. The site is searchable via keywords, or you may browse by subject. Come see how you can submit your images for publication in the Gallery!

ADSA EVENTS

ADSA Student Educational Tour

Monday, July 18 • 11:45 am – 6:00 pm

Salt Lake Plaza Hotel Lobby

Departing from the lobby of the student hotel, the Salt Lake Plaza, we will travel via motor coach to Bateman's Mosida Farms in Elberta. Owned and operated by the Bateman family, it is one of Utah's largest farms and has been touted as a model of efficiency, animal care and high quality milk. Next, we will depart for Utah Olympic Park, one of the venues for the 2002 XIX Olympic Winter Games. Today it is an active Olympic training site, home to six Nordic Ski Jumps, 1,335-meter sliding track with five start areas, freestyle aerials winter training and competition hill, a 750,000-gallon training pool, and a Winter Sports Center with a Ski Museum and 2002 Olympic Winter Games Museum. Ticket price includes transportation and refreshments.

ADSA Graduate Student Division Workshop: Applying for Jobs

Tuesday, July 19 • 1:00 – 3:00 pm

Salt Palace Convention Center, 151 B/C

Join other dairy science graduate students as Dr. Leon Spicer and Dr. Al Kertz provide practical insight on separating yourself from the rest when it comes time to apply for jobs. Drs. Spicer and Kertz will cover topics from interview do's and don'ts to the differences between CV and resume writing and much more. There will also be ample time for professional and social networking throughout the workshop. A $5 registration is required.

ADSA Graduate Student Division Business Meeting and Open Forum

Tuesday, July 19 • 3:15 – 4:00 pm

Salt Palace Convention Center, 151 B/C

In addition to greeting the incoming GSD officer team, attend this meeting to voice your ideas and opinions about ADSA graduate student activities. Learn about our upcoming events and enjoy conversations with your fellow dairy science graduate students.

ADSA Undergraduate Student Midday Mixer

Tuesday, July 19 • 11:00 am – 12:00 pm

Salt Palace Convention Center, 254 B

Join your fellow dairy clubs and get to know your 2016-2017 Student Affiliate Division (SAD) Officer candidates. Ticket price includes lunch. Note: Registration is limited to ADSA undergraduate student members and advisors.

ANIMAL TED-Style Talks

MS. MELISSA BREWER

Communicating Science in a Sound Bite Society

In her communications role with the Certified Angus Beef® brand, Melissa brings the science of animal agriculture to consumers, transforming science facts into messages that resonate with consumers. Melissa will equip you with strategies for sharing challenging concepts in consumer-friendly sound bites, posts and Tweets.

Ms. Brewer is Director of Communications for the Certified Angus Beef® brand.

SPECIAL EVENTS

Large Dairy Herd Management (LDHM) e-Book and Conference Update

Tuesday, July 19 • 4:00 – 5:00 pm

Salt Palace Convention Center, 150 B/C

The ADSA® Foundation is in the midst of developing and publishing the Third Edition of Large Dairy Herd Management as an e-Book. The new comprehensive international reference is targeted for practicing dairy management professionals, progressive farmers, and upper division university students studying dairy science and management. It is written in a practical application style, yet reflects the scientific rigor of the *Journal of Dairy Science*. The LDHM Conference was held last May.

This session is follow-up to that conference to provide an update about the e-Book content and progress towards publication. The completely new content, designed to allow for convenient updating, will be sold at ADSA member, non-member, and student rates. Release is anticipated in Spring 2017.

You can partner with the ADSA Foundation. Nonprofit organizations, companies, and individuals are invited to join as co-sponsors of the e-Book at any time. For information about sponsorship and the long-lasting worldwide recognition, please contact the ADSA Foundation at LargeDairyHerdManagement@adsa.org.

Dairy Quiz Bowl Final Round

Tuesday, July 19 • 4:30 – 5:00 pm

Salt Palace Convention Center, 251 D

University teams from across North America will compete in the ADSA-SAD Dairy Quiz Bowl. The event gives schools an opportunity to demonstrate their knowledge about dairy production, processing, and ADSA history. The Student Affiliate Division (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 2016 Dairy Quiz Bowl Champion.

ADSA Undergraduate Student Poster and Paper Competitions

Wednesday, July 20 • 3:15 – 4:00 pm

Salt Palace Convention Center, Exhibit Hall

Support the future of ADSA - plan time in your schedule to visit the undergraduate posters on Wednesday morning or the oral presentations on Wednesday afternoon. See the Scientific Program for complete details.

ADSA Graduate Student Division Career Insights Luncheon

Wednesday, July 20 • 12:30 – 2:00 pm

Salt Palace Convention Center, Grand Ballroom E

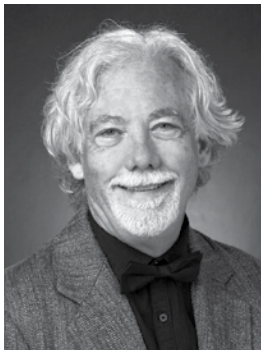
This roundtable career development event will provide dairy science graduate students the opportunity to interact with career professionals from industry, academia, and government agencies. This event is intended to give attendees an informal environment in which to inquire about each professional's personal journey and the challenges they encountered along the way. This is also an excellent context network with likeminded professionals and graduate students. A $10 registration fee is required and a boxed lunch will be provided.

ADSA Undergraduate Student Mixer

Wednesday, July 20 • 6:00 pm

Salt Lake Plaza Hotel Poolside

With the hard work behind you, tonight is the night for fun. Celebrate the week with your fellow undergraduates. Ticket price includes pizza and sodas.



DR. LARRY REYNOLDS

ANIMAL TED-Style Talks

Importance of Animals in Agricultural Sustainability and Food Security

Dr. Reynolds is passionate about sharing the role of food-producing animals in food security and the scientific, socioeconomic, and health implications for humans. He is deeply involved in national and international efforts to highlight the importance of funding for livestock research and its critical role in food security and agricultural sustainability.

Dr. Reynolds is University Distinguished Professor of Animal Sciences and Director of the Center for Nutrition and Pregnancy at North Dakota State University.

ADSA Undergraduate Student Symposium - Telling Our Dairy Story

Thursday, July 21 • 9:30 – 11:00 am
Salt Palace Convention Center, Grand Ballroom E

Presented by Dairy Management, Inc., this session will look at how social media can be used to help tell dairy's story to the public. What is being done now? What tools and tips might they use? How can the students contribute and use their knowledge and experience to communicate through social media? Students will be involved and challenged.

ADSA Undergraduate Student Awards Luncheon

Thursday, July 21 • 11:45 am – 2:00 pm
Salt Palace Convention Center, Grand Ballroom G

Plan to attend this year's Student Affiliate Division (SAD) Awards Luncheon. The afternoon will be capped with the presentation of student awards and announcement of new SAD officers. Both students and professionals are encouraged to attend. This is a wonderful chance to get to know the next generation of the dairy industry.

ADSA Student Three-Minute Thesis Challenge

Thursday, July 21 • 3:00 – 4:30 pm
Salt Palace Convention Center, 250 F

ADSA Graduate Student and Student Affiliate Division members are encouraged to take part in the return of the Three-Minute Thesis Challenge. This event will test the competitor's ability to quickly and concisely convey their research in a way that is understandable to all. Competition will be limited to five graduate and five undergraduate students selected by a panel of judges based upon strength of CV and a 100 word abstract describing the presentation. Everyone is invited to attend the Challenge to watch these students compete for cash prizes and present their research in a fun and exciting way!

ADSA Awards Program

Thursday, July 21 • 5:30 – 6:30 pm
Salt Lake City Marriott Downtown, Salon D/E/F

All meeting participants, families, and friends are welcome to attend the 2016 ADSA awards program. Please join us at this special event to recognize and congratulate the 2016 award winners.

ADSA Graduate Student Division Mixer

Thursday, July 21 • 9:00 pm – 12:00 am
Keys on Main

Enjoy a fun night of entertainment and networking with your fellow dairy science graduate students. Keys on Main is a short walk from the Salt Palace Convention Center and features dueling pianos playing the most popular hits guaranteed to have you singing along! Attend and compete the interactive mixer for your chance to win free drink tickets and other exciting prizes!

DR. GARTH SASSER

From Molecule to Meadow

ANIMAL TED-Style Talks

Dr. Sasser's extensive research in the field of bovine reproductive physiology led to the discovery of pregnancy specific protein B's, which are aspartic acid proteases, and the development of the BioPRYN cattle pregnancy tests sold globally. He will share the story of the quest to better understand the physiological signals of the pregnant cow and the milestones that led to the development and worldwide use of assays for pregnancy-specific proteins in cattle, sheep, goats, and wildlife.

Dr. Sasser is Professor Emeritus at the University of Idaho and Founder of BioTracking Inc.

CSAS EVENTS

CSAS Executive Committee Meeting

Tuesday, July 19 • 8:00 am - 12:00 pm

Salt Palace Convention Center, 151 D

CSAS Annual General Meeting and Lunch

Thursday, July 21 • 12:30 – 2:00 pm

Salt Palace Convention Center, 251 E/F

Discussions will include the most recent updates related to the work of your executive team, achievements of the year, and challenges confronting our society. All CSAS members are invited to attend and share their views.

CSAS Awards Banquet

Friday, July 22 • 6:00 – 10:00 pm

Hotel Monaco, Paris Ballroom

During the banquet we will recognize and celebrate outstanding professional and student members of our society. You are all invited to join in the celebration of great achievements. Come and cheer your colleagues on! Student dinners at this event are partly sponsored by the Canadian Science Publishers.

CSAS Graduate Student Poster Competition

The CSAS Graduate Student Poster Competition will take place in the Exhibit Hall on Wednesday, July 20 from 7:15 am to 8:15 am. These posters will be available for viewing the remainder of the week.

CSAS Graduate Student Oral Competition

In addition to the poster competition, CSAS Graduate students will also participate in an oral competition in Room 251 B on Wednesday, July 20 starting at 9:30 am.

CSAS Symposium

All meeting participants are invited to attend a special CSAS sponsored symposium on reducing the use of antibiotics in livestock production. This symposium starts at 2:00 pm on Friday, July 22 in room 155 A.

CSAS Member Mixer

Friday, July 22 • 10:00 pm – 12:00 am

Hotel Monaco, Paris Ballroom

The CSAS Members Mixer event is a great opportunity to chat, exchange with colleagues and students and forge future partnerships. Meet and share with us! All CSAS members are encouraged to attend. This event is sponsored by your society and the Canadian Science Publishers!

WSASAS EVENTS

WSASAS Graduate Competition Papers

Wednesday, July 20 • All Day

Salt Palace Convention Center, 258/259

Come watch as WSASAS Graduate Students compete. See the Scientific Program for the detailed schedule.

ASAS/WSASAS Graduate Student Lunch and Learn

Thursday, July 21 • 12:00 – 2:00 pm

Hilton Salt Lake City Center, Alpine Ballroom East

The ASAS Graduate Student Lunch and Learn is being co-hosted this year by the ASAS National Graduate Directors and the WSASAS Graduate Directors. The Lunch and Learn is following a common theme for not only JAM but also all graduate educational event from ASAS section meetings this past year, "Branding Yourself." Mark Branine, Mike Day, and Kristen Hales will be available to provide advice and answer any questions about pursuing their specific careers paths. This will be a great opportunity for students to explore employment opportunities within Animal Science and listen to advice from successful professionals in a variety of areas.

ASAS/WSASAS Graduate Student Mixer

Wednesday, July 20 • 8:00 pm

The Twist

The ASAS graduate student mixer will be held at The Twist located just 4 blocks from the convention center. One unique feature to this year's mixer is that the Western Section mixer will be held at the same location as the National mixer. Western Section Graduates will meet at 8:00 pm for WSASAS Social Hour. The combined mixer starts at 9:00 pm. This location will be a lot of fun with good food and drink and a great place to catch up with old friends and make new ones.

WSASAS Undergraduate Poster Competition

The WSASAS Undergraduate Poster Competition will take place in the Exhibit Hall on Wednesday from 7:15 am to 8:15 am. These posters will be available for viewing the remainder of the week.

WSASAS Awards Banquet

Thursday, July 21 • 6:30 – 9:00 pm

Joseph Smith Memorial Building – Empire Room

WSASAS Business Meeting

Friday, July 22 • 7:45 – 9:15 am

Salt Palace Convention Center, 155A

Grazing Livestock Nutrition Conference (GLNC)

The theme of the 5th GLNC is "Enhancing Management, Production, and Sustainability of Grazing Ruminants in Extensive Landscapes." The goal of GLNC is to create a platform for information exchange regarding grazing livestock nutrition and enhancing livestock production within sustainable grazing.

GLNC will take place in beautiful Park City, located just 30 minutes outside Salt Lake City.

ASAS-ASN Preconference

Salt Lake Convention Center, Grand Ballroom B/D

The ASAS-ASN Joint Preconference Symposium begins at 8:15 on Tuesday morning and will focus on gut microbiota, diet and health. Invited talks include:

- Modulation of the gut microbiota – An ecological perspective.
  Jens Walter, University of Alberta, Edmonton, AB, Canada
- Effects of early antibiotic exposure on host metabolism.
  Laura M Cox, Harvard Medical School and Brigham and Women's Hospital, Boston, MA; New York University Langone Medical Center, New York, NY
- Impact of gut microbiota on brain and behavior.
  John F. Cryan, University College Cork, Cork, Ireland
- The human milk microbiome and oligosaccharides - What's normal and so what?
  Michelle K McGuire, Washington State University, Pullman, WA
- Dietary fiber and starch, digestive physiology, and metabolic health.
  Ruurd T. Zijlstra, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada
- Methane matters: From blue tinged moos, to boozy roos, and for the health of humans too.
  Mark Morrison, University of Queensland Diamantina Institute, Brisbane, Australia
- Sub-acute ruminal acidosis (SARA): A tale of two microbiomes.
  Robert J Wallace, Rowett Institute of Nutrition and Health, Aberdeen, United Kingdom
- Dietary manipulation of canine and feline gut microbiome.
  Kelly S Swanson, Department of Animal Sciences, University of Illinois at Urbana-Champaign

International Society for Animal Genetics

ISAG is devoted to the study of the immunogenetics, molecular genetics and functional genomics of economically important and domesticated animal species. There is an outstanding scientific program planned that will blend plenary sessions, posters, and workshops of interest to animal geneticists from around the world.

The conference will follow the 2016 ASAS-ADSA-CSAS-WSASAS Joint Annual meeting (July 19-23, 2016) at the Hilton Salt Lake City Center on July 23 through July 27, 2016.

Functional Annotation of Animal Genomes (FAANG) ASAS-ISAG Joint Symposium begins at 8:30 on Saturday morning. During lunch ePosters from ISAG and the genetics sessions at JAM will be available for viewing. Invited talks include:

- Important lessons from complex genomes.
  T. R. Gingeras, Cold Spring Harbor Laboratory, Functional Genomics, Cold Spring Harbor, NY
- Causal inference of molecular networks integrating multi-omics data.
  F. Peñagaricano, University of Florida, Gainesville
- Genotypes to phenotypes: Lessons from functional variation in the human genome and transcriptome.
  B. E. Stranger, Section of Genetic Medicine, Department of Medicine, Institute of Genomics and Systems Biology, Center for Data Intensive Sciences, University of Chicago, Chicago, IL
- Recurrent chimeric transcripts in human and mouse.
  S. Djebali, GenPhySE, INRA, Castanet-Tolosan, France, Universitat Pompeu Fabra (UPF), Barcelona, Spain, Bioinformatics and Genomics Programme, Centre for Genomic Regulation (CRG), Barcelona, Spain
- Improving genomic selection across breeds and across generations with functional annotation.
  B. Hayes, Department of Economic Development, Melbourne, Australia
- Integrating dynamic omics responses for universal personalized medicine.
  G. I. Mias, Michigan State University, East Lansing
- A review of sequencing and assembly methods that enhance computational use.
  W. C. Warren, McDonnell Genome Institute, Washington University School of Medicine, St Louis, MO

2016 AWARD DONORS

ADSA Award Donors

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International Dairy Foods Association
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ASAS Award Donors

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Canadian Science Publishers
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Elanco Animal Health Canada
Eli Lilly Canada
Masterfeeds
Trouw Nutrition

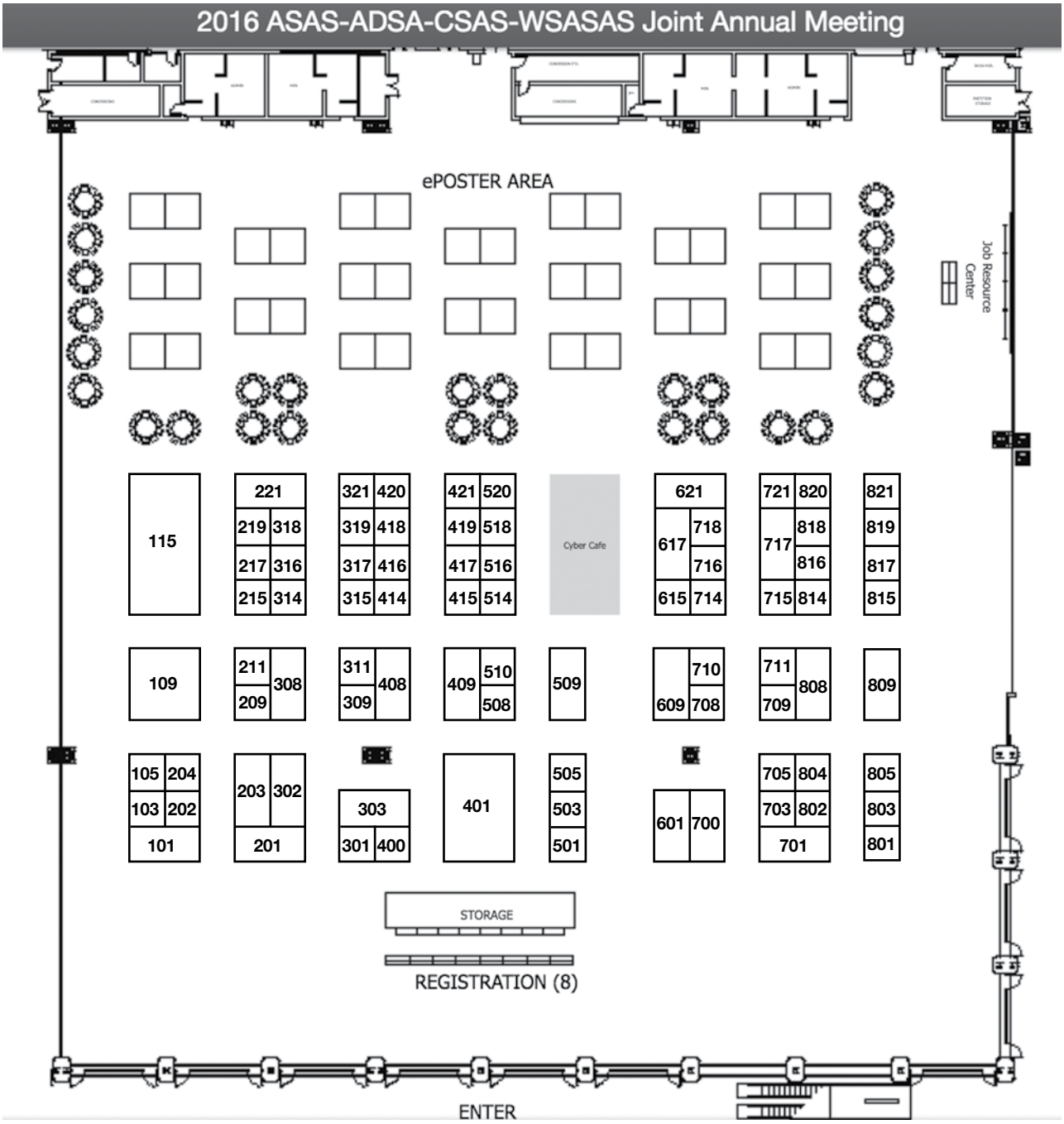
WSASAS Award Donors

Elanco Animal Health Canada
Western Section, American Society of Animal Science
Zinpro Corporation

Exhibit Schedule

Tuesday, July 19	Exhibit set-up	10:00 am – 6:00 pm
Wednesday, July 20	Exhibits open	8:00 am – 6:00 pm
Thursday, July 21	Exhibits open	8:00 am – 6:00 pm
Friday, July 22	Exhibits open	8:00 am – 2:00 pm
Friday, July 22	Exhibit dismantle	2:00 pm – 6:00 pm

In consideration of attendees, exhibitors will be prohibited from beginning to dismantle before 2:00 pm on Friday July 22.



GUIDE TO EXHIBITORS/BOOTH NUMBERS

AAALAC International

5283 Corporate Dr Ste 203
Frederick, MD 21703
www.aaalac.org
Booth: 508

AAALAC International promotes the humane treatment of animals in agricultural and biomedical science, research and education through voluntary assessment, accreditation and education programs. More than 950 institutions in 41 countries have earned AAALAC accreditation, demonstrating their commitment to responsible animal care and use.

Adifo NV

Industrielaan 11b
Maldegem, Belgium 9990
www.adifo.be
Booth: 421

Adifo, your software specialist for the feed and food industry. Adifo develops and services software solutions for the feed and food industry. Launching new products, exploring niche markets, reducing costs, optimizing resource efficiency and handling the loss of essential business knowledge. Anticipate such challenges by using software tools that automate your processes. Tools that directly contribute to your business goals. Choose the innovative recipe and nutrition software by Adifo.

Adisseo

4400 North Point Pkwy Ste 275
Alpharetta, GA 30022
www.adisseo.com
Booth: 308

Adisseo is a world leader in the production of additives and nutritional solutions for animal feed.

ADSA-GSD

1800 S Oak Ste 100
Champaign, IL 61820
www.adsa.org/Membership/Students/GraduateStudentDivision.aspx
Booth: 419

The American Dairy Science Association (ADSA) Graduate Student Division (GSD) was founded in 2011 to meet a growing demand of dairy science graduate students. Today we continue to offer informational and educational meetings, webinars, and workshops; as well as provide expansive networking opportunities and increase the overall graduate student experience!

ADSA-SAD

1800 S Oak Ste 100
Champaign, IL 61820
www.adsa.org/Membership/StudentResources/StudentAffiliateDivision.aspx
Booth: 417

The Student Affiliate Division (SAD)of the American Dairy Science Association (ADSA) consists of Student Affiliate chapters across the country. The chapters are local clubs organized at colleges and universities offering courses that pertain to the production of dairy cattle and dairy foods. SAD aims to provide a channel of communication
for the exchange of information among the various member chapters and ADSA; to acquaint students with ADSA, its scope, purpose and program; and to develop leadership and promote scholastic achievement among students interested in the dairy industry.

AG Processing Inc.

12700 W Dodge Rd
Omaha, NE 68154
www.agp.com
Booth: 718

AminoPlus® is the number one volume bypass protein soybean meal dairy supplement in 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. Learn about the benefits of AminoPlus and AGP's fourth major expansion of AminoPlus processing capacity at AGP – Dawson.

Agarwal Group of Industries

15-1-52/1, Jagdish Nivas, Old Feelkhana
HYDERABAD, India 500012
agarwalindia.com/
Booth: 819

Agri-King, Inc.

PO Box 208
Fulton, IL 61252
agriking.com
Booth: 314

Agri-King 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.

EXHIBIT DIRECTORY

American Dairy Science Association

1800 S Oak St Ste 100
Champaign, IL 61820
www.adsa.org
Booth: 514

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.

American Society of Animal Science

PO Box 7410
Champaign, IL 61826
www.asas.org
Booth: 401

Established in 1908, ASAS is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching and services 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 Frontier*s (www.animalfrontiers.org)
- *Natural Sciences Education*
- AnimalSmart.org
- ASAS Foundation
- ASAS Membership
- ASAS Sections
- ASAS Public Policy

Angel Yeast Co., Ltd.

168 Chengdong Ave
Yichang, Hubei 443003, China
en.angelyeast.com/
Booth: 715

Angel Yeast Co., Ltd, founded in 1986, is a listed high-tech yeast company in China, which is specialized in the production of yeast and yeast derivatives. Angel Yeast has 10 international advanced production bases in China, Egypt and Russia. Our main products for animal nutrition:

- Yeast Cell Wall
- Mycotoxin Binder
- Active Feed Dry Yeast
- Yeast Glucan
- Bacillus Subtilis
- Soluble Yeast Cell Wall
- Selenium Yeast
- Active Feed Dry Yeast (ruminant)
- MOS
- GROPRO

ANKOM Technology

2052 O'Neil Rd
Macedon, NY 14502-8953
www.ankom.com
Booth: 803

ANKOM Technology produces analytical instrumentation for food and feed testing. We are best known for introducing Filter Bag Technology (FBT), which allows high volume, accurate analytical testing. Our systems are used in more than 93 countries worldwide. Ask about our products: ANKOM A2000 Fiber Analyzer, ANKOM Daisy II Incubator, ANKOM RF Gas Production Analyzer, and ANKOM XT15 Fat Extractor.

ARPAS

1800 S. Oak St Ste 100
Champaign, IL 61820
arpas.org/
Booth: 516

The American Registry of Professional Animal Scientists, ARPAS, is the organization which 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 PAS journal) and by providing information on educational opportunities.

Balchem Corporation

52 Sunrise Park Rd
New Hampton, NY 10958
www.balchen.com

Booth: 808

Bar Diamond Inc.

PO Box 60
Parma, ID 83660
www.bardiamond.com
Booth: 520

Bar Diamond provides Rumen Cannulae and accessories to researchers worldwide. Let us know how we can help you.

Beijing Keepyoung Technology Co., Ltd

No. 6, YunXi 7th St, Economic Development Area, Mi Yun County
Beijing, China 101509
en.keepyoung.com.cn
Booth: 716

Beijing KeepYoung Technology Co., Ltd., which founded in 2001, is the first national high-tech enterprise that specializes in applied research, production and sales of plant extract in animal feed and cultivation by using the theory of traditional Chinese medicine and modern biopharmaceutical engineering technology in combination with the development process of animal nutrition and scientific cultivation. At present, nearly half of the top 20 feed companies in China are strengthening the partnership with us to get rid of the antibiotics that prevent disease and promote growth used in feed for pig, broiler chicken, duck, cow, fish and shrimp, etc., since our products are equal or superior to antibiotics in terms of survival rate of animal and productivity. The company is located in the production base in Miyun District of Beijing, which integrates R&D, production, test and office. Its laboratory covers over 2,000 square meters, while the workshop covers over 8,000 square meters. It also has a production line that yields 10,000 tons of plant extracts every year.

BIOMIN America

1842 Lockhill-Selma Rd., Ste 102
San Antonio, TX 78213
www.biomin.net
Booth: 505

We care for healthy animal nutrition. We at BIOMIN are dedicated to developing innovative and sustainable solutions that ensure our customers' success through healthy and safe animal nutrition. The application of science and expertise is based on first understanding and appreciating our customer's needs and concerns. This principle enables us to deliver solutions that support animal health, optimize performance and production efficiency.

Bruker Optics Inc.

19 Fortune Dr
Billerica, MA 01821
www.bruker.com/optics
Booth: 510

Save costs and improve quality by upgrading to the next generation of NIR analyzers. From control of feed ingredients to precise testing of proximates, these analyzers have also been used to monitor blending processes and optimize mill operation. They feature the lowest cost of ownership with a 10 year warranty on the permanently aligned Rock Solid TM Interferometer, eliminating time-consuming "instrument standardization" protocols. Samples can be measured in seconds without sample preparation.

CABI Bookshop

22883 Quicksilver Dr
Sterling, VA 20166
www.cabi.org
Booth: 409

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in the environment.

Cambridge University Press

1 Liberty Plaza, 165 Broadway
New York, NY 10006
www.cambridge.org/academic
Booth: 209

Canadian Science Publishing

65 Auriga Dr
Ottawa, ON K2E 7W6, Canada
www.cdnsciencepub.com
Booth: 321

Canadian Science Publishing is the new publisher of the *Canadian Journal of Animal Science* (*CJAS*). Published since 1957, the *CJAS* is a quarterly journal that contains new research on all aspects of animal agriculture and animal products, including; breeding and genetics; cellular and molecular biology; growth and development; meat science; modelling animal systems; physiology and endocrinology; ruminant nutrition; non-ruminant nutrition; and welfare, behaviour, and management.

Central Life Sciences

1501 E Woodfield Rd Ste 200W
Schaumburg, IL 60173
www.central.com
Booth: 501

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. 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.

CEV Multimedia

1020 SE Loop 289
Lubbock, TX 79404
www.icevonline.com
Booth: 315

iCEV strives to meet the demand of collegiate instructors by providing a modern educational platform filled with streaming video and expert insight across numerous industries in Agriculture. The unrivaled visual exposure will enhance student learning and equip students with an extensive knowledge foundation to achieve ultimate success.

Chr. Hansen, Inc.

9015 W Maple St
Milwaukee, WI 53214
www.chr-hansen.com/animal-health
Booth: 615

Chr. Hansen is committed to natural products and sustainable practices. Our products improve feed conversion ratios and feed utilization in production animals while increasing milk output per cow in dairy operations - all this without detrimental effect on the environment or on long-term product quality and consumer safety. We are actively exploring and participating in the quest to identify solutions that help farmers optimize output per land acre and minimize environmental bi-products.

C-Lock Inc.

2025 Samco Rd
Rapid City, SD 57702
www.c-lockinc.com
Booth: 221

We manufacture precision equipment for measuring and monitoring of animal health and performance.

Cumberland Valley Analytical Services

14515 Industry Dr
Hagerstown, MD 21742-2410
www.foragelab.com
Booth: 621

Cumberland Valley Analytical Services is a forage and feed testing laboratory providing services for the agriculture industry worldwide. CVAS is focused on traditional and innovative chemistry analysis of feed materials providing one of the broadest panels of services to the industry. We support not only the nutritional services industry, but the feed ingredient, agronomy and research communities as well.

Dairy One

730 Warren Rd
Ithaca, NY 14850
www.dairyone.com
Booth: 801

The Dairy One Forage Lab excels in providing you with high quality analyses and customer service. As an international leader, our goal is to provide you with analytical services designed to meet the expanding demands of modern agriculture. New technology and traditional methods are combined to deliver fast, accurate results.

Dairy Records Management Systems

NCSU, 313 Chapanoke Rd Ste 100
Raleigh, NC 27603
www.drms.org
Booth: 617

DRMS is improving the dairy industry with precise information, leading-edge products and superior service. While serving herds from Maine to California through 20 DHIAs, DRMS delivers strong value to every herd: small or large, Jerseys or Holsteins, technology-driven or traditional. Product offerings including PCDART, PocketDairy and a vast array of DHI reports, empower producers to use both their DHI and everyday data to make the most informed, cost-effective decisions possible.

DASCOR, Inc.

PO Box 5036
Oceanside, CA 92052-5036
www.dascor.com
Booth: 518

A world leader, DASCOR provides data loggers for ruminal research with over 500 units already in the field, which measure temperature, ORP/REDOX, pH, and battery voltage. Support software allows calibration and set-up for tests, and downloads the data into an Excel compatible file. DASCOR has improved the performance and long term reliability of both the loggers and sensors. pH sensors now have significantly extended life and reliability, repeatability demonstrated over multiple field trials.

Diamond V

2525 60th Ave SW
Cedar Rapids, IA 52404
www.diamondv.com
Booth: 700

Diamond V is a global nutritional health company conducting research in dairy and beef cattle, swine, poultry, and other species. Our natural, fermentation-based products support animal health, animal performance, and food safety worldwide. Our Embria Health Sciences subsidiary manufactures EpiCor® for research-proven immune support in humans. More than 70 years of science, innovation, technology, and quality have earned Diamond V the reputation of The Trusted Experts in Nutrition and Health®.

Digi-Star

W5527 Hwy 106
Fort Atkinson, WI 53538
www.digi-star.com
Booth: 211

E.I. Medical Imaging

110 12th St SW, Unit 102
Loveland, CO 80537
www.eimedical.com
Booth: 309

E.I. Medical Imaging® is a world leader and the only US manufacturer of portable ultrasound solutions specifically engineered for veterinary use. For the past 30 years, the company's core values have remained intact: putting the customer first and delivering solid, effective ultrasound solutions. EIMI provides the Ibex® portable ultrasound systems.

EAAP

Via G. Tomassetti 3 A/1
Roma, Italy 00161
www.eaap.org
Booth: 418

EAAP annually organizes the largest animal science meeting in Europe. This meeting is the perfect venue to create a network with qualified animal scientsits. 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 activites for its members: publishing scientific books, organizing specific and regional workshops and scientific meetings, coordinating international reserach projects, and defending positions of animal science and livestock industry at international level. Everyone is invited to become members of EAAP and benefit from belonging to the EAAP community.

Elsevier

1600 John F. Kennedy Blvd Ste 1700
Philadelphia, PA 19103
www.elsevier.com
Booth: 203

Elsevier is a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals, empowering them to make better decisions, and deliver better care.

Evonik Corporation

1701 Barrett Lakes
Kennesaw, GA 30144
www.evonik.com
Booth: 717

Evonik Nutrition & Care GmbH, specifically its Animal Nutrition Business Line translates over 60 years of experience in manufacturing essential amino acids for animal nutrition into solutions that meet the evolving needs of its customers in over one hundred countries. As Evonik now expands its scope to innovative nutritional feed additive solutions beyond amino acids, customers can count on Evonik to take nutrient effectiveness ever further and keep delivering value along with consistent quality. Around the planet, Evonik products and services are and will continue to be key to producing healthy, affordable food with fewer natural resources and a smaller environmental footprint.

FASS

1800 S Oak St Ste 100
Champaign, IL 61820
www.fass.org
Booth: 317

FASS was formed to support the common agricultural interests and streamline administrative expenses of our clients while preserving their traditions and values. We specialize in providing a wide array of management services to small and medium-sized, not-for-profit associations.

Gasmet Technologies Inc.

956 A The Queensway
Toronto, ON M8Z 1P5, Canada
gasmet.com
Booth: 708

Gasmet's rugged FTIR multi-gas analyzers provide exceptional analytical precision for researchers studying the reduction of enteric methane (CH^4) and other greenhouse gas (GHG) emissions from ruminant livestock. The DX-series portable FTIR Gas Analyzers are light-weight and compact for easy field transport and our Calcmet Software provides an easy-to-use interface for researchers to view multiple gases in near real-time.

Global Agri-Trade Corporation

320 Global Shore Ste 350
Long Beach, CA 90802
globalagritrade.com
Booth: 703

Global Agri-Trade Corporation, a privately owned company located in Long Beach, California, is one of the largest importers of palm oil based animal nutrition products sold under brand names NURISOL and PALMIT 80®. The company has distribution centers in California, Washington, Texas, Florida, Georgia, and Maryland. Since 2003, the team of technical and trading experts at GATC has utilized its many decades of experience in the fats and oils industry to provide excellence in customer service and product quality to customers in U.S. and Canada.

GrowSafe Systems Ltd.

RR 1 Site 2 Box 29
Airdrie, AB T4B 2A3, Canada
www.growsafe.com
Booth: 821

GrowSafe's engineers and scientists develop advanced data acquisition systems for livestock research and practical automation tools for livestock producers that maximize profitability and ensure animal health and well being.

Illumina, Inc.

W4628 Hall Rd
Rio, WI 92122
www.illumina.com/areas-of-interest/agrigenomics.html
Booth: 408

At Illumina, our goal is to apply innovative technologies for the analysis of genetic variation and function, making studies possible that were not even imaginable just a few years ago. It is mission critical for us to deliver innovative, flexible, and scalable solutions to meet the needs of our customers. Illumina's innovative sequencing and array technologies are fueling groundbreaking advancements in life science research, agricultural and consumer genomics, and molecular diagnostics.

Infinite Trading, Inc.

1810 E Sahara Ave Ste 1482
Las Vegas, NV 89104
Booth: 714

Innovad

33 Eagle Dr
Rehoboth, DE 19971
www.innovad-global.be
Booth: 820

INNOVAD is a group and a brand that combines people's long time experiences in the field of animal feed additives with an innovative approach and dedication to animal well-being and a healthy environment whilst securing the producer's cost effectiveness. With its corporate headquarters and licensed state of the art production facilities close to the port of Antwerp in Belgium, INNOVAD is in a position to serve the global feed and animal industry. Fine products are produced with strict adherence to EU directives and regulations, and GMP certified.

Intermountain Farmers Association

1147 W 2100 S
Salt Lake City, UT 84130
www.intermountainfarmers.com
Booth: 215

Intermountain Farmers Association (IFA) was organized as a farmer's co-op in 1923 as Utah Poultry Exchange by men with hard-working values and a vision for the future. Today, we proudly manufacture and provide superior feed products and nutritional services to the agricultural community and to those choosing a country living lifestyle. We are a major supporter of 4-H, FFA, and our own Young Producer Program. IFA operates 4 feed mills and 3 commodity operations in Utah as well as 24 IFA Country Stores and 7 Agronomy Centers in the Intermountain West.

IQ Technologies, Inc.

3524 Bear Hollow Way
Lehi, UT 84043
www.iqmassager.com/aboutmassagers
Booth: 318

IQ TECHNOLOGIES INC. is the premier leading worldwide distributor of TENS STIMULATORS with over 10 years experience! Our FDA class II cleared medical devices use electrical pulses for the stimulation of muscles. These portable and compact electrical TENS STIMULATORS are a breakthrough in the compact medical device industry. Our devices include an array of massage modes ranging from 6, 8, and 12. Each mode specifically designed to deal with all types of muscle aches and stress. SELLING WORLDWIDE! European CE Certificate approved, Canadian Health department approved and cleared by the FDA as a class II medical device.

We exhibited in the past in horses event and agriculture expo. In general, TENS/EMS is used on people but we find out that the device can be used and beneficial on animals.

Kemin Industries
600 E Court Avenue Ste A
Des Moines, IA 50310
www.kemin.com
Booth: 201

Kemin offers a range of nutritional solutions for raising healthy animals. We understand your need to raise healthy livestock that gives consumers the nutritional and health benefits they are looking for, while also returning a profit. Our products and services help you with nutrition, feed quality, gut health and risk management.

King Techina
PO Box 131455
Ann Arbor, MI 48105
www.kingtechina.com
Booth: 601

King Techina is specialized in developing and manufacturing microcapsulated feed additives. Through our ground breaking patented Intelligent Microcapsule (IM) technology, feed additives and medicines can be coated according to animal digestion system for higher feed efficiency, better animal health and growth performance.

Laboratoires Phodé
Z. I Albipole
Terssac 81150, France
www.phode.fr
Booth: 420

Laboratoires Phodé is a french original and innovative company designing unique sensory and functional ingredients for the feed market. Phodé research center is dedicated to better understanding the effects of olfactory molecules and vegetable extracts on emotions, behavior, better being and ultimately health of living beings. This expertise allows Phodé to create unique solutions targeting livestock performances with new cerebral approach.

Micronutrients
1550 Research Way
Indianapolis, IN 46231
www.micro.net
Booth: 101

IntelliBond trace minerals, manufactured by Micronutrients, represent a completely new category of trace mineral nutrition that can reduce trace mineral supplement costs while optimizing cattle health and productivity. Multiple research studies by well-known universities confirm the ability of IntelliBond trace minerals to significantly increase trace mineral absorption and utilization by your herd.

National Animal Nutrition Program
609 W.P. Garrigus Bldg
Lexington, KY 40546-0215
www.nanp.nrsp.-9.org
Booth: 316

The National Animal Nutrition Program (NANP) serves as a forum to identify high-priority animal nutrition issues and provide an integrated and systemic approach to sharing, collecting, assembling, synthesizing, and disseminating science-based information, educational tools, and enabling technologies on animal nutrition that facilitate high-priority research among agricultural species, with emphasis on beef, dairy, swine, poultry, horses, small ruminants, and fish. The NANP is a research-support activity funded as a National Research Support Project (NRSP-9) with Hatch funds appropriated by the USDA National Institute of Food and Agriculture, and administered by the Experiment Station Committee on Organization and Policy and the State Agricultural Experiment Stations.

Neogen Corporation
4131 N 48th St
Lincoln, NE 68504
www.neogen.com/en/
Booth: 609

GeneSeek provides comprehensive research, product development and delivery solutions for the Life Science, Agribusiness, Pharmaceutical and Biotechnology industries. GeneSeek is the largest global provider of DNA testing for the agricultural biotechnology industry, providing critical genomic-based information to those focused on increasing agricultural outputs, and capabilities in place to provide ultra high-throughput solutions at low cost.

Novus International
20 Research Park Dr
St. Charles, MO 63304
www.novusint.com/en-US/
Booth: 302

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. Other notable Novus product lines include ZORIEN® SeY, SOLIS® and SPORULIN®. Novus works to improve animal performance, health and well-being globally.

Otto Trading Inc.
1921 Carnegie Ave., Suite C
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www.unimedmassager.com
Booth: 303

Pancosma
Voie-des-Traz 6, CH-1218 Le Grand Saconnex
Geneva, Switzerland
www.pancosma.com
Booth: 509

Since it was established in 1947, Pancosma has been creating, developing, manufacturing and distributing a wide range of solutions for the feed industry worldwide. Founded in the Swiss city of Geneva, we are a provider of essential feed additive solutions, based on a unique approach based on three core values: commitment to cutting-edge scientific research, driving forward innovation and dedication to serving customers. Pancosma is present in 75 countries around the world.

Penton Agriculture - Livestock Group
255 38th Ave #P
St. Charles, IL 60174
www.penton.com
Booth: 503

Feedstuffs provides news and insight for the feed, grain and animal production industries. Its properties include a monthly magazine, guidebooks and priority reports, website, newsletters, technical references and the information resource that provides consumer and industry education information.

Poultry Protein & Fat Council
1530 Cooledge Rd
Tucker, GA 30084
www.uspoultry.org/ppfc_index.cfm
Booth: 301

The leading technical resource and advocate for the poultry rendering industry, serving its members through research, education and promotional services.

Sable Systems International
3840 N Commerce St
N Las Vegas, NV 89032
www.sablesys.com
Booth: 311

Sable Systems is the worlds most trusted provider of tools and expertise for research in animal metabolism and behavioral sciences. Whether your focus is on livestock nutrition and diet or methane and CO^2 emission studies, Sable's precise, reliable, high-resolution systems measure MR, RQ, temperature, and water vapor. Our systems are designed to reduce external disturbance for your animal and to maximize your ease of setup and operation in the lab or a field environment.

Silostop
401 N Michigan Ave Ste 120
Chicago, IL 60611
silostop.com
Booth: 721

Silostop Ultimate Oxygen Barrier Film is recognized worldwide as the leading oxygen barrier film. Silostop specializes in silage protection systems. We help farmers and producers around the world to make the best possible silage, as well as reduce labour and recycling costs. Silostop has offices in the UK and the US, an international technical team of renowned silage experts and a global network of carefully selected distributors.

SoyBest
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Soy Best High Bypass Soybean Meal with Gums is bypass protein for dairy cows. Manufactured by the mechanical process, it contains no chemical solvents and is all-natural. Soy Best includes fresh soy-gums with lecithin and phosphatidyl-choline. Now nutritionists and dairy producers can choose between Soy Best formulations: Original Soy Best with fresh soy gums and now Soy Best "L" - the only high-bypass soybean meal available with rumen-protected lysine fortification.

SoyPlus/SoyChlor
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www.dairynutritionplus.com
Booth: 710

Dairy Nutrition Plus™, a family of quality products by Landus Cooperative™, brings together the company's dairy nutrition offerings under a parent brand while re-energizing its well-known products, SoyPlus and SoyChlor. Landus Cooperative demonstrates a long-standing commitment to providing quality and consistency. The Dairy Nutrition Plus family of quality products showcases the ways in which Landus Cooperative offers more to feed mills, nutritionists and dairy producers.

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505 W Main St
Marshall, MN 56258
www.stuhrenterprises.com
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Stuhr Enterprises, LLC is a global company based in Marshall, MN with manufacturing plants in IA and MO. The company is research and technology based with innovative manufacturing process applications.

The National Academies Press

500 5th Street NW
Washington, DC 20001
www.nap.edu
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The National Academies Press (NAP) is the publisher of reports from the National Academies of Sciences, Engineering, and Medicine. The NAP publishes more than 200 books a year on a wide range of topics in science, engineering, and medicine, including the Nutrient Requirements of Animals series.

Udder Health Systems, Inc.

4455 S Meridian Rd
Meridian, ID 83642
www.udderhealth.com
Booth: 705

Udder Health Systems provides animal health, milk quality and food safety testing and consulting for dairy farms, processors, and dairy manufactures. UHS makes a proprietary line of mastitis diagnostic products for veterinary diagnostic laboratories. Our professional staff of veterinary, microbiology and milk quality technical consultants regularly assist herd managers to protect their operations from expensive mastitis or milk quality threats with bacterial testing in milk, water and bedding.

Unity Scientific

117 Old State Rd
Brookfield, CT 06804
www.aphis.usda.gov/nahms
Booth: 400

Unity Scientific, formed by the merger of Westco Scientific Inc. and Unity Scientific, is a leading global provider of near infrared analysis instrumentation, automated wet chemistry analyzers and sample preparation apparatus all designed to make our customers' analysis needs easier and more efficient. Unity Scientific offers the Forage Analyzer and Feed Analyzer, complete with ready to go calibrations for today's livestock and dairy farms and suppliers.

USDA-APHIS-VS, National Animal Health Monitoring System

2150 Centre Avenue, Bldg B-2E7
Fort Collins, CO 80526
Booth: 711

National studies conducted by the National Animal Health Monitoring System (NAHMS) provide essential information on livestock and poultry health and management in the United States. Production types are studied at regular intervals, providing up-to-date information needed to monitor US animal health, support trade decisions, inform the public, and set policy.

Vetagro, Inc.

230 S Clark St #320
Chicago, IL 60604
www.vetagro.com/eng/
Booth: 416

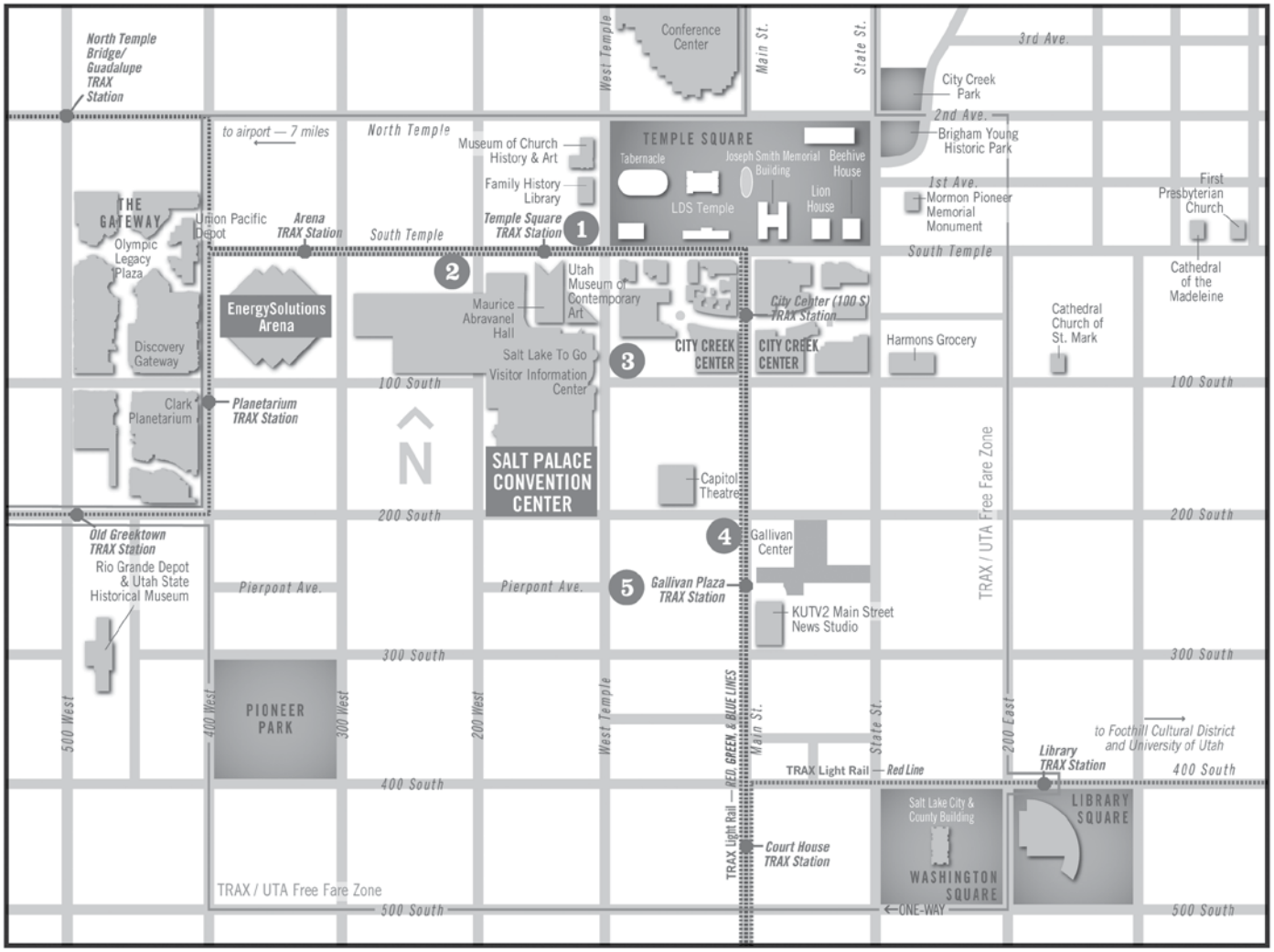
Vetagro is a research-driven company specialized in microencapsulation of feed additive and nutrients for ruminants, swine and poultry since 1982. We are committed to innovation, quality, work safety and environmental care. Vetagro team invites you to visit Vetagro booth #416 to speak with our technical team to find out more about our microencapsulation technology and products.

Veterinary Simulator Industries Ltd.

1155 40 Ave NE
Calgary, AB T2E 6M9, Canada
www.vetsimulators.net
Booth: 414

Making the Best Simulators in the World! Veterinary Simulator Industries Ltd. creates animal simulators that allow veterinary students to become proficient in their diagnostic and practical skills without the need to endanger or cause unnecessary discomfort to live animals.

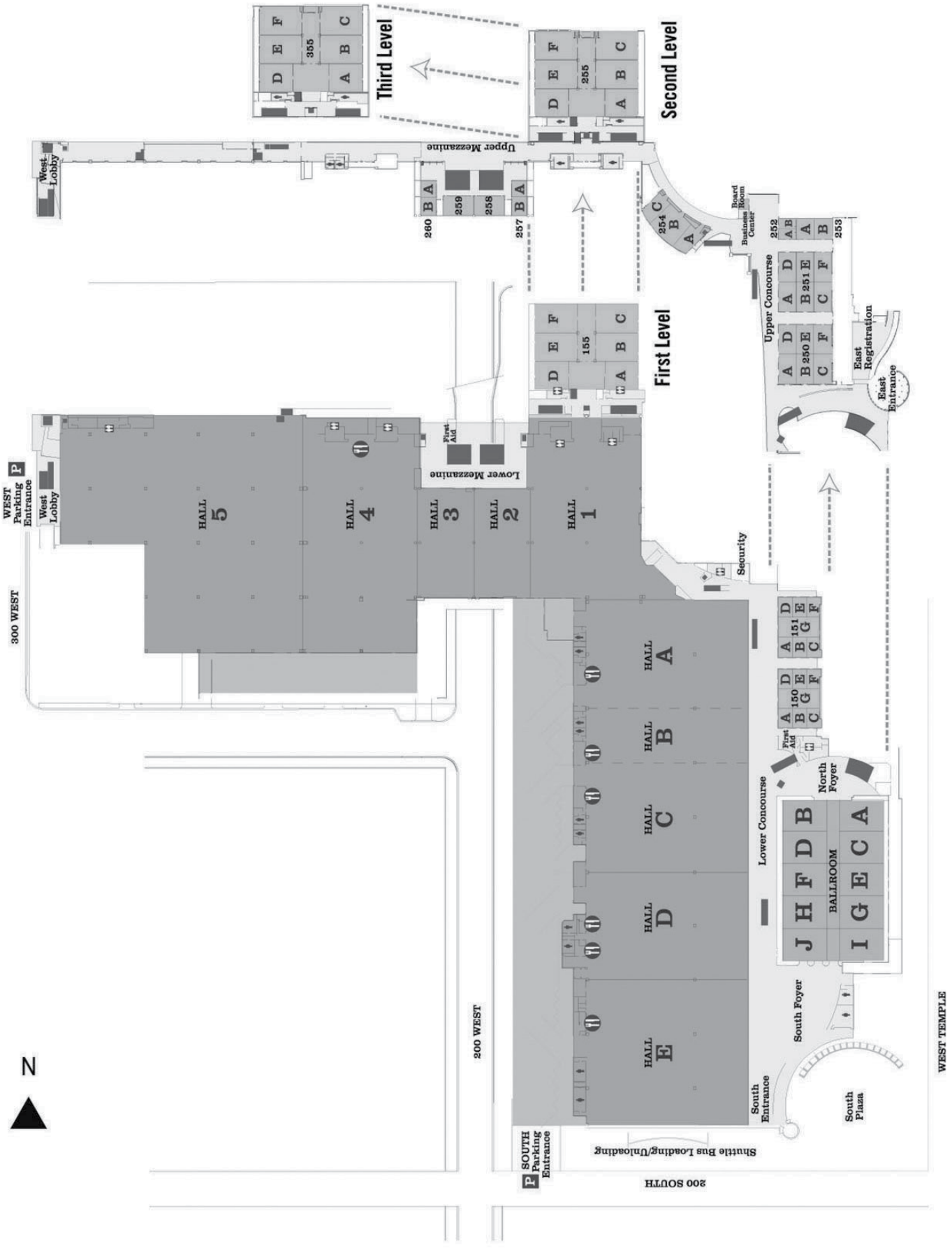
DOWNTOWN SALT LAKE CITY MAP



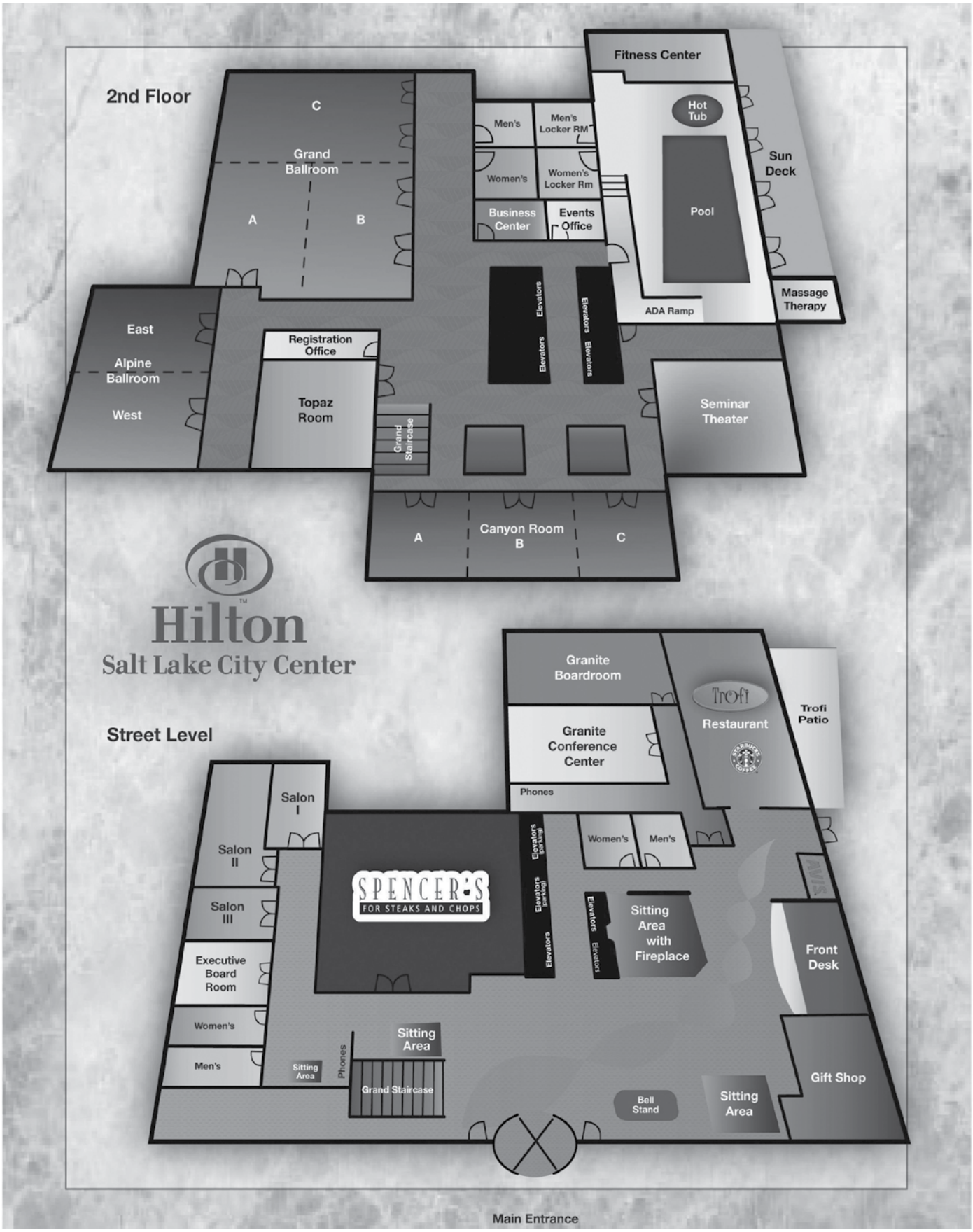
JAM 2016 ISAG 2016

July 19-23, 2016 July 23-27, 2016

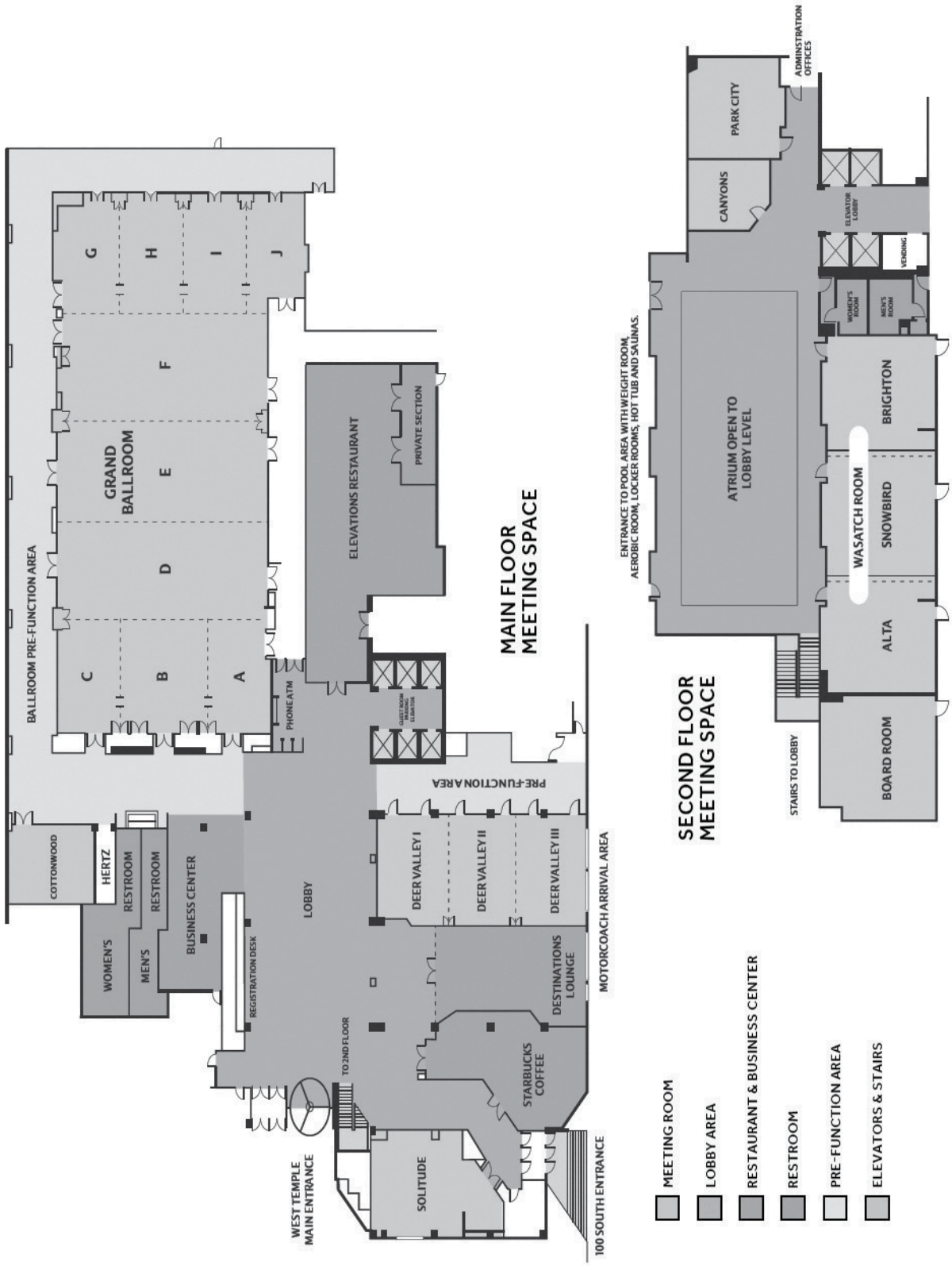
1 The Salt Lake Plaza at Temple Square (Student Headquarters Hotel)
2 Radisson Hotel Salt Lake City Downtown
3 Salt Lake Marriott Downtown at City Creek (ADSA Headquarters Hotel)
4 Hotel Monaco (CSAS Headquarters Hotel)
5 Hilton Salt Lake City Center (ASAS and ISAG Headquarters Hotel)


Third Level
Second Level
First Level
Upper Mezzanine
Lower Mezzanine
West Lobby
WEST Parking Entrance
300 WEST
200 WEST
200 SOUTH
WEST TEMPLE
HALL 5
HALL 4
HALL 3
HALL 2
HALL 1
HALL A
HALL B
HALL C
HALL D
HALL E
Security
First Aid
Upper Concourse
Lower Concourse
Board Business Center
East Registration
East Entrance
North Foyer
South Foyer
South Entrance
South Plaza
BALLROOM
SOUTH Parking Entrance
Shuttle Bus Loading/Unloading
N

HOTEL MAPS


2nd Floor
C
Grand Ballroom
A
B
Men's
Men's Locker RM
Women's
Women's Locker Rm
Business Center
Events Office
Fitness Center
Hot Tub
Pool
Sun Deck
Massage Therapy
ADA Ramp
Elevators
Elevators
Elevators
Elevators
East
Alpine Ballroom
West
Registration Office
Topaz Room
Grand Staircase
Seminar Theater
A
Canyon Room
B
C
Hilton
Salt Lake City Center
Street Level
Granite Boardroom
Granite Conference Center
Phones
Trofi
Restaurant
Trofi Patio
Salon I
Salon II
Salon III
Executive Board Room
Women's
Men's
SPENCER'S
FOR STEAKS AND CHOPS
Elevators
Elevators
Elevators
Elevators
Women's
Men's
Sitting Area with Fireplace
Front Desk
Sitting Area
Grand Staircase
Phones
Sitting Area
Bell Stand
Sitting Area
Gift Shop
Main Entrance

Salt Lake City Marriott Downtown



Thank you to the 2016 Joint Annual Meeting Sponsors!

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A Special Thank You to our ASAS Event Sponsors

(as of June 24)

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CSAS Fellowship Award

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Zoetis
Zook Nutrition & Management Inc.

Battle of the Brats and Big Scoop Competitions

6:45 – 9:30 pm • This is the Place Heritage Park

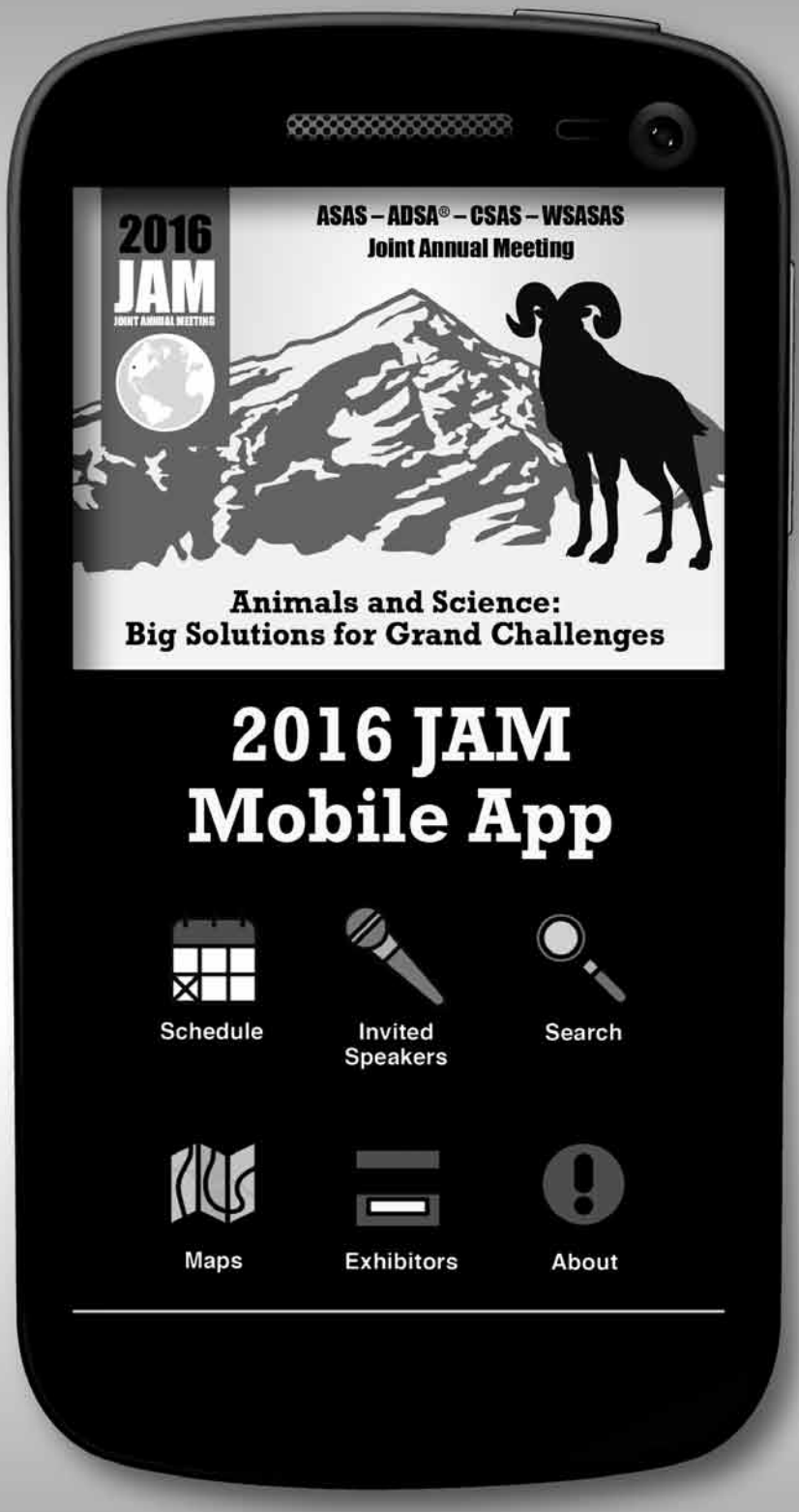
Battle of the Brats

University of Arizona
University of Arkansas
University of California-Davis
University of Florida
University of Illinois
University of Kentucky
Michigan State University
University of Nebraska
North Carolina State University
North Dakota State University
Oklahoma State University
Purdue University
Texas Tech University
Virginia Tech
West Texas A&M University
University of Wisconsin-Madison

Big Scoop Competition

University of Connecticut
University of Nebraska
Utah State University
Washington State University

2016 JAM Mobile App



Go to www.asas.org/JAM2016 for download information.

Monday, July 18

All Day	ASAS Academic Quadrathlon (AQ)	Utah State University, Logan, Utah
7:30 am–5:00 pm	ADSA Board of Directors Meeting	Salt Lake City Marriott Downtown, Deer Valley
8:00 am–9:00 am	ASAS Membership Committee Meeting	Hilton Salt Lake City Center, Topaz
9:30 am–5:30 pm	ASAS Board of Directors Meeting	Hilton Salt Lake City Center, Topaz
11:45 am–6:00 pm	ADSA Student Educational Tour: Bateman's Mosida Farms and Utah Olympic Park	Salt Lake Plaza Hotel Lobby
1:00 pm–5:00 pm	Registration open (preregistered, badge, and material pick-up only)	Salt Palace Convention Center, Exhibit Hall
6:00 pm–8:00 pm	ARPAS Executive Committee Dinner	Off-site
7:00 pm	ADSA SAD Undergraduate Student Mixer	Salt Lake Plaza Hotel Lobby

Tuesday, July 19

All Day	ASAS Academic Quadrathlon (AQ)	Utah State University, Logan Utah
7:00 am–6:00 pm	Registration open	Salt Palace Convention Center, Exhibit Hall
7:30 am–10:00 am	ADSA New Board Orientation	Salt Lake City Marriott Downtown, Cottonwood
8:00 am–12:00 pm	CSAS Executive Committee Meeting	Salt Palace Convention Center, 151 D
8:00 am–12:30 pm	ASAS Board of Directors Meeting	Hilton Salt Lake City Center, Topaz
8:00 am–5:00 pm	ARPAS Governing Council Meeting	Salt Lake City Marriott Downtown, Salons A/B
8:00 am–5:00 pm	American Society for Nutrition (ASN) and ASAS Symposium	Salt Palace Convention Center, Grand Ballroom B/D
10:00 am–6:00 pm	Exhibit Setup	Salt Palace Convention Center, Exhibit Hall
9:00 am–10:00 am	ADSA Undergraduate Student Officers and Advisor Meeting	Salt Palace Convention Center, 257 B
10:00 am–11:00 am	ADSA Undergraduate Student Quiz Bowl Officials Meeting	Salt Palace Convention Center, 257 A
10:30 am–11:00 am	ADSA Undergraduate Student Quiz Bowl Seating Test	Salt Palace Convention Center, 254 B
11:00 am–12:00 pm	ADSA Undergraduate Student Midday Mixer	Salt Palace Convention Center, 254 B
12:00 pm–4:00 pm	ADSA Undergraduate Student Quiz Bowl Seating/ Preliminary Rounds	Salt Palace Convention Center, 250 F & 251 D
12:00 pm–5:00 pm	Hospitality Lounge Open	Salt Palace Convention Center, Exhibit Hall
12:00 pm–5:00 pm	ADSA JDS Editors and Journal Management Committee Lunch and Meeting	Salt Lake City Marriott Downtown, Deer Valley 1/2
1:00 pm–3:00 pm	ADSA Graduate Student Workshop: Applying for Jobs	Salt Palace Convention Center, 151B/C
1:00 pm–3:00 pm	2016 Program Committee Meeting	Salt Palace Convention Center, 257 B
1:00 pm–4:00 pm	WSASAS Executive Board Meeting	Hilton Salt Lake City Center, Canyon B
2:00 pm–3:00 pm	ADSA Production Division Council Meeting	Salt Palace Convention Center, 252 A/B
2:00 pm–3:30 pm	ADSA Foundation Board of Trustees Meeting	Salt Lake City Marriott Downtown, Cottonwood
3:00 pm–4:00 pm	ADSA Production Division Nominating Committee	Salt Palace Convention Center, 252 A/B
3:15 pm–4:00 pm	ADSA Graduate Student Business Meeting	Salt Palace Convention Center, 151 B/C
4:00 pm–5:00 pm	Large Dairy Herd Management (LDHM) e-Book and Conference Update	Salt Palace Convention Center, 150 B/C
4:30 pm–5:00 pm	ADSA Undergraduate Student Quiz Bowl Final Round	Salt Palace Convention Center, 251 D
4:30 pm–5:30 pm	JAM Opening Session Meet & Greet	Salt Palace Convention Center, South Foyer
5:00 pm–6:00 pm	ADSA Dairy Foods Division Council Meeting	Salt Palace Convention Center, 257 A
5:30 pm–6:15 pm	JAM Opening Session	Salt Palace Convention Center, Grand Ballroom E-J
6:45 pm–9:30 pm	JAM Opening BBQ	This is the Place Heritage Park

SCHEDULE OF EVENTS

Wednesday, July 20

All day	ASAS Undergraduate Academic Quadrathlon Fun Day	Park City
All day	WSASAS Graduate Competition Papers	Salt Palace Convention Center, 258/259
6:30 am–5:15 pm	Registration open	Salt Palace Convention Center, Exhibit Hall
6:30 am–8:00 am	ADSA Dairy Specialist/Dairy Related Participants Breakfast	Salt Lake City Marriott Downtown, Salon A/B
7:15 am–8:15 am	Poster Presentations I	Salt Palace Convention Center, Exhibit Hall
7:15 am–8:30 am	Turn in yearbooks and scrapbooks at SAD exhibit booth 417	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Exhibits open	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Job Resource Center	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Hospitality Lounge open	Salt Palace Convention Center, Exhibit Hall
8:00 am–9:15 am	S-PAC Information Update at ADSA exhibit booth	Salt Palace Convention Center, Exhibit Hall
8:15 am–9:15 am	Poster Presentations II	Salt Palace Convention Center, Exhibit Hall
8:15 am–9:15 am	ADSA Undergraduate Student Poster Presentations	Salt Palace Convention Center, Exhibit Hall
8:30 am–9:30 am	ADSA Undergraduate Student Judging of Yearbooks, Scrapbooks, Annual Reports at SAD exhibit booth	Salt Palace Convention Center, Exhibit Hall
8:30 am–9:30 am	ADSA Undergraduate Student Interviews for Outstanding Student and Advisor Awards	Salt Palace Convention Center, 257 B
8:30 am–9:45 am	ADSA Undergraduate Student Activities Symposium	Salt Palace Convention Center, 250 B
9:30 am–5:00 pm	Scientific Sessions	Salt Palace Convention Center
9:30 am–4:30 pm	Spouse Event I: Olympic Park and Park City Tour	Hilton Salt Lake City Center Lobby
10:00 am–10:45 am	ADSA Undergraduate Student Business Meeting	Salt Palace Convention Center, 250 B
11:00 am–5:00 pm	ADSA Undergraduate Student Undergraduate Paper Presentations	Salt Palace Convention Center
12:00 pm–1:30 pm	WSASAS Committee - Advising and Coordinating	Salt Palace Convention Center, 255A
12:00 pm–1:30 pm	WSASAS Committee -Beef Symposium	Salt Palace Convention Center, 255B
12:00 pm–1:30 pm	WSASAS Committee -Undergraduate Poster Competition	Salt Palace Convention Center, 255C
12:00 pm–1:30 pm	WSASAS Committee -Graduate Paper Competition	Salt Palace Convention Center, 255D
12:00 pm–1:30 pm	WSASAS Committee –Awards	Salt Palace Convention Center, 255E
12:00 pm–1:30 pm	WSASAS Committee Academic Quadrathlon	Salt Palace Convention Center, 255F
12:00 pm–1:30 pm	WSASAS Committee - Young Scholars Recognition	Salt Palace Convention Center, 260 A/B
12:30 pm–2:00 pm	ASAS Past Presidents' Lunch	Hilton Salt Lake City Center, Canyon C
12:30 pm–2:00 pm	Undergraduate Lunch and Learn (sponsored by ASAS)	Hilton Salt Lake City Center, Alpine Ballroom
12:30 pm–2:00 pm	ADSA Graduate Student Career Insights Luncheon	Salt Palace Convention Center, Grand Ballroom E
12:30 pm–2:00 pm	ADSA Past Presidents' Luncheon	Salt Lake City Marriott Downtown, Solitude
12:30 pm–2:00 pm	ACAS Annual Meeting	Salt Palace Convention Center, 150 G
12:30 pm–2:00 pm	Purdue Luncheon	Hilton Salt Lake City Center, Canyon B
1:00 pm–2:00 pm	Poster Presentations III	Salt Palace Convention Center, Exhibit Hall
2:00 pm–4:00 pm	ARPAS Exam	Salt Palace Convention Center, 250 C
2:00 pm–5:30 pm	Southern Branch ADSA Symposium and Business Meeting	Salt Palace Convention Center, 155 D
5:00 pm–6:00 pm	Poster Presentations IV	Salt Palace Convention Center, Exhibit Hall
5:00 pm–7:00 pm	Informal Calf Gathering	Salt Lake City Marriott Downtown, Salon F
5:30 pm–7:00 pm	ASAS Award Winners Dinner and Photo Session	Hilton Salt Lake City Center, Canyon A/B
6:00 pm	ADSA Undergraduate Student Mixer	Salt Lake Plaza Hotel Poolside
7:15 pm–8:45 pm	ASAS Awards Program & Undergraduate Academic Quadrathlon Special Presentation	Hilton Salt Lake City Center, Grand Ballroom
8:45 pm	ASAS Awards Celebration	Hilton Salt Lake City Center, Ballroom Foyer
8:30 pm–12:00 am	Iowa State Reception	Hilton Salt Lake City Center, Canyon C
9:00 pm	ASAS National & WSASAS Graduate Student Mixer	The Twist

Thursday, July 21

6:30 am–5:15 pm	Registration open	Salt Palace Convention Center, Exhibit Hall
6:30 am–8:00 am	JDS Editorial Board Breakfast/Meeting	Salt Lake City Marriott Downtown, Solitude
6:30 am–8:00 am	ADSA DF Division Milk Proteins and Enzyme Committee Breakfast	Salt Lake City Marriott Downtown, Cottonwood
6:30 am–8:00 am	Kentucky Breakfast	Hilton Salt Lake City Center, Alpine Ballroom East
6:30 am–8:00 am	University of Illinois Breakfast	Hilton Salt Lake City Center, Alpine Ballroom West
7:15 am–8:15 am	Poster Presentations V	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Exhibits open	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Job Resource Center open	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Hospitality Lounge open	Salt Palace Convention Center, Exhibit Hall
8:00 am–9:00 am	Johne's - Bovine TB Interest Group	Salt Palace Convention Center, 251 D
8:15 am–9:15 am	Poster Presentations VI	Salt Palace Convention Center, Exhibit Hall
8:30 am–9:30 am	ADSA Undergraduate Student Business Meeting–Election of Officers	Salt Palace Convention Center, 250 B
9:00 am–10:30 am	ASAS Foundation Board of Trustees Meeting	Hilton Salt Lake City Center, Topaz
9:30 am–5:00 pm	Scientific Sessions	Salt Palace Convention Center
9:30 am–4:00 pm	Family Fun Day: Hogle Zoo	Hilton Salt Lake City Center, Lobby
9:30 am–11:00 am	ADSA Undergraduate Symposium: Telling Our Dairy Story	Salt Palace Convention Center, Grand Ballroom E
9:30 am–11:00 am	WSASAS Young Scholars Sessions	Salt Palace Convention Center, 155 C
10:00 am–11:00 am	Discover Conference Steering Committee Meeting	Salt Lake City Marriott Downtown
10:30 am–12:30 pm	ARPAS Exam	Salt Palace Convention Center, 250 C
10:30 am–12:00 pm	ASAS Investment Committee Meeting	Hilton Salt Lake City Center, Salon II
11:30 am–12:30 pm	ADSA Dairy Foods Division Business Meeting	Salt Palace Convention Center, 250 F
11:45 am–2:00 pm	ADSA Undergraduate Student Awards Luncheon	Salt Palace Convention Center, Grand Ballroom G
12:00 pm–2:00 pm	ASAS/WSASAS Graduate Student Lunch and Learn	Hilton Salt Lake City Center, Alpine Ballroom
12:00 pm–2:00 pm	ASAS Foundation Heritage Lunch	Hilton Salt Lake City Center, Canyon A/B
12:30 pm–2:00 pm	ARPAS Business Meeting	Salt Palace Convention Center, 251 C
12:30 pm–2:00 pm	CSAS Annual General Meeting and Lunch	Salt Palace Convention Center, 251 E/F
12:30 pm–2:00 pm	ADSA DF Division Program Planning Lunch	Salt Lake City Marriott Downtown, Cottonwood
12:30 am–2:00 pm	ADSA Production Division Business Meeting	Salt Palace Convention Center, 252 A/B
1:00 pm–2:00 pm	Poster Presentations VII	Salt Palace Convention Center, Exhibit Hall
2:00 pm–3:00 pm	ADSA Undergraduate Student Award and Club Photos	Salt Palace Convention Center, 250 B
2:00 pm–4:00 pm	ARPAS Exam	Salt Palace Convention Center, 250 C
2:00 pm–5:00 pm	ADSA Undergraduate Student Exhibits–Pick up yearbooks and scrapbooks in SAD Exhibit Booth 417	Salt Palace Convention Center, Exhibit Hall
2:30 pm–3:30 pm	ADSA Undergraduate Student Committee Meeting–Old and New Officers and Advisors	Salt Palace Convention Center, Ken Knight Boardroom
3:00 pm–4:30 pm	ADSA Graduate Student Three-Minute Thesis Challenge	Salt Palace Convention Center, 250 F
4:00 pm–5:00 pm	ASAS JAS/Animal Frontiers Editorial Meeting and Open Forum	Salt Palace Convention Center, 251 D
5:00 pm–6:00 pm	Poster Presentations VIII	Salt Palace Convention Center, Exhibit Hall
5:15 pm–6:15 pm	Image Gallery Launch Party	Salt Palace Convention Center, 251 D
5:30 pm–6:30 pm	ADSA Awards Program	Salt Lake City Marriott Downtown, Salon D/E/F
6:30 pm–9:00 pm	WSASAS Awards Banquet	Joseph Smith Memorial Building–Empire Room
6:30 pm–8:00 pm	ADSA Award Ceremony Participants Reception	Salt Lake City Marriott Downtown, Salon A/B/C
8:15 pm–9:30 pm	JAM Ice Cream Social	Salt Palace Convention Center, Grand Ballroom North Foyer
9:00 pm–12:00 am	ADSA Graduate Student Mixer	Keys on Main

SCHEDULE OF EVENTS

Friday, July 22

6:30 am–5:15 pm	Registration open	Salt Palace Convention Center, Exhibit Hall
7:15 am–8:15 am	Poster Presentations IX	Salt Palace Convention Center, Exhibit Hall
7:45 am–9:15 am	WSASAS Business Meeting	Salt Palace Convention Center, 155 A
8:00 am–2:00 pm	Exhibits open	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Job Resource Center open	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Hospitality Lounge open	Salt Palace Convention Center, Exhibit Hall
8:00 am–9:00 am	ADSA Spokesperson Q&A at ADSA exhibit booth	Salt Palace Convention Center, Exhibit Hall
8:15 am–9:15 am	Poster Presentations X	Salt Palace Convention Center, Exhibit Hall
10:30 am–5:00 pm	Scientific Sessions	Salt Palace Convention Center
9:30 am–10:30 am	ASAS Business Meeting	Salt Palace Convention Center, 155 B
9:30 am–10:30 am	ADSA Business Meeting	Salt Palace Convention Center, 258/259
9:30 am–4:30 pm	Spouse Event II: Temple Square and Genealogy Library	Hilton Salt Lake City Center Lobby
10:30 am–12:30 pm	ARPAS Exam	Salt Palace Convention Center, 250 C
12:00 pm–2:00 pm	WSASAS Executive Board Post-Conference Meeting	Hilton Salt Lake City Center, Topaz
12:30 pm–2:00 pm	Lunch Panel Discussion: [TOPIC]	Salt Palace Convention Center, 251 E/F
12:30 pm–2:30 pm	ADSA Board of Directors Meeting	Salt Lake City Marriott Downtown, Deer Valley
1:00 pm–2:00 pm	Poster Presentations XI	Salt Palace Convention Center, Exhibit Hall
2:00 pm–4:00 pm	ARPAS Exam	Salt Palace Convention Center, 250 C
2:00 pm–4:00 pm	NE ASAS/ADSA Business Meeting, Reception and Awards	Salt Palace Convention Center, 150 G
2:00 pm–5:00 pm	CSAS Symposium	Salt Palace Convention Center, 155 A
2:00 pm–5:00 pm	Exhibits dismantle	Salt Palace Convention Center, Exhibit Hall
2:30 pm–4:30 pm	ASAS Board of Directors Meeting	Hilton Salt Lake City Center, Topaz
5:00 pm–6:00 pm	Poster Presentations XII	Salt Palace Convention Center, Exhibit Hall
5:00 pm–7:00 pm	Companion Animal Reception	Salt Palace Convention Center, 150 G
6:00 pm–10:00 pm	CSAS Awards Banquet	Hotel Monaco Salt Lake City, Paris Ballroom
10:00 pm–12:00 am	CSAS Member Mixer	Hotel Monaco Salt Lake City, Paris Ballroom

Saturday, July 23

7:15 am–12:00 pm	Registration open	Salt Palace Convention Center, Exhibit Hall
7:15 am–8:15 am	Poster Presentations XIII	Salt Palace Convention Center, Exhibit Hall
8:00 am–5:00 pm	Triennial Growth Symposium	Salt Palace Convention Center, 150 G
8:15 am–9:15 am	Poster Presentations XIV	Salt Palace Convention Center, Exhibit Hall
8:30 am–11:30 am	Scientific Sessions	Salt Palace Convention Center

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Abstract Numbers by Section (Topic Area)

ORAL AND SYMPOSIA PRESENTATIONS

Abstract Numbers by Section (Topic Area)

POSTER PRESENTATIONS

Session Listing by Day

Tuesday, July 19

Wednesday, July 20

ALL DAY

MORNING

AFTERNOON

Thursday, July 21

MORNING

AFTERNOON

Poster Presentations	Number	Number

Friday, July 22

MORNING

AFTERNOON

Saturday, July 23

ALL DAY

MORNING

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SYMPOSIA AND ORAL SESSIONS

ASAS/ASN Joint Symposium: Gut Microbiota, Diet and Health

Chair: Gretchen M. Hill, Michigan State University;
Teresa A. Davis, USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine

Sponsor: Biomin
8:15 AM - 4:30 PM
Grand Ballroom B/D

8:15 AM		**Welcoming Remarks**
8:20 AM	219	**Modulation of the gut microbiota – An ecological perspective.** *J. Walter*, University of Alberta, Edmonton, AB, Canada*
9:05 AM	220	**Effects of early antibiotic exposure on host metabolism.** *L. M. Cox*, Harvard Medical School and Brigham and Women's Hospital, Boston, MA; New York University Langone Medical Center, NY*
9:50 AM		**Break**
10:05 AM	221	**ASAS-EAAP Speaker: Impact of gut microbiota on brain and behavior.** *J. F. Cryan*, University College Cork, Ireland*
10:50 AM	222	**The human milk microbiome and oligosaccharides - What's normal and so what?** *M. K. McGuire*[1] and M. A. McGuire[2], [1]Washington State University, Pullman [2]University of Idaho, Moscow*
11:35 AM		**Lunch and Poster Competition: Sponsored by Lallemand**
1:05 PM	223	**Dietary fiber and starch, digestive physiology, and metabolic health.** *R. T. Zijlstra*, J. M. Fouhse, T. Vasanthan, and M. G. Gänzle, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*
1:50 PM	224	**ASAS-AAPA Speaker: Methane matters: From blue tinged moos, to boozy roos, and for the health of humans too.** *E. C. Hoedt*[1,2], P. OCuiv[2], and M. Morrison*[3], [1]University of Queensland, School of Chemistry and Molecular Biosciences, St Lucia, Australia, [2]University of Queensland Diamantina Institute, Woolloongabba, Australia, [3]University of Queensland Diamantina Institute, Brisbane, Australia*
2:35 PM	225	**ASAS-EAAP Speaker: Sub-acute ruminal acidosis (SARA): A tale of two microbiomes.** *C. A. McCartney*[1], R. C. Cernat[2], H. H. C. Koh-Tan[3], H. J. Ferguson[3], E. M. Strachan[4], W. Thomson[4], T. J. Snelling[1], C. M. Harvey[4], I. Andonovic[5], C. Michie[5], N. N. Jonsson[3], G. W. Horgan[6], and R. J. Wallace*[7], [1]University of Aberdeen, United Kingdom, [2]Chr. Hansen A/S, Hoersholm, Denmark, [3]University of Glasgow, United Kingdom, [4]Harbro Ltd, Turriff, United Kingdom, [5]Strathclyde University, Glasgow, United Kingdom, [6]BIOSS, Aberdeen, United Kingdom, [7]Rowett Institute of Nutrition and Health, Aberdeen, United Kingdom*
3:20 PM	226	**Dietary manipulation of canine and feline gut microbiome.** *K. S. Swanson*, University of Illinois at Urbana-Champaign*
4:05 PM		**Concluding Remarks**

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SYMPOSIA AND ORAL SESSIONS

Pancosma Symposium
Non-Nutrition: The Future of Nutrition?

Chair: Emma Wall, Pancosma;
Michael Steele, University of Alberta

Sponsor: Pancosma
9:00 AM - 5:30 PM
Grand Ballroom A

9:00 AM		**Introductory Remarks**
9:15 AM	1029	**Why the intersection of microbiology and neurobiology matters to animal health: Microbial endocrinology as a means to examine the host-microbiota interface.** *M. Lyte[*], Iowa State University, Ames*
9:45 AM	1030	**The gut microbiome as a virtual endocrine organ: Implications for host physiology and behaviour.** *G. Clarke[*], University College Cork, Ireland*
10:15 AM	1031	**Threats to gut health in production animals.** *J. Furness[*1], D. M. Bravo[2], and J. J. Cottrell[3], [1]University of Melbourne, Parkville, Australia, [2]Pancosma, Geneva, Switzerland, [3]Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia*
10:45 AM	1032	**ASAS-EAAP Speaker: The gut microbiome and its role in the development and function of newborn calf gastrointestinal tract.** *N. Malmuthuge[1], G. Liang[1], P. J. Griebel[2], and L. L. Guan[*1], [1]University of Alberta, Edmonton, AB, Canada, [2]Vaccine and Infectious Disease Organization, University of Saskatchewan, Saskatoon, SK, Canada,*
11:15 AM	1033	**From pre- to post-weaning: The adaptations of the gastrointestinal tract of the young calf.** *M. Steele[*1], S. J. Meale[2], K. Wood[3], and G. B. Penner[4], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]INRA, Unité Mixte de Recherches sur les Herbivores, St Genès Champanelle, France, [3]Department of Animal Biosciences, University of Guelph, ON, Canada, [4]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*
11:45 AM		**Break**
1:45 PM	1034	**Metabolic effects of dietary pungent spices on the gut in animal models.** *K. Srinivasan[*], Department of Biochemistry and Nutrition, CSIR - Central Food Technological Research Institute, Mysore, India*
2:15 PM	1035	**Phytonutrients as non-nutritive feed additives to enhance growth and host immunity in broiler chickens.** *H. Lillehoj[*1] and S. Oh[2], [1]USDA-ARS, Beltsville, MD, [2]USDA, Beltsville, MD*
2:45 PM	1036	**Phytonutrients as additives in ruminants: The unexpected target organ.** *J. Oh[1], E. H. Wall[2], D. M. Bravo[2], and A. N. Hristov[*1], [1]The Pennsylvania State University, University Park, [2]Pancosma, Geneva, Switzerland*
3:15 PM	1037	**Non-nutrients in swine health and production.** *Y. Liu[*], University of California-Davis*
3:45 PM	1038	**ASAS-EAAP Speaker: Manipulation of gut morphology and gut immunity in swine using novel, naturally sustainable bioactives.** *T. Sweeney[*1] and J. O'Doherty[2], [1]School of Vetrinary Medicine, University College Dublin, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*
4:15 PM		**Concluding Remarks**
4:30 PM		**Discussion**

ADSA Production Division Graduate Student Oral Competition: MS

Chair: Gerd Bobe, Oregon State University

9:30 AM - 12:30 PM
251 C

9:30 AM 717 **Rumen development in Holstein calves.**
K. E. Mitchell, University of California-Davis*

9:45 AM 718 **Milk fat secretion in lactating dairy cattle is influenced by soybean particle size and fatty acid profile.**
K. A. Weld and L. E. Armentano, University of Wisconsin-Madison*

10:00 AM 719 **Effects of heat stress and dietary zinc source on mammary tight junction of lactating dairy cows.**
X. Weng[1], A. P. A. Monteiro[1], J. Guo[1], J. K. Bernard[1], J. DeFrain[2], and S. Tao[1], [1]University of Georgia, Tifton, [2]Zinpro Corporation, Eden Prairie, MN*

10:15 AM 720 **Effects of feeding forage and concentrate, separately or as a TMR, on ruminal methane emission, fermentation characteristics, and total tract digestibility.**
B. Rajaraman[1], A. Selvaraj[2], C. H. Lee[2], and K. H. Kim[1,2], [1]Graduate School of International Agricultural Technology, Seoul National University, Pyeongchang, The Republic of Korea, [2]Green Bio Science and Technology, Seoul National University, Pyeongchang, The Republic of Korea*

10:30 AM 721 **The effect of dietary fats on fatty acid composition, gene expression and vitamins status in pre-ruminant calves.**
C. Y. Tsai, W. I. Loucks, C. M. Scholte, K. C. Ramsey, M. E. Doumit, and P. Rezamand, University of Idaho, Moscow*

10:45 AM 722 **Effect of OmniGen-AF and heat stress during the dry period on subsequent performance of cows.**
T. F. Fabris[1], J. Laporta[1], F. N. Correa[1], Y. M. Torres[1], D. J. Kirk[2], D. J. McLean[2], J. D. Chapman[2], and G. E. Dahl[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Phibro Animal Health Corp., Quincy, IL,*

11:00 AM 723 **Feed efficiency is associated with reproductive performance in dairy cows.**
E. M. Bart[1], M. D. Hanigan[1], D. M. Spurlock[2], M. J. VandeHaar[3], and R. R. Cockrum[1], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]Iowa State University, Ames, [3]Michigan State University, East Lansing*

11:15 AM 724 **Use of 1,25(OH)2 vitamin D3 to maintain postpartum blood calcium and improve immune function in dairy cows.**
A. Vieira Neto, I. A. Peixoto, F. R. Lopes Jr., R. Zimpel, C. Lopera, L. D. P. Sinedino, K. N. Galvão, C. D. Nelson, and J. E. P. Santos, University of Florida, Gainesville*

11:30 AM 725 **Effect of 2,4-thiazolidinedione treatment in the inflammatory response to induced sub-clinical mastitis in dairy goats receiving adequate vitamin supplementation.**
F. Rosa[1], M. Moridi[2], J. S. Osorio[1], J. Lohakare[1], S. Filley[1], J. L. Belveal[1], J. J. Bruton[1], E. Trevisi[3], C. Estill[1], and M. Bionaz[1], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]University of Guilan, Rasht, Islamic Republic of Iran, [3]University Cattolica del Sacro Cuore, Piacenza, Italy*

11:45 AM 726 **Effect of increasing milk feeding frequency of an elevated plane of nutrition on glucose and insulin kinetics in male Holstein calves both pre- and post-weaning.**
J. A. R. MacPherson[1], J. Haisan[1], S. J. Meale[2], S. I. Pletts[1], and M. Steele[1], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]UMR Herbivores, INRA, Vetagro Sup, Saint-GenÃ¨s-Champanelle, France*

12:00 PM 727 **Repeatability of residual feed intake across dietary forage concentration.**
M. J. Carrasquillo-Mangual, E. Liu, and M. J. VandeHaar, Michigan State University, East Lansing*

ADSA-ASAS Northeast Section Graduate Student Oral Competition

Chair: Kristen E. Govoni, University of Connecticut

Sponsor: NE Section ADSA-ASAS
9:30 AM - 11:00 AM
251 F

9:30 AM 695 **Survival and growth of Listeria monocytogenes on queso fresco cheese stored under modified atmospheres.**
S. R. Barnes and D. J. D'Amico, University of Connecticut, Storrs*

9:45 AM 696 **The effects of poor maternal nutrition on dam and offspring inflammatory status throughout gestation.**
A. K. Jones, S. M. Pillai, M. L. Hoffman, K. K. McFadden, K. E. Govoni, S. A. Zinn, and S. A. Reed, Department of Animal Science, University of Connecticut, Storrs*

10:00 AM 697 **Effects of poor maternal nutrition during gestation on offspring prenatal muscle growth.**
S. M. Pillai, A. K. Jones, M. L. Hoffman, K. K. McFadden, S. A. Zinn, S. A. Reed, and K. E. Govoni, Department of Animal Science, University of Connecticut, Storrs*

10:15 AM 698 **Effects of citral and linalool on blood neutrophil toxicity and oxidative response in dairy cows.**
C. M. Scholte[*1], Y. Qu[1], M. Garcia[1], T. H. Elsasser[2], D. Biswas[1], and K. M. Moyes[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, [2]USDA-ARS, Beltsville, MD*

10:30 AM 699 ***In vitro* screening of the anthelmintic efficacy of birdsfoot trefoil commercial varieties and cultivars against ovine *Haemonchus contortus*.**
C. Barone[*1], S. Ferguson[1], A. Zajac[2], R. Brown[1], J. Reed[3], C. Krueger[3], and K. Petersson[1], [1]University of Rhode Island, Kingston, [2]Virginia Polytechnic Institute and State University, Blacksburg, [3]University of Wisconsin-Madison*

ADSA-Southern Section Graduate Student Oral Competition

Chair: Peter D. Krawczel, University of Tennessee

9:30 AM - 10:30 PM
251 D

9:30 AM 760 **The nutritional quality of winter crops for silage in monoculture or with legumes.**
A. N. Brown[*1], G. Ferreira[1], C. L. Teets[1], W. E. Thomason[2], and C. D. Teutsch[2], [1]Department of Dairy Science, Virginia Polytechnic Institute and State University, Blacksburg, [2]Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg*

9:45 AM 761 **Housing and demographic effects on somatic cell score in southeast United States dairies.**
A. Stone[*1], C. Blakely[2], K. Bochantin[1], P. D. Krawczel[2], M. Myers[1], D. T. Nolan[1], C. S. Petersson-Wolfe[3], G. M. Pighetti[2], S. Ward[4], and J. M. Bewley[1], [1]University of Kentucky, Lexington, [2]University of Tennessee, Knoxville, [3]Virginia Polytechnic Institute and State University, Blacksburg, [4]Mississippi State University, Mississippi State*

10:00 AM 762 **Feeding low crude protein diets in lactating dairy cows during summer months: Improvements in milk production and nitrogen utilization.**
J. Kaufman, K. Kassube, and A. G. Rius, The University of Tennessee, Knoxville*

10:15 AM 763 **Influence of a BRDC vaccine with a MLV or KV IBR component on estrous cycle parameters and anti-müllerian hormone concentration in nulliparous heifers.**
C. L. Widener, D. J. Hurley, W. M. Graves, A. H. Nelson, D. A. L. Lourenco, and J. F. Bohlen, University of Georgia, Athens*

ASAS Western Section Graduate Student Paper Competition

Chair: Shanna L. Ivey, New Mexico State University

Sponsor: ASAS Western Section
9:30 AM - 3:30 PM
258/259

9:30 AM 1 **Effects of maternal nutritional status on nutrient transporter expression in bovine utero-placental tissue on days 16 to 50 of gestation.**
M. S. Crouse[*1], K. J. McLean[1], M. R. Crosswhite[1], N. Negrin Pereira[1], A. K. Ward[1], L. P. Reynolds[1], C. R. Dahlen[1], B. W. Neville[2], P. P. Borowicz[1], and J. S. Caton[1], [1]North Dakota State University, Fargo, [2]North Dakota State University, Streeter*

9:45 AM 2 **Effects of dried distillers grains and lasalocid on feedlot lamb growth, carcass traits, nutrient digestibility, ruminal fluid volatile fatty acid concentrations, and ruminal hydrogen sulfide concentration.**
A. R. Crane[*1,2], R. R. Redden[3], K. C. Swanson[2], B. M. Howard[2], T. J. Frick[2], K. R. Maddock-Carlin[2], and C. S. Schauer[1], [1]Hettinger Research Extension Center, Hettinger, ND, [2]North Dakota State University, Fargo, [3]Texas A&M AgriLife Research and Extension Center, San Angelo*

10:00 AM 3 **Impacts of stocking density on growth and puberty attainment of replacement beef heifers.**
K. M. Schubach[*1], R. F. Cooke[1], A. P. Brandao[1,2], K. Lippolis[1], R. Marques[1], M. T. Hinchliff[1], and D. W. Bohnert[1], [1]Oregon State University-EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil*

10:15 AM	4	**Physiologic, health and production responses of dairy cows supplemented with an immunomodulatory feed ingredient during the transition period.** *A. P. Brandao[*1,2], R. F. Cooke[1], F. N. Correa[3], M. B. Piccolo[2], R. Gennari[4], T. Leiva[2], and J. L. M. Vasconcelos[5], [1]Oregon State University-EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil, [3]Department of Animal Sciences, University of Florida, Gainesville, [4]UNESP - FMVZ, Botucatu, FL, [5]Sao Paulo State University, Botucatu, Brazil*
10:30 AM	5	**Bioavailability of supplemental ruminally-protected leucine in sheep.** *J. G. Castro[*], J. B. Alford, K. E. Quinn, F. A. Lopez, S. L. Pillmore, E. J. Scholljegerdes, and C. A. Loest, New Mexico State University, Las Cruces*
10:45 AM	6	**Key metabolic pathways associated with differences in weight maintenance and gain in mature cow skeletal and adipose tissue.** *H. C. Cunningham[*1], K. J. Austin[1], K. M. Cammack[1], H. C. Freetly[2], and A. K. Lindholm-Perry[2], [1]Department of Animal Science, University of Wyoming, Laramie, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE*
11:00 AM	7	**Effects of grazing intensity and advancing season on chemical composition and *in vitro* organic matter disappearance in steers grazing mixed-grass prairie.** *K. E. Chilcoat[*], Animal Sciences Department, North Dakota State University, Fargo*
11:15 AM	8	**Altering the time of vaccination against respiratory pathogens to enhance vaccine efficacy, health, and performance of feedlot cattle.** *K. Lippolis[*1], R. F. Cooke[1], K. M. Schubach[1], A. P. Brandao[1,2], R. Marques[1], M. T. Hinchliff[1], and D. W. Bohnert[1], [1]Oregon State University-EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil*
11:30 AM	9	**Evaluation of genetic structure across five US climate zones using prominent AI sires of two British Bos taurus breeds.** *B. C. Krehbiel[*1,2], M. G. Thomas[1], H. D. Blackburn[2], S. E. Speidel[1], R. M. Enns[1], and L. Keenan[3], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]National Animal Germplasm Program USDA-ARS, Fort Collins, CO, [3]Red Angus Association of America, Denton, TX*
11:45 AM	10	**Effect of processing of supplemental corn on metabolizable protein of beef cows grazing winter wheat pasture.** *C. S. Hebbert[*1], M. A. Lopez-Baca[2], L. Avendaño-Reyes[2], U. Macias-Cruz[2], and S. A. Soto-Navarro[1], [1]New Mexico State University, Las Cruces, [2]Instituto de Ciencias Agricolas, Universidad Autonoma de Baja California, Ejido Nuevo Leon, Baja California, Mexico*
12:00 PM	11	**Does adaptive grazing management influence dietary quality of yearlings during the grazing season on western Great Plains rangelands?** *T. R. Plechaty[*1], J. D. Scasta[1], and J. D. Derner[2], [1]University of Wyoming, Laramie, [2]USDA-ARS, Cheyenne, WY*
12:15 PM	12	**Long-term progesterone influence on feed efficiency, body composition, non-esterified fatty acids and metabolic hormones in mature Rambouillet ewes.** *M. R. Herrygers[*], J. M. Thomson, K. A. Perz, P. J. Merta, M. Knerr, K. Metcalf, K. B. Herrygers, and J. G. Berardinelli, Montana State University, Bozeman*
12:30 PM		**Break**
2:00 PM	13	**Health evaluation of immune-stimulated and hay-supplemented feedlot receiving calves as assessed by blood gas analysis.** *E. R. Oosthuysen[*1], M. Hubbert[2], K. L. Samuelson[1], E. J. Scholljegerdes[1], G. C. Duff[1], and C. A. Loest[1], [1]New Mexico State University, Las Cruces, [2]Clayton Livestock Research Center, New Mexico State University, Clayton*
2:15 PM	14	**Effect of post-weaning heifer development system on average daily gain, pregnancy rates, and subsequent feed efficiency as a pregnant heifer.** *S. A. Springman[*], H. R. Nielson, T. L. Meyer, and R. N. Funston, University of Nebraska, West Central Research and Extension Center, North Platte*
2:30 PM	15	**Comparison of timed insemination vs. modified estrus detection protocol in beef heifers.** *B. T. Tibbitts[*1], T. L. Meyer[2], D. J. Kelly[3], and R. N. Funston[2], [1]University of Nebraska-Lincoln, [2]University of Nebraska, West Central Research and Extension Center, North Platte, [3]Kelly Ranches, Sutherland, NE*
2:45 PM	16	**Performance and net energy in high and low RFI beef cattle.** *K. C. Dykier[*] and R. D. Sainz, University of California-Davis*
3:00 PM	18	**Impact of maternal protein restriction in first-calf heifers during mid- to late- gestation on gene expression, feedlot performance, and carcass characteristics of progeny.** *J. J. Kincheloe[*1], M. J. Webb[2], R. N. Funston[3], K. R. Underwood[2], M. G. Gonda[2], A. D. Blair[1], and K. C. Olson[1], [1]South Dakota State University, Rapid City, [2]South Dakota State University, Brookings, [3]University of Nebraska, West Central Research and Extension Center, North Platte*

Big Data in Animal Science: Uses for Models, Statistics and Meta-Approaches

Chair: Robin R. White, Virginia Polytechnic Institute and State University

Sponsor: CDGKV
9:30 AM - 2:00 PM
155 C

9:30 AM		**Welcoming Remarks**
9:40 AM	1293	**ASAS-EAAP Speaker: Modeling in animal science: An introduction to quantitative understanding and prediction.** *J. Dijkstra*, Animal Nutrition Group, Wageningen University, Netherlands*
10:35 AM	1294	**Traditional versus structure-based model development strategies.** *L. O. Tedeschi*[*1], R. R. White[2], C. F. Nicholson[3], B. L. Turner[4], M. A. Fonseca[1], and M. D. Hanigan[2], [1]Texas A&M University, College Station, [2]Virginia Polytechnic Institute and State University, Blacksburg, [3]The Pennsylvania State University, University Park, [4]Texas A&M University-Kingsville*
11:25 AM		**Break**
11:45 AM	1295	**Big data analysis techniques.** *N. St-Pierre*, The Ohio State University, Columbus*
12:35 PM		**Break**
1:15 PM	1296	**Evaluation of multilevel mixed effect models.** *E. Kebreab*, University of California-Davis*

Breeding and Genetics: Genomic Evaluation I - Methods

Chair: James E. Koltes, University of Arkansas

9:30 AM - 12:30 PM
Grand Ballroom I

9:30 AM	291	**APY inverse of genomic relationship matrix – Theory, analyses and questions.** *I. Misztal*, I. Pocrnic, D. Lourenco, and Y. Masuda, University of Georgia, Athens*
9:45 AM	292	**Dimensionality of genomic information and APY inverse of genomic relationship matrix.** *I. Pocrnic*[*1], D. A. L. Lourenco[1], Y. Masuda[1], A. Legarra[2], and I. Misztal[1], [1]University of Georgia, Athens, [2]INRA, UMR 1388 GenPhySE, Castanet-Tolosan, France*
10:00 AM	293	**Accounting for discovery bias in genomic prediction.** *R. M. Thallman*[*1], J. T. Parham[2], L. A. Kuehn[1], and J. P. Cassady[2], [1]USDA-ARS, US Meat Animal Research Center, Clay Center, NE, [2]South Dakota State University, Brookings*
10:15 AM	294	**Assessing genomic prediction accuracy for Holstein sires using bootstrap aggregation sampling and leave-one-out cross validation.** *A. Mikshowsky[1], K. A. Weigel*[*2], and D. Gianola[1], [1]University of Wisconsin-Madison, [2]Department of Dairy Science University of Wisconsin-Madison*
10:30 AM	295	**The impact of call rate on genotype accuracy.** *D. C. Purfield*[*1], M. C. McClure[2], and D. P. Berry[3], [1]Animal & Grassland Research and Innovation Centre, Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, [2]Irish Cattle Breeding Federation, Bandon, Ireland, [3]Teagasc, Moorepark, Fermoy, Co. Cork, Ireland*
10:45 AM	296	**Strategy for incorporating newly discovered causative genetic variants into genomic evaluations.** *G. R. Wiggans*, P. M. VanRaden, D. M. Bickhart, and M. E. Tooker, Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*
11:00 AM		**Break**
11:15 AM	297	**High density marker panels, SNPs prioritizing and accuracy of genomic selection.** *L. Y. Chang*[*1], S. Toghiani[1], S. E. Aggrey[2,3], and R. Rekaya[1,3], [1]Department of Animal and Dairy Science, University of Georgia, Athens, [2]NutriGenomics Laboratory, Department of Poultry Science, University of Georgia, Athens, [3]Institute of Bioinformatics, University of Georgia, Athens*

11:30 AM 298 **Selection of sequence variants to improve dairy cattle genomic predictions.**
*M. E. Tooker[*1], P. M. VanRaden[1], D. M. Bickhart[1], and J. O'Connell[2], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]University of Maryland School of Medicine, Baltimore*

11:45 AM 299 **Genomic prediction of crossbred performance.**
*B. Harlizius[*1], M. S. Lopes[1], J. Vandenplas[2], C. A. Sevillano[2], and J. W. M. Bastiaansen[3], [1]Topigs Norsvin Research Center, Beuningen, Netherlands, [2]Wageningen University, Netherlands, [3]Animal Breeding and Genomics Centre, Wageningen University, Netherlands*

12:00 PM 300 **SNP filtering using FST and implications for Genome wide association and phenotype prediction.**
*S. Toghiani[*1], L. Y. Chang[1], S. E. Aggrey[2,3], and R. Rekaya[1,3], [1]Department of Animal and Dairy Science, University of Georgia, Athens, [2]NutriGenomics Laboratory, Department of Poultry Science, University of Georgia, Athens, [3]Institute of Bioinformatics, University of Georgia, Athens*

12:15 PM 301 **A combined coalescence forward in time simulator software for pedigreed populations undergoing selection for complex traits.**
*J. T. Howard[*1], F. Tiezzi[1], J. E. Pryce[2], and C. Maltecca[1], [1]North Carolina State University, Raleigh, [2]Department of Economic Development, Jobs, Transport and Resources, Bundoora, Australia*

CSAS Graduate Student Oral Competition I

Chair: Evaline Ibeagha-Awemu, Agriculture and Agri-Food Canada; Kees Plaizer, University of Manitoba

9:30 AM - 12:30 PM
251 B

9:30 AM 456 **Ensiling barley varieties selected for varied levels of *in vitro* NDF degradability.**
*N. G. Preston[*1,2], J. Nair[1], P. Yu[1], D. A. Christensen[1], J. J. McKinnon[3], and T. A. McAllister[2], [1]University of Saskatchewan, Saskatoon, SK, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-food Canada, Lethbridge, AB, Canada, [3]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*

9:45 AM 457 **Characterization of the variation in the daily excretion of faecal constituents and digestibility predictions in beef cattle fed feedlot diets using near infrared spectroscopy.**
*L. J. Jancewicz[*1,2], G. B. Penner[3], M. L. Swift[4], J. J. McKinnon[1], C. L. Waldner[5], and T. A. McAllister[2], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]University of Saskatchewan, Saskatoon, SK, Canada, [4]Hi-Pro Feeds, Okotoks, AB, Canada, [5]Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada*

10:00 AM 458 **Effect of energy substrate and days on feed on plasma insulin response in finishing beef heifers.**
F. Joy[*], K. M. Wood, and G. B. Penner, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada

10:15 AM 459 **Effect of digestible fiber content of barley silage on lactation performance and chewing activity of lactating dairy cows in comparison with corn silage.**
*B. Refat[*1,2], D. A. Christensen[3], J. J. McKinnon[4], J. Nair[1], A. D. Beattie[5], T. A. McAllister[6], W. Yang[7], and P. Yu[1], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]Animal Production Department, Faculty of Agriculture, Zagazig University, Zagazig, Egypt, [3]University of Saskatchewan, Saskatoon, SK, Canada, [4]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [5]Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [6]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Lethbridge, AB, Canada, [7]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

10:30 AM 460 **Daytime pasture vs. free-stall barn access: What do dairy cows with year-long outdoor experience prefer?**
*E. R. Shepley[*1], E. Vasseur[2], and R. Bergeron[3], [1]McGill University, Sainte-Anne-de-Bellevue, QC, Canada, [2]McGill University, Sainte-Anne-de-Bellevue, QC, Canada, [3]University of Guelph, ON, Canada*

10:45 AM 461 **Can regular exercise and more comfortable stalls improve cleanliness and lameness in tie-stall dairy cows?**
*S. Palacio[*1], S. Adam[2], R. Bergeron[3], D. Pellerin[4], A. M. de Passillé[5], J. Rushen[5], D. B. Haley[6], T. J. DeVries[7], and E. Vasseur[1], [1]McGill University, Sainte-Anne-de-Bellevue, QC, Canada, [2]Valacta, Sainte-Anne-de-Bellevue, QC, Canada, [3]University of Guelph, ON, Canada, [4]Universite Laval, Quebec, QC, Canada, [5]Faculty of Land and Food Systems - University of British Columbia, Vancouver, BC, Canada, [6]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [7]Department of Animal Biosciences, University of Guelph, ON, Canada*

11:00 AM 462 ***Saccharomyces cerevisiae boulardii* improves acute phase response and phagocytosis during weaning in dairy calves.**
B. Fomenky[*1,2], *J. Chiquette*[1], *P. Y. Chouinard*[2], *and É. M. Ibeagha-Awemu*[1], [1]*Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada,* [2]*Département des sciences animales, Université Laval, Québec, QC, Canada*

11:15 AM 463 **Effect of lipid supplementation and type of lipid on fatty acid composition of the ruminal epithelium and short–chain fatty acid transport.**
A. C. Verdugo[*] *and G. B. Penner, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*

11:30 AM 464 **Degradation kinetics and bypassed nutrients of value added pellet products based on combination of new co-products from bio-fuel/bio-oil processing, low grade of peas and lignosulfonate chemical compound at different levels for ruminants.**
V. Guevara[*], *D. A. Christensen, J. J. McKinnon, and P. Yu, Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*

11:45 AM 465 **The different effects of ferrous glycine chelate and ferrous sulfate to intestinal porcine epithelial cells.**
Z. Zhuo[*], *College of Animal Science, Zhejiang University, Hangzhou, China*

12:00 PM 466 **The effect of SNPs in the promoter on expression of *CYP2E1* gene and boar taint.**
H. E. Archer[*], *University of Guelph, ON, Canada*

Dairy Foods Division Symposium: Increasing Utilization of Dairy Co-Products

Chair: Rohit Kapoor, National Dairy Council

9:30 AM - 12:30 PM
151 B/C

9:30 AM **Welcoming Remarks**

9:35 AM 573 **Consumer demand, innovation and opportunity for co-products.**
B. Graves[*] *and R. Kapoor, Dairy Management Inc., Rosemont, IL*

9:50 AM **International market opportunities and regulatory hurdles. USDEC.**

10:15 AM 574 **Permeate - use as a sodium replacer / flavor implications.**
M. Drake[*], *Southeast Dairy Foods Research Center, North Carolina State University, Raleigh*

10:40 AM 575 **Fractionating acid whey into value-added ingredients.**
K. E. Smith[*], *University of Wisconsin-Madison*

11:05 AM **Break**

11:10 AM 576 **Demineralization of delactose permeate and acid whey.**
J. K. Amamcharla[*], *Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan*

11:35 AM 577 **Advancements in drying lactose and acid whey.**
J. G. Ronckers[*], *Relco, Willmar, MN*

12:00 PM 578 **Lactose derivatives and GOS as prebiotic fibers.**
T. C. Schoenfuss[*], *University of Minnesota, Department of Food Science and Nutrition, St. Paul*

12:25 PM **Concluding Remarks**

Forages and Pastures I

Chair: Ken P. Coffey, University of Arkansas

9:30 AM - 12:30 PM
Grand Ballroom H

9:30 AM 627 **A Bayesian approach to unmix diet composition.**
N. Vargas Jurado, K. M. Eskridge, and R. M. Lewis, University of Nebraska-Lincoln*

9:45 AM 628 **Dry matter yields and nutritional composition of corn and sorghum for silage in Florida.**
G. Ferreira[*1], C. R. Staples[2], and J. D. Wasdin[2], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Florida, Gainesville*

10:00 AM 629 **Influence of plant population, maturity and ensiling time on fermentation profile, nitrogen fractions and starch digestibility in earlage.**
L. F. Ferraretto[*1], R. D. Shaver[2], J. G. Lauer[2], L. Brown[3], R. Lutz[3], J. Kennicker[3], R. Schmidt[4], and D. M. Taysom[5], [1]University of Florida, Gainesville, [2]University of Wisconsin-Madison, [3]Monsanto, St Louis, MO, [4]Lallemand Animal Nutrition, Milwaukee, WI, [5]Dairyland Laboratories Inc, Arcadia, WI*

10:15 AM 630 **Replacing alfalfa silage with birdsfoot trefoil silage varying in tannin content in lactating cow diets.**
U. C. Hymes Fecht, USDA-ARS Dairy Forage Research Center, Madison, WI*

10:30 AM 631 **Bacterial and fungal community structure of conventional and brown midrib corn hybrids ensiled with or without a combo inoculant at high dry matter concentrations.**
J. J. Romero[*1,2], Y. H. Joo[3], Y. Zhao[4], J. Park[3], M. A. Balseca-Paredes[1], E. Gutierrez-Rodriguez[5], and M. S. Castillo[1], [1]Department of Crop Science, North Carolina State University, Raleigh, [2]Animal and Veterinary Sciences, University of Maine, Orono, [3]Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, The Republic of Korea, [4]Department of Animal Nutrition and Feed Science, China Agricultural University, Beijing, China, [5]Department of Food, Bioprocessing, and Nutrition Sciences, North Carolina State University, Raleigh*

10:45 AM 632 **Bacterial and fungal community structure of oats ensiled with or without a combo inoculant.**
J. J. Romero[*1,2], Y. Zhao[3], M. A. Balseca-Paredes[1], Y. H. Joo[4], J. Park[4], E. Gutierrez-Rodriguez[5], and M. S. Castillo[1], [1]Department of Crop Science, North Carolina State University, Raleigh, [2]Animal and Veterinary Sciences, University of Maine, Orono, [3]Department of Animal Nutrition and Feed Science, China Agricultural University, Beijing, China, [4]Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, The Republic of Korea, [5]Department of Food, Bioprocessing, and Nutrition Sciences, North Carolina State University, Raleigh*

11:00 AM **Break**

11:15 AM 633 **Microbial count, fermentation, and aerobic stability of regular and brown midrib corn hybrids ensiled with or without a combo inoculant at high moisture concentrations.**
J. J. Romero[*1,2], J. Park[3], M. A. Balseca-Paredes[1], Y. Zhao[4], Y. H. Joo[3], A. Heitman[1], E. Gutierrez-Rodriguez[5], and M. S. Castillo[1], [1]Department of Crop Science, North Carolina State University, Raleigh, [2]Animal and Veterinary Sciences, University of Maine, Orono, [3]Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, The Republic of Korea, [4]Department of Animal Nutrition and Feed Science, China Agricultural University, Beijing, China, [5]Department of Food, Bioprocessing, and Nutrition Sciences, North Carolina State University, Raleigh*

11:30 AM 634 **Forage quality of two different pasture systems incorporating warm and cool season forages for grazing organic dairy cattle.**
K. E. Ruh[*1,2], B. J. Heins[2], and J. Paulson[3], [1]University of Minnesota, Saint Paul, [2]University of Minnesota West Central Research and Outreach Center, Morris, [3]University of Minnesota Extension, Rochester*

11:45 AM 635 **Meta-analysis of the effect of homolactic and facultative heterolactic bacteria inoculation on silage quality: Aerobic stability and yeast, mold and clostridia counts.**
A. S. Oliveira[*1], Z. G. Weinberg[2], A. A. P. Cervantes[3], K. G. Arriola[3], I. M. Ogunade[3], Y. Jiang[3], D. Kim[3], M. C. M. Gonçalves[4], D. Vyas[3], and A. T. Adesogan[3], [1]Universidade Federal de Mato Grosso - Sinop, Sinop, Brazil, [2]Department of Food Quality and Safety, Agricultural Research Organization, The Volcani Center, Rishon Le Zion, Israel, [3] UF/IFAS, Gainesville, FL, [4]Instituto Federal Goiano, Rio Verde, Brazil*

12:00 PM 636 **Meta-analysis of the effect silage inoculation with homolactic or facultative heterolactic bacteria on the performance of dairy cows.**
A. S. Oliveira[*1], Z. G. Weinberg[2], A. A. P. Cervantes[3], K. G. Arriola[3], I. M. Ogunade[3], Y. Jiang[3], D. Kim[3], M. C. M. Gonçalves[4], D. Vyas[3], and A. T. Adesogan[3], [1]Universidade Federal de Mato Grosso - Sinop, Sinop, Brazil, [2]Department of Food Quality and Safety, Agricultural Research Organization, The Volcani Center, Rishon Le Zion, Israel, [3] UF/IFAS, Gainesville, FL, [4]Instituto Federal Goiano, Rio Verde, Brazil*

International Animal Agriculture Symposium: The Future of Pastoral Production Systems

Chair: Filippo Miglior, Centre for Genetic Improvement of Livestock, University of Guelph

Sponsor: EAAP
9:30 AM - 12:00 PM
150 B/C

9:30 AM 835 **ASAS-EAAP Speaker: Contribution of pastoral systems to global food security and potential for sustainable intensification.**
A. Mottet, F. Teillard, G. Cinardi, and G. Velasco Gil, Food and Agriculture Organization of the United Nations, Rome, Italy*

10:00 AM 836 **Opportunities for international research and development through the Feed the Future Innovation Lab for Livestock Systems.**
A. T. Adesogan, UF/IFAS, Gainesville, FL*

10:30 AM 837 **Community-based breeding programs: A sustainable solution for livestock keepers?**
M. Wurzinger[*1], A. Haile[2], B. Rischkowsky[3], C. P. VanTassell[4], T. S. Sonstegard[5], O. Mwai[6], and J. Sölkner[7], [1]BOKU-University of Natural Resources and Life Sciences, Vienna, Austria, [2]International Centre for Agricultural Research in the Dry areas, Addis Ababa, Ethiopia, [3]International Center for Agricultural Research in the Dry Areas, Addis Ababa, Ethiopia, [4]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [5]USDA-ARS, BFGL, Beltsville, MD, [6]International Livestock Research Institute, Nairobi, Kenya, [7]University of Natural Resources and Life Sciences, Vienna, Austria*

11:00 AM 838 **Innovative dissemination of small ruminant genetic improvement by a non-government institute in India.**
C. Nimbkar and P. Ghalsasi, Nimbkar Agricultural Research Institute, Phaltan, Dist. Satara, Maharashtra, India*

11:30 AM 839 **Pastoral systems in the developing world: Trends, needs, and future scenarios.**
D. L. Coppock[*1], M. Fernandez-Gimenez[2], P. Hiernaux[3], E. Huber-Sannwald[4], C. Schloeder[5], C. Valdivia[6], J. T. Arredondo[4], M. Jacobs[5], C. Turin[7], and M. Turner[8], [1]Utah State University, Logan, [2]Colorado State University, Fort Collins, [3]Centre National de la Recherche Scientifique, Geosciences Environment Toulouse, Toulouse, France, [4]Instituto Potosino de Investigacion Cientifica y Tecnologica, San Luis Potosi, Mexico, [5]Oikos Services LLC, Fortine, MT, [6]University of Missouri, Columbia, [7]International Potato Center, Lima, Peru, [8]University of Wisconsin-Madison*

Nonruminant Nutrition: Enzymes

Chair: K. M. Ajuwon, Purdue University

Sponsor: JBS United, Dupont
9:30 AM - 12:30 PM
Grand Ballroom F

9:30 AM 927 **Effect of timing of post-weaning supplementation of xylanase on growth performance, nutrient digestibility and fecal microbial composition in weanling pigs.**
H. Lu[*1], H. Yan[1], H. Masey O'Neill[2], C. L. Bradley[2], M. Bedford[2], P. Wilcock[2], C. Nakatsu[1], O. Adeola[1], and K. M. Ajuwon[1], [1]Purdue University, West Lafayette, IN, [2]AB Vista Feed Ingredients, Marlborough, United Kingdom*

9:45 AM 928 **Effect of xylanase and live yeast supplementation on growth performance and gut microflora diversity of growing pigs.**
H. Lu[*1], H. Yan[1], H. Masey O'Neill[2], C. L. Bradley[2], M. Bedford[2], P. Wilcock[2], C. Nakatsu[1], O. Adeola[1], and K. M. Ajuwon[1], [1]Purdue University, West Lafayette, IN, [2]AB Vista Feed Ingredients, Marlborough, United Kingdom*

10:00 AM 929 **Effects of dietary supplementation of β-mannanase on digesta viscosity and intestinal health of nursery pigs.**
I. Park, Y. I. Kim, and S. W. Kim, North Carolina State University, Raleigh*

10:15 AM 930 **Effects of dietary supplementation with xylanase on growth performance, ileal digesta viscosity, apparent ileal digestibility and excreta noxious gas emission of broilers fed wheat-based diets.**
W. C. Liu, J. H. Park, S. I. Lee, S. D. Upadhaya, and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, The Republic South Korea*

10:30 AM 931 **Effects of corn-expressed phytase on growth performance and gut health of nursery pigs.**
J. K. Lee, H. Chen, I. Park, and S. W. Kim, North Carolina State University, Raleigh*

10:45 AM 932 **Effects of xylanase and protease on gut health and growth performance of newly hatched broiler chickens.**
M. P. Herchler, L. Zheng, and S. W. Kim, North Carolina State University, Raleigh*

11:00 AM **Break**

11:15 AM 933 **Effect of supplemental enzyme on growth performance, digesta viscosity, apparent total tract digestibility of nutrients in nursery pigs.**
*U. P. Tiwari[*1], H. Chen[2], S. W. Kim[2], and R. Jha[1], [1]University of Hawaii at Manoa, Honolulu, [2]North Carolina State University, Raleigh*

11:30 AM 934 **Effects of full fat or defatted ricebran and microbial xylanase on growth performance of weanling pigs.**
G. A. Casas[*] and H. H. Stein, University of Illinois at Urbana-Champaign

11:45 AM 935 **Addition of optimal non-starch polysaccharides enzymes using *in vitro* method to a corn-soybean meal diet and a corn-miscellaneous meal diet for growing pigs.**
L. Gao, L. Chen, R. Zhong, L. Zhang, and H. Zhang[*], Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China

12:00 PM 936 **Growth performance, bone measurements, and P digestibility in nursery pigs fed diets supplemented with increasing levels of a new bacterial 6-phytase expressed in *Pseudomonas fluorescens*.**
F. N. Almeida[*], M. Vázquez-Añón, and J. Escobar, Novus International, Inc., St. Charles, MO

12:15 PM 937 **Nutritive value of cold-pressed soybean cake with or without extrusion or supplementation of multi-carbohydrase for pigs.**
*T. A. Woyengo[*1], R. Patterson[2], and C. L. Levesque[1], [1]South Dakota State University, Brookings, [2]Canadian Biosystems, Calgary, AB, Canada*

Physiology and Endocrinology: Reproductive Technologies and Fertility

Chair: Jeffrey S. Stevenson, Kansas State University

9:30 AM - 11:30 PM
151 G

9:30 AM 1127 **Effects of OmniGen-AF on superovulation response and embryo quality in donor beef cows.**
*A. P. Snider[*1,2], M. R. Gellings[1], S. A. Armstrong[2], D. J. McLean[2], and A. R. Menino[1], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]Phibro Animal Health Corporation, Quincy, IL*

9:45 AM 1128 **OmniGen-AF reduces basal plasma cortisol as well as cortisol release to adrencocorticotropic hormone or corticotrophin releasing hormone and vasopressin in lactating dairy cows under thermoneutral or acute heat stress conditions.**
*M. L. McBride[1], N. C. Burdick Sanchez[2], J. A. Carroll[2], P. R. Broadway[3], X. O. Ortiz[1], J. L. Collier[1], D. McLean[4], J. D. Chapman[4], H. G. Kattesh[5], and R. J. Collier[*1], [1]University of Arizona, Tucson, [2]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, [3]Texas Tech University, Wolfforth, [4]Phibro Animal Health Corporation, Quincy, IL, [5]Department of Animal Science, University of Tennessee, Knoxville*

10:00 AM 1129 **Reproductive performance with automated activity monitoring or a timed insemination program for first insemination in dairy cows.**
*J. Denis-Robichaud[*1], R. L. A. Cerri[2], A. Jones-Bitton[1], and S. J. LeBlanc[1], [1]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [2]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

10:15 AM 1130 **Establishing fertility benchmarks for in-line automated milk progesterone monitoring in postpartum dairy cows.**
L. M. Mayo[*] and M. C. Lucy, University of Missouri, Columbia,

10:30 AM 1131 **The effects of aspirin on pregnancy rates and pregnancy specific protein B in lactating dairy cows during the summer.**
*J. A. Spencer[*1], K. G. Carnahan[1], B. Shafii[1], J. Dalton[2], and A. Ahmadzadeh[1], [1]University of Idaho, Moscow, [2]University of Idaho, Caldwell*

10:45 AM 1132 **Temporarily decreasing progesterone after timed artificial insemination decreased expression of ISG15 in blood leukocytes, serum PSPB concentrations, and embryo size in lactating Holstein cows.**
P. D. Carvalho, C. E. Consentini, S. R. Weaver, R. V. Barletta, L. L. Hernandez, and P. M. Fricke[*], Department of Dairy Science, University of Wisconsin-Madison

11:00 AM 1133 **Effects for fertility of processing steps of a new technology platform for producing sexed sperm.**
M. A. Faust[*], J. Betthauser, A. Storch, and S. Crego, ABS Global, Inc., De Forest, WI

11:15 AM 1134 **Fertility and sex of calf results from a new commercial scale technology platform for producing sexed sperm.**
M. A. Faust[*], J. Betthauser, S. Crego, and A. Storch, ABS Global, Inc., De Forest, WI

Production, Management and the Environment: Environment

Chair: Vinicius R. Moreira, Louisianna State University

9:30 AM - 12:30 PM
151 E/F

9:30 AM 1196 **Use of a novel continuous culture fermentor system for *in vitro* determination of enteric methane output from ruminants.**
A. I. Roca-Fernandez, S. L. Dillard, M. D. Rubano, R. J. Tillmann, and K. J. Soder, USDA-ARS, University Park, PA*

9:45 AM 1197 **Effect of introducing legumes containing condensed tannins in an orchardgrass diet on forage nutritive value and enteric methane output in continuous culture.**
A. I. Roca-Fernandez, S. L. Dillard, M. D. Rubano, C. J. Dell, and K. J. Soder, USDA-ARS, University Park, PA*

10:00 AM 1198 **Effect of summer annuals on ruminal fermentation and methane output in continuous culture.**
S. L. Dillard[*1], A. I. Roca-Fernandez[1], A. N. Hafla[1], M. D. Rubano[1], A. F. Brito[2], and K. J. Soder[1], [1]USDA-ARS, University Park, PA, [2]University of New Hampshire, Durham*

10:15 AM 1199 **Analysis and review of publicly available GreenFeed results.**
S. Zimmerman and P. R. Zimmerman, C-lock, Inc., Rapid City, SD*

10:30 AM 1200 **Evaluation of an enteric methane emissions measurement system for cattle.**
E. M. Andreini[*1,2], M. S. Calvo-Lorenzo[1,3], C. J. Richards[1], J. E. White[1], and S. E. Place[1], [1]Oklahoma State University, Stillwater, [2]University of California-Davis [3]Elanco Animal Health, Fayetteville, AR*

10:45 AM 1201 **Impact of corn or soybean in crops and lactating cow diets on estimated greenhouse gas emission from Wisconsin certified organic dairy farms.**
D. Liang, F. Sun, M. A. Wattiaux, V. Cabrera, and E. M. Silva, University of Wisconsin-Madison*

11:00 AM 1202 **Winter feeding systems and farm greenhouse gas emissions.**
A. W. Alemu[*1], R. R. Doce[2], A. C. Dick[2], J. Basarab[3], R. Kröbel[1], K. Haugen-Kozyra[4], and V. Baron[2], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada, [3]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada, [4]Viresco Solutions, Calgary, AB, Canada*

11:15 AM 1203 **Grazing management and farm greenhouse gas emission intensity of beef production systems.**
A. W. Alemu[*1], H. Janzen[1], S. Little[1], X. Hao[1], D. Thompson[1], V. Baron[2], A. D. Iwaasa[3], K. A. Beauchemin[1], and R. Kröbel[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada, [3]Agriculture and Agri-Food Canada, Swift Current, SK, Canada*

11:30 AM 1204 **A life cycle assessment of a beef feedlot finishing ration supply chain in California.**
S. J. Werth, J. W. Oltjen, E. Kebreab, and F. M. Mitloehner, University of California-Davis*

11:45 AM 1205 **Estimating farm-gate ammonia emissions from Canadian beef production in 1981 as compared with 2011.**
G. Legesse[*1], R. Kroebel[2], A. Alemu[2], K. H. Ominski[1], E. J. McGeough[1], K. A. Beauchemin[2], and T. A. McAllister[2], [1]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

12:00 PM 1206 **The effect of reduced crude protein, synthetic amino acid supplemented diets on nutrient excretion in wean to finish swine.**
C. E. Vonderohe[*1], K. M. Mills[1], M. D. Asmus[1], E. R. Otto-Tice[1], J. Ni[1], C. V. Maxwell[2], B. T. Richert[1], and J. S. Radcliffe[1], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville*

12:15 PM 1207 **Oxalic acid production by *Aspergillus niger* when using whey permeate lactose as a carbon source.**
K. M. Hilt[*1], J. H. Harrison[2], and K. Bowers[3], [1]Washington State University, Pullman, [2]Washington State University, Puyallup, [3]Multiform Harvest Inc., Seattle, WA*

Ruminant Nutrition: Feed Additives I

Chair: Agustin G. Rius, The University of Tennessee

Sponsor: Ajinomoto
9:30 AM - 12:30 PM
155 E

9:30 AM 1361 **Effect of rumen-protected *Capsicum oleoresin* on productivity and responses to a glucose tolerance test in lactating dairy cows.**
*J. Oh[*1], M. Harper[1], F. Giallongo[1], E. H. Wall[2], D. M. Bravo[2], and A. N. Hristov[1], [1]The Pennsylvania State University, University Park, [2]Pancosma, Geneva, Switzerland*

9:45 AM 1362 **Supplementation of β-mannanase (CTCZYME) to lactating dairy cattle diets improves feed conversion efficiency and somatic cell count.**
*E. Kebreab[*1], T. Tewoldebrhan[1], R. Appuhamy[1], M. Niu[1], S. Seo[2], S. Jeong[2], and J. J. Lee[3], [1]University of California-Davis, [2]Chungnam National University, Daejeon, The Republic of Korea, [3]CTC Bio Inc, Seoul, The Republic of Korea*

10:00 AM 1363 **Effects of essential oils and exogenous enzyme in feedlot finishing cattle diets high in flint corn ground at different particle sizes.**
*M. A. P. Meschiatti[1], J. M. M. D. Moraes[1], T. S. Acedo[*2], L. F. M. Tamassia[2], C. S. Cortinhas[2], V. N. D. Gouvea[2], J. R. Dórea[3], and F. A. P. Santos[4], [1]USP, Sao Paulo, Brazil, [2]DSM Nutritional Products SA, Sao Paulo, Brazil, [3]University of Wisconsin-Madson, [4]University of São Paulo, Piracicaba, Brazil*

10:15 AM 1364 **The potential of a buffer (calcified marine algae) or plant extract (*Capsicum*) in combination with or to replace an ionophore (monensin) in lamb feedlot diets.**
*R. F. Gouws[*1], F. M. Hagg[2], L. J. Erasmus[1], R. H. van der Veen[2], and D. E. Holm[3], [1]Department of Animal and Wildlife Science, University of Pretoria, Pretoria, South Africa, [2]Allied Nutrition, Pretoria, South Africa, [3]Department of Production Animal Studies, Faculty of Veterinary Science, University of Pretoria, Pretoria, South Africa*

10:30 AM 1365 **Health, milk yield and milk quality records evaluated in 787 dairy herds before and during OmniGen-AF supplementation to dry and lactating cows.**
*J. D. Chapman[1], S. S. Bascom[1], L. O. Ely[2], G. A. Holub[1], J. P. Jarrett[*1], J. S. Lanier[1], D. Kirk[1], D. E. Nuzback[1], A. D. Rowson[1], and T. J. Wistuba[1], [1]Phibro Animal Health Corporation, Quincy, IL, [2]University of Georgia, Athens*

10:45 AM 1366 **Comparison of the effects of laidlomycin propionate plus chlortetracycline vs. monensin plus tylosin and multiple beta-agonist feeding strategies on feedlot performance and carcass characteristics.**
*A. J. Thompson[*1], Z. K. F. Smith[1], M. Corbin[2], L. B. Harper[2], and B. J. Johnson[1], [1]Texas Tech University, Lubbock, [2]Zoetis, Florham Park, NJ*

11:00 AM 1367 **Effect of different inclusion rates of Fermenten on performance, carcass characteristics, and total tract digestibility of growing Angus crossbred steers.**
*M. E. Garcia-Ascolani[*1], T. M. Schulmeister[1], M. Ruiz-Moreno[1], D. D. Henry[1], F. M. Ciriaco[1], G. M. Silva[2], P. L. P. Fontes[1], G. C. Lamb[1], and N. DiLorenzo[1], [1]University of Florida, North Florida Research and Education Center, Marianna, [2]UF/IFAS, Range Cattle Research and Education Center, Ona, FL*

11:15 AM 1368 **A meta-analysis of lasalocid effects on rumen measures, beef and dairy performance, and carcass traits in cattle.**
*H. M. Golder[*1], T. Cowper[2], and I. J. Lean[1], [1]Scibus, Camden, Australia, [2]Zoetis Australia, Sydney, Australia*

11:30 AM 1369 **Close-up diet DCAD, urine pH, and total plasma calcium at calving on a commercial Jersey herd.**
A. Valldecabres[*], D. Rolle, V. J. Ramírez, S. Rodríguez, and N. Silva-del-Rio, Veterinary Medicine Teaching and Research Center, University of California-Davis, Tulare

11:45 AM 1370 **Effects of bismuth subsalicylate and calcium-ammonium nitrate on *in vitro* fermentation of bahiagrass hay with supplemental molasses.**
*D. D. Henry[*1], F. M. Ciriaco[1], R. C. Araujo[2], M. E. Garcia-Ascolani[1], P. L. P. Fontes[1], N. Oosthuizen[1], C. D. Sanford[1], T. M. Schulmeister[1], M. Ruiz-Moreno[1], G. C. Lamb[1], and N. DiLorenzo[1], [1]University of Florida, North Florida Research and Education Center, Marianna, [2]GRASP Ind. & Com. LTDA, Curitiba, Brazil*

12:00 PM 1371 **The effect of a monensin controlled release capsule at prepartum on betahydroxy butyrate, milk yield, fat, protein, postpartum diseases, rectal temperature, and body condition in Holstein cows.**
*P. Melendez[*1], A. Arevalo[2], P. J. Pinedo[3], and M. Duchens[2], [1]University of Missouri, Columbia, [2]University of Chile, Santiago, [3]Colorado State University, Fort Collins*

12:15 PM 1372 **Effects of essential oils and exogenous enzyme in low starch diets for finishing feedlot cattle.**
*T. S. Acedo[1], L. F. M. Tamassia[1], C. S. Cortinhas[1], V. N. D. Gouvea[*1], V. R. M. Couto[2], and J. J. D. R. Fernandes[3], [1]DSM Nutritional Products SA, Sao Paulo, Brazil, [2]Universidade Federal de Goiás, Goiânia, Brazil, [3]UFG, Goiania, Brazil*

Ruminant Nutrition: Metabolism

Chair: Jan C. Plaizier, University of Manitoba

9:30 AM - 12:30 PM
155 F

9:30 AM 1507 **The effects of heat stress on protein metabolism in lactating Holstein cows.**
*S. Gao[1], J. Guo[1], S. Quan[2], X. Nan[1], L. H. Baumgard[3], and D. Bu[*1,4,5], [1]State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China, [2]The Animal Physiology and Biochemistry Laboratory of the Ministry of Agriculture in Nanjing Agriculture University, Nanjing, China, [3]Iowa State University, Ames, [4]Hunan Co-Innovation Center of Animal Production Safety, CICAPS, Changsha, China, [5]CAAS-ICRAF Joint Laboratory of Agroforestry and Sustainable Animal Husbandry, World Agroforestry Centre, East and Central Asia, Beijing, China*

9:45 AM 1508 **The effect of fructose infusion on dry matter intake in dairy cattle.**
R. Yair[*] and M. S. Allen, Michigan State University, East Lansing

10:00 AM 1509 **Effects of maternal nutrient restriction and melatonin supplementation on vascularity in ovine maternal and fetal jejunum.**
G. Jia[*], North Dakota State University, Fargo

10:15 AM 1510 **Production level of dairy cows affects the extent of diet-induced milk fat depression.**
Y. Sun[*], M. S. Allen, and A. L. Lock, Michigan State University, East Lansing

10:30 AM 1511 **Effect of production level and parity on responses of milk fat to supplementation with 2-hydroxy-4-(methylthio) butanoate (HMTBa).**
*M. Baldin[*1], H. A. Tucker[2], and K. J. Harvatine[1], [1]The Pennsylvania State University, University Park, [2]Novus International Inc., St. Charles, MO*

10:45 AM 1512 **The timing of feed availability entrains the circadian rhythm of milk synthesis in dairy cattle.**
I. J. Salfer[*], J. Y. Ying, and K. J. Harvatine, The Pennsylvania State University, State College

11:00 AM 1513 **Characterization of peripartum liver and skeletal muscle ceramide concentrations in lean and overweight Holstein dairy cows.**
S. Saed Samii[*], J. E. Rico, and J. W. McFadden, West Virginia University, Morgantown

11:15 AM 1514 **Variation in rumen epithelial fatty acid metabolism and cholesterol homeostasis contributes to different responses to the high grain diet adaptation in beef cattle.**
*K. Zhao[*1,2], Y. Chen[1], G. B. Penner[3], M. Oba[1], and L. L. Guan[1], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]College of Medicine, Xi'an Jiaotong University, Xi'an, China, [3]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*

11:30 AM 1515 **Dose response effect of acetate on milk fat synthesis in lactating dairy cows.**
*N. L. Urrutia[*1], M. Baldin[1], J. Y. Ying[2], Y. Fan[1,3], K. J. Harvatine[1], and J. Carvalho[1], [1]The Pennsylvania State University, University Park, [2]The Pennsylvania State University, State College, [3]China Agricultural University, Beijing, China*

11:45 AM 1516 **Lipogenic gene network expression in mammary tissue in response to abomasal infusion of casein, glucose and acetate into feed-restricted lactating cows.**
*M. A. C. Danes[*1,2], F. Batistel[3], G. A. Broderick[4], M. A. Wattiaux[2], and J. J. Loor[3], [1]Federal University of Lavras, Brazil, [2]University of Wisconsin-Madison, [3] University of Illinois at Urbana-Champaign, [4]Broderick Nutrition & Research, LLC, Madison, WI*

12:00 PM 1517 **The effects of feeding increasing concentrations of corn oil on energy metabolism and nutrient balance in finishing beef steers.**
K. E. Hales[*], A. P. Foote, T. M. Brown-Brandl, and H. C. Freetly, USDA-ARS, US Meat Animal Research Center, Clay Center, NE

12:15 PM 1518 **Isolation and comparison of expression of novel glucose transporters, GLUT3 and GLUT14, in bovine utero-placental tissues from days 16 to 50 of gestation.**
M. S. Crouse[*], J. S. Caton, K. J. McLean, P. P. Borowicz, L. P. Reynolds, C. R. Dahlen, and A. K. Ward, Department of Animal Sciences, North Dakota State University, Fargo

Small Ruminant I

Chair: Travis R. Whitney, Texas A&M AgriLife Research

9:30 AM - 12:30 PM
150 E/F

9:30 AM **Introductory Remarks**

9:35 AM 1672 **Protein supplementation and herbage allowance for pregnant ewes grazing low-quality pasture.**
*C. H. E. C. Poli[*1,2], B. M. Paulino[1], A. B. Moraes[1], Z. M. S. Castilhos[3], F. C. A. Silva[3], N. M. Fajardo[1], C. M. Pimentel[4], D. B. David[5], E. B. Azevedo[6], and J. J. Villalba[2], [1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, [2]Utah State University, Logan, [3]Fundação Estadual de Pesquisa Agropecuária, Porto Alegre, Brazil, [4]Universidade de Brasília, Brasília, Brazil, [5]Fundação Estadual de Pesquisa Agropecuária, São Gabriel, Brazil, [6]Universidade Federal do Pampa, Itaqui, Brazil*

9:50 AM 1673 **Food restriction in ewes during different pregnancy periods affects milk production and lamb growth.**
*C. H. E. C. Poli[*1,2], L. A. Sphor[2], A. L. G. Monteiro[3], J. F. Tontini[2], C. Bremm[4], P. C. F. Carvalho[2], and J. J. Villalba[1], [1]Utah State University, Logan, [2]Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, [3]Universidade Federal do Paraná, Curitiba, Brazil, [4]Fundação Estadual de Pesquisa Agropecuaria, Porto Alegre, Brazil*

10:05 AM 1674 **Relationship between infrared thermography measures and feed efficiency in New Zealand sheep.**
*S. P. Miller[*1], S. Dowling[2], J. C. Munro[3], Y. R. Montanholi[3], J. R. Webster[2], and P. L. Johnson[1], [1]AgResearch, Mosgiel, New Zealand, [2]AgResearch, Hamilton, New Zealand, [3]Department of Plant and Animal Sciences, Faculty of Agriculture, Dalhousie University, Truro, NS, Canada*

10:20 AM 1675 **Ground redberry juniper and urea in supplements fed to Rambouillet ewe lambs on growth, blood serum, and fecal N.**
*T. R. Whitney[*1] and J. P. Muir[2], [1]Texas A&M AgriLife Research, San Angelo, [2]Texas A&M AgriLife Research, Stephenville*

10:35 AM 1676 **The relationship between body condition score and body weight, body linear measurements and real-time ultrasound body composition measurements in Alpine does prior to breeding and kidding.**
*F. R. B. Ribeiro[*1], B. Barcelos[2], L. C. Nuti[1], W. B. Foxworth[1], S. K. Lewis[1], Y. Jung[1], S. Horner[1], B. L. Jackson[1], and G. R. Newton[1], [1]Prairie View A&M University, TX, [2]School of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Brazil*

10:50 AM **Break**

11:05 AM 1677 **Effects of selection for high and low juniper-consuming goats on rumen fermentation characteristics.**
*W. C. Stewart[*1], T. R. Whitney[2], E. J. Scolljegerdes[3], D. F. Waldron[4], J. W. Walker[4], and J. M. B. Musser[5], [1]Montana State University, Bozeman, [2]Texas A&M AgriLife Research, San Angelo, [3]New Mexico State University, Las Cruces, [4]Texas A&M AgriLife, San Angelo, [5]Texas A&M, College Station*

11:20 AM 1678 **Ground redberry juniper and urea in DDGS-based supplements do not adversely affect ewe lamb rumen microbial communities.**
*S. L. Ishaq[*1], C. J. Yeoman[1], and T. R. Whitney[2], [1]Montana State University, Bozeman, [2]Texas A&M AgriLife Research, San Angelo*

11:35 AM 1679 **Fatty acid profile, sensory traits, and aromatic compounds of chops from lambs fed ground woody plants as roughage in feedlot finishing diets.**
*K. R. Wall[*1], C. R. Kerth[1], T. R. Whitney[2], S. B. Smith[1], J. L. Glasscock[3], and J. T. Sawyer[4], [1]Texas A&M University, College Station, [2]Texas A&M AgriLife Research, San Angelo, [3]Texas A&M AgriLife, San Angelo, [4]Tarleton State University, Department of Animal Science and Veterinary Technology, Stephenville, TX*

11:50 AM 1680 **Feeding behavior of grazing lambs in a silvopastoral system.**
*F. de Oliveira Scarpino van Cleef[*1,2], T. Silva do Nascimento[1], L. Ariel Tosi[1], D. J. A. Santos[1], and A. C. Ruggieri[1,2], [1]Sao Paulo State University, Jaboticabal, Brazil, [2]CNPq, Brasilia, Brazil*

12:05 PM 1681 **Intake, digestibility and performance of hair sheep lambs fed with ammoniated cotton gin trash treated with exogenous fibrolytic enzymes.**
D. G. Quadros[*], Bahia State University, Barreiras, Brazil

Teaching Undergraduate and Graduate Education Symposium: Animal Science Education in the Current Environment

Chair: Antonio Faciola, University of Nevada

Sponsor: Elanco Animal Health
9:30 AM - 12:30 PM
155 B

9:30 AM		**Welcoming Remarks**
9:35 AM	1762	**Introduction to learning theories and implications for classroom design.** *M. Clement*, Berry College, Mount Berry, GA*
10:05 AM	1763	**Beyond veterinary school: Helping animal science students explore other career opportunities.** *J. A. Sterle*[*1], H. D. Tyler[1], and J. Daniel[2], [1]Iowa State University, Ames, [2]Department of Animal Science, Berry College, Mount Berry, GA*
10:35 AM	1764	**A different approach in pedagogical model: Flipped classrooms.** *M. G. Maquivar*[*1] and A. Ahmadzadeh[2], [1]Department of Animal Sciences, Washington State University, Pullman, [2]University of Idaho, Moscow*
11:05 AM	1765	**Teaching evaluations and other alternatives to assess good teaching and learning.** *K. G. Odde*, Kansas State University, Manhattan*
11:35 AM		**Discussion**

ARPAS Symposium
Understanding Inflammation and Inflammatory Biomarkers to Improve Animal Performance

Chair: Jeffrey M. DeFrain, Progressive Dairy Solutions, Inc.

Sponsor: ARPAS & Cytozyme
9:30 AM - 12:35 PM
Grand Ballroom C

9:30 AM		**Welcoming Remarks**
9:35 AM	185	**Overview of the inflammatory response and its nutritional costs.** *K. C. Klasing*, University of California-Davis*
10:20 AM	186	**Ruminal microbes, microbial products, and systemic inflammation. Sponsored by Cytozyme.** *T. G. Nagaraja*, Kansas State University, Manhattan*
11:05 AM	187	**Usefulness (or not) of inflammatory biomarkers - The good, the bad and ugly.** *C. Chase*, South Dakota State University, Brookings*
11:50 AM	188	**Nutritional and management considerations in beef cattle experiencing stress-induced inflammation.** *R. F. Cooke*, Oregon State University-EOARC Burns*

ADSA-SAD (Student Affiliate Division) Undergraduate Student Oral Competition: Dairy Foods

Chair: Cathleen C. Williams, Lousianna State University

11:00 AM - 12:00 PM
251 E

11:00 AM	37	**Milk is milk, isn't it?** *J. M. Madigan* and S. P. Washburn, North Carolina State University, Raleigh*
11:15 AM	38	**Health benefits of *Lactobacillus helveticus* in dairy foods.** *C. Kenny*, Louisiana State University, Baton Rouge*

11:30 AM	39	**A2 Milk marketing and human health.** *J. Nystrom[*] and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg*
11:45 AM	40	**Ultrasonic separation of milk to select for fat globule size distribution.** *S. P. Itle[*] and D. R. Olver, The Pennsylvania State University, University Park*

ADSA Dairy Foods Graduate Student Oral Competition

Chair: Randy Brandsma, Schreiber Foods

2:00 PM - 4:30 PM
251 F

2:00 PM	700	**Anti-obesity and anti-diabetic properties of lactoferrin are independent of calorie intake.** *R. C. Zapata[*1], A. Pezeshki[2], A. Singh[1], and P. K. Chelikani[1], [1]University of Calgary, AB, Canada, [2]Oklahoma State University, Stillwater*
2:15 PM	701	**Effect of milk protein intake and casein:whey ratio in breakfast meals on postprandial glucose, satiety ratings and subsequent meal intake.** *B. Kung[*1], S. Paré[1], A. J. Tucker[1], G. H. Anderson[2], A. J. Wright[1], and H. D. Goff[1], [1]University of Guelph, ON, Canada, [2]University of Toronto, ON, Canada*
2:30 PM	702	**Evaluation of modified stainless steel surfaces targeted to reduce biofilm formation by common dairy related sporeformers.** *S. Jindal[*1], S. Anand[1], J. K. Amamcharla[2], and L. Metzger[1], [1]South Dakota State University, Brookings, [2]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan*
2:45 PM	703	**Gelation properties of micellar casein concentrate when recombined with cream.** *Y. Lu[*], D. J. McMahon, and A. H. Vollmer, Western Dairy Center, Utah State University, Logan*
3:00 PM		**Break**
3:15 PM	704	**Thermal stability of microfiltered and ultrafiltered retentates.** *I. R. T. Renhe[*1] and M. Corredig[1,2], [1]University of Guelph, ON, Canada, [2]Gay Lea Foods, Guelph, ON, Canada*
3:30 PM	705	**Effect of milk protein composition on *in vivo* gastric digestion of a model infant formula.** *N. Rafiee Tari[*], M. Z. Fan, and M. Corredig, University of Guelph, ON, Canada*
3:45 PM	707	**Efficient removal of spores from skim milk using microfiltration: Spore size and surface property considerations.** *E. R. Griep[*], Y. Cheng, and C. I. Moraru, Cornell University, Ithaca, NY*

ADSA Production Division Graduate Student Oral Competition: PhD

Chair: Gerd Bobe, Oregon State University

2:00 PM - 5:15 PM
251 C

2:00 PM	728	**Effects of supplementing rumen-protected methionine on lactational performance of Holstein dairy cows during early and mid-lactation.** *M. A. Fagundes[*1], S. A. Blaser[2], S. Y. Yang[2], J. S. Eun[1,2], and J. O. Moon[3], [1]School of Veterinary Medicine, Utah State University, Logan, [2]Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, [3]CJ CheilJedang Research Institute of Biotechnology, Suwon, The Republic of Korea*
2:15 PM	729	**Effect of dextrose and purified starch at two levels of rumen degradable protein on lactation performance and enteric methane emission in dairy cows.** *F. Sun[*], M. J. Aguerre, and M. A. Wattiaux, University of Wisconsin-Madison*
2:30 PM	730	**Influence of mixed cropping of corn and soybean with different seeding rates on forage yield, quality and nutrient yield grown under organic condition.** *I. P. Acharya[*1], X. Gu[2], and D. P. Casper[1], [1]Dairy Science Department, South Dakota State University, Brookings, [2]Deparment of Plant Science, South Dakota State University, Brookings*

2:45 PM 731 **Association between circulating progesterone during the luteal phase and estrous activity detected by automated activity monitoring in dairy cattle.**
*J. Denis-Robichaud[*1], S. J. LeBlanc[1], A. Jones-Bitton[1], and R. L. A. Cerri[2], [1]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [2]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

3:00 PM 732 **Effect of prepartum physical activity on behavior and immune competence of dairy cows.**
R. A. Black[*], G. M. Pighetti, and P. D. Krawczel, University of Tennessee, Knoxville

3:15 PM 733 **Associations between preventive hoof trimming, activity and resting behaviors.**
*G. Stoddard[*1] and G. Cramer[2], [1]University of Minnesota Twin-Cities, Saint Paul, [2]Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, St. Paul*

3:30 PM 734 **Enhanced pre-weaning nutrition increases mammary gland development without negatively affecting tissue composition in Holstein heifer calves.**
A. J. Geiger[*], R. M. Akers, and C. L. M. Parsons, Virginia Polytechnic Institute and State University, Blacksburg

3:45 PM 735 **Effects of fuels derived from starch digestion on feeding behavior of cows in the postpartum period.**
L. B. Gualdron-Duarte[*] and M. S. Allen, Michigan State University, East Lansing

4:00 PM 736 **Fetuin-A: A novel biomarker for lipolysis-induced metabolic stress in transition dairy cows.**
*C. Strieder-Barboza[*1], W. Raphael[2], S. E. Schmidt[2], A. L. Lock[2], L. M. Sordillo[2], and G. A. Contreras[2], [1]Department of Large Animal Clinical Sciences, Michigan State University, East Lansing, [2]Michigan State University, East Lansing*

4:15 PM 737 **The effect of trace mineral source and fiber source on total-tract nutrient digestion.**
*M. J. Faulkner[*1], K. R. Perryman[2], and W. P. Weiss[1], [1]Department of Animal Sciences, OARDC, The Ohio State University, Wooster, [2]Micronutrients Inc., Indianapolis, IN*

4:30 PM 738 **Economic value of cooling dry cows across the United States.**
*F. C. Ferreira[*1,2], A. De Vries[2], G. E. Dahl[2], and R. Gennari[2], [1]Embrapa Gado de Leite, Juiz de Fora, Brazil, [2]Department of Animal Sciences, University of Florida, Gainesville*

4:45 PM 739 **Palmitic acid feeding increases hepatic ceramide accumulation and modulates expression of genes responsible for ceramide synthesis in mid-lactation dairy cows.**
J. E. Rico[*], A. T. Mathews, and J. W. McFadden, West Virginia University, Morgantown

5:00 PM 740 **Assessment of performance, oxidative stress status, and plasma AA profiles in peripartal dairy cows supplemented with rumen-protected methionine or choline and with different liver functionality indices.**
*Z. Zhou[*1], M. Vailati Riboni[1], E. Trevisi[2], D. N. Luchini[3], and J. J. Loor[1], [1] University of Illinois at Urbana-Champaign, [2]University Cattolica del Sacro Cuore, Piacenza, Italy, [3]Adisseo S.A.S., Alpharetta, GA*

ADSA-SAD (Student Affiliate Division) Undergraduate Student Oral Competition: Dairy Production

Chair: Cathleen C. Williams, Lousianna State University

2:00 PM - 5:00 PM
251 D

2:00 PM 41 **Gene therapy and the prevention of mastitis in dairy cattle.**
K. Boudreaux[*], Louisiana State University, Baton Rouge

2:15 PM 42 **The importance of mastitis management practices in maintaining milk quality in the United States.**
K. Bochantin[*] and J. M. Bewley, University of Kentucky, Lexington

2:30 PM 43 **The impact of amount and quality of colostrum and subsequent transition milk on calf health and growth.**
J. Hardy[*], K. M. Daniels, and D. R. Winston, Virginia Polytechnic Institute and State University, Blacksburg

2:45 PM 44 **A future for genomics in animal health through the Bovine Respiratory Disease Complex: Coordinated Agricultural Project.**
S. J. Thomsen[*] and J. F. Bohlen, University of Georgia, Athens

3:00 PM 45 **Breeding for strength may create frail cows.**
A. N. Gabel[*] and C. D. Dechow, The Pennsylvania State University, University Park

3:15 PM 46 **The links between uterine infection and infertility.**
N. Walker[*], University of Florida, Gainesville

ADSA-SAD (Student Affiliate Division) Undergraduate Student Oral Competition: Original Research

Chair: Jeffrey M. Bewley, University of Kentucky

2:00 PM - 5:00 PM
251 E

2:00 PM	47	**Comparison of calving data among Jersey, Jersey x Holstein crosses, and Norwegian Red x Holstein x Jersey crosses.** *S. M. Royal*, K. A. E. Mullen, and S. P. Washburn, North Carolina State University, Raleigh*
2:15 PM	48	**Effects of a low moisture block supplement on cow distribution and time budget.** *A. J. DiGennaro*, A. R. Lee, B. A. Wadsworth, J. D. Clark, and J. M. Bewley, University of Kentucky, Lexington*
2:30 PM	49	**The influence of age and weaning on the structure of the gastrointestinal epithelium in Holstein bull calves.** *S. I. Pletts*, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*
2:45 PM	50	**Effects of supplementing a commercial blend of anaerobic probiotic bacteria, MBiotix Calf, on the growth and health of pre-weaned and immediately post-weaned Holstein calves.** *R. E. Hudson*, Y. Liang, T. L. Harris, K. P. Sharon, and M. A. Ballou, Texas Tech University, Lubbock*
3:00 PM	51	**Assessing the correlation between teat end scores and presence of mastitis in lactating Holstein cows.** *K. J. Alward*, J. F. Bohlen, L. O. Ely, and S. C. Nickerson, University of Georgia, Athens*
3:15 PM	52	**Evaluating the effects of heat stress on rumen pH and temperature.** *L. Beckett*, R. R. White, and M. D. Hanigan, Virginia Polytechnic Institute and State University, Blacksburg*

Advances in Bovine Respiratory Disease

Chair: H. L. Neibergs, Washington State University

Sponsor: USDA-NIFA
2:00 PM - 5:00 PM
Grand Ballroom C

2:00 PM	283	**Genetic approaches to selection for resistance to bovine respiratory disease.** *J. E. Womack*, Texas A&M University, College Station*
2:20 PM	284	**Differential gene expression in cattle challenged with single pathogens of the bovine respiratory disease complex.** *L. J. Gershwin*[*1], A. Vaneenennaam[1], J. F. Taylor[2], J. Kim[2], R. L. Toaff-Rosenstein[1], H. L. Neibergs[3], and J. E. Womack[4], [1]University of California-Davis, [2]University of Missouri, Columbia, [3]Department of Animal Sciences, Washington State University, Pullman*
2:40 PM	285	**Genome-wide association study of bovine respiratory disease complex in US feedlot cattle.** *C. M. Seabury*[*1], H. L. Neibergs[2], J. F. Taylor[3], J. E. Womack[4], and T. Bovine Respiratory Disease Complex, [1]College of Veterinary Medicine, Texas A&M University, College Station, [2]Department of Animal Sciences, Washington State University, Pullman [3]University of Missouri, Columbia, [4]Texas A&M University, College Station*
3:00 PM	286	**Identification of causal variants underlying pathogen susceptibility and translation to genetic improvement.** *J. F. Taylor*[*1], H. L. Neibergs[2], C. M. Seabury[3], A. Vaneenennaam[4], J. E. Decker[1], J. L. Hoff[5], P. C. Tizioto[6], T. Bovine Respiratory Disease Complex, J. E. Womack[7], and R. D. Schnabel[1], [1]University of Missouri, Columbia, [2]Department of Animal Sciences, Washington State University, Pullman [3]College of Veterinary Medicine, Texas A&M University, College Station, [4]University of California-Davis, [5]Division of Animal Sciences, University of Missouri, Columbia, [6]Embrapa Southeast Livestock, SÃ£o Carlos, Brazil, [7]Texas A&M University, College Station*
3:20 PM		**Break**
3:35 PM	287	**Gene set enrichment analysis of bovine respiratory disease complex SNP data in feedlot cattle.** *M. Neupane[1], J. F. Taylor[2], C. M. Seabury[3], J. E. Womack[3], T. Bovine Respiratory Disease Complex, and H. L. Neibergs*[*1], [1]Department of Animal Sciences, Washington State University, Pullman, [2]University of Missouri, Columbia, [3]Texas A&M University, College Station*

3:55 PM 288 **Calculation of genomic predicted transmitting abilities for bovine respiratory disease complex in Holsteins.**
*C. P. VanTassell[*1], G. Spangler[2], D. M. Bickhart[1], G. R. Wiggans[1], J. B. Cole[1], J. F. Taylor[3], H. L. Neibergs[4], C. M. Seabury[5], A. L. Van Eenennaam[6], J. E. Womack[7], and T. Bovine Respiratory Disease Complex, [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]USDA-ARS, Beltsville, MD, [3]University of Missouri, Columbia, [4]Department of Animal Sciences, Washington State University, Pullman [5]College of Veterinary Medicine, Texas A&M University, College Station, [6]University of California-Davis [7]Texas A&M University, College Station*

4:15 PM 289 **The value of genetic selection in reducing economic losses from bovine respiratory disease complex in beef cattle feedlots.**
J. S. Neibergs[*] and H. L. Neibergs, Washington State University, Pullman

4:35 PM 290 **How might genomic information get translated into industry outcomes?**
A. L. Van Eenennaam[*], University of California-Davis

Beef Species I

Chair: David L. Fernandez, University of Arkansas - Pine Bluff

2:00 PM - 5:00 PM
150 B/C

2:00 PM 243 **Effects of rumen-protected PUFA supplementation to late-gestating beef cows on performance and physiological responses of the offspring.**
*R. Marques[*1], R. F. Cooke[1], K. M. Shubach[1], A. P. Brandao[1,2], M. C. Rodrigues[1,2], K. Lippolis[1], P. Moriel[3], and D. W. Bohnert[1], [1]Oregon State University-EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil, [3]UF/IFAS, Range Cattle Research and Education Center, Ona, FL*

2:15 PM 244 **Effects of injectable trace mineral supplementation on yearling bull growth, carcass characteristics, testicular development and semen quality attributes.**
C. P. Blank[*], P. J. Gunn, D. Schrunk, S. Ensley, D. Madson, and S. L. Hansen, Iowa State University, Ames

2:30 PM 245 **Effect of alpha tocopherol acetate and ascorbic acid on performance, carcass traits, and incidence and severity of liver abscesses in finishing cattle.**
H. C. Muller[*], C. L. Van Bibber-Krueger, and J. S. Drouillard, Kansas State University, Manhattan

2:45 PM 246 **Feed intake and production efficiency of beef cows.**
H. C. Freetly[*], L. A. Kuehn, R. M. Thallman, and W. M. Snelling, USDA-ARS, US Meat Animal Research Center, Clay Center, NE

3:00 PM 247 **Effects of concurrent selection for residual feed intake and average daily gain on fertility and longevity in black Angus beef females.**
P. J. Gunn[*] and G. R. Dahlke, Iowa State University, Ames

3:15 PM 248 **Efficacy of a novel intranasal Zn solution on health and growth performance of high risk, newly received stocker cattle.**
M. M. Foster[*], E. B. Kegley, J. G. Powell, J. L. Reynolds, J. A. Hornsby, D. L. Galloway, J. J. Ball, and J. Zhao, Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville

3:30 PM **Break**

3:45 PM 249 **Performance and net energy in High and Low RFI beef cattle on restricted intake.**
K. C. Dykier and R. D. Sainz[*], University of California-Davis

4:00 PM 250 **Effects of the EPNIX beef program on feedlot performance in diets containing no Monensin or Tylosin.**
*V. B. Holder[*1], J. S. Jennings[2], and R. S. Swingle[3], [1]Alltech Inc, Nicholasville, KY, [2]Texas A&M AgriLife Research and Extension Center, Amarillo, [3]Cactus Feeders, Amarillo, TX*

4:15 PM 251 **Natural dry matter intake fluctuation impacts performance, feeding behavior and rumen morphometrics of feedlot cattle: 10 years of data assessment.**
*G. D. Cruz[*1], I. C. Pereira[2], D. D. Millen[3], M. D. Arrigoni[2], C. L. Martins[2], and C. F. Costa[2], [1]Cargill Animal Nutrition, Elk River, MN, [2]São Paulo State University (UNESP), Botucatu campus, Botucatu, Brazil, [3] São Paulo State University (UNESP), Dracena campus, Dracena, Brazil*

Breeding and Genetics: Selection for Improved Efficiency

Chair: Filippo Miglior, Centre for Genetic Improvement of Livestock, University of Guelph

2:00 PM - 5:00 PM
Grand Ballroom I

2:00 PM 390 **Economic selection index coefficients for terminal traits in Beefmaster cattle.**
*K. P. Ochsner[*1], R. M. Lewis[1], M. D. MacNeil[2], and M. L. Spangler[1], [1]University of Nebraska-Lincoln, [2]Delta G, Miles City, MT*

2:15 PM 391 **Genomic regions associated with residual feed intake of divergently selected lines of Yorkshire pigs when fed a low energy, high fiber diet.**
*E. D. Mauch[*1], N. V. Serão[2], J. M. Young[3], J. F. Patience[1], N. K. Gabler[1], and J. C. M. Dekkers[1], [1]Department of Animal Science, Iowa State University, Ames, [2]North Carolina State University, Raleigh, [3]North Dakota State University, Fargo*

2:30 PM 392 **Genetic architecture of feed efficiency in mid-lactation Holstein dairy cows.**
*L. C. Hardie[*1], M. J. VandeHaar[2], R. J. Tempelman[2], K. A. Weigel[3], L. E. Armentano[3], G. R. Wiggans[4], R. F. Veerkamp[5], Y. de Haas5[6], M. P. Coffey[6], E. E. Connor[4], M. D. Hanigan[7], C. R. Staples[8], Z. Wang[9], and D. M. Spurlock[1], [1]Iowa State University, Ames, [2]Michigan State University, East Lansing, [3]University of Wisconsin-Madison, [4]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [5]Animal Breeding and Genomics Centre, Wageningen University, Netherlands, [6]SRUC, Edinburgh, United Kingdom, [7]Virginia Polytechnic Institute and State University, Blacksburg, [9]Department of Animal Sciences, University of Florida, Gainesville, [9]University of Alberta, Edmonton, AB, Canada*

2:45 PM 393 **Analysis of genetic residual feed intake in Danish Holstein cows by covariance functions using random regression models.**
C. Pfeiffer[*], B. Li, P. Lovendahl, and J. Lassen, Department of Molecular Biology and Genetics AU Foulum/ Aarhus University, Tjele, Denmark

3:00 PM 394 **Greenhouse gas emission related traits differ in RFI divergent lactating dairy cows.**
*D. Hailemariam[*1], G. Manafiazar[1], J. Basarab[1,2], F. Miglior[3,4], G. Plastow[1], and Z. Wang[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada, [3]Canadian Dairy Network, Guelph, ON, Canada, [4]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada*

3:15 PM 395 **Genetic relationship between methane emissions and conformation traits in Danish Holstein cattle.**
*L. Zetouni[*1], M. Kargo[1,2], and J. Lassen[1], [1]Aarhus University, Tjele, Denmark, [2]SEGES, Aarhus N, Denmark*

3:30 PM **Break**

3:45 PM 396 **Genetic variation of predicted milk fatty acids groups in Canadian Holsteins.**
*S. G. Narayana[*1], F. S. Schenkel[1], A. Fleming[1], A. Koeck[1], F. Malchiodi[1], J. Jamrozik[1,2], M. Sargolzaei[1,3], M. Corredig[4,5], B. Mallard[1,6], A. Ali[7], and F. Miglior[1,2], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Canadian Dairy Network, Guelph, ON, Canada, [3]Semex Alliance, Guelph, ON, Canada, [4]University of Guelph, ON, Canada, [5]Gay Lea Foods, Guelph, ON, Canada, [6]Dept of Pathobiology, OVC, University of Guelph, ON, Canada, [7]Dept of Mathematics and Statistics, University of Guelph, ON, Canada*

4:00 PM 397 **Genetic correlations between predicted milk fatty acids and milk production traits in Canadian Holsteins.**
*A. Fleming[*1], F. S. Schenkel[1], A. Koeck[1], F. Malchiodi[1], A. Ali[2], B. Mallard[3], M. Corredig[4], and F. Miglior[1,5], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Dept of Mathematics and Statistics, University of Guelph, ON, Canada, [3]Dept of Pathobiology, OVC, University of Guelph, ON, Canada, [4]University of Guelph, ON, Canada, [5]Canadian Dairy Network, Guelph, ON, Canada*

4:15 PM 398 **Genetic associations between milk ß-hydroxybutyrate and fatty acids in early first lactation of Canadian Holsteins.**
*A. Koeck[*1], J. Jamrozik[2,3], A. Fleming[1], F. S. Schenkel[1], R. K. Moore[4], D. M. Lefebvre[4], D. F. Kelton[5], and F. Miglior[1,3], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Center for Genetic Improvement of Livestock, University of Guelph, ON, Canada, [3]Canadian Dairy Network, Guelph, ON, Canada, [4]Valacta, Sainte-Anne-de-Bellevue, QC, Canada, [5]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

4:30 PM 399 **Relevance of mid-infrared spectroscopy predictions of milk fine composition and technological properties for selective breeding.**
*V. Bonfatti[*1], D. Vicario[2], L. Degano[2], and P. Carnier[1], [1]Department Comparative Biomedicine and Food Science, University of Padova, Legnaro, Italy, [2]National Simmental Cattle Breeders Association, ANAPRI, Udine, Italy*

4:45 PM 400 **Markers associated with metabolome, and microbiome measures in a grain and sugar challenge in dairy heifers.**
*H. M. Golder[*1], J. Thomson[2], S. Denman[3], C. McSweeney[3], and I. J. Lean[1], [1]Scibus, Camden, Australia, [2]Montana State University, Bozeman, [3]CSIRO Animal, Food and Health Services, Queensland Bioscience Precinct, St. Lucia, Australia*

Cell Biology Symposium: Membrane Trafficking and Signal Transduction

Chair: James L. Klotz, USDA-ARS, Forage - Animal Production Research Unit

Sponsors: ASAS and Pancosma
2:00 PM - 5:00 PM
155 C

2:00 PM 189 **Introduction - What is the relevance of this topic?**
J. L. Klotz[*], USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY

2:15 PM 190 **SNAREs in exocytosis and membrane trafficking.**
S. W. Whiteheart[*], University of Kentucky, Lexington

3:00 PM 191 **Signaling endosomes and epithelial morphogenesis.**
C. D'Souza-Schorey[*], University of Notre Dame, Notre Dame, IN

3:45 PM 192 **Structural and signaling functions of sphingomyelinases during inflammation.**
M. N. Nikolova-Karakashian[*], University of Kentucky, Lexington

4:30 PM 193 **Practical application of the basic aspects of membrane trafficking and receptor-mediated signaling on issues related to animal agriculture.**
S. B. Smith[*], Texas A&M University, College Station

Contemporary and Emerging Issues Symposium: Communicating Animal Sciences Effectively

Chair: Deb Hamernik, University of Nebraska-Lincoln; Kristen Johnson, Washington State University

Sponsor: Elanco Animal Health
2:00 PM - 5:15 PM
Grand Ballroom J

2:00 PM 452 **Public perceptions of animal-sourced genetically modified food products.**
W. K. Hallman[*], C. L. Cuite, and X. K. Morin, Rutgers University, New Brunswick, NJ

2:30 PM 453 **What is the science of science communication for, and why should animal scientists care?**
D. Kahan[*], Yale Law College, New Haven, CT

3:00 PM **Panel Discussion**

3:30 PM 454 **Cracking the code: Making complex information understandable.**
A. Perry[*], The Center for Food Integrity, Gladstone, MO

4:00 PM 455 **Communicating animal science effectively.**
D. R. Williams[*], National Cattlemen's Beef Association, Centennial, CO

4:30 PM **Panel Discussion**

CSAS Graduate Student Oral Competition II

Chair: Eveline Ibeagha-Awemu, Agriculture and Agri-Food Canada; Kees Plaizer, University of Manitoba

2:00 PM - 5:00 PM
251 B

2:00 PM 467 **Nutritional evaluation of barley varieties grown for silage.**
*J. Nair[*1], D. A. Christensen[2], P. Yu[1], A. D. Beattie[3], T. A. McAllister[4], D. Damiran[1], N. Preston[1,4], L. Fuhr[5], and J. J. McKinnon[1], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Saskatchewan, Saskatoon, SK, Canada, [3]Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [4]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [5]Dairy Smart Nutrition, Saskatoon, SK, Canada*

2:15 PM 468 **The repeatability of gonadotropin releasing hormone-induced release of luteinizing hormone and its association with fertility in dairy cattle.**
*M. Gobikrushanth[*1], P. A. Dutra[1], C. A. Felton[2], T. C. Bruinjé[1], M. G. Colazo[2], S. Butler[3], and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada, [3]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland*

2:30 PM 469 **Use of low-cost, non-nutritive adsorbents as intestinal binding agents to sequester the boar taint compound androstenone.**
P. Park[*], I. B. Mandell, C. F. M. de Lange, and J. Squires, Department of Animal Biosciences, University of Guelph, ON, Canada

2:45 PM 470 **The effect of sorting wheat or barley, based on the predicted CP of individual seeds, on physical characteristics and *in vitro* dry matter digestibility.**
*K. Sahtout[*1], D. Beaulieu[1], G. B. Penner[2], and T. A. McAllister[3], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Saskatchewan, Saskatoon, SK, Canada, [3]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

3:00 PM 471 **The effect of binding feed emzymes to spores of bacillius Subtlis and bacillius Coagulans on *in Vitro* NDF digestibility in ruminal batch cultures.**
*C. L. Rosser[*1,2], L. Jin[1], K. A. Beauchemin[1], M. Oba[2], S. M. Cutting[3], and T. W. Alexander[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [3]School of Biological Sciences, Royal Holloway University of London, Egham, United Kingdom*

3:15 PM 472 **Characterization of bovine nasopharyngeal lactic acid bacteria and their *in vitro* antimicrobial activities against the respiratory pathogen *Mannheimia haemolytica*.**
*S. Amat[*1,2], E. Timsit[1], D. B. Holman[2], and T. W. Alexander[2], [1]Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary, Calgary, AB, Canada, [2]Lethbridge Research and Development Centre, Agriculture Agri-Food Canada, Lethbridge, AB, Canada*

3:30 PM 473 **Severity and prevalence of ruminal acidosis during the diet transition for commercial feedlot cattle.**
*B. I. Wiese[*1], S. Hendrick[2], J. J. McKinnon[3], J. Campbell[1], and G. B. Penner[4], [1]Department of Large Animal Clinical Sciences, University of Saskatchewan, Saskatoon, SK, Canada, [2]Coaldale Veterinary Clinic, Coaldale, AB, Canada, [3]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, Saskatoon, SK, Canada, [4]University of Saskatchewan, Saskatoon, SK, Canada*

3:45 PM 474 **Comparison of digestion and particle-associated bacteria after *in situ* incubation of different barley varieties in the rumen of cattle.**
*H. E. Yang[*1,2], C. A. Zotti[2], J. J. McKinnon[1], and T. A. McAllister[2], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

4:00 PM 475 **Carbohydrate spectroscopic features of bio-oil co-products in relation to rumen degradation kinetics in ruminants.**
*X. Li[*1,2], W. Xu[1], J. Yang[1], Y. Zhang[1], and P. Yu[2], [1]College of Animal Science and Technology, Northeast Agricultural University, Harbin, China, [2]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*

4:15 PM 476 **Low protein diets produce divergent effects on energy balance.**
*R. C. Zapata[*1], A. Pezeshki[2], A. Singh[1], N. J. Yee[1], and P. K. Chelikani[1], [1]University of Calgary, AB, Canada, [2]Oklahoma State University, Stillwater*

Dairy Foods Division: Innovations in Dairy Chemistry

Chair: Annie Bienvenue, US Dairy Export Council

2:00 PM - 5:00 PM
151 B/C

2:00 PM	558	**Composition and antioxidant activity of full-fat cheese fortified with (+)-catechin, and recovery of (+)-catechin after simulated *in vitro* digestion.** *A. Rashidinejad[1], J. Birch[2], and D. W. Everett[*3], [1]Riddet Institute, Palmerston North, New Zealand, [2]University of Otago, Dunedin, New Zealand, [3]California Polytechnic State University, San Luis Obispo*
2:15 PM	559	**Prediction of fat globule particle size in homogenized milk using mid-FTIR.** *D. M. Barbano[1], L. di Marzo[*1], and P. Cree[2], [1]Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY, [2]Delta Instruments, Drachten, Netherlands*
2:30 PM	560	**Impact of mid-FTIR homogenizer performance on repeatability and predicted values for major milk components.** *D. M. Barbano and L. di Marzo[*], Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*
2:45 PM	561	**Lipolysis effect on milk fat and protein analysis by infrared spectroscopy using filter and Fourier Transform Infrared (FTIR) methods.** *R. M. Longo[1], L. F. Ferreira[1], F. D. A. C. Feijo[1], R. S. Conrrado[2], M. E. R. Costa[1], M. M. O. P. Cerqueira[1,2], M. O. Leite[1,2], and L. M. Fonseca[*1,2,3], [1]Universidade Federal de Minas Gerais (School of Veterinary Medicine), Belo Horizonte, Brazil, [2]Laboratory of Milk Quality/UFMG/FUNDEP, Belo Horizonte, Brazil, [3]CNPq-Produtividade em Pesquisa, Brasilia, Brazil*
3:00 PM	562	**Complimentary calcium fractionation techniques to increase coproduct solids value and utilization.** *R. Singh[*1], M. Molitor[2], and J. A. Lucey[1,2], [1]University of Wisconsin-Madison, [2]Wisconsin Center for Dairy Research, Madison, WI*
3:15 PM	563	**Impact of controlling the lactose to casein ratio of concentrated milks on the properties of cheddar cheese.** *R. A. Ibáñez[*1], S. Govindasamy Lucey[2], J. J. Jaeggi[2], M. E. Johnson[2], and J. A. Lucey[2], [1]University of Wisconsin-Madison, [2]Wisconsin Center for Dairy Research, Madison, WI*
3:30 PM		**Break**
3:45 PM	564	**Enhanced dairy membrane operations through control of deposit formation on membrane surfaces.** *U. Kulozik[*], Technical University of Munich, Freising-Weihenstephan, Germany*
4:00 PM	565	**Constant permeate flux microfiltration of liquid whey protein concentrate for the separation of whey proteins from fat.** *S. L. Beckman[*1] and L. Metzger[2], [1]Midwest Dairy Foods Research Center, South Dakota State University, Brookings, [2]South Dakota State University, Brookings*
4:15 PM	566	**Critical factors for evaluation of cheese yield performance and fat loss in large cheese factories.** *D. M. Barbano and B. Margolies[*], Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*
4:30 PM	567	**Kinetics studies of chemical reactions in conjugated linoleic acid (CLA) enriched milk treated with high-pressure sterilization.** *S. I. Martinez-Monteagudo[*], South Dakota State University, Brookings*
4:45 PM	568	**Impact of shear, heat and pH on the conformation, digestibility and antigenicity of lactoglobulin.** *M. T. Rahaman, L. Ramchandran, and T. Vasiljevic[*], Victoria University, Melbourne, Australia*

Forages and Pastures Symposium: Greenhouse Gas Emissions in Pasture-Based Dairy and Beef Cattle Systems

Chair: Kathy J. Soder, USDA-ARS

2:00 PM - 5:00 PM
Grand Ballroom H

2:00 PM **Welcoming Remarks**

2:05 PM 686 **Comprehensive national assessment on the sustainability of beef production.**
C. A. Rotz[*1] *and K. R. Stackhouse*[2]*, [1]USDA-ARS Pasture Systems and Watershed Management Research Unit, University Park, PA, [2]National Cattlemen's Beef Association, Centennial, CO*

2:40 PM 687 **Screening for forages and foraging managements that reduce N excretion and CH_4 emissions while maintaining or increasing animal production.**
P. Gregorini[*]*, P. C. Beukes, and A. J. Romera, Dairy NZ Ltd., Hamilton, New Zealand*

3:15 PM 688 **Outcomes and future directions from the National Livestock Methane Program in Australia.**
T. M. Davison[*]*, Meat and Livestock Australia, Brisbane, Australia*

3:50 PM 689 **Greenhouse gas emissions and mitigation in the West African sub-region: Challenges and opportunities.**
C. Antwi[*]*, Kwame Nkrumah University of Science & Technology, Kumasi, Ghana*

4:25 PM 690 **Effects of native and tame grassland species reintroduction on carbon sequestration potential on the Canadian Prairies.**
A. D. Iwaasa[*]*, B. McConkey, and H. Wang, Agriculture and Agri-Food Canada, Swift Current, SK, Canada*

Nonruminant Nutrition Symposium: VFD

Chair: Z. J. Rambo, Zinpro Corporation

Sponsor: Zoetis
2:00 PM - 5:00 PM
Grand Ballroom F

2:00 PM **Microbial colonisation, metabolism and immunity in the young piglet.**
M. Bailey, University of Bristol, School of Clinical Veterinary Science, Langford House, Langford, Bristol, UK

2:45 PM **Intraluminal targeting of intestinal interleukin-10. A new strategy for controlling helminthic and protozoan diseases.**
M. Cook, Animal Sciences Department, University of Wisconsin-Madison

3:30 PM **Early life adversity and life time gut function.**
Yihang Li, North Carolina State University

4:15 PM **Post-weaning feed and water deprivation has long- and short-term implications on nursery pig growth performance and gastrointestinal dynamics and influences subsequent stress response.**
N. Horn, Purdue University

Physiology and Endocrinology: Reproduction, Environment and Genetics

Chair: Clay A. Lents, USDA-ARS, US Meat Animal Research Center

2:00 PM - 4:00 PM
151 G

2:00 PM 1119 **Hepatic gluconeogenic enzymes are differentially altered by methyl-donors choline and methionine in bovine primary hepatocytes.**
*T. L. Chandler[*1], S. J. Bertics[1], B. A. Barton[2], and H. M. White[1], [1]Department of Dairy Science University of Wisconsin-Madison, [2]Balchem Corporation, New Hampton, NY*

2:15 PM 1120 **Expression of the putative gonadotropin-inhibitory hormone receptor, NPFFR1, in the anterior pituitary gland of the gilt is affected by age and sexual maturation.**
C. A. Lents[*], J. F. Thorson, and D. J. Nonneman, USDA-ARS, US Meat Animal Research Center, Clay Center

2:30 PM 1121 **Role of focal adhesion molecules in maternal recognition of pregnancy in the mare.**
K. Klohonatz, L. Nulton, A. Hess, G. J. Bouma, and J. E. Bruemmer[*], Colorado State University, Fort Collins

2:45 PM 1122 **Modification of embryonic resistance to heat shock in cattle by melatonin and genetic variation in *HSPA1L*.**
*M. S. Ortega[*1], N. A. D. S. Rocha Frigoni[2], G. Z. Mingoti[2], Z. Roth[3], and P. J. Hansen[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]University of Sao Paulo State (UNESP), Araçatuba, Brazil, [3]The Hebrew University, Rehovot, Israel*

3:00 PM 1123 **Transgenerational paternal influence on temperament and growth performance of crossbred beef calves.**
*R. C. Vann[*1], B. P. Littlejohn[2], C. R. Long[3], T. H. Welsh, Jr.[2], and R. D. Randel[3], [1]MAFES - Brown Loam Experiment Station, Mississippi State University, Raymond, [2]Texas A&M AgriLife Research and Department of Animal Science, College Station, [3]Texas A&M AgriLife Research, Overton*

3:15 PM 1124 **DNA methylation is a possible basis of phenotypic alterations observed in suckling Brahman calves.**
*B. P. Littlejohn[*1,2], D. M. Price[1,2], D. A. Neuendorff[2], C. R. Long[2], J. A. Carroll[3], R. C. Vann[4], T. H. Welsh, Jr.[1], and R. D. Randel[2], [1]Texas A&M AgriLife Research and Department of Animal Science, College Station, [2]Texas A&M AgriLife Research, Texas A&M University System, Overton, [3]USDA-ARS, Livestock Issues Research Unit, Lubbock, [4]MAFES - Brown Loam Experiment Station, Mississippi State University, Raymond*

3:30 PM 1125 **Photoperiod manipulations during the dry period significantly impact mammary circadian clock in goats.**
*S. J. Mabjeesh[*1], A. Shamay[2], K. Plaut[3], C. Sabastian[1], and T. M. Casey[3], [1]Deptartment of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University, Rehovot, Israel, [2]Institute of Animal Science, The Volcani Center, Israel, [3]Department of Animal Sciences, Purdue University, West Lafayette, IN*

3:45 PM 1126 **Management and genetic components of fertility indicators in dairy cattle.**
*T. M. Goncalves[*1], D. Gonzalez-Pena[2], H. Jeong[1], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[8], R. Chebel[4], K. N. Galvão[9], C. M. Seabury[10], W. W. Thatcher[11], and S. L. Rodriguez Zas[1], [1] University of Illinois at Urbana-Champaign, [2]Zoetis, Kalamazoo, MI, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin - Madison, [7]Cornell University College of Veterinary Medicine, Department of Clinical Sciences, Ithaca, NY, [8]Cornell University, Ithaca, NY, [9]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [10]Texas A&M University, College Station, [11]Department of Animal Sciences, University of Florida, Gainesville*

Production, Management and the Environment: Stress

Chair: Felipe Cardoso, University of Illinois at Urbana-Champaign

2:00 PM - 5:00 PM
151 E/F

2:00 PM 1277 **Milk metabolomics of dairy goats with mammary inflammation under heat stress conditions.**
*S. Love[1], A. Salama[*1,2], N. Mehaba[1], and G. Caja[1], [1]Group of Ruminant Research, Universitat Autonoma de Barcelona, Bellaterra, Spain, [2]Animal Production Research Institute, Dokki, Giza, Egypt*

2:15 PM 1278 **Winter climate variables and their effect on feed intake in *Bos taurus* bulls.**
R. C. Pauling[*], S. E. Speidel, M. G. Thomas, M. M. Culbertson, R. K. Peel, and R. M. Enns, Department of Animal Sciences, Colorado State University, Fort Collins

2:30 PM 1279 **Maternal heat stress reduces body and organ growth in calves: Relationship to immune tissue development.**
*B. M. S. Ahmed[*1], U. Younas[1], T. O. Asar[1], A. P. A. Monteiro[2], J. Hayen[1], S. Tao[2], and G. E. Dahl[3], [1]University of Florida, Gainesville, [2]University of Georgia, Tifton, [3]Department of Animal Sciences, University of Florida, Gainesville*

2:45 PM 1280 **Liver proteomic analysis of cows exposed to heat stress or cooling conditions during the dry period.**
*A. L. Skibiel[*1], M. Zachut[2], Y. Levin[3], B. C. do Amaral[4], and G. E. Dahl[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Institute of Animal Science, Volcani Center, Bet Dagan, Israel, [3]The Nancy and Stephen Grand Israel National Center for Personalized Medicine, Weizmann Institute of Science, Rehovot, Israel, [4]PMI Nutritional Additives, Shoreview, MN*

3:00 PM 1281 **A rumen bolus is a useful tool to monitor core body temperature in lactating dairy cows in a sub-tropical summer.**
*P. A. Gonzalez-Rivas[1], M. Sullivan[2], J. J. Cottrell[1], B. J. Leury[1], J. B. Gaughan[2], and F. R. Dunshea[*1], [1]Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, [2]The University of Queensland, Gatton, Australia*

3:15 PM 1282 **Activity and rumination in an organic vs. a conventional grazing herd.**
*G. M. Pereira[*1,2], B. J. Heins[2], and M. I. Endres[1], [1]University of Minnesota, St.Paul, [2]University of Minnesota West Central Research and Outreach Center, Morris*

3:30 PM 1283 **Understanding behavior patterns of cattle adaptation to heat stress.**
*G. Nogueira[*1], P. Ajmone-Marsan[2], M. Milanesi[2], L. Zavarez[3], T. Sayuri Aguiar[4], D. Sandre[1], M. A. Maioli[4], G. Ferreira[5], G. Bispo[1], S. Stabile[5], S. Stabile[5], R. Caputo[5], C. Toyama[5], J. F. Garcia[6], and J. C. P. Lima[1], [1]UNESP- FMVA, Aracatuba, Brazil, [2]Università Cattolica del Sacro Cuore, Piacenza, Italy, [3]UNESP, Jaboticabal, Brazil, [4]UNESP, Aracatuba, Brazil, [5]UNESP- FMVA, Aracatuba-SP, Brazil, [6]UNESP Univ Estadual Paulista, Araçatuba, Brazil*

3:45 PM 1284 **Plasma insulin and glucose concentrations of feedlot cattle during summer.**
*A. M. Lees[*1], S. T. Anderson[2], V. Sejian[3], and J. B. Gaughan[1], [1]The University of Queensland, Gatton, Australia, [2]School of Biomedical Sciences, The University of Queensland, Gatton, Australia, [3]ICAR-National Institute of Animal Nutrition and Physiology, Bangalore, India*

4:00 PM 1285 **Impact of heat stress on immune status of sheep.**
J. B. Gaughan[*], M. Sullivan, A. J. Cawdell-Smith, H. Owen, and G. Wijffels, The University of Queensland, Gatton, Australia

4:15 PM 1286 **Stocking rates and parasite load in yearling steers grazed season long in the Northern Great Plains.**
*F. A. Brummer[*1], G. L. Stokka[2], B. Patton[1], and C. Miller[2], [1]North Dakota State University, Central Grasslands Research Extension Center, Streeter, [2]North Dakota State University, Fargo*

Ruminant Nutrition: Fats, Fatty Acids and Energy

Chair: Sara E. Place, Oklahoma State University

2:00 PM - 5:00 PM
155 F

2:00 PM 1306 **Feeding steers extruded flaxseed and hay in a total mixed ration or sequentially can have substantial effects on beef fat polyunsaturated fatty acids and biohydrogenation intermediates.**
P. Vahmani[*1], D. C. Rolland[1], T. A. McAllister[2], H. C. Block[1], S. D. Proctor[3], L. L. Guan[3], N. Prieto[1], J. L. Aalhus[1], and M. E. R. Dugan[1], [1]Agriculture and Agri-Food Canada, Lacombe, AB, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]University of Alberta, Edmonton, AB, Canada*

2:15 PM 1307 **Fatty acid composition of intramuscular lipids from Nellore and Brangus bulls fed diets supplemented with cottonseed.**
S. R. Medeiros[*1], G. D. Feijó[1], M. Mele[2], P. E. P. Barros[3], C. T. Marino[1], F. Ciucci[2], M. N. Bonin[4], and N. V. Verbisck[1], [1]Embrapa Beef Cattle, Campo Grande-MS, Brazil, [2]University of Pisa, Pisa, Italy, [3]Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina-MG, Brazil, [4]Federal University of Mato Grosso do Sul, Campo Grande-MS, Brazil*

2:30 PM 1308 **Effects of dietary fat on fertility of dairy cattle: A meta analysis and meta-regression.**
R. M. Rodney[*1,2], P. Celi[3], W. Scott[2], I. J. Lean[1,2], and K. Breinhild[2], [1]University of Sydney, Camden, Australia, [2]Scibus, Camden, Australia, [3]Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia*

2:45 PM 1309 **Altering the ratio of palmitic, stearic and oleic acids in diets with or without whole cottonseed impacts production responses and energy partitioning of dairy cows.**
J. de Souza[*], C. L. Preseault, and A. L. Lock, Michigan State University, East Lansing*

3:00 PM 1310 **Effect of high-oleic acid whole, heated soybeans or extruded soybean meal on production performance, milk fatty acid composition, and enteric methane emission in dairy cows.**
J. C. Lopes[1], M. T. Harper[1], F. Giallongo[1], J. Oh[1], L. G. Smith[1], A. M. Ortega-Perez[1], S. Dixon[1], D. M. Kniffen[1], R. A. Fabin[2], and A. N. Hristov[*1], [1]The Pennsylvania State University, University Park, [2]Fabin Bros. Farms, Indiana, PA*

3:15 PM 1311 **Biohydrogenation kinetics of oleic, linoleic and alpha-linolenic acids *in vivo*.**
M. Baldin[*1], J. G. de Souza[1,2], N. L. Urrutia[1], J. Y. Ying[3], and K. J. Harvatine[1], [1]The Pennsylvania State University, State College, [2]Federal University of Bahia, Salvador, Brazil*

3:30 PM 1312 **Production response, nutrient digestibility, and energy partitioning of post-peak dairy cows when palmitic acid-enriched supplements are included in diets: A meta-analysis and meta-regression.**
J. de Souza[*], R. J. Tempelman, M. S. Allen, and A. L. Lock, Michigan State University, East Lansing*

3:45 PM 1313 **Effect of potassium carbonate and soybean oil supplementation on rumen microbial population linked to lipid metabolism.**
A. R. Alfonso-Avila[*1], J. Chiquette[2], P. Y. Chouinard[1], E. Charbonneau[1], and R. Gervais[1], [1]Département des sciences animales, Université Laval, Quebec, QC, Canada, [2]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada*

4:00 PM 1314 **Abomasal infusions of linoleic and linolenic acid in lactating dairy cows differentially alter the fatty acid composition of plasma lipid fractions and immune cells.**
S. E. Schmidt[*], V. E. Ryman, C. L. Preseault, L. M. Sordillo, and A. L. Lock, Michigan State University, East Lansing*

4:15 PM 1315 **Effect of increasing doses of abomasally infused linseed oil on animal performance and oxidative stability of milk in Holstein dairy cows.**
D. E. Rico[*], R. Gervais, S. M. Peña-Cotrino, C. Cohou, Y. Lebeuf, and P. Y. Chouinard, Département des sciences animales, Université Laval, Québec, QC, Canada*

4:30 PM 1316 **Palmitic acid feeding increases ceramide availability in association with increased milk yield, NEFA availability, and adipose tissue responsiveness to a glucose challenge.**
J. E. Rico, A. T. Mathews, and J. W. McFadden[*], West Virginia University, Morgantown*

4:45 PM 1317 **Effect of supplemental enriched palmitic acid in free fatty acid form vs calcium salts of palm fatty acids on production performance in early postpartum cows.**
J. E. Nocek[*1], C. Wan[2], and T. M. Londergan[2], [1]Overture Enterprises, LLC, Auburn, NY, [2]Centriq, Seattle, WA*

Ruminant Nutrition: Feeds and Feeding

Chair: Antonio Faciola, University of Nevada

Sponsor: H. J. Baker
2:00 PM - 5:00 PM
155 E

2:00 PM 1404 **Effects of replacing soybean meal with canola meal or treated canola meal on ruminal digestion, and omasal nutrient flow in lactating dairy cows.**
*E. Marostegan de Paula[*1], M. A Camargo Danes[2], N. E Lobos[3], F. L. Drago[4], G. I. Zanton[5], G. A. Broderick[6], and A. Faciola[1], [1]University of Nevada, Reno, [2]Federal University of Lavras, Lavras, Brazil, [3]Kemin Industries, Des Moines, IA, [4]University of Sao Paulo, Piracicaba, Brazil, [5]USDA-ARS, US Dairy Forage Research Center, Madison, WI, [6]Broderick Nutrition & Research, LLC, Madison, WI*

2:15 PM 1405 **Growth performance of dairy heifers limit-fed distillers dried grains with ad libitum forage.**
A. K. Manthey[*] and J. L. Anderson, Dairy Science Department, South Dakota State University, Brookings

2:30 PM 1406 **Effects of roughage inclusion and particle size on performance and rumination behavior of finishing beef steers.**
*W. W. Gentry[*1], C. P. Weiss[1], C. M. Meredith[1], C. L. Brauer[1], F. T. McCollum[1], N. A. Cole[2], and J. S. Jennings[1], [1]Texas A&M AgriLife Research and Extension Center, Amarillo, [2]USDA-ARS Conservation and Production Research Laboratory, Bushland, TX*

2:45 PM 1407 **Automation of statistical procedures to screen raw data and construct feed composition databases.**
*H. Tran[*1,2], A. Caprez[1], P. J. Kononoff[1], P. S. Miller[1], and W. P. Weiss[3], [1]University of Nebraska-Lincoln, [2]National Animal Nutrition Program, University of Kentucky, Lexington, [3]Department of Animal Sciences, OARDC, The Ohio State University, Wooster*

3:00 PM 1408 **Effect of pelleting at different temperatures and times on nutrient supply of co-products form canola oil processing.**
*X. Huang[1], V. Guevara[*1], B. Refat[2], and P. Yu[2], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*

3:15 PM **Break**

3:30 PM 1409 **Okara meal can completely replace soybean meal in diets of early to mid-lactation dairy cows.**
*R. A. V. Santana[1], A. F. Brito[*2], D. C. Moura[3], C. P. Ghedini[2], J. G. B. Galvão Jr.[4], F. A. Barbosa[5], A. S. Oliveira[6], A. B. D. Pereira[2], S. F. Reis[2], I. A. Souza[7], and K. A. Juntwait[2], [1]Instituto Federal de Educação, Ciência e Tecnologia do Norte de Minas Gerais – Campus Arinos, Arinos, Brazil, [2]University of New Hampshire, Durham, [3]Universidade Federal de Mato Grosso, Cuiabá, Brazil, [4]Instituto Federal de Educacao, Ciencia e Tecnologia do Rio Grande do Norte, Ipanguaa U, Brazil, [5]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [6]Instituto de Ciências Agrárias e Ambientais, Universidade Federal de Mato Grosso – Campus Sinop, Sinop, Brazil, [7]Universidade Estadual do Sudoeste da Bahia, Itapetinga, Brazil*

3:45 PM 1410 **Effect of flax meal supplementation on oxidative stress and metabolic status of early lactation dairy cows infused with flax oil in the abomasum.**
J. Lapointe[*], C. Roy, D. Beaudry, N. Bergeron, I. Blanchet, H. Petit, and M. F. Palin, Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada

4:00 PM 1411 **The effect of by-product inclusion and concentrate feeding level on milk production and composition, pasture dry matter intake, body weight and body condition score of mid-late lactation spring calving grazing dairy cows.**
*S. A. Condren[*1], S. J. Whelan[2], T. M. Boland[1], G. Rajauria[1], S. Kirwan[1], M. B. Lynch[1], and K. M. Pierce[1], [1]School of Agriculture and Food Science, University College Dublin, Ireland, [2]AHDB Dairy, Agriculture & Horticulture Development Board, Stoneleigh Park, Kenilworth, Warwickshire, United Kingdom*

4:15 PM 1412 **Evaluating the feeding value of field peas for growing and finishing cattle.**
*H. L. Greenwell[*1], K. H. Jenkins[2], and J. C. MacDonald[1], [1]University of Nebraska-Lincoln, [2]University of Nebraska, Scottsbluff*

4:30 PM 1413 **Cotton burrs as alternative roughage to adapt beef steers to steam-flaked corn-based finisher diet.**
*L. A. Ovinge[*1], J. O. Sarturi[1], P. R. B. Campanili[1], B. J. M. Lemos[2], B. C. Bernhard[1], and D. Pettit[1], [1]Texas Tech University, Lubbock, [2]Universidade Federal de Goiás, Goiânia, Brazil*

4:45 PM 1414 **Temporal effects of ruminal propionate infusion on feeding behavior of Holstein cows In the postpartum period.**
G. Maldini[*], M. Allen, K. Kennedy, Michigan State University, East Lansing

Small Ruminant Symposium: Enhancing Small Ruminant Profitability

Chair: Steven P. Hart, American Institute for Goat Research, Langston University

2:00 PM - 5:00 PM
150 E/F

2:00 PM		**Introductory Remarks**
2:10 PM	1726	**Profitability of small ruminant production systems.** *G. W. Williams[*] and D. P. Anderson, Texas A&M University, College Station,*
2:55 PM	1727	**Contribution of hair sheep to small ruminant profitability.** *J. Morgan[*], Round Mountain Consulting Service, Fayetteville, AR*
3:25 PM	1728	**Contribution of newer goat breeds to small ruminant profitability.** *R. Browning, Jr.[*1] and M. L. Leite-Browning[2], [1]Tennessee State University, Nashville, [2]Alabama A&M University, Huntsville*
3:55 PM	1729	**Contribution of forage production systems to small ruminant profitability.** *R. Ehrhardt[*], Michigan State University, East Lansing*

Strategies for Managing Heifers in the Southeast

Chair: Mary E. Sowerby, University of Florida

2:00 PM - 5:00 PM
155 D

2:00 PM	57	**Influences of feeding and housing practices on the behavior and performance of dairy calves.** *E. K. Miller-Cushon[*1] and T. J. DeVries[2], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Department of Animal Biosciences, University of Guelph, ON, Canada*
2:30 PM	58	**Developing replacement heifers that get pregnant and maintain pregnancy.** *K. G. Pohler[*1], M. H. Pereira[2], S. Reese[1], and J. L. M. Vasconcelos[3], [1]The University of Tennessee, Knoxville, [2]UNESP - FMVZ, Botucatu, Brazil, [3]Sao Paulo State University, Botucatu, Brazil*
3:00 PM	59	**Benefits of fly control in dairy heifers.** *S. C. Nickerson[*], University of Georgia, Athens*
3:30 PM	60	**Economic trade-offs between replacement rates and improved genetics.** *A. De Vries[*], Department of Animal Sciences, University of Florida, Gainesville*
4:00 PM		**Panel discussion: Where should Southeastern calf/heifer nutrition research go from here?**

Teaching Undergraduate and Graduate Education

Chair: Amin Ahmadzadeh, University of Idaho

2:00 PM - 5:00 PM
155 B

2:00 PM	1747	**Increase in demand for hands on instruction in animal science curriculum.** *R. Woiwode[*], Colorado State University, Fort Collins*
2:15 PM	1748	**Adding a student-generated summary of main points to a lecture as a learning tool in an advanced nutrition course.** *S. L. Hansen[*], Iowa State University, Ames*
2:30 PM	1749	**Teaching animal welfare via competitive judging contests.** *C. B. Shivley[*1], F. B. Garry[2], and T. Grandin[1], [1]Colorado State University, Fort Collins, [2]Colorado State University, College of Veterinary Medicine and Biomedical Sciences, Fort Collins*

2:45 PM 1750 **Integrated program for reducing bovine respiratory disease domplex (BRDC) in cattle, coordinated agricultural project (CAP): translation of multi-omics research results into teaching programs.**
*M. G. Thomas[*1], R. M. Enns[1], R. Hagevoort[2], J. S. Neibergs[3], A. L. Van Eenennaam[4], H. L. Neibergs[3], and J. E. Womack[5], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]New Mexico State University, Dairy Extension, Clovis, [3]Washington State University, Pullman, [4]University of California-Davis, [5]Texas A&M University, College Station*

3:00 PM 1751 **A novel approach to adviser training for relational skills.**
A. L. Robinson[*] and H. D. Tyler, Iowa State University, Ames

3:15 PM 1752 **The effect of a real-world learning project on students' knowledge retention: A comparative study.**
L. M. White[*], New Mexico State University, Las Cruces

3:30 PM **Break**

3:45 PM 1753 **Utilization of concept mapping as a tool to qualitatively assess knowledge of college seniors in a companion animal management course.**
C. L. Morris[*], Iowa State University, Ames

4:00 PM 1754 **Spanish for animal health and care: Towards a certificate program in field-specific Spanish.**
*S. Zeller[*1], M. Velazquez-Castillo[2], and I. N. Roman-Muniz[3], [1]INTO Colorado State University, Colorado State University, Fort Collins, [2]Department of Foreign Languages and Literatures, Colorado State University, Fort Collins, [3]Department of Animal Sciences, Colorado State University, Fort Collins*

4:15 PM 1755 **Characterization of students' educational background and subsequent use of relevant teaching methods enhances student engagement and success in introductory animal science course.**
*J. Adcock[*1], Q. S. Baptiste[1], and M. Knights[2], [1]Berea College, Berea, KY, [2]West Virginia University, Morgantown*

4:30 PM 1756 **Impact of a global food security assignment on agricultural sciences students' education and career interests.**
K. Matthews[*] and O. Bolden-Tiller, Tuskegee University, AL

POSTER PRESENTATIONS

Sponsor: SoyPlus/Soy Chlor

Poster Session I

7:15 AM - 8:15 AM
Exhibit Hall A/B

ASAS Undergraduate Student Poster Competition

198 1 **Antimicrobial activity of tropical spice extracts against *Escherichia coli* O157:H7.**
*E. Olasoji[*1], I. M. Ogunade[2], D. Kim[2] and A. T. Adesogan[2], [1]Department of Food Science, University of Florida, Gainesville, [2]Department of Animal Sciences, UF/IFAS, Gainesville, FL*

199 2 **Effect of low and high-fat dry distillers grains supplementation on forage intake and digestibility in beef heifers.**
*E. L. Stephenson[*1], A. L. Jones[2], J. S. Luther[1] and A. E. Radunz[1], [1]University of Wisconsin-River Falls, [2]University of Wisconsin-Madison*

200 3 **Nutritive and digestibility parameters of invasive grasses in Northwest Missouri.**
F. C. Huneke[*], M. H. Richardson, A. M. Snyder and J. D. Allen, Northwest Missouri State University, Maryville

201 4 **Poor maternal nutrition during gestation alters mesenchymal stem cell (MSC) metabolism in offspring.**
*N. H. Sereda[*1], S. M. Pillai[1], M. L. Hoffman[1], S. A. Zinn[1], Y. K. Park[2], J. Y. Lee[2] and K. E. Govoni[1], [1]Department of Animal Science, University of Connecticut, Storrs, [2]Department of Nutritional Sciences, University of Connecticut, Storrs*

202 5 **The abundance of myosin heavy chain Ilb mRNA in porcine *Longissimus dorsi* muscle was not affected by dietary lysine level.**
M. B. Lewis[*], S. F. Liao, T. Wang and J. M. Feugang, Mississippi State University, Mississipi State

203 6 **Identification of loci on chromosome 3 associated with susceptibility to bovine paratuberculosis using genotypes imputed to whole genome sequence in Holstein cows.**
*C. F. Pierce[*1], J. N. Kiser[1], J. L. Hoff[2], M. Neupane[1], S. N. White[3], J. F. Taylor[2] and H. L. Neibergs[1], [1]Department of Animal Science, Washington State University, Pullman, [2]University of Missouri, Columbia, [3]USDA-ARS, Animal Disease Research Unit, Pullman, WA*

204 7 **Effect of the total western diet via direct or ancestral exposure on estrous cycling in third generation offspring in mice.**
*K. Contreras[*1], J. Cuthbert[1], S. Phatak[1], D. Larson[2] and A. Benninghoff[1], [1]Utah State University, Logan, [2]USTAR Applied Nutrition Research, Logan, UT*

205 8 **Maternal over-feeding during gestation alters islet size and number in the pancreas of 135 d old fetuses.**
M. C. Wynn[*], M. L. Hoffman, S. M. Pillai, A. K. Jones, K. K. McFadden, S. A. Reed, S. A. Zinn and K. E. Govoni, Department of Animal Science, University of Connecticut, Storrs

206 9 **Comparison of high definition Zenmuse X3 and X5 video cameras onboard unmanned aerial vehicles for future use in precision ranching.**
C. F. Solecki[*] and J. S. Church, Thompson Rivers University, Kamloops, BC, Canada

207 10 **Leucine supplementation increases mouse mammary cell proliferation *in vitro*.**
M. M. McGuckin[*], R. Manjarin and D. G. Peterson, California Polytechnic State University, San Luis Obispo

208 11 **Effects of maternal nutrition during gestation on placental steroid metabolizing enzyme activity in sheep.**
*K. J. McCarty[*1], M. P. T. Coleson[1], S. M. Pillai[2], M. L. Hoffman[2], A. K. Jones[2], K. E. Govoni[2], S. A. Reed[2], S. A. Zinn[2] and C. O. Lemley[1], [1]Mississippi State University, Mississippi State, [2]Department of Animal Science, University of Connecticut, Storrs*

209 12 **Relationship between antioxidants and residual feed intake in grazing heifers.**
J. N. Kidrick[*], E. Felton, K. S. Shaffer and K. M. Barnes, West Virginia University, Morgantown

210 13 **Effects of spices on *in vitro* enteric methane production.**
S. Taylor[*], I. M. Ogunade, D. Kim, K. G. Arriola and A. T. Adesogan, Department of Animal Sciences, UF/IFAS, Gainesville, FL

211 14 **An exploratory observational study to quantify ante- and post-mortem complete blood count variables in fed beef cattle.**
C. L. Rogers[*], T. J. McEvers, J. T. Richeson, S. L. Roberts and T. E. Lawrence, West Texas A&M University, Canyon

212 15 **Body fat distribution is a determinant of pulmonary arterial and central venous pressures in feedlot cattle.**
K. M. Freeman, A. K. Gulick, B. C. Bernhard, R. J. Rathmann, J. O. Sarturi and J. M. Neary, Texas Tech University, Lubbock*

213 16 **The effects of lavender oil on stalled horses subjected to a stressor.**
S. R. Adkins, A. I. Apel, K. D. Vogel and D. N. Smarsh, University of Wisconsin-River Falls*

214 17 **FSH dependent and IGF-1 independent phosphorylation of β-catenin is similar in bovine and human granulosa cells.**
C. R. Smith, B. H. Aloqaily, C. A. Gifford, B. I. Gomez and J. A. Hernandez Gifford, Oklahoma State University, Stillwater*

215 18 **Receptor (chemosensory) transporter protein-4 expression and regulation in bovine granulosa cells.**
C. N. Horsley, B. H. Aloqaily, J. A. Hernandez Gifford and C. A. Gifford, Oklahoma State University, Stillwater*

216 19 **Protein expression and localization of receptor (chemosensory) transporter protein 4 in the endometrium during early pregnancy in sheep and cattle.**
K. S. Wilson[*1], J. A. Hernandez Gifford[1], T. L. Ott[2] and C. A. Gifford[1], [1]Oklahoma State University, Stillwater, [2]Department of Animal Science, The Pennsylvania State University, Univeristy Park*

217 20 **Follicle-stimulating hormone regulation of proenkephalin in granulosa cells.**
A. D. Gullic, B. I. Gomez, B. Couger, C. A. Gifford and J. A. Hernandez Gifford, Oklahoma State University, Stillwater*

218 21 **Optimization of probes and PCR conditions for the correlation between 4 genes and production of high citrate in milk.**
V. A. Smith[*1], R. Manjarin[1] and R. Jimenez-Flores[2], [1]California Polytechnic State University, San Luis Obispo, [2]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*

CSAS Graduate Student Poster Competition

477 22 **Effect of high dietary canola meal inclusion in lactating sows on nutrient digestibility and sow and piglet performance.**
D. E Velayudhan and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada*

478 23 **Transcriptome analysis of the intestinal tissues of cattle suggests an association among host immune responses, lipid metabolism and the super-shedding of *E. coli* O157.**
O. Wang[*1], T. A. McAllister[2], G. Plastow[3], B. Selinger[4], K. Stanford[5] and L. L. Guan[6], [1]University of Alberta, Edmonton, AB, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [4]University of Lethbridge, AB, Canada, [5]Alberta Agriculture and Forestry, Lethbridge, AB, Canada, [6]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

479 24 **Determination of standardized total tract digestibility of phosphorus in flaxseed meal fed to finishing pigs without or with phytase supplementation.**
J. W. Kim and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada*

480 25 **The effects of partial replacement of barley starch with lactose on production and ruminal fermentation characteristics in dairy cows.**
E. De Seram[*1], G. B. Penner[1] and T. Mutsvangwa[2], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Saskatchewan, Saskatoon, SK, Canada*

481 26 **Potential to improve fiber digestion in the rumen of cattle through inoculation with bison rumen contents.**
C. Griffith[*1,2], G. O. Ribeiro Jr.[2], V. Bremer[3], M. Oba[4], T. A. McAllister[2] and K. A. Beauchemin[2], [1]University of Alberta, Edmonton, AB, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]Elanco Animal Health, Greenfield, IN, [4]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

482 27 **CNCPS fractions of value added pellet products based on combination of new co-products from bio-fuel/bio-oil processing, low grade of peas and lignosulfonate chemical compound at different levels for ruminants.**
V. Guevara, D. A. Christensen, J. J. McKinnon and P. Yu, Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*

483 28 **Comparison of barley silage with varying digestible fibre content to corn silage on rumen fermentation characteristics and microbial protein synthesis using RUSITEC technique.**
B. Refat[*1,2], D. A. Christensen[3], J. J. McKinnon[1], J. Nair[1], A. D. Beattie[4], T. A. McAllister[5], W. Yang[5] and P. Yu[1], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]Animal Production Department, Faculty of Agriculture, Zagazig University, Egypt, [3]University of Saskatchewan, Saskatoon, SK, Canada, [4]Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [5]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

484 29 **Phosphorus utilization on dairy farms in Manitoba.**
V. P. Senaratne, E. J. McGeough, K. H. Ominski and J. C. Plaizier, Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*

485 30 **Effect of variety and level of inclusion of barley grown for silage on performance and carcass characteristics of growing and finishing beef steers.**
J. Nair[*1], D. A. Christensen[2], P. Yu[1], T. A. McAllister[3], D. Damiran[1] and J. J. McKinnon[4], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Saskatchewan, Saskatoon, SK, Canada, [3]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, Lethbridge, AB, Canada, [4]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, Saskatoon, SK, Canada*

486 31 **Development of a genetic marker panel for ketosis in dairy cattle.**
V. Kroezen[*1], F. Miglior[1,2], F. S. Schenkel[1] and J. Squires[1], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Canadian Dairy Network, Guelph, ON, Canada*

487 32 **Taxonomic assessment of the rumen microbiome of bulls under backgrounding and finishing diets.**
E. O'Hara[*1,2], M. Zhou[1], S. M. Waters[2], M. E. Walpole[3], P. Gorka[4], M. Woodbury[5], G. B. Penner[6] and L. L. Guan[1], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Teagasc Grange Animal & Bioscience Department, Dunsany, Co. Meath, Ireland, [3]Department of Animal and Poultry Science, University of Saskatchewa, Saskatoon, SK, Canada, [4]University of Agriculture in Krakow, Poland, [5]Department of Large Animal Clinical Sciences, University of Saskatchewan, Saskatoon, SK, Canada, [6]University of Saskatchewan, Saskatoon, SK, Canada*

488 33 **The transition cow: May the odds be ever in her favour.**
Y. Schuermann[*1], A. St-Yves[1], N. Dicks[1], R. C. Bohrer[1], R. Mondadori[2], G. Welsford[1], V. Boyer[1], M. Taibi[1], V. Higginson[1], S. Hartley[1], E. Madogwe[1], V. Bordignon[1], B. Baurhoo[1] and R. Duggavathi[1], [1]McGill University, Saint-Anne De Bellevue, QC, Canada, [2]Federal University of Pelotas, Capão do Leão, Brazil*

489 34 **Effect of dietary wheat bran inclusion on nutrient digestibility in weaned pigs.**
B. Koo, M. M. Hossain and C. M. Nyachoti, University of Manitoba, Winnipeg, MB, Canada*

490 35 **Effect of steam flaking and seed type on carbohydrate molecular structure features associated with nutrient availability of legume seed in ruminants.**
X. Li[*1,2], V. Racz[1], B. Laarveld[1], Y. Zhang[2] and P. Yu[1], [1]Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada, [2]College of Animal Science and Technology, Northeast Agricultural University, Harbin, China*

491 36 **Dynamics of progesterone concentrations and insemination outcomes in dairy cows.**
T. C. Bruinjé[*1], M. Gobikrushanth[1], R. C. Guimarães[1] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada*

ADSA Dairy Foods Graduate Student Poster Competition

708 37 **Unit operations before and during spray drying influence the flavor of milk protein concentrate and whole milk powder.**
C. Park and M. Drake, Southeast Dairy Foods Research Center, North Carolina State University, Raleigh*

709 38 **The effect of bleaching agents on the degradation of vitamins and carotenoids in WPC80.**
M. A. Stout[*1], C. Park[2] and M. Drake[2], [1]North Carolina State University, Raleigh, [2]Southeast Dairy Foods Research Center, North Carolina State University, Raleigh*

710 39 **Characterization of flavor and functional properties of liquid and dried WPC 80, WPI, MPC 85 and micellar casein concentrates.**
B. Carter[*1], H. Patel[1], D. M. Barbano[2] and M. Drake[3], [1]North Carolina State University, Raleigh, [2]Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY, [3]Southeast Dairy Foods Research Center, North Carolina State University, Raleigh*

711 40 **Effect of milk protein concentrate (MPC 80) quality on susceptibility to fouling during thermal processing.**
G. Gandhi and J. K. Amamcharla, Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan*

713 42 **Use of fluorescence-based Amaltheys analyser for studying effect of pH and heat on whey protein interactions in reconstituted milk protein concentrate.**
K. Sajith Babu, Z. Liu and J. K. Amamcharla, Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan*

714 43 **Use of ozonated water in removing Bacillus cereus biofilms from the dairy membranes.**
*R. Henderson[*1], G. Gandhi[1], N. Sevart[1], S. Gragg[2], R. Phebus[1] and J. K. Amamcharla[1], [1]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan, [2]Food Sciences Institute, Department of Animal Sciences and Industry, Kansas State University, Olathe*

715 44 **Development of a benchtop method to polymerize lactose to soluble fiber.**
A. F. Kuechel[*] and T. C. Schoenfuss, University of Minnesota, Department of Food Science and Nutrition, St. Paul

716 45 **Effect of micro-encapsulated iron salts on cheddar cheese divalent cation balance and composition.**
A. Arce[*] and Z. Ustunol, Michigan State University, East Lansing

ADSA Production Division Graduate Student Poster Competition: MS

741 46 **Effect of intrammamary infusion of chitosan hydrogels on bovine mammary gland involution after drying-off.**
*S. Lanctot[*1], X. Zhao[1], P. Fustier[2], A. Taherian[2], B. Bisakowski[2] and P. Lacasse[3], [1]Department of Animal Science, McGill University, Montreal, QC, Canada, [2]Food Research and Development Centre, St-Hyacinthe, QC, Canada, [3]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada*

742 47 **Mitigation of variability in feeding patterns between competitively-fed dairy cows through increased feed delivery frequency.**
R. E. Crossley[*], A. Harlander and T. J. DeVries, Department of Animal Biosciences, University of Guelph, ON, Canada

743 48 **Infusion of a serotonin precursor pre-partum induces dynamic glucose and fat metabolism gene expression in the livers of multiparous dairy cows during peripartum.**
*A. P. Prichard[*1], S. R. Weaver[2], E. L. Endres[1], M. S. Akins[3], R. M. Bruckmaier[4] and L. L. Hernandez[2], [1]University of Wisconsin-Madison, [2]Department of Dairy Science, University of Wisconsin-Madison, [3]Univeristy of Wisconsin, Platteville, [4]Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland*

744 49 **Sire performance and reproductive breeding values are associated with feed efficiency and growth in dairy heifers.**
C. E. Owens[*], Virginia Polytechnic Institute and State University, Blacksburg

745 50 **Dry matter intake, milk yield and milk composition of dairy cows fed corn silage from corn treated with various application times of foliar fungicide.**
*C. Kalebich[*1], M. Weatherly[1], G. M. Fellows[2] and P. Cardoso[1], [1]University of Illinois at Urbana-Champaign, [2]BASF Corporation, Research Triangle Park, NC*

746 51 **Identification of loci associated with fertility in US Holstein heifers.**
*E. Keuter[*1], C. M. Seabury[2], M. Neupane[1], J. N. Kiser[1], J. Moraes[3], G. Burns[3], T. E. Spencer[3] and H. L. Neibergs[1], [1]Department of Animal Science, Washington State University, Pullman, [2]Texas A&M University, College Station, [3]Division of Animal Sciences, University of Missouri, Columbia*

747 52 **The effects of increased metabolizable protein and amino acid supplementation in fresh dairy cattle.**
E. G. Carder[*], The Ohio State University-OARDC, Wooster

748 53 **Effects of supplementing lactating dairy cow ration with sodium sesquicarbonate on reticulorumen pH, rumination, and dry matter intake.**
*M. L. Jones[*1], J. D. Clark[1], N. A. Michael[2] and J. M. Bewley[1], [1]University of Kentucky, Lexington, [2]Arm & Hammer Animal Nutrition, Princeton, NJ*

749 54 **Feeding low crude protein diets in lactating dairy cows during summer months: Improvements in energy metabolism.**
J. Kaufman[*], K. Kassube, K. G. Pohler and A. G. Rius, University of Tennessee, Knoxville

ASAS Western Section Undergraduate Student Poster Competition

Sponsor: WSASAS

19 55 **Development of an immunohistochemical technique to determine presence and localization of glucose transporter GLUT3 in bovine utero-placental tissues from days 16 to 50 of gestation.**
J. Osei[*], M. S. Crouse, K. J. McLean, J. A. Flaten, P. P. Borowicz, L. P. Reynolds, J. S. Caton and C. R. Dahlen, Department of Animal Sciences, North Dakota State University, Fargo

20 56 **Do ewes born with a male co-twin have greater longevity with lambing over time?**
*D. N. Grogan[*1], J. A. Brown[1] and J. B. Taylor[2], [1]Wingate University, NC, [2]USDA-ARS, Rangeland Sheep Production Efficiency Research, Dubois, ID*

21 57 **Effect of post-weaning brewers grain supplementation on growth and reproductive performance of angus and red angus heifers.**
S. E. Butterfield[*], J. M. Wisniewski, D. A. Daley, S. P. Doyle and K. L. DeAtley, California State University, Chico

22 58 **Growth performance and feed efficiency of commercial and half-blood lowline-angus steers in backgrounding and finishing phases.**
G. E. Woodmansee, S. P. Doyle, J. M. Wisniewski, D. A. Daley and K. L. DeAtley, California State University, Chico*

23 59 **Utilization of wet brewers grain as a winter feed supplement for beef cows grazing native annual grasslands.**
K. N. Bohn[*1], S. P. Doyle[1], J. Davy[2], D. K. Flavell[3], N. Schweitzer[3] and K. L. DeAtley[1], [1]California State University, Chico, [2]University of California, Cooperative Extension Service, Red Bluff, [3]University of California, Cooperative Extension Service, Browns Valley*

24 60 **Derivation of economic values for feedlot performance traits in commercial and lowline-influenced angus steers.**
L. C. Huffaker, K. L. DeAtley, J. N. Brimlow and S. P. Doyle, California State University, Chico*

Nonruminant Nutrition: Enzymes

920 61 **The effect of increasing *Buttiauxella phytase* dose on performance in piglets: Meta-analysis from 5 trial studies.**
Y. Dersjant-Li, R. M. Bold and W. Li, Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom*

921 62 **Effects of dietary β-mannanase supplementation with soy bean meal in the performances in weanling pigs.**
B. Balasubramanian, H. M. Yun, Y. M. Kim, J. K. Kim and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea*

922 63 **Effect of multi-enzyme component on growth performance, nutrient digestibility, carcass quality and gas emission in broilers.**
D. H. Nguyen, H. S. Kim, S. Kathannan, S. Shanmugam and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea*

923 64 **Efficacy of dietary supplementation of protease and xylanase in plant-based diets on growth performance and health of nursery pigs at 6 to 9 week of age.**
I. Park, H. Chen and S. W. Kim, North Carolina State University, Raleigh*

924 65 **Effects of microbial phytase on the apparent and standardized total tract digestibility of calcium in milk co-products fed to growing pigs.**
Y. She[*1], D. Li[2] and H. H. Stein[1], [1]University of Illinois at Urbana-Champaign, Urbana, [2]CAU, Beijing, China*

925 66 **Effect of different levels of zinc and phytase on growth performance in weanling pigs.**
L. Blavi, D. Solà-Oriol, S. M. Martín-Orúe and J. F. Pérez, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autanoma de Barcelona, Bellaterra, Spain*

926 67 **New bacterial 6-phytase expressed in *Pseudomonas fluorescens* improved growth performance, bone parameters, and P digestibility in growing pigs.**
F. N. Almeida, M. Vázquez-Añón and J. Escobar, Novus International, Inc., St. Charles, MO*

Poster Session II

8:15 AM - 9:15 AM
Exhibit Hall A/B

ADSA Production Division Graduate Student Poster Competition: PhD

750 1 **Elevation of circulating serotonin pre-partum decreases BHBA concentrations and improves energy status post-partum in multiparous dairy cows.**
S. R. Weaver[*1], A. P. Prichard[2], E. L. Endres[2], M. S. Akins[3], R. M. Bruckmaier[4] and L. L. Hernandez[1], [1]Department of Dairy Science, University of Wisconsin-Madison, [2]University of Wisconsin-Madison [3]Univeristy of Wisconsin, Platteville, [4]Veterinary Physiology, Vetsuisse Faculty University of Bern, Switzerland*

751 2 **Temporal effects of ruminal propionate infusion on feeding behavior of Holstein cows in the postpartum period.**
G. Maldini[*1,2], M. S. Allen[1] and K. M. Kennedy[1], [1]Michigan State University, East Lansing, [2]CAPES Foundation, Brasilia, Brazil*

752 3 **Forage yield, nutrient composition and grain yield of corn and soybeans when intercropped at different seeding rates grown under organic conditions.**
I. P. Acharya[*1], X. Gu[2], S. Acharya[1], P. Poudel[1] and D. P. Casper[1], [1]Dairy Science Department, South Dakota State University, Brookings, [2]Deparment of Plant Science, South Dakota State University, Brookings*

753 4 **Refinement of the *DST* locus associated with bovine respiratory disease complex in Holstein calves.**
*M. Neupane[*1], J. L. Hoff[2], J. F. Taylor[2], C. M. Seabury[3], J. E. Womack[3], T. Bovine Respiratory Disease Complex[3] and H. L. Neibergs[1], [1]Department of Animal Sciences, Washington State University, Pullman, [2]University of Missouri, Columbia, [3]Texas A&M University, College Station*

754 5 **Meta-analysis of factors influencing new intramammary infection rate in natural exposure teat dip efficacy trials.**
*B. D. Enger[*1], R. R. White[1], S. C. Nickerson[2] and L. K. Fox[3], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Georgia, Athens, [3]Washington State University, Pullman*

755 6 **Diet starch content and fermentability affects feed intake and milk yield of cows in the postpartum period.**
R. I. Albornoz[*] and M. S. Allen, Michigan State University, East Lansing

756 7 **Meta-analysis of post-ruminal microbial nitrogen flows in dairy cattle.**
*Y. Roman-Garcia[*1], R. R. White[2] and J. L. Firkins[1], [1]The Ohio State University, Columbus, [2]Virginia Polytechnic Institute and State University, Blacksburg*

757 8 **Milk yield genotype affects hepatic expression of innate immune genes when challenged with lipopolysaccharide (LPS).**
*G. T. Cousillas[*1], W. J. Weber[1], B. Walcheck[1], R. Chebel[1], D. E. Kerr[2], T. H. Elsasser[3] and B. A. Crooker[1], [1]University of Minnesota, Saint Paul, [2]University of Vermont, Burlington, [3]USDA-ARS, Beltsville, MD*

758 9 **Effects of feeding different forms of polyunsaturated fatty acids on performance, plasma metabolites and milk fatty acid composition of dairy cows.**
*L. D. P. Sinedino[*1], R. R.C. Mello[2], C. Lopera[1], A. Vieira Neto[1], M. G. Zenobi[1], E. Block[3], C. L. Preseault[4], A. L. Lock[4], C. R. Staples[1], W. W. Thatcher[1] and J. E. P. Santos[1], [1]University of Florida, Gainesville, [2]Federal Rural University of Rio de Janeiro, Seropedica, Brazil, [3]Arm & Hammer Animal Nutrition, Princeton, NJ, [4]Michigan State University, East Lansing*

759 10 **Rumen-protected methyl donors during the transition period: Circulating plasma amino acids in response to supplemental rumen-protected methionine or choline.**
*Z. Zhou[*1], M. Vailati Riboni[1], D. N. Luchini[2] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Adisseo S.A.S., Alpharetta, GA*

Teaching Undergraduate and Graduate Education I

1757 11 **Student perspectives on agricultural study abroad programs.**
M. M. Beverly[*], S. F. Kelley, P. Urso, M. J. Anderson, J. L. Leatherwood and K. J. Stutts, Sam Houston State University, Huntsville, TX

1758 12 **Curriculum development for animal disaster planning.**
K. Franks, S. F. Kelley[*] and M. M. Beverly, Sam Houston State University, Huntsville, TX

1761 13 **Student assessment of curriculum efficacy in a beef systems management course.**
C. E. Andresen[*], E. L. Lundy, D. D. Loy and P. J. Gunn, Department of Animal Science, Iowa State University, Ames

International Animal Agriculture

827 14 **Carcass quality of guinea pigs: Age effects on weights, yields and linear carcass measurements.**
*R. Remache[1], J. Palmay[1], C. Hernández[1], I. Barba[1], V. Inca Guerrero[1], E. Ureña[1], D. Yumisaca[2], A. J. Morales-delaNuez[2] and D. Sánchez Macías[*1], [2]Facultad de Ciencias Pecuarias, Escuela Superior Politécnica de Chimborazo, Riobamba, Ecuador*

828 15 **Effect of age on the regional composition of fattening guinea pig carcasses.**
*R. Remache[1], V. Inca Guerrero[1], I. Barba[1], C. Hernández[1], J. Palmay[1], M. Tenelema[2], J. Espinoza[1], A. J. Morales-delaNuez[2] and D. Sánchez Macías[*1], [1]Agroindustrial Engineering, Universidad Nacional de Chimborazo, Riobamba, Ecuador, [3]Facultad de Ciencias Pecuarias, Escuela Superior Politécnica de Chimborazo, Riobamba, Ecuador*

829 16 **Inulin and flavomicine as growth promoters in rabbit diets: Effects on animal performance, cecum′s crypts depth and serum-bone macrominerals (Ca, P, Mg).**
M. E. Juárez Silva, M. Cuchillo Hilario[*], I. Torres Acosta, E. L. Villarreal Delgado and R. M. Castillo Domínguez, National Institute of Medical Science and Nutrition Salvador Zubiran, Mexico City, Mexico

830 17 **Increased body condition during lactation increases milk production and pre-weaning growth of Bali cattle.**
*D. Dahlanuddin[*1], M. Supriyadi[1], T. S. Panjaitan[2], D. P. Poppi[3] and S. P. Quigley[3], [1]Faculty of Animal Science, University of Mataram, NTB, Indonesia, [2]Assessment Institute for Agricultural Technology, Narmada, NTB, Indonesia, [3]School of Agriculture and Food Sciences, The University of Queensland, Gatton, Qld, Australia*

831 18 **Alpaca and lama fiber quality comparison in Ecuadorian Andes.**
L. Cordova, A. J. Morales-delaNuez, M. Vaca-Cardenas and N. F. Rodriguez Gonzalez, Facultad de Ciencias Pecuarias, Escuela Superior Politecnica de Chimborazo, Riobamba, Ecuador*

832 19 **Fiber alpaca quality in Ecuadorian Andes.**
J. C. Simbaina-Solano, B. Aucancela, A. J. Morales-delaNuez, M. Vaca-Cardenas and N. F. Rodriguez Gonzalez, Facultad de Ciencias Pecuarias, Escuela Superior Politecnica de Chimborazo, Riobamba, Ecuador*

833 20 **Guinea pig carcass quality: Traditional diet vs. high quality diet.**
M. C. Tenelema[1], D. Sánchez-Macías[2], D. D. Yumisaca-Guevara[1], R. Remache[2], V. Inca Guerrero[2], I. Barba[2], C. Hernández[2], J. Palmay[2] and A. J. Morales-delaNuez[*1], [1]Facultad de Ciencias Pecuarias, Escuela Superior Politecnica de Chimborazo, Riobamba, Ecuador, [2]Agroindustrial Engineering, Universidad Nacional de Chimborazo, Riobamba, Ecuador*

834 21 **Do buffaloes have better milk fat profile than cows? Where does the evidence stand in 2016?**
G. Bilal[*] and M. Moaeen-ud-Din, PMAS-Arid Agriculture University, Rawalpindi, Pakistan*

Forages and Pastures I

637 22 **Screening of microorganism and effects of different bacterial additives on fermentation quality of rye silage harvested at dough stage.**
S. S. Lee[*1], Y. H. Joo[1], H. J. Lee[1], J. W. Jang[2], O. K. Han[3], J. H. Kim[2] and S. C. Kim[1,2], [1]Division of Applied Life Science (BK21Plus, Institute of Agriculture & Life Science), Gyeongsang National University, Jinju, The Republic of Korea, [2]Department of Animal Science, Gyeongsang National University, Jinju, The Republic of Korea, [3]National Institute of Crop Science, Rural Development Administration, Suwon, The Republic of Korea*

638 23 **Effects of cow and bag type on the undigested neutral detergent fiber after 240 hours *in situ* incubation.**
H. Yang[*1], Y. Yan[2], D. J. Undersander[3] and D. K. Combs[4], [1]College of Animal Science and Technology, China Agriculture University, Beijing, China, [2]College of Animal Science and Technology, Sichuang Agriculture University, Chengdu, China, [3]Department of Agronomy, University of Wisconsin-Madison, [4]Department of Dairy Science University of Wisconsin-Madison*

639 24 **WS** **Immunodetection of the Cry toxin in leaves of transgenic maize hybrids.**
G. Balieiro Neto[*1], A. W.P. Freitas[1], R. Botelho Ferraz Branco[1], K. Maria Roncato Duarte[1], F. Porto Pela[2] and M. D. Barufi[2], [1]Sao Paulo State Agency Agribusiness Technology, Ribeirao Preto, Brazil, [2]University of São Paulo, Ribeirao Preto, Brazil*

640 25 **The effect of defoliation severity during late autumn-winter on herbage production, regrowth and nitrogen uptake.**
G. Cun[*], G. R. Edwards and R. H. Bryant, Lincoln University, New Zealand*

641 26 **Tall wheatgrass biomass yield and quality after interseeding with hairy vetch.**
M. Menghini[1,2], H. M. Arelovich[*1,2,3], M. F. Martínez[1], R. D. Bravo[1] and M. D. Chamadoira[1], [1]Dto. Agronomia, Universidad Nacional del Sur, Bahia Blanca, Argentina, [2]CIC, Bahia Blanca, Argentina, [3]CERZOS, Bahia Blanca, Argentina*

642 27 **Effect of canopy height on the nutritive value of elephant grass silage.**
E. B. Alves, I. L. De Oliveira, J. R. Gervasio, M. S. Bastos, S. M. Da Silva, J. O. Gusmao, L. M. Lima and T. F. Bernardes[*], Federal University of Lavras, Brazil*

643 28 **Compost inclusion level in soil on chemical composition and *in vitro* dry matter digestibility of native and improved cactus forage varieties.**
J. A. Santos-Haliscak[*1], J. Kawas[1], H. Fimbres-Durazo[1], G. Moreno-Degollado[1], R. E. Vázquez-Alvarado[1], E. Olivares-Sáenz[1] and H. Andrade-Montemayor[2], [1]Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico, [2]Universidad Autónoma de Querétaro, Mexico*

644 29 **Neutral detergent fiber digestibility of diets supplemented with soy hulls, corn stover, or alkali-ethanol treated stover in lactating dairy cows.**
D. M. Donnelly[*1], L. C. de Resende[2] and D. K. Combs[1], [1]Department of Dairy Science, University of Wisconsin-Madison, [2]University of Wisconsin-Madison*

645 30 **Yield and nutritive value of photoperiod-sensitive sorghum and sorghum-sudangrass in central Wisconsin.**
E. Remick[*1], H. Su[1], W. K. Coblentz[2] and M. Akins[1], [1]University of Wisconsin-Madison, [2]US Dairy Forage Research Center, Marshfield*

646 31 **Cutting interval and water application influence *Sericea Lespedeza* yields and condensed tannin content.**
L. C. Nuti[*1], J. P. Muir[2], E. A. Duffus[1], Y. Jung[1], A. A. James[1], N. M. Cherry[3] and G. R. Newton[1], [1]Prairie View A&M University, TX, [2]Tarleton State University, Stephenville, TX, [3]Texas A&M AgriLife Research, Stephenville*

647 32 **A comparison of *in vitro* rumen digestibility and fermentation indices of tannin rich chestnut meal.**
J. H. Park[*1], J. W. Jang[1], J. H. Kim[1], H. J. Lee[2], Y. H. Joo[2], S. S. Lee[2], I. H. Choi[3] and S. C. Kim[1,2], [1]Department of Animal Science, Gyeongsang National University, Jinju, The Republic of Korea, [2]Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, The Republic of Korea, [3]Department of Companion Animal & Animal Resources Science, Joongbu University, Geumsan, The Republic of Korea*

648 33 **Inoculant effects on bermudagrass silage nutritive value and fermentation characteristics.**
E. C. Freitas[1], J. M. D. Sanchez[*2], F. A. Kuhawara[3], U. Cecato[4], J. M. B. Vendramini[2] and A. Aguiar[1], [1]DeLaval Manufacturing, Bannockburn, IL, [2]UF/IFAS Range Cattle Research and Education Center, Ona, FL, [3]Sao Paulo State University, Botucatu, Brazil, [4]University of Florida, Ona*

649 34 **The effect of a microbial inoculant at two application rates on the aerobic stability of high moisture corn.**
E. Benjamim da Silva[*], R. M. Savage, S. A. Polukis, M. L. Smith, A. E. Laubach, K. M. Pacer and L. Kung Jr., University of Delaware, Newark*

650 35 **Meta-analysis of the effect of homolactic and facultative heterolactic bacteria inoculation on silage quality: Dry matter recovery, chemical composition and in-vitro digestibility.**
A. S. Oliveira[*1], Z. G. Weinberg[2], A. A. P. Cervantes[3], K. G. Arriola[3], I. M. Ogunade[3], Y. Jiang[3], D. Kim[3], M. C. M. Gonçalves[4], D. Vyas[3] and A. T. Adesogan[3], [1]Universidade Federal de Mato Grosso-Sinop, Brazil, [2]Department of Food Quality and Safety, Agricultural Research Organization, The Volcani Center, Rishon Le Zion, Israel, [3]Department of Animal Sciences, UF/IFAS, Gainesville, FL [4]Instituto Federal Goiano, Rio Verde, Brazil*

651 36 **Percentages of alfalfa and grass in fresh and ensiled binary mixtures using near infrared reflectance spectroscopy: Developing a robust calibration.**
E. Karayilanlia[*1], J. H. Cherney[2], P. Sirois[3], D. Kubinec[4] and D. J. R. Cherney[2], [1]Suleyman Demirel University, Isparta, Turkey, [2]Cornell University, Ithaca, NY, [3]Dairy One, Ithaca, NY, [4]Dairy One Forage Laboratory, Dairy One Cooperative, Inc., Ithaca, NY*

652 37 **Comparison of dry matter measurements between three hand-held near infrared units with oven drying at 60 degrees Celsius for 48 hours.**
D. M. Donnelly[*1], H. Yang[2] and D. K. Combs[1], [1]Department of Dairy Science, University of Wisconsin-Madison [2]College of Animal Science and Technology, China Agriculture University, Beijing*

653 38 **Grazing intensities and season affect N_2O emissions in a tropical pastureland.**
A. S. Cardoso[1], L. F. Brito[1], E. R. Janusckiewicz[1], E. S. Morgado[2], R. P. Barbero[1], J. F. W. Koscheck[1], R. A. Reis[1] and A. C. Ruggieri[*1], [1]Sao Paulo State University, Jaboticabal, Brazil, [2]Universidade Federal de Uberlandia, Brazil*

654 39 **Impact of foliar spray on yield and chemical composition of alfalfa hay.**
S. Acharya[*] and D. P. Casper, Dairy Science Department, South Dakota State University, Brookings*

655 40 **Evaluation of *in vitro* gas production and energy available in low lignin alfalfa varieties.**
K. P. Ortega[*], G. Getachew, D. H. Putnam and E. J. DePeters, University of California-Davis*

ADSA-SAD (Student Affiliate Division) Undergraduate Student Poster Competition

53 41 **Validation of a commercially available beta-hydroxybutyrate meter for assessing rumen development in dairy calves.**
M. A. Richard[*1], C. C. Williams[2], R. M. Orellana[1], S. J. Blair[1] and A. H. Dolejsiova[2], [1]Louisiana State University, Baton Rouge, [2] Louisiana State University, AgCenter, Baton Rouge*

54 42 **The effect of the liquid nitrogen level on the temperature in a semen storage tank.**
A. Hale[*1], A. Ahmadzadeh[1], B. Shafii[1] and J. Dalton[2], [1]University of Idaho, Moscow, [2]University of Idaho, Caldwell,*

55 43 **Evaluating the effects of a sodium hypochlorite post milking teat disinfectant on teat condition using a split udder trial.**
N. Lind[*], University of Kentucky, Lexington*

56 44 **The effect of ergothioneine-containing mushroom powder (MP) on sensory acceptability and probiotic survivability in yogurt.**
B. Blain, C. Boothroyd[*], D. R. Roberts and E. Furumoto, The Pennsylvania State University, University Park*

Ruminant Nutrition: Ruminal Fermentation I

1617 45 **Effect of dietary energy source and level on rumen bacteria community in lactating dairy cows.**
*D. Bu[*1,2,3], S. Li[4], Z. Yu[5], S. Gao[1], L. Ma[1], X. Zhou[1] and J. Wang[1], [1]State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, [2]CAAS-ICRAF Joint Lab on Agroforestry and Sustainable Animal Husbandry, World Agroforestry Centre, East and Central Asia, Beijing, China, [3]Hunan Co-Innovation Center of Animal Production Safety, CICAPS, Changsha, China, [4]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [5]The Ohio State University, Columbus*

1618 46 **Effect of different microbial inoculants on fermentation characteristics of *Miscanthus* silage, and their rumen fermentation and digestibility.**
*J. Yang[*1], C. Ryu[1], S. J. Shin[1], B. Choi[1], Y. Kim[1], M. Park[1], J. Heo[2], S. Cho[3] and N. J. Choi[1], [1]Chonbuk National University, Jeonju-si, The Republic of Korea, [2]Microbial Institute for Fermentation Industry, Sunchang-gun, The Republic of Korea, [3]CALS Co.,Ltd, Seongnam-si, The Republic of Korea*

1619 47 **The effects of varying undigested NDF and physically effective NDF content of fresh cow rations on dry matter intake, rumination, and milk yield in multiparous Holstein cows.**
S. E. Williams[*], B. M. Leno, C. M. Ryan and T. R. Overton, Cornell University, Department of Animal Science, Ithaca, NY

1620 48 **Bacterial diversity in the feces of lambs fed purple prairie clover (*Dalea purpurea* Vent.) and alfalfa (*Medicago Sativa*).**
*Q. Huang[1,2], D. Holman[1], T. W. Alexander[1], T. Hu[2], L. Jin[1], Z. Xu[1], T. A. McAllister[1], S. Acharya[1] and Y. Wang[*1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]College of Animal Science and Technology, Northwest A&F University, Yangling, China*

1621 49 **Comparisons of microbial populations found in the rumen and in a dual-flow continuous culture fermentation system using high-throughput 16S amplicon sequencing.**
I. J. Salfer[*], H. E. Larson and M. D. Stern, University of Minnesota, St. Paul

1622 50 **Evaluation of *in vitro* and *in situ* starch digestibility assays.**
S. E. Schuling[*], D. Schimek and B. Vander Wal, Hubbard Feeds Inc., Mankato, MN

1623 51 **Effect of rumen acidosis and short-term feed restriction on mRNA expression of genes relating to gut barrier function and immune response in Holstein steers.**
*K. M. Wood[*1,2], R. L. A. Pederzolli[1] and G. B. Penner[1], [1]University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Guelph, ON, Canada*

1624 52 **Use of fecal starch as an indicator of starch digestibility and starter intake in pre-weaned dairy calves.**
*T. S. Dennis[*1], W. Hu[1], F. X. Suarez-Mena[2], T. M. Hill[1], J. D. Quigley[1] and R. L. Schlotterbeck[1], [1]Provimi, Brookville, OH, [2]Provimi North America, Brookville, OH*

1625 53 **Expression and purification of a novel bacterial expansin from *Bacillus subtilis* that synergistically degrades cellulose with fibrolytic enzymes.**
*A. A. P. Cervantes[*1], I. Muhammad[2], C. F. Gonzalez[2], D. Vyas[1] and A. T. Adesogan[1], [1]Department of Animal Sciences, UF/IFAS, Gainesville, FL, [2]University of Florida, Gainesville*

1626 54 **Annual rhythms of milk, fat, and protein production in US dairy cattle.**
I. J. Salfer[*], C. D. Dechow and K. J. Harvatine, The Pennsylvania State University, State College

1627 55 **Molecular physiology of rumen papillae following an acidosis challenge.**
C. E. Kent-Dennis[*], J. A. Pasternak and G. B. Penner, University of Saskatchewan, Saskatoon, SK, Canada

1628 56 **Endocannabinoid and lipid metabolism gene network expression in adipose tissue of peripartal cows with low or high body condition score at calving.**
*A. S. Alharthi[*1], Z. Zhou[1], D. N. Luchini[2] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Adisseo S.A.S., Alpharetta, GA*

1629 57 **Endocannabinoid network and proopiomelanocortin gene expression in peripartal bovine liver in response to rumen-protected methionine supplementation.**
*A. S. Alharthi[*1], Z. Zhou[1], D. N. Luchini[2] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Adisseo S.A.S., Alpharetta, GA*

1630 58 **Substrate utilization by *Megasphaera elsdenii* strain NCIMB 41125.**
*A. M. Mobiglia[*1], F. R. Camilo[1] and J. S. Drouillard[2], [1]CAPES Foundation, Ministry of Education of Brazil, Brasilia, Brazil, [2]Kansas State University, Manhattan*

1631 59 **16S rRNA bacterial sequences suggest dietary intervention can be used to change microbial community structure to reduce methane emission in Holstein dairy cattle.**
W. Tom[*], J. V. Judy, P. J. Kononoff and S. C. Fernando, University of Nebraska-Lincoln

1632 60 **Inulin as prebiotic for *Lactobacillus salivarius* and *Enterococcus faecium* with probiotic potential in ruminants.**
*D. Hernández-Sánchez[*1], J. L. Gómez–Hernández[1], M. M. Crosby–Galván[1], A. M. Hernández-Anguiano[1], J. E. Ramirez-Bribiesca[2], E. Aranda–Ibañez[1], S. S. Gonzalez-Muñoz[3] and R. Pinto-Ruiz[1], [1]Colegio de Postgraduados, Montecillo Texcoco, Mexico, [2]Colegio de Postgraduados, Montecillo, Mexico, [3]Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico*

1633 61 **Moisture content influences ensiling characteristics, *in situ* disappearance, and *in vitro* digestion characteristics of reconstituted corn grain.**
*F. R. Camilo[*1], A. M. Mobiglia[1], C. L. Van Bibber-Krueger[2], H. C. Muller[2], T. J. Ellerman[2], S. Katulski[2] and J. S. Drouillard[2], [1]CAPES Foundation, Ministry of Education of Brazil, Brasilia, [2]Kansas State University, Manhattan*

1634 62 **On the way to optimize the two stage Tilley and Terry technique for a more accurate *in vitro* assessment of rumen modifiers.**
*A. Russouw[*1], E. Raffrenato[1], F. Chaucheyras-Durand[2] and E. Chevaux[2], [1]Department of Animal Sciences, Stellenbosch University, South Africa, [2]Lallemand SAS, Blagnac, France*

1635 63 **Effect of feeding different flaxseed-based products on the rumen microbial community of dairy cows evaluated by high-throughput DNA sequencing.**
*E. Castillo-Lopez[*1], J. Moats[1], N. D. Aluthge[2], H. A. Ramirez Ramirez[3], T. A. McAllister[4], C. L. Anderson[2], D. A. Christensen[1], T. Mutsvangwa[1], H. Lee-Rangel[5], G. B. Penner[1] and S. C. Fernando[2], [1]University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Nebraska-Lincoln, [3]Iowa State University, Ames, [4]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [5]Universidad Autonoma de San Luis Potosi, San Luis Potosi, Mexico*

Poster Session III

1:00 PM - 2:00 PM
Exhibit Hall A/B

Forages and Pasture II

609 1 **Influence of forage diversity on feeding behavior and diet digestibility in lambs.**
*S. Lagrange[*1,2] and J. J. Villalba[2], [1]INTA EEA, Bordenave, Argentina, [2]Utah State University, Logan*

610 2 **Nutritive quality and forage yield of three brassica varieties for use in livestock grazing systems.**
S. L. Dillard[*], A. I. Roca-Fernandez, M. D. Rubano and K. J. Soder, USDA-ARS, University Park, PA

611 3 **Effect of early intensive grazing of Kentucky bluegrass on animal performance.**
*F. A. Brummer[*1], B. Patton[1] and R. Limb[2], [1]North Dakota State University, Central Grasslands Research Extension Center, Streeter, [2]North Dakota State University, Fargo*

612 4 **Frequency of feeding distillers dry grain with solubles as a supplement to beef cows grazing corn residue.**
S. M. Gross[*], B. W. Neville, F. A. Brummer and M. Undi, North Dakota State University Central Grasslands Research Extension Center, Streeter

613 5 **Development of an automated system for measuring supplement intake of grazing animals.**
*R. Reuter[*1], S. Zimmerman[2] and M. Billars[2], [1]Oklahoma Agricultural Experiment Station, Stillwater, [2]C-lock, Inc., Rapid City, SD*

614 6 **Sampling corn silage in bags from the sides.**
*P. Turiello[*1], M. Ruiz de Huidobro[1], H. Garcia[1], L. Forcone[1] and C. Celaye[2], [1]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Argentina, [2]Garay SRL, Recreo, Argentina*

615 7 **Survey of temporal variation in pasture mineral concentrations and total dietary mineral intake in pasture-based dairy herds.**
*F. Curran[*1,2], D. Wall[3], P. Lonergan[2] and S. Butler[1], [1]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland, [3]Teagasc Crops, Environment and Land Use Programme, Johnstown Castle Co.Wexford, Ireland*

616 8 **Observations of forage yield and steer average daily gain when double cropped forage following crop harvest.**
*K. M. Ulmer[*1], R. G. Bondurant[1], J. L. Gramkow[1], G. W. Lesoing[2], M. E. Drewnoski[1] and J. C. MacDonald[1], [1]University of Nebraska-Lincoln, [2]University of Nebraska, Auburn*

617 9 **Banana tree (*Musa sapientum*) forage in sexed Guinea pig (*Cavia Porcellus*) fattening.**
A. R. Sanchez[*], Universidad Tecnica de Quevedo, Ecuador

618 10 **Effect of frame size and season on enteric methane (CH^4) and carbon dioxide (CO^2) emissions in Angus brood cows grazing native tall-grass prairie in central Oklahoma, USA.**
J. P. S. Neel, K. E. Turner, P. H. Gowda and J. L. Steiner, USDA-ARS-PA-GRL, El Reno, OK*

619 11 **Grazing management: Milk production and composition of dairy cows grazing elephant grass.**
C. D. A. Batalha, G. F. D. S. Congio, A. C. A. Krol, S. Crestani, M. B. Chiavegato, S. C. Da Silva and F. A. P. Santos, University of Sao Paulo, Piracicaba, Brazil*

620 12 **Performance and rumimal metabolism are not changed in lactating dairy cows offered spring available annual forage crops during a short-term grazing experiment.**
K. A. Juntwait, A. F. Brito, K. S. O'Connor, R. G. Smith, K. M. Aragona, C. P. Ghedini and A. B. D. Pereira, University of New Hampshire, Durham*

621 13 **Performance and ruminal metabolism in lactating dairy cows offered summer available annual forage crops during a short-term grazing experiment.**
K. A. Juntwait, A. F. Brito, K. S. O'Connor, R. G. Smith, K. M. Aragona, C. P. Ghedini and A. B. D. Pereira, University of New Hampshire, Durham*

622 14 **Fluctuation of soil carbon dioxide emission in agrosilvopastoral system managed with sheep.**
F. O. Alari[1], A. C. Ruggieri, T. Silva do Nascimento, E. B. Malheiros, P. P. Spasiani, L. F. Brito, R. A. Reis and A. S. Cardoso, Sao Paulo State University, Jaboticabal, Brazil*

623 15 **Yield and quality evaluation of ensiled Johnsongrass as a potential forage for beef cattle.**
M. L. Bass[1], D. D. Harmon[2], J. M. Lourenço[3], D. Hancock[2] and R. L. Stewart, Jr.[3], [1]University of Georgia, Athens, [2]Department of Crop and Soil Sciences, University of Georgia, Athens, [3]Department of Animal and Dairy Science, University of Georgia, Athens*

624 16 **Evaluation of warm-season annual forages on forage production and stocking rate.**
D. D. Harmon[1], M. L. Bass[2], J. M. Lourenço[2], C. D. Teutsch[3], J. R. Segers[4], A. M. Stelzleni[2], R. L. Stewart, Jr.[2] and D. Hancock[1], [1]Department of Crop and Soil Sciences, University of Georgia, Athens, [2]Department of Animal and Dairy Science, University of Georgia, Athens, [3]Department of Crop and Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg, [4]Department of Animal and Dairy Science, University of Georgia, Tifton*

625 17 **Microbiota attachment and structural components of *Lolium perenne L.* and *Festuca arundinacea Schreb* during *in vitro* fermentation.**
H. A. Zavaleta-Mancera[1], D. Trujillo-Gutierrez[1], S. S. Gonzalez-Muñoz[2], M. Cobos-Peralta[1], J. E. Ramirez-Bribiesca[3] and J. L. Bórquez-Gastelim[4], [1]Colegio de Postgraduados, Montecillo Texcoco, Mexico, [2]Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico, [3]Colegio de Postgraduados, Montecillo, Mexico, [4]Universidad Autónoma del Estado de México, Toluca, Mexico*

626 18 **Correlation of fermentation characteristics with intake and digestibility of alfalfa silage in gestating ewes.**
V. Niyigena[1], K. P. Coffey[2], W. K. Coblentz[3], A. N. Young[1], D. Philipp[2], H. L. Bartimus[4] and R. T. Rhein[1], [1]Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, [2]University of Arkansas, Division of Agriculture, Fayetteville, [3]US Dairy Forage Research Center, Marshfield, WI, [4]Department of Agriculture and Environmental Sciences, Lincoln University, Jefferson City, MO*

Small Ruminant I

1682 19 **Effects of forage quality and breed on rumination time in goats.**
S. N. LeShure, T. A. Gipson, A. L. Goetsch, R. Puchala and T. Sahlu, American Institute for Goat Research, Langston University, OK*

1683 20 **Genome-wide association analysis of residual feed intake and milk yield in dairy goats.**
C. B. Wasike[1], M. Rolf[2], N. C. D. Silva[1], R. Puchala[1], T. Sahlu[1], A. L. Goetsch[1] and T. A. Gipson[1], [1]American Institute for Goat Research, Langston University, OK, [2]Oklahoma State University, Stillwater*

1684 21 **Effect of Narasin on nutrient intake and digestibility in wethers fed high-forage diets.**
D. M. Polizel[1], M. F. Westphalen[2], A. A. Miszura[1], M. H. Santos[1], R. G. Silva[1], A. V. Bertoloni[1], G. B. Oliveira[1], M. V. C. Ferraz Junior[1], M. V. Biehl[2], I. Susin[2] and A. V. Pires[1,2], [1]FMVZ/University of Sao Paulo, Pirassununga, Brazil, [2]ESALQ/ University of Sao Paulo, Piracicaba, Brazil*

1685 22 **Effects of different levels of zilpaterol hydrochloride on feedlot performance and carcass characteristics of hair-breed ram lambs.**
J. Cayetano de Jesús[1], R. Rojo-Rubio[2], H. Lee-Rangel[3], L. Avendaño-Reyes[4], U. Macias-Cruz[4], A. Olmedo-Juarez[5], J. Vazquez-Armijo[2] and S. Rebollar-Rebollar[2], [1]Universidad Autonoma de San Luis Potosi, Mexico, [2]Universidad Autonoma del Estado del Mexico, Temascaltepec, Mexico, [3]Universidad Autonoma de San Luis Potosi, Mexico, [4]Universidad Autonoma de Baja California, Mexicali, Mexico, [5]Centro Nacional de Investigacion Disciplinaria en Parasitologia Veterinaria, INIFAP, Cuernavaca, Mexico*

1686 23 **Performance of lambs fed high concentrate-diets containing monensin or narasin.**
*D. M. Polizel[*1], M. F. Westphalen[2], R. G. Silva[1], A. A. Miszura[1], M. H. Santos[1], M. V. C. Ferraz Junior[1], M. V. Biehl[2], A. V. Pires[1] and I. Susin[2], [1]FMVZ/University of Sao Paulo, Pirassununga, Brazil, [2]ESALQ/ University of Sao Paulo, Piracicaba, Brazil*

1687 24 **Effects of high concentrations of crude glycerin on blood parameters of energy metabolism in finishing lambs.**
*E. H. C. B. van Cleef[*1,2], M. T. C. Almeida[1,2], H. L. Perez[1,2], V. B. Carvalho[1], J. R. Paschoaloto[1], E. S. Castro Filho[1] and J. M. B. Ezequiel[1], [1]São Paulo State University, Jaboticabal, Brazil, [2]FAPESP, São Paulo, Brazil*

1688 25 **Effect of diets rich in starch or digestible fiber on glucose metabolism of ewes and goats in mid lactation.**
M. F. Lunesu[*1], G. C. Bomboi[2], M. Decandia[3], G. Molle[3], G. Gaspa[1], A. S. Atzori[1], L. S. Knupp[4] and A. Cannas[1], *[1]Dipartimento di Agraria, University of Sassari, Italy, [2]Dipartimento di Medicina Veterinaria, University of Sassari, Italy, [3]Dipartimento per la Ricerca nelle Produzioni Animali, Agris Sardegna, Sassari, Italy, [4]Departamento de Zootecnia, Universidade Federal de Vicosa, Brazil*

1689 26 **Reproductive parameters of Dorper ewes in south Texas.**
*E. C. Taylor[*1], J. A. Reyes[1], M. R. Garcia[1] and R. Stanko[2], [1]Texas A&M University-Kingsville, [2]Texas A&M University-Kingsville, Texas A&M AgriLife Research*

1690 27 **Comparison of linear model and artificial neural network using antler beam diameter and beam length of white-tailed deer (*Odocoileus virginianus*).**
*S. O. Peters[*1], M. Sinecen[2], G. R. Gallagher[3], L. A. Pebworth[3], J. S. Hatfield[3] and K. Kizilkaya[2], [1]Department of Animal Science, Berry College, Mount Berry, GA, [2]Adnan Menderes University, Aydin, Turkey, [3]Berry College, Mount Berry, GA*

1691 28 **Induction of sexual activity in Dorper ewes: Effect of two intramuscular doses of progesterone vs. progesterone vaginal sponges + eCG.**
*J. Z. Ordonez[*1], O. Ángel-García[1], E. Carrillo[2], J. Luna-Orozco[3], C. A. Meza-Herrera[4], R. Rodriguez[1] and F. G. Véliz-Deras[1], [1]Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, [2]Instituto Tecnologico de Torreon, Torreon, Mexico, [3]Centro de Bachillerato Tecnologico Agropecuario N. 1, Torreon, Mexico, [4]Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, Mexico*

1692 29 **Effect of supplementation with antioxidants in goats and their newborns evaluated during the transition period.**
*B. Barcelos[*1], F. R. B. Ribeiro[2], S. K. Lewis[2], W. B. Foxworth[2], L. C. Nuti[2], G. R. Newton[2], V. F. P. Rispoli[3], L. B. Correa[1] and A. Saran Netto[1], [1]School of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Brazil, [2]Prairie View A&M University TX, [3]School of Veterinary Medicine and Animal Science, University of Sao Paulo, Brazil*

1693 30 **Effects of feeding varying levels of deoiled distillers dried grains with solubles on fatty acid composition of subcutaneous adipose tissue in meat goats.**
*K. C. Camareno[*1], A. T. Sukumaran[1], J. Scott[2], N. Gurung[2], T. T. N. Dinh[1] and D. D. Burnett[1], [1]Mississippi State University Department of Animal and Dairy Sciences, Mississippi State, [2]Tuskegee University, AL*

1694 31 **Dietary effects of grass hay and alfalfa hay on the digestive microbiome of the alpaca.**
C. Carroll[*], K. D. Olsen, J. M. Chaston and T. F. Robinson, Brigham Young University, Provo, UT

1695 32 **Sunflower and palm cake as supplemental fatty acid sources to feedlot lambs.**
*J. G. de Souza[*1,2], P. G. Cirqueira[2], J. P. I. S. Monnerat[3] and C. V. D. M. Ribeiro[2], [1]The Pennsylvania State University, University Park, [2]Federal University of Bahia, Salvador, Brazil, [3]Federal University of Pernambuco Rural, Recife, Brazil*

1696 33 **Ground chevon as influenced by different concentrations of rosemary extracts.**
*M. Y. Muñoz[1], J. H. Lee[2], C. D. Santos[1], X. Ma[2], A. Discua[*2] and B. Kouakou[2], [1]Universidad Nacional de Agricultura, Catacamas, Honduras, [2]Fort Valley State University, GA,*

1697 34 **Post-estrus GnRH administration does not improve fertility in Alpine goats in northern Mexico.**
*Z. Santos[*1], C. A. Meza-Herrera[2], J. M. Guillen[1], F. Arellano[1], R. Rodriguez[1] and F. G. Véliz-Deras[1], [1]Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, [2]Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, Mexico*

1698 35 **Quality of chevon chops as influenced by different packaging atmospheres.**
*C. D. Santos[1], J. H. Lee[2], M. Y. Muñoz[1], A. Discua[2], X. Ma[2], D. Kafle[*2] and B. Kouakou[2], [1]Universidad Nacional de Agricultura, Catacamas, Honduras, [2]Fort Valley State University, GA*

1699 36 **Reproductive performance of anovulatory goats stimulated by bucks previously exposed to estrogenized does.**
*J. M. Guillen[*1], C. A. Meza-Herrera[2], Z. Santos[1] and F. G. Véliz-Deras[1], [1]Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, [2]Universidad Autónoma Chapingo, Unidad Regional Universitaria de Zonas Áridas, Bermejillo, Durango, Mexico*

1700 37 **Effect of dried distillers grains on diet digestibility, body weight gain and carcass composition of lambs.**
*J. R. Bárcena-Gama[*1], K. R. Curzaynz–Leyva[1], C. Sánchez del Real[2], J. C. Escobar–España[1], M. I. Rivas–Martínez[1], E. A. Santillán–Gómez[1] and S. S. Gonzalez-Muñoz[3], [1]Colegio de Postgraduados, Montecillo Texcoco, Mexico, [2]Universidad Autónoma Chapingo, Chapingo Texcoco, Mexico, [3]Colegio de Postgraduados, Montecillo Estado de Mexico, Mexico*

Physiology and Endocrinology: Reproductive Technologies, Gametes, and Embryo Development

1135 38 **A meta-analysis of the impacts of maternal weight and fetal sex on uterine blood flow and maternal heart rate in beef cows from mid- to late-gestation.**
*A. R. Tanner[*1], M. L. Bauer[1], V. C. Kennedy[1], B. Mordhorst[1], L. E. Camacho[2], K. C. Swanson[1] and K. A. Vonnahme[1], [1]North Dakota State University, Fargo, [2]University of Arizona, Tucson*

1136 39 **Validation of a chemical pregnancy test in dairy cows that uses whole blood, shortened incubation times, and visual readout.**
*L. M. Mayo[*1], S. G. Moore[1], S. E. Poock[1], W. Silvia[2] and M. C. Lucy[1], [1]University of Missouri, Columbia, [2]University of Kentucky, Lexington*

1137 40 **Effects of parity and mid-gestation nutrient restriction on umbilical blood flow, fetal and placental measurements, and birth weight in sheep.**
M. A. Vasquez[*], K. C. Swanson and K. A. Vonnahme, North Dakota State University, Fargo

1138 41 **Comparing two ultrasound devices to determine antral follicle counts in dairy cows.**
*M. Gobikrushanth[*1] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada*

1139 42 **The repeatability of antral follicle count and anti-Müllerian hormone concentration at two different postpartum stages in dairy cattle.**
*M. Gobikrushanth[*1], P. A. Dutra[1], C. A. Felton[2], A. Ruiz-Sanchez[1], T. C. Bruinjé[1], M. G. Colazo[2], S. Butler[3] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada, [3]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland*

1140 43 **Dairy cows with shorter ano-genital distance may be more fertile than those with longer ano-genital distance.**
*M. Gobikrushanth[*1], T. C. Bruinjé[1], M. G. Colazo[2] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada*

1141 44 **Pregnancy Associated Glycoprotein (PAG) concentrations in early gestation from dairy heifers undergoing embryo transfer.**
*S. Reese[1], M. H. Pereira[2], J. L. M. Vasconcelos[3] and K. G. Pohler[*4], [1]University of Tennessee, Knoxville, [2]UNESP - FMVZ, Botucatu, Brazil, [3]Sao Paulo State University, Botucatu, Brazil, [4]The University of Tennessee, Knoxville*

1142 45 **Protein kinase A directly phosphorylates GSK3β, and regulates beta-catenin via phosphorylation in granulosa cells.**
*B. H. Aloqaily[*1], C. A. Gifford[2], B. I. Gomez[1] and J. A. Hernandez Gifford[1], [1]Oklahoma State University, Stillwater, [2]Department of Animal Science, Oklahoma State University, Stillwater*

1143 46 **Plasma anti-Müllerian hormone in dairy heifers and associations with reproductive performance in two reproductive programs for first artificial insemination.**
*T. V. Silva[1], J. E. P. Santos[2] and E. S. Ribeiro[*3], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]University of Florida, Gainesville, [3]Department of Animal Biosciences, University of Guelph, ON, Canada*

1144 47 **Wingless-type mouse mammary tumor virus integration site (WNT) regulation of ovarian theca cells of cattle.**
L. J. Spicer[*], Oklahoma State University, Stillwater

Ruminant Nutrition: Feed Additives I

1341 48 **Application of *Pediococcus pentosaceus* and chitinase to high moisture alfalfa hay at baling: Effects on nutrient digestion and on growth performance of beef cattle.**
*L. Jin[1], E. Chevaux[2], T. A. McAllister[1] and Y. Wang[*1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Lallemand SAS, Blagnac, France*

1342 49 **The impact of *Saccharomyces cerevisiae* and *Lactobacillus* acidophilus on colon histomorphology and gene expression in rumen and ileum tissues of young dairy calves.**
*B. Fomenky[*1,2], J. Chiquette[1], P. Y. Chouinard[2] and É. M. Ibeagha-Awemu[1], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Département des Sciences Animales, Université Laval, Québec, QC, Canada*

1343 50 **Aflatoxin M1 levels reduction in milk after *Saccharomyces cerevisiae* or mannanoligosaccharides addition to aflatoxin B1 contaminated diet of dairy cows.**
*M. Aronovich[*1], C. Perali[2], C. A. D. R. Rosa[3], A. A. Castagna[1] and E. Rodrigues[1], [1]Pesagro-Rio, Niteroi, Brazil, [2]Castelo Branco University, Rio de Janeiro, Brazil, [3]Veterinary Microbiology/UFRRJ, Rio de Janeiro, Brazil*

1344 51 **Effects of a plant extract-based feed additive on feed intake, milk production and composition, rumen fermentation, digestibility, and nitrogen utilization in lactating dairy cows.**
J. Oh[*], M. Harper, F. Giallongo, J. C. Lopes and A. N. Hristov, The Pennsylvania State University, University Park

1345 52 **Monensin and levels of narasin on rumen metabolism in lambs during adaptation to high-concentrate diets.**
*D. M. Polizel[*1], S. S. Marques[2], M. F. Westphalen[3], M. H. Santos[1], M. V. C. Ferraz Junior[1], M. V. Biehl[3], R. G. Silva[1], I. Susin[3] and A. V. Pires[1,3], [1]FMVZ/University of Sao Paulo, Pirassununga, Brazil, [2]Ponta Grossa State University, Brazil, [3]ESALQ/ University of Sao Paulo, Piracicaba, Brazil*

1346 53 **Effect of narasin on rumen metabolism and dry matter intake in wethers fed high-forage diets.**
*D. M. Polizel[1], M. F. Westphalen[*2], A. A. Miszura[1], M. H. Santos[1], R. G. Silva[1], A. V. Bertoloni[1], G. B. Oliveira[1], M. V. Biehl[2], M. V. C. Ferraz Junior[1], A. V. Pires[2] and I. Susin[2], 1FMVZ/University of Sao Paulo, Pirassununga, Brazil, [2]ESALQ/ University of Sao Paulo, Piracicaba, Brazil*

1347 54 **Monensin and levels of narasin on rumen metabolism in lambs fed high-concentrate diets.**
*D. M. Polizel[*1], S. S. Marques[2], M. F. Westphalen[3], M. H. Santos[1], M. V. C. Ferraz Junior[1], M. V. Biehl[3], R. G. Silva[1], I. Susin[3] and A. V. Pires[3], [1]FMVZ/University of Sao Paulo, Pirassununga, Brazil, [2]Ponta Grossa State University, Brazil, [3]ESALQ/ University of Sao Paulo, Piracicaba, Brazil*

1348 55 **Daily supplementation with an active dry yeast improved feed efficiency in lactating dairy cows.**
*N. D. Walker[*1] and W. V. Straalen[2], [1]AB Vista Feed Ingredients, Marlborough, United Kingdom, [2]Schothorst, Lelystad, Netherlands*

1349 56 **Effect of saponite (EcoMix) on toxin binding capacity, ruminal fermentation, diet digestibility and growth of steers fed high concentrate diets.**
*N. A. Lancaster[*1], D. Silva Antonelo[2], C. R. Muegge[1] and J. P. Schoonmaker[1], [1]Purdue University, West Lafayette, IN, [2]University of Sao Paulo, Pirassununga, Brazil*

1350 57 **Use of *aspergillus oryzae* extract containing α-amylase activity in finishing diets for Nellore cattle.**
*C. F. Nascimento[*1], L. L. Oliveira[2], W. D. C. Amancio[2], N. C. D. Silva[1], F. D. Santos[2], P. H. Gonçalves[1], G. R. Siqueira[3] and F. D. D. Resende[3], [1]UNESP - Univ Estadual Paulista, Jaboticabal, Brazil, [2]UNIFEB, Barretos, Brazil, [3]APTA - Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil*

1351 58 **Inclusion of pelleted calcium hydroxide-treated corn stover in lactating Holstein cow diets: Effects on milk production and milk composition.**
*B. A. Casperson[*1], A. E. Wertz-Lutz[2] and S. S. Donkin[1], [1]Purdue University, West Lafayette, IN, [2]ADM Alliance Nutrition, Quincy, IL*

1352 59 **Influence of adding slow release urea and zeolite in growth performance and carcass traits of feedlot lambs.**
*H. Dávila-Ramos[*1], J. N. Sanchez-Perez[2], J. C. Robles-Estrada[3], F. G. Rios-Rincon[4], J. J. Portillo-Loera[4] and A. Plascencia[5], [1]Universidad Autonoma de Sinaloa, Culiacán, Mexico, [2]Universidad Autonoma de Sinaloa, Sinaola, Mexico, [3]Universidad Autonoma de Sinaloa, Culiacan, Mexico, [4]Universidad Autonoma de Sinaloa, Culiacn, Sinaloa, Mexico, [5]Instituto de Investigaciones en Ciencias Veterinarias. Universidad Autonoma de Baja California, Mexico*

1353 60 **Effect of different doses of a Bacillus-based probiotic on the *in vitro* digestibility of concentrates and forages.**
*C. A. Oliveira[1], D. O. Sousa[1], J. F. Penso[1], P. F. Menegucci[2] and L. F. P. Silva[*1], [1]University of Sao Paulo, Pirassununga, Brazil, [2]Chr. Hansen, Valinhos, Brazil*

1354 61 **Net choline absorption of abomasally infused choline and rumen-protected choline in the lactating dairy cow.**
*M. J. de Veth[*1], V. M. Artegoitia[2], S. R. Campagna[2], H. Lapierre[3], F. M. Harte[4] and C. L. Girard[3], [1]BioNarus LLC, Cary, NC, [2]University of Tennessee, Knoxville, [3]Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, [4]The Pennsylvania State University, University Park*

1355 62 **Effects of Trigestamace on performance of lactating dairy cows.**
*M. M. Masiero[*1], A. L. Kenny[1], R. L. Barnett[1], R. Morrison[2] and M. S. Kerley[1], [1]University of Missouri, Columbia, [2]R&D LifeSciences, Menomonie, WI*

1356 63 **Effect of imprinted polymer based ergot-alkaloid adsorbent on *in vitro* ruminal fermentation.**
M. B. Kudupoje[*], Alltech-University of Kentucky Nutrition Research Alliance, Lexington

1357 64 **Effects of *ascophyllum nodosum* meal and monensin on performance and iodine metabolism in lactating dairy cows.**
*S. F. Reis[*1], A. F. Brito[1], C. P. Ghedini[1], D. C. Moura[2] and A. S. Oliveira[3], [1]University of New Hampshire, Durham, [2]Universidade Federal de Mato Grosso, Cuiabá, Brazil, [3]Instituto de Ciências Agrárias e Ambientais, Universidade Federal de Mato Grosso – Campus Sinop, Sinop, Brazil*

1358 65 **Lactation performance and nutrient digestibility by dairy cows supplemented with calcium montmorillonite clay during an aflatoxin feeding challenge.**
*A. D. Thomas[*1], C. Maki[2], E. M. Jimenez[3], S. E. Elmore[2], L. Kinman[3], A. Romoser[2], R. B. Harvey[2,4], T. Phillips[2] and H. A. Ramirez Ramirez[1], [1]Iowa State University, Ames, [2]Texas A&M University, College Station, [3]Tarleton State University, Stephenville, TX, [4]USDA, College Station, TX*

1359 66 **Impact of a ferulic acid esterase producing lactobacilli on nutrient digestion of barley silage.**
L. Jin, Y. Wang and T. A. McAllister, Lethbridge Reserarch and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

1360 67 **Excretion of fumonisin B1 by dairy cows supplemented with calcium montmorillonite clay during a mycotoxin challenge.**
E. M. Jimenez[1], A. D. Thomas[2], C. Maki[3], S. E. Elmore[3], R. B. Harvey[4], T. Phillips[3], L. A. Kinman[1] and H. A. Ramirez Ramirez[2], [1]Tarleton State University, Stephenville, TX, [2]Iowa State University, Ames, [3]Texas A&M University, College Station, [4]USDA, College Station, TX*

Poster Session IV

5:00 PM - 6:00 PM
Exhibit Hall A/B

Forages and Pastures III

666 1 **The physiological consequences of ingesting a toxic plant (*Diplotaxis tenuifolia*) and medicinal supplements influence subsequent foraging decisions by sheep.**
F. H. Catanese[1], J. J. Villalba[2] and R. A. Distel[1], [1]Universidad Nacional del Sur, Bahia Blanca, Argentina, [2]Utah State University, Logan*

667 2 **Lining bunker wall with oxygen barrier film reduces nutrient losses of corn silages.**
L. M. Lima, J. P. Dos Santos, I. L. De Oliveira, J. O. Gusmao, M. S. Bastos, S. M. Da Silva, E. B. Alves, J. R. Gervasio and T. F. Bernardes, Federal University of Lavras, Brazil*

668 3 **Effects of method and storage time on the nutritive value of sugarcane for dairy cattle.**
F. T. Fonseca[1], L. M. Lima[1], R. M. De Oliveira[1], F. N. Domingues[2] and T. F. Bernardes[1], [1]Federal University of Lavras, Brazil, [2]Federal University of Para, Belem, Brazil*

669 4 **Bunk heating of rations containing corn silage with various inoculants, a stabilizer, or wet grain byproducts: A field survey.**
B. Powel-Smith, L. Nuzback, F. Owens, S. Dennis, B. Mahanna and W. Rutherford, DuPont Pioneer, Johnston, IA*

670 5 **The effect of *Lactobacillus brevis* and fibrolytic enzymes on fermentation of switchgrass silages.**
J. Liu[1], Y. Wang[1], X. Wang[*2], Z. Cao[1], S. Li[1] and Z. Cui[2], [1]State Key Laboratory of Animal Nutrition, Beijing Engineering Technology Research Center of Raw Milk Quality and Safety Control, College of Animal Science and Technology, China Agricultural University, Beijing, China, [2]Center of Biomass Engineering, College of Agriculture and Biotechnology, China Agricultural, Beijing, China*

671 6 **Effects of wrapping time delays on fermentation characteristics of baled alfalfa silages.**
W. K. Coblentz[1], K. P. Coffey[2] and E. A. Chow[3], [1]US Dairy Forage Research Center, Marshfield, WI, [2]University of Arkansas, Division of Agriculture, Fayetteville, [3]Kuraray America, Inc., Pasadena, TX*

672 7 **Effects of wrapping time delays on the nutritive value of baled alfalfa silages.**
W. K. Coblentz[1], K. P. Coffey[2] and E. A. Chow[3], [1]US Dairy Forage Research Center, Marshfield, WI, [2]University of Arkansas, Division of Agriculture, Fayetteville, [3]Kuraray America, Inc., Pasadena, TX*

673 8 **Effects of corn planting density and maturity on yield and nutritional quality of corn silage.**
G. Ferreira* and C. L. Teets, Virginia Polytechnic Institute and State University, Blacksburg

674 9 **Effect of homolactic bacteria inoculation and aerobic stress during ensiling on the nutritional and fiber digestibility characteristics of spring triticale.**
L. C. Solórzano[1], L. L. Solorzano[2], A. A. Rodriguez[1] and J. A. Teisberg[3], [1]University of Puerto Rico, Mayagüez, PR, [2]Lankin, Fitchburg, WI, [3]Nurealm, LLC, Hutisford, WI*

675 10 **Effect of homolactic bacteria inoculation and aerobic stress during ensiling on the fermentation characteristics, DM recovery and aerobic stability of spring triticale.**
L. C. Solórzano[1], L. L. Solorzano[2], A. A. Rodriguez[1] and J. A. Teisberg[3], [1]University of Puerto Rico, Mayagüez, PR, [2]Lankin, Fitchburg, WI, [3]Nurealm, LLC, Hutisford, WI*

676 11 **Effects of inoculant application on chemical composition, fermentation indices and microbial counts of corn silage.**
S. S. Lee[1], H. J. Lee[1], Y. H. Joo[1], D. H. V. Paradhipta[1], I. H. Choi[2], O. K. Han[3] and S. C. Kim[1], [1]Division of Applied Life Science (BK21Plus, Insti. of Agri. & Life Sci.), Gyeongsang National University, Jinju, The Republic of Korea, [2]Department of Companion Animal & Animal Resources Science, Joongbu University, Geumsan, The Republic of Korea, [3]National Institute of Crop Science, Rural Development Administration, Suwon, The Republic of Korea*

677 12 **Impact of temperature post-defrosting on fermentation of high-moisture corn.**
*L. F. Ferraretto[*1], E. Lynch[2], J. P. Goeser[1,2] and R. D. Shaver[1], [1]University of Wisconsin-Madison, [2]Rock River Laboratory, Inc, Watertown, WI*

678 13 **The effect of two microbial inoculants on the aerobic stability of high moisture corn.**
S. A. Polukis[*], M. L. Smith, R. M. Savage, E. Benjamim da Silva, A. E. Laubach, A. M. Gray and L. Kung Jr., University of Delaware, Newark

679 14 **Investigating the relationship between corn silage fiber digestibility and rainfall, growing degree days and soil type.**
*S. A. Flis[*1], T. P. Tylutki[2] and P. Sirois[1], [1]Dairy One, Ithaca, NY, [2]AMTS LLC, Cortland, NY*

680 15 **Forage yield and quality of four maize cultivars sown in single and double rows.**
M. A. Ramirez[*], Universidad Nacional Autonoma de Mexico, FMVZ, Mexico, City, Mexico

681 16 **Evaluation of genetic diversity of *Lactobacillus plantarum* isolated from alfalfa silage using the BOX-PCR.**
*M. C. N. Agarussi[1], O. G. Pereira[*2], K. G. Ribeiro[2], E. S. Leandro[2], V. P. Silva[2] and R. A. Paula[1], [1]Federal University of Vicosa, Brazil, [2]Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil*

682 17 **Volatile organic compounds in sugarcane silage treated with chemical and microbial additives.**
*L. L. Cardoso[1], K. G. Ribeiro[*1], O. G. Pereira[1], M. I. Marcondes[2] and K. Weiss[3], [1]Universidade Federal de Viçosa, Minas Gerais, Brazil, [2]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil, [3]Humboldt University of Berlin, Germany*

683 18 **Meta-analysis of the effect of homolactic and facultative heterolactic bacteria inoculation on silage quality: Fermentation profile.**
*A. S. Oliveira[1], Z. G. Weinberg[2], A. A. P. Cervantes[3], K. G. Arriola[3], I. M. Ogunade[3], Y. Jiang[3], D. Kim[3,4], M. C. M. Gonçalves[5], D. Vyas[3] and A. T. Adesogan[*3], [1]Universidade Federal de Mato Grosso - Sinop, Brazil, [2]Department of Food Quality and Safety, Agricultural Research Organization, The Volcani Center, Rishon Le Zion, Israel, [3]Department of Animal Sciences, UF/IFAS, Gainesville, FL, [4]Department of Animal Sciences, University of Florida, Gainesville, [5]Instituto Federal Goiano, Rio Verde, Brazil*

684 19 **The effects of air and heat stress on the aerobic stability of silage treated with a chemical additive.**
R. M. Savage[*], E. Benjamim da Silva, M. L. Smith, S. A. Polukis, K. M. Pacer, A. E. Laubach, A. M. Gray and L. Kung Jr., University of Delaware, Newark

685 20 **Effects of chemical additives on fermentation characteristics of high moisture alfalfa silage.**
E. Benjamim da Silva[*], R. M. Savage, M. L. Smith, S. A. Polukis, A. E. Laubach, K. M. Pacer and L. Kung Jr., University of Delaware, Newark

Small Ruminant II

1701 21 **Effect of high concentrations of crude glycerin on feed intake and growth of feedlot ram lambs.**
*M. Almeida[*1,2], J. M. Bertocco Ezequiel[3], J. R. Paschoaloto[3], H. L. Perez[1,2], V. B. Carvalho[3], E. S. Castro Filho[3] and E. H. C. B. Van Cleef[3,2], [1]Sao Paulo State University, Jaboticabal, SP, Brazil, [2]FAPESP, Sao Paulo, SP, Brazil, [3]Unesp, Sao Paulo State University, Department of Animal Science, Jaboticabal, SP, Brazil*

1702 22 **Conditions to evaluate differences among individual sheep and goats in resilience to restricted drinking water availability.**
*U. L. Mengistu[1,2], R. Puchala[1], T. Sahlu[1], T. A. Gipson[1], L. J. Dawson[1,3] and A. L. Goetsch[*1], [1]American Institute for Goat Research, Langston University, OK, [2]School of Animal and Range Sciences, Haramaya University, Dire Dawa, Ethiopia, [3]Center of Veterinary Health Sciences, Oklahoma State University, Stillwater*

1703 23 **High concentrations of crude glycerin change ruminal *in vitro* greenhouse gas emissions in feedlot sheep.**
*M. Almeida[*1,2], J. M. Bertocco Ezequiel[3], J. R. Paschoaloto[3], H. L. Perez[1,2], V. B. Carvalho[3], E. S. Castro Filho[3] and E. H. C. B. Van Cleef[3,2], [1]Sao Paulo State University, Jaboticabal, SP, Brazil, [2]FAPESP, Sao Paulo, SP, Brazil, [3]Unesp, Sao Paulo State University, Department of Animal Science, Jaboticabal, SP, Brazil*

1704 24 **Factors influencing estimates of energy used for activity by grazing meat goats.**
*M. E. Brassard[1,2], R. Puchala[*2], T. A. Gipson[2], T. Sahlu[2] and A. L. Goetsch[2], [1]Universite Laval, Quebec City, QC, Canada, [2]American Institute for Goat Research, Langston University, OK*

1705 25 **The response to artificial infection with *Haemonchus contortus* and growth performance of sheep and goat progeny of selected parents in a central performance test.**
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, OK

1706 26 **Species and breed differences of small ruminants in response to experimental infection with *Haemonchus contortus* and growth performance in a centralized performance test.**
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, OK*

1707 27 **Effects of adding water to total mixed ration on water consumption, nutrient digestibility, wool cortisol and blood indices in corriedale ewes under hot and humid conditions.**
J. Ghassemi Nejad[1], K. Sung[1], B. Lee[2], J. Peng[2], J. Kim[2], S. Oh[2], B. Chemere[2] and B. Kim[*1], [1]Department of Animal Life System, College of Animal Life Science, Kangwon National University, Chuncheon, South Korea, [2]Kangwon National University, Chuncheon, The Republic of Korea*

1708 28 **Effects of pasture access regimen on grazing behavior and energy utilization by Alpine goats.**
A. Keli[1,2], L. P. S. Ribeiro[*2,3], T. A. Gipson[2], R. Puchala[2] and A. L. Goetsch[2], [1]Department of Animal Production, National School of Agriculture, Meknes, Morocco, [2]American Institute for Goat Research, Langston University, OK, [3]Department of Animal Science, Federal University of Bahia, Areia, Brazil*

1709 29 **Energy and protein requirements of indigenous goats.**
A. K. Almeida[*1], K. T. Resende[1], I. A. M. A. Teixeira[1], S. D. A. Ribeiro[2], M. T. Rodrigues[3] and J. A. Garcia[3], [1]UNESP, University Estadual Paulista, Department of Animal Science, Jaboticabal, SP, Brazil, [2]Capritec, Espirito Santo do Pinhal, SP, Brazil, [3]Universidade Federal de Vicosa, Vicosa, MG, Brazil*

1710 30 **Nutrient content of crop residues selected by grazing goats.**
J. Mendoza[*1], L. Gaytan[1], M. Mellado[2], O. Angel[1] and I. Chavarria[1], [1]Autonomous Agrarian University Antonio Narro, Torreon, Coahuila, Mexico, [2]Autonomous Agrarian University Antonio Narro, Saltillo, Coahuila, Mexico*

1711 31 **Genomic evaluation and population structure of eleven Russian sheep breeds.**
T. E. Deniskova[1], A. V. Dotsev[1], K. Wimmers[2], H. Reyer[2], V. R. Kharzinova[*1], E. A. Gladyr[1], G. Brem[1,3] and N. A. Zinovieva[1], [1]L.K. Ernst Institute of Animal Husbandry, Moscow, Russian Federation, [2]Genome Biology, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, [3]Institute of Animal Breeding and Genetics, VMU, Vienna, Austria*

1712 32 **Plate waste and artificial rearing of orphaned lambs versus ewe reared lambs.**
A. DiPastina and D. J. R. Cherney, Cornell University, Ithaca, NY*

1713 33 **Effects of corn silage levels on methane emissions and blood metabolite concentrations of drying-off Xinong Saanen dairy goats.**
P. Wang[*1], Y. Xue[2], G. Ma[1] and J. Luo[1], [1]Alltech-NWAFU Animal Science Research Alliance, College of Animal Science and Technology, Northwest A&F University, Yangling, China, [2]Alltech, Lexington, KY*

1714 34 **Inclusion of a by-product of *Myrtus communis* in the diet of lactating sheep: Performance and health.**
A. Nudda[*1], G. Battacone[1], P. Nicolussi[2], F. Correddu[1], G. Pulina[1] and P. Bonelli[2], [1]Dipartimento di Agraria, University of Sassari, Italy, [2]Istituto Zooprofilatico Sperimentale della Sardegna, Sassari, Italy*

1715 35 **Genetic parameter estimates for productivity of the Katahdin and Hampshire ewe and its components.**
J. G. Pérez-Álvarez, F. A. Rodríguez-Almeida and J. Domínguez-Viveros, Universidad Autónoma de Chihuahua, Mexico*

1716 36 **Effects of protected methionine supplementation during dry period of seasonally synchronized goats on blood parameters and the subsequent lactation.**
F. Piccioli-Cappelli, A. Minuti, M. Maiocchi, M. Mezzetti and E. Trevisi, Università Cattolica del Sacro Cuore, Piacenza, Italy*

1717 37 **Responses of hair sheep breeds to high heat load index conditions.**
D. Tadesse, R. Puchala, T. A. Gipson, Y. Tsukahara and A. L. Goetsch, American Institute for Goat Research, Langston University, OK*

Production, Management and the Environment: Lactation and Growth

1238 38 **Prediction of daily concentration of milk and milk components from single-milking values.**
M. Duplessis[*1], L. Fadul-Pacheco[2], R. Lacroix[1], D. M. Lefebvre[1], D. E. Santschi[1] and D. Pellerin[3], [1]Valacta, Saint-Anne-de-Bellevue, QC, Canada, [2]Département des Sciences Animales, Université Laval, Québec, QC, Canada, [3]Universite Laval, Quebec, QC, Canada*

1239 39 **Sources of variation in dry matter content and particle size distribution in total mixed rations in dairy farms in Argentina.**
P. Turiello[*1], M. Ruiz de Huidobro[1], F. Bargo[2], A. Larriestra[1] and A. Relling[3], [1]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Argentina, [2]Facultad de Agronomia, UBA, Buenos Aires, Argentina, [3]Department of Animal Sciences, The Ohio State University, Wooster*

1240 40 **Growth measurements of crossbred dairy steers compared to Holstein dairy steers raised in an organic production system.**
H. N. Phillips[*] and B. J. Heins, University of Minnesota West Central Research and Outreach Center, Morris

1241 41 **Accuracy and precision of diets for high-producing dairy cows and their impacts on production and milk composition.**
*J. H. Carneiro[1,2], J. F. Santos[2], P. Schmidt[1], T. J. DeVries[3] and R. D. Almeida[*1], [1]Universidade Federal do Paraná, Curitiba, Brazil, [2]Castrolanda Cooperativa Agroindustrial, Castro, Brazil, [3]Department of Animal Biosciences, University of Guelph, ON, Canada*

Ruminant Nutrition: Growth, Young Stock and Calves I

1459 42 **Effects of duration of moderate increases in grain on bacterial diversity in the digestive tract of Holstein calves.**
*S. Li[1], S. Moossavi[2], P. Azevedo[1], B. Schurmann[3], P. Gorka[4], G. B. Penner[3], J. C. Plaizier[1] and E. Khafipour[*1], [1]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [2]Department of Medical Microbiology, University of Manitoba, Winnipeg, MB, Canada, [3]University of Saskatchewan, Saskatoon, SK, Canada, [4]University of Agriculture, Krakow, Poland*

1460 43 **Muscle protein metabolism of growing Holstein × Gyr heifers.**
*F. A. S. Silva[*1], S. C. Valadares Filho[2], L. N. Rennó[3], S. A. Santos[4], D. Zanetti[1], L. A. Godoi[3], M. V. C. Pacheco[3], H. M. Alhadas[3], P. P. Rotta[5] and L. F. Costa e Silva[5], [1]Universidade Federal de Vicosa, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Viçosa, Viçosa, Brazil, [4]Universidade Federal da Bahia, Salvador, Brazil, [5]Colorado State University, Fort Collins*

1461 44 **Effects of milk replacer feeding rate, egg yolk inclusion in milk replacer, and calf starter starch content on Holstein calf performance through 4 months of age.**
*T. S. Dennis[*1], T. M. Hill[1], J. D. Quigley[1], F. X. Suarez-Mena[2] and R. L. Schlotterbeck[1], [1]Provimi, Brookville, OH, [2]Provimi North America, Brookville, OH*

1462 45 **Effects of mineral and vitamin supplementation to pasteurized whole milk diets on growth and health of preruminant Holstein bull calves.**
*D. Wood[*1], L. A. Krueger[2,3], M. Dehghan banadaky[4], J. R. Stabel[5], M. A. Engstrom[6], D. C. Beitz[7] and R. Blome[1], [1]Animix, Juneau, WI, [2]Agri-King, Inc., Fulton, IL, [3]Department of Animal Science, Iowa State University, Ames, [4]Department of Animal Science, Faculty of Agriculture, University of Tehran, Karaj, Iran, [5]Infectious Bacterial Diseases Research Unit, National Animal Disease Center, USDA-ARS, Ames, IA, [6]DSM Nutritional Products, LLC, Parsippany, NJ, [7]Iowa State University, Ames*

1463 46 **Effect of Axcelera-C on calf performance, intake, digestive development and immune function during the first 3 months of life.**
*M. Terré[1], F. Fàbregas[2] and A. Bach[*3], [1]IRTA, Caldes de Montbui, Spain, [2]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [3]ICREA, Barcelona, Spain*

1464 47 **Colostrum supplement feeding with a medium quality bovine colostrum: Passive immunity transfer, health and performance of dairy calves.**
M. R. De Paula, N. B. Rocha, E. Miqueo, F. L. M. Silva, T. Manzoni, S. Baldassin and C. M. M. Bittar[*], University of Sao Paulo, Piracicaba, Brazil

1465 48 **Thermoregulation, performance and blood metabolites in calves fed different amounts of colostrum.**
F. L. M. Silva[*], M. D. Silva, E. Miqueo, N. B. Rocha, T. Manzoni, M. G. Coelho and C. M. M. Bittar, University of Sao Paulo, Piracicaba, Brazil

1466 49 **The effects of supplementing a ruminally protected B-vitamin complex on pre-weaning growth and performance of Holstein heifer calves.**
*K. M. Wood[*1], E. Evans[2], C. L. Girard[3], H. Leclerc[4], L. Doepel[5] and G. B. Penner[6], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]Technical Advisory Services, Bowmanville, ON, Canada, [3]Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, [4]Jefo Nutrition, St. Hyacinthe, QC, Canada, [5]University of Calgary, AB, Canada, [6]University of Saskatchewan, Saskatoon, SK, Canada*

1467 50 **RNAseq-based whole transcriptome analysis in jejunum of pre-weaned calves under different milk feeding regimens.**
*H. M. Hammon[1], D. Frieten[2], C. Gerbert[3], C. Koch[3], G. Dusel[2], R. Weikard[1] and C. Kühn[*1], [1]Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany, [2]University of Applied Sciences, Bingen, Germany, [3]Educational and Research Centre for Animal Husbandry, Hofgut Neumuehle, Muenchweiler, Germany*

1468 51 **Comparison of two calf rearing programs on the performance and cost benefit ratio.**
L. M. Gomez[*], J. A. Henao, A. K. Amorocho, M. R. Valenzuela, C. Mesa and P. Aguirre, Nutri-Solla Group. Research and Development Unit, Solla S.A., Medellin, Colombia

Ruminant Nutrition: Forages and Feeds I

1427 52 **Effects of feeding steers extruded flaxseed and hay together (TMR) or sequentially (non-TMR) on animal performance and erythrocyte vaccenic, rumenic and alpha-linolenic acid content.**
P. Vahmani[*1], *D. C. Rolland*[1], *T. A. McAllister*[2], *H. C. Block*[1], *S. D. Proctor*[3], *L. L. Guan*[3], *N. Prieto*[1], *J. L. Aalhus*[1] *and M. E. R. Dugan*[1], [1]*Agriculture and Agri-Food Canada, Lacombe, AB, Canada,* [2]*Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada,* [3]*University of Alberta, Edmonton, AB, Canada*

1428 53 **Transcriptome responses to different forage allowance in the hypothalamus of grazing beef cows.**
A. I. Trujillo[*1], *F. Peñagaricano*[2], *A. Casal*[1], *J. Laporta*[3], *P. Soca*[4] *and M. Carriquiry*[1], [1]*Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay,* [2]*University of Florida, Gainesville,* [3]*Department of Animal Sciences, University of Florida, Gainesville,* [4]*Facultad de Agronomia. Universidad de la Republica, Paysandu, Uruguay*

1429 54 **Effects of feeding alfalfa stemlage or wheat straw for dietary energy dilution on growth performance and sorting behaviors of Holstein dairy heifers.**
H. Su[*1], *N. M. Esser*[2], *W. K. Coblentz*[3], *K. F. Kalscheur*[4], *R. D. Hatfield*[4] *and M. Akins*[1], [1]*University of Wisconsin-Madison,* [2]*University of Wisconsin, Marshfield,* [3]*US Dairy Forage Research Center, Marshfield, WI,* [4]*USDA-ARS, US Dairy Forage Research Center, Madison, WI*

1430 55 **Effect of partially replacing barley grain with liquid whey permeate in diets for finishing lambs on DMI, average daily gain, and total tract digestibility.**
F. Joy[*] *and G. B. Penner, Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada*

1431 56 **Evaluation of the fermentation characteristics and glucosinolate content of cold-pressed or solvent-extracted carinata meal ensiled with corn forage.**
K. Rodriguez-Hernandez[*1,2], *J. L. Anderson*[1], *M. A. Berhow*[3] *and A. Garcia*[1], [1]*Dairy Science Department, South Dakota State University, Brookings,* [2]*CIRNOC-INIFAP, Matamoros, Mexico,* [3]*USDA-ARS, NCAUR, Peoria, IL*

1432 57 **Magnitude of difference in chemical and nutrient profiles, ruminal degradation kinetics, and intestinal digestion of three barley silages varieties in comparison with corn silage for dairy cattle.**
B. Refat[*1,2], *W. Yang*[3], *J. J. McKinnon*[1], *J. Nair*[1], *A. D. Beattie*[4], *T. A. McAllister*[3], *D. A. Christensen*[5] *and P. Yu*[1], [1]*Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada,* [2]*Animal Production Department, Faculty of Agriculture, Zagazig University, Zagazig, Egypt,* [3]*Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada,* [4]*Department of Plant Sciences, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada,* [5]*University of Saskatchewan, Saskatoon, SK, Canada*

1433 58 **Production of high quality and digestible forages to increase milk production and nutrient supply for lactating dairy cows.**
J. P. Pretz[*1], *C. Ramsier*[2] *and D. P. Casper*[1], [1]*Dairy Science Department, South Dakota State University, Brookings,* [2]*Ag Spectrum, Inc., De Witt, IA*

1434 59 **Increased forage NDF digestibility (*in vitro* or *in situ*) is positively related to DMI and milk yield both across and within forage type.**
D. Sousa[*], *M. J. VandeHaar and M. S. Allen, Michigan State University, East Lansing*

1435 60 **Lactation performance, *in situ* degradability, and rumen fermentation of Holstein cows fed BMR-6 sorghum silage versus corn silage based diets.**
K. K. Gautam, S. J. Trojan, J. O. Sarturi and M. A. Ballou[*]*, Texas Tech University, Lubbock*

1436 61 **Factors affecting methane production from ruminal fermentation of fiber isolated from dried distillers grains and solubles.**
O. R. Drehmel[*]*, S. C. Fernando, J. L. Gramkow, J. V. Judy, J. C. MacDonald, H. A. Paz Manzano and P. J. Kononoff, University of Nebraska-Lincoln*

1437 62 **Effect of native and hybrid varieties of whole-plant corn silage on digestion in diets for cattle.**
L. Corona-Gochi[*]*, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico*

1438 63 **Evaluation of brown mid-rib sudangrass silage in the diets of lactating dairy cows.**
K. F. Kalscheur[*] *and B. Geoff, USDA-ARS, US Dairy Forage Research Center, Madison, WI*

1439 64 **Chemical composition and fermentation profile of corn silage ensiled for 0, 30, 90, or 150 days from corn treated with a foliar fungicide at different growing stages.**
M. Weatherly[*1], *C. Kalebich*[1], *K. Robinson*[1], *G. M. Fellows*[2] *and P. C. Cardoso*[1], [1]*University of Illinois at Urbana-Champaign,* [2]*BASF Corporation, Research Triangle Park, NC*

1440 65 **Chemical and energy profiles of value added pellet products based on combination of new co-products from bio-fuel/bio-oil processing, low grade of peas and lignosulfonate chemical compound at different levels for ruminants.**
V. Guevara, D. A. Christensen, J. J. McKinnon and P. Yu, Department of Animal and Poultry Science, College of Agricultural and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada*

1441 66 **Use of short season hybrids may enable greater use of corn silage in Western Canadian feedlot diets without decreasing animal performance.**
G. E. Chibisa[1] and K. A. Beauchemin[2], [1]University of Idaho, Moscow, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

1442 67 ***In vitro* starch and neutral-detergent fiber degradability of corn silage hybrids.**
M. T. Harper[1], G. Roth[1], H. L. Wells[1], C. Canale[2], A. Gallo[3], F. Masoero[3] and A. N. Hristov[1], [1]The Pennsylvania State University, University Park, [2]Cargill Animal Nutrition, Shippensburg, PA, [3]Università Cattolica del Sacro Cuore, Piacenza, Italy*

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SYMPOSIA AND ORAL SESSIONS

ADSA Production Division Symposium: Robotic Dairying: Adapting Farm and Business Management

Chair: Leo L. Timms, Iowa State University

9:30 AM - 12:30 PM

Grand Ballroom J

9:30 AM	33	**Changes in dairy farm management strategies with the adoption of robotic milking.** *J. Rodenburg[*], DairyLogix, Woodstock, ON, Canada*
10:00 AM	34	**Opportunities and challenges for herd health and reproduction with robotic milking.** *S. J. LeBlanc[*], Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*
10:30 AM		**Break**
10:45 AM	35	**Nutritional approaches in robotic herds.** *A. Bach[*1,2], M. Vidal[2], and V. Cabrera[3], [1]ICREA, Barcelona, Spain, [2]IRTA, Caldes de Montbui, Spain, [3]University of Wisconsin-Madison*
11:15 AM	36	**Finances and returns for robotic dairies.** *J. A. Salfer[*1], M. I. Endres[2], W. Lazarus[2], and K. Minegishi[2], [1]University of Minnesota, St. Cloud, [2]University of Minnesota, St. Paul*
11:45 AM		**Panel Discussion**

Animal Behavior and Well-Being Symposium: Metrics for On-Farm Animal Welfare Assessment – Current State and Future Needs

Chair: Trevor J. DeVries, University of Guelph

Sponsor: Novus

9:30 AM - 12:30 PM

150 B/C

9:30 AM		**Introductory Remarks**
9:40 AM	95	**Poultry welfare assessments: Where do we go from here.** *R. Blatchford[*], University of California-Davis*
10:20 AM	96	**Metrics for beef cattle welfare.** *D. Griffin[*], Great Plains Veterinary Educational Center, Clay Center, NE*
11:00 AM		**Break**
11:10 AM	97	**Optimizing outcome measures of welfare in dairy cattle assessment.** *E. Vasseur[*], McGill University, Sainte-Anne-de-Bellevue, QC, Canada*
11:50 AM	98	**The Common Swine Industry Audit: Future steps to assure positive on-farm animal welfare utilizing validated, repeatable and feasible animal-based measures.** *M. Pairis-Garcia[1] and C. J. Rademacher[*2], [1]The Ohio State University, Columbus, [2]Swine Medicine Education Center, Department of Vet Diagnostic & Production Animal Medicine, Ames, IA*

Animal Health: Dairy Transition and Reproductive Health

Chair: Troy J. Wistuba, Phibro Animal Health Corporation

9:30 AM - 11:35 PM

155 D

9:30 AM **Introductory Remarks**

9:35 AM 144 **Effects of lactic acid bacteria on metritis prevalence and endometrium inflammation in dairy cows.**
S. Genís[*1], R. L. A. Cerri[2], A. Bach[3,4], B. F. Silper[2], J. Denis-Robichaud[5], and A. Arís[1], [1]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [2]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [3]ICREA, Barcelona, Spain, [4]IRTA, Caldes de Montbui, Spain, [5]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

9:50 AM 145 **Metritis severity score misclassification underpredicts consequence cost of disease.**
M. M. McCarthy[*] *and M. W. Overton, Elanco Animal Health, Greenfield, IN*

10:05 AM 146 **Subacute ruminal acidosis negatively affects conception rate in Holstein heifers.**
H. Khalouei[*1], *A. A. Alamouti[2], A. Mohammadi-Sangcheshmeh[2], N. Farzaneh[3], J. C. Plaizier[1], and E. Khafipour[1], [1]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [2]Department of Animal and Poultry Sciences, Aburaihan Campus, University of Tehran, Pakdasht, Tehran, Islamic Republic of Iran, [3]Faculty of Veterinary Medicine, Ferdowsi University, Mashhad, Islamic Republic of Iran*

10:20 AM 147 **Evaluating milk fat to protein ratio and milk fat to lactose ratio as indicators for early lactation disease.**
S. Paudyal[*1,2], *F. P. Maunsell[3], C. A. Risco[3], A. Donovan[3], A. De Vries[4], D. Manriquez[1], and P. J. Pinedo[1,5], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]West Texas A&M, Canyon, [3]College of Veterinary Medicine, University of Florida, Gainesville, [4]Department of Animal Sciences, University of Florida, Gainesville, [5]Texas A&M AgriLife Research, Amarillo*

10:35 AM 148 **Associations between multiple activity and physiological parameters around the time of disease diagnosis and calving in Holstein cows.**
D. Manriquez[*1], *F. P. Maunsell[2], S. Paudyal[1], A. Donovan[2], A. De Vries[3], and P. J. Pinedo[4], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]College of Veterinary Medicine, University of Florida, Gainesville, [3]Department of Animal Sciences, University of Florida, Gainesville, [4]Texas A&M AgriLife Research, Amarillo*

10:50 AM 149 **DI/LC-MS/MS-based metabolomics identifies early predictive serum biomarkers for ketosis in dairy cows.**
B. N. Ametaj[*1], *G. Zhang[1], E. Dervishi[1], S. M. Dunn[1], R. Mandal[2], and D. S. Wishart[2], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]University of Alberta, Edmonton, AB, Canada*

11:05 AM 150 **Targeted metabolomics reveals multiple metabolite alterations in the urine of transition dairy cows preceding the incidence of lameness.**
B. N. Ametaj[*1], *G. Zhang[1], E. Dervishi[1], S. M. Dunn[1], R. Mandal[2], and D. S. Wishart[2], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]University of Alberta, Edmonton, AB, Canada*

11:20 AM 151 **Elevated serum amyloid A concentrations in the first days after calving are an early disease indicator in dairy cows.**
G. Bobe[*1] *and S. Walker[2], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]Oregon State University, Corvallis*

ASAS Western Section Young Scholars

Chair: Michael Salisbury, Angelo State University

Sponsor: Zinpro

9:30 AM - 11:00 AM

155 C

9:30 AM 25 **Effects of organic or inorganic Co, Cu, Mn, and Zn supplementation to late-gestating beef cows on productive and physiological responses of the offspring.**
R. Marques[*1], *R. F. Cooke[1], M. C. Rodrigues[1], B. I. Cappellozza[1], R. R. Mills[2], C. K. Larson[3], P. Moriel[4], and D. W. Bohnert[1], [1]Oregon State University-EOARC Burns, [2]Oregon State University Extension Service, Pendleton, [3]Zinpro Corporation, Eden Prairie, MN, [4]UF/IFAS Range Cattle Research and Education Center, Ona, FL*

10:00 AM 26 **Altered rumen microbial populations in response to high sulfate water in lambs.**
A. N. Abrams[*1], C. J. Clarkson[1], K. J. Austin[1], M. Ellison[1], H. C. Cunningham[1], G. C. Conant[2], W. R. Lamberson[2], T. M. Taxis[2], and K. M. Cammack[1], [1]Department of Animal Science, University of Wyoming, Laramie, [2]University of Missouri, Columbia*

10:30 AM 27 **Immunological implications of pregnancy: A focus on inflammatory cytokines.**
S. Z. Prosser[*], K. E. Quinn, and R. L. Ashley, New Mexico State University, Las Cruces*

Beef Cattle Nutrition Symposium: A Look at the Latest Beef Cattle NRC Recommendations

Chair: Nathan M. Long, Clemson University

Sponsor: NRC, ASAS & Zinpro
9:30 AM - 12:30 PM
Grand Ballroom B/D

9:30 AM 1021 **Overview of the process and changes in the 8th Edition of the Nutrient Requirements of Beef Cattle.**
M. L. Galyean[*], Texas Tech University, Lubbock*

9:45 AM 1022 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Maintenance and growth.**
J. S. Caton[*1], C. R. Krehbiel[2], M. L. Galyean[3], and L. O. Tedeschi[4], [1]Department of Animal Sciences, North Dakota State University, Fargo, [2]Oklahoma State University, Stillwater, [3]Texas Tech University, Lubbock, [4]Texas A&M University, College Station*

10:15 AM 1023 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Reproduction.**
R. P. Lemenager[*1], J. S. Caton[2], M. L. Galyean[3], and L. O. Tedeschi[4], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, North Dakota State University, Fargo, [3]Texas Tech University, Lubbock [4]Texas A&M University, College Station*

10:30 AM 1024 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Protein and metabolic modifiers.**
J. H. Eisemann[*1], M. L. Galyean[2], K. A. Beauchemin[3], C. R. Krehbiel[4], and L. O. Tedeschi[5], [1]North Carolina State University, Raleigh, [2]Texas Tech University, Lubbock, [3]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [4]Oklahoma State University, Stillwater, [5]Texas A&M University, College Station*

10:50 AM 1025 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Minerals, vitamins, and water.**
T. E. Engle[*1], J. S. Caton[2], M. L. Galyean[3], L. O. Tedeschi[4], N. A. Cole[5], C. R. Krehbiel[6], G. E. Erickson[7], K. A. Beauchemin[8], R. P. Lemenager[9], and J. H. Eisemann[10], [1]Colorado State University, Fort Collins, [2]Department of Animal Sciences, North Dakota State University, Fargo, [3]Texas Tech University, Lubbock, [4]Texas A&M University, College Station, [5]USDA-ARS, Bushland, [6]Oklahoma State University, Stillwater, [7]University of Nebraska-Lincoln, [8]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [9]Purdue University, West Lafayette, IN, [10]North Carolina State University, Raleigh*

11:10 AM 1026 **The 8th revised edition of the Nutrient Requirements of Beef Cattle: Environmental issues.**
N. A. Cole[*1], K. A. Beauchemin[2], G. E. Erickson[3], L. O. Tedeschi[4], and M. L. Galyean[5], [1]USDA-ARS Conservation and Production Research Laboratory, Bushland, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]University of Nebraska-Lincoln, [4]Texas A&M University, College Station, [5]Texas Tech University, Lubbock*

11:30 AM 1027 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Byproducts and feed composition.**
K. A. Beauchemin[*1], G. E. Erickson[2], H. Tran[3], J. S. Caton[4], N. A. Cole[5], J. H. Eisemann[6], T. E. Engle[7], M. L. Galyean[8], C. R. Krehbiel[9], R. P. Lemenager[10], and L. O. Tedeschi[11], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]University of Nebraska-Lincoln, [3]National Animal Nutrition Program, University of Kentucky, Lexington, [4]Department of Animal Sciences, North Dakota State University, Fargo, [5]USDA-ARS Conservation and Production Research Laboratory, Bushland, TX, [6]North Carolina State University, Raleigh, [7]Colorado State University, Fort Collins, [8]Texas Tech University, Lubbock, [9]Oklahoma State University, Stillwater, [10]Purdue University, West Lafayette, IN, [11]Texas A&M University, College Station*

11:50 AM 1028 **The 8th Revised Edition of the Nutrient Requirements of Beef Cattle: Development and evaluation of the mathematical model.**
L. O. Tedeschi[*1], M. L. Galyean[2], K. A. Beauchemin[3], J. S. Caton[4], N. A. Cole[5], J. H. Eisemann[6], T. E. Engle[7], G. E. Erickson[8], C. R. Krehbiel[9], and R. P. Lemenager[10], [1]Texas A&M University, College Station, [2]Texas Tech University, Lubbock, [3]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [4]Department of Animal Sciences, North Dakota State University, Fargo, [5]USDA-ARS Conservation and Production Research Laboratory, Bushland, TX, [6]North Carolina State University, Raleigh, [7]Colorado State University, Fort Collins, [8]University of Nebraska-Lincoln, [9]Oklahoma State University, Stillwater, [10]Purdue University, West Lafayette, IN*

12:10 PM **Panel Discussion**

Bioethics Symposium

Chair: James W. Knight, Virginia Polytechnic Institution and State University

Sponsor: Elanco Animal Health
9:30 AM - 12:30 PM
151 B/C

9:30 AM	280	**How was that chicken raised? Ethics and deliberating conscientiously about animal welfare standards.** *R. X. Anthony*, University of Alaska Anchorage, Anchorage*
10:15 AM	281	**Farm animal welfare: Three essential ingredients from an international context.** *A. De Paula Vieira*, Positivo University, Curitiba, Brazil*
11:00 AM		**Break**
11:15 AM	282	**Breaking down communication barriers to connect with stakeholders.** *R. Beck*, The Center for Food Integrity, Gladstone, MO*
12:00 PM		**Panel Discussion**

Breeding and Genetics: Genomic Evaluation II - Applications

Chair: Ignacy Misztal, University of Georgia

9:30 AM - 12:30 PM
Grand Ballroom I

9:30 AM	302	**Identifying and calling insertions, deletions, and single-base mutations efficiently from sequence data.** *P. M. VanRaden*[*1], D. M. Bickhart[1], and J. R. O'Connell[2], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]University of Maryland School of Medicine, Baltimore*
9:45 AM	303	**Issues in commercial application of single-step genomic BLUP for genetic evaluation in American Angus.** *D. A. L. Lourenco*[*1], S. Tsuruta[1], B. D. Fragomeni[1], Y. Masuda[1], I. Pocrnic[1], I. Aguilar[2], J. K. Bertrand[1], D. W. Moser[3], and I. Misztal[1], [1]University of Georgia, Athens, [2]INIA, Las Brujas, Uruguay, [3]Angus Genetics Inc., St. Joseph, MO*
10:00 AM	304	**Single-step GBLUP using APY inverse for protein yield in US Holstein with a large number of genotyped animals.** *Y. Masuda*[*1], I. Misztal[1], and P. M. VanRaden[2], [1]University of Georgia, Athens, [2]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*
10:15 AM	305	**Heteroskedastic extensions for genome-wide association studies.** *Z. Ou*[*1], R. J. Tempelman[2], J. P. Steibel[3,4], C. W. Ernst[3], R. O. Bates[3], C. Chen[3], and N. M. Bello[1], [1]Department of Statistics, Kansas State University, Manhattan, [2]Michigan State University, East Lansing, [3]Department of Animal Science, Michigan State University, East Lansing, [4]Department of Fisheries and Wildlife, Michigan State University, East Lansing*
10:30 AM	306	**Exploring the feasibility of using copy number variants as genetic markers through large-scale whole genome sequencing experiments.** *D. M. Bickhart*[*1], L. Xu[2], J. L. Hutchison[3], J. B. Cole[1], D. J. Null[1], S. G. Schroeder[1], J. Song[2], J. F. Garcia[4], T. Sonstegard[5], C. P. VanTassell[5], R. D. Schnabel[6], J. F. Taylor[6], and G. E. Liu[5], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]Department of Animal and Avian Sciences, University of Maryland, College Park, [3]Animal Improvement Programs Laboratory, USDA-ARS, Beltsville, MD, [4]UNESP Univ Estadual Paulista, Araçatuba, Brazil, [5]Recombinetics, Inc., St Paul, MN*
10:45 AM	307	**Use of marker × environment interaction whole genome regression model to incorporate genetic heterogeneity for residual feed intake, dry matter intake, net energy in milk, and metabolic body weight in dairy cattle.** *C. Yao[1], G. de los Campos[2], M. J. VandeHaar[2], D. M. Spurlock[3], L. E. Armentano[1], M. P. Coffey[5], Y. de Haas[6], R. F. Veerkamp[6], C. R. Staples[7], E. E. Connor[8], Z. Wang[9], R. J. Tempelman[2], and K. A. Weigel*[*1], [1]University of Wisconsin-Madison, [2]Michigan State University, East Lansing, [3]Iowa State University, Ames, [5]SRUC, Edinburgh, United Kingdom, [6]Animal Breeding and Genomics Centre, Wageningen University, Netherlands, [7]Department of Animal Sciences, University of Florida, Gainesville, [8]USDA-ARS, Animal Genomics and Improvement Laboratory, Beltsville, MD, [9]University of Alberta, Edmonton, AB, Canada*
11:00 AM		**Break**

11:15 AM 308 **Imputation of medium density genotypes from custom low density genotype panel in sheep.**
*D. P. Berry[*2], A. O'Brien[4], S. Randles[1], K. McDermott[1], E. Wall[1], and N. McHugh[2], [1]Sheep Ireland, Bandon, [2]Teagasc Moorepark, Fermoy, Ireland*

11:30 AM 309 **Systematic profiling of short tandem repeats in the cattle genome.**
*G. E. Liu[*1], L. Xu[1], R. Haasl[2], J. Sun[3], Y. Zhou[1], D. M. Bickhart[1], J. Li[4], J. Song[5], T. Sonstegard[6], C. P. VanTassell[1], and H. Lewin[7], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]University of Wisconsin-Platteville, [3]South China Agricultural University, Guangzhou, China, [4]Institute of Animal Science of Chinese Academy of Agricultural Sciences, Beijing, China, Beijing, China, [5]University of Maryland, Animal Science and Avian, College Park, [6]Recombinetics, Inc., St Paul, MN, [7]University of California-Davis, Department of Evolution and Ecology, David*

11:45 AM 310 **Assessing genetic diversity in Canadian beef cattle populations using Illumina Bovine SNP50 chip.**
*M. K. Abo-Ismail[*1,2], E. C. Akanno[1], R. Khorshidi[1], J. Crowley[1,3], L. Chen[1], B. K. Karisa[4], X. Li[1], Z. Wang[1], J. Basarab[1,5], C. Li[1,6], P. Stothard[1], and G. Plastow[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Animal and Poultry Production, Damanhour University, Damanhour, Egypt, [3]Canadian Beef Breeds Council, Calgary, AB, Canada, [4]Alberta Livestock and Meat Agency Ltd, Edmonton, AB, Canada, [5]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada, [6]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Edmonton, AB, Canada*

12:00 PM 311 **Joint association analysis of additive and non-additive genomic effects for growth and carcass traits of beef cattle.**
*E. C. Akanno[*1], M. K. Abo-Ismail[1,2], L. Chen[1], C. Li[1,3], J. Basarab[1,4], and G. Plastow[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Animal and Poultry Production, Damanhour University, Damanhour, Egypt, [3]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Edmonton, AB, Canada, [4]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada*

12:15 PM 312 **Investigation of genomic imprinting through allelic expression analysis of mRNA in chicken embryonic brain and liver.**
*Z. Zhuo[1], S. J. Lamont[2], and B. Abasht[*1], [1]Department of Animal and Food Sciences, University of Delaware, Newark, [2]Department of Animal Science, Iowa State University, Ames*

Comparative Gut Physiology Symposium

Chair: Andrew P. Foote, USDA-ARS, US Meat Animal Research Center

Sponsors: Novus, King Techina, Kemin, Pro Nutra Solutions
9:30 AM - 5:00 PM
Grand Ballroom A

9:30 AM **Introductory Remarks**

9:45 AM 441 **Diet, gut microbiome, brain and behavior.**
J. Bienenstock[*], McMaster Brain-Body Institute, Hamilton, ON, Canada

10:30 AM 442 **Butyrate increases tight junction protein expression and enhances tight junction integrity in porcine IPEC-J2 cells stimulated with LPS.**
*H. Yan[*1] and K. M. Ajuwon[2], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, Purdue University, West Lafayette, IN*

10:45 AM 443 **Understanding host-microbiota interplay using nutrimetabonomics.**
*S. P. Claus[*1], C. I. Le Roy[1], M. J. Woodward[1], and R. M. La Ragione[2], [1]The University of Reading, United Kingdom, [2]University of Surrey, Guildford, United Kingdom*

11:30 AM 444 **Effects of dietary fibers on obesity related physiological parameters in C57BL/6 mice.**
C. Liu, A. K. Singh, M. Stewart, J. H. Uyehara-Lock, and R. Jha[*], University of Hawaii at Manoa, Honolulu

11:45 AM 445 **The gut microbiome as a regulator of physiology, brain and behaviour: Implications for the treatment of stress-related disorders.**
*G. Clarke[*1], T. F. O'Callaghan[1,2], P. Ross[1], and C. Stanton[1], [1]University College Cork, Ireland, [2]Teagasc Food Research Centre, Cork, Ireland*

12:30 PM **Break**

2:00 PM 446 **The microbiota-gut-brain axis: A key regulator of neural function across the lifespan.**
J. F. Cryan[*], University College Cork, Ireland

2:45 PM 447 **Microbial modulation of the neonatal immune system: Lessons from infants and piglets.**
*S. M. Donovan[*1], M. Wang[1], L. A. Davidson[2], I. Ivanov[2], and R. S. Chapkin[2], [1] University of Illinois at Urbana-Champaign, [2]Texas A&M Unversity, College Station*

3:15 PM 448 **The growing importance of defining gut "health" in animal nutrition and health.**
*P. Celi[*1], A. J. Cowieson[2], F. Fru-Nji[2], A. M. Kluenter[2], and V. Verlhac[3], [1]Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, [2]DSM Nutritional Products, Kaiseraugst, Switzerland, [3]DSM Nutritional Products, Village-Neuf, France*

3:30 PM 449 **The microbiome and animal health.**
*G. B. Penner[*1], T. A. McAllister[2], S. Li[3], J. C. Plaizier[3], E. Khafipour[3], and L. L. Guan[4], [1]University of Saskatchewan, Saskatoon, SK, Canada, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada [3]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [4]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

4:15 PM 450 ***In vitro* fermentation characteristics of agricultural products and coproducts and its effect on the large intestinal microbiota of swine.**
*U. P. Tiwari[*1], S. Mattus[1], K. Neupane[2], and R. Jha[1], [1]University of Hawaii at Manoa, Honolulu, [2]University of Hawaii, Leeward Community College, Pearl City*

4:30 PM 451 **Analysis of the gut microbiome in beef cattle and its association with feed intake, growth, and efficiency.**
*P. R. Myer[*1], J. E. Wells[2], T. P. L. Smith[2], L. A. Kuehn[2], and H. C. Freetly[2], [1]University of Tennessee Institute of Agriculture, Knoxville, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE*

Forages and Pastures II

Chair: Karla H. Jenkins, University of Nebraska

9:30 AM - 12:30 PM
Grand Ballroom H

9:30 AM 656 **WS** **Influence of supplement type and monensin addition on utilization of low-quality, cool-season forage by beef cattle.**
*D. W. Bohnert[*1], M. C. Rodrigues[1], M. C. Vieira[1], K. C. Swanson[2], S. J. Falck[3], and R. F. Cooke[1], [1]Oregon State University-EOARC Burns, [2]North Dakota State University, Fargo, [3]USDA-ARS; EOARC Burns, OR*

9:45 AM 657 **WS** **Methods to increase productivity of spring calving production systems in the Nebraska Sandhills.**
*D. Broadhead[*1], A. Stalker[1], J. A. Musgrave[2], and R. N. Funston[2], [1]University of Nebraska-Lincoln, North Platte, [2]University of Nebraska-Lincoln,*

10:00 AM 658 **Performance of stocker cattle grazing 'Tifton 85' bermudagrass supplemented with dried distillers grains on per animal and per area bases: A 2-year summary.**
*W. B. Smith[*1], F. M. Rouquette[1], J. L. Kerby[1], L. O. Tedeschi[2], J. L. Foster[3], J. P. Banta[1], K. C. McCuistion[4], T. J. Machado[4], and L. A. Redmon[2], [1]Texas A&M AgriLife Research, Overton, [2]Texas A&M University, College Station, [3]Texas A&M AgriLife Research, Beeville, [4]Texas A&M University, Kingsville*

10:15 AM 659 **Monensin effects on early weaned beef calves grazing annual ryegrass pastures.**
*J. M. B. Vendramini[*1], F. Leite de Oliveira[1], J. M. D. Sanchez[1], J. Yarborough[1], D. Perez[1], J. Ralston[1], and R. F. Cooke[2], [1]UF/IFAS, Range Cattle Research and Education Center, Ona, FL, [2]Oregon State University-EOARC Burns*

10:30 AM 660 **Reduced enteric methane emissions on legume vs. grass irrigated pastures.**
*J. W. MacAdam[*1], K. A. Beauchemin[2], A. I. Bolletta[3], and L. R. Pitcher[4], [1]Department of Plants, Soils, and Climate, Utah State University, Logan, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]National Institute of Agricultural Technology, Bordenave, Argentina, [4]Utah State University, Logan*

10:45 AM 661 **Milk production, rumination and body condition score of organic dairy cattle grazing two pasture systems incorporating warm and cool season forages.**
*K. E. Ruh[*1,2], B. J. Heins[2], and J. Paulson[3], [1]University of Minnesota, Saint Paul, [2]University of Minnesota West Central Research and Outreach Center, Morris, [3]University of Minnesota Extension, Rochester*

11:00 AM **Break**

11:15 AM 662 **Evaluation of production, rumination, milk fatty acid profile, and profitability for organic dairy cattle fed sprouted barley fodder.**
*B. J. Heins[*1], J. Paulson[2], and H. Chester-Jones[3], [1]University of Minnesota West Central Research and Outreach Center, Morris, [2]University of Minnesota Extension, Rochester, [3]University of Minnesota Southern Research and Outreach Center, Waseca*

11:30 AM 663 **Effect of tillage and planting date of wheat pasture on forage production and calf performance.**
*P. A. Beck[*1], W. Galyen[2], T. Hess[3], and D. S. Hubbell, III[3], [1]University of Arkansas SWREC, Hope, [2]University of Arkansas, Fayetteville, [3]University of Arkansas Livestock and Forestry Research Station, Batesville*

11:45 AM 664 **Impact of high-energy forages on grass-finished steer performance and carcass merit.**
*R. M. Martin[*1], J. E. Rowntree[1], K. A. Cassida[1], and D. Carmichael[2], [1]Michigan State University, East Lansing, [2]Michigan State University AgBio Lake City Research Center, Lake City*

12:00 PM 665 **Effect of stocking rate on performance, diet selection and apparent total-tract digestibility among heifers grazing cover crops.**
B. R. Brunsvig[*], D. W. Brake, A. J. Smart, and E. E. Grings, South Dakota State University, Brookings

Genomics Symposium: Translational Genomics to Improve Fertility of Animals

Chair: Mark A. Mirando, USDA National Institute of Food and Agriculture

Sponsor: CDGKV Appreciation Club
9:30 AM - 11:30 AM
150 G

9:30 AM 691 **Translational genomics for improving sow reproductive longevity.**
*D. C. Ciobanu[*1], S. D. Kachman[1], S. Olson[1], M. L. Spangler[1], M. D. Trenhaile[1], H. Wijesena[1], P. S. Miller[1], J. J. Riethoven[1], C. A. Lents[2], J. F. Thorson[2], R. Massey[3], and T. J. Safranski[3], [1]University of Nebraska-Lincoln, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE, [3]University of Missouri, Columbia*

10:00 AM 692 **Detection and selection against early embryonic lethals in US beef breeds.**
*J. F. Taylor[*1], R. D. Schnabel[1], B. Simpson[2], J. E. Decker[1], M. Rolf[8], B. P. Kinghorn[4], A. Van Eenennaam[5], M. D. MacNeil[6], D. S. Brown[1], M. F. Smith[1], and D. J. Patterson[1], [1]University of Missouri, Columbia, [2]GeneSeek, a Neogen Company, Lincoln, NE, [3]Oklahoma State University, Stillwater, [4]University of New England, Armidale, Australia, [5]University of California-Davis, [6]Delta G, Miles City, MT*

10:30 AM 693 **Genomic selection for improved fertility of dairy cows with emphasis on cyclicity and pregnancy.**
*G. J. M. Rosa[*1], P. J. Pinedo[2], J. E. P. Santos[3], R. C. Bicalho[4], G. Schuenemann[5], R. Chebel[6], K. N. Galvão[3], R. O. Gilbert[7], S. L. Rodrigez-Zas[8], C. M. Seabury[9], J. Fetrow[6], and W. W. Thatcher[10], [1]University of Wisconsin-Madison, [2]Colorado State University, Fort Collins, [3]University of Florida, Gainesville, [4]Cornell University, Ithaca, NY, [5]The Ohio State University, Columbus, [6]University of Minnesota, Saint Paul, [7]Cornell University College of Veterinary Medicine, Department of Clinical Sciences, Ithaca, NY, [8]University of Illinois at Urbana-Champaign, [9]College of Veterinary Medicine, Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

11:00 AM 694 **Improving fertility of dairy cattle using translational genomics.**
*T. E. Spencer[*1], H. L. Neibergs[2], P. J. Hansen[3], J. B. Cole[4], J. Dalton[5], D. A. Moore[6], M. Chahine[7], and A. De Vries[3], [1]Division of Animal Sciences, University of Missouri, Columbia, [2]Department of Animal Sciences, Washington State University, Pullman, [3]Department of Animal Sciences, University of Florida, Gainesville, [4]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [5]University of Idaho, Caldwell, [6]Department of Veterinary Clinical Sciences, Washington State University, Pullman, [7]Department of Animal and Veterinary Sciences, University of Idaho, Twin Falls*

Horse Species Symposium: Urban Students in Animal Science and the Impact of Equine Programs

Chair: Fernanda Camargo, University of Kentucky

9:30 AM - 12:30 PM
155 A

9:30 AM 822 **Making animal sciences relevant to the Urban student: Connecting to the real world.**
J. J. Parrish[*], University of Wisconsin-Madison

10:00 AM 823 **Creating hands on learning opportunities for inexperienced equine students.**
K. L. Vernon[*], Clemson University, SC

10:30 AM **Beyond the lecture: Engaging equine science students inside and outside the classroom**
C.J. Hammer, Animal Sciences, North Dakota State University, Fargo*

11:00 AM 824 **Retaining urban students in animal science: The role of equine programs.**
J. A. Sterle[*] and H. D. Tyler, Iowa State University, Ames

11:15 AM 825 **Prolonged head elevation causes mucosal IgA fluctuation in horses.** *J. M. Bobel[*], M. R. Di-Lernia, J. R. Abbott, M. T. Long, and L. K. Warren, University of Florida, Gainesville*

11:30 AM 826 **Effect of a square toe or perimeter fit horseshoe on quality of movement and gait kinematics of the western pleasure horse.**
*P. Q. Underwood[1], L. M. White[*1], K. W. Walter[2], D. Hogue[1], and L. K. Hirtz[2], [1]New Mexico State University, Las Cruces, [2]Truman State University, Kirksville, MO*

Meeting Today's Animal Care Standards: Are You Ready?

Chair: Gretchen M. Hill, Michigan State University

Sponsor: AAALAC
9:30 AM - 12:30 PM
Grand Ballroom C

9:30 AM 28 **New Ag Guide—What should we expect?.**
A. B. Webster[*], Department of Poultry Science, University of Georgia, Athens

10:05 AM 29 **How ag research and teaching differs from "rodent" studies in AAALAC international accreditation.**
J. J. McGlone[*], Texas Tech University, Lubbock

10:40 AM 30 **Getting along with your IACUC and helping them understand agricultural species research.**
J. Salak-Johnson[*], University of Illinois at Urbana-Champaign

11:15 AM 31 **Applying AAALAC international's peer review program to support agricultural research programs.**
J. Bradfield[*], AAALAC International, Frederick, MD

11:50 AM 32 **AAALAC international agricultural animal research program accreditation at Purdue University: "The good, the bad, and the ugly".**
J. S. Radcliffe[*], Purdue University, West Lafayette, IN

Nonruminant Nutrition: Feed Additives

Chair: Josh Jendza, BASF Corporation

9:30 AM - 12:30 PM
Grand Ballroom F

9:30 AM 938 **Influence of *Acacia tortilis* leaf meal-based diets on growth performance of pigs.**
M. Khanyile, S. P. Ndou, and M. Chimonyo[*], University of KwaZulu-Natal, Pietermaritzburg, South Africa

9:45 AM 939 **Different responses of Ross 308 and 708 broiler strains in growth performance and related properties to diet treatment with or without tributyrate glycerides.**
*A. Bedford[1], H. Yu[1], M. Hernandez[1], J. Squires[2], S. Leeson[3], Y. Hou[4], and J. Gong[*1], [1]Agriculture and Agri-Food Canada, Guelph, ON, Canada, [2]Department of Animal Biosciences, University of Guelph, ON, Canada, [3]Department of Animal and Poultry Science, University of Guelph, ON, Canada, [4]Wuhan Polytechnic University, Wuhan, China*

10:00 AM 940 **Immunomodulatory effects of whole yeast cells and capsicum in weanling pigs challenged with pathogenic *Escherichia coli*.**
*S. Wojnicki[*1], V. G. Perez[2], and R. N. Dilger[1], [1] University of Illinois at Urbana-Champaign, [2]ADM Animal Nutrition, Decatur, IL*

10:15 AM 941 **Comparing the effects of zinc oxide, milk hydrolysate, yeast β glucan and combination of milk hydrolysate / yeast β glucan on growth, gut microbiota and cytokine gene expression in weaning piglets.**
*A. Mukhopadhya[*1], J. V. O'Doherty[2], N. Noronha[3], M. T. Ryan[1], and T. Sweeney[1], [1]School of Veterinary Medicine, University College Dublin, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland, [3]Food for Health Ireland, University College Dublin, Ireland*

10:30 AM 942 **Effects of a standardized blend of carvacrol, cinnamaldehyde and capsicum oleoresin on performance of growing finishing pigs using multiple trial analysis methodology.**
C. Oguey[*], Pancosma, Geneva, Switzerland

10:45 AM 943 **Extracts of laminarin improve growth rate and small intestinal morphology in new born chicks, but does not influence Campylobacter colonisation.**
*A. Mukhopadhya[*1], S. Vigors[1], J. V. O'Doherty[2], H. Meridith[1], K. Thornton[1], and T. Sweeney[1], [1]School of Veterinary Medicine, University College Dublin, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*

11:00 AM **Break**

11:15 AM 944 **Effects of defatted microalgae on nutrient digestibility and retention in broiler chicks.**
T. Sun[*], A. D. Magnuson, L. Tao, M. Burke, M. Barcus, and X. G. Lei, Cornell University, Ithaca, NY

11:30 AM 945 **Defatted microalgae-mediated enrichment of N-3 polyunsaturated fatty acids in muscle of broiler chicks was not affected by supranutrition of vitamin E and(or) Se.**
L. Tao, T. Sun, A. D. Magnuson, M. Burke, and X. G. Lei[*], Cornell University, Ithaca, NY

11:45 AM 946 **Effect of supplementing milk during first 4 days postweaning on growth performance, energy digestibility, gut morphology, and severity of diarrhea for nursery pigs in a commercial farm.**
*J. Guo[*1], J. Wang[1], J. M. Purvis[1,2], and S. W. Kim[1], [1]North Carolina State University, Raleigh, [2]N. G. Purvis Farm Inc., Robbins*

12:00 PM 947 **Effects of dietary lysophospholipid complex on apparent ileal digestibility and growth performance in nursery pigs.**
L. Zheng[*], A. C. Weaver, and S. W. Kim, North Carolina State University, Raleigh

12:15 PM 948 **Effects of dietary supplementation of phytobiotics on intestinal health and growth performance of nursery pigs.**
I. Park[*], J. K. Lee, J. Wang, and S. W. Kim, North Carolina State University, Raleigh

Physiology, Endocrinology and Extension Symposium: Enhancing Adoption of Reproductive Management Tools for Beef and Dairy Producers

Chair: G. Cliff Lamb, University of Florida, North Florida Research and Education Center

9:30 AM - 12:30 PM
151 G

9:30 AM 1166 **History of the development of the Beef Reproduction Task Force (BRTF) and impacts of the BRTF on beef cattle reproductive management.**
*S. Johnson[*1], R. F. Cooke[2], G. R. Dahlke[3], R. N. Funston[4], J. B. Hall[5], D. J. Kesler[6], G. C. Lamb[7], J. Lauderdale[8], D. J. Patterson[9], G. A. Perry[10], D. R. Strohbehn[3], and A. L. Van Eenennaam[11], [1]Kansas State University, Colby, [2]Oregon State University-EOARC Burns, [3]Iowa State University, Ames, [4]University of Nebraska, North Platte, [5]University of Idaho Nancy M. Cummings Research, Extension Education Center, Carmen, [6]University of Illinois at Urbana-Champaign, [7]University of Florida, North Florida Research and Education Center, Marianna, [8]Lauderdale Enterprises, Inc., Augusta, MI, [9]University of Missouri, Columbia, [10]Department of Animal Science, South Dakota State University, Brookings, [11]University of California-Davis*

10:00 AM 1167 **History of the development of the Dairy Cattle Reproduction Council (DCRC) and impacts of the DCRC on dairy cattle reproductive management.**
M. C. Lucy[*], University of Missouri, Columbia

10:30 AM 1168 **Physiological and management advances enhancing adoption of applied reproductive management procedures in beef cattle.**
*D. J. Patterson[*1], R. F. Cooke[2], G. R. Dahlke[3], R. N. Funston[4], J. B. Hall[5], G. C. Lamb[6], J. Lauderdale[7], G. A. Perry[8], and A. L. Van Eenennaam[9], [1]University of Missouri, Columbia, [2]Oregon State University-EOARC Burns, [3]Iowa State University, Ames, [4]University of Nebraska, North Platte, [5]Department of Animal & Veterinary Sciences, University of Idaho, Moscow [6]University of Florida, North Florida Research and Education Center, Marianna, [7]Lauderdale Enterprises, Inc., Augusta, MI, [8]Department of Animal Science, South Dakota State University, Brookings, [9]University of California-Davis*

11:00 AM 1169 **Physiological and management advances enhancing adoption of applied reproductive management procedures in dairy cattle.**
J. S. Stevenson[*] and L. G. D. Mendonça, Kansas State University, Manhattan

11:30 AM 1170 **Impacts of temperament on reproductive performance of *Bos indicus* and *B. taurus* beef females.**
R. F. Cooke[*], Oregon State University-EOARC Burns

12:00 PM 1171 **Estrus: Association with productive parameters and implications to fertility.**
*R. L. A. Cerri[*1], B. F. Silper[1], T. A. Burnett[1], A. M. L. Madureira[2], J. L. M. Vasconcelos[2], and L. Polsky[1], [1]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [2]Sao Paulo State University, Botucatu, Brazil*

Production, Management and the Environment Symposium: Impacts of Livestock Production on Environmental Reactive Nitrogen

Chair: April B. Leytem, USDA-ARS

9:30 AM - 12:00 PM
151 E/F

9:30 AM	1287	**The world's nitrogen cycle and human impacts.** *J. Ham*, Colorado State University, Fort Collins*
10:00 AM	1288	**Reactive N emissions from beef cattle feedlots.** *R. W. Todd*, H. M. Waldrip, D. B. Parker, and N. A. Cole, USDA-ARS, Bushland, TX*
10:20 AM	1289	**Reactive nitrogen losses from dairy production systems.** *A. B. Leytem*[1] and C. A. Rotz[2], [1]USDA-ARS, Kimberly, ID, [2]USDA-ARS Pasture Systems and Watershed Management Research Unit, University Park, PA*
10:40 AM	1290	**Reactive N emissions from crops and pastures.** *C. Wagner-Riddle* and K. Congreves, University of Guelph, ON, Canada*
11:00 AM	1291	**Measurement and mitigation of reactive nitrogen species from swine and poultry production facilities.** *W. Powers* and M. Capelari, Michigan State University, East Lansing*
11:20 AM	1292	**Modeling atmospheric reactive nitrogen.** *J. O. Bash*[1], K. Foley[1], J. T. Walker[1], M. W. Shepard[2], K. E. Cady-Pereira[3], S. Napelenok[1], D. K. Henze[4], and E. J. Cooter[1], [1]US EPA, Research Triangle, NC, [2]Environmental Canada, Toronto, ON, Canada, [3]Atmoshperic and environmental Research Inc., Lexington, MA, [4]University of Colorado, Boulder*

Toxic Plants Symposium

Chair: T. Zane Davis, USDA-ARS

Sponsor: USDA-ARS
9:30 AM - 12:30 PM
150 E/F

9:30 AM	766	**Is there a difference between exposures to one or two plant toxins?** *K. D. Welch*, USDA-ARS, Poisonous Plant Research Laboratory, Logan, UT*
9:55 AM	1767	**Resistance to toxic plants: The right animal at the right time in the right pasture.** *B. T. Green*[1], K. D. Welch[1], J. W. Keele[2], T. G. McDaneld[2], and J. A. Pfister[1], [1]USDA-ARS, Poisonous Plant Research Laboratory, Logan, UT, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE,*
10:20 AM	1768	**Using divergent selection and genomics to uncover genetic variation underlying larkspur tolerance and susceptibility in cattle.** *J. W. Keele*[1], T. G. McDaneld[1], L. A. Kuehn[1], W. M. Snelling[1], R. G. Tait, Jr.[1], K. D. Welch[2], and B. T. Green[2], [1]USDA-ARS, US Meat Animal Research Center, Clay Center, NE, [2]USDA-ARS, Poisonous Plant Research Laboratory, Logan, UT*
10:45 AM		**Break**
11:10 AM	1769	**The relationship between swainsonine-containing plants and endophytic fungi.** *D. Cook*, D. R. Gardner, and J. A. Pfister, USDA-ARS Poisonous Plant Research Laboratory, Logan, UT*
11:35 AM	1770	**Alleviation and mitigation of fescue toxicosis.** *G. E. Aiken*, USDA-ARS Forage-Animal Production Research Unit, Lexington, KY*
12:00 PM	1771	**Effects of high selenium forages on reproduction in sheep.** *Z. Davis*, USDA-ARS, Logan, UT*

ADSA Foundation Talk

Chairs: Mike Socha, Zinpro Corporation

11:30 AM - 12:15 PM
155 E

A new holostic approach for dairy extension: Fom research to education to business.
F. Cardoso, University of Illinois at Urbana-Champaign

Animal Health: Immunology and Gut Health

Chair: Michael A. Ballou, Texas Tech University;
Nicole C. Burdick Sanchez, USDA-ARS, Livestock Issues Research Unit

2:00 PM - 5:00 PM
155 D

2:00 PM 172 **Porcine intestinal explants as *ex vivo*/*in vitro* model to study gastrointestinal disease.**
N. Reisinger, P. Fuhrmann, C. Emsenhuber, B. Grenier, E. Mayer, and G. Schatzmayr, BIOMIN Research Center, Tulln, Austria*

2:15 PM 173 **Comparison of strategies for combining dynamic linear models with artificial neural networks for detecting diarrhea in slaughter pigs.**
D. B. Jensen and A. R. Kristensen, University of Copenhagen, Department of Large Animal Sciences, Frederiksberg, Denmark*

2:30 PM 174 **Heat stress increases gut permeability in pigs – application of a non-invasive assay.**
N. Reisinger[1], S. Schaumberger[2], I. Dohnal[1], B. Doupovec[1], E. Mayer[1], and G. Schatzmayr[1], [1]BIOMIN Research Center, Tulln, Austria, [2]BIOMIN Holding GmbH, Getzersdorf, Austria*

2:45 PM 175 **The effect of various parameters measured at farrowing on subsequent pig performance.**
A. L. Robinson[1], J. Colpoys[2], G. Robinson[1], E. A. Hines[1], E. Edwards[1], J. Bundy[1], A. K. Johnson[1], and H. D. Tyler[1], [1]Iowa State University, Ames, [2]Truman State University, Kirksville, MO*

3:00 PM 176 **Environmental persistence of porcine epidemic diarrhea virus, porcine delta corona virus, and transmissible gastroenteritis in feed ingredients.**
M. P. Trudeau[1], H. Verma[2], F. Sampedro[2], P. E. Urriola[1], G. C. Shurson[1], and S. M. Goyal[2], [1]Department of Animal Science, University of Minnesota, St. Paul, [2]Veterinary Population Medicine, University of Minnesota, St. Paul*

3:15 PM 177 **Bovine macrophage phenotype influences inflammatory response to lipopolysaccharide.**
W. Raphael and G. A. Contreras, Michigan State University, East Lansing*

3:30 PM 178 **High immune response technology for use in commercial swine herds: A broad based approach to disease resistance.**
J. D. Schmied[1], S. L. Cartwright[1], P. Rupa[1], and B. Mallard[2], [1]University of Guelph, ON, Canada, [2]Department of Animal Biosciences, Centre for Genetic Improvement of Livestock, University of Guelph, ON, Canada*

3:45 PM 179 **Immunomodulatory activities of polyphenol extract from Cowpea (*Vigna unguiculata*) on bovine polymorphonuclear neutrophils.**
S. Adjei-Fremah, L. E. Jackai, K. Schimmel, and M. Worku, North Carolina Agricultural and Technical State University, Greensboro*

4:00 PM 180 **Prevalence of digital dermatitis in Canadian Holsteins classified as high, average or low antibody and cell-mediated immune responders.**
S. L. Cartwright[1], F. Malchiodi[2], K. A. Thompson-Crispi[3], F. Miglior[4], and B. Mallard[4], [1]University of Guelph, ON, Canada, [2]Centre of Genetic Improvement of Livestock University of Guelph, ON, Canada, [3]Trouw Nutrition Agresearch, Guelph, ON, Canada, [4]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada,*

4:15 PM 181 **MiRNAseq of neutrophils during the transition period in cows with divergent metabolic phenotypes.**
M. A. Crookenden[1], C. G. Walker[1], A. Heiser[2], J. J. Loor[3], K. M. Moyes[4], J. K. Kay[1], S. Meier[1], A. Murray[5], V. S. R. Dukkipati[5], M. D. Mitchell[6], and J. R. Roche[1], [1]DairyNZ, Hamilton, New Zealand, [2]AgResearch, Palmerston North, New Zealand, [3] University of Illinois at Urbana-Champaign, [4]Department of Animal and Avian Sciences, University of Maryland, College Park, [5]Massey University, Palmerston North, New Zealand, [6]University of Queensland, Queensland, Australia*

Beef Species Symposium: Improving Welfare of Beef Cattle

Chair: Judson T. Vasconcelos, Merck & Co

Sponsor: Novus
2:00 PM - 5:00 PM
150 B/C

2:00 PM			**Welcoming Remarks**
2:05 PM	275		**Assessing and improving welfare in cow calf systems.** *C. B. Tucker*, University of California-Davis*
2:35 PM	276		**Best management practices for weaned calves for improved health and well-being.** *C. R. Krehbiel*, B. K. Wilson, C. J. Richards, and D. L. Step, Oklahoma State University, Stillwater*
3:05 PM	277		**Dairy cow culling – Best practices and industry trends.** *J. Walker*, Dean Foods, Dallas, TX*
3:35 PM	278		**Welfare assessments of low stress handling in finishing feedlot cattle.** *K. S. Schwartzkopf-Genswein*, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*
4:05 PM	279		**Evolution of animal welfare at packing plants.** *L. N. Edwards-Callaway*, JBS USA LLC, Greeley, CO*
4:35 PM			**Panel Discussion**
4:50 PM			**Concluding Remarks**

Breeding and Genetics: Selection for Health and Fertility

Chair: Christian Maltecca, North Carolina State University

2:00 PM - 5:00 PM
Grand Ballroom I

2:00 PM	379		**Genetic analysis of superovulation and embryo transfer traits in Holstein cattle.** *K. L. Parker Gaddis*[*1], S. Dikmen[2], J. B. Cole[3], and P. J. Hansen[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Uludag University, Faculty of Veterinary Medicine, Department of Animal Science, Bursa, Turkey, [3]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*
2:15 PM	380		**Genetic correlations of hoof lesions and trimming status with feet and leg conformation traits in Canadian Holsteins.** *F. Malchiodi*[*1], A. M. Christen[2], D. F. Kelton[3], F. S. Schenkel[1], and F. Miglior[1,4], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Valacta, Sainte-Anne-De-Bellevue, QC, Canada, [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [4]Canadian Dairy Network, Guelph, ON, Canada*
2:30 PM	381		**Genetic parameters for number of embryos produced by superovulated donors as heifers or cows using an *in vivo* or *in vitro* technique.** *C. Jaton*[*1,2], A. Koeck[1], M. Sargolzaei[1,2], C. A. Price[3], C. Baes[1], F. S. Schenkel[1], and F. Miglior[1,4], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Semex Alliance, Guelph, ON, Canada, [3]Faculté de médecine vétérinaire, Université de Montreal, St-Hyacinthe, QC, Canada, [4]Canadian Dairy Network, Guelph, ON, Canada*
2:45 PM	382		**Estimation of genetic progress and profitability of dairy herds using varying proportions of in-vitro produced sexed embryos.** *K. Kaniyamattam[1], J. Block[2], P. J. Hansen[1], and A. De Vries*[*1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]OvaTech LLC, Gainesville, FL*
3:00 PM	383		**Single step genomic prediction accuracies for lactation and reproduction traits in Yorkshire sows.** *D. M. Thekkoot*[*1], R. A. Kemp[2], N. J. Boddicker[2], and G. Plastow[3], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Genesus Inc, Lethbridge, AB, Canada, [3]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*
3:15 PM	384	**WS**	**Influence of first calving date on stayability in *Bos indicus* crossbred cows.** *B. N. Engle*, C. A. Gill, J. O. Sanders, D. G. Riley, J. E. Sawyer, and A. D. Herring, Department of Animal Science, Texas A&M University, College Station*

3:30 PM **Break**

3:45 PM 385 **Use of a threshold animal model to estimate calving ease and stillbirth (Co)variance components for US Holsteins.**
J. B. Cole[*1], D. J. Null[1], and S. Tsuruta[2], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]University of Georgia, Athens*

4:00 PM 386 **Genetic parameters for production traits and heifer pregnancy in Red Angus cattle.**
R. J. Boldt[*1], S. E. Speidel[1], M. G. Thomas[1], L. Keenan[2], and R. M. Enns[1], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [3]Red Angus Association of America, Denton, TX*

4:15 PM 387 **Daily rumination time in Italian Holstein cows: Heritability and correlation with milk production.**
R. Moretti[*1], R. Bozzi[1], C. Maltecca[2], F. Tiezzi[2], S. Chessa[3], D. Bar[4], and S. Biffani[3], [1]University of Florence, Italy, [2]North Carolina State University, Raleigh, [3]Institute of Agricultural Biology & Biotechnology - CNR, Lodi, Italy, [4]SCR Europe, Gariga di Podenzano, Italy*

4:30 PM 388 **Relationship between linear type and fertility traits in Nguni cows.**
T. J. Zindove[*1], K. A. Nephawe[2], S. P. Ndou[3], and M. Chimonyo[1], [1]University of KwaZulu-Natal, Pietermaritzburg, South Africa, [2]Tshwane University of Technology, Pretoria, South Africa, [3]University of Manitoba, Winnipeg, MB, Canada*

4:45 PM 389 **Estimation of genetic parameters for birth to weaning traits in meat goats.**
K. M. Andries[*], F. Bebe, A. McKay, A. Bodrick, and A. Hartell, Kentucky State University, Frankfort*

Development of a Hazard Analysis for Animal Food Performed for Compliance with the Federal Food Safety Modernization Act (AFIA/IFEEDER)

Chair: R. S. Sellers, American Feed Industry Association

Sponsor: AFIA
2:00 PM - 5:00 PM
Grand Ballroom B/D

2:00 PM **Introductory Remarks**

2:20 PM **Requirements of the Hazard Analysis Section of the Animal Food Rules.**
D. Edwards, Center for Veterinary Medicine, US Food and Drug Administration

2:50 PM **Review process and categories of hazards for animal food.**
J. Evanson, Center for Animal Health and Food Safety, University of Minnesota

3:30 PM **Findings of the review process.**
T. Goldsmith, Center for Animal Health and Food Safety, University of Minnesota

4:10 PM **Animal food hazards report and proposed use.**
J. Evanson, T. Goldsmith, Center for Animal Health and Food Safety, University of Minnesota

4:30 PM **Discussion**

EAAP Symposium: Genomic Selection is Transforming Cattle Breeding

Chair: Ignacy Misztal, University of Georgia

Sponsor: EAAP
2:00 PM - 5:00 PM
Grand Ballroom J

2:00 PM 407 **ASAS-EAAP Speaker: Genomic selection for methane emission.**
Y. de Haas[*1], J. E. Pryce[2], E. Wall[3], S. McParland[4], C. I. V. Manzanilla Pech[1], G. Difford[5], and J. Lassen[5], [1]Animal Breeding and Genomics Centre, Wageningen UR Livestock Research, Netherlands, [2]Agribio, Department of Economic Development, Jobs, Transport and Resources and La Trobe University, Melbourne, Australia, [3]SRUC, Edinburgh, United Kingdom, [4]Teagasc, Moorepark, Fermoy, Co. Cork, Ireland, [5]Center of Quantitative Genetics and Genomics, Department of Molecular Biology and Genetics, Aarhus University, Foulum, Denmark*

2:45 PM 408 **ASAS-EAAP Speaker: How is genomics changing cattle breeding?.**
D. Boichard[*1], V. Ducrocq[1], P. Croiseau[1], and S. Fritz[1,2], [1]GABI, INRA, AgroParisTech, Universite Paris Saclay, Jouy-en-Josas, France, [2]Allice, Paris, France*

3:30 PM 409 **ASAS-EAAP Speaker: Genomic prediction using imputed sequence data in dairy and dual purpose breeds.**
*M. Erbe[*1,2], M. Frischknecht[3,4], H. Pausch[5], R. Emmerling[1], T. H. Meuwissen[6], B. Gredler[3], B. Bapst[3], I. Consortium[7], K. U. Götz[1], and H. Simianer[2], [1]Bavarian State Research Centre for Agriculture, Institute for Animal Breeding, Grub, Germany, [2]Georg-August-University, Department of Animal Sciences, Animal Breeding and Genetics Group, Göttingen, Germany, [3]Qualitas AG, Zug, Switzerland, [4]Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL, Zollikofen, Switzerland, [5]Technische Universität Müchen, Chair of Animal Breeding, Freising, Germany, [6]Norwegian University of Life Sciences, Department of Animal and Aquacultural Sciences, Ås, Norway, [7]Interbull Centre, Uppsala, Sweden*

4:15 PM 410 **ASAS-EAAP Speaker: Multi-breed genomic evaluations for 1 million beef cattle in Ireland.**
*A. Cromie[*1], R. Evans[2], F. Kearney[2], D. Berry[3], M. C. McClure[1], and J. McCarthy[4], [1]Irish Cattle Breeding Federation, Bandon, Ireland, [2]Irish Cattle Breeding Federation, Bandon, Co. Cork, Ireland, [3]Teagasc, Moorepark Research Centre, Fermoy, Cork, Ireland, [4]Irish Cattle Breeding Federation, Cork, Ireland*

Extension Education

Chair: Joseph Dalton, University of Idaho

2:00 PM - 4:00 PM
155 C

2:00 PM 579 **WS** **Survey of serum trace mineral concentrations in weaned Montana ram lambs.**
*C. M. Page[*1], M. Van Emon[1], S. Spear[1], T. W. Murphy[2], J. G. P. Bowman[1], and W. C. Stewart[1], [1]Montana State University, Bozeman, [2]University of Wisconsin-Madison*

2:15 PM 580 **Breakfast on the Farm event is an effective learning activity and improves consumer perceptions of dairy production.**
*J. M. Smith[*1] and T. A. Ferris[2], [1]University of Vermont, Burlington, VT, [2]Michigan State University, East Lansing*

2:30 PM 581 **Breakfast on the Farm, an educational farm tour, improves consumer trust in animal care, food safety and modern conventional dairy production.**
*T. A. Ferris[*1], J. M. Smith[2], E. M. Richer[3], M. Welker[3], J. Stechschulte[3], M. A. Dunckel[4], and A. E. Kuschel[5], [1]Michigan State University, East Lansing, [2]University of Vermont, Burlington, VT, [3]The Ohio State University Extension, Wauseon, [4]Michigan State University Extension, Alpena, [5]Michigan State University Extension, Clinton Twp*

2:45 PM 582 **Creation, delivery, and assessment of the livestock education and certification for agricultural law enforcement extension program.**
*C. Wickens[*1], M. J. Hersom[2], R. G. Easterly III[1], E. Jennings[1], B. Myers[1], J. Shuffitt[1], B. Stice[1], and J. Weir[1], [1]University of Florida, Gainesville, [2]Department of Animal Sciences, University of Florida, Gainesville*

3:00 PM 583 **Benchmark demographics of the Mississippi feeder calf board sale program.**
*E. A. Caldwell[*1], B. B. Karisch[1], J. M. Riley[2], and J. A. Parish[3], [1]Mississippi State University, Mississippi State, [2]Oklahoma State University, Stillwater, [3]Mississippi State University, Prairie*

3:15 PM 584 **The show-me-select replacement heifer program: Adding value to beef herds in Missouri.**
J. W. C. Locke[*], J. M. Thomas, B. E. Bishop, J. M. Abel, S. E. Poock, D. S. Brown, J. E. Decker, and D. J. Patterson, University of Missouri, Columbia

3:30 PM 585 **Perceived mastitis costs and milk quality management practices among Southeastern United States dairy producers.**
*D. T. Nolan[*1], C. Blakely[2], P. D. Krawczel[2], C. S. Petersson-Wolfe[3], G. M. Pighetti[2], A. Stone[1], S. Ward[4], and J. M. Bewley[1], [1]University of Kentucky, Lexington, [2]University of Tennessee, Knoxville, [3]Virginia Polytechnic Institute and State University, Blacksburg, [4]Mississippi State University, Mississippi State*

Growth and Development Symposium: New -OMICS Technologies to Understanding the Biological Processes and Network Pathways Associated with Cattle Growth and Health

Chair: Gary J. Hausman, University of Georgia; Angela Canovas, University of Guelph

Sponsor: EAAP
2:00 PM - 5:00 PM
150 G

2:00 PM		**Introductory Remarks**
2:15 PM	783	**Objective-oriented genomic relationship matrices.** *A. Reverter*, CSIRO Agriculture, Brisbane, Australia*
2:55 PM	784	**Multi-omics data resources and use in genetic improvement of cattle growth and health.** *M. G. Thomas*, S. J. Coleman, S. E. Speidel, and R. M. Enns, Department of Animal Sciences, Colorado State University, Fort Collins*
3:35 PM		**The new bovine reference assembly and its value for genomic research.** *J. F. Medrano, University of California-Davis*
4:15 PM		**Metagenomics and transcriptomics associated with adiposity and feed efficiency in beef cattle.** *L. Guan, University of Alberta, Canada*

Horse Species Symposium: Nutrition and Immunology

Chair: Fernanda Camaro, University of Kentucky

2:00 PM - 4:30 PM
155 A

2:00 PM	815	**Nutritional immunology for the geriatric horse.** *A. A. Adams*, The Gluck Equine Research Center, University of Kentucky, Lexington*
2:30 PM	816	**Nutrition and immunity: General principles.** *K. C. Klasing*, University of California-Davis*
3:00 PM	817	**Optimizing nutrition to improve immune function in horses.** *L. K. Warren*, University of Florida, Gainesville*
3:30 PM	818	**Effect of selenium and vitamin E supplementation on blood glutathione peroxidase activity and selenium in moderately exercised horses.** *E. Velázquez Cantón*, A. H. Ramírez Pérez, L. A. Zarco Quintero, R. Rosiles Martínez, and J. C. Ángeles Hernández, FMVZ-UNAM, Mexico*
3:45 PM	819	**Age-related changes in select fecal bacteria in foals.** *M. B. Pyles*[*1], A. L. Fowler[1], V. Bill[1], B. E. Harlow[1,2], A. Crum[1], S. H. Hayes[1], M. D. Flythe[1,2], and L. M. Lawrence[1], [1]University of Kentucky, Lexington, [2]USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*
4:00 PM	820	**Changes in equine hindgut fermentation and carbohydrate digestion in response to varying sources of nitrogen.** *M. O. Lass*, J. S. Drouillard, J. M. Kouba, C. I. Vahl, Y. Wei, and T. L. Douthit, Kansas State University, Manhattan*
4:15 PM	821	**Effects of meal size and frequency on the equine cecal microbiota.** *E. B. Venable*[*1], S. S. Bland[1], H. Holscher[2], T. W. Liu[2], and K. S. Swanson[2], [1]Southern Illinois University, Carbondale, [2]University of Illinois at Urbana-Champaign*

Livestock Water Symposium

Chair: John J. Wagner, Colorado State University

2:00 PM - 5:00 PM
Grand Ballroom H

2:00 PM	872	**Understanding blue and green water for feed production in animal agriculture.** *J. G. Warren*, Oklahoma State University, Stillwater*
2:45 PM	873	**Mineral balances including TMR, drinking water and assay minerals in the milk.** *A. R. Castillo*, UC Cooperative Extension, Merced, CA*
3:15 PM		**Break**
3:30 PM	874	**Water: The frequently neglected nutrient in growing and finishing diets.** *J. J. Wagner* and T. E. Engle, Colorado State University, Fort Collins*
4:00 PM	875	**Simultaneous monitoring of water consumption in eight double pens as a tool for improving welfare and predicting diseases and unwanted behavioral changes in finisher pigs.** *K. N. Dominiak*[1], L. J. Pedersen[2], and A. R. Kristensen[1], [1]University of Copenhagen, Department of Large Animal Sciences, Frederiksberg, Denmark, [2]Aarhus University, Department of Animal Science Behavior and Stress Biology, Denmark*
4:15 PM	876	**Growth and health performance of dairy calves drinking reverse osmosis water compared to municipal water.** *N. D. Senevirathne*, J. L. Anderson, and M. Rovai, Dairy Science Department, South Dakota State University, Brookings*
4:30 PM	877	**Effect of protein supplementation on low-quality forage utilization and nitrogen balance by lambs drinking saline water.** *J. I. Arroquy*[1], A. Lopez[2], and A. Juarez Sequeira[3], [1]INTA - CONICET - UNSE, Santiago del Estero, Argentina, [2]INTA EEA Santiago del Estero, Santiago del Estero, Argentina, [3]CONICET-FAyA UNSE, Santiago del Estero, Argentina*

Meat Science and Muscle Biology Symposium: Science of Red Meat Consumption

Chair: Luigi Faucitano, Laval University

2:00 PM - 5:00 PM
155 B

2:00 PM		**Welcoming Remarks**
2:05 PM	906	**Beef's role in a healthy diet.** *J. N. Martin*, D. R. Woerner, R. Delmore, K. E. Belk, and J. D. Tatum, Colorado State University, Fort Collins*
2:45 PM	907	**How certain can we be about the association of meat consumption and cancer?** *D. M. Klurfeld*, USDA-ARS, Beltsville, MD*
3:25 PM	908	**The role of red and processed meat in colorectal cancer development: A perspective.** *S. De Smet*, Ghent University, Melle, Belgium*
4:05 PM	909	**Is there a role for meat in a plant-based diet?** *M. A. Binnie*, Canadian Pork Council, London, ON, Canada*
4:45 PM		**Panel Discussion**

Nonruminant Nutrition: Feed Ingredients and Digestibility

Chair: Miguel Cervantes, University of Baja California

Sponsor: H. J. Baker
2:00 PM - 5:00 PM
Grand Ballroom F

2:00 PM 969 **Effects of high protein canola meal on digestibility of phosphorus and growth performance of weanling pigs.**
*Y. She[*1], H. H. Salgado[2], D. Li[3], and H. H. Stein[1], [1] University of Illinois at Urbana-Champaign, [2]Laval University, Quebec City, QC, Canada, [3]CAU, Beijing, China*

2:15 PM 970 **Effect of heat stress on the apparent and standardized ileal digestibilities of amino acids in growing pigs.**
*A. Morales[1], M. Perez[1], P. Castro[1], N. O. Ibarra[1], E. Avelar[1], L. H. Baumgard[2], and M. Cervantes[*1], [1]ICA - Universidad Autanoma de Baja California, Mexicali, Mexico, [2]Iowa State University, Ames*

2:30 PM 971 **Effect of methionine sources and graded levels of sulfur amino acids on the growth performance of post-weaning piglets.**
*F. Molist[*1], P. Buttin[2], M. Bouwhuis[1], and P. J. van der Aar[1], [1]Schothorst Feed Research, Lelystad, Netherlands, [2]Novus International, Brussels, Belgium*

2:45 PM 972 **Digestible calcium requirement for 100 to 130 kg pigs.**
*L. A. Merriman[*1], C. L. Walk[2], C. M. Parsons[1], and H. H. Stein[1], [1] University of Illinois at Urbana-Champaign, [2]AB Vista, Marlborough, United Kingdom*

3:00 PM 973 **Effects of inclusion of canola meal in weanling pig diets containing different concentrations of energy.**
*T. F. Pedersen[*1], Y. Liu[2], and H. H. Stein[3], [1]Aarhus University, Denmark, [2]University of California-Davis,[3] University of Illinois at Urbana-Champaign*

3:15 PM 974 **Effect of increasing concentrations of digestible calcium and digestible phosphorus on apparent total tract digestibility of calcium and phosphorus by pigs.**
*J. C. González-Vega[*1], C. L. Walk[2], M. R. Murphy[1], and H. H. Stein[1], [1] University of Illinois at Urbana-Champaign, [2]AB Vista, Marlborough, United Kingdom*

3:30 PM **Break**

3:45 PM 975 **Trans-generational effect of feeding genetically modified mCry1Ac corn to laying hens and offspring on offspring growth and health.**
L. Chen[*], R. Zhong, L. Zhang, L. Gao, and H. Zhang, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China

4:00 PM 976 **Effects of methionine or arginine supplementation and environmental temperature on performance, carcass traits and meat quality of finishing pigs.**
*J. K. Htoo[*1], C. A. Garbossa[2], H. Silveira[2], L. G. Amaral[2], N. A. Barbosa[3], and V. S. Cantarelli[2], [1]Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany, [2]Federal University of Lavras, Brazil, [3]Evonik Industries do Brazil, São Paulo, Brazil*

4:15 PM 977 **A protective effect of IGF-activated plasma protein (CTCgrow) on lipopolysaccharide-induced intestinal dystrophy in rats.**
*M. Kwak[*1], J. Kim[1], J. M. Lee[2], S. W. Jung[2], and K. Y. Whang[1], [1]Korea University, Seoul, The Republic of Korea, [2]CTC BIO, Seoul, The Republic of Korea*

4:30 PM 978 **Effects of α-Galactosidase supplementation on the energy value of soybean meal and growth performance of weanling pigs.**
C. D. Espinosa[*], University of the Philippines Los Baños, Laguna, Philippines; University of Illinois at Urbana-Champaign

4:45 PM 979 **Use of crystalline amino acids in meal feeding does not affect nitrogen retention in growing pigs compared to protein-bound amino acids.**
S. A. Lee[*] and B. G. Kim, Konkuk University, Seoul, The Republic of Korea

Physiology and Endocrinology: Nutrition, Reproduction and Metabolism in Dairy Cattle

Chair: Ronaldo L.A. Cerri, University of British Columbia

2:00 PM - 4:30 PM
151 G

2:00 PM 1100 **Body condition score affects milk yield and energy balance of dairy cows after a short or no dry period.**
A. van Knegsel[*] and B. Kemp, Adaptation Physiology Group, Wageningen University, Netherlands

2:15 PM 1101 **The effect of stocking rate and cow breed on resumption of cyclicity, blood indicators of energy status, uterine health and reproductive parameters in pasture-based dairy systems.**
*S. Leane[*1,2], P. Lonergan[2], J. Kenneally[1], and S. Butler[1], [1]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*

2:30 PM 1102 **Implications of acute or chronic pasture restriction on indicators of metabolic status in grass-based dairy cows.**
*F. Curran[*1,2], E. Kennedy[1], E. Lewis[1], P. Lonergan[2], and S. Butler[1], [1]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*

2:45 PM 1103 **The effects of ketosis, feed restriction, and an endotoxin challenge on circulating serotonin (5-HT) in lactating dairy cows.**
*E. A. Horst[*1], S. K. Kvidera[1], M. Abuajamieh[1], E. J. Mayorga[1], M. A. Al-Qaisi[1], H. B. Green[2], K. M. Schoenberg[2], W. E. Trout[3], and L. H. Baumgard[1], [1]Iowa State University, Ames, [2]Elanco Animal Health, Indianapolis, IN, [3]Elanco Animal Health, Greenfield, IN*

3:00 PM 1104 **Transcriptome analysis reveals fundamental differences between liver of neonatal calves and transition dairy cows.**
F. Batistel[*], M. Vailati Riboni, A. Agrawal, and J. J. Loor, University of Illinois at Urbana-Champaign

3:15 PM 1105 **ADSA-EAAP Speaker Exchange Presentation: Effect of rumen content exchange on gene expression in rumen epithelium of lactating cows.**
*J. Vilkki[*1], D. Fischer[1], I. Tapio[1], S. Ahvenjärvi[1], and K. J. Shingfield[2], [1]Natural Resources Institute Finland, Jokioinen, [2]Aberystwyth University, United Kingdom*

3:45 PM 1106 **Identification of effects of different forage source on metabolism and function of liver from dairy cows using systematic approaches.**
*H. Z. Sun[*1,2], H. Y. Liu[1], D. M. Wang[1], L. L. Guan[2], and J. X. Liu[1], [1]Institute of Dairy Science, Zhejiang University, Hangzhou, China, [2]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

4:00 PM 1107 **Early postpartum administration of sodium salicylate to multiparous dairy cattle is associated with alterations in feeding behavior up to 120 days in milk.**
A. J. Carpenter[*], C. M. Ylioja, and B. J. Bradford, Kansas State University, Manhattan

4:15 PM 1108 **Proteomic analysis reveals increased abundance of inflammation-related proteins in adipose tissues from postpartum dairy cows treated with sodium salicylate.**
*M. Zachut[1], S. R. Montgomery[2], Y. Levin[3], L. Mamedova[2], and B. J. Bradford[*2], [1]Institute of Animal Science, Volcani Center, Bet Dagan, Israel, [2]Kansas State University, Manhattan, [3]The Nancy and Stephen Grand Israel National Center for Personalized Medicine, Weizmann Institute of Science, Rehovot, Israel*

Production, Management and the Environment: Reproduction

Chair: Felipe Cardoso, University of Illinois

2:00 PM - 5:00 PM

151 E/F

2:00 PM 1253 **Evaluation of different synchronization and early pregnancy diagnosis methods in postpartum Holstein cows.**
*A. H. Shahzad[*1], A. Sattar[2], I. Ahmad[1], A. Y. Qamar[1], and N. Ahmad[1], [1]University of Veterinary and Animal Sciences, Lahore, Pakistan, [2]Department of Theriogenology, University of Veterinary and Animal Sciences, Lahore, Pakistan,*

2:15 PM 1254 WS **Effects of octacosanol on non-seasonal spermatogenesis in ovine.**
J. W. Dickison[*], Angelo State University, San Angelo, TX

2:30 PM 1255 WS **Winter grazing or confinement feeding heifer development strategies differ in energetics as measured by 24 hour heart rate and activity.**
*M. K. Petersen[*1], J. M. Muscha[2], and A. J. Roberts[1], [1]USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, [2]Fort Keogh Livestock & Range Research Laboratory, Miles City, MT*

2:45 PM 1256 WS **Effects of dietary phytoestrogens on testicular growth and semen quality characteristics in developing Angus bulls.**
S. C. Yurrita[*], Angelo State University, San Angelo, TX

3:00 PM 1257 **Reproductive performance of lactating dairy cows managed for first service with the Double-Ovsynch or Presynch-Ovsynch protocol and different duration of the voluntary waiting period.**
M. L. Stangaferro[*], R. Wijma, M. Masello, and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

3:15 PM 1258 **Estrus detection intensity and accuracy, and optimal timing of insemination with automated activity monitors for dairy cows.**
*C. S. Leroy[1], J. S. Walton[1], and S. J. LeBlanc[*2], [1]University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

3:30 PM **Break**

3:45 PM 1259 **Beta-hydroxybutyrate concentration influences conception date in young beef cows in Tennessee.**
*J. D. Hobbs[*1], E. R. Cope[1], S. R. Edwards[1], Z. D. McFarlane[1], and J. T. Mulliniks[2], [1]University of Tennessee, Knoxville, [2]University of Tennessee, Crossville*

4:00 PM 1260 **Heifer development using stockpiled, dormant native forages delays gain without altering reproductive performance.**
*Z. D. McFarlane[*1], J. D. Hobbs[1], E. R. Cope[1], R. L. Nave[2], and J. T. Mulliniks[2], [1]University of Tennessee, Knoxville, [2]University of Tennessee, Crossville*

4:15 PM 1261 **Effect of pre- and postnatal trace mineral (TM) source on Angus and Brangus heifer growth and body composition.**
*D. M. Price[*1], M. M. O'Neil[1], W. B. Watson III[1], R. West[2], D. O. Rae[2], D. M. Irsik[2], M. J. Hersom[1], and J. V. Yelich[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]College of Veterinary Medicine, University of Florida, Gainesville*

4:30 PM 1262 **Effect of pre- and postnatal trace mineral (TM) source on Angus and Brangus heifer growth and reproductive performance.**
*D. M. Price[*1], M. M. O'Neil[1], W. B. Watson III[1], R. West[2], D. O. Rae[2], D. M. Irsik[2], M. J. Hersom[1], and J. V. Yelich[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]College of Veterinary Medicine, University of Florida, Gainesville*

4:45 PM 1263 **Impacts of zinc, manganese, and copper source on mature bull trace mineral status and spermatozoa characteristics.**
*A. L. Zezeski[*1], M. Van Emon[2], R. C. Waterman[1], B. Eik[1], J. S. Heldt[3], and T. W. Geary[1], [1]USDA-ARS Fort Keogh LARRL, Miles City, MT, [2]Montana State University, Bozeman, [3]Micronutrients, Indianapolis, IN*

Ruminant Nutrition: Forages and Crop Residues

Chair: Ken P. Coffey, University of Arkansas

2:00 PM - 5:00 PM
155 F

2:00 PM 1415 **Evaluation of five cool season grasses and alfalfa-grass mixtures.**
*J. Paulson[*1], D. Holen[2], D. Nicolai[3], and B. J. Heins[4], [1]University of Minnesota Extension, Rochester, [2]University of Minnesota, Morris, [3]University of Minnesota, Farmington, [4]University of Minnesota West Central Research and Outreach Center, Morris*

2:15 PM 1416 **A novel BM3 corn silage hybrid with floury kernel genetics improves lactational performance and feed efficiency in Holstein cows.**
*E. M. Remick[*1], S. M. Fredin[1], K. W. Cotanch[1], H. M. Dann[1], C. S. Ballard[1], J. P. Brouillette[2], and R. J. Grant[1], [1]William H. Miner Agricultural Research Institute, Chazy, NY, [2]Dow AgroSciences, Mycogen Seeds, Indianapolis, IN*

2:30 PM 1417 **Alternative forage crops modify the composition and content of bovine milk fatty acids.**
*L. M. Cersosimo[*1], R. Tacoma[1], S. Greenwood[1], K. Juntwait[2], A. F. Brito[2], and J. Kraft[1], [1]University of Vermont, Burlington, [2]University of New Hampshire, Durham*

2:45 PM 1418 **Effects of post-ethanol extraction sorghum silage as an alternative forage in growing and finishing diets on steer performance, carcass characteristic and nutrient digestibility.**
*C. P. Blank[*1], D. D. Loy[2], and S. L. Hansen[1], [1]Iowa State University, Ames, [2]Department of Animal Science, Iowa State University, Ames*

3:00 PM 1419 **Effect of lactic acid bacterial inoculants on the fermentation parameters and aerobic stability of sorghum-sudangrass silage.**
*X. Li[*1,2], Y. Zhu[2], D. Vyas[1], and A. T. Adesogan[1], UF/IFAS, Gainesville, FL, [2]Institute of Grassland Science, China Agricultural University, Beijing*

3:15 PM 1420 **Effects of feeding triticale and wheat silages on feed intake, milk production and composition, and enteric methane production in lactating dairy cows.**
M. T. Harper[*], J. Oh, F. Giallongo, G. Roth, and A. N. Hristov, The Pennsylvania State University, University Park

3:30 PM 1421 **Effects of feeding sorghum and oat silages on feed intake, milk production and composition, and enteric methane production in lactating dairy cows.**
M. T. Harper[*], J. Oh, F. Giallongo, J. C. Lopes, G. Roth, and A. N. Hristov, The Pennsylvania State University, University Park

3:45 PM 1422 **Effect of harvest method on digestibility of corn residue.**
T. M. King[*], M. L. Jolly-Breithaupt, J. L. Gramkow, J. C. MacDonald, and T. J. Klopfenstein, University of Nebraska-Lincoln

4:00 PM 1423 **Supplementing corn on alfalfa pasture to alter growth performance, carcass, and quality traits.**
*C. Gresel[*1], C. Campbell[1], L. Duizer[1], B. W. McBride[2], I. B. Mandell[2], and C. Lafreniere[3], [1]University of Guelph, ON, Canada, [2]Department of Animal Biosciences, University of Guelph, ON, Canada, [3]Universite du Quebec en Abitibi-Temiscamingue, Rouyn-Noranda, QC, Canada*

4:15 PM 1424 **Effect of harvest method and ammoniation on apparent digestibility and intake of baled corn residue in lambs.**
A. C. Conway[*], T. M. King, M. L. Jolly-Breithaupt, J. C. MacDonald, T. J. Klopfenstein, and M. E. Drewnoski, University of Nebraska-Lincoln

4:30 PM 1425 **Effects of growing system and silage type on feedlot growth performance, carcass characteristics, and nutrient digestibility of beef steers.**
*P. R. B. Campanili[*1], J. O. Sarturi[1], S. J. Trojan[1], M. A. Ballou[1], B. J. M. Lemos[2], L. A. Ovinge[1], and J. B. G. Mayorquin[3], [1]Texas Tech University, Lubbock, [2]Universidade Federal de Goiás, Goiânia, Brazil, [3]Zamorano, Tegucigalpa, Honduras*

4:45 PM 1426 **Effects of feeding green chopped winter forages on digestibility, ruminal fermentation and blood parameters in beef steers.**
T. M. Schulmeister[*], M. Ruiz-Moreno, M. E. Garcia-Ascolani, F. M. Ciriaco, D. D. Henry, J. Benitez, J. C. B. Dubeux Jr., G. C. Lamb, and N. DiLorenzo, University of Florida, North Florida Research and Education Center, Marianna

Ruminant Nutrition: Ruminal Fermentation

Chair: Jenny S. Jennings, Texas A & M AgriLife Research and Extension Center

2:00 PM - 5:00 PM
155 E

2:00 PM 1605 **Rumen fluid metabolomics analysis associated with feed efficiency on crossbred steers.**
*V. M. Artegoitia[*1], A. P. Foote[2], R. M. Lewis[1], and H. C. Freetly[2], [1]University of Nebraska-Lincoln, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE,*

2:15 PM 1606 **Enrichment of cattle rumen with bison rumen contents improves N digestion.**
*G. O. Ribeiro Jr.[*1], D. B. Oss[2], Z. He[1], V. Bremer[3], R. J. Forster[1], W. Yang[1], K. A. Beauchemin[1], and T. A. McAllister[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil, [3]Elanco Animal Health, Greenfield, IN*

2:30 PM 1607 **Effect of nitrate, monensin and the combination of additives on rumen fermentation using a semi-continuous culture system.**
*M. Capelari[*1], K. A. Johnson[2], B. Latack[1], J. Roth[1], and W. Powers[1], [1]Michigan State University, East Lansing, [2]Washington State University, Pullman*

2:45 PM 1608 **Metagenomic census of predominant *ureC* genes of ureolytic bacteria in the rumen of dairy cows.**
*D. Jin[1,2,3,4], S. Zhao[1,4,2], N. Zheng[1,2,5], D. Bu[4], Y. Beckers[3], and J. Wang[*4,2,6], [1]Ministry of Agriculture-Milk Risk Assessment Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, [3]Gembloux Agro-Bio Tech, University of Liège, Gembloux, Belgium, [4]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [5]Ministry of Agriculture - Laboratory of Quality & Safety Risk Assessment for Dairy Products, Beijing, China, [6]Ministry of Agriculture Laboratory of Quality & Safety Risk Assessment for Dairy Products, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*

3:00 PM 1609 **Rumen bacterial communities continue to shift five weeks after switching diets from conserved forage to pasture.**
M. L. Bainbridge[*], L. K. Saldinger, J. W. Barlow, J. P. Alvez, J. Roman, and J. Kraft, University of Vermont, Burlington

3:15 PM 1610 **Metabolome and microbiome associations after a grain and sugar challenge.**
*H. M. Golder[*1,2], S. Denman[3], C. McSweeney[3], and I. J. Lean[1,2], [1]Scibus, Camden, Australia, [2]University of Sydney, Camden, Australia, [3]CSIRO Animal, Food and Health Services, Queensland Bioscience Precinct, St. Lucia, Australia*

3:30 PM 1611 **Ruminal dosing with *Megasphaera elsdenii* and strain persistence are associated with milk fat depression in Holstein cows.**
*F. Cacite[1] and P. J. Weimer[*2], [1]Federal University of Mato Grosso, Cuiabá, Brazil, [2]USDA-ARS, Madison, WI*

3:45 PM 1612 **Potential for live yeast culture to enhance nitrate mitigation of methanogenesis in Jersey dairy cattle.**
*R. A. Meller[1], J. M. Ashworth[1], A. M. Gehman[2], and J. L. Firkins[*1], [1]The Ohio State University, Columbus, [2]Alltech, Inc., Nicholasville, KY*

4:00 PM 1613 **Inhibition of methanogenesis by nitrate, with or without defaunation, in continuous culture.**
B. A. Wenner[*], B. K. Wagner, Z. Yu, N. St. Pierre, and J. L. Firkins, The Ohio State University, Columbus

4:15 PM 1614 **Does weaning age affect the development of ruminal and fecal microbiomes in dairy calves?**
*S. J. Meale[1], S. Li[2], P. Azevedo[2], H. Derakhshani[2], J. C. Plaizier[2], M. Steele[*3], and E. Khafipour[2], [1]UMR Herbivores, INRA, Vetagro Sup, Saint-Genas-Champanelle, France, [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*

4:30 PM 1615 **Analysis methods differ in recovery of microbial glycogen.**
M. B. Hall[*], U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI

4:45 PM 1616 **Utilization of lactose by mixed ruminal microbes is affected by nitrogen type and level, and differs from utilization of glucose.**
M. B. Hall[*], U. S. Dairy Forage Research Center, USDA-ARS, Madison, WI

Small Ruminant II

Chair: Maristela Rovai, South Dakota State University

2:00 PM - 4:15 PM
150 E/F

2:00 PM **Introductory Remarks**

2:05 PM 1718 ***In vitro* efficacy of three novel compounds on development and survival of gastrointestinal nematode larvae in feces of sheep.**
*J. E. Miller[*1], V. Kelly[2], and J. M. Burke[3], [1]Louisiana State University, Baton Rouge, [2]Louisiana State University School of Veterinary Medicine, Baton Rouge, [3]USDA-ARS, Booneville, AR*

2:20 PM 1719 **Recovery of fibroblast cells upto 65 days of postmortem storage of sheep ear skin at 4°C.**
M. Singh[*] and X. Ma, Fort Valley State University, Fort Valley, GA

2:35 PM 1720 **Morphometric measurements and body weight affected by breed, age and sex in Sindh goat breeds population of Pakistan.**
*M. Moaeen-ud-Din[*1], G. Bilal[1], J. M. Reecy[2], M. S. Khan[3], and S. Razzaq[1], [1]PMAS-Arid Agriculture University, Rawalpindi, Pakistan, [2]Iowa State University, Ames [3]University of Agriculture, Faisalabad, Pakistan*

2:50 PM 1721 **Effects of supplementing olive pomace as a feed additive on weight gain in *Capris aegagrus hircus*.**
P. Urso[*], M. M. Beverly, S. F. Kelley, M. J. Anderson, J. L. Leatherwood, K. J. Stutts, and S. Nair, Sam Houston State University, Huntsville, TX

3:05 PM 1722 **Genetic and non-genetic effects on performance traits in a US population of dairy sheep.**
*T. W. Murphy[*1], M. Baldin[2], Y. M. Berger[3], R. L. Burgett[4], P. W. Holman[3], and D. L. Thomas[1], [1]University of Wisconsin-Madison, [2]The Pennsylvania State University, Department of Animal Science, University Park, [3]University of Wisconsin-Madison, Spooner Agricultural Research Station, [4]National Sheep Improvement Program, Ames, IA*

3:20 PM 1723 **Effects of high concentrations of crude glycerin on feed intake and ruminal parameters of sheep.**
*E. H. C. B. van Cleef[*1,2], M. T. C. Almeida[1,2], E. S. Castro Filho[1], I. Monsignati[1], H. L. Perez[1,2], and J. M. B. Ezequiel[1], [1]São Paulo State University, Jaboticabal, Brazil, [2]FAPESP, São Paulo, Brazil*

3:35 PM 1724 **Serum anti-mullerian hormone as an indicator of fertility in Katahdin ewes.**
*M. Acharya[*1], J. M. Burke[2], E. Smyth[2], L. Ngere[2,3], and R. W. Rorie[1], [1]Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, [2]USDA-ARS, Booneville, AR, [3]Oak Ridge Institute for Science and Education, Oak Ridge, TN*

3:50 PM 1725 **Fatty acid composition of different fat depots from hair and wool x hair crossbred lambs supplemented with highly digestible fiber containing agro-byproducts on pasture.**
*C. Tripp[*1], J. H. Lee[1], S. Wildeus[2], A. Discua[1], and D. Kafle[1], [1]Fort Valley State University, GA, [2]Virginia State University, Petersburg*

POSTER PRESENTATIONS

Sponsor: Innovad

Poster Session V

7:15 AM - 8:15 AM
Exhibit Hall A/B

Comparative Gut Physiology

438 1 ***β-hydroxybutyrate and glucose concentrations in the blood of dairy calves.***
F. X. Suarez-Mena, W. Hu, T. S. Dennis, T. M. Hill, J. D. Quigley and R. L. Schlotterbeck, Provimi, Brookville, OH*

439 2 **Comparison of intestinal goblet cell staining methods in turkey poults.**
S. O. Osho, T. Wang, N. L. Horn and O. Adeola, Department of Animal Sciences, Purdue University, West Lafayette, IN*

440 3 **The development of a cecum-cannulated gnotobiotic piglet model to study the human gut microbiota.**
N. D. Aluthge, W. Tom, T. E. Burkey, D. E. Hostetler, K. D. Heath, C. Kreikemeier and S. C. Fernando, University of Nebraska-Lincoln*

Physiology and Endocrinology: Environment, Metabolism and Physiology

1039 4 **WS** **Influence of sampling location and pregnancy on composition of the microbiome associated with the reproductive tract of the ewe.**
K. E. Smith, A. L. Garza, C. Robinson, R. L. Ashley and S. L. Ivey, New Mexico State University, Las Cruces*

1040 5 **Use of doppler ultrasound and infrared thermography to evaluate scrotal insulation in Braford bulls.**
*F. A. Barca Jr.[1], C. Koetz Jr.[*1], G. R. Pereira[2], S. R. Menegassi[2], F. Morotti[3], J. O. Barcellos[2], L. A. Claus[3] and M. M. Seneda[3], [1]UNOPAR, Arapongas, Brazil, [2]NESPRO/UFRGS - Federal University of Rio Grande do Sul, Porto Alegre, Brazil, [3]UEL - Universidade Estadual de Londrina, Brazil*

1041 6 **Diurnal vaginal temperature cycles of senepol and crossbred beef heifers with different hair coat types and colors under tropical conditions.**
*H. L. Sánchez-Rodríguez[*1], Z. Contreras-Correa[1], K. Domenech-Pérez[2], G. Rivera-Collazo[2], A. Casas-Guérnica[1] and G. Muñiz-Colón[1], [1]University of Puerto Rico, Mayagüez Campus, Mayagüez, Puerto Rico, [2]University of Nebraska-Lincoln*

1042 7 **Associations between the environmental conditions and vaginal temperature in wild type and slick-haired Puerto Rican Holstein cows.**
*H. L. Sánchez-Rodríguez[*1], Z. Contreras-Correa[1], M. Pagán-Morales[2], J. Curbelo-Rodríguez[1], A. Mesonero-Morales[1], C. Cabrera-Cabrera[3N] and G. Muñiz-Colón[1], [1]University of Puerto Rico, Mayagüez Campus, Mayagüez, Puerto Rico, [2]Department of Animal Science, University of Puerto Rico, Mayaguez Campus, Mayaguez, Puerto Rico, [3]Universidad ISA, Santiago, Dominican Republic*

1043 8 **Impact of heat stress and metabolic endotoxemia on porcine ovarian function.**
M. J. Dickson, K. L. Bidne, B. J. Hale, C. L. Hager, J. T. Seibert, L. H. Baumgard, J. W. Ross and A. F. Keating, Iowa State University, Ames*

1044 9 **Heat stress induces distinct lipidomic profile in differentiating porcine adipocytes.**
*H. Qu[1] and K. M. Ajuwon[*2], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, Purdue University, West Lafayette, IN*

1045 10 **Impact of temperature fluctuations in cooled-fresh semen on fertility of lactating dairy cows.**
*A. H. Souza[*1], H. J. Bessoff[2] and E. Danzeisen[3], [1]Ceva Animal Health, Libourne, France, [2]Dairy Management Solutions, Tulare, CA, [3]Global AG Alliance, Tulare, CA*

1046 11 **Effects of a 48h feed withdrawal on intraperitoneal core body temperature in growing pigs.**
*J. S. Johnson[*1], N. M. Chapel[2] and C. J. Byrd[2], [1]USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN, [2]Purdue University, West Lafayette, IN*

1047 12 **The effect of exercise on heat tolerance and first lactation in pregnant Holstein heifers.**
J. Johnson, P. L. Steichen and T. G. Rozell, Kansas State University, Manhattan*

1048 13 **Effect of exercise on ovarian function in cycling gilts.**
*A. M. Mesa[*1], A. M. Adkin[1], A. L. Dias[2], D. Y. Kim[3], P. J. Hansen[1] and C. J. Mortensen[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]University of Alberta, Edmonton, AB, Canada, [3]Gachon University, Gyeonggi-do, The Republic of Korea*

1049 14 **The effect of exogenous glucose infusion on early embryonic development in lactating dairy cows.**
*S. Leane[*1,2], M. M. Herlihy[1], N. Forde[3], M. C. Lucy[4], P. Lonergan[2] and S. Butler[1], [1]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland, [3]University of Leeds, United Kingdom, [4]University of Missouri, Columbia*

1050 15 **Influence of cattle temperament on blood serum fatty acid content.**
*T. Gardner[*1], J. F. Legako[1], N. C. Burdick Sanchez[2], P. R. Broadway[2], J. A. Carroll[2] and R. C. Vann[3], [1]Utah State University, Logan, [2]Livestock Issues Research Unit, USDA-ARS, Lubbock, TX, [3]MAFES-Brown Loam, Mississippi State University, Raymond*

1051 16 **Effects of intrammamary LPS infusions on inflammation and reproductive parameters of dairy cows.**
*C. C. Campos[*1], A. C. C. Fernandes[2], I. Hartling[3], M. Kaur[2], R. M. Dos Santos[4] and R. L. A. Cerri[3], [1]FAMEV-UFU, Uberlândia, Brazil, [2]Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [3]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [4]Universidade Federal de Uberlândia, Brazil*

1052 17 **Relationships of calf vigor at birth with calf size and circulating metabolites in fall-born beef calves.**
*J. M. Larson[*1], B. L. Vander Ley[2] and A. M. Meyer[1], [1]Division of Animal Sciences, University of Missouri, Columbia, [2]Department of Veterinary Medicine and Surgery, University of Missouri, Columbia*

1053 18 **Effect of pregnancy on steroid and eicosanoid metabolizing enzymes in bovine reproductive tissues.**
M. P. T. Coleson[*1], E. J. Northrop[2], J. J. J. Rich[2], G. A. Perry[2], C. G. Hart[1], K. J. McCarty[1] and C. O. Lemley[1], *[1]Mississippi State University, Mississippi State, [2]Department of Animal Science, South Dakota State University, Brookings*

1054 19 **Effect of exogenous β-hydroxybutyrate in the lateral ventricle on circulating serum metabolites and luteinizing hormone in castrated lambs.**
*E. R. Cope[*1], B. H. Voy[1], B. K. Whitlock[1], J. D. Hobbs[1], Z. D. Mcfarlane[1], S. Das[1] and J. T. Mulliniks[2], [1]University of Tennessee, Knoxville, [2]University of Tennessee, Crossville*

Nonruminant Nutrition: Feed Ingredients

949 20 **Growth performance and toxic response of broilers fed diets containing unfermented or fermented cottonseed meal.**
*J. L. Xiong[1], L. Y. Wu[*1], H. L. Zhou[2], Z. J. Wang[1], F. T. Meng[1] and L. H. Miao[1], [1]Hubei Key Laboratory of Animal Nutrition and Feed Science, Wuhan Polytechnic University, Wuhan, China, [2]Xiangyang Engineering Research Center of Animal Medicine, Xiangyang Vocational and Technical College, Xiangyang, China*

950 21 **Protein value of eight triticale genotypes for pigs based on standardized ileal amino acid digestibility.**
*E. J. P. Strang[*1], M. Eklund[1], P. Rosenfelder[1], J. K. Htoo[2] and R. Mosenthin[1], [1]University of Hohenheim, Institute of Animal Science, Stuttgart, Germany, [2]Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany*

951 22 **Effect of metabolizable energy and sulfur amino acid levels on productive performance and economic return of laying hens.**
*C. Gallardo[*1] and E. Salvador[2], [1]University of São Paulo, Pirassununga, Brazil, [2]National University of San Luis Gonzaga, Ica, Peru*

952 23 **Intestinal microbiota, microbial metabolites and carcass traits are changed in a pig model fed a high-fat/low-fiber or a low-fat/high-fiber diet.**
*S. N. Heinritz[*1], E. Weiss[1], M. Eklund[1], T. Aumiller[1], S. Messner[1], C. M. E. Heyer[1], S. Bischoff[2] and R. Mosenthin[1], [1]University of Hohenheim, Institute of Animal Science, Stuttgart, Germany, [2]University of Hohenheim, Department of Nutritional Medicine, Stuttgart, Germany*

953 24 **Use of zinc oxide nanoparticles as growth promoter for weanling pigs.**
N. C. Milani[*], N. Y. Ikeda, M. Sbardella and V. S. Miyada, Universidade de São Paulo, Piracicaba, Brazil

954 25 **Effect of dietary flaxseed oil on growth performance, nutrient digestibility, blood profiles, and meat quality in pigs.**
P. Y. Zhao[*], T. S. Li, S. Shanmugam, S. Kathannan, R. X. Lan and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea

955 26 **The effect of three levels of unmilled rice on growth performance and digestive tract development in broilers and ducks.**
C. P. Villemarette[*], E. Lyons, B. Chung, E. Ferguson and F. M. LeMieux, McNeese State University, Lake Charles, LA

956 27 **Influence of zinc-methionine complex supplementation on reproductive performance and immunity of gestating-lactating sows under hot weather condition.**
J. M. Romo, J. A. Romo, R. Barajas, H. R. Güémez, I. Enriquez and G. Silva, FMVZ-Universidad Autónoma de Sinaloa, Culiacán, Mexico*

957 28 **Japanese quail (*Coturnix japonica*) responses to low protein diets supplemented with crystalline lysine, methionine, and threonine.**
C. R. Herrera Cortés[1], H. Bernal Barragán[1], F. Sánchez Dávila[1], J. E. Hernández Quiroz[1], M. A. Montemayor Abundiz[1] and M. Cervantes Ramírez[2], [1]Universidad Autónoma de Nuevo León, San Nicolás de los Garza, Mexico, [2]ICA - Universidad Autónoma de Baja California, Mexicali, Mexico*

958 29 **Bioavailability of D-methionine relative to L-methionine for nursery pigs using slope-ratio assay.**
C. Kong, J. Y. Ahn and B. G. Kim, Konkuk University, Seoul, The Republic of Korea*

959 30 **Energy value of bakery meal and peanut flour meal for broiler chickens determined using the regression method.**
F. Zhang[1] and O. Adeola[2], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, Purdue University, West Lafayette, IN*

960 31 **Kinetics of lipid peroxidation in fats and oils as affected by lipid source, heating temperature, and length of heating.**
S. C. Lindblom[1], G. C. Shurson[2], J. Moser[3] and B. J. Kerr[4], [1]Iowa State University, Ames, [2]Department of Animal Science, University of Minnesota, St. Paul, [3]USDA-ARS, Peoria, IL, [4]USDA - ARS, Ames, IA*

961 32 **Effects of feeding dried cabbage leaf residues on broiler performance, ileal digestibility and total tract nutrient digestibility.**
A. Mustafa, V. Higginson and B. Baurhoo, McGill University, Saint-Anne De Bellevue, QC, Canada*

962 33 **Effect of type of fibrous sources in the phosphorus-free diet on the basal endogenous loss of phosphorus in growing pigs.**
A. R. Son[1] and B. G. Kim[2], [1]Konkuk University, Seoul, South Korea, [2]Konkuk University, Seoul, The Republic of Korea*

963 34 **Effects of feeding dried broccoli floret residues on performance, ileal and total tract digestibility, and selected microbial population in broiler chickens.**
A. Mustafa, B. Baurhoo and V. Higginson, McGill University, Saint-Anne De Bellevue, QC, Canada*

964 35 **Effect of different levels of zinc and calcium on growth performance in weanling pigs.**
L. Blavi, D. Solà-Oriol, S. M. Martín-Orúe and J. F. Pérez, Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autonoma de Barcelona, Bellaterra, Spain*

965 36 **Evaluation of cold pressed soybean meal and pea protein as alternative amino acid sources in swine diets.**
J. Koepke, South Dakota State University, Brookings*

966 37 **The effects of feeding low trypsin inhibitor soybean meal to broilers on growth performance.**
G. Hosotani, B. Freitas, M. S. Kerley and M. C. Shannon, Division of Animal Sciences, University of Missouri, Columbia*

967 38 **Nutritive value of cold-pressed camelina cake with or without supplementation of multi-carbohydrase in pig diets.**
T. A. Woyengo[1], R. Patterson[2] and C. L. Levesque[1], [1]South Dakota State University, Brookings, [2]Canadian Biosystems, Calgary, AB, Canada*

968 39 **Optimization of alkali hydrolysis conditions to increase antioxidant availability in corn distillers grain.**
A. Daramola and B. Min, University of Maryland Eastern Shore, Princess Anne*

Animal Health: Dairy Calves

103 40 **Effects of climatic conditions before and after birth on growth rate of Holstein calves in a hot environment.**
E. L. Lopez-Rodriguez[1], A. Martinez[2] and M. Mellado[3], [1]Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, [2] Universidad Autonoma Agraria Antonio Narro, Saltillo, Mexico, [3]Autonomous Agrarian University Antonio Narro, Saltillo, Coahuila, Mexico*

104 41 **The hidden cost of a hidden disease: Growth performance of calves as affected by bovine respiratory disease diagnosed using ultrasonography.**
C. Tejero[1] and A. Bach[2,3], [1]Rancho Las Nieves, Mallen, Spain, [2]ICREA, Barcelona, Spain, [3]IRTA, Caldes de Montbui, Spain*

105 42 **Serum and colostrum antibody titers in Holstein cows, and the relationship between these titers and serum antibody titers in their calves.**
D. J. McLean[1], J. D. Chapman[1], A. Woolums[2], D. J. Hurley[3] and L. O. Ely[3], [1]Phibro Animal Health Corp., Quincy, IL, [2]Mississippi State University, Starkeville, [3]University of Georgia, Athens*

106 43 **Evaluating pre-weaned calf housing and its impact on calf respiratory parameters on New York dairy farms.**
K. M. Morrill, Cornell University, Ithaca, NY*

107 44 **Differential primary and secondary immune responses in calves fed heat-treated or unheated colostrum.**
S. L. Gelsinger* and A. J. Heinrichs, The Pennsylvania State University, University Park

108 45 **The effect of novel antiseptic compounds on umbilical cord healing and infection rates in the first week of life in dairy calves.**
A. L. Robinson, L. L. Timms, K. J. Stalder and H. D. Tyler, Iowa State University, Ames*

109 46 **Effects of OmiGen-AF and Provia 6086 on growth, leukocyte, and hematological variables of pre-weaned and immediately post-weaned Holstein calves.**
Y. Liang[1], R. E. Hudson[1], T. L. Harris[1], K. P. Sharon[1], J. P. Jarrett[2], D. McLean[2], J. D. Chapman[2], J. A. Carroll[3] and M. A. Ballou[1], [1]Texas Tech University, Lubbock, [2]Phibro Animal Health Corporation, Quincy, IL, [3]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*

Ruminant Nutrition: Protein, Amino Acids and Nitrogen I

1574 47 **Effects of different protein level and corn processing method on nitrogen metabolism in dairy cows and environmental pollution.**
G. R. Ghorbani, H. Rafiee and M. Alikhani, Isfahan University of Technology, Isfahan, Iran*

1575 48 **Relative availability for lactating dairy cattle of methionine from two sources of ruminally protected methionine.**
M. Ardalan[1], C. F. Vargas Rodriguez[1], G. I. Zanton[2], M. Vázquez-Añón[3], E. C. Titgemeyer[1] and B. J. Bradford[4], [1]Department of Animal Sciences and Industry, Kansas State University, Manhattan, [2]USDA-ARS, U.S. Dairy Forage Research Center, Madison, WI, [3]Novus International, Inc., St. Charles, MO, [4]Kansas State University, Manhattan*

1576 49 **Effects of rumen undegradable protein supplementation and ambient temperature on growth performance and blood metabolites in Korean cattle steers.**
H. J. Kang, M. Y. Piao, H. J. Kim and M. Baik, Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, The Republic of Korea*

1577 50 **Guanidinoacetic acid as a precursor for creatine in steers.**
M. Ardalan[1], M. D. Miesner[2], C. D. Reinhardt[1], D. U. Thomson[3], C. K. Armendariz[1] and E. C. Titgemeyer[1], [1]Department of Animal Sciences and Industry, Kansas State University, Manhattan, [2]Department of Clinical Sciences, Kansas State University, Manhattan, [3]Department of Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan*

1578 51 **Total amino acid content variation for commercial TMR and relationship to crude protein.**
J. P. Goeser[1,2], D. Sawyer[2] and G. A. Broderick[3], [1]University of Wisconsin-Madison, [2]Rock River Laboratory, Inc, Watertown, WI, [3]Broderick Nutrition & Research, LLC, Madison, WI*

1579 52 **Impact of a rumen protected methionine prototype on dairy cow performance, milk composition, and milk casein.**
A. M. Barnard[1], B. A. Barton[2], C. A. Zimmerman[2], R. S. Ordway[2] and T. F. Gressley[1], [1]University of Delaware, Newark, [2]Balchem Corporation, New Hampton, NY*

1580 53 **Effects of feeding canola meal or wheat dried distillers grains with solubles alone or in combination as the major protein sources on ruminal function and production in dairy cows.**
S. Abeysekara[1] and T. Mutsvangwa[2], [1]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [2]University of Saskatchewan, Saskatoon, SK, Canada*

1581 54 **Relative bioavailability of L-carnitine delivered by ruminal or abomasal infusion or by encapsulation in dairy cattle.**
K. E. Olagaray[1], J. E. Shaffer[1], C. K. Armendariz[2], A. Bellamine[3], S. Jacobs[3], E. C. Titgemeyer[1] and B. J. Bradford[1], [1]Kansas State University, Manhattan, [2]Department of Animal Sciences and Industry, Kansas State University, Manhattan, [3]Lonza, Inc., Allendale, NJ*

1582 55 **Comparison of three levels of a rumen-protected methionine product on performance of lactating dairy cows.**
A. M. Barnard[1], B. A. Barton[2], C. A. Zimmerman[2], R. S. Ordway[2] and T. F. Gressley[1], [1]University of Delaware, Newark, [2]Balchem Corporation, New Hampton, NY*

1583 56 **Evaluation of Brassica carinata meal as a protein supplement for growing beef heifers.**
T. M. Schulmeister, M. Ruiz-Moreno, J. Benitez, M. E. Garcia-Ascolani, F. M. Ciriaco, D. D. Henry, J. C. B. Dubeux Jr., G. C. Lamb and N. DiLorenzo, University of Florida, North Florida Research and Education Center, Marianna*

1584 57 **Effects of replacing soybean meal with canola meal or treated canola meal on nitrogen metabolism and total tract digestibility in lactating dairy cows.**
*E. Marostegan de Paula[*1], M. A Camargo Danes[2], N. E Lobos[3], G. I. Zanton[4], G. A. Broderick[5] and A. Faciola[1], [1]University of Nevada, Reno, [2]Federal University of Lavras, Brazil, [3]Kemin Industries, Des Moines, IA, [4]USDA-ARS, U.S. Dairy Forage Research Center, Madison, WI, [5]Broderick Nutrition & Research, LLC, Madison, WI*

1585 58 **Impact of different diet CP levels and RDP:RUP ratios on midlactation dairy cow performance: Dry matter intake, digestibility and nitrogen balance.**
*C. R. Guimaraes[1], S. G. Coelho[2], A. M. Pedroso[*3], F. S. Machado[4], M. M. Campos[4], R. A. Azevedo[2], L. C. Rezende[2], T. R. Tomich[4] and L. G. R. Pereira[4], [1]Cargill Amidos, Uberlandia, Brazil, [2]UFMG, B. Horizonte, Brazil, [3]Cargill Premix & Nutrition, Campinas, Brazil, [4]EMBRAPA, Juiz de Fora, Brazil*

1586 59 **Evaluation of protein supplementation in low to medium quality forage diets on intake and ruminal fermentation in steers.**
*J. R. Pukrop[*1], S. Day[2], P. M. Fricke[3], J. S. Luther[1], A. L. Jones[4], J. T. Sylvester[2] and A. E. Radunz[1], [1]University of Wisconsin-River Falls, [2]BioZyme, Inc., St. Joseph, MO, [3]Department of Dairy Science, University of Wisconsin-Madison, [4]University of Wisconsin-Madison*

1587 60 **The effect of increasing concentrations of different methionine forms and 2-hydroxy-4-(methylthio) butanoic acid on hepatic oxidative status and genes controlling methionine metabolism and transmethylation flux.**
*Q. Zhang[*1], D. N. Luchini[2] and H. M. White[1], [1]University of Wisconsin-Madison, [2]Adisseo S.A.S., Alpharetta, GA*

1588 61 **Heat stress alters glucose homeostasis, hepatic heat shock proteins and the immune system in lactating dairy cows.**
*S. Quan[1,2], D. Bu[*1,3,4], Y. Zhang[2], J. Guo[1], S. Gao[1] and L. H. Baumgard[5], [1]State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China, [2]The Animal Physiology and Biochemistry Laboratory of the Ministry of Agriculture in Nanjing Agriculture University, Nanjing, China, [3]Hunan Co-Innovation Center of Animal Production Safety, CICAPS, Changsha, China, [4]CAAS-ICRAF Joint Laboratory of Agroforestry and Sustainable Animal Husbandry, World Agroforestry Centre, East and Central Asia, Beijing, China, [5]Iowa State University, Ames*

Ruminant Nutrition: Growth, Young Stock and Calves II

1469 62 **Effects of different forage combination on growth performance, ruminal fermentation, and digestibility of weaned calves.**
Y. Zou[*], X. Zou, Z. J. Cao, Y. Wang and S. L. Li, State Key Laboratory of Animal Nutrition, Beijing Engineering Technology Research Center of Raw Milk Quality and Safety Control, College of Animal Science and Technology, China Agricultural University, Beijing, China

1470 63 **Use of the Brix refractometer to evaluate milk replacer solutions for calves.**
*H. K. Floren[*1], W. M. Sischo[1], C. Crudo[1] and D. A. Moore[2], [1]Washington State University, Pullman, [2]Department of Veterinary Clinical Sciences, Washington State University, Pullman*

1471 64 **Effect of corn wet distillers grains inclusion in growing diets on backgrounded cattle performance.**
*M. Arcieri[*1], P. Davies[2], D. Méndez[2], J. Elizalde[3] and I. Ceconi[2], [1]Universidad Nacional de Córdoba, Córdoba, Argentina, [2]Instituto Nacional de Tecnología Agropecuaria, General Villegas, Argentina, [3]Private consultant, Rosario, Argentina*

1472 65 **Effects of *Saccharomyces cerevisiae* fermentation products on intestinal villi integrity in neonatal calves naturally infected with *Cryptosporidium* spp..**
*S. Vázquez Flores[1], M. de Jesús Guerrero Carrillo[2], M. F. Scott[3], J. Hamann[*3], S. Barrera Almanza[1], C. Guizar Bravo[1], A. Patricia Baños Quintana[1] and P. Jazmin Aranda Vargasb[2], [1]ESIABA-Tecnológico de Monterrey-Campus Querétaro, Querétaro, Mexico, [2]Facultad de Ciencias Naturales, Universidad Autónoma de Querétaro, Querétaro, Mexico, [3]Diamond V, Cedar Rapids, IA*

1473 66 **Evaluation of Brix refractometer to assess IgG concentration of first and second colostrum from Jersey cows.**
D. Rolle, S. Rodríguez, A. Valldecabres and N. Silva-del-Rio[*], Veterinary Medicine Teaching and Research Center, University of California-Davis, Tulare

1474 67 **Effects of lactose inclusion in calf starters on starter intake, growth performance and digestive organ development.**
*K. Inouchi[*1], A. Saegusa[2], Y. Inabu[3], T. Sugino[3] and M. Oba[4], [1]ZEN-RAKU-REN, Nishi-shirakawa, Japan, [2]ZEN-RAKU-REN, Fukushima, Japan, [3]Hiroshima University, Higashi-hiroshima, Japan, [4]University of Alberta, Edmonton, AB, Canada*

1475 68 **Bioavailability of different sources of zinc using stable isotopes in male Holstein calves.**
H. A. Tucker[*], C. K. Foran, S. Bettis, P. Fisher, J. Xue, K. J. Wedekind and M. Vázquez-Añón, Novus International, Inc., St. Charles, MO

Poster Session VI

8:15 AM - 9:15 AM
Exhibit Hall A/B

Physiology and Edocrinology: Molecular Mechanisims and Genetics

1076 1 **Global gene expression in the endometrium of primiparous dairy cows during the early-luteal phase of the estrous cycle.**
*A. L. Astessiano Dickson[*1], F. Peñagaricano[2], A. Meikle[3] and M. Carriquiry[1], [1]Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay, [2]University of Florida, Gainesville, [3]Facultad de Veterinaria, Montevideo, Uruguay*

1077 2 **Influence of reproductive indicators and genetic parameters on lactation curves.**
*H. Jeong[*1], D. Gonzalez-Pena[2], T. M. Goncalves[1], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[7], R. Chebel[4], K. N. Galvão[8], C. M. Seabury[9], W. W. Thatcher[10] and S. L. Rodriguez Zas[1], [1]University of Illinois at Urbana-Champaign, [2]Zoetis, Kalamazoo, MI, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin-Madison, [7]Cornell University, Ithaca, NY, [8]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [9]Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

1078 3 **Hematocrit, milk yield and production related parameters comparisons between slick and wild type- haired Puerto Rican Holstein cows.**
*Z. Contreras-Correa[*1], G. Muñiz-Colón[1], M. Pagán-Morales[2], A. Mesonero-Morales[1], J. Curbelo-Rodríguez[1] and H. L. Sánchez-Rodríguez[1], [1]University of Puerto Rico at Mayagüez, Mayagüez, Puerto Rico, [2]Department of Animal Science, University of Puerto Rico, Mayaguez Campus, Mayaguez, Puerto Rico*

1079 4 **Effect of milk yield genotype on hepatic metabolic gene expression and repeated lipopolysaccharide (LPS) administration.**
*G. T. Cousillas[*1], W. J. Weber[1], B. Walcheck[1], R. Chebel[1], D. E. Kerr[2], T. H. Elsasser[3] and B. A. Crooker[1], [1]University of Minnesota, Saint Paul, [2]University of Vermont, Burlington, [3]USDA-ARS, Beltsville, MD*

1080 5 **Milk yield genotype impacts expression of hepatic innate immune genes during the transition period in Holsteins.**
*G. T. Cousillas[*1], W. J. Weber[1], B. Walcheck[1], D. E. Kerr[2], T. H. Elsasser[3] and B. A. Crooker[1], [1]University of Minnesota, Saint Paul, [2]University of Vermont, Burlington, [3]USDA-ARS, Beltsville, MD*

1081 6 **Effect of milk yield genotype on hepatic metabolic gene expression during the transition period.**
*G. T. Cousillas[*1], W. J. Weber[1], B. Walcheck[1], D. E. Kerr[2], T. H. Elsasser[3] and B. A. Crooker[1], [1]University of Minnesota, Saint Paul, [2]University of Vermont, Burlington, [3]USDA-ARS, Beltsville, MD*

1082 7 **Gene expression and secretion of chemerin in bovine mammary epithelial cells.**
*Y. Suzuki[*1], S. Chiba[1], S. Haga[2] and S. Roh[1], [1]Lab of Animal Physiology, TOHOKU University, Sendai, Japan, [2]NARO Institute of Livestock and Grassland Science, Nasushiobara, Japan*

1083 8 **Proteomic analysis reveals increased Nrf2-mediated oxidative stress response in adipose tissue of late pregnant dairy cows during summer heat stress.**
*M. Zachut[*1], G. Kra[1], G. Friedlander[2] and Y. Levin[3], [1]Institute of Animal Science, Volcani Center, Bet Dagan, Israel, [2]The Ilana and Pascal Mantoux Institute for Bioinformatics,Weizmann Institute of Science, Rehovot, Israel, [3]The Nancy and Stephen Grand Israel National Center for Personalized Medicine, Weizmann Institute of Science, Rehovot, Israel*

1084 9 **Cholesterol deficiency associated APOB mutation affects lipid metabolism in Holstein cattle.**
*J. J. Gross[*1], A. C. Schwinn[1], F. Schmitz-Hsu[2], F. Menzi[3], C. Drögemüller[3], C. Albrecht[4] and R. M. Bruckmaier[1], [1]Veterinary Physiology, Vetsuisse Faculty University of Bern, Switzerland, [2]Swissgenetics, Zollikofen, Switzerland, [3]Institute of Genetics, Vetsuisse Faculty, University of Bern, Switzerland, [4]Institute of Biochemistry and Molecular Medicine, University of Bern, Switzerland*

1085 10 **Characterization of changes in temporal concentrations of fibroblast growth factor 21 (FGF21) before and after parturition in multiparous beef cows.**
*L. Prezotto[*1], J. F. Thorson[1], J. Dafoe[1], M. R. Herrygers[2] and J. G. Berardinelli[2], [1]Montana State University, Havre, [2]Montana State University, Bozeman*

1086 11 **Effect of investigational kisspeptin/metastin analog, TAK-683, on luteinizing hormone secretion at different stages of the luteal phase in goats.**
*L. P. Rahayu[*1,2], M. E. Behiry[3], N. Endo[1,2] and T. Tanaka[1,2], [1]Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan, [2]United Graduate School of Veterinary Sciences, Gifu University, Gifu, Japan, [3]Visiting Research Scientist from Egypt, Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan*

1087 12 **MAC-T cell as *in vitro* evaluation system for casein gene expression involving glucose level.**
H. Y. Jeong[*1], Y. T. Heo[2], H. S. Kang[1], E. T. Kim[1] and H. Song[2], [1]Dairy Science Division, National Institute of Animal Science, RDA, Cheonan-si, The Republic of Korea, [2]Konkuk University, Seoul, The Republic of Korea*

1088 13 **mRNA abundance of steroid hormone metabolizing enzymes (17ß-HSD isoforms and CYP19) in adipose tissue of dairy cows during the periparturient period.**
*A. Alizadeh[1,2,3], H. Sadri[1], J. Rehage[4], S. Dänicke[5] and H. Sauerwein[*1], [1]Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Germany, [2]Department of Animal Science, Saveh Branch, Islamic Azad University, Saveh, Islamic Republic of Iran, [3]Department of Embryology, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Islamic Republic of Iran, [4]University for Veterinary Medicine, Foundation, Hannover, Germany, [5]Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany*

1089 14 **Mitochondrial biogenesis and DNA content in metabolically tissues of lactating cows with divergent milk production.**
R. Weikard[*] and C. Kühn, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany

1090 15 **Lipopolysaccharide exposure in swine alters ovarian toll-like receptor 4 expression.**
K. L. Bidne[*], M. J. Dickson, S. K. Kvidera, L. H. Baumgard, J. W. Ross and A. F. Keating, Iowa State University, Ames

757 16 **Milk yield genotype affects hepatic expression of innate immune genes when challenged with lipopolysaccharide (LPS).**
*G. T. Cousillas[*1], W. J. Weber[1], B. Walcheck[1], R. Chebel[1], D. E. Kerr[2], T. H. Elsasser[3] and B. A. Crooker[1], [1]University of Minnesota, Saint Paul, [2]University of Vermont, Burlington, [3]USDA-ARS, Beltsville, MD*

Production, Management and the Environment: Environment

1180 17 **Partial carbon footprint of milk and interaction between enteric methane and nitrous oxide emissions in grazing dairy farms: The case of Costa Rica.**
*M. A. Wattiaux[*1], J. P. Iñamagua-Uyaguari[2], F. Casasola-Coto[3], L. Guerra-Alarcón[4] and A. Jenet[3], [1]University of Wisconsin-Madison, [2]Universidad de Cuenca, Cuenca, Ecuador, [3]Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Turrialba, Costa Rica, [4]Université Laval, Québec, QC, Canada*

1181 18 **WS** **Effects of dry and wet conditions during the pre-weaning phase on subsequent feedlot performance and carcass composition of beef cattle.**
*G. A. Gatson[*1], B. L. Vander Ley[2], W. D. Busby[3], P. J. Gunn[4] and A. M. Meyer[1], [1]Division of Animal Sciences, University of Missouri, Columbia, [2]College of Veterinary Medicine, University of Missouri, Columbia, [3]Tri-County Steer Carcass Futurity, Lewis, IA, [4]Department of Animal Science, Iowa State University, Ames*

1182 19 **Predicting manure volatile solid output of lactating dairy cows.**
*R. Appuhamy[*1], L. Moraes[1], C. Wagner-Riddle[2], D. P. Casper[3] and E. Kebreab[1], [1]University of California-Davis, [2]University of Guelph, Guelpg, ON, Canada, [3]Dairy Science Department, South Dakota State University, Brookings*

1183 20 **The effects of vermifiltration on gaseous emissions from dairy lagoon water.**
E. Lai[*], Y. Zhao, Y. Pan and F. M. Mitloehner, University of California-Davis

1184 21 **Trends in milk urea nitrogen, milk composition, and milk yield in dairy farms in the Northeast US**
*A. N. Hristov[*1], M. T. Harper[1], J. Oh[1], F. Giallongo[1], J. C. Lopes[1], G. Cudoc[2], J. Clay[3] and L. E. Chase[4], [1]The Pennsylvania State University, University Park, [2]Dairy One Coop., Inc., Ithaca, NY, [3]Dairy Records Management Systems, Raleigh, NC, [4]Cornell University, Ithaca, NY*

1185 22 **Effect of time and storage conditions on cow urine pH.**
M. C. Lewis[*], S. A. Armstrong, J. P. Jarrett and D. J. McLean, Phibro Animal Health Corporation, Quincy, IL

1186 23 **Farm gate environmental impacts of beef production in the Northern Plains and Midwest regions of the US**
S. Asem-Hiablie, C. A. Rotz[*] and R. C. Stout, USDA-ARS Pasture Systems and Watershed Management Research Unit, University Park, PA

1187 24 **Effect of temperature on ammonia emissions from feedlot cattle manure.**
K. M. Koenig[*] and S. M. McGinn, Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB, Canada

1188 25 **A novel method for collecting gas produced from the *in vitro* ANKOM gas production system.**
*P. S. Alvarez Hess[*1], P. Giraldo[1], R. O. Williams[2], P. J. Moate[2], K. A. Beauchemin[3] and R. J. Eckard[1,2], [1]The University of Melbourne, Faculty of Veterinary and Agricultural Sciences, Melbourne, Australia, [2]The Department of Economic Development, Jobs, Transport and Resources Ellinbank Research Centre, Ellinbank, Australia, [3]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

1195 26 **Effect of baling or grazing of corn residue on the subsequent crop yields.**
*K. M. Ulmer[*1], J. L. Cox[1], M. K. Rakkar[1], R. G. Bondurant[1], M. E. Drewnoski[1], J. C. MacDonald[1], H. Blanco-Canqui[2] and R. J. Rasby[1], [1]University of Nebraska-Lincoln, [2]Department of Agronomy and Horticulture, University of Nebraska-Lincoln*

1190 27 **Intake, milk production, and methane emission of dairy cows fed diets that differ in ruminal *in vitro* NDF digestibility.**
*M. J. Aguerre[*1], M. J. Powell[2], A. R. Pelletier[1] and M. A. Wattiaux[1], [1]University of Wisconsin-Madison, [2]USDA-ARS, US Dairy Forage Research Center, Madison, WI*

1191 28 **Life cycle energy and greenhouse gas comparison of co-located organic and conventional dairy systems.**
B. J. Heins[*], M. Reese, J. Tallaksen and E. Buchanan, University of Minnesota West Central Research and Outreach Center, Morris

1192 29 **Effects of canola meal and soybean meal as protein sources on methane and ammonia emissions of high producing dairy cows.**
*S. A. E. Moore[*1], K. F. Kalscheur[2], M. J. Aguerre[1] and M. J. Powell[2], [1]University of Wisconsin-Madison, [2]USDA-ARS, US Dairy Forage Research Center, Madison, WI*

1193 30 **Optimizing nitrogen efficiency on commercial dairy farms: Impact on production performance and herd profitability.**
*L. Fadul-Pacheco[*1], D. Pellerin[1], P. Y. Chouinard[1], M. A. Wattiaux[2] and E. Charbonneau[1], [1]Département des Sciences Animales, Université Laval, Québec, QC, Canada, [2]University of Wisconsin-Madison*

1194 31 **Including corn in crop rotations is profitable for dairy farms and does not result in greater greenhouse gas emissions at the whole-farm level.**
*V. Ouellet[*1], D. Pellerin[1], M. Chantigny[2] and E. Charbonneau[1], [1]Departement des Sciences Animales, Universite Laval, Quebec City, QC, Canada, [2]Soils and Crops Research and Development Centre, Agriculture and Agri-Food Canada, Quebec, QC, Canada*

1189 32 **Effect of forage source of dairy cow diets on methane emission from enteric fermentation and manure storage.**
F. Hassanat[*] and C. Benchaar, Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada

Ruminant Nutrition: Greenhouse Gas Emissions

1457 33 **Enteric methane emissions from dairy cows fed corn silage based-diet supplemented with increasing amounts of linseed oil.**
C. Benchaar[*], F. Hassanat, D. Warner and H. Petit, Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada

1456 34 **Essential oils from three tropical Citrus species can reduce *in vitro* enteric methane production.**
*D. Kim[*1,2], I. M. Ogunade[1], K. G. Arriola[1], D. Vyas[1] and A. T. Adesogan[1], [1]Department of Animal Sciences, UF/IFAS, Gainesville, FL, [2]Division of Applied Life Science (BK21Plus, Institute of Agriculture and Life Science), Gyeongsang National University, Jinju, The Republic of Korea*

1458 35 **Effect of different forages and concentrate levels on energy conversion, and enteric methane production of Holstein × Gyr heifers.**
*F. A. S. Silva[*1], S. C. Valadares Filho[2], E. Detmann[3], L. F. Costa e Silva[4], L. A. Godoi[1], B. C. Silva[3], J. M. V. Pereira[1], A. C. B. Menezes[1], P. Pucetti[1] and P. P. Rotta[4], [1]Universidade Federal de Vicosa, Vicosa, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, [4]Colorado State University, Fort Collins*

Ruminant Nutrition: Intake and Feed Efficiency

1476 36 **Endocannabinoids concentrations in plasma associated with feed efficiency and carcass composition on crossbreed steers.**
*V. M. Artegoitia[*1], A. P. Foote[2], R. M. Lewis[1], D. A. King[2], S. D. Shackelford[2], T. L. Wheeler[2] and H. C. Freetly[2], [1]University of Nebraska-Lincoln, [2]USDA-ARS, US Meat Animal Research Center, Clay Center, NE*

1477 37 **The phenotypic relationship between residual feed intake and ultrasound carcass traits in Santa Gertrudis steers.**
C. R. Branton[*], Stephen F. Austin State University, Nacogdoches, TX

1478 38 **Using indigestible rare earth markers and internal markers to predict DMI and residual feed intake.**
K. A. Weld[*] and L. E. Armentano, University of Wisconsin-Madison

1479 39 **Short term intake technique to predict dry matter intake and digestibility in forages.**
*F. M. Ingentron[1,2], B. C. Lentz[1], N. P. Stritzler[1], C. N. Rabotnikof[1], M. Menghini[3,4] and H. M. Arelovich[*3,4,5], [1]Fac. Agronomia, Universidad Nacional de La Pampa, Santa Rosa, Argentina, [2]CONICET, Santa Rosa, Argentina, [3]CIC, Bahia Blanca, Argentina, [4]Dto. Agronomia, Universidad Nacional del Sur, Bahia Blanca, Argentina, [5]CERZOS, Bahia Blanca, Argentina*

1480 40 **Effects of a blend of essential oils on milk yield and feed efficiency of lactating cows.**
*I. Guasch[1], G. Elcoso[1], B. Zweifel[2] and A. Bach[*3,4], [1]Blanca, Lleida, Spain, [2]Agolin, Bière, Switzerland, [3]ICREA, Barcelona, Spain, [4]IRTA, Caldes de Montbui, Spain*

1481 41 **Repeatability of feed efficiency in beef cattle offered grass silage and zero-grazed grass.**
*S. Coyle[*1,2], C. Fitzsimons[1], D. A. Kenny[1], A. K. Kelly[2] and M. McGee[1], [1]Teagasc Grange, Dunsany Co. Meath, Ireland, [2]University College Dublin, Ireland*

1482 42 **Repeatability of feed efficiency in steers offered a high concentrate diet.**
*S. Coyle[*1,2], C. Fitzsimons[2], D. A. Kenny[2], A. K. Kelly[1] and M. McGee[2], [1]University College Dublin, Ireland, [2]Teagasc Grange, Dunsany Co. Meath, Ireland*

1483 43 **NADH dehydrogenase (ubiquinone) Fe-S protein-1 (NDUFS1), a core subunit of mitochondrial complex I, is not differentially expressed in peripheral blood mononuclear cells of beef steers with divergent residual feed intakes.**
*J. J. Michal[1], J. R. Russell[2], S. L. Hansen[2], J. F. Taylor[3], M. S. Kerley[4], U. S. Feed Efficiency Consortium[3] and K. A. Johnson[*1], [1]Washington State University, Pullman, [2]Iowa State University, Ames, [3]University of Missouri, Columbia, [4]Division of Animal Sciences, University of Missouri, Columbia*

1484 44 **Dry matter intake prediction of heifers under tropical conditions.**
*M. I. Marcondes[*1] and A. L. Silva[2], [1]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil, [2]Universidade Federal de Vicosa, Vicosa, Brazil*

1485 45 **An improved model for predicting dry matter intake in prepartum dairy cows.**
*F. A. Paiva[*1], F. Peñagaricano[1], J. K. Drackley[2] and J. E. P. Santos[1], [1]University of Florida, Gainesville, [2]University of Illinois at Urbana-Champaign*

1486 46 **The use of artificial neural network to estimate feed intake in lactating cows through milk mid-infrared spectra of individual cow milk samples.**
J. R. R. Dórea[*], G. J. M. Rosa and L. E. Armentano, University of Wisconsin-Madison

748 47 **Effects of supplementing lactating dairy cow ration with sodium sesquicarbonate on reticulorumen pH, rumination, and dry matter intake.**
*M. L. Jones[*1], J. D. Clark[1], N. A. Michael[2] and J. M. Bewley[1], [1]University of Kentucky, Lexington, [2]Arm & Hammer Animal Nutrition, Princeton, NJ*

Nonruminat Nutrition: Feed Additives I

995 48 **Effect of supplemental citrulline on thermal and production parameters during heat stress in growing pigs.**
*S. K. Kvidera[*1], E. A. Horst[1], E. J. Mayorga[1], J. T. Seibert[1], M. A. Al-Qaisi[1], J. W. Ross[1], R. P. Rhoads[2] and L. H. Baumgard[1], [1]Iowa State University, Ames, [2]Virginia Polytechnic Institute and State University, Blacksburg*

996 49 **Effect of microencapsulated blends of organic acids on growth performance, nutrient digestibility, and fecal microflora in pigs.**
P. Y. Zhao[*], R. X. Lan, W. C. Liu, H. S. Kim and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea

997 50 **Effect of multispecies probiotic supplementation source on growth performance and meat quality traits in growing-finishing pigs.**
B. Balasubramanian[*], Y. H. Kim, J. W. Park, Y. H. Liu and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea

998 51 **Effects of dietary red ginseng on growth performance, nutrient digestibility, blood profile, meat quality, and carcass grade in growing-finishing pigs.**
H. N. Tran[*], Y. H. Kim, J. W. Park, S. Mohana Devi and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea

999 52 **Effect of protected organic acid blend with medium chain fatty acid on growth performance, nutrient digestibility, blood profiles, meat quality, fecal micro flora and fecal gas emission in finishing pigs.**
D. H. Nguyen[*], T. S. Li, S. D. Upadhaya, H. N. Tran and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea

1000 53 **Effect of dietary melamine concentrations on performance and tissue melamine residue in male broiler chickens.**
J. H. Kim and D. Y. Kil[*], Chung-Ang university, Anseong-si, The Republic of Korea

1001 54 **Effect of dietary melamine concentrations on performance and tissue melamine residue in female broiler chickens.**
J. H. Kim and D. Y. Kil, Chung-Ang university, Anseong-si, The Republic of Korea*

1002 55 **A plant extract with manganese, Vali MP, decreased adipogenesis in 3T3-L1 pre-adipocytes by modulating adipogenic gene expression and cellular energy level.**
S. W. Choi[*1], J. Kim[1], S. W. Jung[2] and K. Y. Whang[1], [1]Korea University, Seoul, The Republic of Korea, [2]CTC BIO, Seoul, The Republic of Korea*

1003 56 **Effects of dietary lysophospholipids (LipidolTM) on intestinal morphology and gene expression of inflammatory cytokines in weaned rats.**
M. Kwak[*1], J. Kim[1], I. H. Hwang[2] and K. Y. Whang[1], [1]Korea University, Seoul, The Republic of Korea, [2]EASY BIO, Seoul, The Republic of Korea*

1004 57 **Effect of protected sodium butyrate and nutrient concentration on early phase of broilers.**
M. Puyalto[*1], C. Sol[1], J. J. Mallo[1] and M. J. Villamide[2], [1]NOREL S.A., Madrid, Spain, [2]Departamento de Produccion Agraria. ETSI Agronomos. Universidad Politecnica de Madrid, Madrid, Spain*

1005 58 **Use of aromatics plants in the diet on performance of broilers in Colombia.**
L. Bernal, La Salle University, Bogotá, Colombia*

1006 59 **Dietary antioxidants, chromium and betaine supplementation can improve lactation performance of sows during summer.**
J. J. Cottrell[1], F. Liu[1], D. J. Henman[2], K. O'Halloran[2] and F. R. Dunshea[*1], [1]Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, [2]Rivalea Australia Pty Ltd, Corowa, Australia*

1007 60 **Effects of dietary melamine on growth performance, organ weight, and blood melamine concentrations in pigs.**
K. R. Park[*] and B. G. Kim, Konkuk University, Seoul, The Republic of Korea*

1008 61 **Effects of dietary melamine on growth performance and blood and urinary melamine concentrations in pigs.**
K. R. Park[*] and B. G. Kim, Konkuk University, Seoul, The Republic of Korea*

1009 62 **Feed additives reduced diarrhea occurrence in a medication-free postweaning pig diet.**
Z. Yang[*1], X. Wang[1], F. Chi[2] and S. Ching[2], [1]College of Animal Science, Shandong Agricultural University, Tai-an, China, [2]Amlan International, Chicago, IL*

1010 63 **Optimization of B vitamins for improving the quality of fermented feed with response surface methodology.**
Z. Yang[*1] and X. M. Wang[2], [1]College of Animal science, Shandong Agricultural University, Taian, China, [2]College of Animal science, Shandong Agricultural University, Tai-an, Shandong, Taian, China*

Ruminant Nutrition: Vitamins

1661 64 **Pantothenic acid does not affect the concentration of biotin in plasma of Holstein bull calves.**
G. Ferreira, C. L. Teets, A. N. Bladen and A. Geiger, Virginia Polytechnic Institute and State University, Blacksburg*

1662 65 **Short-term feeding of a tocopherol mix (α-, β-, γ-, and δ) alters the daily pattern of tocopherol isoforms present in milk and blood in lactating dairy cows.**
Y. Qu[*1], T. H. Elsasser[2], J. R. Newbold[3], E. E. Connor[4], M. Garcia[1], C. M. Scholte[1] and K. M. Moyes[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, [2]USDA-ARS, Animal Biosciences and Biotechnology Laboratory, Beltsville, MD, [3]Cargill Innovation Center, Velddriel, Netherlands, [4]USDA-ARS, Animal Genomics and Improvement Laboratory, Beltsville, MD*

1663 66 **Effect of rumen protected vitamin B complex on metabolic parameters, milk production and d 15 conceptus and endometrium outcomes.**
M. Kaur[*1], I. Hartling[1], T. A. Burnett[1], L. Polsky[1], R. L. A. Cerri[1] and H. Leclerc[2], [1]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [2]Jefo Nutrition, St. Hyacinthe, QC, Canada*

Teaching/Undergraduate and Graduate Education II

1759 67 **Application of a survey instrument for assessing student demographics and interests in an animal and dairy sciences career planning course.**
M. C. Nicodemus, Mississippi State University, Mississippi State*

1760 68 **Evaluation of learning outcomes in a dairy science section of a science, technology, engineering, and math retention program.**
K. A. Dolecheck[*] and J. M. Bewley, University of Kentucky, Lexington*

Poster Session VII

1:00 PM - 2:00 PM
Exhibit Hall A/B

Horse Species: Nutrition

806 1 **Feeding a small amount of hay prior to concentrate neutralizes the effects of high starch diets on inflammation in horses.**
*J. K. Suagee-Bedore[*1], K. Wimbush[1], D. R. Linden[1] and R. K. Splan[2], [1]The Ohio State University, Wooster, [2]Virginia Polytechnic Institute and State University, Middleburg*

807 2 **Feeding DigestaWell Buffer to horses neutralizes the effects of high starch diets on blood pH and inflammation.**
*J. K. Suagee-Bedore[*1], A. L. Wagner[2] and I. D. Girard[2], [1]The Ohio State University, Wooster, [2]Probiotech International Inc., St-Hyacinthe, QC, Canada*

808 3 **Efficacy of a brewer's yeast supplement with or without fat added to an energy restricted diet for performance horses.**
*L. B. Hodge[*1], A. Boyer[2] and B. J. Rude[1], [1]Mississippi State University, Mississippi State, [2]FL Emmert, Cincinnati, OH*

809 4 **Modeling ammonia emission rate from horses fed different concentrations of dietary crude protein.**
*J. Weir[*1], H. Li[2], L. K. Warren[1], E. Macon[3] and C. Wickens[1], [1]University of Florida, Gainesville, [2]University of Delaware, Newark, [3]Middle Tennessee State University, Murfreesboro*

810 5 **Dietary supplementation of DigestaWell NRG to unconditioned Warmblood mares may reduce lactate rise following exercise.**
*A. L. Wagner[*1], R. K. Splan[2], J. K. Suagee-Bedore[3] and I. D. Girard[1], [1]Probiotech International Inc., St-Hyacinthe, QC, Canada, [2]Virginia Polytechnic Institute and State University, Middleburg, [3]The Ohio State University, Wooster*

811 6 **Maturity of bermudagrass hay affects digestibility by horses.**
T. L. Hansen[*], E. C. Lee, O. K. Zugay and L. K. Warren, University of Florida, Gainesville

812 7 **Investigation of equine hindgut microbiota development in young horses.**
B. St-Pierre[*], M. E. Graf, B. M. Schlaikjer and R. C. Bott, South Dakota State University, Brookings

813 8 **Evaluation of chromic oxide and titanium dioxide as external markers for estimating digestibility in horses.**
*A. Fowler[*1], M. B. Pyles[1], B. Harlow[1,2], S. H. Hayes[1], A. Crum[1] and L. M. Lawrence[1], [1]University of Kentucky, Lexington, [2]USDA-ARS Forage Animal Production Research Unit, Lexington, KY*

814 9 **Effect of starch source in pelleted concentrates on fecal bacterial communities in thoroughbred mares.**
*M. B. Pyles[*1], A. L. Fowler[1], V. Bill[1], B. E. Harlow[1,2], A. Crum[1], S. H. Hayes[1], M. D. Flythe[1,2] and L. M. Lawrence[1], [1]University of Kentucky, Lexington, [2]USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY*

Horse Species: Management

796 10 **Stress responses in horses tied with overchecks.**
K. Bennett-Wimbush[*], J. K. Suagee-Bedore and M. Amstutz, The Ohio State University, Wooster

797 11 **Effect of pre-race behavior on performance in racing quarter horses.**
C. E. Ferguson[*], McNeese State University, Lake Charles, LA

798 12 **Evaluating the effectiveness of varying doses of supplemental tryptophan as a calmative in horses.**
*B. Davis[*1], T. Grandin[1], T. E. Engle[1] and J. Ransom[1,2], [1]Colorado State University, Fort Collins, [2]National Park Service, Sedro-Woolley, WA*

799 13 **Effects of barefoot trimming and shoeing on the lower forelimb: Hoof morphology.**
*D. K. Proske[1], J. L. Leatherwood[*1], M. J. Anderson[1], K. J. Stutts[1], C. J. Hammer[2] and J. Coverdale[3], [1]Sam Houston State University, Huntsville, TX, [2]North Dakota State University, Fargo, [3]Texas A&M University, College Station*

800 14 **Effects of barefoot trimming and shoeing on the lower forelimb: Joint inflammation.**
*D. K. Proske[1], J. L. Leatherwood[*1], K. J. Stutts[1], M. J. Anderson[1], C. J. Hammer[2] and J. Coverdale[3], [1]Sam Houston State University, Huntsville, TX, [2]North Dakota State University, Fargo, [3]Texas A&M University, College Station*

801 15 **Characterizing the physiological response of a novel vaccine in mature horses.**
J. L. Leatherwood[*], D. L. Parker, M. J. Anderson, K. J. Stutts, M. M. Beverly and S. F. Kelley, Sam Houston State University, Huntsville, TX

802 16 **Application of either a single or multiple doses of an intravaginal GnRH agonist to induce ovulation in mares.**
C. D. Sinclair[*1], *S. K. Webel*[2], *T. L. Douthit*[1], *D. M. Grieger*[1] *and J. M. Kouba*[1], [1]*Kansas State University, Manhattan,* [2]*JBS United, Inc., Sheridan, IN*

803 17 **Incidence of exercise induced pulmonary hemorrhage in race horses in Puerto Rico.**
V. Morales[1], *S. Glass*[1], *J. De Angel*[2], *B. Vallejo*[2] *and A. A. Rodriguez*[*1], [1]*University of Puerto Rico, Mayaguez, PR,* [2]*Equus PR, Caguas, PR*

804 18 **Application of gait analysis to determine if the Galiceno horse breed is a gaited horse breed.**
M. C. Nicodemus[*1] *and J. Beranger*[2], [1]*Mississippi State University, Mississippi State,* [2]*The Livestock Conservancy, Pittsboro, NC*

805 19 **Effect of body condition score on fatty acid composition of equine subcutaneous adipose tissue.**
R. M. Humphrey[*], *A. T. Sukumaran, R. L. Lemire, E. N. Ferjak, C. Cavinder, D. D. Burnett and T. T. N. Dinh, Mississippi State University Department of Animal and Dairy Sciences, Mississippi State*

Physiology and Endocrinology: Ruminant Nutriton, Metabolism and Reproduction

1145 20 **Plasma concentrations of glucagon-like peptide 1 and 2 in calves fed calf starters containing lactose.**
Y. Inabu[*1], *A. Saegusa*[2], *K. Inouchi*[2], *M. Oba*[3] *and T. Sugino*[1], [1]*Hiroshima University, Higashi-hiroshima, Japan,* [2]*ZEN-RAKU-REN, Nishi-shirakawa, Japan,* [3]*Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

1146 21 **Metabolic profile and inflammatory response in calves with different intake of immunoglobulins.**
S. Dander, F. Piccioli-Cappelli, A. Bignami, A. Minuti and E. Trevisi[*], *Università Cattolica del Sacro Cuore, Piacenza, Italy*

1147 22 **Effect of the timing of addition of trans-10, cis-12 conjuaged linoleic acid and L-carnitine during culture on development and cryotolerance of bovine embryos produced in-vitro.**
A. M. Zolini[*1], *P. J. Hansen*[1], *C. A. Torres*[2] *and J. Block*[1,3], [1]*Department of Animal Sciences, University of Florida, Gainesville,* [2]*Universidade Federal de Vicosa, Vicosa, Brazil,* [3]*OvaTech LLC, Gainesville, FL*

1148 23 **An insufficient supply of glucose substrates causes reduced lactose synthesis in lactating dairy cows fed cereal straws instead of alfalfa hay.**
B. Wang[*1], *F. Zhao*[1,2], *B. X. Zhang*[1] *and J. X. Liu*[1], [1]*Institute of Dairy Science, Zhejiang University, Hangzhou, China,* [2]*University of Vermont, Burlington*

1149 24 **Expression of genes involved in the initial steps of steroidogenesis in adipose tissue depots of dairy cows during the dry period and early lactation.**
A. Alizadeh[1,2,3], *H. Sadri*[1], *J. Rehage*[4], *S. Dänicke*[5] *and H. Sauerwein*[*1], [1]*Institute of Animal Science, Physiology and Hygiene Unit, University of Bonn, Germany,* [2]*Department of Animal Science, Saveh Branch, Islamic Azad University, Saveh, Islamic Republic of Iran,* [3]*Department of Embryology, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Islamic Republic of Iran,* [4]*University for Veterinary Medicine, Foundation, Hannover, Germany,* [5]*Institute of Animal Nutrition, Friedrich-Loeffler-Institute (FLI), Braunschweig, Germany*

1150 25 **Effects of a dietary supplementation of rumen-protected B vitamins on reproduction of dairy cows by measuring nutrigenomic parameters.**
F. Richard[*1], *D. R. Khan*[1], *C. L. Girard*[2], *H. Leclerc*[3] *and E. Evans*[4], [1]*Universite Laval, Quebec, QC, Canada,* [2]*Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada,* [3]*Jefo Nutrition, St. Hyacinthe, QC, Canada,* [4]*Technical Advisory Services, Bowmanville, ON, Canada*

1151 26 **Impact of dietary protein levels during late pregnancy on the number of binuclear cells in sheep.**
H. H. Mansour[*1], *A. Reyaz*[1], *S. T. Dorsam*[1], *L. A. Lekatz*[2] *and K. A. Vonnahme*[1], [1]*North Dakota State Unversity, Fargo,* [2]*Illinois State University, Normal*

1152 27 **Effect of serum concentration of beta-carotene at AI on productive and reproductive parameters in lactating Holstein cows.**
A. M. L. Madureira[*1], *T. Guzella Guida*[1], *R. L. A. Cerri*[2] *and J. L. M. Vasconcelos*[1], [1]*Sao Paulo State University, Botucatu, Brazil,* [2]*Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

1153 28 **Propionic acid decreased hepatic acetyl CoA content compared with glycerol within the timeframe of meals when infused abomasally.**
L. B. Gualdron-Duarte[*] *and M. S. Allen, Michigan State University, East Lansing*

1154 29 **Feed restriction-induced negative energy balance alters the fatty acid profiles of adipose tissue and milk fat of dairy cows.**
S. E. Schmidt, K. M. Thelen, C. L. Preseault, G. A. Contreras and A. L. Lock, Michigan State University, East Lansing*

1155 30 **Body condition score and body condition score change: Associations with fertility phenotypes in lactating dairy cows.**
M. M. Herlihy[*1], E. Rojas[1,2], J. Kenneally[1], P. Lonergan[2] and S. Butler[1], [1]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*

1156 31 **Effects of Omnigen-AF supplementation on body temperature, milk production, and somatic cell count in lactating dairy cows.**
T. Leiva[*1], R. F. Cooke[2], A. P. Brandao[1,2], R. L. A. Cerri[3], R. O. Rodrigues[1] and J. L. M. Vasconcelos[4], [1]UNESP - FMVZ, Botucatu, Brazil, [2]Oregon State University - EOARC Burns, [3]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [4]Sao Paulo State University, Botucatu, Brazil*

1157 32 **The effects of stage of gestation and maternal nutrient status on binucleate cell numbers in the beef cow.**
A. M. Peterson[*1], A. Reyaz[1], S. T. Dorsam[1], L. E. Camacho[2], K. C. Swanson[1], A. Grazul-Bilska[1] and K. A. Vonnahme[1], [1]North Dakota State University, Fargo, [2]University of Arizona, Tucson*

1158 33 **Effects of post-AI supplementation with Ca salts of soybean oil on ovarian and pregnancy development in *Bos indicus* beef cows.**
R. S. Cipriano[*1], R. F. Cooke[2], A. D. P. Rodrigues[3], L. G. T. da Silva[2,4], T. F. Schumaher[2], M. V. Biehl[5], L. H. Cruppe[6], D. W. Bohnert[2], A. V. Pires[5] and R. L. A. Cerri[7], [1]UniSalesiano, Araçatuba, Brazil, [2]Oregon State University - EOARC Burns, [3]Departamento de Produção Animal - FMVZ - UNESP, Botucatu, Brazil, [4]UNESP - FMVZ, Botucatu, Brazil, [5]ESALQ/ University of Sao Paulo, Piracicaba, Brazil, [6]Select Sires, Inc., Plain City, OH, [7]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

Animal Health: Dairy Cattle

121 34 **Assessment of tubal patency by hysterosalpingo-contrast sonography in cow.**
K. Itoh[1], N. Endo[1], S. I. Kataoka[2] and T. Tanaka[*1], [1]Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan, [2]Tokyo Metropolitan Agriculture and Forestry Research Center, Ome, Tokyo, Japan*

122 35 **Retained placenta and subclinical endometritis: Prevalence and relation with reproductive performance in crossbred dairy cows.**
R. R. Buso, C. C. Campos, T. R. Santos, J. P. E. Saut and R. M. Santos[*], FAMEV-UFU, Uberlândia, Brazil*

123 36 **Association of rumination time and health status with milk production in early lactation dairy cows.**
V. H. Asselstine[1], E. I. Kaufman[1], S. J. LeBlanc[2], B. W. McBride[1], T. F. Duffield[2] and T. J. DeVries[*1], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

124 37 **Associations of cow-level factors with the risk of poor hygiene.**
I. Robles[*1], D. F. Kelton[2], H. Barkema[3], G. P. Keefe[4], J. P. Roy[5], M. A. von Keyserlingk[6] and T. J. DeVries[1], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [3]University of Calgary, AL, Canada, [4]Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PE, Canada, [5]Faculté de Médecine Vétérinaire, University of Montreal, St. Hyacinthe, QC, Canada, [6]Animal Welfare Program - University of British Columbia, Vancouver, BC, Canada*

125 38 **Genomic markers associated with hyperketonemia in Jersey cows.**
R. S. Pralle[*1], H. A. Adams[2], T. L. Chandler[1] and H. M. White[1], [1]Department of Dairy Science University of Wisconsin-Madison, [2]CRI International Center for Biotechnology, Mount Horeb, WI*

126 39 **Meta-analysis of factors influencing new intramammary infection rate in experimental challenge teat dip efficacy trials.**
B. D. Enger[*1], R. R. White[1], S. C. Nickerson[2] and L. K. Fox[3], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Georgia, Athens, [3]Washington State University, Pullman*

127 40 **The effects of short-term feeding of tocopherol mix (α-, β-, γ-, and δ) on blood neutrophil function and immunometabolic-related gene expression in lactating dairy cows.**
Y. Qu[*1], T. H. Elsasser[2], M. Garcia[1], C. M. Scholte[1], E. E. Connor[3], J. R. Newbold[4] and K. M. Moyes[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, [2]USDA-ARS, Animal Biosciences and Biotechnology Laboratory, Beltsville, MD, [3]USDA-ARS, Animal Genomics and Improvement Laboratory, Beltsville, MD, [4]Cargill Innovation Center, Velddriel, Netherlands*

128 41 **Predicting hyperketonemia prevalence in Jersey herds from milk composition and cow test-day information using multiple linear regression.**
*T. L. Chandler[*1], N. Zhang[1,2], M. R. Skiba[1], S. G. Moore[3], M. O. Caldeira[3], S. E. Poock[3], G. R. Oetzel[4], C. W. Wolfe[5], R. H. Fourdraine[6] and H. M. White[1], [1]Department of Dairy Science University of Wisconsin-Madison, [2]Feed Research Institute Chinese Academy of Agricultural Sciences, Beijing, China, [3]University of Missouri, Columbia, [4]Department of Medical Sciences, School of Veterinary Medicine, University of Wisconsin-Madison, [5]American Jersey Cattle Association, Reynoldsburg, OH, [6]CRI International Center for Biotechnology, Mount Horeb, WI*

129 42 **Liver transcriptome modifications by nutrient restriction in early lactation Holstein cows challenged with intramammary lipopolysaccharide.**
*K. Pawlowski[1], C. Leroux[1], Y. Faulconnier[1], C. Boby[2], A. de la Foye[2], D. Durand[1] and J. A. A. Pires[*1], [1]UMR1213 Herbivores, INRA, VetAgroSup, Saint-Genes-Champanelle, France, [2]PFEM, INRA, Saint-Genes-Champanelle, France*

130 43 **Growth and transcriptional profile analysis following oral probiotic supplementation in dairy cows.**
M. Worku[*], S. Adjei-Fremah, K. Ekwemalor, E. Asiamah and H. Ismail, North Carolina Agricultural and Technical State University, Greensboro

131 44 **Mammary gland transcriptome and proteome modifications by nutrient restriction in early lactation Holstein cows challenged with intramammary lipopolysaccharide.**
*K. Pawlowski[1], C. Chambon[2], C. Boby[2], A. de la Foye[2], Y. Faulconnier[1], J. A. A. Pires[*1] and C. Leroux[1], [1]UMR1213 Herbivores, INRA, VetAgroSup, Saint-Genes-Champanelle, France, [2]PFEM, INRA, Saint-Genes-Champanelle, France*

132 45 **Methionine supplementation modulates the inflammatory response of dairy cow blood neutrophils in response to lipopolysaccharide.**
*M. Vailati Riboni[*1], B. Qadir[2] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Veterinary Division, Sulaymaniyah Veterinary Department, Ministry of Agriculture and Water Resource, Kurdistan Region Government, Sulaymaniyah, Iraq*

133 46 **Feasibility and safety of nitric oxide releasing solution as a treatment for bovine mastitis.**
G. Regev-Shoshani, J. Martins[*], J. Leemhuis, N. Dinn and C. Miller, University of British Columbia, Vancouver, BC, Canada

134 47 **Methionine coupled with choline supplementation alters inflammation and oxidative stress gene network expression of dairy cow blood neutrophils.**
*M. Vailati Riboni[*1], A. Bellingeri[2], I. Khan[3] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Università Cattolica del Sacro Cuore, Piacenza, Italy, [3]University of Agriculture, Peshawar, Pakistan*

135 48 **Impact of a BRDC vaccine with a MLV or KV IBR component on the innate inflammatory profile of nulliparous heifers.**
C. L. Widener[*], D. J. Hurley, W. M. Graves, A. H. Nelson, D. A. L. Lourenco and J. F. Bohlen, University of Georgia, Athens

136 49 **Association between bovine milk infrared temperature and bacteriological results from CHROMagar Mastitis Plates and PathoProof Mastitis Complete-16 Kit.**
M. G. Marrero-Pérez[*], J. Curbelo-Rodríguez, G. Ortiz-Colón, H. L. Sánchez-Rodríguez and Y. R. Vélez-Robles, University of Puerto Rico, Mayagüez Campus, Mayagüez, Puerto Rico

137 50 **The endometrial microbiome in transition cows fed an energy-restricted diet.**
*G. Esposito[*1,2], J. J. Lim[3], T. Tasara[4], P. C. Irons[2,5], E. C. Webb[2] and A. Chapwanya[3], [1]Department of Production Animal Studies, Faculty of Veterinary Sciences, University of Pretoria, South Africa, [2]Institute of Food, Nutrition and Well-being University of Pretoria, South Africa, [3]Ross University School of Veterinary Medicine, Basseterre, Saint Kitts and Nevis, [4]Institute for Food Safety and Hygiene, Vetsuisse Faculty University of Zurich, Switzerland, [5]Department of Production Animal Studies, Faculty of Veterinary Sciences, University of Pretoria, Onderstepoort, South Africa*

Beef Species I

227 51 **Relationship between forage quality parameters and mineral intake in grazing beef cattle.**
J. D. Rivera[*], M. L. Gipson and R. G. Gipson, Mississippi State University South Branch Experiment Station, Poplarville

228 52 **Feeding antibodies against interleukin-10 improved gain efficiency in beef steers.**
M. R. Schaefer[*], M. E. Cook and D. M. Schaefer, University of Wisconsin-Madison

229 53 **Animal and digestibility marker variation influence predictions of dry matter intake and dry matter digestibility.**
*K. A. Weld[*1], J. R. R. Dorea[1], F. A. P. Santos[2] and D. E. Oliveira[3], [1]University of Wisconsin-Madison, [2]University of São Paulo, Piracicaba, Brazil, [3]Santa Catarina State University, Lages, SC, Brazil*

230 54 **Using hair cortisol concentrations to assess the adrenocortical stress response in beef cattle administered corticotrophin-release hormone.**
*K. M. Schubach[*1], R. F. Cooke[1], A. P. Brandao[1,2], K. Lippolis[1], M. T. Hinchliff[1], D. W. Bohnert[1] and R. L. A. Cerri[3], [1]Oregon State University - EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil, [3]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

231 55 **Effects of static or oscillating dietary crude protein levels on fermentation dynamics of beef cattle diets using a dual-flow continuous culture system.**
*P. Amaral[1,2], L. Mariz[1,2], P. Del Bianco Benedeti[1,2], L. Galoro da Silva[1], E. Marostegan de Paula[1], H. Monteiro[1,3], T. Shenkoru[1], S. A. Santos[4], S. Poulson[1] and A. Faciola[*1], [1]University of Nevada, Reno, [2]Federal University of Vicosa, Brazil, [3]Maringa State University, Brazil, [4]Universidade Federal da Bahia, Salvador, Brazil*

232 56 **Reproductive development of rotationally grazed beef heifers when supplemented chelated trace minerals.**
H. A. Tucker[*], S. Bettis, T. Hampton and M. Vázquez-Añón, Novus International, Inc., St. Charles, MO

233 57 **Comparison of treatment protocols for bovine respiratory disease in high-risk, newly received beef calves.**
*J. J. Ball[*1], E. B. Kegley[1], J. A. Hornsby[1], J. L. Reynolds[1], J. Sarchet[2] and J. G. Powell[1], [1]Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, [2]Zoetis, Kalamazoo, MI*

234 58 **Glycerin as alternative energy source for ruminants: *In vitro* fermentation, total gas and methane production.**
*P. Del Bianco Benedeti[1,2], T. Shenkoru[2], M. Fonseca[3], R. Bittner[2], K. Murphy[2], D. Ivey[2], B. Ribas[2,4], E. Marostegan de Paula[2], L. Galoro da Silva[2], H. Monteiro[2,5], I. Nicolis[2], L. Mariz[1,2], H. Costa[2,6], P. Amaral[1,2], M. I. Marcondes[1] and A. Faciola[*2], [1]Federal University of Vicosa, Brazil, [2]University of Nevada, Reno, [3]Texas A&M University, College Station, [4]Sao Paulo State University, Botucatu, Brazil, [5]Maringa State University, Maringa, Brazil, [6]Federal University of Minas Gerais, Belo Horizonte, Brazil*

235 59 **The effects of supplementing ruminal bypass unsaturated fatty acids during late gestation on cow and calf serum fatty acids in beef cows.**
R. E. Ricks, E. K. Cook, S. K. Duckett and N. M. Long[*], Clemson University, SC

236 60 **The effects of supplementing ruminal bypass unsaturated fatty acids during late gestation on transfer of passive immunity and growth in calves.**
R. E. Ricks, E. K. Cook, L. K. Lewis and N. M. Long[*], Clemson University, SC

237 61 **Effect of OmniGen-AF dietary supplementation on ultrasound parameters in purebred Angus steers fed a finishing diet.**
*S. A. Armstrong[*1,2], D. J. McLean[1], G. Bobe[2], M. Bionaz[2] and T. J. Wistuba[1], [1]Phibro Animal Health Corporation, Quincy, IL, [2]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis*

238 62 **Total gastrointestinal tract digestibility of dry matter, neutral detergent fiber and starch of Nellore and ½ Angus x Nellore cattle adapted either for 9 or 14 days to high-concentrate diets.**
*W. I. Silva Filho[*1], D. H. M. Watanabe[1], A. L. Rigueiro[1], M. C. Pereira[2], G. P. Bertoldi[1], A. C. J. Pinto[1], A. A. Santos[1], M. M. Squizatti[1], L. A. Tomaz[1], O. A. Souza[1] and D. D. Millen[1], [1]São Paulo State University (UNESP), Dracena, Brazil, [2]São Paulo State University (UNESP), Botucatu, Brazil*

239 63 **Effect of OmniGen-AF supplementation on the metabolic profile of growing beef cattle.**
*T. H. Schell[*1,2], S. A. Armstrong[1,2], J. A. Branson[2], M. C. Lewis[2], A. P. Snider[1,2], D. J. McLean[2] and G. Bobe[1], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]Phibro Animal Health Corporation, Quincy, IL*

240 64 **Dietary melatonin and growth responses in feedlot heifers.**
M. R. Schaefer[*] and D. M. Schaefer, University of Wisconsin-Madison

241 65 **Dietary melatonin and growth responses in implanted feedlot steers.**
M. R. Schaefer[*] and D. M. Schaefer, University of Wisconsin-Madison

242 66 **Use of the residual retained energy as a measure of efficiency in growing Nellore cattle bulls.**
*A. M. Castilhos[*1], A. M. Jorge[1], C. L. Francisco[1], M. E. Z. Mercadante[2], S. F. M. Bonilha[2], C. M. Pariz[1], D. C. M. Silva[1] and R. H. Branco[2], [1]Universidade Estadual Paulista - FMVZ, Botucatu, Brazil, [2]Centro APTA Bovinos de Corte, Instituto de Zootecnia, Sertãozinho, Brazil*

Poster Session VIII

5:00 PM - 6:00 PM
Exhibit Hall A/B

Meat Science and Muscle Biology

890 1 **Sensory properties of meat of Nellore cattle fed different levels of lipid-based diets.**
T. N. P. Valente[*1], E. S. Lima[2], J. P. G. Morais[3], R. O. Roça[4] and D. P. B. Costa[5], [1]IFGOIANO, POSSE, Brazil, [2]Environmental Health, FMU, São Paulo, Brazil, [3]Agricultural Sciences Center, Federal University of Sao Carlos, Araras, Brazil, [4]São Paulo State University (FCA/UNESP), Botucatu, Brazil, [5]IFMT, Cuiabá, Brazil*

891 2 **Genome-wide efficient mixed-model study for meat quality in Nellore cattle.**
C. E. Buss[1], P. C. Tizioto[2], P. S. N. Oliveira[2], M. A. Mudadu[3], A. S. M. Cesar[4], R. V. Ventura[5], J. Afonso[1], A. O. D. Lima[1], L. L. Coutinho[4], R. R. Tullio[2] and L. C. A. Regitano[*2], [1]Federal University of Sao Carlos, Sao Carlos, Brazil, [2]Embrapa Southeast Livestock, Sao Carlos, Brazil, [3]Embrapa Pecuária Sudeste, São Carlos, Brazil, [4]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [5]Beef Improvement Opportunities, Guelph, ON, Canada*

892 3 **Comparison of carcass and sensory traits and contents of fatty acids and volatile compounds in *Longissimus dorsi* of three cattle breeds.**
M. Baik[*], M. Y. Piao, H. J. Lee, H. J. Kim, S. J. Park, H. J. Kang and C. Jo, Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, The Republic of Korea*

893 4 **Label-Free MS^E proteomic analysis of the bovine skeletal muscle: New approach for meat tenderness evaluation.**
M. D. Poleti[*1], R. C. Simas[1,2], A. S. M. Cesar[1], S. C. S. Andrade[3], G. H. M. F. Souza[4], L. C. Cameron[5], L. C. A. Regitano[6] and L. L. Coutinho[1], [1]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [2]Thomson Mass Spectrometry Laboratory - , Campinas, Brazil, [3]Genetics and Evolutionary Biology Department – IB, University of São Paulo, São Paulo, Brazil, [4]Waters Corporation, Sao Paulo, Brazil, [5]Laboratory of Protein Biochemistry - Federal University of State of Rio de Janeiro, Brazil, [6]Embrapa Southeast Livestock, Sao Carlos, Brazil*

894 5 **Carcass grading effects on the fatty acid and amino acid composition of pork loin from Duroc pigs.**
J. Álvarez-Rodriguez[1], R. Ros-Freixedes[1], S. Gol[1], E. Henríquez-Rodríguez[1], R. N. Pena[1], L. Bosch[2], J. Estany[1], F. Vilaró[3] and M. Tor[*1], [1]University of Lleida, Agrotenio Center, Spain, [2]Universitat de Girona, Spain, [3]University of Lleida, Spain*

895 6 **The *Longissimus thoracis* muscle proteome in Alentejana bulls as affected by growth pattern.**
A. M. Almeida[*1,2], P. Nanni[3], A. M. Ferreira[1], C. Fortes[3], J. Grossmann[3], R. J. Bessa[4] and P. Costa[4], [1]Instituto de Biologia Experimental e Tecnologica, Oeiras, Portugal, [2]Ross University School of Veterinary Medicine, Basseterre, Saint Kitts and Nevis, [3]Functional Genomics Center Zurich (FGCZ) - University of Zurich, Zurich, Switzerland, [4]CIISA, FMV-Ulisboa, Lisboa, Portugal

896 7 **Ferulic acid in diets of heifers and its effect on the oxidative stability of meat stored in refrigeration.**
E. Peña Torres[*], H. Gonzalez Rios, T. Islava Lagarda, M. Valenzuela Melendres, A. Peña Ramos, L. Zamorano Garcia, A. Pinelli Saavedra and J. L. Davila Ramirez, Centro de Investigacion en Alimentacion y Desarrollo, Hermosillo, Mexico*

897 8 **Label-free quantification of myosin isoforms in porcine skeletal muscles.**
J. Y. Jeong[*1], H. S. Yang[2], J. K. Seo[2], H. W. Yum[2] and G. D. Kim[1,3], [1]Institute of Agriculture & Life Science, Gyeongsang National University, Jinju, The Republic of Korea, [2]Division of Applied Life Science (BK21 plus), Gyeongsang National University, Jinju, The Republic of Korea, [3]Department of Animal Sciences, University of Illinois at Urbana-Champaign*

898 9 **Identification of novel genes and mechanisms involved in bovine myogenic differentiation.**
H. Jiang[*1], R. Settlage[2], X. Leng[1] and Y. Hou[1], [1]Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, [2]Biocomplexity Institute, Virginia Polytechnic Institute and State University, Blacksburg*

899 10 **Omega-3 and omega-7 oil supplementation on tissue fatty acid accumulation.**
S. K. Duckett[*], I. F. Furusho-Garcia, M. F. Miller Jr., B. M. Koch and G. Volpi Lagreca, Clemson University, SC*

900 11 **Supplementation of glycerol or fructose via drinking water of pasture-fed lambs.**
G. Volpi Lagreca, I. F. Furusho-Garcia, B. M. Koch, M. F. Miller Jr. and S. K. Duckett[*], Clemson University, SC*

901 12 **Comparison of meat quality and fatty acid composition of grain-fed calves to grass-fed steers, as an alternative beef production system in Chilean Patagonia.**
F. Sales[*1], R. Morales[2], R. Lira[1], L. Bravo[3] and Q. Sciascia[4], [1]Instituto de Investigaciones Agropecuarias, Punta Arenas, Chile, [2]Instituto de Investigaciones Agropecuarias, Osorno, Chile, [3]Universidad del País Vasco, Bizkaia, Spain, [4]Leibniz Institute, Dummerstorf, Germany*

902 13 **Influence of tannins extract supplementation on lipid oxidation of beef kept in refrigerated storage.**
*B. O. Lopez[*1], R. Barajas[1], M. A. Mariezcurrena[2], M. D. Mariezcurrena[2] and Y. Libien[3], [1]FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Mexico, [2]FMVZ-Universidad Autonoma del Estado de Mexico, Toluca, Mexico, [3]FM-Universidad Autónoma de Estado de México, Toluca, Mexico*

903 14 **Differentially expressed genes in genetically divergent Nellore steers for calcium content in the *Longissimus dorsi* muscle.**
*J. Afonso[1], P. C. Tizioto[2], P. S. N. Oliveira[2], W. J. S. Diniz[1], A. O. D. Lima[1], M. M. D. Souza[1], M. I. P. Rocha[1], J. V. D. Silva[1], C. E. Buss[1], C. F. Gromboni[3], G. B. Mourão[4], A. R. Nogueira[2], L. L. Coutinho[5] and L. C. A. Regitano[*2], [1]Federal University of Sao Carlos, Brazil, [2]Embrapa Southeast Livestock, Sao Carlos, Brazil, [3]Federal Institute of Education, Bahia Science and Technology, Valenca, Brazil, [4]University of São Paulo, Piracicaba, Brazil, [5]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil*

904 15 **Fatty acid profile and gene expression of lipogenic transcription factors in the muscle of Nellore bulls fed processed soybean.**
*C. V. Oliveira[1], M. M. Ladeira[*1], O. R. Machado Neto[2], D. R. Casagrande[1], L. Ruiz[1], J. R. R. Carvalho[1], J. P. Schoonmaker[3] and A. C. Rodrigues[1], [1]Universidade Federal de Lavras, Brazil, [2]Universidade Estadual Paulista, Botucatu, Brazil, [3]Purdue University, West Lafayette, IN*

905 16 **Heat shock protein expression differs in 14 day aged *Longissimus lumborum* in agreement with Warner-Bratzler Shear Force values.**
N. E. Ineck[*], R. G. Christensen, S. M. Quarnberg, J. McClellan, J. F. Legako and K. J. Thornton, Utah State University, Logan

Extension Education

586 17 **Development of a web-based calendar tool for scheduling beef cow management activities.**
*D. Poddaturi[1], S. Johnson[*2], G. R. Dahlke[1], D. A. Blasi[3] and G. Hanzlicek[4], [1]Iowa State University, Ames, [2]Kansas State University, Colby, [3]Department of Animal Science & Industry, Manhattan, KS, [4]Kansas State Veterinary Diagnostic Laboratory, Manhattan*

587 18 **Comparing The Pennsylvania State and NRC 2001 heifer ration programs.**
L. K. Mitchell[*] and A. J. Heinrichs, The Pennsylvania State University, University Park

588 19 **Motivations of calf care workers for sick calf identification and treatment decisions.**
*C. Crudo[1], D. A. Moore[*2], J. A. Afema[1] and W. M. Sischo[1], [1]Washington State University, Pullman, [2]Department of Veterinary Clinical Sciences, Washington State University, Pullman*

589 20 **Developing a feed allocation model to maximize income over feed cost considering farmer risk preferences.**
D. Liang[*], T. F. Rutherford, B. L. Jones, R. D. Shaver and V. Cabrera, University of Wisconsin-Madison

590 21 **A qualitative assessment of perception and communication barriers that interfere with the transfer of knowledge to dairy farmers.**
*M. E. Woolpert[*1,2], C. E. Morse[1] and D. M. Barbano[3], [1]University of Vermont, Burlington, [2]William H. Miner Agricultural Research Institute, Chazy, NY, [3]Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*

Dairy Foods Division: Dairy Chemistry I

505 22 **Characterization of the fatty acid composition of retail bovine milk and vegetable milk in Chile.**
E. Vargas-Bello-Pérez[*], P. Toro-Mujica, D. Enriquez-Hidalgo and M. A. Fellenberg, Pontificia Universidad Católica de Chile, Santiago, Chile

506 23 **Effect of milk protein intake and casein: Whey ratio in breakfast meals on postprandial glucose, satiety ratings and subsequent meal intake.**
*B. Kung[*1], S. Paré[1], A. J. Tucker[1], G. H. Anderson[2], A. J. Wright[1] and H. D. Goff[1], [1]University of Guelph, ON, Canada, [2]University of Toronto, ON, Canada*

507 24 **Influence of sodium reduction on the rheological characteristics of cottage cheese cream dressing.**
H. L. Damiano[*], University of Idaho, Moscow

508 25 **A rapid and non-destructive fluorescence-based analyzer for monitoring the changes in deproteinized whey powder during storage.**
K. Sajith Babu[*] and J. K. Amamcharla, Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan

509 26 **Evaluation of mineral compositions in commercial Mongolian dried yogurts (Aaruul) marketed at retail stores in Mongolia.**
*Y. W. Park[1], B. I. Davis[*1], J. H. Ko[2], K. P. Bastola[1], A. Siddique[1] and J. O. Jones[1], [1]Fort Valley State University, GA, [2]Mongloia Huree University of ICT, Ulaanbaatar, Mongolia*

510 27 **Potential protective effect of camel milk and yogurt with chromium on alloxan-induced hyperglycemia in rats.**
M. M. Motawee[*] and A. M. Badawi, National Organization for Drug Control and Research, Giza-, Egypt

511 28 **Characteristics, composition and sensory properties of butter from cows on pasture versus indoor feeding systems.**
*T. F. O'Callaghan[*1,2], H. Faulkner[2], S. McAuliffe[3], M. G. O'Sullivan[1], D. Hennessy[3], P. Dillon[3], K. N. Kilcawley[2], C. Stanton[1,2] and R. P. Ross[1], [1]University College Cork, Ireland, [2]Teagasc Food Research Centre, Cork, Ireland, [3]Teagasc Animal & Grassland Research and Innovation Centre, Cork, Ireland*

512 29 **Identification of protein fractions in ripened American style natural cheese manufactured utilizing recombinant bovine and camel chymosin by capillary electrophoresis.**
A. C. Biswas[*] and L. Metzger, South Dakota State University, Brookings

513 30 **Effect of gamma radiation on physicochemical properties, protein-protein interaction, and microstructure of whey proteins.**
*M. Guo[*1,2], X. Wang[3], F. Lee[2], J. Lv[4] and D. Zhang[2], [1]College of Food Science and Engineering, Jilin University, Changchun, China, [2]University of Vermont, Burlington, [3]Northeast Agriculture University, Harbin, China, [4]Agriculture Academy of China, Beijing, China*

514 31 **Effects of sodium polyphosphate on distribution of particle size of polymerized whey protein.**
*M. Guo[*1,2], D. Liu[1] and C. Wang[1], [1]College of Food Science and Engineering, Jilin University, Changchun, China, [2]University of Vermont, Burlington*

515 32 **Effects of ultrasound treatment on physicochemical properties of whey protein soluble aggregates.**
*X. Shen[1], T. Fang[1], T. Zhang[1] and M. Guo[*1,2], [1]Department of Food Science, College of Food Science and Engineering, JiLin University, ChangChun, China, [2]Department of Nutrition and Food Science, College of Agriculture and Life Science, University of Vermont, Burlington*

516 33 **Crystallization of calcium phosphate in stabilized-paste white mold cheese rinds.**
*G. F. Tansman[*1], P. S. Kindstedt[1] and J. M. Hughes[2], [1]Department of Nutrition and Food Sciences, University of Vermont, Burlington, [2]Department of Geology, University of Vermont, Burlington*

517 34 **Effect of buffalo αs1-casein polymorphism on the semi-hard Monterey Jack -type cheese quality.**
*L. Li[1], Q. Zeng[1], D. Ren[*2], L. Huang[1] and Y. Tang[1], [1]Buffalo Research Institute, Chinese Academy of Agricultural Science, Nanning, China, [2]Institute of Dairy Science, College of Animal Sciences, Zhejiang University, Hangzhou, China*

518 35 **Membrane fractionation of delactosed permeate to enhance salty taste.**
*L. D. Alexander[*1], M. A. Stout[2], M. Drake[2], S. L. Beckman[1] and L. Metzger[3], [1]Midwest Dairy Foods Research Center, South Dakota State University, Brookings, [2]North Carolina State University, Raleigh, [3]South Dakota State University, Brookings*

519 36 **Characterization of Queso Fresco made with Na/K salt blends and stored for 12 weeks.**
D. L. Van Hekken[*], M. H. Tunick, J. A. Renye and P. M. Tomasula, USDA-ARS, ERRC, Dairy & Functional Foods Research Unit, Wyndmoor, PA

520 37 **Effect of micro-encapsulated iron salts on Cheddar cheese divalent cation balance and composition.**
A. Arce[*] and Z. Ustunol, Michigan State University, East Lansing

521 38 **Chemical characteristics and enhanced hepatoprotective activities of Maillard-reaction products derived from milk protein-sugar system.**
N. S. Oh[*], J. Y. Lee, J. Y. Joung and Y. K. Shin, R&D Center, Seoul Dairy Cooperative, Ansan, The Republic of Korea

Production, Management and Environment: Stress

1172 39 **Use of evaporative cooling systems and their effects on core body temperature and lying times in lactating dairy cattle.**
*J. R. Johnson[*1], L. G. D. Mendonça[2], J. P. Harner[3] and M. J. Brouk[1], [1]Department of Animal Sciences and Industry, Kansas State University, Manhattan, [2]Kansas State University, Manhattan, [3]Department of Biological and Agricultural Engineering, Kansas State University, Manhattan*

1173 40 **Relationship between blood parameters, physiological changes and behavior pattern in Korean native steers under cold stress.**
W. S. Kim[*], U. S. Jung, M. J. Kim, S. W. Jeon, D. Q. Peng, Y. S. Kim, M. H. Bae, J. S. Lee, S. R. Lee and H. G. Lee, Department of Animal Science and Technology, College of Animal Bioscience and Technology, Konkuk University, Seoul, The Republic of Korea

1174 41 **Effects of exit-lane water drenching using showers on lactating dairy cow vaginal temperature.**
A. R. Lee, S. M. Smith, D. L. Ray, J. D. Clark and J. M. Bewley, University of Kentucky, Lexington*

1175 42 **The effects of zinc amino acid complex on biomarkers of gut integrity and metabolism in heat-stressed steers.**
M. Abuajamieh[*1], S. K. Kvidera[1], E. A. Horst[1], E. J. Mayorga[1], J. T. Seibert[1], J. S. Johnson[1], J. W. Ross[1], M. A. Al-Qaisi[1], P. J. Gorden[2], J. DeFrain[3], R. P. Rhoads[4] and L. H. Baumgard[1], [1]Iowa State University, Ames, [2]Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, [3]Zinpro Corporation, Eden Prairie, MN, [4]Virginia Polytechnic Institute and State University, Blacksburg*

1176 43 **Effect of OmniGen-AF supplementation to heat stressed cows during late gestation on blood parameters and immune cells of their calves.**
A. L. Skibiel[*1], J. L. Powell[1], T. F. Fabris[1], Y. M. Torres[1], F. N. Corra[1], J. D. Chapman[2], D. J. McLean[2], D. Kirk[2], G. E. Dahl[1] and J. Laporta[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Phibro Animal Health Corporation, Quincy, IL*

1177 44 **Effects of cooling and dietary zinc source on the inflammatory responses to an intra-mammary lipopolysaccharide challenge in lactating Holstein cows during summer.**
A. P. A. Monteiro[*1], X. Weng[1], J. Guo[1], J. K. Bernard[1], J. DeFrain[2] and S. Tao[1], [1]University of Georgia, Tifton, [2]Zinpro Corporation, Eden Prairie, MN*

1178 45 **Survey of facility design and heat abatement strategies in progressive Central California dairies.**
A. H. Souza[*1], E. O. S. Batista[2], B. Gonzales[3] and F. Doricci[4], [1]Ceva Animal Health, Libourne, France, [2]University of Sao Paulo, Pirassununga, Brazil, [3]Large Animal Veterinary Practitioner, Campestre Dairy, Sao Pedro, Brazil, [4]University of Sao Paulo, Sao Paulo, Brazil*

1179 **The effect of vaginal temperature on expressed physical activity of lactating Holstein cows following induced estrus.**
L. Polsky[*1], A. M. L. Madureira[2], E. L. Drago Filho[2], J. L. M. Vasconcelos[2] and R. L. A. Cerri[1], [1]Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada, [2]Departamento de Production Animal - FMVZ - UNESP, Botucatu, Brazil*

Ruminant Nutrition: Protein, Amino Acids and Nitrogen II

1589 46 **The effect of heat stress and jugular infusions of methionine, lysine and branched-chain amino acids in lactating dairy cattle.**
K. Kassube, J. Kaufman, K. G. Pohler and A. G. Rius, The University of Tennessee, Knoxville*

1590 47 **Effect of experimental design on production responses in high-producing dairy cows fed two levels of metabolizable protein.**
G. I. Zanton, USDA-ARS, U.S. Dairy Forage Research Center, Madison, WI*

1591 48 **Meta-analysis of post-ruminal microbial nitrogen flows in dairy cattle.**
B. D. Enger[*1], R. R. White[1], S. C. Nickerson[2] and L. K. Fox[3], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Georgia, Athens, [3]Washington State University, Pullman*

1592 49 **Prediction of crude protein and neutral detergent fiber content in Pennisetum clandestinum by near-infrared spectroscopy.**
A. Rivera, Universidad Nacional de Colombia, Medellin, Colombia*

1593 50 **Impact of metabolizable protein source on pancreatic enzyme activity in finishing cattle fed dry-rolled corn-based diets.**
E. J. Blom[*1], D. W. Brake[1], M. R. Fiene[1], J. A. Walker[1], F. E. Keomanivong[2] and K. C. Swanson[2], [1]South Dakota State University, Brookings, [2]North Dakota State University, Fargo*

1594 51 **Comparative effects of multiple sources of rumen-protected methionine on milk production and serum amino acid levels in mid-lactation dairy cows.**
Y. Zang[1], S. Saed Samii[*1], L. R. Tager[2], J. W. McFadden[1] and K. M. Krause[1], [1]West Virginia University, Morgantown, WV, [2]MarSyt, Elizabethtown, PA*

1595 52 **Milk protein synthesis gene expression and mTOR phosphorylation in response to the "ideal" profile of Lys, Met, Thr, Phe, His, Val, Ile, and Leu in bovine mammary cells.**
X. Dong[*1,2], Z. Zhou[1], Z. Wang[2], B. Saremi[3] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Sichuan Agricultural University, Ya'an, IL, [3]Evonik Industries AG, Hanau, Germany*

1596 53 **Nitrogen excretion of lactating dairy cows fed alfalfa hay- or birdsfoot trefoil hay-based high-forage diet.**
M. Ghelich Khan[1], S. Y. Yang[1], J. S. Eun[*1] and J. W. MacAdam[2], [1]Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan, [2]Department of Plants, Soils, and Climate, Utah State University, Logan*

1597 54 **Determination of relative methionine bioavailability in lactating cows fed Smartamine M, Mepron, and AminoShure M using the plasma free AA dose-response method.**
N. L. Whitehouse[*1], C. G. Schwab[2], S. M. Fredin[3] and A. F. Brito[1], [1]University of New Hampshire, Durham, [2]Schwab Consulting, LLC, Boscobel, WI, [3]Adisseo, Inc., Alpharetta, GA*

1598 55 **Impact of three rumen protected lysine prototypes on dairy cow performance, milk composition, and milk casein.**
*A. M. Barnard[*1], B. A. Barton[2], C. A. Zimmerman[2], R. S. Ordway[2] and T. F. Gressley[1], [1]University of Delaware, Newark, [2]Balchem Corporation, New Hampton, NY*

1599 56 **Effects of soybean meal, Fermenten, or expeller soybean meal on milk performance and intake in lactating dairy cattle.**
*S. W. Fessenden[*1], D. A. Ross[1], E. Block[2] and M. E. Van Amburgh[1], [1]Cornell University, Ithaca, NY, [2]Church and Dwight Animal Nutrition, Ewing, NJ*

1600 57 **Effect of ruminal bypass lysine on amino acid status, performance and carcass characteristics of steers fed corn product based diets.**
*N. A. Lancaster[*1], J. A. Tekippe[2], M. C. Claeys[1] and J. P. Schoonmaker[1], [1]Purdue University, West Lafayette, IN, [2]Ajinomoto Heartland LLC, Chicago, IL*

1601 58 **Determining ruminal lysine degradability of a bypass soybean meal product and an encapsulated lysine source.**
*J. M. Prestegaard[*1], A. L. Kenny[1], M. M. Masiero[1] and M. S. Kerley[2], [1]University of Missouri, Columbia, [2]Division of Animal Sciences, University of Missouri, Columbia*

1602 59 **Effects of rumen-protected lysine and methionine on milk yield and milk composition in lactating Holstein cows fed two different levels of crude protein.**
*A. Ostrensky[1], G. Negro[2], A. M. D. Santos[1], A. Anater[1], D. R. Ribeiro[1], L. F. Greco[3], M. N. Pereira[4] and R. D. Almeida[*2], [1]Pontifícia Universidade Católica do Paraná, Curitiba, Brazil, [2]Universidade Federal do Paraná, Curitiba, Brazil, [3]Kemin South America, Indaiatuba, Brazil, [4]Universidade Federal de Lavras, Brazil*

1603 60 **Immunometabolic gene expression in blood neutrophils (PMN) in Holstein dairy cows supplemented with rumen-protected methionine or rumen-protected choline during the peripartal period.**
*P. Montagner[1], Z. Zhou[*1], D. N. Luchini[2], J. J. Loor[1] and M. Nunes Corrêa[3], [1]University of Illinois at Urbana-Champaign, [2]Adisseo S.A.S., Alpharetta, GA, [3]Federal University of Pelotas, Pelotas, Brazil*

1604 61 **Estimation of microbial protein and blood urea of confined bulls fed with diets containing virginiamycin and monensin sodium.**
*F. R. Camilo[*1], A. M. Mobiglia[1], J. J. D. R. Fernandes[2], V. R. M. Couto[3], F. D. D. Resende[4], G. R. Siqueira[4] and R. K. Grizotto[4], [1]CAPES Foundation, Ministry of Education of Brazil, Brasilia, Brazil, [2]UFG, Goiania, Brazil, [3]Universidade Federal de Goiás, Goiânia, Brazil, [4]Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil*

Ruminant Nutrition: Ruminal Fermentation II

1636 62 **Effects of inoculum source and ammoniation on *in vitro* gas production kinetics of barley straw.**
*L. Xu[1,2], Z. X. He[1], P. X. Jiao[1,3], G. O. Ribeiro Jr.[1], V. Bremer[4], K. A. Beauchemin[1], T. A. McAllister[1] and W. Z. Yang[*1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Light Industry Vocational Technical College, Baotou, China, [3]Northwest Agriculture and Forestry University, Yangling, China, [4]Elanco Animal Health, Greenfield, IN*

1637 63 **Feeding ground flaxseed to lactating dairy cows decreases the ruminal proportion of Archaea, but does not change the major species of cellulolytic bacteria.**
*A. B. D. Pereira[*1], A. F. Brito[1], T. L. Resende[2], D. H. Woitschach[3], R. B. Reis[2] and K. J. Soder[4], [1]University of New Hampshire, Durham, [2]Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, [3]Universidade Federal de Viçosa, Viçosa, Brazil, [4]USDA-ARS, University Park, PA*

1638 64 **Data acquisition settings of the Ankom RF system and inocula donors affect *in vitro* gas production.**
*D. R. Mertens[*1], N. Schlau[2] and D. M. Taysom[2], [1]Mertens Innovation & Research LLC, Belleville, WI, [2]Dairyland Laboratories, Inc., Arcadia, WI*

1639 65 **Effect of duration of *in vitro* incubation on disappearance of NDF and starch from chopped corn plants versus their resulting corn silages.**
*L. Nuzback[*1], B. Mahanna[1], R. A. Zinn[2], S. Dennis[1] and F. Owens[1], [1]DuPont Pioneer, Johnston, IA, [2]University of California-Davis, El Centro*

1640 66 **Rumen protozoal communities are dynamic after a dietary switch from conserved forage to pasture.**
M. L. Bainbridge[*], L. K. Saldinger, J. W. Barlow, J. P. Alvez, J. Roman and J. Kraft, University of Vermont, Burlington

1641 67 **Effects of *Bacillus subitilis* supplementation on milk production and rumen fermentation of dairy cows.**
*A. Bach[*1] and N. Nakamura[2], [1]IRTA, Caldes de Montbui, Spain, [2]Asahi Calpis Wellness Co., Ltd., Tokyo, Japan*

1642 68 **Effect of *Enterococcus faecalis* SROD5 supplementation on microbial communities and quantities of *in vitro* rumen fermentation.**
L. L. Mamuad, S. S. Lee[*], A. A. Biswas and C. D. Jeong, Sunchon National University, Suncheon, The Republic of Korea

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SYMPOSIA AND ORAL SESSIONS

Animal Health: Dairy Udder Health

Chair: Jamie P. Jarrett, Phibro Animal Health Corporation; Thomas R. Overton, Cornell University

Sponsor: H. J. Baker
10:30 AM - 12:30 PM
155 D

10:30 AM — **Introductory Remarks**

10:35 AM 152 — **The effect of dry period length and antibiotic treatment at drying off on somatic cell counts across the dry period.**
R. J. Vanhoeij[*1], A. van Knegsel[2], B. Kemp[2], and T. J. G. M. Lam[3,4], [1]Wageningen University, Netherlands, [2]Adaptation Physiology Group, Wageningen University, Netherlands, [3]Animal Health Service, Deventer, Netherlands, [4]University of Utrecht - Department of Farm Animal Health, Utrecht, Netherlands*

10:50 AM 153 — **Enhancement of the dry-off process by intramammary infusion of metalloproteinase 9 nanoparticles.**
S. Parés[*1], O. Cano-Garrido[2], E. Garcia-Fruitós[1], F. Fàbregas[1], A. Bach[3,4], N. Ferrer-Miralles[2], M. Terré[3], A. Villaverde[2], and A. Arís[1], [1]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [2]Departament de Genetica i de Microbiologia, UAB, Cerdanyola del Valles, Spain, [3]IRTA, Caldes de Montbui, Spain, [4]ICREA, Barcelona, Spain*

11:05 AM 154 — **Effects of inhibiting prolactin production with cabergoline on the physiology of the cow-dry period.**
S. Parés[1], A. Arís[*1], M. Terré[2], F. Fàbregas[1], E. Garcia-Fruitós[1], J. Ruberte[3], V. Nacher[3], A. De-Prado[4], and A. Bach[2,5], [1]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [2]IRTA, Caldes de Montbui, Spain, [3]CBATEG Universitat Autònoma de Barcelona, Bellaterra, Spain, [4]Ceva Santé Animale, Libourne, France, [5]ICREA, Barcelona, Spain*

11:20 AM 155 — **The treatment of only environmental *Streptococci* clinical mastitis cases reduced antibiotic use, days out of the tank, recurrence of clinical mastitis and a tendency to reduce culling.**
A. Lago[*], C. Tovar, J. Zaragoza, D. Luiz, and D. Pearce, DairyExperts Inc., Tulare, CA*

11:35 AM 156 — **Effect of the selective treatment of gram-positive clinical mastitis cases versus blanket therapy.**
A. Lago[*], D. Luiz, D. Pearce, C. Tovar, and J. Zaragoza, DairyExperts Inc., Tulare, CA*

11:50 AM 157 — **Comparison of PCR and culture methods for detecting mastitis causing mycoplasma in bulk tank milk from commercial dairy herds.**
A. M. Britten, E. D. Tretter[*], and M. Gurajala, Udder Health Systems, Inc., Meridian, ID*

12:05 PM 158 — **Effects of antibiotic dry cow therapy and internal teat sealant (Teatseal) on milk somatic cell counts, clinical, and subclinical mastitis in early lactation.**
H. M. Golder[*1], A. Hodge[2], and I. J. Lean[1], [1]Scibus, Camden, Australia, [2]Zoetis Australia Research and Manufacturing Pty. Ltd., Parkville, Australia*

ASAS Graduate Student Symposium

Chair: Kyle J. McLean, North Dakota State University

Sponsor: ASAS
1030 AM - 12:30 PM
254 B

10:30 AM — **Welcoming Remarks**

10:35 AM 194 — **Marketing 101: Learning how to market yourself for a successful career.**
R. M. Yamka[*], Blue Buffalo Company, Ltd., Wilton, CT*

11:00 AM 195 — **Personal branding.**
M. Calvo-Lorenzo[*], Elanco Animal Health, Greenfield, IN*

11:25 AM 196 **Bridging the gaps.**
J. D. Crosswhite, North Dakota State University, Fargo*

11:50 AM 197 **Doctoral programs in animal science: Strategies for targeting academic careers.**
J. S. Caton, Department of Animal Sciences, North Dakota State University, Fargo*

12:15 PM **Panel Discussion**

12:25 PM **Concluding Remarks**

Beef Species II

Chair: Patrick J. Gunn, Iowa State University

10:30 AM - 12:30 PM

150 B/C

10:30 AM 267 **Locomotor activity changes in the final 72 hours prepartum in multiparous beef cows.**
S. M. Bolen[1], B. L. Vander Ley[2], K. N. Niederecker[1], and A. M. Meyer[1], [1]Division of Animal Sciences, University of Missouri, Columbia, [2]Department of Veterinary Medicine and Surgery, University of Missouri, Columbia*

10:45 AM 268 **Impact of heifer development system on subsequent ADG and reproduction in two different breeding seasons.**
S. A. Springman, H. R. Nielson, and R. N. Funston, University of Nebraska, West Central Research and Extension Center, North Platte*

11:00 AM 269 **Effect of castration method and analgesia on growth performance and carcass traits in feedlot cattle.**
S. L. Roberts[1], H. D. Hughes[1], J. G. Powell[2], and J. T. Richeson[1], [1]Department of Agricultural Sciences, West Texas A&M University, Canyon, [2]Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville*

11:15 AM 270 **Evaluation of long-acting eprinomectin and a combination of moxidectin/oxfendazole administration post-weaning on immune status by Angus and Angus × Hereford crossbred replacement heifers over a 274-d grazing period.**
E. A. Backes, J. G. Powell, E. B. Kegley, J. A. Hornsby, and J. L. Reynolds, Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville*

11:30 AM 271 **Modelling milk yield and calf performance of beef suckler cows on pasture-based systems.**
D. Sapkota[1,2], A. K. Kelly[1], M. McGee[2], and P. Crosson[2], [1]University College Dublin, Belfield, Ireland, [2]Teagasc Grange, Dunsany Co. Meath, Ireland*

11:45 AM 272 **Dry and wet conditions during the prepartum forage growing season affect offspring feedlot performance and carcass composition in beef cattle.**
A. M. Meyer[1], B. L. Vander Ley[2], G. A. Gatson[1], W. D. Busby[3], and P. J. Gunn[4], [1]Division of Animal Sciences, University of Missouri, Columbia, [2]College of Veterinary Medicine, University of Missouri, Columbia, [3]Tri-County Steer Carcass Futurity, Lewis, IA, [4]Department of Animal Science, Iowa State University, Ames*

12:00 PM 273 **Modeling body condition score at calving by past body condition and forage allowance in grazing beef cow on rangelands.**
M. Claramunt[1] and P. Soca[2], [1]Centro Universitario de la Regian Este, Universidad de la Repafablica, Treinta y Tres, Uruguay, [2]Facultad de Agronomia, Universidad de la Republica, Paysandu, Uruguay*

12:15 PM 274 **Growth Potential of Dhanni cattle under rain fed conditions of Punjab , Pakistan.**
G. Bilal, M. Moaeen-ud-Din, and A. Zurwan, PMAS-Arid Agriculture University, Rawalpindi, Pakistan*

Breeding and Genetics: Novel Traits and Selection Objectives

Chair: Jennifer M. Bormann, Kansas State University

10:30 AM - 12:45 PM

Grand Ballroom I

10:30 AM 352 **Genetics of heat stress in purebred and crossbred pigs from different states using BLUP or ssGBLUP.**
B. D. Fragomeni[1], D. Lourenco[1], S. Tsuruta[1], K. A. Gray[2], Y. Huang[2], and I. Misztal[1], [1]University of Georgia, Athens, [2]Smithfield Premium Genetics, Rose Hill, NC*

10:45 AM 353 **Genetic evaluation for heat tolerance in growing Angus cattle.**
H. L. Bradford, B. D. Fragomeni, D. Lourenco, and I. Misztal, University of Georgia, Athen,*

11:00 AM 354 **Angus cattle at high elevation: Comparison of models to estimate breeding values of yearling pulmonary arterial pressure.**
X. Zeng[*1], T. N. Holt[2], S. E. Speidel[1], R. M. Enns[1], and M. G. Thomas[1], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins*

11:15 AM 355 **The effect of heterosis on pulmonary arterial pressure on beef cattle.**
M. M. Culbertson[*1], M. G. Thomas[1], L. L. Leachman[2], R. M. Enns[1], and S. E. Speidel[1], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]Leachman Cattle of Colorado, Fort Collins*

11:30 AM 356 **Genetic and phenotypic analysis of Israeli Holstein milk, fat and protein production as determined by the Afilab real-time milk analyzer.**
J. I. Weller[*1] and E. Ezra[2], [1]ARO, The Volcani Center, Bet Dagan, Israel, [2]Israel Cattle Breeders Association, Caesaria, Israel*

11:45 AM 357 **ADSA-EAAP Speaker Exchange Presentation: Genetic analysis of multivariate indices of detailed fatty acid profile determined by gas chromatography in bovine milk.**
N. P. P. Macciotta[*1], M. Mele[2], A. Cecchinato[3], G. Conte[4], S. Schiavon[5], and G. Bittante[5], [1]Dipartimento di Agraria, University of Sassari, Italy, [2]University of Pisa, Italy, [3]University of Padova, Legnaro PD, Italy, [4]Department of Agriculture, Food and Environment, UniversitY di Pisa, Italy, [5]Department of Agronomy, Food, Natural resources, Animals and Environment, University of Padova, Italy*

12:15 PM 358 **Effectiveness of genomic prediction of boar taint components in Pietrain sired breeding populations.**
C. Große-Brinkhaus[*1], E. Heuß[1], J. Trautmann[2], D. Mörlein[2,3], K. Schellander[1], C. Looft[1], J. Dodenhoff[4], K. U. Götz[4], and E. Tholen[1], [1]Institute of Animal Science, University of Bonn, Germany, [2]Department of Animal Science, University of Göttingen, Germany, [3]isi GmbH & Co. KG, Rosdorf, Germany, [4]Bavarian State Research Centre for Agriculture, Institute of Animal Breeding, Poing, Germany*

12:30 PM 359 **Understanding the genetic archticture of Hays Converter Cattle.**
M. K. Abo-Ismail[*1,2], R. Khorshidi[1], E. C. Akanno[1], J. Crowley[1,3], S. P. Miller[4,5,6], A. Fleming[7], J. Basarab[1,8], C. Li[1,9], P. Stothard[1], and G. Plastow[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Animal and Poultry Production, Damanhour University, Egypt, [3]Canadian Beef Breeds Council, Calgary, AB, Canada, [4]AgResearch Limited, Mosgiel, New Zealand, [5]Centre for Genetic Improvement of Livestock, University of Guelph, ON, Canada, [6]University of Queensland, Centre for Animal Science, QAAFI, St. Lucia, Australia, [7]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [8]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada, [9]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Edmonton, AB, Canada*

Companion Animal: Nutrition and Biology

Chair: Brittany M. Vester Boler, Nestle Purina

10:30 AM - 11:45 AM
150 E/F

10:30 AM 425 **Canine hemangiosarcoma expresses luteinizing hormone (LH) receptors.**
K. Zwida and M. A. Kutzler, Oregon State University, Corvallis*

10:45 AM 426 **Rabbit maternal pheromone delivered in ointment decreases heart rate in domestic dogs during a simulated thunderstorm.**
G. M. Pirner and J. J. McGlone, Texas Tech University, Lubbock*

11:00 AM 427 **Evaluation of nutrient digestibility and fecal scores in domestic dogs (*Canis lupis familiaris*) fed raw meat diets varying in protein source.**
C. A. Iennarella, C. J. Iske, and C. L. Morris, Iowa State University, Ames*

11:15 AM 428 **Misncanthus grass utilization as a dietary fiber source for dogs.**
R. Antunes Donadelli, C. G. Aldrich, and I. C. Alvarenga, Kansas State University, Manhattan*

11:30 AM 429 **The effect of milled sorghum fractions on diet utilization by dogs.**
I. C. Alvarenga, C. G. Aldrich, and R. A. Donadelli, Kansas State University, Manhattan*

Dairy Foods Division Symposium: Advances in Sustainability within the Dairy Processing Industry

Chair: Lisbeth Goddik, Oregon State University; Ying Wang, Innovation Center for US Dairy

10:30 AM - 12:30 PM
151 B/C

10:30 AM	569	**New packaging and strategies to enhance your sustainability plan.** *E. Comere*, Tetra Pak Inc., Denton, TX*
11:00 AM	570	**Life cycle environmental assessment of yogurt production and consumption in the USA.** *Y. Wang*[1], G. Thoma[2], D. Kim[2], and J. Burek[2], [1]Innovation Center for US Dairy, Rosemont, IL, [2]University of Arkansas, Fayetteville*
11:30 AM	571	**Using big data to drive sustainable CIP.** *J. Curran*, Ecolab, St. Paul, MN*
12:00 PM	572	**Processing sustainability – Ideas to create a comprehensive effort.** *D. Skidmore*, Hilmar Cheese Company, Inc., Hilmar, CA*

Food Safety Symposium: The Spectrum of Food Safety Improvement in Foods of Animal Origin

Chair: Todd R. Callaway, USDA-ARS

10:30 AM - 5:00 PM
Grand Ballroom C

10:30 AM	606	**Have we improved food safety in live cattle?** *K. Stanford*, T. Reuter, and D. Niu, Alberta Agriculture and Forestry, Lethbridge, AB, Canada*
11:15 AM	607	**Improving food safety in live swine.** *T. R. Callaway*, USDA-ARS, College Station, TX*
12:00 PM		**Risks involved with raw milk consumption.** *A. Garcia, South Dakota State University*
12:45 PM		**Break**
2:15 PM		**Food safety enhancements during meat harvesting and processing.** *T. Schmidt, University of Nebraska-Lincoln*
3:00 PM	608	**Characterization of zoonotic bacteria from dairy cattle in the era of genomics.** *J. A. S. Van Kessel*, S. W. Kim, J. S. Karns, and B. J. Haley, USDA-ARS, Beltsville, MD*
3:45 PM		**Food safety in the industry and during preparation.** *F. Diez Gonzalez, University of Minnesota.*
4:30 PM		**Panel Discussion**

Growth and Development

Chair: Jay Daniel, Berry College

10:30 AM - 12:30 PM
150 G

10:30 AM 778 **A new view on the growth of pigs in relation to frequent body weight monitoring.**
A. H. Stygar[*1], K. A. Dolecheck[2], and A. R. Kristensen[1], [1]University of Copenhagen, Department of Large Animal Sciences, Frederiksberg, Denmark, [2]University of Kentucky, Lexington*

10:45 AM 779 **Effect of prior fiber consumption on diet-induced obesity susceptibility and metabolic health indicators in Ossabaw pigs.**
V. V. Almeida[1] and K. M. Ajuwon[*2], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, Purdue University, West Lafayette, IN*

11:00 AM 780 **Body composition at first heat of gilts exposed to three different feeding regimens.**
S. Van Vliet[1], T. S. Bruun[2], J. Hales[3], C. F. Hansen[3], and P. K. Theil[*1], [1]Aarhus University, Denmark, [2]SEGES Pig Research Centre, Denmark, [3]University of Copenhagen, Denmark*

11:15 AM 781 **Pre-weaning diet and exogenous estrogen alter mammary epithelial cell proliferation and progesterone and estrogen receptor expression.**
A. J. Geiger[*], R. M. Akers, and C. L. M. Parsons, Virginia Polytechnic Institute and State University, Blacksburg*

11:30 AM 782 ***In vivo* knockdown of FGFR2 and MET mRNAs in trophectoderm of ovine conceptuses retards their development via abrogation of MAPK and MTOR pathways.**
X. Wang[*], K. A. Dunlap, M. C. Satterfield, G. Wu, and F. W. Bazer, Texas A&M University, College Station*

11:45 PM 16 **WS** **Growth and reproductive performance of yearling beef heifers implanted with Revalor G in the Nebraska Sandhills.**
B. T. Tibbitts[*1], H. R. Nielson[2], K. C. Ramsay[3], and R. N. Funston[2], [1]University of Nebraska-Lincoln, [2]University of Nebraska, West Central Research and Extension Center, North Platte, [3]Rex Ranches, Ashby, NE*

12:00 PM **National Early Career award recipient.**
M. C. Satterfield, Texas A&M University, College Station

Milk Protein and Enzymes

Chair: Rafel Jimenez-Flores, California Polytechnic State University

10:30 AM - 12:30 PM
Grand Ballroom B/D

10:30 AM 910 **Intrinsic and extrinsic factors affecting milk yield and composition of Camel milk in Northern Eritrea.**
Y. N. Berhane[*], Uludag University, Bursa, Turkey*

10:45 AM 911 **Effect of lactoferrin hydrolysates on cytokine expression in Raw264.7 cells.**
Y. W. Park[*1], J. Y. Son[2], G. Renchinkhand[2], S. H. Paik[3], and M. S. Nam[2], [1]Fort Valley State University, GA, [2]Chungnam National University, Daejeon, The Republic of Korea, [3]Cheonan Yonam College, Cheonan, The Republic of Korea*

11:00 AM 912 **Three new bovine α_s-CN phosphorylation isoforms reveal different phosphorylation pathways.**
Z. H. Fang[*1,2,3], M. H. P. W. Visker[3], G. Miranda[1,2], A. Delacroix-Buchet[1], H. Bovenhuis[3], and P. Martin[4], [1]INRA, UMR1313 GABI, Jouy-en-Josas, France, [2]Agroparistech, UMR 1313, GABI, Jouy-en-Josas, France, [3]Animal Breeding and Genomics Centre, Wageningen University, Netherlands, [4]UMR1313 Gabi, INRA, AgroParisTech, Université Paris-Saclay, Jouy-en-Josas, France*

11:15 AM 913 **Hardening and microstructure of high protein nutrition bars made using whey protein isolate or milk protein concentrate.**
S. K. Hassan[1] and D. J. McMahon[*2], [1]College of Education, Al-Qadisiya University, Al-Qadisiya - Diwaniya, Iraq, [2]Western Dairy Center, Utah State University, Logan*

11:30 AM 914 **Effect of casein non-phosphopeptides on the development of rat muscle analyzed using computed tomography (CT) scanning technology.**
N. Zhang[*1,2], S. Ikeda[2], Y. Shi[1], and Q. Guo[3], [1]Harbin University of Commerce, China, [2]University of Wisconsin-Madison, [3]Northeast Forestry University, Harbin, China*

11:45 AM 915 **Physico-chemical properties and antioxidant efficacy of whey protein isolate and casein hydrolyzate stabilized nano-vesicular vehicle systems containing curcumin.**
Z. Z. Haque[*] and S. Mukherjee, Food Science, Nutrition and Health Promotion, Mississippi State*

Physiology and Endocrinology: Nutrition, Reproduction and Metabolism

Chair: Lance H. Baumgard, Iowa State University

10:30 AM - 12:30 PM
151 G

10:30 AM 1092 **WS** **Mycobacterium avium subspecies paratuberculosis serum lipid profile analysis through Fourier transform ion cyclotron resonance mass spectrometry.**
A. L. Salazar[*1], J. M. Jarvis[1], N. M. Sudasinghe[1], S. Kumar[1], M. Song[1], J. Stabel[2], T. Thacker[2], S. L. Ivey[1], and T. Schaub[1], [1]New Mexico State University, Las Cruces, [2]USDA-ARS, Ames, IA*

10:45 AM 1093 **WS** **Insulin-associated and insulin-independent impacts of β adrenergic agonists and pro-inflammatory cytokines on glucose metabolism in primary rat soleus muscle.**
C. N. Cadaret[*], K. A. Beede, H. E. Riley, and D. T. Yates, University of Nebraska-Lincoln*

11:00 AM 1094 **WS** **Relationship between current temperament measures and physiological responses to handling of feedlot cattle.**
A. F. Williams[*1], J. A. Boles[1], M. R. Herrygers[1], J. G. Berardinelli[1], M. C. Meyers[2], and J. M. Thomson[1], [1]Montana State University, Bozeman, [2]Idaho State University, Pocatella*

11:15 AM 1095 **Cardiovascular performance of modern swine does not comply with allometric scaling laws.**
G. van Essen[*], University Medical Center Rotterdam, Netherlands*

11:30 AM 1096 **DL-methionine increases glutathione concentration and alleviates inflammatory responses in primary bovine hepatocytes.**
Q. Zhang[*1], D. N. Luchini[2], and H. M. White[1], [1]University of Wisconsin-Madison, [2]Adisseo S.A.S., Alpharetta, GA*

11:45 AM 1097 **Elevated hepatic lipid peroxidation and oxidative stress in underperforming piglets.**
T. G. Ramsay[*], M. J. Stoll, L. A. Blomberg, and T. J. Caperna, USDA-ARS, BARC, Beltsville, MD*

12:00 PM 1098 **Yeast supplementation altered the metabolic response to a combined viral-bacterial challenge in feedlot heifers.**
A. B. Word[*1], P. R. Broadway[2], N. C. Burdick Sanchez[2], K. P. Sharon[3], S. L. Roberts[4], J. T. Richeson[4], P. J. Defoor[5], M. D. Cravey[6], J. R. Corley[7], M. A. Ballou[1], and J. A. Carroll[2], [1]Texas Tech University, Lubbock, [2]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, [3]Texas Tech University, Department of Animal and Food Sciences, Lubbock, [4]Department of Agricultural Sciences, West Texas A&M University, Canyon, [5]Cactus Feeders, Canyon, TX, [6]Phileo Lesaffre Animal Care, Milwaukee, WI, [7]Phileo Lesaffre Animal Care, Cedar Rapids, IA*

12:15 PM 1099 ***In vivo* production, quality and pregnancy of bovine embryos from cows with high or low intake of dry matter or energy.**
R. Sartori[*1], R. S. Surjus[2], A. B. Prata[2], P. L. J. Monteiro Jr[1], M. C. C. Mattos[3], F. C. Mattos[4], G. B. Mourao[5], and F. A. P. Santos[6], [1]University of São Paulo - ESALQ/USP, Piracicaba, Brazil, [2]ESALQ/USP, Piracicaba, Brazil, [3]CEVA Animal Health, Paulinea, Brazil, [4]Ourofino Animal Health, Cravinhos, Brazil, [5]Department of Animal Science, University of São Paulo/ESALQ, Piracicaba, Brazil, [6]University of São Paulo, Piracicaba, Brazil*

Ruminant Nutrition: Lactation Performance

Chair: Fernando Bargo, FAUBA

10:30 AM - 12:30 PM
155 F

10:30 AM 1500 **Effects of arginine infusion through jugular vein on the milk performance and casein synthesis in mid-lactation cows.**
M. Z. Wang[*], Yangzhou University, Yangzhou, China*

10:45 AM 1501 **Diet starch content and fermentability affects feed intake and milk yield of cows in the postpartum period.**
R. I. Albornoz[*], Michigan State University, East Lansing*

11:00 AM 1502 **Effects of feeding a histidine-deficient diet on lactational performance of dairy cows.**
F. Giallongo[*1], M. Harper[1], J. Oh[1], C. Parys[2], I. Shinzato[3], and A. N. Hristov[1], [1]The Pennsylvania State University,*

University Park, [2]Evonik Nutrition & Care GmbH, Hanau, Germany, [3]Ajinomoto Co., Inc., Tokyo, Japan

11:15 AM 1503 **The effect of metabolizable protein supply for dry Holstein dairy cows on periparturient feed intake, metabolism, and lactation performance.**
K. M. Hultquist[*1], K. W. Cotanch[1], C. S. Ballard[1], H. A. Tucker[1], R. J. Grant[1], R. Suzuki[2], and H. M. Dann[1], [1]William H. Miner Agricultural Research Institute, Chazy, NY, [2]ZEN-NOH National Federation of Agricultural Cooperative Associations, Tokyo, Japan*

11:30 AM 1504 **Meta-analysis to predict amino acids limiting dairy cattle performance.**
I. J. Lean[*1], M. B. De Ondarza[2], C. J. Sniffen[3], and K. E. Griswold[4], [1]Scibus, Camden, Australia, [2]Paradox Nutrition, West Chazy, NY, [3]Fencrest, LLC, Holderness, NH, [4]Kemin Industries, Inc., Des Moines, IA*

11:45 AM 1505 **Influence of essential amino acid balancing post-partum on lactation performance by dairy cows through a meta-analysis.**
L. F. Ferraretto[*1], C. S. Ballard[1], C. J. Sniffen[2], and I. Shinzato[3], [1]William H. Miner Agricultural Research Institute, Chazy, NY, [2]Fencrest, LLC, Holderness, NH, [3]Ajinomoto Heartland Inc., Chicago, IL*

12:00 PM 1506 **Canola meal in dairy cow diets during early lactation increases production compared to soybean meal.**
S. A. E. Moore[*1] and K. F. Kalscheur[2], [1]University of Wisconsin-Madison, [2]USDA-ARS, US Dairy Forage Research Center, Madison, WI*

Ruminant Nutrition: Minerals

Chair: Matt J. Hersom, University of Florida

10:30 AM - 12:30 PM
155 E

10:30 AM 1531 **A meta-analysis to estimate the net macromineral (Ca, P, Mg, Na, and K) requirements for maintenance in beef cattle.**
L. F. Costa e Silva[*1], S. C. Valadares Filho[2], P. P. Rotta[3], M. I. Marcondes[4], D. Zanetti[5], F. A. S. Silva[1], and M. V. C. Pacheco[5], [1]Universidade Federal de Vicosa, Vicosa, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, [4]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil, [5]Universidade Federal de Viçosa, Viçosa, Brazil*

10:45 AM 1532 **Effect of micronutrient source on mineral status and performance of steers fed low or high sulfur diets.**
S. J. Hartman[*], O. N. Genther-Schroeder, and S. L. Hansen, Iowa State University, Ames*

11:00 AM 1533 **Effect of anionic salts on rumen fermentation in a continuous culture system.**
A. L. Kenny[*1], J. L. Purdom[1], M. M. Masiero[1], J. P. Jarrett[2], T. J. Wistuba[2], and M. S. Kerley[1], [1]University of Missouri, Columbia, [2]Phibro Animal Health Corporation, Quincy, IL*

11:15 AM 1534 **Effects of prepartum dietary cation anion difference and source of vitamin D on dairy cows: Vitamin D, mineral and bone metabolism.**
R. M. Rodney[*1,2], N. Martinez[3], E. Block[4], L. L. Hernandez[5], C. D. Nelson[6], P. Celi[7], J. E. P. Santos[6], and I. J. Lean[1,2], [1]University of Sydney, Camden, Australia, [2]Scibus, Camden, Australia, [3]Department of Animal Sciences, University of Florida, Gainesville, [4]Church and Dwight Animal Nutrition, Ewing, NJ, [5]Department of Dairy Science, University of Wisconsin-Madison, [6]University of Florida, Gainesville, [7]Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia*

11:30 AM 1535 **The net macromineral (Ca, P, Mg, Na, and K) requirements for growth in beef cattle estimated by meta-analysis.**
P. P. Rotta[*1], S. C. Valadares Filho[2], L. F. Costa e Silva[3], M. I. Marcondes[4], A. C. B. Menezes[3], M. V. C. Pacheco[5], T. E. Engle[6], and B. C. Silva[1], [1]Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Vicosa, Vicosa, Brazil, [4]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil, [5]Universidade Federal de Viçosa, Viçosa, Brazil, [6]Colorado State University, Fort Collins*

Ruminant Nutrition: Western Section

Chair: Terry E. Engle, Colorado State University

Sponsor: Western Section ASAS
10:30 AM - 12:30 PM
155 C

10:30 AM 1664 WS **Effect of crude protein supplementation on performance of cow-calf pairs and replacement heifers grazing late growing season forage.**
L. Canterbury, P. Ebert, D. G. Lust, and E. A. Bailey, Department of Agricultural Sciences, West Texas A&M University, Canyon*

10:45 AM 1665 WS **Effect of corn-based supplementation on gas emissions, performance, and energetic losses of steers grazing wheat pasture.**
P. Ebert[1], E. A. Bailey[1], A. L. Shreck[2], N. A. Cole[2], and J. S. Jennings[3], [1]Department of Agricultural Sciences, West Texas A&M University, Canyon, [2]USDA-ARS Conservation and Production Research Laboratory, Bushland, TX, [3]Texas A & M AgriLife Research and Extension Center, Amarillo*

11:00 AM 1666 WS **Effects of rumen protected arginine supplementation to cows during early or late gestation on progeny glucose tolerance.**
L. R. Owensby[1], C. B. Gardner[1], R. C. Dunlap[2], C. A. Loest[1], S. L. Ivey[1], S. H. Cox[2], A. F. Summers[3], and E. J. Scholljegerdes[1], [1]New Mexico State University, Las Cruces, [2]Corona Range and Livestock Research Center, Corona, NM, [3]Animal and Range Science Department, New Mexico State University, Las Cruces*

11:15 AM 1667 WS **Effects of administering Ralgro to Holstein calves during the hutch period on growth performance.**
K. L. McCarthy[1], E. J. Scholljegerdes[1], J. A. Gould[2], and W. T. Nichols[3], [1]New Mexico State University, Las Cruces, [2]Reynolds Creek Calf Ranch, Melba, ID, [3]Merck Animal Health, DeSoto, KS*

11:30 AM 1668 WS **Effects of protein concentration and degradability on performance and carcass characteristics of finishing heifers receiving 0 or 400 mg ractopamine hydrochloride.**
K. L. Samuelson[1], M. Hubbert[2], E. R. Oosthuysen[1], Z. Bester[1], and C. A. Loest[1], [1]New Mexico State University, Las Cruces, [2]Clayton Livestock Research Center, New Mexico State University, Clayton*

11:45 AM 1669 WS **Evaluation of *Eragrostis tef* (Zucc.) as a forage option for grazing beef cattle in the Southern High Plains.**
D. Sugg, Texas Tech University, Lubbock; Angelo State University, San Angelo, TX*

12:00 PM 1670 WS **Salivary cortisol concentrations affect rumen microbial fermentation and nutrient digestibility *in vitro*.**
K. L. Samuelson[1], A. L. Salazar[1], L. L. Rath[1], J. B. Alford[1], E. R. Oosthuysen[1], S. L. Ivey[1], D. M. Hallford[2], and C. A. Loest[1], [1]New Mexico State University, Las Cruces, [2]Animal and Range Science Department, New Mexico State University, Las Cruces*

12:15 PM 1671 WS **Shifting the paradigm of liver abscess dogma in USA feedlots.**
Z. Bester[1], M. Hubbert[2], R. E. Carey[1], K. L. Samuelson[1], and C. A. Loest[1], [1]New Mexico State University, Las Cruces, [2]Clayton Livestock Research Center, New Mexico State University, Clayton*

Swine Species

Chair: Samer W. El-Kadi, Virginia Polytechnic Institute and State University

10:30 AM - 12:30 PM
Grand Ballroom F

10:30 AM 1730 **Probiotic treatment using *Bacillus subtilis* PB6 improves the growth performance, intestinal morphology, enzyme activities and barrier function in low birth weight piglets.**
L. Hu, L. Che, X. Peng, Q. Xu, Z. Fang, S. Xu, Y. Lin, and D. Wu, Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China*

10:45 AM 1731 **Dietary nucleotides supplementation improves the intestinal development and immune function of low birth weight piglets.**
L. Hu, L. Che, X. Peng, Q. Xu, Z. Fang, S. Xu, Y. Lin, and D. Wu, Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China*

11:00 AM 1732 **Effect of supplemented mineral phosphorus and fermentable substrates on gut microbiota composition and metabolites, phytate hydrolysis, and health status of growing pigs.**
C. M. E. Heyer, S. Schmucker, E. Weiss, M. Eklund, T. Aumiller, E. Graeter, T. Hofmann, M. Rodehutscord, L. E. Hoelzle, J. Seifert, V. Stefanski, and R. Mosenthin, University of Hohenheim, Institute of Animal Science, Stuttgart, Germany*

11:15 AM 1733 **Sexual development and boar taint in male pigs selected for divergent residual feed intake.**
A. Prunier[*1], S. Parois[1], N. Le Floc'h[1], and H. Gilbert[2], [1]PEGASE, Agrocampus Ouest, INRA, Saint-Gilles, France, [2]GenPhyse, Université de Toulouse, INRA, INPT, INPT-ENV, F-31326 Castanet-Tolosan, France*

11:30 AM 1734 **Effects of dietary live yeast supplementation on growth and immunological parameters of weaned piglets challenged with *Escherichia coli* K88.**
Q. Xu, L. Che[*], C. Wu, X. Peng, C. Yan, L. Hu, L. Qin, R. Wang, Y. Lin, Z. Fang, and D. Wu, Institute of Animal Nutrition, Sichuan Agricultural University, Chengdu, China*

11:45 AM 1735 **Assessment of the age of lesions on the pig carcass at the abattoir through spectrophotometric color assessment and gene expression analysis.**
M. Vitali[*1], S. Conte[2], M. Lessard[3], G. Martelli[1], F. Guay[4], and L. Faucitano[5], [1]University of Bologna, Bologna, Italy, [2]Agriculture and Agri-Food Canada, Lennoxville, QC, Canada, [3]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [4]Universite Laval, Quebec City, QC, Canada, [5]Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*

12:00 PM 1736 **Blood plasma replacement by hydrolyzed yeast in weaned piglets diets.**
J. A. Rivera[*1], L. F. Araújo[2], R. L. D. C. Barbalho[3], M. A. Bonato[3], L. A. Vitagliano[4], G. D. Santos[3], and M. L. Cuadros[5], [1]Faculdade de Medicina Veterinária e Zootecnia – VNP/FMVZ/USP, Pirassununga, Brazil, [2]University of Sao Paulo, Pirassununga, Brazil, [3]ICC Brazil, Sao Paulo, Brazil, [4]Universidade de São Paulo, Pirassununga, Brazil, [5]Veterinary Medical, Universidad Peruana Cayetano Heredia, Lima, Peru*

12:15 PM 1737 **Effects of dietary energy on muscle growth of low birth weight neonatal pigs.**
Y. Chen[*], S. R. McCauley, K. R. Oliver, R. P. Rhoads, and S. W. El-Kadi, Virginia Polytechnic Institute and State University, Blacksburg*

Animal Behavior and Well-Being

Chair: Elsa Vasseur, McGill University

2:00 PM - 5:00 PM
150 B/C

2:00 PM 61 **Utility of an online learning module for teaching disbudding in dairy calves, including cornual nerve block application.**
C. B. Winder[*1], S. J. LeBlanc[2], D. B. Haley[2], K. D. Lissemore[1], M. A. Godkin[3], and T. F. Duffield[2], [1]University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [3]Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, ON, Canada*

2:15 PM 62 **WS** **Grazing behavior and production characteristics among cows differing in residual feed intake while grazing late season Idaho rangeland.**
J. E. Sprinkle[*1,2], J. B. Taylor[3], P. E. Clark[4], M. C. Roberts-Lew[1], and J. B. Hall[1,2], [1]University of Idaho Nancy M. Cummings Research, Extension Education Center, Carmen, ID, [2]Department of Animal & Veterinary Sciences, University of Idaho, Moscow, [3]USDA-ARS, US Sheep Experiment Station, Dubois, ID, [4]USDA-ARS, Northwest Watershed Management Research Unit, Boise, ID*

2:30 PM 63 **Variability in feeding behavior between individual dairy cows fed under different levels of competition.**
R. E. Crossley[*], A. Harlander, and T. J. DeVries, Department of Animal Biosciences, University of Guelph, ON, Canada*

2:45 PM 64 **Identification of lameness using lying time, rumination time, neck activity, reticulorumen temperature, and milk yield.**
B. A. Wadsworth[*], A. Stone, J. D. Clark, and J. M. Bewley, University of Kentucky, Lexington*

3:00 PM 65 **Management and dimensions of footbaths on California dairies.**
M. Pineda[*] and N. Silva-del-Rio, Veterinary Medicine and Research Center, University of California, Tulare, CA*

3:15 PM 66 **History of management procedures and hierarchy in dairy cows.**
A. Butterworth[*1] and L. van Dijk[2], [1]University of Bristol, United Kingdom, [2]HAS Institute, Amsterdam, Amsterdam, Netherlands*

3:30 PM **Break**

3:45 PM 67 **Behavioral analysis and performance response of feedlot ssteers on concrete slats versus rubber slats.**
D. Wagner, Colorado State University, Fort Collins*

4:00 PM 68 **Effect of corral modification for humane livestock handling on cattle behavior and cortisol release.**
M. L. P. Lima[1], J. A. Negrao[2], C. C. P. Paz[3,4], and T. Grandin[5], [1]Instituto de Zootecnia, Sertãozinho, Brazil, [2]Faculdade de Zootecnia e Engenharia de Alimentos, FZEA, USP, Pirassununga, Brazil, [3]Universidade de Sao Paulo, Faculdade de Medicina de Ribeirao Preto - Departamento de Genetica (USP/FMRP), Ribeirao Preto-SP, Brazil, [4]SAA/APTA/ Instituto de Zootecnia-Centro de Bovinos de Corte, Sertaozinho-SP, Brazil, [5]Colorado State University, Fort Collins*

4:15 PM 69 **A preliminary examination of swine caretakers' perspectives for euthanasia technology and training.**
M. McGee[1], R. L. Parsons[1], A. M. O'Connor[1], A. K. Johnson[2], R. Anthony[3], A. Ramirez[1], and S. T. Millman[1,4], [1]Department of Veterinary Diagnostic & Production Animal Medicine, Iowa State University, Ames, [2]Iowa State University, Ames, [3]Department of Philosophy, University of Alaska Anchorage, Anchorage, [4]Department of Biomedical Sciences, Iowa State University, Ames*

4:30 PM 70 **Slow doesn't win the race: Reduced energy diets did not improve sow articular cartilage.**
N. M. Chapel[1], R. L. Dennis[2], J. N. Marchant-Forde[3], B. T. Richert[1], and D. C. Lay Jr.[3], [1]Purdue University, West Lafayette, IN, [2]University of Maryland, College Park, [3]USDA-ARS Livestock Behavior Research Unit, West Lafayette, IN*

Animal Health: Dairy Calves and General Health

Chair: Charles C. Elrod, Natural Biologics, Inc.

Sponsor: H. J. Baker
2:00 PM - 5:00 PM
155 D

2:00 PM **Introductory Remarks**

2:05 PM 110 **Health status of dairy feeder calves arriving to a veal facility.**
D. L. Renaud, T. F. Duffield, D. F. Kelton, S. J. LeBlanc, and D. B. Haley, Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

2:20 PM 111 **Acute immunological responses to a combined viral-bacterial respiratory disease challenge in feedlot heifers supplemented with yeast.**
A. B. Word[1], P. R. Broadway[2], N. C. Burdick Sanchez[2], Y. L. Liang[3], K. P. Sharon[3], S. L. Roberts[4], J. T. Richeson[4], P. J. Defoor[5], M. D. Cravey[6], J. R. Corley[7], M. A. Ballou[1], and J. A. Carroll[2], [1]Texas Tech University, Lubbock, [2]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, [3]Texas Tech University, Department of Animal and Food Sciences, Lubbock, [4]Department of Agricultural Sciences, West Texas A&M University, Canyon, [5]Cactus Feeders, Canyon, TX, [6]Phileo Lesaffre Animal Care, Milwaukee, WI, [7]Phileo Lesaffre Animal Care, Cedar Rapids, IA*

2:35 PM 112 **Safmannan and ActiSaf supplementation in milk replacer modulates health and performance in high-risk, pre-weaned Holstein calves.**
T. L. Harris[1], Y. Liang[1], R. E. Hudson[1], K. P. Sharon[1], J. A. Carroll[2], and M. A. Ballou[1], [1]Texas Tech University, Lubbock, [2]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*

2:50 PM 113 **Evaluation of horn bud wound healing following cautery disbudding of pre-weaned dairy calves treated with aluminum-based aerosol bandage.**
K. L. Huebner, A. K. Kunkel, C. M. McConnel, R. J. Callan, R. P. Dinsmore, and L. S. Caixeta, Colorado State University, Fort Collins*

3:05 PM **Break**

3:15 PM 114 **Automated milking systems: Using productivity and behavioral data to detect illness in dairy cows.**
M. T. King[1], E. A. Pajor[2], S. J. LeBlanc[3], and T. J. DeVries[1], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]University of Calgary, Calgary, AB, Canada, [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

3:30 PM 115 **Occurrence of mycotoxins in the 2015 US corn crop.**
P. N. Gott, B. G. Miller, R. Beltran, and G. R. Murugesan, Biomin America Inc., San Antonio, TX*

3:45 PM 116 **Associations of hygiene and lying behavior with the risk of elevated somatic cell count and lameness.**
*I. Robles[*1], D. F. Kelton[2], H. Barkema[3], G. P. Keefe[4], J. P. Roy[5], M. A. von Keyserlingk[6], and T. J. DeVries[1], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [3]University of Calgary, Calgary, AL, Canada, [4]Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PE, Canada, [5]Faculté de médecine vétérinaire, University of Montreal, St. Hyacinthe, QC, Canada, [6]Animal Welfare Program - University of British Columbia, Vancouver, BC, Canada*

4:00 PM 117 **Using milk fat-to-protein ratio to evaluate dairy cows energy balance status.**
T. Schcolnik[*], Afimilk, Afikim, Israel

4:15 PM 118 **Evaluation of three lameness detection strategies on the odds of cure in dairy cows.**
E. M. Wynands[*], D. Moe, and G. Cramer, Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, St. Paul

4:30 PM 119 **Risk factors for subclinical ketosis in grazing dairy herds in Brazil.**
*R. R. Daros[*1], M. J. Hötzel[2], S. J. LeBlanc[3], J. A. Bran[2], A. J. Thompson[1], and M. A. von Keyserlingk[1], [1]Animal Welfare Program - University of British Columbia, Vancouver, BC, Canada, [2]Universidade Federal de Santa Catarina, Florianopolis, Brazil, [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

4:45 PM 120 **Mortality risk factors for calves entering a multi-location white veal farm in Ontario.**
*C. B. Winder[*1], D. F. Kelton[2], and T. F. Duffield[2], [1]University of Guelph, ON, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

Breeding and Genetics Symposium: Resilience of Livestock to Changing Environments

Chair: John B. Cole, Animal Genomics and Improvement Laboratory, USDA-ARS

Sponsor: Neogen
2:00 PM - 5:00 PM
Grand Ballroom I

2:00 PM 401 **Production, biological, and genetic responses to heat stress in ruminants and pigs.**
*L. H. Baumgard[*1], J. T. Seibert[1], S. K. Kvidera[1], A. F. Keating[1], J. W. Ross[1], and R. P. Rhoads[2], [1]Iowa State University, Ames, [2]Virginia Polytechnic Institute and State University, Blacksburg*

2:30 PM 402 **Breeding for resilience to heat stress effects: A comparison across dairy ruminant species.**
*M. J. Carabaño[*1], M. Ramón[2], C. Díaz[1], A. Molina[3], J. M. Serradilla[3], and M. D. Pérez-Guzmán[4], [1]INIA, Madrid, Spain, [2]CERSYRA-IRIAF-CLM, Valdepeñas, Spain, [3]Universidad de Córdoba, Córdoba, Spain, [4]Centro Regional de Seleccion y Reproduccion Animal (CERSYRA-IRIAF). Junta de Comunidades de Castilla La Mancha., Valdepeñas, Spain*

3:00 PM 403 **Climate change and selective breeding in aquaculture.**
P. Sae-Lim[*], Nofima, Ås, Norway

3:30 PM 404 **Introgression of genes conveying resistance to heat stress into cattle populations using the "Slick" genetic variant as a model.**
S. R. Davis[*], R. J. Spelman, and M. J. Littlejohn, Livestock Improvement Corporation, Hamilton, New Zealand

4:00 PM 405 **Genetic solutions to infertility caused by heat stress.**
*P. J. Hansen[*1], S. Dikmen[2], J. B. Cole[3], M. S. Ortega[1], and G. E. Dahl[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Uludag University, Faculty of Veterinary Medicine, Department of Animal Science, Bursa, Turkey, [3]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*

4:30 PM 406 **Resilience and lessons from studies in genetics of heat stress.**
I. Misztal[*], University of Georgia, Athens

Companion Animal Symposium: Fundamentals of Protein Nutrition

Chair: Greg Aldrich, Kansas State University

Sponsor: George Fahey Appreciation Club
2:00 PM - 5:00 PM
150 E/F

2:00 PM		**Introductory Remarks**
2:10 PM	434	**Global protein supply: Present and future considerations and availability.** *D. L. Schaefer*, Cargill, Wichita, KS*
2:40 PM	435	**Alternative protein supplies for petfood.** *G. Bosch*, Wageningen University, Netherlands*
3:10 PM		**Break**
3:25 PM	436	**Amino acid requirements and protein digestibility and assessment in dogs with considerations for cats.** *A. K. Shoveller*, University of Guelph, ON, Canada*
3:55 PM	437	**Idiosyncrasies of amino acid metabolism in dogs and cats.** *D. L. Harmon*, University of Kentucky, Lexington*
4:25 PM		**Panel Discussion**

CSAS Symposium: Reducing the Use of Antibiotics in Livestock Production

Chair: Filippo Miglior, Centre for Genetic Improvement of Livestock, University of Guelph; Eveline M Ibeagha-Awemu, Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre

Sponsor: CSAS
2:00 PM - 5:00 PM
155 A

2:00 PM	492	**Alternatives to antibiotics in swine and poultry.** *D. Schokker*[*1,2] and M. A. Smits[1,2,3], [1]Wageningen UR Livestock Research, Netherlands, [2]Animal Breeding and Genomics Centre, Wageningen, Netherlands, [3]Wageningen UR, Central Veterinary Institute, Lelystad, Netherlands*
2:30 PM	493	**Management of dairy cows to improve resistance to infectious diseases.** *P. Lacasse*[*1], N. Vanacker[2,3], S. Lanctôt[2,4], and S. Ollier[2], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Sherbrooke R&D Centre, Sherbrooke, QC, Canada, [3]Université de Sherbrooke, Sherbrooke, QC, Canada, [4]McGill University, Montréal, QC, Canada*
3:00 PM	494	**Selection for disease resistance in swine.** *G. Plastow*, Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*
3:30 PM	495	**Genomic approaches to characterizing and reducing antimicrobial resistance in beef cattle production systems.** *M. A. Javed, C. Klima, A. A. Cameron, T. W. Alexander, R. Zaheer, K. Munns, and T. A. McAllister*, Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*
4:00 PM	496	**Nurturing healthy gut microbiome: Route to increased disease resistance in ruminants.** *L. L. Guan* and N. Malmuthuge, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*
4:30 PM	497	**Pre- and probiotics for increased disease resistance in the nonruminant animal.** *C. M. Nyachoti*, University of Manitoba, Winnipeg, MB, Canada*

Dairy Foods Division: Advances in Dairy Microbiology

Chair: Milena Corredig, University of Guelph

2:00 PM - 5:00 PM
151 B/C

2:00 PM	498	**Investigating the antimicrobial activity of pasteurized and raw camel milk against foodborne pathogens: *Listeria monocytogenes* and *E. coli* O157:H7** *M. Ayyash*, UAE University, Al-Ain, United Arab Emirates*
2:15 PM	499	**Application of fluorescent probes to determine localized salt concentrations within cheese matrices and their influence on metabolic activity of entrapped bacterial cells.** *C. D. Hickey[1], V. Fallico[1], Z. Burdikova[1], M. G. Wilkinson[2], and J. J. Sheehan*[1], [1]Teagasc Food Research Centre Moorepark, CO Cork, Ireland, [2]University of Limerick, Ireland*
2:30 PM	500	**Inducing HT-29 colon cells apoptosis by the extracellular polymeric substances isolate from *L.casei* strains.** *W. Di*, L. Zhang, and X. Han, Harbin Institute of Technology, Harbin, China*
2:45 PM	501	**Comparative genomics of *Lactobacillus brevis* uncovers its common capability for efficiently synthesizing neuroactive γ-aminobutyric acid.** *Q. Wu*[1], H. M. Tun[2], Y. S. Law[1], E. Khafipour[2], and N. P. Shah[1], [1]School of Biological Sciences, The University of Hong Kong, Pokfulam, [2]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada*
3:00 PM	502	**Effect of incubation temperature on yield and molar mass of EPS during fermentation of milk by *Streptococcus thermophilus* DGCC 7785 and the impact on the rheological properties of acid milk gels.** *S. N. Khanal*[1] and J. A. Lucey[2], [1]University of Wisconsin-Madison, [2]Wisconsin Center for Dairy Research, Madison, WI*
3:15 PM	503	**Probiotic-fermented Maillard reaction products: New functional food for cardiovascular health.** *S. Kim*, Korea University, Seoul, The Republic of Korea*
3:30 PM	504	**An ancient, species-specific tagatose-6-phosphate pathway in *Lactobacillus casei* group for galactose reduction in cultured dairy foods.** *N. P. Shah* and Q. Wu, School of Biological Sciences, The University of Hong Kong, Pokfulam*

Extension Education Symposium: Growing Extension's Impacts with Changing Budgets and Personnel

Chair: Julie A. Walker, South Dakota State University

2:00 PM - 4:30 PM
155 C

2:00 PM	591	**Work-life balance for extension professionals: Maybe it should be redefined as 'work-life effectiveness'.** *G. P. Lardy*, North Dakota State University, Fargo*
2:30 PM	592	**Enhancing your Extension program through a strong research program, and vice versa.** *W. Powers*, Michigan State University, East Lansing*
3:00 PM	593	**Culturing and leveraging allied industry support for academic programs.** *M. W. Overton*, Elanco Animal Health, Greenfield, IN*
3:30 PM	594	**Developing regional and multi-state extension collaborations.** *A. J. Young*, Utah State University, Logan*
4:00 PM	595	**Extension faculty navigating the tenure and promotion process.** *N. E. Cockett*, Utah State University, Logan*

Meat Science and Muscle Biology

Chair: Jerrad F. Legako, Utah State University

2:00 PM - 5:00 PM
155 F

2:00 PM 878 **Chemical composition and expression of genes involved in lipid metabolism in the muscle of Nellore and Angus young bulls fed whole shelled corn diet.**
*M. M. Ladeira[*1], P. D. Teixeira[1], M. P. Gionbelli[1], M. L. Chizzotti[2], J. R. R. Carvalho[1], D. M. Oliveira[1], and T. C. Coelho[1], [1]Universidade Federal de Lavras, Brazil, [2]Universidade Federal de Viçosa, Brazil*

2:15 PM 879 **Effects of arachidonic acid and prostaglandins on proliferation, differentiation, and fusion of bovine myoblasts.**
X. Leng[*] and H. Jiang, Department of Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg

2:30 PM 880 **Influence of zinc amino acid complex and ractopamine hydrochloride supplementation on the sarcoplasmic protein profile of finishing steers.**
*O. N. Genther-Schroeder[*1], E. Huff-Lonergan[1], M. E. Branine[2], and S. L. Hansen[1], [1]Iowa State University, Ames, [2]Zinpro Corporation, Eden Prairie, MN*

2:45 PM 881 **Survey of attitudes for millennials who do not consume lamb.**
*K. R. Wall[*1] and C. R. Kerth[2], [1]Texas A&M University, College Station, [2]Texas A&M University Animal Science Department, College Station*

3:00 PM 882 **Survey of attitudes for millennial lamb consumers.**
*K. R. Wall[*1] and C. R. Kerth[2], [1]Texas A&M University, College Station, [2]Texas A&M University Animal Science Department, College Station*

3:15 PM 883 **A histologic and ultrastructural study of wooden breast disease in modern broiler chickens.**
M. P. Babak, E. M. Brannick, C. J. Schmidt, and B. Abasht[*], Department of Animal and Food Sciences, University of Delaware, Newark

3:30 PM 884 **High-energy forage and feedlot finishing impact on beef consumer acceptability and sensory characteristics in the upper Midwest.**
*R. M. Martin[*1], J. E. Rowntree[1], J. P. Schweihofer[2], J. B. Harte[1], and A. M. Merwin[1], [1]Michigan State University, East Lansing, [2]Michigan State University Extension, Bad Axe*

3:45 PM 885 **Effect of growth-promoting technologies on the proteome of bovine *Longissimus lumborum*.**
*C. A. Hayes[*1,2], W. L. Keller[1], J. K. Grubbs[3], S. M. Lonergan[3], S. M. Ebarb[4], K. J. Phelps[4], J. S. Drouillard[4], J. M. Gonzalez[4], and K. R. Maddock-Carlin[1], [1]North Dakota State University, Fargo, [2]Purina Animal Nutrition LLC, Gray Summit, MO, [3]Iowa State University, Ames, [4]Kansas State University, Manhattan*

4:00 PM 886 **Effects of post-weaning exposure to a high-concentrate diet vs. pasture on live performance, carcass characteristics, and meat quality of early harvested steers.**
*B. M. Koch[*1], L. E. Bowen[1], J. T. Milopoulos[1], G. Volpi Lagreca[2], and S. K. Duckett[1], [1]Clemson University, SC, [2]INTA, Anguil, Argentina*

4:15 PM 887 **Effects of post-weaning exposure to a high-concentrate diet vs. pasture on carcass ultrasound, plasma insulin and glucose, and gene expression of lipogenic enzymes of early harvested steers.**
B. M. Koch[*], L. E. Bowen, N. M. Long, and S. K. Duckett, Clemson University, SC

4:30 PM 888 **Effects of dietary coated cysteamine hydrochloride on meat quality in finishing pigs.**
*H. Liu[*1], M. Bai[1,2], K. Xu[1], B. Zou[3], R. Yu[3], Q. Xi[2], and Y. Yin[1,2], [1]Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, China, [2]College of Animal Science, South China Agricultural University, Guangzhou, China, [3]King Techina Group, Hangzhou, China*

4:45 PM 889 **Meat quality of lambs fed diets containing different levels of residual frying oil.**
*M. Capelari[*1], E. L. T. Peixoto[2], E. S. Moura[3], E. L. A. Ribeiro[3], and I. Y. Mizubuti[3], [1]Michigan State University, East Lansing, [2]Universidade Federal do Sul e Sudeste do Pará, Maraba, Brazil, [3]Universidade Estadual de Londrina, Londrina, Brazil*

MILK Symposium: Marketing Milk for Entrepreneurial and Big Business Value

Chair: Lisbeth Goddik, Oregon State University

Sponsor: ADSA Foundation
2:00 PM - 5:30 PM
Grand Ballroom B/D

2:00 PM 916 **Get in the driver's seat: Marketing milk and dairy products to today's and tomorrow's consumers.**
D. M. Berry, Dairy & Food Communications Inc., Chicago, IL*

2:45 PM 917 **Practices and programs to ensure the safety of artisan cheese.**
D. J. D'Amico, University of Connecticut, Storrs*

3:30 PM 918 **Camel milk from commodity to added value product. The science behind the development of the camel dairy industry.**
P. Nagy, Emirates Industries for Camel Milk and Products, Dubai, United Arab Emirates*

4:15 PM 919 **Terroir: Science based or marketing gimmick.**
L. Goddik, Oregon State University, Corvallis*

5:00 PM **Reception**

Nonruminant Nutrition: General

Chair: Z. J. Rambo, Zinpro Corporation

Sponsor: JBS United, DuPont
2:00 PM - 3:30 PM
Grand Ballroom F

2:00 PM 980 **Effects of SILOHealth 104 supplementation on the growth performance of Ross 308 broiler chickens.**
A. Bedford[1], H. Yu[1], M. Hernandez[1], J. Squires[2], S. Leeson[3], and J. Gong[1], [1]Agriculture and Agri-Food Canada, Guelph, ON, Canada, [2]Department of Animal Biosciences, University of Guelph, ON, Canada, [3]Department of Animal and Poultry Science, University of Guelph, ON, Canada*

2:15 PM 981 **Effect of increasing Buttiauxella phytase dose to 2,000 FTU/kg on phytate degradation and ileal AA digestibility in weaned pigs.**
Y. Dersjant-Li[1] and G. Dusel[2], [1]Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, United Kingdom, [2]University of Applied Sciences Bingen, FB1- Life Sciences, Bingen am Rhein, Germany*

2:30 PM 982 **Influence of dietary crude protein and phosphorus levels on the utilization of crude protein and phosphorus in growing pigs.**
P. Xue[1] and O. Adeola[2], [1]Purdue University, West Lafayette, IN, [2]Department of Animal Sciences, Purdue University, West Lafayette, IN*

2:45 PM 983 **Effects of Dakota gold and high fat commodity DDGS in a complete diet on pellet quality.**
A. D. Yoder, Kansas State University, Manhattan*

3:00 PM 984 **Oregano essential oil supplementation in gestation and lactation shortened birthing interval in primparous and multiparous sows.**
M. Renken, R. C. Thaler, and C. L. Levesque, South Dakota State University, Brookings*

3:15 PM 985 **Effects of casein on digestibility of amino acids in distillers dried grains with solubles fed to pigs.**
C. S. Park[1], C. Fang[1], D. Ragland[2], and O. Adeola[1], [1]Department of Animal Sciences, Purdue University, West Lafayette, IN, [2]Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, IN*

Physiology and Endocrinology: Reproduction and Estrous Cycle Control

Chair: Vitor R. G. Mercadante, Virginia Polytechnic Institute and State University

2:00 PM - 5:00 PM
151 G

2:00 PM 1109 **WS** **Effect of delayed insemination of non-estrual beef heifers following a 7-d-CO-Synch plus controlled internal drug release (CIDR) insert timed artificial insemination protocol.**
D. C. Shaw, K. E. Fike, and D. M. Grieger, Kansas State University, Manhattan*

2:15 PM 1110 **GnRH increased pregnancy risk in suckled beef cows that did not display estrus when subjected to a split-time artificial insemination program.**
S. L. Hill[*1], D. M. Grieger[1], K. C. Olson[1], J. R. Jaeger[2], C. R. Dahlen[3], M. R. Crosswhite[3], N. Negrin Pereira[3], S. R. Underdahl[3], B. W. Neville[4], J. K. Ahola[5], M. C. Fischer[5], G. E. Seidel[5], and J. S. Stevenson[1], [1]Kansas State University, Manhattan, [2]Western Kansas Agricultural Research Center, Kansas State University, Hays, [3]North Dakota State University, Fargo, [4]North Dakota State University, Streeter, [5]Colorado State University, Fort Collins*

2:30 PM 1111 **Comparison of long- versus short-term CIDR-based protocols to synchronize estrus prior to fixed-time AI in primiparous two-year-old beef cows.**
J. M. Abel, B. E. Bishop, J. M. Thomas, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, University of Missouri, Columbia*

2:45 PM 1112 **Comparing split-time AI pregnancy rates among non-estrous heifers based on administration of GnRH at AI.**
B. E. Bishop, J. M. Thomas, J. M. Abel, M. F. Smith, M. R. Ellersieck, S. E. Poock, and D. J. Patterson, University of Missouri, Columbia*

3:00 PM 1113 **Comparing fixed-time artificial insemination to split-time artificial insemination with delayed administration of GnRH in postpartum beef cows.**
B. E. Bishop, J. M. Abel, J. M. Thomas, M. F. Smith, S. E. Poock, M. R. Ellersieck, and D. J. Patterson, University of Missouri, Columbia*

3:15 PM 1114 **Split-time artificial insemination following synchronization of estrus with the 14-d CIDR-PG protocol in primiparous two-year-old beef cows.**
J. M. Abel, B. E. Bishop, J. M. Thomas, M. R. Ellersieck, S. E. Poock, M. F. Smith, and D. J. Patterson, University of Missouri, Columbia*

3:30 PM **Break**

3:45 PM 1115 **The 9-d CIDR-PG protocol: Incorporation of prostaglandin pretreatment into a long-term, CIDR-based estrus synchronization protocol improves timed AI pregnancy rates in postpartum suckled beef cows.**
J. M. Thomas, B. E. Bishop, J. M. Abel, J. W. Locke, S. E. Poock, M. F. Smith, and D. J. Patterson, University of Missouri, Columbia*

4:00 PM 1116 **Requirement of GnRH administration at the onset of the 5 day CO-Synch + CIDR protocol in suckled beef cows.**
T. M. Grussing[*1], M. L. Day[2], B. J. Funnell[3], B. R. Harstine[4], E. J. Northrop[5], G. A. Perry[5], J. J. J. Rich[5], D. W. Shike[6], K. R. Stewart[7], and P. J. Gunn[1], [1]Department of Animal Science, Iowa State University, Ames, [2]Department of Animal Science, University of Wyoming, Laramie, [3]Department of Veterinary and Clinical Sciences, Purdue University, West Lafayette, IN, [4]The Ohio State University, Columbus, [5]Department of Animal Science, South Dakota State University, Brookings, [6] University of Illinois at Urbana-Champaign, [7]Purdue University, West Lafayette, IN*

4:15 PM 1117 **Comparison of follicular dynamics and subsequent progesterone profiles in Brahman cows with either two or three ovarian follicular waves.**
R. A. d'Orey Branco[*1,2], D. A. Neuendorff[8], A. W. Lewis[1], R. C. Vann[4], T. H. Welsh, Jr.[5], and R. D. Randel[3], [1]Texas A&M AgriLife Research, Overton, [2]Department of Animal Science, Texas A&M University, College Station, [3]Texas A&M AgriLife Research, Texas A&M University System, Overton, [4]MAFES - Brown Loam Experiment Station, Mississippi State University, Raymond, [5]Texas A&M AgriLife Research and Department of Animal Science, College Station*

4:30 PM 1118 **Effect of a progesterone-based estrous synchronization program for timed AI (TAI) on reproductive performance in a seasonal pasture-based dairy production system.**
F. Randi[1,2], J. M. Sanchez[1], M. M. Herlihy[3], D. A. Kenny[4], A. Valenza[5], S. Butler[*3], and P. Lonergan[1], [1]School of Agriculture and Food Science, University College Dublin, Ireland, [2]Teagasc Grange, Meath, Ireland, [3]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland, [4]Teagasc Grange, Dunsany Co. Meath, Ireland, [5]Ceva Animal Health, Libourne, France*

Production, Management and the Environment: Health and Welfare

Chair: Don Ely, University of Kentucky

2:00 PM - 5:00 PM
151 E/F

2:00 PM 1227 **Factors associated with average daily gain in dairy heifer calves on US dairy operations.**
*C. B. Shivley[*1,2], N. J. Urie[1,2], and J. E. Lombard[2], [1]Colorado State University, Fort Collins, [2]USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO*

2:15 PM 1228 **Factors associated with morbidity in dairy heifer calves on US dairy operations.**
N. Urie[*], C. B. Shivley, and J. E. Lombard, USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO

2:30 PM 1229 **Factors associated with *Cryptosporidium* and *Giardia* infection in preweaned dairy heifer calves.**
*N. Urie[*1,2], C. B. Shivley[1,2], and J. E. Lombard[2], [1]Colorado State University, Fort Collins, [2]USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO*

2:45 PM 1230 **Factors associated with colostrum quality and passive transfer status of dairy heifer calves on US dairy operations.**
*J. E. Lombard[*1], C. B. Shivley[1,2], and N. Urie[1,2], [1]USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO, [2]Colorado State University, Fort Collins*

3:00 PM 1231 **Risk factors for calf mortality on farms using automated feeders in the Midwest USA.**
M. Jorgensen[*] and M. I. Endres, University of Minnesota, St. Paul

3:15 PM 1232 **Impact of milk-feeding programs on fecal bacteria population and antimicrobial resistance genes in *Escherichia coli* isolated from feces in preweaned calves.**
*G. Maynou[*1], L. Migura-Garcia[2], J. Subirats[3], H. Chester-Jones[4], D. Ziegler[4], A. Bach[1,5], and M. Terré[1], [1]IRTA, Caldes de Montbui, Spain, [2]CRESA, Cerdanyola del Vallès, Spain, [3]ICRA, Girona, Spain, [4]University of Minnesota Southern Research and Outreach Center, Waseca, [5]ICREA, Barcelona, Spain*

3:30 PM 1233 **A survey of management practices and producers' perceptions regarding manual and automated milk feeding systems for dairy calves.**
*C. Medrano-Galarza[*1,2], J. Rushen[3], A. M. de Passillé[3], A. Jones-Bitton[1], T. J. DeVries[4,5], S. J. LeBlanc[1], and D. B. Haley[1,2], [1]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [2]Campbell Centre for the Study of Animal Welfare, University of Guelph, ON, Canada, [3]Faculty of Land & Food Systems, University of British Columbia, Agassiz, BC, Canada, [4]Department of Animal Biosciences, University of Guelph, ON, Canada, [5]University of Guelph, ON, Canada*

3:45 PM 1234 **Investigating the within-herd prevalence and risk factors of hyperketonemia of dairy cattle in Ontario as diagnosed by the test-day concentration of milk ß-hydroxybutyrate.**
*E. H. Tatone[*1], T. F. Duffield[1], S. J. LeBlanc[1], T. J. DeVries[2], and J. L. Gordon[1], [1]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [2]Department of Animal Biosciences, University of Guelph, ON, Canada*

4:00 PM 1235 **Relationships between early life milk replacer and starter intake and first lactation performance of Holstein dairy cows.**
*H. Chester-Jones[*1], B. J. Heins[2], D. Ziegler[1], D. Schimek[3], S. E. Schuling[3], B. Ziegler[3], M. B. De Ondarza[4], C. J. Sniffen[5], and N. Broadwater[6], [1]University of Minnesota Southern Research and Outreach Center, Waseca, [2]University of Minnesota West Central Research and Outreach Center, Morris, [3]Hubbard Feeds Inc., Mankato, MN, [4]Paradox Nutrition, West Chazy, NY, [5]Fencrest, LLC, Holderness, NH, [6]University of Minnesota Extension, Rochester*

4:15 PM 1236 **Feeding management strategies on large and smaller freestall dairy herds in Minnesota.**
L. Kloeckner[*] and M. I. Endres, University of Minnesota, St. Paul

4:30 PM 1237 **Evaluation of the CowVac for controlling flies on Minnesota organic dairy farms.**
*M. A. Kienitz[1] and B. J. Heins[*2], [1]University of Minnesota, Lakeville, [2]University of Minnesota West Central Research and Outreach Center, Morris*

Ruminant Nutrition: Intake, Digestibility and Efficiency

Chair: Kristen Johnson, Washington State University

2:00 PM - 5:00 PM
155 E

2:00 PM 1488 **Toxicity of antibiotics on rumen protozoan *Entodinium caudatum* and its associated microbes.**
T. Park, The Ohio State University, Columbus*

2:15 PM 1489 **Effect of diets containing different levels of crude glycerol on nutrient intake in lambs.**
M. A. Syperreck[1], M. Capelari[2], I. Y. Mizubuti[1], and E. L. A. Ribeiro[1], [1]Universidade Estadual de Londrina, Londrina, Brazil, [2]Michigan State University, East Lansing*

2:30 PM 1490 **Effects of corn particle size and ratio NDF:starch on in-vitro NDF degradability.**
S. Malan and E. Raffrenato, Department of Animal Sciences, Stellenbosch University, Stellenbosch, South Africa*

2:45 PM 1491 **Associations between RFI, and metabolite profiles and feeding behavior traits in feedlot cattle.**
M. D. Miller[1], G. E. Carstens[1], J. M. Thomson[2], J. G. Berardinelli[2], M. R. Herrygers[2], J. White[2], L. O. Tedeschi[1], and P. K. Riggs[1], [1]Texas A&M University, College Station, [2]Montana State University, Bozeman*

3:00 PM 1492 **Effects of acidity and silage type on lysine retention among two lipid-coated ruminally protected lysine products.**
J. N. Reiners and D. W. Brake, South Dakota State University, Brookings*

3:15 PM 1493 **Relationship of days in milk to nutrient digestibility in lactating multiparous cows.**
A. M. Barnard[1], H. Jensen[2], and T. F. Gressley[1], [1]University of Delaware, Newark, [2]BioZyme, Wathena, KS*

3:30 PM 1494 **Effects of animal and diet characteristics on digestibilities of dry matter, fiber and starch in lactating cows.**
R. A. De Souza[1], R. J. Tempelman[1], M. S. Allen[1], J. K. Bernard[2], B. Weiss[3], and M. J. VandeHaar[1], [1]Michigan State University, East Lansing, [2]University of Georgia, Tifton, [3]The Ohio State University, Wooster*

3:45 PM 1495 **Effects of silage type and inclusion level on ruminal characteristics and feeding behavior of feedlot steers.**
P. R. B. Campanili[1], J. O. Sarturi[1], S. J. Trojan[1], M. A. Ballou[1], L. A. Pellarin[1], J. D. Sugg[2], L. A. Ovinge[1], A. Alrumaih[1], and A. A. Hoffman[1], [1]Texas Tech University, Lubbock, [2]Angelo State University, San Angelo, TX*

4:00 PM 1496 **Identification of biological pathways involved in residual feed intake in Hereford cattle through Gene Set Enrichment Analysis.**
J. L. Mutch[1], M. Neupane[1], C. M. Seabury[2], H. L. Neibergs[1], P. C. Tizioto[3], D. J. Garrick[4], M. S. Kerley[3], D. W. Shike[5], J. E. Beever[5], J. F. Taylor[3], U. S. Feed Efficiency Consortium[3], and K. A. Johnson[1], [1]Department of Animal Sciences, Washington State University, Pullman [2]College of Veterinary Medicine, Texas A&M University, College Station, [3]University of Missouri, Columbia, [4]Department of Animal Science, Iowa State University, Ames, [5] University of Illinois at Urbana-Champaign*

4:15 PM 1497 **Updating equations to estimate dry matter intake of Nellore and beef crossbred cattle.**
L. F. Costa e Silva[1], S. C. Valadares Filho[2], P. P. Rotta[3], J. A. G. Azevedo[4], F. F. Silva[1], A. C. B. Menezes[1], and B. C. Silva[3], [1]Universidade Federal de Vicosa, Vicosa, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil, [4]Universidade Estadual de Santa Cruz, Ilheus, Bahia, Brazil*

4:30 PM 1498 **Rumen bacterial species associate with residual feed intake in beef cattle.**
A. A. Elolimy[1], M. Abdelmegeid[1,2], J. C. McCann[1], D. W. Shike[1], and J. J. Loor[1], [1] University of Illinois at Urbana-Champaign [2]Kafrelsheikh University, Egypt*

4:45 PM 1499 **The association between body condition score, residual feed intake, and hyperketonemia.**
F. M. Tiberio[1], R. S. Pralle[1], C. A. Getschel[1], R. C. Oliveira[1], S. J. Bertics[1], K. A. Weigel[1], R. D. Shaver[1], L. E. Armentano[2], and H. M. White[1], [1]Department of Dairy Science University of Wisconsin-Madison, [2]University of Wisconsin-Madison*

POSTER PRESENTATIONS

Sponsor: Chr. Hansen

Poster Session IX

7:15 AM - 8:15 AM
Exhibit Hall A/B

Swine Species

1738 1 **Prediction of the concentration of androstenone in backfat from boar carcasses using indicators of sexual development.**
*A. Prunier[*1], S. Parois[1], A. Faouën[1] and C. Larzul[2], [1]PEGASE, Agrocampus Ouest, INRA, Saint-Gilles, France, [2]GenPhyse, Université de Toulouse, INRA, INPT, INPT-ENV, Castanet-Tolosan, France*

1739 2 **Effects of dietary ramie (Bochmeria nivea) powder at different levels on carcass traits, muscle fiber characteristics and muscular free amino acid profile of Chinese indigenous finishing pigs.**
Y. Tang[*], Institute of Subtropical Agriculture, Chinese Academy of Sciences, Changsha, China

1740 3 **Effects of different sources and routes of administration of copper and vitamins A and D on gut volatile fatty acids and gene expression involved in regulation of innate and acquired immunity in piglets.**
*L. Lo Verso[*1], J. J. Matte[1], G. Talbot[1], J. Lapointe[1], N. Bissonnette[1], F. Guay[2], N. Gagnon[1], B. Ouattara[1] and M. Lessard[1], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Universite Laval, Quebec City, QC, Canada*

1741 4 **Comparison of transport characteristics of ferrous sulfate and iron glycine ghelate across IPEC-J2 cell monolayers.**
S. Fang[*], College of Animal Science, Zhejiang University, HangZhou, China

1742 5 **Studing of population structure of European wild boar (sus scrofa) and its subspecies, inhabiting Russia.**
*A. A. Traspov[1], O. V. Kostyunina[1], I. A. Domsky[2], A. V. Ekonomov[2], A. A. Sermyagin[*1] and N. A. Zinovieva[1], [1]L.K.Ernst Institute of Animal Husbandry, Moscow, Russian Federation, [2]Institute of Hunting and Fur-farming named after professor B.M. Zhitkov, Kirov, Russian Federation*

1743 6 **Supplementation with a blend of capsicum and artificial sweetener improves performance of growing and finishing pigs.**
C. Ionescu[*], C. Soulet, C. Bruneau and E. H. Wall, Pancosma, Geneva, Switzerland

1744 7 **Effects of different sources and routes of administration of copper and vitamins A and D on piglets gut microbiota.**
*G. Talbot[1], M. Lessard[*1], E. Yergeau[2], N. Gagnon[1], L. Lo Verso[1], J. Lapointe[1], N. Bissonnette[1], D. Bueno Dalto[1], B. Ouattara[1], F. Guay[3] and J. J. Matte[1], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Université du Québec, Centre INRS-Institute Armand-Frappier, Laval, QC, Canada, [3]Universite Laval, Quebec City, QC, Canada*

1745 8 **Diurnal heat stress reduces nursery-grower pig performance and intestinal integrity.**
*N. K. Gabler[*1], G. R. Murugesan[2], S. Schaumberger[3], U. Hofstetter[3] and G. Schatzmayr[4], [1]Department of Animal Science, Iowa State University, Ames, [2]Biomin America Inc., San Antonio, TX, [3]Biomin Holding GmbH, Getzersdorf, Austria, [4]Biomin Research Center, Tulln, Austria*

1746 9 **Effect of diet composition on piglet growth and digestibility responses to a high dietary canola content.**
G. A. Mejicanos[*], University of Manitoba, Winnipeg, MB, Canada

Breeding and Genetics: Molecular Genetics

338 10 **Comparison of transcriptome profiles in longissimus dorsi muscle between bulls and steers of Korean cattle.**
M. Baik, S. J. Park[*] and N. Sang Weon, Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, The Republic of Korea

339 11 **Gene network regulated by microRNAs suggests modulation of fat deposition in cattle.**
*G. B. Oliveira[*1], A. S. M. Cesar[1], A. M. Felício[1], M. D. Poleti[1], L. C. A. Regitano[2] and L. L. Coutinho[1], [1]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [2]Embrapa Southeast Livestock, Sao Carlos, Brazil*

340 12 **Differentially expressed miRNAs in skeletal muscle related to feed efficiency in Nelore cattle.**
*P. S. N. Oliveira[*1], P. C. Tizioto[1], G. B. Oliveira[2], A. S. M. Cesar[2], W. J. S. Diniz[3], A. O. D. Lima[3], J. M. Reecy[4], L. L. Coutinho[2] and L. C. A. Regitano[5], [1]Embrapa Southeast Livestock, Sao Carlos, Brazil, [2]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [3]Federal University of Sao Carlos - UFSCar, Sao Carlos, Brazil, [4]Iowa State University, Ames, [5]Embrapa Southeast Livestock, Sao Carlos, Brazil*

341 13 **miRNAs related to fatty acids composition in Nelore cattle.**
*P. S. N. Oliveira[*1], A. S. M. Cesar[2], G. B. Oliveira[2], P. C. Tizioto[1], M. D. Poleti[2], W. J. S. Diniz[3], A. O. D. Lima[3], J. M. Reecy[4], L. L. Coutinho[2] and L. C. A. Regitano[1], [1]Embrapa Southeast Livestock, Sao Carlos, Brazil, [2]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [3]Federal University of Sao Carlos - UFSCar, Sao Carlos, Brazil, [4]Iowa State University, Ames*

342 14 **Expression levels of the bovine SCD gene are significantly associated with fatty acid composition of cattle.**
H. Chung[*], National Institute of Animal Science, Wanju, The Republic of Korea

343 15 **Profiling microRNA expression in Longissimus dorsi muscle of F2 pigs from the Michigan State University Duroc x Pietrain Resource Population.**
*K. R. Perry[*1], J. P. Steibel[1,2], D. Velez-Irizarry[1], S. A. Funkhouser[3], N. E. Raney[1], R. O. Bates[1] and C. W. Ernst[1], [1]Department of Animal Science, Michigan State University, East Lansing, [2]Department of Fisheries and Wildlife, Michigan State University, East Lansing, [3]Genetics Program, Michigan State University, East Lansing*

344 16 **Scan for allele frequency differences from pooled samples in lines of pigs selected for components of litter size.**
B. A. Freking[*], J. W. Keele and G. A. Rohrer, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE

345 17 **Construction and functional analysis of expression vector and miRNA interference vectors of Gsdma of Tibetan sheep.**
*C. Li[1], L. Ren[1], Y. Wang[1], J. Zhong[2], L. Huang[1], Y. Lin[1], X. Zi[1] and Y. Zheng[*1], [1]Southwest University for Nationalities, Chengdu, China, [2]Auburn University, AL*

346 18 **Genetic characteristics of semi-domesticated reindeer populations from different regions of Russia based on SNP analysis.**
*V. R. Kharzinova[*1], A. V. Dotsev[1], I. M. Okhlopkov[2], K. A. Layshev[3], V. I. Fedorov[4], L. D. Shimit[5], G. Brem[1,6], K. Wimmers[7], H. Reyer[7] and N. A. Zinovieva[1], [1]L.K. Ernst Institute of Animal Husbandry, Moscow, Russian Federation, [2]Science Institute of Biological Problems Cryolithozone, Yakutsk, Russian Federation, [3]North-West Center of Interdisciplinary Researches of Food Maintenance Problems, Federal Agency of Scientific Organizations, St. Petersburg, Russian Federation, [4]Federal Government Budget Scientific Institutions Yakut Scientific Research Institute of the Agriculture Federal Agency Scientific Institutions, Yakutsk, Russian Federation, [5]Tuva State University, Tyva Republic, Russian Federation, [6]Institute of Animal Breeding and Genetics, VMU, Vienna, Austria, [7]Genome Biology, Leibniz Institute for Farm Animal Biology (FBN), Dummerstorf, Germany*

347 19 **Candidate gene and marker for equine metabolic syndrome.**
S. Lewis[*], H. Holl, M. T. Long, M. Mallicote and S. Brooks, University of Florida, Gainesville

348 20 **The polymorphisms of Toll-like receptor 4 gene influences milk production traits in Chinese Holstein cows.**
X. Zhu, M. Wang, S. Xing, Z. Yang and Y. Mao[*], College of Animal Science and Technology, Yangzhou, China

349 21 **A polymorphism within the PAPPA2 gene is associated with postpartum fertility traits in Holstein dairy cattle located in southern Sonora Mexico.**
*P. Luna-Nevarez[*1], J. C. Leyva-Corona[1], M. A. Sanchez-Castro[1], R. Zamorano-Algandar[1], J. F. Medrano[2], G. Rincon[3], R. M. Enns[4], S. E. Speidel[4] and M. G. Thomas[4], [1]Instituto Tecnologico de Sonora, Ciudad Obregon Sonora, Mexico, [2]University of California-Davis, [3]Zoetis Inc., Kalamazoo, MI, [4]Department of Animal Sciences, Colorado State University, Fort Collins*

350 22 **Using LD structure of several populations to optimize an SNP panel for conservation and selection.**
*C. Díaz[*1], L. Varona[2], M. J. Carabaño[1], E. Nicolazzi[3], M. Bichard[4], J. Baro[5], A. Molina[6], J. Piedrafita[7], A. Rossoni[8], H. Schwarzenbacher[9], F. Seyfried[10], T. R. Solberg[11], D. Vicario[12], J. Altarriba[2] and K. J. Abraham[13], [1]INIA, Madrid, Spain, [2]Universidad de Zaragoza, Spain, [3]Fondazione Parco Tecnologico Padano, Lodi, Italy, [4]English Guernsey Cattle Society, Launceston, United Kingdom, [5]Universidad de Valladolid, Palencia, Spain, [6]Universidad de Córdoba, Córdoba, Spain, [7]Universitat Autònoma de Barcelona, Bellaterra (Barcelona), Spain, [8]ANARB, Italian Brown Cattle Breeders' Association, Bussolengo (VR), Italy, [9]ZuchtData EDV-Dienstleistungen GmbH, Vienna, Austria, [10]Qualitas AG, Zug, Switzerland, [11]Geno Breeding and A.I. Association, Hamar, Norway, [12]National Simmental Cattle Breeders Association, ANAPRI, Udine, Italy, [13]Estacio –Uniseb, Ribeirão Preto, Brazil*

351 23 **Meiotic recombination differences in ruminant livestock species.**
K. M. Davenport[*] and B. M. Murdoch, University of Idaho, Moscow

Dairy Foods Division: Dairy Microbiology

542 24 **Inactivation of Listeria innocua on cheddar cheese by supercritical fluid CO2.**
*S. Padilla Antunez[*1] and R. Jimenez-Flores[2], [1]California Polytechnic State University, San Luis Obispo, [2]Dairy Products Technology Center, California Polytechnic State University, San Luis Obispo*

543 25 **Evaluation of the effect of cavitation on biofilm forming ability of sporeformers.**
*T. Almalki[*1] and S. Anand[2], [1]Midwest Dairy Foods Research Center, Dairy Science Department, South Dakota State University, Brookings, [2]South Dakota State University, Brookings*

544 26 **The effect of Lactobacillus brevis and fibrolytic enzymes on fermentation of switchgrass silages.**
L. Jingjing[*], State Key Laboratory of Animal Nutrition, Engineering Technology Research Center of Raw Milk Quality and Safty Control, College of Animal Science and Technology, China Agricultural University, Beijing, China

545 27 **Influence of flax seed on the bile tolerances of Lactobacillus acidophilus, Lactobacillus bulgaricus and Streptococcus thermophilus.**
*M. Theegala[*1], R. Chiguila Arevalo[1], V. Viana[1], D. Olson[2] and K. J. Aryana[2], [1]Louisiana State University, Baton Rouge, [2]Louisiana State University Agricultural Center, Baton Rouge*

546 28 **Characterization of Lactobacillus wasatchensis from aged cheeses showing late-gas defects.**
*C. J. Oberg[1], M. D. Culumber[*1], T. Allen[2], T. S. Oberg[3], B. Villalba[4] and D. J. McMahon[5], [1]Department of Microbiology, Weber State University, Ogden, UT, [2]Utah State University, Logan, [3]Department of Nutrition, Dietetics, and Food Sciences, Western Dairy Center, Utah State University, Logan, [4]Vivolac Cultures Corp., North Logan, UT, [5]Western Dairy Center, Utah State University, Logan*

547 29 **Determination of antagonism between NSLAB strains and Lactobacillus wasatchensis WDC04 using the agar-flip method.**
*C. J. Oberg[*1], M. Walker[2], M. D. Culumber[1] and D. J. McMahon[3], [1]Department of Microbiology, Weber State University, Ogden, UT, [2]Weber State University, Ogden, UT, [3]Western Dairy Center, Utah State University, Logan*

548 30 **Determination of treatments to reduce late gassy defect in cheese due to Lactobacillus wasatchensis WDC04 contamination.**
*C. J. Oberg[*1], I. Bowen[2], M. D. Culumber[1] and D. J. McMahon[3], [1]Department of Microbiology, Weber State University, Ogden, UT, [2]Weber State University, Ogden, UT, [3]Western Dairy Center, Utah State University, Logan*

549 31 **Regional milk sourcing impact on non-starter lactic acid bacteria (NSLAB) in raw milk and Cheddar cheese during aging.**
L. Goddik[*], C. Baird and J. Waite-Cusic, Oregon State University, Corvallis

550 32 **Effect of rate of cooling and ripening temperatures on non-starter lactic acid bacteria in cheese.**
D. I. Khan[*] and S. Anand, Midwest Dairy Foods Research Center, South Dakota State University, Brookings

551 33 **Efficient removal of spores from skim milk using microfiltration: Spore size and surface property considerations.**
E. R. Griep[*], Y. Cheng and C. I. Moraru, Cornell University, Ithaca, NY

552 34 **Evaluation of microbial enzymes for degradation of exopolymeric substances (EPS) within biofilm matrices for more effective cleaning.**
*N. Garcia-Fernandez[*1,2], A. Hassan[3] and S. Anand[2,4], [1]Dairy Science Department, South Dakota State University, Brookings, [2]Midwest Dairy Foods Research Center, Brookings, SD, [3]Daisy Brand, Garland, TX, [4]South Dakota State University, Brookings*

553 35 **Comparison of biofilm formation on stainless steel and modified surface milk plate heat exchangers.**
*S. Jindal[*1], S. Anand[1], J. K. Amamcharla[2] and L. Metzger[1], [1]South Dakota State University, Brookings, [2]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan*

554 36 **Improved functionality of fermented milk is mediated by the synbiotic interaction between Cudrania tricuspidata leaf extract and Lactobacillus gasseri strains.**
N. S. Oh[*], J. Y. Lee, J. Y. Joung, S. G. Kim and Y. K. Shin, R&D Center, Seoul Dairy Cooperative, Ansan, The Republic of Korea

555 37 **Influence of proteolytic Bacillus spp. on sour cream characteristics.**
*D. Mehta[*1], L. Metzger[1], A. Hassan[2] and B. Nelson[2], [1]South Dakota State University, Brookings, [2]Daisy Brand, Garland, TX*

556 38 **Heat tolerance of Leuconostoc mesenteroides as influenced by prior subjection to mild heat.**
I. Osorio[*] and K. J. Aryana, Louisiana State University Agricultural Center, Baton Rouge

557 39 **Lactobacillus plantarum ameliorates inflammation in LPS-induced RAW264.7 cells and DSS-induced colitis animal model.**
*S. H. Choi[1], S. H. Lee[1], H. J. Lee[2] and G. B. Kim[*1], [1]Department of Animal Science and Technology, Chung-Ang University, Anseong, The Republic of Korea, [2]Department of Food Science and Technology, Chung-Ang University, Anseong, The Republic of Korea*

Animal Health: Beef Cattle

99 40 **In silico identification of natural product inhibitors of Brucella abortus threonyl-tRNA synthetase.**
*M. Li[1,2], N. Zheng[1,2,3], F. Wen[1,2], Y. Zhang[1,2], S. Li[1,2], S. Zhao[1,2] and J. Wang[*1,2,3], [1]Ministry of Agriculture Laboratory of Quality & Safety Risk Assessment for Dairy Products, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]Ministry of Agriculture - Milk and Dairy Product Inspection Center, Beijing, China, [3]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*

100 41 **Evaluation of immune function markers in OmniGen-AF supplemented steers.**
*S. A. Armstrong[*1,2], D. J. McLean[2], T. H. Schell[1,2], G. Bobe[1] and M. Bionaz[1], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]Phibro Animal Health Corporation, Quincy, IL*

101 42 **Influence of dietary supplementation with a Saccharomyces cerevisiae fermentation product prototype on the pathophysiological response to a combined intranasal bovine herpesvirus-1 and intratracheal Mannheimia haemolytica challenge in Holstein steers.**
*K. P. Sharon[*1], Y. Liang[1], R. E. Hudson[1], I. Yoon[2], M. F. Scott[2], N. C. Burdick Sanchez[3], P. R. Broadway[3], J. A. Carroll[3] and M. A. Ballou[1], [1]Texas Tech University, Lubbock, [2]Diamond V, Cedar Rapids, IA, [3]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*

102 43 **Dose response effect of Saccharomyces cerevisiae fermentation product prototype on leukocyte functionality and ex vivo cytokine production during a dexamethasone challenge in Holsteins steer calves.**
*K. P. Sharon[*1], Y. Liang[1], R. E. Hudson[1], I. Yoon[2], M. F. Scott[2], N. C. Burdick Sanchez[3], P. R. Broadway[3], J. A. Carroll[3] and M. A. Ballou[1], [1]Texas Tech University, Lubbock, [2]Diamond V, Cedar Rapids, IA, [3]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*

Beef Species II

252 44 **Effect of total replacement of trace minerals with Bioplex proteinated minerals on the health and performance of light weight, high risk feedlot cattle.**
*V. B. Holder[*1], J. S. Jennings[2] and T. L. Covey[3], [1]Alltech Inc, Nicholasville, KY, [2]Texas A&M AgriLife Research and Extension Center, Amarillo, [3]OT Feedyard and Research Center, Hereford, TX*

253 45 **The effect of frequency of supplementing rumen protected unsaturated fatty acids on blood serum fatty acid profiles in beef heifers and lactating cows.**
*E. K. Cook[*1], M. E. Garcia-Ascolani[2], R. E. Ricks[1], S. K. Duckett[1], N. DiLorenzo[2], G. C. Lamb[2] and N. M. Long[1], [1]Clemson University, SC, [2]University of Florida, North Florida Research and Education Center, Marianna*

254 46 **Economic viability of supplementation during the rainy season for growing water buffaloes.**
D. C. M. Silva[*], F. M. Silva, C. L. Francisco, A. M. Castilhos, P. R. L. Meirelles and A. M. Jorge, Universidade Estadual Paulista - FMVZ, Botucatu, Brazil

255 47 **Subclinical ketosis prevalence in Nellore beef cows during the breeding season in Brazil did not affect pregnancy rate.**
*R. C. de Souza[*1], R. C. Souza[1], A. C. B. P. Tavares[1], G. C. V. de Oliveira[1], L. A. M. de Souza[1], C. A. G. Pellegrino[2], M. I. V. Melo[1], J. P. Lustosa[1] and A. B. D. Pereira[3], [1]Pontificia Universidade Catolica de Minas Gerais, Betim, Brazil, [2]Faculdade Alis de Bom Despacho, Bom Despacho, Brazil, [3]University of New Hampshire, Durham*

256 48 **Effects of breeding system of origin (natural service or artificial insemination) on pregnancy rates, distribution of calving, and calf weaning weights of commercial beef cow herds in North Dakota.**
*M. R. Crosswhite[*1], D. N. Black[2], S. R. Underdahl[1], T. L. Neville[2] and C. R. Dahlen[2], [1]North Dakota State University, Fargo, [2]Department of Animal Sciences, North Dakota State University, Fargo*

257 49 **Resynchronization for sequential timed artificial insemination.**
*K. E. Zechiel[*1], K. G. Pohler[1], S. A. Lockwood[2], M. Backus[1] and J. D. Rhinehart[3], [1]University of Tennessee, Knoxville, [2]Department of Animal Science, University of Tennessee, Knoxville, [3]University of Tennessee, Spring Hill*

258 50 **Impact of diet on the behavior of limit-fed beef cows in drylots.**
*C. L. Daigle[*1], J. R. Baber[1], J. E. Sawyer[2] and T. A. Wickersham[1], [1]Texas A&M University, College Station, [2]Department of Animal Science, Texas A&M University, College Station*

259 51 **Newborn beef calves benefit from supplementation of vitamins D and E.**
*C. D. Nelson[1], M. Poindexter[*2], J. L. Powell[2], J. V. Yelich[2], S. L. Bird[3] and R. L. Stuart[4], [1]University of Florida, Gainesville, [2]Department of Animal Sciences, University of Florida, Gainesville, [3]University of Minnesota, Grand Rapids, [4]Stuart Products Inc, Bedford, TX*

260 52 **Functional SNP in a polygenic disease induced by high-altitude in fattening Angus steers using systems biology approach.**
*A. Cánovas[*1], R. Cockrum[2], D. Brown[3], S. Riddle[3], J. M. Neary[4], T. N. Holt[5], J. F. Medrano[6], A. Islas-Trejo[6], R. M. Enns[7], S. E. Speidel[7], K. Cammack[4], K. R. Stenmark[8] and M. G. Thomas[7], [1]University of Guelph, Ontario, ON, Canada, [2]Virginia Polytechnic Institute and State University, Blacksburg, [3]University of Colorado, Denver, [4]Colorado State University, Fort Collins, [5]College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, [6]University of California-Davis, [7]Department of Animal Sciences, Colorado State University, Fort Collins, [8]University of Denver, CO*

261 53 **Factors affecting timing and intensity of calving season of beef cow-calf producers in the Midwest.**
*C. E. Andresen[*1], P. J. Gunn[1] and L. L. Schulz[2], [1]Department of Animal Science, Iowa State University, Ames, [2]Department of Economics, Iowa State University, Ames*

262 54 **Effects of feeding NaturSafe on performance, carcass characteristics, and liver abscesses in finishing beef heifers at a commercial feedlot.**
*M. F. Scott[*1], K. L. Dorton[1], D. L. Henry[1], C. R. Belknap[1] and B. E. Depenbusch[2], [1]Diamond V, Cedar Rapids, IA, [2]Innovative Livestock Services, Inc., Great Bend, KS*

263 55 **Inclusion of exogenous enzymes in creep feeding rations for nursing beef calves.**
*J. M. Lourenço[*1], B. T. Campbell[2], N. DiLorenzo[3] and R. L. Stewart, Jr.[1], [1]Department of Animal and Dairy Science, University of Georgia, Athens, [2]DSM Nutritional Products, LLC., Parsippany, NJ, [3]University of Florida, North Florida Research and Education Center, Marianna*

264 56 **Body Temperature And Seminal Characteristics In Double And Normally Muscled Senepol Bulls In The Tropics.**
*I. Suero[1], E. Sanoguet[1], H. Sánchez[*1], J. Curbelo[1], A. Casas[1], T. Sonstegard[2] and M. Pagán-Morales[1], [1]Department of Animal Science, University of Puerto Rico, Mayaguez Campus, Mayaguez, Puerto Rico, [2]Recombinetics, Inc., St Paul, MN*

265 57 **Effects of Summer and Winter Feeding of Endophyte Infected Tall Fescue Seeds on Average Daily Gain and Activity of Hepatic Cytochrome P450 1A, 2C, 3A, Aldo-Keto Reductase 1C, and Uridine 5'-Diphospho-Glucuronosyltransferase in Beef Steers.**
*B. J. McClenton[*1], C. Waldrip[1], C. G. Hart[1], A. Theradiyil Sukumaran[1], C. O. Lemley[1], J. R. Blanton[1] and T. T. N. Dinh[2], [1]Mississippi State University, Mississippi State, [2]Mississippi State University Department of Animal and Dairy Sciences, Mississippi State*

266 58 **Relationships of neonatal beef calf birth weight and body size measures.**
A. M. Meyer[*], S. M. Bolen and J. M. Larson, Division of Animal Sciences, University of Missouri, Columbia

Ruminant Nutrition: Minerals I

1536 59 **The effect of decreasing dietary cation anion difference in the prepartum diet on urine mineral excretion and blood energy metabolite concentrations in multiparous Holstein cows.**
*B. M. Leno[*1], C. M. Ryan[1], T. Stokol[2], K. Zanzalari[3], D. Kirk[3], J. D. Chapman[3] and T. R. Overton[1], [1]Cornell University, Department of Animal Science, Ithaca, NY, [2]Cornell University College of Veterinary Medicine, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, [3]Phibro Animal Health Corp., Quincy, IL*

1538 61 **Influence of molybdenum concentration, pH, and transit time on the *in vitro* bioaccessibility of sulfur.**
J. Hawley[*] and E. B. Kegley, Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville

1539 62 **Bovine hair mineral concentrations as potential indicators of mineral status.**
J. Hawley[*] and E. B. Kegley, Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville

1540 63 **Effects of diets containing either traditional anionic salts or a commercial anionic supplement on feed intake and energy balance of pre-partum dairy cows.**
*F. S. Strydom[*1], J. N. Nothnagel[1] and J. P. Swiegers[2], [1]Nova Feeds, Malmesbury, South Africa, [2]Ruminant Nutrition Consultancy, Bethlehem, South Africa*

1537 60 **The effect of decreasing dietary cation anion difference in the prepartum diet on plasma haptoglobin concentrations and incidence of cytological endometritis in multiparous Holstein cows.**
*B. M. Leno[*1], C. M. Ryan[1], R. O. Gilbert[2], K. Zanzalari[3], D. Kirk[3], J. D. Chapman[3] and T. R. Overton[1], [1]Cornell University, Department of Animal Science, Ithaca, NY, [2]Cornell University College of Veterinary Medicine, Department of Clinical Sciences, Ithaca, NY, [3]Phibro Animal Health Corp., Quincy, IL*

1541 64 **Effect of level of dietary cation-anion difference (DCAD) and duration of prepartum feeding on calcium and measures of acid-base status in transition cows.**
*C. Lopera[*1], R. Zimpel[1], F. R. Lopes Jr.[1], W. G. Ortiz[1], B. N. Faria[1], M. R. Carvalho[1], A. Vieira Neto[1], M. L. Gambarini[2], E. Block[3], C. D. Nelson[1] and J. E. P. Santos[1], [1]University of Florida, Gainesville, [2]Federal University of Goiás, Goiânia, Brazil, [3]Church and Dwight Animal Nutrition, Ewing, NJ*

1542 65 **Effects of concentrate type and chromium propionate supplementation on insulin resistance parameters, milk production, and reproductive outcomes in lactating dairy cows consuming excessive energy.**
*T. Leiva[1], R. F. Cooke[2], A. P. Brandao[1,2] and J. L. M. Vasconcelos[*3], [1]UNESP - FMVZ, Botucatu, Brazil, [2]Oregon State University - EOARC Burns, [3]Sao Paulo State University, Botucatu, Brazil*

1543 66 **Regulatory effect of dietary intake of chromium propionate on function of monocyte-derived macrophages from Holstein cows in mid-lactation.**
*M. Garcia[*1], Y. Qu[2], C. M. Scholte[2], D. O'Connor[3], P. W. Rounds[3] and K. M. Moyes[2], [1]Kansas State University, Manhattan, [2]Department of Animal and Avian Sciences, University of Maryland, College Park, [3]Kemin Industries, Inc., Des Moines, IA*

Poster Session X

8:15 AM - 9:15 AM
Exhibit Hall A/B

Animal Behavior and Well-Being

71 1 **WS** **Use of a human tri-axial pedometer for measurement of sheep activity.**
K. A. Perz[*], J. G. Berardinelli, R. A. Shevitski II, J. White and J. M. Thomson, Montana State University, Bozeman

72 2 **Cooling cows with soakers: Spray duration affects heat loss in dairy cattle.**
*G. Tresoldi[*1], K. E. Schütz[2] and C. B. Tucker[1], [1]University of California-Davis, [2]AgResearch, Hamilton, New Zealand*

73 3 **Association between rumination behavior, milk yield and milk composition in dairy cows kept on commercial farms.**
T. Miedema and T. J. DeVries[*], Department of Animal Biosciences, University of Guelph, ON, Canada

74 4 **Lameness, productivity and cow behavior in dairy herds with automated milking systems.**
*M. T. King[*1], E. A. Pajor[2], S. J. LeBlanc[3] and T. J. DeVries[1], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]University of Calgary, AB, Canada, [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada*

75 5 **Assessment of biomarkers of pain and daily activity patterns in lactating dairy cows diagnosed with clinical metritis.**
*A. A. Barragan[1], S. Bas[*1], J. M. Piñeiro[1], G. M. Schuenemann[1], P. Rajala-Schultz[1] and D. Sanders[2], [1]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [2]Vaca Resources, Urbana, OH*

76 6 **Effect of social feeding environment on the feeding behavior of dairy cows and their willingness to consume a novel feed.**
G. Mainardes and T. J. DeVries[*], Department of Animal Biosciences, University of Guelph, ON, Canada

77 7 **Effects of acute and chronic heat stress on feed sorting behavior of lactating dairy cows.**
*A. Dayton[1], A. P. A. Monteiro[2], X. Weng[2], S. Tao[2] and E. K. Miller-Cushon[*3], [1]University of Florida, Gainesville, [2]University of Georgia, Tifton, [3]Department of Animal Sciences, University of Florida, Gainesville*

78 8 **In-utero exposure to heat stress during late gestation has prolonged negative effects on activity patterns of dairy calves.**
E. K. Miller-Cushon[*], K. C. Horvath, G. E. Dahl and J. Laporta, Department of Animal Sciences, University of Florida, Gainesville

79 9 **Factors associated with the occurrence of stillborn calves.**
*M. I. Chavez[*1], M. A. Mellado[2], E. Carrillo[3] and J. E. Garcia[2], [1]Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico, [2]Universidad Autonoma Agraria Antonio Narro, Saltillo, Mexico, [3]Instituto Tecnologico de Torreon, Torreon, Mexico*

80 10 **Reducing heat stress in calf hutches using reflective covers: Optical properties and implications.**
*T. H. Friend[*1] and L. Y. Carrillo[2], [1]Texas A&M University, College Station, [2]NASA Johnson Space Center, Houston, TX*

81 11 **Sprinkler system in a holding pen: Behavioral responses of dairy cows during the subsequent grazing.**
*S. V. Matarazzo[*1], D. S. Mello[1], L. M. de Toledo[2], I. Arcaro Júnior[2] and S. A. D. A. Fernandes[3], [1]State University of Santa Cruz, Ilhéus, Brazil, [2]Animal Science Institute, Nova Odessa, SP, Brazil, [3]University of Southwest of Bahia, Itapetinga, BA, Brazil*

82 12 **Evaluation of alternative flooring surfaces for dairy goats.**
M. A. Sutherland[*], G. L. Lowe, C. M. Ross, D. Rapp and G. A. Zobel, AgResearch Ltd, Hamilton, New Zealand

83 13 **Risk factors associated with lameness severity in feedlot cattle.**
*S. Marti[1,2], E. D. Janzen[1], K. Orsel[1], M. J. Jelinski[3], L. C. Dorin[3], E. Pajor[1], J. K. Shearer[4], S. T. Millman[5], J. F. Coetzee[6], D. U. Thomson[7] and K. S. Schwartzkopf-Genswein[*2], [1]University of Calgary, AB, Canada, [2]Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]Veterinary Agri-Health Services, Airdrie, AB, Canada, [4]Iowa State University, Ames, [5]Department of Veterinary Diagnostic & Production Animal Medicine, Iowa State University, Ames, [6]Pharmacology Analytical Support Team, Iowa State University College of Veterinary Medicine, Ames, [7]Department of Diagnostic Medicine/Pathobiology, Kansas State University, Manhattan*

84 14 **Assessment of acute pain during and after knife and band castration following a single dose of Meloxicam in 1 week old beef calves.**
*D. M. Melendez[1,2], S. Marti[1,2], E. D. Janzen[1], D. Moya[1,2], D. R. Soares[1,2], E. A. Pajor[1] and K. S. Schwartzkopf-Genswein[*2], [1]University of Calgary, AB, Canada, [2]Agriculture and Agri-Food Canada, Lethbridge, AB, Canada*

85 15 **Effect of castration method and analgesia on inflammation and behavior in feedlot cattle.**
*S. L. Roberts[*1], H. D. Hughes[1], J. G. Powell[2] and J. T. Richeson[1], [1]Department of Agricultural Sciences, West Texas A&M University, Canyon, [2]Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville*

86 16 **A systematic review-meta-analysis of castration and welfare indicators in beef cattle.**
*M. E. A. Canozzi[1], A. Mederos[2], D. Zago[1], G. R. Pereira[1] and J. O. Barcellos[*1], [1]NESPRO/UFRGS - Federal University of Rio Grande do Sul, Porto Alegre, Brazil, [2]National Research Institute for Agriculture, Tacuarembo, Uruguay*

87 17 **Blocking the steer's view of people during restraint in a squeeze chute results in calmer behavior.**
*M. L. P. Lima[*1], R. Woiwode[2], C. C. P. Paz[3,4] and T. Grandin[2], [1]Instituto de Zootecnia, Sertãozinho, Brazil, [2]Colorado State University, Fort Collins, [3]Universidade de Sao Paulo, Faculdade de Medicina de Ribeirao Preto - Departamento de Genetica (USP/FMRP), Ribeirao Preto-SP, Brazil, [4]SAA/APTA/Instituto de Zootecnia-Centro de Bovinos de Corte, Sertaozinho-SP, Brazil*

88 18 **Effect of different hydraulic squeeze chute and cattle breed on behavior of steer during restraining in feedyard facilities.**
*M. L. P. Lima[*1], R. Woiwode[2], C. C. P. Paz[3,4] and T. Grandin[2], [1]Instituto de Zootecnia, Sertãozinho, Brazil, [2]Colorado State University, Fort Collins, [3]Universidade de Sao Paulo, Faculdade de Medicina de Ribeirao Preto - Departamento de Genetica (USP/FMRP), Ribeirao Preto-SP, Brazil, [4]SAA/APTA/Instituto de Zootecnia-Centro de Bovinos de Corte, Sertaozinho-SP, Brazil*

89 19 **Movement and spatial proximity patterns of rangeland-raised Raramuri Criollo cow-calf pairs.**
*S. Nyamurekung'e[1], A. Cibils[1], R. Estell[*2], A. Gonzalez[2], O. Roacho-Estrada[3] and F. A. Rodríguez-Almeida[3], [1]New Mexico State University, Las Cruces, [2]Jornada Experimental Range, Las Cruces, [3]Universidad Autonoma de Chihuahua, Mexico*

90 20 **Effects of predation on cortisol and progesterone levels in gestating ewes.**
*M. Ward[*1], A. F. Summers[2], S. Roscano[1], J. Beard[1], S. A. Soto-Navarro[1] and D. M. Hallford[2], [1]New Mexico State University, Las Cruces, [2]Animal and Range Science Department, New Mexico State University, Las Cruces*

91 21 **Feeding and watering behavior of Nellore bulls fed with or without calcium, phosphorus and trace minerals supplemental sources.**
*D. Zanetti[*1], L. A. Godoi[2], M. M. Estrada[2], F. A. S. Silva[2], L. F. Prados[2], T. E. Engle[3] and S. C. Valadares Filho[4], [1]Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, [2]Universidade Federal de Viçosa, Viçosa, Brazil, [3]Colorado State University, Fort Collins, [4]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil*

92 22 **Effects of ventilation and water misting on the physiological response of pigs kept in a stationary trailer before unloading.**
*T. Pereira[1], N. Devillers[2], R. Sommavilla[3], R. Friendship[4], F. Guay[5], F. Dalla Costa[6], E. A. Titto[7] and L. Faucitano[*8], [1]University of Sao Paulo, Pirassununga, Brazil, [2]Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, [3]Agriculture & Agrifood Canada, Sherbrooke, QC, Canada, [4]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [5]Universite Laval, Quebec City, QC, Canada, [6]Universida Estadual Paulista, Jaboticabal, Brazil, [7]University of São Paulo. School of Animal Science and Food Engineering, Pirassununga, Brazil, [8]Agriculture and Agri-Food Canada, Sherbrooke, QC, Canada*

93 23 **Increased intake of tannin-rich sainfoin (Onobrychis viciifolia) pellets by parasitized and non-parasitized sheep after a period of conditioning.**
*M. Costes-Thiré[*1], J. J. Villalba[2], H. Hoste[3] and C. Ginane[4], [1]INRA Clermont-Ferrand/Theix, St Genès-Champanelle, France, [2]Utah State University, Logan, [3]UMR 1225 INRA DGER, 23 Chemin des Capelles, Toulouse, France, [4]Institut National de la Recherche Agronomique (INRA), St-Genès-Champanelle, France*

742 24 **Mitigation of variability in feeding patterns between competitively-fed dairy cows through increased feed delivery frequency.**
R. E. Crossley[*], A. Harlander and T. J. DeVries, Department of Animal Biosciences, University of Guelph, ON, Canada

Production, Management and the Environment: Health and Welfare

1208 25 **Effects of pre- and postpartum supplementation of ruminally protected polyunsaturated fatty acids on reproductive performance of suckled beef cows.**
*P. L. P. Fontes[*1], N. Oosthuizen[1], F. M. Ciriaco[1], D. D. Henry[1], M. E. Garcia-Ascolani[1], V. R. G. Mercadante[2], N. DiLorenzo[3] and G. C. Lamb[1], [1]University of Florida, North Florida Research and Education Center, Marianna, [2]Virginia Polytechnic Institute and State University, Blacksburg, [3]University of Florida, Marianna*

1209 26 **The effect of straw bedding on dry matter intake and residual feed intake ranking in yearling bulls.**
*J. B. Hall[1,2], M. C. Roberts Lew[*1] and W. K. Smith[1], [1]University of Idaho Nancy M. Cummings Research, Extension Education Center, Carmen, [2]Department of Animal & Veterinary Sciences, University of Idaho, Moscow*

1210 27 **Management of dairy bull calves on U.S. dairy operations.**
*C. B. Shivley[*1,2], N. Urie[1,2] and J. E. Lombard[1], [1]USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, [2]Colorado State University, Fort Collins*

1211 28 **Assessment of different bedding systems for lactating cows in freestall housing.**
*H. Su[*1], N. M. Esser[2], W. K. Coblentz[3], M. A. Borchardt[3], W. Jokela[3] and M. Akins[1], [1]University of Wisconsin-Madison, [2]University of Wisconsin, Marshfield, [3]US Dairy Forage Research Center, Marshfield, WI*

1212 29 **Management practices related to the welfare of dairy heifer calves on U.S. dairy operations.**
*C. B. Shivley[*1,2], N. Urie[1,2] and J. E. Lombard[1], [1]USDA:APHIS:VS:Center for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, CO, [2]Colorado State University, Fort Collins*

1213 30 **Performance and health of calves pre- and post-weaning when fed pasteurized whole milk and whole milk supplemented with differing milk replacer protein sources.**
*D. Ziegler[*1], H. Chester-Jones[1], D. L. Cook[2], J. L. Olson[2] and S. M. McCusker[2], [1]University of Minnesota Southern Research and Outreach Center, Waseca, [2]Milk Products, Chilton, WI*

1214 31 **Performance and health of calves pre- and post-weaning when fed milk replacers formulated with alternative protein sources.**
*H. Chester-Jones[*1], D. Ziegler[1], R. Blome[2] and D. Wood[2], [1]University of Minnesota Southern Research and Outreach Center, Waseca, [2]Animix, Juneau, WI*

1215 32 **Performance and health of calves pre- and post-weaning when fed milk replacer supplemented with algae.**
*D. Schimek[*1], B. Ziegler[1], D. Ziegler[2] and H. Chester-Jones[2], [1]Hubbard Feeds Inc., Mankato, MN, [2]University of Minnesota Southern Research and Outreach Center, Waseca*

1216 33 **Evaluation of the efficacy of a copper sodium hypochlorite footbath and a 5% copper sulfate footbath on the control of digital dermatitis lesions.**
B. A. Wadsworth[*], J. D. Clark and J. M. Bewley, University of Kentucky, Lexington

1217 34 **Comparison of DX613 copper sulfate acidifier to a 5% copper sulfate footbath for prevention of digital dermatitis lesions in dairy cattle.**
H. B. Reichenbach[*], B. A. Wadsworth, J. D. Clark and J. M. Bewley, University of Kentucky, Lexington

1218 35 **Northeast dairy herd characteristics: Transition cow management strategies, performance, culling, and health.**
*A. B. Lawton[*1], W. S. Burhans[1], D. V. Nydam[2], M. Tetreault[3] and T. R. Overton[1], [1]Cornell University, Department of Animal Science and Pro-Dairy, Ithaca, NY, [2]Cornell University, Department of Population Medicine and Diagnostic Sciences, Ithaca, NY, [3]Poulin Grain Inc., Newport, VT*

1219 36 **Facilities, management, and animal factors associated with heifer culls in New York State dairy farms.**
B. D. Scott[*] and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

1220 37 **Facilities, management, and animal factors associated with primiparous cows postpartum herd exit risk in New York state dairy farms.**
B. D. Scott[*] and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

1221 38 **Facilities, management, and animal factors associated with calf losses in New York state dairy farms.**
B. D. Scott[*] and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

1222 39 **Seasonal effects on milk yield and somatic cell score in organic dairy farms from the Northeast United States.**
*J. G. B. Galvão Jr.[*1], A. F. Brito[2], A. H. N. Rangel[3] and J. B. A. Silva[4], [1]Federal Institute of Science, Education,and Technology of Rio Grande do Norte, Ipanguaçu, Brazil, [2]University of New Hampshire, Durham, [3]Federal University of Rio Grande do Norte, Natal, Brazil, [4]Universidade Federal do Semi-arido, Mossoro, Brazil*

1223 40 **Argentina Veterinarian preferences to devise a mastitis control plan: A conjoint analysis approach.**
*C. Vissio[1,2], M. Richardet[1,2], C. Bonetto[3], P. Turiello[*1] and A. Larriestra[1], [1]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Argentina, [2]CONICET, Rio Cuarto, Argentina, [3]IAP Ciencias Basicas y Aplicadas, UNVM, Villa Maria, Argentina*

1224 41 **A model to estimate losses due to bovine mastitis for Argentinian dairy herds.**
*M. Richardet[1,2], H. Solari[3,4], C. Vissio[*1,2], J. Bartolome[5], G. Bo[6], P. Turiello[2], C. Bogni[7] and A. Larriestra[2], [1]CONICET, Rio Cuarto, Argentina, [2]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Argentina, [3]CONICET, Buenos Aires, Argentina, [4]Facultad de Ciencias Exactas, Fisicas y Naturales, UBA, Buenos Aires, Argentina, [5]Facultad de Ciencias Veterinarias, UNLPam, General Pico, Argentina, [6]IAP Ciencias Basicas y Aplicadas, UNVM, Villa Maria, Argentina, [7]Facultad de Ciencias Exactas, Físico-Químicas y Naturales, UNRC, Rio Cuarto, Argentina*

1225 42 **Effects of oral calcium formate supplementation in peripartum dairy cows.**
*E. W. Carneiro[1], E. E. Ichikawa[2], D. M. V. F. Carneiro[3] and R. D. Almeida[*1], [1]Universidade Federal do Paraná, Curitiba, Brazil, [2]Bayer HealthCare, São Paulo, Brazil, [3]Instituto Federal Catarinense, Araquari, Brazil*

1226 43 **Effect of prenatal and lactating cow trace mineral source on Angus and Brangus calf acute phase protein response to a weaning stressor.**
*D. M. Price[*1], K. G. Arriola[2], K. K. Arellano[3], M. M. O'Neil[1], W. B. Watson III[1], D. M. Irsik[3], D. O. Rae[3], M. J. Hersom[1] and J. V. Yelich[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Department of Animal Sciences, UF/IFAS, Gainesville, FL, [3]College of Veterinary Medicine, University of Florida, Gainesville*

Animal Health: Monogastric

182 44 **Short chain nitrocompounds treatment of poultry excreta: *In vitro* survivability of Salmonella, E. coli and nitrogen metabolism.**
*C. Arzola-Alvarez[*1], J. Corrales[1], O. Ruiz-Barrera[1], R. C. Anderson[2], M. E. Hume[2], Y. Castillo-Castillo[3], A. Corral-Luna[1], J. L. Guevara-Valdez[1], J. Salinas[4] and C. Rodriguez-Muela[1], [1]Universidad Autonoma de Chihuahua, Mexico, [2]USDA/ARS, College Station, TX, [3]Universidad Autonoma de Ciudad Juarez, Cd. Juarez, Chihuahua, Mexico, [4]Universidad Autonoma de Tamaulipas, Reynosa, Tamaulipas, Mexico*

183 45 **Effect of protected sodium butyrate on Salmonella spp. excretion in a pig fattening unit.**
*M. Puyalto[*1], C. Sol[1], J. J. Mallo[1], S. Andrés-Barranco[2], A. Casanova-Higes[2] and R. C. Mainar-Jaime[3], [1]NOREL S.A., Madrid, Spain, [2]Unidad de Produccion y Sanidad Animal, Centro de Investigacion y Tecnologia Agroalimentaria de Aragon, Universidad de Zaragoza-CITA, Zaragoza, Spain, [3]Departamento de Patología Animal. Facultad de Veterinaria, Instituto Agroalimentario de Aragón, Universidad de Zaragoza - CITA, Zaragoza, Spain*

184 46 **Study of genetic basis of immune response in gilts vaccinated with a modified live PRRS virus in a swine farm from southern Sonora Mexico.**
*P. Luna-Nevarez[*1], M. Pavlovich-Sotomayor[1], R. I. Luna-Ramirez[1], C. M. Aguilar-Trejo[1], G. Luna-Nevarez[1], X. Zeng[2], S. E. Speidel[2], R. M. Enns[2] and M. G. Thomas[2], [1]Instituto Tecnologico de Sonora, Ciudad Obregon Sonora, Mexico, [2]Department of Animal Sciences, Colorado State University, Fort Collins*

Ruminant Nutrition: Minerals II

1544 47 **Influence of supplementary zinc and chromium-amino acid complexes on growth performance and carcass characteristics of finishing cattle fed zilpaterol hydrochloride.**
*R. Barajas[*1], M. E. Branine[2], C. K. Larson[2] and B. J. Cervantes[3], [1]FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico, [2]Zinpro Corporation, Eden Prairie, MN, [3]Ganadera los Migueles, S.A. de C.V., Culiacán, Mexico*

1545 48 **Effect of peripartum source of dietary calcium and magnesium, and postpartum level of magnesium, on dry matter intake, performance and plasma minerals in multiparous Holstein cows.**
*B. M. Leno[*1], S. E. Williams[1], C. M. Ryan[1], D. Briggs[2], M. Crombie[3] and T. R. Overton[1], [1]Cornell University, Department of Animal Science, Ithaca, NY, [2]Papillon Agricultural Company, Inc., Easton, MD, [3]MIN-AD, Inc., Winnemucca, NV*

1546 49 **Effects of mineral supplementation on pre- and postpartum primiparous beef heifer performance and progeny preweaning performance.**
J. Hawley[*], E. B. Kegley and J. G. Powell, Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville

1547 50 **Effects of mineral supplementation on pre- and postpartum primiparous beef heifer mineral status and progeny preweaning mineral status.**
J. Hawley[*], E. B. Kegley and J. G. Powell, Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville

1548 51 **Relative bioavailability of selenium sources for beef cattle.**
M. A. Zanetti[*1], J. S. Silva[2], J. C. D. C. Balieiro[1] and J. A. Cunha[2], [1]University of São Paulo- USP/FZEA, Pirassununga, Brazil, [2]FZEA-USP, Pirassununga, Brazil

1549 52 **Hydroxy trace mineral supplementation lowers proportion of low-quality embryos in postpartum dairy cows.**
*A. H. Souza[*1], C. D. Narciso[2], G. E. Higginbotham[3], E. Martinez[2], R. Ruggeri[2] and E. O. S. Batista[4], [1]Ceva Animal Health, Libourne, France, [2]Sequoia Veterinary Services Inc., Tulare, CA, [3]Micronutrients, Indianapolis, IN, [4]University of Sao Paulo, Pirassununga, Brazil*

1550 53 **Effects of zinc amino acid complex on mammary epithelium and dairy food chemistry.**
*J. E. Shaffer[*1], K. Pandalaneni[1], L. Mamedova[1], J. DeFrain[2], J. K. Amamcharla[1] and B. J. Bradford[1], [1]Kansas State University, Manhattan, [2]Zinpro Corporation, Eden Prairie, MN*

1551 54 **Effects of sulfur on the nutrition value of DDGS for beef cattle.**
L. He[*], China Agricultural University, Beijing, China

1552 55 **Effects of sulfur on the *in vitro* fermentation profile of DDGS.**
L. He[*], China Agricultural University, Beijing, China

Ruminant Nutrition: Forages and Feeds II

1443 56 **Evaluation of use of heat-stable α-amylase for neutral detergent fiber contents by using cellulose standard in filter bags made from different textiles add starch in samples.**
*T. N. P. Valente[*1], E. Detmann[2] and C. Batista Sampaio[3], [1]IFGoiano, POSSE, Brazil, [2]Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil, [3]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil*

1444 57 **Production response of lactating cows to diets based on corn or forage sorghum silage harvested on two dates and supplemented with soybean meal or mechanically pressed cottonseed meal.**
J. K. Bernard[*], S. Tao and T. Smith, University of Georgia, Tifton

1445 58 **Commercial ground corn surface area is better related to rumen disappearance than geometric mean particle size.**
*J. P. Goeser[*1,2], B. Beck[3], T. Koehler[4], D. Tanata[5], E. Reid[6], M. Kirk[7] and R. D. Shaver[1], [1]University of Wisconsin-Madison, [2]Rock River Laboratory, Inc, Watertown, WI, [3]Witmers Feed and Grain, Columbiana, OH, [4]Landmark Cooperative, Cottage Grove, WI, [5]Medford Cooperative, Medford, WI, [6]Cooperative Feed Dealers, Conklin, NY, [7]Masters Choice, Anna, IL*

1446 59 **Effect of steam flake and ground corn with different particle size on dairy cow performance with high concentrate diet.**
G. R. Ghorbani[*], F. Ahmadi and M. Haidary, Isfahan University of Technology, Isfahan, Islamic Republic of Iran

1447 60 **Effect of diastatic power and processing index on the feed value of barley grain for finishing feedlot cattle.**
*G. O. Ribeiro Jr.[*1], M. L. Swift[2] and T. A. McAllister[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Hi-Pro Feeds, Okotoks, AB, Canada*

1448 61 **Heating of ensiled high moisture corn and aerobic loss of volatile organic compounds are delayed by inoculation with Lactobacillus buchneri.**
S. Qi, W. Rutherford, B. Smiley, B. Harman and F. Owens[*], DuPont Pioneer, Johnston, IA

1449 62 **Liver gluconeogenesis in young bulls fed different levels of crude glycerin.**
*M. M. Ladeira[*1], J. R. R. Carvalho[1], P. D. Teixeira[1], J. C. O. Dias[2], T. R. Gionbelli[1], A. C. Rodrigues[1] and D. M. Oliveira[3], [1]Universidade Federal de Lavras, Brazil, [2]IFNMG, Salinas, Brazil, [3]Universidade Estadual do Mato Grosso do Sul, Aquidauana, Brazil*

1450 63 **Starch digestibility by lactating cows fed flint or dent corn silage stored two or six months prior to feeding.**
*A. Laflotte[1], L. Aubry[2], B. Mahanna[3] and F. Owens[*3], [1]U. Lorraine, Nancy, France, [2]DuPont Pioneer, Aussonne, France, [3]DuPont Pioneer, Johnston, IA*

1451 64 **Ruminal *in situ* degradability and *in vitro* organic matter digestibility of peanut hulls under different incubation times with calcium oxide.**
*F. M. Ciriaco[*1], D. D. Henry[1], R. Beierbach[2], T. M. Schulmeister[1], M. Ruiz-Moreno[1], M. E. Garcia-Ascolani[1], N. Oosthuizen[1], P. L. P. Fontes[1], G. C. Lamb[1] and N. DiLorenzo[1], [1]University of Florida, North Florida Research and Education Center, Marianna, FL, [2]Instituto Nacional de Tecnología Agropecuaria (INTA), EEA Anguil, Anguil, Argentina*

1452 65 **A comparison of Lacto-Whey to soybean meal in continuous cultures fed corn- or wheat-based diets.**
*J. L. Firkins[1], B. K. Wagner[*1], J. E. Plank[1], B. A. Wenner[1] and G. Poppy[2], [1]The Ohio State University, Columbus, [2]Fermented Nutrition Corporation, St, Luxemburg, WI*

1453 66 **Glucose precursor supplementation in Holstein and Jersey cows as a preventative treatment for ketosis in the transition period.**
K. E. Mitchell[*], University of California-Davis

1454 67 **Manipulation of lactating dairy cows diets using reduced-fat distillers grains, corn oil and calcium sulfate to reduce methane production measured by indirect calorimetry.**
*J. V. Judy[*1], T. M. Brown-Brandl[2], S. C. Fernando[1] and P. J. Kononoff[1], [1]University of Nebraska-Lincoln, [2]USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE*

1455 68 **Effect of particle size of a mash concentrate on behavior, rumen fermentation, and macroscopic and microscopic lesions of the digestive tract in Holstein bulls fed a high-concentrate diet.**
*M. Devant[*1], B. Quintana[2], A. Sole[2] and A. Bach[3,2], [1]IRTA - Department of Ruminant Production, Caldes De Montbui, Spain, [2]IRTA, Caldes Montbui, Spain, [3]ICREA, Barcelona, Spain*

Poster Session XI

1:00 PM - 2:00 PM
Exhibit Hall A/B

Dairy Foods Division: Dairy Chemistry II

522 1 **Prediction of intact casein in cheese by using amaltheys: A front-face fluorescence analyzer.**
*Z. Liu[*1], K. Sajith Babu[1], A. Coutouly[2], F. Allouche[2] and J. K. Amamcharla[1], [1]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan, [2]Spectralys Innovation, Romainville, France*

523 2 **Changes of the state of calcium and protein in low fat and full fat processed cheese during cheese making.**
*N. Shirashoji[*1,2], H. Aoyagi[2], T. Abe[1] and M. Ikeda[1], [1]Food Research & Development Laboratory, Morinaga Milk Industry Co., Kanagawa, Japan, [2]Life Sciences and Bioengineering, Graduate School of Life and Environmental Sciences, University of Tsukuba, Ibaraki, Japan*

524 3 **Effect of selenium fortification on mozzarella cheese quality.**
K. L. Peng, J. X. Liu and D. X. Ren[*], Institute of Dairy Science, College of Animal Science, Zhejiang University, Hangzhou, China

525 4 **Relationship between the yield of mozzarella cheese of buffalo's milk, milk quality and the recovery of constituents in whey.**
*D. C. Sales[1], A. H. N. Rangel[1], J. G. B. Galvão Júnior[*2], L. H. F. Borba[1], A. R. Freitas[3] and E. O. Moura[1], [1]Federal University of Rio Grande do Norte, Natal, Brazil, [2]University of New Hampshire, Durham, [3]Brazilian Agricultural Research Corporation (Embrapa), São Paulo, Brazil*

526 5 **Transmission Electron Microscopy (TEM) identifies major microstructural changes in soft Feta cheese.**
*A. H. Vollmer[*1], D. J. McMahon[1], J. C. Grande[2] and N. N. Youssef[1], [1]Western Dairy Center, Utah State University, Logan, [2]Analytical Sciences Laboratory, GE Global Research, Niskayuna, NY*

527 6 **Performance shelf life extension of LMPS Mozzarella using high pressure treatment and low temperature storage.**
*L. A. Jiménez-Maroto[*1], S. Govindasamy-Lucey[2], J. J. Jaeggi[2], M. E. Johnson[2] and J. A. Lucey[1,2], [1]University of Wisconsin-Madison, [2]Wisconsin Center for Dairy Research, Madison, WI*

528 7 **Hydrolysis of phosphates with a different chain length in water, milk and calcium caseinate.**
W. H. Viotto[*] and D. Maus, University of Campinas, Brazil

529 8 **Water mobility, texture and composition of "REQUEIJÃO CREMOSO" manufactured with polyphosphates of different chain lengths.**
W. H. Viotto[*] and V. R. Dias, University of Campinas, Brazil

530 9 **Effect of carbon dioxide injection on protein interaction to reduce viscosity of high solids skim milk concentrates.**
*H. Dahiya[*1], L. Metzger[1] and H. A. Patel[2], [1]South Dakota State University, Brookings, [2]Land O'Lakes Inc., Arden Hills, MN*

531 10 **Hauling and receiving practices at dairy processing facilities.**
E. Kuhn[*], J. Waite-Cusic and L. Goddik, Oregon State University, Corvallis

532 11 **Comparing Fluorescent and Light-emitting Diode (LED) Retail Lighting Effects on Consumer Acceptability of Fluid Milk.**
S. Duncan[*], H. Potts and K. N. Amin, Virginia Polytechnic Institute and State University, Blacksburg

533 12 **Effect of various storage conditions on the stability of Sulphonamides in raw milk.**
*M. Chen[1,2], F. Wen[1,2], H. Wang[3], N. Zheng[1,2] and J. Q. Wang[*1,2], [1]Ministry of Agriculture Laboratory of Quality & Safety Risk Assessment for Dairy Products , Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China, [3]College of Animal Science and Technology, Yangzhou University, Yangzhou, China*

534 13 **Effect if pH on the hydrolysis of sodium polyphosphates in different dairy matrices.**
W. H. Viotto and A. P. Barth, University of Campinas, Brazil*

535 14 **NIR technology as a process analytical tool for cheese inspection.**
W. H. Viotto, D. F. Barbin and C. Karaziack, University of Campinas, Brazil*

536 15 **Extraction of phospholipids from procream using supercritical carbon dioxide and ethanol as a modifier.**
B. Li[*1], Z. Linghu[1], F. Hussain[1], S. J. Smith[2] and J. K. Amamcharla[1], [1]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan, [2]Kansas State University, Manhattan*

537 16 **Evaluation of Sol-Gel non-stick surface modification in dairy thermal processing.**
Z. Liu[*1], J. K. Amamcharla[1] and L. Metzger[2], [1]Food Science Institute, Animal Sciences and Industry, Kansas State University, Manhattan, [2]South Dakota State University, Brookings*

538 17 **Foaming and baking properties of MPC and egg white protein mixtures.**
V. Hor and B. Vardhanabhuti, University of Missouri, Columbia*

539 18 **The effect of emulsifying salts on the turbidity of a diluted milk system with varying pH and protein concentration.**
M. Culler, Y. Saricay and F. M. Harte, The Pennsylvania State University, University Park*

540 19 **Effect of high pressure jet processing on the rheological properties of ice cream mix.**
M. Tran, D. R. Roberts and F. M. Harte, The Pennsylvania State University, University Park*

541 20 **Fat reduction in ice cream and its effect on physical structure and consumer acceptability.**
M. L. Rolon, A. J. Bakke, J. N. Coupland, J. E. Hayes and R. F. Roberts, The Pennsylvania State University, University Park*

712 20 **Oxygen barrier and light interference packaging properties for controlling light-induced oxidation in milk.**
H. Potts, S. Duncan, M. L. Johnson, S. F. O'Keefe, J. E. Marcy and K. Mallikarjunan, Virginia Polytechnic Institute and State University, Blacksburg*

Physiology and Endocrinology: Estrus and Estrous Cycle Control

1055 22 **WS** **Comparisons of two short duration estrous synchronization protocols on pregnancy rates to fixed-time AI.**
J. B. Hall[*1] and M. C. Roberts-Lew[2], [1]Department of Animal & Veterinary Sciences, University of Idaho, Moscow, [2]University of Idaho Nancy M. Cummings Research, Extension Education Center, Carmen*

1056 23 **WS** **Effect of prostaglandin administration after ram exposure on ewe reproductive efficiency.**
S. L. Rosasco, J. K. Beard, M. C. Herrington, D. M. Hallford and A. F. Summers, Animal and Range Science Department, New Mexico State University, Las Cruces*

1057 24 **The association between Anti-Mullerian Hormone concentrations, antral follicle count and fertility measures in dairy cows.**
M. Gobikrushanth[*1], P. A. Dutra[1], C. A. Felton[2], A. Ruiz-Sanchez[1], T. C. Bruinjé[1], M. G. Colazo[2], S. Butler[3] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada, [3]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland*

1058 25 **Natural patterns of early postpartum luteal activity and their association with insemination outcomes in dairy cows.**
T. C. Bruinjé[*1], M. Gobikrushanth[1] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada*

1059 26 **Circulating LH concentrations after intravaginal instillation of GnRH in lactating dairy cows.**
R. Wijma, M. L. Stangaferro, M. A. Elmetwally, F. Amovilli and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY*

1060 27 **Effect of dose and timing of prostaglandin $F_{2\alpha}$ treatments during a Resynch protocol on luteal regression and fertility to timed artificial insemination in lactating Holstein cows.**
R. V. Barletta, P. D. Carvalho, L. F. Mello, M. Luchterhand, C. E. Consentini, A. L. Jones, A. S. Netto and P. M. Fricke, Department of Dairy Science, University of Wisconsin-Madison*

1061 28 **Fertility of lactating Holstein cows after synchronization of ovulation and timed artificial insemination versus artificial insemination after detection of estrus at a similar DIM range.**
V. G. Santos[1], P. D. Carvalho[1], C. Maia[2], B. Carneiro[2], A. Valenza[3] and P. M. Fricke[*1], [1]Department of Dairy Science, University of Wisconsin-Madison, [2]Diessen Servicos Veterinarios Lda, Evora, Portugal, [3]Ceva Animal Health, Libourne, France*

1062 29 **Increasing estrus expression in lactating dairy cows.**
J. A. Sauls, B. E. Voelz, S. L. Hill and J. S. Stevenson, Kansas State University, Manhattan*

1063 30 **The characterization of estradiol concentration prior to insemination and its effect on fertility in dairy cattle.**
M. Gobikrushanth[*1], P. A. Dutra[1], C. A. Felton[2], T. C. Bruinjé[1], M. G. Colazo[2], S. Butler[3] and D. J. Ambrose[1,2], [1]Department of Agricultural Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada, [3]Animal & Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork, Ireland*

1064 31 **Resynchronization of ovulation strategies including or not including GnRH treatment before non-pregnancy diagnosis.**
R. Wijma, M. L. Stangaferro, M. Masello, G. E. Granados and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY*

1065 32 **Effects of modification of proestrus length and duration of progesterone exposure on automated measurements of estrous expression in lactating Holstein cows.**
B. F. Silper, T. A. Burnett, P. F. M. P. Souto, M. S. Baylao, A. P. O. Santos and R. L. A. Cerri, Applied Animal Biology, Faculty of Land and Food Systems, University of British Columbia, Vancouver, BC, Canada*

1066 33 **Effect of GnRH removal at CIDR insertion in the 5 day CO-Synch + CIDR ovulation synchronization protocol on ovarian function in beef cows.**
T. M. Grussing[*1], T. C. Grussing[2] and P. J. Gunn[1], [1]Department of Animal Science, Iowa State University, Ames, [2]Department of Animal Science, South Dakota State University, Brookings*

1067 34 **Effect of eCG and P4 level in timed AI programs in bos indicus and bos indicus x bos taurus heifers.**
A. D. P. Rodrigues[*1], R. F. G. Peres[1], M. L. Day[2] and J. L. M. Vasconcelos[1], [1]Departamento de Produção Animal - FMVZ - UNESP, Botucatu, Brazil, [2]Department of Animal Science, University of Wyoming, Laramie*

Animal Health: Dairy Cattle II

138 35 **Fecal microbial shifts of the german Holstein dairy cows with left-sided displacement of the abomasum.**
M. K. Shim[*1], B. R. Kim[2], J. W. Shin[2], S. H. Hong[1] and H. B. Kim[2], [1]Dankook University, Cheonan, The Republic of Korea, [2]Department of Animal Resource & Science, Dankook University, Cheonan, The Republic of Korea*

139 36 **Genetic parameters and impact of post-partum diseases on lactation curves in dairy cattle.**
H. Jeong[*1], D. Gonzalez-Pena[2], T. M. Goncalves[1], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[7], R. Chebel[4], K. N. Galvão[8], C. M. Seabury[9], W. W. Thatcher[10] and S. L. Rodriguez Zas[1], [1]University of Illinois at Urbana-Champaign, [2]Zoetis, Kalamazoo, MI, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin-Madison, [7]Cornell University, Ithaca, NY, [8]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [9]Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

140 37 **Genetic and environmental components of disease traits in dairy cattle.**
T. M. Goncalves[*1], D. Gonzalez-Pena[2], H. Jeong[1], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[7], R. Chebel[4], K. N. Galvão[8], C. M. Seabury[9], W. W. Thatcher[10] and S. L. Rodriguez Zas[1], [1]University of Illinois at Urbana-Champaign, [2]Zoetis, Kalamazoo, MI, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin-Madison, [7]Cornell University, Ithaca, NY, [8]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [9]Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

141 38 **Undernutrition alters metabolic responses to acute inflammation in early lactation cows.**
J. A. A. Pires[*1], K. Pawlowski[1], J. Rouel[1], C. Delavaud[1], G. Foucras[2], P. Rainard[3], P. Germon[3] and C. Leroux[1], [1]UMR1213 Herbivores, INRA, VetAgroSup, Saint-Genes-Champanelle, France, [2]UMR1225 IHAP, INRA, Toulouse, France, [3]UMR1282 ISP, INRA, Nouzilly, France*

142 39 **Potential modulation of the toxic effects of Escherichia coli in bovine endometrium by lactic acid bacteria.**
S. Genís[*1], A. Sánchez-Chardi[2], A. Bach[3,4] and A. Arís[1], [1]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [2]Servei de Microscopia, UAB, Cerdanyola del Valles, Spain, [3]ICREA, Barcelona, Spain, [4]IRTA, Caldes de Montbui, Spain*

754 40 **Meta-analysis of factors influencing new intramammary infection rate in natural exposure teat dip efficacy trials.**
B. D. Enger[*1], R. R. White[1], S. C. Nickerson[2] and L. K. Fox[3], [1]Virginia Polytechnic Institute and State University, Blacksburg, [2]University of Georgia, Athens, [3]Washington State University, Pullman*

Nonruminat Nutrition: Feed Additives II

1011 41 **Changes in pH of digestive tract and cecal microflora composition in broilers fed with probiotic and prebiotic supplementation (SynerAll).**
A. Ipek and A. Sozcu, Uludag University, Faculty of Agriculture, Department of Animal Science, Bursa, Turkey*

1012 42 **Effecfs of dietary inclusion of probiotic and prebiotic (SynerAll) on growth performance and serum biochemical parameters in broiler.**
A. Ipek[*1], A. Sozcu[1] and V. Akay[2], [1]Uludag University, Faculty of Agriculture, Department of Animal Science, Bursa, Turkey, [2]Global Nutritech Biotechnology LLC, Richmond, VA*

1013 43 **Changes in pH of digestive tract and cecal microflora composition in broilers fed with probiotic and prebiotic supplementation, SynerAll.**
A. Ipek and A. Sozcu, Uludag University, Faculty of Agriculture, Department of Animal Science, Bursa, Turkey*

1014 44 **Supplementation of chestnut tannins in artificially infected weaned piglets.**
G. Bee, S. Thanner, G. Marion and A. Gutzwiller, Agroscope Institute for Livestock Sciences, Posieux, Switzerland*

1015 45 **Curcumin prevents hepatotoxic effects of Aflatoxin B1 associated with inhibition of cytochrome P450 isozymes genes in chick liver.**
L. Sun, N. Zhang, M. Zhu, L. Zhao and D. Qi, College of Animal Science and Technology, Huazhong Agricultural University, Wuhan, China*

1016 46 **Effects of humic acids supplementation on pig growth performance, Nitrogen digestibility, odor and ammonia emission.**
C. H. Ponce[*1], C. Arteaga[2] and A. Flores[2], [1]Escuela de Medicina Veterinaria, Colegio de Ciencias de la Salud, Universidad San Francisco de Quito USFQ, Quito, Ecuador, [2]Departamento de Ciencias de la Vida y Agricultura, Universidad de las Fuerzas Armadas ESPE, Sangoloqui, Ecuador*

1017 47 **A standardized blend of capsicum and turmeric oleoresins given during late gestation improves performance of sows vaccinated against E. coli.**
C. Oguey[*1], I. Riu[2], C. Quintilla[3] and S. Lopez[4], [1]Pancosma, Geneva, Switzerland, [2]Avena Nutrició, La Garriga, Spain, [3]Copinsa, Altorrican, Spain, [4]Pancosma SA, Le Grand Saconnex, Switzerland*

1018 48 **Evaluation of biodegraded and undegraded plantain peels as replacement to wheat offal in broiler production.**
F. A. Aderemi[*1], O. M. Alabi[2] and A. Awe[2], [1]Bowen, Ibadan, Nigeria, [2]Bowen University, Iwo, Nigeria*

1019 49 **Effect of lysophospholipids supplementation in different energy diets on growth performance, nutrient digestibility, milk composition, litter performance and fecal score in lactating sows.**
P. Y. Zhao, S. O. Jung, I. C. Hwang, B. R. Kim, J. W. Shin, M. K. Shim, D. K. Kang, J. Y. Kim, H. B. Kim and I. H. Kim, Department of Animal Resource & Science, Dankook University, Cheonan, South Korea*

1020 50 **Effect of crystalline silicon dioxide in piglet feed on growth performance with different levels of growth promoters.**
Y. Martel-Kennes[*1], J. Lévesque[1] and C. Decaux[2], [1]Centre de Recherche en Sciences Animales de Deschambault, Deschambault, QC, Canada, [2]Ceresco Nutrition, Saint-Urbain-Premier, QC, Canada*

Ruminant Nutrition: Ruminal Fermentation III

1643 51 **Effects of dietary neutral detergent fiber and starch ratio on rumen epithelial cell morphological structure and gene expression in dairy cows.**
L. Ma[1], M. Zhao[1], J. Xu[2], L. Zhao[1] and D. Bu[*1,3,4], [1]State Key Laboratory of Animal Nutrition, Institute of Animal Sciences, Chinese Academy of Agricultural Sciences, Beijing, China, [2]Kunming Institute of Botany, Chinese Academy of Sciences, Kunming, China, [3]Hunan Co-Innovation Center of Animal Production Safety, CICAPS, Changsha, China, [4]CAAS-ICRAF Joint Laboratory of Agroforestry and Sustainable Animal Husbandry, World Agroforestry Centre, East and Central Asia, Beijing, China*

1644 52 **Rumen disappearance of capsaicin and dihydrocapsaicin in lactating dairy cows.**
J. Oh[*1], D. M. Bravo[2], E. H. Wall[2] and A. N. Hristov[1], [1]The Pennsylvania State University, University Park, [2]Pancosma, Geneva, Switzerland*

1645 53 **WS** **Effects of capsaicin source on blood capsaicin, glucose and insulin concentrations, rumen fermentation and nitrogen balance of sheep.**
J. B. Alford[1], J. G. Castro[*1], E. R. Oosthuysen[1], S. L. Rosasco[2], R. D. Richins[1], E. J. Scholljegerdes[1], D. M. Hallford[2] and C. A. Loest[1], [1]New Mexico State University, Las Cruces, [2]Animal and Range Science Department, New Mexico State University, Las Cruces*

1646 54 **Describing aNDFom in-vitro digestion with a multi-compartment model and evaluation of predictions in the CNCPS v7.0 Model.**
A. M. Zontini and M. E. Van Amburgh, Cornell University, Ithaca, NY*

1647 55 **WS** **Mammalian hormones associated with stress impact microbial fermentation of rumen fluid *in vitro*.**
L. L. Rath, K. L. Samuelson, A. L. Salazar, F. A. Lopez, E. J. Scholljegerdes and C. A. Loest, New Mexico State University, Las Cruces*

1648 56 **RNA sequencing reveals differential expression of genes associated with an altered morphology of rumen papillae in lactating dairy cows fed diets with various forage sources.**
B. Wang[1], D. M. Wang[1], M. Liu[1], X. B. Wang[1], L. L. Guan[2] and J. X. Liu[1], [1]Institute of Dairy Science, Zhejiang University, Hangzhou, China, [2]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

1649 57 **Effect of ruminal inoculum from bison or cattle on *in vitro* gas production, feed digestibility and responses to exogenous enzyme supplementation.**
Z. X. He[1,2], G. O. Ribeiro Jr.[1], V. Bremer[3], K. A. Beauchemin[1], T. A. McAllister[1] and W. Z. Yang[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Key Laboratory for Agro-Ecological Processes in Subtropical Region, Hunan Research Center, The Chinese Academy of Sciences, Changsha, China, [3]Elanco Animal Health, Greenfield, IN*

1650 58 **Ruminal fermentation from Nellore steers supplemented with additives in the rainy season.**
E. E. Dalanttonia[1], J. F. Lage[2], E. San Vito[1], P. D. S. Castagnino[3], L. Maneck Delevatti[4], R. A. Reis[5] and T. T. Berchielli[6], [1]Universidade Estadual Paulista Júlio de Mesquita Filho - UNESP, Jaboticabal, Brazil, [2]Trouw Nutrition Brazil, Campinas, Brazil, [3]UNESP JABOTICABAL, Jaboticabal, Brazil, [4]UNESP, Jaboticabal, Brazil, [5]Sao Paulo Satate University, Jaboticabal, Brazil, [6]São Paulo State University - UNESP, Jaboticabal, Brazil*

1651 59 **The micro gas test – a small scale *in vitro* system for high throughput analysis.**
K. Elberg[1], P. Steuer[2], U. Habermann[2], J. Lenz[2], M. Nelles[1,3] and K. H. Südekum[4], [1]Department of Waste Management and Material Flow, University of Rostock, Germany, [2]Senzyme GmbH, Troisdorf, Germany, [3]German Biomass Research Center GmbH, Leibzig, Germany, [4]Institute of Animal Science, University of Bonn, Germany*

1652 60 **Rumen protozoal community structures are not altered in lactating dairy cows offered alternative forage crops during short-term grazing experiments.**
L. M. Cersosimo[1], R. Tacoma[1], S. Greenwood[1], K. Juntwait[2], A. F. Brito[2] and J. Kraft[1], [1]University of Vermont, Burlington, [2]University of New Hampshire, Durham*

1653 61 **Metabolomics analysis reveals effect of corn silage levels on ruminal metabolic profiles in Holstein heifers.**
J. Zhang, H. Shi, Z. Cao, S. Li and Y. Wang, State Key Laboratory of Animal Nutrition, Beijing Engineering Technology Research Center of Raw Milk Quality and Safety Control, College of Animal Science and Technology, China Agricultural University, Beijing, China*

1654 62 **Response of rumen microbiota to diets containing different corn silage levels in Holstein heifers.**
H. T. Shi, Z. J. Cao, S. K. Ji, H. T. Zhang, S. L. Li and Y. J. Wang, State Key Laboratory of Animal Nutrition, Beijing Engineering Technology Research Center of Raw Milk Quality and Safty Control, College of Animal Science and Technology, China Agricultural University, Beijing, China*

1655 63 **Effect of acetate addition and headspace gas composition on *in vitro* production of volatile fatty acids and gases.**
L. M. Judd and R. A. Kohn, The University of Maryland, College Park*

1656 64 **Predicting the time course of ruminal pH from continuous reticular pH measurements.**
D. J. Seymour[1], K. M. Wood[2,3], J. P. Cant[1] and G. B. Penner[2], [1]Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, [3]University of Saskatchewan, Saskatoon, SK, Canada*

1657 65 **Changes in milk production efficiency and ruminal bacterial community composition following near-total exchange of ruminal contents between high- and low-efficiency Holstein cows.**
P. J. Weimer[1], M. S. Cox[2], T. Vieira de Paula[3], M. Lin[4] and G. Suen[2], [1]USDA-ARS, Madison, WI, [2]University of Wisconsin-Madison, [3]Federal University of Mato Grosso, Cuiabá, Brazil, [4]Yangzhou University, Yangzhou, China*

1658 67 **Synergism of cattle and bison inoculum on ruminal fermentation and bacterial communities in an artificial rumen (Rusitec) fed barley straw.**
D. B. Oss[1], G. O. Ribeiro Jr.[2], M. I. Marcondes[1], W. Yang[2], K. A. Beauchemin[2], R. J. Forster[2], V. Bremer[3] and T. A. McAllister[2], [1]Departamento de Zootecnia, Universidade Federal de Viçosa, Brazil, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]Elanco Animal Health, Greenfield, IN*

1659 67 **Effect of peNDF on milk production and composition in goats fed with NNFS replacing alfalfa hay.**
D. Esparza*, R. Rodriguez, F. G. Veliz, O. Angel, T. Arbez and P. Robles-Trillo, Universidad Autonoma Agraria Antonio Narro, Torreon, Mexico

1660 68 **Effects of conventional dietary adaptation over periods of 6, 9, 14 and 21 days on rumen morphometrics of Nellore cattle.**
D. D. Estevam[1], I. C. Pereira[1], A. L. Rigueiro[2], F. T. Pereira[2], C. L. Martins[1], M. D. Arrigoni[1] and D. D. Millen[2], [1]São Paulo State University, Botucatu, Brazil, [2]São Paulo State University, Dracena, Brazil*

Poster Session XII

5:00 PM - 6:00 PM
Exhibit Hall A/B

Breeding and Genetics: Quantitative Traits

360 1 **Genetic parameters and trends for length of productive life and lifetime production efficiency traits in Thai Landrace and Yorkshire sows.**
U. Noppibool[1], M. A. Elzo[*1], S. Koonawootrittriron[2] and T. Suwanasopee[2], [1]University of Florida, Gainesville, [2]Kasetsart University, Bangkok, Thailand*

361 2 **Estimation of genetic parameters on carcass traits and body type measurements in Hanwoo.**
Y. S. Choi[*1], S. W. Kim[1], K. S. Kim[1], D. J. Yu[1], M. J. Ku[1], G. H. Lee[1], S. G. Park[1] and J. W. Lee[2], [1]Livestock Research Institute, Jeollanamdo Agricultural Research & Extension Service, Jeollanamdo, The Republic of Korea, [2]Chonnam National University, Gwangju, The Republic of Korea*

362 3 **Residual feed intake (RFI) for genetic selection of Simmental and Simbrah cattle.**
N. Manzanares-Miranda[*1], J. R. Kawas[2], H. Villalon-Mendoza[2] and G. Moreno-Degollado[2], [1]Universidad Autonoma de Nuevo Leon, Posgrado Conjunto de las Facultades de Agronomia y Medicina Veterinaria y Zootecnia, San Nicolas de los Garza, Mexico, [2]Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico*

363 4 **Multivariate analysis of reproductive and productive traits in Sindhi breed females (Bos indicus).**
R. R.C. Mello[1], L. D. P. Sinedino[*2], S. L.G. Sousa[1] and M. R.B. Mello[1], [1]Federal Rural University of Rio de Janeiro, Seropedica, Brazil, [2]University of Florida, Gainesville*

364 5 **Repeatability of egg weight in Japanese quail.**
O. T. Abanikannda, O. N. Ottun[*] and A. O. Leigh, Lagos State University, Ojo-Lagos, Nigeria*

365 6 **Genetic parameters of cyclicity and other fertility indicators in dairy cattle.**
D. Gonzalez-Pena[*1], H. Jeong[2], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[7], R. Chebel[4], K. N. Galvão[8], C. M. Seabury[9], W. W. Thatcher[10] and S. L. Rodriguez Zas[2], [1]Zoetis, Kalamazoo, MI, [2]University of Illinois at Urbana-Champaign, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin-Madison, [7]Cornell University, Ithaca, NY, [8]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [9]Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

366 7 **Genetic parameters of early lactation diseases in dairy cattle.**
D. Gonzalez-Pena[*1], T. M. Goncalves[2], P. J. Pinedo[3], J. E. P. Santos[4], G. M. Schuenemann[5], G. J. M. Rosa[6], R. O. Gilbert[7], R. C. Bicalho[7], R. Chebel[4], K. N. Galvão[8], C. M. Seabury[9], W. W. Thatcher[10] and S. L. Rodriguez Zas[2], [1]Zoetis, Kalamazoo, MI, [2]University of Illinois at Urbana-Champaign, [3]Colorado State University, Fort Collins, [4]University of Florida, Gainesville, [5]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [6]University of Wisconsin-Madison, [7]Cornell University, Ithaca, NY, [8]Department of Large Animal Clinical Sciences; University of Florida, Gainesville, [9]Texas A&M University, College Station, [10]Department of Animal Sciences, University of Florida, Gainesville*

367 8 **Genetic evaluation of mastitis, metritis, and ketosis in Holstein cattle using producer recorded data.**
G. C. Márquez[*], Y. Zare, K. L. Stephan and K. Olson, ABS Global, DeForest, WI*

368 9 **Genetic evaluation of dairy cow livability.**
J. R. Wright[*] and P. M. VanRaden, Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*

369 10 **Genetic associations between milk production and growth traits in Guzerat breed.**
M. P. M. Gama[*1], H. T. Ventura[2], M. Alencar Pereira[2], L. El Faro[3] and C. C. P. Paz[4], [1]Departamento de Genetica, FMRP-USP, Ribeirao Preto, Brazil, [2]Associação Brasileira de Criadores de Zebu, Uberaba, Brazil, [3]SAA/APTA/ Instituto de Zootecnia-Centro de Bovinos de Corte, Sertãozinho-SP, Brazil, [4]Universidade de Sao Paulo, Faculdade de Medicina de Ribeirao Preto - Departamento de Genetica, Ribeirao Preto-SP, Brazil*

370 11 **Production, reproduction, and health of Holstein, Jersey, and crossbred cattle in a seasonal calving pasture-based dairy.**
K. A. E. Mullen[*] and S. P. Washburn, North Carolina State University, Raleigh*

371 12 **Between and within-lactation repeatabilities for hoof lesions in Canadian Holsteins.**
F. Malchiodi[*1], A. M. Christen[2], D. F. Kelton[3], F. S. Schenkel[1] and F. Miglior[1,4], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]Valacta, Sainte-Anne-De-Bellevue, QC, Canada, [3]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [4]Canadian Dairy Network, Guelph, ON, Canada*

372 13 **Sexed-semen usage for Holstein AI in the United States.**
J. L. Hutchison and D. M. Bickhart, Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD*

373 14 **Effect of semen type (cooled-fresh vs frozen-thawed) on fertility of lactating dairy cows.**
A. H. Souza[*1], H. J. Bessoff[2] and E. Danzeisen[3], [1]Ceva Animal Health, Libourne, France, [2]Dairy Management Solutions, Tulare, CA, [3]Global AG Alliance, Tulare, CA*

374 15 **Subclinical ketosis in the oocyte donors of Holstein X Gir cows.**
R. C. de Souza[*1], R. C. Souza[1], B. C. M. V. Reginaldo[1], G. C. M. V. da Silva[1], C. A. G. Pellegrino[2], M. I. V. Melo[1], J. P. Lustosa[1] and A. B. D. Pereira[3], [1]Pontificia Universidade Catolica de Minas Gerais, Betim, Brazil, [2]Faculdade Alis de Bom Despacho, Brazil, [3]University of New Hampshire, Durham*

375 16 **Clinical signs associated with bovine respiratory disease diagnosis and high heritability in beef and dairy cattle.**
J. N. Kiser[*1], C. M. Seabury[2], J. F. Taylor[3], J. E. Womack[2], R. Hagevoort[4], T. W. Lehenbauer[5], S. S. Aly[6], A. L. Van Eenennaam[7], T. Bovine Respiratory Disease Complex[2] and H. L. Neibergs[8], [1]Department of Animal Science, Washington State University, Pullman, [2]Texas A&M University, College Station, [3]University of Missouri, Columbia, [4]New Mexico State University, Dairy Extension, Clovis, [5]University of California-Davis, [6]VMTRC, University of California, Tulare, [7]University of California-Davis, [8]Department of Animal Sciences, Washington State University, Pullman*

376 17 **Estimating enteric methane and carbon dioxide emission from lactating dairy cows using GreenFeed system.**
D. Hailemariam[*1], G. Manafiazar[1], J. Basarab[1,2], F. Miglior[3,4], G. Plastow[1] and Z. Wang[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada, [3]Canadian Dairy Network, Guelph, ON, Canada, [4]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada*

377 18 **Evaluation of factors affecting NaCl content the evolution in ewes milk and of its effect on technological properties.**
J. Serdino, F. Correddu, M. G. Manca, A. Nudda, P. Urgeghe and N. P. P. Macciotta, Dipartimento di Agraria, University of Sassari, Italy*

378 19 **A survey on breeding strategies and selection objectives for increased feed efficiency and decreased methane emission.**
C. Richardson[*1], F. Malchiodi[1], A. M. Wilson[1], A. M. Butty[1], C. Baes[1], A. Cánovas[1], M. P. Coffey[2], E. E. Connor[3], M. De Pauw[4], B. Gredler[5], E. Goddard[6], G. Hailu[7], V. R. Osborne[8], J. E. Pryce[9], M. Sargolzaei[1,10], F. S. Schenkel[1], P. Stothard[11], E. Wall[2], Z. Wang[11], T. Wright[12] and F. Miglior[1,13], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]SRUC, Edinburgh, United Kingdom, [3]USDA-ARS, Animal Genomics and Improvement Laboratory, Beltsville, MD, [4]University of Alberta, Edmonton, AB, Canada, [5]Qualitas AG, Zug, Switzerland, [6]Department of Resource Economics and Environmental Sociology, University of Alberta, Edmonton, AB, Canada, [7]Department of Food, Agricultural and Resource Economics, University of Guelph, ON, Canada, [8]University of Guelph, ON, Canada, [9]Department of Economic Development, Jobs, Transport and Resources, Bundoora, Australia, [10]Semex Alliance, Guelph, ON, Canada, [11]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [12]University of Guelph, OMAFRA, Guelph, ON, Canada, [13]Canadian Dairy Network, Guelph, ON, Canada*

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764 20 **Functional characterization of porcine SCD1 in stably transduced porcine SK6 cells.**
J. Hwang, N. Singh, C. Long and S. B. Smith, Texas A&M University, College Station*

765 21 **Gene expression profiling and fatty acid composition in muscle during growth of Yanbian Yellow Cattle.**
X. Li[*1], C. Yan[1], S. Choi[2], J. Shin[3] and S. B. Smith[4], [1]Yanbian University, Yanji, China, [2]Chungbuk National University, Chengju, The Republic of Korea, [3]Kongwon National University, Chuncheon, The Republic of Korea, [4]Texas A&M University, College Station*

766 22 ***α-chaconine induces myogenesis of bovine satellite cells isolated from semimembranosus and longissimus muscle tissue.***
K. Y. Chung, S. C. Jang, E. M. Lee, S. H. Yang and E. G. Kwon, Hanwoo Research Institute, NIAS, RDA, Pyeongchang, The Republic of Korea*

767 23 **Vitamin C supplement increased intramuscular adipose tissues but not affect myogenic development of Hanwoo steers.**
S. C. Jang, K. Y. Chung, E. M. Lee, S. H. Yang and E. G. Kwon, Hanwoo Research Institute, NIAS, RDA, Pyeongchang, The Republic of Korea*

768 24 **Chromium propionate supplementation alters feedlot performance and GLUT4 activity in feedlot steers.**
J. O. Baggerman[*1], Z. K. F. Smith[1], A. J. Thompson[1], J. Kim[1], P. W. Rounds[2] and B. J. Johnson[1], [1]Texas Tech University, Lubbock, [2]Kemin Industries, Inc., Des Moines, IA*

769 25 **Feeding 5% grass hay or wheat straw with high starch, textured diets to weaned dairy calves between 8 and 16 weeks of age.**
F. X. Suarez-Mena, T. S. Dennis, T. M. Hill, J. D. Quigley and R. L. Schlotterbeck, Provimi, Brookville, OH*

770 26 **Effects of a milk balancer protein supplement on growth and performance of dairy calves.**
P. Turiello[*1], E. Martinez[1], M. Auil[2], A. Bogni[2] and O. Queiroz[2], [1]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Argentina, [2]Department Tecnico Bovinos, TEKNAL SA, Cordoba, Argentina*

771 27 **Effects of trans-10, cis-12 conjugated linoleic acid on gene expression and lipid content of adipocytes derived from lactating dairy cows.**
S. E. Schmidt, K. M. Thelen, W. Raphael, G. A. Contreras and A. L. Lock, Michigan State University, East Lansing*

772 28 **Effects of maternal exercise on postnatal growth and carcass characteristics of swine.**
B. L. Ferguson, E. K. Harris, D. J. Newman, E. P. Berg and K. A. Vonnahme, North Dakota State University, Fargo*

773 29 **The effect of phase-feeding on feed cost, growth, and performance of calves fed milk replacer.**
C. Hansen[*1], W. S. Bowen Yoho[1], T. Earleywine[2], T. E. Johnson[3] and B. L. Miller[4], [1]Land O Lakes, Inc., Gray Summit, MO, [2]Land O'Lakes Animal Milk Products, Shoreview, MN, [3]Land O' Lakes, Inc., Webster City, IA, [4]Purina Animal Nutrition Center LLC, Gray Summit, MO*

774 30 **The effect of weaning over a 14-day vs 21-day period on the performance of calves fed milk replacer on a controlled ad libitum curve through an automatic feeder.**
W. S. Bowen Yoho[*1], C. Hansen[1], E. Stephas[2], T. Earleywine[3], T. E. Johnson[4] and B. L. Miller[2], [1]Land O' Lakes, Inc., Gray Summit, MO, [2]Purina Animal Nutrition Center, LLC, Gray Summit, MO, [3]Land O'Lakes Animal Milk Products, Shoreview, MN, [4]Land O' Lakes, Inc., Webster City, IA*

775 31 **Effects of maternal dietary restriction during the second trimester on offspring growth and feedlot performance.**
S. M. Quarnberg, J. F. Legako, J. M. Gardner, D. R. ZoBell, C. E. Carpenter, K. A. Rood and K. J. Thornton, Utah State University, Logan*

776 32 **Neonate immunity, growth and puberty in dairy calves: Influence of dietary conjugated linoleic acid supplementation of the dam.**
C. L. Cardoso[*1], D. Somwe[2] and G. Esposito[1,3], [1]Department of Production Animal Studies, Faculty of Veterinary Science, University of Pretoria, South Africa, [2]Department of Animal and Wildlife Science, Faculty of Natural and Agricultural Sciences,University of Pretoria, South Africa, [3]Institute of Food, Nutrition and Well-being University of Pretoria, Pretoria, South Africa*

777 33 **Repeatability of residual feed intake and indices of body composition in growing Columbia ewes fed the same diet.**
K. A. Perz, J. G. Berardinelli, L. N. Park, R. K. Pollard, C. M. Page, W. C. Stewart and J. M. Thomson, Montana State University, Bozeman*

Food Safety

596 34 **Monitoring of pesticide residues in animal feeds from republic of Korea.**
H. Park, H. J. Kim, M. S. Jeong, C. R. Kim, E. S. Choe, Y. S. Youn, J. K. Kim and J. H. Lee, Experiment and Research Institute, National Agricultural Products Quality Management Service (NAQS), Ministry of Agriculture, Food, and Rural Affairs (MAFRA), Kimcheon, The Republic of Korea*

597 35 **Bacillus amyloliquefaciens from UHT Organic Milk Produces Biofilm and Demonstrates Virulence Potential.**
J. L. McKillip, A. Grutsch, E. R. Wagner and C. Klug, Ball State University, Muncie, IN*

598 36 **Occurrence of aflatoxin M1 in UHT, pasteurized and powdered milk marketed in Hubei province (central China).**
J. L. Xiong[1], H. L. Zhou[2], L. Y. Wu[*1] and F. T. Meng[1], [1]Hubei Key Laboratory of Animal Nutrition and Feed Science, Wuhan Polytechnic University, Wuhan, China, [2]Xiangyang Engineering Research Center of Animal Medicine, Xiangyang Vocational and Technical College, Xiangyang, China*

599 37 **An aptamer-based biosensor for detection of aflatoxin M1.**
X. Guo[1,2,3,4], F. Wen[1,3], N. Zheng[1,2,3], S. Li[1,3], M. L. Fauconnier[4] and J. Wang[*1,2,3], [1]Ministry of Agriculture - Milk and Dairy Product Inspection Center , Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [3]Ministry of Agriculture - Laboratory of Quality & Safety Risk Assessment for Dairy Products , Beijing, China, [4]Chimie Générale et Organique, Gembloux Agro-Bio Tech, Université de Liège, Gembloux, Belgium*

600 38 **Individual and combined cytotoxicity assessment of zearalenone and ochratoxin A /alpha-zearalenol by full factorial design.**
*N. Zheng[1,2,3], Y. Gao[1,2,3], H. Wang[4] and J. Wang[*1,2,3], [1]Ministry of Agriculture - Laboratory of Quality & Safety Risk Assessment for Dairy Products , Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [3]Ministry of Agriculture-Milk Risk Assessment Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [4]College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China*

601 39 **Distribution and genetic characterization of the top clinically-relevant Shiga toxin-producing Escherichia coli in feedlot cattle.**
*J. Hallewell[*1], K. Stanford[2], T. Reuter[2], L. Chui[3], R. Johnson[4], T. A. McAllister[1], E. Topp[5] and T. W. Alexander[1], [1]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [2]Alberta Agriculture and Forestry, Lethbridge, AB, Canada, [3]Provincial Laboratory for Public Health, Edmonton, AB, Canada, [4]Public Health Agency of Canada, Ottawa, ON, Canada, [5]Agriculture and Agri-Food Canada, London, ON, Canada*

602 40 **Isolation and characterization of listeriaphages for control of growth of Listeria monocytogenes in dairy foods.**
*S. H. Lee[1], H. S. Lee[1], S. Heo[1], C. R. Lee[1,2] and G. B. Kim[*1], [1]Department of Animal Science and Technology, Chung-Ang University, Anseong, The Republic of Korea, [2]Feed Industry Research Institute, Korea Feed Association, Seoul, The Republic of Korea*

603 41 **Effects of feeding NaturSafe on foodborne pathogens in finishing beef heifers.**
*K. M. Feye[1], K. L. Anderson[1], M. F. Scott[*2], K. L. Dorton[2], D. L. Henry[2], C. R. Belknap[2], B. E. Depenbusch[3] and S. A. Carlson[1], [1]Department of Biomedical Sciences, Iowa State University, Ames, [2]Diamond V, Cedar Rapids, IA, [3]Innovative Livestock Services, Inc., Great Bend, KS*

604 42 **Moxidectin residues in tissues of lambs submitted to three programs of gastrointestinal endoparasite control.**
*A. L. G. Monteiro[1], C. H. E. C. Poli[*2], M. A. M. Fernandes[1], F. G. Reyes-Reyes[3], C. J. A. Silva[4], M. D. Bianchi[3], S. Gilaverte[1] and M. T. Peres[1], [1]Universidade Federal do Paraná, Curitiba, Brazil, [2]Utah State University, Logan, [3]Universidade Estadual de Campinas, Brazil, [4]Instituto Federal de SC, Camboriú, Brazil*

605 43 **Shiga toxin-producing Escherichia coli on cattle hides and bacterial transfer from hides to carcasses in Midwestern commercial beef slaughter operations.**
A. McKiearnan[*], N. Cernicchiaro and M. Sanderson, Kansas State University, Manhattan

706 44 **Differences in HDPE milk packaging performance under LED and fluorescent retail storage.**
K. N. Amin[*], M. L. Johnson, J. B. Phillips, S. Duncan, H. Potts, S. F. O'Keefe, J. E. Marcy, and K. Mallikarjunan, Virginia Polytechnic Institute and State University, Blacksburg

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1553 45 **Supplementation with a blend of capsicum and artificial sweetener alters milk yield and nutrient partitioning in lactating dairy cows.**
E. H. Wall[*] and D. M. Bravo, Pancosma, Geneva, Switzerland

1554 46 **Supplementation with rumen-protected capsicum oleoresin increases milk production and component yield in lactating dairy cows.**
E. H. Wall[*] and D. M. Bravo, Pancosma, Geneva, Switzerland

1555 47 **WS** **Effects of increasing sugar beets on steer backgrounding performance.**
I. McGregor[*], C. M. Page, W. C. Stewart and M. Van Emon, Montana State University, Bozeman

1556 48 **Effects of red grape pomace to adapt beef cattle to finishing diets and spoilage mitigation strategies.**
*L. A. Pellarin[*1], J. O. Sarturi[1], P. R. B. Campanili[1], L. A. Ovinge[1], B. C. Bernhard[1], B. J. Johnson[1], J. C. Brooks[1] and E. W. Hellman[2], [1]Texas Tech University, Lubbock, [2]Texas A&M AgriLife Extension and Texas Tech University, Lubbock*

1557 49 **Effects of thyme (Thymus vulgaris) essential oil on feed intake and feeding behavior of Nellore steers.**
*L. C. Roma Junior[*1], E. S. Castro Filho[2], J. M. Bertocco Ezequiel[3], M. Almeida[2] and E. H. C. B. Van Cleef[2], [1]Sao Paulo's Agency for Agribusiness Technology, Ribeirao Preto, Brazil, [2]Sao Paulo State University, Jaboticabal, SP, Brazil [3]São Paulo State University, Department of Animal Science, Jaboticabal, SP, Brazil*

1558 50 **Effects of functional oils or monensin on dry matter digestibility, milk yield and composition of Holstein cows.**
*F. P. Rennó[*1], E. F. Jesus[2], T. A. Del Valle[1], G. D. Calomeni[1], T. H. Silva[1], C. S. Takiya[1], T. H. A. Vendramini[1], P. G. D. Paiva[2], G. G. Silva[1], A. Saran Netto[3] and J. Torrent[4], [1]School of Veterinary Medicine and Animal Science, University of São Paulo, Pirassununga, Brazil, [2]School of Agricultural and Veterinary Sciences, University of São Paulo, Jaboticabal, Brazil, [3]School of Animal Science and Food Engineering, University of Sao Paulo, Pirassununga, Brazil, [4]Oligo Basics Agroindustry, Cascavel, Brazil*

1559 51 **Effect of rumen-protected Capsicum oleoresin on immune responses in lactating dairy cows experimentally challenged with lipopolysaccharide.**
*J. Oh[*1], M. Harper[1], F. Giallongo[1], E. H. Wall[2], D. M. Bravo[2] and A. N. Hristov[1], [1]The Pennsylvania State University, University Park, [2]Pancosma, Geneva, Switzerland*

1560 52 **Effects of cinnamaldehyde on performance of post-weaned Holstein dairy heifers.**
*C. E. Chapman[*1], D. Ziegler[2], H. Chester-Jones[2], J. A. Clapper[3] and P. S. Erickson[1], [1]University of New Hampshire, Durham, [2]University of Minnesota Southern Research and Outreach Center, Waseca, [3]South Dakota State University, Brookings*

1561 53 **Effects of essential oils and exogenous enzyme in feedlot finishing diets high in flint ground corn at different particle sizes during the adaptation period.**
*M. A. P. Meschiatti[1], J. M. M. D. Moraes[1], T. S. Acedo[2], L. F. M. Tamassia[2], C. S. Cortinhas[2], V. N. D. Gouvea[*2], J. R. Dórea[3] and F. A. P. Santos[4], [1] University of São Paulo, Sao Paulo, Brazil, [2]DSM Nutritional Products SA, Sao Paulo, Brazil, [3]University of Wisconsin, Madson, [4]University of São Paulo, Piracicaba, Brazil*

1562 54 **Effects of essential oils and exogenous enzymes on intake, digestibility and rumen fermentation in finishing Nellore cattle.**
*M. A. P. Meschiatti[1], L. A. Pellarin[1], C. D. A. Batalha[2], T. S. Acedo[*3], L. F. M. Tamassia[3], C. S. Cortinhas[3], V. N. D. Gouvea[3], F. A. P. Santos[2] and J. R. Dórea[4], [1] University of São Paulo, Sao Paulo, Brazil, [2]University of Sao Paulo, Piracicaba, Brazil, [3]DSM Nutritional Products SA, Sao Paulo, Brazil, [4]University of Wisconsin, Madson*

1563 55 **Effect of inclusion of Acacia mearnsii tannin extract on nitrogen and energy balance in growing beef cattle fed a low protein-corn silage diet.**
*S. Capa de Avila[*1], G. V. Kozloski[2], K. R. McLeod[1] and D. L. Harmon[1], [1]University of Kentucky, Lexington, [2]Federal University of Santa Maria, Brazil*

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1318 56 **Hepatic oxidation is responsive to prepartum energy and peripartum rumen protected choline supplementation.**
*V. Caprarulo[*1,2], T. L. Chandler[1], M. G. Zenobi[3], B. A. Barton[4], C. R. Staples[3] and H. M. White[1], [1]Department of Dairy Science University of Wisconsin-Madison, [2]Department of Health, Animal Science and Food Safety, University of Milan, Milan, Italy, [3]Department of Animal Sciences, University of Florida, Gainesville, [4]Balchem Corporation, New Hampton, NY*

1319 57 **Rumen-protected methyl donors during the transition period: Hepatic short-chain acyl CoA concentration in response to supplemental methionine or choline.**
*Z. Zhou[*1], C. L. Girard[2], B. Ouattara[2], M. Vailati Riboni[1], D. N. Luchini[3] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]Agriculture & Agri-Food Canada, Sherbrooke, QC, Canada, [3]Adisseo S.A.S., Alpharetta, GA*

1320 58 **Development and validity of a lipid accessibility index that quantifies reaction exposure of internal fatty acids in animal feeds.**
*T. C. Jenkins[*1], K. Murphy[2] and R. Ward[3], [1]Clemson University, SC, [2]Virtus Nutrition, LLC, Corcoran, CA, [3]Cumberland Valley Analytical Services Inc., Hagerstown, MD*

1321 59 **Comparison of flax oil with varying lipid supplements in dairy ration: A meta-analysis.**
*M. Leduc[*1,2], M. P. Létourneau Montminy[1], R. Gervais[1] and P. Y. Chouinard[1,2], [1]Département des Sciences Animales, Université Laval, Québec, QC, Canada, [2]INAF, Université Laval, Québec, QC, Canada*

1322 60 **Milk bioactive fatty acids decrease in cows grazing pearl millet versus a cool-season pasture.**
M. L. Bainbridge[*], E. Egolf, J. W. Barlow, J. P. Alvez, J. Roman and J. Kraft, University of Vermont, Burlington

1323 61 **Effect of early lactation feeding strategy on production, metabolic and endocrine responses of primiparous dairy cows.**
*M. Carriquiry[*1], M. Cariani[2], A. Jasinsky[2], M. L. Adrien[3] and D. A. Mattiauda[2], [1]Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay, [2]Facultad de Agronomia, Universidad de la Republica, Paysandu, Uruguay, [3]Facultad de Veterinaria, Universidad de la Republica, Paysandu, Uruguay*

1324 62 **Ratios of milk fatty acids accurately estimates plasma non-esterified fatty acid concentrations as an indicator of animal energy balance.**
*J. R. R. Dórea[*1], E. A. French[2] and L. E. Armentano[1], [1]University of Wisconsin-Madison, [2]DeLaval USA, Madison, WI*

1325 63 **Effect of linseed oil supplementation on milk fatty acid profile of dairy cows fed diets based on red clover silage or corn silage.**
*F. Hassanat[*1], R. Gervais[2] and C. Benchaar[1], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Département des Sciences Animales, Université Laval, Québec, QC, Canada*

1326 64 **Characterization of rumen bacterial and protozoal fatty acid compositions from lactating Jersey cows offered alternative forage crops.**
*L. M. Cersosimo[*1], R. Tacoma[1], S. Greenwood[1], K. Juntwait[2], A. F. Brito[2] and J. Kraft[1], [1]University of Vermont, Burlington, [2]University of New Hampshire, Durham*

1327 65 **Effect of frequency of supplementation with Megalac-R on non-esterified fatty acids and blood urea nitrogen concentration in lactating beef cows.**
*M. E. Garcia-Ascolani[*1], T. M. Schulmeister[1], M. Ruiz-Moreno[1], D. D. Henry[1], F. M. Ciriaco[1], P. L. P. Fontes[1], G. C. Lamb[1], N. M. Long[2] and N. DiLorenzo[1], [1]University of Florida, North Florida Research and Education Center, Marianna, [2]Clemson University, SC*

1328 66 **Supplementation of palm oil to lactating dairy cows fed a high fat diet during summer.**
*R. P. Melo[1], L. P. Castro[1], F. F. Cardoso[1], E. F. Barbosa[1], L. Q. Melo[1], R. B. Silva[1,2], R. A. N. Pereira[2,3] and M. N. Pereira[*1,2], [1]Universidade Federal de Lavras, Brazil, [2]Better Nature Research Center, Ijaci, Brazil, [3]Empresa de Pesquisa Agropecuaria de Minas Gerais, Lavras, Brazil*

1329 67 **Effects of dietary fat source on performance of lactating dairy cows fed a pre-mixed concentrate.**
*C. M. Ylioja[*1], C. Schulte[2], R. A. Stock[2] and B. J. Bradford[1], [1]Kansas State University, Manhattan, [2]Cargill Corn Milling, Blair, NE*

758 68 **Effects of feeding different forms of polyunsaturated fatty acids on performance, plasma metabolites and milk fatty acid composition of dairy cows.**
*L. D. P. Sinedino[*1], R. R.C. Mello[2], C. Lopera[1], A. Vieira Neto[1], M. G. Zenobi[1], E. Block[3], C. L. Preseault[4], A. L. Lock[4], C. R. Staples[1], W. W. Thatcher[1] and J. E. P. Santos[1], [1]University of Florida, Gainesville, [2]Federal Rural University of Rio de Janeiro, Seropedica, Brazil, [3]Arm & Hammer Animal Nutrition, Princeton, NJ, [4]Michigan State University, East Lansing*

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SYMPOSIA AND ORAL SESSIONS

Triennial Growth and Development Symposium

Chair: Gary J. Hausman, University of Georgia; Angela Canovas, University of Guelph

Sponsor: ASAS
8:00 AM - 5:00 PM
150 G

8:00 AM		**Introductory Remarks**
8:15 AM	785	**Muscle gene expression patterns associated with differential intramuscular fat in cattle and markers for skeletal muscle growth rate and major cell types.** *B. P. Dalrymple*, CSIRO Agriculture, Brisbane, Australia*
9:00 AM	786	**Factors influencing bovine intramuscular adipose tissue development and cellularity.** *E. Albrecht*[1], L. Schering[1], Y. Liu[1], K. Komolka[1], C. Kühn[2], K. Wimmers[3], and S. Maak[1], [1]Muscle Biology and Growth, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany, [2]Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany, [3]Genome Biology, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany*
9:45 AM	787	**Growth and growth rate influences bovine intramuscular adipose tissue gene expression in a differential manner.** *C. R. Krehbiel*[1], P. A. Lancaster[2], G. W. Horn[3], J. D. Starkey[4], E. D. Sharman[5], and S. L. Roberts[6], [1]Oklahoma State University, Stillwater, [2]Missouri State University, Springfield, [3]Oklahoma Agricultural Experiment Station, Stillwater, [4]Starkey Consulting Services, Gainsville, GA, [5]Johnson Research, LLC, Parma, ID, [6]Department of Agricultural Sciences, West Texas A&M University, Canyon*
10:20 AM		**Break**
10:50 AM	788	**Molecular mechanisms of bovine intramuscular fat deposition.** *M. Baik*, H. J. Kang, S. J. Park, and M. Y. Piao, Department of Agricultural Biotechnology, College of Agriculture and Life Sciences, Seoul National University, Seoul, The Republic of Korea*
11:30 AM	789	**Dedifferentiated fat cells: Potential involvement in intramuscular adipogenesis.** *M. S. Duarte*[1], R. Bueno[1], M. V. Dodson[2], and G. J. Hausman[3], [1]Universidade Federal de Viçosa, Viçosa, Brazil, [2]Washington State University, Pullman, [3]University of Georgia, Athens*
12:00 PM	790	**Metabolic programming and intramuscular adipogenesis.** *T. Gotoh*, Kyushu University, Taketa-city, Japan*
12:30 PM		**Break**
1:30 PM	791	**Genetics and breeding for intramuscular fat and oleic acid content in pigs.** *J. Estany*[1], R. Ros-Freixedes[2], M. Tor[1], and R. N. Pena[1], [1]University of Lleida - Agrotenio Center, Spain, [2]Universitat de Lleida, Spain*
2:10 PM	792	**The genetic landscape of intramuscular fat content and composition in pigs.** *M. Amills*, Center for Research in Agricultural Genomics, Bellaterra, Spain*
2:50 PM	793	**Statistical models and tools for Integration of omics data to uncover the genetic control of pork quality and growth traits.** *J. P. Steibel*[1], D. Velez-Irizarry[1], S. Casiro[1], and C. W. Ernst[2], [1]Department of Animal Science, Michigan State University, East Lansing, [2], Michigan State University, East Lansing*
3:30 PM	794	**Marbling: Management of cattle to maximize the deposition of intramuscular adipose tissue.** *S. B. Smith*[1] and B. J. Johnson[2], [1]Texas A&M University, College Station, [2]Texas Tech University, Lubbock*
4:10 PM	795	**Linking from the farm to the table.** *M. R. McMorris*, Beef Improvement Opportunities, Guelph, ON, Canada*
5:30 PM		**Discussion**

Functional Annotation of Animal Genomes (FAANG) ASAS-ISAG Joint Symposium

Chair: Chris Tuggle, Iowa State University

Sponsor: Illumina
8:30 AM - 4:30 PM
Grand Ballroom A

8:30 AM		**Welcoming Remarks**
8:35 AM		**Introductory Remarks**
8:40 AM		**Sponsor's Remarks** *Andre Eggen, Illumina*
8:45 AM	411	**Important lessons from complex genomes.** *T. R. Gingeras*, Cold Spring Harbor Laboratory, Functional Genomics, Cold Spring Harbor, NY*
9:25 AM		**Discussion**
9:40 AM	412	**Causal inference of molecular networks integrating multi-omics data.** *F. Peñagaricano*, University of Florida, Gainesville*
10:05 AM		**Break**
10:35 AM	413	**Genotypes to phenotypes: Lessons from functional variation in the human genome and transcriptome.** *B. E. Stranger*, Section of Genetic Medicine, Department of Medicine, Institute of Genomics and Systems Biology, Center for Data Intensive Sciences, University of Chicago, Chicago, IL*
11:20 AM		**Discussion**
11:35 AM	414	**Recurrent chimeric transcripts in human and mouse.** *S. Djebali*[*1,2,3], B. Rodríguez Martín[2,3], E. Palumbo[2,3], D. D. Pervouchine[2,3], A. Breschi[2,3], C. Davis[4], A. Dobin[4], G. Alonso[5], A. Rastrojo[5], B. Aguado[5], T. R. Gingeras[4], and R. Guigó[2,3], [1]GenPhySE, INRA, Castanet-Tolosan, France, [2]Universitat Pompeu Fabra (UPF), Barcelona, Spain, [3]Bioinformatics and Genomics Programme, Centre for Genomic Regulation (CRG), Barcelona, Spain, [4]Cold Spring Harbor Laboratory, Functional Genomics, Cold Spring Harbor, NY, [5]Centro de Biología Molecular Severo Ochoa (CSIC - UAM), Madrid, Spain*
12:00 AM		**Lunch and Poster Viewing**
12:55 PM	415	**Improving genomic selection across breeds and across generations with functional annotation.** *B. Hayes*[*1], A. J. Chamberlain[2], H. Daetwyler[3], C. J. Vander Jagt[2], and M. E. Goddard[4], [1]Department of Economic Development, Melbourne, Australia, [2]Dairy Futures Cooperative Research Centre, Bundoora, Australia, [3]Department of Economic Development, Jobs, Transport and Resources, Bundoora, Australia, [4]Department of Primary Industries, Melbourne, Australia*
1:35 PM		**Discussion**
1:50 PM	416	**Integrating dynamic -omics responses for universal personalized medicine.** *G. I. Mias*, Michigan State University, East Lansing*
2:30 PM		**Discussion**
2:45 PM		**Break**
3:15 PM	417	**A review of sequencing and assembly methods that enhance computational use.** *W. C. Warren*, McDonnell Genome Institute, Washington University School of Medicine, St Louis, MO*
3:55 PM		**Updates on ongoing FAANG activities**

Companion Animal Symposium: Behavior and the Human-Animal Bond

Chair: Brittany M. Vester Boler, Nestle Purina

Sponsor: George Fahey Appreciation Club
9:30 AM - 12:30 PM
150 E/F

9:30 AM		**Introductory Remarks**
9:40 AM	430	**Cognitive assessment protocols for use with companion animals.** *B. Milgram*, CanCog Technologies, Toronto, ON, Canada*
10:10 AM	431	**Objective evaluation of affective states in dogs.** *R. T. S. McGowan*, Nestlé Purina Research, St. Louis, MO*
10:40 AM		**Break**
10:55 AM	432	**The human-animal bond: Science-based approaches to improving companion animal welfare and adoption outcomes.** *C. C. Croney*, Purdue University, W. Lafayette, IN*
11:25 AM	433	**2015 Corbin Award Winner: Behavior and training of companion and zoo animals.** *C. L. Morris*, Iowa State University, Ames*
11:55 AM		**Panel Discussion**

Lactation Biology

Chair: Thomas B. McFadden, University of Missouri

9:30 AM - 12:30 PM
155 B

9:30 AM	859	**Differences in body condition of gilts that are maintained from mating to the end of gestation affect their mammary development.** *C. Farmer*[*1], M. Comi[2], M. Vignola[3], P. Charagu[4], C. R. A. Duarte[5], and M. F. Palin[1], [1]Agriculture and Agri-Food Canada, Sherbrooke R & D Centre, Sherbrooke, QC, Canada, [2]Dipartimento VESPA, Universitá Studi Milano, Milano, Italy, [3]Trouw Nutrition, St-Elzéar, QC, Canada, [4]Hypor Inc, Regina, SK, Canada, [5]Departamento de Zootecnia, Universidade Estadual de Maringá, Maringá, Brazil*
9:45 AM	860	**Stem cells and cell hierarchy in the bovine mammary gland.** *I. Barash*[*1] and G. Rauner[1,2], [1]Volcani Center, Bet-Dagan, Israel, [2]Hebrew University of Jerusalem, Jerusalem, Israel*
10:00 AM	861	**Optimal combination of histidine, lysine, methionine and leucine affect β-casein synthesis via mTOR signaling pathway in bovine mammary epithelial cells.** *H. Gao[1,2,3,4], N. Zheng[1,2,4], S. Zhao[1,2,4], Y. Zhang[1,2,4], S. Wang[1,2,4], X. Q. Zhou[1,2,4], and J. Wang*[*2,3,4], [1]Ministry of Agriculture-Milk Risk Assessment Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [3]College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China, [4]Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China*
10:15 AM	862	**The goat (*Capra hircus*) mammary gland secretory tissue proteome as influenced by weight loss: A study using label free proteomics.** *A. M. Almeida*[*1,2], L. E. Hernandez-Castellano[3], A. M. Ferreira[2], P. Nanni[4], J. Grossmann[4], A. Argüello[5], J. Capote[6], G. Cai[7], J. D. Lippolis[7], and N. Castro[8], [1]Ross University School of Veterinary Medicine, Basseterre, Saint Kitts and Nevis, [2]Instituto de Biologia Experimental e Tecnologica, Oeiras, Portugal, [3]Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, [4]Functional Genomics Center Zurich (FGCZ) - University of Zurich, Zurich, Switzerland, [5]Department of Animal Science, Universidad de Las Palmas de Gran Canaria, Arucas, 35413, Las Palmas, Spain, [6]Canarian Agronomic Science Institute, La Laguna, Spain, [7]USDA-ARS, National Animal Disease Center, Ames, IA, [8]Dep. Animal Science, University of Las Palmas de Gran Canaria, Arucas, Spain*

10:30 AM 863 **Pre-calving and early lactation factors that predict milk casein and fertility in the transition dairy cow.**
*R. M. Rodney[*1,2], J. K. Hall[3], C. T. Westwood[4], P. Celi[5], and I. J. Lean[1,2], [1]Scibus, Camden, Australia, [2]University of Sydney, Camden, Australia, [3]Halltech Services, Orange, Australia, [4]Kimihia Research Centre, PGG Wrightson Seeds Limited, Lincoln, Canterbury, New Zealand, [5]Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia*

10:45 AM 864 **Increasing blood 5-hydroxy-L-tryptophan concentration for prevention of periparturient hypocalcemia in dairy cows.**
*L. E. Hernandez-Castellano[*1], S. R. Weaver[2], L. L. Hernandez[2], and R. M. Bruckmaier[1], [1]Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, [2]Department of Dairy Science, University of Wisconsin-Madison*

11:00 AM 865 **Beta-hydroxybutyrate infusion affects glucose metabolism before and after parturition in dairy cows.**
*M. Zarrin[1,2], L. Grossen-Rösti[1], R. M. Bruckmaier[1], and J. J. Gross[*1], [1]Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland, [2]Department of Animal Science, Yasouj University, Yasouj, Iran*

11:15 AM 866 **Impact of increasing dietary crude protein content on urinary nitrogen excretion and milk nitrogen secretion of lactating sows.**
*T. F. Pedersen[*1], C. Y. Chang[1], T. S. Bruun[2], and P. K. Theil[1], [1]Aarhus University, Tjele, Denmark, [2]SEGES Pig Research Centre, Copenhagen, Denmark*

11:30 AM 867 **Intramammary prednisolone affects the permeability of the blood-milk barrier during LPS and LTA induced mastitis in dairy cows.**
S. K. Wall, L. E. Hernandez-Castellano, R. M. Bruckmaier, and O. Wellnitz[*], Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland

11:45 AM 868 **Regulation of sterol regulatory element binding protein-1 in bovine mammary epithelial cells.**
L. Chen[*] and B. A. Corl, Virginia Polytechnic Institute and State University, Blacksburg

12:00 PM 869 **Efficacy of dual x-ray absorptiometry as a means to measure mammary gland development in dairy heifer calves.**
A. J. Geiger[*], C. L. M. Parsons, and R. M. Akers, Virginia Polytechnic Institute and State University, Blacksburg

12:15 PM 870 **Percentages of milk fat, lactose and protein are affected by diurnal variations in dairy goats.**
*F. Rosa[*1], J. S. Osorio[1], J. Lohakare[1], M. Moridi[2], A. Ferrari[3], E. Trevisi[3], and M. Bionaz[1], [1]Department of Animal and Rangeland Sciences, Oregon State University, Corvallis, [2]University of Guilan, Rasht, Islamic Republic of Iran, [3]University Cattolica del Sacro Cuore, Piacenza, Italy*

12:30 PM 871 **Comparative effect of two commercial preparations of bovine somatotropin on milk yield and overall performance in Chilean dairy cows.**
*M. A. Barrios[1], P. Melendez[*2], and M. Duchens[1], [1]University of Chile, Santiago, [2]University of Missouri, Columbia*

Physiology and Endocrinology Symposium: Pre- and Post-natal Impacts on Offspring Performance

Chair: Kimberly A. Vonnahme, North Dakota State University

Sponsor: Elanco Animal Health
9:30 AM - 5:00 PM
151 G

9:30 AM 1159 **Consequences of early nutritional insults on fetal hepatic glucose metabolism and insulin action.**
S. R. Wesolowski[*], University of Colorado School of Medicine, Aurora

10:20 AM 1160 **Alterations in uteroplacental hemodynamics during melatonin supplementation in sheep and cattle.**
*C. O. Lemley[*1] and K. A. Vonnahme[2], [1]Mississippi State University, Mississippi State, [2]North Dakota State University, Fargo*

10:50 AM 1161 **Development of the fetus and fetal reproductive tract in gilts subjected to heat stress from week 4 to 8 of gestation.**
C. J. Bernhard[*], T. J. Safranski, M. C. Lucy, W. R. Lamberson, S. G. Moore, L. M. Mayo, and R. Molina-Coto, University of Missouri, Columbia

11:05 AM **Break**

11:20 AM 1162 **The effects of under- and over-feeding ewes during gestation on offspring growth and stem cell function.**
K. E. Govoni[*], S. A. Reed, M. L. Hoffman, S. M. Pillai, and S. A. Zinn, Department of Animal Science, University of Connecticut, Storrs

11:50 AM 1163 **Postnatal reproductive development and the lactocrine hypothesis.**
*F. F. Bartol[*1], C. A. Bagnell[2], and A. F. George[2], [1]Auburn University, Auburn, AL, [2]Rutgers University, New Brunswick, NJ*

12:40 PM 1164 **Supplementation of corn-dried distillers grains plus solubles to gestating beef cows fed low quality forage: Neonatal calf performance.**
*V. C. Kennedy[*1], J. J. Gaspers[1], B. Mordhorst[1], G. L. Stokka[2], M. L. Bauer[1], K. C. Swanson[1], and K. A. Vonnahme[1], [1]North Dakota State University, Fargo, [2]Department of Animal Sciences, North Dakota State University, Fargo*

12:55 PM 1165 **The effects of nutritional restriction on endogenous retroviruses and placentation during the first 50 d of gestation in beef heifers.**
*K. J. McLean[*1], M. S. Crouse[1], M. R. Crosswhite[2], N. Negrin Pereira[1], A. K. Ward[1], C. R. Dahlen[1], L. P. Reynolds[1], P. P. Borowicz[1], B. W. Neville[3], and J. S. Caton[1], [1]Department of Animal Sciences, North Dakota State University, Fargo, [2]North Dakota State University, Fargo, [3]North Dakota State University, Streeter*

1:10 PM **Concluding Remarks**

Production, Management and the Environment: Lactation and Growth

Chair: April B. Leytem, USDA-ARS

9:30 AM - 12:30 PM
151 E/F

9:30 AM 1242 **Health treatment costs of pure Holsteins in 8 high-performance Minnesota dairies.**
*M. R. Donnelly[*1], A. R. Hazel[1], B. J. Heins[2], and L. B. Hansen[1], [1]University of Minnesota, St. Paul, [2]University of Minnesota West Central Research and Outreach Center, Morris*

9:45 AM 1243 **Relationships between early life growth and first lactation performance of Holstein dairy cows.**
*B. J. Heins[*1], H. Chester-Jones[2], D. Ziegler[2], M. B. De Ondarza[3], S. E. Schuling[4], B. Ziegler[4], D. Schimek[4], N. Broadwater[5], and C. J. Sniffen[6], [1]University of Minnesota West Central Research and Outreach Center, Morris, [2]University of Minnesota Southern Research and Outreach Center, Waseca, [3]Paradox Nutrition, West Chazy, NY, [4]Hubbard Feeds Inc., Mankato, MN, [5]University of Minnesota Extension, Rochester, [6]Fencrest, LLC, Holderness, NH*

10:00 AM 1244 **Relationships between birth season versus early life starter intake and growth and first lactation performance of Holstein dairy cows.**
*B. J. Heins[*1], D. Ziegler[2], D. Schimek[3], S. E. Schuling[3], B. Ziegler[3], H. Chester-Jones[2], M. B. De Ondarza[4], C. J. Sniffen[5], and N. Broadwater[6], [1]University of Minnesota West Central Research and Outreach Center, Morris, [2]University of Minnesota Southern Research and Outreach Center, Waseca, [3]Hubbard Feeds Inc., Mankato, MN, [4]Paradox Nutrition, West Chazy, NY, [5]Fencrest, LLC, Holderness, NH, [6]University of Minnesota Extension, Rochester*

10:15 AM 1245 **ADSA-EAAP PhD Student Travel Award Presentation: Comparing milk yield between cows with different dry period lengths over multiple lactations.**
*A. Kok[*1], C. van Middelaar[1], A. van Knegsel[2], B. Engel[3], H. Hogeveen[4], B. Kemp[2], and I. de Boer[1], [1]Animal Production Systems group, Wageningen University, Netherlands, [2]Adaptation Physiology Group, Wageningen University, Netherlands, [3]Biometris, Wageningen University, Netherlands, [4]Business Economics Group, Wageningen University, Netherlands*

10:45 AM 1246 **Economic impact of introducing automatic milking system on Canadian dairy farms.**
*J. Ferland[1], E. Vasseur[2], M. Duplessis[*3], E. A. Pajor[4], and D. Pellerin[1], [1]Université Laval, Québec, QC, Canada, [2]McGill University, Sainte-Anne-de-Bellevue, QC, Canada, [3]Valacta, Sainte-Anne-de-Bellevue, QC, Canada, [4]University of Calgary, Calgary, AB, Canada*

11:00 AM 1247 **Potential economic returns associated with weekly body condition scoring.**
C. M. Truman[*] and J. M. Bewley, University of Kentucky, Lexington

11:15 AM 1248 **The influence of genetic potential on lactation curve and survival response of commercial dairy cattle to early lactation non-steroidal antiinflammatory (NSAID) drug administration.**
*A. J. Carpenter[*1], J. Ehrlich[2], L. G. D. Mendonça[1], M. J. Brouk[1], and B. J. Bradford[1], [1]Kansas State University, Manhattan, [2]DairySight LLC, Argyle, NY*

11:30 AM 1249 **Management practices and dietary physically effective fiber are related to bulk tank milk de novo fatty acid concentration on Holstein dairy farms.**
*M. E. Woolpert[*1,2], H. M. Dann[1], K. W. Cotanch[1], C. Melilli[3], L. E. Chase[3], R. J. Grant[1], and D. M. Barbano[4], [1]William H. Miner Agricultural Research Institute, Chazy, NY, [2]University of Vermont, Burlington, [3]Cornell University, Ithaca, NY, [4]Cornell University, Department of Food Science, Northeast Dairy Foods Research Center, Ithaca, NY*

11:45 AM 1250 **Estimating the benefit:cost ratio of monensin supplementation.**
K. A. Dolecheck[*] and J. M. Bewley, University of Kentucky, Lexington

12:00 PM 1251 **TMR versus grazing supplemented with TMR out or into the grazing plot: Productive response.**
*D. A. Mattiauda[*1], J. P. Marchelli[2], and P. Chilibroste[1], [1]Facultad de Agronomia, Universidad de la Republica, Paysandu, Uruguay, [2]Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay*

12:15 PM 1252 **Shearing during milking increases milk yield in dairy ewes.**
*A. Elhadi[1], G. Caja[*2], A. A. K. Salama[1,3], X. Such[1], and E. Albanell[1], [1]Universitat Autonoma de Barcelona, Bellaterra, Spain, [2]Group of Ruminant Research (G2R), Universitat Autonoma de Barcelona, Bellaterra, Spain, [3]Animal Production Research Institut, Giza, Egypt*

Ruminant Nutrition: Calves

Chair: Jill L. Anderson, South Dakota State University

9:30 AM - 12:30 PM
155 F

9:30 AM 1297 **Effect of lactose inclusion in calf starters on rumen fermentation of weaned calves.**
*A. Saegusa[*1], K. Inouchi[2], M. Ueno[3], Y. Inabu[4], S. Koike[3], T. Sugino[4], and M. Oba[5], [1]ZEN-RAKU-REN, Fukushima, Japan, [2]ZEN-RAKU-REN, Nishi-shirakawa, Japan, [3]Hokkaido University, Sapporo, Japan, [4]Hiroshima University, Higashi-hiroshima, Japan, [5]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada*

9:45 AM 1298 **Methionine:lysine ratio for crossbred suckling calves fed milk replacer and an amino acid complex.**
*J. C. Chagas[1], M. A. Ferreira[1], M. R. Entjes[2], F. S. Machado[3], L. F. Costa e Silva[4], and M. I. Marcondes[*5], [1]Universidade Federal Rural de Pernambuco, Recife, Brazil, [2]VHL University of Applied Sciences, Leeuwarden, Netherlands, [3]EMBRAPA, Juiz de Fora, Brazil, [4]Universidade Federal de Vicosa, Vicosa, Brazil, [5]Departamento de Zootecnia, Universidade Federal de Viçosa, Viçosa, Brazil*

10:00 AM 1299 **Effects of organic or inorganic Co, Cu, Mn, and Zn supplementation to weaned calves during preconditioning on their productive and health responses.**
*K. Lippolis[*1], R. F. Cooke[1], L. G. T. da Silva[2], K. M. Schubach[1], A. P. Brandao[1,2], R. Marques[1], C. K. Larson[3], T. DelCurto[4], and D. W. Bohnert[1], [1]Oregon State University-EOARC Burns, [2]UNESP - FMVZ, Botucatu, Brazil, [3]Zinpro Corporation, Eden Prairie, MN, [4]Oregon State University-EOARC Union*

10:15 AM 1300 **Dynamics of prepartum β-carotene supplementation among cow, colostrum, and calf.**
*C. M. Prom[*1], M. A. Engstrom[2], and J. K. Drackley[1], [1] University of Illinois at Urbana-Champaign, [2]DSM Nutritional Products, LLC, Parsippany, NJ*

10:30 AM 1301 **Effect of supplementing increasing levels of RUP on growing performance in calves fed a silage-based diet.**
C. R. Oney[*], R. G. Bondurant, F. H. Hilscher, A. K. Watson, G. E. Erickson, J. C. MacDonald, and T. J. Klopfenstein, University of Nebraska-Lincoln

10:45 AM **Break**

11:00 AM 1302 **The effects of a high- or low-plane of nutrition pre-weaning on growth and starter intake of group-housed calves.**
*J. Haisan[*1], M. Oba[1], D. J. Ambrose[2], and M. Steele[1], [1]Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Livestock Research Branch, Alberta Agriculture and Forestry, Edmonton, AB, Canada*

11:15 AM 1303 **Evaluation of stay strong for new born dairy calves.**
*K. Froehlich[*1] and D. P. Casper[2], [1]South Dakota State University, Brookings, [2]Dairy Science Department, South Dakota State University, Brookings*

11:30 AM 1304 **Effects of supplementing pasteurized waste milk with vitamins A, D and E on fat-soluble vitamin status, growth, and health of calves.**
*L. Blakely[*1], M. Kweh[1], M. Poindexter[1], R. L. Stuart[2], and C. D. Nelson[3], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Stuart Products Inc, Bedford, TX, [3]University of Florida, Gainesville*

11:45 AM 1305 **Effect of phytogenic compounds fed to preweaned calves.**
*B. G. Miller[*1] and C. Scheider[2], [1]Biomin USA, Warrenton, MO, [2]Biomin Holding GmbH, Herzogenburg, Austria*

Ruminant Nutrition: Feed Additives II

Chair: Maurice Eastridge, The Ohio State University

Sponsor: Ajinomoto
9:30 AM - 12:30 PM
155 D

9:30 AM 1373 **Optimal blood sampling time points to determine bioavailability of rumen-protected Met products using the plasma free AA dose-response method.**
*N. L. Whitehouse[*1], D. L. Chirgwin[1], C. G. Schwab[2], D. N. Luchini[3], and A. F. Brito[1], [1]University of New Hampshire, Durham, [2]Schwab Consulting, LLC, Boscobel, WI, [3]Adisseo S.A.S., Alpharetta, GA*

9:45 AM 1374 **Effects of prophylactic supplementation with oral calcium boluses on peripartum calcium, urine pH and health in a commercial Jersey herd supplemented with anionic salts.**
A. Valldecabres[*], D. Rolle, A. Belaid, S. Rodríguez, and N. Silva-del-Rio, Veterinary Medicine Teaching and Research Center, University of California Davis, Tulare, CA

10:00 AM 1375 **Effects of supplemental zinc sulfate concentrations on growth performance and carcass characteristics of feedlot heifers, and *in vitro* ruminal fermentative activity.**
C. L. Van Bibber-Krueger[*], C. I. Vahl, and J. S. Drouillard, Kansas State University, Manhattan

10:15 AM 1376 **Evaluating the effects of an injectable trace mineral product on steers raised in a natural beef feedlot program.**
E. K. Niedermayer[*], O. N. Genther-Schroeder, and S. L. Hansen, Iowa State University, Ames

10:30 AM 1377 **Interactive effects of supplemental Zn sulfate and ractopamine hydrochloride on growth performance, carcass traits, and plasma urea nitrogen in feedlot heifers.**
*C. L. Van Bibber-Krueger[*1], J. M. Gonzalez[1], R. G. Amachawadi[1], H. M. Scott[2], and J. S. Drouillard[1], [1]Kansas State University, Manhattan, [2]Texas A&M University, College Station*

10:45 AM 1378 **SafeGain (ruminally-protected lysine) for growing beef cattle.**
*V. De Aguiar Veloso[*1], C. L. Van Bibber-Krueger[1], K. Karges[2], and J. S. Drouillard[1], [1]Kansas State University, Manhattan, [2]H.J. Baker, Animal Health and Nutrition Division, Little Rock, AR*

11:00 AM **Break**

11:15 AM 1379 **Effects of rotating antibiotic and ionophore feed additives on enteric methane and rumen microbial populations of steers consuming a high forage diet.**
*W. L. Crossland[*1], L. O. Tedeschi[1], T. R. Callaway[2], M. D. Miller[1], and W. B. Smith[3], [1]Texas A&M University, College Station, [2]USDA-ARS, College Station, TX, [3]Texas A&M AgriLife Research, Overton*

11:30 AM 1380 **Effects of supplementing lactating dairy cow ration with sodium sesquicarbonate on reticulorumen pH, rumination, and dry matter intake.**
*M. L. Jones[*1], J. D. Clark[1], N. A. Michael[2], and J. M. Bewley[1], [1]University of Kentucky, Lexington, [2]Arm & Hammer Animal Nutrition, Princeton, NJ*

11:45 AM 1381 **Comparison of Titanium 5 PH-M versus Titanium 5 plus NUPLURA PH with the presence or absence of monensin on health and performance of newly received feedlot calves fed RAMP.**
*R. M. Jones[*1], C. J. Bittner[1], F. H. Hilscher[1], R. A. Stock[2], and G. E. Erickson[1], [1]University of Nebraska-Lincoln, [2]Cargill, Blair, NE*

12:00 PM 1382 **Effect of Bovamine on performance of lactating dairy cows.**
*C. Dickey[*1] and M. Eastridge[2], [1]The Ohio State University, Columbus, [2]The Ohio State University, Columbus*

12:15 PM 1383 **Effects of rumen-protected choline (RPC) supplementation to periparturient dairy cows did not depend upon prepartum energy intake.**
*M. G. Zenobi[*1], R. Gardinal[1], A. L. G. Dias[1], J. E. Zuniga[1], R. Moreira[1], B. A. Barton[2], J. E. P. Santos[3], and C. R. Staples[1], [1]Department of Animal Sciences, University of Florida, Gainesville, [2]Balchem Corporation, New Hampton, NY, [3]University of Florida, Gainesville*

Ruminant Nutrition: Microbiology, Fermentation and Feeding

Chair: Antonio Faciola, University of Nevada

9:30 AM - 12:30 PM

155 E

9:30 AM 1519 **Does microbial contamination affect *in situ* estimation of crude protein degradability of concentrate feedstuffs?.**
A. C. B. Menezes[*1], S. C. Valadares Filho[2], P. P. Rotta[3], S. A. Santos[4], D. Zanetti[5], M. V. C. Pacheco[1], B. C. Silva[5], H. M. Alhadas[6], J. M. V. Pereira[6], and P. Pucetti[6], [1]Universidade Federal de Vicosa, Vicosa, Brazil, [2]Universidade Federal de Viçosa, Department of Animal Science, Viçosa, Minas Gerais, Brazil, [3]Colorado State University, Fort Collins, [4]Universidade Federal da Bahia, Salvador, Brazil, [5]Universidade Federal de Viçosa, Vîçosa, Minas Gerais, Brazil*

9:45 AM 1520 **Effect of concentrate type (starch *vs*. fiber) and bicarbonate addition in grass silage-based diets on performance, diet digestibility and enteric methane emissions in lactating dairy cows.**
A. Bougouin[*], A. Ferlay, M. Doreau, Y. Rochette, S. Rudel, C. Lascoux, and C. Martin, INRA-UMR1213 Herbivores, Saint-Genes-Champanelle, France*

10:00 AM 1521 **Validation of the GreenFeed system against model predicted methane emissions.**
P. Huhtanen[1], M. Ramin[1], and A. N. Hristov[*2], [1]Swedish University of Agricultural Sciences, Umea, Sweden, [2]The Pennsylvania State University, University Park*

10:15 AM 1522 **Influence of colostrum on the microbiological diversity of the developing bovine intestinal tract.**
S. L. Ishaq[*1], E. Bichi[2], S. K. Olivo[1], J. Lowe[2], C. J. Yeoman[1], and B. M. Alridge[2], [1]Montana State University, Bozeman, [2]University of Illinois at Urbana-Champaign*

10:30 AM 1523 **Effects of starch feeding on lipopolysaccharide (LPS) concentrations in rumen fluid and feces in fresh dairy cows.**
J. Guo[*1], J. C. Plaizier[1], S. Li[2], S. E. William[3], E. Khafipour[1], and H. M. Dann[3], [1]University of Manitoba, Winnipeg, MB, Canada, [2]Department of Animal Science, University of Manitoba, Winnipeg, MB, Canada, [3]William H. Miner Agricultural Research Institute, Chazy, NY*

10:45 AM 1524 **Correlations between the abundance of specific ruminal bacteria with milk production and total tract digestibility of dairy cows fed live or killed yeast.**
Y. Jiang[*1], R. M. Martins[2], I. M. Ogunade[1], M. A. Bamikole[3], F. Amaro[2], W. Rutherford[4], S. Qi[4], F. Owens[4], B. Smiley[4], K. G. Arriola[1], A. Oliveria[1], D. Vyas[1], C. R. Staples[5], and A. T. Adesogan[1], [1] UF/IFAS, Gainesville, FL, [2]Federal University of Vicosa, Vicosa, Brazil, [3]Department of Animal Science, University of Benin, Benin, Nigeria, [4]DuPont Pioneer, Johnston, IA, UF/IFAS, Gainesville, FL [5]Department of Animal Sciences, University of Florida, Gainesville*

11:00 AM 1525 **Inhibiting the growth of *Escherichia coli* O157:H7 in alfalfa silage with silage additives.**
I. M. Ogunade[*1], D. Kim[1], Y. Jiang[1], K. G. Arriola[1], A. A. P. Cervantes[1], D. Vyas[1], Z. G. Weinberg[2], and A. T. Adesogan[1], [1] UF/IFAS, Gainesville, FL [2]Department of Food Quality and Safety, Agricultural Research Organization, The Volcani Center, Rishon Le Zion, Israel*

11:15 AM 1526 **Partial replacement of ground corn by citrus pulp or steam-flaked corn fed at two concentrate Levels on rumen parameters and kinetics.**
V. B. Ferrari[*], N. R. B. Cônsolo, F. Rodriguez, J. F. Penso, M. O. Frasseto, and L. F. P. Silva, University of Sao Paulo, Pirassununga, Brazil*

11:30 AM 1527 **Recovering lactating dairy cows from diet-induced milk fat depression using corn with different starch degradabilities.**
B. M. Koch, L. E. Koch[*], W. C. Bridges, and G. J. Lascano, Clemson University, Clemson, SC*

11:45 AM 1528 **Effects of field pea supplementation on digestibility and rumen VFA concentration of diets containing high and low quality forages.**
H. L. Greenwell[*1], J. L. Gramkow[1], M. L. Jolly-Breithaupt[1], J. C. MacDonald[1], and K. H. Jenkins[2], [1]University of Nebraska-Lincoln, [2]University of Nebraska, Scottsbluff*

12:00 PM 1529 **Effect of live yeast fed to natural-program beef steers during the finishing phase.**
L. A. Ovinge[*], J. O. Sarturi, M. L. Galyean, P. R. B. Campanili, and L. A. Pellarin, Texas Tech University, Lubbock*

12:15 PM 1530 **Effects of calcium-ammonium nitrate on *in vitro* fermentation of bahiagrass hay with supplemental molasses.**
D. D. Henry[*1], F. M. Ciriaco[1], R. C. Araujo[2], M. E. Garcia-Ascolani[1], P. L. P. Fontes[1], N. Oosthuizen[1], C. D. Sanford[1], T. M. Schulmeister[1], M. Ruiz-Moreno[1], G. C. Lamb[1], and N. DiLorenzo[1], [1]University of Florida, North Florida Research and Education Center, Marianna, FL, [2]GRASP Ind. & Com. LTDA, Curitiba, Brazil*

POSTER PRESENTATIONS

Sponsor: DuPont

Poster Session XIII

7:15 AM - 8:15 AM
Exhibit Hall A/B

Breeding and Genetics: Genomic Selection and GWAS

313 1 **Identification of causative genomic region for carcass weights of cattle.**
H. Chung*, National Institute of Animal Science, Wanju, The Republic of Korea

314 2 **Introgression of the Belgian Blue Myostatin variant into Nellore cattle: Effects of double muscling on birth weight and calving ease.**
G. Nogueira[*1], K. S. Paulussi[1], A. T. H. Utsunomiya[2], Y. T. Utsunomiya[2], A. Almeida[3], A. Tanuri[4], T. Santos[4] and R. Alonso[3], [1] UNESP, Aracatuba-SP, Brazil, [2]UNESP Univ Estadual Paulista, Jaboticabal, Brazil, [3]Deoxi, Aracatuba-SP, Brazil, [4]UFRRJ, Rio de Janeiro-RJ, Brazil*

315 3 **Genomic-polygenic and polygenic parameters and prediction trends for growth and reproduction traits in an Angus-Brahman multibreed population.**
M. A. Elzo[*1], R. Mateescu[1], M. G. Thomas[2], D. D. Johnson[1], D. O. Rae[1], J. D. Wasdin[1], M. D. Driver[1] and J. D. Driver[1], [1]University of Florida, Gainesville, [2]Department of Animal Sciences, Colorado State University, Fort Collins*

316 4 **Genome-enabled prediction of genetic values of growth traits using artificial neural networks.**
S. O. Peters[*1], M. Sinecen[2], M. G. Thomas[3], I. G. Imumorin[4] and K. Kizilkaya[2], [1]Department of Animal Science, Berry College, Mount Berry, GA, [2]Adnan Menderes University, Aydin, Turkey, [3]Department of Animal Sciences, Colorado State University, Fort Collins, [4]Animal Genetics and Genomics Laboratory, Cornell University, Ithaca, NY*

317 5 **Molecular breeding values distribution in slick male and female senepol cattle differing In musculature.**
C. L. González-Berríos[*1], A. Rivera-Serrano[1], A. Casas-Guérnica[1], T. Sonstegard[2] and M. Pagán-Morales[1], [1]Department of Animal Science, University of Puerto Rico, Mayaguez, Puerto Rico, [2]Recombinetics Inc., St Paul, MN*

318 6 **PRUNE2 gene has a potential effect on residual feed intake in Nelore cattle.**
A. O. D. Lima[1], P. S. N. Oliveira[*2], P. C. Tizioto[2], A. L. Somavilla[3], W. J. S. Diniz[1], J. V. D. Silva[1], S. C. S. Andrade[4], C. Boschiero[5], A. S. M. Cesar[6], M. M. Souza[1], M. I. P. Rocha[1], J. Afonso[1], C. E. Buss[1], M. A. Mudadu[7], G. B. Mourao[5], L. L. Coutinho[6] and L. C. A. Regitano[2], [1]Federal University of Sao Carlos, Sao Carlos, Brazil, [2]Embrapa Southeast Livestock, Sao Carlos, Brazil, [3]Universidade Estadual Paulista, Júlio de Mesquita Filho, Jaboticabal, Brazil, [4]Genetics and Evolutionary Biology Department – IB, University of São Paulo, São Paulo, Brazil, [5]Department of Animal Science, University of São Paulo/ESALQ, Piracicaba, Brazil, [6]Animal Biotechnology Laboratory - ESALQ, University of São Paulo, Piracicaba, Brazil, [7]Embrapa Pecuária Sudeste, São Carlos, Brazil*

319 7 **A genome-wide association study for changes in dry matter intake due to temperature variation in an admixed beef cattle population.**
R. Ghebrewold[*] *and M. L. Spangler, University of Nebraska-Lincoln*

320 8 **An international effort to improve feed efficiency and reduce methane emissions in dairy cows through genomics.**
A. M. Wilson[*1], A. M. Butty[1], C. Baes[1], A. Cánovas[1], M. P. Coffey[2], E. E. Connor[3], M. De Pauw[4], B. Gredler[5], E. Goddard[4], G. Hailu[6], V. R. Osborne[7], J. E. Pryce[8], M. Sargolzaei[1,9], F. S. Schenkel[1], P. Stothard[10], E. Wall[2], Z. Wang[4], T. C. Wright[7,11] and F. Miglior[1,12], [1]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [2]SRUC, Edinburgh, United Kingdom, [3]USDA-ARS, Animal Genomics and Improvement Laboratory, Beltsville, MD, [4]University of Alberta, Edmonton, AB, Canada, [5]Qualitas AG, Zug, Switzerland, [6]Department of Food, Agricultural and Resource Economics, University of Guelph, ON, Canada, [7]University of Guelph, ON, Canada, [8]Department of Economic Development, Jobs, Transport and Resources, Bundoora, Australia, [9]Semex Alliance, Guelph, ON, Canada, [10]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [11]Ontario Ministry of Agriculture, Food and Rural Affairs, Guelph, ON, Canada, [12]Canadian Dairy Network, Guelph, ON, Canada*

321 9 **Effect of diet energy level and genomic residual feed intake on dairy heifer performance.**
K. Williams[*1], K. A. Weigel[2], W. K. Coblentz[3], N. M. Esser[4], H. Schlesser[5], P. Hoffman[1,6], H. Su[1] and M. Akins[1], [1]University of Wisconsin-Madison, [2]Department of Dairy Science University of Wisconsin-Madison, [3]US Dairy Forage Research Center, Marshfield, WI, [4]University of Wisconsin, Marshfield, [5]University of Wisconsin-Extension, Marathon County, Wausau, WI, [6]Vita Plus Corporation, Madison, WI*

322 10 **Genomic prediction for feed efficiency traits based on 50K and imputed high density SNP genotypes in multiple breed populations of Canadian beef cattle.**
*C. Li[*1,2], L. Chen[1], M. Vinsky[2], J. Crowley[1], S. P. Miller[3,4], G. Plastow[1], J. Basarab[5] and P. Stothard[1], [1]Livestock Gentec, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, [2]Lacombe Research and Development Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada, [3]Invermay Agricultural Centre, AgResearch Ltd., Mosgiel, New Zealand, [4]Centre for the Genetic Improvement of Livestock, University of Guelph, ON, Canada, [5]Lacombe Research Centre, Alberta Agriculture and Forestry, Lacombe, AB, Canada*

323 11 **Use of multivariate statistical analyses to preselect SNP markers for GWAS on residual feed intake in dairy cattle.**
*C. Dimauro[*1], E. Manca[1], A. Rossoni[2], E. Santus[2], M. Cellesi[1] and G. Gaspa[3], [1]Università di Sassari, Italy, [2]ANARB, Italian Brown Cattle Breeders' Association, Bussolengo (VR), Italy, [3]Dipartimento di Agraria, University of Sassari, Sassari, Italy*

324 12 **Breed base representation in dairy animals of five breeds.**
H. D. Norman[*1], P. M. VanRaden[2], J. H. Megonigal[1], J. W. Dürr[1] and T. A. Cooper[2], [1]Council on Dairy Catlle Breeding, Bowie, MD, [2]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD

325 13 **Estimation of the composition of four U.S. swine breeds using genomic data.**
*S. A. Funkhouser[*1], R. O. Bates[2], C. W. Ernst[2], D. W. Newcom[3] and J. P. Steibel[2,4], [1]Genetics Program, Michigan State University, East Lansing, [2]Department of Animal Science, Michigan State University, East Lansing, [3]National Swine Registry, West Lafayette, IN, [4]Department of Fisheries and Wildlife, Michigan State University, East Lansing*

326 14 **Genome-wide association study and accuracy of genomic prediction for teat number in Duroc pigs using genotyping by sequencing.**
*C. Tan[*1,2], Y. Da[2], Z. Wu[3], D. Liu[3], X. He[2,3], N. Li[1] and X. Hu[1], [1]State Key Laboratory for Agrobiotechnology, China Agricultural University, Beijing, China, [2]Department of Animal Science, University of Minnesota, Saint Paul, [3]College of Animal Science, South China Agricultural University, Guangzhou, China*

327 15 **Genome-wide association study for supernumerary teats in Swiss Brown Swiss Cattle reveals LGR5 as a major gene on chromosome 5.**
*A. M. Butty[1,2], M. Frischknecht[2,3], B. Gredler[2], C. Baes[*1], S. Neuenschwander[4], J. Moll[2], A. Bieber[5] and F. Seefried[2], [1]Centre for Genetic Improvement of Livestock, University of Guelph, ON, Canada, [2]Qualitas AG, Zug, Switzerland, [3]School of Agricultural, Forest and Food Sciences, Bern University of Applied Sciences, Zollikofen, Switzerland, [4]Unit of Animal Genetics, Institute of Agricultural Sciences, Swiss Federal Institute of Technology, Zurich, Switzerland, [5]Department of Animal Science, Research Institute of Organic Agriculture (FiBL), Frick, Switzerland*

328 16 **Genomic and polygenic evaluations for milk and fat yields in Holstein upgraded Thai dairy cattle.**
*D. Jattawa[1], M. A. Elzo[*1], S. Koonawootrittriron[2] and T. Suwanasopee[2], [1]University of Florida, Gainesville, [2]Kasetsart University, Bangkok, Thailand*

329 17 **Genome wide association study for loci associated with digital dermatitis and pododermatitis circumscripta in Holstein cattle.**
*A. M. Oberbauer[*1], A. L. Danner[1], J. M. Belanger[1], T. R. Famula[1] and J. M. Heguy[2], [1]Department of Animal Science, University of California-Davis, [2]UCCE Stanislaus and San Joaquin Counties, Modesto, CA*

330 18 **Genome-wide associations study for somatic cell score in Russian Holstein cattle population.**
A. A. Sermyagin[*], E. A. Gladyr' and N. A. Zinovieva, L.K.Ernst Institute of Animal Husbandry, Moscow, Russian Federation

331 19 **Genome-wide association study of Milk Coagulation Properties in Dairy Sheep.**
*G. Gaspa[1], J. Serdino[1], M. G. Manca[1], S. Sorbolini[1], R. Negrini[2], C. Dimauro[3] and N. P. P. Macciotta[*1], [1]Dipartimento di Agraria, University of Sassari, Italy, [2]Associazione Italiana Allevatori, Roma, Italy, [3] University of Sassari, Italy*

332 20 **Genetic markers identification and genotyping for resistance to internal parasites in sheep and goat infected with Haemonchus contortus.**
*Z. M. Estrada Reyes[*1], A. L. Goetsch[2], T. A. Gipson[2], Z. Wang[3], M. Rolf[4], T. Sahlu[2], R. Puchala[2], S. Zeng[3] and R. Mateescu[1], [1]University of Florida, Gainesville, [2]American Institute for Goat Research, Langston University, Langston, OK, [3]Langston University, Langston, OK, [4]Oklahoma State University, Stillwater*

333 21 **Genomic analysis of lactation persistency in four breeds of dairy cattle.**
*J. B. Cole[1], D. J. Null[*1] and K. L. Parker Gaddis[2], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]Department of Animal Sciences, University of Florida, Gainesville*

334 22 **Genome-wide association study for tick count and infection level of Babesia bovis traits in Angus cattle.**
*L. Cavani[*1,2], C. H. Santana[1], R. Giglioti[1], T. B. Bilhassi[1], M. C. D. S. Oliveira[3], R. Carvalheiro[1] and H. N. Oliveira[1], [1]State University of São Paulo, Faculty of Agriculture and Veterinary Sciences, Jaboticabal, Brazil, [2]São Paulo State Foundation, São Paulo, Brazil, [3]Embrapa Southeast Livestock, São Carlos, Brazil*

335 23 **Identification of loci associated with susceptibility to bovine paratuberculosis using imputed genotypes based on whole genome sequencing.**
J. N. Kiser[*1], J. L. Hoff[2], S. N. White[3], J. F. Taylor[2] and H. L. Neibergs[1], [1]Department of Animal Science, Washington State University, Pullman, [2]University of Missouri, Columbia, [3]USDA-ARS, Animal Disease Research Unit, Pullman, WA*

336 24 **Joint SNP-haplotype analysis for genomic selection based on the invariance property of GBLUP and GREML to duplicate SNPs.**
Y. Da[*1], C. Tan[1,2] and D. Parakapenka[1], [1]Department of Animal Science, University of Minnesota, Saint Paul, [2]State Key Laboratory for Agrobiotechnology, China Agricultural University, Beijing, China*

337 25 **Practical approximation of accuracy in genomic breeding values for a large number of genotyped animals.**
S. Tsuruta[*1], D. Lourenco[1], Y. Masuda[1], D. W. Moser[2] and I. Misztal[1], [1]University of Georgia, Athens, [2]Angus Genetics Inc., St. Joseph, MO*

Animal Health: General Health

159 26 **A new protocol for the isolation of key recombinant proteins in livestock production using lactic acid bacteria as a cell factory.**
L. Gifre[*1], O. Cano-Garrido[2,3,4], F. Fàbregas[1], J. Seras-Franzoso[2,3,4,5], R. Roca[1], N. Ferrer-Miralles[2,3,4], A. Villaverde[2,3,4], A. Bach[1,6], A. Arís[1] and E. Garcia-Fruitós[1], [1]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [2]Departament de Genetica i de Microbiologia, UAB, Cerdanyola del Valles, Spain, [3]CIBER de Bioingenieria, Biomateriales y Nanomedicina (CIBER-BBN), Cerdanyola del Valles, Spain, [4]Institut de Biotecnologia i de Biomedicina, UAB, Cerdanyola del Valles, Spain, [5]Cibbim-Nanomedicine, Hospital Vall d'Hebron, Institut de Recerca de la Vall d'Hebron (VHIR), Barcelona, Spain, [6]ICREA, Barcelona, Spain*

160 27 **The negative effects of electromagnetic field exposure in male New Zealand White rabbits.**
O. Yildiz Gulay[*1], M. S. Gulay[1], A. Balic[2] and A. Ata[1], [1]Mehmet Akif Ersoy University, Burdur, Turkey, [2]Sakarya Research Hospital, Sakarya, Turkey*

161 28 **Embracing innovation in the animal drug approval process.**
D. M. Sholly[*] and C. Taylor-Edwards, U.S. Food and Drug Administration/CVM, Rockville, MD*

162 29 **Regulation of animal drugs and foods in the 21st century: Enhancing communication among industry, academics, regulators, and the public.**
C. Taylor-Edwards[*] and D. M. Sholly, U.S. Food and Drug Administration/CVM, Rockville, MD*

163 30 **Exploring a new presentation form of recombinant proteins for animal production.**
O. Cano-Garrido[1,2,3], S. Parés[4], A. Sánchez-Chardi[5], L. Gifre[4], N. Ferrer-Miralles[1,2,3], A. Natalello[6], R. Cubarsi[7], A. Bach[8,9], A. Villaverde[1,2,3], A. Arís[4] and E. Garcia-Fruitós[*4], [1]Institut de Biotecnologia i de Biomedicina, UAB, Cerdanyola del Valles, Spain, [2]Departament de Genetica i de Microbiologia, UAB, Cerdanyola del Valles, Spain, [3]CIBER de Bioingenieria, Biomateriales y Nanomedicina (CIBER-BBN), Cerdanyola del Valles, Spain, [4]Department of Ruminant Production, IRTA, Caldes de Montbui, Spain, [5]Servei de Microscopia, UAB, Cerdanyola del Valles, Spain, [6]Department of Biotechnology and Biosciences, Università di Milano-Bicocca, Milano, Italy, [7]Departament de Matemàtica Aplicada IV. Universitat Politècnica de Catalunya, Barcelona, Spain, [8]ICREA, Barcelona, Spain, [9]IRTA, Caldes de Montbui, Spain*

164 31 **Reduced severity of histological lesions in mink selected for tolerance to Aleutian mink disease virus infection- A field survey.**
A. H. Farid[*1] and L. E. Ferns[2], [1]Department of Animal Science, Dalhousie University Faculty of Agriculture, Truro, NS, Canada, [2]Pathology Laboratory, Veterinary Services, Nova Scotia Department of Agriculture, Truro, NS, Canada*

165 32 **Type of blood tube affects haptoglobin concentration when analyzed with a colorimetric assay.**
M. A. Campbell[*1,2], J. W. Darrah[1] and H. M. Dann[1], [1]William H. Miner Agricultural Research Institute, Chazy, NY, [2]University of Vermont, Burlington*

166 33 **Health and production benefits of feeding cowpeas to goats.**
S. Adjei-Fremah[*], A. Everett, R. Franco, K. Moultone, E. Asiamah, K. Ekwemalor, L. E. Jackai, N. Whitley, K. Schimmel and M. Worku, North Carolina Agricultural and Technical State University, Greensboro*

167 34 **Exposure of bovine blood to pathogen associated and non pathogen associated molecular patterns results in transcriptional activation.**
K. Ekwemalor[*], S. Adjei-Fremah, E. Asiamah, H. Ismail and M. Worku, North Carolina Agricultural and Technical State University, Greensboro*

168 35 **Prevalence of Brucella suis in hunting dogs in Hawai`i.**
B. S. McNeill, J. Odani, R. Jha[*] and H. M. Zaleski, University of Hawaii at Manoa, Honolulu*

169 36 **Pulmonary arterial pressure in yearling Angus cattle managed at high altitude: Study of a non-synonymous SNP in the oxygen-dependent degradation domain of the endothelial PAS domain-containing protein 1 gene.**
*N. F. Crawford[*1], X. Zeng[1], S. J. Coleman[1], T. N. Holt[2], S. E. Speidel[1], R. M. Enns[1], J. H. Newman[3], R. Hamid[4] and M. G. Thomas[1], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, [3]Department of Medicine, Division of Allergy, Pulmonary and Critical Care, Vanderbilt University School of Medicine, Nashville, TN, [4]Department of Pediatrics, Division of Medical Genetics and Genomic Medicine, Vanderbilt University School of Medicine, Nashville, TN*

170 37 **Subclinical right heart failure may contribute to the development of liver disease in feedlot cattle during the finishing phase.**
A. K. Gulick[*], K. M. Freeman, B. C. Bernhard, J. O. Sarturi and J. M. Neary, Texas Tech University, Lubbock

171 38 **Evidence of cor pulmonale and liver disease in association with pneumonia in feedlot and dairy cattle at an altitude of 975m.**
A. K. Gulick[*] and J. M. Neary, Texas Tech University, Lubbock

Nonruminant Nutrition: Nutrient Digestibility and Gene Effects

986 39 **Investigations of marker and fiber effects on energy and nutrient utilization in growing pigs.**
*T. Wang[*1], D. Ragland[2] and O. Adeola[1], [1]Department of Animal Sciences, Purdue University, West Lafayette, IN, [2]Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, IN*

987 40 **Evaluation of ileal energy digestibility of diets based on different grain species fed to growing pigs.**
P. Rosenfelder[*], H. K. Spindler, E. J. P. Strang, E. DeGiorgi, M. Eklund and R. Mosenthin, University of Hohenheim, Institute of Animal Science, Stuttgart, Germany

988 41 **The relationship between the expression of genes regulating appetite control and feeding behaviour in pigs divergent in feed efficiency.**
*S. Vigors[1], J. V. O'Doherty[2], A. K. Kelly[2] and T. Sweeney[*1], [1]School of Veterinary Medicine, University College Dublin, Belfield, Ireland, [2]School of Agriculture and Food Science, University College Dublin, Ireland*

989 42 **Ileal amino acid digestibility in broiler chicken fed rice bran with or without carbohydrase and phytase.**
C. Gallardo[*], J. C. Dadalt, J. C. da Silva Maciel de Souza and M. A. D. T. Neto, University of São Paulo, Pirassununga, Brazil

990 43 **Effect of dietary net energy and digestible lysine levels on performance of weaned and starter pigs fed low protein-amino acids fortified diets.**
*J. K. Htoo[*1] and J. Morales[2], [1]Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany, [2]PigCHAMP Pro Europa, Segovia, Spain*

991 44 **Relationship between the microbiota in different sections of the gastrointestinal tract, and the body weight of broiler chickens.**
J. Lee[*] and C. Kong, Konkuk University, Seoul, The Republic of Korea

992 45 **Nutrient profile and *in vitro* digestibility of cassava silages in swine.**
U. P. Tiwari[*] and R. Jha, University of Hawaii at Manoa, Honolulu

993 46 **Amino acid digestibility in feed ingredients fed to pigs.**
*S. A. Lee[*1], J. Y. Ahn[2], A. R. Son[1] and B. G. Kim[1], [1]Konkuk University, Seoul, The Republic of Korea, [2]Jeongeup, The Republic of Korea*

994 47 **Evaluation and development of the prediction equation for the gross energy in feed ingredients.**
A. R. Son[*] and B. G. Kim, Konkuk University, Seoul, The Republic of Korea

Ruminant nutrition: Plant-derived feed additives II

1564 48 **Effects of condensed tannins on the ensiling and aerobic stability of purple prairie clover (Dalea purpurea Vent.) silage.**
*K. Peng[*1,2], Q. Huang[3], T. A. McAllister[2], S. Wang[1], Z. Xu[2], S. Acharya[2] and Y. Wang[2], [1]College of Engineering, China Agricultural University, Beijing, China, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]College of Animal Science and Technology, Northwest A&F University, Yangling, China*

1565 49 **Effect of purple prairie clover (Dalea purpurea Vent.) and its condensed tannins on nutrient intake, digestibility and growth performance of lambs.**
*K. Peng[*1,2], D. C. Shirley[3], Z. Xu[2], Q. Huang[2,4], T. A. McAllister[2], A. V. Chaves[3], S. Acharya[2], S. Wang[1] and Y. Wang[2], [1]College of Engineering, China Agricultural University, Beijing, China, [2]Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada, [3]The University of Sydney, Faculty of Veterinary Science, School of Life and Environmental Sciences, Sydney, Australia, [4]College of Animal Science and Technology, Northwest A&F University, Yangling, China*

1566 50 **Effect of dietary polyphenol, protected amino acid and crude protein levels on *in vitro* rumen fermentation and crude protein digestibility.**
*B. Choi[*1], J. Yang[1], C. Ryu[1], S. J. Shin[1], Y. Kim[1], J. Heo[2], S. Cho[3] and N. J. Choi[1], [1]Chonbuk National University, Jeonju-si, The Republic of Korea, [2]Microbial Institute for Fermentation Industry, Sunchang-gun, The Republic of Korea, [3]CALS Co.,Ltd, Seongnam-si, The Republic of Korea*

1567 51 **The effect of addition of mulberry leaves silage in the diet of beef cattle on their growth and slaughter performance.**
H. Wu[*], Q. Meng, L. Ren and Z. Zhou, China Agricultural University, Beijing, China

1568 52 **Supplementation of Korean honeysuckle (Lonicera vesicaria) extract in timothy hay on *in vitro* ruminal fermentation.**
*I. D. Lee[*1], S. K. Lee[2], S. J. Lee[2], S. Y. Yang[3], S. S. Lee[1] and J. S. Eun[3], [1]Division of Applied Life Science, Gyeongsang National University, Jinju, The Republic of Korea, [2]Institute of Agriculture and Life Science, Gyeongsang National University, Jinju, The Republic of Korea, [3]Department of Animal, Dairy, and Veterinary Sciences, Utah State University, Logan*

1569 53 **Effects of an extract of plant flavonoids from Citrus aurantium on performance, eating and animal behavior, ruminal health, and carcass yield in Holstein bulls fed high-concentrate diets.**
*M. Paniagua[5], F. J. Crespo[2], A. Bach[3,4] and M. Devant[*1], [1]IRTA - Department of Ruminant Production, Caldes De Montbui, Spain, [2]Interquim SA, Barcelona, Spain, [3]ICREA, Barcelona, Spain, [4]IRTA, Caldes de Montbui, Spain, [5]Quimidroga, Barcelona, Spain*

1570 54 **A blend of cinnamaldehyde, eugenol and capsicum oleoresin improves milking performance in lactating dairy cows.**
C. Oguey[*] and E. H. Wall, Pancosma, Geneva, Switzerland

1571 55 **Evaluation of a proprietary blend of essential oil and cobalt on a commercial dairy.**
O. J. Kuester[*], South Dakota State University, Brookings

1572 56 **Effects of feeding functional oils or monensin on feedlot performance and carcass traits of Nellore cattle.**
*A. C. Melo[*1,2], M. C. Pereira[3], A. L. Rigueiro[1], D. H. M. Watanabe[1], M. M. Squizatti[1], L. A. Tomaz[1], J. V. Dellaqua[1], O. A. Souza[1], P. F. Santi[1], A. L. J. Lelis[1], A. F. Toledo[1] and D. D. Millen[1], [1]São Paulo State University, Dracena, Brazil, [2]São Paulo State Foundation, São Paulo, Brazil, [3]São Paulo State University, Botucatu, Brazil*

1573 57 **Influence of tannins extract and monensin supplementation on performance of feedlot heifers in Argentina.**
*C. Cabral[1], A. Lopez Da SIlva[2,3], J. J. Couderc[3], D. Colombatto[4] and R. Barajas[*5], [1]Indunor, S.A., Buenos Aires, Argentina, [2]Feedlot Don Corral de Corijunio S.A., Buenos Aires, Argentina, [3]Nowet S.A, Buenos Aires, Argentina, [4]Universidad de Buenos Aires, Argentina, [5]FMVZ-Universidad Autónoma de Sinaloa, Culiacan, Mexico*

Ruminant Nutrition: Fats, Fatty Acids and Energy II

1331 58 **Milk production responses to palmitic acid supplementation when fed as fatty acids or triglycerides.**
J. de Souza[*] and A. L. Lock, Michigan State University, East Lansing

1332 59 **Comparison of a palmitic acid-enriched triglyceride supplement and a calcium salts of palm fatty acids supplement on milk production responses of dairy cows.**
J. de Souza[*] and A. L. Lock, Michigan State University, East Lansing

1333 60 **Changes in milk odd and branched-chain fatty acids during induction and recovery from biohydrogenation-induced milk fat depression.**
*E. Palmer[1], M. Baldin[*1], D. E. Rico[2] and K. J. Harvatine[1], [1]The Pennsylvania State University, University Park, [2]Université Laval, Québec, QC, Canada*

1334 61 **Dynamics of enrichment of omega-3 fatty acids in plasma lipid fractions following a bolus dose in dairy cows.**
*N. L. Urrutia[*1], M. Baldin[1], J. Y. Ying[2], S. R. McKinney[1] and K. J. Harvatine[1], [1]The Pennsylvania State University, University Park, [2]The Pennsylvania State University, State College*

1335 62 **Intravenous nicotinic acid suppresses adipose tissue lipolysis in Holstein dairy cows.**
A. N. Davis[*], J. L. Clegg and J. W. McFadden, West Virginia University, Morgantown, WV

1336 63 **Ruminal metabolism of fatty acids from fish oil or algae in steers fed a finishing diet.**
A. Pesqueira[*], University of Kentucky, Lexington

1337 64 **Increases in milk fat yield are maintained with prolonged palmitic acid supplementation in mid-lactation dairy cows.**
*A. T. Mathews[1], J. E. Rico[*1], N. T. Sprenkle[1], A. L. Lock[2] and J. W. McFadden[1], [1]West Virginia University, Morgantown, WV, [2]Michigan State University, East Lansing*

1338 65 **Feedlot performance of Nellore bullocks fed with two different types of ruminally protected fat.**
*F. D. A. Nascimento[1], N. C. D. Silva[1], F. P. Monção[*1], R. D. L. Pacheco[2], B. J. Johnson[3], F. D. D. Resende[4] and G. R. Siqueira[4], [1]UNESP - Univ Estadual Paulista, Jaboticabal, Brazil, [2]Empresa Mato-grossense de Pesquisa, Assitência e Extensão Rural-EMPAER-MT, Campo Grande, Brazil, [3]Texas Tech University, Lubbock, [4]Agência Paulista de Tecnologia dos Agronegócios, Colina, Brazil*

1339 66 **Studies on different energy density of close-up diets on energy metabolism and lactation performance in montbeliarde-sired crossbred holstein cows.**
S. Dong, Z. Cao, S. Li and Y. J. Wang[*], State Key Laboratory of Animal Nutrition, Beijing Engineering Technology Research Center of Raw Milk Quality and Safety Control, College of Animal Science and Technology, China Agricultural University, Beijing, China*

1340 67 **Prepartum body condition score and plane of nutrition affect the hepatic transcriptome during the transition period in grazing dairy cows.**
*M. Vailati Riboni[*1], S. Meier[2], C. Burke[2], J. K. Kay[2], M. D. Mitchell[3], C. G. Walker[2], M. A. Crookenden[2], A. Heiser[4], S. L. Rodriguez Zas[1], J. R. Roche[2] and J. J. Loor[1], [1]University of Illinois at Urbana-Champaign, [2]DairyNZ, Hamilton, New Zealand, [3]University of Queensland, Australia, [4]AgResearch, Palmerston North, New Zealand*

Poster Session XIV

8:15 AM - 9:15 AM
Exhibit Hall A/B

Companion Animal Biology

418 1 **Ehrlichia canis in canines from Culiacan, Sinaloa, Mexico.**
I. Enríquez Verdugo[*], B. E. Lopez Gallegos, C. Barraza Tizoc, N. Castro del Campo, D. Solis Carrasco, S. M. Gaxiola Camacho, J. Gaxiola Montoya and M. C. Rubio Robles, FMVZ-Universidad Autonoma de Sinaloa, Culiacan, Mexico

419 2 **Effect of dietary composition over food preferences of dogs.**
J. Figueroa, S. A. Guzmán-Pino, S. Morales[*] and C. Muñoz, Universidad de Chile, Santiago, Chile

420 3 **Hind limb kinematics of the Weimaraner at the trot.**
*L. Carlisle[1], M. C. Nicodemus[*1] and K. Slater[2], [1]Mississippi State University, Mississippi State, [2]Banfield Pet Hospital, Magnolia*

421 4 **The effect of source and drying process on amino acid composition and protein quality of dried poultry used in high quality pet diets and select human foods.**
*L. M. Molnar[*1], C. G. Aldrich[1], S. Beyer[1], C. K. Jones[1] and R. L. Dake[2], [1]Kansas State University, Manhattan, [2]American Dehydrated Foods, Springfield, MO*

422 5 **The amino acid composition and protein quality of various poultry and vegetable proteins commonly used in the production of dog and cat diets.**
*R. A. Donadelli[*1], C. G. Aldrich[1], C. K. Jones[1], R. S. Beyer[1] and R. L. Dake[2], [1]Kansas State University, Manhattan, [2]American Dehydrated Foods, Springfield, MO*

423 6 **The effect of Miscanthus grass as a fiber source in cat diets on nutrient utilization and stool consistency.**
R. A. Donadelli[*], C. G. Aldrich and I. C. Alvarenga, Kansas State University, Manhattan

424 7 **The effect of feed form on diet digestibility and cecal fermentation in rabbits.**
*I. C. Alvarenga[*1], C. G. Aldrich[1] and M. Kohles[2], [1]Kansas State University, Manhattan, [2]Oxbow Animal Health, Murdock, NE*

Lactation Biology

840 8 **Duration of lactation in first-parity sows: Does it affect piglet growth in second parity?**
*C. Farmer[*1], M. Amezcua[2], R. M. Bruckmaier[3], O. Wellnitz[3] and R. Friendship[2], [1]Agriculture and Agri-Food Canada, Sherbrooke R & D Centre, Sherbrooke, QC, Canada, [2]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [3]Veterinary Physiology, Vetsuisse Faculty University of Bern, Bern, Switzerland*

841 9 **Effects of glucose and amino acids on casein synthesis via JAK2/STAT5 signaling pathway in bovine mammary epithelial cells.**
*M. Zhang[1,2,3], S. Zhao[1,2,3], H. Gao[1,2,3,4], C. Luo[1,2,3], S. Wang[1,2,3], N. Zheng[1,2,3] and J. Wang[*2,3,5], [1]Ministry of Agriculture-Milk Risk Assessment Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [3]Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, [4]College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China, [5]Ministry of Agriculture Laboratory of Quality & Safety Risk Assessment for Dairy Products, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China*

842 10 **Repeated mammary tissue collections during lactation have no impact on cow performance.**
*X. Weng[*1], A. P. A. Monteiro[1], J. Guo[1], B. M. S. Ahmed[2], J. K. Bernard[1], J. DeFrain[3], G. E. Dahl[4] and S. Tao[1], [1]University of Georgia, Tifton, [2]University of Florida, Gainesville, [3]Zinpro Corporation, Eden Prairie, MN, [4]Department of Animal Sciences, University of Florida, Gainesville*

843 11 **Lack of glucose and amino acids suppresses protein synthesis of bovine mammary epithelial cells by activating AMPK and inhibiting mTORC1 signaling pathways.**
*S. Wang[1,2,3,4], S. Zhao[1,2,3], H. Gao[1,2,3,5], M. Zhang[1,2,3], N. Zheng[1,2,3], Y. Zhang[1,2,3], S. Yan[4] and J. Wang[*2,3,3], [1]Ministry of Agriculture-Milk Risk Assessment Laboratory, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [2]State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences, Beijing, China, [3]Ministry of Agriculture-Milk and Dairy Product Inspection Center, Beijing, China, [4]College of Animal Science, Inner Mongolia Agricultural University, Hohhot, China, [5]College of Animal Science and Technology, Gansu Agricultural University, Lanzhou, China*

844 12 **Genome wide association analysis and pathways enrichment for lactation persistency in Canadian Holstein cattle.**
*D. N. Do[*1,2], N. Bissonnette[1], P. Lacasse[1], M. Sargolzaei[3,4], F. Miglior[4,5], X. Zhao[2] and É. M. Ibeagha-Awemu[1], [1]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada, [2]Department of Animal Science, McGill University, Montreal, QC, Canada, [3]Semex Alliance, Guelph, ON, Canada, [4]Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, ON, Canada, [5]Canadian Dairy Network, Guelph, ON, Canada*

845 13 **Effect of 17β-estradiol on milk production, hormone secretion and mammary gland gene expression of dairy cows.**
*J. J. Tong[1], I. M. Thompson[2] and P. Lacasse[*2], [1]Department of Clinical Veterinary Medicine, College of Veterinary Medicine, Northeast Agricultural University, Harbin, China, [2]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada*

846 14 **Estimation of quarter vs. composite colostrum composition via Brix refractometry, specific gravity, and visual color appearance in dairy cows.**
J. J. Gross[*], E. C. Kessler and R. M. Bruckmaier, Veterinary Physiology, Vetsuisse Faculty University of Bern, Switzerland

847 15 **Effects of increasing residual milk on milk yield and composition.**
*L. L. Hernandez[1], V. J. McKeon[*2], E. L. Endres[2], A. de Bruijn[2], A. Kleinhans[2] and D. J. Reinemann[2], [1]Department of Dairy Science, University of Wisconsin-Madison, [2]University of Wisconsin-Madison*

848 16 **Nutrient composition of milk from great apes throughout lactation.**
*M. Garcia[*1], M. Power[2] and K. M. Moyes[1], [1]Department of Animal and Avian Sciences, University of Maryland, College Park, [2]Smithsonian Conservation Biology Institute, Washington DC, DC*

849 17 **Milk fat globules as a source of mammary microRNA.**
*D. Lago-Novais[1,2], K. Pawlowski[1], J. A. A. Pires[*1], L. Mobuchon[1,3], S. Bes[1], P. Martin[3] and C. Leroux[1], [1]UMR1213 Herbivores, INRA, VetAgroSup, Saint-Genes-Champanelle, France, [2]Universidade Federal da Bahia, CEP 40170-110 Salvador-BA, Brazil, [3]UMR1313 Gabi, INRA, AgroParisTech, Université Paris-Saclay, Jouy-en-Josas, France*

850 18 **Consumption of endophyte-infected fescue seed during the dry period and lactation affects mammary gland gene expression in dairy cows.**
*R. L. Baldwin[*1], C. Li[1], D. M. Bickhart[1], C. M. Evock-Clover[1], P. Grossi[2], R. K. Choudhary[3], T. H. Elsasser[4], G. Bertoni[5], E. Trevisi[6], G. E. Aiken[7], K. R. McLeod[8] and A. Capuco[1], [1]Animal Genomics and Improvement Laboratory, USDA-ARS, Beltsville, MD, [2]Università Cattolica del Sacro Cuore, Piacenza, Italy, [3]School of Animal Biotechnology, GADVASU, Ludhiana, India, [4]USDA-ARS,Animal Biosciences and Biotechnology Laboratory, Beltsville, MD, [5]Istituto di Zootecnica, Universita Cattolica del Sacro Cuore, Piacenza, Italy, [6]Universita Cattolica del Sacro Cuore, Piacenza, Italy, [7]USDA-ARS, Lexington, KY, [8]University of Kentucky, Lexington*

851 19 **Intravenous infusion of 5 hydroxy-L-tryptophan, a serotonin precursor, to transition dairy cows pre-calving affects GH-IGF axis gene expression in the mammary gland and liver post-calving.**
*S. R. Weaver[*1], L. L. Hernandez[1], S. Tao[2] and J. Laporta[3], [1]Department of Dairy Science, University of Wisconsin-Madison, [2]University of Georgia, Tifton [3]Department of Animal Sciences, University of Florida, Gainesville*

852 20 **Effect of cortisol on mammary epithelial cell, Bax and Bcl-2 gene expression at lactation peak of goats.**
G. F. Bomfim[*], State University, Julio de Mesquita Filho, Jaboticabal, Sao Paulo, Brazil

853 21 **Interactions among serotonin and circadian systems in the mammary gland.**
*A. Suárez-Trujillo[1], J. S. Crodian[2], A. M. Shamay[3], S. J. Mabjeesh[*4], K. Plaut[5] and T. M. Casey[5], [1]Department of Animal Science, Universidad de Las Palmas de Gran Canaria, Arucas, Las Palmas, Spain, [2]Purdue University, West Lafeyette, IN, [3]Agriculture Research Organization, Volcani Center, Bet Dagan, Israel, [4]Deptartment of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food and Environment The Hebrew University, Rehovot, Israel, [5]Department of Animal Sciences; Purdue University, West Lafayette, IN*

854 22 **Effects of stress on IGF-1 plasma concentrations, and on expression of GH and IGF-1 receptors in mammary glands.**
G. F. Bomfim[*], Faculty of Animal Science and Food Engineering, FZEA/USP, Pirassununga / Sao Paulo, Brazil

855 23 **Extracellular matrix molecule decorin signaling pathway gene expression in two bovine mammary cell lines.**
H. L. M. Tucker[*], C. L. M. Parsons and K. M. Daniels, Virginia Polytechnic Institute and State University, Blacksburg

856 24 **Associations between quarter-level inflammation status across the dry period and health outcomes in the subsequent lactation.**
S. A. Metzger[*], L. L. Hernandez and P. L. Ruegg, Department of Dairy Science, University of Wisconsin-Madison

857 25 **Interaction among energy status, dietary protein and vitamin A in periparturient dairy cows: Effects on milk fatty acid profile and gross milk yield efficiency.**
Y. Chen[*], K. C. Ramsey, C. Y. Tsai, M. A. McGuire and P. Rezamand, University of Idaho, Moscow

741 26 **Effect of intrammamary infusion of chitosan hydrogels on bovine mammary gland involution after drying-off.**
*S. Lanctot[*1], X. Zhao[1], P. Fustier[2], A. Taherian[2], B. Bisakowski[2] and P. Lacasse[3], [1]Department of Animal Science, McGill University, Montreal, QC, Canada, [2]Food Research and Development Centre, St-Hyacinthe, QC, Canada, [3]Agriculture and Agri-Food Canada, Sherbrooke Research and Development Centre, Sherbrooke, QC, Canada*

Production, Management and the Environment: Reproduction

1264 27 **WS** **Effects of early or conventional weaning on beef cow and calf performance in pasture and drylot environments.**
*G. W. Preedy[*1], J. R. Jaeger[2], J. W. Waggoner[3] and K. C. Olson[1], [1]Kansas State University, Manhattan, [2]Western Kansas Agricultural Research Center, Kansas State University, Hays, [3]Western Kansas Agricultural Research Center, Kansas State University, Garden City*

1265 28 **Association between management practices and reproductive performance of lactating dairy cows.**
*G. M. Schuenemann[*1], J. M. Piñeiro[1] and P. Turiello[2], [1]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, [2]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Cordoba, Argentina*

1266 29 **Association between management practices and dairy herd performance.**
*P. Turiello[*1], J. M. Piñeiro[2] and G. M. Schuenemann[2], [1]Facultad de Agronomia y Veterinaria, UNRC, Rio Cuarto, Cordoba, Argentina, [2]Department of Veterinary Preventive Medicine, The Ohio State University, Columbus*

1267 30 **Impacts of early lactation hyperketonemia on reproduction and 305-d milk production.**
*D. E. Santschi[*1], R. Lacroix[1], R. K. Moore[1], F. Miglior[2] and D. M. Lefebvre[1], [1]Valacta, Saint-Anne-de-Bellevue, QC, Canada, [2]Candian Dairy Network, Guelph, ON, Canada*

1268 31 **Reproductive performance and culling dynamics of lactating dairy cows with detected pregnancy loss.**
R. Wijma[*], M. L. Stangaferro and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

1269 32 **Profitability of dairy cows receiving first service timed artificial insemination after the Double-Ovsynch protocol with a voluntary waiting period of 60 or 88 days.**
M. L. Stangaferro[*], R. Wijma, M. Masello, G. E. Granados and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY

1270 33 **Profitability of dairy cows managed for first service with the Double-Ovsynch or Presynch-Ovsynch protocol and different duration of the voluntary waiting period.**
M. L. Stangaferro, R. Wijma, M. Masello, G. E. Granados and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY*

1271 34 **Economic evaluation of a milk test for pregnancy confirmation in dairy cows.**
E. M. Wynands[1], M. von Massow[2], S. J. LeBlanc[1] and D. F. Kelton[1], [1]Department of Population Medicine, Ontario Veterinary College, University of Guelph, ON, Canada, [2]School of Hospitality, Food & Tourism Management, University of Guelph, ON, Canada*

1272 35 **Effect of synchronizing, access to supplement, and grazing session on grazing behaviour of early lactating dairy cows.**
P. Chilibroste[1], J. P. Marchelli[2] and D. A. Mattiauda[1], [1]Facultad de Agronomia, Universidad de la Republica, Paysandu, Uruguay, [2]Facultad de Agronomia, Universidad de la Republica, Montevideo, Uruguay*

1273 36 **Profitability of reproductive management strategies for second and greater artificial insemination service in dairy cows.**
W. C. Chandler, M. L. Stangaferro and J. O. Giordano, Department of Animal Science, Cornell University, Ithaca, NY*

1274 37 **Pre-weaning injections of bovine somatotropin enhanced puberty attainment of *bos indicus*-influenced beef heifers.**
G. M. Silva, P. Moriel, J. M. B. Vendramini and J. D. Arthington, UF/IFAS, Range Cattle Research and Education Center, Ona, FL*

1275 38 **Effects of temperament on physiological and reproductive responses of *Bos indicus* beef cows.**
R. F. Cooke[1], K. M. Schubach[1], R. F. G. Peres[2], R. S. Cipriano[3], R. Marques[1], R. Carvalho[2], D. W. Bohnert[1], M. V. Biehl[4], A. V. Pires[4] and J. L. M. Vasconcelos[5], [1]Oregon State University - EOARC Burns, [2]Departamento de Produção Animal - FMVZ - UNESP, Botucatu, Brazil, [3]UniSalesiano, Araçatuba, Brazil, [4]ESALQ/ University of Sao Paulo, Piracicaba, Brazil, [5]Sao Paulo State University, Botucatu, Brazil*

1276 39 **Carcass quality of primiparous cows managed under a single-calf heifer model combined with use of sexed semen and early weaning.**
J. A. Arce-Cordero[1], J. K. Ahola[1], D. R. Woerner[2], G. E. Seidel[3] and S. L. Archibeque[1], [1]Department of Animal Sciences, Colorado State University, Fort Collins, [2]Colorado State University, Fort Collins, [3]Department of Biomedical Sciences, Colorado State University, Fort Collins*

Physiology and Endocrinology: Metabolism, Health, and Physiological Processes

1068 40 **Gonadal and extra-gonadal sperm characteristics of rabbit bucks fed raw or fermented cottonseed cake – cased diets supplemented with ginger (*Zingiber officinale Roscoe*).**
A. A. Olajide, Ladoke Akintola University of Technology, Ogbomoso, Nigeria*

1069 41 **Supplementation with a *Lactobacillus acidophilus* fermentation product alters the metabolic response following a lipopolysaccharide challenge in weaned pigs.**
N. C. Burdick Sanchez[1], J. A. Carroll[1], P. R. Broadway[1], B. E. Bass[2] and J. W. Frank[2], [1]USDA-ARS, Livestock Issues Research Unit, Lubbock, TX, [2]Diamond V, Cedar Rapids, IA*

1070 42 **Non-targeted metabolomic evaluation of the uterine milieu during the transitional period of embryo elongation in the pig.**
J. R. Miles[1], E. C. Wright-Johnson[1], T. D. Laughlin[2], C. D. Broeckling[3], L. A. Rempel[1] and A. K. Pannier[2], [1]USDA-ARS, U.S. Meat Animal Research Center, Clay Center, NE, [2]Department of Biological Systems Engineering, University of Nebraska-Lincoln, [3]Proteomics & Metabolomics Facility, Colorado State University, Fort Collins*

1071 43 **Effect of neuromedin U on pig immune regulation.**
Z. Lei, Nanjing Agricultural University, Nanjing, AZ, China*

1072 44 **Evaluation of immune function of circulating leukocytes during the transition period in dairy cows.**
A. Minuti[1], N. Jahan[2], F. Piccioli-Capelli[1], L. Bomba[1], S. Capomaccio[3], J. J. Loor[4], P. Ajmone-Marsan[1] and E. Trevisi[1], [1]Università Cattolica del Sacro Cuore, Piacenza, Italy, [2]International University of Business Agriculture and Technology, Dhaka, Bangladesh, [3]Università degli Studi di Perugia, Perugia, Italy, [4]University of Illinois at Urbana-Champaign*

1073 45 **Branched-chain amino acids (BCAA) in serum and skeletal muscle and mRNA expression of BCAA catabolizing enzymes in muscle of dairy cows around parturition.**
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